

IN THE MATTER OF SERVICES NO. K4450 22 1028
FOR THE MARATHON PALLADIUM PROJECT

TRANSCRIPT OF PROCEEDINGS
held virtually at Toronto
Friday, March 18, 2022, at 9:00 a.m.

VOLUME 5
REVISED TRANSCRIPT

BEFORE: Debra Sikora, Panel Chair
Gay Drescher, Panel Member
Laurie Bruce, Panel Member

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Also Present:

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Kierney Leach

Dominic McRae

Isabelle Turcotte

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Tracy Utting

Don Hart

Audrey Rooney

Sophie Regimbald

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Jon Pounder

Rob Foster

Tim Cano

Gavin Fitch

Jason Patchell

Robert Purdon

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Sandra Brereton

Legal counsel to the Panel

Panel manager

Panel secretariat

Panel secretariat

Court reporter

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1 Virtual proceedings

2 --- Upon resuming on Friday, March 18, 2022,
3 at 9:00 a.m.

4 PANEL CHAIR: Good morning,
5 everyone. Can everyone hear me okay?

6 MR. ANWYLL: I can. I don't
7 know if that counts.

8 PANEL CHAIR: Welcome again,
9 everyone. Today is day 5 of the public
10 hearings for the Marathon Palladium Project.
11 And welcome everybody back for those of you
12 who were in attendance yesterday.

13 My name is Debra Sikora and
14 I'm the chair of the joint review panel. My
15 colleagues are the panel are Gay Drescher on
16 my right and Laurie Bruce on my left and we'll
17 be continuing with day 2 of the aquatic
18 environment for our hearings today. My full
19 opening remarks can be found in the
20 transcripts and on YouTube. I won't be
21 repeating those today.

22 Just a couple of reminders
23 though that live audio and video streams and
24 video recordings of this hearing are available
25 to the public through YouTube. Anyone in the

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1 virtual hearing room with their camera or
2 microphone turned on will be captured and
3 images and recordings of you and your
4 surroundings will be broadcast to a publicly
5 available YouTube video.

6 If you do have concerns about
7 this please contact the secretariat and we'll
8 do our best to accommodate while considering
9 the need to conduct an open and transparent
10 public process.

11 The secretariat has been
12 assisting us with logistical and
13 process-related questions and they can be
14 reached throughout the hearing process by
15 writing to the project e-mail address found on
16 the public registry. I think this has been
17 working really well over the last week so I
18 encourage you to access that if needed.

19 In the event of an emergency
20 where you are please consider your safety
21 first, exit your location if needed, and then
22 when it's safe to do so please let us know how
23 we may assist and we'll find time to
24 reschedule your presentation. The agenda for
25 today is available on the Marathon section of

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1 the public registry as Document 1066.

2 I noted that we'll start
3 today with questions from the panel to the
4 presenters from yesterday's aquatic session.
5 Following questions from the panel we'll
6 proceed to the next topic presentations
7 related to fish and fish habitat. We will
8 monitor our time this morning and provide
9 updates to that schedule, especially for those
10 presenters in the event they have to be moved
11 to the following day. And we do appreciate
12 everyone's flexibility in adapting to any
13 schedule adjustments we may make.

14 We will plan to take a
15 15-minute break midmorning and afternoon, and
16 a one hour break for lunch.

17 Following we will continue to
18 provide an opportunity to Generation PGM to
19 respond to information presented at the close
20 of session-specific topics.

21 Just a comment from
22 yesterday. There was some confusion with
23 respect to how participants may want to
24 register an objection and how the panel will
25 handle objections.

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1 To clarify, if during a
2 presentation or an answer to a question you
3 wish to raise an objection, turn your camera
4 on and raise your hand using the raised hand
5 feature in Zoom. When I or any of my panel
6 members see that we will ask the presenter to
7 pause and ask you whether you have an
8 objection, following which you can state your
9 objection. The participant against whom the
10 objection is raised may then respond to that
11 objection, and once we've heard from both
12 sides the panel may caucus and rule
13 accordingly.

14 Just to be clear, I'm not
15 encouraging objections and interruptions when
16 someone is presenting, but we do understand
17 that sometimes it is necessary and we trust
18 that objections will only be raised when there
19 are good grounds to do so.

20 Before then we proceed to our
21 questioning I will ask if there are procedural
22 matters that participants would like to raise,
23 and thank you, Mr. Barretto, I do see your
24 hand up so I'll turn it to you.

25 MR. BARRETTO: Thank you,

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1 Madam Chair, and good morning, panel members.

2 I just wanted to report some
3 participants on YouTube are reporting that the
4 line is muted so they can't hear the audio
5 from the session. I just wanted to let the
6 panel know so we can remedy it. Thank you.

7 PANEL CHAIR: Thank you, Mr.
8 Barretto. Now I feel like I'm in an echo too,
9 so if you wouldn't mind giving us a couple of
10 minutes before we begin again. We are working
11 on it. Thanks for raising it.

12 MR. BARRETTO: Thank you.

13 PANEL CHAIR: I will just
14 clarify, we're going to pause for about five
15 minutes. Thank you for your patience.

16 --- Recess taken at 9:07 a.m.

17 --- Upon resuming at 9:11 a.m.

18 PANEL CHAIR: I think what
19 I'll do is I really was at the end of my
20 opening remarks, many of which were
21 housekeeping items. What I will do just for
22 the sake of clarification is repeat my remarks
23 just about any objections that participants
24 may have while we're in the hearings.

25 So what I would like to

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1 clarify is that if during a presentation or an
2 answer to a question that any of the
3 participants wish to raise an objection, you
4 can turn your camera on and raise your hand
5 using the raised hand feature in Zoom. When I
6 or any of my panel members do see that we will
7 ask the presenter to pause, ask whether you do
8 have an objection, following which you can
9 state your objection. The participant against
10 whom the objection is raised may then respond
11 to that objection and once we've heard from
12 both sides the panel may caucus and rule
13 accordingly. So hopefully this will clarify
14 some matters that were raised yesterday and we
15 trust that objections will only be raised when
16 there are good grounds to do so.

17 So before I turn it over to
18 the panel for questions regarding the aquatic
19 environment today to our participants I would
20 ask if there are any other questions or
21 procedural matters that participants would
22 like to raise.

23 Okay. I think that is that.
24 Let me just take a moment here. I'm handing it
25 over to me for the start of questions on

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1 presentations we heard yesterday. I do have a
2 number of questions myself and my panel
3 members will be asking throughout the day, and
4 if we're ready to go I have a number of
5 questions to start for Generation PGM.
6 QUESTIONS SESSION:

7 So my first question is with
8 respect to the topic of geochemical
9 assessment. And we did hear questions,
10 comments raised about items yesterday, and I
11 will focus in on three. Some were the
12 contaminant loadings based the geochemical
13 characterization work on tailings and waste
14 rock, the potential for metal leaching from
15 type 1 rock under neutral conditions, and the
16 proposed use of waste rock for construction
17 purposes.

18 I have a series of questions.
19 I wonder, Mr. Anwyll, I see you there, would
20 it be helpful I'll just proceed through each
21 one and you can direct it accordingly or
22 respond yourself.

23 MR. ANWYLL: I'll likely need
24 some technical assistance I would imagine, but
25 we will see how we can tackle them.

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1 PANEL CHAIR: Sounds good.
2 So we've heard comments from
3 participants regarding metal leaching from
4 type 1 materials and understand you do plan to
5 use this material over the construction site.
6 Could you explain to the panel how you have
7 assessed the suitability of that type 1
8 material for use in construction, given in the
9 context of the concerns raised earlier.

10 MR. ANWYLL: Totally noted.
11 Give me one second and I'll caucus and I will
12 come right back.

13 We'll get Dr. Ron Nicholson
14 from Ecometrix to clarify the answer for us.

15 PANEL CHAIR: Thank you. Good
16 morning.

17 DR. NICHOLSON: Good morning,
18 Madam Chair. Ron Nicholson here for the
19 record. Thank you for that question. I think
20 it's an important one.

21 The suitability of the mine
22 rock for construction was an important aspect
23 of the assessment. The materials were tested
24 for metal leaching. We also know that those
25 materials will not be potentially acid

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1 generating, so by the very nature of the
2 materials, the sulfide content and the
3 neutralization potential.

4 So we are assured that they
5 are not potentially acid generating, but we
6 also tested those materials for neutral
7 conditions, metal leaching, in the laboratory.
8 Those results were then used in the water
9 quality model to represent the materials that
10 will be used in construction to build the
11 embankments for the process solids management
12 facility and so we assumed that the full
13 build-out of those embankments would occur and
14 we included that material in the modelling.

15 So we know the results of
16 that -- of the water quality associated with
17 that and everything is acceptable for the --
18 the drainage quality is acceptable, and that
19 reassures us that that material will be
20 acceptable for construction.

21 PANEL CHAIR: Thank you, Mr.
22 Nicholson. So just as a follow on to that, are
23 you anticipating that there is any kind of a
24 significant volume of that type 1 material
25 that has a high potential for metal leaching

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1 which would make it unsuitable for
2 construction?

3 DR. NICHOLSON: Ron Nicholson
4 for the record.

5 No, Madam Chair. We don't
6 anticipate any metal leaching that will cause
7 adverse effects on water quality at all, for
8 type 1 material, to be very specific.

9 PANEL CHAIR: I'll just stay
10 on the type 1 materials if you don't mind. We
11 did hear from some participants yesterday
12 about recommendations regarding additional
13 mine rock sampling and testing. I believe
14 NRCAN and perhaps others raised this, and my
15 question to you would be whether GenPGM is
16 contemplating undertaking additional testing
17 of mine rock in advance of construction to
18 better inform the management or
19 characterization of the type 1.

20 DR. NICHOLSON: I can say that
21 our plans would be to do additional testing
22 and characterization definitely. We
23 appreciated NRCAN's comments and
24 recommendations and will be -- I think we
25 would be pleased to follow up with those.

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1 PANEL CHAIR: A broader
2 question to follow here. It has been noted
3 that there is increasing pyrrhotite
4 concentrations at depth in the deposit. The
5 question is has this been factored into the
6 assessment of the potential drainage chemistry
7 related to waste rock?

8 DR. NICHOLSON: Pyrrhotite is
9 another iron sulfide mineral. The main sulfide
10 mineral throughout the deposit is pyrite which
11 is also an iron sulfide mineral. But the
12 pyrrhotite has been factored in by way of
13 looking at the sulfide content overall. So
14 sulfide -- the sulfide content would take into
15 account both pyrrhotite and pyrite and so yes,
16 this has been factored into the overall
17 characterization of the materials at the site.

18 PANEL CHAIR: Thank you. Would
19 you be able to explain the anticipated time
20 you expect to the onset of any acidic
21 conditions in the type 2 waste rock in the
22 context of anticipated storage times either on
23 surface, unsubmerged in the pits, and any
24 anticipated impacts that this could have on
25 water quality.

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1 DR. NICHOLSON: Ron Nicholson
2 here for the record.

3 Yes, that's an important
4 aspect of the risk assessment and risk
5 management on-site. All of the -- as you
6 probably understand, when we do the
7 geochemical characterization and testing, the
8 so-called kinetic tests are done to understand
9 the rates of reaction and those rates of
10 reaction help us to understand the times to --
11 the consumption of all the neutralization
12 potential in the rock and in the process
13 solids.

14 And it's only after the
15 neutralization potential becomes depleted that
16 -- in a type 2 material that that acid
17 generation can begin. If there is still the
18 neutralization potential then it is available
19 to neutralize any acid that is being produced
20 by the sulfide oxidation.

21 So when we do these kinetic
22 tests we determine the rate of acid production
23 and rate of the consumption of the
24 neutralization potential, and in those tests,
25 the results of those tests we do calculate a

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1 time to onset or potential onset of acid
2 generation and we did that for both the mine
3 rock and the process solids. And for the
4 process solids that time is about 50 years. I
5 think it came up to about 47 years. And in the
6 mine rock that onset was on average 65 years.

7 So there's a long time before
8 the potential onset and that's why it's safe
9 to have an exposure of that material for
10 sometime during the operation as long as we
11 make sure that those materials are water
12 covered in the long-term for closure and
13 prevent any potential for acid generation.

14 PANEL CHAIR: Thank you, Mr.
15 Nicholson. The next question, I want to do a
16 follow on to that just to clarify my
17 understanding.

18 The testing and assessments
19 that you're doing, at this point do I
20 understand correctly these are laboratory
21 tests as opposed to broader field testing and
22 will that field testing be taking place once
23 construction operations are start? Will that
24 be an ongoing program that's undertaken to
25 validate the information that has been tested

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1 at a laboratory stage now?

2 DR. NICHOLSON: Yes, Madam
3 Chair. All of the comments I made about the
4 kinetic testing is laboratory based, and those
5 tests were fairly conservative tests on -- for
6 the mine rock specifically. These were ground
7 up samples -- very finely ground up samples
8 and to give us very aggressive leaching
9 reactions that would occur in the laboratory.
10 And we have committed to doing field tests,
11 larger scaled field tests on run-of-mining
12 material, meaning actually mined material, so
13 that we have the true characteristics of the
14 rock. And those tests will be started as soon
15 as material becomes available from blasting of
16 the rock, and those -- as you indicated, the
17 results of those tests will be used to
18 validate and confirm our current results.

19 PANEL CHAIR: So the timing of
20 that will depend on what stages of the mine
21 you are in with respect to how you would be
22 feeding that back into the field scale
23 testing.

24 DR. NICHOLSON: I believe
25 we'll try to set up those tests as soon as we

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1 get into the blasting of the mine rock, and
2 that would be the appropriate time to bring
3 that material into a larger -- into the larger
4 scale tests.

5 PANEL CHAIR: Okay. So in that
6 same vein, and I think it's the last question
7 I have related to this particular topic, CRNIO
8 described the geochemical testing performed as
9 insufficient and that potential contamination
10 loading may be underestimated as a result. Can
11 you explain why you chose the methodologies to
12 estimate loadings with a particular focus on
13 the concerns that were raised and in the
14 context of that sort of laboratory versus
15 field testing.

16 DR. NICHOLSON: So -- Ron
17 Nicholson for the record.

18 The testing that was done,
19 first of all, is very standard testing and
20 it's best practice testing for geochemical
21 characterization. And the testing, as I
22 suggested in my previous comments, was done on
23 -- for mine rock was done on crushed samples,
24 they are very finely ground up, very unlike
25 the mine rock that is -- that comes from an

1 operation from blasting of rock. As you can
2 imagine, the rock size that ends up in a waste
3 rock storage facility varies from, you know,
4 the size of a snow machine or skidoo to fairly
5 fine material.

6 But this type of rock, these
7 rocks are very, very hard. The rock type in
8 the analysis that was done by the experts that
9 will be designing the blasting of the rock
10 have determined that only 1 percent of the
11 rock would be characteristic of the material
12 that was used in the humidity cell or the
13 kinetic tests that we determined the loading
14 rates on.

15 And so what we try to do is
16 to be very aggressive in our leaching and
17 reactions in the test work, but then we need
18 to try to relate that -- those laboratory
19 results back to what will happen in the field.

20 There are two major
21 considerations when you move from the lab to
22 the field. One is the temperature. In the lab
23 we're running 20 to 25 degrees Celsius, and
24 those temperatures are much warmer than what
25 we would see in the field. We have the average

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1 daily temperature or the average annual
2 temperature is about plus 2 degrees Celsius,
3 and that would mean that a rock pile or ground
4 temperatures would be around 4 degrees
5 Celsius, in that 3 to 4 degrees Celsius, so
6 cooler than the laboratory. And reaction rates
7 are known to be a function of temperature and
8 they are slower at colder temperatures and
9 they are faster at higher temperatures.

10 So we need to adjust the
11 reaction rates to go from a higher temperature
12 lab result to what we expect would be a lower
13 temperature and slower rate in the field. So
14 we put an adjustment factor on there for
15 temperature, and that would bring the reaction
16 rates down to about a third of what we would
17 expect in the lab based on temperature
18 differences.

19 The other major factor, as I
20 suggested, was the grain size because it
21 relates to the surface area of the material
22 that is exposed for reaction. And surface area
23 and grain size -- the smaller the grain size
24 the greater the surface area, and greater
25 surface areas lead to higher reaction rates.

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1 So consequently, when we have very fine grain
2 materials we have higher reaction rates than
3 when we have coarse grain materials.

4 So in this case you can
5 imagine a particle that would be about the
6 size of a pebble, 1 centimetre in diameter or
7 10 millimetres in diameter, about the size of
8 the end of your fingertip, and particles above
9 that size in this type of material will not
10 even -- the sulfide material will not even be
11 available for reaction because the sulfide is
12 encapsulated within the strong igneous rock,
13 this hard igneous rock, and it just does not
14 become available for geochemical reactions.

15 So we're considering the
16 material that is finer than that 10-millimetre
17 size material in the reaction rates, and only
18 about 1 percent of the rock pile will be in
19 that grain size range.

20 So again you do an adjustment
21 factor from going -- we use -- in the
22 laboratory all the material is less than that
23 10-millimetre size. It's actually less than 5
24 millimetre. And so in making that adjustment
25 we go to -- we've applied a .01 or a 1 percent

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1 factor that would go from the laboratory to
2 the field conditions.

3 We know from experience at
4 other mines, and there's information in the
5 literature that shows this, that it's very
6 reasonable to see factors of hundreds of
7 difference between laboratory test results on
8 humidity cells and actual rates and loadings
9 that occur in the field for actual rock piles
10 at other mining operations. So we know that
11 those numbers are quite reasonable to apply,
12 and that is the basis of trying to go from the
13 lab to the field and we're quite confident
14 that that is a very reasonable way of loading
15 -- of estimating the loadings that we'll
16 expect in the mine rock storage facility.

17 PANEL CHAIR: Thank you, Mr.
18 Nicholson. Just maybe a point of
19 clarification. Are you using drill core for
20 any of the field scale testing or is that part
21 of the plan? I know you talked about some of
22 that field scale testing starting once you
23 begin blasting, but I think we understand
24 there are drill core samples available. Is
25 that what has been used to test out those

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1 leaching rates, and if not, would that be an
2 opportunity to assist with that
3 characterization of the type 1 and 2 metal
4 rock and back to our leaching question?

5 DR. NICHOLSON: Madam Chair.
6 Ron Nicholson for the record.

7 Absolutely. All the testing
8 was done on drill core because in a project
9 like this when we're planning a mining
10 operation, drill core is the only material
11 that is available to get an idea of what we
12 expect to have as ore. It's used for an assay
13 obviously of the economic value of the
14 deposit, but that drill core is equally used
15 to define the mine rock that will be removed
16 from the pit during the operation.

17 And so we're very careful to
18 select very representative drill core material
19 for that mine rock and that's the material
20 that I spoke of that was crushed to a very
21 fine grain material.

22 And I think we saw pictures
23 of drill core in the field tests yesterday and
24 that drill core was piled in a crib, and my
25 comment on that was that that would be a less

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1 conservative approach than actually using mine
2 rock because those big drill core fragments
3 are not -- they don't contain fine grain
4 material that we expect to find some of in an
5 actual rock pile. So I was a little surprised
6 to see that in a field test, and that's
7 furthermore why we're going to use actual
8 run-of-mine material to be -- to have a more
9 realistic material that will be tested for
10 loading rates once mining begins.

11 PANEL CHAIR: Thank you. I'm
12 just going to probe one little bit more on
13 this one.

14 You mentioned representative
15 drill core. Could you describe to us when you
16 say representative, you know, we did see
17 diagrams of the core work you had done on the
18 various pits and I just wonder if you could
19 just elaborate a little bit on when you say
20 representative drill core how that is chosen,
21 where it's chosen kind of thing.

22 DR. NICHOLSON: Yes, Madam
23 Chair. That's a very important point because
24 all of that -- all of that testing needs to be
25 based on good representative material. So in

1 case of our sampling programs, we in fact took
2 large zones of rock that we would extend over
3 10 to 15 metres of core and collect multiple
4 samples that would then be brought together
5 into one sample so it would represent fairly
6 large zones of the deposit and of the mine
7 rock that would be characterized and tested.

8 So a lot of care went into
9 selecting those samples, making sure that they
10 represented the mine rock that will end up in
11 the mine rock storage facility that way.

12 PANEL CHAIR: Thank you. I
13 have some questions again to Generation PGM,
14 and they do relate to the geochemical model
15 assumption. So I have a similar series of
16 questions and I will -- so the proponent did
17 provide for the record detailed information on
18 the geochemical model assumptions, inputs,
19 outputs, and this was provided in their EIS as
20 well as their additional information on the
21 fisheries offset and water quality modelling
22 submission.

23 Participants including CRINO
24 have raised questions about the use of the
25 predictive geochemical model. If I understood

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1 correctly, there was comments about the
2 proprietary nature of that. So with some of
3 that in mind I'll start my questioning, and
4 some of it is a bit of clarity upfront here.

5 So we heard I think during
6 the geochemistry presentation yesterday water
7 quality had been predicted in the use of this
8 model and assessed for the stages of
9 operations and closure, and further on in the
10 presentation I did hear references to
11 different terminology for the closure phase of
12 the project. GenPGM referred to closure -- has
13 referred -- not necessarily just yesterday,
14 has referred to closure, post-closure, active
15 and passive closure, and initial phase and
16 long-term. And I just wondered if you could
17 clarify, are those similar interchangeable
18 statements with respect to the definition of
19 operations and closure, and I did -- I have a
20 couple of questions further on those
21 descriptors, I guess would be my question.

22 DR. NICHOLSON: Madam Chair,
23 if I could just have a moment to confer with
24 my colleagues. I would like to just have a
25 chat, thank you.

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1 PANEL CHAIR: Okay. Thanks.

2 DR. NICHOLSON: Thank you,
3 Madam Chair, for allowing that time. I would
4 like to ask Mr. Fraser to address your
5 question of clarification.

6 PANEL CHAIR: Thank you.

7 MR. FRASER: Thanks, Ron. And
8 thank you, Madam Chair, and good morning,
9 panel members.

10 I would refer everyone to
11 section 1.5.2.3 of the EIS addendum, and
12 that's CIAR reference 727, for some
13 clarification around terms. But I'll offer
14 this to be sure that we're all on the same
15 page. So when we talk about initial phase of
16 closure or the active phase of closure we're
17 talking about the period right at the end of
18 the cessation of operations where active
19 reclamation on the site occurs. When we talk
20 about -- and that would also be sort of the
21 defining or the line between closure and
22 post-closure.

23 So apologies that we use
24 those terms interchangeably. I think we all
25 understand together what they mean. But the

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1 line is between sort of the active closure
2 phase where there is reclamation actively
3 going on and after that period it's more
4 passive.

5 And just for further
6 reference, the water quality model was run out
7 for a period of 150 years. So it starts in the
8 construction phase, runs through operations,
9 and goes well into the closure phase, the
10 long-term closure phase, and goes well beyond
11 the time it takes the pit to fill and then
12 captures within the model that period where
13 the pit is overflowing through the MRSA to the
14 east.

15 PANEL CHAIR: Thank you, Mr.
16 Fraser. That does clarify. So it is fair to
17 say those terms are interchangeable the way
18 we've seen them in the various documentation
19 and they describe as you've noted?

20 MR. FRASER: Yes, I think
21 that's fair.

22 PANEL CHAIR: Thank you. Is
23 there a particular time frame attached to that
24 with respect to when we talk about -- or a
25 predicted timeframe attached to say the

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1 active/passive closure phases? I think we've
2 heard five years, six years. I just wanted to
3 clarify are those predicted timelines.

4 MR. FRASER: Thank you, Madam
5 Chair. It's Brian Fraser again for the record.

6 So for planning purposes and
7 what's incorporated into the water quality
8 model the assumption is that active phase of
9 closure or the initial phase of closure is
10 five years. And that's where reclamation
11 activities or the primary reclamation
12 activities would occur. And subsequent to that
13 just in terms of planning and the water
14 quality prediction specifically we tested the
15 idea that drainage patterns, the natural
16 drainage patterns on the site would be
17 restored after that time, and that's just a
18 conceptual plan at this point.

19 I think, as I mentioned
20 previously, the idea would be to monitor site
21 drainage to ensure that it would be acceptable
22 for restoration of natural drainage patterns,
23 and if it was acceptable before that they
24 could be restored before that five-year period
25 ended, or if it took longer, the water

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1 collection system would continue to operate
2 until such time it was demonstrated that the
3 release was protective. But as I said, the
4 water quality model as it was run, you know,
5 consider that a five-year period and then
6 tested those predictions.

7 PANEL CHAIR: Okay, thank you.
8 Are those definitions, do they align with the
9 mine rehabilitation code? There are closure
10 planning requirements; are those definitions
11 in alignment with that sort of regulatory
12 framework? If you're aware.

13 MR. FRASER: Thank you, Madam
14 Chair. I'll just take one second to caucus
15 with my colleagues. Thank you, Madam Chair.
16 We're back now.

17 I'm going to introduce Mr.
18 Jeremy Dart who is the environmental manager
19 for GenPGM at the site and he's going to
20 answer that question for you.

21 PANEL CHAIR: Thank you, Mr.
22 Fraser. Good morning, Mr. Dart.

23 MR. DART: Good morning. For
24 some reason my video won't start.

25 PANEL CHAIR: I saw your name

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1 there for a moment. Let's see if we can --

2 The video is working now.

3 THE COURT: Good morning.

4 MR. DART: Good morning, Madam
5 Chair. Jeremy Dart for the record.

6 So yes, the phases that are
7 mentioned within the water quality model do
8 align with the mine rehabilitation code as
9 prescribed under Ontario regulation 240.

10 PANEL CHAIR: Thank you.
11 Appreciate that clarification. And all of that
12 preamble was leading to my next question but I
13 think, Mr. Fraser, you've answered that. But
14 just for the record, with the terminology
15 clarified, in the geochemistry portion of the
16 presentation there was reference to water
17 quality inputs being assessed for all of
18 operations and closure. And I really -- I was
19 looking for confirmation that that did include
20 active/passive faces of closure. Maybe I can
21 just confirm. You said a moment earlier about
22 the water quality model having been -- had
23 inputs 150 years out, predictive inputs for --
24 I thought you said 150 years.

25 MR. FRASER: Thank you, Madam

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1 Chair. It's Brian Fraser for the record.

2 That's correct. So all of
3 those inputs that would potentially generate
4 chemistry associated with that closure period.
5 So specific to the pit, that would be pit
6 walls, rubble on benches, rubble on pit floor,
7 waste in those pits, that was all factored in
8 along that timeline within the 150-year period
9 of the model. So it's a complete mass balance
10 of all the chemistry that would occur over
11 that time period.

12 PANEL CHAIR: Okay. Thank you.
13 I had a couple more questions specifically
14 about the model being used, and would you be
15 able to tell us whether this model,
16 geochemical model has been used on other
17 sites, how successful it is. Elaborate a bit
18 for us on that.

19 MR. FRASER: Thank you, Madam
20 Chair. We're just going to caucus for one sec
21 to make sure the right person answers the
22 question for you.

23 PANEL CHAIR: Okay, thank you.

24 MR. FRASER: Thank you, Madam
25 Chair. Brian Fraser for the record. Dr.

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1 Nicholson is going to take this question.

2 PANEL CHAIR: Thank you, Mr.
3 Fraser. Hello, Mr. Nicholson.

4 Just maybe I will add this
5 one more piece to it so as you respond that
6 there's a fuller context. I had asked about
7 whether you're aware if the model had been
8 used on other sites, its success, and I
9 wondered if there was something unique about
10 this model that makes it one particularly
11 appropriate for use at the proposed Marathon
12 Palladium Project.

13 DR. NICHOLSON: Thank you very
14 much for the question, Madam Chair. Ron
15 Nicholson for the record.

16 In answer to your first
17 question, this model, we've developed this
18 model and it's been developed over oh, more
19 than a decade now going back. And the model
20 was specifically developed for -- to apply to
21 mining operations so it has very specific
22 features in it that allow the appropriate
23 implementation of source terms and that we
24 would expect at mining operations. The model
25 is based on many years and decades of

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1 experience with mining operations,
2 understanding water quality and the source
3 terms that are associated with mining
4 operations. The model contains water balance
5 and mass balance, components to it that put
6 the source terms together with water and
7 provide predictions on concentrations.

8 So I would say that yes, I
9 think the model has some very special and
10 positive attributes that can be applied to
11 mining operations.

12 And in answer to your
13 question about if it has been used and -- yes,
14 it has, and very frequently in fact. And we
15 have applied the model for existing
16 operations, in which case we have shown
17 excellent validation results showing that the
18 model gives us and can replicate observations
19 on sites that have good data. And we've worked
20 with operations. We've applied it to closed
21 sites, again validating against actual
22 monitoring data. So we have a number of
23 operations and sites where we have applied the
24 model and we have a very -- we have a very
25 strong confidence that the model is applicable

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1 to mining operations and appropriate for
2 giving us a high degree of confidence in the
3 predicted model results.

4 PANEL CHAIR: Thank you, Mr.
5 Nicholson. Just as a follow on to that, you've
6 referenced its use in various stage of mine
7 operations, and I would ask is it Generation
8 PGM's intention with that modelling data to be
9 updated periodically with the field results
10 from any ongoing or planned monitoring to
11 continually reflect that progress of the mine
12 phases, construction, operations and beyond?

13 DR. NICHOLSON: Thank you,
14 Madam Chair. Ron Nicholson for the record.

15 Yes, absolutely. The point of
16 having -- doing a modelling exercise like this
17 is to provide the ability to make management
18 decisions but those results can't be looked at
19 in isolation. And so typically we would do
20 follow-up programs based on monitoring and
21 observations and that provides a method to
22 update predictions, either confirm that
23 everything is as predicted, and if they are
24 not, it provides an ability to adjust and
25 adapt going forward and making sure that we're

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1 -- that we have the appropriate results and an
2 ongoing understanding of what future
3 conditions will be.

4 PANEL CHAIR: Thank you, Mr.
5 Nicholson. You actually led into my next
6 question which was exactly that, if it was
7 determined that the model was not actually
8 reflective of those field results what
9 contingencies does Generation PGM anticipate
10 with respect to your comment about the ability
11 to adjust or adapt to those inputs or new
12 inputs to the model?

13 DR. NICHOLSON: Thank you,
14 Madam Chair. The follow-up programs are there
15 to either verify or determine what conditions
16 will arise, and there is an ability to adapt
17 to the changes that are observed. As
18 indicated, first they would be -- the new
19 results would be compared to the model results
20 and the modelling would be adjusted if
21 necessary.

22 If different conditions are
23 found then there would be an ability to adjust
24 water management to reflect those changes.
25 There's a number of things that can be done,

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1 and I believe yesterday there was a discussion
2 of water treatment needs, and water treatment
3 needs would be -- as indicated in previous
4 presentations and discussion yesterday, there
5 was discussion of phosphate and TSS, for
6 example. If other -- if there was a finding
7 that some other constituent required treatment
8 that adjustment could be made.

9 So those types of adaptive
10 management approaches can be offered to
11 follow-up with any identified changes from the
12 current predictions.

13 PANEL CHAIR: Thank you, Mr.
14 Nicholson. I think we do have some further
15 questions on that as well, but at this time I
16 think I have completed my questions on the
17 model itself. Thank you.

18 I have another few questions
19 on -- Mr. Fraser? Sorry, you have your hand
20 up. I couldn't see it.

21 MR. FRASER: Apologies, Madam
22 Chair. Camera on/camera off.

23 PANEL CHAIR: No worries. Go
24 ahead.

25 MR. FRASER: I just wanted to

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1 add to Dr. Nicholson's response about the use
2 of the model, that we have used it in
3 regulatory settings, so to support closure
4 plans, to support permitting in Ontario and
5 elsewhere. So the model has been tested in the
6 regulatory environment.

7 PANEL CHAIR: Sorry, and did
8 you say in Ontario specifically?

9 MR. FRASER: And elsewhere.

10 PANEL CHAIR: And elsewhere.

11 MR. FRASER: We work across
12 Canada and internationally.

13 PANEL CHAIR: Thank you. Thank
14 you very much.

15 So I will move on to my
16 questions now for total ammonia, and these are
17 to Generation PGM. Has Generation PGM
18 evaluated the risk of increasing ammonia
19 concentrations in the water management pond
20 due to the recirculation of water from there
21 to the processing plant?

22 MR. FRASER: Thank you, Madam
23 Chair. Brian Fraser for the record. We'll just
24 caucus for one moment.

25 PANEL CHAIR: Okay.

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1 MR. FRASER: Thank you, Madam
2 Chair. Brian Fraser for the record. Dr.
3 Nicholson is going to come online and talk to
4 that answer.

5 PANEL CHAIR: Thank you.

6 DR. NICHOLSON: Madam Chair.
7 Ron Nicholson for the record.

8 Ammonia -- and perhaps I
9 should ask for a little clarification here on
10 what you're asking specifically about ammonia.
11 I understand it was related to the processing
12 but I wonder if you can clarify.

13 PANEL CHAIR: Maybe a more
14 general question about concerns with -- so my
15 question is more related to increasing --
16 potential for increasing ammonia
17 concentrations in the water management pond
18 due to the recirculation of water from there
19 to the processing plant. Is there a
20 possibility of that potential happening and
21 has that risk been assessed in any way?

22 DR. NICHOLSON: Madam Chair,
23 Ron Nicholson for the record.

24 The main source of ammonia
25 from mining operations like this are typically

1 the residues from the explosives that are
2 used, and with good housekeeping procedures
3 those -- the ammonia is minimized that way in
4 the process. So there's no ammonia added in
5 the processing, so there's a pass-through of
6 the -- the material that ends up being
7 processed of course has some residual ammonia
8 associated with it, but typically what occurs
9 in this recirculation of water back to the
10 mill and through the water management pond is
11 -- does not necessarily increase the ammonia.
12 And also ammonia just naturally degrades with
13 time when it is in an open pond like that, so
14 that has a tendency to decrease ammonia or
15 keep ammonia at levels lower within the
16 system.

17 PANEL CHAIR: Has GenPGM
18 anticipated any need for treatment ammonia? I
19 know you've indicated likelihood -- I don't
20 want to put words into your mouth so maybe I
21 won't. Based on your response there, has there
22 been any contemplation of a treatment system
23 for ammonia if that -- if the potential was
24 there or if it was shown that the total
25 ammonia in the water management pond was

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1 higher than predicted.

2 I think what we're getting at
3 is there was a question the panel posed
4 through IR2-4, just wanting to understand
5 protections for Hare Lake if the predictions
6 around that total ammonia concentration were
7 to change during site operations.

8 DR. NICHOLSON: Thank you,
9 Madam Chair. Ron Nicholson for the record.

10 We evaluated the potential
11 inputs of ammonia so we did assess that taking
12 into account the residual ammonia that would
13 be associated with the ore and with the mine
14 rock, and those were included as source terms
15 in the water quality predictions. And we
16 therefore assessed the concentrations of
17 ammonia going into the system and furthermore,
18 assessed the discharge of those ammonia
19 concentrations, and I think those were
20 referred to in the Hare Lake discharge and I
21 think you would find those in CIAR757. And the
22 levels of ammonia were such that we don't
23 contemplate a need for treating ammonia; they
24 were low enough to not cause any adverse
25 effects.

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1 PANEL CHAIR: Thank you. So
2 given that you don't anticipate a treatment
3 system, would there be consideration for any
4 need for contingency planning, again if during
5 site operations or beyond that the
6 concentration of total ammonia from that would
7 be higher than predicted, to ensure no adverse
8 impact on Hare Lake?

9 DR. NICHOLSON: May I have a
10 moment to caucus with my colleagues?

11 PANEL CHAIR: Yes.

12 ---(Unidentified speaking)

13 MR. BARRETTO: I'm sorry, Mr.
14 Fraser, if you can mute your mic into Zoom.

15 DR. NICHOLSON: Madam Chair,
16 if I can just ask Mr. Fraser to respond to
17 your question.

18 PANEL CHAIR: Yes, thank you.

19 MR. FRASER: Thank you, Madam
20 Chair. Brian Fraser. Apologies for having my
21 mic still on.

22 So as part of the site-wide
23 water management monitoring program, inputs
24 from the mine rock storage area and from the
25 process solids facility will be monitored

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1 specifically for ammonia and various other
2 compounds. Water quality at the water
3 management pond will also be monitored. The
4 discharge to Hare Lake from the water
5 management pond would be monitored.

6 There will be limits for
7 discharge that will come from provincial
8 permitting and that permitting process will
9 also require, as we heard yesterday and is
10 standard from our experience in provincial
11 permitting, it will require detailed
12 contingency plans with triggers for action
13 levels that would trigger certain responses
14 and that's -- would be specific to likely
15 increasing concentrations of constituents if
16 that was to happen so that appropriate
17 mitigation strategies could be employed so
18 that we could prevent a situation as you're
19 describing where concentrations in Hare Lake
20 or another receiver would get beyond
21 appropriate standards for the protection of
22 aquatic life.

23 So absolutely, I guess to sum
24 up, there will be contingency in monitoring to
25 identify those situations and ensure they are

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1 rectified. I would also point to the IR you
2 mentioned, the response to IR2-4 which is CR
3 757 that talks also about the management of
4 blasting residues. So there will be an
5 explosive management plan that would be --
6 that would rely on best practices to ensure
7 that explosive residues that might be left
8 from the blasting process will be minimized
9 and that will in turn minimize the amount of
10 ammonia and other nitrogen-based compounds
11 that you would see associated with the mine
12 rock.

13 PANEL CHAIR: Mr. Fraser, just
14 -- thank you. A point of clarity. Is that the
15 predominant potential source of ammonia from
16 blasting activities or are there other source
17 potentials for ammonia?

18 MR. FRASER: Thank you, Madam
19 Chair. It's Brian Fraser for the record.

20 I'm just going to caucus and
21 make sure that we have got the right person to
22 answer your question.

23 PANEL CHAIR: Thank you.

24 MR. FRASER: Thank you, Madam
25 Chair. Brian Fraser again for the record. So

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1 the principal constituents on the nitrogenous
2 compound side that would be associated with
3 blasting residues would be ammonia and
4 nitrite.

5 PANEL CHAIR: Thank you.

6 MR. FRASER: And just I guess
7 for the record, we've carried through that
8 same analysis with nitrite.

9 PANEL CHAIR: Thank you. And
10 then I believe last question on ammonia. Would
11 you be able to elaborate how the concentration
12 of un-ionized ammonia will evolve between the
13 point of discharge into Hare Lake and 50
14 metres downstream where Generation PGM had
15 predicted that the concentration of un-ionized
16 ammonia would be below the provincial quality
17 objectives value?

18 MR. FRASER: Thank you, Madam
19 Chair. Brian Fraser for the record. We'll just
20 take one second to caucus.

21 PANEL CHAIR: Okay.

22 MR. FRASER: Thank you, Madam
23 Chair. Brian Fraser for the record again.

24 As it concerns un-ionized
25 ammonia in the water quality assessment, as

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1 you know we've -- un-ionized ammonia is a
2 function of both Ph and temperature, so we
3 have factored that into the assessment. And
4 with respect to its -- I'm not sure what the
5 right word -- evolution through the mixing
6 zone, if you like, we've treated it as a
7 conservative parameter. We would expect some
8 degradation in the environment but we've
9 considered it as a conservative parameter so
10 looked at it in a conservative manner in the
11 water quality model.

12 PANEL CHAIR: So has it
13 actually been modelled from the point of
14 discharge to that 50-metre or prior to the
15 point of discharge and into Hare Lake? Is
16 there any difference between those inputs from
17 the point of discharge to the 50-metre mark in
18 the model itself or into --

19 MR. FRASER: Yeah, it would be
20 discharged at the concentration as shown from
21 the water management pond released into Hare
22 Lake, undergo mixing, and their prediction
23 being at the end of the mixing zone just on a
24 mass balance basis.

25 PANEL CHAIR: At that 50-metre

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1 point, the end of the mixing zone?

2 MR. FRASER: Correct.

3 PANEL CHAIR: Thank you.

4 Given that it's 10:15, 10:20,

5 I think we'll take our first break today.

6 Thank you to Generation PGM for responding to

7 our questions so far. How about we return at

8 10:35 following the break, and we'll continue

9 our questioning.

10 --- Recess taken at 10:18 a.m.

11 --- Upon resuming at 10:38 a.m.

12 PANEL CHAIR: Welcome back

13 from break. Thanks, everyone.

14 So we're going to continue

15 our panel questioning for presenters, and the

16 next topic I would like to ask about is

17 related to the binational lake-wide management

18 plan for Lake Superior. I do have some

19 questions for Generation PGM to -- and a

20 couple of federal and provincial governments.

21 So with that, I'll start my questioning.

22 So the project as planned

23 appears to have the potential for discharges

24 to Lake Superior through Hare Lake, and

25 following closure, the Pic River. So a couple

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1 of questions to Generation PGM.

2 Could you please outline for
3 the panel and participants how impacts may
4 have been assessed in consideration of the
5 zero discharge demonstration project overseen
6 by the binational forum for Lake Superior.

7 MR. ANWYLL: Thanks for your
8 question, Chairman Sikora. I'll have to get
9 the right person to answer that. Just one
10 second.

11 PANEL CHAIR: Thank you.

12 MR. ANWYLL: Thank you, Madam
13 Chair. With the folks we have on the line we
14 are unaware of the details of that standard
15 you demonstrated.

16 PANEL CHAIR: Okay. One
17 option. We do have a line of questioning --
18 let me just take a couple of minutes. Would
19 you be able to bring those folks to the table
20 on another day, later in the afternoon?

21 MR. ANWYLL: Let me confirm
22 that, if I could. I'll caucus for a quick
23 second.

24 PANEL CHAIR: Thanks, Mr.
25 Anwyll.

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1 Mr. Anwyll, I may have -- can
2 you hear me okay?

3 MR. ANWYLL: Yes, we're good.

4 PANEL CHAIR: I hope I haven't
5 confused things. Apparently I'm being told I
6 said this was a follow-up to the ammonia
7 question. It's actually a lead in to more
8 questions around mercury, methylmercury. So I
9 don't know if that was part of the confusion.

10 But perhaps I do have some
11 questions for the government organizations
12 that perhaps if I began with those questions
13 some clarity would be provided and you could
14 let me know if on follow-up there's still time
15 that you require.

16 MR. ANWYLL: Yeah, that would
17 be excellent. If you could help us with the
18 reference document for that. Again we were
19 trying to figure out whether it was the people
20 online that were unfamiliar with it or whom we
21 would get within the team to answer that. So
22 if you could help me with that reference
23 number we certainly can get a better
24 understanding. And certainly on the
25 methylmercury, if there's specific questions

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1 or a path that we can tie into that would
2 absolutely make sense.

3 PANEL CHAIR: Yeah, we do have
4 a number of questions that my panel member
5 will support in terms of questions. I do have
6 a CIAR number 1081 PDF 63 for your reference.

7 And what I'll do then is I
8 will pose a question to MECP as a starting
9 point. Do we have representatives from
10 Ministry of Environment, Conservation and
11 Parks on the line?

12 Mr. Brown, I think I can see
13 you -- oh, I thought I could see you there.
14 Ms. Gilliam-Price? We're just having a little
15 trouble hearing you, Ms. Price. I wonder if
16 you could either turn your mic up or....

17 --- (DISCUSSION OFF THE RECORD)

18 MS. GILLIAM-PRICE: Is that
19 good?

20 PANEL CHAIR: Perfect. Thank
21 you very much.

22 So in your hearing submission
23 -- in MECP's hearing submission it notes that
24 there is a potential conflict with the
25 lake-wide management plan for the Lake

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1 Superior objective and the proposed mine
2 development given the potential for mining
3 activities to have either a direct or diffused
4 discharge to waterbodies that discharge to
5 Lake Superior.

6 To minimize the potential for
7 release of mercury to Lake Superior, the
8 submission states that MECP may consider
9 imposing a more stringent water quality
10 criterion for mercury for any environmental
11 compliance approvals that may authorize
12 proposed project discharges towards watersheds
13 that drain to Lake Superior.

14 Could you comment on how
15 likely, if you're able, it would be that there
16 may be more stringent water quality criterion
17 imposed towards advancing to that zero
18 discharge under the binational lake-wide
19 management plan.

20 MS. GILLIAM-PRICE: So I guess
21 first off mercury is not anticipated to be as
22 a result of process in the effluent. Part of
23 what I guess confounds our potential concerns
24 is that some of the baseline sampling wasn't
25 conducted using a low enough method detection

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1 limit, so at this point we're a little unsure
2 about accurate predictions for mercury for
3 discharge to Hare Lake so we had recommended
4 updated sampling. And with respect to more
5 stringent water quality criteria for mercury,
6 if the project is to advance we would look
7 into more detail and work with the proponent
8 to develop appropriate criteria for potential
9 effluent limits for the ECA.

10 So unfortunately at this time
11 I can't quite say how stringent those would
12 be. Mercury isn't anticipated to be a
13 constituent of potential concern for the
14 effluent; however, mercury has arisen as a
15 potential concern by some and again we're
16 unsure as to the -- how accurate the
17 predictions are for discharge to Hare Lake.

18 PANEL CHAIR: Thank you, Ms.
19 Gilliam-Price. Can I just probe a little bit.
20 So when you talked about the detection limits
21 for mercury and the consideration for those, I
22 appreciate that you can't share with us now,
23 not able to. Are those recommendations in
24 consideration specifically related to the zero
25 discharge demonstration project under that

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1 lake-wide management plan, or more generally
2 as you've described yesterday -- I shouldn't
3 say generally, but specifically related to the
4 effluent itself of the project?

5 MS. GILLIAM-PRICE: Yeah, not
6 necessarily related to the Lake Superior
7 lake-wide management plan, just more generally
8 a concern that was identified about the high
9 method detection limits that were used, we
10 would normally recommend lower limits, method
11 detection limits in this case.

12 PANEL CHAIR: So it was your
13 comments are specifically related to the
14 project itself.

15 MS. GILLIAM-PRICE: Correct.

16 PANEL CHAIR: Thank you.

17 Is it possible for MECP to
18 provide a copy of the binational lake-wide
19 management plan for Lake Superior to the
20 panel?

21 MS. GILLIAM-PRICE: I believe
22 we can. I'll have to seek that out from
23 others.

24 PANEL CHAIR: That's fair. If
25 you could let us know. That would formally be

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1 undertaking number 2, for the record.

2 MS. GILLIAM-PRICE: Okay.

3 PANEL CHAIR: Thank you. Just
4 take a moment here. Thank you, Ms.

5 Gilliam-Price. Appreciate your responses.

6 I do have a general question
7 as well on this same topic, if Environment
8 Canada and Climate Change is on the line
9 and/or Parks Canada, if they were available. I
10 can pose my question, you can let me know if
11 you're able to respond and that is, would you
12 have any questions or concerns you would wish
13 to bring forward regarding that lake-wide
14 management plan or national park and marine
15 conservation areas with respect to the
16 proposed project.

17 MR. CLAVERING: Good morning,
18 Madam Chair. Just give me a moment to caucus
19 with my team.

20 PANEL CHAIR: Thank you, Mr.
21 Clavering.

22 MR. CLAVERING: Thank you for
23 that time, Madam Chair. ECCC just wishes to
24 point out that we do share MECP's concerns
25 with respect to the method detection limits

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1 and we had asked the proponent to provide
2 clarity with respect to in particular Hare
3 Lake and Angler Creek and those exceedances
4 that were reported there and nothing further
5 to add on that.

6 PANEL CHAIR: Maybe just --
7 thank you, Mr. Clavering, for that. So similar
8 to Environment Canada -- Environment,
9 Conservation and Parks at the Ontario level,
10 your specific concerns are related to Hare
11 Lake and Pic Creek as opposed to the broader
12 linkage, if any, with Lake Superior and that
13 binational management plan.

14 MR. CLAVERING: Correct, again
15 just stressing that the method detection
16 limits themselves need to be -- and the
17 recommendation that ECCC provided in terms of
18 rerunning the geochemical analysis using that
19 lower detection limits and taking into account
20 the mitigation and follow-up measures that
21 we've recommended as well as the proponent 's
22 commitments, then correct, we don't have
23 further concern.

24 PANEL CHAIR: Okay, thank you.
25 Just a moment, please.

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1 So Generation PGM, I had
2 three questions and I wondered if that
3 conversation was helpful. Perhaps I can sort
4 of order my three questions and you can let me
5 know how best you would like to respond just
6 in the context of management plan.

7 So my first one was, as you
8 know, about outlining how impacts may have
9 been assessed in consideration of that project
10 and the binational forum for Lake Superior.
11 Wondered if there was a possibility to
12 describe how the mine project may assist in
13 meeting those objectives set out in the plan,
14 and then perhaps a more broadly stated
15 question: do you anticipate the changes to
16 water quality or quantity as a result of the
17 project will have an impact on any Federal
18 lands; for example, Biigtigong First Nation
19 lands, Pukaskwa National Park, or the Lake
20 Superior National Marine Conservation area?

21 MR. ANWYLL: Thanks for that
22 question. Give me a second, please. Thanks for
23 the time, Chair Sikora. I'll hand it over to
24 Brian Fraser.

25 PANEL CHAIR: Thank you.

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1 MR. FRASER: Thank you, Madam
2 Chair. It's Brian Fraser for the record.

3 I think in response to your
4 first question, if you would accept that the
5 primary issue as discussed is related to
6 mercury, then I would be happy to share some
7 further information specifically about that in
8 relation to the binational plan, and then we
9 can move on to the second part of that
10 question if that makes sense.

11 PANEL CHAIR: Yes, thank you.

12 MR. FRASER: Great. So as
13 we've heard, there were some questions raised
14 about detection limits and how the detection
15 -- the analysis and the detection limits were
16 used in the predictive modelling.

17 So I guess I want it clear
18 for the record the distribution of data
19 relative to those detection limits both in
20 terms of the geochemical testing and the
21 baseline water quality data that are
22 available.

23 So we've provided a review of
24 the mercury data in IR5-11 which is CIAR 950,
25 and -- so I think we'll first talk about the

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1 geochemical analysis.

2 So we talked yesterday about
3 detection limits and water, which I'll get to
4 in a second, but we also have the analysis of
5 the solids portion of the mine waste
6 materials. So those samples all came back with
7 analyses of less than the respective detection
8 limits associated with the solids analysis.

9 And then moving on to the
10 water, I think we discussed that there was a
11 bit of a mix of detection limits seen in the
12 geochemical testing results, some meeting the
13 Federal guideline and some about an order of
14 magnitude above the guideline.

15 So based on our review of the
16 geochemical testing data which showed within
17 all of the samples tested that only one sample
18 even at the low detection limit was above
19 detection and still below the Federal
20 guideline, that it was reasonable to assume
21 that from a source material point of view that
22 the detection limit -- so .00001 being the
23 lower detection limit for those testing, so
24 below the Federal guideline of 26 nanograms,
25 could be used for the predictive modelling.

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1 So the constraint that we
2 discussed yesterday in terms of specifically
3 with the closure predictions for the Pic River
4 being detection limit-related weren't
5 associated with the source, they were
6 associated with the way we dealt with the data
7 for the Pic River. And perhaps we'll jump
8 ahead to the Pic River before we get back to
9 Hare Lake since I started down that way.

10 But there is a mix of
11 detection limits for baseline data associated
12 with the Pic River. 28 percent of the samples
13 that were collected in the Pic River were at
14 the lower detection limit, so at the detection
15 limit which is below the Federal guideline. In
16 light of that, we conservatively decided
17 within the predictive effects assessment to
18 use the higher detection limit for background,
19 or the higher -- yeah, the higher detection
20 limit as the basis of background, so when we
21 concluded in the predictive effects assessment
22 for water quality that there would be no
23 incremental change relative to that number, it
24 was based on the higher detection limit.

25 Having said that, as I said,

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1 that's a very conservative view of background
2 in the Pic River and I said we do have 28
3 percent of the samples collected were in fact
4 below the Federal guideline.

5 So again the constraint for
6 -- in our view isn't on the source material
7 for the prediction, it was on the background
8 characterization. So if we were to use the
9 lower background which was represented in 28
10 percent of the samples with the lower
11 detection limit we would see no incremental
12 change in concentrations of mercury in the Pic
13 River at that lower detection limit, so below
14 the Federal guideline.

15 PANEL CHAIR: Mr. Fraser, and
16 maybe the question is to either of the
17 government agencies but I'll just ask it. When
18 you talked about the lower detection limit and
19 below the Federal guideline, would you be able
20 to confirm those 28 samples, which detection
21 limit are we talking about? I believe, and
22 someone correct me if I'm wrong, that there
23 was an order of magnitude between that which
24 the Federal agency and the provincial agency
25 spoke to, so I wonder for those 28 samples

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1 could you or either the province or the
2 Federal government confirm which detection
3 limit those are associated with.

4 MR. FRASER: Sorry, Madam
5 Chair. If that was directed to me, would you
6 mind repeating that.

7 PANEL CHAIR: Okay. It is a
8 bit -- so you spoke about 28 samples that were
9 -- I think it was the Pic River -- you said
10 below the Federal guideline, and at the lower
11 detection limit. Is that the detection limit
12 that's referenced in Environment Canada and
13 Climate Change?

14 MR. FRASER: That's correct,
15 it's 28 percent of have -- 28 percent of 76
16 samples.

17 PANEL CHAIR: Oh I see, okay.

18 MR. FRASER: And yes, so the
19 detection limit achieved, which was 1 nanogram
20 or 1 or 2 nanograms depending, is below the
21 Federal guideline of 26.

22 PANEL CHAIR: Thank you. And
23 can I just get Environment Canada and Climate
24 Change to confirm that I have that correct,
25 that understanding.

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1 MR. CLAVERING: Just give me a
2 moment to caucus with the team.

3 PANEL CHAIR: Thank you.

4 MR. CLAVERING: Thank you for
5 that time.

6 PANEL CHAIR: Thank you. Go
7 ahead.

8 MR. CLAVERING: So in ECCC's
9 review of the documentation provided by GenPGM
10 we just note that there were many different
11 values provided in terms of the methyl -- the
12 mercury concentrations including within the
13 updated baseline update and other reports, and
14 these -- this mixture of values provided, this
15 is what in part create some of that
16 uncertainty for ECCC, and also pointing out
17 that within the IR response itself GenPGM had
18 indicated that the levels predicted were tied
19 to the method detection limits identified as
20 part of their geochemical analysis and we
21 would just be looking for further clarity in
22 terms of that. So all of this builds up to
23 some of that uncertainty in the
24 recommendations that we've provided.

25 PANEL CHAIR: Thank you, I

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1 appreciate that.

2 Thank you. Does Generation
3 PGM have any further comment they would like
4 to add? I got a note that my internet
5 connection is unstable.

6 MR. FRASER: Thank you, Madam
7 Chair.

8 I would just -- I guess we
9 can finish off, if it's okay, on the Hare Lake
10 side of things.

11 So there were more data
12 associated with the Hare Lake baseline data
13 that enabled us to rationally, reasonably use
14 the lower detection limit for the predictive
15 effects assessment. And again when we've got
16 samples below detection at that lower number
17 we're not cutting the detection limit by half
18 for the predictive process as is sometimes the
19 case. We use the stated detection limit as the
20 basis for that to try to be conservative.

21 So within that assessment,
22 that's why on the Hare Lake side the
23 predictive effects assessment was able to
24 conclude that the concentrations in Hare Lake
25 would be below the Federal water quality

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1 guideline. And I guess in reference to your
2 second question --

3 PANEL CHAIR: Sorry, could I
4 just clarify something there. We heard
5 Environment Canada and Climate Change just
6 reference sort of that mixture of value
7 provided. Do I understand -- values provided
8 -- do I understand you to say in the Hare Lake
9 baseline data there was the one value used?

10 MR. FRASER: So no, to
11 clarify, in the Hare Lake data there are more
12 analyses that were completed at the lower
13 detection limit.

14 PANEL CHAIR: Okay.

15 MR. FRASER: So we were able
16 to rationally or reasonably use that lower
17 detection limit within the predictive effects
18 assessment and still what we considered to do
19 a conservative analysis, but understanding
20 that the detection limits did flip back and
21 forth a little bit generally speaking prior to
22 2013, '14 or the samples associated with the
23 lower -- or the higher detection limits, and
24 since that time generally the lower detection
25 limit has been provided with the analyses.

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1 And as was indicated I think
2 by the ECCC representatives, that we have
3 committed -- we talked about yesterday have
4 committed to ensuring that detection limits
5 with further analysis would meet that low
6 detection limit below the Federal guideline.

7 PANEL CHAIR: So just to
8 confirm, I'm curious why the difference. You
9 mentioned that there were various values used.
10 Perhaps more to the point, my question being,
11 just to follow-up on your commitment, those
12 detection limits would be used then for your
13 ongoing sampling program? I don't want to put
14 words in your mouth.

15 MR. FRASER: That's correct.
16 Any samples that have been collected in the
17 last few years have used that detection limit,
18 used the lower -- or the lower detection
19 limit, and that would continue on for any
20 future monitoring.

21 PANEL CHAIR: Thank you.

22 MR. FRASER: I had forgotten
23 your second question. If you would like an
24 answer, if you could repeat it, please.

25 PANEL CHAIR: I think we'll

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1 end there actually, in terms of my particular
2 question.

3 We do have additional
4 questions related to mercury and methylmercury
5 and I am at this time going hand it over to my
6 panel member Gay Drescher.

7 Ms. Drescher, over to you for
8 questions.

9 PANEL MEMBER DRESCHER: Thank
10 you very much, Madam Chair.

11 Good morning, Mr. Fraser.

12 So as the chair has
13 indicated, the line of questioning that I have
14 here is on mercury and methylmercury
15 mobilization, and I appreciate the
16 clarification that you've given in response to
17 the chair's questions and some of my questions
18 may seem as a repeat and will give you an
19 opportunity to restate what you already said
20 for the record.

21 So the first question that I
22 have is in response to IR5-11, so that's CIAR
23 950, GenPGM recognizes the risk for mercury
24 mobilization to local surface water during
25 land clearing activities. So that is indicated

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1 in that IR so that recognition is there.

2 In response to Pays Plat
3 question regarding land clearing and
4 methylmercury yesterday, you indicated that
5 you intend to collect surface water during
6 land clearing and hold it in the water
7 management pond for treatment. The panel
8 understands, however, that GenPGM will not be
9 treating water from the water management
10 ponds.

11 So the first question I have
12 is could you quantify the amount of mercury
13 that could mobilize into local surface water
14 from the side from land clearing, grubbing,
15 and stripping of vegetation activities.

16 MR. FRASER: Thank you, Panel
17 Member Drescher. Brian Fraser for the record.
18 We're just going to caucus.

19 PANEL MEMBER DRESCHER: Thank
20 you.

21 MR. FRASER: Thank you, Panel
22 Member Drescher. Brian Fraser again for the
23 record.

24 So as I discussed yesterday
25 and perhaps just to clarify, water will be

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1 managed from areas that are disturbed for
2 clearing. They will be managed in local ponds
3 until the -- and water management
4 infrastructure that's associated with the
5 clearing activities until the water management
6 pond is constructed, so ensure that there is
7 no uncontrolled runoff related with any
8 clearing activities that would report off
9 site.

10 We would expect any mercury
11 that might be associated with disturbance of
12 land. And again based on the geochemical
13 analysis of mine waste, I think we can infer
14 from that that we wouldn't expect to see
15 mercury mobilized, but it would be, if it was
16 there, mobilized associated with total
17 suspended solids. And that's why we will use
18 erosion control measures to isolate areas that
19 would be cleared.

20 We will provide or the
21 company will provide water management
22 infrastructure to temporarily route and
23 control that water. And the treatment I may
24 have mentioned would be allowing for the
25 sediment or the settling of suspended sediment

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1 in those initially temporary management ponds
2 and then subsequently in the water management
3 pond so that there would be no mercury
4 associated with the liquid portion of the
5 water -- or the liquid portion of the material
6 in the pond and not suspended material.

7 And then I think, as I
8 mentioned yesterday, that any release of that
9 water would only follow testing to ensure that
10 it was of quality that would not impact
11 downstream receivers and that testing would
12 include mercury.

13 PANEL MEMBER DRESCHER: Thank
14 you for that. My actual question was -- so if
15 we can agree that TSS is what mercury would be
16 found in or attached to, could you quantify
17 the potential amount of mercury resulting in
18 the collection of ponds from -- in association
19 with the TSS. So in other words, if you are
20 stripping land, you're taking -- you are
21 disturbing the soil, what is the amount
22 anticipated/predicted of mercury that would
23 end up in one of your local ponds and
24 ultimately into your water management pond?

25 MR. FRASER: Thank you. Just

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1 one second to caucus. Brian Fraser for the
2 record, Panel Member Drescher.

3 So as I was saying, we have a
4 high degree of confidence that we have a good
5 management plan, but we do not at this time
6 have an estimate of the amount of mercury that
7 might be mobilized through those activities.
8 But as I said, based on our experience and
9 implementation of the mitigations that we have
10 recommended during site clearing activities,
11 that whatever mercury could be mobilized
12 through or attached to suspended sediments
13 would be captured and not released outside of
14 the site.

15 PANEL MEMBER DRESCHER: We may
16 have to come back to that but thank you very
17 much.

18 The second question is, and
19 this is just a clarification, I thought I
20 heard you mention in your first comments that
21 the water from site clearing, any water
22 collected in site clearing will be directed to
23 local ponds and then to the water management
24 pond ultimately, and then I did hear you say
25 that the water that is going to be discharged

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1 from there will be treated?

2 MR. FRASER: Brian Fraser for
3 the record.

4 Yes, that's correct. The mine
5 plan does have contingency for water
6 treatment. At this time we have identified the
7 need for the potential -- or not potential,
8 but the management of phosphorus and the
9 management of suspended solids. Based on the
10 analysis completed those would be the key
11 constituents.

12 And I think as I referred to
13 yesterday, on the phosphorus side, because we
14 know the source we believe there may be a
15 management issue through recirculation between
16 the mill and the PSMF that will do a good job
17 of controlling and managing phosphorus loads
18 and concentrations. But at this time those are
19 the parameters that we've identified for
20 specific management, which could include
21 treatment, yes.

22 PANEL MEMBER DRESCHER: So
23 specifically -- okay, I'll move on. Thank you.

24 The next question that I have
25 is with respect to mercury mitigation plans

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1 and the buffer zones, and you've already
2 touched on some of the mitigation which is
3 listed in CIAR 950, specifically IR 5-11 and
4 on page 8 -- PDF page 8, as opposed to me
5 reading through those. So that's there for
6 reference.

7 The first question I have is
8 what constitutes a sensitive habitat where
9 Generation PGM would consider leaving a buffer
10 zone? One of the mitigative measures is that
11 buffer zones would be left around sensitive
12 habitats.

13 MR. FRASER: Thank you, Panel
14 Member Drescher. I'll just caucus with the
15 team briefly.

16 PANEL MEMBER DRESCHER: Thank
17 you.

18 MR. FRASER: Brian Fraser for
19 the record, Panel Member Drescher.

20 I think we're specifically
21 referring there to water courses and wetland
22 features as well as any significant wildlife
23 habitat or -- that may exist. We can provide
24 some further detail with respect to that. And
25 as I mentioned, significant wildlife habitat

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1 as a concept rather than a specific rule. And
2 perhaps we can bring that topic back up again
3 in the terrestrial sessions when Dr. Rob
4 Foster is on the line.

5 PANEL MEMBER DRESCHER: Thank
6 you for clarifying that. Absolutely, we'll
7 probably be looking at significant wildlife
8 habitat and implications next week when you
9 have your expert online. That would be great.

10 In the meantime, if we can
11 continue down with this line of questioning on
12 sensitive habitats you can clarify as we're
13 going along what applies to.

14 So the second question I have
15 is what is the approximate proposed size of
16 vegetation buffer zones. So in other words, if
17 I could clarify that, and that sounds like --
18 is the distance from a sensitive feature, so
19 what would be that vegetation buffer zone, the
20 distance from that.

21 MR. FRASER: Thank you, Panel
22 Member Drescher. I'll just confer with the
23 team.

24 Brian Fraser for the record.
25 Thank you, Panel Member Drescher.

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1 The specific buffer sizes
2 would be established based on site conditions
3 specific to the locations where clearing
4 activities will occur. As you can appreciate,
5 having been to the site, the topography is
6 quite varied and that will dictate to some
7 extent how buffer zones can be established. We
8 certainly will be respecting any provincial or
9 Federal guidance with respect to buffer zones.
10 We often reference 30-metre buffer zones
11 around water features, but again we would
12 consider on a site-specific basis and within
13 the context of activities within specific
14 locations and guidance that is provided by
15 province or the Federal government with
16 respect to ensuring that buffer zones are
17 adequate for the purposes.

18 PANEL MEMBER DRESCHER: Thank
19 you.

20 So following along this same
21 line of questioning, I'm a little bit confused
22 on -- you had indicated that water courses,
23 wetland features and significant wildlife
24 habitat would be covered in these buffer
25 zones, so let's just focus on the water

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1 courses and the wetland features for right
2 now.

3 If your site clearing, as is
4 understood in your project description, your
5 site clearing is to clear the site so that
6 none of these features would be retained, I'm
7 not quite understanding how the vegetative
8 buffer zone would be applied, so I'm wondering
9 if you could outline would the vegetative
10 buffer zones be on the periphery of the site
11 or will there actually be pockets and islands
12 left within the site?

13 MR. FRASER: Thank you, Panel
14 Member Drescher. Brian Fraser for the record.
15 That's a good clarification. Thank you. That
16 would really be applying to the periphery of
17 the site because, as you say, site clearing
18 activities within the site study area would be
19 complete, including overprinting of some water
20 features as described in the EIS
21 documentation.

22 Having said that, drainage
23 from those water features in areas where
24 clearing would be controlled so that there
25 wouldn't be drainage coming off those water

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1 features to the local study area.

2 PANEL MEMBER DRESCHER: Thank
3 you. So the next question I have is you had
4 indicated that you would comply with the
5 Federal and provincial guidance on setback
6 distances. Are you aware of a provincial
7 standard for setback distance permitting --
8 for setback distance in Ontario, and if so,
9 could you tell us what it is.

10 MR. FRASER: Thank you, Panel
11 Member Drescher.

12 Yes, there is guidance or at
13 least older guidance provided by MTO, MNR on
14 land clearing that provides for a 30-metre
15 buffer, and that's generally in practice as
16 with respect to projects that were related to
17 or I have worked on in the province that a
18 30-metre buffer is often applied.

19 PANEL MEMBER DRESCHER: Thank
20 you very much. The next question is in your
21 view does the 30-metre buffer actually provide
22 sufficient protection for mitigating mercury
23 mobilization?

24 MR. FRASER: Thank you, Panel
25 Member Drescher. Brian Fraser for the record.

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1 The setbacks are just one
2 feature of the management program. So as you
3 reference in that CIAR or referenced in the IR
4 response, erosion controls will be applied
5 beyond just providing a buffer. So the buffer
6 is part of the management plan but not solely
7 part of the management plan, and we're quite
8 confident that as a whole the management plan
9 for controlling settlement and erosion within
10 cleared areas will ensure that there is no
11 release of mercury into downstream
12 environments during site clearing and
13 preparation activities.

14 PANEL MEMBER DRESCHER: Thank
15 you very much. I would like to address my
16 questioning now to representatives from MNRF,
17 if anybody is on the line.

18 Thank you, Mr. Fraser.

19 MR. CANO: Tim Cano here. I'm
20 on the line for MNRF. I'm not sure I am the
21 person who can answer your question though.

22 PANEL MEMBER DRESCHER: I
23 haven't actually started questioning MNRF yet.
24 Was just wondering if you could come on
25 camera, please.

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1 MR. CANO: My apologies. Good
2 morning.

3 PANEL MEMBER DRESCHER: Thank
4 you for joining us. The line of questioning if
5 you've been following this, is with respect to
6 the setback distances that are prescribed by
7 the province. And I was just wondering if you
8 can confirm, does MNRF, A, administer that in
9 part, recognizing that other departments may
10 in Ontario, and could you confirm the actual
11 setback distance, if there is one, within
12 MNRF.

13 MR. CANO: I would have to
14 actually caucus on that. My recollection of
15 that is under forestry and we would actually
16 have varied sized buffers. They are mostly
17 dependent on slope.

18 PANEL MEMBER DRESCHER: If you
19 could, that would be appreciated. Thank you.

20 MR. CANO: Just a moment. My
21 apologies for that. I had to bring a forester
22 in for a little bit of help.

23 It's dependent on slope
24 indeed. I'm just trying to bring my other
25 screen up. Of course now I can't find it

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1 again. I'm sorry, I have to ask for another
2 caucus while I go dig this information up.
3 You've caught me a little bit by surprise. I
4 wasn't expecting to be tapped by the panel
5 until later today. Excuse me for a moment.

6 I'm back, Panel. My apologies
7 for that. I had things coming in across a
8 variety of platforms.

9 The values for the slope,
10 I'll give them to you in degrees for the width
11 of AOC that we would apply in forestry. For
12 zero to 8.5 the width would be 30 metres, 8.6
13 to 16.7 it would be 50 metres, and 16.8 to
14 24.2 it would be 70 metres; greater than 24.2
15 would be 90 metres.

16 Now, this actually is for
17 forestry specifically, so it's also a bit of a
18 lands question for leased lands and I am
19 afraid we don't have anyone who could answer
20 that for us right now.

21 PANEL MEMBER DRESCHER: This
22 is fine. Thank you very much. Because the
23 basis of the questions are in relation to the
24 clearing of the forest for site preparation so
25 this is very effective. Thank you.

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1 MR. CANO: Okay. Thank you.

2 PANEL MEMBER DRESCHER: I
3 appreciate the time that you took. Just one
4 other question.

5 Are you familiar with the Pic
6 forest management plan?

7 MR. CANO: No, I'm not.

8 PANEL MEMBER DRESCHER: Is it
9 administered through your department though?

10 MR. CANO: It is administered
11 through MNR, yes, through our regional
12 operations division.

13 PANEL MEMBER DRESCHER: Could
14 I ask for an undertaking through you to
15 whomever you see as appropriate that it could
16 answer this question or provide it? We would
17 like to have the Pic forest management plan
18 entered in on the record and so I'm asking for
19 an undertaking that that be provided. And it
20 would be undertaking number 3.

21 And your response, the
22 response that's coming back to the panel, if
23 you could please highlight that it as
24 undertaking number 3.

25 MR. CANO: Absolutely.

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1 PANEL MEMBER DRESCHER:

2 Wonderful, thanks very much.

3 MR. CANO: Thank you.

4 PANEL MEMBER DRESCHER: Back
5 to GenPGM. Mr. Fraser.

6 Just a quick question on the
7 Pic forest management plan, which is
8 referenced in the EIS addendum, are you aware
9 of the mitigation measures presented in that
10 plan specifically for forest clearing, which
11 is what we're talking about here.

12 MR. FRASER: Thank you, Panel
13 Member Drescher. To be frank, I'm generally
14 aware, but it's an area that Dr. Foster has
15 specialized in for the EIS documentation.

16 PANEL MEMBER DRESCHER:
17 Understood. Thank you.

18 So moving again with you in
19 the room, Mr. Fraser, we're moving now to the
20 timing of mercury mobilization mitigation.

21 GenPGM's proposed mitigation
22 suggests that the land that is disturbed for
23 the purpose of site development will be
24 reclaimed in a progressive manner where
25 opportunities allow. GenPGM also indicates

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1 that this would lessen the risk that
2 erosion-driven runoff from cleared areas would
3 occur and present a loading source to local
4 surface waters.

5 It would seem from this
6 statement that mercury mobilization is a
7 concern from construction through to
8 reclamation, not just during construction and
9 land clearing period.

10 So it's for that -- from day
11 one through to the actual reclamation site.

12 However, yesterday's
13 presentation had a key results operation's
14 slide, and I'll give you the reference, CIAR
15 1113, PDF page 53, that stated, "testing
16 indicates the project is not a source of
17 mercury."

18 We can continue. Okay. So the
19 first question is can you clarify when you
20 expect mercury mobilization to occur and when
21 in the project's lifespan the risk of mercury
22 mobilization is at its highest, in light of
23 the statement that is made with respect to
24 mitigation measures that I read out earlier.

25 MR. FRASER: Thank you, Panel

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1 Member Drescher. We'll just take some time to
2 caucus. Thank you.

3 PANEL MEMBER DRESCHER: Thank
4 you.

5 MR. FRASER: Brian Fraser for
6 the record, Panel Member Drescher.

7 So I just want to take the
8 opportunity to perhaps, if you'll bear with
9 me, to backtrack a little bit on mercury as a
10 source constituent during any phase of the
11 project.

12 So -- and I'll make reference
13 to CIAR 227 for the record, which is the
14 original soils baseline report from the
15 initial EIS submission.

16 So PDF page 31 in that
17 document summarizes constituent concentrations
18 in solids -- in soil samples around the site,
19 and generally, and without counting them, I
20 would guess there are -- well, I could count
21 them quickly -- upwards of 35 to 40 samples
22 shown on that PDF page where the majority of
23 the concentrations of mercury are below method
24 detection limits, which is -- and that method
25 detection limit is below the average crustal

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1 abundance value and generally all samples are
2 below soil quantity guidelines from the
3 Ministry of Environment at that time.

4 So similar to that, I think
5 we talked this morning about the geochemistry
6 analysis that talked -- that considered the
7 levels of mercury in the solids from mine
8 waste and we've gone through the predictive
9 effects assessment for water.

10 So we don't see a high risk
11 of mercury mobilization, mercury emissions in
12 any project phase based on our analysis.
13 Nevertheless, based on information provided by
14 our Indigenous partners and various other
15 stakeholders, we completely understand the
16 sensitivity around mercury and that's why it's
17 highlighted sort of repeatedly through the
18 assessment and management and mitigation
19 strategies provided specifically for it.

20 And further, I guess, the
21 monitoring program that's being developed and
22 that will be implemented for mercury and
23 methylmercury on the site and in Hare Lake in
24 particularly, those discussions are ongoing
25 with BN.

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1 So I guess in short, to
2 answer your question, we don't think there's a
3 high risk in any phase of the project based on
4 the source constituent concentrations in
5 solids, soils, mud, rock, tailings, process
6 solids, we don't see high risk associated with
7 the predictive water quality effects
8 assessment, but we certainly are sensitive to
9 the concerns of our Indigenous partners and
10 local communities and the stakeholders and
11 that's why I think there's a heightened level
12 of assessment provided to try to mitigate
13 those risks or mitigate those concerns.

14 PANEL MEMBER DRESCHER: Thank
15 you for that. I appreciate it is GenPGM's
16 position that there is not a high risk for
17 mercury from the project, but I'm more
18 interested in a specific aspect of the project
19 which is the actual land clearing and the
20 potential for mercury mobilization from that
21 particular activity. So that's where these
22 questions are directed, and I appreciate the
23 statement that you made and thank you for that
24 comment.

25 Just to continue along this

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1 line, you mentioned earlier that GenPGM has
2 not quantified the amount of mercury that
3 could be mobilized in local surface waters.
4 You just didn't have that amount available.

5 Yesterday in response to Ms.
6 King's question, which was could GenPGM
7 confirm that potential mercury input from land
8 clearing activities was incorporated into the
9 water quality modelling, GenPGM stated, and I
10 quote:

11 "I can confirm that that was
12 the case. Waters collected during the site
13 preparation and construction phase going into
14 water management facilities was included in
15 the water quality assessment."

16 So the question we have is
17 could you clarify for the panel how potential
18 mercury input from land clearing activities
19 was incorporated into the water quality
20 modelling if the inputs have not been
21 quantified.

22 MR. FRASER: Thank you, Ms.
23 Drescher, for the question -- or Panel Member
24 Drescher. Brian Fraser, for the record.

25 So how those inputs were

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1 incorporated into the predictive water quality
2 effects assessment was through consideration
3 of those stockpiled materials from clearing
4 activities within the water quality model.

5 PANEL MEMBER DRESCHER: Just a
6 moment, thank you.

7 We've moved from discussion
8 of collection of water in ponds and now we're
9 going to stockpiling of materials during site
10 operations. So in the stockpile of materials,
11 could you just elaborate on that and how that
12 was incorporated into the water quality
13 modelling.

14 MR. FRASER: Certainly. We'll
15 just take one second to caucus. Brian Fraser
16 for the record.

17 Panel Member Drescher, I'm
18 going to bring Mr. Craig Hall into the
19 conversation. He is with Knight Piésold and
20 has developed the site water management plan
21 and perhaps he can help clarify.

22 PANEL CHAIR: Mr. Hall.

23 MR. HALL: Good morning, Panel
24 Member Drescher.

25 Could I ask for CIAR

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1 reference 914 to be brought up, please. It's a
2 presentation that was provided back in May
3 26th, 2021.

4 PANEL MEMBER DRESCHER: Just a
5 moment, please. Excuse me, just quick
6 question. Do you have a specific page that you
7 could give us?

8 MR. HALL: Sure. So if you
9 could go to PDF page 4 to start.

10 PANEL MEMBER DRESCHER: PDF
11 page 4. Thank you.

12 MR. HALL: Correct, thank you.

13 So in this presentation we
14 did provide the conceptual level staging for
15 the initial clearing and construction and I
16 thought I would just go through a couple of
17 these slides for clarification for everyone.

18 So next slide, please.

19 So what we have shown here is
20 the preconstruction phase of the project and
21 the areas outlined in red basically represent
22 the initial timber harvest areas. So what you
23 can see is there's the red polygon around the
24 existing access road in the site towards the
25 bottom of the page where there would be a bit

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1 of clearing for widening that road on the site
2 property. And then up around the pit area the
3 overburden stockpile and then the haul road
4 back towards PSMF. Those are the other red
5 polygons. So that would be the initial
6 clearing.

7 So during these activities
8 when there's the harvesting the water would be
9 locally collected and runoff from these areas
10 would be locally managed.

11 Can we go to the next slide,
12 please.

13 So we step ahead here to year
14 minus 2 and the area outlined in red is now
15 the extent of the harvesting. And there's also
16 the yellow polygons which were the red
17 polygons on the previous slide. I realize
18 there's a lot of yellow on this slide. So
19 following the harvest these areas would be the
20 first areas that are stripped and grubbed and
21 the soils and organic materials removed during
22 that time would be locally stockpiled so that
23 the runoff from these areas could be managed.

24 Next slide, please.

25 So as we step through this

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1 preoperation period, the disturbance areas
2 again shown in the yellow polygons will be
3 expanded incrementally, and again all soils
4 that are removed from these areas would be
5 locally stockpiled so that the runoff can be
6 managed and we can manage suspended solids as
7 Mr. Fraser indicated.

8 Next slide, please.

9 So year 1, it's largely
10 similar but we have further development down
11 in the PSMF area, and that's to the left-hand
12 side of the image that's shown here.

13 And then if we step forward
14 one more slide please.

15 Year 2, which you see towards
16 the top right of the image that the area is
17 further expanded over the open pit area, the
18 process solids management facility has largely
19 stayed the same. And then if we go ahead one
20 more slide, please.

21 At this point the PSMF is now
22 expanded further to the west so that again
23 there will be surface soil removal and
24 foundation preparation associated with that
25 work. So basically between that year minus 2

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1 time period through to year 3 is when the
2 surface soils would be removed from the
3 surface of the bedrock and locally stockpiled
4 and that runoff managed.

5 I just wanted to share that
6 with the panel just to illustrate the timing
7 of when the soils would be locally stockpiled
8 and we would be actively managing the runoff
9 from those areas.

10 PANEL MEMBER DRESCHER: Thank
11 you, Mr. Hall.

12 So would you consider then
13 that somewhere between minus 2 and year 3 is
14 the highest potential for mercury
15 mobilization, in spite of your erosion control
16 measure so on and so forth, but that is the
17 period of time that would be the highest
18 potential.

19 MR. HALL: That is the period
20 of time where surface soils are being removed
21 from the surface of the rock and stockpiled.

22 PANEL MEMBER DRESCHER: Thank
23 you for the clarification. Thank you, Mr. Hall
24 and Mr. Fraser. Madam Chair.

25 PANEL CHAIR: Thank you, Ms.

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1 Drescher and Mr. Hall, Mr. Fraser.

2 I think, given the time, it
3 is 12:20, we do want to continue our
4 questioning on mercury as a start when we
5 reconvene after lunch. And we do of course
6 have questions further on in the afternoon,
7 but we'll continue this line of questioning
8 and reconvene let's call it 1:15.

9 Thank you, everyone, and
10 we'll see you back here at 1:15.

11 --- Recess taken at 12:12 p.m.

12 --- Upon resuming at 1:17 p.m.

13 PANEL CHAIR: So just wanted
14 to give a bit of an update on the schedule for
15 this afternoon.

16 Based on the remaining
17 questions that the panel has with respect to
18 the aquatic environment, it's looking like
19 those questions are going to have to continue
20 into tomorrow. We'll have to use that time to
21 complete the questions on the aquatic
22 environment. So couple of things.

23 If you could let us know, let
24 the secretariat know of any availability
25 issues that you need to share, I would

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1 appreciate that. I don't have a specific time.
2 I'm thinking we would start at the same time
3 tomorrow, and it is for the -- let's call it
4 the remainder of the day now, depending on
5 where we get through questions this afternoon,
6 which does mean then that the presenters for
7 fish and fish habitat would then move to the
8 Monday time slot. So we'll put together an
9 adjusted hearing schedule with that in mind,
10 and again please let us know if there are
11 availability issues for sitting tomorrow
12 starting at 9 o'clock. Thank you.

13 With that, we'll continue the
14 panel's questions related to the aquatic
15 environment and I'll turn the floor over to my
16 colleague, Ms. Drescher.

17 PANEL MEMBER DRESCHER: Thank
18 you, Madam Chair. Welcome back. I would like
19 to continue questioning of GenPGM, please. Mr.
20 Anwyll.

21 I'm continuing along with the
22 questioning that we had just before lunch,
23 which is mercury mobilization mitigation. And
24 we had completed that line of questioning with
25 Mr. Hall presenting to us that there's

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1 effectively a five-year period in which
2 sediment will be stockpiled and controlled and
3 the controls will be set up, so it's active
4 sediment stockpiling with the controls being
5 put in place.

6 So following on that
7 question, I would like to ask is what is the
8 timeline for the start of the progressive
9 reclamation that is mentioned as mitigative
10 measure to when the risk of mercury
11 mobilization would begin to be mitigated.

12 MR. ANWYLL: Thank you for
13 your question, Panel Member Drescher. Give me
14 one second, please.

15 Thank you for the time. And
16 as you would expect, I'll hand over to
17 somebody smarter than myself which will be
18 Jeremy Dart who is the environmental manager
19 for the operation, potential operation.

20 MR. DART: Thank you, Drew,
21 and thank you Panel Member Drescher for the
22 question. Jeremy Dart for the record.

23 So with respect to soil
24 stabilization through progressive reclamation,
25 the company intends to start that during the

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1 construction phase. As the company develops
2 the property and stockpiles are formed we will
3 be seeding those appropriately to minimize
4 runoff associated from those stockpiles.
5 Throughout -- as well, sediment -- an erosion
6 and sediment control program will be in place
7 during construction.

8 Throughout the operation the
9 main focus on progressive rehabilitation will
10 be on the mine rock storage areas. So as those
11 benches of rock are placed in the appropriate
12 storage facility progressive rehab will occur
13 as well onto those to control sediment in
14 operations. That will approximately start in
15 year 2 of the operational phase as it will
16 take several years to build those rock piles.

17 PANEL MEMBER DRESCHER: Okay,
18 thank you. You've answered the next question.
19 That's wonderful. Thank you very much.

20 I would like to go forward
21 and ask MECP -- thank you, Mr. Dart -- MECP,
22 ECCC and DFO if their representatives can make
23 themselves available, please, for one question
24 that I'm going to ask each one. I'm just
25 trying to be a little bit more efficient with

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1 the time here in asking people to join. Thanks
2 very much and welcome.

3 So we've heard up to now the
4 company's proposed mitigation measures and we
5 also have some description -- well, some
6 listing of the proposed mitigation measures in
7 IR 5-11 of CIAR 950.

8 And my question to each, and
9 I will ask you to reply based on my screen
10 which I will let you know in a minute, is does
11 your organization, the agency or department
12 that you work for, agree with GenPGM's
13 conclusions that the risk of mercury
14 mobilization is low, and does your
15 organization, ministry or department have any
16 comments on the proposed mitigation measures
17 for mercury mobilization.

18 I will start with ECCC,
19 please.

20 MR. CLAVERING: Rob Clavering
21 with Environment and Climate Change Canada for
22 the record. If I could just have a moment to
23 caucus with my team.

24 PANEL MEMBER DRESCHER:
25 Certainly.

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1 MR. CLAVERING: Thank you for
2 the time. So in terms of our review on the
3 issue, we don't have any comment in terms of
4 the land clearing itself and the mobilization
5 but we do look to the proponent and note that
6 the proponent has committed to the mitigation
7 of containing the water, surface water, so we
8 are comfortable with that.

9 PANEL MEMBER DRESCHER: Thank
10 you. I will continue with my questioning for
11 MECP, please. The same questions. Do you agree
12 with the conclusions and do you have any
13 comments on the proposed mitigation measures
14 for mercury mobilization.

15 MS. GILLIAM-PRICE: It's
16 Jacinth Gilliam-Price here with MECP.

17 We are generally in agreement
18 that mercury mobilization -- the risk for
19 mercury mobilization should be low, however,
20 we recognize that the company will be
21 employing a number of mitigation measures and
22 agree those are suitable for this development,
23 as well as they will be monitoring mercury
24 during operations and post-closure so we'll be
25 keeping a close eye on that. And we will be

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1 working with the company should the project
2 continue, and then develop of their
3 environmental compliance approvals for
4 discharge to surface waters. And we don't have
5 any further concerns or questions on the
6 matter.

7 PANEL MEMBER DRESCHER: Thank
8 you very much.

9 PANEL CHAIR: Ms. Drescher,
10 may I interrupt for one moment.

11 Just based on my comment this
12 morning we do have Deb King has her hand up
13 and I wonder -- I'm sorry to interrupt. I
14 wonder if Ms. King could let us know what your
15 question is.

16 MR. BELMAR: Good afternoon,
17 Madam Chair. And I apologize. I am Sebastien
18 Belmar. I am technical advisor for Pays Plat
19 First Nation and I'm sharing the computer with
20 Deb King. We just wanted to recommend, and if
21 it is possible, that the question be also
22 extended to the Ministry of Natural Resources
23 and Forestry in consideration of their
24 expertise in enforcement and land clearing
25 activities. And that's everything I have to

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1 say about that. Thank you so much.

2 PANEL CHAIR: Thank you.

3 Sorry, Ms. Drescher, over to you.

4 PANEL MEMBER DRESCHER: Thank
5 you. Thank you very much for that comment from
6 Pays Plat.

7 So that I think is a great
8 suggestion and agree with it. So if the
9 representative from MNRF could please make
10 themselves available as well and the
11 representative from DFO who was kindly on the
12 screen, thank you. Hi. Brandi, hello.

13 MS. MOGGE: Hi. Would you like
14 me to respond now?

15 PANEL MEMBER DRESCHER: Yes,
16 please.

17 MS. MOGGE: My name is Brandi
18 Mogge for the record. I am with DFO.

19 With respect to the risk of
20 mercury mobilization, DFO doesn't have that
21 expertise. We rely on our counterparts in
22 Environment and Climate Change Canada.

23 With respect to mitigation,
24 DFO does have standard measures with respect
25 to riparian setbacks to protect aquatic

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1 habitat; however, we don't have the expertise
2 to speak to its effectiveness with respect to
3 mercury mobilization.

4 PANEL MEMBER DRESCHER: Thank
5 you for your time. Maybe we'll have to come
6 back to the representative from MNRF.

7 MR. CANO: No, I'm actually
8 here.

9 PANEL MEMBER DRESCHER: Okay.
10 Wonderful.

11 MR. CANO: Sorry, we had
12 assumed our group was done for the day in
13 background so I had to call them all back. I
14 should have them on the line. Could you please
15 repeat the question for us so that we make
16 sure we answer it correctly.

17 PANEL MEMBER DRESCHER: Okay.
18 So the question is do you agree with
19 Generation PGM's conclusions that the risk to
20 mercury mobilization is low and do you have
21 any further comments on their proposed
22 mitigation measures.

23 MR. CANO: I'll just ask for a
24 moment to caucus with the group, please. Thank
25 you for the time.

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1 We're going to actually have
2 to ask for an undertaking on that. We have
3 someone to works on that, one of our research
4 scientists, but he's going to need some time
5 to understand the question and respond to it.

6 PANEL MEMBER DRESCHER: For
7 the record, the representative from MNRF
8 indicated that they required more time to
9 provide a response to the question that I had
10 posed about the risk to mercury migration and
11 the comments on their mitigation measures, and
12 they have committed to an undertaking number 4
13 which will be provided at a later time.

14 So now I would like to go
15 back to Generation PGM, please. Again, Mr.
16 Anwyll, is this to do with methylmercury and
17 its monitoring in Hare Lake so that you're
18 prepared.

19 In response to IR 5-11, CIAR
20 950, Generation PGM indicated that specific
21 monitoring measures to address methylmercury
22 in Hare Lake will be provided in IR response
23 5-3, which is related to surface water quality
24 predictions and monitoring. So that's the
25 frame.

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1 Attachment A in that
2 particular IR, which is IR 5-3, and
3 specifically PDF page 22, which is table 2, is
4 a list of constituents that will be monitored
5 and that list is indicated on the right-hand
6 side, and what is missing from that list is
7 methylmercury. So the question is could GenPGM
8 please provide an update whether they intend
9 to conduct methylmercury monitoring in Hare
10 Lake.

11 MR. ANWYLL: I'll caucus
12 quickly, please. Thank you for the time. I'll
13 hand over the answer to Mr. Jeremy Dart.

14 MR. DART: Thank you for the
15 question, Panel Member Drescher and Madam
16 Chair. Thank you.

17 I would like to point out
18 that the documentation that you referenced was
19 conceptual at the time, and through ongoing
20 discussions with -- collaboration with our
21 First Nation environmental committees we have
22 committed to developing a methylmercury
23 monitoring plan for Hare Lake. At that time we
24 will identify methylmercury as a constituent
25 to monitor, but I do just want to reference

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1 that the documentation was conceptual and we
2 are developing that through ongoing
3 discussions.

4 PANEL MEMBER DRESCHER: Okay.
5 Would you be able to elaborate on the
6 monitoring plan?

7 MR. DART: Thank you for the
8 question again, Panel Member Drescher, and can
9 we caucus again for a moment, please.

10 Thank you for the time to
11 caucus, Panel Member Drescher. Jeremy Dart for
12 the record.

13 At this time we are still
14 developing the comprehensive program. Through
15 our discussions with First Nation communities
16 we have also indicated that the program will
17 cover off the entire aquatic environment
18 considering water, sediment, and fish tissues.
19 So at this time, as I said, we will continue
20 to collaborate on the development of that
21 program and it will be available for
22 operations of the project if it were to
23 proceed.

24 PANEL MEMBER DRESCHER: Thank
25 you. Just one final question on this

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1 particular topic, recognizing that you are in
2 development of a monitoring plan.

3 In the case of a notable
4 change in methylmercury concentration due to
5 effluent discharge from the mine, what -- what
6 contingency measure will be in place to
7 correct the situation, so it's almost like a
8 leader into your monitoring plan.

9 MR. DART: Thank you for the
10 question, Panel Member Drescher and Madam
11 Chair. Please allow me to take a minute to
12 caucus with my team.

13 PANEL MEMBER DRESCHER:
14 Certainly.

15 MR. DART: Thank you for the
16 time to caucus, Panel Member Drescher.

17 While we don't expect
18 methylmercury to be a concern for the project,
19 we have committed to developing a
20 comprehensive methylmercury monitoring
21 program. With that there will be an adaptive
22 management portion of the plan which will
23 develop triggers in the event we do see
24 changes. From there, possible mitigations
25 could be changes to water management

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1 strategies but it is very hard to be
2 prescriptive at this time. A number of
3 activities could occur with respect to water
4 management in order to adapt to the changes
5 that may be viewed through our monitoring
6 programs.

7 PANEL MEMBER DRESCHER: Thank
8 you for that. Adaptive management was another
9 question that I had, thank you.

10 So just so I could clarify
11 for the record, you are in consultations to --
12 with First Nations communities, Indigenous
13 groups for development of a monitoring plan
14 for methylmercury as one constituent, but in
15 fact that this monitoring plan will be much
16 broader and it will look at water quality,
17 sediment and fish tissue. And do you have any
18 indication, suggestion of how long it would
19 take to develop that monitoring plan and when
20 it could be available?

21 MR. DART: Thank you for the
22 question, Panel Member Drescher and Madam
23 Chair. Jeremy Dart for the record.

24 So yes, I can confirm that we
25 are in consultation with First Nation

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1 communities to develop a comprehensive
2 methylmercury monitoring program that covers
3 off water, sediment, and fish tissues. We also
4 plan to engage the communities in
5 participation of those activities during the
6 operations when samples are collected.

7 It's a little early to
8 speculate when the plan will be drafted as we
9 are currently developing that with input from
10 our various communities, but we will have a
11 plan established prior to operations that may
12 be as well part of our ongoing monitoring for
13 the project.

14 PANEL MEMBER DRESCHER: Thank
15 you very much. Madam Chair, there's a hand up.

16 PANEL CHAIR: Yes, Ms.
17 Drescher. I think we have Ms. Zanini from
18 Biigtigong Nishnaabeg First Nation. Do you
19 have your hand up?

20 MS. ZANINI: Yes, I do. Thank
21 you, Madam Chair. For the record, Tracy Zanini
22 on behalf of Biigtigong Nishnaabeg.

23 I just wanted to clarify for
24 the record that while Biigtigong is certainly
25 pleased to hear commitments from Generation to

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1 develop a mercury monitoring program, we have
2 not yet been engaged in any consultation or
3 discussion around this program. And I know it
4 was expressed that it is early yet, but I just
5 want to clarify there's been very little to no
6 detailed discussion with Biigtigong as it
7 relates to this program, and it's certainly
8 something we hold very close to us as of dear
9 concern and would like to be engaged more
10 fully by Generation in these discussions
11 especially considering what we just heard now
12 that there is a plan in place or at least will
13 soon be in place to address this issue. Thank
14 you.

15 PANEL CHAIR: Thank you, Ms.
16 Zanini.

17 PANEL MEMBER DRESCHER: Could
18 we just have a minute, Madam Chair?

19 PANEL CHAIR: Yes, we will
20 take 5 minutes.

21 --- Recess taken at 1:47 p.m.

22 --- Upon resuming at 1:49 p.m.

23 PANEL MEMBER DRESCHER: Thank
24 you very much for that short caucus, Madam
25 Chair. I would like to go back to MECP,

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1 please, and --

2 PANEL CHAIR: Sorry, Ms.
3 Drescher, I think we have a hand up. Just
4 checking.

5 PANEL MEMBER DRESCHER: Yes,
6 we do.

7 MR. DAVE: Thank you, Madam
8 Chair. Just for the record, it's Suraj Dave.
9 I'm here with Mr. Belmar and Ms. King on
10 behalf of Pays Plat First Nation.

11 And in a similar -- I just
12 wanted to note for the record in a similar
13 manner to Ms. Zanini, Pays Plat has not been
14 specifically engaged with methylmercury
15 situation. This is a concern that we have
16 consistently raised as you may have gathered
17 from our questioning from yesterday, and while
18 we definitely appreciate the efforts and the
19 commitments that have been made by the
20 proponent today and that have been in made in
21 the past, the very, very specific issue of
22 methylmercury has not been addressed in
23 substance, has not been consulted in
24 substance, and it is a certain that is
25 outstanding for the nation.

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1 I just wanted to put that on
2 the record. Thank you, Madam Chair. Thank you,
3 everyone.

4 PANEL CHAIR: Thank you, Mr.
5 Dave.

6 And Ms. Drescher, before I
7 hand it back over, my apologies if I'm not as
8 timely. My screen is not showing hands up so
9 I'm probably going to have to get somebody to
10 help me do that. But in the meantime, Ms.
11 Drescher -- maybe it's just my view. I will
12 hand it back over to you for questions.

13 Oh, we do have another
14 question. Okay. Mr. McCarty, I understand that
15 you have your hand up. You may be mute. You
16 are still muted. We can hear some sound.
17 --- (DISCUSSION OFF THE RECORD)

18 MR. MCCARTY: Yes, I just
19 talked with my colleague Dr. Fitzgerald and we
20 wanted to point out to just reaffirm that we
21 have not been in any explicit discussions with
22 the proponent in regards to methylmercury
23 monitoring, although we are pleased to hear
24 they are seriously considering that.

25 PANEL CHAIR: Thank you, Mr.

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1 McCarty. Much appreciated. Ms. Drescher.

2 PANEL MEMBER DRESCHER: Thank
3 you very much. So moving on, I would like to
4 ask, please, MECP -- representative from MECP
5 and GenPGM.

6 Actually my question is first
7 to MECP. Thank you very much for joining
8 again. This is to do with method detection --
9 and the numbers that were -- the numbers that
10 have lots of zeros in them that were bandied
11 around this morning. So I would like to
12 clarify for the record MECP's detection limit
13 that they have identified is .0000001
14 milligrams per litre. So that's six zeros and
15 a 1.

16 MS. GILLIAM-PRICE: Hi, it's
17 Jacinth Gilliam-Price here with MECP. So we
18 generally when it comes to mercury will use
19 units and nanograms per litre, and I'm just
20 going to confirm for you in one sec. So
21 generally we recommend the low level method
22 detection limits for water of .1 nanograms per
23 litre for total mercury and .02 nanograms per
24 litre for methylmercury.

25 PANEL MEMBER DRESCHER: Thank

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1 you very much for that confirmation. But just
2 for the record, because we have been dealing
3 in milligrams, just so that we've got all the
4 zeros right, it is six zeros is equivalent to
5 a nanogram?

6 MS. GILLIAM-PRICE: Yes,
7 that's the correct number.

8 PANEL MEMBER DRESCHER: Thank
9 you very much.

10 So the question that I --
11 continuing with you, and thank you for that
12 clarification for us, ECCC actually has a
13 limit of .00001, so four zeros 1, and MECP is
14 .1 nanograms. Could MECP please give us their
15 view on why this lower detection limit is
16 required for mercury.

17 MS. GILLIAM-PRICE: Thank you
18 for the question. I'm just going to caucus
19 with my team here, if that's okay.

20 PANEL MEMBER DRESCHER: Yes.

21 MS. GILLIAM-PRICE: Hi. I just
22 wanted to clarify, so I believe the issue
23 concerning the decimal points there is that
24 most likely the value quoted for ECCC is
25 probably their regulatory limit, whereas when

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1 it comes to monitoring, we're looking for a
2 lower detection limit. So it will help in
3 detecting the potential for mercury and
4 bioaccumulation and triggering additional
5 monitoring requirements.

6 PANEL MEMBER DRESCHER: Thank
7 you. So -- that's great. Thanks very much.
8 Thank you for your time.

9 I would like to now go to
10 GenPGM, please. Thanks, Mr. Anwyll. So
11 continuing on with method detection limits so
12 that you're aware of who to bring on the
13 screen into the room.

14 The question is -- the
15 preamble is in its hearing submission ECCC has
16 recommended further geochemical analysis using
17 their lower method detection limit for
18 mercury. With the new mercury -- so that's the
19 one with .000001 milligrams per litre -- I
20 think I got their number of zeros right --
21 with the new mercury loading rates, ECCC
22 recommends GenPGM redo the water quality
23 modelling for the predicted constituent
24 concentrations of mercury in Pic River. ECCC
25 has requested this during the post-closure

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1 following the initial restoration of drainage
2 from the MRSA and following 30 years of
3 filling the open pit and its subsequent
4 discharge. The actual question is does GenPGM
5 have any concerns with meeting this
6 recommendation prior to the commencement of
7 the project.

8 MR. ANWYLL: I will caucus for
9 a second. Give me a moment.

10 PANEL MEMBER DRESCHER: Thank
11 you.

12 MR. ANWYLL: Thank you for
13 your question, Panel Member Drescher. We have
14 no concerns -- no issues with your question or
15 the standard for ECCC before the start of the
16 project.

17 If I could also, I would --
18 if you have a follow on question we can go
19 with that, or I would also like to flag --
20 hand over to one of my colleagues to help
21 clarify some of the meetings where we
22 discussed some of the issues that were brought
23 up in the previous conversation.

24 PANEL MEMBER DRESCHER: I'm
25 sorry, I'm not following. What previous

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1 conversation are we talking about?

2 MR. ANWYLL: Thank you for
3 clarifying. So some of the First Nations had
4 indicated that we didn't speak about specific
5 topic which we brought up in a previous
6 correspondence.

7 PANEL MEMBER DRESCHER: Okay,
8 I'm sorry, I'm not quite finished on my line
9 of questioning.

10 MR. ANWYLL: Very good. We'll
11 come back to that then.

12 PANEL MEMBER DRESCHER: Thank
13 you.

14 So just for clarification so
15 that I heard you correctly, that Generation
16 PGM will be able to meet this recommendation
17 proposed by ECCC. You're on mute, sorry.

18 MR. ANWYLL: The answer is
19 yes.

20 PANEL MEMBER DRESCHER: Thank
21 you very much. So my next question -- I would
22 like to continue with this line of questioning
23 before we go anywhere else and the Panel Chair
24 will be able to address your request.

25 The next one is mercury

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1 monitoring recommendations continuing. So in
2 its hearing submission and yesterday's
3 presentation ECCC recommended that Generation
4 PGM as part of the follow-up and monitoring
5 program verify the predicted effects so that
6 no changes in mercury -- methylmercury
7 concentrations occur as a result of the
8 project during construction, operation and
9 closure phases.

10 ECCC also notes that due to
11 the uncertainty in the baseline data, it can
12 only assume that the concentrations of mercury
13 in the Pic River would exceed the CCME water
14 quality guidelines for protection of aquatic
15 life. ECCC states that this would represent a
16 potential risk to the environment as the
17 potential for chronic and/or acute effects to
18 aquatic life including fish would exist.

19 My apologies, this is
20 actually to ECCC and MECP. My apologies, Mr.
21 Anwyll, thanks for sticking with me.

22 MR. ANWYLL: I was ready
23 almost.

24 PANEL MEMBER DRESCHER: I
25 would ask that ECCC and MECP please make

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1 themselves available. Mr. Clavering.

2 Wonderful, thanks.

3 So you heard the preamble to
4 the question to ECCC is would any increase in
5 mercury or methylmercury concentrations from
6 project activities be acceptable to ECCC.

7 MR. CLAVERING: Thank you for
8 the question. Rob Clavering, Environment and
9 Climate Change Canada, for the record. If I
10 could just have a minute to caucus.

11 PANEL MEMBER DRESCHER: Thank
12 you.

13 MS. GILLIAM-PRICE: Jacinth
14 Gilliam-Price here. Just going to take a
15 moment to caucus.

16 PANEL MEMBER DRESCHER: Thank
17 you.

18 MR. CLAVERING: Rob Clavering
19 at Environment and Climate Change Canada for
20 the record. Thank you for the time.

21 ECCC is of the view that it
22 has not been provided with the information
23 necessary to determine the background
24 concentrations of mercury, what they will be
25 in the Pic River, and we point out that it is

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1 up to the proponent to ensure that subsection
2 36(3) of the Fishery Act is met and that no
3 deleterious substance shall be deposited in fish
4 bearing water.

5 PANEL MEMBER DRESCHER: Thank
6 you very much. MECP.

7 MS. GILLIAM-PRICE: Jacinth
8 Gilliam-Price here again for the record.
9 Thanks again for the time as discuss.

10 As ECCC had mentioned, as
11 mercury concentrations in the Pic River
12 haven't been properly characterized yet, it is
13 on the proponent to provide that to us to
14 allow an appropriate assessment of potential
15 impacts. It is always our goal to have no
16 increase in potential constituents of
17 potential concern in a receiver so it is
18 always our objective to minimize any changes
19 in water quality as much as possible.

20 PANEL MEMBER DRESCHER: Thank
21 you very much and thank you for your replies.

22 I would like to just ask ECCC
23 one more question. Thank you, Mr. Clavering.

24 Based on what you've heard in
25 this water session so far, do you have any

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1 additional recommendations for the panel on
2 effective mitigation measures that could be
3 implemented by GenPGM.

4 MR. CLAVERING: Rob Clavering,
5 Environment and Climate Change Canada for the
6 record. If I could just take a moment to
7 caucus. Thank you for the time. Thank you for
8 the question.

9 So ECCC is of the view that
10 the written -- as per our written submission,
11 the recommendations within the written
12 submission, we still are of the opinion that
13 those recommendations still stand and we don't
14 have any additional recommendations to make at
15 this time.

16 PANEL MEMBER DRESCHER: Thank
17 you very much. Thanks for your time. Thank
18 you. Okay. Back to Generation PGM, please. I'm
19 going to ask the -- this has to do with
20 phosphorus.

21 Question one: GenPGM has
22 indicated that there is no specific design at
23 this time for phosphorus treatment. On what
24 basis did GenPGM predict the concentration of
25 phosphorus of 0.02 milligrams per litre in the

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1 final effluent to be discharged in Hare Lake
2 when the source concentration is predicted to
3 be 1 milligram per litre as indicated in the
4 response to IR 2-4 which is CIAR 752.

5 MR. ANWYLL: I'll caucus for
6 one minute, please. Thank you for the time.
7 I'll hand over to Dr. Nicholson to clarify the
8 answer.

9 PANEL MEMBER DRESCHER: Thank
10 you. Go ahead, Dr. Nicholson.

11 DR. NICHOLSON: Thank you, Ms.
12 Drescher. Ron Nicholson here for the record.

13 In terms of phosphorus
14 levels, those were indicated because of the
15 assessment and characterization we did of
16 process water, and when we characterized the
17 process water that we use in our water quality
18 modelling we realized that there was
19 phosphorus in the process water. It's added as
20 a reagent in the milling process. And so we
21 ended up predicting a concentration that was
22 on the order of the milligram per litre in the
23 process water and in the water management
24 pond.

25 However, we recognize that

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1 that level of phosphorus would not be
2 acceptable for release to the environment and
3 we therefore are using that information to
4 tell us that we're going to need to provide
5 water management, and that might be source
6 control, for example, dealing with the mill
7 process water, or it could be treatment to
8 that required value that will be protective of
9 the environment when we discharge in Hare
10 Lake.

11 So the assumption was made --
12 the technology exists and the assumption was
13 made that if we needed to institute that
14 technological component to reduce phosphorus
15 we would do that.

16 PANEL MEMBER DRESCHER: Okay,
17 thank you. Just a further question, Dr.
18 Nicholson.

19 Could you elaborate on some
20 of the available technologies that you just
21 referred to, besides the source control -- the
22 actual treatment itself, treatment
23 technologies.

24 DR. NICHOLSON: Treatment
25 technologies that I'm aware of are fairly

1 standard technologies for the removal of
2 phosphate, and they have to do with
3 coagulation, in other words, a form of
4 precipitation in solution and then removing
5 the solids. And it's a very common practice in
6 the water treatment business.

7 PANEL MEMBER DRESCHER: Thank
8 you very much. If it's okay with your team
9 I'll just continue asking the question. I
10 believe you'll probably be able to answer this
11 as well as you're speaking of phosphorus.

12 The preamble is MECP has
13 requested a revision of the phosphorus
14 threshold benchmark from 0.02 milligrams per
15 litre to 0.01 milligrams per litre. Your
16 prediction of water quality in Hare Lake shows
17 that after discharge of treated mine effluent
18 to Hare Lake, phosphorus concentration in the
19 lake will be at 0.02 milligrams per litre.
20 With the benchmark of 0.01 milligrams per
21 litre, your predictions show that with regard
22 to phosphorus quality Hare Lake will be
23 degraded.

24 Can you elaborate on how your
25 proposed treatment technology for phosphorus

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1 removal be able to achieve the lower
2 phosphorus benchmark of 0.01 milligrams per
3 litre.

4 DR. NICHOLSON: Thank you for
5 that question, Ms. Drescher. I would like to
6 caucus for a moment if I can, please.

7 Thank you for that time, Ms.
8 Drescher.

9 If the original assumption
10 was that we were going to meet the PWQO
11 number, and that's where the number came from,
12 for the treatment -- for the guideline for the
13 water treatment and removal of phosphorus, if
14 we needed to meet the interim PWQO value, the
15 lower value of .1, then the treatment
16 technology would be designed to do that. In
17 other words, there can be -- the treatment
18 capability is there. It means having a
19 different design criteria for the treatment
20 plant to have a lower concentration. So that
21 can be achieved. And the commitment to meet
22 that remains.

23 PANEL MEMBER DRESCHER: Thank
24 you, Dr. Nicholson. Thank you very much.

25 I do have a question for

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1 MECP, just a quick final question. If MECP
2 would make themselves -- enter into the room
3 that would be great. Thank you, Ms.
4 Gilliam-Price.

5 Final question. Can MECP
6 speak to if there has been any increasing
7 level of phosphorus in the local and regional
8 study area that you're aware of based on your
9 sampling, routine sampling in the area.

10 MS. GILLIAM-PRICE: I'm going
11 to quickly caucus here and get back to you.
12 Thank you for that time.

13 PANEL MEMBER DRESCHER: Go
14 ahead, please.

15 MS. GILLIAM-PRICE: Okay. So
16 with respect to the actual study area, we do
17 -- as MECP we do go out in the spring mainly
18 and do sampling of area lakes for phosphorus
19 concentrations, however, we don't have current
20 data for that study area so it's challenging
21 to talk about trends there.

22 Regionally we do monitor many
23 lakes in northwestern Ontario, however, we
24 find that phosphorus concentrations in lakes
25 is really dependent on and influenced by

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1 development on a lake. We see varying
2 concentrations across the region, and at this
3 point we can't really speak on regional or
4 local trends over time across the region.

5 So I hope that covers your
6 question. I think you were looking for
7 possible trends across the region that we may
8 be aware of, but it's really dependent on the
9 lakes and particular geology in the area and
10 development on the lake.

11 PANEL MEMBER DRESCHER: Thank
12 you very much. Thank you.

13 Madam Chair, that completes
14 my questioning. Thank you very much.

15 PANEL CHAIR: Thank you, Ms.
16 Drescher. Thanks to all the presenters for
17 their responses.

18 Ms. Bruce, I would ask you
19 before -- I have a number of questions to
20 continue in the afternoon but I thought at
21 this time I could ask you if you had any
22 questions you would like to pose.

23 PANEL MEMBER BRUCE: Thank
24 you. I do have a question that is going to be
25 directed both to MECP and ECCC.

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1 So my question is can we
2 confirm for the record whether MECP and/or
3 ECCC have any concern about any contaminants
4 referenced in the binational lake-wide
5 management plan that may arise from point or
6 nonpoint sources associated with the project.

7 So I'll ask Mr. Clavering.

8 MR. CLAVERING: Robert
9 Clavering from Environment and Climate Change
10 Canada for the record. If you can just give me
11 a moment to caucus.

12 PANEL CHAIR: And Ms.
13 Gilliam-Price, if you need a moment to caucus,
14 please go ahead.

15 MS. GILLIAM-PRICE: Thank you,
16 we would like a moment as well. Thanks.

17 MR. CLAVERING: Thank you for
18 the time. Rob Clavering from Environment and
19 Climate Change Canada for the record.

20 So taking in account the
21 proponent commitments as well as ECCC's
22 recommendations including in particular the
23 recommendation as it relates to redoing the
24 geochemical analysis and updating water
25 quality modelling, that ECCC would not have

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1 any concerns related to the contaminants of
2 potential concern, in particular just noting
3 that mercury is the one contaminate that
4 relates to the Great Lakes water quality
5 agreement.

6 PANEL MEMBER BRUCE: Thank
7 you.

8 MR. CLAVERING: Thank you.

9 MS. GILLIAM-PRICE: Jacinth
10 Gilliam-Price for the record.

11 We agree with ECCC's comment
12 as well. Considering the contaminants listed
13 in the lake action management plan for Lake
14 Superior, it appears it is only mercury which
15 would be considered a contaminate of concern
16 which we have discussed earlier. So there is
17 no other concerns with the other contaminants
18 listed. Thank you.

19 PANEL MEMBER BRUCE: Thank
20 you.

21 PANEL CHAIR: Thank you. I
22 would like to continue our questioning with
23 respect to water, and I do have a number of
24 questions to pose to Generation PGM starting
25 with the MRSA catch basins and overflow to Pic

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1 River.

2 So I will start. The panel
3 would like to fully understand how GenPGM will
4 address the concerns raised by Biigtigong
5 First Nation regarding effluent discharge from
6 the mine site to Pic River during operations
7 of the site and post-closure. I'll go back a
8 bit and reference some documents.

9 So in supplemental
10 information request 9, CIAR 579 the proponent
11 stated that during the initial years of mine
12 development the open pits will have limited
13 storage capacity and runoff resulting from a
14 Timmins June 2002 storm event may not be
15 contained within the open pits. Runoff in that
16 case would eventually report to the Pic River.

17 In this same submission the
18 proponent stated that runoff from that June
19 2002 storm event would potentially result in
20 overtopping of the MRSA catch basins and
21 spillways and then run off into the Pic River.

22 The panel does note that
23 since that supplemental information request 9
24 response was provided, Generation PGM has
25 changed its MRSA catch basin capacity to a 1

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1 in 100-year 24-hour precipitation event as
2 opposed to the one in 25-year event which we
3 heard in your presentation yesterday, and I
4 believe is a 133 millimetres with the overflow
5 spillway capacity as 142 millimetres.

6 So with that preamble I have
7 a series of questions to pose. We just
8 wondered how is this 133-millimetre value
9 derived, and if you could point us to where in
10 your materials that has been provided or was
11 that just the presentation yesterday.

12 MR. ANWYLL: I'll caucus for
13 one second, please.

14 PANEL CHAIR: Thank you.

15 MR. ANWYLL: I'll hand over to
16 Mr. Craig Hall from Knight Piésold who did the
17 water management designs.

18 PANEL CHAIR: Thank you.

19 MR. HALL: Thank you for the
20 question, Madam Chair. Craig Hall for the
21 record. The 1 in 100-year storm event value
22 comes from the hydrology baseline report. I
23 will refer you to CIAR number 722. And it's
24 table 6.4 and there's the intensity duration
25 frequency curves for Pukaskwa National Park

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1 for the projection from 2010 to 2040. So we
2 used the value from that table. So that's on
3 the record.

4 PANEL CHAIR: Thank you. So
5 that is how that 133 millimetres was
6 developed, derived for the assessment.

7 MR. HALL: Correct.

8 PANEL CHAIR: Could you --
9 this is a two-part question, kind of a follow
10 on to the first one.

11 Would you be able to provide
12 an estimate of the quantity of water that may
13 overflow annually from the MRSA catch basin to
14 the Pic River, include what assumptions may
15 have been used for that prediction, and I
16 guess follow on to that is could you talk
17 about the likelihood of such an overflow event
18 if it were to occur.

19 MR. HALL: Can I take a minute
20 caucus, please?

21 PANEL CHAIR: Yes.

22 MR. HALL: Thank you. Thank
23 you for the minute to caucus, Madam Chair.

24 So with the design event that
25 we are proposing to size the catch basins for,

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1 that 1 in 100-year return period event, the
2 probability of there being overflow on an
3 annual basis is very unlikely, so the amount
4 of discharge during a given year of operations
5 is zero. And in addition to that storage
6 capacity there's also the pump back rate of
7 750 cubic metres per hour that would be there
8 to transfer water on a regular basis.

9 PANEL CHAIR: I'm going to
10 probe a little bit here.

11 So I understand that when you
12 talk about low probability, potentially never
13 going to happen, just in the context of
14 designing in the event of it happening, so if
15 I understand correctly, as the MRSA catch
16 basins are designed to 133 millimetres and the
17 Timmins storm event is 193 millimetres, are we
18 correct in understanding that a storm event of
19 the Timmins magnitude could potentially still
20 result in an overtopping of the MRSA catch
21 basins.

22 MR. HALL: I'll just take one
23 moment to caucus, please.

24 PANEL CHAIR: Okay. Thank you
25 for that.

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1 MR. HALL: Thank you for the
2 time to caucus, Madam Chair. I would like to
3 invite Mr. Sheldon Smith to discuss the
4 hydrology, please.

5 PANEL CHAIR: Thank you, Mr.
6 Hall. Welcome, Mr. Smith.

7 MR. SMITH: Thank you, Madam
8 Chair, and thank you, Mr. Hall.

9 I would just like to speak a
10 little bit about where the climate change
11 estimate that Mr. Craig has used for sizing of
12 the MRSA catch basins came from. As he's
13 mentioned, it's described in the updated
14 hydrology baseline report and we use a climate
15 change tool to actually calculate that using
16 data from Pukaskwa station. What that is in
17 actual terms is a change from, say, the
18 current estimate of the hundred year storm
19 being about 117 millimetres for a 100-year
20 return period, 24-hour event, goes up by about
21 15 millimetres to 132, 133 millimetres, just
22 for some reference as to what that climate
23 change factor is.

24 PANEL CHAIR: Could I just --
25 sorry, before you go on so I don't forget

1 this, sorry. So are you suggesting that's a
2 range, 117 to, say, 133 or -- I don't know
3 that I'm understanding what you are saying.

4 MR. SMITH: No, it's the
5 change. So if you look at what we have
6 estimated the current 100-year 24-hour event
7 to be essentially today, and then projecting
8 it out to 2040, it goes up by 15 millimetres
9 for that particular event. That's all we're
10 saying. That's the climate change
11 differential.

12 PANEL CHAIR: Sorry. Let me
13 just try one more time.

14 So if it goes up, where is
15 the 117? Was that from previous references? So
16 once 117, now 133.

17 MR. SMITH: That's right. So
18 in the table just before what Mr. Hall had
19 referenced, table 64, if you look at table 63
20 it's essentially the intensity duration
21 frequency curve for Pukaskwa station, and it
22 indicates that the current 2020 100-year
23 24-hour event is 117.56 millimetres.

24 PANEL CHAIR: Thank you. Go
25 ahead.

1 MR. SMITH: And just to speak
2 to the Timmins event. So the Timmins event in
3 northern Ontario, similarly to the Hurricane
4 Hazel event that is used in southern Ontario,
5 these are essentially regional or regulatory
6 storm events. The Timmins event in my
7 understanding is a multiday event. It has what
8 we call a height of wrath, which is the actual
9 hour to hour amount of precipitation. It
10 occurred over more than a 24-hour period. It
11 occurred -- there's intensity within 12 hours,
12 but it occurred over a multiday period.

13 And it's difficult to compare
14 a one 100-year 24-hour event with an event
15 like Timmins, for instance, that occurred over
16 more than that time period. It's an actual
17 event, whereas the event that we're indicating
18 here is a statistically derived event.

19 PANEL CHAIR: Okay. If we
20 stayed on that what if this happened, as
21 you've noted, Timmins had an event, we've had
22 multiple extreme climate weather events, what
23 the panel is curious about is if such an event
24 were to happen we do understand there's been
25 infrastructure positioned, located, built for

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1 particular capacity. Has part of the modelling
2 included sort of estimated or predicted
3 volumes of water that could reach the river,
4 and then the second part of that question
5 being, you know, has GenPGM assessed the
6 potential effects of such an event and a
7 quantity of water overflowing to the river.

8 MR. HALL: I think we'll take
9 a minute to caucus, please.

10 PANEL CHAIR: Okay, thanks.

11 MR. HALL: Thank you for that
12 time to caucus, Madam Chair.

13 So overtopping of the MRSA
14 catch basins was evaluated as part of the
15 accidents and malfunctions section, and I
16 would point to CIAR reference 727 and it's
17 chapter 6.3. And that assessment included for
18 an overtopping rate of 910 cubic metres per
19 hour over the 24-hour period, and the
20 assessment indicated that there would be no
21 incremental change in the water quality
22 parameters.

23 PANEL CHAIR: Thank you.

24 So just expanding a bit on
25 the questions with respect to Pic River and

1 other watersheds, participants have noted that
2 not all of the quantity of seepage that will
3 be generated around the process solids
4 management facility and the mine rock storage
5 area during the operations of the mine will be
6 collected and pumped towards the water
7 management pond. Noted a significant part of
8 seepage will bypass the collection systems to
9 discharge to watershed 101 Pic River, the
10 watershed 102 Pic River, watershed 105 Hare
11 Lake, and watershed 106 Angler Creek.

12 So I have a couple of
13 questions related to this. One, could you
14 confirm that seepage that will discharge to
15 these watersheds has been accounted for in the
16 modelling of water quality in those receivers.

17 MR. HALL: Thank you for the
18 question, Madam Chair. We'll just take a
19 moment to caucus, please.

20 PANEL CHAIR: Yes.

21 MR. HALL: Thank you. Thank
22 you for the time to caucus, Madam Chair. I
23 would like to introduce Michelle Fraser to
24 address this question, please.

25 PANEL CHAIR: Thank you.

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1 MS. FRASER: Michelle Fraser
2 for the record. Thank you, Madam Chair, for
3 the question.

4 The seepage from the PSMF and
5 MRSA are predicted to go to those watersheds
6 as you had indicated. The predicted travel
7 times from the facility to the receivers is
8 greater than 100 years, and just to keep that
9 in mind as we talk about how the seepage was
10 incorporated into the modelling, which I'll
11 pass you off to Dr. Nicholson to discuss that
12 aspect of it.

13 DR. NICHOLSON: Hello again,
14 Madam Chair. Ron Nicholson for the record.

15 The way the seepage was
16 modelled, to answer your question, yes, the
17 seepage was taken into account in terms of
18 water quality, but as Ms. Fraser suggested,
19 that will not happen during operations, so we
20 did not account for during operations because
21 that would be an unrealistic scenario.

22 However, after the closure we
23 didn't wait the 100 years to assess the
24 effects; we assumed that after closure that
25 that water, that seepage would go straight

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1 into those watersheds and into the
2 environment, and treat it more or less like a
3 pipe that would deliver that seepage just to
4 be very conservative in our estimates of water
5 quality. So we have taken that into account
6 for the closure scenario, and after closure
7 have included the water chemistry in the
8 seepage going to those watersheds that you
9 mentioned.

10 PANEL CHAIR: Thank you. Maybe
11 just a clarification.

12 I know we spoke this morning
13 about clarifying, and I'm not sure if this
14 would make any difference, but we talked about
15 the initial -- the active closure phase, the
16 passive closure phase. Would your response
17 apply to both of those phases?

18 DR. NICHOLSON: I believe -- I
19 would have to check, but I believe it wouldn't
20 make a difference because it would only be
21 that period of five years, so -- but we are
22 checking for certain after the active closure
23 phase certainly and then we compare all the
24 chemistry in the receiving environment based
25 on the receipt of that seepage from the

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1 project.

2 PANEL CHAIR: Thank you. So
3 when you're saying you are checking for
4 certain, what are you referring to?

5 DR. NICHOLSON: Oh, receiver
6 water quality to make sure that everything is
7 acceptable in terms of the seepage getting out
8 into the environment.

9 PANEL CHAIR: And you're doing
10 that how, with --

11 DR. NICHOLSON: Oh, in
12 post-closure we have directed seepage very
13 conservatively. We don't wait the hundred
14 years, we just do post-closure, and we direct
15 it to those watersheds and then we check the
16 water quality in those watersheds to make sure
17 that we have not exceeded any guidelines or
18 benchmarks in the environment.

19 PANEL CHAIR: So I'm going to
20 ask is this part of your ongoing water
21 monitoring? Is that what you're referring to?

22 DR. NICHOLSON: Well,
23 definitely there's going to be monitoring, and
24 there will be groundwater monitoring as well
25 to determine that movement of seepage, to

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1 understand that well before it can leave the
2 property.

3 PANEL CHAIR: Along those same
4 lines, we've spoken briefly just before about
5 the use of the pumping system that Generation
6 PGM has indicated with respect to contingency
7 measure in the catch basin.

8 Are you anticipating
9 installing sort of a dual pumping system, for
10 instance, as a backup I'm asking, and if that
11 were the case, is it a case where you have a
12 backup pump that is in the same location so
13 that that can be employed immediately in the
14 event of its necessity for any kind of failure
15 of that first pump? Just curious about the
16 logistics around the potential pumping that
17 was referenced for the catch basins.

18 DR. NICHOLSON: Thank you,
19 Madam Chair. I'm going to have to pull
20 somebody else to respond to that question.
21 I'll be just a moment in caucus. Thank you.

22 PANEL CHAIR: Thank you.

23 DR. NICHOLSON: I would like
24 to ask Jeremy Dart to respond to your
25 question.

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1 PANEL CHAIR: Thank you.

2 DR. NICHOLSON: Sorry, Madam
3 Chair. There's a technical difficulty on here
4 and we're just trying to get that adjusted for
5 Mr. Dart.

6 PANEL CHAIR: No problem.

7 MR. DART: I have it solved.

8 PANEL CHAIR: Thank you, Mr.
9 Dart. Are you okay to go on camera? There you
10 are. Might be my technical difficulty too.
11 Thank you.

12 MR. DART: Thank you for that.
13 I apologize for the technical difficulties,
14 Madam Chair.

15 Jeremy Dart for the record.
16 So as we documented in IR response 4-2, backup
17 power to the water transfer systems will be
18 provided by the mine's backup power system.
19 Replacement pumps will also be kept on-site in
20 the event of a pump failure. Those will be
21 regularly maintained as per the maintenance
22 requirements.

23 PANEL CHAIR: Thank you. It
24 was more a specific question about where that
25 backup pump would be. May sound like a funny

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1 question, but is it in another complete
2 location away from where it may be required in
3 the event of failure of your duty pump, so to
4 speak, or was the intention to actually have
5 it there and -- just curious to know what that
6 plan is. If it's not fully developed, that's
7 fine.

8 MR. DART: Thank you for the
9 question again, Madam Chair. Jeremy Dart for
10 the record.

11 So the explicit plan has not
12 yet been developed, however, the pumps will be
13 on-site and stored for allocation in the event
14 of an emergency.

15 PANEL CHAIR: So before I
16 leave the topic, and I think then we'll take
17 the afternoon break, I do want to ask a
18 question again of GenPGM. When we speak about
19 this impact of seepage, the PSMF, the MRSA,
20 and the concerns expressed.

21 So you've talked about
22 predictions, inputs that have been put into
23 the modelling program. We've heard some
24 feedback on the likelihood of events, the
25 design, features of catch basins, their

1 capacity, the changes that Generation PGM has
2 indicated. In addition, we heard about
3 groundwater monitoring as well.

4 I just wonder if, given the
5 concerns that have been raised around
6 discharge to these watersheds, is there a way
7 to kind of package sort of the overall plan
8 with respect to those mitigation measure,
9 safety nets, if you want to call them, and
10 sort of potential adaptive management plans to
11 give the reassurance if any of these events
12 were to take place, overflows were to happen,
13 what has Generation got in place to mitigate
14 that eventuality if it does happen.

15 MR. ANWYLL: I'll caucus for
16 one second, please.

17 MR. DART: Thank you for the
18 question again, Madam Chair. This is Jeremy
19 Dart for the record. So we've talked about
20 quite a bit today with respect to adaptive
21 management and that will be one of the key
22 extents to the monitoring plans that we
23 establish with the project.

24 Other types of plans that
25 will be developed to respond to any upset

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1 conditions or accidents or malfunctions are
2 not limited to our tailings, operation,
3 maintenance and surveillance manual, site
4 specific emergency response and preparedness
5 plans, as well as spill prevention and
6 contingency plans.

7 So while not explicitly
8 outlined as part of this, that is definitely
9 something that the project will be committing
10 to developing as it moves into construction
11 and operations if approved.

12 PANEL CHAIR: Thank you. So it
13 is 3:10 now, I believe. How about we come back
14 at 3:30 and we'll continue this questioning.

15 --- Recess taken at 3:11 p.m.

16 --- Upon resuming at 3:31 p.m.

17 PANEL CHAIR: I think I see
18 Environment Canada and Climate Change. Mr.
19 Clavering, do you have a question for us?

20 MR. CLAVERING: Thank you for
21 taking my question. This is Robert Clavering
22 from Environment and Climate Change Canada for
23 the record.

24 I just wanted to advise the
25 panel that tomorrow that we do have certain

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1 experts who may not be able to attend due to
2 them having young children with family
3 commitments. We will have participants
4 available tomorrow and we'll do our best to
5 participate, and they are available today and
6 will be available on Monday. So I just wanted
7 to make you aware of this and tomorrow we may
8 require some undertakings if there are areas
9 where we're unable to respond.

10 PANEL CHAIR: Thank you, Mr.
11 Clavering. Yes, we are looking at
12 opportunities to have as many of those
13 questions that we do have for Environment and
14 Climate Change Canada to see if those can be
15 completed but I appreciate your information.
16 Thank you.

17 MR. CLAVERING: Thank you.

18 PANEL CHAIR: Oh, there's
19 another hand. I'm sorry, I can't see the hand.

20 MR. CANO: Tim Cano from MNR.
21 Or MNR, pardon me.

22 PANEL CHAIR: Yes, go ahead.

23 MR. CANO: We are in a similar
24 situation. We have a number of people who have
25 young kids racing around their feet right now.

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1 So we will have representation, but it won't
2 be our full team so we may have difficulty
3 answering some questions.

4 PANEL CHAIR: Fair enough.
5 Thank you so much for that. Appreciate it.

6 And again just my apologies
7 for not -- I should have -- I'll get my screen
8 sorted, but it is -- I'm not able to see hands
9 up so I'm relying on the folks in the room and
10 they are doing their best to make sure I can
11 see them.

12 So I'll continue my line of
13 questioning and I still have some questions
14 for Generation PGM on Pic River and water. So
15 maybe I'll just start in.

16 In response to a panel
17 question yesterday you indicated that there
18 was a process underway in parallel to this --
19 in parallel I'll say, related to the
20 post-closure discharge of mine impacted water
21 to the Pic River, and we do have some
22 questions about this, both for clarity and to
23 make sure we understand correctly. A bit of a
24 two- or three-part question.

25 Could you expand on the

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1 parallel process as it relates to assessments
2 or potential assessments for alternatives of a
3 post-closure discharge. Would that assessment
4 involve a technical analysis of alternatives
5 particularly where we heard information
6 related to a potential western discharge
7 request, and is a change from post-closure
8 discharge into the Pic River to a potential
9 western discharge a potential outcome of this
10 process.

11 So I think basically trying
12 to just understand a little bit more about
13 what was raised yesterday with respect to this
14 parallel process.

15 MR. ANWYLL: I understand your
16 question clearly, Madam Chair. Give me a
17 second and I'll caucus and come back.

18 PANEL CHAIR: Thank you.

19 MR. DART: Thank you for the
20 question, Madam Chair. Jeremy Dart for the
21 record.

22 With respect to the discharge
23 in the Pic River, the current concept that we
24 have provided is technically protective of the
25 Pic River. It is a viable solution for

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1 protecting the environment from a water, fish
2 and recreational purposes.

3 Throughout our discussions
4 and ongoing consultation we've already worked
5 with BN to adjust the mine design by avoiding
6 discharge during construction and operational
7 phases and similarly by Moose Lake. We've
8 heard the concerns from BN regarding the
9 discharge during closure is not socially
10 acceptable to the community and we're
11 committed to ongoing discussions to explore
12 whether options that can avoid discharge
13 during closing would be technically and
14 economically feasible.

15 We expect to address these
16 concerns during ongoing closure plan
17 discussions with BN and agencies as part of
18 the provincial permitting under the Mining
19 Act.

20 We've already -- I just want
21 to refer back to commitments already made to
22 work with BN to develop the closure landscape
23 through ongoing consultation and the
24 development of an end land use plan. We are
25 committed to working with Biigtigong in the

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1 development of the closure plan and
2 specifically to the potential to return the
3 landscape to natural conditions. That includes
4 releases of water to the Pic River.

5 PANEL CHAIR: Okay, that's
6 helpful clarification. I just have a couple of
7 just -- two clarification questions.

8 I know you did note that this
9 parallel process and right now would it be
10 safe for me to assume these are discussions as
11 opposed to sort of technical assessments, and
12 maybe I'll continue with my question.

13 I would like to ask about the
14 proposed timing of that because, as you know,
15 the panel can only make a decision on the
16 material that is before us for consideration
17 in this EA process, and at this point the
18 alternative -- the only alternative, as we
19 heard yesterday which is included in the EIS
20 and related documents, is the post-closure --
21 the anticipated post-closure discharge to the
22 Pic River as you have indicated. That's
23 correct, is that right?

24 MR. DART: Thank you for that
25 question, Madam Chair. Jeremy Dart for the

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1 record. We just want to take a moment to
2 caucus, please.

3 PANEL CHAIR: Okay.

4 MR. DART: Thank you for the
5 question, Madam Chair.

6 As I mentioned previously,
7 the concept that we presented in the EA is
8 technically and environmentally achievable and
9 protects the environment. The discussions
10 regarding changes to possible discharge
11 locations is really at the early conceptual
12 stage. Typically these discussions take
13 several months due to the fact that there's a
14 long-term engagement with BN, other Indigenous
15 communities, as well as the regulatory
16 agencies, specifically the MND and MRF. What
17 we do know is that this will be developed over
18 time and anything that is presented with
19 respect to the closure plan will be in place
20 prior to the construction of the project if
21 approved.

22 PANEL CHAIR: So just to be
23 clear then, what we have before us now is the
24 one alternative that's been described in the
25 documentation we have before us.

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1 MR. DART: Yes, that is
2 correct.

3 PANEL CHAIR: Thank you. Just
4 a quick follow-up to -- on this line of
5 questioning to Biigtigong Nishnaabeg First
6 Nations. Thank you, Mr. Dart.

7 Ms. Zanini, thank you. Along
8 the lines of my questioning to Generation PGM
9 we did hear from Biigtigong Nishnaabeg First
10 Nation and the concerns expressed around the
11 current design of passive water management
12 during post-closure into the Pic River, you
13 referred in the presentation during the
14 alternative session earlier in the week to a
15 preference for a western discharge option and
16 GenPGM of course noted the discussions that
17 were underway.

18 I just -- the panel wondered
19 if you would like an opportunity to speak any
20 further to this at this point or in the
21 community sessions further on? We just wanted
22 to provide that opportunity to you.

23 MS. ZANINI: Thank you, Madam
24 Chair. Tracy Zanini on behalf of Biigtigong
25 Nishnaabeg for the record.

1 I can confirm this issue will
2 be a strong feature in our upcoming community
3 sessions but at this time I would just like to
4 ask my colleague Jody Duncan if he has
5 anything further to add from a technical
6 perspective.

7 MR. DUNCAN: Thank you, Tracy.
8 Thank you for the question, Madam Chair.

9 I don't believe we have
10 anything to add at this time with regard to
11 the technical aspects. We wish to see the
12 alternatives that are technically and
13 economically feasible for a western discharge
14 route and at that time we would then be able
15 to provide further comment on these aspects.
16 Thank you.

17 PANEL CHAIR: Thank you very
18 much. I now have some additional questions
19 again to Generation PGM primarily around
20 closure and post-closure. So I wondered if you
21 could talk a little bit about how the pit
22 lakes will be monitored and how will pit lake
23 water chemistry be modelled in that 30-year
24 period post-closure.

25 MR. ANWYLL: Thank you for the

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1 question. My understanding is we have a
2 session on closure which we can certainly
3 tackle that, but if you're looking for a high
4 level explanation just now, we can certainly
5 tackle that as well.

6 PANEL CHAIR: That would be
7 great. Thank you.

8 MR. ANWYLL: High level, I
9 like high level. Give me one second.

10 MR. DART: Madam Chair, thank
11 you for the question. Jeremy Dart for the
12 record. We're going to answer this in two
13 parts; first from myself and then I'll pass
14 over the response to Dr. Ron Nicholson.

15 So with respect to the
16 development of the closure plant, there will
17 be resources and financial commitments around
18 monitoring for the site including pit water
19 quality modelling during the filling of the
20 pit as well as tracking the quantities or the
21 fill rates in the open pit. At that time the
22 water quality data will be used to -- for
23 water quality and I can pass that over to Mr.
24 Nicholson.

25 DR. NICHOLSON: Hello again,

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1 But I think the key point
2 here is that the pit will be filling over many
3 years. A great opportunity to have continuous
4 monitoring of water quality and time to make
5 decisions that are required. If something
6 doesn't come as expected there's plenty of
7 time to react and have proper and appropriate
8 water management to make sure that we would
9 not release anything to the environment that
10 was not acceptable.

11 That would be -- that the pit
12 is -- you know, if water had to be pumped back
13 to make sure that it didn't flow out, that
14 would occur and we have many, many years to
15 respond to that. So it's a very protective
16 system for the environment with that pit
17 there. It's quite a resource.

18 PANEL CHAIR: Thank you, Mr.
19 Dart and Mr. Nicholson. I see a hand up. Mr.
20 McCarty, just one second, please. I'll just
21 finish my thought here.

22 Mr. Anwyll, you did provide a
23 note about closure day. I have a number of
24 other questions related to this matter that I
25 will put into our closure day session. This

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1 has been very helpful to provide that high
2 level overview so thank you for that and we
3 will have some follow-up questions.

4 What we'll do is just make
5 sure if there are any water experts we need to
6 have available for that day we'll adjust the
7 schedule accordingly.

8 So thank you, Mr. McCarty.
9 You have your hand up?

10 MR. MCCARTY: Yes, I just
11 would just like to point out that pursuant to
12 this discussion, a point of information that
13 table 1 from the Marathon 2021 report, the
14 title of the table is called "Long-Term
15 Constituent Concentrations in the Central and
16 Northern Pits," does not include any estimates
17 of phosphorus in the pit. So it's very
18 difficult to suggest that everything is okay
19 when a critical parameter has not been
20 modelled.

21 And I also like to point out
22 that the -- on table 6.8 and 6.9 -- all these
23 are in our report by the way -- from EcoMetrix
24 2021 that they note that the background level
25 of phosphorus in the Pic River is .08 which is

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1 well above any of the numbers that the Ontario
2 government views as acceptable so it's already
3 a very stressed ecosystem.

4 So the lack of a phosphorus
5 number for the effluent that's coming out of
6 the pits and proposed to go into the lake
7 seems to be a major omission. Thank you.

8 PANEL CHAIR: Mr. Barretto, I
9 see your hand up.

10 MR. BARRETTO: Thank you,
11 Madam Chair. I'll just be brief.

12 I was wondering if we could
13 get some guidance from the panel where we're
14 at in the process, as I understood we were
15 undergoing panel questioning. I know, Mr.
16 McCarty, he may have had a procedural matter,
17 but it appeared to be just a statement about
18 his opinion and I think in the name of the
19 efficiency, given that we're using the day on
20 Saturday, any guidance from the panel
21 regarding what comments would be helpful would
22 be much appreciated for our benefit. Thank
23 you.

24 PANEL CHAIR: Thank you, Mr.
25 Barretto, Mr. McCarty. We're just going to

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1 take 5 minutes on this item. Thank you so
2 much. The panel will take 5 minutes.

3 --- Recess taken at 3:56 p.m.

4 --- Upon resuming at 3:59 p.m.

5 PANEL CHAIR: I just would
6 like to confirm indeed we are in the
7 questioning stage with the panel asking its
8 questions of the participants, in this case
9 GenPGM. I appreciate that Mr. McCarty in this
10 case, certainly all participants may feel the
11 need to sort of put their hand up in the
12 middle of those discussions to make a point.
13 There will be opportunities for that to take
14 place. Obviously in the earlier questioning
15 with those parties there are also
16 opportunities during the close of hearings for
17 all parties to make such statements or
18 information they want to pass on.

19 I think this approach is
20 slightly different than the arrangement I
21 spoke about this morning with respect to
22 somebody wanting to make a procedural
23 objection to the proceedings which is a little
24 different I think than Mr. McCarty had
25 intended. So with that, I am going to continue

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1 with my questions for Generation PGM.

2 So just want to make sure I
3 did close off the closure/post-closure line of
4 questioning for the moment. We will shift that
5 into that section of the topic specific, and I
6 did have some questions to Generation PGM
7 around process solids management facility and
8 groundwater impacts.

9 So we do know that there are
10 a number of businesses and residents along
11 Highway 17 and many of those properties are
12 served by groundwater wells and these wells
13 are located down-gradient of the PSMF.
14 Information regarding monitoring and
15 contingency plans was provided to the panel in
16 response to IR 4-4 and the panel recognizes
17 that a detailed plan would have to be
18 developed during any potential permitting
19 approval stage if the project is approved.

20 So question to GenPGM. Could
21 you describe what in any proposed mitigation
22 measures, monitoring, and contingency plans
23 you might consider appropriate to provide
24 assurances to the groundwater well users that
25 their groundwater is safe from any potential

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1 mine impacts.

2 MR. ANWYLL: Clear. Give me a
3 second and I'll caucus, please.

4 PANEL CHAIR: Okay.

5 MR. HALL: Craig Hall for the
6 record. Thank you for the question. We're
7 going to answer this in two parts. I'll just
8 speak to the PGM method design and the
9 measures in place or that will be in place to
10 minimize seepage from the facility and then
11 Michelle Fraser will speak to the groundwater
12 modelling program -- or monitoring program,
13 sorry.

14 So the perimeter embankments
15 from the process solids management facility
16 will include an HTPU geomembrane on the
17 upstream face of the embankment, and this
18 geomembrane will be tied into the bedrock
19 along the upstream toe of the embankment so
20 that we basically have, you know, a seepage
21 cutoff or low permeable barrier to minimize
22 seepage as much as reasonably possible through
23 the embankment.

24 And then during the
25 foundation preparation, the bedrock foundation

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1 will be evaluated to confirm the tie-in
2 details for the concrete plinth which anchors
3 the geomembrane to the bedrock, and in areas
4 such as the drainages that run through the
5 PSMF where, you know, there may be fractured
6 bedrock at a greater depth that can't be
7 addressed at surface, there will be in situ
8 grouting to basically lower the hydraulic
9 conductivity of those materials again to
10 minimize seepage.

11 Around the perimeter of the
12 PSMF there will be seepage collection basins,
13 and basically these basins collect any
14 potential seepage that does occur through the
15 embankments as well as the near surface
16 bedrock, and that collected seepage will be
17 pumped back with -- into the PSMF or into the
18 water management pond if it's on the east side
19 of the facility.

20 So I think with that,
21 Michelle Fraser will now speak to the
22 groundwater monitoring.

23 MS. FRASER: Michelle Fraser
24 for the record.

25 So the groundwater model was

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1 used to predict the seepage pathways and
2 timing of that seepage from the PSMF, and as
3 we saw in the presentation yesterday, the
4 pathways of seepage are towards surface water
5 receivers, the main pathway, and not towards
6 the water supply wells along Highway 17.

7 In addition, the travel times
8 are centuries to thousands of years from the
9 PSMF. And even when we look at the sensitivity
10 analysis that was done with the groundwater
11 flow model in the original effects assessment,
12 we still see that the pathways are still
13 consistent with surface water and that travel
14 times are still very long.

15 Having said that, Generation
16 PGM will be conducting a water supply well
17 inventory along that stretch of roadway to
18 confirm the number of users and the well
19 construction and the existing baseline
20 groundwater quality that they have. And then
21 in addition, there will be a detailed
22 monitoring program that accounts for these
23 predictions of effects.

24 So because there are long
25 travel times we will be placing monitoring

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1 wells immediately adjacent to the facilities
2 and then another row of monitoring wells at
3 some distance down-gradient from that so that
4 we can monitor the effects in a reasonable
5 timeframe to understand and to validate the
6 prediction of effects from the EA.

7 And there will be a series of
8 triggers and thresholds that if we are seeing
9 effects that are not consistent with the EA,
10 and I should even say that the triggers are
11 normally set to be more conservative than the
12 EA so you can alert to changing conditions
13 prior to a significant effect, and so these
14 triggers and thresholds will alert us to these
15 changing conditions and allow that flexibility
16 to address and accommodate the new
17 circumstances or to adjust the monitoring and
18 implementation new mitigation mercuries or
19 modify existing ones for the PSMF if required.

20 So that response plan, there
21 will be a response plan along with an adaptive
22 management plan that would include the options
23 for contingency measures should we see these
24 trigger threshold exceedances and that will
25 all be documented in the groundwater

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1 monitoring management plan that will be
2 developed through permitting with the
3 provincial regulators.

4 PANEL CHAIR: Thank you. I had
5 a follow-up question there when, Mr. Hall, you
6 were talking about the construct of the
7 geomembrane, and my question is related to
8 would there perhaps be areas of deeper or
9 coarser soils around the southern perimeter
10 where -- or other areas where a geomembrane
11 may be more difficult to install; so maybe
12 kind of looking at the effectiveness of that
13 geomembrane, and I recognize it's one
14 component, but just to get a sense of how that
15 works when you have differing types of
16 material in that area.

17 MR. HALL: Thank you for the
18 question, Madam Chair. So we have completed
19 site investigations around the perimeter of
20 the PSMF, in particular along the south side
21 between the residences and businesses that you
22 spoke to. We have a very good understanding of
23 the bedrock profile and as you noted, there
24 are some drainages that do have deeper
25 overburden in them but they are not

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1 significant depths where we still fully intend
2 to tie the geomembrane into the bedrock into
3 these areas.

4 If we encounter, say,
5 incised, steeper dipping drainages that are
6 narrow or, as you point out, cannot be
7 effective to install the geomembrane with the
8 plinth details, there would be levelling
9 concrete basically used to fill in those
10 narrow discontinuities in the bedrock and then
11 the grouting would proceed through that
12 levelling concrete so that we have a suitable
13 surface to tie the geomembrane in that's also
14 subsequently tied into the bedrock to provide
15 that low permeable barrier.

16 PANEL CHAIR: Thank you.
17 Appreciate that.

18 Okay. I do have some
19 questions related to groundwater/surface water
20 interactions. I know those have been mentioned
21 a couple times in responses. I have questions
22 for Generation PGM and also for Natural
23 Resources Canada.

24 So very quickly, Natural
25 Resources Canada's hearing submission notes

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1 that model results are presented on a
2 subwatershed basis, reporting the net change
3 in groundwater discharge to surface water for
4 the entire subwatershed, and that this
5 approach may overlook local variations at
6 individual waterbodies. It also notes that
7 reported changes in groundwater discharge in
8 select subwatersheds perhaps not consistent
9 with reported changes in groundwater
10 elevations, suggesting the possibility for
11 localized changes in groundwater discharge to
12 surface water that are not reported and may
13 impact that surface water flow.

14 Similar concerns in this
15 regard were raised by the Ontario Ministry of
16 Environment, climate change and parks.

17 So with that comment and
18 question to GenPGM. So Ministry of the
19 Environment, Conservation and Parks Ontario,
20 recommends that monitoring stations be
21 established in reference lakes to compare
22 non-impacted water levels to potentially
23 impacted water levels. MECP also recommends
24 that trigger values be developed for lake
25 features considering various climactic

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1 scenarios as well as the potential impacts of
2 the project and should be established at a
3 level that will ensure there is no loss for
4 fish habitat or natural functions of those
5 waterbodies.

6 My question to Generation PGM
7 is your thoughts or any concerns you may have
8 with these monitoring recommendations proposed
9 by MECP.

10 MR. ANWYLL: Thanks for the
11 questions. A couple things to answer there so
12 I will certainly caucus on this one.

13 PANEL CHAIR: Thank you.

14 MR. ANWYLL: Madam Chair, Drew
15 Anwyll here. We've got a few answers so we're
16 going to do it in a couple parts and we hope
17 we tick off all your questions in order, or
18 mostly anyways.

19 PANEL CHAIR: Thank you.

20 MR. ANWYLL: And we will start
21 with Michelle Fraser.

22 PANEL CHAIR: Thank you, Ms.
23 Fraser.

24 MS. FRASER: Michelle Fraser
25 for the record.

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1 So the groundwater flow model
2 was used to predict base flow to surface water
3 features on a watershed scale in the
4 assessment of effects for groundwater. That
5 was accounted for in the assessment of effects
6 for surface water.

7 And through the IR process in
8 CIAR 950, IR number 5-6, page 5, we did
9 delineate base flow to individual surface
10 water features for 10 of the surface water
11 features in and around the open pit, and that
12 was evaluated further through that IR.

13 And it's important to note
14 too that the component of base flow in total
15 stream flow is a very small percentage
16 compared to the total stream flow and so the
17 effects that we're seeing to groundwater base
18 flow really has a minor factor on the overall
19 effect to the streams which are predominantly
20 controlled by precipitation and runoff; so the
21 changes in catchment have a greater effect
22 than the changes in base flow to the surface
23 water receivers. And I'll pass you off to
24 Sheldon Smith who can speak to that and the
25 monitoring further.

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1 PANEL CHAIR: Thank you, Ms.
2 Fraser.

3 MR. SMITH: Thank you, Ms.
4 Fraser. Thank you, Madam Chair. Sheldon Smith
5 for the record.

6 I would just like to speak to
7 your comment about MECP's recommendation to
8 use reference lakes. I have no particular
9 issue at all with that recommendation, Madam
10 Chair. I actually think it's a good
11 recommendation and I welcome it, as well as
12 the comments that the Ministry also provided
13 around monitoring related to individual lakes
14 that Ms. Fraser just referenced, you know, we
15 assessed in IR 5-6 from a groundwater
16 discharge perspective.

17 PANEL CHAIR: Thank you, Mr.
18 Smith. I wonder could I just confirm then your
19 comment, the recommendation from MECP was to
20 develop trigger values for lake features. Is
21 that a commitment that's being made to do
22 that?

23 MR. SMITH: I'm going to have
24 to caucus for a moment, Madam Chair.

25 PANEL CHAIR: Okay.

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1 MR. ANWYLL: Drew Anwyll for
2 the record, Madam Chair. So in concept we are
3 aligned with the recommendations with MECP and
4 we will certainly develop those standards
5 post-closure EA with MECP as it would be a
6 requirement.

7 PANEL CHAIR: Thank you. Thank
8 you, Mr. Anwyll and Mr. Smith.

9 My follow-on question is to
10 Natural Resources Canada, and in your hearing
11 submission and presentation NRCAN recommends
12 that Generation PGM report forecasted changes
13 to groundwater/surface water interaction for
14 the individual surface waterbodies represented
15 in the numerical model and that reported flux
16 changes are consistent with reported changes
17 in groundwater elevations.

18 Could NRCAN clarify this
19 recommendation for the panel, please?

20 DR. BUNN: Thank you, Madam
21 Chair. This is Melissa Bunn for the record
22 from NRCAN.

23 PANEL CHAIR: Thank you, Dr.
24 Bunn, for joining.

25 DR. BUNN: I'll just respond

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1 to say that I do note that in the IR responses
2 there is two sets of responses where
3 Generation PGM has provided changes in
4 groundwater discharge to surface water, one
5 for a set of three lakes and then the one
6 mentioned by Ms. Fraser with the 10 changes.

7 The request from NRCAN was
8 related to subwatershed -- reported
9 subwatershed changes that didn't appear to be
10 consistent with the reported groundwater
11 elevation changes for subwatersheds 102, 103,
12 104, 106, 108 and 116.

13 And I'll agree with Ms.
14 Fraser that the groundwater discharge is a
15 small component of the overall surface water
16 flow in the features. My concern and the
17 reason for bringing this IR is two-fold. One
18 is that the groundwater model, although
19 uncertain as we've pointed out several times,
20 it should generally align with the
21 conceptualized response, and so if we're
22 seeing a subwatershed where there is drawdown
23 we would expect to see a decrease in
24 groundwater discharge to surface water, which
25 we do not always see in the results reported.

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1 The second factor is that
2 although changes in groundwater discharge
3 might be small, those changes could be
4 consequential for other valued ecosystem
5 components.

6 PANEL CHAIR: Thank you, Dr.
7 Bunn, for that recommendation.

8 And I would ask Generation
9 PGM a similar question related to the MECP
10 recommendations, whether you have any concerns
11 with these recommendations proposed by NRCAN.

12 MR. ANWYLL: Sorry, Madam
13 Chair, button problems on my side. Let me
14 caucus quickly.

15 Madam Chair, could you
16 restate your question for us quickly? We had a
17 technical discussion in the background.

18 PANEL CHAIR: So maybe I'll --
19 my question was about any concerns with the
20 recommendations from NRCAN. Perhaps I'll read
21 that back and if that is not clear I may turn
22 to NRCAN for clarification, but my question
23 was in NRCAN's hearing submission and
24 presentation they recommended that Generation
25 PGM report forecasted changes to

1 groundwater/surface water interaction for the
2 individual surface waterbodies represented in
3 the numerical model and that reported flux
4 changes are consistent with reported changes
5 in groundwater elevation. Dr. Bunn provided
6 some clarity. If there's more clarity needed
7 we can do that.

8 MR. ANWYLL: Thanks for
9 clarifying. Let me go to caucus once more
10 quickly please. Thank you, Madam Chair.

11 So we will develop the
12 recommendation from NRCAN through the
13 monitoring program and into permitting.

14 PANEL CHAIR: Thank you, Mr.
15 Anwyll. Appreciate that.

16 I'm just going to take two
17 minutes before I proceed with my next
18 question. Thank you.

19 --- Recess taken at 4:31 p.m.

20 --- Upon resuming at 4:34 p.m.

21 PANEL CHAIR: Hi, everyone. I
22 was looking at the clock and just want -- it
23 is Friday -- wanted to give everyone an idea
24 of what we plan to do.

25 So I mentioned earlier, given

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1 the number of questions we have, that we would
2 be continuing tomorrow and heard back from
3 folks. Thank you for that.

4 We will reconvene tomorrow,
5 but what I would like to do is ask two more
6 sets of questions. There are a number of
7 questions in between that. May take us just
8 beyond 5 o'clock but I do have a couple of
9 sets of questions that I would like to ask of
10 Generation PGM and some of the government
11 agencies before we wrap up for today. So just
12 give you an idea of timing for end of day.

13 Okay. So I'm just going to
14 shift to a question. We heard yesterday a
15 number of presentations and questions related
16 to PGM metals.

17 So these have been identified
18 by some participants as a potential
19 contamination of concern, and we recognize and
20 we did hear as well yesterday that there may
21 be limited scientific information at this time
22 and currently no federal or provincial water
23 quality parameters established in Ontario.

24 So looking for a response
25 from GenPGM to the recommendations provided by

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1 government agencies on establishing baseline
2 PGM concentrations and subsequent monitoring,
3 and my question to Generation PGM is is this
4 something that you have contemplated, are
5 intending to implement, and -- that's my first
6 question.

7 MR. ANWYLL: Thank you for
8 that one-part question, Madam Chair. We'll
9 caucus quickly.

10 Thank you for the time to
11 caucus, Madam Chair. Drew Anwyll for the
12 record.

13 So conceptually we recognize
14 that there are no standards available at this
15 point in time. We are certainly conceptually
16 willing to support MECP with us collecting the
17 data and sharing that with them for the goal
18 of further understanding down the road.

19 I would like to add that our
20 -- my technical experts, who probably don't
21 need to go into detail, did investigate when
22 the original IR came up, 5-18 I think it is,
23 of how -- what the detection limits are for a
24 number of those elements that were flagged
25 yesterday, and some of them are fairly

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1 problematic, as in ALS, which is one lab in
2 Canada and around the world, and for one of
3 the elements it's only tested in Europe.

4 So I would humbly suggest
5 that may be a bit of a challenge. But for the
6 platinum and palladium we can certainly
7 contribute to the gainful understanding and
8 growth of that.

9 PANEL CHAIR: Thank you. So I
10 take that as a commitment from Generation PGM
11 on those aspects you --

12 MR. ANWYLL: Working with
13 MECP, yes.

14 --- (Speaker Overlap)

15 PANEL CHAIR: So my question
16 is now to MECP.

17 We understand you've
18 indicated that typically you require
19 monitoring data for two years on a monthly
20 basis or three years on a quarterly basis to
21 establish a proper baseline. The panel
22 understands that to date Generation, and Mr.
23 Anwyl has confirmed this -- actually I can't
24 say Mr. Anwyl has confirmed this, but I
25 understand that PGMs have not yet been

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1 monitored in surface waters at this point in
2 time.

3 Could MECP though describe
4 the duration of monitoring that may be
5 required for Generation PGM to establish the
6 baseline for PGMs?

7 MS. GILLIAM-PRICE: It's
8 Jacinth Gilliam-Price her for the record.

9 As I mentioned in my
10 presentation, we do look for two years of
11 monthly, three years of quarterly baseline
12 sampling. So that doesn't necessarily have to
13 be done before construction if the project is
14 approved, but something definitely before
15 major construction or activities that might
16 impact nearby surface water receivers. So they
17 most likely would have sufficient time to
18 fulfill those requirements, and we would need
19 those for part of the application for
20 environmental compliance approval.

21 PANEL CHAIR: Thank you. Thank
22 you, Ms. Gilliam-Price.

23 This is a question to MECP,
24 again as a follow on and to Environment and
25 Climate Change Canada. Just let me take a

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1 moment.

2 You raise concern about
3 potential toxicity in water and you did
4 indicate the need for monitoring in order to
5 ensure that mitigation measures are
6 implemented if necessary.

7 Would you be able to explain
8 your understanding, and again I recognize
9 early science on this matter, but could you
10 explain your understanding of PGM toxicity
11 potential exposure pathways and is there a
12 good understanding of the level at which
13 toxicity occurs.

14 MS. GILLIAM-PRICE: Perhaps
15 I'll ask if we can caucus for a moment.

16 PANEL CHAIR: Yes, certainly.
17 Thank you.

18 MR. CLAVERING: Rob Clavering
19 from Environment and Climate Change Canada for
20 the record. I'll also caucus.

21 PANEL CHAIR: Thank you, Mr.
22 Clavering. Mr. Anwyll, you have your hand up,
23 but I'm so sorry, I can't see that so --

24 MR. ANWYLL: I acknowledge
25 that. Just while they are caucusing if I

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1 could, I want to confirm the commitment that
2 we're willing to undertake.

3 So if I understand correctly,
4 what I intended to communicate was there is no
5 standard for PGMs. So the requirement for an
6 ECA to have two years of testing before that
7 ECA is issued, that wouldn't be what I would
8 be willing to commit to. I'm willing to
9 collect the data for a period of time and
10 certainly share that with MECP. So if that was
11 our understanding of what the commitment was,
12 I just wanted to confirm that.

13 PANEL CHAIR: Thank you for
14 confirming. I actually have a couple of
15 follow-up questions for MECP but -- in that
16 vein, but I'll -- thank you for raising that
17 and I'll wait to do my follow-up.

18 MR. ANWYLL: Okay. So if I
19 need to clarify I'm happy to. I'll stand down.

20 PANEL CHAIR: Thank you. I
21 appreciate it. Thank you.

22 I see you. Are you unmuted.
23 Are you ready to proceed?

24 MS. GILLIAM-PRICE: It's
25 Jacinth Gilliam-Price from MECP.

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1 So we do agree and recognize
2 the proponent's commitment to monitor for
3 these kind of upcoming new arising parameters.
4 We also recognize that it is rather premature
5 to look at developing criteria any time in the
6 next year or so.

7 So we would look to the data
8 that's collected from the proponent to enhance
9 our understanding of that, and we would be
10 working with our standards development branch
11 as well as work with NRCAN to better
12 understand potential toxicity pathways in
13 hopes of developing an appropriate criteria
14 that is necessary, depending on the results
15 from monitoring data.

16 PANEL CHAIR: Thank you, Ms.
17 Gilliam-Price. I do have a couple of
18 follow-ups, but maybe, Mr. Clavering, I'll ask
19 you to respond to my question.

20 MR. CLAVERING: Sure. Robert
21 Clavering from Environment and Climate Change
22 Canada for the record.

23 So at Environment and Climate
24 Change Canada we have no evidence from other
25 palladium mines in Ontario that palladium

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1 would be found in the effluent. We have been
2 satisfied to date with the proponent's
3 responses to the IRs as it relates to this
4 issue and we would like to note that the
5 proponent would be required to meet the
6 requirements of the Fisheries Act as well as
7 the metal and diamond mining effluent
8 regulations, and we also acknowledge that it
9 is in the early research stages in terms of
10 PGM toxicities and those exposure pathways in
11 terms of what those would look like.

12 PANEL CHAIR: Fair enough.
13 Thank you.

14 Maybe, Ms. Gilliam-Price, I
15 had a question just around the timelines we
16 talked about a little bit earlier with respect
17 to establishing a proper baseline, the two and
18 three-year. Is there an optimum time to do
19 this? Did you mention that it wouldn't
20 necessarily have to be done before
21 construction, but again more is there an
22 optimum time given that we're establishing a
23 baseline, and again understanding that this is
24 early stages of information that's available
25 to scientists, experts like yourself who will

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1 be involved with others in looking at this and
2 potentially developing guidelines or standards
3 in the future. Just curious if there's
4 something you could respond to with respect to
5 that.

6 MS. GILLIAM-PRICE: Could I
7 just ask for just a few moments to caucus.

8 PANEL CHAIR: Sure. Thank you.

9 MS. GILLIAM-PRICE: So as with
10 most baseline collection projects, we would
11 recommend, now that this concern has been
12 highlighted, that baseline sampling for
13 platinum group metals be started as soon as
14 possible, especially before site disturbance,
15 but also before discharge is proposed. So the
16 sooner the better to get that baseline data in
17 before the site is disturbed too much.

18 PANEL CHAIR: Thank you for
19 that clarification. Appreciate that.

20 I think I have one more
21 question, if I may, and this is to MECP first
22 and then to Generation PGM. It's with respect
23 to CORMIX modelling and the recommendation --
24 that MECP has recommended that Generation PGM
25 reevaluate the CORMIX modelling considering

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1 quantity for inflows and outflows to the Hare
2 Lake and the maximum predicted effluent
3 discharge, and I wonder if MECP could clarify
4 when they envision this reevaluation of the
5 CORMIX modelling to be conducted by GenPGM.

6 MS. CAMPBELL-PATTERSON: Hi
7 there. This is Brooke Campbell-Patterson with
8 the MECP for the record.

9 I would expect this CORMIX
10 modelling to at least be done prior to the --
11 if the EA is approved -- prior to the ECA
12 pre-consultation. We have standard processes
13 within MECP that we have pre-consultation with
14 proponent prior to submission of an ECA
15 package, so we would recommend that they
16 complete this modelling and submit it to us
17 for review and approval prior to that ECA
18 package being accepted by the Ministry. But we
19 also recognize that the EA needs to identify
20 all valued ecosystem components and understand
21 worst case scenario, so if that's the case we
22 would also potentially recommend it as soon as
23 possible to understand what is the worst case
24 scenario of the discharge.

25 PANEL CHAIR: Thank you for

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1 the clarification. And I would just have one
2 last question to Generation PGM with respect
3 to that. Any concerns regarding this
4 recommendation by MECP?

5 MR. ANWYLL: No, we would
6 recognize that the CORMIX modelling would be
7 required before the ECA.

8 PANEL CHAIR: Thank you very
9 much. This does conclude our session for
10 today, 5 to 5:00.

11 A couple of things -- just
12 make sure I cover this. Tomorrow we plan on
13 finishing our questions for the aquatic
14 environment, but as we conclude today's
15 session I did want to let the federal and
16 provincial departments know that we were able
17 to get through all of the questions we have
18 for you on surface and groundwater so we do
19 not have any specific questions to ask you
20 tomorrow under the current planning scenario.
21 And we also at this point are not planning on
22 questions to Indigenous groups.

23 Generation PGM, we still have
24 some questions for you. So while all are
25 welcome to join tomorrow, I just wanted to let

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1 you know we would not at this point be
2 planning on asking questions of Indigenous
3 groups, Federal, provincial departments.

4 So just wanted to make sure
5 that was clear. Since we will be finishing our
6 questions on the aquatic environment we would
7 -- tomorrow as planned, we would then of
8 course turn to Generation PGM for the closing
9 of that -- for any closing remarks they have
10 on that particular topic session, as we did in
11 the general sessions and as I outlined in my
12 remarks and our procedures.

13 I think we talked about 9
14 o'clock tomorrow. I've got some hands up.
15 Sorry. Mr. Barretto.

16 MR. BARRETTO: Yes, Madam
17 Chair. One clarification, and thank you for
18 the information regarding the schedule for
19 tomorrow.

20 I understand we have a
21 fisheries presentation that is part of the
22 aquatic environment session. Generation's
23 understanding was that it would present a
24 closing at the end of the entire aquatic
25 environment session including fisheries and

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1 the other water matters, but we are of course
2 in the panel's hands, if you prefer the
3 closing to be broken up between the different
4 aquatic environment matters. Thank you.

5 PANEL CHAIR: Thank you, Mr.
6 Barretto. We are fine with having those
7 closing at the end of the fish session, which
8 is currently scheduled for Monday, so if that
9 works for Generation PGM that would be fine
10 with the panel. Thank you.

11 And just then to confirm, we
12 would plan on having the fish presentations. I
13 think right now we are scheduled to have five
14 or six -- perhaps maybe four if my count is
15 right, on Monday followed by questions on the
16 fish session.

17 So I think I've covered
18 everything with respect to scheduling and I
19 want to thank everyone once again who
20 participated today. Good discussion. Really
21 appreciate your time and attention, and we'll
22 see some or all of you tomorrow morning at 9
23 o'clock. Thank you very much.

24 --- Whereupon at 5:00 p.m. the proceedings were
25 adjourned till Saturday, March 19, 2022 at

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1 9:00 a.m.