



MACKENZIE VALLEY LAND

AND WATER BOARD

DE BEERS CANADA INC. (De Beers)

- SNAP LAKE PROJECT

MV2019L2-0004 and MV2017D0032

PUBLIC HEARING

THE BOARD:

Mavis Cli-Machaud) Chairperson
Camilia Zoe-Chocolate) Board Member
Kimberly Fairman) Board Member
Mason Mantla) Board Member
Tanya T. MacIntosh) Board Member

HELD AT:

Explorer Hotel- Katimavik Room

Yellowknife, NT

November 27, 2019

Day 2 of 2

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1	LIST OF UNDERTAKINGS		
2	No.	DESCRIPTION	PAGE NO.
3	5	GNWT to provide an updated security	
4		estimate, in an Excel spreadsheet and	
5		as a PDF, to account for the updated	
6		security estimate that is due to be	
7		submitted by De Beers on December 16,	
8		2019, per Undertaking No. 2. This is	
9		to include the proposed scenario of no	
10		constructed wetlands. A concordance	
11		table shall also be included that	
12		identifies the updates and the	
13		locations. This is due by January 24,	
14		2020.	77
15	6	GNWT to provide clarification on	
16		triggers in the proposed Water Licence	
17		that could be used to initiate the	
18		Plume Delineation Study and a second	
19		set of Effluent Quality Criteria (EQC).	
20		This is due by January 24, 2020	98
21			
22			
23			
24			
25			

1 --- Upon commencing

2

3 THE CHAIRPERSON: Good morn -- good
4 morning. We'll -- if everyone take their seats, we'll
5 start the process.

6

7 (BRIEF PAUSE)

8

9 THE CHAIRPERSON: Good morning. We'd
10 like to begin.

11 Good morning, everyone. I'd like to
12 begin by welcoming all the participants to the
13 continuation of this process. My name is Mavis Cli-
14 Michaud, and I'm the Chair of the Mackenzie Valley
15 Land and Water Board.

16 Today, we're scheduled to sit until
17 approximately 5:00 p.m. I would like to provide a
18 brief recap of yesterday's proceeding.

19 Opening statements were provided by De
20 Beers Canada Incorporated, Environment and Climate
21 Change Canada, and the Government of -- and the
22 Government of the Northwest Territories.
23 Presentations were provided by De Beers Canada
24 Incorporated and Environment and Climate Change
25 Canada.

1 This morning, we will continue where we
2 left off. I will now turn it over to the Government
3 of the Northwest Territories for their presentations.

4 And please be reminded that all
5 questions should be focused on seeking clarity on
6 issues that will assist the Board in their decisions
7 relating to the land use permit amendment application
8 in the water license renewal application, and out of
9 respect for all others in the room, this opportunity
10 to ask questions should not be used to advocate
11 positions or express opinions.

12 The Government of the Northwest
13 Territories, your presentation.

14

15 (BRIEF PAUSE)

16

17 PRESENTATION BY GNWT:

18 MR. NATHEN RICHEA: Good morning,
19 Madam Chair. My name is Nathen Richea, and I am the
20 director of the Water Management and Monitoring
21 Division with the Department of Environment and
22 Natural Resources, Government of the Northwest
23 Territories.

24 I'm happy to be here today to present
25 the GNWT's rep -- recommendations related to the Snap

1 Lake Diamond Mine water license renewal. On the panel
2 with me today, I have Dr. Barry Zajdlik, of Zajdlik
3 Associates, and Ms. Lara Fletcher, of Brodie
4 Consulting Limited.

5 In addition, there are other ENR
6 support staff present. Notably, Mr. Bill Pain, Ms.
7 Laura Fletcher -- or sorry, More -- Laura Malone, Ms.
8 Bryana Matthews, who also may assist us here today.

9 And I would also like to note that the
10 inspector for the Snap Lake Mine, Mr. Joe Heron, is
11 also here from the Department of Lands. ENR's legal
12 counsel was also here today, Mr. Rohan Brown, and Mr.
13 Mark Ishack.

14 Madam Chair, the GNWT appreciates the
15 opportunity to present our technical interventions and
16 describe our concerns and issues with this
17 application. The GNWT has attended technical sessions
18 and par -- participated in all phases of the
19 revelatory process to date.

20 In my presentation, I will briefly
21 outline the GNWT's concerns and recommendations to the
22 Board. As identified on the slide, this will include
23 the water license renewal application, the Final
24 Closure and Reclamation Plan, the effluent discharge
25 locations, effluent quality criteria, and water

1 quality models, surface water and biological
2 monitoring, the North Pile, and security.

3 As part of the water license renewal
4 application, De Beers submitted the Final Closure and
5 Reclamation Plan and supporting documents. However, I
6 would like to note that De Beers has significantly
7 altered the plan for final closure and reclamation
8 during the review process.

9 In our opinion, these changes were not
10 founded on reviewer input or preferences. Concerns
11 with these changes has been detailed in the GNWT's
12 written intervention.

13 One (1) key concern I would like to
14 highlight today is while proposing these changes, De
15 Beers has only provided updates to documents that are
16 directly affected. This has resulted in
17 inconsistencies in the documents supporting this
18 renewal application. The late nature of these changes
19 to the application has also created review timing
20 difficulties during this review process.

21 Madam Chair, our first recommendation
22 for the Board is the GNWT recommends that the
23 Mackenzie Valley Land and Water Board require the
24 Final Closure and Reclamation Plan and supporting
25 documents be resubmitted for approval post-issuance of

1 the water license. The Mackenzie Valley Land and
2 Water Board should ensure sufficient review time is
3 available for each of these documents.

4

5 (BRIEF PAUSE)

6

7 MR. NATHEN RICHA: Madam Chair, the
8 water license is granted to regulate activities at the
9 site. The water license is a legal instrument and
10 should therefore include conditions that identify the
11 required components of the Final Closure and
12 Reclamation Plan and supporting documents.

13 It has become apparent during the
14 review process that the conditions of the draft water
15 license proposed, and the proposed Final Closure and
16 Reclamation Plan do not include the necessary detail.
17 Outstanding items have been identified during the
18 review process that are required in a final closure
19 and reclamation plan, according to the closure
20 guidelines which were released in 2013.

21 Of particular concern is the North Pile
22 design. De Beers has explained that the results of
23 closure cover field trials are proposed to be
24 submitted ninety (90) days prior to construction.
25 These trials will inform the final North Pile design

1 while also dictating closure criteria and response
2 frameworks.

3 The GNWT is concerned with this request
4 to develop closure criteria in response to frameworks
5 based on design as opposed to determining acceptable
6 closure objectives and criteria independent of field
7 trials. Developing closure objectives and criteria
8 independently typic -- is the typical process for
9 divining -- developing final closure plans.

10 The consequences of developing them
11 based on design is that they may result in a lower
12 closure standard for the North Pile. Furthermore, De
13 Beers is proposing to submit this information with an
14 extremely short time period for -- prior to
15 construction. In our opinion, it's not possible to
16 obtain comments and make a decision on such a large
17 component of the final closure within ninety (90)
18 days.

19 The GNWT recommends that the Mackenzie
20 Valley Land and Water Board require all closure
21 criteria and response frameworks be submitted as part
22 of the Final Closure and Reclamation Plan, with
23 sufficient time for public review and approval by the
24 Mackenzie Valley Land and Water Board.

25 The Government of the Northwest

1 Territories recommends that in addition to components
2 that have been submitted with the Final Closure and
3 Reclamation Plan, the Mackenzie Valley Land and Water
4 Board require a submission of all outstanding items
5 including, but not limited to, the final Landform
6 Execution Plan, the Toxicity Testing Design Plan for
7 the water management pond, and the Reclamation Plan
8 for the water management pond, if wetlands are not
9 constructed.

10 During the review process, the
11 Government of the Northwest Territories expressed
12 concerns regarding the ability of the proposed closure
13 criteria to adequately and clearly measure successful
14 closure, such as how closure criteria will be used to
15 determine that the closure objective has been met, how
16 the closure criteria links to the closure design, and
17 how the closure criteria will be measured as part of
18 the post closure monitoring programs.

19 It is important for each stage of the
20 closure process to be consistently linked to the
21 closure objectives and the criteria to the -- to
22 ensure the successful closure and relinquishment of
23 the mine can occur.

24 The GNWT recommends that the conditions
25 of the water license and schedules ensure that the

1 link to closure objectives and closure criteria is --
2 is incorporated into the various phases of closure
3 documents, such as design and construction plans,
4 monitoring and management plans, reclamation
5 completion reports, and the performance assessment
6 reports.

7 Moving on to physical stability, De
8 Beers has proposed, De Beers has proposed physical
9 stability closure criteria to include acceptable
10 results of visual monitoring, which will correspond
11 with measurable criteria in the response framework.

12 However, it's not clear to the GN --
13 GNWT how acceptable results of visual monitoring can
14 correspond to measurable close -- closure criteria.
15 The GNWT's opinion on closure criteria is that they
16 must be clear and measurable.

17 Closure criteria should be included in
18 the final closure and reclamation plan and relevant
19 monitoring programs to adequately assess the closure
20 condition.

21 Regarding physical -- physical
22 stability criteria, the GNWT's first recommendation is
23 that the post-closure site-wide physical stability
24 monitoring plan, with a response framework for each
25 mine component, be required as a condition of the

1 water licence.

2 This recommendation was based on a
3 response to comments made by De Beers during the
4 review process. However, in response to
5 interventions, De Beers explained that the preference
6 is to keep the monitoring plans for physical stability
7 separate by component instead of site-wide. The G --
8 GNWT agrees with this approach, providing that each
9 monitoring plan includes an associated response
10 framework as recommended.

11 Our second recommendation for this
12 topic is that the water licence require that the final
13 Closure and Reclamation Plan include closure criteria
14 that will be used to assess whether the closure
15 objective has been met.

16 In their water licence application, De
17 Beers proposed one (1) mixing zone during closure and
18 two (2) during the post-closure period. At the
19 technical workshop, De Beers requested the ability to
20 discharge from three (3) different locations
21 concurrently prior to the gravity fed collection
22 system being in place, notably the influent storage
23 ponds and the water management pond.

24 Of note, during closure, water pumped
25 to the underground is assumed to report to Snap Lake,

1 and is there -- therefore, a potential fourth source
2 of discharge. To date, the different scenarios
3 presented by De Beers do not appear to present a
4 situation that requires discharge from both influent
5 storage ponds and the water management pond at the
6 same time.

7 In accordance with the Board's Water
8 and Effluent Quality Management Policy, the deposit of
9 waste is to be regulated such that the amount of waste
10 deposited to the receiving environment is minimized.

11 The GNWT recommends that the Mackenzie
12 Valley Land and Water Board minimize the amount of
13 waste that is to be deposited to the receiving
14 environment, consistent with the Water and Effluent
15 Quality Management Policy.

16 The GNWT recommends that the Mackenzie
17 Valley Land and Water Board consider the cumulative
18 effects of multiple effluent discharge points to Snap
19 Lake prior to approving multiple point source
20 discharges, including the pumping of site water to the
21 underground.

22 As previously mentioned, De Beers has
23 made several changes to their application during the
24 review process, including changes to the proposed
25 effluent quality criteria, or EQC, and the number and

1 size of mixing zones.

2 To reflect these changes, De Beers
3 provided updated versions of the Snap Lake Effluent
4 Quality Criteria Report for closure and post closure,
5 as well as the Snap Lake Hydrodynamic and Water
6 Quality Modelling Report, and the Downstream Lakes
7 Water Quality Report.

8 As each of these plans have
9 implications on EQC development, the GNWT
10 recommendations on each of these items is outlined in
11 the next slides.

12 The first topic we'd like to discuss
13 today is the mixing zone configuration. De Beers
14 proposes to maintain the existing 200 metre mixing
15 zone size during closure and post closure. The GNWT
16 notes that the 200 mix -- 200 metre mixing zone size
17 was approved previously based on operational discharge
18 volumes that were significantly higher than the
19 maximum discharge volumes predicted during closure and
20 the post closure period. The mixing zone size should,
21 therefore, be reduced based on lower discharge volumes
22 expected during the closure and post closure period.

23 Overall, the GNWT is concerned with the
24 method De Beers has employed to determine the need and
25 size of Snap Lake mixing zones. Their approach was --

1 has created challenges with the development of SNP
2 sites for closure and the post -- post closure
3 periods, as well as subsequent development of AMP
4 benchmarks and EQC.

5 The GNWT notes that De Beers' proposal
6 does not align with the overall closure goal of
7 returning the site to closure -- to as close as
8 possible to pre-development conditions, nor does it
9 align with the guidelines for effluent mixing zones,
10 which state that mixing zones should be as small as
11 recently possible and not be used as a surrogate for
12 reasonable or practical water treatment.

13 The GNWT notes that the mixing zones
14 size appears to be driven by achievability without
15 treatment. De Beers has noted that one (1) of the
16 reasons the proposed post-closure mixing zone size
17 increase from one hundred meters to 200 metres was to
18 provide an opportunity to present a closure scenario
19 for the Snap Lake Mine that does not depend on
20 treating nitrate using the trust -- constructed
21 wetlands.

22 Madam Chair, the GNWT strongly believes
23 that mixing zones should be as small as possible and
24 does not support larging -- larger mixing zones to
25 eliminate the need to treat discharge.

1 Furthermore, the GNWT lacks confidence
2 that a 200 metre mixing zone post closure is
3 necessary, given the finite amount of nitrate in the
4 North Pile, the attenuation of nitrate concentrations
5 expected within -- with time, and the model likely
6 over-predicts concentrations.

7 The GNWT is also concerned that De
8 Beers has removed the requirement for a plume
9 delineation study from the proposed draft water
10 licence, stating that it's no longer required as the
11 volumes of water discharged to Snap Lake is
12 drastically reduced and the quality of effluent is
13 improved.

14 The GNWT notes that while the discharge
15 volume has reduced for some parameters, the effluent
16 quality has worsened compared to the treated
17 discharge during operations. Further, the current
18 effluent quality, for some parameters, is higher than
19 predicted effluent quality submitted in the initial
20 water licence application.

21 Madam Chair, the GNWT's recommendations
22 on this topic are as follows: The GNWT recommends
23 that the Mackenzie Valley Land and Water Board not
24 approve the proposed mixing zone at this time due to
25 the overt conservative assumptions that were used in

1 the linked models.

2 The exact mixing zone dimensions for
3 each effluent discharge location should be deter --
4 should be determined and -- and included in the SNP,
5 or Surveillance Network Program, after plume dela --
6 delineation studies have been completed.

7 The GNWT recommends that in the
8 interim, the mixing zones could be set at 200 metres
9 for the main site diffuser and a hundred metres for
10 the east and west influent storage ponds.

11 Madam Chair, we'd like now to move on
12 to the North Pile runoff model inputs as it has
13 important implications on the water quality
14 predictions, subsequent screening of parameters of
15 potential concern, and the effluent quality criteria
16 developed for the closure and post closure period.

17 As discussed in our intervention, the
18 GNWT has two (2) primary concerns with the predicted
19 quality of the North Pile inflows: first, that the
20 model assumptions include diluted concentrations from
21 the North Pile runoff and seepage; and second, that
22 the assignment of typical site water runoff chemistry,
23 SNP 02-05, during May and June, which was lower --
24 which has a lower concentration in compared -- in
25 comparison to North Pile seepage and run-off, SMP 02-

1 02.

2 Our first concern relates to the
3 decision by De Beers to select SMP 02-02 to be the
4 most representative water quality for the North Pile
5 run-off.

6 The GNWT disagrees with this, given
7 that the water quality -- given that water quality
8 data exists for the North Pile perimeter sumps.

9 SMP 02-02 represents all water
10 collected from the perimeter wall collection system,
11 including seepage and run-off from the North Pile.

12 Run-off from the catchment areas, other
13 than the North Pile and direct precipitation. As a
14 result, there is a dilution of seepage and run-off
15 from the North Pile, inherent in the measured
16 concentrations at this location.

17 When this water chemistry is then
18 assigned to the North Pile seepage and other
19 contributing sources to the sumps are assigned water
20 chemistry of stream one, this dilutes the North Pile
21 water quality, which is used in the model.

22 Sorry, I think we got mixed up on the
23 slides here.

24 Our second concern is that De Beers
25 assumed that once the North Pile cover is in place,

1 water will sheet off and not interact with processed
2 kimberlite, as the processed kimberlite will be
3 frozen. Therefore, for May and June, the run-off is
4 assigned a water chemistry equal to that of SMP 02-05,
5 which is relatively clean compared to the North Pile
6 seepage and run off from those months.

7 Once the active layer has melted, the
8 run-off is assumed to infiltrate into and interact
9 with the processed kimberlite.

10 During this period, water chemistry is
11 once again assigned SMP 02-02. However, the
12 assumption that the processed kimberlite will remain
13 frozen during winter, including May and June, cannot
14 be confirmed until after the cover is in place.

15 Madam Chair, the GNWT recommends that
16 the site water quality model be updated to include the
17 following to inform predicted water quality conditions
18 in the Snap Lake post-closure.

19 First, that thermal monitoring
20 assessments should be included, including the depth of
21 thaw and a time needed for the North Pile to freeze
22 and thaw.

23 To better support the assumption that
24 there will be a substantially reduced contribution for
25 processed kimberlite to load to loadings during the

1 May -- during May and June with placement of the
2 cover.

3 The GNWT also included a recommendation
4 that the model should include a sensitivity analysis
5 with a scenario that assigns SMP 02-02 water chemistry
6 to May and June seepage and run-off from the North
7 Pile perimeter water collection system for some time
8 after the cover is place.

9 However, based on De Beers response to
10 interventions, the GNWT now understands that 50
11 percent of the inflow from the North Pile during May
12 and June was assigned water chemistry from SMP 02-02.

13 With this clarification from De Beers
14 and the commitment to conduct thermal monitoring once
15 the cover is in place on the North Pile, this
16 recommendation may be removed from the GNWT's list of
17 recommendations before the Board.

18 And finally, the model should include a
19 North Pile run-off model input based on most -- the
20 most representative data available with the least
21 amount of dilution with rationale and sensitivity
22 analysis to support the selection.

23 The third topic as it relates to the
24 effluent quality criteria development is that toxicity
25 -- is that of toxicity modifying factors.

1 As a result of discharge from the water
2 management pond at Snap Lake during closure, predicted
3 hardness concentrations in Snap Lake are expected to
4 increase over time.

5 De Beers proposes to apply hardness
6 dependent AEMP benchmarks based on measurable hardness
7 concentration at the proposed mixing zone boundaries.

8 In essence, De Beers proposes to use
9 anthropogenically increased hardness to allow higher
10 discharge limits by adjusting their hardness dependent
11 AMP benchmarks, and thus EQC.

12 The GNWT does not support this
13 approach. To clarify, we're not recommending the use
14 of background hardness that existed prior to
15 operations, but rather the toxicity modifying factors
16 should reflect the existing ambient conditions at the
17 beginning of the closure period.

18 The GNWT notes that increased
19 concentrations of parameters of potential concern and
20 the effluent would increase the size of the zone of
21 influence over time.

22 In the case of Snap Lake entering
23 closure, the expectation should be that the zone of
24 influence should decrease with time, and that the site
25 is returned to pre-development conditions wherever

1 possible.

2 Madam Chair, the GNWT recommends that
3 the AMP benchmark should be recalculated using the
4 ambient hardness concentration from the beginning of
5 the closure period, prior to the effluent discharge,
6 for parameters where toxicity is affected by hardness.

7 The GNWT recommends that the screening
8 process for parameters of potential concern and
9 development of updated EQC be revised based on the
10 updated AEMP benchmarks.

11 Moving on to selected parameters of
12 potential concern. In selecting parameters of
13 potential concern, De Beers eliminated all parameters
14 from the screening that did not have predictions, did
15 not have a toxicity-based guideline, or did not have
16 an AEMP benchmark. As well, total petroleum
17 hydrocarbon was also eliminated.

18 De Beers rationale for the exclusion of
19 total petroleum hydrocarbon is that there is no
20 mining-related sources in closure or post-closure.

21 However, the GNWT notes that there is a
22 tank farm on-site and that heavy machinery will be
23 required to work at the site until reclamation is
24 complete.

25 As such, the rationale to remove total

1 petroleum hydrocarbons is not supported by the GNWT.

2 In version 2 of the EQC report, De
3 Beers revised the screening process to screen
4 predicted concentrations against 100 percent AMP
5 benchmarks instead of the 25 percent AMP benchmarks
6 which was used in version 1 of the plan.

7 De Beers rationale was that this method
8 aligns with the EQC development for operations, and
9 that this method provides a closure scenario where
10 wetlands are not required.

11 Since De Beers is entering the closure
12 phase with a reduced monitoring frequency, GNWT
13 supports a more precautionary level of assessment
14 given the variable nature of water quality on the
15 site.

16 Screening against 75 percent of the AMP
17 benchmarks allows an additional level of protection
18 for the receiving environment by increasing the
19 likelihood of parameters being screened in. This also
20 allows the ability for a response to conditions that
21 result in water quality that approaches 75 percent of
22 the AMP benchmarks during the closure period.

23 Madam Chair, the GNWT's recommendation
24 on this topic are as follows:

25 The GNWT recommends that the analyte

1 (sic) list for screening parameters of potential
2 concern include parameters that do not have a
3 toxicity-based guideline.

4 The GNWT recommends that De Beers use a
5 75 percent AMP benchmark for screening potential
6 parameters of concern and development of effluent
7 quality criteria.

8 The GNWT recommends that the Mackenzie
9 Valley Land and Water Board retain total petroleum
10 hydrocarbons as a resulted parameter until a
11 remediation at the site is complete.

12 Now that we've discussed our concerns
13 with the various steps to develop F1 quality criteria,
14 we'd like to present our concerns regarding the EQC
15 themselves.

16 In their application, De Beers proposed
17 to reduce the number of effluent quality parameters
18 during closure from 18 to 4, specifically nitrate
19 total suspended solids, PH and faecal coliforms.

20 During the review process, De Beers
21 revised the proposed -- their proposal, such that the
22 proposed post-closure maximum average concentration
23 for nitrate has increased from 25 milligrams per
24 litre, to 60 milligrams per litre. This represents a
25 140 percent increase in the original proposal.

1 The proposed maximum grab concentration
2 has also increased from 50 milligrams per litre to 80
3 milligrams per litre.

4 The GNWT does not support EQC for
5 closure and post-closure that are higher than that was
6 -- that was allowed or existed during operations.

7 The GNWT's concern that the nitrate EQC
8 proposed may be unnecessary, particularly given the
9 level of conservatism in their modelling.

10 Further, the GNWT notes that the
11 proposed nitrate EQC and AMP -- AMP benchmarks may not
12 meet measure 1 of the report of EA.

13 As operations have ceased, effluent
14 water quality should improve relatively to operational
15 conditions, and therefore EQC should also be lower.

16 The proposed reduction in regulated
17 parameters, coupled with the increased maxable
18 allowable concentration introduces the risk that
19 discharge to Snap Lake will have elevated
20 concentrations of other contaminants, compared to
21 operations.

22 Without additional EQC, elevated
23 concentrations on unregulated parameters may not be
24 detected until action levels are triggered within the
25 AEMP or the Aquatic Effects Monitoring Program. This

1 creates the potential for adverse impacts to Snap Lake
2 water quality.

3 Madam Chair, our recommendations
4 regarding effluent quality criteria are as follows:

5 The GNWT recommends that the existing
6 EQC remain in the closure and post-closure license on
7 an interim basis, until such time as De Beers has
8 updated models and the AMP benchmarks and has
9 submitted these updates in a revised effluent quality
10 criteria report.

11 The GNWT recommends that the Mackenzie
12 Valley Land and Water Board set numerical site
13 specific water quality objectives for total dissolved
14 solids and constituent ions of concern for the closure
15 and post-closure period to ensure compliance with
16 measure 1 of the report of EA.

17 As well, the GNWT recommends that EQCs
18 adopted in the water license align with the pollution
19 prevention principles in objective 2 of the Mackenzie
20 Valley Land and Water Board water and effluent quality
21 management policy.

22 Finally, the GNWT recommends that there
23 be a condition in the water license requiring monthly
24 representative water quality samples from sump 3 and
25 sump 5 and the water management pond to assess changes

1 in water quality over the closure -- closure period.

2 The condition should include updated
3 modelling based on this data to inform selection of
4 parameters of potential concern and derivation of
5 effluent quality criteria for post-closure.

6 Madam Chair, I would now like to move
7 on to surface water and biological monitoring.

8 De Beers proposes to remove a number of
9 SNP stations during the closure and post-closure,
10 stating that additional monitoring for acid generation
11 is not warranted.

12 The GNWT notes that additional
13 parameters, such as metals and nitrates, are also
14 contaminants of concern, and that in 2018 several SMP
15 stations, or surveillance network program sites,
16 exceeded the existing effluent quality criteria.

17 The GNWT concludes that De Beers has
18 not provided sufficient rationale for eliminating
19 sites from the monitoring program, particularly those
20 that have demonstrated exceedances of current EQCs and
21 the AMP benchmarks.

22 Madam Chair, the GNWT recommends that
23 all existing surveillance network stations be retained
24 in the new water licence until sufficient evidence is
25 provided to demonstrate whether or not higher

1 concentrations measured at the current SNP locations
2 are indicative of a continuing trend during active
3 closure and, if so, provide a description of the
4 actions that will be taken to address them.

5 The GNWT recommends that the water
6 licence include a condition that, should De Beers wish
7 to remove sta -- a station from the surveillance
8 network program, a report be submitted to the
9 Mackenzie Valley Land and Water Board for approval
10 that includes potential trends and metal leaching for
11 each of the SNP sites that are proposed to be
12 eliminated and any previous accedences at each
13 station.

14

15 (BRIEF PAUSE)

16

17 MR. NATHEN RICHEA: Regarding
18 uncontrolled runoff monitoring stations, De Beers
19 discusses sediment releases from uncontrolled runoff
20 during closure and post-closure but did not include a
21 runoff station in this proposed -- in their proposed
22 SNP program.

23 The GNWT's concerned that sediment
24 releases could occur from uncontrolled runoff is
25 stations are not established prior to the site

1 regrading.

2 The GNWT recommends that a sediment --
3 that sets -- that sediment and erosion control plans
4 be required for remediation activities that will occur
5 within 150 metres of Snap Lake.

6 The GNWT recommends that the Mackenzie
7 Valley Land and Water Board require that surveillance
8 network program stations be determined prior to
9 commencement of recreating at the site within 100
10 metres of Snap Lake during the closure period.

11 Moving on to monitoring frequencies.
12 Throughout this process, despite various proposed
13 changes to water quality management plans, effluent
14 quality criteria and mixing zone size, De Beers has
15 not updated the associated monitoring frequencies.

16 The GNWT's concerned that with the
17 proposed monitoring frequencies there's a risk that
18 the effluent could exceed the maximum average
19 concentration EQC for a given parameter for an entire
20 open water season prior to there being sufficient
21 monitoring data to su -- to assess compliance.

22 For example, the proposed sampling
23 frequency for SNP 02-02b, the eff -- east eff --
24 influent storage pond and SNP 02-02c, the west
25 influent storage pond, is once annually.

1 Therefore, under this condition and the
2 draft water licence, four (4) years of monitoring is
3 required to obtain the minimum of four (4) samples to
4 determine average concentrations.

5

6 (BRIEF PAUSE)

7

8 MR. NATHEN RICHEA: Madam Chair, the
9 GNWT recommends that the monitoring frequencies for
10 all surveillance network program stations that may be
11 discharged to the receiving environment be sampled
12 every two (2) weeks during closure in order to -- to
13 be able to adequately assess compliance with the
14 maximum average EQC.

15 In their response to interventions, De
16 Beers agreed to conduct sampling every two (2) weeks
17 during the discharge period and at least once leading
18 up to discharge.

19 The GNWT recommends that the frequency
20 and location be evaluate -- evaluated following
21 completion of active closure at the mine site.

22 Now we will move on to the Aquatic
23 Effects Monitoring Program, or AEMP. The GNWT has
24 concern that the annual AMP reporting may not
25 adequately account for the potential aquatic effects

1 of high TDS water as the process by which high TDS
2 water enters Snap Lake via the underground is still
3 not fully understood.

4 In addition, GNWT notes that the final
5 closure and reclamation plan states that flushing of
6 mine impacted water from the North Pile will take up
7 to thirty (30) years.

8 Therefore, five (5) years is likely
9 insufficient to monitor potential impacts from the
10 site post-closure given the length of time nitrates
11 are expected to remain in the North Pile.

12

13 (BRIEF PAUSE)

14

15 MR. NATHEN RICHA: The GNWT
16 recommends that De Beers ensure that the Aquatic
17 Effects Monitoring Program annual reporting
18 specifically and adequately accounts for the potential
19 aquatic effects high TDS water entering Snap Lake via
20 the underground, as has been recommended by the
21 Mackenzie Valley Land and Water Board.

22 This monitoring data should then be
23 used to update the hydrodynamic model. The GNWT
24 recommends that De Beers continue the surveillance
25 network program and the Aquatic Effects Monitoring

1 Program water quality monitoring until such time that
2 De Beers has demonstrated the closure conditions are
3 stable and closure criteria have been consistently
4 met.

5 Madam Chair, we would now like to move
6 on to our discussion of the North Pile. To date, De
7 Beers has not developed predictions on how the active
8 layer within the pile may change over time due to
9 climate change. Because of this, the GNWT's concerned
10 that delayed releases of elevated nitrate
11 concentrations beyond thirty (30) years could occur.

12 An understanding of the timing of
13 nitrate releases is important since the AMP benchmarks
14 for nitrate is hardness dependent, which is predicted
15 to decrease -- decrease with time, increasing the
16 potential for water quality accedences.

17

18 (BRIEF PAUSE)

19

20 MR. NATHEN RICHA: The GNWT
21 recommends that the water licence require that a
22 performance assessment report for the North Pile,
23 including a comprehensive description of the thermal
24 regime of the North Pile that includes predicted
25 changes to the active layer.

1 This includes ensuring that the
2 associated monitoring program is developed with a perf
3 -- with the performance assessment report -- report
4 requirements in mind.

5

6 (BRIEF PAUSE)

7

8 MR. NATHEN RICHA: Regarding cover
9 material source for the North Pile, De Beers has
10 confirmed that potentially acid genera -- generating
11 material will be excluded from North Pile cover
12 construction and propose the use of North Pile
13 embankment and rib -- rib berms as borrow sources.

14 The GNWT notes that in the North Pile
15 closure design various embankments and rib berms are
16 described as containing up to 40 percent of
17 potentially acid generating -- generating waste rock.

18 Therefore, the GNWT's concerned that,
19 if De Beers uses the material from the embankments or
20 rib berms without a proper geochemical
21 characterization, there's a risk of using material
22 that can cause long-term acid drainage or metal
23 leaching.

24

25 (BRIEF PAUSE)

1 MR. NATHEN RICHEA: GNWT recommends
2 that there be a condition in the water licence
3 requiring that all construction material, including
4 material to be used for the North Pile cover, be non-
5 potentially acid generating and free of contaminants.

6 The GNWT recommends that the
7 geochemical testing results be provided to the
8 Mackenzie Valley Land and Water Board for approval
9 prior to using the material for reme -- for
10 remediation.

11

12 (BRIEF PAUSE)

13

14 MR. NATHEN RICHEA: Moving on to a
15 discussion of the overall blended rock units as part
16 of the final closure and reclamation plan. De Beers
17 reviewed geochemical data and found that by completing
18 an overall geochemical characterization of blended
19 material, each rock type of non-potentially acid
20 generation (sic) with an excess of neutralization
21 potential, which included metavolcanics which are --
22 which were treated as potentially acid generating
23 during operations.

24 However, De Beers has acknowledged that
25 a small pocket of meto -- metavolcanics may have some

1 acid generating potential and could develop pockets of
2 acid leachate.

3 To debate -- to -- to date, De Beers
4 has not provided sufficient rationale for the non-
5 potentially acid dra -- drainage classification of
6 metavolcanics or information regarding the continuance
7 in adaptive management measures that were used in the
8 event of changes in the water quality due to acid rock
9 drainage.

10

11 (BRIEF PAUSE)

12

13 MR. NATHEN RICHEA: Madam Chair, the
14 GNWT recommends that the ARD and geochemical
15 characterization plan remain as a condition of the
16 water licence during the closure to ensure that the
17 appropriate geochemical characterization of materials
18 continue -- continues, including during all blasting
19 and earthwork activities.

20 As an item under this plan, the GNWT
21 recommends that De Beers submit a geochemical
22 characterization sampling plan for review and approval
23 for geochemical assessments that will be conducted in
24 areas where acid generating potential of cover
25 construction materials needs to be confirmed or

1 further defined.

2 As well, the GNWT recommends that all
3 PAG material, or potentially acid rock -- acid
4 generating material, including PAG material
5 encountered during the cover construction and west
6 perimeter embankments regrade be relocated as required
7 in order to meet the setback requirements in the North
8 Pile cover design.

9 This PAG material should be placed
10 appropriately and covered by at least 3 metres of non-
11 pag material.

12

13 (BRIEF PAUSE)

14

15 MR. NATHEN RICHEA: In relation to
16 seepage surveys, De Beers has proposed to remove acid
17 rock drainage and geochemical characterization plans
18 and the associated seepage surveys from the water
19 licence conditions, stating that there's no need for
20 continued implementation of this plan and that this
21 plan was only meant for construction in the
22 operational phases.

23 The GNWT remains concerned about the
24 elimination of this program prior to the completion of
25 earthworks and construction of the North Pile cover as

1 well as the potential construction of passive wetland
2 treatment systems.

3 The 2018 seepage survey summary report
4 noted elevated concentrations compared to EQCs at all
5 monitoring locations while the 2018 ARD and
6 geochemical characterization report recommended that
7 monitoring from these locations should continue to
8 assess if the observed concentrations are indicative
9 of a trend or represent typical variability at this
10 location.

11 It's not clear how De Beers will
12 monitor non-point source discharges and confirmed
13 modelled trends for surface runoff and seepage water
14 quality without continuing the seepage monitoring
15 during the closure and into the post-closure period.

16

17 (BRIEF PAUSE)

18

19 MR. NATHEN RICHA: The GNWT
20 recommends that seepage surveys be retained as part of
21 the seepage monitoring program throughout the closure
22 period as a condition of the water licence.

23 The GNWT recommends that, if seepage
24 assessments are not covered by the SNP, the SNP
25 locations be reviewed as part of a public review

1 process to ensure that they're appropriate to
2 effectively characterize seepage at the site and that
3 SNP samples -- sampling occurs.

4 The GNWT recommends that seepage
5 monitoring program conducted during the closure period
6 will determine how long, if at all, the monitoring
7 should continue into the post-closure period.

8

9 (BRIEF PAUSE)

10

11 MR. NATHEN RICHEA: Madam Chair, we'll
12 now move on to discuss the GNWT's con -- concerns
13 related to security. To begin, the GNWT has a few
14 remaining items that require attention.

15 Of significance is De Beer's omission
16 of the recommended -- recommendations regarding
17 monitoring programs and the associated costs.

18

19 (BRIEF PAUSE)

20

21 MR. NATHEN RICHEA: For our first
22 recommendation, the GNWT directed De Beers and the
23 Mackenzie Valley Land and Water Board to -- to the
24 technical memorandum attached to our written
25 intervention.

1

2

(BRIEF PAUSE)

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MR. NATHEN RICHA: Regarding the previous comment on outstanding items, the GNWT does not believe that the monitoring program proposed by De Beers is sufficient.

As there is currently no final approved closure plan, the GNWT is unable to review and revise De Beer's estimates in terms of differences in frequency, duration, and number of stations. The GNWT recommends that the final security estimate be updated by De Beers based on the final SNP and AEMP following the Mackenzie Valley Land and Water Board's final approval of the Final Closure Rec -- Closure and Reclamation Plan.

Moving on to other commitments related -- or, comments related to security, De Beers has proposed a phased -- phasing of security reductions aligned with major physical work milestones.

The GNWT notes that the reductions in security are possible at any time, and that they are based on successful completion of an approved remediation work; however, there are several factors that ma -- make predetermining security a -- sorry,

1 I'm going to start that again.

2 However, there are several factors that
3 make re -- predetermined security returns unworkable,
4 such as, depending on the component and the complexity
5 of the closure strategy, there's a like -- there's
6 likely to be some amount of security held back until
7 performance assessments have been completed, and as De
8 Beers has noted, remediation schedules are subject to
9 change.

10

11 (BRIEF PAUSE)

12

13 MR. NATHEN RICHEA: Therefore, Madam
14 Chair, it's the GNWT's recommendation that the
15 security amounts to be returned to De Beers be
16 evaluated at the time of the request for security
17 adjustment. Predetermined phases -- predetermined
18 phasing of security returns should not be approved.

19 In respons -- in respect to comments
20 from De Beers related to the Environmental Agreement
21 security, the GNWT is supportive of ensuring that De
22 Beers is neither over- or under-secured as it relates
23 to the Environmental Agreement security and the land
24 and water Board authorizations; however, at this time,
25 the GNWT cannot support De Beers's request.

1 Madam Chair, our recommendation
2 regarding the Environmental Agreement security is that
3 GNWT recommends that the costs associated with the
4 Environmental Agreement security remain until af --
5 until the Environmental Agreement is officially
6 amended. Once finalized, the GNWT is committed to
7 reviewing these items to ensure their accuracy and to
8 avoid over bonding.

9

10 (BRIEF PAUSE)

11

12 MR. NATHEN RICHEA: Moving on to
13 interim care and maintenance. De Beers has reduced
14 the period of interim care and maintenance in their
15 security estimate from two (2) years to one (1). The
16 generally accepted minimum for -- for most security
17 estimates for mines in the Northwest Territories is
18 two (2) to three (3) years.

19 Given the current status of the mine
20 and the Final Closure Plan, which is currently under
21 review, the GNWT's position is that a time period for
22 interim care and maintenance of two (2) years is
23 justified. The GNWT recommends that the period of
24 interim care and maintenance be maintained at two (2)
25 years and not reduced to one (1) as proposed by De

1 Beers.

2

3 (BRIEF PAUSE)

4

5 MR. NATHEN RICHEA: GNWT has committed
6 -- has completed and submitted a revised estimate of
7 security for the Snap Lake Mine. Of note, the GNW --
8 GNWT's estimate is two million dollars (\$2 million)
9 higher than that proposed by De Beers, as detailed in
10 our intervention.

11 The GNWT recommends that the amount of
12 security required for the Snap Lake Mine total eighty-
13 seven million five hundred and twenty thousand nine
14 hundred and forty dollars (\$87,520,940), which should
15 be split between land-related liability of thirty-nine
16 million seven hundred and twelve thousand five hundred
17 and sixty-four (39,712,564) and a water-related
18 liability of forty-seven million eight hundred and
19 eight thousand three hundred and seventy-six
20 (47,808,376).

21 Madam Chair, that concludes our
22 presentation, but before we take questions, I do want
23 to make a statement.

24 The GNWT is supportive of De Beers
25 moving into closure. The GNWT's committed to working

1 with De Beers in ensuring that closure of the Snap
2 Lake Mine is successful. The GNWT's participated in
3 this process and has worked closely with De Beers on a
4 number of the items that we've covered in our
5 presentation today, and we continue to work with De
6 Beers and will commit to working with De Beers through
7 the closure process. We're supportive of De Beers
8 moving into closure and completing closure of the Snap
9 Lake Mine.

10 So with that, I'd like to end the
11 presentation, and we're available for questions.

12 THE CHAIRPERSON: Thank you. We -- I
13 was just made aware that we are going to be having an
14 emergency alert test at ten o'clock, and it is 9:55.
15 So we'll take -- probably take a fifteen (15) minute
16 break and come back at 10:10.

17 And the other is two (2) jackets were
18 missing yesterday, so if we can leave them inside
19 here. Someone had walked away with someone's jacket
20 yesterday and the winter gear, so if you not leave
21 your jackets in the hallway. So all now on a break.

22

23 --- Upon recessing

24 --- Upon resuming

25

1 THE CHAIRPERSON: If we can please all
2 be seated, we'll get started once again.

3

4 (BRIEF PAUSE)

5

6 MS. SARAH MCLEAN: De Beers -- Sarah
7 McLean, with De Beers. Madam Chair, might we have
8 another five (5) minutes before initiating the
9 question period?

10 THE CHAIRPERSON: Yes. No problem.
11 So we'll start at about 10:17.

12

13 (BRIEF PAUSE)

14

15 THE CHAIRPERSON: De Beers, are you --
16 De Beers? Are you ready, please? All right.

17

18 (BRIEF PAUSE)

19

20 THE CHAIRPERSON: De Beers, are you
21 ready?

22

23 (BRIEF PAUSE)

24

25 THE CHAIRPERSON: If we can take our

1 seats, we'll start once again.

2

3 (BRIEF PAUSE)

4

5 QUESTION PERIOD:

6 THE CHAIRPERSON: I'd like to thank
7 the Government of the Northwest Territories for their
8 presentations. I will now turn it over to De Beers
9 Canada Incorporated, and the other Interveners, and --
10 and their opportunity to ask questions of the
11 Government of the Northwest Territories.

12 I would like to remind all parties to
13 please state your name prior to speaking, and that
14 questions should be asked through the Chair. We'll
15 begin with De Beers Canada Incorporated. De Beers...?

16 MR. JUSTIN FONTAINE: Thank you, Madam
17 Chair. My name is Justin Fontaine. I'm legal counsel
18 for De Beers Canada Incorporated. We have just a few
19 questions for the Government of the Northwest
20 Territories, which we'll refer to as GNWT.

21 First, De Beers would like to know
22 whether the views expressed by the GNWT witness panel
23 during this hearing, so the presentation and
24 submissions, are representative of the entire GNWT,
25 the Department of Environment and Natural Resources,

1 or the Water Resources Division.

2 THE CHAIRPERSON: GNWT...?

3

4 (BRIEF PAUSE)

5

6 MR. NATHEN RICHEA: Thank you, Madam
7 Chair. It's Nathen Richea, with the Government of the
8 Northwest Territories. Thank you for the question.

9 The Department of Environment and
10 Natural Resources has legislation that governs water
11 licensing in the territory. The submission made to
12 the Board in our presentation today is on behalf of
13 the Environment and Natural Resources that has legal
14 and legislative authorities provide advice to the Land
15 and Water Board.

16 The submission is on behalf of the
17 Government of the Northwest Territories as a
18 department of the Government of the Northwest
19 Territories.

20 THE CHAIRPERSON: De Beers...?

21 MR. JUSTIN FONTAINE: Thank you for
22 that. Was the intervention submission rec -- or
23 reviewed and approved by other government departments
24 as well?

25 THE CHAIRPERSON: GNWT...?

1 MR. NATHEN RICHEA: Thank you, Madam
2 Chair. It's Nathen Richea, Government of the
3 Northwest Territories. Yes.

4 THE CHAIRPERSON: De Beers...?

5 MR. JUSTIN FONTAINE: Thank you.
6 Justin Fontaine, counsel for De Beers.

7 And finally, does the intervention
8 submission have the endorsement of the newly elected
9 government?

10 THE CHAIRPERSON: Government of the
11 Northwest Territories...?

12

13 (BRIEF PAUSE)

14

15 MR. NATHEN RICHEA: Thank you, Madam
16 Chair. Nathen Richea, Government of the Northwest
17 Territories.

18 I believe the submission date for our
19 intervention was in October. It may have been October
20 13th, but I'm sure the Board staff could correct that
21 if that's wrong. The newly elected government was
22 elected on October 1st, but was not sworn in into
23 membership until later, so the intervention would have
24 went in prior to the new government being formed.

25 THE CHAIRPERSON: De Beers...?

1 MR. JUSTIN FONTAINE: Justin Fontaine,
2 counsel for De Beers. Thank you for that.

3 I'm now going to pass it over to De
4 Beers's representatives and some of their consultants
5 to ask further questions.

6

7 (BRIEF PAUSE)

8

9 MS. ALISON SNOW: It's Alison Snow,
10 from Golder Associates. So I have a few questions for
11 the GNWT. The first one is on just some clarification
12 of -- of a bullet point on slide 24. It says the GNWT
13 believes that toxicity modifying factors should
14 reflect conditions at the beginning of closure prior
15 to effluent discharge. So I would just like some
16 clarification around that -- around that point,
17 because we did interpret it incorrectly in -- in our
18 intervention response.

19 So the hardness concentrations in Snap
20 Lake at the beginning of closure are predicted to be
21 approximately 100 milligrams per litre greater. And
22 so I'm assuming the beginning of closure prior to
23 effluent discharge would be next year, say, in 2020.

24 When we calculated AEMP benchmarks that
25 were hardness based, we used the minimum hardness

1 concentrations at the end of our model simulation,
2 which is an additional thirty (30) years in the
3 future. And so those hardness concentrations were
4 approximately 30 milligrams per litre.

5 And so my -- my question is just -- if
6 I'm understanding it correctly, does the GNWT believe
7 that using a higher hardness concentration in Snap
8 Lake to calculate AEMP benchmarks will identify
9 additional parameters of potential concern that
10 require EQC?

11 THE CHAIRPERSON: GNWT...?

12 DR. BARRY ZAJDLIK: Barry Zajdlik, on
13 behalf of GNWT, Madam Chair.

14 Using a higher hardness will not
15 identify additional POPCs.

16 THE CHAIRPERSON: De Beers...?

17 MS. ALISON SNOW: Thank you. So my
18 second question, is the GNWT of the understanding that
19 the new proposed mixing zones are smaller, larger, or
20 the same as those which were in place during
21 operations?

22 THE CHAIRPERSON: GNWT...?

23 MR. NATHEN RICHEA: Thank you, Madam
24 Chair. It's Nathen Richea, with the Government of the
25 Northwest Territories.

1 Could you restate the question? I'm
2 not sure if I captured it correctly.

3 THE CHAIRPERSON: De Beers...?

4 MS. ALISON SNOW: It's Alison Snow,
5 from Golder Associates.

6 Is the GNWT of the understanding that
7 the new proposed mixing zones are smaller, larger, or
8 of the same size as those which were in place during
9 operations?

10 THE CHAIRPERSON: GNWT...?

11 MR. NATHEN RICHEA: Thank you, Madam
12 Chair. It's Nathen Richea, with the Government of the
13 Northwest Territories. During operation, there was
14 only one (1) mixing zone for Snap Lake. In the
15 submission there was a proposal for additional mixing
16 zones in Snap Lake. So I would say that would be an
17 increase in the size of the mixing zones.

18 THE CHAIRPERSON: De Beers...?

19 MS. ALISON SNOW: It's Alison Snow,
20 from Golder Associates.

21 So we would just like to repeat that
22 the -- the mixing zone that existed in operations had
23 a 200 metre radius, and it was approximately 1 percent
24 of the total volume of Snap Lake. The two (2) new
25 mixing zones that we are proposing are going to be

1 shoreline discharges, where we're asking for those
2 discharges to be -- the mixing zone boundaries to be
3 200 metres from the shoreline, but because they are
4 shoreline discharges, their total volumes individually
5 are smaller than the mixing zone that existed in
6 operations.

7 So, individually, each of those mixing
8 zones are approximately .3 percent of the total volume
9 of Snap Lake.

10

11 (BRIEF PAUSE)

12

13 MS. ALISON SNOW: And combined, the
14 two (2) mixing zones are smaller in volume than the
15 existing mixing zone in operations.

16

17 (BRIEF PAUSE)

18

19 MS. ALISON SNOW: Does the GNWT agree
20 with that?

21 THE CHAIRPERSON: GNWT...?

22 MR. NATHEN RICHEA: Thank you, Madam
23 Chair. I'm just wondering if -- if we can get the
24 question restated.

25 THE CHAIRPERSON: De Beers...?

1 (BRIEF PAUSE)

2

3 MS. ALISON SNOW: So it's Alison Snow,
4 from Golder Associates.

5 So does the GNWT -- are -- is the GNWT
6 aware that the two (2) proposed mixing zones -- the
7 new mixing zones that have a combined volume that
8 represents .6 percent of the volume of Snap Lake, that
9 those two (2) combined are smaller than the existing
10 mixing zone?

11 THE CHAIRPERSON: GNWT...?

12 MR. NATHEN RICHEA: Thank you, Madam
13 Chair. It's Nathen Richea, with the Government of the
14 Northwest Territories. Our recommendation to the
15 Board is that on an interim basis, a 200 metre mixing
16 zone be maintained for the point source discharge,
17 where the diffuser is, and then in an interim basis,
18 the two (2) non-point source discharges have a mixing
19 zone of 100 metres until a plume delineation study is
20 conducted.

21 And the rationale for the plume
22 delineation study is there are -- there are currently
23 mixing zone guidelines that have jointly been released
24 between the Government of the Northwest Territories
25 and the Mackenzie Valley Land and Water Board that

1 indicate that in all areas, waste minimization and
2 reducing the size of the mixing zone should be part of
3 the process for any licence in the Northwest
4 Territories.

5 THE CHAIRPERSON: De Beers...?

6

7 (BRIEF PAUSE)

8

9 THE CHAIRPERSON: I just would like to
10 please be reminded that the question should be focused
11 on speaking clarity on issues that will assist the
12 Board in their decision relating to the permits.

13

14 (BRIEF PAUSE)

15

16 MS. ALISON SNOW: Thank you for that.
17 So I have two (2) additional questions.

18 Is the GNWT aware, or was the GNWT
19 aware when drafting its intervention submission, or
20 the presentation we heard today, that De Beers
21 monitors site water quality, including a long list of
22 parameters at multiple stations through the SNP
23 program, and that De Beers reports on it every month
24 to the Board and inspector?

25 THE CHAIRPERSON: GNWT...?

1 MR. NATHEN RICHEA: Thank you, Madam
2 Chair. It's Nathen Richea, with the Government of the
3 Northwest Territories.

4 Yes, we are aware that you have a
5 Surveillance Network Program.

6 THE CHAIRPERSON: Okay. De Beers...?

7 MS. ALISON SNOW: Thank you for that.
8 And just one (1) final question.

9 Is the GNWT aware, or was the GNWT
10 aware when drafting its intervention submission, or
11 the presentation we heard today, that EQC are specific
12 to discharges to the lake to ensure protection of the
13 aquatic environment in the lake, given the known
14 quality and volume of water discharged?

15 Is the GNWT aware that they are not
16 relevant and do not apply for runoff water that may
17 occur around the site when it rains, such as over a
18 road, or over a pad?

19 THE CHAIRPERSON: GNWT...?

20 MR. NATHEN RICHEA: Thank you, Madam
21 Chair. It's Nathen Richea, with the Government of the
22 Northwest Territories.

23 The water licence authorizes according
24 to legislation the use of water and deposit of waste.
25 Any waste that's discharged to -- directly or

1 indirectly to water could have an effluent quality
2 criteria associated with it. So I guess, in answer to
3 your question, effluent quality criteria can apply to
4 any discharge of waste at site, including a point
5 source discharge, or any overland runoff, or any non-
6 point source discharge.

7 THE CHAIRPERSON: De Beers...?

8

9 (BRIEF PAUSE)

10

11 MR. GARY LAWRENCE: Hello, Madam
12 Chair, Gary Lawrence, of Golder Associates.

13 The final bullet in the presentation on
14 slide 40, in reference the North Pile, indicates that
15 lower hardness would increase the potential for water
16 quality exceedances, presumably because the AEMP
17 benchmark for nitrate is hardness dependent.

18 However, earlier in their presentation,
19 the GNWT expressed an opinion -- it's slide 25 -- that
20 in screening water quality, hardness and other ETMFs
21 be held at closure conditions prior to discharge.

22 How does the GNWT explain this
23 difference in the incorporation of ETMFs for
24 interpretation of water quality data?

25 THE CHAIRPERSON: GNWT...?

1 (BRIEF PAUSE)

2

3 MR. NATHEN RICHEA: Thank you, Madam
4 Chair. It's Nathen Richea, with the Government of the
5 Northwest Territories, and thank you for the question.

6 Our recommendation to the Board is to
7 use a fixed hardness concentration when establishing
8 hardness dependent effluent quality criteria or AMP
9 benchmarks; that position is a policy-based decision.

10 At times in the receiving environment,
11 using a fixed hardness concentration to set hardness
12 dependent criteria, we'll be overprotective, and at
13 times of the year -- or times of the closure and post
14 closure period, we'll be underprotective, but we
15 acknowledge that when we made the recommendation and
16 our recommendation still is to use a fixed hardness
17 and the ambient concentration prior to closure.

18 THE CHAIRPERSON: De Beers...?

19 MR. GARY LAWRENCE: Gary Lawrence,
20 Golder Associates. Again, so just to clarify, that
21 determination is a policy determination and is not
22 based on scientific considerations of hardness
23 dependence or other interaction between ETMFs and
24 constituents.

25 THE CHAIRPERSON: GNWT...?

1 MR. NATHEN RICHEA: Thank you, Madam
2 Chair. It's Nathen Richea, with the Government of
3 Northwest Territories.

4 And any time when you rely on aquatic
5 effects or aquatic guidelines, for example, the CCME
6 guidelines, you're using a policy-based approach to
7 assess what safe conditions are in the environment.
8 It's based on science, but in the end the number is
9 based on policy.

10 So in our recommendation here, what we
11 have put forward to the Board for its consideration,
12 is that they use the ambient hardness at closure to
13 calculate the hardness dependent concentrations for
14 AMP benchmarks and EQC.

15 THE CHAIRPERSON: De Beers...?

16

17 (BRIEF PAUSE)

18

19 MR. SEAN WHITAKER: Thank you, Madam
20 Chair. Sean Whitaker, with De Beers Canada. The next
21 few questions are just sort of to align with the
22 licence and the -- and trying to get some clarity for
23 licence conditions.

24 The first question, within the licences
25 in the Northwest Territories there's a standard clause

1 of ninety (90) days prior to construction. The
2 Proponent is required to submit engineering designs
3 and management plans associated with the construction
4 of engineered facilities.

5 Does the GNWT disagree with that
6 standard condition?

7 THE CHAIRPERSON: GNWT...?

8 MR. NATHEN RICHEA: Thank you, Madam
9 Chair. It's Nathen Richea, with the Government of the
10 Northwest Territories. And thank you for the
11 question.

12 So I guess the first answer is yes, the
13 existing licence has a requirement for submission of
14 plans and construction details ninety (90) days prior
15 to construction. That is typically associated with
16 infrastructure use for development of the mine, which
17 over time has areas where we can review and approve
18 that and inspection to assess the conformance of those
19 designs.

20 What we're talking about here in this
21 process and part of the proceeding here today, is
22 final closure of the site. So I believe the time
23 frame for active closure is around eight (8) years.

24 So when these plans are submitted for
25 the Board's consideration, and a time limit of ninety

1 (90) days is granted for approval of that before
2 construction begins, the ninety (90) days is in
3 question because of the nature of the activity that's
4 being undertaken, and that nature is it's final
5 closure. That site will be left in perpetuity in the
6 condition that was approved in ninety (90) days.

7 So having a review of those closure
8 plans in assessing how relevant and necessary those
9 closure activities are to achieving the closure goal
10 and the closure objective are extremely important, and
11 doing that in a ninety (90) day time frame is
12 concerning to the Northwest -- Government of the
13 Northwest Territories.

14 What we would expect and what we've
15 seen in other licences is a final closure plan being
16 submitted two (2) years prior to the end of
17 operations, and the idea of the two (2) year time
18 period is that there is much discussion over what the
19 final state of closure should be for the site, and
20 there's a lot of discussion about closure design and
21 closure objectives and closure criteria prior to
22 approving a final plan.

23 So comparing the ninety (90) days to
24 some of the other licences and conditions over the
25 time frame to get to a final closure and reclamation

1 plan, we don't feel that ninety (90) days is
2 sufficient in this scenario.

3 THE CHAIRPERSON: De Beers...?

4

5 (BRIEF PAUSE)

6

7 MR. SEAN WHITAKER: Thank you, Madam
8 Chair. Sean Whitaker, with De Beers Canada. Just a
9 bit of a follow-up on the response from the GNWT.

10 Does the GNWT agree that a one (1) year
11 regulatory process and multiple iterations throughout
12 the life of mine is sufficient time to review initial
13 designs to detailed design?

14 THE CHAIRPERSON: GNWT...?

15 MR. NATHEN RICHEA: Thank you, Madam
16 Chair. As we outlined in our presentation, there's
17 been much change to the final closure plan and the
18 final application for the Board's consideration on the
19 renewal. So although the application came in within a
20 one (1) year time period, there have been changes made
21 at the very late stages of the process that still need
22 to be reviewed and assessed.

23 For that reason, we're asking that the
24 Board issue a licence for closure and ask for the
25 submission of final closure plan and supporting

1 documents following the issuance, and that sufficient
2 time be provided for reviewers to provide input to the
3 Board prior to making an approval of those plans.

4 The reason for that recommendation is
5 highlighted in the fact that, you know, in the
6 previous question we talked about the time frame and
7 the importance of setting final closure criteria,
8 final designs for closure components of the site.

9 So our recommendation is that the Board
10 issue a licence for closure and that subsequently a
11 final closure plan be provided for approval of the
12 Board and any supporting documents, but sufficient
13 time be provided to assess that, and this past year
14 hasn't been sufficient to get to a point where we're
15 in agreement on the final closure plan.

16 THE CHAIRPERSON: De Beers...?

17 MR. SEAN WHITAKER: Sean Whitaker,
18 with De Beers. Thank you, Madam Chair.

19 I think we'll leave it as a point of a
20 bit of disagreement because the original EA, and
21 what's currently proposed with no wetland treatment,
22 is actually the original assumptions for the Snap Lake
23 Mine. It's undergone several reviews through the ICRP
24 process.

25 The wetlands weren't actually an add-on

1 for water treatment, so we'll just -- I'm just noting
2 it as a point of disagreement between the GNWT and De
3 Beers.

4 We've actually reverted back to almost
5 a previous position and previous design of the
6 facilities at Snap Lake, with minor modifications for
7 passive waterflow, which wasn't originally predicted.

8 So I'm going to move on to my next
9 question, if that's okay, Madam Chair.

10 My next question again is in line with
11 licence conditions and it's with respect to lines of
12 evidence, and it was with respect to the GNWT's
13 position on visual monitoring.

14 Visual monitoring is obviously a useful
15 tool, and it's one used by competent, qualified
16 professionals as a line of evidence against multiple
17 lines of evidence.

18 Does the GNWT have fo -- does the GNWT
19 agree that visual monitoring is one of many multiple
20 lines of evidence by a qualified professional, a
21 sufficient line of evidence?

22 THE CHAIRPERSON: GNWT...?

23 MR. NATHEN RICHEA: Thank you, Madam
24 Chair. It's Nathen Richea, with the Government of the
25 Northwest Territories, and thank you for this

1 question.

2 We've had a lot of discussion about the
3 adequacy of built to design or visual inspection in a
4 number of closure plans in the Northwest Territories
5 that we review for all the diamond mines and other
6 activities in the Northwest Territories.

7 I guess to answer your -- your
8 question, what we're looking for is certainty -- you
9 know, as I talked about in the previous answer, the
10 final closure designs and -- and final closure
11 activities at the site are extremely important, not
12 just to the Government of the Northwest Territories
13 but also all residents of the Northwest Territories,
14 because that's the way that the site will be left in
15 perpetuity.

16 Having closure objectives and
17 measurable closure criteria that provide certainty
18 that successful closure has been obtained is extremely
19 important, not just to us but to all residents.

20 But speaking on behalf of the
21 Government of the Northwest Territories, we hold
22 securities for remediation of the site, and in order
23 for us to be assured that security can be returned in
24 full, we need to have assurance that successful
25 remediation has been completed at the site. So making

1 a decision on the full return of security based on
2 visual inspections and professional judgment can be a
3 bit difficult.

4 So what we would like to have is
5 measurable closure criteria that we can agree to that
6 demonstrate that the activity has been successfully
7 completed and successful closure has occurred at the
8 site. Therefore, we are able to re -- release the
9 full security that we hold.

10 So the objective here is to not hold
11 security for the mine and that the mine is
12 successfully closed, and in order to do that you need
13 to have measurable criteria and closure objectives
14 that can provide assurance to the Government of the
15 Northwest Territories and to all residents that the
16 site has been successfully remediated.

17 Hopefully that helps answer your
18 question, but I think what you were referring to is --
19 there are two (2) different things to what you
20 referred to, and that was one (1), that visual
21 inspections along with other measurable criteria could
22 provide some assurance, and I think that that could be
23 the case, but relying on visual inspections alone and
24 professional judgment does not provide the necessary
25 certainty to make a determination on successful

1 remediation.

2 THE CHAIRPERSON: De Beers...?

3 MS. COLLEEN PRATHER: Thank you, Madam
4 Chair. Colleen Prather, with De Beers. One question.

5 De Beers noted on Slide 17 that the
6 GNWT stated that our models -- our water quality
7 models were too conservative, and then on Slide 23
8 they then stated that our models were not conservative
9 enough. So we're confused with these conflicting
10 statements.

11 Can the GNWT please explain these
12 opposing statements? Thank you.

13 THE CHAIRPERSON: GNWT...?

14

15 (BRIEF PAUSE)

16

17 DR. BARRY ZAJDLIK: Madam Chair, it's
18 Barry Zajdlik, on behalf of GNWT.

19 The modelling that was done is -- is
20 complex in the sense that there are a series of models
21 that are linked.

22 The conservatism that we referred to in
23 many slides is the conservatism that the predicted
24 concentrations are higher than they are measured
25 because De Beers used constant inputs to the models

1 where we know that actually the nitrate concentrations
2 and the other analytes will be attenuated over time.
3 They go down. But De Beers used the -- a very high
4 concentration and they used it for the entire closure
5 period.

6 So in that sense, the models are
7 conservative from De Beers perspective because they
8 provide a high concentration and a high assurance. So
9 it provides a high EQC and then from that perspective
10 De Beers is confident that they can meet that EQC
11 because it's very high.

12 But conservatism also works the other
13 way, that we want maximum concentrations to be used
14 elsewhere to really reflect what's going into the
15 model, and at times there's inconsistency.

16 We talked about some of the
17 inconsistencies in our slides where there's been
18 considerable debate about what the input terms were
19 and even recommendations to do further work, like
20 sensitivity analysis which we've since dropped, but
21 that gives you an idea of the -- of the discussions
22 that have had about the input terms we've been
23 discussing for quite some time. So there's
24 conservatism both ways.

25 THE CHAIRPERSON: De Beers...?

1 MS. COLLEEN PRATHER: Thank you.

2 Colleen Prather, with De Beers.

3 We'll move on to a second question. On
4 slide 38 of the presentation the GNWT noted that they
5 were concerned with decreasing trends in total
6 dissolved solids, and at slide 39 they noted that
7 they're concerned about the effects of high total
8 dissolved solid water.

9 So again, these statements appear to be
10 conflicting. Can GNWT please explain these opposing
11 statements? Thanks.

12 THE CHAIRPERSON: GNWT...?

13 MR. BARRY ZAJDLIK: Barry Zajdlik, on
14 behalf of GNWT.

15 Could we get a repeat on that question,
16 please?

17 THE CHAIRPERSON: De Beers...?

18 MS. COLLEEN PRATHER: Colleen Prather,
19 with De Beers.

20 Slide 38 of the presentation noted that
21 the GNWT are concerned with decreasing trends in total
22 dissolved solids.

23 Slide 39, GNWT noted they were
24 concerned about the effects of high total dissolved
25 solid water.

1 Can you please explain those opposing
2 statements? Thanks.

3 THE CHAIRPERSON: GNWT...?

4 MS. LARA FLETCHER: It's Lara
5 Fletcher. I'll attempt to answer that, but I probably
6 should find some thing.

7 It was -- I believe that the previous
8 slide 38 is -- was a count -- sorry, was a quote from
9 a decision that the Board had made that -- that De
10 Beers was -- would be expecting or that TDS
11 concentrations were expected to decrease in Snap Lake,
12 but that there was -- that De Beers would also have to
13 monitor for this potential increasing TDS with input
14 from the underground.

15 And just that the AMP program would --
16 would account for any potential increases.

17 THE CHAIRPERSON: De Beers...?

18 MR. JAMIE VAN GULCK: Hi, Madam Chair,
19 my name is Jamie Van Gulck, for De Beers. I have a
20 question with regards to slide 60 in the amount of the
21 security estimate.

22 De Beers proposes to set security in
23 license to include a scenario where there's no wet
24 land being considered.

25 The GNWT's security estimate here of

1 about 87 million, could you confirm if this includes
2 the wetland scenario, or excludes the wetlands
3 scenario?

4 THE CHAIRPERSON: GNWT...?

5 MR. NATHEN RICHEA: Thank you, Madam
6 Chair. It's Nathen Richea, with the Government of the
7 Northwest Territories.

8 Yes, I can confirm that the 87 million
9 security number reflects constructive wetlands.

10 THE CHAIRPERSON: De Beers...?

11 MR. SEAN WHITAKER: Sean Whitaker,
12 with De Beers Canada. Thank you, Madam Chair.

13 Perhaps we could have an undertaking to
14 the Government of the Northwest Territories for
15 issuing of the license and having the appropriate
16 security number put into it that they also update
17 their security estimate to include a scenario where
18 the wetlands are not constructed as well.

19 MR. NATHEN RICHEA: Thank you, Madam
20 Chair. I can -- maybe before we take the undertaking,
21 I can commit to providing a security estimate on our
22 closing statements that include wetlands and an
23 estimate that does not include wetlands in the
24 security.

25 THE CHAIRPERSON: De Beers...?

1 MS. SARAH MCLEAN: Sarah McLean, with
2 De Beers.

3 Just wondering, are you indicating that
4 you will update the security estimate with an updated
5 reclaim model as part of the closing statement?

6 THE CHAIRPERSON: GNWT...?

7 MR. NATHEN RICHEA: Thank you, Madam
8 Chair. Yesterday there was a undertaking that was --
9 I think it's undertaking number 2, that was issued to
10 De Beers to update their security estimate based on
11 all the changes over the course of the proceeding.

12 We would like to see that number first,
13 before submitting our updated estimate as part of our
14 closing arguments or closing statements for the
15 proceeding, not the hearing today, but the proceeding
16 for the water license renewal.

17 So, I guess to answer your question,
18 yes, we can commit to providing an estimate with
19 wetlands and without wetlands in our closing
20 statements for this water license renewal proceeding.

21 THE CHAIRPERSON: De Beers...?

22 MS. SARAH MCLEAN: Sarah McLean, with
23 De Beers.

24 I wonder if this may be something that
25 the Board would like to decide on as to the format of

1 the undertaking or simply in the closing arguments
2 made as part of the process.

3 I'd leave that to the Board.

4 THE CHAIRPERSON: We're just going to
5 take a time-out right now and then --

6 MR. NATHEN RICHEA: If I could just
7 real quick, Madam Chair?

8 THE CHAIRPERSON: Yes, go ahead.

9 MR. NATHEN RICHEA: I guess our
10 concern would be that if we were to take it as an
11 undertaking, we would be providing an estimate without
12 seeing the De Beers undertaking estimate at the same
13 time, because the deadline would be the same.

14 So it may not actually rectify our
15 current situation. It would be good to see what De
16 Beers has produced as part of the undertaking first,
17 and then us providing our submission as part of our
18 closing statements.

19 And then De Beers has a response to the
20 closing statements following the submission of ours.
21 So there will still be an opportunity for De Beers to
22 respond to whatever we provide in our closing
23 statements.

24 THE CHAIRPERSON: Okay, thank you.
25 We'll just take five (5) minutes.

1 Our legal counsel respond to that,
2 Sheldon?

3 MR. SHELDON TONER: Sheldon Toner,
4 Board council.

5 So to the GNWT, it would be good to get
6 a clear undertaking here today. So my question is
7 just that in the current work plan if the undertaking
8 from De Beers is fulfilled by the proposed date of
9 December 16th, would the GNWT be able to provide its
10 re-evaluation by February 7th, which is the -- the
11 date for closing arguments from Interveners?

12 THE CHAIRPERSON: GNWT...?

13 MR. NATHEN RICHEA: Thank you, Madam
14 Chair. It's Nathen Richea, with the Government of the
15 Northwest Territories.

16 Yes, that would be workable for us.

17 THE CHAIRPERSON: De Beers...?

18 MS. SARAH MCLEAN: Thank you, Madam
19 Chair. Sarah McLean, with De Beers.

20 May it be possible -- would it be
21 possible to make that submission earlier, as that
22 would only leave one week for De Beers to review the
23 submission prior to submission of our own closing
24 arguments, according to the work plan, one week later.

25 So, for your consideration. Thank you.

1 THE CHAIRPERSON: Sheldon...?

2 MR. SHELDON TONER: Madam Chair,
3 Sheldon Toner, Board counsel.

4 I think that question needs to go back
5 to the GNWT then as to whether they feel they could
6 provide that re-evaluation somewhat earlier than
7 February 7th to give De Beers time to respond, say
8 some time in mid-January or early January.

9 THE CHAIRPERSON: GNWT...?

10 MR. NATHEN RICHEA: Thank you, Madam
11 Chair, it's Nathen Richea. I guess maybe I'm just
12 trying to seek clarification.

13 So in our written intervention and in
14 our presentation we have an estimate of 87 million,
15 which includes wetlands.

16 And if I understand the undertaking
17 correctly, we would go away and prepare an estimate
18 without wetlands, which would be less than 87 million.
19 The exact number, I don't -- I don't know what that
20 would be, but we could come up with that number,
21 subtracting the wetlands.

22 So I don't know how much -- like, why a
23 week would be insufficient to review that information
24 when our current reclaim estimate in all the line
25 items are included in our current submission. And all

1 we would be doing is subtracting the wetlands off of
2 that number.

3 THE CHAIRPERSON: De Beers...?

4 MS. SARAH MCLEAN: Sarah McLean, with
5 De Beers. Thank you, Madam Chair.

6 Acknowledging that the variation should
7 be fairly limited to the reductions related to the
8 wetlands, there is six (6) weeks from the period in
9 which we will submit our closure estimate to the
10 period that GNWT would submit their estimate, making
11 that minor change.

12 And then we would be left with one (1)
13 week to incorporate that information into our closing
14 argument, which will probably be a pretty busy week
15 for us. So wondering if maybe a compromise may be
16 found and that GNWT may be willing to submit their
17 closure estimate earlier, perhaps around even one or
18 two weeks earlier, say for January 24th, to allow us a
19 little bit more time. Thank you.

20 THE CHAIRPERSON: GNWT...?

21 MR. NATHEN RICHEA: Thank you, Madam
22 Chair, it's Nathen Richea, with the Government of
23 Northwest Territories.

24 It kind of sounds like the ninety (90)
25 days --it's just a joke, attempt at a joke. Anyway,

1 January 24th for sure that's something that we can
2 commit to.

3 THE CHAIRPERSON: Thank you.
4 Sheldon...?

5 MR. SHELDON TONER: So, Madam Chair, I
6 believe we're at the point now where you have the
7 undertaking and perhaps GNWT can confirm that, and
8 that would be to provide its re-evaluation minus the
9 wetlands by January 24th, and then that would -- that
10 would be based on De Beers fulfilment of its
11 undertaking by December 16th. De Beers would then
12 have until the 14th of February to respond in its
13 closing submission.

14

15 --- UNDERTAKING NO. 5: GNWT to provide an updated
16 security estimate, in an Excel
17 spreadsheet and as a PDF, to account
18 for the updated security estimate that
19 is due to be submitted by De Beers on
20 December 16, 2019, per Undertaking No.
21 2. This is to include the proposed
22 scenario of no constructed wetlands. A
23 concordance table shall also be
24 included that identifies the updates
25 and the locations. This is due by

1 January 24, 2020.

2

3 THE CHAIRPERSON: The dates are now
4 set, we're in agreement? Okay.

5 The next question, De Beers?

6 MS. SARAH MCLEAN: Thank you, Madam
7 Chair. Sarah McLean, with De Beers.

8 I would like to ask Ken De Vos, who is
9 on the line, to proceed with his question. Thank you.

10 MR. KEN DE VOS: (BY PHONE) Thank you,
11 Madam Chair. Ken De Vos with Golder Associates.

12 Government of the Northwest Territories
13 provided some discussion regarding potential acid
14 generation and acidic leachate on or around slide 44.

15 I just want to point out that there is
16 a substantial difference between material with
17 potential for acid generation, and production of
18 acidic leachate,

19 I just want to be clear on De Beers'
20 position that while we agree there may be some pockets
21 of potentially acid-generating materials, De Beers
22 does not expect this material to release acidity.

23 So that's to day we don't expect there
24 to be acidic leachate and this material will not be
25 used for construction.

1 With that said, I have a question with
2 regards to sufficiency of data.

3 If we look at the blended composition
4 of units and coming to the conclusion that acidic
5 leachate is not expected, this is supported by
6 multiple lines of evidence as presented in the
7 environmental assessment back in 2002, the annual
8 reports, which have been presented annually from then
9 until now, and also in the summary of -- summary
10 report of geo chemical conditions provided in the
11 final Closure and Reclamation Plan appendices.

12 So this supporting information is all
13 previously provided and includes kinetic test data,
14 there's -- there's more than ten metavolcanic
15 examples with a range of sulfur content, that's
16 metavolcanic samples.

17 Acid based accounting results from 115
18 samples, net acid generation test results which were
19 also presented in the annual reports that show the
20 blending of the material is not acid generating.

21 In addition to that, we have fifteen
22 (15) years of ongoing on-site monitoring at location
23 SNP 02-05, which receives run-off from the former bulk
24 sample laydown area, which is composed of a blend of
25 acid-generating and not acid-generating metavolcanic

1 rock and shows stable trends and neutral conditions.

2 So this is, essentially, a very large
3 field-scale kinetic test cell that's been running for
4 fifteen (15) years.

5 We also have ongoing site monitoring of
6 the sumps from the north pile, over the past ten
7 years, and some of these sumps receive run-off from a
8 blend of acid-generating and non-acid generating rock
9 and show stable or decreasing trends and neutral
10 conditions and all that information is also provided
11 in the annual report.

12 So the question is: Based on that, does
13 the Government of Northwest Territories consider
14 fifteen (15) years of actual field data on essentially
15 the same material as the planted material they're
16 referring to, as sufficient?

17 THE CHAIRPERSON: GNWT...?

18 MR. NATHEN RICHA: Madam Chair, just
19 one (1) minute, if that's okay.

20

21 (BRIEF PAUSE)

22

23 MS. LARA FLETCHER: Madam Chair, it's
24 Lara Fletcher. Thanks, Ken, for the question. I
25 think we'll refer back to yesterday and that De Beers

1 has made commitments to not use PAG materials within
2 the -- within construction anywhere on the site,
3 including the North Pile, and that there -- as -- that
4 there are contin -- well, there are mitigation
5 measures that have been described.

6 And as you just commented on, there may
7 be pockets of material that has been classified as PAG
8 and -- and that the concern -- well, and that
9 yesterday we heard from De Beers that there will be a
10 geochemical management plan that is provided for
11 review that will ensure that the mitigation measures
12 that have been described will be implemented.

13 THE CHAIRPERSON: De Beers...?

14

15 (BRIEF PAUSE)

16

17 MS. SARAH MCLEAN: We'd like to go to
18 our next question, Madam Chair, if that's possible?

19 THE CHAIRPERSON: Yeah, go ahead.

20

21 (BRIEF PAUSE)

22

23 MR. JEFFREY KWOK: Thank you, Madam
24 Chair. This is Jeffrey Kwok, with Golder Associates.
25 On slide 43, just a question regarding that, and the

1 previous question, as well, or the response.

2 My question is: Does the GNWT agree
3 that PAG, if encountered during geochem testing, can
4 be used for construction and landfill development
5 below 3 metres from the North Pile cover?

6 THE CHAIRPERSON: GNWT...?

7

8 (BRIEF PAUSE)

9

10 MR. NATHEN RICHEA: Thank you, Madam
11 Chair. It's Nathen Richea, with the Government of the
12 Northwest Territories. I guess I got a conditional
13 answer to your question. And that would be, it would
14 be dependent on the cover material that com -- would
15 comprise the 3-metre cover and whether that would
16 maintain the active layer.

17 So, what we wouldn't want to see is the
18 active layer penetrating into the PAG material that
19 was used for construction. So, if that 3-metre cover
20 over that PAG material was sufficient to contain the
21 active layer -- and the active layer is the layer that
22 freezes and thaws each year from seasonal temperature
23 changes.

24 So, if the active layer would penetrate
25 into the PAG material, that's something that we would

1 not like to see.

2 So, if the idea is to use PAG material
3 for closure and that you would maintain a 3-metre
4 cover over that material as a buffer to prevent metal
5 leaching or acid generation, we need to be sure that
6 the active layer would be maintained in that 3 metres.

7 THE CHAIRPERSON: De Beers...?

8

9 (BRIEF PAUSE)

10

11 MS. SARAH MCLEAN: Sarah McLean, with
12 De Beers. Thank you, Madam Chair. We only have one
13 (1) final question for GNWT.

14 MS. ROBERTA PEDLAR-HOBBS: Roberta
15 Pedlar-Hobbs, with ERM. Madam Chair, my question is
16 in relation to slide 9, about physical stability. The
17 GNWT stated on this slide that closure criteria must
18 be included in the FCRP and the monitoring programs to
19 assess conditions against these criteria.

20 The FCRP does include two (2)
21 objectives specific to the North Pile, NP 1 and NP 2.
22 Closure criteria associated with these objectives have
23 been established and included in the FCRP as Table
24 5.2.

25 Specific to closure objective NP 1,

1 there are eight (8) criteria included for measuring
2 success of physical stability. Specific aspects of
3 the cover that will be measured to determine success
4 of closure are further identified in the closure cover
5 design criteria as listed in the North Pile closure
6 cover detailed design report, section 3.6, Table 1,
7 which was submitted as part of the water licence
8 application.

9 Does GNWT acknowledge that closure
10 criteria for the North Pile have been included in the
11 FCRP?

12 THE CHAIRPERSON: GNWT...?

13 MR. NATHEN RICHEA: Thank you, Madam
14 Chair. There was a lot of information provided in
15 that question. And I think, in order for us to
16 provide a wholesome answer to the question, I would
17 like to take it as an undertaking.

18 THE CHAIRPERSON: Undertaking number
19 5. All right. Undertaking number 6. (Page 86
20 undertaking removed)

21

22 (BRIEF PAUSE)

23

24 THE CHAIRPERSON: De Beers, have any
25 further questions?

1

2

(BRIEF PAUSE)

3

4

MS. ROBERTA PEDLAR-HOBBS: Okay.

5

Madam Chair, maybe I can simplify the question. What

6

we're looking to understand is whether GNWT

7

acknowledges that closure criteria related to the

8

North Pile have been included within the FCRP

9

submitted as part of the water licence. Pardon?

10 Sorry.

11

Yeah, this -- the criteria in Table 5.2

12

of the FCRP were provided in March 2019 with the water

13

licence application that has been reviewed by GNWT.

14

And we would just like clarification from GNWT as to

15

whether they acknowledge that closure criteria are

16

included in this table.

17

18

(BRIEF PAUSE)

19

20

THE CHAIRPERSON: GNWT...? We do have

21

-- just a reminder that we do have it under -- as

22

Undertaking number 6, so. GNWT...?

23

MR. NATHEN RICHEA: Thank you, Madam

24

Chair. It's Nathen Richea, with the Government of the

25

Northwest Territories.

1 From talking with my colleagues, I
2 understand that we did review the proposed criteria
3 and provided comments to De Beers about the
4 applicability of those criteria. And we weren't fully
5 supportive of those -- of those criteria that were
6 proposed.

7 However, you know, we -- we could take
8 this away and -- and provide a more wholesome and
9 written response as part of the undertaking, unless
10 that answer is sufficient for De Beers.

11 THE CHAIRPERSON: De Beers...?

12

13 (BRIEF PAUSE)

14

15 MS. SARAH MCLEAN: Sarah McLean, with
16 De Beers. I think the answer provided in the room is
17 sufficient to save you from doing an undertaking. I
18 think it's widely acknowledged you did review, and the
19 -- the criteria are included.

20 And we did receive comments from GNWT
21 on those criteria as part of the re -- of the review,
22 so I don't think this is worthy of an undertaking.
23 Thank you.

24 THE CHAIRPERSON: GNWT...?

25 MR. NATHEN RICHEA: Thank you, Madam

1 Chair. So, hopefully, we can scratch Undertaking
2 number 6, but -- or number 8 or number -- I don't know
3 what numbers there are anymore, but hopefully that
4 undertaking can be scratched.

5 THE CHAIRPERSON: Yes, the undertaking
6 is taken off.

7

8 (BRIEF PAUSE)

9

10 THE CHAIRPERSON: De Beers...?

11

12 (BRIEF PAUSE)

13

14 MS. SARAH MCLEAN: Sarah McLean, with
15 De Beers. Thank you, Madam Chair. We have no further
16 questions at this time.

17 THE CHAIRPERSON: Thank you. I would
18 like to now turn to Environment and Climate Change
19 Canada to have their opportunity to ask questions of
20 the Government of the Northwest Territories.

21 And I would like to remind all parties
22 to please state your name prior to speaking and that
23 questions should be asked through the chair, and also
24 to be reminded that all questions should be focussed
25 on speaking clearly on issues that will assist the

1 Board in the decisions relating to the land use permit
2 amendment application and the water licence renewal.

3 Environment and Climate Change

4 Canada...?

5 MR. GABRIEL BERNARD-LACAILLE: Thank
6 you, Madam Chair. Gabriel Barnard-Lacaille, with
7 Environment and Climate Change Canada. We'd like to
8 thank the GNWT for their presentation. And we have no
9 questions.

10 THE CHAIRPERSON: Thank you.

11

12 (BRIEF PAUSE)

13

14 THE CHAIRPERSON: I now ask if we have
15 any -- anything from the general public. No?

16

17 (BRIEF PAUSE)

18

19 THE CHAIRPERSON: So, the agenda
20 provides an opportunity now to ask questions from the
21 Board staff, the Board technical advisors and legal
22 counsel to ask questions of the Government of the
23 Northwest Territories. Board staff...?

24 MS. KATHERINE HARRIS: Thank you,
25 Madam Chair. Katherine Harris, Board staff. So, a

1 separate public technical workshop related to EQC was
2 held on September 19th, 2019, and a request for De
3 Beers to provide additional monitoring data arose from
4 that discussion.

5 This additional data was provided by De
6 Beers on September 25th and posted to the public
7 registry on September 26th. Board staff note that
8 GNWT's intervention only considered monitoring data up
9 to September 25th.

10 Can GNWT please comment on whether they
11 have completed a review of this additional data and,
12 if so, if further clarification to their intervention
13 can be provided at this time?

14 THE CHAIRPERSON: GNWT...?

15 DR. BARRY ZAJDLIK: Barry Zajdlik, on
16 behalf of GNWT. I didn't fully catch the dates. But
17 what was provided by De Beers was more data up until
18 September of 2018 for the sumps.

19 And we did request additional data, and
20 De Beers has agreed to provide it for all the
21 perimeter sumps. The analyses that I've done to date
22 consist of augmenting the data provided by De Beers
23 for the water management pond in SNP 02-02 because
24 those data are available publically in SNP reports.

25 But I was not able to do that for the

1 other perimeter sump data because those data are not
2 publically available. So, upon receipt of the data,
3 it will take us some time to review and provide
4 further comment.

5 It may augment our position with
6 respect to the conservatism of the model predictions
7 that were used to set EQC.

8 THE CHAIRPERSON: Board staff...?

9

10 (BRIEF PAUSE)

11

12 MS. KATHERINE HARRIS: Okay. Thank
13 you, Madam Chair. So, GNWT has recommended -- sorry,
14 Katherine Harris, Board staff.

15 GNWT has recommended that the water
16 licence include a condition that, should De Beers wish
17 to remove a station from the surveillance network
18 program, a report be submit to the Board for approval
19 that includes potential trends in metal leaching and
20 any previous accedences.

21 Can GN -- GNWT please specify where
22 they envision where an SNP reassessment would be
23 encompassed with the licence? For example, would this
24 be a separate water licence condition or included as a
25 requirement within the SNP annex?

1 THE CHAIRPERSON: GNWT...?

2

3 (BRIEF PAUSE)

4

5 MR. NATHEN RICHEA: Thank you, Madam
6 Chair. It's Nathen Richea, Government of the
7 Northwest Territories. I guess our opinion is it
8 could be either of the two (2) options.

9 Just some considerations. If it's a
10 condition within the licence -- if it's a condition of
11 the licence and the frequency changes or the
12 requirement changes in some manner, it will require an
13 amendment to the licence which has a process
14 associated with it.

15 If it's a condition of the surveillance
16 network program, then that can be modified and
17 adjusted as necessary without a formal amendment.

18 THE CHAIRPERSON: Board staff...?

19 MS. KATHERINE HARRIS: Thank you,
20 Madam Chair. Thank you for that response. Katherine
21 Harris, Board staff.

22 In section 5.1 of your intervention,
23 GNWT's intervention, there's the recommendation of a
24 plume de -- delineation study be completed prior to
25 approval of the regulated mixing zone boundaries

1 associated with the passive water treatment system.

2 Typically, the Board sets the mixing
3 zones and water quality objectives in the reasons for
4 decision that accompany the EQC in the licence.

5 Does GNWT believe that the EQC for the
6 passive water treatment system cannot be set in
7 advance of completing the plume delineation study or
8 does GNWT believe the results of the study can be used
9 to confirm EQC set at issuance?

10 THE CHAIRPERSON: GNWT...?

11

12 (BRIEF PAUSE)

13

14 MR. NATHEN RICHEA: Thank you, Madam
15 Chair. It's Nathen Richea, with the Government of the
16 Northwest Territories. I guess I'm just trying to
17 understand the question.

18 Is -- is the question whether effluent
19 quality criteria can be set in a licence without a
20 plume delineation study?

21 THE CHAIRPERSON: Board staff...?

22 MS. KATHERINE HARRIS: Thank you,
23 Madam Chair. Katherine Harris, Board staff. Yes,
24 that is the question.

25 THE CHAIRPERSON: GNWT...?

1 MR. NATHEN RICHEA: Thank you, Madam
2 Chair. It's Nathen Richea, Government of the
3 Northwest Territories. I guess the answer to the
4 question is, yes, you can -- you can set EQCs without
5 a plume delineation study.

6 But the issue with that is you don't
7 know how accurate or appropriate your effluent
8 criteria will be until you have the results of your
9 plume delineation study.

10

11 (BRIEF PAUSE)

12

13 THE CHAIRPERSON: Board staff...?

14 MS. KATHERINE HARRIS: Thank you,
15 Madam Chair. Katherine Harris, Board staff. So, just
16 going further with this, the Board staff is just, I
17 guess, struggling a little bit with logistics on this.

18 So, in order to do a plume delineation
19 study, you need to release effluent. And if the
20 effluent from the existing system is not adequate or
21 is deemed that there's concern that is potentially
22 harmful to the environment, then it's -- how do you
23 set the EQC to allow that release without then
24 triggering either unauthorized discharge or having a
25 problem within the environment itself?

1 So we're just wondering if -- if GNWT
2 could elaborate on how a plume delineation study for
3 that passive system could be conducted in advance of
4 approving a mixing zone and EQC without resulting in
5 either inconclusive results, if active treatment was
6 still required, or an unauthorized discharge
7 situation.

8 THE CHAIRPERSON: GNWT...?

9 MR. NATHEN RICHEA: Thank you, Madam
10 Chair. It's Nathen Richea, of the Government of
11 Northwest Territories. I will attempt to answer this
12 question, and if I'm missing any pieces, some of the
13 team may also answer the question.

14 But the answer that I have is that
15 we're recommending that the existing effluent quality
16 criteria be maintained for the parameters that are
17 currently in the licence on an interim basis until the
18 final Plume Delineation Report is complete and final
19 EQCs are set.

20 THE CHAIRPERSON: Board staff...?

21

22 (BRIEF PAUSE)

23

24 MS. KATHERINE HARRIS: Thank you,
25 Madam Chair. Katherine Harris, Board staff.

1 So would the GNWT be comfortable with a
2 trigger being set in the water licence to allow that
3 initiation of the second set of EQC to be implemented
4 post-completion -- well, I guess, pending approval of
5 the plume delineation study and completion of it?

6 The challenge that we're facing is that
7 if existing EQC are maintained as currently in the
8 water licence, that really forces things to be an
9 active treatment system, and that active treatment is
10 going to result in an effluent that's not going to be
11 reflective of the final effluent in the passive
12 system.

13 So it's -- it's just how do you
14 complete that plume delineation study under existing
15 active treatment EQC?

16 THE CHAIRPERSON: GNWT...?

17

18 (BRIEF PAUSE)

19

20 MS. KATHERINE HARRIS: Katherine
21 Harris, Board staff. Perhaps I can provide just a bit
22 of clarification on that rather long-winded question.
23 The -- I guess our question is:

24 How do we, within a water licence, set
25 a condition that would allow moving to a different set

1 of EQC associated with a passive treatment system
2 based on the results of the plume delineation if we
3 know that the -- it is unlikely that the conditions
4 currently would meet existing EQC as set in the
5 licence?

6 So you're then releasing an effluent
7 that is not going to likely be chemically
8 characteristic of a passive system and unlikely to
9 meet existing EQC, which then would fall into an
10 unauthorized discharge situation.

11 So we're wondering if there's a
12 possibility to set a trigger somehow in the licence
13 that there would be approval of a plume delineation
14 study that would enable that study to go forward
15 somehow and allow for the movement to the second set
16 of EQC.

17 THE CHAIRPERSON: GNWT...?

18

19 (BRIEF PAUSE)

20

21 MR. NATHEN RICHEA: Thank you. It's
22 Nathen Richea, of the Government of Northwest
23 Territories. Thank you for that question and for the
24 clarification. I think I understand the question now.

25 So there could be a trigger included in

1 the licence that would trigger the use of a second set
2 of effluent quality criteria. There also could be a
3 trigger in the licence that initiated a plume
4 delineation study via a passive water treatment
5 process.

6 We could take this away and do some
7 further thinking on it and provide some comments and
8 recommendations to the Board for their consideration
9 as part of our closing statements.

10 THE CHAIRPERSON: Board staff...?

11

12 (BRIEF PAUSE)

13

14 MS. KATHERINE HARRIS: Thank you,
15 Madam Chair. Katherine Harris, Board staff. Would
16 GNWT be willing to take this on as an undertaking with
17 the due date of December 16th?

18 THE CHAIRPERSON: Government of
19 Northwest Territories...?

20 MR. NATHEN RICHEA: Thank you, Madam
21 Chair. It's Nathen Richea, with the Government of
22 Northwest Territories. We were thinking about that
23 while you were having a huddle, and the concern that
24 we have over the timing for the undertaking is we're
25 also looking for additional data from De Beers for the

1 perimeter sumps and -- I probably have the description
2 wrong, but additional data from De Beers that will
3 help us in some of the analysis of how conditions are
4 changing on site. And we would like to use that
5 information as part of our assessment that we were
6 talking about in the questioning. So then we run into
7 a bit of a timing issue.

8 But we did talk about a different
9 deadline for GNWT submission for security of January
10 24th, and if that would be amenable to De Beers and
11 the Board, we could commit to doing that and providing
12 an assessment on January 24th.

13

14 (BRIEF PAUSE)

15

16 THE CHAIRPERSON: De Beers, are you in
17 agreement for this undertaking?

18 MS. SARAH MCLEAN: Sarah McLean, with
19 De Beers. Yes, and we would defer to the Board's time
20 line regarding the date.

21 THE CHAIRPERSON: Thank you.
22 Undertaking number 6. Right.

23

24 --- UNDERTAKING NO. 6: GNWT to provide
25 clarification on triggers in the

1 proposed Water Licence that could be
2 used to initiate the Plume Delineation
3 Study and a second set of Effluent
4 Quality Criteria (EQC). This is due by
5 January 24, 2020

6
7 THE CHAIRPERSON: Board staff...?

8
9 (BRIEF PAUSE)

10
11 MS. KATHERINE HARRIS: Thank you,
12 Madam Chair. Katherine Harris, Board staff.

13 GNWT's recommended that the Board
14 retain total petroleum hydrocarbons as a regulated
15 parameter until remediation is complete at the site.

16 Is total petroleum hydrocarbon
17 consistent with the parameter currently listed in De
18 Beer's Snap Lake licence for EQC requirements, which
19 is actually -- so that's the extract -- extractable
20 petroleum hydrocarbons F1 fractions C6 to C10?

21
22 (BRIEF PAUSE)

23
24 THE CHAIRPERSON: GNWT...?

25 MR. NATHEN RICHA: Thank you, Madam

1 Chair. It's Nathen Richea, Government of Northwest
2 Territories. We're fine with either total petroleum
3 hydrocarbons or extractable hydrocarbons in
4 maintaining the EQC.

5 THE CHAIRPERSON: Board staff...?

6 MS. KATHERINE HARRIS: Thank you,
7 Madam Chair. Okay, and then we -- the next question,
8 sorry.

9 The GNWT recommended that the Board
10 require the SNP stations be determined prior to
11 commencement of re-grading at site within one hundred
12 (100) metres of Snap Lake during the closure period.

13 Can GNWT please comment on whether the
14 monitoring stations related to re-grading could be
15 addressed through the monitoring of standards
16 construction practices rather than formal SNP
17 locations?

18 THE CHAIRPERSON: GNWT...?

19 MR. NATHEN RICHEA: Thank you, Madam
20 Chair. It's Nathen Richea, Government of Northwest
21 Territories.

22 The purpose of our recommendation to
23 include Surveillance Network Program stations is in
24 relation to compliance points. There could be a
25 construction plan that had sampling and -- and

1 monitoring requirements that identified the frequency
2 and location of where sampling could occur during re-
3 grade when they're operating within a hundred (100)
4 metres of Snap Lake. But the total -- like, the final
5 compliance point for that monitoring, to ensure that
6 Snap Lake is protected, would need to be reflected in
7 -- at least one (1) of those stations would need to be
8 reflected in the surveillance network program for
9 compliance purposes.

10 THE CHAIRPERSON: Board staff...?

11

12 (BRIEF PAUSE)

13

14 MS. ANGELA LOVE: Thank you, Madam
15 Chair. It's Angela Love, Board staff. Come to the
16 question period of term. So as mentioned previously,
17 De Beers has applied for that fifteen (15) year term
18 to the water licence.

19 Does GNWT have any position, now that
20 they've heard all this evidence, on what an
21 appropriate term would be, and if so, what would that
22 supporting rationale be?

23 THE CHAIRPERSON: GNWT...?

24 MR. NATHEN RICHEA: Thank you, Madam
25 Chair. It's Nathen Richea, with the Government of the

1 Northwest Territories. We did not include a
2 recommendation on term. We understand that De Beers
3 has applied for a fifteen (15) year term, and we're
4 supportive of that term if the Board is of the opinion
5 that that term is sufficient.

6 THE CHAIRPERSON: Board staff...?

7

8 (BRIEF PAUSE)

9

10 THE CHAIRPERSON: Board staff...?

11

12 (BRIEF PAUSE)

13

14 THE CHAIRPERSON: I just need you to
15 acknowledge that -- if you have any further questions
16 or if you don't, so -- for the record.

17 MS. KATHERINE HARRIS: Katherine
18 Harris. Thank you, Madam Chair. Katherine Harris,
19 Board staff. No further questions.

20 THE CHAIRPERSON: Thank you.

21

22 (BRIEF PAUSE)

23

24 THE CHAIRPERSON: I'll ask -- now ask
25 the -- the members of the Board panel if they have any

1 questions they would like to ask the Government of the
2 Northwest Territories. Mason Mantla...?

3 BOARD MEMBER MANTLA: Merci -- merci,
4 Madam Chair. Mason Mantla, from Board. I don't have
5 any questions.

6 THE CHAIRPERSON: Kim -- I was just
7 about to say the wrong -- Tanya MacIntosh?

8 BOARD MEMBER MACINTOSH: Thank you,
9 Madam Chair. Tanya MacIntosh, Board staff. No
10 questions at this time for the Government, thank you.

11 BOARD MEMBER FAIRMAN: Thank you,
12 Madam Chair. It's Kimberley Fairman. I have no
13 questions at this time.

14 BOARD MEMBER ZOE-CHOCOLATE: It's
15 Camilia Zoe-Chocolate. I have no questions.

16 THE CHAIRPERSON: It's been a long
17 morning, and we're going to call a lunch break and --
18 and reconvene at 1:30. Thank you.

19

20 --- Upon recessing

21 --- Upon resuming

22

23 THE CHAIRPERSON: If we all can be
24 seated, we'll get started for the afternoon session.

25

1 (BRIEF PAUSE)

2

3 THE CHAIRPERSON: As -- as mentioned
4 in the outset of the hearing, we are now going to hear
5 presentations from the any members of the public who
6 have signed in.

7

8 (BRIEF PAUSE)

9

10 THE CHAIRPERSON: We have one (1)
11 person identified to address the Board, and you'll be
12 given five (5) minutes to address the Board.

13 I would like to start by calling on
14 Todd -- Todd Slack to address the Board and to state
15 who he is representing. Todd...?

16

17 PRESENTATION BY MR. TODD SLACK:

18 MR. TODD SLACK: Thanks, Madam Chair.
19 My name is Todd Slack. I'm not representing anyone.
20 I'm just a citizen here in Yellowknife. However, I
21 have worked in this Snap Lake process for a number of
22 years, starting in '07 or '08, and wrapping up in,
23 let's say 2015 or so. And if you need exact dates, I
24 can provide it. Anyhow, I'm familiar.

25 I have not -- I am not up-to-date with

1 what's in front of the Board now, and I'm only seeking
2 to just add a little context after I heard something
3 on the radio last night, and that kind of brought some
4 old remembrances back to me. And I -- what I heard
5 was that the -- De Beers stands by the nature of the
6 science, or something to that effect.

7 And I -- just a -- a little bit of
8 history here, and I'm not sure what is on the record.
9 So if I'm duplicating this, please forgive me. And it
10 goes back to '05, I think was the -- the EA, and I'm
11 sure our friends at the table can confirm that.

12 This project -- the nature of the
13 predictions provided by Golder at that point are --
14 were poor. So as you go forward, keep -- I'm -- I'm
15 just asking the Board to keep that in mind.

16 There was an absolute promise that they
17 would never reach the levels of TDS that we saw.
18 There was interventions from INAC at the time who were
19 the responsible folks saying, We're not so sure about
20 that. We think that there's a -- a concern here.
21 There's a risk.

22 And they said, Well, that's just not
23 going to happen -- De Beers said, It's just not going
24 to happen. And the -- the response, Even if it does
25 happen, we will -- we'll grout everything. We're

1 going to have this paste backfill.

2 Again, none of that worked out. And so
3 the point that I'm trying to make here is there are
4 going to be a lot of predictions, and a lot of
5 modelling here, all of which is inherently going to be
6 wrong. It's not necessarily going to be wrong to the
7 same degree, but I'm hoping that as the Board -- and
8 you -- you guys are going to have to approach this,
9 and review this stuff, and try to make findings of
10 fact that form the foundation of the decision going
11 forward.

12 And the -- back then there was a level
13 of certainty in the science that was not borne out by
14 events. And so when I hear again that there is a
15 level of -- that the project is certain on what's
16 going to happen, I think that we should be approaching
17 this with a -- a level of concern and a skepticism.

18 And so again, I -- I heard a little bit
19 of -- from our -- our -- the GNWT this morning, and I
20 think even when we go back to the '05, or the original
21 EA hearings, and I think about who I want to trust, I
22 think about it -- like, what is -- why is GNWT here?
23 They're here to represent all of our interests as
24 citizens. And the projects job, they're doing their
25 job to try to reduce the security, to try to have

1 lower limits, to try to make it easier for them to
2 walk away from this site.

3 And so when I look at those two (2)
4 comparative motives, me as a citizen, I have concern
5 with one over the other. That doesn't necessarily
6 mean that GNWT's going to be right, but everything
7 they do, they get grief for. And so when they put
8 their position forward, I'm sure that it's -- it's
9 thought out to the degree that we would all expect.

10 And so just starting to move this
11 towards wrapping up, it -- the idea of -- of mining --
12 and I think mining is important for -- for all of us,
13 and even -- I -- I -- even this project, I don't --
14 you don't have to look to my words for this. You
15 know, De Beers -- at the time, Dave Putnam (phonetic)
16 was his name -- he put it the way that I think about
17 it, that they're borrowing the land.

18 I think it was 2011, and our colleagues
19 at the table here can tell you what his title was. I
20 think he was a VP of sustainability, or -- he was a
21 boss, anyhow. And so it's about borrowing the land.
22 They used the land, and now they're going to give it
23 back, and what is the condition that they're going to
24 give it back?

25 You know, and not to make light of it,

1 but I have a personal little anecdote here, and I
2 don't let anybody borrow my chainsaw, because that
3 chainsaw is not going to come back and perform the way
4 that you thought it would, no matter how much you
5 trust them, how much -- you know, they could be your
6 best friends in the world, and, you know, been burned
7 by this a number of times.

8 So in this case, I think -- I'm really
9 hoping that the Board will look at the function that
10 that land perform -- land and water perform before and
11 ensure that we're going to meet -- it's going to be
12 able to do that again.

13

14 (BRIEF PAUSE)

15

16 MR. TODD SLACK: And -- and I trust
17 the -- the Board to do that.

18 And then the -- the last item that I --
19 I talk about -- and again, my knowledge on the recent
20 events is very limited. It relates to the security.
21 We think of De Beers as a big company. It's never
22 going to go bankrupt. That security is there to
23 protect us and their engineer will do their
24 calculations, GNWT's consultant will do theirs.

25 And I just come down on it at the point

1 of, what if -- what if the security has to be called?
2 What's the cost of being wrong? There is a cost to
3 money and providing assurance to us as citizens. I --
4 I acknowledge that, but the flipside of that is that
5 we as -- as the citizenry, we know the cost of when
6 this goes wrong.

7 You know, my -- the little bit of work
8 that I do now is Giant, on the drive up. Giant's
9 rolling in at \$1.1 billion these days. Like, never
10 mind Snowfield, never mind Tahera's project up in the
11 North. Other examples that I'm sure if I sat and
12 thought about it are going to cost us money to clean
13 up.

14 And so that's what the purpose of the
15 security is for. And you know, these -- these guys
16 are saying one (1) number. They're going to say one
17 (1). Again, what is the cost of insuring that we're
18 protect -- that we, the citizens, are protected?

19 And the -- the concern I have is 1)
20 ensuring that we are going to be protected, but number
21 2) De Beers and Anglo American, yeah, they're a big
22 company, but three (3) years ago, they were trading
23 their market capitalization, their -- the value of
24 that company, was 90 per -- give or take, 90 percent
25 less than what it is today.

1 So the idea that they'll never go
2 bankrupt, that's -- that's not an idea that we have --
3 we should really have, and that I'm hoping that the
4 Board will again err on the -- the preventative side,
5 and on the cautionary side, and ensure that the
6 citizenry isn't going to be shelling out for whatever
7 may come.

8 And so that's my sign that -- that I
9 better wrap this up. So I'm hoping -- yeah, I don't
10 have anything to say about the -- the specific details
11 that is on the record, but yeah, I -- I hope that
12 these concerns are -- are, again, part of your
13 decision. Thank you very much for the opportunity. I
14 really appreciate it.

15

16 QUESTION PERIOD:

17 THE CHAIRPERSON: Yeah. Thank you.
18 If you'd just remain seated, because we're going to
19 give the opportunity.

20 I'd like to -- to be reminded that all
21 the -- the questions directed to -- to Todd be focused
22 on seeking clarity on issues that will assist the
23 Board in their decisions relating to the land use
24 permit -- the land use permit -- permit amendment
25 application, and the water licence renewal

1 application.

2 And the first -- I would like to start
3 by calling on De Beers Canada Incorporated if they
4 have any questions or clarifications for Todd.

5 MS. SARAH MCLEAN: Sarah McLean, with
6 De Beers. Thank you, Madam Chair. We thank Mr. Slack
7 for his comments, and we have no questions. Thank
8 you.

9 THE CHAIRPERSON: Thank you. Next, I
10 will ask the same. Does Environment and Climate
11 Change Canada have any questions or clarifications for
12 Todd Slack?

13 MR. GABRIEL BERNARD-LACAILLE: Thank
14 you, Madam Chair. Gabriel Bernard-Lacaille, with
15 Environment and Climate change Canada. Thank you, Mr.
16 Slack. We have no questions.

17 THE CHAIRPERSON: Thank you. I will
18 now call on the Government of the Northwest
19 Territories, if they have any questions or
20 clarifications for the speaker Todd Slack.

21 MR. NATHEN RICHEA: Thank you, Madam
22 Chair. It's Nathen Richea, with the Government of the
23 Northwest Territories. I would like to thank Mr.
24 Slack for his remarks, and I have no questions.

25 THE CHAIRPERSON: Thank you. Now I

1 will ask the -- the Board staff, Board technical
2 group, and legal counsel if they have any questions of
3 Todd Slack for clarification.

4 MR. SHELDON TONER: Thank you, Madam
5 Chair. Board staff have no questions.

6 THE CHAIRPERSON: Thank you. I now
7 ask the Board themselves.

8 BOARD MEMBER MANTLA: Masi, Madam
9 Chair. Mason Mantla. I have no questions.

10 BOARD MEMBER MACINTOSH: Thank you,
11 Madam Chair, I have -- Tanya MacIntosh, Board member.
12 Thank you for your comments. I have no questions.

13 BOARD MEMBER FAIRMAN: It's Kimberly
14 Fairman. I have no questions at this time.

15 BOARD MEMBER ZOE-CHOCOLATE: Thank
16 you, Todd Slack. I have no questions at this time.
17 It's Camilia Zoe-Chocolate.

18 THE CHAIRPERSON: Thank you, Todd, for
19 your presentation.

20 MR. TODD SLACK: Thank you.

21

22 (BRIEF PAUSE)

23

24 THE CHAIRPERSON: I'm just going to
25 take a five (5) minute break, just to regroup. Board

1 staff...?

2

3 --- Upon recessing

4 --- Upon resuming

5

6 FINAL QUESTIONS FROM THE BOARD AND STAFF:

7 MS. KATHERINE HARRIS: Thank you,
8 Madam Chair. Katherine Harris, Board staff. So we
9 have a question for De Beers. Yesterday, De Beers
10 referred to a BATEA Report.

11 Board staff would like to confirm that
12 this is the preliminary evaluation of best available
13 technologies, economically achievable, for reduction
14 of total dissolved solids in effluent at Snap Lake
15 Mine, which was submitted in 2014 as part of the post
16 EA information package for the amendment of water
17 license MV2011L2-0004.

18 THE CHAIRPERSON: De Beers...?

19 MR. SEAN WHITAKER: Sean Whitaker,
20 with De Beers. Thank you, Madam Chair. Yes, that is
21 confirmed. That is the correct report that was
22 referred -- referenced, BATEA Report from that time.

23 THE CHAIRPERSON: Board staff...?

24 MS. KATHERINE HARRIS: Thank you,
25 Madam Chair. Thank you. Can De Beers please confirm

1 that this report with used to inform their proposed
2 water treatment option selection for closure?

3 THE CHAIRPERSON: De Beers...?

4 MR. SEAN WHITAKER: Thank you, Madam
5 Chair. Sean Whitaker, with De Beers Canada.

6 It was for operational effluent quality
7 criteria, to maintain the operation of Snap Lake Mine
8 at that time. However, it was a reference to Hatch
9 2014 report that was developed for MENZ (phonetic)
10 that says reverse osmosis is not an economically
11 achievable treatment solution for the treatment of
12 many constituent ions, which nitrate is one (1) of
13 those constituents.

14 THE CHAIRPERSON: Board staff...?

15 MS. KATHERINE HARRIS: Thank you,
16 Madam Chair. So just to clarify, was this report
17 actually used to confirm the assessment of other
18 treatment options, such as ion exchange as part of
19 closure?

20 THE CHAIRPERSON: De Beers...?

21

22 (BRIEF PAUSE)

23

24 MR. SEAN WHITAKER: Thank you, Madam
25 Chair. Sean Whitaker, with De Beers Canada.

1 Could we have a couple minutes just to
2 pull up the 2014 report? I don't honestly remember.
3 It's been quite a few years since we wrote it.

4 THE CHAIRPERSON: Yeah. I'll give you
5 five (5) minutes.

6

7 (BRIEF PAUSE)

8

9 MR. SEAN WHITAKER: Madam Chair, Sean
10 Whitaker, with De Beers. May I provide an answer?

11 THE CHAIRPERSON: Yes, go ahead.

12 MR. SEAN WHITAKER: Madam Chair, thank
13 you. Sean Whitaker, with De Beers Canada.

14 It was actually referenced in the
15 original water licence application that study was
16 completed by Golder in 2013. It was titled "Treatment
17 Review for All Water," as part of TDS Management's
18 technical memorandum prepared for De Beers Canada,
19 dated December 12th, 2013, Denver, Colorado, which was
20 submitted with the original water licence application,
21 before we were referred to EA 13-14-02.

22 THE CHAIRPERSON: Board staff...?

23

24 (BRIEF PAUSE)

25

1 MS. KIMBERLEY MURRAY: Thank you,
2 Madam Chair. This is Kim Murray, with Board staff.
3 Could we just have a minute to look up this report
4 quick?

5 THE CHAIRPERSON: Yeah, five (5).

6

7 (BRIEF PAUSE)

8

9 MS. KATHERINE HARRIS: Thank you,
10 Madam Chair. Katherine Harris, for the Board staff.
11 So on the public registry for water
12 licence MV2011L2-004, it's listed as being provided as
13 Appendix 5, in support for the TDS treatment and tied
14 to the post-EA information package.

15 THE CHAIRPERSON: De Beers...?

16 MS. KATHERINE HARRIS: Sorry, just to
17 clarify, I'm just curious if this is -- if we're
18 referring to the same thing.

19 THE CHAIRPERSON: De Beers...?

20 MR. SEAN WHITAKER: Sean Whitaker,
21 with De Beers, Canada. I just have to look it up
22 exactly how it was filed onto the registry, but maybe
23 he could do that after the fact, to confirm if -- for
24 that report. It is on the registry. It might just be
25 under a different name.

1 THE CHAIRPERSON: Are you asking to
2 have that -- to give you five (5) minutes to -- to
3 look it up, or...

4

5 (BRIEF PAUSE)

6

7 MS. KATHERINE HARRIS: Madam Chair, if
8 it's okay, I could continue with my next question,
9 which may provide some clarity.

10 THE CHAIRPERSON: Okay, go ahead.

11 MS. KATHERINE HARRIS: Okay. Thank
12 you, Madam Chair. Katherine Harris, Board staff.

13 The reason why we -- the Board staff is
14 seeking clarification on this is that yesterday the
15 statement was made that this -- alternate technologies
16 were -- was done as part of this assessment with this,
17 what De Beers referred to as the BATEA Report.

18 And we are just, first of all,
19 wondering if a copy of this can be provided for the
20 public record associated with this application, and
21 also, if De Beers can confirm if this was used,
22 whether or not the option assessment that was
23 completed as part of the final Closure and Reclamation
24 Plan in association with the constructed wetland
25 alternatives evaluation, if that needs to be revisited

1 in light of this decision to eliminate the constructed
2 wetland.

3 THE CHAIRPERSON: De Beers...?

4

5 (BRIEF PAUSE)

6

7 MR. SEAN WHITAKER: Thank you, Madam
8 Chair. Sean Whitaker, with De Beers Canada.

9 Just to put clarity on it, the reports
10 used were part of evidence that we use for management
11 decisions and for background information to select
12 closure alternatives that we proposed in the closure
13 plan.

14 It's -- it's not specifically written
15 for the closure plan. It was just background
16 information that we've used.

17 THE CHAIRPERSON: Board staff...?

18 MS. KATHERINE HARRIS: Thank you,
19 Madam Chair. So -- Katherine Harris, Board staff.

20 To go to my second question then, in
21 light of the removal of the constructed wetland option
22 foreclosure and moving into this passive water
23 treatment system, does De Beers -- can De Beers
24 comment on whether or not this options assessment that
25 was completed as part of the original application with

1 the final closure and reclamation plan, if that needs
2 to be revisited?

3 THE CHAIRPERSON: De Beers...?

4 MR. SEAN WHITAKER: Sean Whitaker,
5 with De Beers Canada. Thank you, Madam Chair.

6 No, I don't think it needs to be
7 revisited. We've proposed effluent quality criteria
8 that are protective of the aquatic environment and
9 limiting waste into the environment. The removal of
10 the wetland was an iterative process through the
11 regulatory process, and the comments that we received
12 during this application. The decision on modular
13 water treatment shouldn't be revisited.

14 THE CHAIRPERSON: Board staff...?

15 MS. KATHERINE HARRIS: Thank you,
16 Madam Chair. Katherine Harris, Board staff. Thank
17 you very much for that response.

18

19 (BRIEF PAUSE)

20

21 MS. KATHERINE HARRIS: Thank you,
22 Madam Chair. Katherine Harris, Board staff. No
23 further questions at this time.

24

25 (BRIEF PAUSE)

1 THE CHAIRPERSON: With that, does the
2 Board have any additional questions or clarifications
3 before moving forward? Mason...?

4 BOARD MEMBER MANTLA: Thank you, Madam
5 Chair. Mason Mantla, for the Board. I have no
6 questions.

7 BOARD MEMBER MACINTOSH: Thank you,
8 Madam Chair. Tanya MacIntosh, Board member. I have
9 no questions. Thank you.

10 BOARD MEMBER FAIRMAN: Thank you,
11 Madam Chair. It's Kimberly Fairman. I have no
12 further questions.

13 BOARD MEMBER ZOE-CHOCOLATE: Masi.
14 Camilia Zoe-Chocolate. I have no questions.

15 THE CHAIRPERSON: Thank you. Thank
16 you. I would now ask De Beers Canada Incorporated if
17 they have any final replies to make.

18

19 (BRIEF PAUSE)

20

21 MS. SARAH MCLEAN: Sarah McLean, with
22 De Beers. No, we have nothing -- no further replies
23 to make. Thank you.

24 THE CHAIRPERSON: Thank you. We're
25 going to take about a ten (10) minute break while the

1 undertakings are being prepared and to be read into
2 the record.

3

4 --- Upon recessing

5 --- Upon resuming

6

7 THE CHAIRPERSON: If we all could be
8 seated again, we'll start once again.

9

10 (BRIEF PAUSE)

11

12 THE CHAIRPERSON: I would like to call
13 on the Board's legal counsel to read through the list
14 of undertakings that require follow up in the coming
15 weeks.

16 MR. SHELDON TONER: Thank you, Madam
17 Chair. Sheldon Toner, Board counsel.

18 Undertakings from De Beers Snap Lake
19 Public Hearing, November 26-27, 2019.

20 Undertaking Number 1:

21 "De Beers to provide all available
22 water quality data for Sumps 1
23 through 5 for 2019."

24 Undertaking Number 2:

25 "De Beers to provide an updated

1 security estimate in an Excel
 2 spreadsheet and as a PDF to account
 3 for the updates made throughout this
 4 proceeding. This is to include a
 5 breakdown of the two proposed
 6 closure scenarios, (1) constructed
 7 wetlands, and (2) no constructed
 8 wetlands. A concordance table shall
 9 also be included that identifies the
 10 updates and the locations."

11 Undertaking Number 3:

12 "De Beers to provide a digital copy
 13 for the record of the mixing zone
 14 map as mentioned during De Beers'
 15 presentation at the public hearing."

16 Undertaking Number 4:

17 "De Beers to provide a temporal
 18 summary of all available data,
 19 preferably in graphical format
 20 associated with the SNP stations
 21 that are proposed to be removed."

22 Undertaking Number 5:

23 "GNWT to provide an updated security
 24 estimate in an Excel spreadsheet and
 25 as a PDF to account for the updated

1 security estimate that is due to be
2 submitted by De Beers on December
3 16, 2019, per Undertaking Number 2.
4 This is to include the proposed
5 scenario of no constructed wetlands.
6 The concordance table shall also be
7 included that identifies the updates
8 and the locations. This is due by
9 January 24, 2020."

10 Undertaking Number 6:

11 "GNWT to provide clarification on
12 triggers in the proposed water
13 licence that could be used to
14 initiate the plume delineation
15 study, and a second set of effluent
16 quality criteria, EQC. This is due
17 by January 24, 2020."

18 And that is all, Madam Chair.

19 THE CHAIRPERSON: Thank you. Before
20 moving forward to the parties' closing statements, I
21 would like to ask our Executive Director, Shelagh
22 Montgomery, to review the next steps in this process
23 for the record.

24 MS. SHELAGH MONTGOMERY: Thank you,
25 Madam Chair. Shelagh Montgomery, Executive Director,

1 Mackenzie Valley Land and Water Board.

2 So at the conclusion of the -- this
3 public hearing, the -- these undertakings that were
4 just read into the record, those will be circulated by
5 Board staff early next week, by December 2nd.

6 The -- those responses to undertakings
7 will be due on December 16th, 2019, with the exception
8 of those two (2) that have dates of January 24th of
9 2020.

10 The draft licence and permit conditions
11 will be put out for public review in early January, by
12 January 3rd, 2020. The reviewer comments on those
13 draft conditions will be due on January 17th, 2020.
14 The -- De Beers will have an opportunity to provide
15 their responses to those comments by January 24th.

16 The deadline then for closing arguments
17 -- written closing arguments from the Interveners will
18 be due on February 7th, 2020. The deadline then for
19 closing arguments -- written closing arguments from De
20 Beers will be February 14th.

21 And then the staff will -- will
22 diligently work away to compile a lot of information.
23 It's expected -- expected that at some point -- March,
24 the Board will be in a position to making --
25 deliberate on the applications and provide a decision,

1 and then it would be transmitted to the Minister of
2 Environment and Natural Resources of the Government of
3 Northwest Territories for -- for approval for the Type
4 A Water Licence.

5 THE CHAIRPERSON: Thank you. I now
6 would like to invite Environment and Climate Change
7 Canada to provide their closing statements.

8

9 (BRIEF PAUSE)

10

11 CLOSING STATEMENT BY ECCC:

12 MR. GABRIEL BERNARD-LACAILLE: Thank
13 you, Madam Chair. Gabriel Bernard-Lacaille, with
14 Environment and Climate Change Canada.

15 So Environment and Climate Change
16 Canada appreciates the opportunity to participate in
17 the water licensing process, and we would like to
18 thank the Board, the Board staff, translators,
19 technical staff, De Beers, and all intervening parties
20 for their hard work during this proceeding.

21 The Department also appreciates the
22 cooperation of the Proponent and other -- other
23 Interveners in responding to and discussing technical
24 comments and recommendation.

25 Environment and Climate Change Canada

1 looks forward to further cooperative work with the
2 Proponent and other interested parties that would be
3 ongoing with this water licence application and other
4 closure activities.

5 Specifically, ECCC looks forward to the
6 review of the Aquatic Effects Monitoring Program based
7 on final closure configuration which is to be
8 submitted to the Mackenzie Valley Land and Water Board
9 for review by interested parties. Thank you.

10 THE CHAIRPERSON: Thank you,
11 Environment and Climate Change Canada. I now invite
12 the Government of the Northwest Territories to provide
13 their closing statement.

14

15 (BRIEF PAUSE)

16

17 CLOSING STATEMENT BY GNWT:

18 MR. NATHEN RICHA: Thank you, Madam
19 Chair. It's Nathen Richea, with the Government of the
20 Northwest Territories.

21 First, I would like to thank the Board
22 for hosting us here today and for prodi -- providing
23 the opportunity to provide our recommendations to the
24 Board for its consideration during its deliberations
25 on this water licence renewal application and on the

1 final Closure and Reclamation Plan.

2 I also would like to thank the
3 Mackenzie Valley Land and Water Board staff and De
4 Beers for their thoughtful and -- and very structured
5 questions. I think we had some good dialogue today
6 and yesterday on some of the project and the water
7 licence.

8 I also wanted to reiterate that in part
9 of my closing for the presentation earlier today that
10 the GNWT is supportive of De Beers obtaining a water
11 licence of closure of the Snap Lake Mine.

12 And we're also committed to continuing
13 to work with De Beers through some of the scientific
14 and technical challenges that were identified in our
15 presentation earlier today.

16 And we have a commitment to continue
17 that work and to meet with De Beers over the course of
18 this proceeding and following the issuance of the
19 renewal for the closure to ensure that the closure
20 plan is as robust and comprehensive as possible.

21 With that, I'd like to conclude my
22 remarks and look forward for -- we're going to
23 continue to participate in the process and provide our
24 written submissions on January 24th as well as our
25 closing statements.

1 So, thank you very much and have a good
2 rest of the week.

3 THE CHAIRPERSON: I now invite De
4 Beers Canada Incorporated to provide their closing
5 statements.

6

7 CLOSING STATEMENT BY DE BEERS CANADA INC:

8 MR. ERIK MADSEN: Thank you. Erik
9 Madsen, lead of Corporate Affairs Canada with De
10 Beers. Good afternoon, Madam Chair. Thank you for
11 the opportunity to provide a closing statement.

12 I'd like to begin by thanking the Chair
13 and the Board members, the Mackenzie Valley Land and
14 Water Board staff, the interpreters, and Pido
15 Productions for facilitation of this public hearing.

16 I would also like to thank the
17 reviewers and members of the public, the -- the Snap
18 Lake Environmental Monitoring Agency and the
19 Indigenous parties who made time to review our
20 application and attended these sessions.

21 Lastly, I'd like to thank the De Beers
22 team and our subject matter experts from Golder
23 Associates, ERM, Osler and Arktis, all of whom share
24 our collective interest in environmental protection of
25 Snap Lake.

1 De Beers is seeking a water licence
2 that will enable closure and reclamation of the site.
3 And we want to reiterate again that this is not an
4 operational water licence.

5 We have no plans to restart mining and
6 operations. And it is critical that the water licence
7 is fit for purpose and that it enables rather than
8 hinders active closure and reclamation at the site.

9 The Mackenzie Valley Land and Water
10 Board issued guidelines for the closure and
11 reclamation of mine sites in the NWT in 2013. The
12 final closure and reclamation plan that we submitted
13 in March of -- of this year conforms to those
14 guidelines.

15 The final Closure and Reclamation Plan
16 maintains the closure objectives that were approved by
17 the Board and provides clear and measurable criteria
18 for determining progress towards achieving those
19 objectives.

20 We are proud of the final Closure and
21 Reclamation Plan and feel it is very robust and is a
22 clear blueprint for moving forward.

23 Approval of this final Closure and
24 Reclamation Plan is critical to Beers -- to De Beers'
25 investment decisions in closure and reclamation

1 activities at the Snap Lake.

2 Investment dollars necessary to proceed
3 with the closure and reclamation activities proposed
4 will not be released internally without regulatory
5 approval of the plan.

6 For these reasons, we urge the Board to
7 permit us to proceed through issuance of a clear water
8 licence and approval of the final Closure and
9 Reclamation Plan aligned with the outcomes of this
10 past review.

11 Delays in approval will not only hinder
12 progress of closure and reclamation activities at the
13 site but will also act as dis -- disincentive to
14 current and potential investors in the Northwest
15 Territories.

16 About a month ago, a new government was
17 elected here in the Northwest Territories. The
18 majority of the candates -- candidates noted that
19 there were concerns with the future of the expiration
20 and mining industry in this territory.

21 They stressed that it was the
22 foundation of the history of the Northwest Territories
23 and that there needed to be increased investor
24 confidence. And, Madam Chair, this Board has a role
25 to play in this.

1 Many people are watching what is
2 rolling out in this Hearing because, yes, this is the
3 first of several diamond mines that will be closing in
4 the future.

5 And investors are wondering if they
6 should invest in the Northwest Territories or if they
7 are likely to face permitting conditions that are not
8 evidence-based, not reasonably achievable and could
9 impose undue financial burden on them.

10 The protection of the environment is a
11 shared interest between all parties, De Beers, the
12 government, Indigenous groups, and the general public,
13 and we heard that today from Mr. Todd Slack.

14 We are committed to doing our part and
15 seek a decision that ensures protection of the
16 environment by adopting measures based upon science
17 and evidence.

18 Over the past couple of days there has
19 much talk about effluent quality criteria. We have
20 developed effluent quality criteria using the same
21 method that we used to develop the operational
22 effluent quality criteria.

23 This messa -- method has been approved
24 over and over again by the Board, and for good reason.
25 The aquatic health of receiving water bodies has to be

1 -- has -- has been protected. The fish have remained
2 good to eat and the water good to drink in Snap Lake
3 and beyond.

4 There has been no evidence provided by
5 any reviewer or Intervener to -- to the contrary.
6 Decisions must be evidence-based. The evidence
7 presented through this process strongly supports our
8 position.

9 Neither of the Interveners has
10 indicated that the effluent quality criteria as we
11 proposed are likely to cause environmental harm.

12 Their argument seem to amount to
13 recommending to the Board to place stricter limits on
14 De Beers because they feel De Beers can achieve those
15 stricter limits, not because there is any risk to the
16 aquatic environment at the levels that we proposed.

17 Madam Chair, stricter limits will not
18 result in improvement environmental outcomes for Snap
19 Lake. Water management has changed at Snap Lake.
20 And, as we've heard, we are discharging on a seasonal-
21 only basis and less than 2 percent of the volume of
22 water that was discharged annually at the peak of
23 extended care and maintenance in 2016.

24 In addition to a major decrease in the
25 quantity of water discharge, it is important also to

1 recognize the improvement in water quality in Snap
2 Lake that has been served -- been observed since this
3 change in water management as of 2014 -- or '17, I
4 mean. And this trend will continue under the closure
5 discharge scenarios as presented.

6 We have demonstrated with evidence and
7 expert testimony that we can meet the Aquatic Effects
8 Monitoring Program benchmarks within Snap Lake during
9 closure and post-closure without active treatment.

10 As we have discussed, we do require a
11 200-metre mixing zone for the discharges, just as we
12 did in operations. The Mackenzie Valley Land and
13 Water Board, the Government of the Northwest
14 Territories guideline on mixing zones 2017 indicates
15 that the dimensions of the mixing zones should be as
16 small as practical.

17 The total area of the new mixing zones
18 from the influent storage ponds is actually smaller
19 than the current one. And this is illustrated in the
20 map provided for Undertaking number 3.

21 This is because the discharge from the
22 influent storage ponds to the lake is at the shoreline
23 and, therefore, the mixing zone is not a complete
24 circle as it is around the operational discharge
25 location. A hundred-metre mixing zone would not be

1 reasonable within this context.

2 Basing our effluent quality criteria on
3 a mixing zone of 200 metres is reasonable and will not
4 cause harm to the Snap Lake or the aquatic system. We
5 will continue to monitor and evaluate a long list of
6 water quality parameters as part of the surveillance
7 network program within the site and as a part of the
8 Aquatic Effects Monitoring Program within Snap Lake
9 and beyond.

10 The adapted management framework with
11 the Aquatic Effects Monitoring Program includes action
12 level triggers whereby reporting and management
13 responses are required.

14 These programs should provide the
15 assurances that reviewers are looking for on a
16 continued basis that the environment is being
17 protected.

18 Regarding the comments that have been
19 made by Interveners that more regulated water quality
20 parameters are needed to provide additional certainty,
21 I'd like to draw the Board and Board staff's attention
22 specifically to the hydrodynamic model reported --
23 report submitted in August of 2019.

24 Within that report, and specifically
25 within Attachment B, we include a series of figures,

1 Figures B1 through B40, which show the simulated
2 concentrations of all parameters at the edge of the
3 mixing in Snap Lake compared to the aquatic effects
4 monitoring benchmarks.

5 These figures clearly show
6 decreasing concentrations over time in Snap Lake for
7 all parameters and that all parameters remain below
8 the Aquatic Effects Monitoring Program benchmarks.

9 These figures illustrate this both at
10 the edge of the three (3) mixing zone as well as at
11 the outlet of the lake. In other words, if we
12 discharge at the upper bounds of predicted
13 concentrations for the whole discharge period, the
14 lake will still be protected.

15 The definition of 'reasonable
16 achievable' in the context of effluent quality
17 criteria should consider the tradeoffs in terms of net
18 environmental benefit to Snap Lake.

19 The science indicates that reductions
20 of nitrate below 60 milligrams per litre as nitrogen
21 are not necessary because at the concentration will
22 not have acute toxicity at end of pipe, nor chronic
23 toxicity at the edge of the mixing zone.

24 The aquatic communities documented in
25 the Aquatic Effects Monitoring Programs will remain

1 healthy and productive. Reductions of nitrate
2 effluent quality criteria to lower than 60 milligrams
3 per litre as nitrogen would not provide meaningful
4 reduction of environmental risk, because the risks to
5 aquatic life are already negligible in this scenario.

6 To the contrary, the other types of
7 environmental risks, such as carbon balance, waste
8 generation, and disposable -- and disposal to compe --
9 to keep a reverse osmosis facility running, or habitat
10 alterations required to create a wetland would create
11 competing environmental challenges even prior to
12 consideration of technological or economic
13 considerations.

14 Requiring De Beers to maintain a
15 reverse osmosis plant or any other form of active
16 treatment for the very small volume of surface water
17 runoff and seepage we now manage is also not
18 justified, either as pollution prevention mechanism or
19 to prode -- protect the environment. There is, in
20 fact, an environmental cost to maintaining these
21 facilities, unjustified by -- by any tangible benefit
22 to the aquatic environment.

23 Put simply, Madam Chair, placing
24 stricter requirements and ongoing active care
25 requirements on De Beers will result in no benefit to

1 the environment and, in fact, will result in -- in
2 potentially other environmental risks -- cannot be
3 seen as reasonable. To the contrary, there is strong
4 evidence before you that the aqua -- that the effluent
5 quality criteria and methods for closure proposed by
6 De Beers are achievable and are the result of
7 optimizing and balancing the protection of the
8 environment with proven and effective methods. This
9 approach, Madam Chair, is reasonable, achievable, and
10 properly -- properly balances the interests of all
11 parties.

12 As we have pointed out in our response
13 to interventions, we are adhering to the pollution
14 prevention requirements of the Fisheries Act. The
15 subject of pollution provisions under the Fisheries
16 Act was raised during Intervener questions, with the
17 comment that De Beers is ultimately responsible for
18 providing assurance that the qual -- effluent quality
19 criteria for nitrate will not trigger acute toxicity.

20 De Beers wishes to make it clear that
21 discharges do not currently and will not in the future
22 result in acute toxicity as defined under the
23 Fisheries Act. Monitoring of the discharge water to
24 date has included testing of multiple standard test
25 species and has not exhibited acute toxicity to

1 rainbow trout or Daphnia magna. These tests will
2 continue to be used to demonstrate compliance under
3 future exposure conditions.

4 The proposed nitrate effluent quality
5 criteria of 60 milligrams per litre as nitrogen will
6 not cause acute toxicity, and this determination has
7 high confidence. This concentration is below the CCME
8 generic short-term guideline for acute life of 124
9 milligrams per litre as nitrogen and is well below
10 acute toxic -- toxicity values specified by CCME for
11 rainbow trout, which is a hu -- 821 milligrams per
12 litre as nitrogen; Daphnia magna, of 462 milligrams
13 per litre as nitrogen; and even the most sensitive
14 species listed by the CCME's technical derivation for
15 nitrate, caddisfly, which is 97 milligrams as nitrogen
16 -- milligrams per litre.

17 The focus of activities at Snap Lake
18 should now turn to progressum -- progressing active
19 closure, active reclamation, and demolition of site
20 infrastructure. It should turn to meeting the NWT
21 closure guidelines and actually implementing the final
22 closure and reclamation plan for this site, and this
23 is everybody's interest.

24 As we have said many times before,
25 mines are always changing, whether due to changing

1 economic market commodity conditions, environmental
2 conditions, or in our case, moving into next phase in
3 the life of the mine. And the one (1) thing that is
4 always constant is change. The regulatory regime
5 governing mining in the Northwest Territories must
6 recognize the need for change and allow for change to
7 occur.

8 We ask that the Board set the terms of
9 the water licence in such a way to allow for future
10 adjustments without overly burdensome and lengthy
11 amendments and processes.

12 We ask that the Board approve the
13 effluent quality criteria as we have proposed. They
14 are protective of the environment while allowing for
15 closure objectives to be met and closure activities to
16 proceed.

17 And in conclusion, De Beers is not
18 leaving. As everybody knows, we have an operating
19 mine very close by in the Gahcho Kue operations that
20 has a life expectancy out to presently 2028. But stay
21 tuned, as we will soon be back to this same Board for
22 our licence amendment for the Gahcho Kue Mine in order
23 to extend the mine life. As we said earlier, the only
24 thing certain is change, and we and industry req --
25 req -- request flexibility in mine plans moving

1 forward.

2 I wish to say we were very encouraged
3 this morning and just now in the closing remarks from
4 the GNWT and from -- from Environment and Climate
5 Change that there is a verbal reconnection --
6 recognition from the Government of the Northwest
7 Territories that -- that there is support for closure
8 of the Snap Lake Mine and that we will work -- and
9 that they will work with De Beers as we proceed
10 through closure and post-closure periods.

11 We understand there are technical
12 opinions or areas of difference, as we have heard over
13 the past two (2) days, but we feel there is still room
14 for agreement between De Beers and the Government of
15 the Northwest Territories, and we look to work with
16 the Government of the Northwest Territories to resolve
17 these areas of disagreement prior to submission of our
18 closing arg -- arguments.

19 And finally, I want to reiterate that
20 De Beers Group is committed to safe, responsible, and
21 environmentally sound closure of the Snap Lake Mine,
22 and we ask the Board to allow us to proceed into
23 closure with a clear and concise water licence that is
24 fit for purpose. So with that, thank you very much,
25 and masi cho.

1 CLOSING COMMENTS BY THE CHAIR:

2 THE CHAIRPERSON: Thank you for all
3 your presentation -- your closing statements, on
4 behalf of the Board. I'd like to thank all of you for
5 participating in this hearing process in a respectful
6 manner. I'd like to remind everyone that transcripts
7 of the hearing will be filed on the public registry.

8 In closing, we would like to thank all
9 of the presenters and the participants. The Board
10 appreciates the efforts made by De Beers Canada
11 Incorporated and the Interveners to prepare for this
12 process, including all the evidence provided to help
13 us make a decision. I would also like to thank our
14 court transcriber, Ms. Wendy Woodworth, and the Pido
15 technician, Norbert Poitras. Your work for this
16 hearing is very much appreciated.

17 And of course, many thanks to our staff
18 and our legal counsel. And all of you, thank you for
19 your courtesy and for your spec -- respect for each
20 other. And in particular, I'd like to thank the Board
21 here for their dedication and hard work that makes
22 everybody's job, and especially mine, a lot easier.

23 I've ask -- it's Bertha -- I'm trying
24 to think of the name again -- Bertha Catholique to say
25 our closing prayer, but prior to calling her forward,

1 I have -- after the meeting is adjourned, I'd ask that
2 if eve -- everyone would just kind of stay seated, the
3 Board would like to show our respect with everyone and
4 to thank you all by shaking each and everyone's hands
5 before they leave. Bertha...?

6

7 (CLOSING PRAYER)

8

9 THE CHAIRPERSON: This meeting is now
10 adjourned at 2:41. I just ask people to be seated,
11 and the Board will come and shake your hands.

12

13 --- Upon adjourning at 2:41 p.m.

14

15

16 Certified Correct,

17

18

19 _____

20 Wendy Woodworth, Ms.

21

22

23

24

25

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