

DDMI Traditional Knowledge Panel Session #12

OPTIONS FOR PIT CLOSURE

Diavik Diamond Mine, NT
September 12-16, 2019



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**Diavik Diamond Mines (2012) Inc.
Traditional Knowledge Panel Report**

Session #12: *Options for Pit Closure*

Diavik Diamond Mine, NT
September 12-16, 2019

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1 Background

Since 2011, the Traditional Knowledge (TK) Panel has guided Diavik Diamond Mines (2012) Inc. (Diavik) to appropriately and meaningfully consider Traditional Knowledge (TK) in operations, environmental management and monitoring as well as closure planning at the Diavik Diamond Mine (Figure 1). The TK Panel has been meeting since 2012 and continues to gather at least once a year to discuss select issues and concerns. The most recent gathering was held at the Diavik Diamond Mine from September 12-16, 2019 to consider various options for pit closure, particularly the possibility of placing processed kimberlite into the pits and, regardless of the presence of processed kimberlite in the pits, to discuss criteria for reconnecting the pit lakes to Lac de Gras.

In June 2018, Diavik filed for an amendment to its water license to consider allowing pits (i.e., mine workings) to be filled with processed kimberlite (PK). This proposed change to the closure plan, known as *The Processed Kimberlite to Mine Workings (PKMW) Project*, triggered an environmental assessment through the Mackenzie Valley Environmental Impact Review Board (MVEIRB).

While the North Inlet was originally planned as the topic of session #12, the timing of the environmental assessment for the PKMW led both DDMI and the TK Panel to speak about pit options instead. The North Inlet will be the focus of session #13.

2 Session Purpose and Overview

“Life is like a river; it only flows one way. We can’t go back and change things, we have to work with what we have now in the present. That is why we have this panel to discuss this, and to try our best to make the land back like it used to be as much as possible.” - Roger Catholique

The purpose of TK Panel Session #12 was to explore disposing of processed kimberlite (PK) in the open pits and underground mining areas (A418 and possibly A154 and A21), consider water quality and fish habitat within the pits upon closure regardless of whether there is PK in the pits, and allow for Diavik to formally respond to Session #11 recommendations around processed kimberlite made by TK Panel members.

The TK Panel members weighed the options of making the existing containment facility (i.e., the processed kimberlite containment, or PKC) higher than initially planned to increase the amount of available space versus the current proposal of depositing the processed kimberlite in mined out open pits and underground. Recommendations from the TK Panel contributed to this new proposal.

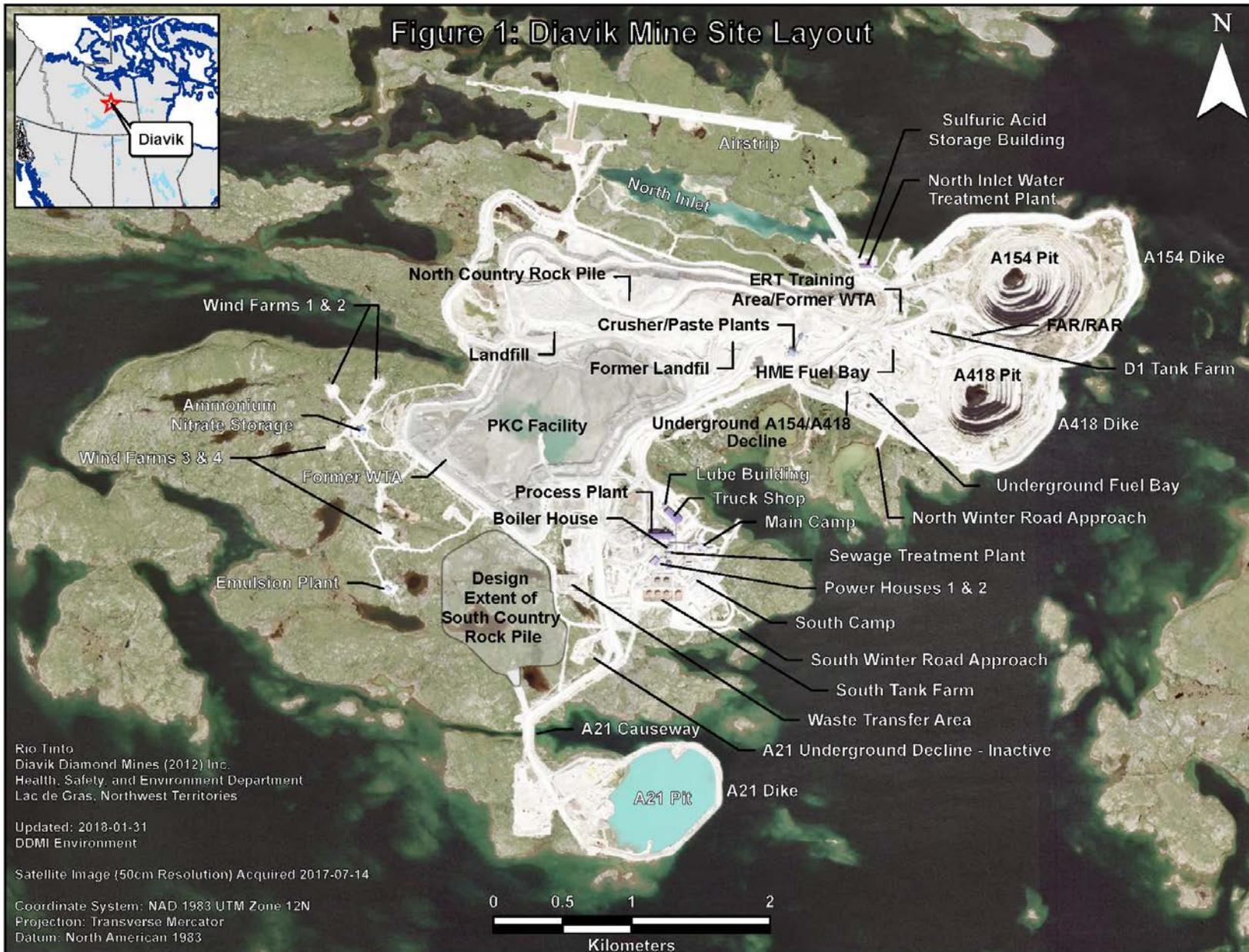
The group further explored the technicalities of placing PK into the A418 mine workings—disposing of PK from future operations directly into the pit as well as possibly moving much of the PK from the PKC. TK Panel members expressed their concerns around healthy fish and water in the pits and considered their comfort level around potential impacts of PK on the aquatic environment if pits are filled with PK. The group also discussed their comfort level around the timing and appropriateness of breaching a dike for mined-out pits that contained PK as well as pits that do not contain PK, and what monitoring processes and testing results would enable a breach to connect a reclaimed pit with Lac de Gras. Finally, the TK Panel considered the implications of the current alternative to continue PK disposal within the current containment.

The TK Panel revisited and built upon their findings from Session #6 which focused on the PKC, TK Panel #8 which considered reefs, fish habitat and water monitoring in the pits, as well as Session #11 which focused on options for processed kimberlite.

A short presentation highlighted pit options and reminded the TK Panel of their previous recommendations made around PK, pits, water, fish and fish habitat. Key TK values identified by the TK Panel (e.g., respect, stewardship, traditional laws) were emphasized as providing the backdrop for all discussions. Finally, the group was reminded that while there is currently PK disposal at other mines (e.g., Ekati), the Diavik mine is unique given that the kimberlite pipes are located under a lake and the mine operates on an island. This background information provided additional context for the Panel members when evaluating pit options on-site.

Diavik also presented an overview of revisions to the site-wide Closure and Reclamation Plan (V4) and proposed PKMW Project as the basis for subsequent discussions around the proposed disposal of PK in the pits, monitoring plans, and breaching the dikes. A second presentation highlighted community engagement on these topics in 2019.

The TK Panel heard Diavik's formal responses to recommendations from the TK Panel Session #11 Processed Kimberlite Options. In addition, they developed new guidance points and recommendations for the pit options as well as suggestions for future TK Panel sessions. Diavik provided initial responses to these recommendations while formal responses will be forthcoming. This format is the same as that of previous sessions and provides strong consistency, feedback, and communications between the TK Panel members and Diavik staff. Finally, consistent participation from TK Panel members made for strong and efficient discussion.



3 Session Goals and Activities

The TK Panel members review closure plans for various areas of the mine, share their knowledge in relation to each topic, and present recommendations to Diavik. In this way, they are continually building their understanding of the mine site and its closure challenges, while also directly influencing Diavik's closure plans.

The goals for Session #12 were to:

- Provide input to monitoring and ensuring healthy water and fish during and after pit closure;
- Build on discussions for PK disposal; and
- Observe “with their own eyes” the pits, visit the water treatment plant, and view the North Inlet and adjacent vegetation plots.

The session format followed an established routine, modified according to participant feedback and learnings over the previous eleven sessions. At the outset of each session, the group reviews and approves the proposed format and agenda. An evaluation process held at the end of the session then helps to inform and improve future sessions.

Like other sessions, participants engaged in a site tour to view the A418, A154 and A21 open pits, observe the PKC from atop the North Country Rock Pile, investigate the North Inlet, inspect the outflow from the water treatment plan into Lac de Gras, tour the water treatment plant and view the vegetation plots beside the North Inlet. While visiting the shores of Lac de Gras, traditional protocols of feeding the water were practiced.

The tour of the water treatment plant included an explanation of how turbid water settles in a series of tanks with the aid of a binding agent (i.e., flocculant) before being released into Lac de Gras. TK Panel members climbed several stories in the plant in order to look down at the impressive labyrinth of tanks, ponds, testing equipment, and platforms. They learned that the water treatment plant has the capacity to treat 90,000 m³ per day.

As in previous sessions, staff from the Environmental Monitoring Agency Board (EMAB) attended; however, this was the first session where EMAB observed the entire workshop rather than just the final day when the TK Panel presents the current session's recommendations. During Session #11, the TK Panel advised that EMAB could observe the entire TK Panel session.

4 Report Outline

This report outlines key themes related to pit options and water criteria for closure considered by the TK Panel and presents their subsequent recommendations.

Appendix A includes photos from the session and site tours. Appendix B contains the agenda while Appendix C provides a blank copy of the informed consent form that was signed by participants or observers new to the TK Panel. Daily notes were reviewed and verified by each participant and included in Appendix D. In addition, all questions posed to Diavik during each day were tracked and attached to the daily notes in Appendix D. Appendix E contains the background presentation on pit options and highlights previous TK Panel recommendations related to PK, the PKC and pit closure. Appendix F contains presentations given to the TK Panel by Diavik related to community engagement in 2019, and an update to closure plans for mined pits and the PKMW Project.

Diavik presents their response to TK Panel Session #11 recommendations on the PK options in Appendix G. The TK Panel gave their guidance and recommendations on options for the pits as shown in Appendix H. A short presentation used for discussion on the next steps and session topics is included in Appendix I, followed by participant evaluations summarized in Appendix J.

5 Proceedings: Key Questions, Themes and Guidance Points

The TK Panel was tasked with exploring guiding questions around pit options. The original questions proposed by the facilitators as well as the general direction of the session were modified with input from the TK Panel over the course of the session. These guiding questions included:

- What are your thoughts about the revised closure plans for the pit? Do you have any questions about the changes to the plan?
- If the pits are filled, what are your concerns or fears about reconnecting the pit to Lac de Gras?
- What other information do you need to feel comfortable with closure of the pit?
- If Diavik goes ahead with refilling the pit, what would you want to watch during closure to know that it is good? Regarding water? Regarding fish?
- If Diavik goes ahead with refilling the pit, what would you want to watch in the filled pit lakes to advise if the pit lakes should be connected with Lac de Gras?

Throughout discussions to consider these questions which balanced scenarios if the pits were or were not filled with PK, key observations emerged around monitoring, ways of knowing and communications.

5.1 Monitoring Guidance

Indigenous community members have been “monitoring” their lands since time immemorial. People have a strong understanding of what needs to be watched and how often which is generally grounded in their sense of guardianship and responsibility for taking care of the land, air, water and animals. Several re-occurring themes emerged around the challenges of monitoring today, particularly around given climate change impacts and uncertainties so present in the modern day. TK Panelists spoke to the importance of balancing western science and TK in long-term monitoring and how young people need the capacity and economic opportunities that can be provided by monitoring.

The TK Panel put forth the following guidance points around monitoring:

- Feeling comfortable and having confidence throughout closure is difficult given many complex and interconnected factors. Monitoring programs that we design and carry out will help us to feel more comfortable and less uncertain.
- We want to build on the existing aquatic effects monitoring program (AEMP) and camp to expand TK testing and to build scientific testing methods and skills with young people.
- Over and above the fact that community members are the rightful guardians of their lands, these modern times mean that people now need the employment opportunities that formal monitoring programs provide.
- Watching (monitoring) is just the beginning. Action plans need to be developed that identify responsibilities around addressing issues found through monitoring fish, water, wildlife, etc.
- Non-invasive monitoring and testing are always preferred to methods that harass, prod or disrupt fish, wildlife, etc. (e.g., cameras versus tagging).
- Even after the TK Panel is satisfied that Diavik is released of responsibilities, the pits and mine site need to be monitored every year, indefinitely.

5.2 Ways of Knowing Guidance

Expertise and understandings grounded in TK provide the framework for most discussions held by the TK Panel at Diavik. Indeed, this forum provides a unique opportunity for Indigenous ways of knowing to be discussed in a safe and supportive environment in a manner that doesn't always have to be measured against the typical standard of western science. Throughout this session, the TK Panel contributed TK that can be interwoven into closure planning.

The TK Panel put forth the following guidance points grounded in their ways of knowing:

- While fish and wildlife are smart and can sense whether habitat is healthy or safe, sometimes they don't have any choice. This is why, for example, contaminated or deformed fish have been found in other parts of the world.
- People understand fish, fish habitat and how fish survive in lakes based on their fishing experience.
- The TK Panel supports and expects ongoing rigorous scientific testing of fish, water, geology (e.g., fissures), wildlife, etc.
- The impacts of climate change on permafrost and water levels, in particular, remain a big question in peoples' minds.
- It will take time for the pits to return to a natural state that is healthy for fish.

5.3 Communications Guidance

Communications was a significant topic of discussion throughout this session. First, people wanted a more transparent and easier process for TK Panel findings (e.g., reports, guiding points, and recommendations) to be shared with TK Panel members and other community members. Second, members of the TK Panel commented on the importance of using creative ways to communicate complex engineering ideas related to the mine and closure.

Communication needs to be improved in terms of the members of the TK Panel accessing their reports and being available to community members and future TK Panel participants. While these are sent to each group several months after each session, there seems to be a disconnect such that members are rarely provided copies of the reports from their member Nations. Further to discussion, it was decided improvements to communications will require that:

- All TK Panel reports need to be uploaded to a central online location (e.g., EMAB);
- At the end of each TK Panel session, a print-out of the points of guidance and recommendations will be distributed to each member; and
- TK Panel members need to be notified by email or by phone when their communities receive the reports such that they can access a copy and speak to it with other community members.

Throughout the session, as the TK Panel wrestled to understand complex engineering designs, it was suggested multiple times from both elders and youths that physical models or animations would make it much easier for people to understand the works being proposed.

Further, the TK Panel put forth the following guidance points:

- The TK Panel needs more tools (e.g., 3D models, animations) that people can see and touch to help visualize and understand proposed plans.
- Again, the TK Panel continues to want to meet more frequently (i.e., twice per year).
- People who attend the TK Panel for the first time must look at previous reports before participating.
- As per Recommendation 8.6, the TK Panel would like to see both male and female youth participating in each TK Panel session.

6 Proceedings: Recommendations

The TK Panel made a total of 16 recommendations, as outlined above and presented in Appendix G, and summarized below:

- Pit Closure and Processed Kimberlite—Three recommendations pertained to moving the PK and PKC slimes from the PKC into the pits and redirecting future PK directly to the pits. It is important that the TK Panel witness this transfer of PK as well as the inflow of water during refilling of the pit lakes with water from Lac de Gras.
- Monitoring Water (Science)—Three recommendations spoke directly to scientific monitoring of water, specifying how the pits should be refilled with water regardless of whether PK is placed in the pits; how, how often, and where monitoring water above the PK in the pits should occur; and key baseline information that should be collected prior to any breaching of dikes in pits that have been filled with PK. TK holders depend on scientific testing of water alongside monitoring according to TK.
- Monitoring Water (TK)—The TK Panel drew upon the TK protocols and methods developed for the AEMP TK Program in making two recommendations related to monitoring water in the pits after closure. The TK Panel wants to compare water in the pits with water in Lac de Gras and only when they are comfortable with both the scientific findings and TK testing can the dikes be breached. These recommendations apply for both pits that may or may not have PK.
- Watching Fish—The TK Panel discussed at length fish habitat within the pits; whether or not they wanted to encourage fish into pits that held PK after closure; and the conditions upon which breaching the dikes may be possible. The TK Panel built upon the AEMP TK Program to put forth four recommendations related to monitoring fish in and around the pits. As with water, people need to “see with their own eyes” that fish are healthy. These recommendations apply for both pits that may or may not have PK.

- **Monitoring (Other)**—Four recommendations related to innovative and non-invasive testing methods and expanding the AEMP to include monitoring of plant life, sediments, and bugs. Again, these recommendations apply for both pits that may or may not have PK.

Recommendations are numbered to reflect the TK Panel session identification (i.e., Session 12) and to subsequently identify each specific recommendation (i.e., 12.1–12.16). Diavik will consider these and add them to their Recommendations Tracking Table. Diavik’s response will be presented back to the TK Panel at the next session.

6.1 Pit Closure and Processed Kimberlite Recommendations

Diavik gave an overview of the updated site-wide Closure and Reclamation Plan (V4) after which Panel members considered the question: *What are your thoughts on the closure plan? Do you have any questions about changes to the plan?*

The TK Panel revisited previous discussions around the PKC and reminded one another how a rock cover would not be too effective given that the rocks would sink into the slimes which can behave like quicksand. Several panelists advised that it would be much better to put the slimes and PK back into the pits in part because that would mean that the rock pile above the PKC could be kept lower and more stable.

Feeling comfortable with any approach is difficult for people given environmental uncertainties and the complexities of mine closure processes. This challenge of ‘feeling comfortable’ applies to pit closure regardless of whether they contain PK. Panelists affirmed the importance of balancing scientific information with traditional knowledge so that a greater understanding informs pit closure planning. As always, people reiterated the importance of “seeing with their own eyes” so that they feel comfortable with what is happening during mine closure: they want to watch the slimes being transferred to the pits as well as when water is pumped into the pits.

- 12.1 The TK Panel would prefer to have the soft material that is produced from processing kimberlite (slimes) stored away from the surface so animals and humans cannot access it and accidentally get caught in it. The Panel supports the option of putting the existing slimes that are in the PKC plus new slimes produced, in the bottom of the pit so that animals and people do not have access to it.
- 12.2 Remove the slimes that are currently in the PKC such that Diavik can start to cover the PKC to create a safe and hard surface at least three years earlier than the original closure plan.
- 12.3 The TK Panel needs to be on site to witness transfer of slimes and filling the pits with water (i.e., two TK Panel sessions).

6.2 Monitoring Water - Science - Recommendations

The group then considered the questions as they considered monitoring water and fish from both a scientific and traditional knowledge perspective:

- *If the pits are filled, what are your concerns or fears about reconnecting the pit to Lac de Gras?*
- *What other information do you need to feel comfortable with closure of the pit?*
- *If Diavik goes ahead with refilling the pit, what would you want to watch during closure to know that it is good? Regarding water? Regarding fish?*
- *If Diavik goes ahead with refilling the pit, what would you want to watch in the filled pit lakes to advise if the pit lakes should be connected with Lac de Gras?*

A key strength of the TK Panel is that members recognize that both scientific understandings and traditional knowledge must be considered in closure planning: in some cases, panelists advise that scientific testing must be done before monitoring according to traditional knowledge.

August Enzoe commented: “The water they are putting in the pit . . . every year they are going to test if the water changes. They will know it: they are scientists.”

A concern that has been raised in previous sessions is the potential for contamination from the pit walls such that the water might be contaminated when the pits are filled. Diavik advised that several studies have been carried out to “wash the walls” and test the resulting water quality and that no concerns have been raised. Regardless, the TK Panel wants to see the pits filled from the bottom up in order to minimize the water running down the pit walls as well as to minimize missing or stirring up of PK with water by controlling the way in which water is added to the pits.

When it comes to water, the TK Panel discussed the importance of science to first identify if the water is healthy before people would like to test water quality by tasting. People are familiar with scientific water quality monitoring and discussed the importance of measuring for temperature, turbidity, clarity, and colour as well as for oxygen levels, knowing that all of these measures can determine whether the water is safe for fish and animals. Small “bugs” in the water are also important for fish and need to be measured to know whether the water is healthy. The TK Panel don’t want the dikes to be breached until there was enough food in the water for them.

It is important that scientific testing take place throughout all seasons and at multiple depths in the water column. TK Panel members want to make sure that results are shared widely with community members.

TK Panel members discussed the time required for water to settle in the pits before the dikes could be connected with Lac de Gras. Estimates ranged from two to six years as the range for required monitoring.

Climate change impacts, as with previous sessions, continued to be an underlying concern throughout all discussions. Members of the TK Panel worry that plans today won't accommodate changes tomorrow. Some participants questioned whether the PK might generate heat or at least conduct heat thereby not freezing when placed in the underground/pits. Diavik explained that the PK cannot freeze as it will not be placed in an area of permafrost. Other people worried about fissures expanding to allow groundwater movement between the filled pit and surrounding areas. Diavik explained that this wasn't anticipated to be an issue. Much of the discussion around this question related to potential permafrost melt, ice thickness, wind behaviour, changing water levels, instability, and uncertainty. Scientific monitoring of these key indicators must be carried out for several years in order for panelists to feel comfortable with the results and to support any breaching of the dikes.

The TK Panel put forth the following recommendations related to scientific water monitoring:

- 12.4 Fill the pits from the bottom up with Lac de Gras water so that water is not running down the walls of the pits. Let the water settle for a minimum of two years.
- 12.5 Ensure scientific tests are done every season and throughout the year to understand the health of the water and to compare water in the pits to water in Lac de Gras. Scientific water testing should include, but not be limited to temperature, turbidity, clarity, colour. The presence of micro-organisms should be measured as well as oxygen levels. Such tests should be done at various depths in the water column as far down as the PK. The results should be regularly shared with the TK Panel.
- 12.6 Diavik should collect baseline information on Lac de Gras from around the dikes so that impacts of breaching can be measured. The TK Panel should work with scientists to record ice thickness, wind behaviour and snow-drifting before and after dikes are breached.

6.3 Monitoring Water - TK - Recommendations

After considering water monitoring according to science, the TK Panel explored how traditional knowledge monitoring of water should occur in and around the pits. The TK Panel agreed that the water and fish must be deemed "safe" from a scientific perspective before any traditional knowledge tasting tests can occur. Only when the scientific and traditional knowledge results agree that the water is safe, could the dikes be breached so that the pit water is reconnected with water of Lac de Gras. The TK Panel, after much discussion and clarification was provided over the session, decided that the first phase of breaching the dikes should allow for water movement, but not fish movement particularly for pits containing PK.

Watching water according to traditional knowledge is well understood by the TK Panel members who have worked hard to develop protocols being used at the AEMP TK Camp. These protocols should be used for ongoing monitoring on-site both within the pits and outside the dikes in Lac de Gras. However, taste testing would only occur after results from scientific water testing were reviewed.

Panelists expect that the water within the pits will smell differently when there is PK rather than natural sediments and want to make sure there is enough time for settling to occur. In the words of Nancy Kadlun:

“If we put water in that pit and sit there for a while and it has no more oxygen, so best try to put those dams down so that the water can move around before the pit gets stale.”

Following much discussion, the TK Panel put forth the following recommendations around monitoring water according to TK:

- 12.7 The TK Panel would like Diavik to test water in the pits for at least two years (until the water is deemed good) and compare this to water in Lac de Gras. Water samples will be collected from multiple depths at various times throughout each year and tested according to the AEMP protocols. Taste tests will be done after scientific sampling tells us the water is drinkable where they will watch for smell, clarity (turbidity), temperature, colouration, scum on the water or tea, and water and tea for taste.
- 12.8 When scientists and the TK Panel agree that the pit water is safe (i.e., drinkable) and stable (i.e., consistent), then breaching of the dikes can occur to allow water to flow back and forth but prevent fish from entering the pits, at least initially.

6.4 Monitoring Fish Recommendations

The TK Panel struggled with deciding whether they considered it respectful and safe to encourage fish to be allowed back into the pits, particularly if they were filled with PK. Discussions considered whether fish habitat should be encouraged through restoration within pits or whether natural processes alone would be enough. In the end, the group decided that breaching the dikes for fish would be part of a second phase after people were confident that the water was safe and that building fish habitat within the pits is not preferred.

Fish are known to have an acute sense of smell, just like animals. This sense will guide fish to know whether it is safe to enter the pits once the dikes are breached. Fish are known to be smart and use temperature to guide their movements. As Louis Zoe explained:

“The old timers used to say this time, in the fall time, with the north wind and the deep water, they will go into the deep water. The north wind comes in and it is cold for us. And that is how fish go into deep water. And a little warm out they go in deeper and they know where the warm water and hot water is: the fish know that too.”

The TK Panel discussed the fact that it would take time before fish would return to the pits after the dikes are breached because there needs to be enough food for them. One panelist suggested that it would be important to see how the micro-organisms survive in the pit water: if the fish food doesn't survive, people will know that the fish won't survive.

The TK Panel put forth the following recommendations around monitoring fish according to TK:

- 12.9 Set nets for fish testing near the dikes in Lac de Gras to help get baseline information on current fish health and continue once the dikes are breached to compare.
- 12.10 Whether or not the dikes allow fish passage, do not build up fish habitat within the shallow pit areas where PK is placed as fish will return naturally if they sense it is safe and the nutrients and oxygen that they need are there. Focus DFO requirement for fish habitat enhancement in pits where there will be no PK. The TK Panel needs to be there to watch and provide guidance on how to enhance fish habitat.
- 12.11 Put fish in pit lakes to be monitored, tested and sampled before the dike is completely breached once water is deemed “safe” (i.e., at least 2-6 years of monitoring). If the fish are the same as fish in Lac de Gras according to TK testing (e.g., liver, heart, gills, bladders, etc.), carry out a second stage breach for fish passage.
- 12.12 Monitor fish from pit lakes according the AEMP protocols, but only taste test them if there is an acceptable comfort level and scientific results confirm that the fish are safe for eating.

6.5 Monitoring - Other - Recommendations

The TK Panel generally supports monitoring approaches that are gentle and cause the least disturbance to the land, air, water, fish and animals. Innovative and non-invasive monitoring approaches are preferred. Monitoring according to TK can be carried out in ways that minimize disturbance although more discussion is required to develop these approaches by building on existing AEMP TK protocols. In-person and on-the-ground monitoring is important so people can feel comfortable.

The TK Panel put forth the following recommendations around monitoring:

- 12.13 Install motion activated cameras around the dikes to monitor wildlife activity to see if birds and animals are trying to access pit water. Test animals if possible through non-invasive methods. Any dead animals should be tested for contaminants. Report all findings to communities and the TK Panel.
- 12.14 Monitor plant life, sediments and bugs in the water within the pits in the spring (after break-up), summer, and fall (before freeze-up) through our own eyes. Combine this with scientific test results. Further discussion is needed to detail this monitoring approach.
- 12.15 Develop details of monitoring programs (including training and employment) and action plans for community members. Expand the aquatic effects monitoring program and camp to include the TK Panel and a base for TK monitoring as one step in this plan.

6.6 Communications Recommendations

The TK Panel discussed the importance of their work reaching a broader audience and the difficulties they experience in accessing reports from the TK Panel sessions. In addition to the points of guidance identified above, a formal recommendation to put materials online was made:

- 12.16 Develop an online location where all TK Panel materials will be stored and made accessible. Request that EMAB host these on their website. Communications presentations should be developed and uploaded so that they can be used by TK Panel members within their communities.

7 Tours of the PKC, Pits, North Inlet, and Water Treatment Plant

On the second day of the session, TK Panel members went on a site tour which included extended stops on the top of the North Country Rock Pile to view the PKC, pits A154 and A418, the North Inlet, the shores of Lac de Gras and the water treatment plant. On the fourth day, a short trip to view pit A21 and some vegetation plots near the North Inlet took place as the group ran out of time during the first site tour.

The first tour included a viewpoint atop the North Country Rock Pile (NCRP) where the TK Panel could see the current PKC and Diavik could explain how PK is presently added to the PKC and point out both the coarse PK and fine PK. The group next drove along the dikes of A154 and A418 with stops at A154 near Lac de Gras as well as above the viewing trailer in the pit of A154. From these stops, people could visualize how the PK might be placed in the pit. TK Panel members were able to view the special fish habitat construction areas (e.g., shoals and reefs discussed in Session 8) as well as visualize where the dikes would be breached upon closure.

Next, the group visited the west end of the North Inlet where Diavik demonstrated the water collection techniques for water quality monitoring. The TK Panel was able to view the water before it goes through the water treatment plant. Next, the group visited the water treatment plant. Diavik walked the group through the treatment process, showing the various machinery and technologies in place. People could see the transformation of water as it comes into the plant, moves through settling ponds and then flows back into Lac de Gras.

The last stop of the tour was to visit the shores of Lac de Gras adjacent to the east end of the North Inlet so that they could view the water treatment plant outflow pipes as well as compare the Lac de Gras water to the North Inlet water. Here, the TK Panel offered ceremony to the shore and waters of Lac de Gras.

Since time did not allow for the group to view A21, a second site tour was arranged two days later. First, the group visited the vegetation plots on the south side of the North Inlet. The group was able to explore these areas which were revegetated. They also made observations of various scat in the area, including grizzly bear, wolf, rabbit and siksik (i.e., ground squirrels), attesting to wildlife in the area.

The group then viewed A21 from a viewing platform. A clear difference between the kimberlite pipe and the surrounding rock could be seen. The group was also reminded of their tour to the site during a previous TK session when the dike was being built and the area was still filled with Lac de Gras water. This would have been similar to what the future pit lake will look like once the pit is refilled with water at closure.

8 TK Panel Next Steps

During each TK Panel session, participants typically re-visit the list of session topics carried out to date and those suggested for the future (Appendix I). During this session, the TK Panel confirmed that they would like the next session to focus on the North Inlet. Other potential future TK Panel topics remain:

- North Inlet – fish and water health
- Monitoring at Closure (Closure Overview)
- Updates on PKC closure options
- Closure Details: building demolition, metal disposal, waste disposal, contaminants, laydown areas, airports, roads, etc.
- Closure Inspection Criteria
- 2021 Aquatic Effects Monitoring Program (AEMP) TK Camp

Once again, the TK Panel discussed the importance of meeting twice per year rather than just once per year so that people can more easily remember what is happening. Diavik suggested that once per year as more realistic from a schedule and budget perspective. Regardless, it is important to tie the sessions to important mine closure processes or regulatory review windows: people don't want to miss an opportunity to contribute meaningfully.

The group weighed the pros and cons of meeting on-site versus in Yellowknife. There was general agreement that on-site was better but that occasionally a session in Yellowknife or one of the communities would be a good idea.

Other general discussions included the suggestion that both a male and female youth from each group could attend future sessions and to hold the TK Panel meetings during times when the youth are off school.

Appendix A

TK Panel Session #12 Photos

Viewing the Processed Kimberlite Containment



Therese and Louie Zoe chat with Peter Huskey while observing the PKC.



Thomas Lafferty discusses processed kimberlite while on the North Country Rock Pile with Jonas Sangris and Gord Cumming.



PKC in foreground with Lac de Gras in the background.



Elder Jimmy Fatt inspects the North Country Rock Pile and PKC.

Viewing the Pits



The TK Panel look out over Pit A154.



The TK Panel comments that the rocky terraces in Pit A154 are attractive to raptors, which circle overhead during the tour.



Joanne Barnaby chats with Rose Mackenzie and Emma Wilson in front of Pit A154.



Left to Right: Peter Huskey, Gord MacDonald, Sean Sinclair, Myra Berrub, August Enzoe, and Roger Catholique after inspecting Pit A418.



The TK Panel observing Pit A418.

Viewing North Inlet



August Enzoe takes a moment to reflect at the North Inlet.



DDMI demonstrate how water is collected for monitoring at the North Inlet.



Sean Sinclair holds a water sample for the TK Panel to observe.



Youth Roger Catholique enjoys a moment in the sun.

Viewing the Water Treatment Plant



The water treatment plant is equipped to treat 90,000 m³ of water per day, some of which is pictured in settling ponds.

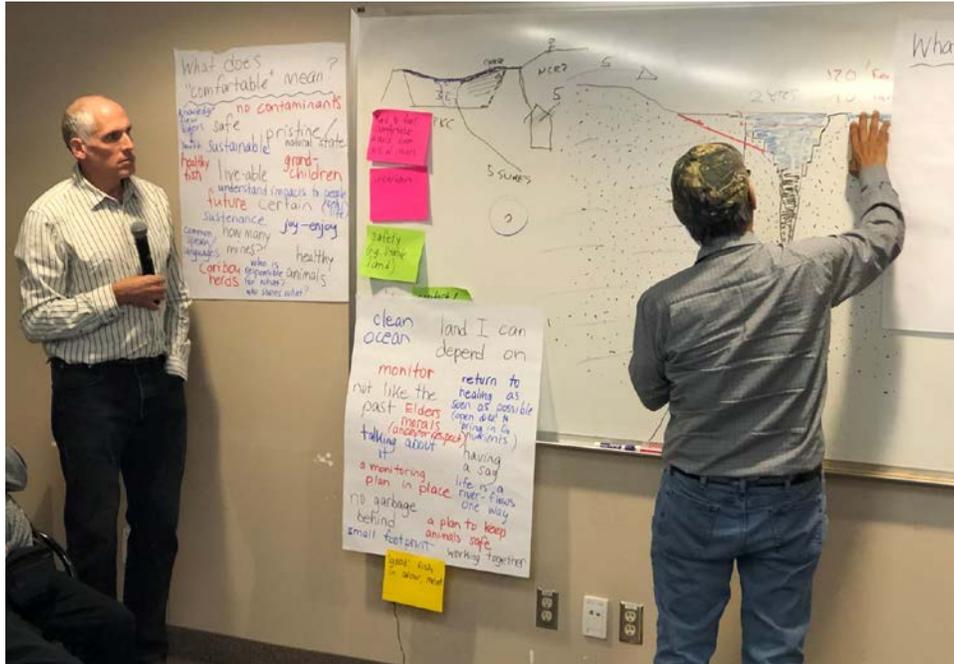


The TK Panel observes water as it goes through multiple treatment processes before being released into Lac de Gras.

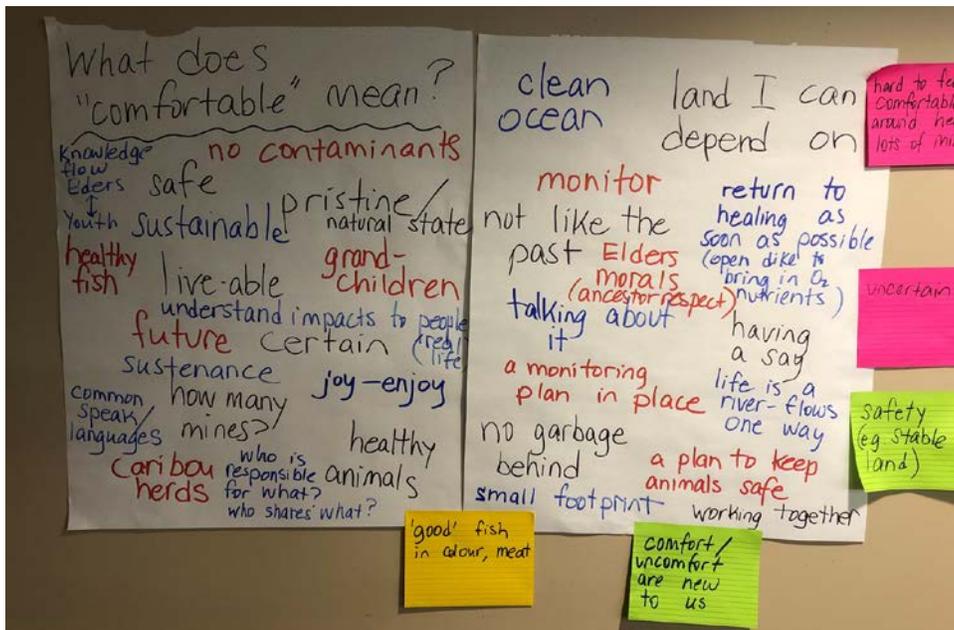


Sean Sinclair explains how regular sampling at the water treatment plant is part of quality control and monitoring at Diavik.

Workshop



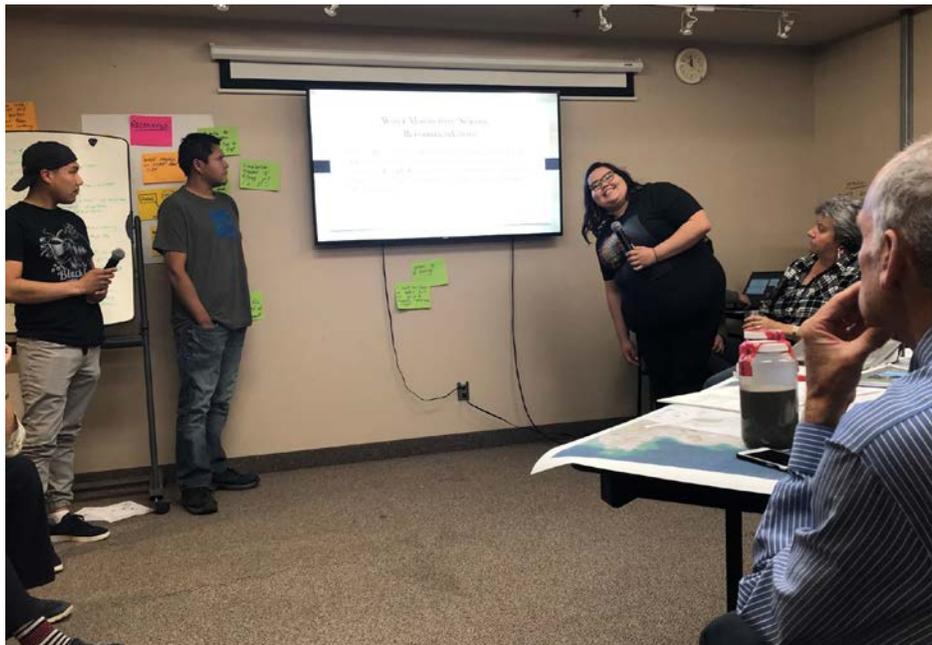
Elder Bobby Alguna explains his concerns about processed kimberlite and water quality in the pit while Gord Macdonald listens.



Understanding what makes people "comfortable" was a cornerstone to understanding options for pit closure.



Elders Louie Zoe and Jonas Sangris take turns with the microphone.



Youths present recommendations of the TK Panel to DDMI. L to R: Roger Catholique, Jonathon Mackenzie, Janelle Nitsiza, and Regan Adjun (behind Janelle) with Gord Macdonald in the foreground.

Appendix B

TK Panel Session #12 Agenda



Agenda
Diavik Diamond Mines Inc.
Traditional Knowledge Panel
Session #12: Pit Closure Options
September 12 - 16, 2018

Thursday, September 12

3:00 pm Arrive onsite; Security, Orientation & camp tour (~1 hr); Site Tour Discussion; Rooms & Luggage

Friday, September 13

8:30 am Opening Prayer, Welcome, Round Table Introductions, Review Draft Agenda, Workshop Purpose Overview

9:00 am Presentation: Site overview, Closure and Reclamation Plan update, Community engagement, Responses to previous session recommendations

Group Discussion

10:40 am Presentation: Pit Closure Options

Question 1: What are your thoughts about the revised closure plans for the pit? Do you have any questions about the changes to the plan?

Group Discussion

12:00 pm Lunch and Site Tour

Saturday, September 14

8:30 am Opening

Question 2: If the pits are filled, what are your concerns or fears about reconnecting the pit to Lac de Gras?

Group Discussion

Presentation: Previous TK Panel Discussions related to Pit Closure

12:00 pm Lunch

1:00 pm Question 3: What other information do you need to feel comfortable with closure of the pit?

Presentation: Next Steps / Next Sessions

4:30 pm Close



Sunday, September 15

- 9:30 am Opening
- 9:45 am Question 4: If Diavik goes ahead with refilling the pit, what would you want to watch during closure to know that it is good? Regarding water?
- Question 5: If Diavik goes ahead with refilling the pit, what would you want to watch in the filled pit lakes to advise if the pit lake should be connected with Lac de Gras?
- Group Discussion or Break-Out Groups
- 11:30 am Lunch
- 12:30 pm Group Discussion
- 4:30 pm Close

Monday, September 16

- 7:30 am Bags & belongings out of rooms, store under stairs in lobby
- 8:30 am Opening
- 8:35 am Facilitators present draft of TK Panel recommendations for discussion
- Group Discussion: Finalize recommendations
- 11:40 pm TK Panel Presentation to Diavik: TK Panel recommendations
- Diavik Response and Group Discussion
- 12:40 pm Closing Circle and Prayer
- 1:00 pm Lunch
- 3:00 pm Check out for return flight

Note: Frequent breaks will be scheduled throughout the day, as needed. Changes to agenda may occur depending on TK Panel input. Each day will close at 4:30 pm.

Appendix C

TK Panel Session #12 Informed Consent Form

Diavik Diamond Mines Inc. Traditional Knowledge Panel

Informed Consent Form

I, _____ on September 12, 2019 give permission for Diavik Diamond Mines (2012) Inc. and its Contractors (i.e., Thorpe Consulting Services, Joanne Barnaby Consulting, PIDO Productions) to take notes, photographs and / or audio and video recordings related to my participation in meetings, workshops and events related to the Traditional Knowledge Panel established for the Diavik Diamond Mine. I understand that my participation includes meetings and workshops held throughout each year either in communities in the NWT or NU or at the Diavik Diamond Mine.

Through my signature below, I understand that:

1. I consent to have my words, activities and responses regarding and related to my knowledge recorded on maps, in notes and photographs, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data);
2. I am free to choose not to respond to any questions asked or participate in any discussions without prejudice or penalty;
3. I can choose to be anonymous in my participation without penalty;
4. My representative Aboriginal Organization, DDMI and / or its contractors may use the information collected to contribute to operations and closure planning at the Diavik Diamond Mine;
5. DDMI and its contractors may share my information which I have verified and given permission to share in either reports and/or photographs and provide such information to my Aboriginal organization and other regulators;
6. I agree that my contributions may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the TK Panel and that my representative Aboriginal organization, DDMI and/or its contractors will make all reasonable efforts to consult me, or my descendants, before using my information for purposes not indicated above;

7. I will receive financial compensation for my participation in the TK Panel in accordance with DDMI and my Aboriginal organization policy;
8. I am free to request that any information I share is removed, erased or deleted and that I will have the opportunity to verify draft video-documentaries, reports and maps to make edits before I sign them off and that final copies will be provided to me;
9. I also understand that DDMI cannot ensure the protection of the Traditional Knowledge from public release once the reports are released (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites);
10. The Traditional Knowledge Data will be summarized and included in a report which will be publicly available.

Signed on September 14, 2019 in Diavik, Northwest Territories.

Signatures:

Participant

Aboriginal Organization

Diavik Diamond Mines Inc.

Witness

Thorpe Consulting Services

Witness

Appendix D

TK Panel Session #12 Daily Notes

Traditional Knowledge Panel Session #12: Pit Closure Options Day 1/4 Notes

Date	Friday, September 13th, 2019
Time	8:30am – 12:00pm
Location	Diavik Diamond Mine
Handouts	1. Agenda
Participants	Bobby Algona (Kitikmeot Inuit Association) BA Regan Adjun (Kitikmeot Inuit Association) RA Nancy Kadlun (Kitikmeot Inuit Association) NK Roger Catholique (Łutsel K'e Dene First Nation) RC August Enzoe (Łutsel K'e Dene First Nation) AE Jimmy Fatt (Łutsel K'e Dene First Nation) JF Shirley Coumont (North Slave Métis Alliance) SC Wayne Langenhan (North Slave Métis Alliance) WL Janelle Nitsiza (Tłıchq Government) JN Louis Zoe (Tłıchq Government) LZ Therese Zoe (Tłıchq Government) TZ Jonathan Mackenzie (Yellowknives Dene First Nation) JM Rose Mackenzie (Yellowknives Dene First Nation) RM Jonas Sangris (Yellowknives Dene First Nation) JS
Facilitators	Joanne Barnaby (Thorpe Consulting Services) JB Natasha Thorpe (Thorpe Consulting Services) NT
Observers	Mona Tiktalek (Kitikmeot Inuit Association - Interpreter) MT Bernadette Martin (Yellowknives Dene First Nation - Interpreter) BM Peter Huskey (Tłıchq Government - Interpreter) PH Joline Huskey (Tłıchq Government - Staff) JH Thomas Lafferty (Łutsel K'e Dene First Nation - Staff) TL Janyne Matthiessen (EMAB (Environmental Monitoring Advisory Board)) Myra Berrub (DDMI - Principal Advisor, Communities and Social Performance for Closure) MB Gord Macdonald (DDMI - Principal Advisor, Sustainable Development) GM Gord Cumming (DDMI - Environment Technician) GC Sean Sinclair (DDMI - Superintendent, Environment) SS Ryan Dempster (PIDO Productions - Sound Technician) Emma Wilson (Thorpe Consulting Services - Transcriber)

1.0 Opening Prayer, Welcome, Round Table Introductions, Review Draft Agenda, Workshop Purpose Overview

Natasha: Welcome everybody and thank you for coming out to the 12th panel. Let's do a round table of introductions, to share your name and where you are from.

Bobby: Good morning, Bobby Algona.

Nancy: Nancy from Kivalliq Inuit Association.

Wayne: Wayne Langenhan from NSMA.

Regan: Regan from Kivalliq Inuit Association.

Roger: Roger Catholique from Łutsel K'e.

Shirley: Shirley Coumont from Yellowknife.

August: August Enzoe. I am from Łutsel K'e. 12 years this has been going on. That is a long time.

Jonas: Jonas Sangris from YKDFN.

Jimmy: Jim from Łutsel K'e.

Jolene: Jolene Huskey with Tłıchǫ Government.

Janyne: Janyne Matthiessen with EMAB.

Rose: Rose with Yellowknives Dene First Nation.

Louie: Louis Zoe from Gameti.

Therese: Therese Zoe from Gameti.

Janelle: Janelle from Tłıchǫ.

Thomas: Thomas Lafferty, I am representing the Łutsel K'e Dene First Nation.

Janyne: Jonathon Mackenzie from Dettah.

Gord C: Gord Cumming - Diavik.

Gord M: Gord Macdonald from Diavik.

Myra: I am Myra and I am from Diavik.

Joanne: Joanne Barnaby from Hay River and I'm helping to facilitate this panel.

Natasha: Natasha Thorpe - helping to facilitate this panel.

Ryan: Ryan Dempster from Yellowknife.

Berna: Berna Martin from Yellowknives Dene First Nation.

Peter: Peter Huskey

Mona: Mona Tiktalek

Natasha: Thanks everyone with being patient this morning. It is exciting that it has been almost a decade that we have been meeting as a group. I was saying yesterday that this is my favourite project every year. I like seeing the same faces coming back year after year. It isn't common with boards like this to have such regularity. It speaks to how important the work you are doing is, how you are seeing that your work is making a difference, how your recommendations are being heard, being acted upon, being respected. So, on that note, the last time we met we talked about this session having the focus on the North Inlet. But as you likely know, Diavik has been undergoing an Environmental Assessment regarding options for the pit and they have been meeting in your communities detailing what they hope to do. Gord is going to present on that. First, we want to check in with everybody if it is ok to change the focus from the North Inlet to talking about the pit. The reason this came up is because Diavik has been going to communities, there has been a lot of questions from community members on the pit. This panel is a space for us to have more discussion about what it would look like if PK would go back into the pit – whether the dikes would stay as they are now, whether they would be breached. We have an opportunity to talk about that as a part of the environmental process. I want to ask: is this ok to move the topic of discussion from the North Inlet to the pit?

Thomas: Will there be any discussion on the North Inlet or are we going to focus on the pit?

Natasha: We would dedicate a whole session on the North Inlet during the next panel. But I think there will be a lot of overlap in our discussions on both the North Inlet and the pit - for example water quality.

Thomas: If Gord remembers, the North Inlet was a big issue for Łutsel K'e. It would be good to touch upon it.

Gord M: I will give an overview of all the closure options and happy to have a discussion on the North Inlet.

Natasha: Are we ok with going ahead on discussing the pit?

Hands up for yes

August: For the mine life, how many years you figure you guys got?

Gord M: Six more – so 2025

August: We been talking for 12 years now. And one thing about that – where is all the forms that they said they were making? Because a lot of people from the first years, they are all gone. Jonas, he started here 11 years ago and now he is still sitting here. What do you do with all the panel reports? I do talk to people at home with what should be done for the mine closing part. I know they know that. Thank you.

Natasha: After Gord gives a presentation, Joanne and I have put together a presentation that pulls together the important recommendations that you have shared that are relevant for our discussion. One of the reasons we have a person here transcribing – Emma – is that every word gets down so we can always keep the words moving forward and informing what Diavik does now.

August: I know it is being written down. We should get a copy every year after the meetings.

Natasha: Just a bit of background of our process for the new faces here. We meet for the next few days, we develop recommendations on a topic – in this case, related to the pit. We present those recommendations as draft back to everyone here on Monday morning and then we get a chance to recommend them directly to Diavik. And they are all tracked. We have over 150 recommendations so far. It is a crazy long document – Myra has a copy for anyone who is interested. It becomes a report – Joanne and I pull together the report at the end of the session. It ends up including about 100 pages on word for word transcription of our session and is attached to the report. It is sent back to each of the nations about 2-3 months after the panel. Joanne is holding up the recommendations table right now.

Joanne: They are organized by topics. So for example, if we are dealing with wildlife, there is a wildlife section. If we are dealing with water quality, there is a wildlife section. So all of the main issues under closure and reclamation are in here. And all your recommendations that came from these sessions are in here as well as the response from Diavik in response to each of those recommendations. There is so much information in here, and it is available to you.

August: That is the one I am talking about. I could bring it to my community, so I can go to the band office?

Joanne: Yes

NT & Myra: Housekeeping

Joanne: The chart I showed you includes all the recommendations. We get a report like this *[shows a report from previous TK Panel]*. There is a lot more detail here. You can bring them home and share with people and you can also see the summary of the recommendations which is from all 12 sessions. It is also online for people who use the internet and computers.

Shirley: What website can we access these reports?

Natasha: I will get back to you about this.

Presentation: Previous TK Panel Discussions related to Pit Closure (Gord Macdonald)

Gord M: If you would have told me 12 years ago that this panel would be what it is today, I don't know if I would believe you. The regulators are watching this, the other Indigenous groups are watching the work of this panel and how it is working and not working – it is making a life of its own. The discussions with the scientists, with the governments, with the regulators, people are getting more comfortable with the science asking what we are going to do to the pits. It kept coming back to the question of, 'Should we connect the pits back to Lac de Gras?', and we wanted to know from the Traditional Knowledge side to see how you would look at it. Should we cut some holes in this dike and connect it? How would all of you look at that condition and help us make a decision on what we should do?

Wayne: *[question on slide 3]* On the way into the camp, I noticed there is a new road by the North Country Rock Pile. The edge of the rock pile hasn't grown out towards the south, but I noticed a new road being put in there and telephone posts all the way along that. Are you going to remove that road and put the rockpile further south or is it going to stay there?

Gord M: You are right, there is a new road and you can see how this one is really close to the rock pile. The new poles are up but the wires aren't up yet. The plan is the road will move to the new one so we can re slope the rock pile.

Wayne: That answered my question.

Gord M: We will go up there on our tour. *[slide 5]* We are going to propose underground mining at A21, which is a new thing. We will propose the water level will come up to the edge of the dike. We would monitor it for 2 years and then we would re-connect it. That has always been the plan. This area up on the top between the dike and the pit would be constructed to fish habitat to try and make better fish habitat. One of the reasons to cut holes in the dike is so fish can use this new fish habitat. Material from underground would get removed. Some of the infrastructure would stay down there and would get flooded at closing. *[Slide 6]* We are re-sloping the North Country Rock Pile to smooth and flatten the angle out for two reasons: one is to make it more accessible for caribou. A bigger reason for us is to put a cover on this pile, the cover being a meter and a half of till and 3 metres of rock, so that it keeps all that rock frozen so that it can't get wet. So that it won't get rained on and seeped out and change the chemistry of the water.

August: Are you guys talking about the rock pile right now or? Around the big pile of rock, there is a lot of the moss, and water. How many times do you test it, how many time a year? Because I mentioned last time we were here you said you were doing it every 2 years and that is too long. All summer it will be raining, and you guys take the sample, it would be good to take samples during fall before freeze up and at spring after all the run off.

Gord M: We do two things. We have collection ponds so that any of the water collects in these ponds and we monitor those monthly when it isn't frozen. In the spring, that is when we see most of the water. If we find places where there is a regular flow or seepage, then we measure that. But we don't have seepage coming off the pile. We think the water is still developing in the rock pile and it isn't flowing out yet because the rock pile hasn't filled up with water. We are looking at that.

August: The reason I said is because this land is on an island. There is a big lake around that.

Gord M: That is the main focus of the closure. We don't want to create bad water quality that would affect the lake.

Nancy: You talked about keeping the rock frozen. What about in 100 years' time? What would happen if no one is around to deal with keeping things frozen?

Gord M: We have designed it to keep it frozen with a warm climate scenario. The cover is thick enough that even if the earth warms up, it will still stay frozen. The engineers have designed it so that it will be reasonable for the next 100 years.

Wayne: *[slide 7]* My question is as you are breaking down the camp, the buildings, why can't these buildings, with a lot of metal in them, why can't that be taken out during winter time in trucks instead of burying it here? You are going to have trucks going out all the time, you hauled it in, why can't you haul it out?

Gord M: At that point - after operations - we wouldn't have empty trucks going out. Doesn't mean you couldn't bring empty trucks out to transport it out, but what would you do with it?

Wayne: All of that metal – they might open up a railway to Hay River. You could get it to Hay River, put it on box cars, and bring it south.

Gord M: For reuse or landfill?

Wayne: All this metal could be melted down and used for something else.

Gord M: If it could be recycled, that is something we will do. There are three criteria for taking it out: 1) Does it have a value as is? 2) Value for community? 3) Value for recycle? If it doesn't, then it will go to landfill.

Roger: The two pits, you said you are going to take out most stuff out of the pits, but you will leave the pipes in there. Will it affect anything in the future? That is my concern.

Gord M: The pipes and ventilation underground was what I was talking about. There is quite a bit of material. Once we fill it back up with water, then there are no processes that would go on that would happen in the water after the oxygen is gone. We think it would be safe.

Roger: I know they [pits] are both connected underground, you said you would put cement or block it off? Because they are both connected – still going to go through to the very bottom.

Gord M: I will talk about this. But the cementing off was over here [*pointing to map*] where the tunnel comes to the surface. We will cement off here the tunnel comes to the surface so no animals or people can get down there.

Roger: I was thinking from the tunnels where the 2 pits are connected.

Gord M: I will get to that.

Jonas: You said earlier that the pit, you going to leave some stuff down there. How much are you going to fill? Are you going to cap it and then put water in there?

Gord M: PK will fill up the very bottom of the smaller pit it and then put water in it. The big pit would be just filled with water.

Jonas: Other wastes?

Gord M: That was an option we have looked at, but no one seems keen on it.

Jonas: At the community hearings we talked about leaving some of the waste in the pits. The waste wasn't pipe or metal?

Gord M: No, the pipes and ventilation would be underground, but not putting anything new in.

Shirley: You said you were putting PK in there – would you consider putting a barrier on top of that so that there wasn't a mixture with the water?

Gord M: We will get to that. [*slide 8*] There are things at the bottom of North Inlet that weren't there before we started mining. The inlet was originally a part of Lac De Gras. The challenge for us is what to do after closure. Spilled material, whether it be diesel or hydraulic oils, get deposited in the North Inlet. There are hydrocarbons on the bottom of the North Inlet which wouldn't be good for fish or fish food. That is the question – what to do with the North Inlet? People would like us to re-connect it to the lake, but only if it is safe. But we don't think it is safe, so the options are dredging it out to another part of the mine, or cover it with rock, or allow it to self-heal (hydrocarbons break down on their own), or never allow water to move in between the inlet and the lake. It will be at least 2030 where we have to make this decision. We will keep monitoring it. It isn't getting worse, but it also isn't getting better yet.

Nancy: There is so much chemicals at the bottom. Can you get the water off the top and then burn what is on the bottom (hydrocarbons)?

Gord M: We could dig it out of there, yes, but then we don't know what we would do with it. I don't know if there is enough in there for it to burn.

Nancy: Well anything that is full of chemicals you can burn it with a little bit of oil because it is a manmade material. Put it in barrels and burn it.

Wayne: I was just wondering why this question didn't come up 12 years ago? Something could have been done 12 years ago that would have stopped this situation that we are now in.

Gord M: We didn't know about the hydrocarbons; we did expect there would be metals on the bottom. Our closure plan was to never re-attach the inlet back to Lac De Gras. When we discovered it had hydrocarbons, we went and investigated probably 10 years ago and redoubled our efforts on our spill cleanup. We weren't as vigilant cleaning up spills in the pit because we didn't think they were going to go anywhere. But then we realized they were going into the inlet.

Wayne: We have a problem and it isn't going away anytime soon. Is there some way to lessen it instead of adding to this problem? Is there any way of starting to put it in to the North Inlet – new technology to do something with?

Gord M: We did look at that and we still think it is the best management of the water on the site. Using the North Inlet is the best option. The best was to deal with it at its source. [slide 9] Processed Kimberlite Containment will be another topic for a future panel. PK comes out as course 1 in a truck. Another one comes out in a pipe and is mixed with water and is deposited all along the edges and forms all the beaches. The finer bits go to the water in the middle. Along these edges - it sort of looks like solid – you can drive trucks on it. But when you get to the middle it is like toothpaste and it will stay like toothpaste. If you leave it here in a wet state it won't get more solid. It's not a chemical, it is a physical thing. If we keep in on the surface and a person or a caribou goes in it, they will sink.

Wayne: I was wondering – there has to be a way to dry this. The slime has to be – if it was in a dryer state it would be solid, am I correct?

Gord M: Correct.

Wayne: Can you not use electricity?

Gord M: We looked at that but what do you do with the dry material, how do you keep it dry?

Wayne: Once you get it dry, you could cap it then.

Gord M: You wouldn't be able to drive trucks on it because it would be like flour in a dry state.

Wayne: Maybe we should have to look at the site.

Gord M: Very good.

Nancy: The first time they were talking about it they were talking about covering it. I don't think that is the safe. You look at the bottom it is all solid rock. It got be thinking to move it there because it there is always water going everywhere. We have big storms, but it might be safer to put it in the pit.

Gord M: That was one of the ideas this group came up with. If it is a problem on the surface, and you said what about the pit, and we did the engineering work, and now we are going through the regulatory process of trying to do that. Even if we can't take the toothpaste substance out, we leave water on top where it is too toothpaste-y. Extra fine processed kimberlite is what we talked about. If we leave the slimes in place with water on top you can't get stuck in it anymore (caribou, people). Challenging for us to build it that way so that is sharp shoreline, but it would keep it safe. That is the current plan, but we want to talk about the option of taking the slime out and putting it in a pit. [slide 11] we will build bulkheads that will prevent any material moving down the tunnels.

Nancy: How much would one of these [pits] hold?

Gord M: Let's say there are 32 here. We can put 5 here. We could put all the last 3 years of mine production, into there and the slimes into there (the pit). Diavik would like to put processed kimberlite back into the pit. We want to fill the bottom with PK. It is the same material that came out of these without the diamonds and it is crushed now and not solid. It is very deep. Then put fresh water back on top of it.

Natasha: Do you want to explain how the water would keep it from mixing?

Gord M: This water at the top of the pit would still be very deep. It would be 150 metres of water. If you think about a lake in a big windstorm, when the lake gets all mixed up, it is usually on the shoreline. In the deep lake areas, you don't usually see that. The old bits of the dike would make sure there are no big waves that will go into that. We have done a mathematical model, and it wouldn't create a wake at the bottom.

Wayne: I have asked this question quite a few times before. There have been a lot of people here who haven't been out of school for 50 years plus. Anyway, I thought you could put it in feet and yards and miles. Use feet and yards.

Gord M: A meter and a yard is about the same, so I will start using yards.

Shirley: looking at the KP, the colour of the kimberlite right now is a weird colour. So that water is non drinkable. How many metres above the kimberlite would be toxic?

Gord M: It wouldn't be toxic, but not good maybe for about 10 metres. It looks like a different colour because the water on the surface is only 2 metres deep. You wouldn't see that in the pits once they are filled.

Shirley: Was there a test done to come up with the 2 metres deep figure?

Gord M: We can't test it because it doesn't exist, so all we can do is model it. What we need to be worried about is the 40 metres deep at the top where most of the fish will live. That is where any caribou would drink water, but we can predict what it will look like on the very bottom. We will have to measure that when we get there. Challenging for us is we have to try and predict what we think it would look like.

Bobby: I keep coming back to a bowl, thinking about the bowl and a bathtub. Bathtub with a plug in the bottom. You pull the plug and all the water goes down. That is how much pressure is going to be on this pit here. And looking at the future you sometimes see fishes all along the sides of the bowl. I keep worrying about the fishes and all the pressure, all that processed kimberlite and that has been one of my big concerns. We have big pressure going down to that. And once that pressure starts - when you start filling it up, the fish on the sides of the bowl, going to seep out on to parts of the lake too now. I keep thinking about that pressure, that bathtub pressure. Thinking about the ocean and how much pressure people can't even go down there.

Gord M: In your example there is a bathtub and there is air on the outside. Think about if the bathtub was sunk into the lake, and the water in the drain, it is all water and its all at the same level, if you pull the plug out, the water isn't going to go anywhere. All the water is underneath there, the pressure isn't there anymore. The pressure if you want to dive down there is always there. But you shouldn't worry about the pressure because if we pull the plug there is no where else to go. It is just walls of big rock.

Bobby: The only reason I was worried about it is the crevices and the fishers on the rock could give way from any little pressure along the rim or around the bowl. That is one of my concerns.

Gord M: We have looked at that. I agree, but the big difference is the pit level and the lake level, then you don't have that pressure. [slide 13] before we put the water back in, put the PK in, then put water back in. If we don't get that approval, we are still going to put water in there. Once we put in water, should we be reconnecting and allowing fish to come back in to here? We are saying we will measure the water chemistry in that top 40 metres, and we won't connect it unless it is safe. But what we want to know, is if you were standing on this dike, and water levels, what are you going to look at? Are you going to look at other things other than the water chemistry?

Roger: I know we were talking about capping it, but just my thought, if you do fill up with water will it affect the water levels of Lac De Gras? It is pretty deep, water levels do go up and down, will Lac de Gras go down?

Gord M: Absolutely it will go down, but it will be very small. That is one of the criteria we have to monitor. The lake probably moves between winter and spring quite a bit.

Roger: With climate change, things could change. It could change fast. Nature has its own way of changing.

Gord M: What we need to know, when we say climate change, is the concern too much water? Or is it both?

Roger: Either or both. My main concern is the main lake and its water level.

Gord M: Those are very good things for us to know. For this, the change we have been looking at is if the winds change, what would happen? We looked at what a really wet period or dry period would look like. This is only the introduction of this discussion.

Louie: Yes, one of the pits that was filled with water, we had the opportunity to see it. If it was possible to see it again it will be good. The water that was filled into the open pit they made a littoral zone so when they put the water back into the open pit along the top portion where water touches the rock they made a littoral zone. We've seen this. This would be safe for wildlife to enter and get out of water safely. When you leave the pit the water it is right now it may not get out safely. These are the things that were said. The smaller pit will be filled with water we had seen that. It will be good to see that again. The young man who is talking about that is correct. When the water is filled the depth of the water will be deep. In the shallow parts will be shallow. They may be equal level but that will take time but that will happen in due time, very diligently that's what I think about it.

Gord M: Right along [*pointing to edge of pits*] here we did say there would be a rock wall with a ramp for caribou and we have accepted that recommendation. There are places where the caribou can get out.

Joanne: We are going to take a break. This afternoon we are going to go on a site tour, so think about where you want to go on a site tour. The options are open pits and PKC, and Lac de Gras from the North Country Rock Pile.

Natasha: Yes, or we can actually go down the shoreline.

BREAK

Presentation: Diavik Community Engagement (Myra Berrub)

Myra: I am quite new to Diavik, just starting in April. I am not an expert in everything here, but I will try my best to answer, and we can keep the questions for Gord. We have talked to all our TK communities other than the Kitikmeot community, but we are hoping to get there. We try to host communities once a year. If you feel like you haven't been to the site in a while, please let me know. We apologize we aren't talking about the North Inlet today, but it was so timely you were all going to be here during the discussions on the Environmental Assessment, so thank all for being here.

Presentation: Pit Options (Natasha Thorpe and Joanne Barnaby)

Natasha: [*Presented previous recommendations from the TK Panel that relate to this panel's conversations.*] This TK panel has talked about how fish and wildlife, how water quality, how wellness safety all that together feeds into closure planning with climate change in a way that is being driven by the TK panel. Let's talk about some of your fears and concerns about putting PK back into the pits. And if it happens, what needs to be monitored and watched so that you are comfortable knowing that the fish are healthy, the land is healthy. We will probably spend the most time on question 5: If Diavik goes ahead with refilling the pit, what would you want to watch in the filled pit lakes to advise if the pit lake should be connected with Lac de Gras? Any questions? I tried to give you a little background of the good suggestions that you have given in the past.

Bobby: Before we put the chemicals or parts in to the pits, the slimes in to the pit, would it be possible if we could use only water before we put the chemical stuff under the ground, and if that level of the water stays the same for maybe a month or so, maybe if we could just fill it up with straight water and testing it out before we put the PK under the ground? And if that water stays level then maybe in a month or so, pull it back out, and if it is the same level and it hasn't changed, then maybe we will know for sure that the PK will not be draining out anywhere else underground? My recommendation would have something to think about using straight water before we put PK down below. And maybe pump it back out and when we are sure it won't leak anywhere, maybe we could start putting the slimes and what have you down below. That's what I was thinking about if that could be done.

Natasha: That would be a good question for Gord, and I have made note of it here and maybe we can revisit it when he comes. The proposal is not to put chemicals back in the pit, the proposal is to put the PK back in to the pits.

Presented PK samples in jars

Joanne: this is probably a question for Gordon. My understanding that only one pit would be proposed to be used to place the slime in. And the other pit was not. What is the possibility of doing what Bobby was suggesting to use the one that will not have any slimes in as the place to determine what would happen? Testing the pit to see what is happening there.

Gord C: I can't speak to it from an engineering perspective. I think they would have to go through another permitting process to do that in a different way. Unfortunately, I cannot speak to how it would affect it.

Myra: When the proposal was first going forward, it was looking at all 3 pits even though we don't need all that space. We just wanted the option of doing that. Through the interventions there was quite a lot of discussion and nonsupport looking at A21 (the newest and most shallow pit), so we took it off the table. We are still looking at the 2 pits, but really just looking at one. Originally, we thought all the pits would finish at the same time, but now that things have changed - it has been 20 years and operation and timing has changed - one of the pits is going to close sooner than all the others. In 2 years, we will have a pit that we aren't mining anymore. So why not take the stuff out of A21, as we are processing it, and stick it into the pit that we aren't using anymore? I don't know if we can use a test bed – it really has to do with timing, and it is the main reason we are revisiting this option. We should ask these questions to Gord because I am quite new here.

Wayne: The question that I have is there are certain tunnels connecting or drifts if you want to call that connecting the two pits. When one pit just finished, why can't there be a portion like a set charges, and block those drifts off so that the pits are no longer connected together? Then you can work on one pit to see if it works out as a safety precaution.

Myra: Will have to bring up with Gord, but again I think it is the timing issue. We want to take the stuff out of A21 and put in the first pit.

Wayne: Have you got cars down there that haul and dump – take from one and dump in the other pit that isn't being used or how is this stuff being transported?

Myra: There will be a pipeline that will need to be built for the slime to be deposited into the pit. The bulk of it.

Thomas: I know Gord spoke about doing calculations and mathematical studies in regard to how the pits are going to work with the PKC and the grey water and the natural water. Has there been any physical models built to scale on how the mixture is going to happen? It would be advantageous to look at.

Natasha: Not that I know of, but I am putting that up on the wall. I wanted to close off and make sure there are no questions about the proposed agenda or logistic questions before the site tour?

None

BREAK – END OF DAY 1 NOTES - Site Tour

Traditional Knowledge Panel Session #12: Pit Closure Options Day 2/4 Notes

Date	Saturday, September 14th, 2019
Time	8:30am – 4:30pm
Location	Diavik Diamond Mine
Participants	Bobby Algona (Kitikmeot Inuit Association) Regan Adjun (Kitikmeot Inuit Association) Nancy Kadlun (Kitikmeot Inuit Association) Roger Catholique (Łutsel K'e Dene First Nation) August Enzoe (Łutsel K'e Dene First Nation) Jimmy Fatt (Łutsel K'e Dene First Nation) Shirley Coumont (North Slave Métis Alliance) Wayne Langenhan (North Slave Métis Alliance) Janelle Nitsiza (Tłıchq Government) Louis Zoe (Tłıchq Government) Therese Zoe (Tłıchq Government) Jonathan Mackenzie (Yellowknives Dene First Nation) Rose Mackenzie (Yellowknives Dene First Nation) Jonas Sangris (Yellowknives Dene First Nation)
Facilitators	Joanne Barnaby (Thorpe Consulting Services) Natasha Thorpe (Thorpe Consulting Services)
Observers	Mona Tiktalek (Kitikmeot Inuit Association – Interpreter) Bernadette (Berna) Martin (Yellowknives Dene First Nation - Interpreter) Peter Huskey (Tłıchq Government – Interpreter) Joline Huskey (Tłıchq Government - Staff) Thomas Lafferty (Łutsel K'e Dene First Nation – Staff) Janyne Matthiessen (EMAB (Environmental Monitoring Advisory Board) Myra Berrub (DDMI – Principal Advisor, Communities and Social Performance for Closure) Gord Macdonald (DDMI – Principal Advisor, Sustainable Development) Gord Cumming (DDMI – Environment Technician) Sean Sinclair (DDMI – Superintendent, Environment) Ryan Dempster (PIDO Productions - Sound Technician) Emma Wilson (Thorpe Consulting Services - Transcriber)

Opening

Gord M: I looked at some of the questions from yesterday and I'm hoping to answer some of the questions that were brought up. This figure I drew is looking sideways where this being the island, and this is Lac de Gras. Lac de Gras has a bottom of lakebed, but what is underneath the lakebed is still all rock but in that rock is water. So, it is not open – if you dug a hole in the ground here, water is going to flow into it. Just like anywhere where the land thaws. What this line shows here is permafrost. There is no permafrost under the lake. But underneath the island is permafrost and it goes down hundreds of yards. So, all the water in the rock underneath the island is all frozen so nothing is moving here. But when you get out where the lake used to be, the rock is there, so if you dig a hole, the water is going to come into it. We pump water out of here and that goes into the North Inlet. That water came from the bottom of the pit and gets pumped into the North Inlet for treatment. The pits are mostly dry, that is because we have pulled out the water. When we first dug the hole, water was coming in, and keeps coming in lower and lower so that is why the edges of the pit we see are dry. So, what do you think would happen if we stopped pumping water out of here? Where would it stop?

Joanne: Lake level.

Gord M: It's going to stop when it gets to the same level as the lake. Does everybody agree?

Nods in agreement

Gord M: So, this water that comes from the earth has a lot more minerals in it. We want to fill the pit with the lake water with the best water we can fill in there. We would bring it to the same level as the lake. When they are both at this same level, the under-ground water is not going to move anymore – it is just going to sit there. Does that make sense?

Nods in agreement

Gord M: If pit water level is not at the same level of the lake, water is going to want to move in between the two, but if it is at the same level then it will be stagnant. We need more water, so we would have to use more Lac de Gras water. We think it is safer to put material down at the bottom of the pit – it is more stable than putting on the surface. We have all the permits and designs to put it up here we think it's just better to put it down here. If we stop putting PK on the surface, we can start closing it 3 years sooner.

Joline: Gord there was some confusion at the hearing about the amount of PK putting in the pit. Yesterday you said there was 32 tons of PKC and you are going to be only putting 4 in the pit. Just giving an example. And then also maybe if you mentioned around the edge, the PKC hardens and that once the slurry you put in the pit, then you are going to cap the PKC. How it is going to be capped? If it was described that way, I think we would have a better understanding.

Myra: Just differentiate between the PKC and the North Country North Pile on that same drawing to show there is a difference.

Gord M: I'm not going to use units to simplify things, just numbers. Right now, there is 32 in the PKC. Between 2002 and 2025 we will produce another 5. So, where do we put this 5? We have a choice – we can put the 5 in here or in the pit. We are suggesting putting the 5 in the pit, but we also talk about slimes and we were talking about taking some slimes from the PKC and putting it in the pit. We could put 5 of the slime into the pit. There would still be 28 left in here.

Natasha: So, there is only room for 5, not 10?

Gord M: No there is room for 10 if we wanted to. But we are only talking about the 5 from the last few years of construction.

Thomas: Have you guys looked at the process of the slime being put in before the PKC so you'd maybe have some settling or freezing?

Gord M: We haven't looked but the reality is the best way to do it would be to do at the same time.

Nancy: If it is approved to go in the pit it might be easier to put 5 directly in the pit.

Gord M: Exactly, if it is approved, we want to start moving the PK in there as soon as we can. Maybe end of 2021 beginning of 2022. So, we change the pipeline instead of going up to the PKC it starts going over to the pit.

Bernadette: There will always be moving of the water.

Gord M: I wasn't trying to get spiritual with the water – that would be way out of my expertise. I don't know how to convey how if there is no change in the surface, water does not move.

Wayne: You have 32 units there and you want to take 5 from it and store these other 5 units right off the bat. To get the 5 units out of the 32, you have to use some sort of dredge, but you said there could be another 10 taken in there, so there would be a total of 20 units, is that correct?

Gord M: Total of 10 with 5 and 5, but the pit is big enough to hold 20. And don't forget this is 51A, but there is another pit that we could put more PK into.

Wayne: At the end though couldn't you draw more out of the PKC and move more?

Gord M: Yes, we could. Ok so how could we close this and differentiate between hard and soft? When we were standing up at the rock pile yesterday, we were looking down on it. What you didn't see is there is a dam in there with a plastic liner that stops anything from seeping out. And there are beaches that are the old stuff that has been put down in layers. Water goes to the middle and courser stuff settles. This is built up over the last 20 years (courser stuff), in the

middle there is always a pond and then underneath the pond, that is where the slimes are. The extra fine material has stayed in the middle and it has kept growing. If we put the 5 extra in there it will keep growing. So with the closure plan, if we don't move the slimes, we have to keep a pond on here. But what we do is keep a rock cover all the way to the shoreline so a caribou or person could walk to the pond, and they would get in to water not slime, and they could get out. So if we can move the slime, the idea would be to make it all rock. But if we tried to do that now, all the rock would just sink in to here.

Nancy: If it is covered with rock, I don't think the cover will be there because it is not going to be up there because the earth is always moving, and it will be there so it will be best to put it in the pit.

Gord M: Yes, the rock cover will be very difficult.

Nancy: Best way you can get all that out, at least make the rock cover really low.

Shirley: You said that If you put rock in it would sink, but if you put enough rock in you could fill it?

Gord M: The problem is, you put it in, it all looks good, you wait 50 years, it sinks, and then you have to put more. It might take 10s or hundreds of years for that rock to sink and settle. You could theoretically fill up that space.

Joline: When I was at the hearing last week I also heard about the concern about the middle piece after putting the PKC in the pipe. You took us to the process plant, and we saw how the diamonds were extracted from the ore. And you use just water to extract diamonds out of the ore, I think what I was hearing is that the middle piece, and the type of chemicals could possibly be in the pit could maybe be harmful to fresh water or lake fish. Maybe you can explain a bit about that so that we know what kind of chemicals that would go in the pit. I think that was a concern at the hearing – so that our elders here – it would make us feel comfortable to know what is going into the pit.

Gord M: Chemicals are hard to explain. If you go to a mud puddle and you squeeze that mud, there is a water that will come out of that. The water has chemicals in it, but it is natural. When we say there are chemicals in there, they are natural that have come from the earth. When we put all this slurry in the pit, so it is water and PK together, as it comes in, it is almost 15% PK and the rest is water, so take that jar, and imagine even more water than in the jar. But over time, this gets more and more consolidated. The amount of solids become more and more. The water level stays the same, but the solid level goes down over time. This gets more and more solid, but what comes out is water. So, the water on top of that has more chemicals in there than Lac de Gras has. At the very bottom here as the water is coming up at the top, it will set up a layer at the bottom of the pit different than the top layer of the water in the pit. It is this water that might not be safe or as safe as for fish or caribou or people. But this water is going to

be way down here so no one can get there. We are saying it will be safe at the top. But even down here it's not that if a fish will be down here its not going to go belly up. So, I wouldn't use the word toxic, it would be a sub lethal effect. Water that is denser, it will stay at the bottom and not go to the top. Heavier.

Shirley: So, the water at the top of the slurry, same as the jar, as you add water to it, it would mix up, so would you add it at different times to let it settle.

Gord M: So, let's say this is the end of mine operations and we are somewhere around 2028. The first thing we want to do is pump out all the water, treat it, and pump in to Lac de Gras, then what we do is pump the water in to fill it up but with as much Lac de Gras water as we can and as little as the poor water we can. We do think it will stir up a bit as we fill it. So we will wait for 2 years, we will measure the water chemistry and what other visual thing we can assess before we breach the dike and mix the 2. So it is then that the water will be starting to release off the bottom and will form that layer between the clean water and the slime

Louis: How high is going to go up, how high is going to reach at the open pit? Is it going to be up at the top of the cone or once it mixes, once it mixes with water and PKC portion is going to float to the bottom and then on top of the process kimberlite, how is it going to mix, with the turbidity, and within the open pit if water is breached with the lake how far is the water going to seep in to the open pit? What is going to happen with the crevices and cracks and earth crust – I just want to check with you how it would affect the open pit?

Gord M: It will be the bottom of the cone? This would be so deep that the current would not mix this back up to the top. If this water was this much water.

Jonas: How deep is that cone?

Gord M: So this part is 150 metres of water and this would be 300 yards.

Jonas: There will be hot water coming out it as it is getting close to the underground. If you go underground, it gets hot down there. I don't know about this lake, any beavers out there?

Bobby: They are starting to come up now. Yes, we are starting to see muskrats. Two we have never seen muskrats. Beaver, I am not too sure, but muskrats are coming up from Pellatt Lake now. I have never seen that before. Means that animals are coming from up south and I'm sure beaver is going to do the same thing. Muskrat never before at Pellatt Lake before and they started to show up. The little houses that they build near the rivers. There are more of them coming out near the rivers now. I believe that beaver can now come up now too depending on what river they will come up and where they travel from.

Jonas: That is Traditional Knowledge. Science and Traditional Knowledge can work together to make it what it looks like. Because if there is beaver on the lake, water is going down, why is water going down? Because they are trying to block it. So maybe you should do a study on

beaver. When you say the lake is up, they check a lake, the elders, and it is full. One of the things I can't stand is the scientists want to leave some stuff in the bottom – are they going to cap it so that the water doesn't go down to the pipes and whatever you are going to leave at the bottom? The water was 400 feet down there. There is big lakes they aren't going to go up. You probably have to fill them up to make it level. They are probably going to stay like that. Do you guys ever look at climate change and what is happening? You go to Yellowknife from Dettah, used to be many lakes around, and they are all gone. Where did they go? Even Great Slave Lake is going down. So it is going to do the same thing up here. Ice is leaving, land is getting dryer and dryer. At the same time, we need to look at it very closely. I am concerned about how the animal, not only the bears, caribou, we want those things to be safe. Are these things going to be safe? We don't want to fall anywhere on the mine site. You know you look at caribou, I don't know how you look at it, but if you look out on the land, there are so many rocks out here, but you never hear the caribou break its leg or something. They know the best way to go, but I don't know if you are going to draw a – where does the water going to go back and forth? There should be maybe every 2 years after the closure, monitor it. This old man right here and I were talking, what is going to happen here? Look at the whole place. Is everything going to be gone, the buildings? You know, it is a big place. Probably take a few years to close. Where is it going to go and how beautiful it is – the site. The stockpile looks like it is harder to dump more. Maybe start now and look how it is going to work. So fill it out with something. Maybe put straight water up and see what happens, what kind of dirt comes out of the pit. And then you can pump it out again, and then put the waste down below. But the water that flows back to make the dredges, how deep are the dredges going to be? So those are some of the things I'm wondering how you are going to do it. The big lake might go down. I was just wondering about that.

Gord M: You had a good question about if those are the dikes, and we put holes in them, and how the currents flow, but the idea is when it is full, if climate change happens, the water level in the pit would go up and down the same level as the lake. So if the levels in the lake would go down, so it would in the pit. So all Lac de Gras would be dried up there would still be water in the pit. Even after it is breached.

Jonas: Dries up the big lake, the other one wouldn't dry up. Summer its going to be rainy so its gonna be heavy rain that will go in the bottom.

Gord M: Let's pretend the dike is completely gone, then all the water is connected. So if the water level in the lake is down – the level in the pit is going down, and it goes the same way the other way.

Natasha: I wonder if it helps to think about the Traditional Knowledge value that nature is always in balance. Nature is always trying to balance out and maybe that is what is trying to happen there – balancing water inside and outside the pit.

Louis: Once the water gets in to the open pit and the top of it and the water will move, and the movement of the water mix with the water and the top so the bottom water won't move that much so just thinking about the water level and the slime that once it has been put in the pit and where they put the rocks and this is how they work and they put some chemical dirt in the bottom and they put rocks and some of the put the material under the rocks. And we walk on top of that rocks. The slurry that they are going to put the PKC how it would work – I want to know if there is going to be slurry and rocks on top and we can think of that too?

Gord M: Thanks Louis. The question about Ekati, at Ekati, it is all permafrost, and the edge of their pits would be, once they fill them up with water there would be this area, so they have the same thing where they put PK on the bottom and then water on the top, but I think what you are talking about is the littoral zone, where you put rock back here to make a shallow area where the plants can grow and where there is more of a natural beach instead of a steep cutoff. But at Diavik, the water would be up here, so all of this is where the fish habitat would be, so we wouldn't have to build it up the same way that Ekati does.

Jonas: How are you going to make the fish go down? 'Follow the arrow down?' Springtime you go out in June, you go fishing, they're at about 20 feet, and if you go to July, they are about 40 feet down.

Gord M: We are saying we think fish go to 40 yards.

Natasha: Jonas, regarding your question on how deep do you think fish would go? This panel came up with that number, and that is the number Diavik is working with, that biologists agree with on how deep fish go.

Jonas: Fishing at June, 40 yards, till I reach 42, I know I would get a fish. If I want to go deeper, I go 60.

Joline: If you are talking about yards and you are thinking about feet, yards are about 3 feet in a yard. Bobby said that he knows they go as deep as 50 feet in some areas. More than that. But then you are talking about yards, if you're talking about 40 yards that is an average of 120 feet, right? But then if you come to look at - I just want to stand up here, I find that explaining to our elders back home is important because we don't know how to read and write engineering plans so photos and writing it out like this is easier. So last year we wanted to take elders and show it looks like in the pit. And how deep the fish is going to swim. So when I took Dora there, so when we went out there and I told her you see those blocks and how they go down like steps, and I told her can you visualize fish swimming deep. And then she looked at it and she said I could see fish from the side coming in because there is vegetation there and the pit here is no vegetation. And I don't think there will be no food in the pit, but maybe about interest they would explore, but on this side of the pit there is vegetation here, and not so deep, she said I could see the fish going there to eat, but not to go down in here. And they always mention, the elders always mention, we always have to because of TK we know how fish and wildlife behave,

and back home they always say we are talking for our future generation and we want our children to learn and get educated the scientific way and the traditional way. I feel like I am the in between for Tłı̨ch̨ Government, I have gone to school and I have worked with the elders for many years. So I have to think like a fish or a caribou or a beaver. When you mentioned beavers, but scientifically you look at beavers and they have to chew on wood, if there is no wood for them to chew, I find it really hard to see them come up here because there is no wood to chew. But we saw some areas where we drove the slope smoothing out. You look back 10,000 years ago we were all covered with ice. It took 10,000 years how it looks on the tundra. You see all the boulders. You see how the ice slide back and retract, slide, and retract. Because the ice did that while melting, it grabbed some big boulders, and after that happened you see vegetation grow. Because we were all covered with rock. All this is like lava out here, it was all coming out from earth. Out on the tundra now you see vegetation grew. So we look at the North Country Pile, we see vegetation grow, and you think like caribou too the big boulders out there covered by vegetation. And Jonas is right, caribou is smart. They know these areas. I would imagine if some of the areas of sloped, caribou will recognize that and will go on that path. I think Diavik is also trying to slope other areas where caribou go through. One of the elders said the fish won't come down here because there is no food. So I just wanted to mention that. It is good that we are coming up with discussion here, but I think we have to recognize the people that work for our First Nations. Even getting Janelle to come back. I am really pleased with her. We are learning from our elders. Mahsi.

Natasha: Joline thank you for sharing that. I wanted to share with the panel we had a little bit of this discussion last time and one recommendation from you was that: TK holders know that fish generally goes where there is food and nutrients and oxygen, and will probably not go down to where the PK is back. The panel discussed at length the 6 yards to 100 yards where the fish could go.

Bobby: I don't know if I ever told this fish story. A few years ago, in this panel, but individually I've told this to other people as well. When fish knows these areas. These deep deep holes in these areas. This fish that we caught on Contwoyto Lake very large fish. Caught that fish and once we started taking the fish in, it kept going out. Kept getting - using 17 pounds line on those reels that I have, and 1 reel could hold little over 200 yards. And when we caught that fish, I knew it was going to take all my line, so I started the motor and started following that fish with the boat. It was taking us to the right of the middle of the lake, where it is very deep. When it stopped there, it went straight down in the hole. Straight down taking all of the line. I had only maybe 5 yards or so on that reel, and it stopped. And then tells me how deep the fish can go. Almost took the whole line again. Once we stopped at that spot, that fish kept going straight down, when it finally stopped. It stayed there for about 15 minutes. I couldn't pull it up. I can't move it up. But I believe the fish can go very very deep where they know these areas. Fish are like any other predator or animal. They know where they live, where the ends are. They go straight for that. Fish do the same. They know these areas and lakes very well and if another

predator goes after them they go straight for these holes. This is what happened with this fish. I believe they can go even deeper if that – if it wanted to. That told me how deep that hole was. Maybe it stopped at the very bottom. It stayed there not moving, right at the bottom until I started tugging slowly. And then when we got it all the way up to the boat, it carried us right back to the shore. And when we got to this shore it started trying going back to the hole. After 3 hours it finally got tired until I could get it in the boat. Fishing is the only way we can tell how deep the fish can go. That is my fish story about how the deep can go. That fish was 57 inches long by 39 inches girth. I believe almost 90 pounds. That was our record for that lake.

Joanne: You win the fish story.

Jonas: I have a better one.

Joanne: Wayne did you have a question or comment?

Wayne: Ya, the fish that can go deep like Bobby says and I've fished up on Great Bear Lake and quite a bit on Slave Lake, not as much as some people, but Bobby is definitely right. But that is on a big open lake where it isn't the same situation as what we are looking at here because Lac de Gras, even though it is a pretty big lake, it isn't exceptionally deep lake like Great bear or Contwoyto Lake so we wouldn't have that same situation here with the water depths going to be put in these pits. So, I don't think it would be a great concern to have more water unless sludge or slime or whatever on the bottom. Because this is like, the rest of the lake is probably not any deeper than going into the hole. So I want to show the difference between a big open lake and – the biggest fish I caught is 30 lbs. That was a salmon in BC, not on the big lake.

Joanne: Before we take a break, Gord mentioned something about experience with the fish and the effects of PK on fish and there is some testing that has been done, do you want to explain that?

Gord M: I was going to come back to that – that was the toxicology that was being done. We can talk about that whenever is a good time.

BREAK

Natasha: [discussing note process] We will hand them back to you during the same day. 7 pm every day. And you will have time to read through your words to make sure we get it right. We will hand you yesterdays notes at lunch. And at 7 pm tonight, check in with us we will have notes from today for you. Does that work with everybody?

Nods of agreement

Natasha: When we are pulling together recommendations and writing the report, we want to know that you have had the chance to verify or read through your words. This is the report from panel 11. As we said, every time it is sent to the lands and resources department. It sounds like sometimes you get to see it sometimes you don't. What we are thinking is we will

print 5 copies every time and hand them out. So at least each group has a hard copy. Does that help resolve some of those frustrations of not seeing a copy?

Nods of agreement

Myra: If you would like it today, let me know and then I can get them to print a copy, I will make copies in Yellowknife when we land. We can email it too.

Natasha: The other thing we can do is that whoever wants all the reports digitally, we can email those, we can send on flash drive. We could circulate a paper and make sure everyone sees it.

Bobby: Maybe sometimes when you make the hard copies, can you make some extra so I can have 1 on my own. Back home I have lots of elders coming visiting for tea or bannock or tea. We get to looking at these stuff I bring home, and we have our own little discussion groups and it really helps me thinking about some things too. So if you could make extra copies I would really like to have one if I could because I have lots of elders always coming to my house and we have discussions about the report. I would have an extra one for each group or something.

Joanne: If there is other elders who want your own personal copy in addition to the ones that go to your office, that is easy to do. We just need to know who wants those and you can keep your own copy.

Natasha: show of hands for who wants personal copy?

Show of hands – 10 copies

Thomas: Email personally

Bobby: And also, sometimes when those hard copies get into the office, a lot of people some time don't go into the offices and look at these hard copies that you have sent. In that way, when I have my own, other people in the community has access to it, which really helps. A lot of people in the community don't go in the office to look at these things, so I just wanted to have one to share with elders and youth groups as well.

Natasha: Another thing we could do is print all 150 recommendations and Diavik's responses if that would be of interest. Then you would have a hard copy of all the recommendations. We always put together an agenda, but we don't always follow it to the exact time. In the big picture, we are hoping to get through the first 3 questions today and tomorrow the questions 4 and 5. These first 3 questions focus on some of your thoughts on the proposed closure plan, ideas for the pit, your concerns or fears or recommendations if the pits are filled, what are your concerns or fears about reconnecting the pit to Lac de Gras? What other information do you need to feel comfortable with closure of the pit? Sometimes we stay together as one group, sometimes we go into smaller groups. First question we will stay together, but wanted to check if that is ok first?

Nods in agreement

Question 1: What are your thoughts on the closure plan? Do you have any questions about changes to the plan?

August: It is my 12th season and a lot of us are with me. This year we have been talking about closing. All the time we have been here, words about what should be done, and for me this year we have been sitting here listening to what the scientists going to be do. For me I am pleased, we should do that. Because we have put a lot of words in the last 12 years. So lets leave it to the scientists how it is right now. After they fill up the one [pit], they will be testing it so they will let us know if something is wrong with is. For me I will stick to what the scientists say. Thank you.

Joanne: So I hear you are saying you are comfortable going ahead with Diavik's revised proposal and to put the slimes in the bottom and then to fill it up with lake water, right?

August: The reason I am saying the scientists, they know more than us towards that. All we do is talking talking about what we have done. So let's leave it to the scientists.

Joanne: And then at the end you said, and then we can test it. What do you want to test?

August: The water they are putting in the pit, the small one, so every year they are going to test if the water change, they will know it they are scientists.

Joanne: So after they put the slimes in, water in, then you would want regular testing?

August: Yes

Shirley: One of the tests I'd like to know at what point, how far deep, the water is good, or when does it start to change or when it is not ok for fish habitat?

Joanne: So you want different depths of testing?

Shirley: Yes, right to the solid.

Joanne: Semi solid, toothpaste?

Shirley: Yes.

Joanne: Any other general comments on changes to the plan?

Thomas: It is funny because Gord is never here when I ask these questions. I want to see some realistic testing, something to scale and how everything is going to move around. I know we had it up there and he didn't really answer it today. Today we don't have any realistic testing. So if there was a model created it would probably be a first of its kind but it would be a visual of what is happening, if the current comes in, what are the potential plans and processes for the

PK, are they going to add textile material to help sift out that slime to help it from not going up. I was talking a little but, I want to see something realistic that we can all see.

Natasha: Is there an Indigenous firm that could do that? Do you know any in Canada?

Thomas: I know there are a few universities, Waterloo works closely with the GNWT. The firm that used to do that isn't there anymore. I know it is able to be done, this is huge I want to see something like that. I know what Ekati is doing, but we are doing something but I want to see where we are going to go from there. It would be good to see.

Joanne: As much direction we can give in what we are looking for, the better.

Wayne: I was wondering – is there some communication between Diavik and Ekati and are they planning on doing something along the same line? Has there been any back and forth feedback? Maybe they are ahead of the game already.

Natasha: That would maybe be a question for Gord.

Mona: I've got a question here. Would they be cleaning the rocks before they are putting them in the pit or before they put the water? Sometimes the rock gets slimy when they are in the water, it isn't frozen. Will they be testing the slime; they could scrape it from the rock? It might have something in it. The water tank, George Marlowe used to say it is our water tank. I guess there are mines, even sports centers work around it too. Wonder if they could test it even some years after they fill it?

Myra: Test the water, not the rock? So, to clarify, they will be testing the water, but they aren't going to right down to the settled PK to test that.

Bobby: I keep coming back to this pit as well and the surrounding rock around the pit. Anywhere you put a hole in a lake, a hole is going to get bigger as it gets warmer, it will get bigger, it will widen. That pit is not going to be solid anymore, it isn't going to be permafrost under, but there is still permafrost on the side there, and once the water temperature will rise, the permafrost on the sides is going to get warmer too. I am afraid the water in the rock itself is going to melt and seep into these areas and also those crevices is going to melt around the pit, depending on how warm the water is going to be, it is going to be wider and coming in to the pit. And also, maybe for temperature, permafrost under that pit there is going to warm up the bottom of the pit maybe, around that pit.

Natasha: So this is the permafrost line, it isn't under the pit.

Bobby: But it is so cold in those crevices and concern for fishes and where there are cracks. It will be melting coming from the sides from this pit wall here. This water is going to warm up and the warmer it gets it is going to warm up all along here and maybe get into the permafrost and up here. Because it is not solid anymore, the hole. This hole is going to be warm along here

and maybe it won't freeze anymore after that it is one of my big concerns. All of the slimes and that maybe going to help defrost this area as well and slimes and PKC – I think, maybe.

Natasha: I wonder if the question is if Diavik puts PK in the pit, will that affect the temperature such that it melts the permafrost nearby?

Bobby: That is the concern.

Natasha: Let's see if the scientists have modelled that. Nancy said she likes the idea taking the PK and putting it here. Is that generally what people are thinking? Do we like that idea?

Wayne: Can't we just do a show of hands, who agrees with it and who doesn't, and why don't they like it?

August: When Gord comes back can he address that question?

Natasha: Yes. How about we follow Wayne's suggestion. By show of hands who is ok with that idea about putting PK in the pit. We have 7 hands. Ok. If you are ok or even if you are not ok with this idea, what are your thoughts about it, what is making you hesitate about it? What are your concerns or fears? Bobby raised this concern about the permafrost – he does not want the permafrost to melt.

Louis: Bobby is correct in saying what he had presented. Once we fill the pit with water it is not going to freeze. It may melt the permafrost and he is correct in saying that. I agree with him. When we had that trip to the underground and the workings how the – I've asked the question how they work with pumping water out and once we fill it with water and those areas where we went underground, I've asked question on what's going to happen with the openings in the underground once it is held with water? With the PK, being filled in the open pit and undergrounds, what would be replaced of the PKC area? What would replace the PKC area, it would be great to have a presentation about that. I am thinking of all the boulders from the North Country and the north side towards the air strip. The slope that exists now, wildlife might not climb that North Country Rock Pile because caribou like a breeze and avoid bugs so they go up these areas. With the closure and reclamation plan the island is not very big island and so if we agree on how the closure plan how it is going to look it would be good for the wildlife but on the other side of the lake it is very difficult. We can see the stockpile across the lake and there is a long mountain – Ekati is a very large footprint but on this island, it is very small and is contained on the island and I just want to share that with you.

Jonas: When an elder speaks we have to take his word and so I think about what Bobby said. He is correct in saying we have to open the pit like an ice cream cone. The water it moves, and there is a crack, maybe a crack, and that is here the water will move in to. I'm sure there is a lot of cracks in that area and the water will get into those cracks, and later on the water maybe will maybe get soft, and the water will keep falling in maybe there will be a lot of rock in that area. And maybe it will be a big open area and that is what the elders are thinking. Not that the

climate change and on even on top of the roof the material get worn out and there is another leak. The lady that spoke every in the community will have a young people and they start talking about things even about the community, what's about – and some of them laid off they are unemployed in the community and where else can get a job and what else can they do. Now today in the community we have to pay for water service, power bills and utilities to pay, and even the elders are concerned about the young people today and how they are going to survive in the future. And once the closure of the mine, what is the plan B, where can they go get a job? Is there going to be a job, here for our community in Tłı̄chǫ and Det'on Cho Corporation, we will never grow plants, this is a rocky area and where there is a mine, even in Nunavut, getting jobs and they are getting gold and diamond in those areas. Now we have more population of young people. Even now our community is 80% of the Yellowknives Dene First Nation is young people. We are talking about closure today, first of all, back in 1992, when the first I was a chief at those times, and they discovered diamond and the elders were saying this is similar to Giant Mine? And we want up front compensation, the Nation saying that now they will have a diamond mine in our area. We aren't going to have – at least we get a benefit in return. I remember those times the elders say, we need a good deal out of Diavik. So that we need to discuss some kind of road block, seems like sometimes we are scared of development and 3 weeks later and who's going to develop this area, and we have to negotiate with Diavik for 60 days and after that implement with them and we have 3 areas maybe 1 million annually from them now. We are in a place with the elders when – there was a real hardship in those days. That they had to travel this far to get caribou. So every time we go on the land of our ancestors we are always needing to respect, make a fire, feed the fire, this is ancestors land and we are here today with the young people, these are the kinds of things are worrisome with us. We are here today as a panel and we are so concerned about the wildlife and that they will sleep well and live well. Animals be healthy, and the fish, and I told Gord yesterday he seen one of his friends here as some caribou on the west side. Before they used to be in this area but haven't seen caribou in this area for a while. Maybe there isn't any food in this area for them, and they know the landscape and they are cleverer than us. This concerns us, but not only Aboriginal people, we as Dene people that we really think about the land and out on the land, about caribou. Now we are just talking about the closure plan, and there are other things considered. And I want to say thank you.

Joanne: Maybe we can focus on question 2. We talked about what we want to watch for in terms of having the PK placed in the pit with the water on the top. The next question deals with how you feel about how you feel about opening up the dike in sections. That would allow water to flow between the pit and Lac de Gras. So any comments, what are your concerns about that step, and is that a good idea?

Question 2: If the pits are filled, what are your concerns or fears about reconnecting the pit to Lac de Gras?

Wayne: I don't think it would be too wise to just open up the dikes to the rest of the lake without – you could pump the water in to start off with and to see if there would be any changes and do studies on that cone there before you open it up to the rest of the lake. Maybe something goes wrong in the cone that no one will realize. But if it is tested, and everything is found to be safe, then the dikes could be breached.

Shirley: I agree with Wayne, I don't think it's a decision that can be made within the next 2 years. Maybe another generation of fish to test to see if they are ok. It's really not a decision to be made.

Joanne: You are suggesting for fish to be put in and to test those fish?

Shirley: Yes, otherwise how would you know?

Joanne: So you'd bring in a limited amount of fish to see how they do before opening the dikes?

Shirley: Yes.

Joline: Last year when Diavik presented us with the jars. They did a test of the slurry and they test the water to see if the little bugs would survive in that and the results they came back they did survive and that that would be the food chain, because we wanted to know if the fish would survive, and that was one of the results that they did come back. I think what this group should do is that, in order to understand and make a decision is to know the types of other stuff that is mix with PK and if they understand that, they would have more understanding if it is safe or unsafe to be put in the pit. It is not explained clearly what is mixed in the PKC. We saw last year that they recycle the water. It is not like a gold mine where they use other chemicals that is harmful. And kind of like compare it to gold, but if they understand the chemistry of what is in here, the group would better understand the decision more about putting the PK here. I am starting to see the gap is here. Ok so if you fill the pit, and the fish go there, I am not safe having the corridor open, when I am listening here I am hearing assumption based on TK and not understanding the scientific. I think we are missing what is dangerous in the PKC. It is not as dangerous – I don't think there will be a danger to put it in the pit. I think it would be safer to put it in the pit and cap the PKC. Because they said it would be like quicksand and you would be sunk it to the building. I think that is the gap.

Joanne: As Gord mentioned, he will be doing a presentation on the testing that was done, so we will have a reminder and we can ask questions about what is actually in the paste, what is in the slime, so that you are comfortable with your choices.

Joline: And if we did leave it like this it is going to have to be monitored for years and years and years. In this case in the pit I don't think it would be monitored for very many years. You know

when you carry 2 gallons water from the lake and carry it to your camp, those 2 buckets are really heavy. I look at it as the amount of water that is going to be put back here is going to be really heavy. And the water will push the pressure down and help with settling the PK, you will have the middle mixture, but it will also be pushed down by the water. So, if you are carrying 2 pails of water, that is only 2 buckets, and this is maybe 50 tons or something like that. That would be put the pressure down so I feel that – I don't think that this would also have an impact on here because this is already naturally happening, under the lakebed, with the permafrost.

Joanne: Although, the idea of testing for impacts on permafrost is I think fairly reasonable request.

Roger: I was just thinking if you do put the PK and slime in the pit, and if that happens and they test it for the 2 years. For those 2 years, they will be testing it and all season, because in the summer, fall time, and then it freezes and then once it freezes ice moves with the wind. And the springtime it all melts, and the wind always blows up here. I know that will be tested but during that summertime, I was thinking for the 2 years the animals could drink the water, will the animals be tested too? They can't read no signs like, 'Don't drink the water.' If the animals get sick, what will the action be if that happens? After those 2 years if they decide to open it up, how wide will the breaches be? How many, on these sides? Because the water flows all year round. And if the fish do go through, the elders say they will eat the nutrients along the shallow parts, but knowing fish, they will go very deep. And if they go deep all the way to the bottom, they won't know to not pass the PK. So if that does happen, and they come back up, because usually the big fish stay at the bottom, and the big fish will eat the little fish, and the bigger the fish they carry more toxins, and then the animals will eat the fish too, like the food chain. The foxes or the birds or the bears, the wolverines, eat fish too. If they do get sick, what are the actions? In knowing nature, with those breaches, over years it will naturally groove itself because the ice moves and it moves rocks and it will probably get bigger over time and the current will probably get stronger. It will happen, just visualizing it, for the future. That is all that I thought of.

Joanne: Thank you Roger, that is great. If I can try and summarize your concerns, you are interested in monitoring for impacts on wildlife on the land as well as fish in the water, and that you want to know what is possible in terms of that kinds of testing?

Roger: *nods in agreement*

Joanne: Any further sense of how people feel about opening the dikes and when you would like to make that decision? Do you want to have some tests done before that happens in the future?

Nancy: It would be good testing it for long time first before you open the dikes because if it is unhealthy, we don't want to spread it to the lake. Water takes quite a few years to settle and maybe 6 years at the least of testing because due to the weather this little stuff is going to grow. At least 6 years before rushing to open the dikes.

Natasha: I am wondering if say after 6 years, they do the testing, and they say the water is good, and they put the fish in the pit to test to make sure they ok, would you want to encourage fish to move back and forth or would you say forever we want to keep fish out?

Nancy: If there is open dikes and they would naturally move between. Let's not put fish in there while you are testing, but if there is natural grasses will be in there if you let it sit for 3 years. If it is healthy enough then you can open those dikes.

Shirley: Addressing Roger's concern about wildlife, could we not pit up a temporary fence from that dike to prevent the wildlife to drink that water?

Jonas: Bobby, you think the pit, if the fish are in there, would the polar bear be happy? Wouldn't have to swim far, there would be a bunch in there. How about the big lake, if they are in the pond, they will find out, the polar bear. They will be there.

Bobby: On the main lake they would be happy. Maybe on a main lake they would be happy. Because it smells and ammonia is going to be in the water in there, smelling the hole going to be keeping the polar bear away. They don't want to dive in there if that smell is in the water. I don't think they would dive in there and dig for fish. If there was seal in there too, even seal wouldn't want to be getting in there. I would figure anyway, the smell, the slimes and the PK and the walls on the side, it is going to smell for a long time and different from the natural sediments in the lake and the sediments going to be settling down in the bottom of the walls or up to the PKC area.

Jonas: Thanks, I was just wondering about it.

Joanne: Out of curiosity, when we had the tour, did people smell different smells in different areas and is that something we want to watch out for?

Wayne: When they started blasting out these pits, I think they were using a different kind of blasting technique or substances they use for blasting. I think afterwards they changed them, so maybe they will have to take water canyons, wash down all the walls first so it goes to the bottom, and then pump that water that comes off the walls out, so they contaminate it. I think there is contamination on the walls and crack. Ask Gord which blasting techniques they use and any types of substances they used before they even think of moving fish in there.

Natasha: You are reminding me that this has come up before. Someone asked yesterday if they are going to power wash the walls, Mona asked again today. Sean and I were talking about it and there had been tests done where they put water on the walls, run down, collect water, and then test the chemistry of that water. And then they use that information to model what the chemistry of the water would be like if the entire pit was filled. I know the scientists are monitoring that and maybe Gord can speak a bit more to that.

Jonas: Just wondering, not regarding this pit, but we watched the open pit yesterday. There is another one, there is open pit, open pit, we are here, and then to the west, there is a rumor they might open another pit.

Joanne: They are doing a third

Myra: Are you talking about A21?

Jonas: Yes

Myra: We did want to get there yesterday but they were doing blasting so we couldn't go there. We have the opportunity to go this weekend, but it is up to the group to decide.

Jonas: I want to see it. Who got the contract to those things, there has to be work for Deton Cho that is why.

Natasha: The concern about unemployment earlier. It might be something to keep in your mind about monitoring. Closure and all the monitoring and testing that needs to be done over the next 20 years. Maybe that is a way to fill the unemployment gap that Jonas has raised. Sunday afternoon there is an opportunity to go if the group wants to go see A21.

Louis: Those are the issues that we are concerned about the closing and reclamation plan. We are concerned about the employment and we talked about the air strip too and the closure. I mentioned before that the air strip needs to be left behind. We had a discussion on this, and we have to have the boat available and then every summer we need to monitor the fish and the water. And those are the things we need to monitor to have our people employed. And the stockpile of the rock exists here and also when it rains the water will seep off the rock piles. There will always be seepage and it will probably flow into Lac de Gras watershed. And these things are still going to exist and probably some chemicals are going to be in the rock. And so those are the things we need to train our young people in that area so they can be employed to do the monitoring. So when we go hunting in the area – in the past when our ancestors would travel on the land. There were many people and family that used to live in the area. And today we don't see these historic sites and this mine site should be put back into the natural state as much as possible. We are saying this for the future generations so they can use this land as their hunting grounds. I just wanted to share that with you. Those are the things that I am thinking about.

Bobby: We got to remember that the fish can smell too. They have a very acute sense of smell like all animals. And that pit is going to smell. I am really curious how far the fish sometimes they can get close to the pit. Maybe that water after the breach is going to smell and it is going to leak down to the main lake. Maybe that whole area because of the smell the whole area is going to be avoided for many years. Because the fish have very acute sense of smells. That is what I was always thinking of too. And also, that once you breach the walls, the smells and taste in the water might be different. We might not detect it as humans, but the animals will because they have an acute sense of feel and smell. They know very well what to avoid and where not to go and where to go hunting. That has been one of my concerns too. If they breach that too early and it still smells the fish will be avoiding that water. The PK and the slime, they have smell too. Everything has smell. So maybe the fish will be avoiding it. Also, if they are proposing the fish to put in the pit, I am curious to see how healthy the fish will be for. That is one of our concerns. Maybe they won't be healthy. That is a big concern for all of us.

Natasha: Nancy suggested 6 years of monitoring. I wonder what you think in terms of years would you want to watch fish in the pit?

Bobby: I think we came up with this answer a few years how many years we would want to monitor. In the reports as well I think.

Joanne: I think the idea that several people have suggested that we put a limited amount of fish when the pit is filled in that we monitor those fish before we allow any other fish from Lac de Gras to move in and out of there. A specific number of fish that can be caught and tested would provide some comfort for people that the habitat in the pit will not be harmful. We need to know that. So how long should we monitor those fish if that is a possibility?

Bobby: Well whoever monitors that fish, fish are going to be harassed in there, they won't be healthy in there if they are being tested on and on and on. I am thinking they won't be healthy because of man's ability to harass them. Same as all the muskrat, wolf, wolverine, that is harassment, they aren't going to be healthy again after tagged collared poked and gutted while they are still alive. They aren't going to healthy anymore.

Natasha: So if it wasn't DFO or the government, if it was you doing the monitoring, how would you monitor them inside the pit so they wouldn't get harassed?

Bobby: They have monitors everywhere in this building. I bet you could have underwater monitors. We monitor ourselves here in the building how we move around. If you put some kind of monitoring equipment down there, humans wouldn't be touching those fish, it would only be the electronic monitoring equipment would be the solution I am thinking. Instead of people netting them and poking them, how fat they are. Monitoring with electric monitors might be a solution if scientists can watch them how thin or fat they are getting, what type of colour is on their skin, maybe scientists are coming up with all kinds of solutions for monitoring

the animals too. I think they can come up with underwater monitors, I think they do have underwater monitors as well.

Natasha: Everyone else, how would you monitor your way?

August: When my partner was talking about the fish, they aren't going to take fish out of the lake without sampling them. When they catch it, you take sample, and then you are putting it in to the pit. They will know if the fish changed or not.

Joanne: So, you would catch them?

August: Before you put the fish in the pit, you take the fish out of the lake, take a sample of it, put it in the pit, and then after 1 or 2 years you sample it to see if it changed. I am not a scientist; they should know how to take the sample. The second part they try and have to catch it and take a second sample out of it.

Natasha: At the fish camp, the aquatic effects fish camp, what I understand is the way you know the fish are healthy are you see with your own eyes, you look at the liver and the heart and whether the tissue is mushy. From your TK expertise, then you can tell if it is a healthy fish. But I'm wondering if that would be same approach?

August: Tasting the fish when we are there it tastes so good. But another way is to take a sample, we get a report about it.

Joanne: So you wouldn't use tasting?

August: No, just take a sample of it.

Joanne: Relying on science?

August: Yes, and the visual.

Jonas: Anyway, I like the TK and science. The way the movement, but for the tasting and all that, I think that would be the TK way of tasting it and see how it goes. See what kind of – maybe if it is going to be hot water, it might be warm.

Nancy: After it had been tested for so long, when I heard about fish being harassed, I'm like after testing it for so long, if we know it is health, then you can open the dikes. The fish will naturally will go around, but let's find out first if it is healthy. And then the fish will naturally go in there.

Louis: We do fish sampling in our land, people, the scientists that come along with us that do the testing of the fish. If the fish was not healthy, they would know. And how long the fish was unhealthy – how many years – they know that. The types of sampling in our communities, then we know. Twice have good healthy fish in our lakes and so how long the fish is unhealthy. If the fish is not healthy and then we do the sampling of the water in our lakes. So, they do fish

sample and they use and they use the fish head and the little bone out and they know the age of the fish, and so that's how we know things through scientists. **The old timers used to say this time in the fall time and the north wind and the deep water, they will go into the deep water and the north wind comes in and it is cold for us. And that is how fish go into deep water. And a little warm out they go in deeper and they know where the warm water and hot water, so the fish know that too.**

Wayne: I just wanted to say that the fish wouldn't be going in there soon anyway because there is no food in there for them. There has to be something on all these tiers so that they can have something to eat to survive on. There is no use throwing fish in there right away. Might have to give 2-3 years for the plants to take hold and grow.

Natasha: In a previous session, for those that are new, we brought out maps of the pit and we broke up in to 2 groups, and each group and indicated on this shallow area of the pit, how it might be landscaped to create good fishing habitat. Some rearing areas, some general areas, to encourage nutrient vegetation growth. I'm wondering now, that Diavik is proposing to put PK into the pit, would you want to create fish habitat? Would you want to encourage fish to come back into the pit?

Nancy: Naturally fish will travel wherever they want, so they won't travel if there is dikes there, if it is healthy, they will naturally come around if there are reefs.

Natasha: You made special areas about the North Country Rock Pile area for the caribou to come. Should Diavik make the same effort for special areas for fish to come back?

Nancy: if it is healthy again and if they put the reef out there, that would help grow because it is all rocks.

Joanne: One of the questions is if we want to put fish in there for a period of time before we make any decisions about opening it up to the lake, those fish that we put in there will have to survive. Can we do both? Can we build the fish habitat that we planned for in that previous session so we can ensure the fish that we do put in there have an environment to survive in, and wait to see how they do before we make the decision to open the dikes?

Wayne: I think once you put the habitat in for the fish, if the habitat doesn't survive, I don't think the fish will survive. That'll give you an idea before you put the fish if the habitat dies.

Natasha: My question is, now Diavik is proposing to put PK into the pit, does that change how you feel about making those special fish areas?

Wayne: I think they should.

Joline: From what I have been hearing, Diavik and their amendment to their water license proposing to put PK into the pits and also filling it with water and monitoring it for 2 years. That is what I heard from Gord. And within the 2 years after it is monitored with not opening the

dike, monitoring the water for 2 years with vegetation already being there and filled, that is where it would also be monitored before opening the dike. You had a question about if it would be safe to put fish in there before opening the dike to see if they could survive. From my experience and from experience in our region where they have been doing fish and water sampling, we invite participants from the group and community members, elders, women, and youth, so they would be able to be at site to test with scientists. So I think here that we are unsure, I think if you are participating with the scientists, I think your confidence would be higher because you are able to translate your TK to the scientists, and in turn they would be telling you what they are doing scientifically. I think it would be good to participate for the elders during the all season monitoring of the pit so you would know and build your trust I guess with Diavik. Mahsi.

Janelle: Could there be a simulation created so that we can visualize so that we can see the worst case scenario and the best-case scenario and what the scientist thinks it would look like over time. Would there be a possibility of over population before the open dikes? Fish like their space, compared to Lac de Gras and then put in a small area. I am expecting a simulation at our next meeting. A time lapse of what it would look like after 2 years. It is hard to translate these technical terms to elders. The translators can break it down in Tłı̄ch̄q so that I can understand it better. I often listen to translator because they break down terms for us. It gives our elders a visual aid and we can see what it looks like afterwards.

Myra: To carry on with that, I am responsible to put something together like that. I don't know the best option – 3D model where people can pick things up, or like a video. Maybe you and I can take some time to talk about that. This is a 3D model of the rock pile, so if you look at the slopes it is more gradual, is something like this helpful?

Bobby: I keep hearing putting fish in the dike before they break the dike. You have to remember that fish also need oxygen. Wintertime, I do lots of ice fishing and I find lots of lakes that have very little oxygen all winter long. And when we do open those lakes, fish come by the hundreds trying to get to the oxygen. We catch so many of them because they find our hole, that is how we fish. They also need oxygen. If you don't breach the dike, you are going to have no movement on the water and the fish are going to be starving for oxygen in that pit if you don't breach the walls. If you wanted to put the fish in there, you need to think about the winter and the oxygen they need. If you want to put fish in there, open the dikes, you need movement of the water and oxygen. You have to think about that too.

Wayne: My question is more to the facilitators. The fish that I want mentioned is the one that Bobby was talking about. Can we take time at one of the end of the days to watch this program he has taped up. Is that possible?

Natasha: Yes, we could put it at lunch or evening.

BREAK

Question 3: What other information do you need to feel comfortable with closure of the pit?

Thomas: Data. We need to see what they are going to with the pits upon approvals. Toxicity, what the slime is doing on the bottom – if it's moving or if it is coming into the fresh water.

Natasha: That sounds like we need scientific data. From a TK perspective, what kind of information would you want to feel comfortable with the pit? What is it that makes you feel comfortable on your land? What do you see?

Wayne: I'm not so sure about what makes me feel comfortable, but I know that running over and going into a 600 feet deep hole - that wouldn't make me feel comfortable.

Joanne: Obvious safety issues with places that have been interrupted by mining, ok.

Mona: For the pit, would it be frozen solid during the winter?

Natasha: Do you mean the PK or the water on top, the whole thing?

Mona: It's the water that is frozen on top. For safety for hunters.

Joanne: For safe travels.

Natasha: Is the question is, is it going to be the same temperature in here as in Lac de Gras?

Mona: Yes.

Joanne: Would you expect to see animals coming back to the area?

August: This question you give us, nobody can answer it because if we leave here, we will never see it again. In closing time, I don't know what it is going to be like. I don't understand what you mean. Somebody has to come down here every summer to monitor around the pit. Like you say, if you travel by yourself on your land, we hope to have a good day travelling. That is always what we have in our mind. So for this, it is very hard. After it is closed, only scientists is going to come check it. That is all I have to say, for us anyway.

Bobby: It's really hard to feel comfortable because this is not only the pit our people is dealing with. There are many many pits around this area. The migration route of our main caribou route, the Bathurst herd, the pits want to put their PK in to the pits. I'm still really uncertain the future is going to be after all the mines are closing down. It's not only this pit, it is all the same pits. How many pits do you have now including all the other mines? All across the migration route. Hard to feel comfortable thinking this way. It is really hard question to ask for me right now, because it is all uncertain right now with all the mining activity. Looking at it now, the caribou, the caribou migration route is very disrupted. They don't want to come south anymore. A natural forest fire, because of that, the caribou don't want to go in those areas because of climate change. Stuff like this contribute to climate change. I don't feel very

comfortable right now thinking, how do I answer this? Because I am feeling very uncomfortable right now. The only way I might be a little comfortable is the mining company giving me a complete certain answer to everything we want to keep clean and pristine, breathable, livable, enjoyable, the way we have been doing it for thousands of years around these parts. The environment that we live in, it is really hard for me to think about being comfortable. I really don't feel comfortable with all this mining because it is all water that is going into a hole and all the other rivers that are going into the ocean as well. As you know all the rivers in this part of the world flows north. All the major rivers go north into the Arctic ocean. That is because of mining activity and disruptions what mining companies are doing to the caribou herd and the animals we have in our area. That is uncertainty to me. I have many grandchildren to think about. I want them to be able to live like me with all the healthy animals I have lived with for many years and living out on the land. I have many grandchildren, and also thinking about my great grandchildren I want them to be able to live the same comfortable life I have had. I want that to come back with caribou herds, because of climate change, we have microplastics in the ocean right now, it is very uncertain for me how our future is going to be, because our ocean is contaminated with other chemicals as well, dropping in to the ocean and dropping into the land where we come to enjoy and live by. We want this to be our future for our children and grandchildren. We say this every year. All the mining companies and environmentalists say this too. We want to enjoy the life we have lived with and which have sustained us over the years. The sustenance that we have collected, and we have enjoyed. We were very healthy before the mining companies have come to this part of the world. Not even this part, look at the climate change that is looking at now. Every country that we know of, never had floods or fires, and all these big cities and these countries, they all have infrastructure, garbage and everything all floating down to the ocean. Without that ocean we cannot have any clean air again on the mainland. Everything that we depend on comes from the ocean, comes from the water. Not only from the ocean, but from the land that we come to depend on. The hardest question for me to answer, how to I feel comfortable? I don't feel comfortable at all. It is hard to answer because of climate change. Climate change is done by not only by industry, knowing how climate change it was very very natural long before mining has come. We know that climate change that has been going on by millions of years. That is how we live here. What was there before us? The mining has industry all over the world contributing to natural climate change. Volcanoes, tsunamis, those have been going on for millions of years. That is nature. But now it is fueled by industry, industry being the way it is and the way it has been monitored in the past. It wasn't monitored well in the past. I am happy now that we can speak in groups like this in all parts of the mining activity now. The mining monitoring now that gives us a little more comfortable speaking about it. I feel comfortable speaking about it. But being comfortable about the mining that is destroying the land, breaking up the land, and leaving their garbage behind. And to me, that is my comfort that I wish to say a little bit about and something to think about. We all know this as elders. We need to keep this going for thousands of years still. We have great great grandchildren and we want them to enjoy the life that we have enjoyed

for many thousands of years. We want that to come back as well. That is my uncertainty and difficulty answering that question.

Joanne: It isn't an easy question that's for sure. Thank you for taking that question apart for us Bobby. What does comfort mean to each of us, and are we saying that we are willing to live with certain things, and there are other things we are not willing to live with, and what are those things that we aren't willing to live with? Maybe that is the bottom line. What would be unacceptable to you is one way to think of it. Relating to water, relating to fish perhaps. Other things that are affected by the creation of the pits and the closure of the pits.

Shirley: I was just thinking of the fine PK they have in the middle, they said if they don't put it in a pit, they will cover it with water. How much water? After so many years it dissipates, how many years will they monitor it and ensure that the water levels will be at a good level so that no one dies or whatever? If water is above, how do you prevent animals from drinking that water? My concern is the sludge and the amount of years that monitoring will happen to ensure it is safe?

Joanne: Myra did you want to address the question of how long Diavik will be hoping to monitor?

Myra: There isn't a definitive answer to that. Obviously if results come back and they aren't acceptable we will continue to monitor. Our hope is we can eventually have clean water at levels that are acceptable. But it is an unknown right now. We are saying we will monitor in those 2 years, but it will really depend on the results. I want to say, we aren't going to just say 2 years and then leave.

Joanne: Maybe think about what level of safety are you looking for? Do you want to be able to scoop your cup in the pit water and be able to drink it without any worry? Is that an objective that you want to meet before we let Diavik go? Do you want to know that the fish have not changed as a result of the pit and the adding of the slimes to the bottom of the pit? Is that something that you want to see in terms of acceptable impacts or demonstration of no impacts on fish? What is acceptable regarding fish? Regarding water?

Nancy: If we put water in that pit and sit there for awhile and it has no more oxygen, so best try to put those dams down so that the water can move around before the pit gets stale.

Joanne: So, you see that as a good reason to breach the dikes?

Nancy: Yes, so it doesn't get stale.

Wayne: That water there sitting on top of the slime is something like 1,200 feet deep is what Gord said? Ground level to the bottom is how much?

Myra: 630 metres.

Wayne: Close to 2,000 feet. Pretty close. So if slime only comes up to half, and then you have water there, that slime is going to be that cold being that deep, and the water is going to be so deep and so the bottom is going to be very cold, so it might get warm right near the surface, but I don't think it's going to be warm if you take the temperature of the water say, 20 feet down. I don't think it is a big problem of the pit and the water warming up. I think of putting the food in there to see how it fares before we put the fish in would be a good idea. We know that if the food doesn't survive that the fish isn't going to survive. Earlier Bobby brought up the oxygen in the water and there was a fish kill off with hundreds of fish on the shore. The foliage on the lake grew up and the lake is fairly shallow, the ice went down, the oxygen ran out for the amount of fish. So, it was a fairly big fish kill. But if someone put a certain number of fish in the pit that could be sustained, then you wouldn't have to worry about the oxygen. I don't think that will be a big worry.

Jonas: You're talking about Pontoon Lake, happened a few years ago, all the fish died in there? It is hard to say if we are comfortable or uncomfortable. We don't want this to be another dry mine. That issue is not going to go away because you use different chemicals. But here there is no chemicals. Do some samples and come back to us in a couple years to tell us what happened to the fish and the animals. We aren't the guy upstairs – he knows everything. Test it out. We could give you a few good suggestions right now, something that is hard to come by. Bobby said all the things that we are going to suffer by, with the future generations. We don't know that, but we think about all those things. How are we going to make it work? Right now, I am thinking about what else can we do. All the other things that Roger mentioned, it is unknown what he says. Because it has never been done. So that's something to grapple with, trying to think what a possible way of doing things. If we don't test it out, we aren't going to know. That's all I'm thinking.

Natasha: Does the youth have any ideas they want to share?

Roger: It's a pretty hard question thinking about it. To feel comfortable, growing up since the mine life happening and when it started, that was when exploration happening, and I was just growing up with my grandfather. I want to see things – we used to have caribou outside of Łutsel K'e, I want to see them come back. Nowadays things are different, with climate change and things. To feel comfortable, I want the land to be as it was before, but it is not going to happen, because it has already been impacted. Life is like a river; it only flows one way. We can't go back and change things, we have to work with what we have now in the present. That is why we have this panel to discuss this, and to try our best to make the land back like it used to be as much as possible. What you brought here, put it back. That's what you said first, but now when it comes to closure, there is still going to be things left behind. It is just like what you say, and now it is happening, and the other thing I think about is the animals and how the land is shaped now is going to be different. Wonder if the animals are going to be healthy for future generations, the fish, the birds, even the landscape. We aren't sure how it is going to turn out

after the mines close. But it's up to us now to make the decisions and use traditional and science. I just want things to be like back they used to be, but they can't now. It is very hard to feel comfortable 100% but at least we have a say to make it the best we could, put the land back as normal we can. With all the impacts around the communities, we never know what holds in the future. We got to live one day at a time and deal with things. Like Bobby was saying, he made me think about that, and makes me think what he all said, and it's true. I just want the animals to be healthy, and the land, and the fish, but you can only do with the best of our knowledge and science for now and we will try and work with Diavik and my other thought there is still going to be mines popping up and we are still going to be impacted. It isn't going to stop yet for years, it's hard to feel comfortable 100%, but we'll try our best from our groups and hopefully with the other mines, we should try and share information, they are probably stubborn with that, but what can we do.

Applause

Janelle: Going back to the 3rd question what other information you need. I like what Thomas said about data and who is responsible with what – monitoring, will it be up to Diavik, where will the info go, how will it be shared, who will do it? And having that information in common speak. Having that we can translate – not everybody thinks like a scientist, but when you break it down in plain speak it is easier to share with younger kids. I am often sharing information to the young people in the community and being able to translate it from an elder's perspective to a young kid. I don't think anyone will be comfortable with the closure. You see so many people dying of cancer. Both of my grandparents died of cancer, I don't know if it was because we are located near Ray Rock, but we were in the area. Bringing it back to the reality, not just in a scientific way, but bring it back to traditional knowledge. Unfortunately, mining is a part of our history, and if we can make our footprint smaller here than Giant and Rayrock, that is a big thing we are doing for our future generation. If you look at the north, there are so many mines coming. Caribou playing grounds are getting smaller and smaller, and it is the same with fish. They have less places to travel. Really taking into consideration that this is impacting human lives, our history, the way our culture will be passed down generation by generation. What about in 50 years will there be no caribou? How will we show our youngsters how to tan a hide or make moccasins? My grandpa was a chief, and I saw a transcript of when I was young. He was talking about me when I was a little girl. He had to take care of me two weeks on, two weeks off because my mom worked up at the mine. She was making \$9.25 an hour, he always wanted to make sure we have compensation for this mine. But if we can make this place as close to a natural space as well can I feel like we are helping what the leaders who have left us wanted. We are fulfilling the legacy they left for us. Have that same image or how we want that mine to look like.

Applause

Jonathan: I don't know what to say about the closure, but it is hard to deal with. What the elders say, it is a hard decision, and I don't know how we are going to do it, but let's take our time, a couple years, work together with the scientists to figure it out. When I was young, we used to have caribou come to Dettah when I was young. They would wait on the ice. Ever since the mine open, we haven't seen caribou from Dettah, I think it is because of the mine. We saw caribou in summertime when I work at the mines. When they are on the road, the truckers stop, we leave them be. We would sit there for hours before they move. 2016 at Ekati we see a lot of caribou back and forth in the summertime. This time, wintertime, went caribou hunting, hardly saw anything. Back in the older days we used to go caribou hunting at the end of the road in Dettah. Now a days you can't see caribou now. Travel 6, 7 hours north to go caribou hunting. We have to go get caribou tag at the band office now, 2 tags per house. Back in the day we used to get whatever we want. Now the numbers are low, the dust, is polluting the air, their food. The mines are making it worse; it is not just caribou. Last couple weeks when I was doing a fish catching, we were doing a fish tasting. We open its stomach, we see parasites and the one thing we can tell the fish healthy is when it is soft, it isn't healthy. The colour of the fish. I can't remember what the lake is, had to go by chopper. Anyway, I was there looking at the fish, some were healthy, some weren't. Their meat is tender, like bright, but some of them wasn't bright. Those ones weren't healthy. Closure even put fish inside of there, I think it is still going to get sick because going to the pit. The pit, the truckers, they break down, some hydraulics they leak, and diesel fuel, around the pit, it drains out to the bottom. The pit water or the PK is still going to be contaminated and dirty with the fuel. Either way we look at it I think it is still contaminated. Results with the hydrologists, if we work together with the geologists in the camp, maybe we can figure out a way to keep it. Work together as one group and see what happens there. Mahsi.

Applause

Natasha: does anybody want to respond to the good strong comments by the youth?

August: Thanks for the youth with what you were saying, I am very pleased. This is for your future that you are saying this. So, I am very happy. Mahsi cho.

BREAK

Gord M: I am here to talk about a couple of the questions that were brought up. One was toxicity and one was permafrost. Does anybody remember why we did the toxicity testing?

Bobby: Because of the fish habitat and the habitat around the major water – ponds and we were concerned about the fish and all types of fish, microbes and what have you that were living these ponds.

Gord M: We were looking at a specific pond for PK. It was what was in the pond. We started on this question on the PK, and this morning I was talking about an option of the pond. You asked us, would it be ok for fish and the bugs in that pond to leave it there? So, what we did – water is very shallow – we took some of that material and we tested that material. So, what do you test if they live in that material? Well fish won't live in that material, so what we did is we test, and they put fish in a jar that was shook up. Little fish in there for 28 days and measured how many survived and how did they grow (heavy and length). So, taking the fish and putting fish in water like that, there was no difference in the fish in that water and clean water. So that means there is no effect to fish. Because we were looking at seeing if the fish got in the pond, what would happen to them? And we found that they would be fine. So we also looked at algae. For those, we can take the slimes, get the water that is in there, and then see if the water flea and algae can live and grow in that material. Results were it was fine in the pore water and the leachate. No difference in living in that water or living in Lac de Gras. Then we looked at 2 of the benthic invertebrates. They live at the bottom so they would be affected the most if there was an effect. Now the test is right on the sledge itself, and when it was only that PK slime material, there was reduced survival, but if you mixed half that, half sand, they were fine. Same thing with this water flea, when it was just the slimes, there was a reduced growth rate. They lived fine, but not as great as others in other materials. So, what we concluded is this, it isn't as good as Lac de Gras, but it would support an ecosystem. That was for a pond like the PKC. If a fish went swimming down to the very bottom, he'd be fine. That is the information that we have tried to take from this.

Natasha: I think it is important to understand that it wasn't Diavik that did this research. Diavik provided funding to University of Saskatoon to do this work in their laboratory.

Gord M: It is hard to read but it is there. We can do things like this again if there are other tests that can help. It is almost like a TK test because it is something you can see like a fish.

Wayne: How come you didn't show this to us in 2016?

Gord M: We did. This is a slide deck from 2016.

Natasha: This specific recommendation came from the TK panel that you wanted that toxicological testing to be done. It's good to remind yourself that this leads to recommendations and action that we can track.

Gord M: The next step, but we are talking about for wildlife. How do you test for caribou? You aren't going to subject caribou to this start of testing. Ok so next question about the permafrost question.

Natasha: Bobby can you re-ask your question?

Bobby: The reason I was thinking about the permafrost, warming up after this pit – once that pit is – it's open now, and it is going to be warmer than when it was opened. You have all this open pit here; all this area is going to be warmer than the rock around it. So, I am concerned about the warmer air working itself and moving around the cone, and maybe getting warmer into the fissures and cracks, and maybe the permafrost is going to change again.

Gord M: having cut it out yes in the summertime it is warmer but the rest of the time it is colder. The bottom is probably the colder it is freezing back in the wall as opposed to melting back into the wall. This is the tunnel that we drive down, there is an obvious area where

Bobby: The other concern is that the lake is frozen, pressure going to be pressing down on that cone as well. I know it is going to be frozen on the top and the pressure when the pit is completely frozen, there won't be any oxygen in there, more pressure. And that is what I meant it might be warmer in the future due to this cone. What I see now is not going to be frozen with all that PKC and whatnot down there.

Gord M: It will never be permafrost down here. And it never had been.

Bobby: But the rock has been frozen?

Gord M: No, because it is underneath where the lake was. So, the place where we see the permafrost change, we haven't seen a change yet, but we would expect it to be in the active zone. That depth of thaw is where you are going to see a change in the permafrost. You will see that annual thaw zone go deeper every year. Since we have been here, we haven't seen a change in depth of permafrost.

Natasha: Is Diavik monitoring permafrost?

Gord M: Correct, we monitor it very frequently and for the last 25 years now.

Natasha: Another question was would the water freezing behaviour, once the pit fills with water, be the same in the pit as in the lake?

Gord M: We think these will act like some of the bays. We think it will thaw earliest and freeze earliest. Where we breach the dike there would be current there and that would be where the ice would make it most difficult for safety.

Rose: And if you guys leave, how long after that you are going to monitor this whole area?

Gord M: It is a really hard question. From the time we are done it will probably be 20 years, to about 2050. And then it depends on what we are finding. If it all looks good, we hope we could stop. But if it isn't not, we will keep monitoring if there are still a lot of questions.

Thomas: Some of the questions I raised had to do with modeling and pit water. Have you tried doing to miniature scale models to turbidity and whether the toxicity will move up?

Gord M: Once it is breached it isn't a still lake, but pretty much at the bottom. But no, not sure how you would do that. The closest thing we have done is the video how this section would work. The jar and that video is the closest thing we have done to a physical model.

Applause

Joanne: I guess that means that was good news. That is the first time I heard Gord say they will be here for at least 20 years after mining operations finish. To me that is encouraging. That is more a realistic timeline of 2 years in terms of having firsthand information available for what is going on after closure.

Myra: There is a reclamation period after that. There will be work still happening after 2025. It's not like we are going to disappear.

Joanne: So, can we get back to the difficult discussions we were having and maybe focusing on what is unacceptable? We talked a lot about what we would like to see, what our values are, and the fact that there is not a lot of comfort right now. There is still a feeling of a lot of uncertainty. What does comfort really mean in terms of our culture, our beliefs, our values? To help make sure what action is taken by Diavik and what kinds of actions we can recommend that would improve our comfort with what is done, perhaps we could look at the flip side. What is unacceptable to us? If we get clearer on that, that also provides important guidance that could result in action from Diavik that would lend to comfort in the future. What would be unacceptable?

Louis: At the beginning of these sessions, we had many elders involved amongst with us from Łutsel K'e, Dettah, and Behchokò and Whatì, and all the elders that used to be concerned about these things. At that time we had people from Tłıchǫ, the recommendations would be held in our discussions. At that time they wanted to put water in the pits but extracting all the rock in the opening, maybe if they are putting the waste rock back in to the pit, putting the waste rock back in to the open pit and reclaim the area. But since then the talks have changed to putting water in the pits. At that time the elders were talking about the waste rock was being put back in the open pit. Now we are talking about putting water into it. And in the past the discussion amongst the elders, they were saying that open pits be filled with waste rock and those are the stories I wanted to say.

Jonas: I remember some of the elders talking about are you going to take some rock out, they said yeah. Where are you going to put all those rocks, the waste? They said, 'you see that hill on the barren lands, it won't be any higher than those hills'. But a few years later, the waste looks like a mountain, you know. I don't know how that happened. At the same time Louis said once you put the rock out, put it all back, in the cone, and cover up with rocks, with cement or something and put grass on it. That way caribou can walk over. We don't need to put PK in there, let's just make it natural. That is what the elders said in the past. I don't know where this

water talk came from. I guess from the scientists. But I don't know if it is going to work. I cannot accept. Mahsi.

Joanne: Why was the waste rock not put back into the pits, Myra? Has to do with money? I believe it has to do with the cost of doing that plus the fact that they moved, underground, after they finish mining the pit area, they started mining underground, and at that stage, they would be blocking off access to the underground tunnels. And wouldn't be able to get the diamonds out, was another reason they didn't follow through with putting the waste rock in the pits. But we could get Gord to address.

Jonas: Why would you want to keep the underground open? There isn't going to be anything going on down there.

Joanne: After the pits were mined out they moved underground. So they needed to get to the underground through the pits, so that is why they couldn't start filling them up.

Natasha: They had to put it somewhere when they mined underground, so they put it on the waste rock pile. So then they would have to load it back again and then dump it, moving it twice.

Jonas: Well I saw the smaller pit, the big truck there to get the diamonds, take it up to the plant. So that is not going to go on when it is closer? Why would they do that then, keep it open? Why would you want to keep the culvert open?

Joanne: They are still taking diamonds out using that access.

Jonas: See that is one of things they don't show on the cone here. I don't really know. I'm going to draw it up. They put a tunnel here to get underground. But let's say here, there is a culvert over here, we don't see that, they never told us those things. Like Giant they had tunnels all around these, it was under Dettah, are they doing the same thing? Is it like a beehive down there? They don't tell us that.

Myra: I am still not quite sure on the exact question, but the tunnel you saw enters over here. Can you see this darker section here. That is the kimberlite pipe, but the stuff around it is going to into the North Country Pile right now. So this is why we first do surface mining, get the stuff on the part, and we only want the kimberlite portion. But to get access to this, you need to start excavating a bigger and bigger hole, but we really only want the middle section. At some point, it doesn't make sense to make the hole wider, and that is why we start going underground. So they start building these tunnels. Then we start accessing the kimberlite this way in these layers. These 2 pits right now are connected by this underground tunnel. Gord did mention yesterday it would be blocked off before filling in one of the pits.

Jonas: See you just go down to get the diamond out, but I didn't know there were tunnels. So they see some sign of diamond, and take it out?

Myra: Yes, because the diamonds are only in this section. They will build a road, do a blast, pull the material out, load it into trucks, and then they will load up larger trucks, go to the processing plant.

Jonas: So that will all be flooded?

Myra: Yes, the road tunnel will be filled up. They will be separating the 2 pits before one is filled up.

Wayne: You can see that green line up top there and the other ones down below there, the red one, close to the first cone here on the left, there are places where they are going to build bulkheads and they are big bulkheads so that nothing can get one to the other. They are building bulkheads instead of blasting.

Bobby: I'm wondering, with all those tunnels in there, I wonder how stable the walls are or the around those tunnels. How stable are the walls around the tunnels around the cone and the bottom? Are there any water seepage coming into these parts from the rock itself?

Nancy: Last year we went underground. There is constant water being pumped up because the water is coming in.

Joanne: That water is brought to North Inlet and treated. It is the water coming in from the walls.

Bobby: That's what I mean about the fissures in the walls. How stable are they?

Joanne: There is lots of water in those rocks and that is what Gord was explaining. The dots represent water. They had to design a process where they are able to deal with the water because if they didn't constantly pump it out the tunnels would be flooded. As they pump it out it is sent to the North Inlet.

Bobby: My concern is about the fissures. Would it be fissures as well, lines instead of dots. Lines coming near the bottom of the pits or how much – how stable is it going to be after it's been filled? And is it going to be frozen again after it – that is what I'm considering

Joanne: Right, but it was never frozen. The permafrost is not in here. It ends here, where the island is. As you remember, this was created in the lake. All of this, there is no permafrost in here.

Bobby: How did all that little dots of water get here?

Joanne: It has never been solid rock, it is natural.

Bobby: Are those dots [in Gord's illustration] – how many are they are connected and pressure coming out after you fill it up with water and pressure going out sideways, hey?

Natasha: You have to remember the pressure won't be there the same way. Nature is always seeking balance. Any other questions?

Shirley: I was going to address Bobby's question. Are you concerned about seepage, meaning when all those shaft ways going to be filled, somehow is the PKC going to seep? But it is so deep, I really don't think it will be an issue. Even if they do collapse, where would the water go? So, I guess it is a more seepage thing, not a pressure issue.

Myra: It is a similar thing. If you think of your bathtub analogy, so once water fills the pit, it won't move. It will actually be more stable. Right now, it is flowing because there is space.

Bobby: The way it is right now, I talked a little bit about seismic activity. We are always having activity in our area. I'm pretty sure it has occurred in this part of the world. I am concerned once it ever happens here, all this is going to be disrupted, seeping upwards and coming to my community. How stable is it going to be in the future? It is uncertain to me. I always felt those tremors, we felt those many times. That was one of my biggest concerns with all these mines putting stuff like this in the bottom of the mines. I have concerns about how toxic other mines are. Like gold mines they have more dangerous stuff there with the permafrost there. The way they want to leave stuff behind it is being unacceptable to me. They want to leave this stuff unmonitored after many years, it is really unacceptable they want to leave garbage behind, I don't matter what it is. All the landfills, I don't know what is going to go in the landfills. I would really like it to be part of our panel groups or whoever to monitor what is going into landfills. That is part of my biggest concern.

Louis: They are going to do filling of the pit and they want to fill up the open pit, it's only some other places like all the purple siding in the underground, and they are going to fill with water or something?

Myra: I have to check at what level the PKC is expected to be filled, because I believe all of this will be PKC – sorry not PKC, but PK, in that case it would flow into those areas and it would flow in this area. But I can see at what depth the tunnels start.

Louis: Are they going to have the PKC slime in there? I know there is a big long tunnel going down. Is there going to be water too, and think it's going to be a lot of waste and water, probably going to be warmer down there and harder for fish too?

Myra: I think like what Wayne was saying earlier, there will be a bulkhead that will separate the tunnel, but again I can confirm with Gord.

Jonas: You know this underground thing; we should get an underground engineer and tell us what is down there. It looks like they are following the diamond mine. So, I think they are trying to pick up all the diamonds in there.

Myra: So, the diamonds are just in in this kimberlite pipe.

Louis: They are going to have the water filled in there and the tunnel is big blast and they put water in there and once they take the water out, they put a water out, they put it in the plant, they are going to ship it back out? I wonder? Everything that will be taken apart will be shipped out?

Natasha: Are you thinking about camp waste? The powerplant, the water treatment plant?

Jonas: All the parts down there, they are going to stay down there?

Myra: Yes.

Natasha: I know you have asked for a session about waste – what is going to be sent out for recycling, what will stay behind, etc. and that is still on the lists for possible next sessions.

Joanne: Louis, the PK that they are going to put down in here, and the water that goes on top of it, most of it will never freeze, and it sounded like he was wondering about that. So, the ice that forms in the winter will just be on the surface sort of like a lake. After a certain number of feet of ice, you always find water under the ice. It will be the same in that pit.

Louis: We know for fact that on to the top it will be frozen, but this is barren lands so maybe 4 feet down and the bottom might never freeze, so maybe 4 feet deep the ice will probably freeze.

BREAK

Next Steps / Next Sessions

Natasha: We were sensing people needed a mental break, so we thought we'd bring up the next steps slide and talk about it today instead of tomorrow. [*re-cap of previous TK Panels*]. As I presented yesterday, each of these build on the other. We need to build on future sessions, 1 per year is probably realistic. We thought we would talk about the North Inlet next time, and these are some of the sessions you have suggested as well. Monitoring at Closure, Updates on PKC closure options, Closure Details: building demolition, metal disposal, waste disposal, contaminants, laydown areas, airports, roads, etc., and Closure Inspection Criteria. What you see up here, thinking about what we have already done, is there anything else that is missing from this list, other topics we should put forward?

Wayne: Are the sessions only once a year? Maybe we should make it twice, people are getting old you know.

Natasha: I know originally that was the agreement– when the TK panel goals and vision were first defined, that was the hope. So we can remind Diavik that that was the original hope. How would people feel about that? Would it be too much? Once a year is fine? Jonas says once a year.

August: Once a year is enough for me.

Jonas: Twice a year is got to be reasonable, because if there was a lot of concern we could do that. I know there is a lot of concern, but I think maybe twice a year.

Thomas: I think one a year is going great, but since there has been a change to approvals and permitting, I think one right after review board make their decision because it is a big change with what was originally happening.

Janelle: Twice a year is good because it makes people remember what is happening, and it is consistently in your thoughts. I want to meet twice a year.

Berna: Maybe twice a year, not for my benefit, but for the benefit of the panel here. Maybe once talk about wildlife, maybe about the closure and what is going to happen to other building materials. One time I went to the aquatic effects program, we never monitored the caribou, never went out to the barren lands and see the behaviors of the caribou. One time with Ekati we went out in a chopper and we sat out all day looking for the caribou. Maybe once a year for animals and another time for the closure. Thank you.

Jonas: Future topics and the North Inlet I think there should be because number one issue should be safety and talk about how you are going to do the safety – if you are taking everything apart, safety thing that goes along with it. Number 1 is safety first. The elders talk about it all the time. And maybe for Wayne's sake maybe do it twice a year.

Natasha: I hope we think about safety every time, related to each topic. It seems to come up every time at least. But especially about these closing details session, is that we should add that word specifically? In the Closure Details?

Joanne: If part of the problem for Diavik in having more than 1 session is having access to the rooms. We could think of having one session in Yellowknife and one out here and rotating the sessions. So we would really have to plan for the special ones here where we need to see things first hand to help with the process. And then those session we could have in Yellowknife where it doesn't really matter.

Jonas: It will be good to have a meeting in Yellowknife or Whatì.

Bobby: Having it twice a year it would be good to have a refresher. Look at us, we forgot a few things in the session even how close it was. One year is a long time to keep it in my mind, and it is gone. 1 year is a long time for panel sessions like this. I think twice a year, that option of having one here and one in Yellowknife – I would be up for that.

Jonathan: Last time we did caribou monitoring at Diavik, we stayed at the campsite, the tent frame. That is where we did caribou monitoring and we stayed for 3 days. We took boats around the shore, so if we are having an issue and not finding rooms here, how about we stay at the campsites.

Natasha: That is a good suggestion.

August: I'm going to help Jonas. So, we will do it twice a year. Yellowknife is close to their house, hey? So, I agree with Jonas.

Natasha: What about future topics?

Joanne: I know in the past we have talked about having a big picture session, an overview. We look at these specific elements of closure, and sometimes it is hard to put it all together. So that we have a better sense of what to – and that visual that we are thinking of producing. So that we can look at what it would look like in the future. What do you think of that idea?

Wayne: Good.

Joanne: So, Closure Overview for a future topic?

Hands vote – yes

Natasha: Myra is there anything you can think of or is on the radar for a future session or timing?

Myra: I did ask Gord and he did respond, and particularly North Inlet does make sense to do it next time.

Natasha: Are panel members good at doing North Inlet next time?

Hands vote – yes

Natasha: We can throw this up again tomorrow and we can come back to it and add ideas. Just before we close for today, a couple things I wanted to share. We handed out notes from yesterday, if you can initial at the bottom then we know everybody has been able to look it over. [*note discussion*] Any more questions before we close? [*discussion on seeing pit tomorrow*]

END OF DAY 2 NOTES

Traditional Knowledge Panel Session #12: Pit Closure Options Day 3/4 Notes

Date	Sunday, September 15th, 2019
Time	9:30am - 4:30pm
Location	Diavik Diamond Mine
Handouts	1. A154 and A418 Fish Habitat Design - maps (from TK Panel #6)
Participants	Bobby Algona (Kitikmeot Inuit Association) Regan Adjun (Kitikmeot Inuit Association) Nancy Kadlun (Kitikmeot Inuit Association) Roger Catholique (łutsel K'e Dene First Nation) August Enzoë (łutsel K'e Dene First Nation) Jimmy Fatt (łutsel K'e Dene First Nation) Shirley Coumont (North Slave Métis Alliance) Wayne Langenhan (North Slave Métis Alliance) Janelle Nitsiza (Tłı̄chq̄ Government) Louis Zoe (Tłı̄chq̄ Government) Therese Zoe (Tłı̄chq̄ Government) Jonathan Mackenzie (Yellowknives Dene First Nation) Rose Mackenzie (Yellowknives Dene First Nation) Jonas Sangris (Yellowknives Dene First Nation)
Facilitators	Joanne Barnaby (Thorpe Consulting Services) Natasha Thorpe (Thorpe Consulting Services)
Observers	Mona Tiktalek (Kitikmeot Inuit Association - Interpreter) Bernadette Martin (Yellowknives Dene First Nation - Interpreter) Peter Huskey (Tłı̄chq̄ Government - Interpreter) Joline Huskey (Tłı̄chq̄ Government - Staff) Thomas Lafferty (łutsel K'e Dene First Nation - Staff) Janyne Matthiessen (EMAB (Environmental Monitoring Advisory Board)) Myra Berrub (DDMI - Principal Advisor, Communities and Social Performance for Closure) Gord Macdonald (DDMI - Principal Advisor, Sustainable Development) Gord Cumming (DDMI - Environment Technician) Sean Sinclair (DDMI - Superintendent, Environment) Ryan Dempster (PIDO Productions - Sound Technician) Emma Wilson (Thorpe Consulting Services - Transcriber)

1 Diavik Response to TK Panel #11 Recommendations

2 Gord M: [*went over recommendations from last panel and Diavik's recommendations*] We will be able to
3 give you the items that are being removed from underground during the next panel.

4
5 Natasha: After Gord's presentation we are going to jump in to questions 4 and 5: If Diavik goes ahead
6 with refilling the pit, what would you want to watch during closure to know that it is good? Regarding
7 water? If Diavik goes ahead with refilling the pit, what would you want to watch in the filled pit lakes to
8 advise if the pit lake should be connected with Lac de Gras? Think of those as your building blocks for
9 the watching program that we are going to try and work through this morning.

10
11 Gord M: I think I commented on this one about the TK Panel recommends that we test slimes/PK in a
12 fish tank to see if any water plants would grow on the PK. We didn't see a good reason to test it. We
13 know plants grow in PK. [*Pending 1st slide*] We expect the approvals will be around November from
14 Mackenzie Valley Environmental Impact Review Board. It then goes to the minister of the GNT that
15 reaches out to all the Indigenous groups. I expect that will go until January. Hopefully by this time next
16 year we will have more information for your next panel. Any questions? I have 3 specific questions here
17 now to address -

18
19 Natasha: Joanne and I went and looked back at the previous reports and we were anticipating these
20 questions are something you might want an answer to - how long would it take for the water be filled,
21 where would the water comes from, and what would that look like?

22
23 Gord M: How would we fill this up? And lots of people think we are going to blow up the dike. That
24 might be a fun thing to do, but it isn't what we are going to do.

25
26 Jonas: Can you go back to the first thing, the slide on your computer? The first one. When you say the
27 words are from Diavik, is that you already making a decision and saying yes?

28
29 Gord M: Yes.

30
31 Jonas: We have only been here 3 days. We talked about it last night and this morning about the cone.
32 Whose idea was it to put water in there?

33
34 Gord M: Diavik's back in 1998.

35
36 Jonas: If you put water in there it is going to create more problems. Earlier Bobby said if you start
37 putting water in the cone the rocks are going to fall down, and it slide. So I am still thinking about that.
38 And you are going to leave the materials in the underground. Where are all the veins, we just talk about
39 it last night, you are going to leave all the pipes and wires whatever all down there. But still thinking that
40 you should take it all out, don't leave anything in there, maybe flood the bottom, those underground
41 veins, flood them all, and you put all that rock back, fill it right back to the top, and make it work, and
42 make sure caribou will walk on it. If you put water in there, because of the heat from underground, it
43 might not freeze too hard. Caribou go on it and fall through maybe. So, fill it right to the top and make

1 sort of a hill and put some stuff on it so it grows back to natural. That is what the elders and I were
2 talking about this morning. Looks like you want to do this in a fast hurry job. So it is still back of my mind,
3 thinking about how it is going to work. You use the scientists, use some traditional knowledge, and like
4 this morning you are talking about looks like done deal, done already. Consult other people - the
5 government, the government never owned the land up here. They think they do but they don't, the First
6 Nations do. You look over the last 100 years, our ancestors were up here. I don't know why the
7 government - if you leave it up to the government they are going to do it anyway. But the TK Panel, we
8 have been up here we know what is going on up here. Government looks at papers and say that is what
9 is happening. So, I'm still thinking about how - there needs to be more couple more rounds sitting
10 around talking about it. I hope tomorrow is not the last day and it is finalized. We never know what is
11 going to happen in the future. Maybe the young guys want to come back up here in the future, you
12 leave a big hill up, caribou can't climb on it. That is what we need to think about - not just the slime and
13 all that. It never happened before, so this is the first time. Those are things that are happening up here.
14 So still I'm not 100% sure based off the science. Looking at it, this is what scientists think, based on
15 science sounds like 'let's just go finish off'. But this is not going to be the last mine. That is what the
16 elders said. I said earlier the first day, I always remember when I met with my elders, and they said,
17 'Well Giant is closing, government is downsizing, what is going to happen next?' He said, 'Don't worry
18 about it, the creator will take care of it.' A couple years later they discovered diamonds. We have to set
19 up a good precedent that is going to last forever I guess, so we cannot rush into things. Maybe a better
20 method might come up, you never know. Mahsi.

21
22 Nancy: When you said to gush it in, I don't think we should just gush it in. If we approve the water to go
23 in, I don't want the water to gush it in.

24
25 Gord M: What we would do is put pipes, the big black pipes, in to the lake, and all the way into the pit,
26 so we can start filling it like you fill up a sink, but not too fast, not too much energy so it doesn't stir up
27 the sludge. We think it will take 6 months to 12 months to fill up the 154 and 418 pits. They would have
28 to fill up together because they are connected. It would be a controlled filling and the water would
29 come from Lac de Gras. So very little would come from precipitation. And we would fill it all the way up -
30 if you look at these pictures, all this dark area which is in between the edge of the pit and the inside toe
31 of the dike, these would be areas where the fish would want to use the most. It will be shallow and most
32 productive area for feeding. In real terms, probably end of 2026.

33
34 Bobby: When you are filling up with water, can you put a tube down to the bottom and filling up from
35 the bottom instead of coming straight from Lac de Gras? I think if you did it from the bottom all that
36 sediment will stay on top that we want to keep, but if you fill it up from the bottom to the top that
37 would not cause any disruption that we want to keep as fish habitat on top. Like, could be all kinds of,
38 bit of chemicals or anything that might be underground will stay down there if you filled from bottom
39 up. I think it would be good to see in that way instead of having to fill it up.

40
41 Gord M: You are exactly right; we are on the same wavelength. Ok, so the next question is how long will
42 it take for the lateral zone to support fish? If you put fish in there as soon as it is flooded, I think they
43 would be fine, but there would only be food that would come in with the Lac de Gras water. It might
44 take a year or 2 before the community in the sediment will start to develop. There is lots of vegetation

1 in there right now so I think it will grow quite quickly and be productive for fish quickly. Ok, what is
2 behind the number of 5 of 32 tons of material from the PKC? Is that the estimate of the slimes in the
3 PKC right now? Yes, 5 is our best estimate of how much slime is in there. We are trying to get a better
4 estimate, and we should know by the end of the year whether it is 5 or smaller or larger for all of the
5 slimes. And then everything else can have a rock cover on it if it needs.

6

7 Natasha: So 5 might change, but the idea is to move the slime and leave the coarse material.

8

9 Gord M: Yes.

10

11 Joanne: To help the panel decide how they feel about opening the dikes and encouraging fish habitat, is
12 there any need to do habitat development work before the pits are completely full?

13

14 Gord M: All of the habitat construction work we are thinking of doing is up here. All this has to be done
15 before the pits have to be filled with water. We need to start this next year. We need to decide by
16 February of next year if we are going to build fish habitat here or somewhere else. DFO requires us to
17 put the fish habitat here. I have heard concerns and they are open to alternatives. If the answer is we
18 don't want to build fish habitat close to the mine area, or we want to do enhanced fish programs where
19 it might be more used for communities, they are open to doing that. They are waiting for decisions from
20 either us or the Mackenzie board with input from Indigenous groups. Back in 1998 there was only the
21 one option of building fish habitat at the mine site. The scientists have said that the fish don't need this
22 area.

23

24 Bobby: Can this be done to all the pits? If they didn't have something built like this right at the
25 beginning, can this be done by the roads you have? Can fish habitat or material be put down in that
26 spiral? The roads that you have, maybe I would like to see little bit of sediment near the top, near the
27 top rail and roads before you start filling up each one of the pits and maybe they would start having fish
28 habitat, if you turned the roads going down there in to fish habitat, putting in a little bit of material on
29 the road. How deep would you want to go? You don't have to go down deep, maybe 150 feet or 200
30 feet, put a little bit of sediment, fish habitat material on the road on the top. Can that be done to all the
31 pits?

32

33 Gord M: Absolutely we could. What the science has been saying, which TK might be different, only
34 where its shallow, where it is 10-15 yards would the science people want to put fish habitat. But if
35 advice from TK says we should put something on the ramps, that would be a good recommendation.
36 And there is no reason it couldn't be in all 3 pits.

37

38 Wayne: I was just thinking about what Jonas said about putting rocks in down there, but then you got 5
39 units of slime that you wouldn't be talking out of the big PKC pit, and then you have another 5 in the
40 other pit piled on there on top again. Is that correct?

41

42 Gord M: We are not talking about putting any of the rock in the pit. Would we have to put the rock on
43 top of the pit?

44

1 Wayne: No, Jonas was saying putting rock in there. But if we put rock in there, there are 10 units that
2 would be left in that pit, in the PKC. So what we are doing if we fill it up with rock, we are causing a
3 bigger problem on the surface because the PKC pile is going to get bigger.

4
5 Gord M: Yes, you are making it worse for the PKC, but you would be it better for the North Country Rock
6 Pile. We have already gone through the discussions about why we aren't putting the rock in the pit. We
7 have already made that decision and we are working on re-sloping that rock pile and putting a cover on.

8
9 Wayne: I brought this up so that Jonas would have more information on this because he hasn't been to
10 the earlier meetings.

11
12 Jonas: I'm worried about the big pile here because it has to go somewhere. When it first started, they
13 said they would move the big pile.

14
15 Gord M: We call it the North Country Rock Pile, so this is it right here. The pile will be a mountain that
16 will be there forever. We are re-sloping the sides of it and putting a cover for the caribou to have it safe.
17 It is not the plan to put it in any of the pits.

18
19 Jonas: I am concerned about the caribou. Where is he going to climb, where he is going to fall down?
20 Every mine decision has been made already. At Giant Mine, decision was for mine to freeze that thing.
21 We told them no, get it out of here. If it leaks out all lake is going to go down. Some of the elders say
22 what is going to happen in the future? Earthquake, climate change. You are looking across the lake
23 there, I don't think that is going to moving anywhere. See that is why the caribou is moving far away
24 from us. You look at the territory around us, only BC you see big hill. It's flat here, good for caribou to
25 wander. I remember when they first said, I will say it again, where are you going to put all the rock? Is it
26 going to be the same thing as the other hill? They said yes. Now it is double. I don't know where you get
27 your science stuff from, I just wanted to bring it up. I want to make sure caribou can wander everywhere
28 all over the place.

29
30 Myra: Gord there was a question yesterday about where the tunnels are to access the pit and at what
31 level in relation to where the PK would go up to.

32
33 Gord M: So these are the tunnels, the line would be in here. We would fill it up to here. Where it
34 changes from being the top of the ice cream cone to the bottom. We can pump the water off.

35
36 Myra: And how are you going to close off the second pit from the first?

37
38 Gord M: We are putting big cement plugs that get built into the tunnels so nothing can flow out that
39 way.

40
41 Shirley: I am just a bit confused because earlier I thought you said they would be filled at the same time
42 because they are connected.

43

1 Gord M: If we put PK back in, we would put the PK in here while one is still being mined, but when we
2 put the water in we will put putting it into both.

3
4 Mona: We keep going back to kimberlite. If you are going to fill up the bottom of the pit, are you putting
5 waterproof, leakproof, in the bottom? It is all going to go spreading out? You said there is lots of water
6 on the right side, because we seen even on the sand there is lots of water. When you open up, when
7 you shovel up the sand, the water comes from all over. I don't know how long it is going to be filled. If
8 you are going to fill it with water it is going to go all over the place, do you think?

9
10 Gord M: No, we aren't going to put any liner around it. It is going to be the earth, the rock there where it
11 came from. I think we are going out to A21 this afternoon. We can see where the kimberlite is now, you
12 can see the rock wall behind it. No it wouldn't go this way, anything the water is going to want to come
13 in the hole, not out. This is where it came from, we think it is the safest place for it.

14
15 Nancy: I am letting Mona know that this is all solid rock.

16
17 Gord M: Ok thanks, I will leave you to your deliberations as they say.

18
19 Joanne: Last chance for questions for Gord.

20
21 Rose: Ok those two over there, the red and green, those are tunnels right? Ok so you said you are going
22 to close it on both sides, but what about in between - are you going to fill all that?

23
24 Gord M: We will close those tunnels and it will stop anything from going over there. All of these tunnels
25 on the left will get filled. All those tunnels will get filled, but there is way more space in the middle as the
26 tunnels, but all that will get filled as PK.

27
28 Jonas: Will the caribou use the stairs [referring to the NCRP model], it is all I see.

29
30 Gord M: Jonas we need to take you for a walk to see the rock pile.

31
32 Jonas: How would the caribou going to use it, all I see are stairs, they aren't going to use it?

33
34 Janelle: The idea was that there would be a boulder for caribou to get a breeze, and there will be a
35 natural sense of place, there would be boulders for them to hang out, we are hoping that natural
36 vegetation will come back.

37
38 Jonas: Well caribou got different mind. They are not going to climb up there. Now the young generation
39 they don't listen to the elders. Just scientific, think that is good enough. But you need to look at the
40 traditional way too.

41
42 Joanne: The question of taking rock from North Country Rock pile to make it smaller, that decision has
43 been made a long time ago. It isn't going to happen. What the panel is trying to work through is how do

1 we live with that rock pile? What is the best thing we can do with the rock pile to make it easy for
2 caribou to go on their traditional migration routes and how to make the best of that situation?

3
4 Bobby: Coming back to Rose's question, you have plans to fill up straight water for both sides, as you are
5 filling up one you are going to have it open to the other pit?

6
7 Gord M: Let's assume all the PK has gone back in, it is all done, we will probably bring it up together.

8
9 Bobby: So all that PK is capped before you do this?

10
11 Gord M: Exactly, it is all in there before then.

12
13 Joline: I just want to clarify some stuff here. No disrespect to the panel members. The reason Diavik has
14 us here is to share knowledge with 3 different levels. The youth, the man, and the woman. You know, I
15 find it kind of disrespectful when they say the youth don't always listen. I am not an elder or a youth. I
16 am 45 years old, and I have worked with elders for 21 years with Tłıchǫ Government and with all other
17 elders in our community and region. The reason they invited youth in this program is so they have their
18 input as well. I don't find that hearing that kind of stuff from an older person that all youth don't listen
19 or understand helpful. Janelle has been with this panel for a very long time and was raised by her
20 grandparents, and now they are no longer with us, she is very knowledgeable in TK. I just wanted to say
21 if youth have their own views, they might have both Traditional Knowledge and science. We live in a
22 modern way, and we are learning both English and our culture, for us that is the Tłıchǫ. So I just wanted
23 to clarify that because I don't want to feel disrespected. There is a reason why they are here because
24 they are interested, and they have concerns. I just wanted to clarify that, I am not being disrespectful of
25 anyone here.

26
27 Augustine: I am confused. The rock pile we did talk about it when we started way back years ago. Those
28 elders aren't here anymore. It was them that told us what to do and how we should do it for caribou.
29 That is how they did it now. It doesn't look good but it'll be nice and smooth all around it, so caribou can
30 go on it. Just flattened around so caribou can go up for the breeze. So all from Rae, Yellowknives, they
31 were said all these years ago. Because I am still sitting here I would like to mention that, thank you.

32
33 Jonas: This is not only for us, we want to protect the wildlife, we don't want the wildlife to get injured.
34 The North Country Rock Pile, when the caribou climb the North Country Rock Pile, they probably
35 wouldn't, but this kind of mine site if we continue in this manner we might come in to an argument but
36 the wildlife and the fish in the mine, we are talking about these things, and often elders say that this is
37 where our people use to travel to hunt and trap and today those things don't exist. And in the past, we
38 used to go hunting near Tibbitt Lake, now we have to travel 7, 8 hours to see the caribou, the caribou
39 would avoid noise and travel a long ways. This argument that exists, we can do without, thanks.

40
41 Joanne: So, I think we have all the information so what I would suggest is a 10-15 minute break and
42 when we get together again it will be in 2 separate groups. The men's group will stay in here, so you'll
43 have the use of the interpreting equipment, and then the women's group will be moving downstairs to

1 the Tundra room. Then we were thinking we would get started, and then we would have an early lunch
2 break, go back into the small groups, and continue our work till 3 o'clock.

3
4 Augustine: Look around us, we are one bunch, we come here every year, and why do you want to
5 separate us. We have a translator for us, everybody can say something.

6
7 Joanne: And August you are consistent; you have said that last time and the time before. We have found
8 we have got more participation from everyone if we divide in to two groups. We want to hear from
9 everyone as much as possible. When we break in to two groups, we present to each other at the end.
10 So, we still do hear from each of the groups in that way and everybody's has the time to talk and you
11 don't have 1 or 2 people dominating the conversation. It provides more opportunity for people to talk.

12
13 Augustine: Some that don't talk because they are just listening, and they are newcomers.

14
15 Natasha: Because there was a request to have a tour we are ending earlier today, really at the end of
16 the session, we want to give as much as we can to Diavik, so we thought if we could break into 2 groups.
17 It would give us more time to collect more information to make a stronger report. If we had another
18 day, we would feel a little more relaxed, but this is our last day to give direction.

19
20 *[further discussion of today and tomorrow logistics]*

21
22 **BREAK**

23 Break Out Session: Women's Group

24 Joanne: We really need to try and focus on giving guidance to Diavik on a number of basic questions,
25 one is how you feel about placing the PK at the bottom of the pits. Of course, the alternative is leave it
26 where it is on the land and all of the problems we have identified with that that we have talked about
27 fairly extensively. Based on previous discussions and previous panel recommendations, I think there is a
28 consensus having the slimes at the bottom and covered with water. So everybody is ok with that?

29
30 Rose: I feel comfortable with it.

31
32 Janelle: Gord said we are putting it back where it came from.

33
34 Shirley: And lots of water opposed to that pond which isn't a ton of water.

35
36 Rose: Water on the bottom if they put it at the top, wouldn't it just settle in to how far it goes.

37
38 Janelle: **I want to see if we can add plants in to generate oxygen.** The amazon is burning, we need to
39 create more resources of oxygen and the area on the side where the vegetation will be for the fish and
40 for us as human beings.

41
42 Joanne: Do you want fish in the pits?

1
2 Janelle: Naturally if it goes.
3
4 Shirley: If we breach.
5
6 Joanne: I double checked with Gord if it is necessary to breach and his answer is no. So that is something
7 we can make a recommendation about.
8
9 Janelle: I want to hear an option on of our elders from KIA because the water flows to you
10 Nancy. We need to make sure this is healthy to let the water come we are ok with it. If it is not healthy
11 then we are not ok with it. So make sure.
12
13 Joanne: So that is a big if. So, what do we do in terms of timing and how much monitoring time do we
14 want?
15
16 Nancy: I'm not concerned about it not healthy because it has always been looked at.
17
18 Joanne: Right, so how long do you want to watch it?
19
20 Nancy: I don't really know. Scientists should know. They fill it, we monitor it, let them to check the
21 water. Just don't let it sit in there to not let it open because it is going to be stale and there will be no
22 oxygen in there. So as soon as it is ok for to open the dike, before it is stale in that water.
23
24 Joanne: In terms of steps and the process, the first step would be to allow the water, or fill up the pits,
25 allow it to sit for a while to settle.
26
27 Nancy: So to settle everything and then they will say it is good.
28
29 Joanne: Do you want to help decide to see when it is good?
30
31 *Nods in agreement*
32
33 Joanne: What would you be looking for?
34
35 Nancy: If it is murky.
36
37 Shirley: Smell, if there is life in it.
38
39 Joline: I am confused, because that side I thought it would be that side where would be PK on because
40 there is more vegetation on that side. I thought they would pour it in that because of the vegetation.
41 But it is that side and they will block off that side. What I was hearing is they are going to fill it with PK in
42 the bottom including the tunnels, fill it with water, and then monitor for 2 years to see how it goes. And
43 then maybe look at the scientific results to see if those bugs are coming back and obviously it is going to

1 be closed in, and then once they feel it will be safe they are going to open the dikes, then we could see
2 and look at the results, and not leave it too long because of oxygen.

3
4 Mona: If they fill it up right away? With fish?

5
6 Joanne: That is a recommendation we need to address. Do we want them to put fish in there before it is
7 breached?

8
9 Mona: Ya

10
11 Nancy: They will naturally go in if you open it up.

12
13 Janelle: I don't know that is kind of a hard question.

14
15 Rose: They need to put water in there before all this will clean out.

16
17 Janelle: I think it will have to settle. Because after they settle and put fish in it.

18
19 Joanne: They wouldn't do that before the 2 years.

20
21 Janelle: Can they test the fish when they open the dike?

22
23 Shirley: Ya because I'm thinking the fish need oxygen but when you do decide to breach, you are going
24 to disturb them. So good to wait.

25
26 Janelle: If they are closed in here, they should be willing to choose to go in there.

27
28 Rose: Do animals go down there?

29
30 Joline: Just the birds, nesting on the walls.

31
32 Joanne: With all the activity other animals don't go there.

33
34 Mona: There are birds in the open pit, open walls?

35
36 Joline: Yes.

37
38 Joanne: So, most of you have gone to the fish camp.

39
40 Janelle: I haven't yet.

41
42 Joanne: We do testing of water and testing of fish. We use both science and traditional knowledge. And
43 we use TK by tasting. Tasting the water and the fish. And from different depths in different areas. So we

1 have caught fish from the mine site here. We have set nets near the mine site because we want to see if
2 there has been a difference.

3
4 Janelle: Any test on snow? There was a pink film on there. Has there been test for snow around the
5 mining areas? Sediment testing on the lake bed? Just to see from the blasting.

6
7 Joanne: I know they do tests of snow especially when there is yellow snow or grey from blasting.

8
9 Joline: So this would be amendment to their water license that would be approved by the end of the
10 year?

11
12 Joanne: Yes, by end of November. They would start planning the slime. Before they have final approval,
13 they can't do anything.

14
15 Joline: So maybe after June, July of next year. Can we make a recommendation before filling the pits,
16 bring the TK group to the fish plant so the group here can test the water and eat the fish and then after
17 the dikes open and then do that after the dikes to see if there was a difference.

18
19 Nancy: The fish here is still healthy, from tasting sample. 3 years ago was my first time going there to the
20 fish monitoring. Last year we went have more parasites than 2 years ago.

21
22 Janelle: I think it is the happening everywhere from water warming.

23
24 Joline: That is what they see at Fletcher Lake this year too. It could also be because of climate change,
25 warmer water.

26
27 Joanne: The elders say it is from warmer water.

28
29 Janelle: They caught a big cyst, a big parasite on it.

30
31 Joanne: We haven't seen that here, just tiny little parasites when they cut it open.

32
33 Nancy: We saw how old the fish was.

34
35 Joanne: Colour of the gills, the elders use that as a strong indicator of the health of the fish.

36
37 Joline: We don't eat big fish because of the mercury. The elders know that and that is what I have
38 learned as well. So when I hear them talk about the bigger fish will swim deeper, but we don't
39 traditionally eat big fish.

40
41 Therese: We do if it is healthy.

42
43 Joline: That is what I noticed in the cultural gathering. They mostly cook the fish head and then really
44 really dry it.

1 Janelle: If you eat the big fish you eat a really small piece or else you might get gassy or something.

2

3 Nancy: I am good with the slime in there because if they leave it up top they will sink.

4

5 Joline: Even if they put big rocks down there you will see a curious fox or something wanting to see the
6 water. The rocks won't stop them from going into it.

7

8 Nancy: It is a good thing they will put it in there. I have been under the pit when Mona said it might seep
9 out, these are big solid rock.

10

11 Joline: I heard at the hearing too because this company is owned by same company as Ekati, they are
12 wondering why they can't put it in their pits.

13

14 Joanne: They have a business arrangement. They aren't the same company, and you sure can tell
15 because they don't talk to each other.

16

17 Shirley: So are we all agreeing to put the PK in to the pit?

18

19 *Nods in agreement*

20

21 Nancy: What is in the PKC, let's make it nothing as possible.

22

23 Joline: I like how Gord explained the PKC is 30, and we are only taking 5, which is the slurry part in the
24 water. And so that way where you see the PKC on the edge it hardens, so eventually that would happen
25 and then they would cover it and then it will be safe for all animals to go over. And I think that was the
26 goal 2 sessions ago.

27

28 *[writing on board]*

29

30 Joanne: 1) Support putting slimes in the pit, so that is new slime that is produced plus moving slime from
31 the PKC. 2) putting water in and letting settle for at least 2 years before the dike is breached.

32

33 Shirley: Is that conditional though? Only breached only if the water is safe?

34

35 Joanne: Yes, make another point do not breach dikes until panel is satisfied that the water is safe.

36

37 Joline: And then you open the dikes. We said put the slimes in, let it settle, put the water in, and letting
38 it settle for a minimum of 2 years and then once it does that, we said we would open the dikes if it is
39 safe.

40

41 Shirley: Before all of that we have already set up the fish habitat before bringing water in I guess. So put
42 the fish habitat part before the water on the board.

43

44 Joanne: Yes, create fish habitat.

1 Joline: And then after opening the dikes, fish swim in naturally.
2
3 Janelle: Let fish enter naturally. Don't force them in.
4
5 Shirley: And then continue monitoring?
6
7 Janelle: How long?
8
9 Joline: This will still be in operation, this will still -
10
11 Janelle: But after closure -
12
13 Shirley: No, 2026 they will fill it.
14
15 Rose: Still then, 20, 40 years
16
17 Shirley: Gord said 20 years minimum.
18
19 Janelle: If they go bankrupt, who will be responsible?
20
21 Joanne: They have a deposit.
22
23 Janelle: But what if that runs out?
24
25 Joanne: Well, that is the risk.
26
27 Joanne: It will depend on how good everything is working, how good the systems are they built for
28 closure, we don't know that but we should give direction in that question.
29
30 Shirley: So monitor until we are satisfied until fish are healthy in there.
31
32 Janelle: So continuous monitoring?
33
34 Shirley: Yes.
35
36 Joanne: We talked about watching, the TK panel, to participate in the aquatic effects monitoring
37 program. The fish camp. We can address that and say something about how often.
38
39 Shirley: Shouldn't it be every year or twice a year?
40
41 Joanne: Good question.
42
43 Joline: Fish taste different in different seasons.
44

- 1 Janelle: They are kind of small when they are spawning, turn in to teenagers. The mercury could be
2 different every season.
3
- 4 Rose: Is this a manmade dike?
5
- 6 Joanne: Yes.
7
- 8 Joline: Do you know where the spawning area in Lac de Gras is?
9
- 10 Joanne: The narrows I would assume.
11
- 12 Joline: Just one area? It would be good to know.
13
- 14 Joanne: It would be more.
15
- 16 Janelle: So the question is how many spawning areas?
17
- 18 Joanne: Yes. When we come back, we will ask those harder questions in terms of what exactly we will be
19 looking for to make sure.
20
- 21 **BREAK**
22
- 23 Joanne: if you don't mind, I am going to take a minute to tell what the last panel session told us. So if we
24 can build on that rather than repeating it that would be helpful. [*read out previous TK Panel 11*
25 *recommendations*] With that in mind, do we have any further recommendations building on what we
26 said this morning? They might specifically be looking at water.
27
- 28 Joline: Maybe to see how long it takes to settle and to see how the vegetation is going I guess.
29
- 30 Bernadette: Water temperature.
31
- 32 Mona: See how the plants grow on the water.
33
- 34 Joline: Water quality and clarity. To see, when the dikes are still closed, to see the oxygen level of the pit
35 water, because the plants would also depend on that. Before and after dikes are breached.
36
- 37 Mona: We should try and get vegetation from Lac de Gras area and put it in the pit to see how it would
38 be.
39
- 40 Joanne: **Transplant?**
41
- 42 Mona: Yes, just the small pieces.
43
- 44 Joanne: I am assuming they would use seeds to plant when they build that revegetation area.

1
2 Joline: Putting those microorganisms where there are going to be plants because it does help cleaning
3 up the water, with algae along the wall sides.
4
5 Joanne: So, in addition to taking the water from Lac de Gras -
6
7 Joline: Like during the 2 years of monitoring, put the microorganisms in there. Because they did say 2
8 different species would be ok - when they showed us the results, the toxicity results showed they would
9 be ok.
10
11 Shirley: So with temperature are we looking at temperature as the same as Lac de Gras?
12
13 Joanne: We would want to know if there was a difference.
14
15 Joline: Lac de Gras is not that deep all the way around, only same areas, but not as deep as the open pit.
16
17 Shirley: So maybe it will be different after the breach too.
18
19 Joline: I remember too at the hearing they said when they open the dikes they open at the same time. If
20 they flood, they want to flood at the same time, and if not it would become like a washing machine
21 because you are creating current. So, they will be flooded at the same time.
22
23 Janelle: Where does this information go afterwards? Is it online? Who processes it? If the water isn't
24 where we want it to be, what happens?
25
26 Joanne: My personal opinion is we continue to monitor ourselves, the panel, or its successor, whatever
27 the communities decide. But it would be up to all of the governments to ensure that. And Diavik would
28 have to demonstrate their closure objectives have been met until they are off the hook. We don't know
29 how long that will be.
30
31 Shirley: So a separate category for fish under question 4.
32
33 Joanne: We talked about using the fish camp as a base to bring the panel out.
34
35 Janelle: Scoping areas. Adding the mine area.
36
37 Joanne: So expanding the use of the fish camp to the panel as a base, especially for fish monitoring. So
38 we could recommend to the aquatics effects program they include in their fish testing setting a net near
39 this area, the mine area, starting now.
40
41 Janelle: That would be baseline information.
42
43 Joanne: That is right. We have set nets in the past but only sporadically.
44

1 Shirley: Start now to start testing fish near pits.
2
3 Joanne: What else do we want to say about fish?
4
5 Janelle: We want to see if they are coming in the area, see if they are living there, once the breach
6 happens.
7
8 Shirley: Once the breach, are the fish coming back in the pit?
9
10 Rose: They see how the other one works and then the second?
11
12 Janelle: At the same time because they are connected.
13
14 Joanne: They will block off the connections between them.
15
16 Mona: What happened if all the fish is still in there and then freeze up comes?
17
18 Nancy: There are going to be openings.
19
20 Joline: Gord also talked about pipes being left behind. I don't have a problem with that because they see
21 if they are safe or unsafe. Most of it is safe to stay below. The safest bit is to keep them down there.
22 They will be deeper underground then up here in the gravel pits. The sprinklers that will keep dust
23 down, I am ok with leaving down there and all the other stuff that they have down here.
24
25 Joanne: We will be getting that list of materials.
26
27 Janelle: How many openings for the dikes?
28
29 Joline: It tells you there are 3 openings. And the other one has several.
30
31 Mona: Do they have waterproof camera? To take pictures of fish.
32
33 Joanne: We want to talk about Bobby's idea about motion detector underwater cameras. I think he was
34 concerned how close the fish were getting to the PK. If it is activated by motion it would pick up the fish.
35
36 Shirley: We could add that as a recommendation under fish, before filling pits with water, install
37 underwater motion sensor cameras to monitor possible fish after breach at different depths.
38
39 Joanne: So that is actually related to question 5. So what else?
40
41 Janelle: I hope I am an elder in 50 years and I get to come here, and they are still monitoring this. Maybe
42 they should open this up as a resort.
43

1 Joline: In BC they have this abandoned mine, they even take you underground, we wound up there to
2 take a look and how the process plant was. It is still there, they build a shack where they can serve food,
3 display type of materials and what can be made from the materials. How it drained into the ocean and it
4 killed many ocean species, and how they process in the plant. It is amazing how even though it is a steep
5 hill up, it's underground mining, and how it still can be done. I think I heard Gord mention that they
6 could take the top part and put it in the water treatment plant but then he could also talk about the
7 water treatment plant because there are maybe harmful substances like diesel underneath the plant. I
8 think for me I am ok with - I know Tłıchǫ Government has a big concern about putting slimes
9 underground and then filling it with water because the middle part, 50% of it, the slurry part, the cloudy
10 area, that it does have some sort of chemical effect. I tried to find it in our report but I can't find it.
11 Anyhow I try to compare it to other mines and look at right out our back door and Giant can kill the
12 earth 8 times over and compared to that so. We have wildlife coming in to Yellowknife, we have bears,
13 wolves, and what draws them in to our communities is garbage and some people still puts their garbage
14 outside their door and I try to compare how our community is doing with our waste, and I try to
15 compare with industry, but when we see it, the diamonds mines are a lot cleaner than our own
16 community because they are sorting their garbage, there are incinerators, and things like that.

17
18 Shirley: It's the regulator boards that make them do it.

19
20 Joline: You don't see in the community, here we are fighting to have it be pristine, but what about our
21 own back yards?

22
23 Janelle: **We hold the mines to a higher priority than our own back yards.**

24
25 Joline: Sometimes too we look at people that sit up there and think they are high up there because they
26 are leadership and we get trained so hard that we work for our own people and we get stuck with it
27 because we don't say anything. Sometimes I have to get up and say something, even standing up to my
28 own managers or directors as well, they have to realistic that we don't always live up to the past.
29 Everything is changing. My parents were taken to residential schools, my parents saw the change, and
30 my grandparents just kept the 2 oldest. You have to learn the white man way to survive. So they are all
31 educated. The elders we have now too, some of them realize that, but some of them realize they are
32 still stuck to their traditional ways. We need to adapt. It is difficult for someone like me who has been
33 learned in English and then having to go back to the traditional way. Are they comfortable with me or
34 not? Late Alexander Baker told me that.

35
36 Mona: When they fill up the pit like this, will be they bringing a couple panels to watch?

37
38 Joanne: Yes, that should be a clear recommendation.

39
40 Mona: Because one time there was prospecting for the mines, the **_____**, they were kind of
41 neighbours, but they kept everything there. There used to not be any panels long ago. Barrels over
42 there, rubber tanks somewhere, air strips with lots of barrels, they cleaned it up 2 years ago.

43
44 Nancy: They don't do it like that now because they have KIA.

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39

Mona: We have lands office now.

Janelle: We were too welcoming and there was no awareness.

Shirley: Before the regulatory -

Joanne: So, maybe everybody can have a look at this map again. If you have feelings one way or another, if you don't that's ok. About where you would specifically want to watch from. Is there anything that makes sense to people or - What about things like testing water after it's breached? But in terms of location. Is there any rational about one place or another?

Shirley: I don't get this island thing. How do you put an island in a hole? They have an island shown in the pit. That is confusing to me. Is this a before map?

Rose: So you are thinking this big hole was an island?

Joanne: It used to be all water.

Janelle: you can see how they built the dike, and then they filled it in. [looking at picture on the wall] Are we doing water testing at different depths?

Shirley: So we want to test water for everything at different depths.

Joline: Toxicity.

Janelle: Different types of minerals.

Joline: I could assume the darkness and depth would turn colder.

Joanne: Well that is another thing, all 6 seasons. Early spring, late spring, early fall, late fall, summer and winter. So are we missing anything?

Nancy: Feel good with what we have.

Janelle: I feel confident.

BREAK

1 Break Out Session: Men's Group

2 Natasha: We printed out a map of the pits that doesn't show it filled with water to give you something
3 to look at, same as what's on the wall there. And I've also got all of the previous TK reports in front of
4 me that we can draw from. In the past you've talked about if Diavik goes ahead and fills the pits, some
5 of the things you'd like to watch are: water fish, wildlife, wind, underwater sediments. We know the
6 scientists will have monitoring programs. But communities will want things that they want watched in
7 their monitoring programs.

8 Jonas: So here we are talk about the pits. We got no choice but we got to fill it with water.

9 Natasha: The original plan was to fill it with water. The revised proposal is to fill it with processed
10 kimberlite and then water. This is a chance to think about whether those original recommendations
11 change if it's PK plus water and not just water.

12 Jonas: I wasn't here for those meetings. That [NCRP] country hill - that decision has already been made.

13 Natasha: The north country rock pile and the south country rock pile, the TK panel made the
14 recommendations to monitor the seepage from those piles. Remember those testing forms that were
15 at the traditional knowledge camp? Would it look the same as the TK camp where tea is used?

16 Jonas: Just found out the GNWT, the water board, the mine, they already made the decision to fill with
17 water. The people that haven't been up in their life they made the decision before us. Before talking
18 and hearing our concerns. It's hard to think overall how it's going to look like we're talking about water.
19 I'm lost.

20 Natasha: I know it's hard to parachute into this TK Panel but we have the chance to think about what it
21 would look like to watch the water to watch the fish through closure. The scientists have a plan for
22 watching water, fish, plants and this panel has come up with 150 plus recommendations. Some are
23 about plants and monitoring. But this session is set aside specifically to talk through monitoring before
24 decisions are made around filling the pit. So I encourage you to think about putting on your community
25 hats and, leading a community monitoring program based on traditional knowledge. We already know
26 they're measuring water and send it to the lab and test chemicals and monitor pH. That's why we have
27 a Traditional Knowledge camp. You have to look at the liver, heart, gills. Not sending it away. You have
28 to look at it with your eyes. So let's think about that. If they fill the pit what do you want to watch?

29 Bobby: After they put the PK in that pit there we can't really watch what the PK will be doing
30 underground. After they cap everything and they're ready to put water in that's what I want to watch as
31 they're filling - the turbidity of the water as they're filling in.

32 Natasha: Turbidity. Does that mean you want to taste it?

33 Bobby: The colour in the water and what might be seeping from the ground and after they have capped
34 the PKC or slimes I would like to watch the water coming up and how turbid it is starting from the
35 bottom and also coming right up on top. And also plant life won't be instantaneous. It's going to be a
36 long time for fish to be in there because of the turbidity of the water. I'd like them to put that fish in
37 and study that fish while that fish is in there and watch. That's what I want to watch.

- 1 Natasha: You kept saying I want to watch *them* monitor. I'm wondering what *you* would watch. What
2 are you going to watch and when and how and where?
- 3 Bobby: It's going to take awhile after they put the fish in. It's going to take another while ... after the
4 turbidity is settled down. I'd like to watch that as well. How many years has it been sitting on the pile
5 for a few years already. Who knows that plant life or anything who knows, it's going to take awhile for
6 the fish to grow back in that habitat you're going to put in. Because it's been sitting out on the land
7 drying out on the land all the nutrients haven't been used with the water. You know because moisture
8 hasn't been there all the plant life hasn't dried up already. That's what I want to watch. See if all of that
9 habitat they're going to put in there see if that can make plant like in the bottom come back. And also
10 I'd like to have a study on all the bits of that sediment before they put it back in that pit. Without water
11 in that habitat that they're going to put it it's going to be dried and dead already.
- 12 Myra: I just want to clarify there isn't a cap on the PK, it's just that heavier water, the *miromixis*, and
13 then the lake water.
- 14 Bobby: That cap - I would like to watch that before they completely fill up that pit.
- 15 Louis: They are probably going to put PKC slimes in pit and then all the phytoplankton and all the bugs
16 that would grow into the water, the sediment and the habitat of the fish. Fish would sometimes eat
17 some of the sediments on the bottom of the lake. Once the fish and the water are put in the pit the
18 things I'm worried about, I'm worried about everything too, the slope of the north country rock, the
19 sediment that they took out from the two pits is still at the north country rock pile, it would be good to
20 have all that sediment that was taken out, put on the North Country Rock Pile, so that it can revegetate
21 itself. I just want to share that with you.
- 22 Natasha: To look at the bugs and the sediment to see what the fish are eating. Maybe look at the fish
23 stomach contents?
- 24 Louis: Once they put water back into the open pit they must be monitoring and watching the fish and if
25 they set nets and watch the fish and examine it would probably be a good idea. That's the only way. On
26 the main land there's another mine. Sometimes the water could seep into the receiving environment
27 there has to be a continued water monitoring around the mine site after the mine has closed so those
28 are the things that I want to say.
- 29 Natasha: So Bobby said once they put the processed kimberlite in the pit and they start to fill with water
30 you want to see with your own eyes how clear how dirty it is. So it starts with water after PK added
31 right. And then we heard yesterday, there was two suggestions for monitoring: 2 years and 6 years. We
32 watch the water once the water is put in the pits over the PK. So Gord said it would take 6 - 12 months.
33 And then we'll have the pit filled with water. We'll be watching the water during that process and we'll
34 wait a couple of years. And you want to put fish into the pit before they breach it. And what Louis said,
35 catch fish see what they're eating look at the fish, I'm trying to come up with a plan.
- 36 Jimmy: I agree with this old man.
- 37 Natasha: Which old man? There's two of them sitting beside you.

- 1 Roger: From what I've been hearing and visually seeing on the bus tour, I know they'll be filling the -
2 From what I hear from Gord, they'll also be putting the slimes inside the tunnels. I know it's straight
3 rock down to the bottom. But the tunnels are different because it's softer rock and sand. The concern
4 from Bobby it might seep through. Is there a study about that? I didn't know that. That's what I caught
5 from Gord. And they'll be blocking the two tunnels. Even if the water mixes with the water. That's just
6 my thought.
- 7 Natasha: That's a question for Gord. If the PK behaves differently in the tunnels and in the pit. Is there
8 a way you would test to see or would you just let science answer that question?
- 9 Roger: Can't really say if it's been done in a different place. If there's a study about that. Just to
10 visualize about that. It just changes my views a little bit.
- 11 Wayne: Someone mentioned putting the fish in. We have to determine what size of fish, what kind of
12 fish and how long we use them before we test them. And the amount of fish to go in. In winter time
13 you only have so much oxygen so there's got to be enough oxygen to sustain them through that period
14 of time.
- 15 Natasha: This didn't come from the TK panel it came from elsewhere, but one idea was to put a big cage
16 inside to keep them contained versus setting nets. The idea is to make it easier to catch them to test
17 them.
- 18 Wayne: If they're in a cage how are they going to feed? How big a cage do you need? I don't see how a
19 cage will help these fish at all. You'll still have to catch them out of that cage.
- 20 Thomas: I have kind of been listening to what everyone is saying. And what Gord said. And I have a
21 little bit of background in mining. Bobby has mentioned capping. On the first day I asked what is the
22 process - slimes first and then PK.
- 23 Natasha: You have to think of the slimes. You can't put a cap on it. If you put rocks on it, it will just flow
24 though to the bottom.
- 25 Thomas: Everything will be diverted through the mine workings. I don't know if there's any thought to
26 using geotextiles. Sheeting to help maximize minimize the slumping to make it more a solid. Testing will
27 it reduce the amount of slime and greywater.
- 28 Natasha: From a traditional knowledge perspective, the concern I'm hearing is the turbidity in the water.
29 If you're going to collect water for drinking, you're out on the land. If you can only find turbid water, is
30 there something you would do to make it good drinking water?
- 31 Wayne: If the water's a bit black you could put it though a nylon stocking or a diaper to trap some the
32 sediments.
- 33 Natasha: You got that? Wayne wears nylons when he goes out on the land.
- 34 Wayne: How do you know what I wear?

1 Louis: Once they put PK slimes in the underground we had the opportunity to go underground and
2 there's a big opening, are they going to put the slimes first. Are they going to cap it? How are they
3 going to do it? It would be good to get an explanation on that.

4 Natasha: If you go back to Gord's drawing, see right now this is all the PK. In the middle this is the
5 slimes. They're not going to take the coarse material, over in the jar by Myra. If I put some of these
6 rocks here and put it in it would flow to the bottom. So they're going to take these five tonnes of slimes
7 and put it in the pit. Then it would take 6-12 months of filling with water. What Joline explained
8 yesterday, if you have two buckets of drinking water all that heavy water is going to push down on this
9 processed kimberlite. Do you remember yesterday Gord drew this area as the area where fish live. That
10 was based on the TK Panel recommendations last time and also what the fisheries biologists say. Does
11 that help clear things up, I hope.

12 Louis: The dike, open pit, underground, I'm saying are they going to put water and the PK slimes into
13 the openings in the underground and once they fill it with the PK slimes would they cap the opening in
14 the underground.

15 Natasha: Just PK. If I don't let these guys go there will be no soup. No soup for you. We'll meet back at
16 12:40 and I think we'll need more time so we'll stay as a small group.

17 **BREAK**

18 Natasha: Any reflections over lunch on building a plan? You know the women are going from A to B
19 really quick so we better catch up.

20 Jonas: As long as it's thick enough. So no animals will fall through.

21 Natasha: Monitor the thickness?

22 Jonas: At least you have 4-5 feet of ice all around. So no caribou, muskox, animal won't go through.

23 Natasha: So far we have the recommendations to watch water for two years. Then put fish in the pit.
24 We also want the ice watched or monitored. Before we get started I forgot to ask who would be the
25 one to present. Maybe the youth.

26 Louis: When the woman come back, nominate Jonas do the presentation.

27 Natasha: If Diavik goes ahead with filling the pit what would you want to watch in the filled pit lake to
28 join it to Lac de Gras? How are they going to make that decision? What information do they need?
29 Based on TK.

30 Bobby: I would like to watch the temperature. We all want to see the thickness of the ice. As it is being
31 filled, maybe start watching the temperature at that stage. And watch the temperature when it is full
32 once it is filled up. I believe it will be some time for that temperature to be the same as Lac de Gras. I
33 would like to watch the temperature before breaching.

34 Natasha: What temp would it have to be before breaching?

35 Bobby: I would like it to be stable like Lac de Gras. Maybe it will get as thick as Lac de Gras. Then maybe
36 it will be breached.

1 Natasha: I wonder if temperatures in smaller lakes are different.

2 Bobby: Smaller lakes are held by permafrost. Under the lake. What I was seeing, the coldest pond you
3 could find are on top of the eskers. All those eskers they're all permafrost all the way across. The
4 temperatures are changing in all of those areas and we're seeing a lot of cave-ins. Eskers caving in.
5 Every sandy area that we have, they're all permafrost below and they're giving way because the
6 permafrost below them are giving way. They're drying up. Grass is growing on those beds where there
7 were lakes and ponds. These little ponds are held by permafrost.

8 Natasha: What do others think about this idea. Watching the temperature before breaching the dike?

9 Bobby: And also once that temperature is the same as Lac de Gras I'd like to put those fish in. Once the
10 temperature's the same.

11 Wayne: When Gord was in here he drew a line where the permafrost was. And that's on the island.
12 There's permafrost on the left hand side and none on the right hand side. So maybe under Lac de Gras
13 there is no permafrost. If there's no permafrost here and no permafrost there how would there be a
14 difference?

15 Natasha: Bobby has come up with a good idea before breaching the dikes. One is temperature. One is it
16 tastes good.

17 Louis: The dikes and open pits that exist, it's all been under water before so when we put water in and
18 breach the dikes, the water will level off and enter the lake where I'm talking about where they were
19 building the dikes it was all water, once they reach the dikes the water would probably level off with the
20 lake. So in that manner there was once water there and they took the water out and after that they
21 started building the open pit. So once they built the dam and extracted the water that's when they took
22 out the ore. That was the process.

23 Natasha: So what we've heard so far from testing the water is that you want to know the colour is not
24 too turbid. You want to watch with your own eyes. You want to check the temp and check the ice
25 thickness. Meanwhile wait to put the fish in and see how they cope. You want to test the fish and see
26 what they're eating. Check their stomachs for bugs and look at the health of the sediments. And how
27 do you decide once you look at the fish how to breach the dikes?

28 Wayne: We have fish inside the hole and then you leave them there for awhile and go to test them.
29 Test the fish in the hole with the ones in the lake. See if they're the same. If they are, you can breach
30 the dikes. Otherwise you will have to leave the dikes whole.

31 Natasha: So walk me through this. What are you going to be looking at to compare them? You will have
32 to pull a few of them apart and check their livers, hearts, kidneys, bladders, just like at the AEMP.
33 Wayne, what about the form that we use at the TK Aquatic Effects Monitoring program?

34 Jonas: He doesn't eat fish or drink tea so how does he know? Sunday I pray for my friend. You want to
35 know the difference between the lake. On the big lake it'll be different colours. When you fish on the
36 big lake and you fish on the inland lake they're different colours. Inland lakes they're warmer so they're
37 different colours. In the big lake it's colder so it's more brighter.

1 Natasha: Would that apply to the pit lake or is it going to be different. You are nodding that it's going to
2 be different.

3 Jonas: It'll probably be warmer.

4 August: Jonas was talking about dark and light fish. When you see the light fish, they're taking their
5 jackets off.

6 Jonas: Just like when you take your clothes off at the beach and you get dark.

7 Bobby: The reason for the temperature I'm worried about is that PK and slimes are I'm wondering if it's
8 going to affect the water on top. The slimes and PK have chemicals in them. Maybe they're going to
9 change the temperature on top where we're going to keep the fish. Filling it slowly and watching it from
10 the bottom. What are those how are those going to affect the good water on top. Because we have
11 that PK and that slimes on the ground. How is it going to keep watch the temperature on top. If the
12 slimes and PK are keeping the temperature warmer on top you're never going to get the same
13 temperature as the big lake.

14 Natasha: What I'm hearing is you really want to know what the water looks like in the pit. When you're
15 testing the water, you want to take temperature from all different depths.

16 Bobby: Maybe 10, 20 feet or so see the temperature change. Including the PK and the slimes. What
17 temperature are they going to be in once you put them in. I'd like to see the temperature before we
18 start to put the water in. I'm really curious what temperature they're going to have.

19 Natasha: You've also tested the colour. Someone mentioned the smells.

20 Bobby: The pit and the PK are going to have different smells. The ammonia. All this manmade stuff
21 that's already in the pit it's going to affect the smells of the clean water that we want on the top.

22 Natasha: One thing I'm hearing about fish is them swimming and coming in contact with the PK. We're
23 told the weight of the water will keep the PK down, far away from the fish. Is there an interest in
24 watching where the fish go in the pits? Maybe tagging the fish. It's like collaring caribou. To see their
25 movements in the pit. To give you some confidence that they're not swimming down deep here?

26 Roger: I just want to add if they don't put the fish in the pit to test it for two years, before if they breach
27 it by the map it says there will be five breaches. How wide will they be. What's the method of
28 breaching? Before they breach it what will the water quality be? I want to see how the flow will be.
29 Like as before, how the water quality will be once it's breached, after it's breached. Will it affect Lac de
30 Gras. All of the water flows to the Arctic Ocean. My other thought is about the fish to monitor the fish
31 somehow if they do go inside the pit and if they use the food how if they'll get sick and reproduce. Just
32 like monitor and yeah.

33 Natasha: Tell me what to write. Will water quality in pit lake affect water quality in Lac de Gras.

34 Roger: Before and after. See how the water quality is, is it drinkable? And will it affect the water quality
35 in Lac de Gras will it level out?

1 Natasha: One thing I wanted to explain, on the papers you see the pit before the breach and after the
2 breach. So when they put the breach in they can do it so that fish do go back and forth freely or they
3 can breach it so fish can't go back and forth freely.

4 Louis: When you put water into the open pit they have to test the water before they breach the dike so
5 once they take a sample and make sure it's safe that's the only way they can breach the dike. And if
6 they test the water and they're not satisfied it should be mixed with Lac de Gras. If the water is not
7 good then we'll test the fish as well. That's the only thing I have to say.

8 Natasha: Are you saying that you don't think the dike should be breached?

9 Louis: Before they do that, they should test the water.

10 Natasha: If you're the boss to test the water before they breach the dike and you take Jonathan, Roger
11 and Regan to test the water, what are you going to look at?

12 Louis: If the water's contaminated they'll identify it by testing the water. Once the water is clarified and
13 once they breach the dike and the water would flow back and forth between Lac de Gras. That was
14 mentioned in past meetings. So once they breach the dike it would probably come back to Lac de Gras
15 level.

16 Wayne: I think that not only tasting the water but also testing it scientifically. Get it tested out.

17 Natasha: For sure the scientists will have to test the water. All that's going to be happening. But this is a
18 chance to say how would you test it. Would you just want the scientists to test it?

19 Wayne: If the scientists say it isn't good and then you drink it, it might do something to your system.

20 Natasha: Do you make tea with it or do you drink it?

21 Wayne: No tea.

22 Natasha: I forgot you don't drink tea. Or coffee. Or both. We like that idea.

23 Louis: At Colomac I used to attend meetings there while reclamation takes place. There's a lake that's a
24 fair size while they were cleaning up the mine site they open up the area where water would seep into
25 one area and sometime during the winter also the scientist that was there tested the water with us the
26 water cleared up so he went ahead and drank the water. So those things are taking place and I just
27 want to share that story with you.

28 Natasha: I don't think Gord mentioned this. There's a few ways to breach the dike. There's one way, so
29 water and fish could go back and forth. Second way, only water will go back and forth. There's ways to
30 break down the dike so only water flows. So do you want fish and water to go back and forth or or just
31 water to flow?

32 August: If you don't want fish to go back and forth, you got to block it.

33 Natasha: You're right they would block it so fish could go back and forth. Gord could explain it. You're
34 taking care of fish and water. You can decide. You can put forward a recommendation.

1 August: You mention blocking I got confused. Only scientists know. For me, they're living in different
2 world under the water. We don't know what they eat under water. It's hard for me to know how the
3 fish going to live. That's a problem I got in my head. Thank you.

4 Wayne: I didn't know about this business blocking the fish going back and forth. According to Gord
5 those pits all together don't even amount to 1%. So why don't we have the fish stay out in the open
6 where we know they're safe and just have the water go in and out.

7 Natasha: So Jonas said earlier today that the community members want to be involved early to guide a
8 process. So even though the plans are made - there's shoals and reefs and habitat all around the pit -
9 you can still provide that recommendation that Wayne has given just to allow water to go back and
10 forth. Part two is that DFO requires that when you take away habitat in one area you have to replace it
11 somewhere else. If they take it away here maybe you want to make habitat in your community or
12 maybe somewhere else in Lac de Gras. It's important that you know you have that chance to make that
13 recommendation now whether water goes back and forth as well as fish or just water.

14 Wayne: You say that DFO, if you take away habitat somewhere else does it have to be on this same lake
15 or somewhere else within the Northwest Territories?

16 Natasha: You don't have to do it all in one area. You could do three small projects. How do people feel
17 about that? Jimmy what do you think? I know you have a lot of fish experience.

18 Jimmy: It's better off somewhere else instead of close to that. All I know when I catch it I know.

19 August: Nothing to say about fish.

20 Bobby: There's conflictions going on in my mind again. Every mine wants to put it back as clean as
21 possible. If they do take away this habitat. It's conflicting in my mid again. Every mine wants it as clean
22 and pristine as possible. It will never be pristine again. Because it's a pit and all those slimes. It's hard
23 to think that way because you already destroyed this part. It is already destroyed. Because you're
24 putting your slimes and PK. That's garbage. That's not pristine and close to the habitat that was there
25 before the mine was open. And I didn't really like what DFO said. If you take one away and create
26 another one that's destroyed already. You want to create something. No. They want it pristine. They
27 want to open this mine. They want it as pristine as possible. That's not happening when you're putting
28 slime and garbage in the bottom. That's not pristine. We've always thought that way in the beginning.
29 We thought the mining company would put it back as clean as possible. Creating it somewhere else
30 that's not putting it back to what it was.

31 Natasha: It's a fisheries regulation. You don't want it destroyed in the first place but the fact is it's
32 destroyed. This is a way DFO wants it. It is a better than nothing option.

33 Thomas: Okay, so we're going on a lot about fish habitat. But it's not just fish. We got ducks and geese.
34 They eat from the bottom. So whether they breach it or not we still have to have clean water.

35 Natasha: Whether caribou are trying to drink the water. The panel advised that the animals are smart
36 and they will smell the water. In a last panel we recommended already for watching behaviour. For
37 that reason, we want to make it drinkable water quality.

1 Thomas: In terms of animals drinking water I've already seen at other sites. We got to think about all
2 the wildlife.

3 Jonas: I like Bobby's idea. That pit is already destroyed. I don't think fish are going to survive in there.
4 Fish knows. Wildlife knows. It'll be tough to live in there. Maybe we shouldn't let fish in.

5 Natasha: Can I see a show of hands of how many don't want to let fish back in?

6 *Unanimous show of hands*

7 Natasha: I see a recommendation coming my friends.

8 Louis: Breaching the dike, not putting the fish back. Once the dike is breached fish are going to want to
9 come back in the area. In the tundra the ice builds up very thick. Or if the ice freezes the ice is going to
10 freeze to the bottom of the lake. If the dike is breached the water won't be allowed to flow back and
11 forth in the winter time.

12 Natasha: Just to wrap things up we have a bit of a plan. Watch water after PK added for two years.
13 Watch fish - this is if fish are allowed to go back and forth but what I'm hearing is we don't want fish
14 going into the pit lakes. So this will be the recommendations, build the dike so the fish can't pass.
15 If...watch temp, test fish, only then when they're okay would you breach. With water is you would want
16 to test turbidity, colour, watch with your own eyes from the bottom as it fills which means collect
17 samples all the way up through the water column, monitor the ice thickness, water won't flow between
18 the two, learn from scientists that the water is drinkable, then once drinkable, do a taste test to test if
19 it's good. If good, then you'd breach the dike to let water back and forth. Did I miss anything?

20 Louis: We say that we won't allow fish to move back and forth but the fish would go as they please. For
21 example it was tried with the caribou to deter them from going on place that are on contaminated. If
22 we do that with the fish then the fish won't go back and forth. I just want to mention that.

23 Natasha: Louis I'll add that we can't deter where fish go unless you have a physical barrier. Any last
24 thoughts.

25 Roger: We're talking a lot about fish but wildlife, we can't tell 100% monitor every animal, there's siksik
26 (ground squirrel), foxes, birds, if they're siksik, and he drinks the water, he's prey, the fox will eat it. Will
27 they be monitored? If they get sick, what action will take place? Because of the food chain, the prey will
28 be eaten than passed on to the bigger animals like the bears, wolverines, foxes, falcons. And they start
29 to get sick because of the chain reaction. What action or what will happen if they do, what's the steps
30 afterwards when that happens? It's just a thought.

31 Natasha: Thanks for bringing that up. That's a challenge for sure.

32 **BREAK**

33 Group Discussion: Women's Presentation

34 Joanne: Janelle and Shirley have offered to present the results of our work.

1 Janelle: So our focus was not on the PKC itself it was the water that would potentially go in to it. Some of
2 things we discussed we all agreed to put the slime in the pit. We aren't giving our garbage to someone
3 else, not building larger boulders. We want to bring water in and let it settle for a minimum of 2 years.
4 Before we bring water in, we want to create fish habitats for the potential use of fish. We aren't saying
5 they are coming in, but they have the potential to come in. **And then we don't want the dike open until**
6 **the panel is satisfied and we know the water is safe for habitats and animals.** Then we would let the fish
7 enter naturally, and not forcing them. Option for flowing in through the dikes. And continuous
8 monitoring, including the TK panel into the aquatics monitoring program. We had questions on how
9 often should we monitor the water, the fish, the spawning areas. Our question for Gord is where are the
10 current spawning areas on Lac de Gras? We want that baseline information before decision making. So
11 we went back to question 4, If Diavik goes ahead with refilling the pit, what would you want to watch
12 during closure to know that it is good? Regarding water? We broke it up in to two parts. Water and fish.
13 We would want to monitor water temperature, the possibility of transplanting vegetation from the lake
14 and to make it look consistent, a little bit of that prior information, I don't know if the new panel
15 members know, but both pits were under water, that was not land, so the goal is to bring it back as
16 natural as you can. Monitoring water temperature, clarity, oxygen level before and after the dike is
17 breached and we need to see how the water looks and tastes like before and after. Joline had added
18 microorganisms, algae and to monitor the water at different depths, because that is 150 meters of
19 water to be tested. We really liked Bobby's idea of cameras to monitor the fish in the water to see if
20 they are flowing into the area. We aren't forcing them, the cameras can show if they are all actually in
21 the area. I learned about all different seasons, it was a great focus group. We moved on to fish. We
22 utilize fish camp here and we will expand it so we can test these areas as well. We wanted to do a
23 baseline study to monitor near the mine before we open the dikes to say what does the fish look like,
24 baseline stuff so we have something to compare it to. After the breach we want to see if the fish are
25 moving on to the pit. And then question again was the motion sensor and checking the fish at the lower
26 level. So we didn't focus too much on the PKC because that is already finalized and that was a plan in
27 1998 I believe so we really did focus the question at hand and what we wanted it to look like. We would
28 make it natural as possible and bring it back to the way it was so that animals can use the area.

29 *Applause*

30 Joanne: Any questions?

31 Joline: I wanted to correct you, in 1998 they didn't approve the PK back in the pit, but then our group
32 decided it would be ok for it to be in the pit.

33 Joanne: Which we discussed for the first-time last year. Any other questions or comments? That note
34 about spawning areas, we wanted to know where Diavik has mapped that out from the past and we
35 want to know that to be aware of where those areas are will help us understand what to do with
36 habitat. Men's turn.

37 Group Discussion: Men's Presentation

38 Jonas: We also talked about the fish and here in the barren lands the land belongs to the wildlife and the
39 aquatic life, so doing samples of water and doing the study of the fish and the fish habitat, because it is

1 open pit area and we like to see the temperature of the PK being put under and also just think the water
2 for its temperature, turbidity, and keeping an eye on - sometimes different wildlife want to go in the
3 water so we have talked about these issues and when will we put water in the open pit? The water -
4 once we put water in the open pit because the open pit was blasted out so the water turbidity may
5 change, and how can we test the water by drinking it or - we talked about these issues. We would like
6 the water to settle for 2 years and then test it, and then if it is good we will put the monitoring station in
7 for 2 years and when we do the study of fish then we know the health of the fish and then we can
8 continue to do that, but that times because of the open pit that exist today the fish might not come back
9 into the area because of the extraction of the rocks and it has been disturbed so some of us put fish -
10 may put screens on any open spots we have on the dike just let the water flow back and forth and
11 monitor that for 2 years and then after we do monitoring for 2 years then we would like to do study of
12 fish before we put water in the open dike. There is other species of wildlife that roam on the barren land
13 and we don't want the wildlife to get injured when it is crossing over the pit during freeze time. And we
14 are still thinking of these things. And there is another discussion about not putting fish in the open pit
15 and have a minimum of 2 years, monitor the water if we add fish in initial fish it might not be good for
16 the health of the fish. If I forgot about stuff certain things than you can add to it.

17 Bobby: The reason we want to do all this is because the PK on the bottom might have an effect on the
18 temperature of the clean water on top. We want to monitor that PK or that slimes, how stable is it going
19 to be after we put it in there? And then watch in stages up to the breaching levels and see what the
20 temperatures is going to be for the whole pit because the open pit is manmade, and it isn't natural
21 anymore. We want to have the same temperature as Lac de Gras before we can put the fish in there and
22 because - and also the turbidity of the water is going to be really hard to tell if the temperature or
23 sediments are coming in from the PK and slimes that are down under there have an effect on the
24 temperature. We want to watch that very closely. And How turbid it is going to be after filling it with
25 water, the good water that we want to have fish habitat, where we want to create fish habitat. We want
26 that temperature to be the same as Lac de Gras which gives us a clue as to how the fish are going to
27 react to the pit compared to Lac de Gras. We don't want to put any fish in there right away, we want to
28 watch it. Maybe breach, and the reason for breaching the sides, and letting it freeze: we want that
29 oxygen to circulate in the pit, before you take the screens off. Just watch how the fish are going to react.
30 How the temperature and turbidity is going to react after filling it up. That is the reason for watching it
31 for at least 2 years. That was what we wanted to see. Maybe that way we can see how the water is
32 going to be after taking the screens off or before taking the screens off, how the ice temperature, how
33 the ice is going to be after it freezes and maybe when you breach that to a certain distance, how thick is
34 the ice going to be? We know how thick it gets, 8 feet or 10 feet, in Lac de Gras, so we want to watch
35 the temperature in the pit as well. Thank you.

36 Natasha: Any others want to comment on what we just heard? Anything missed?

37 Joanne: You had one idea we didn't consider and to put a screen in there for I don't know how long.

38 Natasha: Gord and I had a discussion because I wasn't fully understanding the idea of breaching a dike.
39 So there are 2 ideas. 1 is to prepare the dike so that only water can go back and forth. So it is physically
40 impossible for fish to go back and forth. Option 2 is to allow both water and fish to pass back and forth.
41 So in the men's group, we actually took a vote and they unanimously agreed if they had the choice, they

1 you would say, we won't let fish go back in, we would put effort in fish habitat - better somewhere else.
2 So as we prepare our recommendations this evening, it sounds like we have sort of 2 different ideas.
3 Maybe we can spend a few moments talking about this.

4 Wayne: When we first started discussing this, we split the group up here. We had no idea about how
5 these dikes could be built to breach the pits. So, we just learned it from Natasha here only ½ hour ago. I
6 don't know if the women's group knew this or not. Maybe it would have made a difference on how they
7 would answer.

8 Natasha: My understanding is it is still under consideration. So we can make other recommendations
9 but we don't know what decision Diavik is going to make.

10 Myra: So it was the original plan which was approved where the pits would be filled with water and it
11 would be connected back to Lac de Gras, which was a DFO requirement because we took out 1% of the
12 fish habitat in the lake. But we have heard through these discussions including the input from the EA
13 process, people are feeling uncomfortable breaching and letting fish can go back and forth. DFO has said
14 if that is what the communities want, the dikes don't need to be breached. The plans are still very
15 flexible, someone asked about the amount of breaches, how wide are those, how those get decided.
16 The width was decided by Transport Canada to allow boats to go back and forth and has nothing to do
17 with fish access. Because it is navigable water we need to allow boat access to have. But stepping back,
18 we can spend that money elsewhere.

19 Natasha: So I am just wondering if the women had that detailed information whether you feel like
20 option 1 would be not to encourage fish or not breach it such that they could not go back.

21 Roger: I want to touch up a few things. In our discussion one of them was about the wildlife, and the
22 birds, geese ducks, falcons and all, if 2 years of the water being in the pit, cause we cant 100% monitor
23 the wildlife and there is animals foxes, wolverine, bears, and with the food chain - and rabbits - if they
24 drink the water during those 2 years, if they get sick, you know if the food chain, if they do get sick, what
25 will happen after that and what action will happen if it is possible for that to happen? That is what I
26 wanted to touch upon.

27 Thomas: Natasha I think I had a bit of understanding. We had a vote on do not allow fish through dikes
28 which was unanimous. You mentioned after that the DFO gave another option of creating another fish
29 habitat somewhere. I am not sure if we voted on that. I thought Wayne thought it was a good idea but
30 we didn't talk about it during the group.

31 Natasha: No we didn't talk extensively about that because this is a moving process, my thinking was to
32 take the temperature to get a feel on how people were feeling about the idea of rather than as Myra
33 says, focusing time, energy, money on making these areas key for fish habitat like the proposed fish
34 habitat in these handouts. That instead, DFO may agreeable to communities creating alternate fish
35 habitat elsewhere. My sense, Myra, is that they may be open to that especially if it comes from
36 communities, but I didn't want to over promise or over deliver, etc. I also talked a little about that idea
37 about respecting animals and trying to get a feel from people if letting fish back in to the pit felt like the
38 most respectful thing for fish.

1 Nancy: Thinking of fish, putting them back in, well the fish get hungry there and they would know where
2 to go eat, we don't need to create food if that isn't going to happen. They will just go anywhere where
3 they feed, because any animal do their own little work. We don't have to worry about them, only if the
4 water we know they will be clean. We don't need to worry about the fish.

5 Joanne: I would like to hear more from elders about the idea that the men provided about fish not
6 entering the pit.

7 Shirley: Well the dikes would not get breached unless it would be safe to do so, if the water was
8 drinkable. That would be the only time the dike would be breached. If it is safe enough to open up, why
9 wouldn't you allow the fish to come and go? And maybe we don't need the fish habitat here if it would
10 serve the communities better. Maybe if they aren't edible or don't taste as good as a deeper lake near
11 their community would, I don't see a reason why we would put those gates from stopping fish for
12 coming back in. It doesn't make sense for them to block them from it if it wasn't safe in the first place.

13 Jonas: Reason why we don't want fish in there is someone might go to, example, if there was a
14 graveyard, would you want your body in there? It's already damaged - cracks and if there is rain putting
15 water, it is going to seep all over, so you know that smell of blasts and all that sediment stuff. You put PK
16 in the bottom it might come up, I don't think fish will come up and eat the food. Like Louis said, fish is
17 always looking for food. They eat bugs, they eat everything, are we going to have that down there? I
18 don't know. So those are some of things we are wondering about. The damage is done there, the water
19 is dirty they might not want to go there. So there are a lot of reasons.

20 Joanne: Part of the thinking during the women's group is that fish will go there if they know there is food
21 there. They won't go there is there is no food there, no bugs for them, so the thinking was that the fish
22 will know and they will make the choice themselves. Once we are satisfied the water is clean, so that
23 was the rational there.

24 Janelle: if it is good enough for the water to flow through why isn't it good enough for the fish to flow
25 through? It was their natural playing grounds one time, we took it away, but now we are giving it back to
26 them. The water is already flowing back now, so if it is good enough for the water, it should be good
27 enough for the fish.

28 Mona: The fish could smell if they don't like the water. I don't think they will go in there. If there is no
29 food, even young people now a days know there are lots of fish, they can smell the fish, when there are
30 lots because they spawn together, but if it is clean water, if they like the water they will go in and out. I
31 don't think they will go in if there are no food, no spawning place, no plants. That is my thought.

32 Louis: We've been talking about the dike. I have mentioned this before, once we fill the dike with water,
33 probably we would have to fill the dike with fish habitat and when we put the PKC underground and put
34 the water into the open pit, and fill it to the same level as Lac de Gras and monitor it for 2 years and test
35 the water if it is good enough, and breach the dikes. In the tundra the thickness of the ice is very deep
36 and that area once was open water, and now it is a dike, and if we put water back into the open pit and
37 breach the dike you know the fish will swim back and forth and the current will move back and forth and
38 this is what I mentioned before. It would be good for the fish because they used to swim in that area. It
39 is in their environment. So once the water is clear enough and safe and they can breach the dike, and I
40 just wanted to share that with you.

- 1 Joanne: Ok so we are running out of time to get ready for the bus. How do you want to deal with this?
2 Do you maybe - what we could do is ask Gord to provide us with further information if we think that
3 could be helpful. I'm not sure what you have in mind.
- 4 Natasha: I am just thinking we have some really great recommendations here and I think we there was a
5 lot of similarity between the two groups in terms of what needs to be watched. Test the water, the
6 plants, the animals. So I think we have enough to work with for sure to come up with some
7 recommendations, and if the dike is going to be breached to allow fish to be able to go through we have
8 recommendations, and if the dike is not going to be breached we have recommendations.
- 9 Joanne: I am wondering if we can keep that open for another point? We don't have to make that
10 decision now. We can ask Diavik to have that option open so that you are comfortable making the
11 decision one way or another. There is time, they don't have to make the decision about breaching and
12 how they are going to breach now, so maybe we can keep that open?
- 13 Myra: I am really not trying to push this, but there was the timing in terms of trying : we would start
14 putting boulders in the anticipated fish habitat area starting in the spring. If we know for sure if there
15 was no breaching and having fish going back and forth, that could change things.
- 16 Natasha: Maybe Gord can come clarify, but the other thing to think about you are talking about the
17 money and the effort, if there is one pail of money, that pail money either creates this fish habitat, or if
18 the decision is, 'No we don't want to encourage fish to come through here, we will take that pot of
19 money and decide to enhance fish habitat closer to our communities or another place in Lac de Gras.' So
20 if we don't know if - it's a tough one, but that is where we may need Gord to make that decision.
- 21 **BREAK. END OF DAY 3 NOTES.**

Traditional Knowledge Panel Session #12: Pit Closure Options Day 4/4 Notes

Date	Monday, September 16th, 2019
Time	8:30am – 1:00pm
Location	Diavik Diamond Mine
Handouts	1. Traditional Knowledge Panel Session #12: Recommendations
Participants	Bobby Algona (Kitikmeot Inuit Association) Regan Adjun (Kitikmeot Inuit Association) Nancy Kadlun (Kitikmeot Inuit Association) Roger Catholique (Łutsel K'e Dene First Nation) August Enzoë (Łutsel K'e Dene First Nation) Jimmy Fatt (Łutsel K'e Dene First Nation) Shirley Coumont (North Slave Métis Alliance) Wayne Langenhan (North Slave Métis Alliance) Janelle Nitsiza (Tłı̨chɔ Government) Louis Zoë (Tłı̨chɔ Government) Therese Zoë (Tłı̨chɔ Government) Jonathan Mackenzie (Yellowknives Dene First Nation) Rose Mackenzie (Yellowknives Dene First Nation) Jonas Sangris (Yellowknives Dene First Nation)
Facilitators	Joanne Barnaby (Thorpe Consulting Services) Natasha Thorpe (Thorpe Consulting Services)
Observers	Mona Tiktalek (Kitikmeot Inuit Association - Interpreter) Bernadette Martin (Yellowknives Dene First Nation - Interpreter) Peter Huskey (Tłı̨chɔ Government - Interpreter) Joline Huskey (Tłı̨chɔ Government - Staff) Thomas Lafferty (Łutsel K'e Dene First Nation - Staff) Janyne Matthiessen (EMAB) Myra Berrub (DDMI - Principal Advisor, Communities and Social Performance for Closure) Gord Macdonald (DDMI - Principal Advisor, Sustainable Development) Gord Cumming (DDMI - Environment Technician) Grant Stewart (DDMI – Acting COO) Ryan Dempster (PIDO Productions - Sound Technician) Emma Wilson (Thorpe Consulting Services - Transcriber)

Presentation: Draft of TK Panel Recommendations for Discussion

Gord M: Grant has the responsibility for doing the work. All the great ideas you come up with ends up being his job.

Grant: Good morning everyone. Thanks for coming here for the weekend. Hopefully the weather wasn't bad. Thank you for your input and ideas, like Gord said, we really need advice and we welcome the input on how we should close, how we should do our remediation. The vision of my team is do as much closure now as we can, and when the mine ends in 6-7 years, it is a nonevent because all the hard work is already done. It would be nice to understand how you feel about how we close the dikes, is there fish habitat - we are open to all those ideas. So the more you can help steer us in the direction you'd like, the better. We know what to do. We have a team of people, we have equipment, we just need to go in the preferred direction. A lot of people have opinions but I think your voice and opinion has a lot of weight, and people listen. So the more clear and forceful you can be with your ideas to us the better. We really appreciate the guidance, and we want the guidance. Any questions on what you've seen or future?

Joanne: We are just gearing up to get down to our recommendations for this session, so people are a bit preoccupied. Any questions, and comments?

Bobby: Thinking about that PK under the ground again. Can that be monitored for temperature at all times after it has been put down in that pit, after it has been settled down? Maybe put some monitors down there if you can to monitor the temperature and what the slimes are maybe doing down there, maybe they will change the temperature down there. I would like it monitored. And talking about the temperature in that pit yesterday it got us to thinking about the monitoring and the slimes and the PK under there.

Grant: I think we can because we do have temperature sensors in the earth in different places around the pits, and so it is not out of the possibility that somehow we get them down into where the fine kimberlite, where the fine crushed rock is stored. The water will decant off and will be pumped out. It will be like a huge beach but it'll be like sand filling in the voids. We think it will just be packed in and settled in the very bottom of the underground. It should make its way down to the deepest areas of the mine. And that is where it came from and it would be nice to have it back in there and yes we could find out what its temperature would do. I would imagine – who knows – we don't know what the whole reclamation is, do the tunnels somehow get filled, what happens to them? I'm not sure, I know all the infrastructure will be removed, all the pumping will be removed. So it will have to be a separate instrument to get the temperature. We have done it before so I don't see why we couldn't do it again

Bobby: The two pits are going to be watered at the same time, and the water is going to fill both pits together there. I would really like to have monitors somehow down there to have the temperature - what it will look like after the PK and the water has been put in there. The reason, there is the ice in the wintertime, fall time, how thick it is going to be after the temperature might have changed. Maybe the temperature is going to be changing and the ice in that pit might somewhere be a little thinner than the main Lac de Gras area. That is what I would like to keep an eye on for filling up and for the duration of the time you are going to be here.

Grant: That would be interesting to see what would happen to ice. We usually get 6 feet, 7 feet up here, so that is very thick. Yes, will it be thinner if it is confined versus less confined. We can certainly do samples every winter, do many core hole samples in the ice, see what the depth of it is in different areas of each pit and try and map it out, maybe get someone out on the lake itself within some area, try and make a conclusion. It comes to be a bit like statistics – the more data points you have the more you can believe what you are seeing. We would need to get quite a few samples to make a conclusion. We could do a few years in a row and see, does it change year by year, or what does it do. That is the only thing we can do, get enough data.

Joanne: Any other questions or comments? Well thank you very much coming in.

Grant: It is good to get the same people back year after year.

Joanne: We have been fairly consistent and there is a desire of that from the group and the communities.

Grant: Ok thank you.

Myra: He is the acting CEO.

Natasha: Just before we get started, are there any questions on what this morning will look like? For the folks that are here for the first time, what we do is we pull together both guiding principles and strong recommendations that come from the TK panel and are then presented to Diavik. We go through each one word by word to make sure everyone is comfortable with it. Once you give the thumbs up, Gord comes in and we present it. [*1st slide on Guidance – Monitoring*].

Joanne: So remember it is a statement that is coming from you, so you need to feel comfortable with the wording of it.

Shirley: Reading that second sentence, it sounds like we are carrying the monitoring out? The native organizations, not Diavik?

Natasha: The thinking behind the second sentence is that 1) Diavik has to do their own monitoring, their own watching, in accordance with the regulations of running and closing a mine, but on top of that, there are watching programs, monitoring programs, that bring

community members, TK panel members and others on the land, in the boat, seeing with you own eyes. This watching helps you feel more comfortable and understand what is really happening out here rather than just reading report results.

Shirley: But if they are scientific, we will probably need someone else to carry them out?

Joanne: In the women's group we talked about expanding the fish camp, that includes both science and traditional knowledge, and a lot of communities, as they are evolving their guardianship programs. They are looking at bringing in both knowledge systems as well, so that idea is evolving. It is not clearly defined yet. So you will find as we get in to the recommendations sections we speak specifically about expanding the aquatic effects monitoring program to include the panel, so that'll incorporate both.

Shirley: Thank you.

Natasha: We put the word "monitoring" programs here, I know people use watching sometimes. Would you feel more comfortable with the word "watching"?

Janelle: I feel if you use the word watching, that we are just watching with our eyes - we are using more than just our eyes. We use all our other senses, touch, feel, so I like the word monitoring.

Natasha: Ok I see nods around the room, are we ok with this?

Yes

Natasha: [*2nd slide guidance – monitoring*] Of course you have been watching and monitoring your lands and water since the beginning of time, but now with the mine here you are making formal monitoring programs part of your life. Are we ok with this one?

Nods

Natasha: [*3rd slide Guidance – Monitoring*] So Roger, this was your idea specifically. It is one thing having monitoring programs, but what happens if you find something you are not comfortable with? A sick fish or sick fox, you need a plan in place to test that fox or test that fish to find out what happened. That is the idea here we are trying to convey. Does that make sense?

Nods and hands up

Natasha: [*4th slide Guidance – Monitoring*] Seeing nods around here. Ok. Should I add non-evasive and respectful or leave as is?

Janelle: Yes, add respectful.

Natasha: August used the word 'forever' for monitoring, whether it be Diavik, you, government or somebody else. What we heard is that you always want the pit lakes to be watched. Did we get that one right? This is a difficult one because Diavik at some point has to walk away and not have that responsibility, but this is a guiding principle, this is still something we heard, so we are including it here. [1st slide Guidance – Ways of Knowing] We are trying to show that animals are clever, but sometimes you still find a sick animal. Are we ok with that one?

Nods

Natasha: [2nd slide Guidance – Ways of Knowing] Are we ok with these 3?

Janelle: What do you mean by productive? I thought production was happening, as in mining?

Natasha: Good point. We need to re-write this. So in this language, this was coming from Wayne and some of the elders around re-vegetation – we can't just throw the fish back in the pits, it's going to take time to make it a hospitable environment.

Janelle: I see productive as mining, not for the animals, but 'productive' in a mining sense.

Joanne: We can use language like 'returning to the natural state'. Might be better.

Nods

Janelle: Maybe we can say 'return to a natural state' because it isn't going to return back to the natural state.

Natasha: [slide 8] Nods around the room?

Nods

Bobby: Sometimes we are not always getting the tools we need to think about before we come up to these camps. If Diavik could give us what we are going to be working on, it will give us some time to think about it before we come up here.

Natasha: What would that look like? Agenda?

Bobby: Yes that is what I was thinking of. The questions we are going to be asked.

Natasha: One of the challenges is that that does get sent to your organization before you come, and maybe that is a reminder for when you get those calls to come to the TK Panel, that you go in and physically ask for an agenda.

Bobby: Sometimes the organizations don't do that, sometimes we don't get these. Maybe individually of us, there are 3 or 4 of us, maybe we could have them.

Natasha: Maybe it is a reminder to double check, but at least you know that stuff is there a good week before, ideally. So double check before you get on a plane. The next one, I added the word again, again the TK Panel continues to want to meet more frequently. Heads nodding again.

August: Two meetings a year now, starting next year or when?

Joanne: These are recommendations we will be presenting to Gord later this morning so we want his response on that. We don't know, that is up to Diavik.

Natasha: So this last one we put up here so we could discuss it a little bit, someone made this recommendation to me in a side conversation: New people who attend the TK Panel for the first time must look at previous reports before participating. What was suggested to me when there is a new member they might go into their organization office, ask to look at some of the previous reports, and even though the reports end up being super thick, the first 10 pages are the most important, people could quickly read those and get an idea of what the panel is about. Again, this came up as a side conversation so is this something you would like to put forward? I am seeing one nod, what do people think? Everyone in favor? [*Hands up*] Ok good stuff. The next section will be the formal recommendations that Diavik will have to respond to.

August: Yes, like I was saying we come from all different communities, we all want a couple new youth. 1 girl and 1 boy from each community. That is for the future, thank you.

Joanne: [*slide 10*] When we broke into two groups, we started going in separate directions a little bit so we want to review these recommendations to see if we can bring people back together again. So this first one, I think both groups agreed on that one yesterday. Everyone good with it?

Nods

Joanne: [*slide 11*] The second one, everybody good with that?

Nod

Joanne: [*12.4*] The third, obviously we aren't going to be here for the 6 months, but we want at least one TK Panel session held at that time [the pits are filled with PK].

Shirley: Two - that would be two separate occasions.

Joanne: Ok so we want to be here for both. Which means two separate panel sessions. [*slide 12*] Everybody good with that?

August: Yes

Joanne: [*12.5 reads aloud*] Good?

Nods

Joanne: [12.6 reads aloud]

Bobby: Can we also put ice thickness in there somewhere?

Natasha: Yes, good point.

Joanne: We will add that in. So again, that is in and outside of the pits.

Natasha: A reminder we had 2 formal recommendations of watching wind in the pits from TK Panel Session #11 so this builds upon those 2 recommendations as well.

Joanne: [12.7]

Shirley: Isn't that a repeat?

Joanne: Yes, that is the same as before. We can take that out. [*deleted 12.7. New 12.7 The TK Panel would like Diavik to test water in the pits...*]

Wayne: I just don't see how adding something to the water, be it tea, hot chocolate or coffee, is going to help with the taste of the water? It masks it as anything else, so it should be pure water.

Joanne: We do that too at the fish camp, we could add it to the list. This is one of the things we do is test straight water, that has not been boiled, straight out of the lake. So we do say using the same protocols as we do at the program, so obviously that is in there.

Natasha: Every time we get ready for the monitoring program, the next one is 2021, we review the proposed testing methods and tasting methods. So maybe that would be a time to talk about it?

Joanne: Does everyone want to include drinking the pure water straight from the water source, not just making tea with it?

August: Next time you go to the fish camp you aren't going to be drinking anything but water Wayne. Those words came back way back from when we started. Now it is going on the wall, all those words are coming out of what we had said, so I really appreciate it, so thank you.

Nancy: It could be your choice not having tea or water because I only drink decaffeinated tea, so I only want the water. [*Laughter*]

Wayne: People can drink coffee or tea or whatever, for the initial testing of the water it should just be clear water, no additives to it.

Janelle: I think the idea behind the tea for tasting is because we drink snow water back home, and when you put the tea bag inside there is no gloss on top, but when you use tap water, there is a film, so I think that is a visual for the elders to see that. That is just what I know.

Mona: Janelle just said what I was thinking about. Sometimes we are told we are to boil our water. For us people some of us don't drink the tap water, we use ice or snow. I wonder how far they could test the water, will they be testing it all around, or many miles, how far, if it is going down to the river? This is our water, that is why.

Natasha: Maybe during the break I can pull up the map to show the aquatic testing sites they are required to sample.

Nancy: Before we left here there were a couple ladies who were testing our river in Kugluktuk. There is always someone testing the river. It doesn't have to be Diavik, but there were some ladies testing our river back home.

Joanne: Ok, everyone ok with this now?

Nods

Joanne: [12.8]

Louis: Talking about the water sampling and, where you had to test the water before we drink it so we know there is clear water, and the water doesn't travel, and they travel by the lake and shore so and after that water goes out in to the middle of the lake and the animals, they go down wherever there is water, caribou drink water, and maybe the water is not good, I am sure all the animals would get sick, so there needs to be monitoring of the water. And the slime, the PKC, that we are talking about, it is going to be in the open pit, how about by mistake they are going to go in the water, how is the water going to be?

Joanne: Thank you Louis. So what we are saying is that we need to make sure the water is good before there is any breach to the dike, before water can flow back and forth between the pit and the lake. So that is our main concern and if after 2 years, after they put the water in, and we are still not happy with what the water looks or smells, we can ask Diavik to hold off breaching the dike. It doesn't have to be done fast, we could wait a number of years, we could wait as long as we need to wait, until we are satisfied. If there is a problem with the water inside the pit, we definitely don't want that water getting out, so we would recommend it would not be released and allowed to flow back and forth. You good with that Louis?

Louis nods head.

Joanne: Ok, any other questions or comments about this one?

Bobby: That water, in case it isn't going to be drinkable for a few years, I'm wondering, maybe if they could have the water, run it through the water plant again and then put it back in the pit, maybe something to think about, because that might help if it the water is not getting clearer, and not getting as good as the lake water, maybe we could run through the water plant again and then put it back in the pit and see what happens to it, and make decisions after that.

Joanne: That is what we can ask Gord to see if that would be realistic. [12.10, 12.11] I discussed with Gord this morning the primary concern of letting fish in the pit where the PK is, and he said what about the second pit where there is no PK, how would the panel feel about the allowing fish into that pit. There is no PK, and it provides us an opportunity to get some experience with fish habitat building fish habitat in that second pit, A418. So I told him I would run this by you and see how you feel with that.

Bobby: To me that seems like a good idea, so that the PK and slimes are not going across. Maybe the piping will go there and change the colour and turbidity, and the temperature as well.

Joanne: Any other questions or thoughts? So if you are comfortable with that as an option, we can add it in to the recommendations. Some people are nodding, is everybody ok with that?

August: I don't really understand how it is going to work. Like you are saying the small one you are going to fill up with PK? So are you guys going to do it at the same time, the water? You are going to leave that for long? You aren't putting fish in there right away?

Joanne: That's right. But what Gord is suggesting is this is where the slimes are, both pits are going to be filled at the same time, but there is no way the water can go between them.

August: Both sides just monitoring for 2 years, one with fish or no fish at all?

Joanne: Right, after the water is filled, no fish immediately in either one. And if you decide if you want fish in this one, the one without the slimes, one to think about is if you want them to build the fish habitat, so once you are satisfied the water in there is good, then you could open the dike, you can breach the dike, and allow water to flow in and out, and at a future point after that, you could decide to open it up for fish.

August: So now I understand, so you're talking into the future.

Natasha: The other possibility would include enhancing fish habitat elsewhere, somewhere else in Lac de Gras, somewhere closer to the community. When I reviewed the notes yesterday, I'm not sure if we got a clear answer if people would like to see fish enhancements closer to the mine or see them closer to that communities. I don't think we have to make a decision on that today, but it is good to hear your thoughts.

August: The fish habitat you are talking about, you could do it right away, good to do it earlier than later so we know if it is going to work about.

Joanne: If they are going to do any fish habitat, they are going to do it starting this spring.

August: I would like to stand beside it and see the fish habitat they are building. We all want to see it, thank you.

Bobby: Can I just remind everyone that this idea came from DFO, if you can't fix one area, go to another area to create another area. That came from DFO, not from any of our groups, maybe to make themselves feel comfortable.

Joanne: Yes. By DFO law, Diavik is required to enhance fish habitat some place in the north. Where Diavik does it, is up to them, the communities around them, the panel, and ideally, we come to the same conclusion about that, and I'm not sure that doing the fish habitat here uses up all the requirements by DFO?

Myra: Because we took out habitat from the lake, the fisheries act requires us to replace it. That is where that comes from. DFO used to be quite restrictive that you had to do it at the location that was impacted, but as Gord said yesterday, they are becoming more flexible if the community wants to look at alternate discussions.

Joanne: Do we want to make that choice now, to build fish habitat in the one pit where there is no slime? August thought that was a good idea, Janelle thought it was a good idea.

Roger: The smaller pit will be filled, and what about the other pit, just pure water?

Joanne: Yes, nothing added.

Roger: Before breaching you will probably have to test the 2 waters and see if it is healthy or not.

Joanne: Yes both pits will still be tested for water quality, the difference is the one without the slimes would have the fish habitat built into it because they have to do that before the water is put in. They will monitor it, and at a certain point you can decide, we are satisfied with the water quality with the pit and want to open it up to fish.

Myra: Maybe just a reminder too, if the criteria we are trying to develop for monitoring will be regardless if we put PK in the pits. Remember this is all under environmental assessment, so it is possible this may not go ahead, but we still want the communities' recommendations on how to proceed.

Roger: Ok thank you.

Joanne: Are we ok with that one?

Shirley: I think it should be clear if they have to do the fish habitat by the spring, we have to be clear if we want it to be done. The wording needs to be definite now. I agree with 154.

Joanne: Ok number 12A, option 1. Do not allow fish passage through dike.

Shirley: From what I understand from previous recommendations, there will be no passage for fish for either of them until we know for sure. So it is conditional. So when you say no fish passage, it sounds final in that passage.

Natasha: This is where we need to spend some time talking because in the men's group they voted and it was unanimous that they don't want fish to come back to the pit that has PK in it. The women's group, on the other hand, said they would be ok with fish coming back, so this slide is honing in on both of those directions saying option 1 is do not allow fish passage through dike. Option 2 is honoring what the women said, allow fish passage. Option 2 is reflecting what the women said. Let me back up here a little. The men's group voted and said they didn't want to have fish to go back and forth, but if the group as a whole said they wanted fish to be able to go back in, they came up with how that could happen.

Shirley: We had an issue with contained water, you need the flow of water to survive, I don't think we agree with putting fish in before the dikes being breached, and we didn't know about the gates, but there would have to be water flow first.

Joanne: Just to add more complexity, I asked Gord this morning if they would be willing to consider 2 stages of breaching. So if they did the first stage, it would allow water to flow through, and not fish, and created the oxygen levels and everything we feel is needed for the fish to be healthy, would they come back and do another breach if we go to the point where the panel thought the water would be ready for fish. And he said yes. A few people nodding their heads, they are happy with that idea.

Janelle: I think because we were so focused on 418, we haven't even thought about the 154 pit as another place for the fish to go. We hadn't even discussed 154, so I think our group was focused 418 a place viable for fish to go through. I think the happy medium is 154 is an option for the fish, so I am ok not allowing 418 fish to go there, if we can create a natural state in 154. Gord should have told us this information a couple days ago. We hadn't thought of 154.

Natasha: What do the men think of that idea? Should we re-write this and just say, we don't want fish back A418, but we do want the possibility of putting fish back in 154 assuming water will be monitoring for the 2 years beforehand, assuming the habitat enhancements are done, so that we are comfortable with the quality of the water. Are we all on the same page?

½ hands up

August: We can't figure out what the women are saying. 2 pits in the water, one with the slimes and one with nothing, and in 2 years you put fish – why don't you put fish in both of them so then you will know? I know we said no yesterday, but then if we put fish in both and something happens in one, then we know.

Joanne: So that is yet another option. So August, with that idea, putting fish in both after 2 years, might be longer than two years, once you are happy with the quality of the water, you are saying you would put the fish in the pit from Lac de Gras just to test the fish to see if they are ok or not without opening the dike. And after a number of years you want to take the fish out of both and compare them with the lake fish?

August: Yes.

BREAK

Natasha: Here is a sign in sheet for which report you want and whether you want it emailed, on usb flash drive, or a physical hard copy. We will collect this at the end of the day, and people can fill it out.

Myra: I also printed 10 of the TK Panel 11 report for those who had asked for it.

Joanne: My understanding is that the main concern is the slime. Rather than putting the number of the pits in there, identifying the pits, because it is not clear, Diavik has asked for a license that would allow them to put slime in more than one pit. That doesn't mean they are going to do it. So rather than name the pits, we could just say, where there is slime in pits, here is what you should do. Would that be simpler and clearer? So that again that is based on your concern about the slime and that if there is a pit or 2 that don't have any slime in them, you are open to creating fish habitat and allowing fish in. It is a question of when. I hope I haven't complicated things further but that is reality. So no fish passage through dikes where there is PK, so that is the bottom line. How do people feel about that? August started talking about maybe introducing fish in the pits where there are slime to compare pits where there are no slime and to be compared to fish from the lake. What do you want to do with that?

Rose: I prefer what August said.

Janelle: So you want to see how fish do in pits with slime and without slime and compare those fish to fish from the lake?

August: What I was saying is the big one you are going to have fish habitat too, and the other one with clear water. So the fish habitat, leave it the way it is . . .

Joanne: So go ahead with the fish habitat, work on the larger pit where we don't think there will be slimes?

Myra: We are in an environmental assessment right now to put PK back in the pits. When we initially put the proposal forward, we were looking at all the pits. Communities came back and shared a concern with A21, it is shallower. So Diavik listened to that and we took A21 off the table for putting PK in. There is a lot of room in 418 to put the PK back that we have identified. So that is all the room we need for now. However, if in the future there is some more, is there another pipe we find or more development, we have left 514 on the table just so that we have that approval so we don't have to be go through the environmental assessment again. As of right now it is not part of the plan is, but we just wanted approval for it just in case.

Wayne: When it comes to mine closure, with everything said and done, is that pile of slime that is on the surface, is that going to be completely gone? Is there enough room to put the slimes in all 3 holes?

Myra: There is enough space in one of the holes. That has been identified and required for what we have.

Wayne: Will that one hole hold all that slime?

Myra: Yes.

Joanne: So August is suggesting that when you are ready to allow fish in the pits, with or without slime. If there is slime in one pit and only water in the other pit, he would like to have fish put in both pits to compare them. So you would want to do that for a few years to see how they are doing?

August nods

Joanne: And then check on the health of the fish? If there is a problem with the fish from either pit, that would give you information to make decisions on where to go next, whether or not to breach or to leave the dikes closed. Is that right?

August: Yes

Wayne: I'm for that.

Joanne: Nancy also says yes.

Shirley: Just to clarify, is this after it is breached for water flow between?

Natasha: Yes.

Shirley: Ok, then yes. So August, the fish can go in the pits after the dike has been breached?

August: There will be fish in the big one, and then 2 years later, if the fish are good, if they are healthy, then we can open it.

Shirley: So you would have no flow for the fish?

August: Both of them will be full, if fish are ok, healthy after 2 years, then you open it.

Joanne: So August, the concern is if you allow water to flow in, water can also flow out. So part of the concern we don't want the water, the slurry water to flow in to Lac de Gras.

August: The 2 pits we are talking about will be filled with water, so if it is ok to have fish in there, if the fish are healthy after 2 years, then you open here.

Natasha: I want to clarify. What August is saying I think is that you don't breach right away, we still monitor the water for a 2 year minimum. And then, when we are comfortable that it is drinkable, we add the fish to the pit. Then we watch it for a couple years, then we see.

Shirley: My concern here is that the fish got put in it, then construction for 5 breaches on the dike to allow the water to flow.

Natasha: No not the water, the water has been flowing for the last 2 years already.

Shirley: So once it is breached, you put the grates, and then you introduce the fish? Ok, that is all I wanted clarification on.

Joanne: I think one of the issues that the women had was if you don't allow the water ahead of time to flow and to get the nutrients and the oxygen into the water, then that is asking for trouble with the fish.

Natasha: The men talked about that as well and understood that.

Louis: Yes we mentioned this yesterday about the PKC slurry that is going to be putting in the undergrounds. If the water goes into the open pit, the smaller of the pit would probably be good to only put water into it, but the bigger open pit maybe wise to put the PK back in that one. In that way once the water is filled into the open pit and the habitat, the fish habitat could be put into that open pit and then fill it with water and monitor it, and that is how we have been talking about it. So to monitor and test the water and breach the dikes, and if the dikes were open in a matter that is deep enough for the water to freeze over the dike and then the water would flow back and forth, but if that opening on the dike freezes, it might not be good for the fish for its habitat to flow back and forth. So I just wanted to mention that.

Joanne: maybe what we should do is have a show of hands on one question at a time. Are people comfortable with allowing or putting fish into pits where there is PK?

8 hands

Joanne: Ok we are clear on that.

Natasha: Next question is, is it respectful to have fish in pits with PK? I am seeing headshakes, so I feel like we are not agreeing on this yet. I am making things difficult but I'm not sure we have consensus.

Louis: Once we put the PKC slimes underground it will be very deep and it isn't going to move, it is just going to be stale, the weight on the PKC slimes will keep it down, and if the fish - because of the depth of the water, the PKC slimes will not move that is what I am thinking and the reason I am saying this.

Joanne: Thank you Louis, everyone is good?

Nods

Joanne: Now it reads [12.2, 12.3] Are people ok with that one?

Nods

Joanne: [12.14] Ok everybody good with that?

Nods

Natasha: I was asking if people wanted to offer any detail around that monitoring, just to make it a stronger recommendation. Like how, how often, through which seasons, should we be adding any of those words?

Wayne: Maybe we should do it right in the dead of winter and spring time when things are moving and fall time just before it freezes up.

Joanne: We would have to come 3 times a year, is it realistic?

Shirley: It's kind of hard to monitor plant and bugs in the winter.

Louis: Yesterday on our trip around the dikes we see these nests of birds or maybe – what would happen to the nesting once the water is filled? Will they remove the nests prior to filling it up with water? That might be disturbed.

Myra: Yes, we would remove any nests that we would find prior to filling. I wish Sean was here to answer that question.

Wayne: The reason I mentioned 3 times a year here is that the planes come in early and same day they leave. Catch an early flight in, do the testing, and then go back. Not overnight here.

Joanne: How do other people feel about that? [*no response*] Anybody else? Are people comfortable on voting on that?

August: Talking about flying species around. If it eats something right now around there, if it is a poison they will die. But they will fly away, so how would we know? We have to think of ground squirrel, caribou, fox. The flying species are very different, thank you.

Joanne: Roger, this one apparently came from your suggestions in the men's group. How do you feel about how it is written? Does it reflect what you are looking for?

Roger: Well from what I said this is written different from what I said, but for the plant life sediment and bugs, usually spring time first when everything melts, and then the summer when you can see all the bugs in the water, and then fall before it freezes. There are no bugs in the winter.

Natasha: Roger, I want to get the words right so can you help me write this in the way that you said it yesterday? What I heard you talk about is: we have to remember that wildlife, birds, etc. must be watched to see if they drink from pits. But how? What about the fox, birds? Test the animals if possible?

Roger: From what I said, by monitoring is what from those 2 years – if the water is in there – if one of the animals drink the water, what I was trying to say is we can't see everything 100%. If they do drink the water, part of it – I just started off small, there are ground squirrels, you can't

see them all the time, they are small creatures. I was trying to say the food chain, the prey, the falcons and the birds, foxes they will eat them. We won't be sure if that ground squirrel is sick. How would we know that – if he has been eaten by the predator, and if they end up dead of course they will be tested, but for birds, like August said, when bird eats poison they will fly away, end up going somewhere and dying somewhere else. How would we know that – one of the animals there will pick it up and eat it. So we won't know because we don't see everything out in those barren lands. That is what I was trying to say.

Joanne: So perhaps maybe what we could do modify 13, take 14 off completely so what you would do is get regular reports from Diavik in terms of what they have seen by the motion activated cameras and if there is animals or birds that are trying to get near the pits and in to the pits, we would want to know that. Or do you still want to think about having people come and checking it out?

Roger: If that does happen, if it is possible. If it does happen, will the communities – if that report goes to the communities, or do you guys just keep it to yourselves? Because the people need to know if this happens, because we need communication between communities and if it does happen, because we are all here together for the land and the animals, fish.

Natasha: Ok so Roger I added ... report findings to communities. Should I delete test animals and any dead animals to be tested for contaminants?

Roger: You could keep it as is, but I like the idea of motion cameras.

Mona: To add, if any animals are found dead or if they have been killed or accidentally killed, the elders report them to KIA lands office, so us people from there they should let us know too about what is going on at the mines. Thank you.

Joanne: So we are good for 13 then?

Nods

Thomas: I'm just worried about the wording in 14 "monitor nests on pit walls." Once the pits fill, there will be no nests on the wall anymore.

Joanne: Yes, the nests will be removed, so we can take that out.

Thomas: Perfect, thank you.

Joanne: Everyone good with that?

Nods

Joanne: Last one [12.15]. This is something we haven't developed yet but there is a need to do that.

Natasha: So the way it was reading, AEMP just meant the program, but you guys meant the physical camp as well?

Joanne: Both. The women's group mentioned that they wanted to participate in the camp. And we want to build on that program, so that our own people are trained to do the scientific monitoring as well. It would lead to skill development and employment for both elders and young people in carrying out that monitoring.

Natasha: So I am just suggesting we maybe make it stronger and put it in the guidance as well and so I've gone back to the first slide and added: "We want to build on the existing aquatic effects monitoring program and camp to expand TK testing and to build scientific testing methods and skills with young people."

Joanne: Carrying that idea forward of knowing 2 ways in the future. Everybody good?

Hands up

Shirley: Is the TK Panel already included in that monitoring program?

Joanne: There is overlap in membership.

Shirley: So should we be more specific?

Natasha: We would have to go back in the notes. We have talked about this at length in other discussions. I don't think the panel should dictate who should be at the camp. I think what was mentioned is the communities want to send their experts but it just so happens the experts are usually the same. I might be overstepping, but I think it is up to the communities.

Roger: Just an idea from when August talked yesterday about future TK panels. That would be nice to have a youth boy and girl to have best ideas from both groups.

Natasha: Thank you. The reason we didn't include it is that it's still a recommendation from previous sessions. I will add it as a guidance. Before we call Gord in, please think about everything that has been talked about in the last few days and make sure we have everything. Is there anything we haven't addressed?

Shirley: Roger mentioned, or you said that there was already a formal recommendation for the youth and yet that still hasn't happened?

Joanne: Part of the problem is that it is the community Aboriginal governments who select people to come. You really need to raise that with your governments to say this is really important and here is why it is important and please take our advice on that.

Shirley: Are they under the assumption that it is 2 youth?

Natasha: The way the panel is set up there is 3 people from each community that are funded to come. So there was a recommendation that there be a balance of men and woman both as youth and elders. So there are 3 members and, if needed, 1 interpreter. The panel has made these recommendations and ultimately it is up to each organization to make the decision. Likewise, it is up to the communities to have an alternate ready to go. I know it can be a challenge just to get 1 youth. I think just like everything we have talked about whether it is getting copies of reports from your organizations or attending the TK Panel sessions, it's up to the groups how they want to move forward, who they want to send.

Shirley: Balance is having male and female of each youth and elders.

Natasha: It is just a limitation - there is only space up to 4 with an interpreter. Usually they will find that balance with that interpreter.

Myra: This is really up to the TK Panel members. Diavik hasn't made a decision on the demographic who should be here. It is up to the group who they should send. Going back to the earlier days, it is a full room, we could go into the gym but then it becomes a different dynamic. It's that balance that the group is trying to address.

Joanne: Organizations have been encouraged to identify 2 youth – 1 as an alternate. So presumably they would identify 1 male and 1 female youth. And similarly with elders. Identify 1 female and 1 male. Sometimes we get it and sometimes we don't.

Wayne: We have come up against this before a few times before. The trouble is the kids during the summertime they need jobs. And wintertime they need to go back to school. So it is very hard to find someone to attend these meetings. This has been happening for years now.

Janelle: I am just curious how we identify youth? Is there an age category? I know it is an epidemic in my region. There are a lot of youth that aren't doing anything who are wanderers who don't have goals. Maybe this in turn could help them. I bet there are youth from other regions who aren't doing anything. I bet teachers in high school would be happy to have them come up here. And it is on a weekend. So maybe it is up to our organizations to figure out who should come.

Jonas: Good morning. I come from a community I asked the chiefs who is going up there. He said it was up to the community liaison of the mine. We have a liaison; they are the one who says who they are going to go. It is up to the liaison he said.

Joanne: That is because your government chose to let that person take that on. It is still – if they say go ask the liaison, they have decided that is how they want to handle selecting people. I have heard Łutsel K'e say they have the lands and wildlife department they have been the ones selected to choose the elders and youth that are coming. So each government has their own way.

Jonas: Those kinds of people, they should have come to the chief and council's agenda.

Natasha: I made a mistake and went 4 years back into our notes to find this formal recommendation. The formal recommendation from session 8 is: ensure 2 elders and 2 youth from each group attend future camps and meetings. Diavik response: It would be very beneficial to have TK member s....the TK camp is small. Most community organizations can send 4 people to the camp. Usually 2 elders, 1 youth, 1 interpreter. Should an interpreter not be required, Diavik would consider 1 youth. So I can add this again to the guidance to remind ourselves and Diavik what the commitments are. I am mindful of time to present this to Gord, I want to check in is there anything else is missing?

BREAK

Presentation of Panel Recommendations to Diavik

Youth present recommendations to Gord M.

Gord M: So action plan, I like your guys' words about action plan. In the science community they use adaptive management. You are saying if we see something what are we going to do about it. I like that it is in steps and you learn from the steps. And at each one of those locations that you aren't expecting that is when you take the action. That is what I understand from that. And it goes down to if the fish are ok at the end? The second one is very interesting – when is it that Diavik is done, and if we are done, but you guy still need monitoring needs to be down every year indefinitely, who is responsible for that? Did you talked about that at all?

Natasha: Instead of indefinitely, the word was originally forever. We had the discussion it is not necessarily Diavik monitoring forever, but it is something communities need to sort it out if that is the want.

Gord: But if communities are going to do it, it isn't free, and someone needs to pay for it.

Joanne: They might, and they are developing capacity now to develop guardianship programs, that employees have similar dual approaches: TK and western science. And so we would see building on that momentum that is developing. There are also resources coming in from all sorts of government to support that. We see that it is realistic.

Gord M: That will be a good one to follow as we develop this further. So this one is a bit new to me you are including in visual things like models and animations not just going outside to see it, that here is another visual piece more like those but much better than my art [on the board]. So that is new to me. I understand that. It is helpful to know that. Particularly with animation I think there is much better job that we can do there. So 8.6, the request is to have 4 versus 3 members?

Natasha: We had some discussion about this. The Diavik formal response - we just read this out loud. So here is 8.6 and there is Diavik's response. It is centered around the youth wanting a gender balance of male and female, and in the end, where we landed was that the max was 4 people and ultimately it is up to communities to make that decision. It is generally 3 participants plus an interpreter.

Gord M: Ok got it, thanks. So the one I had in here was colour (12.5). Is it colour or is it clarity? How far you can see in the colour or whether it has a colouring to it? Colour is an actual measure of water. We haven't looked at it, but it can be done. So maybe we should make it colour and clarity?

Nods

Gord M: [12.7] So this would be your own visual of it is clarity versus the science of the clarity?

Natasha: This is water monitoring according to TK. This would be how people would propose to test the water themselves.

Gord M: How would smell, clarity be done?

Natasha: According to the Aquatic Effects Monitoring protocols and what you just described.

Gord M: [12.8] So is stable the consistency, between seasons, is that what people mean?

Joanne: Would that help to add consistent to stable?

Nods

Gord M: 12.9 I thought we could start on the fish camps every 3 years; we start doing the collection of fish around the dikes at that point?

Joanne: That came from the women's group and that is what we had in mind.

Gord M: That would be a logical step, to start doing that. Ok so now we have a difference between 154 and 418, and we are saying where the PK would go and wouldn't go.

Joanne: I thought we changed that. What we wanted to be clear is that any of the pits that PK in it, would be treated differently.

Gord M: Is the opposite of that what we wouldn't do anything for the pits?

Janelle: We still want to monitor everything.

Gord M: Yes so the ones with PK have extra attention, and we do the same thing for all the pits whether it be PK or not?

Shirley: We were talking about those 2 pits specifically, we agreed to put the fish habitat in the big one.

Joanne: The idea of putting fish habitat in the large pit was clear, and not in the smaller one, and that whole discussion happened before we learned that you may want to out PK in both pits.

Shirley: Maybe we should put it to a vote?

Gord M: I think it would be very low chance we put PK in 154. If that ever came, we could come back and talk about that. It would be helpful if there is no PK in A154 is everything different.

Shirley: It is the same because the fish habitat, we need to decide on that because you guys need to start in the spring. That is why we're specific to go ahead on the big one.

Joanne: I think there was interest in the group because we are in a position to compare the habitat construction has made to the health of the fish and whether there is actual differences between the fish and their behaviour and their health.

Gord: Sorry, to be clear, there is still a chance from the outcome from the monitoring on the bigger pit would still say don't allow fish in. That risk is still there.

Joanne: Yes, that risk is still there.

Gord M: Thanks. I really like the two-stage reconnection plan where you connect water first, then you check fish, and if fish are ok, then you let it go. So now we have some new monitoring here on plant life, sediments, and bugs. Has anybody thought about what that is through your own eyes? I know what the science would be for that, but are there thoughts on how to do that on your own eyes?

Nancy: Yes, that would be helpful to see with your own eyes because they don't do any other way.

Gord M: Those would be good things to start talking at another session and maybe we need to start building into the camp to start looking at other things and build the baseline.

Natasha: We did try to take that deeper a little bit but at the end of the day it was that people want to get out there, see with our own eyes, but maybe it would be easier to develop what those indicators might be when we are out there working.

Gord M: It is important for me to understand what you are looking for because we have to create a forecast to see if the conditions are going to meet your criteria. That is my reason, I have to make an informed guess of what the risk is going to be if that doesn't happen. It would help me to see how you would evaluate that.

Joanne: Yes, further discussion and the opportunity for that would be great.

Gord M: That is the kind of thing what do you see here that you say is not good water. Teaching me that would be very helpful.

Joanne: I have noticed elders mention bugs in the water, but we haven't figured out a way to record that.

Gord M: Yes I really like this. Expanding this camp beyond fish testing, looking more at TK monitoring is a logical step to be able to apply it to different closure aspects. I think we will definitely reframe that for the 2021 camp. One other thing I hear through this, it isn't just this TK panel, how do we get community members and youth up doing monitoring continuously. That will come essential as we come into closure. Thank you those are very comments, they are very helpful. I know this wasn't an easy session. I think it'll help the regulators and the other people will have to use this information too. Thank you for your times and energies.

Joanne: Any other questions for Gord?

Joline: Gord, when we went underground last year and the underground engineer, do you remember his name? Richard or – the one that took us underground. He mentioned that he had a couple sea cans where he was collecting scrap metal donating to different communities. I brought it up in May to see who we can address the letter to. If it can be donated to one of our Tłıchǫ communities I would like to put a proposal in for what we may need for our facilities.

Gord: Myra is the one to talk to – we will get you that contact. Sorry, I thought that was addressed.

Joline: if you have that information maybe you can present to the next session next year so other youth for their community can request that.

Gord M: Good idea.

Roger: I was just wondering if there is any First Nation members on the closure team? Someone to report to the communities about information about information about this? Is there anyone full time? We have meetings back home and reports, we often go back home and report back from these Panels, but for each of these communities, is there anyone to report on a daily basis? Because usually we are in the dark until we come up here. People back home ask me what I did up here, but it is important for the information to have out in the communities. Is there anyone full time to do that?

Gord M: There are liaison officers and there is supposed to be one in each community (the broad definition of communities). We have had a tough time filling all of those roles. We haven't moved them in to closure, but the goal right now is to still get people jobs here at Diavik. It is coming in the next few years because I still want people to think that Diavik is a place to work. That is the right avenue, through the liaison. I don't know if it is working correctly.

Roger: People always come to me to ask them what has happened. It is good to have the information out here even because the mine isn't going to last.

Gord M: Would you ever be comfortable on doing a presentation on what happened at the panel, with one of us there, would you ever do a joint presentation?

Roger: I wouldn't mind, if it was organized like this. We can say in our own words.

Gord M: I would be willing to ask Natasha and Joanne, what if we make a presentation file that anybody from the panel can use to what has happened here in the community? If you want me to come, or Myra wants to come, we love to come to the community, we would love to come.

Natasha: It would be fun to work on it together. I'm grateful to Gord because we forgot to add a central web-based location for people to be able to access all the reports and all of this information. We don't know what the best location for this would be – whether it is on a Diavik server, Mackenzie Valley Review Board or ? I think that has come up that is definitely needs to happen.

Gord M: What I would suggest is we have EMAB, they have a website, that is one of your responsibilities to disseminate the information.

Janyne: I know right now, John, the director, he is in the process too – he also has a hard time to get all the TK reports – we haven't been able to find them all either. A lot of the ones he has found are draft copies from EMAB.

Gord M: We will undertake to get reports to EMAB. My recommendation is to put them on EMAB website. I will formally put that request in to EMAB.

Janyne: Just to add to my knowledge, we have uploaded the tables that we do have. I believe it is allowed for us to add it up there.

Natasha: So we circulate that paper to clarify who wants hard copies and we will follow up with a hot link, do we want that as a formal recommendation to require a formal recommendation?

Nods

Joanne: It sounds liked a pretty positive response. It wasn't easy, it is probably the most challenging one I have done so far, so I really appreciate the patience of everyone. Thank you for providing us with the information we needed to meet our goals. Is there anything further that people want to communicate? With Gord?

Janelle: You have that sign downstairs, the thing about legacy and how Diavik wants to leave legacy. All the elders and youth are here to build your legacy. So you should want us to walk around as your legacy with jackets saying TK Panel.

[Laughter]

Joanne: So Natasha has developed a new recommendations about the central online location with all TK Panel materials. *[Reads it aloud]*

Nancy: Before I go home, I would like the copy of this [recommendations].

Joanne: We are going to print the guidance and the recommendations for you to take home today.

Natasha: There was one more question for Gord.

Gord M: If TK panel isn't satisfied with the water, can it be run through the treatment plant? The answer is yes, we could put it through the water treatment center. If there is really bad water, that is what our contingency plan would be.

Natasha: Does PK change whether in the pit or the tunnels?

Gord M: I don't know if it would behave differently in temperatures it might be more time to move it in to the tunnels. But otherwise thermally it should act the same.

Roger: I was just thinking if it will seep and go down slowly, I know the tunnels is softer rock and it is not in permafrost, will it seep out slowly? It's a big honeycomb in there.

Gord M: It is the same solid rock as the middle, they are just drilled around.

Roger: I don't want it to seep into Lac de Gras.

Closing Circle and Prayer

Bobby: This time, this session here was a really good session again, we have had a lot of good success in what we wanted to do and what has been committed by DDMI to make our minds at ease, a lot of good recommendations, and he already agreed to a lot of the good work we have done. I know everything is changing session to session sometimes and a lot of clarity came through this panel in meeting with Gord. We have always worked towards this in the past sometimes we get really jumbled in some things, but I noticed this group this time did a really good job putting together a proposal for Diavik to think about. Can I have one last request for Gord? Remember that hole we were looking at yesterday, the bottom of the pit. My dad's lure went down and touched that very bottom. On the side there were baby birch trees around there. I was wondering maybe you get a piece for me to take home. That was the exact place as a little boy I would slide down with a caribou hide, I would like to have a little piece before it is all destroyed, I would like to take a piece home. It's going to be destroyed. At least, even last couple of years, I at least touched that water that was in there before it was all drained out, and the very water that was there in the past, where my dad touched, maybe it is still in there, that made me feel a little bit better. But this time I looked at it again. I had a dream, looking over it yesterday me and my dad again. I haven't dreamed of him for 8 years. He hasn't spoke to me, until now. He spoke again through my dream last night. So I would really like to have at least of a piece of that baby birch to take home and maybe live with me for the rest of my life. That would be really appreciated.

Nancy: I'm so thankful for KIA for letting us come here. I am thankful for everyone in Diavik to provide this and be in one place. I would like to thank the interpreters, it is good to see everyone again. We all get stronger from coming each time. The North Inlet, that I my big concern because it is the most contaminated part. I am happy what everyone did here, I am so thankful for everyone, especially the youth. The youth might not say anything but the more they hear, see what we are doing, the elders, they will be stronger for the future. Once even if they don't speak it, they get older, they will be strong and like us again because we won't be here. They are youth, and when they hear elders talking about and hearing it, it makes them very strong for the future. In the future they will replace us, so I am so thankful for all the youth that come around. I can't wait until we start working on the North Inlet because I am very concerned about that. Thank you so much.

Wayne: First of all, I'd like to thank Gord for his feedback and his patience. The facilitators who did a bang-up job, Myra for her inputs, she did really well helping us, the interpreters, especially Peter there offered some medicine for the cold, and everyone who attended. I think we had a fairly good meeting and I wish everyone has a good safe trip back home.

Shirley: This is my first time here, I am not a youth, I am an elder in training. I am very impressed how everybody works together respectfully. This was very productive. I am so grateful for being here. I would like to thank all of our support staff. I look forward to seeing these recommendations playing out in the future.

Roger: Thank you to Gord for putting up with us, answering our questions, facilitators, Emma for writing it all up, Ryan the sound guy, the interpreters, everyone giving their input, listening and learning from this panel and it is really good to be here. Thank you for inviting me and for the hospitality. I want to thank the elders and the youth for being here. It is good experience for us down the road to carry on this information. I wish everyone a safe trip home to their homes, and it is good to see everyone here working together as one community and trying to work this out with Diavik. Wish everything will go smoothly in the future panels and I wish the best for everyone. Thank you very much.

August: Mahsi cho. Thanks for last day here now. I am really happy this week being together. Like I was saying it, there is lots of words working there from way back from the elders that aren't with us anymore. I am really happy with that. I hope everyone go home safety. Thank you to all the ladies smiling at me, that keeps me strong. Thank you very much.

Jimmy: Thank you for being here for few days. I appreciate everybody. I'm glad I have been here. Thanks a lot. Mahsi cho.

Jonas: Thank you. This is our ancestral land, we have to remember our ancestors and we have to value our TK and it seems like in modern days there is scientific and all this money industry taking over the land. But in the past our ancestors worked very hard, you know, and we have to remember them. But today in the modern times everything is easily been done. At the same

time we spoke about the closure plan, how we work with the fish, water, aquatic life, and we had a really good meeting together.

Louis: Thank you. Throughout the days that we were here we spoke very well and I am very thankful at these meetings when we speak it is like teaching one another, and I am learning from one another. I am very thankful for all the people, and the interpreters, through the interpreters we understand one another we are thankful for it. This is our ancestor's land and even though they have the transportation, lack of transportation, they never had a good night sleep and light from candles were poor in the evening, they worked on this land, this barren land, this is our land, this island is pretty well developed and it has been the land has been disturbed but we want to have a good reclamation plan and it seems like we are always in agreement and if we do good work that is what we aim for. We are thankful for that. We are representing the people at home, and those are the communications that we can reunite with one another. We have a really good meeting, the hosts, accommodations, and we are very thankful for the food.

Therese: Thank you for inviting me here. This is the first time I ever came this type of meeting. It is hard for me to speak in front of people. Next time I come I might talk, Mahsi cho.

Janelle: I would like to thank the elders that shared their knowledge and history – sometimes it is lost. Thank you for the youth, I remember my first panel I was very shy, it takes a lot of courage. Us being able to see everything and hear from peoples' perspectives has opened my eyes. And something resonated with me in the women's group. We keep Diavik to a very high standards for clean up, and I hope we can do that in our own regions that we can hold us to that type of standards because in the end we are all stewards of this land, it is our job for the land to be there viable for the 7 generations ahead of me. That just resonated with me that we really put Gord in a tough spot all the time. I'm very appreciative because if you look at Rayrock, Colomac or Giant, they just left a mess and took off but Diavik is really building a legacy. Our people may not travel in these lands, but our animals are still here. Just because our people aren't here as much, we still need to be stewards for the animals. Protect our way of life. If we see the last caribou, how are we going to teach those skills to our next generation. The way I was taught was by seeing. I was watching my grandmother making dry meat, she taught me all these things. I held my first knife and needle at 7 years old. I think we should carry on continue to be the stewards of the land, so thank you Diavik.

Rose: This is my second time here, but I am still learning on what is going on, so that is why I'm not saying much. But thank you for everyone who came here, go home safe, and thank you Diavik for their hospitality. Thank you.

Jonathan: This is my first time here. I didn't know what TK Panel was, but learning and listening to what everyone is saying, I learned lots from you guys, and I am happy to hear everything. Thank you to Gord, the communities, it was nice meeting you all. I don't know if I will be back

next year because I am always busy with work. Like what Janelle said, it would be nice for the youth can come back here and learn and keep on learning. Mahsi Cho.

Regan: Happy to attend as a youth participant and heard some good feedback from the youth and elders. It has been a good weekend spending time with you guys. I am happy to be here. Thank you.

Mona: Everybody was so kind for me, I was so happy. I am so thankful to the ladies who showed us everything, while Gord is out, while he is supposed to be out here. Thank you to the interpreters, to everybody, all the people, I was kind of emotional today because of how animals used to walk here, not only the animals but our ancestors and neighbours. My father was close by one time and one of the natives that used to come here from Yellowknife, they used to meet together. But look after our water tank, this is our water tank. For our grandchildren, our great children. Thanks, so much for everyone, have a safe trip home. God bless you all.

Berna: I am glad to come back, I am here today. I was really happy to be here among you guys again. It all depends on our health goes because we don't know tomorrow as the elders always say. What is in front of us we don't know, I hope everyone has done well, like the water and the land. It is so important for the Dene people of the north. We survive by the water even the animals and the caribou and the fish that we live off of. We try to protect the land, the water, the environment. Our country food that elders always talk about. We always have to thank our creator every day for taking care of all of things. Thank you to Gord for everyone for your team, we had a good week here, good stay, good sleep. Safe travels everyone, until next time.

Peter: I want to thank everybody for sharing your knowledge about the traditional knowledge and how we can work together. Our ancestors worked together, and we know that through that we made peace, ever since then we can live a health life among each other. Here we are making recommendations of the closure and recommendation to clean up the mine. We are doing good work. I want personally say thank you to all of your - hope we meet like this again next year, depending on our health. Mahsi Cho.

Joline: I would just like to say thank you, it is good to take part in the TK Panel. Even though I work for Tłı̨chǫ Government and been with them for 19 years, I've learned and gained a lot of experience through TK and work with elders and listening to them about the kind of knowledge they want to pass on. And I find that now a days we don't see very much youth participating in stuff like this. And I would also like to bring youth in and I really love the kind of work I do, I am involved in both science and traditional knowledge. I try to make stuff visual as much plain speech as I can so the elders can understand. So when I was here first time I came here about 4 5 years ago I was shy and emotional because both of my grandparents worked at Ray Rock, and outcome we all know how it ended. To see my grandparents work hard to send their children to school must've been very difficult for the them and to see them coming out of a situation out of

that and both parents going to residential school, I found it difficult for me but my parents taught me to go to school. I still want to learn my traditional way and tongue so I work with elders and I communicate with them once I am comfortable. I would just like to appreciate coming and being invited not as part of the panel but to learn from you guys how we can communicate the information clearly. I would like to thank Gord for bringing us to the process plant to better understand to see what is out there and when we are talking about the animals, we have a better understanding help you reclaim the area. I know that when industry comes or when the Europeans come, the Aboriginal people, they were all welcoming people to outsiders and that is how I feel. I would like to really appreciate you giving us the eyes on how diamonds were processed. And to also invite the youth to take part in your remediation. Mahsi.

Thomas: Thank you to everybody here. I worked for LKDFN as the liaison for DDMI. I thought I was very lucky to get the job, mostly because I am Tłı̄chǫ, not Łutsel K'e. I am honored to be here for both. I was really happy with our youth member Roger and all the other youth, all the elders, it was really good to hear August him talk. Diavik's willingness to open up their ears and listen to them. I have been a part of projects where the mining companies aren't around anymore. This is an amazing process and see. I want to thank everybody. I want to say Mahsi cho, thank you.

Janyne: Thanks to the panel for extending the invite to EMAB this year. It is really nice to be here and we talk a lot about the panel and come and see how it all works.

Myra: It was really difficult to make all the arrangements for you all to be here. I thought it was just another meeting, but when I saw you all at G&G getting together and greeting each other, I recognized this was sort of family and it was a really special group you have developed. I am very grateful for those who have come back year after year. You are all coming from different experiences and knowledge that you are willing to share with one another and listen, I'm really proud to be working for Diavik because you don't see this process very often. I hope I can participate in the future, and thank you for very much for allowing me to be here and to share this time with you.

Gord: I know you all want to get to lunch so I won't repeat what has been said. First of all, you don't have to thank me for being here. I need to thank you for allowing me to be able to do my job and making it easier for me.

Natasha: I am going to let the boss lady and let Joanne have the last word. Last night I was in the gym running around the track and I was laughing because Roger was doing the same thing. We kept passing one another, running in opposite direction. Finally, I thought I'd turn around to try to catch him but he was just too fast. I was thinking it is kind of like how I feel as a scientist, as a southerner, I can't catch up to the Indigenous way, no matter how hard I try, I just don't get there. A really big thank you for everyone each who contributes so genuinely. It is an honour to see the magic that happens and I am just really grateful. It is such a pleasure to work

with Joanne and to be a part of this panel for so long. We are all looking for meaning in our work so that it isn't just a job. The fact that you put in such hard work, the fact that Diavik listens, and responds, gives me meaning in my job. It is really a pleasure. Quana, Mahsi. In the south, on Squamish territory, we say huy chexw.

Joanne: Thank you so much. This session I really appreciated the struggles that you went through and I know August as one of the longest standing members here, he made some recommendations that we don't break into two groups and we did it anyway and he had patience and the love for people to do that and helped build a consensus after. I wanted to mention we are going to be doing a workshop on caribou and taking care of caribou in early December this is not part of Diavik's plan, this is something Natasha and I have been working on. But it relates to this in terms of creating a guardianship program for caribou. And it will eventually interact with the mines work in this area. I hope to see some of you out there. It is intended to build on the strengths we have in our cultures as guardians and to bring together communities to see what we can do to help the caribou. So I hope to see you there. It has been quite something. And thanks Myra for join the team, and thanks to all the participants and interpreters and to Gord and Myra and to Sean. Mahsi.

Prayer

END OF DAY 4 NOTES

Appendix E

Presentation on PK—Backgrounder and Previous TK Panel Recommendations on PK and PKC

Presented to the TK Panel
TK Panel Session #12
September 14, 2019

Pit Options



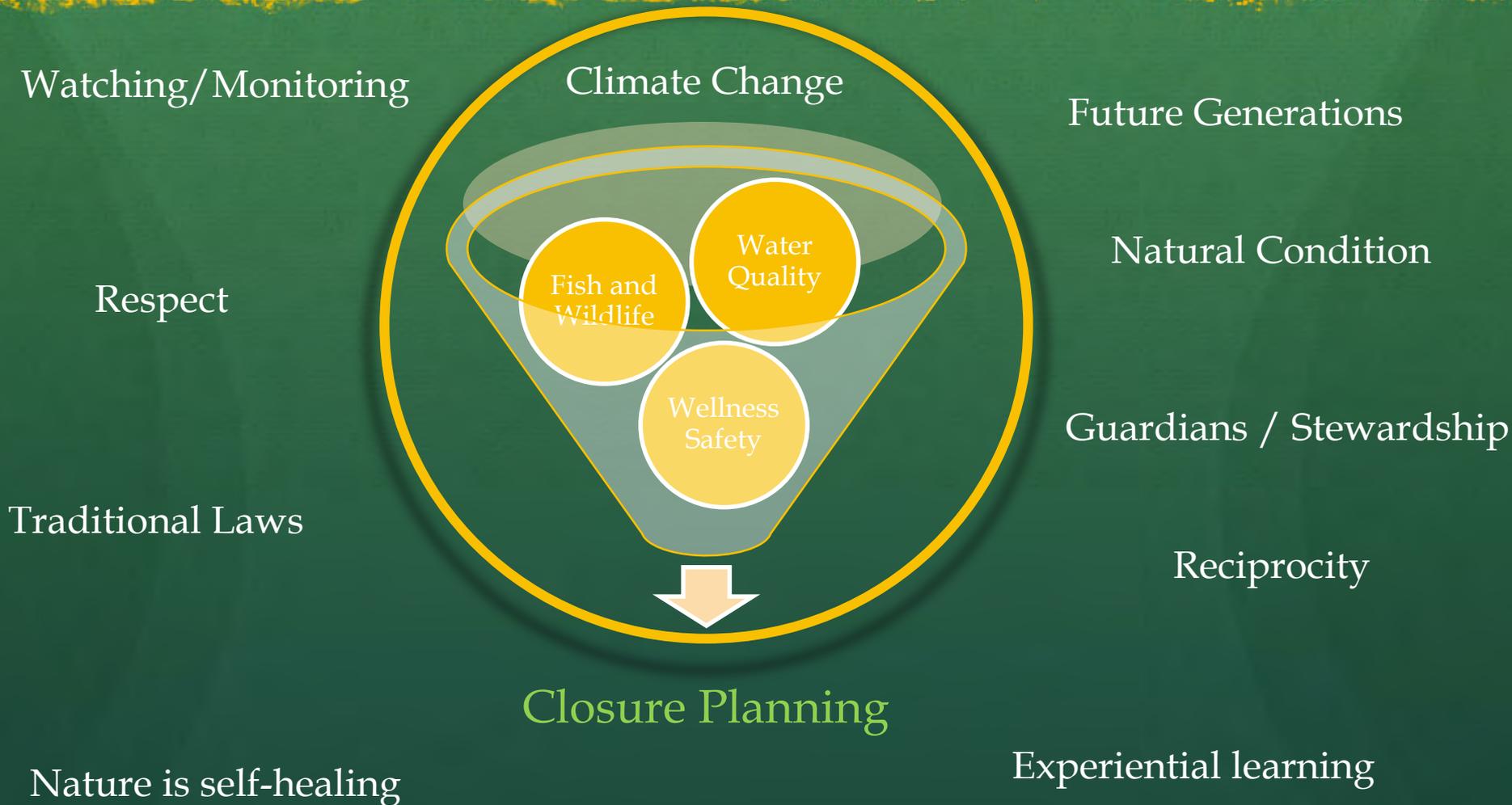
Why are we talking about refilling the pit?

- Diavik wants to put waste rock back into the pit and is undergoing an EA accordingly
- Diavik relies upon input from the TK Panel regarding options to re-fill and monitor (watch) the pit
- In the last few months, community members have voiced interests in considering various pit options as part of the EA: in response, TK Panel 12 topic was switched from North Inlet to Pit Options

Haven't we talked about the pits before?

- TK Panel #6: Explored PK Containment Area (2013)
- TK Panel #8: Considered reefs, fish habitat, and water monitoring (2015)
- TK Panel Session #10: Introduced idea of putting Processed Kimberlite (PK) underground (2017)
- TK Panel #11: Focused session on PK Options (2018)
- TK Panel #12: Focused session on Pit Options (2019)

TK Panel Past Recommendations



TK Panel Recommendations: Slimes

6.7 Removing the slime offsite remains the preferred option until Diavik can demonstrate through chemical and toxicological analysis that the slime is not harmful to the environment (i.e. plants, wildlife, fish, and humans).

- ✓ Toxicological analysis done (2015-2016)

6.10 Once the slime is removed, line the lake bottom with granite / gravel and rocks and other natural materials that were there before.

TK Panel Recommendations: Watching

9.25 Given that the pits are going to be refilled with water, that Diavik is considering putting processed kimberlite and 'slimes' into the pits and underground shafts and concerns about tremors and seismic activity, the TK Panel requests a tour of the pits and underground shafts to see the 'receiving environment' with their own eyes.

- ✓ Underground tour done during TK Panel #11



TK Panel Recommendations: PK in Mine Areas, Pits

- 11.6 If PK were to go in any mine area, the Panel requests an opportunity to learn more about the depth of water for fish habitat to cover PK (TK and western science).



TK Panel Recommendations: PK in Mine Areas, Pits

- 11.11 The TK Panel recommends that they monitor the fish habitat within the pits, shoreline modifications (e.g., ramps) for wildlife as well as the stability of the dikes on a regular and ongoing basis.
- 11.12 The TK Panel recommends that they monitor freeze-up and break-up within the contained areas (i.e., within the dikes) to see if the formation and melting is any different – with a view towards safety for people and wildlife.

TK Panel Recommendations: Wind

- 11.15 The TK Panel would like to see wind behaviour on water within the contained pits/dikes over a period of time (i.e. throughout all seasons).
- 11.16 The TK Panel would like to see wind behaviour on Lac de Gras in and around the dikes. [How is the water on the outside of the dikes and breach areas affected by wind?].

TK Panel Recommendations: Reconnecting Waters

- 9.24 Do not reconnect the North Inlet, open pits and PKC area with the lake/land; keep dams and dikes intact unless the water and sediments in those areas is proven to be clean and the same as Lac de Gras.



TK Panel Guidance (TK Panel #10)

- There is a concern if slimes were to be put into a pit that they may be released into the environment.
- As long as there are no chemical contamination or physical suspension issues (i.e. the slimes don't mix with the lake water), the TK Panel generally supports Diavik researching this alternative for disposal of the PK into the pits. The rationale for this guidance is that the TK Panel wants the WRSA-SCRP and disturbance footprint on the tundra to be as small as possible – move slimes out of the PKC and use WRSA-SCRP rock to cover the PKC area. It was hoped that this might help prevent wildlife access.

Example: Ekati - PK in Underground

- Currently putting PK into Beartooth
- Plans to put PK into Panda/Koala
- 30 m freshwater cap on top of processed kimberlite (considered conservative and thus under review)



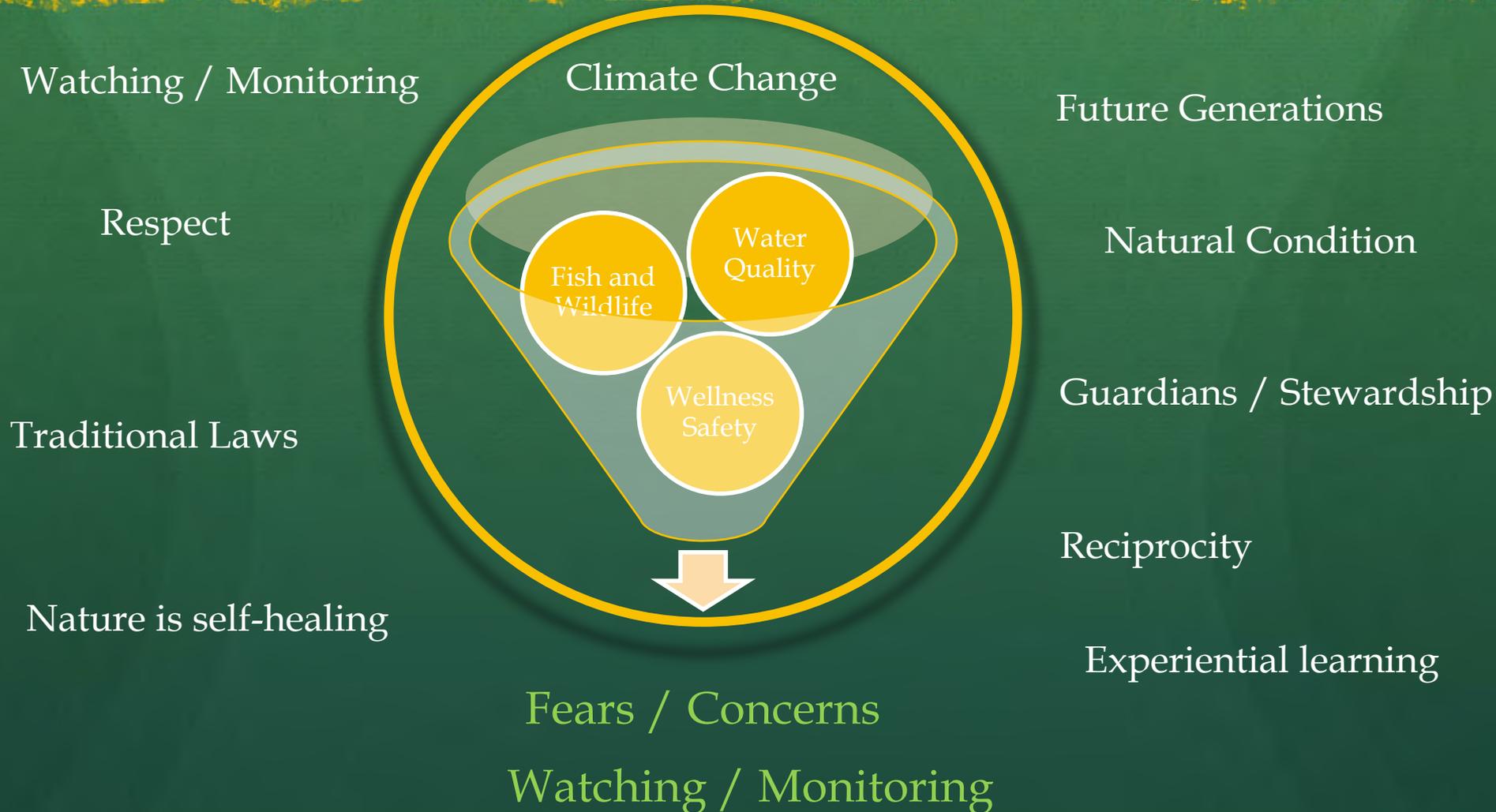
Charting New Ground

But there are no examples where:

- Pits have not been filled with mine waste, filled with water and then connected to another water body
- New challenge, new opportunity for TK Panel to lead the way



TK Panel Recommendations if Pits Refilled?



Questions for TK Panel #12?

- Question 1: What are your thoughts about the revised closure proposal for the pit? Do you have any questions about the changes to the proposal?
- Question 2: If the pits are filled, what are your concerns or fears about reconnecting the pit to Lac de Gras?
- Question 3: What other information do you need to feel comfortable with closure of the pit?



Questions for TK Panel #12?

- Question 4: If Diavik goes ahead with refilling the pit, what would you want to watch during closure to know that it is good? Regarding water? Regarding fish?
- Question 5: If Diavik goes ahead with refilling the pit, what would you want to watch in the filled pit lakes to advise if the pit lake should be connected with Lac de Gras?



Appendix F

DDMI Presentations on Closure and Reclamation Plan Overview, Water License Amendment and Underground Dewatering

RioTinto

TRADITIONAL KNOWLEDGE PANEL #12

Diavik Mine Site – Sept 12-16 2019

Document Control #:
Template #: DCON-029-1010 R8



Lac de Gras and Diavik Mine Site





- 1 - A418
- 2 - A154
- 3 - A21
- 4 - Processing Plant
- 5 - Processed kimberlite containment (PKC)
- 6 - North Country Rock Pile (NCRP)
- 7 - Main Camp (MAC)
- 8 - Fuel tank farm
- 9 - Airport
- 10 - Wind farm
- 11 - Truck shop
- 12 - South Country Rock Pile (SCRCP)
- 13 - Waste management area
- 14 - North Inlet
- 15 - North Inlet water treatment plant

Closure and Reclamation Plan Overview



1. Open Pits & Underground
2. North Country Rock Pile
3. Infrastructure
4. North Inlet
5. Processed Kimberlite Containment

1. Open Pits & Underground



2. North Country Rock Pile



3. Infrastructure



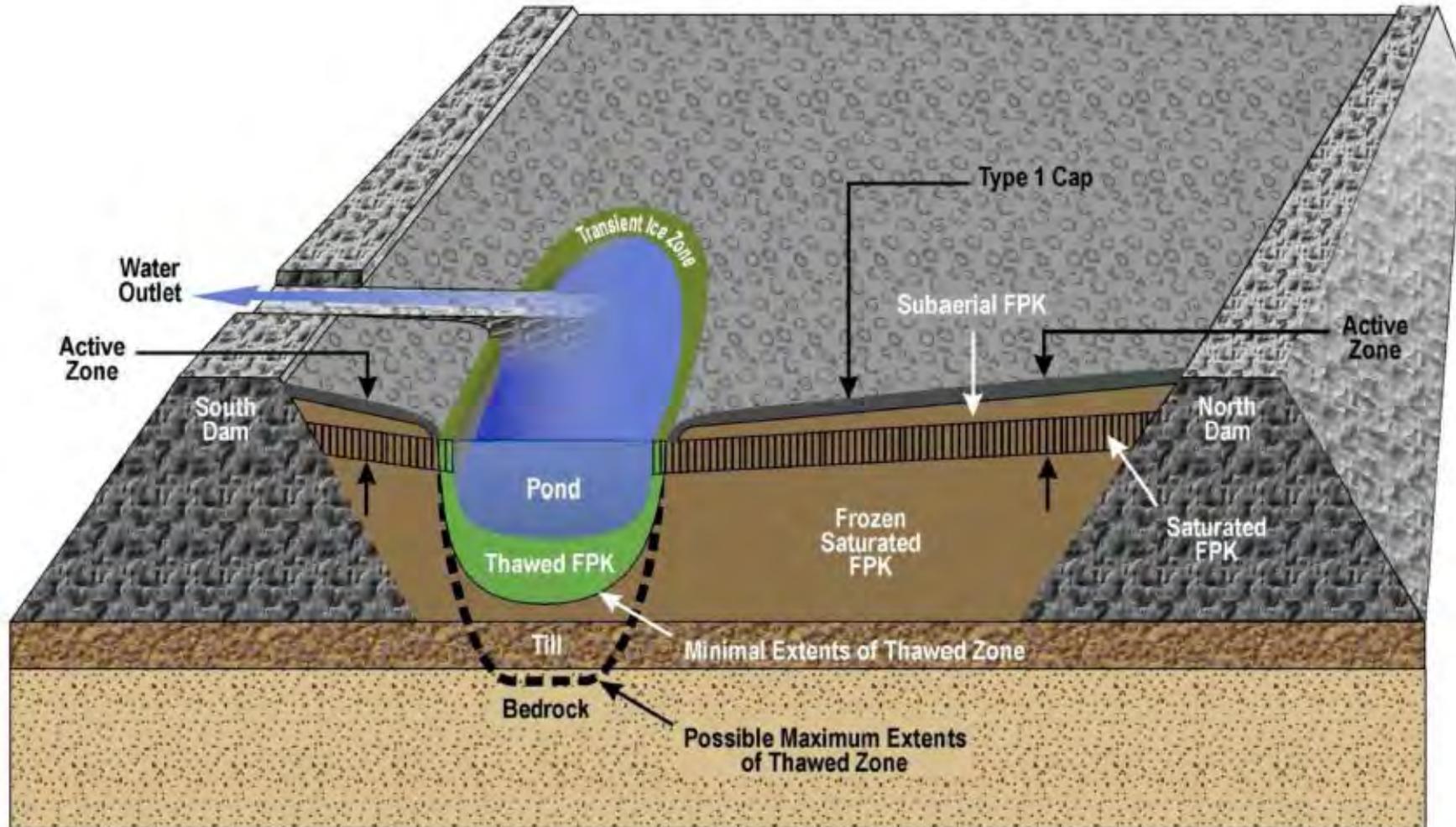
4. North Inlet



5. Processed Kimberlite Containment



Approved PKC Closure Approach



Closure Plan is to fill mine area with water to create pit lakes



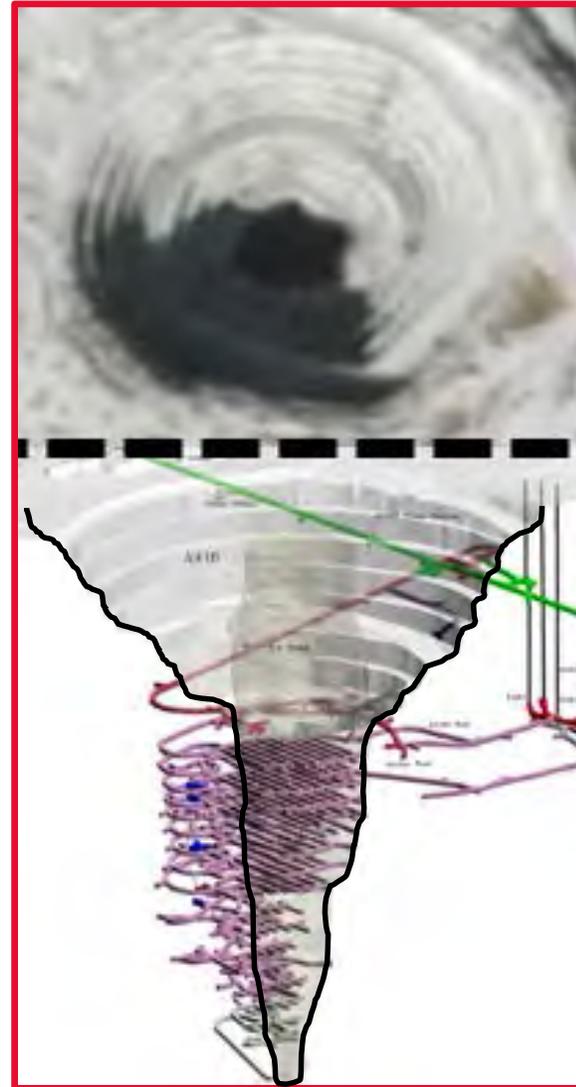
Passages will then be made to connect the pit lakes with Lac de Gras



Question: What are the important things to think about if the water from the pit lakes joins water in Lac de Gras?

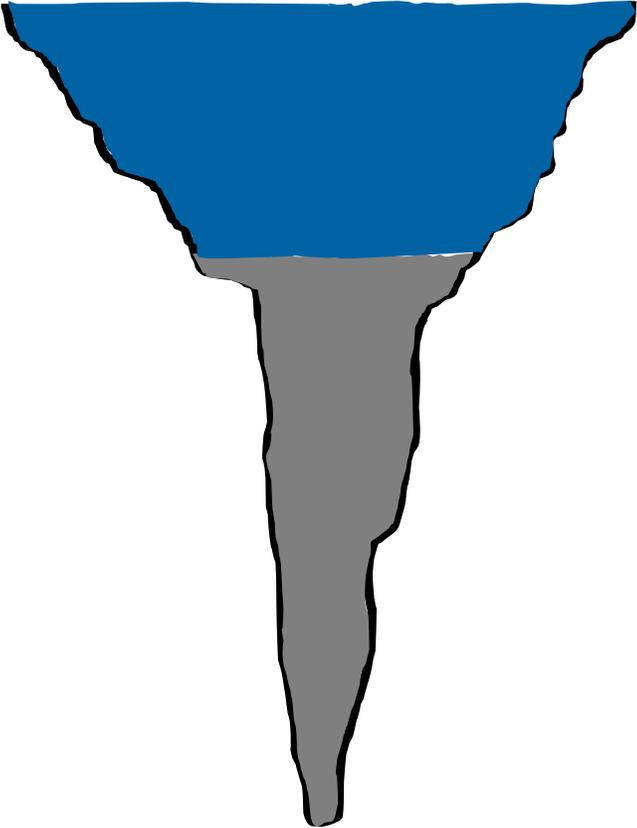
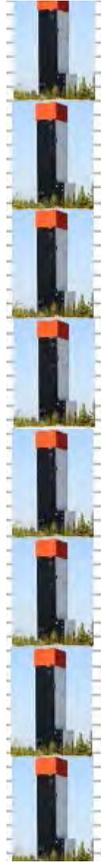
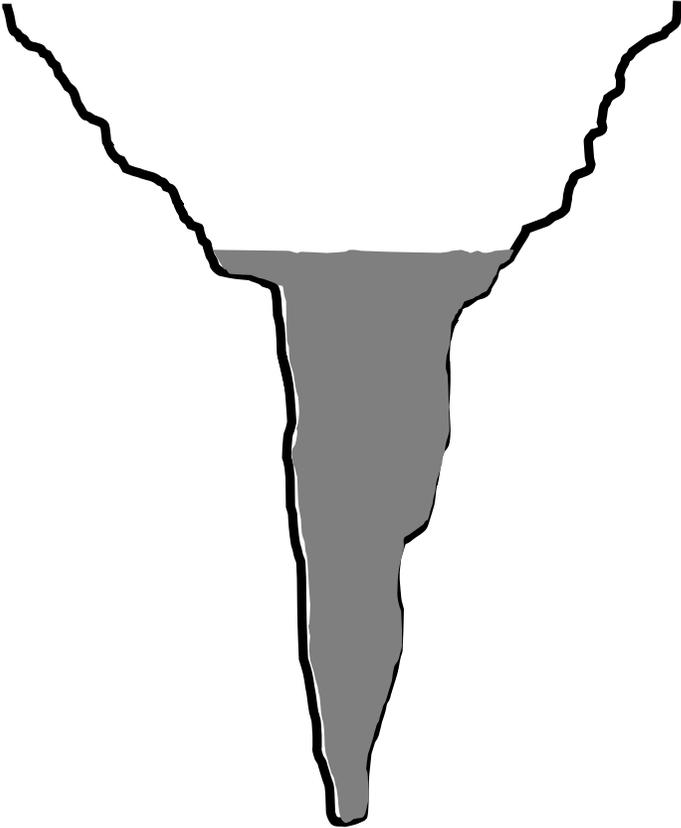
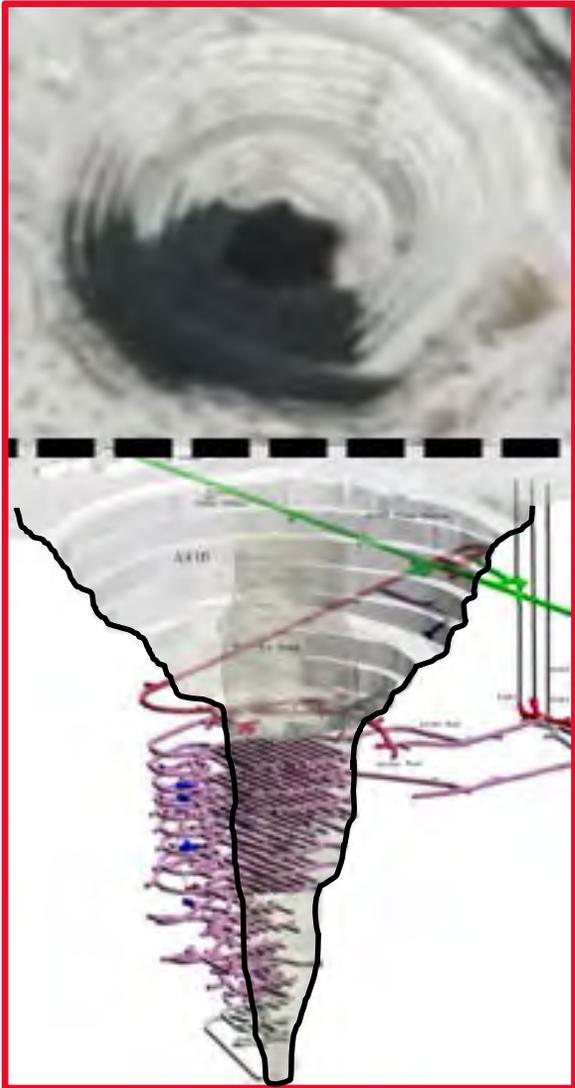


The mine area is very deep – 1/3 mile (630 meters)



You could stack **8**
Robertson Head Frames
on top of each other in the
mine

Diavik would like to put processed kimberlite back in the bottom of the mine before filling it with water

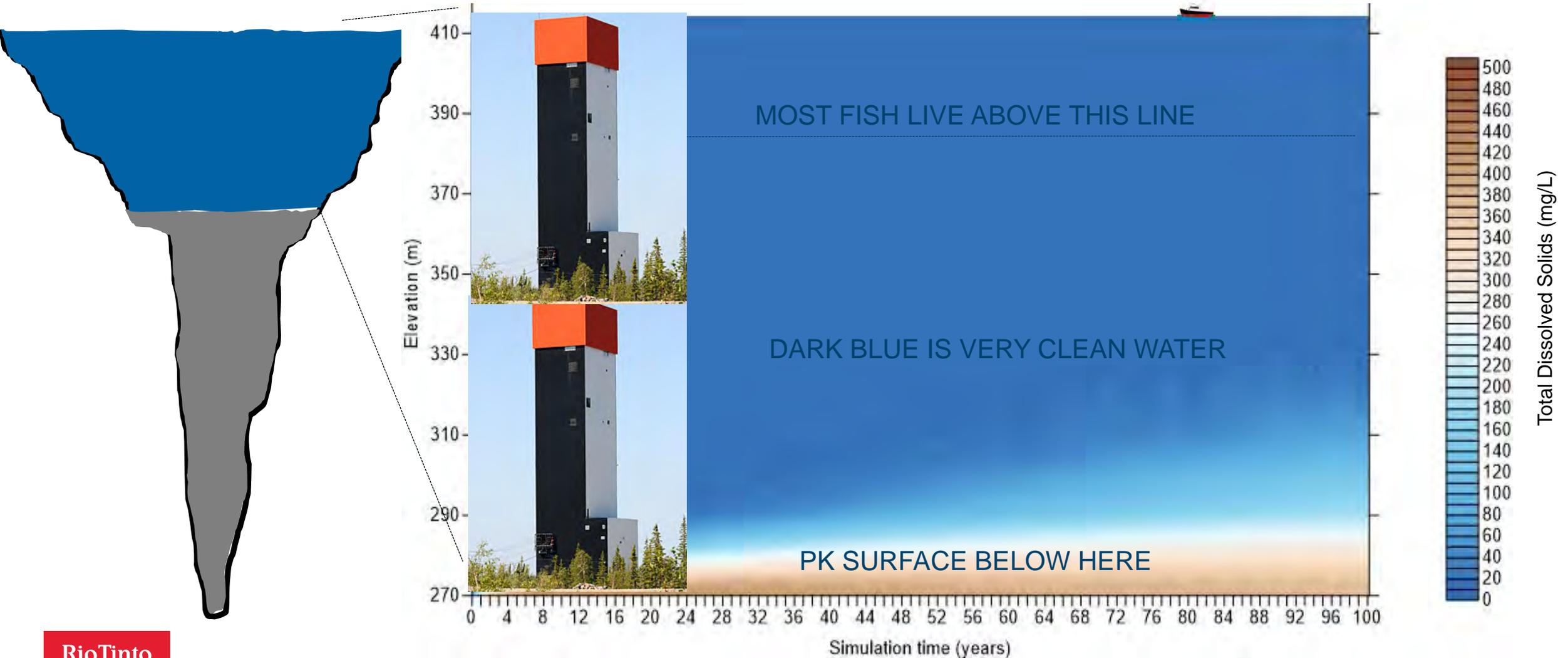


Processed Kimberlite

- Kimberlite is the rock that contains diamonds.
- The diamonds are removed by crushing and washing the rocks in water.
- The remaining material is referred to as 'processed kimberlite' (PK) and is a mixture of rock and water



Water Quality and Fish In The Pit Lake



Question: What else should we look at before deciding to create passages between the pit lakes and the big lake?



RioTinto

Diavik Community Engagement, 2019

Traditional Knowledge Panel #12

12-16 September 2019



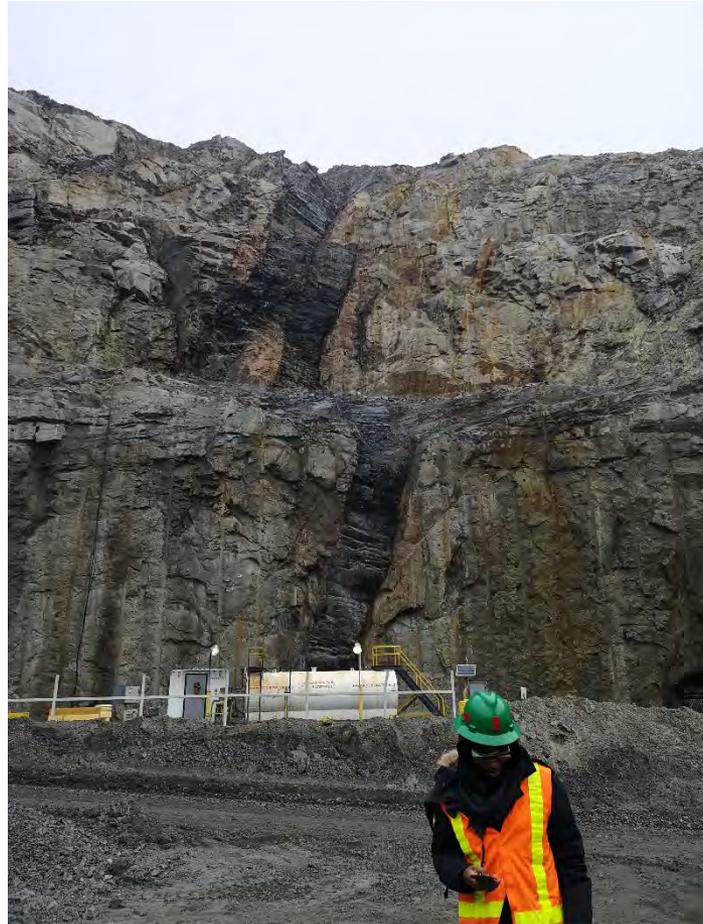
Community Engagement, 2019

Date	2019 Community Engagement Updates
April 2	Lutsek'e Dene First Nation – meeting in Lutsek'e
April 23	Yellowknives Dene First Nation – meeting in Dettah
May 29	Tlicho Elders – meeting in Behchoko
June 3	Yellowknives Dene First Nation – regulatory officers visit to site
June 4	North Slave Metis Alliance – meeting in Yellowknife
June 6	Tlicho Government – visit to site
August 19	North Slave Metis Alliance - visit to site
September 3	MVEIRB EA: PK to MW - community hearing in Behchoko
September 4	MVEIRB EA: PK to MW - community hearing in Dettah
September 5	MVEIRB EA: PK to MW - technical hearing in Yellowknife, day 1
September 6	MVEIRB EA: PK to MW - technical hearing in Yellowknife, day 2

Community Engagement, 2019



Community Engagement, 2019



Community Engagement, 2019



Community Engagement, 2019



Community Engagement, 2019



Community Engagement, 2019



Community Engagement, 2019



Community Engagement, 2019



Appendix G

Presentation of DDMI Responses to TK Panel Session #11 Recommendations

RioTinto

Diavik Response to TK Panel Session 11 Recommendations

Traditional Knowledge Panel #12

12-16 September 2019



Response to Session 11 – Options for Processed Kimberlite

Supported

- The beach materials and rough kimberlite should stay in the PKC area (i.e., anything that can support a rock cover). (11.3) – *Diavik will plan to leave the beach materials and rough kimberlite in the PKC area (i.e., anything that can support a rock cover).*
- TK holders know that fish generally go where there is food (nutrients) and oxygen so they are unlikely to go to the depth where PK would be. (11.4)
- The TK Panel recommends a future TK Panel session dedicated to the health of the North Inlet upon closure and to decide if there is anything to address with the sediments. (11.7)
- The Panel requests that Diavik provide a list of items/equipment that will remain and be removed from underground before flooding or filling the mine with PK/water. (11.8) – *Diavik is developing this list with the Inspector based on what was done previously at Ekati; it will be provided to the Panel when complete.*

Response to Session 11 – Options for Processed Kimberlite

Supported Cont'd

- The TK Panel recommends that their members are present for at least some of the time when the slimes are moved from the PKC into the A418. (11.9) – *Diavik has made development of TK-Based assessment of pit lake conditions with deposition of PK a priority. If slimes are removed from the PKC to the mine workings, Diavik will organize a TK Panel session that overlaps with this event.*
- The TK Panel wants to monitor how water behaves when placed on PK. They would like to see the PK and water in the A418 as soon as it is safe to do so and when there is a good visual of the material, as well as at regular intervals afterwards. (11.10) – *As above. This can be completed annually during the TK Panel sessions.*
- The TK Panel recommends that they monitor the fish habitat within the pits, shoreline modifications (e.g., ramps) for wildlife as well as the stability of the dikes on a regular and ongoing basis. (11.11) – *As above.*

Response to Session 11 – Options for Processed Kimberlite

Supported Cont'd

- The TK Panel recommends that they monitor freeze-up and break-up within the contained areas (i.e., within the dikes) to see if the formation and melting is any different—with a view towards safety for people and wildlife. (11.12) – *As above. Diavik will include recording of freeze-up and break-up within the pit lakes relative to Lac de Gras. Diavik will use air photography whenever possible so that results can be reviewed annually with TK Panel.*
- The TK Panel would like to see the PK vegetation plots again. (11.13) – *This can be done during a future TK Panel Session.*

Response to Session 11 – Options for Processed Kimberlite

Modify

- The TK Panel recommends that we test slimes/PK in a fish tank to see if any water plants would grow on the PK. (11.14)
 - Diavik does not accept this recommendation as aquatic vegetation is not expected to occur at over 100m of water depth due to light limitations.
- The TK Panel would like to see wind behaviour on water within the contained pits/dikes over a period of time (i.e. throughout all seasons). (11.15)
 - Diavik suggests the collection of video during different periods of wind behaviour would be a better method for making these observations; videos could be presented at the TK Panel Sessions. If PK is placed in mine workings, Diavik will video wind behaviours on water within the pit lakes and review the video with the TK Panel.
- The TK Panel would like to see wind behaviour on Lac de Gras in and around the dikes. [How is the water on the outside of the dikes and breach areas affected by wind?] (11.16)
 - As above.

Response to Session 11 – Options for Processed Kimberlite

Pending

- If the PK goes to the mine area, the TK Panel recommends that all of the PKC slimes also be put into the pits. There is interest in moving as much of the slimes as possible from the PKC into the mine area and away from the surface where wildlife might gain access. (11.1)
 - If Diavik receives approval to deposit PK in mine workings then Diavik will proceed to evaluate the feasibility/practicality of also moving EFPK ("slimes") to the mine workings including anticipated benefits to closure of the PKC facility. The results/recommendations from the studies will be shared with the TK Panel once complete.
- If Diavik moves ahead with putting PKC slimes into the mine areas, the Panel requests to review any changes to the PKC closure plan. For example, if it is not possible to move all of the slimes in the PKC to the mine area and some of the slimes remain in the PKC, the TK Panel may recommend that the PKC is topped with large boulders to discourage wildlife and people from entering. (11.2)
 - As above.

Response to Session 11 – Options for Processed Kimberlite

Pending Cont'd

- The Panel would like additional scientific research to see what the effects of PK (ingestion) might be on fish specific to Lac de Gras. (11.5)
 - If Diavik receives approval to deposit processed kimberlite in mine workings then additional toxicological testing will be done on pore water collected from the deposited PK. There is no expectation that particulate PK will occur in the surface 40m where fish live.
- If PK were to go in any mine area, the Panel requests an opportunity to learn more about the depth of water for fish habitat to cover PK (TK and western science). (11.6)
 - If Diavik receives approval to deposit processed kimberlite in mine workings, Diavik has committed to a water cover greater than 50m. Pending approval, at the design stage of the project, Diavik will complete additional modelling and design based on the specific water cover depth that will be available for fish habitat above the PK and report this back to the Panel.

Appendix H

TK Panel Session #12 Recommendations Presented to DDMI

**Traditional Knowledge Panel
Guidance and
Recommendations**

Session #12: Pit Options
September 12-16, 2019

Guidance

Guidance - Monitoring

- Feeling comfortable and having confidence throughout closure is difficult given many complex and interconnected factors. Monitoring programs that we design and carry out will help us to feel more comfortable and less uncertain.
- We want to build on the existing aquatic effects monitoring program and camp to expand TK testing and to build scientific testing methods and skills with young people.

Guidance - Monitoring

- Over and above the fact that community members are the rightful guardians of their lands, these modern times mean that people now need the employment opportunities that formal monitoring programs provide.
- Watching (monitoring) is just the beginning. Action plans need to be developed that identify responsibilities around addressing issues found through monitoring fish, water, wildlife, etc.

Guidance - Monitoring

- Non-invasive monitoring and testing are always preferred to methods that harass, prod or disrupt fish, wildlife, etc. (e.g. cameras versus tagging).
- Even after the TK Panel is satisfied that Diavik is released of responsibilities, the pits and mine site need to be monitored every year, indefinitely.

Guidance – Ways of Knowing

- While fish and wildlife are smart and can sense whether habitat is healthy or safe, sometimes they don't have any choice. This is why, for example, contaminated or deformed fish have been found in other parts of the world.
- People understand fish, fish habitat and how fish survive in lakes based on their fishing experience.

Guidance – Ways of Knowing

- The TK Panel supports and expects ongoing rigorous scientific testing of fish, water, geology (e.g. fissures), wildlife, etc.
- The impacts of climate change on permafrost and water levels, in particular, remain a big question in peoples' minds.
- It will take time for the pits to return to a natural state that is healthy for fish.

Guidance – Communications

- The TK Panel needs more tools (e.g. 3-d models, animations) that people can see and touch to help visualize and understand proposed plans. The TK Panel wants a central online location to store and access all TK materials (e.g. EMAB).
- Again, the TK Panel continues to want to meet more frequently (i.e. twice per year).
- People who attend the TK Panel for the first time must look at previous reports before participating.
- As per recommendation 8.6, the TK Panel would like to see both male and female youth participating in each TK Panel session.

Recommendations

Pit Closure and Kimberlite - Recommendations

- 12.1 The TK Panel would prefer to have the soft material that is produced from processing kimberlite (slimes) stored away from the surface so animals and humans cannot access it and accidentally get caught in it. The Panel supports the option of putting the existing slimes that are in the PKC plus new slimes produced, in the bottom of the pit so that animals and people do not have access to it.

Pit Closure and Kimberlite - Recommendations

- 12.2 Remove the slimes that are currently in the PKC such that Diavik can start to cover the PKC to create a safe and hard surface at least three years earlier than the original closure plan.
- 12.3 The TK Panel needs to be on site to witness transfer of slimes and filling the pits with water (i.e. two TK Panel sessions).

Water Monitoring (Science) - Recommendations

- 12.4 Fill the pits from the bottom up with Lac de Gras water so that water is not running down the walls of the pits. Let the water settle for a minimum of two years.

Water Monitoring (Science) - Recommendations

- 12.5 Ensure scientific tests are done every season and throughout the year to understand the health of the water and to compare water in the pits to water in Lac de Gras. Scientific water testing should include, but not be limited to: temperature, turbidity, colour, clarity. The presence of micro-organisms should be measured as well as oxygen levels. Such tests should be done at various depths in the water column as far down as the PK. The results should be regularly shared with the TK Panel.

Water Monitoring (Science) - Recommendations

- 12.6 Diavik should collect baseline information on Lac de Gras from around the dikes so that impacts of breaching can be measured. The TK Panel should work with scientists to record ice thickness, wind behaviour and snow-drifting before and after dikes are breached.

Water Monitoring (TK) - Recommendations

- 12.7 The TK Panel would like Diavik to test water in the pits for at least two years (until the water is deemed good) and compare this to water in Lac de Gras. Water samples will be collected from multiple depths at various times throughout each year and tested according to the AEMP protocols. Taste tests will be done after scientific sampling tells us the water is drink-able where they will watch for smell, clarity (turbidity), temperature, colouration, scum on the water or tea, and water and tea for taste.

Water Monitoring (TK) - Recommendations

- 12.8 When scientists and the TK Panel agree that the pit water is safe (i.e. drinkable) and stable (i.e. consistent), then breaching of the dikes can occur to allow water to flow back and forth but prevent fish from entering the pits, at least initially.

Fish Monitoring (Science and TK) - Recommendations

- 12.9 Set nets for fish testing near the dikes in Lac de Gras to help get baseline information on current fish health and continue once the dikes are breached to compare.
- 12.10 Whether or not the dikes allow fish passage, do not build up fish habitat within the shallow pit areas where PK is placed as fish will return naturally if they sense it is safe and the nutrients and oxygen that they need are there . Focus DFO requirement for fish habitat enhancement in pits where there is not PK. The TK Panel needs to be there to watch and provide guidance on how to enhance fish habitat.

Fish Monitoring (TK) in Pits - Recommendations

- 12.11 Put fish in pit lakes to be monitored, tested and sampled before the dike is completely breached once water is deemed “safe” (i.e. at least 2-6 years of monitoring). If the fish are the same as fish in Lac de Gras according to TK testing (e.g. liver, heart, gills, bladders, etc.), carry out a second stage breach for fish passage.
- 12.12 Monitor fish from pit lakes according the AEMP protocols, but only taste test them if there is an acceptable comfort level and scientific results confirm that the fish are safe for eating.

Monitoring (Other) - Recommendations

- 12.13 Install motion activated cameras around the dikes to monitor wildlife activity to see if birds and animals are trying to access pit water. Test animals if possible through non-invasive methods. Any dead animals should be tested for contaminants. Report all findings to communities and the TK Panel.
- 12.14 Monitor plant life, sediments and bugs in the water within the pits in the spring (after break-up), summer, and fall (before freeze-up) through our own eyes. Combine this with scientific test results. Further discussion is needed to detail this monitoring approach.

Monitoring (Other) - Recommendations

- 12.15 Develop details of monitoring programs (including training and employment) and action plans for community members. Expand the aquatic effect monitoring program and camp to include the TK Panel and a base for TK monitoring as one step in this plan.
- 12.16 Develop an online location where all TK Panel materials will be stored and made accessible. Request that EMAB host these on their website. Communications presentations should be developed and uploaded so that they can be used by TK Panel members within their communities.

Traditional Knowledge Panel Session # 12: Guiding Themes and Recommendations

September 12-16, 2019 Diavik Mine

Part A: Guiding Themes

Monitoring

Feeling comfortable and having confidence throughout closure is difficult given many complex and interconnected factors. Monitoring programs that we design and carry out will help us to feel more comfortable and less uncertain.

We want to build on the existing aquatic effects monitoring program (AEMP) and camp to expand TK testing and to build scientific testing methods and skills with young people.

Over and above the fact that community members are the rightful guardians of their lands, these modern times mean that people now need the employment opportunities that formal monitoring programs provide.

Watching (monitoring) is just the beginning. Action plans need to be developed that identify responsibilities around addressing issues found through monitoring fish, water, wildlife, etc.

Non-invasive monitoring and testing are always preferred to methods that harass, prod or disrupt fish, wildlife, etc. (e.g., cameras versus tagging).

Even after the TK Panel is satisfied that Diavik is released of responsibilities, the pits and mine site need to be monitored every year, indefinitely.

Ways of Knowing

While fish and wildlife are smart and can sense whether habitat is healthy or safe, sometimes they don't have any choice. This is why, for example, contaminated or deformed fish have been found in other parts of the world.

People understand fish, fish habitat and how fish survive in lakes based on their fishing experience.

The TK Panel supports and expects ongoing rigorous scientific testing of fish, water, geology (e.g., fissures), wildlife, etc.

The impacts of climate change on permafrost and water levels, in particular, remain a big question in peoples' minds.

It will take time for the pits to return to a natural state that is healthy for fish.

Communications

The TK Panel needs more tools (e.g., 3-d models, animations) that people can see and touch to help visualize and understand proposed plans.

Again, the TK Panel continues to want to meet more frequently (i.e., twice per year).

People who attend the TK Panel for the first time must look at previous reports before participating.

As per Recommendation 8.6, the TK Panel would like to see both male and female youth participating in each TK Panel session.

Part B: Recommendations

Pit Closure and Processed Kimberlite

- 12.1 The TK Panel would prefer to have the soft material that is produced from processing kimberlite (slimes) stored away from the surface so animals and humans cannot access it and accidentally get caught in it. The Panel supports the option of putting the existing slimes that are in the PKC plus new slimes produced, in the bottom of the pit so that animals and people do not have access to it.
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Monitoring Water - Science

- 12.4 Fill the pits from the bottom up with Lac de Gras water so that water is not running down the walls of the pits. Let the water settle for a minimum of two years.
- 12.5 Ensure scientific tests are done every season and throughout the year to understand the health of the water and to compare water in the pits to water in Lac de Gras. Scientific water testing should include, but not limited to: temperature, turbidity, colour, clarity. The presence of micro-organisms should be measured as well as oxygen levels. Such tests should be done at various depths in the water column as far down as the PK. The results should be regularly shared with the TK Panel.
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Monitoring Water - TK

- 12.7 The TK Panel would like Diavik to test water in the pits for at least two years (until the water is deemed good) and compare this to water in Lac de Gras. Water samples will be collected from multiple depths at various times throughout each year and tested according to the AEMP protocols. Taste tests will be done after scientific sampling tells us the water is drinkable where they will watch for smell, clarity (turbidity), temperature, colouration, scum on the water or tea, and water and tea for taste.
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Monitoring Fish

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Appendix I

Next Steps

Next Steps

Session	Original Plan (2013)	Completed & Revised Plan
6	PKC	PKC
7	Re-vegetation	Re-vegetation
8	Review of Closure Landscape	Fish Habitat Design & Water Quality
9	Post-closure monitoring: Wildlife & Water	Post-closure Wildlife Monitoring
10	Fish Habitat Design Reviews	SCRP & TK Monitoring Plan
11	PK Management (A418)	PK Management (A418)
12	Pit Options	Pit Options

Need to plan for future sessions – 1/year is realistic

Future Topics/Sessions

North Inlet

Monitoring at Closure

Updates on PKC closure options

Closure Details: building demolition, metal disposal, waste disposal, contaminants, laydown areas, airports, roads, etc.

Closure Inspection Criteria

2021 Aquatic Effects Monitoring Program (AEMP) TK Camp

Appendix J

TK Panel Session #12 Evaluation Summary

TK Panel Session #12 Evaluation Form

Thank you for participating in the twelfth TK Panel session held at the Diavik Mine from September 12-16, 2019. We hope you enjoyed your time at the session. We appreciate feedback on your experience. Your responses will help us maintain and improve future sessions.

1. How would you rate the session for **working and communicating together?**
 - Very good
 - Good
 - Neither good nor poor
 - Poor
 - Very Poor

2. How would you rate the session for **mutual respect among participants?**
 - Very good
 - Good
 - Neither good nor poor
 - Poor
 - Very Poor

3. How would you rate the opportunities for you to **share your knowledge and experiences?**
 - Too many opportunities
 - Enough opportunities
 - Too few opportunities

4. How would you rate the **recording and documenting of TK during the session?**
 - Very good
 - Good
 - Neither good nor poor
 - Poor
 - Very Poor

5. How would you rate the **facilitation of the session?**
 - Very good
 - Good
 - Neither good nor poor
 - Poor
 - Very Poor

6. How would you rate the **outcomes and findings of the session?**
 - Very good
 - Good
 - Neither good nor poor
 - Poor
 - Very Poor

7. How would you rate the **amount of time** to discuss the topic(s) during the session?

- Too much time
- Enough time
- Too little time

8. How would you rate the **venue and food** for the session?

- Very good
- Good
- Neither good nor poor
- Poor
- Very Poor

9. How would you rate the **logistics** for the session (e.g., hotel, travel, and honoraria)?

- Very good
- Good
- Neither good nor poor
- Poor
- Very Poor

10. **Overall**, how would you rate the session?

- Very good
- Good
- Neither good nor poor
- Poor
- Very Poor

11. What were the strengths of the session? What did you enjoy about the session?

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12. How could the session be improved?

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2018 Diavik TK Panel, Session 11: Evaluation Form Summary

Question	Very Good	Good	Neither Good nor	Poor	Very Poor	Total Responses	Comments
How would you rate the session for working and communicating together?	12	2					
How would you rate the session for mutual respect among participants?	19	4					
How would you rate the recording and documenting of TK during the session?	11	3					
How would you rate the facilitation of the session?	10	4					
How would you rate the outcomes and findings of the session?	9	5					
How would you rate the venue and food for the session?	10	2	1				
How would you rate the logistics for the session (e.g. hotel, travel, honoraria)	8	5	1				
Overall, how would you rate the session?	9	4					

Question	Too long/ many	Enough	Too short/few	Total Responses	Comments
How would you rate the opportunities for you to share your knowledge and experiences?	3	11			
How would you rate the amount of time to discuss the topics during the session?	2	10	1		

What were the strengths of the session? What did you enjoy most about the session?

Everyone having enough time to speak. I enjoyed the camaraderie of the group. Making friends. I enjoyed the discussions: it was nice to hear different points of view from different areas. All groups agreeing with one another. Coffee breaks, late starts, early finish. Everyone sharing their knowledge, working together to reach our goals and objectives. Building our bonds with each other to be more comfortable and confidence to have our say. Sight seeing: more of that. More elders and youth supports. The only thing is when trying answer a question that is purposed, a new question develops. Learning, listening, being part [sic]. Keeping everyone on track and on topic. Information sharing, diversity of youth and elders. Have a look and see the new pit and the work from last visit. I love everything. I enjoy my stay and to meet all other peoples that I never seen.

How could the session be improved?

Traditional foods. Have one session on mine site and one session in Yellowknife. New members should at least be updates on issues being discussed. Work together. Re-cap to new members. By going on-land to do fish tasting, water samples - boiling to make tea, same snow in winter then boiling it, taste it. The days are good among the weekend and organized as well to get everyone here. It is good as it is for now unless someone else has other suggestions. Can't be! More space to work in. Give new panelists background on topic to avoid working backwards. Offer traditional food (e.g. caribou stew and bannock). Come back again! Larger room to have meetings, tables as an asset. I can't say much, no complaints. I enjoyed my stay.