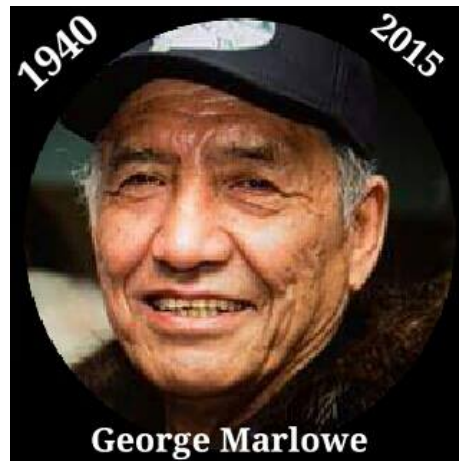


# DDMI Traditional Knowledge Panel Session #9

## FOCUS ON CARIBOU

Diavik Diamond Mine, NT  
May 13–16, 2016





George was known for his love of life. He and his beautiful wife Celine raised a large family ensuring that they could live in both the traditional and modern worlds. He provided leadership in the community formally and informally. He contributed to the publishing of a dictionary in his dialect while playing an important role in the development of a “watchmen” program that builds on traditional stewardship of traditional territories to ensure the environment is protected. Indeed George spent some of his last days reviewing the work of the TK Panel, ensuring that it was well represented by reports. George loved to laugh and make people feel good, he didn't hesitate to tease in a loving way. He will be missed throughout his community and the whole north.

When George was still okay he had a lot of recommendations [for the TK Panel] so wrote everything down in October . . . At the end he was laughing and then he says "I hope the two mines can get together and make me a head stone out of all those rock piles."

Shared by Celine Marlowe

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

## Session #9: *Focus on Caribou*

---

Diavik Diamond Mine, NT  
May 13–16, 2016

### Facilitation

Joanne Barnaby, Joanne Barnaby Consulting  
Natasha Thorpe, Thorpe Consulting Services (TCS)

### Participants

Kitikmeot Inuit Association	Bobby Algona, Nancy Kadlun, Doyle Algona (youth)
Lutsel K'e Dene First Nation	August Enzoe, Celine Marlowe, Denecho Catholique (youth)
North Slave Métis Alliance	Kathy Arden, Wayne Langenhan, Chloe Dragon Smith (youth)
Tłı̨chǫ Government	Dora Migwi, Louie Zoe, Janelle Nitsiza (youth), Peter Huskey (interpreter)
Yellowknives Dene First Nation	Grace Martin, Rose Betsina, Berna Martin (interpreter)

### Observers/Presenters/Visitors

Government of the NWT	Karin Clark (presenter)
Environmental Monitoring Advisory Board	Arnold Enge, Allison Rodvang (observers)
Tłı̨chǫ Government Lands Department	Joline Huskey (observer)
Diavik Diamond Mines Inc.	Gord Macdonald
C&E Consulting	Colleen English
Thorpe Consulting Services	Janet Murray (transcriber)

*Interpreting equipment provided by Pido Productions.*

As a group here, we all come together to try to express our feelings, to give back to Diavik our traditional knowledge. -- Bobby Algona

We are gathered here having this discussion on the caribou we are representing.  
-- Dora Migwi

## **Background**

The TK Panel is mandated to assist Diavik Diamond Mines (2012) Inc. (Diavik) and work with local communities in facilitating appropriate and meaningful accommodation of Traditional Knowledge (TK). The TK Panel provides guidance in environmental management and monitoring as well as in closure planning at the Diavik Diamond Mine. From 2011 through early 2013, TK Panels were assembled by the Environmental Monitoring Advisory Board (EMAB) to discuss select concerns related to the Diavik Diamond Mine. The most recent session was held at the Diavik Diamond Mine (Figure 1) from May 13–16, 2016 and was the fifth in a series of TK Panel sessions now administered under Diavik rather than EMAB, and the ninth in the total number of TK Panel sessions.

## **Session Purpose**

Caribou are at the forefront of many northerners' minds given recent declines in herd populations and, not surprisingly, discussions of caribou have been central to nearly all TK Panel sessions held to date. In response, this ninth session focused on caribou, particularly with respect to monitoring and managing caribou (and other wildlife) as a part of Diavik's closure plan. A review of available TK related to caribou was presented, including maps of caribou-related TK produced by various Aboriginal organizations and available to the public. This session was particularly relevant given present concerns about population decline of the Bathurst caribou herd.

The TK Panel drew upon previous sessions related to caribou (TK Panel #4), observations made during previous site visits, a review of available TK presented as well as an overview of the current Bathurst Caribou Range Plan and regional wildlife research and management programs provided by the Government of the Northwest Territories (GNWT) Department of Environment and Natural Resources (ENR). Part of the session was also used to review the final closure plan for the North Country Rock Pile (NCRP) to allow the TK Panel to determine if they support the final design for the pile at closure. In keeping with the format of previous sessions, the TK Panel developed recommendations for review and consideration by Diavik and provided suggestions for future TK Panel sessions.

## Session Goals and Activities

The TK Panel reviews closure plans for various areas of the mine, shares their knowledge in relation to each topic and presents recommendations to Diavik at the end of each session. In this way, they are continually increasing their understanding of the mine site and its closure challenges, while also directly influencing Diavik's closure plans. The goals for Session 9 were to:

- provide a final opportunity for input and seek support / approval on the final closure plan for the North Country Rock Pile
- review a summary of existing TK of caribou that has been shared since the 1990s, prepared in response to a request from the TK Panel
- learn more about the current Bathurst Caribou Range Plan and the GNWT's wildlife research and monitoring programs
- provide guidance on ways to encourage safe movement of caribou and other wildlife on/around site and how best to monitor animals throughout closure

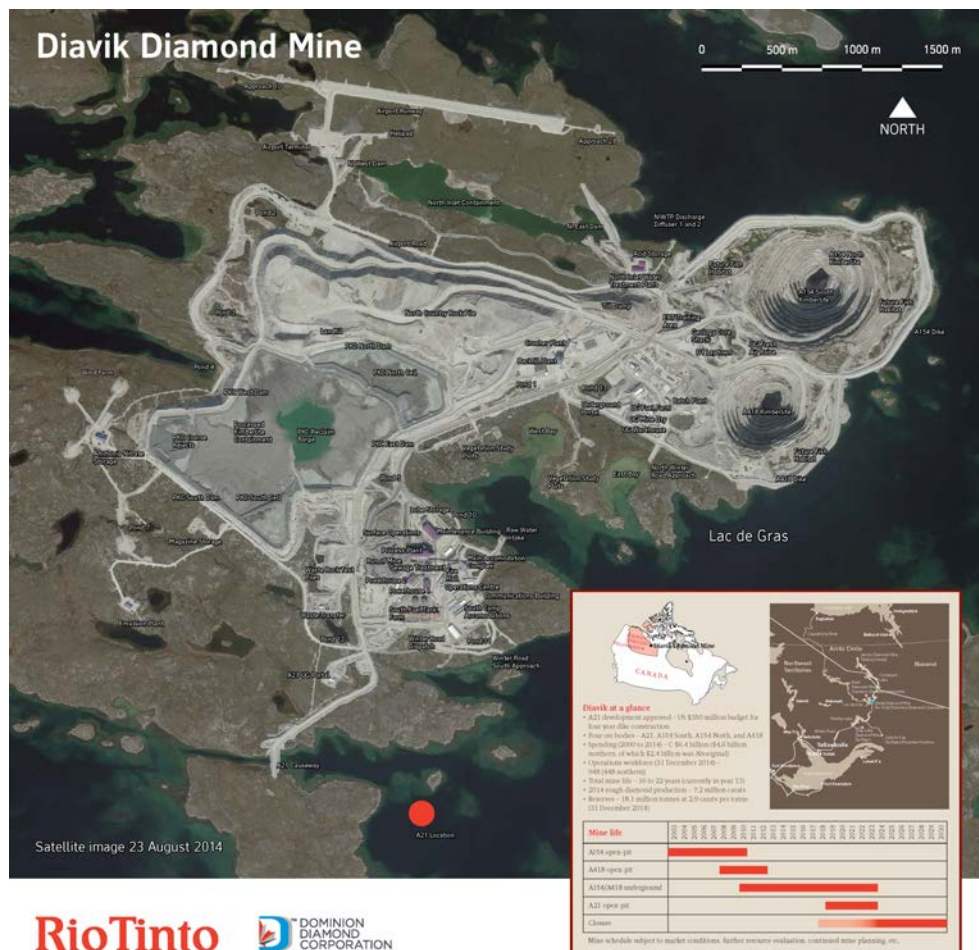


Figure 1 Diavik Diamond Mine 2015

The session agenda was structured around these key goals. At the outset of the session, the group reviewed and approved the proposed format and agenda. An evaluation process held at the end of the session helps to improve future sessions.

During the TK Panel session, approximately 10 individuals took a Process Plant tour, as per their request, to learn more about the Processed Kimberlite deposition trial. Participants received a surface tour of the mine upon arrival to re-familiarize themselves with the site, and a more focussed field trip on May 14 included stops requested by the Panel and discussions relating to the following locations: A154/418 open pits, North Country Rock Pile (NCRP) and till pile, processed kimberlite containment (PKC) area, test pile, natural reclamation areas near the shallow bays, and the North Inlet area.

## Report Overview

This report first outlines key themes around caribou related to closure planning discussed during the session and closes with recommendations made by the TK Panel.

Appendix A includes photos from the session and field trip. Appendix B contains the session 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. Session notes were reviewed and verified by the speakers and included in Appendix D including maps created by the men's break-out group of the TK Panel related to their recommendations around caribou monitoring. Appendix E contains maps of publicly available TK of caribou shared by groups while Appendix F presents a review of caribou recommendations made by the TK Panel to-date. Appendix G contains a presentation given to the TK Panel as an overview of documented TK of caribou starting from the 1990s.

Diavik provided a presentation on an overview of the closure plan, the focus for Session 9 and their response to TK Panel Session 8 recommendations on shoals, reefs and water monitoring. Diavik also presented the final closure plan for the NCRP as well as an update on processed kimberlite toxicology and the PK deposition trial (Appendix H). Finally, Diavik reported on caribou and wildlife monitoring on-site (Appendix I). The Government of the Northwest Territories gave an overview of the Bathurst Caribou Range Plan and the department's current research and management initiatives (Appendix J).

On the morning of the last day, the youth collaboratively presented the work of the TK Panel to Gord Macdonald through a presentation outlining key observations and comments as well as recommendations on caribou (Appendix K). A short presentation delivered on the next steps is included (Appendix L), followed by a summary of participant evaluations (Appendix M).

## Proceedings: Key Questions and Themes

The TK Panel was tasked with exploring guiding questions during this session. The original questions proposed by the facilitators were modified with input from the TK Panel over the course of the session and were finalized as follows:

1. Do you accept the responses to your recommendations as to what can and cannot be accommodated in the NCRP final closure plan? Do you support the plan?
2. At and after closure, what can be done to support safe movement of wildlife on/around site?
3. Should certain areas be planned to attract or keep away caribou? If so, how and where?
4. How will we know if caribou are safe on site after closure? How should we monitor them? What should a monitoring program look like when: 1) Mine operations end (2023–2025)? 2. Post-closure (2025–2030)? How? Where? When? Why? Who? What?

Throughout discussions to consider these questions, the following key themes emerged throughout the session:

1. The current closure plan for the NCRP is supported, with the conditions identified in current session recommendations
2. Today and throughout closure, implementing traditional and other ways to direct caribou movement will help keep them safe.
3. Today and throughout closure, caribou must be monitored.
4. Caribou populations are suffering and need urgent help.
5. Ongoing stewardship must be encouraged through the development of a robust community-based monitoring program.

### 1. The TK Panel Supports the NCRP Closure Plan with Conditions

The final closure plan for the North Country Rock Pile was presented to the TK Panel for final approval (Appendix H). Details of where input and recommendations received from the TK Panel were integrated into the closure plan were provided. General discussion of the design and status of the NCRP followed with participants generally pleased with the final version, as indicated by their unanimous supporting vote (with two abstains from individuals absent from previous sessions).

The TK Panel was satisfied with the plan to use till and rock from A21 to cap the NCRP and discussed whether this would be stable enough to prevent seepage. For example, some delegates expressed concern about how climate change impacts to permafrost might impact the NCRP.

The suggestion was made to put large boulders on top of the NCRP. Boulders would add the benefits of shade and microhabitat but could come with the costs of snow and water accumulation, which may then cause increased melt water and seepage. In the end, the TK Panel advised that a few (i.e., 2–3 large boulders) should be put on top of the NCRP and that snow accumulation patterns should then be monitored.

Next, the group discussed the proposed caribou “ramps” on the NCRP to enable safe caribou passage. Monitoring snowdrift and accumulation patterns on the ramps was considered to be important. As discussed extensively in previous TK Panel sessions, it will also be very important that the ramps are made of materials that encourage easy walking for caribou. The TK Panel has supported material similar to that on the slopes of the test pile, and feel it is important to ensure that large boulders near the bottom of the pile were covered or removed.

The TK Panel also discussed whether to re-vegetate at the base of the NCRP. Some participants didn’t think this was necessary, but the majority thought this would be helpful, most notably in the areas where the collection ponds are located.

The TK Panel discussed and confirmed their ongoing support for the 3:1 slope proposed for the sides of the NCRP.

In summary, the TK Panel supported the revised closure plan for the NCRP with the condition that the related recommendations were supported:

- 9.1 Re-vegetate the base of the NCRP around the collection ponds.
- 9.2 A limited number of boulders (e.g., 3–4) should be placed on top of the NCRP to provide some shade for caribou, create habitat for small mammals and encourage natural re-vegetation.
- 9.3 Study the wind and snow accumulation on caribou ramps/trails as well as the top of the NCRP.
- 9.4 Ensure a gradual slope on the top of the NCRP so that there is a slight dome down the centre.

## **2. Directing Caribou Movement Will Keep Them Safe**

The third key theme that emerged from the session is that today and throughout closure, implementing traditional and other ways to direct caribou movement away from hazards and towards easier walking routes will help keep caribou safe. Aboriginal peoples have long used their knowledge of caribou to guide their migrations and movements using strategically placed spruce trees or inuksuit so that caribou would funnel towards waiting hunters.



Panelists discussed how this knowledge could be applied to direct caribou away from hazardous areas such as cliffs or tailings ponds. Ways to direct caribou considered:

- Boulders (e.g., around PKC)
- Boulder fences
- Traditional fences (e.g., trees, inuksuit, boulders)
- Controlled burn
- Decoys
  - Noise (high pitch, wolf, bells)
  - Physical shapes (e.g., owl, wolf)

During the session, the women and men broke into two separate groups to consider Q2, Q3 and Q4 (refer to Agenda in Appendix B).

The women's group discussed general movement of caribou through the reclaimed mine-site and specified that they would like caribou deflected from the PKC area. They considered the construction of berms as a possible impediment to movement. The men's group identified on the map where they would like boulders placed to deflect caribou away from areas that may be unsafe (Appendix D). This included the shoreline of the North Inlet and the edge of the NCRP near the PKC. An innovative solution to use decoys or sounds to deflect caribou was considered by the men's group.

Even though traditional methods were used to deflect caribou, panelists weighed their concerns about potential residual contamination after closure with the challenges of using fences, boulders, berms or walls to keep caribou away from certain areas of concern.

Regardless of whether methods to influence caribou movement and migrations are implemented, making the site safe again was forefront on the minds of panelists. For example, ways in which natural filtering systems (e.g., moss) could be used to improve water quality on-site during closure were considered.

Across the landscape, both groups discussed whether they wanted to encourage caribou to return to the Lac de Gras area and support caribou in reclaiming their traditional routes after closure. Some people thought that the caribou should be deflected away from the area while others recognized that caribou will go where they like and so the site should be well prepared for returning caribou.

Panelists understand that while caribou movement can be directed sometimes, caribou have their own mind and ways that humans cannot always know how they will behave nor should they try to control the caribou.

### 3. Caribou Must be Monitored Throughout Closure

Details around caribou monitoring emerged as the fourth theme of the session. Following a review of caribou monitoring recommendations made by the TK Panel in previous sessions (Appendix E) and an overview of caribou monitoring presently ongoing on-site (Appendix I), the group considered existing and future monitoring of caribou. Panelists discussed current collaring data and the use of geofence collars which are smaller and enable better data collection. These collars could continue to alert monitors to caribou presence in the area throughout and post-closure, and this information would continue to be shared between adjacent mines such as Diavik and Ekati. Today, caribou sightings at one site should be reported to the other (or, at closure, to community monitors) and acted upon within a monitoring program. This suggestion came as part of a discussion advocating for the mines in this area to collaborate and combine monitoring resources. Finally, in keeping with community concerns about caribou health, panelists advised that the effects of collars on caribou need ongoing monitoring.

Since 2013, Diavik has used motion sensitive cameras for some aspects of wildlife monitoring throughout the site, which the Panel was curious about and suggested might be another good way to monitor caribou through closure. The men's group provided specific suggestions as to where motion-sensitive cameras could be installed in multiple locations at and near the mine-site as a tool to help with monitoring (Appendix D).

Panelists agreed that monitoring is very important throughout all stages of closure and provides capacity building for community members to be monitors both during closure (2023–2025) and post-closure (2025–2030).

The women's group devised the concept of a camp-based monitoring program grounded in both traditional knowledge and science, complete with a name: the Cumulative Effects Monitoring and Management Station (CEMMS). The idea would be to use the current TK camp as a base and link programs to the GNWT Daring Lake Research Station. Monitoring would build upon the current / ongoing monitoring presently conducted onsite, continue through “deconstruction” (i.e., reclamation and decommissioning) and post-closure. The program would be similar to that currently in place, but would have more community members or “land stewards” and northern Aboriginal peoples in leading roles. Training would begin well in advance of 2023 so that monitors are ready. The monitoring program would be built on partnerships between governments, industry (including Diavik), community members, colleges, universities and more with monitors coming from all of the communities across the range of the Bathurst herd.

Any caribou monitoring program should consider both caribou and their habitat. During the session, panelists spoke to fire and other threats to caribou habitat today and into the future. Likewise, a monitoring program must consider animals other than just caribou. Changes in the health of some animals can be an indicator of overall ecosystem health which may, in turn, be influencing caribou.

Monitoring throughout different seasons and across the range (i.e., beyond just the mine site) is also important. Ultimately, any monitoring program requires commitment from community members, industry, government and others if it is going to continue long after the mine closes.

Finally, while the session focused on caribou monitoring, members of the TK Panel again expressed concern about ongoing monitoring of the PKC, slimes, pits, NCRP and drainage (in and of themselves but also in relation to caribou). While this was a topic during the previous TK Panel session, the concern continues to emerge. Diavik assured the TK Panel that the site would be monitored until the final closure target date of 2030 and that Diavik would not be allowed to relinquish the mine if there were contamination issues.

#### **4. Caribou Need Our Help Now**

The TK Panel discussed the current caribou “crisis” and suggested that a combination of predation (especially from wolves), overharvesting and sport hunting, environmental conditions (e.g., climate change, forest fires), exploration and development and disrespectful behaviour have led to declines in populations.

Panelists shared how they had predicted that changes in caribou would come when caribou weren’t respected and expressed their worry for future generations if the caribou do not return. Concern for caribou is particularly personal for the TK Panel members who told of the close relationship between people and caribou and how northerners have long depended on caribou for cultural, spiritual, and economic well-being as well as for subsistence purposes.

People agree that caribou are in need of assistance but have various suggestions as to why the decline is happening and what actions or interventions would be helpful. The TK Panel discussed various ways to help caribou through traditional practices, predator harvesting, education, and healing ceremonies/communicating with the caribou. While many of these issues fall outside of the scope of Diavik’s responsibilities or practices, they provide context and a framework for what happens on-site today and how to plan for the future.

Ultimately, the TK Panel unanimously agreed that action must be taken to help caribou. Participants supported the need for a healing ceremony where people could ask for forgiveness from the caribou and offer their support in helping caribou return. They also advocated for people from various communities, agencies, and territories to work together.

## 5. A Robust Community-based Monitoring Program must be Developed and Transferred Upon Closure

While the TK Panel discussed the concept of a monitoring program, the last key theme that emerged was that the existing TK Camp should be transferred to the GNWT or another organization at closure and serve as the basecamp for community monitors after closure (i.e., 2025). Details around funding, liability, responsibility and more need to be fleshed out well in advance and while community members would like to develop and design the program (e.g., after the Haida Watchmen model), they would seek administration assistance from the GNWT. Other agencies could also use the station for cumulative effects monitoring and other initiatives. More details of the program could be discussed at a future TK Panel session.

## 6. Other

Additional themes discussed during the session included the profound changes that community members are facing today resulting from major caribou declines and the loss of a major food source, and to adapting to mineral exploration and development. Adapting to rapid change is difficult and people are struggling to maintain their traditions in very uncertain times. The concept of staggering development was suggested as a way to minimize impacts to caribou populations.

There were concerns raised about the sighting of pinkish-red snow thought to be associated with dust or development and questions about whether this algae might be toxic. This is known as “watermelon snow” and is a type of algae commonly found throughout the circumpolar Arctic. Diavik regularly tests snow cores and “watermelon snow” has been observed by site staff. If areas of algae were present where a snow core was to be taken, this snow would be included in the sample but the lab analysis would not be specific to the algae. Interestingly, a month after this session, Lutz et al. (2016) published a scientific paper describing how this algae (*Chlamydomonas nivalis*) can accelerate melt because it’s darker colour absorbs light and thus may cause faster melting than white snow which reflects light.

Youth delegates participated in this session and were celebrated for their contributions, including presenting back to plenary on several occasions and leading an “energizer” event. The TK Panel is pleased that Diavik supports youth participation and emphasized throughout the session how important it is for youth to spend time with their elders and to continue to engage in community-based monitoring, community meetings and initiatives such as the TK Panel. Panelists commented on how they would like to continue taking a leadership role in community-based monitoring, planning for development and more.

## Outcomes: Recommendations

The TK Panel collectively developed 25 unanimous recommendations related to caribou (Appendix K). These recommendations built upon discussions around caribou from previous TK Panel sessions, the presentation on the Bathurst Caribou Range Plan, and the summary of documented TK of caribou. The recommendations flowed from a common vision that caribou are in crisis and the relationship between people and caribou must be healed, not only at the mine-site, but also across the entire range.

The resulting recommendations centred around the following themes:

- NCRP—Four additional recommendations to support the final closure plan, as presented above.
- Helping caribou—Two recommendations specifying how communities can contribute their ideas on making caribou strong as well as prioritizing ceremony and healing the human-caribou relationship.
- Directing caribou movement—Two recommendations specifying where boulders should be placed on-site to keep caribou away from areas of concern.
- Monitoring caribou (general)—Two recommendations citing the need for collaboration and to understand both traditional knowledge and western science.
- Closure monitoring (2023–2025 and 2025–2030)—Eight recommendations detailing how planning and implementing a collaborative monitoring program should occur including details on training and capacity building, cumulative effects monitoring, ensuring community members are in high level / leadership roles, and suggestions for what indicators should be monitored.
- Caribou monitoring and cameras—Three recommendations detailing locations for using cameras. (e.g., caribou crossings).
- Supporting stewardship—One recommendation to consider long term monitoring related to re-vegetation, caribou and other wildlife and water quality in the Lac de Gras area.
- Supporting ceremonial traditions—One detailed recommendation on how to work with the TK Panel to plan spiritual gatherings now through closure and other ways to respect spiritual beliefs on-site.
- Other—Two recommendations related to other aspects of closure and community verification of reclamation.

Recommendations are numbered to reflect the TK Panel session identification (i.e., Session 9) and to subsequently identify each specific recommendation (i.e., 9.1–9.25). 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.

## TK Panel Next Steps

Following from planning carried out at previous sessions, the TK Panel has completed most of the focus session topics that have been suggested to-date (Appendix L). Thus, the facilitators asked participants to suggest future TK Panel topics and together the group developed the following possible list:

- A21 Open Pit and South Country Rock Pile
- North Inlet
- Underground mine
- Building deconstruction, metal disposal
- Monitoring Programs (more details of the proposed CEMMS)
- 2018 AEMP TK Study

These proposed topics were presented to Diavik and will be further discussed at the next TK Panel session related to a closure plan update and landscape overview.

## References

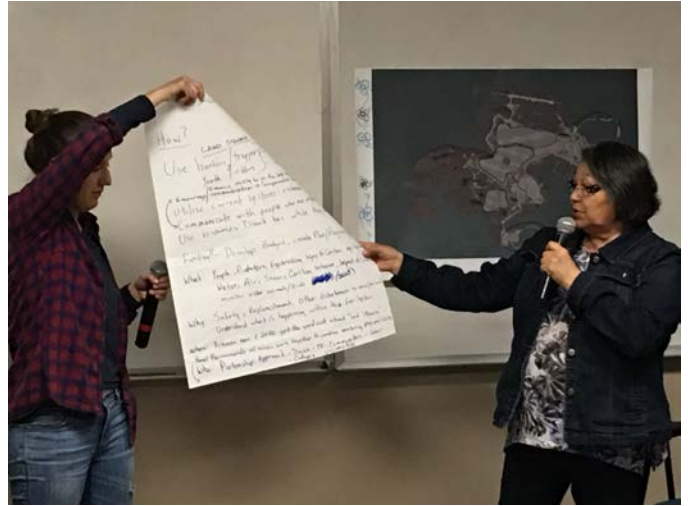
Stefanie Lutz, Alexandre M. Anesio, Rob Raiswell, Arwyn Edwards, Rob J. Newton, Fiona Gill and Liane G. Benning. 2016. The biogeography of red snow microbiomes and their role in melting arctic glaciers. *Nature Communications* 7, Article number: 11968.  
<http://www.nature.com/ncomms/2016/160622/ncomms11968/full/ncomms11968.html>.

## **Appendix A**

### **TK Panel Session #9 Photos**



**Men's breakout session to discuss how best to monitor caribou post-closure**



**Chloe Dragon Smith and Kathy Arden (NSMA) present the results of the women's breakout session back to the group**



**Nancy and Doyle Kadlun (KIA) and Wayne Langenhan (NSMA) listening to presentations**

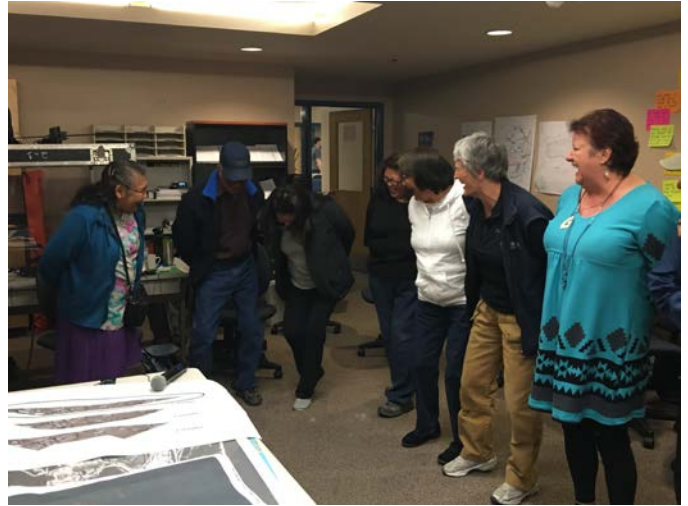


**Louie Zoe, Dora Migwi and Joline Huskey (Tłı̄chǫ) learning about the NCRP closure design**





Having a laugh during a much needed “caribou tails” energy break lead by the youth (L-R, August Enzo (LKDFN), Peter & Joline Huskey (Tłjchq), and Celine Marlowe (LKDFN)



YKDFN youth trying to keep up with the Elders during the game!



Nancy Kadlun (KIA) shares her perspective on caribou management at closure



Gord Macdonald (DDMI) responds to TK Panel recommendations with visitors from EMAB



**Karin Clark (GNWT) presenting to the group on the Bathurst Caribou Management Plan and monitoring and research programs that the GNWT is leading**



**Looking towards the re-vegetation test plots near the shallow bays**



**Gord Macdonald (DDMI) explains open pit closure concepts at the A154 open pit**



**Celine Marlowe (LKDFN) pointing out a wolf travelling along the A154 dike**



**Grace Martin and Rose Betsina (YKDFN) inspecting the A418 pit edge**



**Interpreter Peter Huskey in the PKC area holding a sample of the PK slimes and explaining them to Louie Zoe (Tjichq)**



**Community members considering how to create safe caribou access to the open pit lake areas after closure**

## **Appendix B**

### **TK Panel Session #9 Agenda**



## Agenda

### Diavik Diamond Mines Inc. Traditional Knowledge Panel Session #9: Caribou May 12-16, 2016

#### Thursday, May 12

- 3:00 pm Arrive onsite - quick surface tour en route to camp (~1hr)  
Security, Orientation & camp tour (~1 hr)  
Rooms & Luggage assistance

#### Friday, May 13

- 8:30 am Opening Prayer, Welcome, Round Table Introductions, Review Draft Agenda, Workshop Purpose Overview
- 9:00 am Diavik Presentation – closure overview, response to previous session recommendations, session 9 focus topics  
Group Discussion
- 10:30 am Diavik Update: North Country Rock Pile  
**Question 1:** Do you accept the responses to your recommendations as to what can and cannot be accommodated? Do you support the current plan?
- 11:30 am Lunch
- 12:30 pm Group Discussion  
Understanding Caribou: A 'caribou story' - Overview of Current status, issues according to Traditional Knowledge and Western Science (Facilitators)  
Group Discussion
- 4:30 pm Close



## Saturday, May 14

- 8:30 am Opening
- 8:45 am Review of Caribou Recommendations made by TK Panel to date (Facilitators)
- 9:00 Understanding Caribou at Diavik: Caribou and Wildlife Management On-site (Dianne Dul)
- 9:45 Break-Out Group Discussion: Men / Women
- Question 2:** At and after closure, what can be done to support safe movement of wildlife on/around site?
- Report to Plenary
- 11:30 am Lunch
- 12:30 pm Diavik Update: Processed Kimberlite Toxicology & Deposition Plan update
- Group Discussion
- 2:00 pm Afternoon break before an evening field trip
- 4:00 pm Site Field Trip and debrief for visits to: A154/418 open pits, north country rock pile (NCRP) and till pile, processed kimberlite containment (PKC) area, test pile, natural reclamation areas near shallow bays, North Inlet area

## Sunday, May 15

- 9:30 am Opening
- 9:35 am GNWT - ENR Presentation: Bathurst Caribou Range Plan Overview & Cumulative Effects Monitoring
- 11:30 am Lunch
- 12:30 Break-Out Group Discussion: Men / Women
- Question 3:** How will we know if caribou are safe on site after closure? How should we monitor them?
- Question 4:** Should certain areas be planned to attract or keep away caribou? If so, how and where?



**Question 5:** What should a monitoring program look like? How? What? When? Where? Why?

- 2:30 Group Discussion
- 4:15 pm Introduction to Next Steps / Next Sessions
- 4:30 pm Close
- 6:15 pm Tour of Processing Plant

**Monday, May 16**

- 8:30 am Opening
- 8:35 am Facilitators present draft of TK Panel recommendations for discussion  
Group Discussion: Finalize recommendations
- 11:30 am Lunch
- 12:30 pm Next Steps / Next Sessions (cont'd) Group Discussion
- 1:00 pm Presentation to Diavik: TK Panel recommendations re: caribou and NCRP  
Diavik Response and Group Discussion
- 2:00 pm Closing Circle and Prayer
- 3:00 pm Check out for return flight

## **Appendix C**

### **Informed Consent Form**



## Diavik Diamond Mines Inc. Traditional Knowledge Panel

### ***Informed Consent Form***

I (name) \_\_\_\_\_ on

\_\_\_\_\_, 2016 give permission for Diavik Diamond Mines Inc. and its contractors 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 accordance with DDMI 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 integrated with scientific data into a report, which will be publicly available.

Signed this \_\_\_\_\_ day of \_\_\_\_\_ 2016, in \_\_\_\_\_  
Northwest Territories.

Signatures:

\_\_\_\_\_

Participant

\_\_\_\_\_

Aboriginal Organization

\_\_\_\_\_

Diavik Diamond Mines Inc.

\_\_\_\_\_

DDMI Contractor

## **Appendix D**

### **Session Notes**

1 May 13, 2016 DDMI TK Panel Session #9: Caribou  
2  
3 Louie Zoe: Opening prayer  
4 Joanne Barnaby: Good morning everyone, we will start the day with introductions, please say your  
5 name and organization and your community.  
6 Bobby Algona: From Kugluktuk, KIA  
7 Kathy Arden: Yellowknife North Slave Métis Alliance  
8 Nancy Kadlun: Kugluktuk, I work with the Heritage Center  
9 Doyle Algona: Kugluktuk, KIA  
10 Chloe Dragon Smith: Yellowknife North Slave Métis Alliance  
11 Wayne Langenhan: Highway number 3 and I am with NSMA  
12 Grace Martin: Dettah, Yellowknives Dene First Nation  
13 Rose Betsina: Yellowknife in Ndilo  
14 Denecho Catholique: LKFN, Łutsel K'e Dene First Nation  
15 August Enzoë: Wildlife Management Board Łutsel K'e  
16 Celine Marlowe: Łutsel K'e  
17 Janelle Nitsiza: Whati  
18 Louie Zoe: Gamèti  
19 Dora Migwi: Behchokò  
20 Joline Huskey: Behchokò, Tłìchq Government  
21 Karin Clark: ENR, GNWT I am an invited guest to give a presentation tomorrow.  
22 Colleen English: I contract back to Diavik, and just to let you know Gord Macdonald who many of you  
23 are familiar with and who leads Diavik's closure planning, he will be here, he is just getting  
24 here this morning.  
25 Joanne Barnaby: Working with Natasha in facilitating the work of the panel, and I am losing my voice.  
26

1 Natasha Thorpe: As most of you know, I have been co-facilitating the panel with Joanne. This is our  
2 ninth session.

3 Going through the agenda. We are here to talk about caribou. Colleen is going to provide an update  
4 on the closure plan and speak to the North Country Rock Pile.

5 Colleen English: **Diavik Presentation**—Closure Overview, responses to previous session  
6 recommendations, Session 9 focus topics

7 Bobby Algona: That question about putting bugs back in the lake, we were talking about washing the  
8 walls of all the pits before putting the water back in. Is that water going to be pumped out  
9 prior to putting water back in, because there is still going to be some ammonia in there?

10 Colleen English: If you remember, they did tests of the washing of the walls and it actually came back  
11 saying it didn't make a difference, so the plan is not to wash the walls. The plan is to fill the  
12 pits and then to monitor for a few years. This would be done prior to putting the bugs in, if  
13 that approach was supported.

14 Nancy Kadlun: When we did the last camp we had one bed still in our camp.

15 Colleen English: Yes there were a few people that didn't show up this last time so there were a few  
16 extra beds.

17 Continue presentation.

18 Wayne Langenhan: I am just wondering about if Diavik wants to walk away in 2030, I want to know  
19 what would happen if in 2030 if things still aren't cleaned up sufficiently. Would they stay a  
20 longer period of time 5-10 years until it was to the point where they could walk away or would  
21 they just say 'that's it we are going'?

22 Colleen English: It is a good question. Diavik would have to be able to prove that things are in good  
23 order to walk away. I think even Karin would know that certainly the government doesn't want  
24 to be sitting with another Giant Mine scenario or Con Mine scenario and I think a lot of it would  
25 depend on what that lingering issue was. If it was something big that was going to need a lot  
26 of money and maybe it was a way longer term, then Diavik would still have to be committed.  
27 If it was something smaller, it might be a case where Diavik might not get all of their security  
28 back and so they would relinquish a portion of that and that money would go towards  
29 continuing to fix that problem. So it depends on what the problem is but they would certainly  
30 not be able to walk away at 2030 if there was some problem that was still existing; they would  
31 have to be doing something to solve it before they could relinquish the leases.

32

33 Break

34

1       Natasha Thorpe: I am curious to know if there are any other responses or questions about what Colleen  
2               just presented.

3               I was showing Joline this document here that contains all of the recommendations that you've  
4               made over the last few years. It outlines what the actual recommendation was and then how  
5               Diavik responded to it. The final column speaks to how Diavik is continuing to address or  
6               respond to that recommendation. I just want to check in with you before we move on.

7       Celine Marlowe: On the form that you have, in October when George was still okay he had a lot of  
8               recommendations so wrote everything down in October but I don't know if that paper is still  
9               at home. I hope it is still there. I wrote down all his questions. At the end he was laughing and  
10              then he says "I hope the two mines can get together and make me a head stone out of all those  
11              rock piles".

12       Natasha Thorpe: Thank you for sharing. George was a very strong presence in this panel and when I  
13              spoke earlier about breaking up into the women's group and the men's group he was part of  
14              that men's group and part of shaping those recommendations and how Diavik is planning for  
15              caribou movement.

16       August Enzoe: Can you put the map back up for the pit? The last meeting we had we were talking about  
17              the pits, and everybody agreed that after 5 years if the water is safe and he talked about cutting  
18              the pits from east to west. What happened with that?

19       Colleen English: You are talking about our last meeting when Lucas Enzoe said to cut just here, here  
20              and here (more north to south) to almost make a stream and keep the pits as ponds. So if you  
21              remember the challenge that Gord had said, and still would be the case, is that you can't  
22              control the water level when you do that. The entire pit area would fill with water once the  
23              dikes are breached, as lake water levels would equalize throughout the entire area.

24              We can all get out and look at that on the site tour tomorrow.

25       August Enzoe: Okay

26       Louie Zoe: The open pit in BHP - there is lots of open pits - and they have mentioned similar ideas to  
27              this. The water is going to be filled and if they refill all these open pits and it might make the  
28              water level of the lake go down.

29       Colleen English: It is a good question and I know it seems like it would be a big draw and if everybody  
30              did it at the same time then yes, it probably would make quite a big difference. Filling the pits  
31              was always on the closure plan, and the scientists always do what they call modeling, how  
32              much water is going to be needed to fill those pits and how much will that draw down the lake.  
33              Fortunately Lac de Gras is very large, I can't remember the exact number but I think it would  
34              only go down a few centimeters. I will get it from Gord.

35       Natasha Thorpe: I remember Gord providing a number of how much the draw down would be.

1 Kathy Arden: Earlier you were showing us a picture of Diavik and the pits and the new A21. The new  
2 A21 hasn't come in yet, you are building the dam for it and all the rock that comes out of that  
3 of course is going into North Country Rock Pile. That's why you said it's not going to get any  
4 bigger. So are they going to start a new one?

5 Colleen English: Two things are going to happen with A21. All the rock in A21 is considered clean rock,  
6 so there is an opportunity to do some progressive reclamation and use the rock to close the  
7 North Country Rock Pile earlier. It will be capped like the test pile we visited. A South Country  
8 Rock Pile will also be built and the TK Panel has been very interested in the design of it.

9 Kathy Arden: Where are they, the test piles?

10 Colleen English: (points to map) Beside where the South Country Rock Pile will be. We went by it on  
11 the tour yesterday and we'll go back tomorrow.

## 12 **Presentation on North Country Rock Pile**

13 Joanne Barnaby: My memory around re-vegetation for the North Country Rock Pile was not actually  
14 on the rock pile but was around the base of it, not on top of it. So I am not sure if your response  
15 would be the same or not.

16 Colleen English: The areas around the North Country Rock Pile are mainly collection ponds,

17 Joanne Barnaby: I recognize that.

18 Colleen English: I don't know if that would change, you can ask Gord.

19 Wayne Langenhan: That A21, are you opening that pit for mining the diamonds or recapping?

20 Colleen English: For mining, there are a good chunk of diamonds down there.

21 Wayne Langenhan: So you are using it for dual purposes, how long is it going to take before you mine  
22 the A21 out and use the material for recapping and recovering the diamonds?

23 Colleen English: Pre-stripping would start in 2018. This summer the dike will be finished construction  
24 but will still have water in it. Next spring they will finish what they call the cut off wall and then  
25 they will dewater the inside of the dike in 2017. 2018 is when they start the pre-stripping,  
26 taking the till out of the pit, so that is when they can start capping A21.

27 Wayne Langenhan: 2018, if it's going to be that long, we've got a year to think about it. It doesn't seem  
28 like there is any big rush.

29 Colleen English: It's not a year to think about it. It has to get approved, it has to go through regulatory  
30 review, there is work to be done to prepare the NCRP for closure. Most importantly, re-sloping.

31 Wayne Langenhan: So we don't have a lot of time to think about this.

1 Colleen English: Right, but it's something that you have been talking about for a while now and the  
2 opportunity has come up to do progressive reclamation because of A21.

3 Bobby Algona: I have a nephew that lives year round in Contwoyto looking after the mine Lupin. He is  
4 care-taking the mine year round. He should be on his way home today from Yellowknife but  
5 he couldn't make it back home on the snow mobile because there is not a lot of snow. And we  
6 understand when you have very little snow it's going to melt very fast. We didn't have very  
7 much accumulation over the winter and all the hunters in Kugluktuk complained about no  
8 snow all winter.

9 He likes to drive it up himself instead of flying it home. But this last couple years he started to notice  
10 something on the snow when he got closer to the mines. (We use snow to wash our hands  
11 after working on the caribou or other animals). When he would pick up snow closer to the  
12 mines and let it melt on his hands there were pink crystals on the snow and asked what  
13 chemical is doing this out on the land.

14 In my mind that's dust emissions. I'm not saying it's these mines but industry itself. The jet streams  
15 carry stuff all over the world. He is grabbing snow and it's changing colours, how far away from  
16 the mines do they take the snow core samples? I am wondering if Diavik could expand their  
17 sampling farther away from the mine? As a traditional knowledge holder I have to have some  
18 say about not only the mine itself but around the surrounding areas. Sometimes the mines  
19 tend to look at only their property and not any farther.

20 I am just wondering if the accumulation is coming from the mines or from somewhere else?

21 Colleen English: I think there are a couple of questions in there. The pink is snow algae and ice algae  
22 and it becomes even more concentrated and visible in the spring as the snow melts.

23 The next question is about distances. The little green line is East Island, the second green line is 10-  
24 15 km in each direction away from the island and, is called the local study area (LSA). The red  
25 line is 30-40 km in every direction, and is called the regional study area (RSA).

26 In the snow core program we test for dust and chemicals and it's done in a radius. There are 5 lines  
27 that run out from the mine.

28 Bobby Algona: That is one of my big concerns; we have never seen this pinkish red snow. My nephew  
29 he was saying he witnessed it closer to the mines no matter which way the wind goes.

30 Dora Migwi: The things that Bobby had mentioned are right. At one time my uncle Louie and they were  
31 out on the land on the skidoo and there was something on top of the snow, the dust and it  
32 was just black on top of the snow and maybe it wasn't the mines but maybe the planes.

33 Colleen English: There can be dust on top of the snow. You can see this mostly at the airstrip, just like  
34 in a community. There was more dust beside the open pits from blasting earlier in the mine



1 life, but that has decreased now that Diavik is underground. The dust on the snow is studied  
2 for amount and quality, and so is the lake water and sediments that it melts into.

3 Joline Huskey: Could you go back to the stock pile? I have a few questions and I haven't been to your  
4 meetings before, but I have been involved with Tłjchq Government. You are saying they  
5 wanted to re-vegetate the stock piles, and the company said no. I have been doing a lot of  
6 research on eskers and wildlife. From what I know so far, when caribou roam the tundra and  
7 they go on top of eskers for food and protection. If you are not going to re-vegetate, do you  
8 know how long it would take for the pile to re-vegetate itself? You also mentioned that the  
9 tailings would have lots of seepage in ponds before going into Lac de Gras but I don't see many  
10 ponds on Diavik island so which route would it go? Are the little ponds being tested for  
11 chemicals?

12 Colleen English: One thing I want to distinguish is the rock pile is not tailings, it is waste rock. So the  
13 pile itself, the lichen takes a long time to re-grow. We are doing some work to see if we can  
14 help the lichen and other re-vegetation. The fireweed that is coming back itself, it was probably  
15 8 years after Diavik had been operating before we started seeing anything naturally. There is  
16 an old road about 15 years old that is now all purple, from the fireweed in the summer and  
17 that happened all on its own.

18 The ponds, there are different types of ponds. Some are very natural ponds and nothing has been done  
19 with them. Then there are the engineered ponds that we have put liners or pumping systems  
20 in so we can collect the water. Most of that water goes to the PKC.

21 Kathy Arden: Can you just show us where the dam is starting and where A21 is starting?

22 Colleen English: I will get a picture that better shows where the dike would be.

23 Kathy Arden: Once you start pushing the North Country Rock Pile out, you've got that road there and  
24 that would disappear right?? So how would you get around the mine from the airport?

25 Colleen English: Yes the road would disappear but we have other options for what would become the  
26 main road. The power lines would also have to be moved.

27 In order to start capping it we have to start reshaping in 2016-2017 before putting the till on it and to  
28 be on time with when they start stripping A21. Gord might know how long it would take to  
29 finish capping the Pile.

30 Celine Marlowe: What causes the snow to turn red, purple pink? Is it because of the mine or is it all  
31 over?

32 Colleen English: The snow algae is found in other places. I don't know if he (Bobby's nephew) just  
33 noticed it closer to the mine.

34 Bobby Algona: I get that from chopping ice for my fishing hole.

1 Chloe Dragon Smith: Could it be from the nutrients from the dust from the mines?

2 Colleen English: You may see more of it because of the nutrients in the dust, but I don't know. Is it safe  
3 to make tea from it? I don't know. We made tea from the lake this summer and people thought  
4 it tasted fine. There is definitely less dust right now because the mining has gone underground  
5 so the blasting is underground and contained.

6 Kathy Arden: When you say 'all over the place' do you mean all over the NWT or all over the world?

7 Colleen English: The world.

8 Bobby Algona: When I think of the snow accumulation of red and you look at the aurora borealis you  
9 have the same colours. Maybe it's the same kind of stuff that is up in the jet stream and our  
10 atmosphere. When you see the northern lights and all over would it be the same as the snow,  
11 it's the same colours?

12 Joanne Barnaby: I think one of Celine's questions was regardless if its red, is it still safe?

13 Colleen English: I don't know. Algae is a plant and shouldn't be toxic but I don't know. I can look it up  
14 and get back to you.

15 Celine Marlowe: So for sure you are saying this red snow is not because of the mine or 100% sure that  
16 it's not the mine.

17 Colleen English: 100% it occurs naturally all over the world. One of the uncertainties is if it is nutrient  
18 based. Is there more of it because of the dust? We don't know.

19 Louie Zoe: We are talking about snow, algae. Before we used to travel by the dog team and we would  
20 have ice tea and there are a lot of fumes that are being used and the planes that travel over  
21 us and the fumes that maybe go to the land and the water.

22 Joanne Barnaby; We wanted to check back with you to see if you are satisfied with the closure plan  
23 using your recommendations regarding the North Country Rock Pile. If you are not satisfied  
24 then you need to say so and we should discuss it further.

25 Kathy Arden: When you look around the land here now and look at the natural vegetation that comes  
26 up around the jumbled rock and little ponds and streams that flow. It's taken years to get those  
27 kinds of vegetation and plants. We wouldn't be able to get someone to try and recreate that  
28 on a rock pile, you would have to let nature do that on the rock pile. Lichen itself takes years.  
29 So I think the recommendation that we asked for is reasonable but when we look at it in a  
30 natural sense, we can't put that back there. Those rocks have been blown out of the land, but  
31 we can make that pile as acceptable to nature as we can. I think putting stuff along the base  
32 would help. I think I am satisfied to just let nature take its course.

33 Joanne Barnaby: So Diavik should not try to re-vegetate the rock pile itself but should around the base?

1 Nancy Kadlun: Yes this is a [hu]man made pile here it shouldn't take long to grow plants because any  
2 little thing will attach to the land; the dirt touched by man grows faster.

3 Joline Huskey; It was mentioned that the levels of the rock pile would be a ratio of 1:3. What is the  
4 ratio once the clean rock is on the rock pile? What would it be when it's topped with the till  
5 and rock?

6 I just want to know what the levels of chemicals are on top? Even natural and engineered ponds that  
7 would have an effect on waterfowl, birds and animals that drink out of it.

8 Colleen English: 3:1 is what is on the test pile; so steep but walkable. That would be the finished  
9 steepness of the pile after capping.

10 One of the benefits of doing progressive reclamation is that you can monitor the performance  
11 of the pile earlier. There will be more confidence, so the more information prior to closure, the  
12 better.

13 Celine Marlowe: I am still curious about that pink snow. I still think it is harmful to the human being. If  
14 we kept using that snow everyday it would be harmful for us.

15 I hate to say it but I know my husband is beside me and he has asked me to say it, people that  
16 are working around the mine here and with the mine, that is why I said 100% sure is, I know  
17 it's kind of hard to say that it is the cause of the mine but that pink snow is harmful to human  
18 beings in the long run. When I was still working at the school I do a lot of research with a lot of  
19 things and that's what we teach.

20 Wayne Langenhan: There is a little bit of controversy with the snow here but maybe if the mine could  
21 be talked into it to send some out to be tested.

22 Natasha Thorpe: I am no algal specialist but I would be happy to do some research on the internet  
23 tonight and get back to you.

24 Colleen English: Snow samples are already sent out with the snow core tests, and the pink snow is  
25 included in it, if it is present.

26 Joanne Barnaby: So with a show of hands question number 1. Do you accept the responses to your  
27 recommendations as to what can and cannot be accommodated?

28 Wayne feels he can support the NCRP Plan other than the one response about re-vegetating around  
29 the ponds at the base of the pile.

30 Do you? (show of hands for yes?). *All in support.*

31 Bobby Algona: You are not going to do very much on top of the country rock pile. I mentioned that the  
32 one time on our walks anywhere maybe you have noticed the big boulders sometimes that

1           they create re-vegetation, things collect around them. Maybe putting a few big boulders on  
2           top of the rock pile would help it to do it naturally. With this I can support the plan.

3

4       Break for Lunch

5

6       Gord Macdonald: **Interactive Closure Model - Presentation**

7       Nancy Kadlun: The rock pile is really far and what he was saying to put big rocks on the top of the rock  
8           pile because when it's really hot in the summer and caribou like to be in shade when it's hot.  
9           And the squirrels and animals like to be around rocks as well.

10      Gord: Thank you, we have thought about some of that but where the conflict is with some of that is  
11           remembering that we need to make sure we don't have a poor water quality seepage. So we  
12           want to discourage snow and more water so we would have to look at the benefits vs the  
13           disadvantages.

14      Natasha Thorpe: Gord, there were a couple of the other questions that just came up this morning  
15           about the North Country Rock Pile. There was discussion about re-vegetation at the base  
16           versus on top of the pile.

17      Gord: Yes I heard that comment coming in that you guys are comfortable with most of our responses  
18           to your recommendations but not that one, that you wanted us to look harder at the base of  
19           the pile. That is very good feedback and for sure we will have a closer look at that one.

20      Natasha Thorpe: Another question was "How long will it take to finish the North Country Rock Pile  
21           cap?"

22      Gord: We have been re-mining the rock pile to build the dike for A21, and we have been doing that in  
23           particular spots based on the start of where the re-slope would happen in January 2017, it will  
24           take about a year to do the re-slope and the next product is the till that comes from A21. It  
25           will take about another year until that is done, then we will let it sit for about a year until it  
26           freezes, then we will start putting the rock from A21 on top. Then we would be ready to start  
27           with any re-vegetation around it then.

28           We also have to relocate the road and power line prior to re-sloping the pile.

29      Kathy Arden: Do you have enough till from the new pipe to put a cap on the North Country Rock Pile  
30           or are you using some till from the other two pipes as well?

31      Gord MacDonald: We have more than enough from A21 and we will also create another new till pile.  
32           The reason we are not re-using the current till pile is because we feel it will be helpful in closure  
33           as a material for some of the other re-vegetation work that we might want to do.

1 The main thing I just want you to remember, and I know it's hard to think about what is going on inside  
2 all of this rock pile, but we have to get this right the first time because it is really hard to go  
3 back and change a slope or change something after we have already done it. That's why we  
4 have been talking about it with you for so many years and also because we couldn't commit  
5 to how we were going to deal with this until we had commitments to build the A21 pit. Now  
6 that we do, we have a good path forward.

7 Joanne Barnaby: It might be helpful to remind us why we want to keep the rock pile frozen.

8 Gord: The cover that I described, the reason we are building that cover is to make sure that the rock  
9 pile stays frozen. Right now there is quite a bit of that rock pile that thaws every year. About  
10 30 feet. And when it rains that water can come in contact with the rock in the pile and pick up  
11 chemicals from the rock, just like it does from the ground, but these rocks have been  
12 underground for a really long time and these rocks have the ability to create a poor water  
13 quality. So what we want to do is keep the water from getting in contact with the rock. There  
14 are two different types of rock on the mine site. Type 1 and type 3. Type 1 is a good granite  
15 rock and if water touches it, it doesn't create poor quality seepage. Then a type 3 rock which  
16 is a different geological type of rock and when water contacts it, it can pick up metals and  
17 things that we don't want to get into the water. So the cover we are putting on top of it is to  
18 keep the rock pile frozen and it only thaws into the type 1 rock and the till. . It's using what we  
19 have from nature to help control what could be a problem.

20 And I know Bobby is going to ask about climate change.

21 Climate change is a challenge. We have engineers doing tests under current climate conditions, and  
22 under climate change conditions.

23 Bobby Algona: I was just wondering about with all this global warming and how deep that permafrost  
24 freezing in certain areas and that's why we are having certain lakes with less water because I  
25 think they are losing water because the permafrost is defrosting.

26 I ask this question: how deep does the permafrost go? They say it is very deep and I wonder how deep  
27 it's melting. Look at that rock pile you are still going to have a lot of permafrost melting and  
28 eskers are melting way faster. Hunters are seeing a lot of sinkholes now as well and have to  
29 change their travel paths.

30 Gord: Maybe I wasn't clear but we will put that soil (till) on top but then we are putting 3 meters of  
31 mine rock on top of that and yes that will thaw every year but with it on top there won't be  
32 the sink holes you are talking about because the rock on top will be protecting it.

33 Wayne Langenhan: I was just wondering the way these ramps were put in, were prevailing winds taken  
34 into consideration? Because it might pack things in.

35 Gord: So no we did not look at that but I guess we should look at that and make sure there will always  
36 be a way off, in all seasons.

1 Nancy Kadlun: Instead of having just small ramps, can't you just smooth out the whole area around  
2 the piles?

3 Gord: At the one meeting we looked at the test pile and everyone said that was fine for us and caribou  
4 to walk up. That is what we will be doing with the whole pile, what we are also doing is making  
5 some extra easy ramps.

6 Louie Zoe: We see the graphic it seems to be a good project, a gradual slope would be good for the  
7 animals to roam on it. It would be good to even it out on top.

8 Gord: One of the things we were thinking of ways to take pictures of it with us and look at the pile  
9 while we are there.

10 Louie Zoe: Yes on the tundra when there is a slope there would be a snowdrift, and if the animals go  
11 on the drift then we have to keep that in mind.

12 Gord: If one of these ramps is snowdrifted in would a caribou go up another ramp or go around or try  
13 and go through?

14 Bobby Algona: When you have snow accumulation around the hills it tends to make the slopes a little  
15 less steep and more gradual. In summer time I see a lot of these and how deep they go through  
16 up and down and their hooves catching the rocks. I think it would be really good to have these  
17 ramps that you have on there but as long as you don't have any big boulders on the side of the  
18 pile so when the caribou use the steep hills in the summer.

19 Gord: We have tried to keep the side around the PKC steep because we want to discourage the caribou  
20 from going in there.

21 Bobby Algona: Another thing, in the summer time especially when the mosquitoes are really bad, these  
22 slopes would keep the snow and the caribou would go there where it's cool.

23 Natasha Thorpe: So we are going back to those two keys questions:

24 Question 1 Are we accepting the responses to the recommendations as to what can and cannot be  
25 accommodated on the NCRP?

26 Nancy Kadlun: When I said shade for the caribou I didn't mean putting lots of rocks I was thinking to  
27 put at least 2 or 3 big rocks up on top, I didn't mean a whole lot of them I meant a few maybe  
28 because it will be really hot up there.

29 Gord: I never thought of that. I thought you meant a whole bunch of rocks.

30 Bobby Algona: We are going to go into the PKC later right?

31 Joanne Barnaby: Given the additional advice you have given Gord and Gord's answers, can you indicate  
32 by raising your hand that you are comfortable.

1 **All hands in favour except for two abstains.**

2 Grace Martin: Are we making the decisions, or is it going to the communities as well?

3 Gord: You are the first full group to see this, it still has to go to the Boards and then yes we will also be  
4 taking it back to the communities.

5 Joanne Barnaby: No one needs to go on record for disagreeing with the recommendations?

6 **No hands raised.**

7 Natasha Thorpe: **Traditional Knowledge Insights about Caribou in the Lac de Gras Region –**  
8 **Presentation**

9 So this is the starting point for the next couple of days. Before we break is there anything we missed?

10 August Enzoe: In the olden days, the story about what they were saying was all true. I was raised from  
11 two adults. Before they passed away, I always listened to them talking about caribou, and they  
12 were told by their grandparents that the world was going to change. Same with caribou. I was  
13 told you won't see any caribou in the future and now I remember that what my grandparents  
14 were telling me. One day you will go up a hill and see a caribou and have tears in your eyes.  
15 Caribou is really changing; this is the first year that we didn't have caribou in our life. They  
16 were coming towards us and they got half way there and they turned back. Same with  
17 Bathurst, I'm not surprised it's not coming to us.

18 Bobby Algona: Ultimately for the caribou right now my biggest recommendation is to go shoot some  
19 wolves. That's the biggest concern that we have right now, I would like the government to  
20 come up with something. It's the first time I have ever felt the urgency to get something done.  
21 The caribou are having a hard time keeping their numbers up. It is very urgent that we need  
22 to get rid of some of these wolves. I would like the mine and the government to say go get rid  
23 of some wolves right now. Because some of the caribou are half way between Kugluktuk and  
24 Contwoyto and they say you don't ever see this in one herd and right now we are seeing one  
25 little herd being chased by a bunch of wolves and another little herd also being chased by a  
26 bunch of wolves. I myself I get anywhere around 50 wolves. And when the migration comes  
27 through that's when we get the bulk of the wolves. We need to get rid of some of those wolves  
28 right now. We have done this in the past with poison. That was very hard on all animals that  
29 ate the caribou meat but the way I see it now, it is the hunters that were keeping the wolf  
30 numbers down back then, aren't hunting anymore and our younger generations are looking  
31 more towards jobs and getting away from hunting and trapping. They are saying they've had  
32 100 wolves shot this year when they used to be in the thousands. I remember back when that  
33 big herd was around Kugluktuk. That was the most wolves I ever got, around 3000. This is very  
34 urgent for me and they get together and put their action otherwise what the wolves are doing  
35 now. Bears have gone up very quickly the last couple of years.

1 People in the government and the wildlife department need to get together and help the  
2 caribou numbers come back.

3 Nancy Kadlun: Speaking about caribou that is really declining, we have so many sport hunters as well  
4 every and all year and they are killing off all the big bulls. Where would this young boy be today  
5 if he didn't have guidance? The bulls are being taken away from the young caribou and so the  
6 young caribou don't have anyone to show them where to go any more.

7 Joanne Barnaby: I have heard elders in the past talk about how important those leaders are. They knew  
8 the importance of them to the caribou and traditionally they didn't hunt those leaders. They  
9 knew the importance of those leaders in maintaining the herd. It is something that is not in  
10 the hunting regulations.

11 Celine Marlowe: What Bobby said about wolves is true. Not last year but the year before, past Artillery  
12 Lake on towards Sandy Lake, we were out there hunting and I could see wolves in packs all  
13 over around us. You look one way and there were about 5 or 6 wolves, then another way the  
14 same thing. I do believe that is a big problem with the caribou, the wolves.

15 Last year we didn't really go hunting because my son-in-law and daughter passed away and then now  
16 George, not even a year and I have lost 3 people. It was really tough on us so we didn't go last  
17 year in the spring.

18

19 Break

20

21 Natasha Thorpe: Presents **Maps of migration routes according to TK.**

22 Louie Zoe: In the past when my dad was still living, during the month of August they would migrate to  
23 the north into the tundra. That's how we used to travel out on the land, that's how our  
24 ancestors did too. In August, the calves would be good for a parka, that's what my father would  
25 say. Once the bulls migrate down into the tree line, the cows and calves would follow them,  
26 and once it was spring they would travel into the tundra. There used to be lots of bulls, and  
27 once they started sport hunting they would go for the big bulls for the antlers, these are the  
28 leaders. There used to be a camp for sport hunting at Point Lake. And they kill off a lot of bulls  
29 and today when they put the collars on the necks and those can hurt the caribou as well. In  
30 Mesa Lake there was my brother Joe and he was saying that the collar might be why it's not  
31 feeding properly. The collars might have a negative impact on the caribou.

32 Dora Migwi: We are gathered here having this discussion on the caribou we are representing. Our  
33 people, we are working for the land, making decisions to protect it. We have youth here and I  
34 am thankful for them. The elders are not going to live long. In the future the youth will be  
35 working to protect the land, but as of today there are fewer elders, it feels like there are less.



1 When we have meetings in the community I feel we need more youth there. My father often  
2 said that when they go hunting into the barren grounds, it would be good to harvest calves to  
3 use for clothing. We live off the meat of the caribou and the fish, and it's very difficult for me  
4 to eat here because there is no country food. I live off of country foods so I am thankful that  
5 they talk about protecting the caribou. The wolves they roam on the land in packs, this is an  
6 urgent situation. My children and my grandchildren like to go out on the land and we are  
7 worried because of the packs of wolves. **The 3:1 ratio is a good idea (for the NCRP slope).**

8 Bobby Algona: We as natives all across the land here, we have done a lot of things similarly; we have  
9 lived off this land for many thousands of years. A lot of our elders in the past have talked a lot  
10 about the spiritual aspect not just the caribou but animals in general.

11 My grandmother (Elsi Katiuk) shared this story about caribou. A long time ago, eons ago, a lot  
12 of animals talked, they talked like ourselves and people talked to them in the past and  
13 sometimes when they would start to talk together. They would say that some things are very  
14 spiritual. Caribou were a predator at one time. There were people that were concerned about  
15 the caribou because they became predators because there was not much food. This is when  
16 they were almost like the wolf. The way the people were back in the day they were shamans,  
17 and they worked together and told stories and this caribou turned against the people and  
18 started to eat up everything that the people eat as well, and people started to become hungry,  
19 so they all go together and they started to pray do their shaman work so they did something  
20 very spiritual amongst themselves, they turned the caribou into a caribou without teeth, so  
21 they became vegetarians, and then they started migrating in search of food. Some of these  
22 people started to go hungry because they now needed food. This young shaman started to  
23 wonder what to do, so when the caribou came back he put on his caribou hide and walked  
24 towards the caribou to talk to them but the caribou didn't understand him anymore and they  
25 got scared. So they turned him into a caribou so he could follow them and find out where they  
26 were going. He wanted to talk to these people that were hunting along the way with bows and  
27 arrows and what not. When these people started to hunt this herd with the person, he was  
28 having a hard time running. He started running away and he was looking down and was always  
29 stumbling over, so he started to copy the caribou and looked up and didn't stumble anymore.  
30 He tried many times to turn back into a person but he forgot how. The person who turned him  
31 into a caribou told him how but now that he was a caribou he forgot how to do it because his  
32 brain had turned into caribou as well.

33 Joanne Barnaby: There has been quite a few conversations going on in recent years especially with the  
34 sharp decline of the caribou population and a lot of elders are talking about how our  
35 relationship with the caribou has been damaged. That a lot of the traditional laws that have  
36 been in place for thousands of years have been broken and there are things that are happening  
37 on the land where the land and habitat that the caribou depend on is being damaged and that  
38 there is a need to talk to the caribou again and a need to do ceremonies and try to repair that  
39 spiritual connection with the caribou and reconnect with the caribou and if we don't do this,  
40 they will never come back.

1 Do people have ideas at that level for what needs to be done and what we can be doing at the  
2 mine site and when should we be doing that: now, at closure? What should we be doing?

3 Bobby Algona: I forgot to add the spiritual aspect again. A lot of our elders, when they pass on the  
4 spiritual aspect of it all, sometimes our elders come back as animals or bugs or whatever and  
5 they pay us a visit again. I have noticed the ways of the animals and what they do and when  
6 they start to act a little differently that's when I look at that spiritual; it's a bridge to their soul.

7 Joanne Barnaby: Anything else on what needs to be done to help the caribou? Sometimes people are  
8 not comfortable not talking about this, but I have heard more and more elders saying we have  
9 to talk about this because it is urgent, or the caribou will be gone.

10 August Enzoe: I've been sitting at this program since way back 1996 or 1997, most of them that were  
11 here then, are now gone. I have never seen the records of what was said way back then. I am  
12 just wondering what happened to those records but I have never seen it. I have never seen the  
13 book. No one has told me anything. Towards caribou, we all live on caribou, everyone in this  
14 room. I don't care for store meat.

15 Joanne Barnaby: We are discussing your ideas on what we can do at Diavik to help the caribou return  
16 in the future, if and when they do come back here. We know you provided lots of guidance  
17 already but this is a chance to pull this all together.

18 You've seen the way they are making the North Country Rock Pile safe by changing the slopes, for  
19 example.

20 Rose Betsina: We used to come here with YKDFN with other Elders Jonas Fishbone, my uncle Philip  
21 Crapeau and Alex Mackenzie has passed on. There were no buildings like this. We used to live  
22 in a tent frame, those were the buildings that existed in this area. There were lots of berries,  
23 blueberries, and today it seems like I am lost. With the closure of the mine would there be any  
24 berries after on the land? Just look at Giant Mine, it's all contaminated trioxides. Today the  
25 population for the caribou is down and we used to see caribou on the shores. We never hit  
26 caribou with sticks or anything. What will happen to our future generations? The increase in  
27 prices, commodities. Once the reclamation is done, will there be any movement? Once they  
28 are done with the mine, maybe we should have a feeding of the fire that includes the mining  
29 company to make amends to the land and ask the spirits to return.

30 My husband drowned at Gordon Lake, we never did find his body. We went out there to Gordon Lake  
31 with the help of my sister Berna Martin to do a ceremony. My three older boys and girls wanted  
32 to go to the site again but no donations or help from other sources. It would be 30 years now  
33 and his body is still not retrieved. It is good to pay the land, it reminds people to respect the  
34 land. And for people who have not been on the land for a long time. Hopefully tomorrow we  
35 can pay respect to the land.

1 Joline Huskey: I wanted to mention about caribou and how it's important to us and my culture but also  
2 everyone around here. I have worked with elders for many years. I have been with the Tłı̄chǫ  
3 government since 2001. I worked with Louie Zoe, Dora, Dora's late husband Joe, late Harry  
4 Apples, and late Robert Mackenzie. I learned a lot from them. When they speak about wildlife  
5 about our connections to the land, its meaningful because I was raised by my parents who  
6 were both residential students. I learned English before I learned my native language. I learned  
7 a lot from Louie Zoe and his wife and my late mother. My grandmother and grandfather were  
8 alive they talked a lot about how they would live off the land. When I was really young I didn't  
9 understand the language, but as I got older I started to understand the stories. They told me  
10 that they sent them to residential schools so they could learn the white man's way and bring  
11 it back because times were changing. Thinking about that it's kind of like what is happening  
12 now with the caribou, also with animals. It's not too late to turn around how it changed the  
13 migration routes. I haven't been to Diavik since 2004 and I see a really big change, this place  
14 looks like half mall, half resort. How can you help spiritually with wildlife? How man turned to  
15 caribou and then he turned back and we have that kind of story. My grandmother told me the  
16 caribou gave birth to man and kept it in her hooves. When I see people here because we are  
17 so impacted by industry we get fuzzy and do not really think about our culture. When the  
18 (mine) worker comes back and I see people buying gifts for their children and they get caught  
19 up in stuff like that.

20 I am really happy to see Janelle here, she is really trying hard to learn. When she talks to me about  
21 fixing hide, I feel proud because I've only done it once with my grandmother Helen. This is  
22 something where we can encourage more youth. I am really concerned about the wildlife and  
23 I find that we are caribou people Like Dora was saying we should have more youth, when youth  
24 get together with the elders, they have a lot to learn. There are a lot of ways of involving youth,  
25 and they are the ones that are going to be impacted. If we don't continue to practice our  
26 culture it is going to die out.

27 Joanne Barnaby: We would really like to make sure you are comfortable with the ideas included with  
28 the closure plan.

29 Denecho Catholique: I remember the first time I was out in the barrenlands. I was 8 years old and we  
30 went to Campbell Lake. That was the first time we ever saw barrenlands and you would open  
31 the tent and see caribou walking. Now I go hunting for my grandpa August. Before it used to  
32 be so easy to get caribou. You go 20 km and now you go 100's of km to get caribou. The mines  
33 made an effect on that because they lost their route and we blocked it. Now we are going to  
34 cover their way (trails) with the rock.

35 I think you guys said its going to be closed 2023-2024. Everything closes, the caribou aren't going to  
36 say "oh okay its open now we can go that way." They are like old people, they forget their old  
37 routes.

1 Wayne Langenhan: I was thinking that this problem with mining and caribou, it's got to be more than  
2 this country, has there been anything done in any of the circumpolar countries that might be  
3 having the same problems with mines and caribou?

4 Joanne Barnaby: So learning from each other and coming up with solutions.

5 Wayne Langenhan: Two heads are better than one.

6 Joanne Barnaby: Anyone else?

7 Louie Zoe: Yes, as a citizen of Gamèti we used to see caribou every year. Now as citizens of caribou, it  
8 seems we cannot take care of them anymore. We had a forest fire and it destroyed the land  
9 by Gamèti and Behchokò and also towards Yellowknife. The caribou would migrate there and  
10 now it's destroyed. The caribou migrate to the lake up to Great Bear Lake and all this was  
11 destroyed. We don't know where the caribou will find food now. In the past, when we had  
12 forest fire by Gamèti, we had a caribou habitat and it burned and they lost their food and it's  
13 been more than 20 years since that fire.

14 Joanne Barnaby: Clearly there has been a lot of loss due to the forest fires and that goes way beyond  
15 the mine site.

16 Natasha Thorpe: Maybe we should have the feed the fire ceremony, encouraging the connection to  
17 caribou, practicing ways to connect with caribou, while thinking in your mind what that looks  
18 like at closure.

19 Wayne Langenhan: Is there any way we can talk the mine into putting out a contest? There is a lot of  
20 people out there that would have ideas.

21 Natasha Thorpe: Make that a recommendation? I am putting the youth on the spot: what if you had  
22 to respond to Wayne, what would you say?

23 Louie Zoe: It's because of the wolf, even one wolf will have 7 or 8 pups at birth and when a caribou  
24 delivers, its only 1 calf. So if there was harvesting of the wolves, it would be good. It would  
25 help with the growth of the caribou population.

26 Celine Marlowe: You mean to support the movement of the wildlife around the mine, is it easier with  
27 one big slope or with the ramp?

28 August Enzoe: Yeah I have been thinking a long time now. This mine, you will never see caribou again,  
29 maybe one or two. What we are doing is for if it comes back.

30 Celine Marlowe: They know where to get food, a lot of the barrenland is burned so all the lichens are  
31 all burnt. Of course the caribou is not going back there.

32 Bobby Algona: When we are talking about caribou, we have to look at the other aspects out on the  
33 land. If we want to save the caribou we need to save the whole ecosystem. What do caribou

1 need? They don't look for dry, they want something moist and rich. We need to look at ways  
2 of protecting it. Used to be 30 or 40 years ago we had lots of snow. That's when everything  
3 was healthy. Without water our whole ecosystem won't be viable. We look at the whole  
4 industry. We need to look at ways to cut our emissions down. I don't know how we can get  
5 industry to cut down. They are always working towards growth. Industry makes a lot of things  
6 brand new, a lot of things are mined and a lot of things get outdated even before they get  
7 used.

8 When we need to think about saving our planet. I think industry will have to come up with  
9 ways of slowing down a bit. The stuff that you mine will be there for thousands of years, come  
10 back to stable conditions. That's what we tried to do with the mines at least one mine working  
11 at a time and learned from them. Maybe we should be looking at ways of slowing down a bit,  
12 otherwise we won't have a world anymore. Look at that big fire, look at the NWT we have had  
13 record-breaking fires the last couple of years. We are suffering as well because of the heat. I  
14 think we need to look at ways of at least slowing down a little bit, 5 or 10 years from now you  
15 can still mine it, it's not going anywhere.

16 Our younger generations want to go and work now, so we are losing our cultural language. Most of  
17 our young people in Kugluktuk, they don't speak our native language very much at all. When  
18 we look east they still speak their language more to the elders.

19 Joanne Barnaby: So in addition to trying to make things safe here for caribou, we also want to look at  
20 other animals. We want to look at the other animals as well. Shape things to help encourage  
21 denning areas once the mine is gone. If there are further ideas that you have please share  
22 them.

23 Denecho Catholique: If you want to protect caribou around the site and keep them coming through, I  
24 think what Bobby said was a good idea about putting bounties on the wolves. That would help  
25 to keep the caribou population up.

26 Joanne Barnaby: Is there anything Diavik can do in relation to wolves and caribou?

27 Colleen English: Not in relation to culling wolves. I think that the government has increased the cost  
28 for hides and carcasses.

29 Wayne Langenhan: Maybe it's not worth their while because the government is cheap. Between the  
30 cost of fuel, wear and tear on their vehicles and snowmobiles, time away from their families.

31 Karin Clark: I can say a couple of words. But then I will do some homework tonight to make sure that I  
32 get it right tomorrow. The territorial government has been working with the Tłįchų  
33 Government to come up with an approach to manage predators, to do something about the  
34 wolf population and someone from the Tłįchų group might want to speak. They had wanted  
35 to do a harvesting program, getting people out on the land and harvesting wolves on the  
36 winter range of the Bathurst herd. It didn't happen this year but I am sure it is still in the works

1 for next year. The territorial government has increased the amount that they give for carcasses  
2 and hides. I don't have the numbers but I will get them. The government has also committed  
3 to do some work, background research on looking at what other jurisdictions have done to  
4 manage and control wolf predators. Then come up with some sort of program to try to increase  
5 the harvest of wolves.

6 Wayne Langenhan: I wasn't blaming you personally.

7 Karin Clark: I know but I do want to get you the right information.

8 Kathy Arden: Is there current maps that show the areas that have been burned and how that affects  
9 the caribou migration?

10 Karin Clark: ENR maps out every year what areas were burned and I will try to get a map to show you  
11 tomorrow.

12 Colleen English: Management wise, there are a couple of things we can talk about, one of the best  
13 things (looking at map from a past session, areas are labeled in colours as to where to  
14 encourage/discourage wildlife), if we are talking about closure, for us (Gord and myself talking)  
15 we thought this was one of the best things that came out of the Panel session, is the idea about  
16 areas where we want caribou to travel, areas where we want caribou to be able to stay and  
17 hang out and areas where we don't want caribou to go. This was one of the clearest documents  
18 that has actually provided that type of feedback from the panel. It is one of those documents  
19 that we are looking to when those closure plans are being made so when we talked about the  
20 pile earlier today you will see exactly how your work has been translated.

21 August Enzoe: You are talking about caribou and we would like to know last summer and this year,  
22 were there any caribou on [East] island?

23 Dianne Dul: We had 11 sightings on the island last year and it will be in the presentation tomorrow  
24 where they were. Not big herds by no means, most of the sightings were one or two animals.

25 We also had two wolves yesterday and quite a few wolves this year.

26 **END**

1 May 14, 2016 DDMI TK Panel Session #9: Caribou

2

3 Joanne Barnaby: Agenda items –Dianne’s presentation this morning, Karin’s Presentation tomorrow.

4 Natasha Thorpe: **TK Panel: Wildlife Monitoring & Management Recommendations –Presentation of**  
5 **Past Recommendations**

6 Dianne Dul: **TK Panel Caribou Monitoring –Presentation**

7 Bobby Algona: I was wondering, I noticed that Ekati has a lot of mining cameras that are out on the field  
8 monitoring caribou. Does Diavik have these cameras on site as well monitoring movements  
9 around the site as well?

10 Dianne Dul: I think it was in 2013 we put 10 or 12 cameras out with the elders that came in and did the  
11 studies with us, put them in the areas that we did the scans or tried to find caribou. We put  
12 them all throughout and then went back to grab the cameras, and I think out of all the 10  
13 cameras we had some bears, a couple wolverines, I think there was like 3 caribou and one  
14 moose. So yes we have done that. We have the cameras available, we have put them out. Also  
15 when we were trying to figure out the spot bears came on the island when we were having the  
16 huge number of bears on the island, we put cameras out for that as well. When we collected  
17 them it was mostly foxes and rabbits that we had on them, I think we had one bear and no  
18 caribou. Again that was already when we weren’t having the larger number of caribou around  
19 on site but we do have them and we have put them up.

20 Nancy Kadlun: Just looking at the photo of the caribou with the collar don’t you think that they should  
21 have lighter, skinnier collars?

22 Colleen English: The new geofence collars are amazingly light, the new ones they are focusing on now  
23 are the best ones. Very different from the traditional collars you are use to, like the one in the  
24 picture. The geofence collars are nice and light. As the technology gets better it has lessened the  
25 load on the animal.

26 Dianne Dul: Also the new geofence is different in what it can do. I do know a little bit about them, not a  
27 lot, but if you look at Diavik, they can actually set up an imaginary “fence” around Diavik or  
28 10km from Diavik, so when that caribou comes across that imaginary fence, they can set it to  
29 ping more often. It would do that once it crossed the line. So you can actually monitor the  
30 caribou and see how fast they are moving and which way they are going. The technology has  
31 changed substantially and its pretty amazing what they can do with the little bit that I know  
32 about them.

33 Joanne Barnaby: Everyone is clear on what Diavik is doing to monitor caribou? (Yes) If you think of  
34 questions let me know.

1 We would like to break out into groups and last time we did it, we did men and women so if that's okay  
2 we will do that again? Please try to build on what you already said, if you can provide more  
3 detail on your other recommendations that would be good as well.

4 We have two different maps to choose from and we are working at getting the closure map that Gord  
5 had up yesterday.

6

7 Break

8

9 Small Groups – **Women's Group**

10 Question number 3- How will we know if caribou are safe on site after closure?

11 Joanne Barnaby: We have 4 images in front of us. Caribou pathways, image of mine in its current state,  
12 after closure image from Gord's presentation, image of the bigger area.

13 Nancy Kadlun: If there is so much caribou passing through the PKC there is so much contaminants they  
14 won't be safe.

15 Dianne Dul: Last time it was said you don't want caribou going through the PKC which is why they are  
16 keeping the barriers around it high so they can't go.

17 Joanne Barnaby: Nancy do you want additional ideas for those areas?

18 Joline Huskey: Caribou is just going to go anywhere even if the berms are high, what are you going to do  
19 after closure to deal with the PKC contaminates? Is it actually contaminated or is it going to be  
20 okay? Not really answered yet?

21 Wildlife is still going to roam regardless what we do. So how are we going to monitor this after 2030 this  
22 is how it's going to look right? Okay so we are going to have other animals going through once  
23 the noise and production stops, I am concerned about this PKC even though you have put a  
24 berm up.

25 Gord: On top of the black-PKC fines we will be putting rock on top, so the caribou will not be able to  
26 contact the material underneath, but the pond in the middle that will be different. It will be  
27 open, so wildlife could access it.

28 Joline Huskey: I asked that yesterday because there were a bunch of birds in the pond, but if it's  
29 contaminated what's going to happen with that?

30 Gord: It would go down to this pond to be tested and once everyone says it's okay then we will let it go  
31 on its own to the lake. And after 2030 it would just continue the same.



1 Nancy Kadlun: You can't keep birds away though? (No)

2 Kathy Arden: Is it actually contaminated?

3 Colleen English: Gord will present the toxicity report tomorrow.

4 Kathy Arden: Okay so we won't know until tomorrow about the water.

5 Colleen English: The water is tested, we actually re-use it. The water quality is generally okay, but the pH  
6 is elevated and there is quite a bit of suspended solids in the water. Both of these are the easiest  
7 things to treat by using the tundra streams to drain and filter the water. It's the slimes  
8 underneath that we had tested and are seen as "the problem".

9 No monitoring planned after 2030 unless another party continued it. That is the plan as long as all is  
10 good.

11 Kathy Arden: I would imagine it would be something like the government monitoring caribou  
12 management.

13 Going back to the question, I would have to assume we would know through the hunters that are in the  
14 area and observing, and then they would take that to the government.

15 Those ramps, I am always amazed how caribou don't drown if they go through the ice. So if an animal  
16 were to drown inside the pits after would it be a natural thing or because of the pit? I think it  
17 would be natural.

18 Colleen English: That's more like post 2030 observations so if you took that a step back to when the  
19 mine is closed but they are still monitoring, what would that look like? Interaction monitoring,  
20 at the cliff, the pit entrances, if the caribou got out there on the dikes, would they use the ramps  
21 or climb, are the sides of the dike fine?

22 Kathy Arden: The thing is we don't know when or how many caribou are going to come back. It might  
23 take a long time, and it would have to be long term monitoring by everyone. Naturally I think we  
24 would all take responsibility to report observations of any animal. I think once it's all gone, I  
25 think it will be a natural curiosity of the animals to come back and see what happened here.

26 Joanne Barnaby: At what point is hunting allowed again onsite?

27 Colleen English: The communities are the ones that dictated the no hunting on site so I have no idea  
28 when that would change.

29 Kathy Arden: But there is still Ekati so that will still have an effect on this even if we are done.

30 Janelle Nitsiza: Caribou are sensitive. Does Ekati have a TK panel?

31 Colleen English: No but specifically to Jay-Pipe a TK advisory committee was mandated as part of the  
32 approval. So, something similar would be formed.

1 Chloe Dragon Smith: Wouldn't it make sense to train community members, hunters and trappers as well  
2 as youth, other community members for the jobs prior to closure through either Diavik or  
3 GNWT, or EMAB so that after closure we can continue to monitor it ourselves through EMAB or  
4 the GNWT which would create jobs for them?

5 Kathy Arden: When you go and observe its 32-64 minutes, take them out and train them on what to look  
6 for.

7 Chloe Dragon Smith: That would create jobs for people and youth as well.

8 Karin Clark: We are currently bringing groups together to have a method for observation that it is the  
9 same across the board and then we can actually compare results because it's all done the same  
10 way.

11 Chloe Dragon Smith: I think it's a huge opportunity.

12 Kathy Arden: Question on the red areas. After the mine is closed, how contaminated is the waste area if  
13 everything is all taken away?

14 Chloe Dragon Smith: If we were to talk about training community monitors is that something that Diavik  
15 would pay for or the government?

16 Joanne Barnaby: Would that be open to hunters and trappers that don't have other jobs?

17 Colleen English: Diavik has done community training programs before, because then Diavik has a pool to  
18 draw from of people who are trained and this I see as a similar opportunity.

19 Celine Marlowe: Do they [Diavik] have a community liaison person?

20 Colleen English: Yes, I don't remember who the Łutsel K'e person is. I will find the name and get back to  
21 you.

22 Joanne Barnaby: **Question 4** Are there further actions we should take to draw them to places, or away  
23 from places?

24 Some people have said caribou are not going to return, some say they will but we don't know when.

25 Keeping one side of the North Country Rock Pile really steep to keep them away is there other things we  
26 should do?

27 Joline Huskey: What if they have monitors out there?

28 Nancy Kadlun: They will have lots of activity so can't they tell them when they see animals like they do  
29 now?

30 Dianne Dul: You could use the collars as a trigger to when to come back and monitor, if they pass this  
31 line then you come in and monitor.

1 Chloe Dragon Smith: Is there any opportunity to partner with Ekati, say the collar signal goes off maybe  
2 Ekati can come over to check? It would save money.

3 Dianne Dul: Put it in as a recommendation; remember that Ekati owns 40% of Diavik.

4 Kathy Arden: Put moss bags on the tundra to help filter the water.

5 Joanne Barnaby: The response was not clear, so maybe we need to emphasize the need to help the  
6 natural filtering system.

7 Nancy Kadlun: Make the water in the PKC safe instead of discouraging animals from going there that will  
8 go there anyway.

9 Joanne Barnaby: What would be done now if caribou came into this area?

10 Dianne Dul: Herding, guide them out on foot so that you don't scare them and they don't run.

11 Janelle Nitsiza: So that's what it would look like at closure. It's not very attractive.

12 Joanne Barnaby: There have been some traditional knowledge that has seen caribou returning 30 years  
13 later, like when it's been burned.

14 They may be drawn to the rock pile because of the height. Safety from predators and relief from insects.

15 Janelle Nitsiza: But they don't like rocks, it hurts their hooves.

16 Joanne Barnaby: How old is that test pile?

17 Colleen English: About 7 years, maybe. I'd have to double check. (12 years)

18 Nancy Kadlun: In the future when this is all healed, 100 years from now, and they come back and say  
19 there are lots of diamonds, can we tell them no they can't use the reclaimed areas again?

20 Kathy Arden: There will be records of what has happened here.

21 Joline Huskey: Looking at the traditional routes from the presentation, I would like to lay this map of the  
22 mine over the top here to actually see what the routes were that were actually taken. If we  
23 want them to come back we need to create that natural route again.

24

25 **End of Women's Group**

26

27

1 **Men's Group**

2 Natasha Thorpe: Does anyone have any advice on how they want to start right now. Anything burning  
3 that you want to share around monitoring? We are focusing on caribou in this session.

4 **Question 2 – At and after closure, what can be done to support safe movement of wildlife on/around**  
5 **site?**

6 August Enzoe: I just see this mine right on [East] island, the other mines are on the mainland so for me  
7 right now on this island we can't go out any place. The caribou in the old days there would be  
8 lots of caribou here. I've been here many years monitoring caribou around here and the last two  
9 or three years the caribou are still going down. Now on this island right now they have nothing  
10 to feed on, nothing. I don't know if the grounds squirrels are still around. The foxes they come  
11 here on the ice for summer. It's different, they have to swim across so for monitoring caribou  
12 they are doing monitoring every year, like the lady was saying. For me, I am thinking the caribou  
13 are coming back from the calving grounds in June or July that's the time they should be  
14 monitoring for caribou around east side and west side. We don't worry too much about caribou  
15 right now because we know they will come back. If there is caribou, for now we won't see too  
16 many caribou around this island, the mines on the main land are different. I don't worry too  
17 much about the caribou on this island now the way they are monitoring it.

18 Bobby Algona: The biggest question we all have is the place where chemicals are stored, the North Inlet  
19 and also the PKC containment area. I don't know how we can really keep the caribou away. How  
20 are we going to do that? There are always things that need to be looked over a little closer  
21 because, in my mind, if you are going to keep these animals away you are going to have to build  
22 walls around these areas, especially around the contaminated areas. Because if we build a berm,  
23 they will find ways to climb over. In the springtime when there is snow, they will still get into  
24 those areas. I have tried hard thinking of ways to keep the caribou away until they are  
25 completely free or drinkable.

26 Again this spot in the middle PKC water that will be left behind, they are going to be drinking that if they  
27 get over the berm. I am having a hard time thinking of ways to keep the caribou away.

28 Natasha Thorpe: One of the recommendations the TK panel made in the past was: "Use traditional  
29 techniques like flags or trees or inuksuit to keep caribou away from areas that are unsafe both  
30 near and far from the site" so you could make some drawings on the map about where you  
31 think some of those traditional methods could be applied to keep caribou away from areas.

32 Denecho Catholique: There is another way, too, if you put big boulders around or in it; caribou won't go  
33 on big boulders.

34 Bobby Algona: Even if you put boulders here to keep the animals away, the boulders are just going to  
35 sink anyway. I think it is still going to be soft year round because of what the PK slurry is. I think  
36 Gord is going to give us a presentation on the slimes.

1 Gord: All that black material which is the processed kimberlite, at closure we will put rock on top of that.  
2 So that the caribou can't contact that black material. It seemed like everyone was okay with  
3 that. The question is more about the pond in the middle. It's in a bowl so rain and snow will melt  
4 and a pond will form there.

5 Natasha Thorpe: Denecho had the recommendation to put boulders around the pond to keep caribou  
6 away and that sounds like what you are saying. What size?

7 Gord: We haven't figured out that yet but we think it's a good idea to try to keep animals away from it  
8 but we still have to figure out the detail.

9 Natasha Thorpe: That is an example of a recommendation you could put forward. Building on what you  
10 have already shared.

11 Wayne Langenhan: I think we are jumping the gun here a little bit on trying to figure out a way, when  
12 Gord has not made his presentation yet and we don't know what his recommendations are  
13 going to be or what can be done so far as to what was recommended earlier in previous  
14 meetings. About the pond, I think we should just leave it alone right now until we find out more  
15 information from Gord.

16 August Enzoe: What about a fence?

17 Gord: The concern I have always heard about fences is that it becomes something that wolves will use to  
18 drive caribou up against and that we should try to avoid fences but maybe that's a better thing  
19 than allowing them in the pond?

20 August Enzoe: People are around monitoring the mine everyday so you could try it.

21 Wayne Langenhan: What are the dimensions of that pond? I am talking about yards or feet.

22 Gord: That (pointing to map) is about the right scale but I have to get you the dimensions because I am  
23 not very good in those units off the top of my head.

24 Wayne Langenhan: When you start tearing down these massive buildings of steel you could weld a  
25 network or cage right over top of the whole works and it would be finished, covered over.

26 August Enzoe: A few sessions ago we were talking about the jello or slush at the bottom of that. Are  
27 they doing anything towards that, monitoring it?

28 Louie Zoe: The PKC pond that we are talking about, once they cover it with gravel, when it rains or snow  
29 melts, if they put up a fence we don't know how long it will last. So if they use boulders around  
30 the pond the boulders might last longer than the fence itself. Once it is covered with gravel  
31 where there is rain or snow melts it has to be managed where it's going to drain so we need to  
32 manage the drainage part.

1 At the closure once they manage the drainage I think it will be good and will last a long time if we do it  
2 right the first time.

3 Wayne Langenhan: In previous meetings, Gord was telling us the sludge was right at the bottom and it  
4 was too much money to pump out to ship out so that they would just leave it there because it  
5 would stay at the bottom and not come to the surface. So maybe we should ask him how safe  
6 that water is to drink on top. It might be better to just leave it alone. It's hard to make a decision  
7 on this stuff right now because we don't have enough information on this as far as I am  
8 concerned. I think we should wait until after Gord's presentation to tackle some of these things.  
9 Maybe we could switch the agenda to do this more after his presentation.

10 Natasha Thorpe: Okay we can focus on the question: **what can be done to support movement of**  
11 **wildlife on and around the site?** Right now we have fences, boulders, inuksuit, trees.

12 Denecho Catholique: In Artillery Lake back in the olden days they use to put boulders like 6 feet high to  
13 look like people so it would drive the caribou in one direction maybe that's a good way to keep  
14 caribou away from it.

15 Bobby Algona: I have been thinking about this for a little while. I have seen this around the communities.  
16 They want to keep birds away and you put an owl decoy there to keep the other birds away. If  
17 we could find some ways to make decoys and directing the animals away but I don't know if you  
18 were to use a wolf decoy if it would then attract the wolves, I don't know. Test something,  
19 maybe noise.

20 Natasha Thorpe: Someone in the past suggested wolf noises, or whistles.

21 Denecho Catholique: In my hunting experience, animals are driven away by sounds, high pitch sounds so  
22 maybe a whistle.

23 Natasha Thorpe: From traditional knowledge we know that caribou have really good senses. You have  
24 just talked about their hearing sense, their visual sense (looking at decoys.) What about  
25 something to do with smell or any other sense?

26 Denecho Catholique: If you scent around there, say you use wolf scent around that pond, it's going to  
27 drive caribou away but it is also going to bring in wolves and predators.

28 August Enzoe: Way back in the 90's we did talk about this. They should try this like they are saying. For  
29 me it feels like we are starting over again but this is for the future, the mine future. It's not too  
30 late but I am just saying these are things we did say back then.

31 Natasha Thorpe: I think maybe the difference is that the mine is so busy now that it's naturally keeping  
32 caribou away but what we are talking about is when the mine is not here anymore

33

1 Bobby Algona: We want caribou to go back on the island. We're thinking of ways to keep the caribou  
2 away from the contaminated areas. In my mind if we keep the caribou away with these methods  
3 that we are trying to come up with the animals will not go on the island anymore anyway. We  
4 are trying to encourage the caribou migration to go over the island as well. The ramps we are  
5 trying to build right along the migration route. I don't know how to do this, maybe we need to  
6 keep the caribou away from the island.

7 Wayne Langenhan: Bobby I have to agree with you on this here. We are fighting two ways, we are  
8 fighting to get the caribou back and then we are fighting to keep them away, so it has to be one  
9 way or the other. Maybe what we should do is count this island as a write off and they will find a  
10 different route. There is no food, there is a lot of contamination on this island and it would  
11 probably be doing more harm trying to open up parts of it to the caribou because even if we  
12 were to set up decoys or whistles to keep them off the island who would be here to check these  
13 things? After a certain period of time, these things wear out. Things would disintegrate after a  
14 while. I think the best way is to figure out a way to close the whole island.

15 Natasha Thorpe: In the past you have talked as a group about this. If my memory serves me I  
16 understood you wanted to keep caribou away but, you know caribou have minds of their own  
17 and no matter what you do they may come back. So that's why you gave these  
18 recommendations around planning just in case they do come back here.

19 Maybe the recommendation is that, in general, you would like to keep caribou away but if they do make  
20 it through then what? How are you going to support movement on or around the site or through  
21 the site?

22 Louie Zoe: The PKC pond that would be left behind and the North Country Rock Pile is very high and  
23 maybe they should spread it out, make it the 3:1 ratio. At the same time we may discourage the  
24 caribou from going on there but we need to keep meeting and keep learning from each other.

25 Colleen English: How do caribou sense water? Is it by smell, is it by sight?

26 Bobby Algona: All animals have this instinct in them. They smell for many hundreds of miles but when I  
27 look at the smells around the mines, caribou are still coming around but they won't come and  
28 eat around those areas. The way I look at it right now all animals around the north they are all  
29 giving their sense of distress right now that people are not taking a closer look at. It's not only  
30 the caribou that I am talking about; it's all animals in the north. Our ecosystem is suffering right  
31 now because of low moisture content and when those plants become very brittle; they will not  
32 eat the brittle plants.

33 Humans have the same system telling us that this food is not healthy for us, allergies.

34 Snow algae, I raised that question yesterday, is it coming from the mine? The caribou are rerouting  
35 themselves.

1 Wayne Langenhan: We have three questions up on the board and it's very hard to put an answer to  
2 these questions because some want the caribou to come and some don't. We all agree the  
3 caribou will go where they please regardless. There won't be anyone here to maintain the  
4 property down the line.

5 Natasha Thorpe: We are talking about the time of closure, 2022 until 2030. The reason you need to give  
6 your advice now is because they are preparing the closure plan. So at that time there will be  
7 people here, we are not focusing on after 2030 right now.

8 Wayne Langenhan: Yes but what we are talking about will continue after the mine closes down... well  
9 this rock pile will still be here we aren't going to move that. So what we have to do with the  
10 slopes and such that's fine by me but as for trying to contain these ponds, I don't see how we  
11 can do that satisfactory to continue after the 2030 period. There may be a way, but animals in  
12 other areas of the world that the water is bad from some sort of mining or some other activity  
13 they come down to a watering hole, they drink it, they die. The carcasses are found beside the  
14 hole or in it so it doesn't take the animals long to learn that the water is bad. The caribou are  
15 going to go there regardless of what we do and I don't see how we are going to stop them from  
16 going on that island no matter what we do.

17 So I am saying to attract the caribou or how safe the site should be maybe we could do a little bit with  
18 that but to support movement of the wildlife I don't believe that can be accomplished. They are  
19 going to keep going where they want to go.

20 Natasha Thorpe: One example to support movement was the very specific advice you gave about the  
21 North Country Rock Pile. Is that the only thing you want to do on the site to support movement  
22 through?

23 (Wayne Langenhan nods) For Wayne it is?

24 Bobby Algona: I am having a hard time with the contaminated areas especially the PKC and the North  
25 Inlet. I am having a hard time finding ways to bring caribou back to this island.

26 Natasha Thorpe: This is hard work and I understand you are frustrated.

27 Denecho Catholique: I was wondering, if caribou or any animal are driven to or driven away from fire so  
28 I was wondering, can you control burn everything so the caribou stay away from it for a while  
29 and caribou would know that when there is a fire there will be food again in the future?

30 Bobby Algona: Last year we came up with ideas about the PKC and one was to truck it all out. If we did  
31 take all that slurry and every contamination out we would find ways of encouraging caribou to  
32 come back on the island. That's the only way I could think of encouraging caribou to come back  
33 on the island. Yet it's not an option.

34 August Enzoe: How many years have they got left to work on this island, 5 years I think. We can come up  
35 with something by then.



1 **Big Group – Men’s presentation**

2 Bobby Algona: We didn’t even put one mark on the board all we did was talk and think about ways of  
3 fixing this island somehow. North Country Rock Pile being smaller than the island. It’s what we  
4 were trying to encourage the caribou to come or move around the North Country Rock Pile.  
5 How are we going to do that? We were thinking of ways to encourage the caribou to come but  
6 also ways to discourage them to come. We are making ramps and everything around the PKC  
7 area which is very close to the North Country Rock Pile and also the North Inlet. If we are to  
8 completely keep those animals away from those areas, what does North Country Rock Pile  
9 become? All those ramps we did, caribou will not go there anyway. If we start to discourage the  
10 animals to keep away from these areas we are keeping the caribou away from the North  
11 Country Rock Pile as well. I know that last session we had we came up with trucking everything  
12 that’s contaminated along with the landfill out. If we could remove those contaminated things  
13 then we could encourage the caribou to come back. It was the suggestion that we gave to Diavik  
14 last year, we hoped that they would truck everything out, and then we would want to  
15 encourage them to come. But I heard the words “not an option.”

16 The whole island itself I think about it all being contaminated, the pink snow, the ammonia. In my mind,  
17 maybe we should discourage the animals to come if we want to keep them healthy. And we are  
18 finding ways to build ramps and such but its right beside the PKC where we don’t want the  
19 animals to come. That’s really hard on my mind, I don’t know. I think if we for the time being we  
20 came up with ways of looking at options maybe this whole island will be a write off. How are we  
21 going to direct caribou if we don’t want them to come here at all.

22 **Ways to direct Caribou**

- 23 • Boulders (eg. Around PKC)
  - 24 • Boulder fences
  - 25 • Traditional fences (trees, inuksuit, boulders)
  - 26 • Controlled burn
  - 27 • Decoys
    - 28 ○ Noise (high pitch, wolf, bells)
    - 29 ○ Physical shapes (eg. Owl, wolf)
- 30

31 **Natasha Thorpe: Any other comments from the men?**

32 August Enzoe: My mind caught about Artillery Lake, it’s a long lake about 40 miles long and about 20  
33 miles wide at the east arm of Great Slave Lake. There is a place there, a big point, in the 1930’s  
34 there use to be a village there. And the caribou came there and would swim across and then in  
35 1960’s everything changed, the caribou don’t swim across there anymore. They go a different  
36 way. There was no mine there but somehow it happened to the people there.

37

1 **Women's Presentation**

2 Joline Huskey: We didn't put anything on a map, we thought about a few suggestions about long term  
3 monitoring after the mine closes and Chloe brought up a good idea about having joint training in  
4 wildlife monitoring. A big concern was about the PKC and the drainage, is it going to be covered,  
5 it was a good thing Gord was there for a few minutes, he explained that the PKC would be  
6 covered with boulders and there will still be a pond there, natural rain water and snow melting  
7 and our concern was that, is it contaminated? And he said there was going to be some sort of  
8 drainage through the ponds and then filter out to Lac de Gras. Our concern too was about  
9 wildlife, birds will go to the ponds we can't keep them away, rodents, small animals they are all  
10 going to come in. It's going to be hard to not attract them here. We brought up another concern  
11 about the North Country Rock Pile. Right now you have a map that you wrote previously with  
12 the natural trail sites and it was engineered on top of the North Country Rock Pile. We talked  
13 about how can we attract and how can we keep them away, and when this is all closed I was  
14 really listening and about what Natasha presented yesterday about the Tłjchq has the natural  
15 trails already on the website and same with the Yellowknives Dene First Nation. I suggested  
16 overlaying the maps to see where the traditional trails were to make sure the trails we are  
17 making match up and trying to visualize it. And maybe that way when this is all done maybe  
18 they (caribou) would come, no matter what we do to try to not make them come but eventually  
19 they will come. In 2023 or 2024 the mine is going to close then we have to clean up to the best  
20 of our abilities and see if caribou do come back, eventually they will come back. And Diavik  
21 being part of Ekati, even when this is closed, Ekati will still be running, that they could continue  
22 the monitoring after Diavik is closed.

23 Chloe Dragon Smith: I think what we figured out is that there are a lot of 'ifs'. We don't know when the  
24 water will not be contaminated and if it will not be contaminated so it's hard to say where we  
25 should be diverting the caribou so that just points to the importance of monitoring so we can  
26 know if the places are contaminated or not.

27 Joanne Barnaby: In our group I think everyone agreed that we are not likely to see caribou coming back  
28 in the short term but we need to think ahead for if/when they do we make sure they are safe.

29 Creating these slopes and formations would help for then.

30 I also posed a question as to when the island would be open for hunting and Colleen said it was  
31 at the wishes of the communities to not hunt on the island but when would that change?  
32 Obviously Diavik has to discuss that with the communities and the regulators.

33 Natasha Thorpe: This is not easy work, you come here and you work hard. One of the reasons it's really  
34 hard is because we push you to think in different ways. You know that caribou and people are  
35 one. Using your expertise to try to predict the future is the same as what the sciences are doing,  
36 forecasting. Karin will talk about that - forecasting - and to do the best you can. If you get  
37 frustrated just remember those things. Again I thank you for your patience.

1 Lunch Break

2

3 Gord Macdonald: **Presentation - Characterization of Extra-Fine Processed Kimberlite**

4

5 Wayne Langenhan: So does that mean it is safe for caribou and humans? PKC water?

6 Gord Macdonald: We still have to test that. But we expect, due to the aquatic test results, that it should  
7 be okay but we still need to confirm the people and wildlife portion.

8 Wayne Langenhan: When will the next step be taken to test for human and wildlife consumption?

9 Gord Macdonald: We have released a risk assessment that tries to determine that if a caribou of a  
10 certain size came on the island and ate this all this combined what would it do to the caribou?  
11 That's out for review right now to try and get everyone to agree on the safe level for a caribou.  
12 Then we can go back. We should know by the end of the year.

13 Wayne Langenhan: So who would determine whether it is safe or not, would it just come from head  
14 office or from a scientific evaluation or how would you arrive at that?

15 Gord Macdonald: We hire consultants on our behalf to propose what were thought of as safe levels and  
16 those are now being reviewed. I expect it will get a lot of review and a lot of discussion.

17 Bobby Algona: The number of days they tested was 21 days but you look at those again, I am always  
18 looking at it very long term plus you are recycling the PKC water all the time with other  
19 chemicals. Did they check that with other chemicals as well? Did they do a chemical sample of  
20 that as well?

21 Gord Macdonald: The testing we did was on the slimes and water that is there right now. Which is the  
22 worst-case scenario because at closure we will take the water out and clean it, and then refill it  
23 with clean water.

24 Denecho Catholique: So the water quality around the mine is good?

25 Gord Macdonald: Yes, generally it is good. It is not as good as Lac de Gras by any means particularly the  
26 water in the PKC but it is good enough for aquatic life to live in it. If Lac de Gras was like that we  
27 wouldn't be happy and you wouldn't be happy but for water in the middle of an industrial  
28 facility it is really good.

29 As well as that study we committed to doing, and we still have a little bit more to do on and it  
30 will be interesting to see how the scientific community reviews that report as well and what you  
31 think of it, there was also a lot of discussion about the slimes. We don't like it, stop producing it,  
32 and get rid of it. There was lots of discussion about sending it to Edmonton and we understand  
33 that and we would love to be able to have it economically disappear, but the reality is that it is

1 here and it is something we have to manage on site. But we share your view that it would be  
2 nice if we didn't have that or if we weren't continuing to produce as much of it or if we had  
3 another place to put that. We have two programs that are underway trying to help with the  
4 problem of the slimes. One thing is a change in our process plant. PK is a waste product from  
5 there. And it comes out as fine processed kimberlite and that is what makes the slimes. Then  
6 there is the coarse PK which is like sand. For the last 10 year the process plant has been  
7 producing 70% fine and 30% coarse out of the plant. We have now spent a lot of money in the  
8 plant to change that around so that we create almost the opposite, a lot less fine and more  
9 coarse. And we are now ready to run it as a trial to produce 30% fine and 70% course out of the  
10 plant. We have approval to do a trial, starting June 2016 for one year, from the water board.

11 The other one we are looking at which may have an even bigger potential opportunity for us, we  
12 are looking at the feasibility of putting some of the PK back into the underground where it came  
13 from. It can't happen today because we don't have an underground mine that isn't actively  
14 being mined but by about 2020 we will start to have space in the underground to put some of  
15 this material. It is going to require both some engineering work to find out if we can put that  
16 material back in there safely but also some permitting work to make sure the regulators and all  
17 of you will allow us to put it back in there as well. We view it as a better long-term option then  
18 leaving it up on the surface. We wouldn't be able to get it all back under but I would like to  
19 target putting as much of the slimes down there as possible.

20 Kathy Arden: The other diamond mines in the world do they have this problem as well and what do they  
21 do?

22 Gord Macdonald: I am not very worldly focused but I do know about Ekati's operation. Certainly they  
23 have the exact same thing, they have the same thing in their Long Lake facility and the solution  
24 that they have been moving to is similar to this, they have moved to putting all of their tailings  
25 into one of the open pits.

26 Bobby Algona: So the trial starts in June. That is good to hear that some things are being tested now. In  
27 my mind it should have been done early on. I am happy you are doing that now. But at least it is  
28 something to work on and it is good you are doing this.

29 Gord Macdonald: It's not like we didn't think about this but the change in technology over the last 10  
30 years has allowed us to try this.

31 Joline Huskey: I was thinking about the reports you are presenting and we have elders here and not only  
32 for the elders but for me to better understand it's better to have stuff more visual and seeing  
33 from before the impact or destruction that the mine did and then the process of making it right.  
34 And you are talking about jelly or slime it would better for us to see so our elders would better  
35 understand but also us. What I have learned from the culture is its better to see before the  
36 damage is done then after and try to make it better and that way we would better understand  
37 the written report because not all of us read and write and its good that interpreters are here  
38 that could probably explain it, but it would be good for interpreters to get the presentations

1 before because they usually prepare themselves for meetings like this because if there is not a  
2 word in our language they have time to look it up.

3 Gord Macdonald: It would be easier to be able to see it.

4 Joline Huskey: So maybe when we go on our tour you can describe this is where you got it from.

5 Gord Macdonald: I can show you. It's (the slime) just at the bottom of the pond now so you can't see it  
6 but you can see the other ones. I can get you a jar of slimes to show you.

7 Joline Huskey: It's just better for myself as well to see.

8 Gord Macdonald: I would love to tell you that we have the final answer to the pond and you can now go  
9 forward but we don't have that yet because there are still things we are trying to figure out and  
10 there is still some uncertainty. If that trial works it could very much change how it might look at  
11 the end, if we put material back in the underground maybe there won't be a pond on the  
12 surface, so there are a lot of things that still may change. Maybe that's a good question for the  
13 facilitators as well is how do you work that kind of change into what we are asking you. We are  
14 asking you for help on how we can monitor caribou and you can say well it depends on what is  
15 going to happen here and maybe for today that's what we have to say. And if we come back to  
16 you and say well we have solved this problem, we aren't going to have a pond there anymore,  
17 then you can change again as well and tell us how we monitor differently.

18 Joanne Barnaby: In the break out work we did this morning I think a very basic question people had was  
19 whether the water in that pond is going to be safe for wildlife or humans before you walk away.

20 Gord Macdonald: Yes, because when we say we are done in 2030 we mean "2030 and everybody is  
21 happy and we get our deposit back".

22 Wayne Langenhan: I don't know if you covered this or not but is there some way that you can pump a  
23 chemical into the slime to change the properties of the slimes, like shotcrete?

24 Gord Macdonald: We don't know of any chemicals that would solve that issue right now. We have  
25 looked at chemical solutions but most seem to create more problems.

26 Wayne Langenhan: The volume of that pond there where that slime is, did you figure out the  
27 approximate volume of the slime in the pond right now?

28 Gord Macdonald: We have an estimate but I can't remember what it is. But I will get it.

29 Wayne Langenhan: How far are those drifts that you have at the bottom of the pits? Which way do they  
30 extend and do they go under that pond or are they far away?

31 Gord Macdonald: Where you see the pits, that's how far away they are; they are right underneath the  
32 open pits.

1 Wayne Langenhan: That slime, say there is a pit here and you are down below, which way do your drifts  
2 run, do they run towards the PKC?

3 Gord: They run in a circle because the ore body is straight down the middle of the pits.

4 Wayne Langenhan: Oh so you aren't going outwards at all.

5 Gord: No it's straight down and right around the kimberlite. It would be a surface pipeline to get the PK  
6 to the pits or underground.

7 Wayne Langenhan: How far approximately is it from the slime pond to the nearest pit?

8 Gord: More than 5km less than 10 km, it would have to be a surface pipeline for the fines and a truck for  
9 the coarse.

10 Wayne Langenhan: Okay thanks

11 Gord: The slimes are about 50 meters deep right now.

12 Joanne Barnaby: If you were to move the slimes into the pits after mining is complete would it be the  
13 water sitting within the pits that keeps the slimes at the bottom, would it be the water pressure  
14 that would keep the slimes down there?

15 Gord: In the pit, yes, once you put everything in there, then fill it with water, yes the water will keep it  
16 down there.

17 August Enzoe: The thing we are talking about slimes, is it growing or is it staying the same?

18 Gord: It is growing. We are continuing to add to it and it is continuing to get deeper.

19 August Enzoe: How big will it be at the end?

20 Gord: It could be another 20 meters thick at the end of production.

21 August Enzoe: That's what we are worrying about.

22 Gord: Exactly, that's what we will start with for closure.

23 August Enzoe: Have you tried anything to get rid of it? Like shipping out?

24 Gord: Not shipping out, it is ours to manage and deal with at site. But these are the initiatives we have  
25 going forward now. So we have made the change in the plant we are just ready to trial it and the  
26 other big one is figuring out if we can put it back where it came from -back in the underground,  
27 that might be a more stable long term solution.

28 August Enzoe: It's coming from the mine somewhere?

29 Gord: It comes from the process plant.

1 August Enzoe: That's a tough one; we have to get rid of it somehow.

2 Janelle Nitsiza: Would we be able to take a tour of the process plant? To give our elders a visual  
3 (*accommodated on June 15<sup>th</sup>*).

4 Gord: Can I get back to you on that? We will see if we can arrange it.

5 Kathy Arden: Going back to putting the slimes in the pits, it would be pushed off into the side drifts  
6 because it sounds like there is a lot of it and then once the pits filled the pressure from the  
7 water would keep it in those drifts and at the bottom?

8 Gord: That is exactly right.

9 Denecho Catholique: I am wondering about the water pit by the airport. On a scale of 1-5 how would  
10 you rate it that it's contaminated?

11 Gord: The North Inlet. If I use a very broad use of the word contaminated, we can't discharge it into the  
12 lake without treating, so yes, I would have to say it is contaminated. We are not allowed to  
13 pump that water into Lac de Gras without treating it.

14 Denecho Catholique: Do you have any photos of the water washing up on shore along the North Inlet?

15 Gord: Yeah we might have some.

16 Denecho Catholique: Because I would like to see what the water does to the land while it sits there over  
17 time.

18 Gord: Is it exposed right now or snow drifted? It is a very interesting thing to walk around that shoreline  
19 because you can see where some of the fines have settled on the rock and things. Let me see if  
20 we can find some pictures and see if we can go and look at that.

21 Denecho Catholique: Thank you

22 Gord: Thank you

23 Celine Marlowe: Who's got the answer for the red snow?

24 Colleen English: First article said that they actually use it at spas for skin treatments. The two scientific  
25 answers is that it is an algae, a snow algae, the pink is the most common one. There are over 60  
26 different species of snow algae. A scientific reference says that some people's digestive systems  
27 don't tolerate it well and that bacteria can grow on it. The botanical classification of the algae  
28 says that it is a laxative.

29 Bobby Algona: That's what the animals are showing us, the stress signals that they are looking at. It's not  
30 only in our territory or the north as well, I see this all over the world now too. We have trappers  
31 telling us of very low numbers of rats in the Mackenzie Delta. I think it might have something to  
32 do with the snow that is being produced around the north and around the world for that

1 matter. When we think about that snow we have never been accustomed to it before, we have  
2 never seen it before. My nephew travels a lot he is a very healthy man and family traveling on  
3 the land still living in Contwoyto Lake doing lots of work out on the land and they are the ones  
4 finding some of the contaminants or snow out on the tundra. I think that is what is making the  
5 stress signals that I see in species the whales, the caribou, the polar bears, the muskrats and  
6 beavers, it's all over. Can we have more core samples keeping an eye on those things?

7 Its very, very dry right now, maybe it's because of these contaminants that we have coming into  
8 these areas now.

9 I think about those relatives also when you look at the traditional way of life and we talk about it  
10 a lot and express ourselves very carefully and we need to have some concrete evidence out on  
11 the tundra. The way we express ourselves is through traditional knowledge and then all of a  
12 sudden we are having to have a hard time with our weather and our ecosystem. Just 50 years  
13 ago, I couldn't even speak a word of English and all of a sudden I am having to deal with  
14 contamination around the air, the water quality and the air quality. Industry does not care for  
15 traditional knowledge in my opinion. That's what I keep coming up with in my opinion. I see that  
16 all over the world mining companies going into countries where the natives were very stable at  
17 one time.

18 We as natives have had air and our water was very stable and our predictions were very stable  
19 at one time. We predicted weather very precisely when it was very stable. I am pretty sure the  
20 industries are not willing to slow down for any distress signals the animals are sending. I don't  
21 think the industry is going to slow down anytime soon. And the way the air is going right now  
22 and the pollution and what we have in this world right now, I don't think we have very long to  
23 stay very stable. I am feeling with all this ice and everything else being gone, and our water not  
24 long after that. How I am to deal with those things in my mind. I have a big family and in my  
25 mind, Inuit, natives all across Russia and North America have big families and even my  
26 neighbours to the south of me they are all a part of my family too, we all lived and grew  
27 together on the land and lived stably for a long time. We may have had a hard time starving and  
28 that but that was nature due to caribou being routed though different channels. We need to be  
29 looking at some of those things. What we have here is some things get broken and they get  
30 thrown away, they don't even get used and the industry has to make them all over again. Make  
31 more pollution in the air, we need to look at better ways of looking things now because I don't  
32 know how long we can have animals out in our part of the world very soon. There will be some  
33 species gone very soon, maybe 20 years, maybe 30 years. Looking at the weather all over the  
34 world people are suffering, along with industry and nature itself it's really, really hard time.

35 Our water and land is all different, everything we have is totally different then what we grew up  
36 with 50 years ago. Seven years I lived in total freedom with my family before I went to school,  
37 that was my total freedom. Not one contact with any other part of the world and I can see the  
38 older people then myself they have had total freedom for many, many year and all of a sudden  
39 they have to change too and that is very sad to me and those are some of the things that we



1 need to think about and the industry needs to understand our traditional knowledge ways of  
2 thinking and doing things, this as well how we lived with animals.

3 Natasha Thorpe: When the Jay Pipe decision came down there was also a decision that came with it that  
4 a traditional knowledge panel has to be put together as well, and that provides another place  
5 for traditional knowledge into the mining industry.

6 Denecho Catholique: I was just wondering what the water pit, what are you going to do with all the  
7 rocks that are in and around it? Are they going to take it out and put it on land?

8 Gord: The North Inlet rocks, there are no plans right now. We are hoping it will be okay, we do have  
9 some challenges with the water quality, but mostly there are some problems with the  
10 sediments, with hydrocarbon contamination.

11 Joline Huskey: When you were doing your presentation you talked about leaving the slimes as it is and  
12 also doing more testing for human and wildlife consumption and also the second option was  
13 putting it in the pit. So the engineering work that you provided now is like for option 1 right?  
14 Leaving it as it is for tailings. How would it look like if it was decided to go in the pit?

15 Gord: Haven't done that work yet, as to what it would look like and it would depend on how much goes  
16 into the pit, and where.

17 Nancy Kadlun: We have so much diamonds and gold and in the future what if Diavik wants to come back  
18 because we are rich with Diamonds?

19 Gord: We would love to be able to come back.

20 Colleen English: We are going to go over what the plan is for the tour this afternoon.

21

22

**END**

1 May 15, 2016 DDMI TK Panel Session #9: Caribou

2

3 Celine Marlowe: Opening prayer

4 Joanne Barnaby: Overview of Agenda

5 Karin Clark: **Presentation – Summary of ENR Caribou Monitoring Initiatives**

6 Natasha Thorpe: You were mentioning the other night the work that ENR is supporting. I know in  
7 addition to Tłjchq, CIMP is supporting the Yellowknives Dene and the other groups across the  
8 range in their caribou work.

9 Karin Clark: You are absolutely right, and yes there may be other funding opportunities. I don't know but  
10 definitely these are approaches that can be used across the board by any organization that is  
11 interested in using this approach and contributing to that set of information.

12 Denecho Catholique: I am curious about the map on the first page, the global map. See where the grey  
13 part number 12 it is labeled uncertain but that's by the mines here. We all know the caribou are  
14 declined there because they are blocked by the mines. I know because when I was a kid we use  
15 to see caribou by the thousands by Artillery Lake. It was just like hills moving and you don't see  
16 that now; you'd be lucky to see 2 caribou.

17 Karin Clark: Thank you. You are very observant. Its a bit tricky to see where the Bathurst Range might fit  
18 in there and obviously I don't know what number it is but there is overlap between caribou  
19 ranges. This could refer to another herd.

20 Wayne Langenhan: This map here says it's from 2009, that's 7 years ago. There is a lot on that map that  
21 has already changed. You can't go by that map.

22 Karin Clark: You are right. We don't have a map that is anymore recent than that. I would say the  
23 situation in the NWT hasn't changed much and probably since that time we've got information  
24 on the Bluenose Herd that shows it's in decline.

25 Nancy Kadlun: The calves have declined by 20%. When you put those pictures about the wolves. Why  
26 don't you put the sport hunters as well by the wolves? The calves are declining because of the  
27 sport hunters that are coming in and killing all these bulls. How can they not be declining with  
28 the sport hunters killing the bulls?

29 Karin Clark: **ENR Presentation continued**

30 Gord: The GNWT has a huge area to be managing and collecting information on. We have a very small  
31 focused area, how does the information that we provide link to the work that you need to do?

32

1 Karin Clark: That's a really good question. I think we've done a poor job in the past of using all the  
2 information that we collect ourselves, and the information we get from mines, so definitely an  
3 area for improvement. We are starting to use computer models so we are using computers as a  
4 tool to help us bring all this information together and make predictions about how caribou are  
5 being affected. That model relies on behavioural information, how caribou are responding when  
6 they are close to mines, when they are far from mines. It will rely on the movements both near  
7 and far to mines and other developments (roads) so I really see the use of these computer tools  
8 being really important to bring all that information together. The system is complex. There are a  
9 lot of factors influencing the caribou; predators, weather, people, industry, insects, food. It's  
10 really hard for us to just put that all together and understand how the herd is doing and  
11 predicting how the herd might do in the future.

12 Gord: It echos my view that we are not - in this issue - we are not data poor. It's the link between the  
13 data and the understanding of the data that we are all probably struggling with the most. It's  
14 not a lack of data. We continue to get good data, probably some of the best in the world going  
15 on here, it's just tough to understand what it all means.

16 Karin Clark: Yes I completely agree. ENR and government in the past and, even today, we do a really  
17 good job of counting animals but we need to do a better job of looking at the other factors that  
18 are influencing caribou populations. We are trying to make improvements.

19 Natasha Thorpe: I remember us speaking about this the other day. It's ENR doing a lot of the counting,  
20 but there are a lot of the recommendations that are coming from the community for community  
21 based monitoring and traditional knowledge integration. There is this move towards spending  
22 more time on the land trying to really understand caribou and wolves and other animals out  
23 there.

24 Karin Clark: Sciences might rely on computer models to help us with the big picture, the traditional  
25 knowledge experts are the ones that really put the big picture together for us and can integrate  
26 those different types of information and understand what might be going on. So it's really  
27 important that we do rely on all types of information.

28 Wayne Langenhan: Karin I guess you're counting of the animals is better because I know about 20-25  
29 years ago for some reason you guys lost over 100,000 animals. I was thinking do you have any  
30 connections with the smaller airlines, like Air Tindi maybe Buffalo, because they fly around  
31 carrying cargo go to different communities and these pilots can keep their eye open and report  
32 the herds back to ENR. Have you approached them about that? Do you think it's worthwhile?

33 Karin Clark: I think informally there is a lot of sharing of that information and pilots like to tell us what  
34 they are seeing for sure. Whether that is documented very well, it's probably not, its word of  
35 mouth, and people talking but I agree that it is an important set of information.

1 Wayne Langenhan: I am not talking about Air Canada or something like that, they fly at 30 thousand  
2 feet, I am talking about the smaller aircrafts that fly slower and lower to the ground and they  
3 could probably do some pretty good reporting.

4 Karin Clark: Yes for sure.

5 Chloe Dragon Smith: The traditional knowledge holders can bring everything together. I am really  
6 interested if, in the future, we can have people that can do both. So if we had youth from the  
7 communities being trained in science but also understanding the traditional knowledge, that  
8 would be very valuable. But if there could be opportunities to help train those people I think  
9 that would help a lot.

10 Karin Clark: I agree and I can't help but think about the Tundra Science and Culture Camp that we hold  
11 at our research station where we are trying to bring NWT youth together and teach them in  
12 many of the science disciplines but also expose them to the cultural context. Training the youth  
13 is really very important.

14 Chloe Dragon Smith: I know lots of times community members come along on surveys. With NSMA I  
15 have been asked to go out on the land with researchers and stuff. You get the experience but  
16 you are never really in it, you are kind of like on the outside. I would love to see northern  
17 indigenous people in those leading roles doing that stuff. I don't know how to go about that,  
18 that's obviously a long process.

19 Karin Clark: Yes I completely agree.

20 Gord: I just want to follow up on Wayne's comment about the airlines. I know Air Tindi has looked at  
21 mounting cameras under their airplanes because they do regularly scheduled flights, low  
22 elevation that could record that kind of information. It's then that process of taking that data  
23 and sorting it into how many animals are observed on those lines. But those technologies are  
24 coming more and more.

25 Wayne Langenhan: Why don't we know about this?

26 Joanne Barnaby: Chloe is going to lead us in a little energizer.

27

28 *Break*

29

30 Joline Huskey: When you go back to the world map and you showed the herds recovering (in green), do  
31 you know any strategies of how those herds recovered on its own? Or by help of us humans? I  
32 would just like to read up on it, like what was the recovery plan and how the herds repopulated.

1 Karin Clark: There is not much in that research paper that talks about those things and the green doesn't  
2 necessarily mean the herd is recovering. It can mean that it has been healthy for many years and  
3 still is. I can give you a copy of the paper to look at though.

4 Joline Huskey: Dora asked about wanting to recover wildlife, having people involved. Mostly we see  
5 scientists, not our own people sitting at the table. What Chloe was saying, in training, youth  
6 participate but also the guidance of our elders and there is not too much of them around now  
7 that have all that knowledge. When I look at myself I am kind of the middle aged in my 40s and I  
8 gain a lot of experience from elders like them. I know back home its really hard to get our youth  
9 to participate, it seems like. I don't want to say they are lost but they still need that guidance of  
10 our elders and there is not very many of them left so when stuff like this comes up they really  
11 want to get our youth involved and start training them ahead and also make them understand  
12 that change is happening. They do see it and they want to pass that knowledge on before they  
13 leave. What has been passed on to them, they want to push it forward. We want to keep our  
14 culture strong and our language and our heritage and we still live off of caribou. It is so sad that  
15 our elders can't really harvest the Bathurst that they used to harvest before. And if they do go  
16 out I feel that we are hiding and taking these wildlife, the caribou, we are hiding to eat our food.  
17 I guess to better understand she likes to get more of our people involved, not only for Tłjchq but  
18 all around the table.

19 Karin Clark: I know this is a really small thing but we do have a Tłjchq research assistant program where  
20 we hire two Tłjchq youth and bring them to the government research station, one for the month  
21 of July, one for the month of August and they get exposed to different science projects that are  
22 going on in environmental monitoring.

23 Bobby Alguna: Sometimes I say this word when I come to meetings, we say things over and over, and  
24 sometimes that is hard to do. Once you say it people should understand and sometimes when  
25 we start to say things again we start to feel guilty but now I think we need to say it a thousand  
26 times or more, to make people understand. Sometimes I get to thinking, who is really  
27 transparent when we come to meetings like this? As leaders of our cultural groups sometimes  
28 we tell stories that are very transparent and truthful. Sometimes when we come to meetings  
29 little bits get muddled when people are speaking.

30 This thing about core samples on the snow, about the pink snow, it is getting to me. I am going  
31 to ask the question again. Have they tested the pink snow? I am really curious to know what it is  
32 now because my nephew and I have never seen that before. Saying its snow algae is all right but  
33 is that something you say to bypass other chemicals? Other things that we talk about some  
34 things we need to update ourselves because the weather is changing very fast. We may have  
35 said things in the past. Maybe we need to update ourselves a little bit because of the weather  
36 and climate change. Everything is always changing and our ways of doing things has always been  
37 changing because of industry. I talked a little bit about people not being out on the land as much  
38 anymore.

1 Has the government actually tested the snow and taken core samples? To give us a little more help with  
2 the snow.

3 Karin Clark: To my knowledge, ENR has not sampled snow around the mine sites and to my knowledge  
4 that kind of sampling around the mine is the responsibility of the mine. This is the first time that  
5 I have heard about the algae being around the mine.

6 Chloe Dragon Smith: I just want to say before we get started kind of all of those things like what Bobby is  
7 saying, if we had people in those roles that could be out there doing that it would be building a  
8 relationship and also have community members that could really be understanding what's  
9 happening scientifically behind the pink snow and different things like that. And how Joline was  
10 saying that our youth are lost, I think to fix that we need to be teaching people to live in two  
11 worlds and there is a huge opportunity to do that.

12 Karin Clark: **Presentation – Bathurst Caribou Range Plan**

13 Natasha Thorpe: Yesterday at the end of the day I was saying how hard it is for us in the room to  
14 forecast. It's not necessarily what is going to happen but it helps them with some tools to try to  
15 make decisions. This is what the BCRP is doing.

16 Wayne Langenhan: Is this in effect right now, is this the new boundary for the Bathurst Herd or is it in  
17 the planning stage for the future? I notice that the boundary is all different from the other  
18 boundary that was covering the Bathurst for the restricted area for hunting.

19 Karin Clark: This is what we are calling the planning boundary; so we took what we knew about the  
20 Bathurst annual range and we took what we knew about collar locations and peoples'  
21 observations of caribou distribution and we drew a line. It is very close to what ENR and GNWT  
22 sort of officially puts out as the Bathurst range but it is slightly different. We altered that line a  
23 little bit.

24 Wayne Langenhan: I just wanted to say the Łutsel K'e and east of that was all open for hunting. Is this  
25 going to be included in a restricted zone?

26 Karin Clark: This isn't a hunting boundary at all; this is the annual range of Bathurst Caribou.

27 This is our last future scenario, one is moderate this is much more aggressive. So it's not  
28 important where things are or what's on the landscape but it gives us a level of activity that we  
29 can then predict how caribou might respond to that level of activity.

30 Joanne Barnaby: I was thinking about how people have been describing themselves and a lot of people  
31 who have had historically a really close relationship to the caribou have been calling themselves  
32 Caribou people. I think that is different than having a separate circle for people and a separate  
33 circle for caribou. Even though we have some people moving into the wage economy and you  
34 might include those in the separate people circle but there are still people who feel connected  
35 to the caribou and so maybe there is a fourth circle of caribou people that should be added.

1 Louie Zoe: Yes we are talking about caribou. When we start talking about caribou we often say the  
2 habitat for the caribou should be monitored and should be managed. The caribou migrate in to  
3 Hottah Lake into our area and there has been a forest fire all the way past Behchokò and caribou  
4 range and all that area has been burnt by the forest fires. In the future, all of the habitat of the  
5 caribou, how will the caribou range be in our area after the forest fire? All the wildlife, the bear,  
6 the beaver, the wildlife between Gamèti and Behchokò there are rabbit tracks there are martin  
7 tracks but now there are no more tracks everything has been destroyed. At the same time, as  
8 we are talking about the caribou in the future, it may not come back to this area in the future  
9 that's what I think and also if the habitat for the caribou had been destroyed maybe the caribou  
10 will stay in the tundra. When they do the counting of the caribou, we should have the youth  
11 joining with the counting and survey then the youth would learn how to do the work. Our  
12 leaders are not doing their best to get the youth involved so they are not involved. I think we  
13 should be doing the counting during the winter range.

14 Karin Clark: Fire has been a big topic at our meetings and how it affects where caribou go in the  
15 wintertime. We talk a lot about how we can make recommendations to government on  
16 actioning fires. It is tricky. As we saw in 2014, when there is a big fire year, our efforts are spent  
17 protecting people and people's property and often other priorities fall by the wayside,  
18 unfortunately, but we do have the ability in the range plan to make recommendations on fire  
19 management.

20 Louie Zoe: About the fire at Hottah Lake, south of Great Bear. That's where they live during the winter  
21 so to keep that area from burning, we should protect that area. As a young man, I used to fight  
22 fire with a water pump, then once the fire was out, they would gather 10 people to go put the  
23 hot spots out. And that's how we use to work in the past. But today it's not like that, these  
24 workers they put the fire out but the hot spots keep burning, there is no follow up. Just ask the  
25 people of Gamèti, all summer it would burn even though they have these personnel, but when it  
26 rains the fire would reduce but when it gets a dry sunny day the fire would light up again.

27 Karin Clark: I like what you said about identifying those areas that are not burned that are still green and  
28 still good habitat for barren ground caribou. It will be important to identify those areas and  
29 perhaps recommend protection of some kind or if possible the fire be actioned or fought in  
30 those areas.

### 31 **ENR Presentation continued**

32 Where would the recommendations go?? Unlike a land use plan, for example, that has legislation that  
33 allows it to be put in place and implemented as a complete document, we have to look to other  
34 pieces of legislation or other regulatory processes to implement the different aspects of the  
35 plan. This is both a challenge and an opportunity as Natasha keeps reminding me. The  
36 opportunity is that we are not bound by any guidance or direction on what we can do so this is a  
37 new approach and we are breaking new ground. This is new for government to take this

1 approach to habitat management so in that sense it is an opportunity to be creative and do new  
2 and different things.

3 Bobby Algona: I am really wondering how we can do this, caribou numbers being so low, our ecosystem  
4 so dry, the distress signals the traditional knowledge hunters are giving us and we are noticing  
5 from the animals. Can we shut down the whole industry for a while? To get the land replenished  
6 for a while. I know jobs and everything is really important to a lot of people. I think we need to  
7 look at some things to slow down because it is a sense of urgency for me. We need to look at  
8 things a little closer. Also I am hearing things again about more mines opening up. How many  
9 mines can be open at one time? When we are giving you all these distress signals but you still  
10 wonder how many mines can be open. I think we need to look at this a little more closely. I have  
11 a hard time with people wanting to put more stress on the land itself, that is the industry  
12 causing the global warming along with nature itself.

13 Karin Clark: Thanks Bobby and those are the exact issues and challenges that are facing our group. We  
14 likely can't shut down what is happening today, but we can put conditions on what happens in  
15 the future.

16 Dora Migwi: As we are talking about mines, my late husband he is a recent chief [NAME?] and they talk  
17 about many things. He talked with the Tjichq government when they have these exploration  
18 mines and find the minerals. It would be best not to open mining companies on the tundra  
19 because it is on the migration route of the caribou, so wherever the migration route is, you may  
20 know about these migration routes or you may not but what would happen if you open up these  
21 mines it would disturb their migration routes. A lot of the elders often said these things in the  
22 past. They often said you should not open too many mines at one time. As Louie was talking  
23 about the forest fire, he is right if you drive to Providence all the land is burned all the way to  
24 Whati. All the wildlife we have to live on has been destroyed by the forest fire and also the  
25 habitat for the caribou has been burnt. We are not in control, our lord, our god, our Creator is  
26 the one in control and if we pray and ask for help to our Creator he would help us and as for the  
27 caribou, it is very difficult to say that the caribou would roam to where its habitat is to find its  
28 food. It doesn't live in one area, we don't know what is going to happen. Our creator is in  
29 control. If the population would increase, then it would and that's how our elders pass on this  
30 information.

31 Wayne Langenhan: My old partner never came on this trip with me, Ed Jones, he said there shouldn't be  
32 so many mines in this one area because it's on the migration route of the caribou and as one  
33 shuts down you should leave it down. Snap Lake went down, we still have 3 left here but  
34 Peregrine wanted to open one up and, myself, I am of the opinion that they shouldn't be  
35 allowed to open up. There should be no more than maybe two mines in this area and if the  
36 other ones are allowed to open up maybe they should be underground instead of surface  
37 because of the foot print. Mining may be sustainable in this area if there were maybe just two  
38 mines and they were underground mines.



1 Natasha Thorpe: This range plan is really pushing people - not only the scientists and the biologists but  
2 also the traditional knowledge holders - to say okay if we don't allow a mine or if we do support  
3 an underground mine the real trade off is, for example, maybe a million dollars in jobs  
4 compared to maybe the loss of 100 square km of caribou habitat. So part of the idea is instead  
5 of trying to make decisions in the dark, we are trying to put some forecasted numbers together  
6 so that people, caribou people can make some very, very difficult choices.

7 Nancy Kadlun: Looking at the circles [on the chart] of caribou and money, we have so many mines in our  
8 area and yet we have so many people who are hungry every day, they have no food on the  
9 table. If there are so many mines and they think okay we have so much money because there  
10 are so many mines and the caribou is not there and it's harder for people to have food on their  
11 table. The money doesn't benefit the people who are not working. The mine are not giving the  
12 people who are not working money so it's more important to protect our land and our caribou,  
13 because that is our food. With no jobs from these mines our people don't get anything, they  
14 have nothing.

15 Louie Zoe: This opening of the mine site, the exploration companies, when they find minerals and it is on  
16 the migration route of the caribou, this is where it lives. Our elders are the people that live on  
17 the land so our elders are the caretakers of the land but exploration companies they are just  
18 worried about the money, that's the reason why they open up these mines. As for our  
19 ancestors, the wildlife that migrate, the caribou, the habitat, they use to take care of these  
20 things and do whatever they could to protect it. That is what I wanted to share with you, the  
21 things I am worried about.

22 Joanne Barnaby: I think the other thing that might be missing from this is the sense of respect on time  
23 maybe 30 years and people are thinking about future generations so they are thinking way  
24 beyond the 10-20 year cycle of the mine. People are talking about 30 years of income versus a  
25 resource that we have depended on for a lifetime so it's another way to put things in  
26 perspective and needs to be reflected.

27 So your ideas, your feedback on how traditional knowledge could help create a good plan would  
28 be very helpful. This process is continuing as Karin has pointed out and we have made in our  
29 work over the last several years, we have made several recommendations where Diavik really  
30 can't do anything about some of those recommendations but a lot of those recommendations  
31 actually fit very well into the mandate of this group that's producing this plan. So maybe one of  
32 the things we could do is go back and look at our past recommendations and see which ones  
33 would help define that plan and as we continue our work we can have this planning process in  
34 the back of our minds so some of our ideas and concerns might be directed to them.

35 Wayne Langenhan: Up until recently, we had 4 mines going and we had lots of employment but most of  
36 the people above the 60<sup>th</sup> parallel that have lived here, were born here in this country, they  
37 aren't the majority working at the mines. There is more people from south of the border  
38 working in the mines then there are from north of the border so I think there should be more

1 emphasis on training the people that live up here and continue to live here then hauling in more  
2 people from down south. They only stay here a short time and then they are gone again. The  
3 people up here will stay here if they are trained and get into higher management and then the  
4 training can keep on going in a circle and more can be drawn into that circle so that would be  
5 creating more jobs at these mines for the northerners. If you cut back on the mines say put it  
6 back from 4 to 2 there will still be an increase in the employment of people up north that they  
7 are being trained so you won't need as many mines and the mines that were going to be open  
8 could be kept for further down the line and that way there will be money coming in for a longer  
9 period of time and the expertise of the people in the north country would grow until it would be  
10 90% northerners and 10% southerners.

11 Karin Clark: Thank you to everyone and thank you Joanne for suggesting that **some of the**  
12 **recommendations that are made by this group can be sent our way for consideration in our**  
13 **process.**

14 Joanne Barnaby: Colleen is going to make a short presentation before lunch.

15 Colleen English: **Presentation – DDMI Timeline**

16 Colleen English: When Diavik says closure they are talking about the end of the mine life They stop  
17 mining and a lot of the facilities you see around here can stop being used. They wouldn't be in  
18 the pits anymore, wouldn't be underground anymore, a lot of the buildings, like the process  
19 plant wouldn't be used anymore because the mine is done so they are no longer taking rock out  
20 of the ground, no longer processing it. The estimate for that is 2023. Then you still have all this  
21 stuff, buildings and rock piles, and open pits. That all needs to be closed or re-claimed. Putting  
22 rock into the PKC to cover the beaches, you are putting water back into the open pits. You are  
23 doing all of that work in about a 2 year window, 2023 -2025, and it would still be pretty busy  
24 (maximum of 200 people, many seasonal) doing all of that finishing work for the mine. After  
25 2025 to 2030 would be mostly post closure monitoring (25-50 people) facilities have all been  
26 finished, buildings have been removed, there would be water in back in the pits, and we are  
27 monitoring to make sure they are working like Diavik said they would. That is what we would  
28 call post closure monitoring, this is when you will see the decrease in activity. It will be a nice  
29 little quiet camp again. You would have seasonal fluctuations in the number of people.

30 Then 2030 is the target to close and Diavik would be walking away (hopefully).

31 Denecho's question yesterday specifically, if you had to rank the North Inlet's contamination  
32 level on a 1 to 5 with 1 being good, 5 being bad. If I have to use this scale specific to the Diavik  
33 site:

34 1 – would be Lac de Gras

35 5 - PKC (hardest thing for Diavik to deal with, most contaminated thing we have on site)

1 2/3 – would be North Inlet (water is very easily treatable within the plant, and once mining is  
2 finished no more water would be going in there) the challenge in the North Inlet is the  
3 sediments.

4 Another way to look at it would be to compare Diavik to something like Giant Mine; everything  
5 on the Diavik site would be a 1 to 2 if you compared it to the problems and the legacy issues  
6 that they have for Giant. Nothing on this mine site is anywhere near as bad as the arsenic they  
7 have to try to contain and bury underground and some of the tailings ponds that were left  
8 behind. Because the chemicals that were used in that process are a lot more difficult to deal  
9 with and is a lot more toxic from an environmental or human health perspective.

10 Everyone's view and perspective is different for how they view contamination but it is good to  
11 look at it.

12

13 **Lunch**

14

15 Natasha Thorpe: Colleen talked a little about activities and operations between 2023 and 2025 and 2025  
16 and 2030. We are going to break up into our men's and women's groups again and we are really  
17 going to focus on these two periods of time.

18 Consider monitoring. What should monitoring look like when: 1. Mine operation ends (2023-  
19 2025) 2. Post closure (2025-2030) How? Where? When? Why? Who? What? What exactly do  
20 you want to monitor, the presence or lack of caribou? Their body conditions, how skinny they  
21 are? How will we know that the caribou are safe?

22 Nancy Kadlun: If it's all cleaned up and we don't have to wonder how and why and where, it would be  
23 best. Then we know that area is good and safe. How will we know that? You guys will do the  
24 testing and everything then we will know.

25

26 **Women's Break-out Group**

27

28 Kathy Arden: My opening comment is to keep in mind where the caribou are going to be in their  
29 migration at that time period so maybe when we are discussing it, we start with them being  
30 over in the barrenlands then maybe as time goes on they will come back this way.

31 Joanne Barnaby: Do we want to try to answer the questions one at a time for each period?

32 **How?** 2023-2025 after they finish mining, finish the rock piles. What kind of monitoring should take  
33 place for caribou?

1 Chloe Dragon Smith: I think that right at the start of deconstruction is when we can really start taking  
2 back our role of land stewards that would tie in to monitoring by starting to train and employ  
3 hunters, trappers, and community members and youth but I think we should be part of the  
4 deconstruction process.

5 Joanne Barnaby: What kind of techniques should they use?

6 Chloe Dragon Smith: Would it be much different than it is now on the site? They aren't going to be  
7 coming back because it's still going to be busy. Continue Diavik's current monitoring process but  
8 enhance with starting to train as mentioned above.

9 Berna Martin: Use Diavik's resources while they are here.

10 Joline Huskey: Diavik mentioned that they have community liaisons so what is their role? Update the  
11 communities or what?

12 Each organization is involved in the process, it would be good to have a liaison coordinator to go  
13 into the community and make the updates.

14 The people trained in the 2023-2025 to continue to work in the 2025-2030 but who would  
15 employ them?

16 Chloe Dragon Smith: What would it cost to do that and could we have the money now to start the  
17 program and to continue on during the 2025-2030? Develop a budget, plan/program, so that we  
18 can prove it works then look for funding to continue for the long-term? (Organization like an  
19 EMAB or the Haida Watchman?) We would design the program, they would help administer.

20 **What?** Injuries, people activity, growth, new exploration

21 Kathy Arden: Is there new exploration, people, predators, activity, food regeneration?

22 Chloe Dragon Smith: Environment, weather, water, behavior

23 Berna Martin: Using the collars to monitor the caribou to see if there are any changes due to the collars,  
24 also monitor how the caribou are doing with the collars on and stress from using collars.

25 Joline Huskey: Monitor other animals and birds as well to see if it's affecting the food chain system.

26 Pulling together all that has been done to see what's been done. Part of the training could be looking at  
27 the history of what has been done.

28 **Why would we monitor these things?**

29 Kathy Arden: To ensure the safe return of the wildlife. There will be ground squirrels coming back, and  
30 bugs. They each help one another.

1 Joline Huskey: When we saw the test stockpile and it looks very grey but it's been sitting there a while.  
2 But he was also saying it's going to self re-vegetate. If we just give it the boost around the  
3 bottom so when the wind blows it will move the seeds. We have another big mine out there  
4 from Ekati so you will also see other big disturbances there.

5 Needing to look at the bigger picture → Ekati should be doing this as well, we are all affected,  
6 the whole area

7 Joline Huskey: This would be a good program for University students to do their thesis to collaborate.

8 Nancy Kadlun: I am having a hard time with this because on this map it still has a hole in it (PKC) so I am  
9 having a hard time assuming it is okay.

10 Kathy Arden: Okay but we are going on the assumption that everything is fine and how are we going to  
11 monitor it after that.

12 Joanne Barnaby: We can assume this because Diavik cannot walk away from this until the water and  
13 everything is good.

14 Chloe Dragon Smith: Add understanding ecosystem dynamics → Links between components,  
15 communicate with people who are on/use the land and encourage this by enhancing their  
16 abilities to do this by – compensation

#### 17 **When?**

18 Kathy Arden: Before we get into the training aspect we want to get the word out about training land  
19 stewards prior to 2023 so that when the opportunity comes they are already thinking about it.

#### 20 **Who?**

21 Partnership approach → government, aboriginal governments, industry, Diavik, TK, Colleges,  
22 Universities

23 Nancy Kadlun: We have Inuit organization (KIA) and every summer when there is no snow they inspect  
24 where the old mines were and all around here as well.

#### 25 **Where?**

26 On the map

27 Joline Huskey: Propose to GNWT for another research station with hunters and trappers allowed to use  
28 it as well but call it a "cumulative effects monitoring station."

29 Chloe Dragon Smith: Transfer ownership of the traditional knowledge camp to GNWT or another  
30 organization that would continue to support/fund the work as a cumulative effects monitoring  
31 station.

1 Chloe Dragon Smith: The traditional knowledge panel recommends that the mines in this area  
2 collaborate and combine monitoring resources.

3

4 **Men's Group**

5

6 Natasha Thorpe: Set up on the computer right now is Google Earth.

7 I remember George Marlowe in particular talking about monitoring slightly north of Lac du  
8 Sauvage, North West in that area.

9 Wayne Langenhan: You mentioned that workers may be seasonal, but what season?

10 Colleen English: Primarily the busiest time of the year is summer or really spring, summer, fall that's  
11 when it is easiest for teams to come up and do stability monitoring, access the site, a lot of  
12 water quality monitoring happens more when the water is open and you have ponds and  
13 streams as well as the lake. But it will vary because there are going to be winter questions as  
14 well in terms of how things are performing during the winter season so there will always be  
15 some people here but it will vary depending on the program.

16 Wayne Langenhan: So you would have a skeleton crew most of the year and summer time would be  
17 more. Why couldn't the skeleton crew you have here do the monitoring?

18 Colleen English: They can and they should be involved as well but what would it look like, who is doing  
19 what?

20 Wayne Langenhan: What are the closest communities to this mine? Coppermine?

21 Colleen English: Wekweeti would be the closet.

22 Wayne Langenhan: Maybe someone could be trained from those places.

23 Denecho Catholique: There are how many communities around Great Slave Lake and they have one  
24 person from each community and they come around to monitor. Each community has different  
25 ways of looking at how caribou behave so they should have 1 from each community.

26 August Enzoe: We should just worry about this [East] island right now and we are only talking about  
27 caribou but what about the ground squirrels and rabbits. Is anyone monitoring the small  
28 animals? Do you have cameras out there right now?

29 Colleen English: There are no permanent cameras out. They put the cameras out based on the program  
30 they are working on.

1 I think if there was a suggestion to use the cameras at closing it would be a good idea to tell  
2 them where you would want them placed. Keeping in mind cameras only give you that  
3 presence/absence Natasha was talking about.

4 Wayne Langenhan: Mostly when they migrate they come in from the east and the north right? So set up  
5 cameras would be good there and maybe have a couple little outposts where guys could sit and  
6 observe. I don't think you will have that many in the summer.

7 August Enzoe: The reason I am talking about radio camera, at Ekati they have cameras on the north side,  
8 the east side as well. I saw a lot of them knocked down from grizzly bears so how often do they  
9 check on cameras?

10 Natasha Thorpe: Could you mark the areas for cameras?

11 August Enzoe: South side it doesn't matter because they mostly come from the north and the east  
12 during the summer. For winter usually they don't go through here, they go a different direction  
13 going back to the calving ground in April. Wherever they are they go straight back to the calving  
14 ground they don't zigzag.

15 Check it every week or every two weeks to start.

16 Natasha Thorpe: All communities should be involved. Would you have them working together at the  
17 same time or would you take turns?

18 Denecho Catholique: First couple turn arounds they should have all the monitors together then they can  
19 split up.

20 Bobby Algona: I agree with that, if we start our daily, monthly, or yearly reports or observations a little  
21 before or after the mine at least one youth and one elder, if you had a yearly get together that  
22 would be good as well.

23 Natasha Thorpe: Any more comments on the who part?

24 There has been a lot of talk about youth being strong in both worlds, a lot of recommendations  
25 about training and monitoring. Is there anything that could be from now until 2023 to make sure  
26 that the who - the people that are going to be monitoring - are ready?

27 Bobby Algona: That can be raised to the communities when you do the tours, I think the communities  
28 would like a say as well. I think communities would like a say, I would like to leave that one until  
29 the community work has been done for the time being anyway.

30 Denecho Catholique: Doing courses is good and also the traditional knowledge about how they know  
31 the caribou is even better.

32 August Enzoe: Right now do you have anyone working around the mine monitoring all the things?  
33 Anyone from the communities doing it or only white people?

1 Colleen English: Yes there are people from the communities doing monitoring. I don't know the number  
2 specific to environment monitoring, Dianne is Métis, another student whose name I can't  
3 remember is aboriginal from the north. I can get you the numbers in specifically environment  
4 and also for the mine.

5 August Enzoe: The reason I am saying this the report of what's going on in the mine we never get a  
6 report, I don't think they bring it to our office, the wildlife office.

7 Natasha Thorpe: Should there be cameras off the island as well?

8 Bobby Algona: I don't know how stable the North Country Rock Pile would be but I think it would be a  
9 good place for one looking right around (Number 3)

10 Denecho Catholique: Facing Number 4, 5, 6 facing south east,

11 Natasha Thorpe: Number 1 is facing north

12 Denecho Catholique: Should have a few facing down towards the mainland to see the movement of the  
13 caribou.

14 Denecho Catholique: We are only focusing on the island. How about the mainland, on the north east of  
15 the lake there is a creek there a caribou crossing. We can put cameras there too.

16 Natasha Thorpe: The Narrows? [between LdG and LdS]

17 August Enzoe: I think Ekati already has a camera there.

18 Colleen English: So you would say check to see if Ekati already has a camera at the Narrows and if they  
19 don't then you would recommend having one there?

20 Denecho Catholique: It's kind of important because it is a caribou crossing. I think we should have  
21 cameras at all caribou crossings.

22 Natasha Thorpe: Lac de Gras in the middle

23 Denecho Catholique: Where I marked it is where caribou might cross and that's where I want cameras to  
24 be. Rock pile, the airstrip, and a few on the main land facing Diavik, this one would face out.

25 August Enzoe: How far is the Jay-Pipe from the Narrows? So that's why we want the camera there  
26 because it all flows through there.

27 Colleen English: So when would the cameras be on, all the time? Summer/ fall migration? What do you  
28 think?

29 Denecho Catholique: I was thinking more like trail cameras so when caribou do go by they just take  
30 pictures instead of having it on 24/7.

31 Colleen English: Its still more battery, in the winter it is really tough to keep cameras working.



1 August Enzoe: Yes in winter it's really hard it's only for summer for this, when they are going south.  
2 We were happy in August when we heard the caribou were coming back towards us and  
3 somehow halfway from the calving grounds to the tree line they stopped. They must have had a  
4 big meeting, the two herds, so they went back to the calving ground and past the calving ground  
5 and went to Gjoa Haven. So this year we hope we get caribou but we will see.

6 Natasha Thorpe: The other suggestions you made yesterday included: boulders, boulder fences,  
7 traditional fences, trees, inuksuit, decoys, bells, high pitch sounds, wolf sounds, some kind of  
8 physical shape.

9 George Marlowe suggested some traditional ways of putting inuksuit or some kind of fence here, trees  
10 to deflect the caribou around. I am just reminding you and I can mark it if it is something of  
11 interest.

12 August Enzoe: I was with George then but there was lots of caribou then, caribou are going down now. I  
13 think a fence to start when there are still people here working to monitor.

14 Wayne Langenhan: This PKC, are we talking about where the slime is or the stuff off the bus, the coarse?

15 Colleen English: The sinking stuff that you can't put boulders on is the slimes, so if nothing changes like  
16 what Gord was talking about yesterday, the small pond would remain in the middle of the PKC  
17 and it would be very difficult to put anything on or around it because they'd just sink.

18 Wayne Langenhan: Is there no solid ground around there, no bedrock? What are the dimensions of  
19 that? How big is this hole?

20 Colleen English: Gord is getting me that, the biggest challenge is that it could be up to 50 meters deep or  
21 more at closure, so trying to fill that with rock when they just keep sinking is a lot of rock that  
22 you would have to try to build up because the bedrock you are asking about is another 50-70  
23 meters below this.

24 Wayne Langenhan: So there is no chance of putting pilings down to it?

25 Colleen English: No they have looked at all of those types of options. We can double-check with Gord  
26 but I am pretty sure that everything that they have tried to think of to stabilize or manage that  
27 area besides just leaving it as a pond hasn't been technically feasible.

28 Wayne Langenhan: If it's filled up with water, the bugs and everything that lays on top of the slimes is fit  
29 for consumption, why not just leave it open and leave it alone?

30 Colleen English: That is the plan. The water that is sitting on top would just be left as a pond, the slimes  
31 would be down below. The hard part from a wildlife perspective is you have those areas close to  
32 the pond where it would still be hard to stabilize that ground and the water would be sitting  
33 there but it could be tricky for wildlife near the edges of that pond. So they would back fill to a

1 certain point but then you reach a point where you can't fill it and then its water sitting on top  
2 of it but it would still be tough with wildlife to access that in and out safely.

3 Wayne Langenhan: What you want is an idea for the mine how to stabilize the thing just the way it is.

4 Colleen English: Or some of the stuff that you guys were talking about yesterday with boulders is limiting  
5 access overall to this area. Are there ways that we can design around this whole facility, so not  
6 just this pond, but design around the facility that would limit wildlife access to it? So one of the  
7 ideas that people talked about a lot was this joining slope to the North Country Rock Pile being  
8 steeper than anywhere else on the pile because then there is less of a chance that wildlife would  
9 go down it.

10 Natasha Thorpe: What Colleen is getting at is we don't have to worry about the stability and the slope as  
11 the engineers can figure that out. In terms of thinking about closure and monitoring caribou and  
12 other wildlife moving through this area, there was the suggestion to put the boulders on top of  
13 the PKC and also near the edge as well as keeping that steep. Are there areas on East Island that  
14 you would like to think about putting boulders and if so could you mark them?

15 Denecho Catholique: I am really concerned about this pond they are going to leave open, the PKC  
16 because I wouldn't want my kids to drink out of that. I would want something to try and keep  
17 animals away from this pond. What about just throw a whole bunch of boulders around there so  
18 there would still be water there and boulders showing but it would keep animals from getting to  
19 it? Even if the boulders are further back so the animals can't get through them.

20 Also I wouldn't want caribou coming around this area. I don't want to say contaminated water  
21 but bad water it's still going to be there over time. I know it's hard around here so just throw a  
22 whole bunch of boulders around so the animals can't get near the water and drink and swim in  
23 the water. [North Inlet]

24 Louie Zoe: They said that in the past they aren't going to do anything to the site where the PKC and  
25 North Country Rock Pile is and if they put the boulders on the side of the road of the North  
26 Country Rock Pile and the PKC this is where they are going to make it steep, and it will be less  
27 steep on the other side so that is where the caribou can roam. So on the side where it is steep  
28 on the North Country Rock Pile there should be boulders to deter the caribou from going down  
29 the steep part.

30 Wayne Langenhan: These two places here are dikes here, these dikes are going to be opened right? The  
31 North Inlet they are going to be blasted out right?

32 Natasha Thorpe: They are going to be cut.

33 Wayne Langenhan: So the water in the North Inlet will be the same as the water in the lake so why do  
34 we need these boulders here?

1 Denecho Catholique: I was just suggesting to keep it blocked off because I don't want the water in the  
2 North Inlet and the lake to be mixed so I am suggesting to just leave it as is. I know when I am  
3 older it is going to affect the water, not now but in the future it is going to affect the water, over  
4 time because all the stuff on the rocks on the bottom.

5 Colleen English: So you wouldn't want the north inlet dike cut open.

6 Denecho Catholique: No I don't.

7 Natasha Thorpe: At number 1 you would like boulders around the shoreline.

8 Denecho Catholique: Correct.

9 Natasha Thorpe: And no cutting the (north inlet) dikes.

10 Bobby Algona: That was going to be my suggestion too, do not open these (north inlet dikes), leave it,  
11 the water quality is destroyed now anyway, all the solids are going to eventually go out anyway  
12 so why don't we just leave it the way it is. I am thinking about that for the PKC as well, you are  
13 proposing to cut a stream in there as well. If you put a stream in here all this (PKC) and  
14 precipitation is going to be making a stream in there. We don't want the solids in the North Inlet  
15 and PKC to be mixing with the lake water.

16 Wayne Langenhan: Quite a few years ago you could buy these little things for the fenders of your cars  
17 and they would make noise like a dog whistle and people couldn't hear it but the animals could  
18 hear it and it would keep the animals off the road. So something like that.

19 When it comes to keeping caribou off of some part that these things are just put up and  
20 mounted and there is no maintenance to them, it's just the wind there is no mechanical parts in  
21 them.

22 August Enzoe: I am concerned about the North Inlet. All the mine water goes in there right now, the  
23 waste water goes in there then it goes to the treatment plant, then it is released to the lake. So  
24 after the mine is closed they are going to keep treating that water until there is no water left in  
25 the pond, then maybe they could open it.

26 Denecho Catholique: I agree with my grandpa, he is not going to be around to see that through but I will  
27 be around to see it through and if they do make the water from the North Inlet mix I would only  
28 approve it if the water is 100% clear in the North Inlet.

29 Wayne Langenhan: I know your concern is with the water here but maybe a person should be thinking  
30 about the bottom. You know what's left in the bottom, they could pump that thing dry but what  
31 is on the bottom, how are you going to get rid of that?

32 Denecho Catholique: If they drain all the water they should dig all the contaminated rock out of there.

1 Natasha Thorpe: You have said many times you need to see it with your own eyes, when that time  
2 comes. Testing and approvals have to be met or, like Gord was saying, Diavik won't get their  
3 bond back.

4 So this is obviously an area you don't want to attract animals to, so are there other things you  
5 would like to do to dissuade them from coming?

6 Louie Zoe: The North Inlet we have been worried about it and also beneath the water, how come they  
7 can't take sediments from underneath the water and test for contaminants. **If it's okay then we**  
8 **can dismantle the dam.**

9 Natasha Thorpe: Right now you have only suggested cameras on the land. You haven't suggested  
10 anything about people being out on the land or what that would look like.

11 Denecho Catholique: I suggested people from all over the communities to be monitors, they would be  
12 looking out for wildlife and the environment issues like plants not growing or plants dying.

13 Natasha Thorpe: How will they know the caribou are healthy? What are they going to be watching for?  
14 They want to see it with their own eyes, but how are they going to know?

15 Denecho Catholique: In my experience, I have seen a few unhealthy caribou and you can see the signs,  
16 when you split them open you can see it on their back, the legs, their tummy, kidneys, liver.

17 If you see a bad caribou cut it open and see what is wrong with it. You would know if you saw a  
18 bad caribou because of the fur and the antlers. It will grow big spots on the side.

19 Louie Zoe: Yes once the closure takes place and if there is monitoring sometimes there are white outs  
20 you can't even see. It would be good to have people who have experience with the climate to do  
21 the monitoring.

22 August Enzo: After the mine closes they are going to continue to treat the water in the North Inlet until  
23 its clean then they are going to open both sides.

24 Denecho Catholique: And here in the pits I don't agree with opening it up, because I know down there at  
25 the bottom it's contaminated with materials. I am wondering if they could pump water over it,  
26 into the pits so it stays in there and doesn't come out, like a beaver dam.

27

28 Break

29

30

1 **Women's Presentation**

2

3 Kathy Arden: We based everything on this map.

4 Chloe Dragon Smith: Our model is really about stewardship and taking back our role as active stewards  
5 of the land.

6 Kathy Arden: Explain the role of the Liaison's – Who are they??

7 Chloe Dragon Smith: We don't want to just recommend that Diavik do this. We want to be a part of it.

8

9 **Men's Presentation**

10

11 August Enzoe: For monitoring on this island we mentioned about putting cameras around the island.  
12 Spots on the map.

13 I have been involved with this mine for 10 years now most of what we talk about is about the  
14 island mine. Leave it steep around the PKC we have been saying this all these years and Diavik  
15 has money for clean up.

16 Denecho Catholique: We were more concerned about the land and caribou as you see all these  
17 markings where we want to monitor the caribou coming through. We talked a lot about the  
18 water in the North Inlet, to put boulders around it to keep animals out. Put boulders at the edge  
19 of the North Country Rock Pile by the PKC so the caribou couldn't go down there. Courses for  
20 traditional knowledge so that people know the land and how animals act. You need to have  
21 traditional knowledge so you know the land if the weather changes.

22 We want to watch all this area for caribou.

23 We want the water in the North Inlet to be 100% okay before it is put with the lake. The  
24 monitors would come out and check on the caribou to see if they are healthy or not.

25 August Enzoe: There is one camera on top of the North Country Rock Pile to keep an eye on the mine.

26 Denecho Catholique: We are thinking about keeping the water in the PKC and the lake separate.

27 Chloe Dragon Smith: Would you still want to keep them blocked off if it's clean water?

28 Denecho Catholique: Only if its 100%.

29 August Enzoe: The reason I am saying this is the Jay-Pipe.

1 Denecho Catholique: Have a cabin by the Narrows to keep an eye on things (eg. mine sites, people,  
2 animals).

3 Bobby Algona: The annual monitoring program at least one youth and one elder from each group.

4 Natasha Thorpe: Thank you youth for doing this. We have just over an hour and Joanne and I talked  
5 about going in a circle to share ideas about ceremony, healing the relationship with the caribou,  
6 the land and if you would like that kind of ceremony.

7

8 *Break*

9

10 Denecho Catholique: What are the topics?

11 Joanne Barnaby: The Traditional Knowledge Panel in the past has talked about taking steps to help heal  
12 the land through prayer and ceremony and, in those prayers and ceremonies, to ask for  
13 direction so we are doing that in a good way. We are also talking to the caribou spirits of the  
14 land so we are continuing the traditions of our people. So that's the whole background to that  
15 to why its important and what it is and we would like some further feedback about if there are  
16 particular ceremonies or dates or times. Do we want to do it together or separately, or if you  
17 don't want to.

18 Bobby Algona: I have said it many times before when we come together as a group we are all praying  
19 together just this meeting alone we are telling stories and its actually praying together. We want  
20 the caribou to come back and telling our stories and trying to reclaim the land for the future of  
21 our children. That's what we are doing as a group here. I have always felt that. It is always really  
22 nice getting together like this as a group. It is really wonderful all of our cultures telling our  
23 stories. That's actually praying together because we want the companies to look at our ways of  
24 getting together and praying together. My grandma told me lots of stories and I always thought  
25 that she was praying for me to understand what she is trying to accomplish for me. And that is  
26 exactly what we are doing as elders: trying to tell stories to a company. Through all our stories  
27 and things that we want the companies to do, that's what we actually do. Grandmas and my  
28 elders - I don't mean only my Inuit, I mean all of us, you are all my elders. I may be an elder but I  
29 might be the youngest elder. Along with Nancy we are amongst the very young elders. Until the  
30 land is reclaimed, we will be telling stories, and we want that to keep going as well and just to  
31 reclaim the land and we need to do this more often.

32 Kathy Arden: I don't know where the money is going to come from for my idea but I would like to see  
33 everyone from all the groups involved in a ceremony to honour the land, the spirits that are  
34 here, the animals that are here and in that past they have given all of us food and provided us  
35 with shelter so to have a big ceremony to honour the land I think would be a big task, but I think  
36 it could be done. As we know, the drum has always been the soul of the Aboriginal people and

1 all of us in our traditions have songs that are sang at ceremonies. I would like to see all of those  
2 groups come together and bring their drum songs and to sing to the spirits that are here. Maybe  
3 the caribou will hear those songs and maybe they would hear, maybe we have our land back  
4 and maybe the grass is back so they can eat and come back this way. I think with a lot of strong  
5 hearts coming here to sing it would bring a great feeling over this land and for all of us and all  
6 the future. I don't think there is any harm in doing some within 3 years and then some at the  
7 closing. Like Bobby said, when we come here and we pray and we talk about trying to bring our  
8 land back to some semblance of health for the animals and for growth. It might be a ceremony  
9 that Diavik might like to see on this site with some elders, it could be three years from now and  
10 then at closing. It might become an annual thing that people will come and celebrate the land.

11 Nancy Kadlun; It would be so good to have a ceremony before it really closes down, because our land is  
12 alive just to see all these big wounds in the land it's so sore just like we are hurting the land is  
13 hurting too. It is really strong to have a ceremony for the land when it starts to heal again,  
14 because if we just leave it like that what are we going to have? We need to give back the life it  
15 used to have to heal the big wounds of the land.

16 Wayne Langenhan: I am sort of ignorant to the subject of ceremonies I have only been to a couple of  
17 ceremonies in my life and they have all been wedding ceremonies. I don't think that fits into the  
18 realm of what we are looking at but I would like to participate.

19 Chloe Dragon Smith: I don't have too much to add about how to make a ceremony but I would also like  
20 to be part of it but I do think it would be valuable for the people at the mine to be a part of it as  
21 well. A disconnect in our world is that we live in sort of the main stream world or culture but we  
22 don't often have people come and see how we live and what we do and how we respect the  
23 land and want to live with it so I think it would be nice to have everyone in the mine be a part of  
24 it.

25 Rose Betsina: Thank you for the suggestion of having a ceremony. All the people in all the land, that's  
26 how our ancestors and elders used to get together and do ceremonies. Even a piece of rock, you  
27 make a hole in the ground it makes a sore and how it can heal. Even if you have a dirty plate and  
28 you leave it overnight, the dishes cry and those are the kinds of things that I know that I tell my  
29 kids. And how the land is unhealthy and we leave it and there are a lot of holes in the land. For  
30 the animals and caribou that is what worries us and there is a lot of big concerns in the north,  
31 even the people discussing in, even the caribou can hear a long ways. Even when we go hunting  
32 for caribou, they take our meat away. Even my sister-in-law, they had two caribou taken away  
33 by ENR. That's how ENR is treating the people in the communities. All they are doing is taking  
34 the meat away from the people and all they did with the meat they took away from my sister-in-  
35 law, they distributed it to the community or they donate to somewhere else. My sister-in-law  
36 was at home and her husband went out hunting and he thought that he was going to be back  
37 and she wanted to make dry meat and here they took the meat away from them. Those are the  
38 kinds of things that we have to think of. I wish to have this land nice and clean and when we go  
39 travel by airplane we say our prayers and we see all the landscape and even we had a tour of

1 the site yesterday. We were staying at this point at one time before the mine was here and  
2 there were lots of blueberries and what I see today they really did harm to this land. We knew  
3 this was coming once they find a bunch of resources some kind of metal in the ground. Now  
4 today there are lots of forest fires even if you are rich you will not be happy for a long time. We  
5 are talking to the young people, but the only thing we can do for young people in the  
6 community is to just pray for them and their well-being.

7 Denecho Catholique: I remember when I used to go out on school trips; the teachers would always say  
8 respect the land because if you take care of the land, the land will take care of you. As with fire,  
9 if you have fire, fire is very strong, if you eat with the fire, you pay the fire, so if you cook meat  
10 with the fire, you say thank you and you feed the fire some meat. Also if you are traveling across  
11 big lakes it's good to throw spruce bows on the lake for safe travel across the lake, even in the  
12 summer time. It's always good to pay the land if you have never been there before. Maybe  
13 that's why we have bad weather because some people never paid the land and they came here  
14 for the first time. Respect the land and the land will respect you and take care of you.

15 August Enzo: Thank you Denecho. I was going to say that but I am just going to add a little thing for all  
16 of us. Tomorrow when we leave, it is our land, we love our land, we sleep on it, we eat on it, we  
17 work on it till we die one day. The day is coming to us. The people working here we all wish  
18 them luck safe trip home when they leave from here. Like us if we leave tomorrow back home  
19 before we get on the plane pay the land, say good-bye to the land, pay the land. Tobacco it's a  
20 powerful thing tobacco. Even though I go coming this way I pray for a safe landing tomorrow we  
21 are going back I will do the same thing for all of us safe home to Yellowknife. We know, I know  
22 this land way back in 1995, the first time they were trying to open a mine. I went here and it was  
23 a beautiful island. We used to walk on in and see all the rabbits and ground squirrels now look at  
24 it, it is very different, so what we are working on is for the future, I hope it comes back green  
25 and the berries come back.

26 Celine Marlowe: I have respect for everybody's culture and the way they pray and I always taught my  
27 students to have respect for one another and especially the land. When we come back the next  
28 time if we could come off the plane and go pay the land and then come here and then when its  
29 getting closer to closure to do the same thing because what I am saying is we might not all be  
30 here in 3 more years because we don't know. This will teach the younger generation to do what  
31 we are passing on to them. I have always taught my students to respect themselves first, then  
32 respect others and respect the land and water. I want to thank you for me being here and taking  
33 part without my partner. It's kind of tough but I still have to keep going and thank you very  
34 much for me being here.

35 Janelle Nitsiza: I just wanted to share what my grandma taught me. I was raised by my grandma, she  
36 taught me a lot growing up. Whenever I went on a plane she would tell me to pray, pray that  
37 God guides me and that he is the one that controls the wings of the plane. She taught me when I  
38 go on a canoe trip - any river, any lake, any body of water - to pay the water. If I am going on a  
39 new land, to pay the land. She also taught me that the land reacts to what we do to it. We have



1 taken a lot from this island and now we have to give back. I feel like we need to respect each  
2 other, like Celine said, our own ceremonies. I feel that we should practice more feeding the fire  
3 and even feeding the water. I feel that water is very important right now. We need to feed the  
4 water more and respect the water more because all over the world we are having water issues.  
5 There is not a lot of water left all over the world. Just to show that respect whenever they can. I  
6 am grateful to be here. I was just thinking about my grandma when we started talking about  
7 ceremonies. I lost my grandma around the time that Celine lost her husband, thank you.

8 Louie Zoe: She is right. Wherever we travel on the land, when it's the first time we travel there we need  
9 to pay respect to the land and water and pray for good weather during our stay and that's how  
10 we did. We did pay respect to the water, that's how the story was brought to us through our  
11 parents. This island has been destroyed by mining but it's impossible the way it's going to be  
12 reclaimed, even if there is reclamation taking place it will not be put back to the same way it was  
13 but if it is well enough for the wildlife to roam back in this area, it will be because we are sharing  
14 our knowledge. But in the end, with the help of our Creator, we may accomplish our  
15 reclamation, our project, but if we support one another and help one another in the end we  
16 may get there. We don't go out on the land, maybe once a year, the mining companies can help  
17 us with fuel, and the students who complete their education of grade 12 these students should  
18 be hired at these mines and trained in monitoring by elders and scientists. Those are the things I  
19 wanted to share because our land may not be replenished to the way it was but once it is  
20 reclaimed and it is well enough for the wildlife to roam back in this area; those are the things we  
21 are working together to do.

22 Dora Migwi: Since I have been here, I have been very well informed. This is 10 years since the passing of  
23 my husband. He has passed on many messages to us, all the land that was burning I was very  
24 touched and all the wildlife that are suffering, the wildlife that we live off of. I pray to the  
25 creator and I ask him to replenish the land although it's burning, I pray that there will be an  
26 abundance of wildlife. There are always changes every day. We don't know what is going to  
27 happen in the future, the water is less and less. We, as elders, we think about these things. We  
28 have many children, we have grandchildren, I have more than 50 grandchildren. I talk to my  
29 grandchildren often and today, although they don't listen to me, it seems like things are calming  
30 down, sometimes I give them hugs and I tell them to pray, I tell them while you are still in school  
31 to pray for yourselves so you can complete your education. I tell them to pray for all the forest  
32 fires that destroy the communities. My grandchild had told me lets pray for all the people that  
33 have forest fires destroying the communities. My grandchildren, that's how I talk to them. It  
34 would be good for the water to come back up but what can we say and what can we do it's only  
35 through prayers that our creator will send the spirit and replenish the earth if we ask our creator  
36 for help then he would help us. The land here, the East Island the mining took place here, the  
37 island has been destroyed. How will the wildlife come back to this place? But if it is reclaimed  
38 and replenished the wildlife may come back to this island. I was thinking when we arrived  
39 Thursday there is a lot of white people and I can't often say this but we should feed the land  
40 once before we leave at the airport maybe we should pay respect to the land. I am very

1 thankful. It seems like through our words and working together that we remind one another god  
2 created only one man and one woman and we all exist today so we are all brothers and sisters  
3 we are all related but sometimes there is a communication problem but with respect it is a very  
4 powerful thing. We must pay respect to the youth and the young people. As for myself, I have a  
5 lot of grandchildren and with the youth around me I feel wonderful but without the  
6 grandchildren I might get stressed out so these are the things my daughters tell me to just  
7 surround yourself with your grandchildren.

8 Joline Huskey: Paying respect to the land is really important in my culture. I mentioned earlier that I  
9 learned a lot from my elders and my grandparents and also to speak in my language Tłjchq,  
10 When we were talking about when, where, how and who after 2023 this island how is it going to  
11 look...You know, doing ceremonies it's really good to do that for me that's how I, where I, feel  
12 connected to our culture to our ancestors, to the land and all the wildlife to the water to the air  
13 and we even feed off of it so to give back is always important to me so if we start practicing that  
14 its not only for my culture but also in your own special way because we all have different  
15 cultures but we are all together in this. I was telling the ladies when we were next door when we  
16 were doing the working group that it's just like a big sore or just like after a women gives birth  
17 to a baby, you have to let yourself heal. That's what we have to do when we help in the process  
18 of reclaim/monitor this area but it would be good if can start doing that so the generation after  
19 us can learn while the elders are still here. Because it is meaningful for us to feed the fire and  
20 giving an offering to the land and the water and the air.

21 Natasha Thorpe: Thank you for sharing some really deep insights of what could happen but it sounds like  
22 even on a more regular basis at the traditional knowledge panel meetings we need to carve out  
23 time for that.

24 Dora Migwi: I forgot one thing. Two years ago before my son when his grandmother was still alive, I said  
25 "Bobby when you go hunting, if you see a big rock on top of the hill, pay respect to the land, say  
26 the Our Father, Hail Mary and pray to the lord and our creator". When he came back he said  
27 "While I was hunting I saw a big rock and this white man and his son were coming. I asked why  
28 does this big rock have a hole in it? I pay respect with bullets and also tobacco and I gave the  
29 message for the caribou, to ask them if I can harvest them. That's how I pay respect to the big  
30 rock. As soon as I pay respect out of nowhere caribou came straight towards us and that's how I  
31 shot the caribou and after we cleaned the caribou and then on the way back we saw a whole  
32 herd of caribou." The white man told his son, Bobby paid respect to the rock, go check it out and  
33 see what Bobby did so the son went to the big rock and the son paid the big rock. My grandma  
34 had told me this story and how paying respect to the land helps us.

35 Joanne Barnaby: Elders have also said to us that because this area is the home of the caribou it is their  
36 land and we have allowed this mine to take place and it's been damaged, we need to apologize  
37 to the caribou and to let them know that we still love them and we still need them. That is part  
38 of what we have to do. I know there is elders who feel bad, they cry because the caribou are

1 disappearing, it hurts them, it hurts their hearts. So that is part of what we can do to help with  
2 that.

3 **Natasha Thorpe: Next steps and sessions**

4 Kathy Arden: We've talked a lot about monitoring and even though we have said the word monitoring  
5 maybe we could have more discussions on the process of training, speaking with people from  
6 the hunting organizations and get a finer idea of what this monitoring model will be, including  
7 funding, buildings required and to start thinking about it now.

8 Chloe Dragon Smith: This might be a separate topic but stewardship, just general, because monitoring  
9 would be one aspect of stewardship but I think there is more we can do in the long term.

10 Wayne Langenhan: Earlier on I mentioned about the whistles for deterring caribou from coming here.  
11 They are high pitched so humans can't hear them so maybe they still have something the same  
12 or something better than that and maybe that could be looked into.

13 Chloe Dragon Smith: They do that in Victoria around people's house for the deer.

14 Joanne Barnaby: Any other ideas for a focus of discussion?

15 Denecho Catholique: Water.

16 Natasha Thorpe: We have had a few sessions on water and fish, and unfortunately you weren't there  
17 but do people feel we still need to talk about water? (nobody raises hands)

18 Kathy Arden: We had talked about working in collaboration with the other mines and maybe Dominion  
19 Diamonds site because it is so close so it affects what happens here on Diaviks site. I know we  
20 can't guarantee in the next month or so that they are going to cooperate with information we  
21 might want from them, but it might be something we can discuss on how we can approach them  
22 and how we can find out what their effects are for here.

23 Joanne Barnaby: Colleen did you want to walk through what is in our plan for topics? I know one  
24 outstanding is the north inlet but also A21 that is just under construction now.

25 Colleen English: I also went through the notes over the last couple of days and I have some of those  
26 outstanding questions.

27 **DDMI Presents on Next Steps**

28 How much the lake will go down when they fill the two pits in the same summer? 1.33 inches

29 How many aboriginal's work here. Environment department: 5 out of 10 employees are  
30 aboriginal. Diavik mine: 280 Aboriginal employees, and that is 25% of the total workforce and  
31 that was at the end of 2015.

1 Wayne Langenhan: I remember asking about the approximate volume of slimes but also the  
2 dimensions?

3 **Pictures of the North Inlet Shore Line**

4 Colleen English: Still waiting on the dimensions from Gord. One of the “problems” of the water that  
5 comes out of the mine is that it is really nutrient rich.

6 Kathy Arden: Do you notice any kind of scaling or any growth on the rocks along the shoreline that might  
7 be different then before?

8 Colleen English: How green the pond looks is because of how many nutrients are in there, you get a lot  
9 more algae growth. There will be times they have to shut the treatment plant down because  
10 they get algae growth inside and they need to clean it.

11 Kathy Arden: And then Gord was saying the other day that there is some contamination of hydrocarbon  
12 and its nutrient rich at the same time, how does that combine together?

13 Colleen English: The hydrocarbons are primarily in the sediments. It’s likely that happened in the first  
14 couple years of underground operations. Nutrients don’t have a big impact on hydrocarbons.  
15 That’s going to be the biggest question is figuring how to treat for the hydrocarbon  
16 accumulation that we have seen and that’s one of the reasons why the North Inlet closure plans  
17 are an interest for us to talk about with you and I know basically from what we have heard  
18 definitely in this session and in others, it’s also been an interest for the panel. One of the  
19 struggles from Diavik and Gord’s perspective is whenever we come to the panel we want to  
20 have something at a state and a point where they know enough to share with you but then still  
21 have time to make adjustments based on recommendations from the panel on the back end.

22 On the North Inlet right now they don’t know enough about what they can do to treat for those  
23 hydrocarbons in order to be able to confidently present that to you and have a bit of a plan  
24 around it. So it is on the list but it is not one we can do next session.

25 Denecho Catholique: I was just wondering about the pictures and I would like to add that you get more  
26 detailed pictures around the North Inlet and the PKC.

27

28

**END**

1 May 16, 2016 DDMI TK Panel Session #9: Caribou

2

3 Nancy Kadlun: Opening prayer

4 Joanne Barnaby: We will have a few people from EMAB coming in today to see our recommendations.  
5 So we will walk through these one by one. We can add more if you have some but we will start  
6 with what we have.

7

8 **Presentation – DRAFT Recommendations**

- 9 • **Consider controlled burns of vegetation to discourage wildlife from going to specific areas and**  
10 **to encourage natural re-growth over the long term**

11 Bobby Algona: I think all the dust is going to be all over the island, and all over the plants. If we did burn  
12 some areas on the island then some bigger shrubs and plants might grow. I know burns do help  
13 a lot of natural re-growth.

14 Natasha Thorpe: I think we can expect that Diavik probably can't support burns on East Island, I am  
15 thinking they would be afraid of residual fuels or something catching fire. Would there be any  
16 value in recommending controlled burns in any areas other than East Island? Shores of Lac de  
17 Gras?

18 Bobby Algona: You would have to burn a lot of tundra; you would have to go very far, many miles away  
19 from the mine, because that dust goes a long ways.

20 Kathy Arden: I know that a lot of communities do controlled burns, like Fort Providence and in the spring  
21 to get rid of old grasses. And I remember my father doing that and yes you do get regrowth  
22 coming back but on that one I don't understand what specific areas? We were just talking about  
23 forest fires and destroying food, and then we want to go and burn it up again? I don't  
24 understand that part.

25 Natasha Thorpe: This is something that was said and you might not want to include it. There has to be  
26 consensus from the panel.

27 Joanne Barnaby: If the concern was the dust I don't think that is necessary because the dust gets  
28 washed off with rain and with the snowmelt every year.

29 Denecho Catholique: It's not only the dust we are concerned about. It's the environment and the land.  
30 That's why we wanted to do the controlled burn so we can get rid of all the stuff that the mines  
31 left behind.

32 Joanne Barnaby: I think we will have some push back on that one but we can hear what Diavik has to say  
33 about the problem they have with that and take it from there.

1 Denecho Catholique: On East Island what is on there that they don't want to burn?

2 Natasha Thorpe: We haven't asked them so I don't know but my guess is that this will have been an  
3 industrial site for 30 plus years and it would be a safety concern. As Kathy said there are big  
4 concerns about forest fires. They may not want to contribute to that risk.

5 Denecho Catholique: We are talking about controlled burns not wildfires.

6 Joanne Barnaby: Leave it and see what Diavik says.

7

8 **Presentation Continued**

- 9 • **Learn from other countries on how to bring back caribou populations**

10 Natasha Thorpe: Do we want to be specific and say mining countries or leave it general and say  
11 countries?

12 Bobby Algona: That is a good consideration. So keep it general.

13 **Presentation Continued**

14

15 Joanne Barnaby: Our EMAB guests have arrived.

16 Allison Rodvang: (EMAB) I am the environmental specialist with EMAB. I am really happy to be here and  
17 thank you for the invite.

18 Arnold Enge: (EMAB) I am the chairman of EMAB. I was appointed by the NSMA. I worked for Diavik for  
19 about 8 years in the early 2000's and I also sit on the other environmental advisory boards for  
20 Ekati and the one for Snap Lake.

21 Joanne Barnaby: We are just reviewing draft recommendations.

22 **9.2** A limited number of boulders (e.g. 3-4) should be placed on top of the NCRP to provide some shade  
23 for caribou, create habitat for small mammals and encourage natural re-vegetation.

24 **9.3** Study the wind and snow accumulation on caribou ramps/trails as well as the top of the NCRP before  
25 finishing/finalizing the sloping/grading of the NCRP.

26 **9.4** Ensure a gradual slope on the top of the NCRP so that there is a slight dome down the centre.

27 Kathy Arden: The sloping and grading I think we may have talked about the accumulation of the snow on  
28 top. It's not just the sides, it's also the top.

1 Joanne Barnaby: There was some discussion and I think we are all in agreement that unless there are  
2 boulders up there, we don't expect any accumulation on top.

3 Bobby Algona: Straight down the middle have the slope coming down at an angle so the snow doesn't  
4 accumulate so that it's like a dome.

5 Natasha Thorpe: Everybody okay with that? [Yes.]

6 I am thinking that Diavik might ask the panel how can they show you that they are recognizing  
7 and honoring the importance of ceremony.

8 Denecho Catholique: I was wondering about putting a sign up at the airport, put up a sign at the airport  
9 that says "Pay respect to the land" as you come.

10 Joanne Barnaby: Those ideas are coming later. These are more general in terms of supporting  
11 community initiatives. We have further recommendations for things that should happen on site  
12 later on.

13 Arnold Enge: Just as an idea, the NSMA have a National Aboriginal Day Celebration June 21 and I am  
14 wondering if maybe a feeding the fire ceremony may be done at that time?

15 Joanne Barnaby: Maybe we can ask Diavik to find a way to participate. Are people are okay with that?  
16 [Agreed]

17 **Presentation Continued**

18 Bobby Algona: It would be an example for Dominion, an idea to explore and develop to possibly  
19 establish a Community Effects Monitoring Program.

20 Joanne Barnaby: So that should do it. Everybody okay with that? [nods] All right.

21 Bobby Algona: Put in the Lac de Gras area not just East Island.

22 Joanne Barnaby: Health and safety of caribou. Okay.

23 Joline Huskey: I am just reading your last bullet and trying to understand, are we going to recommend to  
24 employ community monitoring trainees in various aspects, then at the bottom the last sentence  
25 it says, "aim to have community members in leadership roles." What do you mean by that?

26 Natasha Thorpe: There was a recommendation that community members working here should be  
27 leaders, not just labourers.

28 Joline Huskey: Because when I look at it I am looking at leadership in our community like chiefs, council  
29 and the higher up in the government.

30

1 Joanne Barnaby: So it would read:

2 **9.16 Employ community monitor trainees and ensure they have a meaningful role in the design of**  
3 **various aspects of closure work, including the building of wildlife ramps; the reclamation of**  
4 **the PKC, the North Inlet and contaminated sites; and any re-vegetation work on site.**

5 Is that clearer? [Yes]

6 **9.17** Employ and ensure opportunities for high level employment/career advancement of trained  
7 community monitors (graduates of the training program) funded by Diavik and/or others. In  
8 addition to community members, a minimum of one Elder and one youth from each community  
9 should participate in the training program.

10 Bobby Algona: That is what I was thinking about when it comes to the monitoring so at least an elder  
11 and a youth from each community help with the training program.

12 Joanne Barnaby: Would you see the elders having training in the science as well as the youth?

13 Bobby Algona: That is what I see.

14 Joanne Barnaby: So in addition to learning the science the elders would also be teaching the traditional  
15 knowledge, physical side of it?

16 Wayne Langenhan: Instead of putting "at least" you could put a "minimum."

17 Joline Huskey: Employ and foster I think you can make that word stronger. Like "employ and  
18 encourage."

19 **Presentation continued**

20 **9.18** Focus monitoring to determine if steps taken/closure and reclamation actions are working the way  
21 they were intended, through the following measures:

- 22 • Slopes for safe passage of wildlife, boulders for keeping wildlife out of areas, the use of  
23 natural water filtering systems, the use of video cameras to detect wildlife presence, the  
24 testing of water from the North Inlet and PKC area, understanding ecosystem dynamics and  
25 the linkages between components, cumulative effects
- 26 • Include plant growth, plants dying, fur & antler condition, and presence/absence of  
27 injuries or spots on the side of caribou as some of the indicators of caribou well-  
28 being
- 29 • Caribou presence identified on cameras, collars, and sightings would trigger  
30 monitoring
- 31 • Other animals can be indicators that the land is not healthy (e.g. smaller rodents,  
32 birds, fish can tell of change happening in larger animals like caribou, bears, etc.)



1 Grace Martin: Instead of caribou health would it be caribou well-being?

2 Joanne Barnaby: Good suggestion.

3 Joline Huskey: I have a question. The very first bullet “focus monitoring to ensure systems are working.”  
4 When I see “systems” I think electronic stuff so put in to ensure recommendations... I think.

5 Arnold: Focus monitoring to determine if reclamation plans are working?

6 Joanne Barnaby: Reclamation actions perhaps? [Yes]

7 **Presentation continued**

- 8 • **Install motion-sensitive wildlife cameras on the north and west sides of East Island and at**  
9 **important caribou crossings. The north side camera(s) would point to the lake and mainland,**  
10 **the west side camera would point towards the mine. Other possible locations on East Island: 1**  
11 **on top of the rock pile as it is a high point like a lookout (determine if the camera could rotate**  
12 **around); 1 on the south dike of A21; 1 on the west point (near the accommodations); 1 on the**  
13 **south dike of A418 (these 3 would face southeast). Cameras should also be located at both**  
14 **sides of important caribou crossings of water and land.**

15 Joanne Barnaby: There are lots of ideas and we don't know enough about what options and details  
16 there are. We can make this a guideline instead right now.

17 Natasha Thorpe: Is everyone okay if we do that? [Yes.]

18 This next one speaks to that issue, “Ensure that all communities are involved in choosing where  
19 to establish monitoring stations” and this was something that I was thinking of last night based  
20 on the men's group discussion. Maybe we don't want to use the word “stations” but the men's  
21 group identified some areas that would be key places for monitoring caribou whether using  
22 cameras, or a high pitch frequency or whatever it is you use there, those could be monitoring  
23 areas or stations. Maybe there is a concept of this from your aboriginal language?

24 Joanne Barnaby: We could say “in choosing monitoring sites”?

25 Wayne Langenhan: Maybe we can get a hold of somebody from Diavik and get some help in determining  
26 what type of cameras would be best.

27 Joanne Barnaby: We did that in the previous slide so we are trying to narrow this down as a  
28 recommendation.

29 And this next point I am not sure we checked with you, “check to see if Ekati has a camera at the  
30 Narrows and, if not, Diavik should install one.”

31 Kathy Arden: I don't know how far the Jay Pipe is going to be from the camera, but Ekati might think we  
32 are spying on them.

1 Joanne Barnaby: The purpose for the camera would be for the caribou crossing so it wouldn't be pointed  
2 at them.

3 **Presentation continued**

4 Berna Martin: I just want to excuse myself from interpreting for a few minutes. In Dettah we have an  
5 annual spring feeding the fire ceremony because summer is almost here and the community and  
6 our leaders will be going to the big meetings and assemblies and they want to have a good  
7 meeting, that everybody will agree and they will have safe travel. People travel lots in the  
8 summer down south by boat, plane that wherever they are going that they have a safe trip.

9 We fed the land with tobacco, but this should be an annual thing when people to this, we could  
10 go on a tour and sprinkle tobacco. That is our tradition when we go on new land.

11 Back in 1970s or 1980s, my niece traveled down to the States and while she was getting off the  
12 plane she had no tobacco but she had a bunch of coins so she dropped them as she was walking  
13 and there was a lady walking after her picking up all the coins and she said, "no don't give them  
14 back to me" and she ran away from the lady.

15 Joanne Barnaby: So some of those ideas are in the second slide for ceremonial traditions. Back to the  
16 series of ceremonies leading up to 2030. Do we want to assign some time frames?

17 Kathy Arden: Maybe it could be discussed because it would go along with the stages of closure. I really  
18 like Denecho's idea about paying the land when they come and when they leave.

19 Joanne Barnaby: First one before mining ends for sure. [Yes.]

20 Kathy Arden: Yes and involve the workers on site.

21 Joanne Barnaby: Would that be timed with a TK Panel meeting?

22 Kathy Arden: Yes because then there would be no extra expense of money.

23 Joanne Barnaby: So maybe 2017? Second one 2020? Then 2030 or when they leave.

24 Kathy Arden: The last one would take a lot of planning and a lot of spiritual guidance from our elders  
25 and would be costly.

26 Joanne Barnaby: And you would want drumming groups?

27 Kathy Arden: Yes.

28 Joanne Barnaby: So that is the last one. Are people comfortable with this? [Yes.] Good.

29

1 **9.22** Respect spiritual beliefs and the importance of healing ceremonies of Aboriginal communities,  
2 work with the TK Panel to plan spiritual gatherings on site now through 2030;

- 3 • One would be held early/soon to help people on-site understand Aboriginal ceremonial  
4 ways, possibly timed with a TK Panel session (e.g. 2017);
- 5 • Second would be to start healing the environment (e.g. land) (e.g. 2020);
- 6 • Third would be designed to seek guidance on the finalization of the closure plan (e.g.  
7 2023);
- 8 • Fourth would be large and involved to formally invite the spirits to return to the Island  
9 before Diavik leaves (all communities invited, drumming, etc.) (e.g. 2030)

10

11 *Break*

12

13 Joanne Barnaby: We had one last recommendation at the end of the slideshow that we forget and it  
14 states “Do not reconnect the North Inlet, open pits and PKC areas with the lake and land, keeps  
15 dams and dikes in tacked unless the water and sediments in those areas is proven to be clean  
16 and the same as Lac de Gras.”

17 Bobby Algona: I said yesterday do not reconnect North Inlet and PKC because there are planning on  
18 leaving the solids in there.

19 Colleen English: The plan right now in the PKC is the beaches would stay but be capped with rock to help  
20 with dust. There are two areas of the PKC that are currently dammed and they plan on cutting  
21 those two dam areas open, one on the east and one on the west, it’s like a V shape so that if  
22 there is rain or water on top of the rocks it would run through the land before it would get to  
23 the water. Diavik would have to reach a point where any water coming out of those areas  
24 would have to be clean. The fines do stay under the rock cap. The slimes are still an issue, they  
25 have a trial coming up to play around with the coarse and fine PKC stuff. So Diavik still isn’t at a  
26 point where it knows what it is doing with the slimes so they need to do more work in order to  
27 be able to come back to you with more information. Once they know if they can reduce the  
28 amount of slimes and possibly even dredge some of the existing slimes out of the PKC, and if  
29 that can go underground it will really change the way they deal with the slimes and the PKC  
30 area.

31 Natasha Thorpe: I think maybe the concept and the idea is really that the boulders are mainly there to  
32 keep wildlife safe and keep wildlife out so I think we can make that known in the report and  
33 strongly understood and shared.

- 1 Bobby Algona: That still conflicts with my mind because we have tremors and so that may still leach out.  
2 I am wondering, it's still hard on my mind, because the fault lines and the cracks can happen. 10  
3 years ago duck hunters went down to Victoria Island. On their way back, the ice started breaking  
4 apart because of a tremor and they had to go really fast to get off the water. I knew it was a  
5 tremor because we don't normally feel these things.
- 6 Colleen English: The slimes are not going to go away, so we need to find the best way to deal with them,  
7 and shipping them off site is just moving the problem to another place. I know everybody would  
8 love to take them to Alberta but it's not responsible in terms of trying to dispose of something  
9 that has been created here. By putting them in the pits you are lessening the risk that wildlife  
10 would come in contact with them.
- 11 Natasha Thorpe: I have put the question down, "Does the closure plan include considering tremors or  
12 earthquake activity?" So we can ask Gord when he comes back.
- 13 Arnold Enge: Considering putting the slimes in the pits or underground, if it goes in the pits is there a  
14 cover before the water?
- 15 Colleen English: I don't believe so I think it is just water but we can ask Gord.
- 16 Nancy Kadlun: The slimes, is it dryable or flammable?
- 17 Colleen English: I don't think so, it is very wet and it is very hard to dry.
- 18 Joanne Barnaby: Any other questions on this particular topic?
- 19 Nancy Kadlun: Would it be safer to leave the slimes where they are because if there was an earthquake,  
20 and they were underground or in the pits, it would go in the water?
- 21 Colleen English: The pits will already be connected to the water (Lac de Gras) even before an  
22 earthquake. But we are in a pretty low seismic zone.
- 23 Joanne Barnaby: Is there any other guidance we want from Colleen before we finalize these?
- 24 Natasha Thorpe: I have a couple questions, the first one is the idea of communities or EMAB or GNWT  
25 taking over the existing TK camp, is it currently in the best location or should it be moved?
- 26 Joanne Barnaby: The women's group did discuss it and they want it left where it is. They see it as a base  
27 for monitoring the whole area as oppose to just the island and it has berries around it.
- 28 Natasha Thorpe: We talked a bit in the men's group about real specific things that could be monitored  
29 as part of making sure that caribou are healthy. I wondered if there is anything else that has  
30 come to mind. What are you going to be watching for?
- 31 Joanne Barnaby: In the women's groups they said injuries to [caribou] legs and ankles.
- 32 Natasha Thorpe: What would it look like monitoring caribou, out on the land? Looking for tracks?

1 Bobby Algona: We wanted those cameras out which will help with some of those questions.

2 Joanne Barnaby: Part of one of the benefits that the women's group identified with inviting  
3 collaboration with Ekati was that if those motion-activated cameras indicated caribou arrival to  
4 the site, that would trigger a response from them to come and assist with the behavioural  
5 monitoring while they are on site.

6 Bobby Algona: Caribou are not the only animal that those cameras would be monitoring, wolves,  
7 rabbits, bears, wolverines. When you look at these other animals as well, if there were some sick  
8 animals these cameras will also record that and that would mean there is something wrong with  
9 the ecosystem.

10 Natasha Thorpe: That is a good point. We tried to focus this session on caribou because that was the  
11 request from the TK Panel but when you are thinking about a larger monitoring program are  
12 there particular animals that are really important? What about some of these other animals that  
13 Bobby has mentioned?

14 Joline Huskey: I mentioned in the women's group, other small fur-bearing animals are also indicators of  
15 change and larger animals. So if you see changes in larger animals, you can track it down from  
16 smaller animals like the mice, the squirrels, the fish, the birds that are also indicators of change  
17 like the larger animals like the wolves, the bears and most importantly the caribou.

18 I have a question I brought up a couple of times about the PKC. They have engineering designs  
19 for the North Country Rock Pile and a proposed covering of the PKC and I asked that if that was  
20 going to be left like that depending on the outcome of the change, that switch over in the  
21 processing plant where we took a tour and where the changes are being made and second part  
22 of the engineering work would have to be done if they are going to drain out the PKC, the  
23 tailings into the pits. It would be good to have this group look at what the engineers come up  
24 with and doing something like that, because it would be good to see and good to know because  
25 when you put water over top. Water is a lot of pressure to keep it down. Another  
26 recommendation is the next time they come up here and go look at the underground to see  
27 where the slimes might be going.

28 Natasha Thorpe: Thank you for that. Two things, we had a TK Panel session that only talked about the  
29 PKC and I think the report from this would be helpful to share that with you. I will make sure  
30 that you get a copy of that. But I can put your recommendation into words if others are in  
31 agreement about visiting the underground.

32 Joline Huskey: Another thing I said is there going to be engineering work to see if the PKC will be  
33 completely removed and put in the pit?

34 Natasha Thorpe: That's what Colleen was explaining, that's what Diavik is doing right now.

35 Bobby Algona: They have lining on the side of the walls around the berms where the PKC is, the middle  
36 is not lined.

1 Natasha Thorpe: Added recommendation. "Given that the pits are going to be refilled with water and  
2 that Diavik is considering putting PK into the pits and underground shafts, the TK panel requests  
3 a tour of the pits and underground shafts to see the receiving environment with their own  
4 eyes."

5 Kathy Arden: When we were on the tour of the pits I asked Gord about earthquakes in the area and he  
6 said no on that point. The other one with regards to faults on the walls they have these laser  
7 things that check the pits I think every 10 minutes so if there is ever any movement, even slight,  
8 it automatically sets off an alarm so they can empty the pits of people then they do not go in  
9 until that piece of rock has fallen.

10 Joline Huskey: When we took the tour of the two open pits I also heard him mention that because they  
11 are exposed, that's one of the reasons why there are cracks in the walls. Before they were  
12 underground and they weren't exposed to sunlight and weathering. There is no water in there  
13 and that is one of the reasons why there are cracks in the walls.

14 Natasha Thorpe: Any other questions we want to pose to Diavik?

15 Joanne Barnaby: That is a fairly strong case as to why we should go underground and to see those shafts  
16 and to go down to the bottom of the pits. Any other questions or comments? Any new  
17 recommendations? Anything we missed?

18 Bobby Algona: I am also assuming that when we ask for the slimes testing to be given to the  
19 communities they also describe what is in them.

20 Joanne Barnaby: Together with the lab testing that they did, describe what is in the PK and slimes in the  
21 community reports. Okay.

22 Natasha Thorpe: I want to acknowledge that Janet was up late working on the notes and it would be  
23 helpful to us that you have a look at your words while they are fresh. We are really grateful that  
24 you take the time to check them over. So I am going to suggest we give you an extra 15 minutes  
25 over lunch to go over yesterday's notes.

26

27 *Lunch*

28

29 Natasha Thorpe: Next steps or topics for the TK Panel: A21 - North Inlet - SC Rock Pile - Mine Shafts -  
30 Building deconstruction, metal disposal - 2018 AEMP

31 Denecho Catholique: I see we talk about the water, the land and the caribou and I was wondering why  
32 we didn't discuss what they are going to do with the left over metal? The debris, pipes.

1 Natasha Thorpe: To remind everybody, the first few sessions were run through EMAB and then you  
2 decided you wanted them run through Diavik to have that direct connection. The sessions that  
3 were held through EMAB, there was one on caribou monitoring, renewing the landscape, and  
4 then the other two sessions were about the rock piles, what they should look like, what shape.  
5 Since the TK panel has been run under Diavik they had given their hopes for different sessions,  
6 you had given your hopes and in the end this is what it looked like (**presentation**)

7 Wayne Langenhan: I was just wondering if we should talk about how much is going to be buried under  
8 the landscape, steel, insulation, waste disposal, contaminates?

9 Bobby Algona: The very last session that I had right here in the room and we had a discussion about  
10 waste disposal and PKC, I think in my mind I am updating myself, if they are not going to be  
11 taking out any PKC or getting all the contaminated water trucked out. These buildings being  
12 solids I would think it would be a suggestion to get all the metals sent out on truck because they  
13 are stable and they are fixed and a lot of these buildings have contaminants in them and those  
14 are some of things that we have talked about a little bit.

15 Natasha Thorpe: It sounds like there would be enough for a session about the issues you have raised.  
16 Anything else to do with the environment, land, birds, fish?

17 Colleen English: What would be the difference between the A21 and the SC Rock Pile sessions?

18 Natasha Thorpe: One would be the A21 pit and one would be SC Rock Pile, would we do those together?  
19 [Nods yes] Okay.

20 Joanne Barnaby: What about a session to detail the design of the monitoring program? We have  
21 identified some broad goals, incorporating science and traditional knowledge and youth and  
22 elders, finding ways to link with Daring Research Camp.

23 Wayne Langenhan: What is this Daring Research station?

24 Joanne Barnaby: Karin mentioned it in her presentation. It is basically a science based research center.  
25 I'm not sure they would call it collaboration, they do have people from communities at the camp  
26 but they don't have a clear program yet.

27 Arnold Enge: What about the lay down areas and building pads?

28 Natasha Thorpe: Colleen said it would be part of the building deconstruction.

29 Wayne Langenhan: I would just like to know exactly what is going to be left behind here, what buildings,  
30 if the airport terminal is going to be there, roads taken away or left as is?

31 Joanne Barnaby: Alright do you want to do a check in circle just to see if there are any outstanding  
32 thoughts? Janelle is saying no. Everybody is good. We are just waiting for Gord.

1 While we are waiting I wonder if our guests would like to speak to their longer term role and  
2 how they see that evolving and whether there is any clarity in that beyond closure.

3 Arnold Enge: As a general comment, one of EMAB's roles is to monitor the company, the government.  
4 We are really supposed to monitor everyone involved with the Diavik project so that includes  
5 the aboriginal communities and so we have been tasked with trying to figure out how well  
6 Diavik is doing at protecting the environment here on East Island. As part of that role, we see  
7 the Traditional Knowledge Panel providing recommendations directly to Diavik and it is our role  
8 to find out how Diavik is doing in incorporating your recommendations into their management  
9 plans. We follow all your recommendations as they come out and Diavik provides a preliminary  
10 response to your recommendations so that gives you the immediate feedback and there is the  
11 longer feedback loop if it requires additional time to determine if your recommendation can be  
12 taken into account. Diavik then reports those in their environmental management plans that  
13 they submit to the Wek'eezhii Land and Water Board and they explain what they are doing with  
14 your recommendations and we will also review that. We are always trying to provide feedback  
15 to Diavik, and to the regulators and to the aboriginal communities about how Diavik is  
16 maintaining the environmental integrity of the site. In terms of long term I would have to check  
17 our agreement again.

18 Shin works with the North Slave Métis, Sean Richardson for the Tłjchq, there is a new  
19 environment employee for Łutsel K'e she has only been on the job 4 or 5 weeks. We have hired  
20 Allison who is the main contact person back to the communities with the environmental  
21 officers.

22 Natasha Thorpe: One thing that I wanted to add was the big thick document, on the table, that has all  
23 your recommendations is for your review. Speaking of recommendations we have Gord here  
24 now.

## 25 **Presentation of Guidance and Recommendations from the TK Panel**

### 26 **Guidance**

### 27 **Recommendations**

28

29 Gord: The one about directing the caribou using boulders (9.7). I know there is some strategic places  
30 where you suggested putting them right away like at right along the top of the North Country  
31 Rock Pile and around the PKC and the North Inlet and you talked about other things like  
32 whistles. Are those things that we should identify now to say that they are techniques that work  
33 but wait until we actually have a landscape and we know where caribou are or are not going and  
34 use it as a form of adaptive management so we can add those things where we think it's  
35 necessary, where we think there are problems, is that were you are going with that?



1 **9.7 Place boulders along the southern edge of the NCRP, along the edge of where the steep slope**  
2 **between the NCRP and the PKC will meet to keep caribou away (refer to map).**

3 Kathy Arden: The camera idea came from the men's group so maybe they could answer.

4 Gord: I get the cameras, it was more the directing them around the landscape, how much of a guess do  
5 we want to take at that or do we want to wait and see or a bit of both? The other was on the  
6 Traditional Knowledge Camp, I actually never thought about using it more broadly then just for  
7 Diavik but I would ask the question, it's a good idea but is it in the right place?

8 Kathy Arden: That came out of the women's group and the idea was to leave it there. Number one is we  
9 didn't want to have too much disturbance on East Island after closure, and besides having  
10 berries there, it can collaborate with Daring Lake with it being out there they can come in here  
11 and monitor and see what's going on without hanging around on the island.

12 Gord: What if one of the partners in this is Dominion and one of the observations that we want to be  
13 making related to caribou movement further north on their property would it still be in the right  
14 place for doing that?

15 Kathy Arden: I think the hope is we will have Dominion online with us by then to be a partner. Because  
16 they are so close to this mine as well. That they would be in agreement to partner with us on  
17 the Traditional knowledge because they are going to put in Jay Pipe that is still going to affect  
18 some of the environment here on Diavik's island.

19 Gord: Very good, lots on training and I will have to get help from others on training.

20 Natasha Thorpe: Requests for next session, one was a whole session on just monitoring and training and  
21 really fleshing it out.

22 **Map Overview**

23

24 Gord: Thank you

25 Kathy Arden: There was a question that came up regarding tremors. Do you feel earthquake tremors in  
26 this area and the walls of the pits, can you explain how those machines work if there is any loose  
27 rock?

28 Gord: We are in a very low seismicity area of the world. We have almost no tremors in this part of the  
29 world. And that was very important in designing all the engineering around the dikes and the  
30 underground that we understood that. Despite that when you do build a mine with a lot of rock  
31 on the wall it does start to relax and as you saw there are places where you get rock fall and the  
32 monitoring that you are talking about it shoots laser beams all around the inside of the pit and  
33 every time it does it, it measures the exact distance between each one of these reflectors and  
34 before a rock falls it starts to move very, very slightly so they have a very good idea when that

1 rock is going to fall and that is what they use to make sure everyone is out of the pit and  
2 everything is safe until that rock fall happens and then they clean up everything before allowing  
3 anyone back in. It's in the underground as well.

4 Natasha Thorpe: I am glad Kathy has a good memory. Other questions for Gord we recorded are:

5 If the PKC goes into the pits or underground are you going to put a cover on it before the water?

6 Gord: Very good question but we have not gone to that level yet.

7 Natasha Thorpe: How long with it take to put the cover on the North Country Rock Pile?

8 Gord: Several years, about 1 year for the till and then 3-5 to put all of the rock on.

9 Arnold Enge: The volume of glacial till, is there sufficient amounts for the North Country Rock Pile?

10 Gord: We do have enough. We are going to use the A21 till first.

11 Arnold Enge: What about South Country Rock pile, same closure plan?

12 Gord: The SCR pile doesn't need, to be covered because it is the type 1 rock, the good rock.

13 Denecho Catholique: I mentioned earlier about the metal, what are you going to do with the metal?

14 Gord: We have a landfill on site, I don't know if you saw it but it is part of the North Country Rock Pile,  
15 it's a deep hole in the North Country Rock Pile so we put all of our inert material which includes  
16 steel in there and then it gets covered with rock and frozen in the rock pile.

17 Denecho Catholique: So they are going to bury it?

18 Gord: If it has no value or someone isn't going to take it then yes.

19 Denecho Catholique: They don't know how much is going to be buried.

20 Gord: In the worst-case scenario all of it, but we are hoping that some of the material is going to go to  
21 other uses. We do have some recycling programs going on but we will have to wait closer to  
22 closure to have a better idea.

23 Kathy Arden: Just an extension on that: I was noticing along the roadways, the pipe sticking out so all  
24 that stuff would be pulled out, right?

25 Gord: For a mine after closure you shouldn't see anything other than rock.

26 Bobby Algona: Would it be possible to take some of these maps home with us?

27 Gord: Yes.

28 Bobby Algona: Would it be possible to take the presentation home?

1 Natasha Thorpe: Yes. Does everyone have the evaluation forms? Please fill it out. Feel free to add ideas.

## 2 **Closing circle**

3 Janelle Nitsiza: First of all I would like to thank everybody, the translators, Janet and all the facilitators  
4 and especially the elders they are so full of knowledge. I feel very fortunate to be here and hear  
5 all of your stories and to learn from you. I have enjoyed my time here.

6 Bobby Algona: As a group here, we all come together to try to express our feelings, to give back to Diavik  
7 our traditional knowledge. We have made a lot of changes but I don't know it might have been a  
8 bit different from what they were thinking. We are all brothers and sisters when we come  
9 together. It's really hard for me to think because I didn't know our good friend George passed. It  
10 will take time when you lose friends like that, they become family when you come to meetings  
11 like this. We always had that thing with George and laughed with George and we express each  
12 other's feelings towards each other and losing a friend like that is really really hard. God be with  
13 George and that he may go to a safe and wonderful place wherever he has gone. It's really hard  
14 to say this but we have another guardian angel looking after us. I would like to say thank you  
15 and my group also and God be with George.

16 Kathy Arden: I would just like to say how nice it is to see everyone again and to meet the new people  
17 coming, it always amazes me how Joanne, Colleen and Natasha can pull together all our ideas  
18 and we really appreciate all the hard work that you have done.

19 Nancy Kadlun: I am so thankful to be invited here again, I am always really thankful for the translators  
20 and the facilitators. I really enjoy when the elders talk to us as well be because I hear our elders  
21 who have passed away and it makes me feel like they are here with me. I am thankful for  
22 everyone.

23 Wayne Langenhan: I would like to thank the facilitators and Colleen and Gord even though he snuck out,  
24 to Diavik and Peter and Berna here translating and our transcriber here, Ryan our sound man.  
25 Everybody did really good and the suggestions. I would also like to thank Dianne Dul for the tour  
26 and the bus driver got us back safe from the tours and the pilots that are taking us out and I  
27 hope everyone has a safe flight out and gets home all in one piece and if we can stall this and  
28 put it off a little bit longer we could probably have a really good supper.

29 Rose Betsina: We had a good meal and a good sleep. Some people that are here that have passed on,  
30 that is the only way to get through this kind of difficulty is to pray. When George passed away -  
31 and his wife is here - sometimes I think what her thoughts are she is laughing with us and I went  
32 through those difficulties. I never got to see my husband's body, he has never been found and  
33 there are times when I get so lonely. When the plane is coming in I think he is coming back. I  
34 used to love sewing. One of my addictions is smoking but when you get lonely, you get addicted  
35 to something, what can you do but pray to our creator that we stay and we had a good session I  
36 hope that we hear only good news about each other.

1 Denecho Catholique: I would like to say I am happy to be here and this is my first meeting here and I  
2 would like to attend more meetings because I like hearing the stories from other cultures like  
3 Bobby I like his stories al lot.

4 August Enzo: Mahsi. Thank you everyone of you around here we have been together a week. We all  
5 thank you all for doing a good job. For me, I have been on this board for a number of years  
6 especially with newcomers here, they get to hear about everything that we have been doing,  
7 not only this one here but Ekati. I have been on this board for a long time, the elders that used  
8 to sit with us, they are all gone. All those times it's only me and my partner across here, I think I  
9 am still older than him though. I am 78 now and my body is getting weak now but I still keep  
10 going here next time if I am healthy and thank you, every one of you.

11 Celine Marlowe: I am glad that I came this year, it is kind of hard for me, but I have to accept it the way  
12 it is. Before my husband passed away, he was talking to me about being strong. When I look at it  
13 now it's like he was preparing me for now. It's really hard, especially in the mornings, and we  
14 still have to teach our young generation. We have to keep continuing to be strong for our young  
15 generation all over. It's not only back home. I always like to give good advice all over we have to  
16 listen to one another and take care of one another. It doesn't matter who they are. I talk to  
17 them as if I have known them forever. I don't even know that person, that's who I am. Thank  
18 you so much for being here.

19 Louie Zoe: Thank you. We have spent the weekend together and we have shared a lot of stories and our  
20 friend we lost from Łutsel K'e. We prayed for him. When we work together like this, it is very  
21 difficult to travel from one place to another, but when we get together we often talk very wisely  
22 about subjects. So I am very thankful for all of you. We may not understand each other but  
23 through the interpreter we share our stories and I am thankful for that. As for next meeting, we  
24 don't know how our days are coming we don't know about the future so as we part our ways we  
25 need to pray for one another. I am thankful so with sharing your part of the stories, it looks like  
26 it is impossible to reclaim the land but once we work together reclamation can take place. I am  
27 thinking that you have a safe travel home.

28 Dora Migwi: Since we got here we have shared a lot of good stories, we can only pray for one another,  
29 we don't know what is going to happen in the future. The cooks, we ate well. I am very thankful  
30 we have shared a lot of good stories and I am very thankful for that. It would be very good to  
31 improve how we put the recommendations together. Some of them, they travel many distances  
32 and everywhere they travelled. We the elders are not going to be living long on earth. Live a  
33 healthy life and work amongst each other. If you have elders to talk to you, use their words;  
34 their words are their wisdom. We had a very good meeting, we have the facilitators working  
35 hard.

36 Arnold Enge: Just a couple of things. I would like to say thank you to the elders for coming and sharing  
37 their experience on the land. I want to thank the youth for their contributions and their youthful

1 exuberance and their energy and of course Diavik for hosting the TK Panel and for all your hard  
2 work.

3 Doyle Algona: I would like to thank the elders and the youth and thank you to everyone.

4 Grace Martin; Mahsi cho to everyone that came here, everyone have a safe trip home and I hope to see  
5 you in the future. I wish nothing but the best for the closure of the site.

6 Joline Huskey: I work for Tłjchq Government. Thank you for inviting me. I would like to thank the  
7 interpreters and transcribers, the workers and the facilitators and also Diavik for hosting us  
8 here. It's been a long time since I had a good sleep. I just took my first year of the ENR program  
9 and I really enjoyed listening to the elders, to other groups involved and what others are doing.  
10 It's really touching for me when you talk about the environment because I really care for the  
11 environment. We try to restore it if damage has been done and I really like the idea that the  
12 recommendations that are going through and looking at the documentations. So thank you.

13 Berna Martin: I would like to say thank you to everyone that came, thank you to Diavik we had a good  
14 stay and a good meal and thank you to Joanne, Colleen, Natasha, Janet, Ryan.

15 Peter Huskey: [Not recorded]

16 Allison: Thank you for inviting me and Arnold to come and listen to the recommendations; it will be nice  
17 to communicate more with you guys.

18 Dianne Dul: I just want to thank everyone for participating and it was really nice to hear the youth being  
19 really involved this time with the panel. I look forward to the day we can sit on top of the rock  
20 pile and have the wind blowing in our hair and the little bugs bothering us and see the caribou  
21 coming.

22 Natasha Thorpe: I forgot to mention that Karin and Chloe had to get on the flight this morning but they  
23 wanted us to pass on their gratitude and appreciation for being part of this session. Karin's door  
24 is always open for questions.

25 Thank you to everyone for taking time away from your families. Thank you Denencho who's just  
26 had twins, 3 ½ week old twins, so he has taken some really special time away from his family to  
27 be here. I feel really excited about the youth. We are always talking about the future and the  
28 elders are always reminding us of that link. If the youth that are at this panel doing the hard  
29 work are a sign of what's to come, I think it's pretty wonderful. Thank you to Diavik and  
30 everyone for the support.

31 Joanne Barnaby: I would like to make special mention of the beautiful song from Nancy. I am always  
32 amazed at what we are able to get done. I know sometimes the questions we put to you are  
33 difficult and challenging to work through and you have to think about things that you don't have  
34 a lot of experience with and try and be helpful and so I really appreciate the effort and the  
35 honesty that you come at that with. I appreciate the reception that we get from Diavik. If you

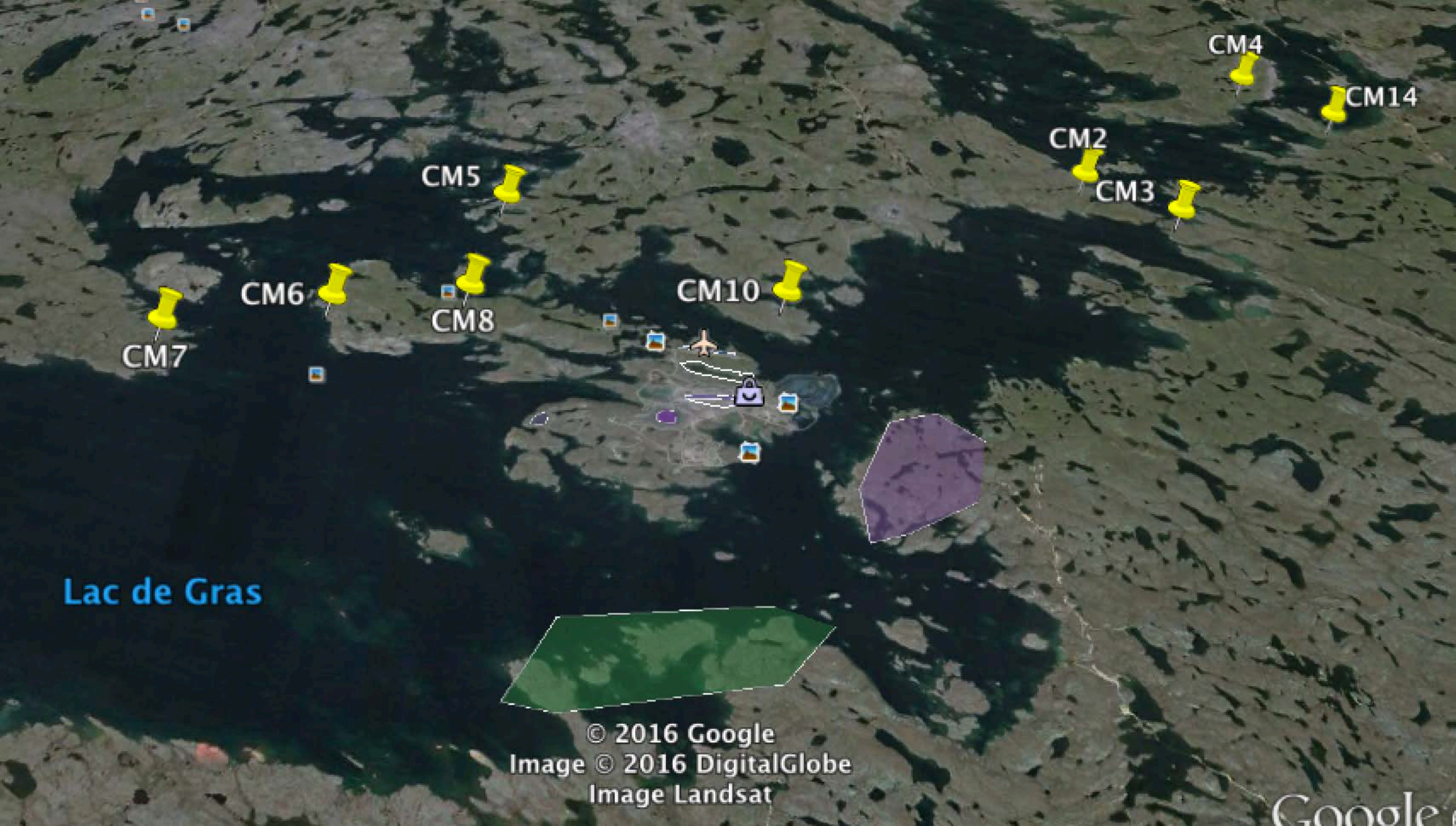
1 look at the history of the panel, we have had a lot of support from them with our  
2 recommendations and when they are not able to support a recommendation they provide us  
3 with very clear reasons why they can't. I really look forward to seeing and working with you  
4 again.

5 Bobby Algona: Of all the time that I have been coming to these sessions and sometimes I want to show  
6 my camp life. If people want to see my pictures of Pellet Lake I can show you after.

7 Colleen English: Check out will be open by the time we are done here.

8 Joanne Barnaby: Natasha just suggested an idea that I think is quite wonderful and that is to dedicate  
9 the report coming out of this session to George Marlowe. Is everybody good with that? [Yes.]  
10 Okay good.

11 Dora Migwi: Closing prayer



CM7

CM6

CM5

CM8

CM10

CM2

CM3

CM4

CM14

Lac de Gras

© 2016 Google  
Image © 2016 DigitalGlobe  
Image Landsat

Google

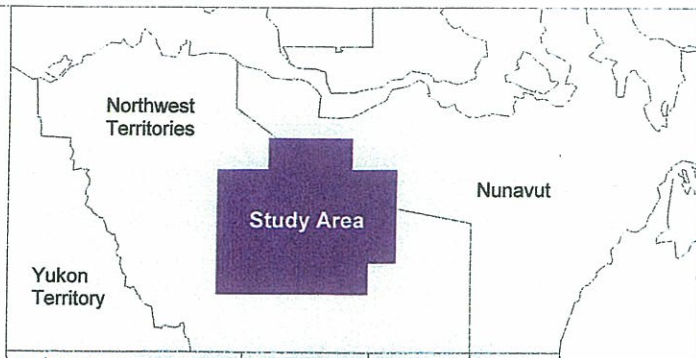


Lac de Gras



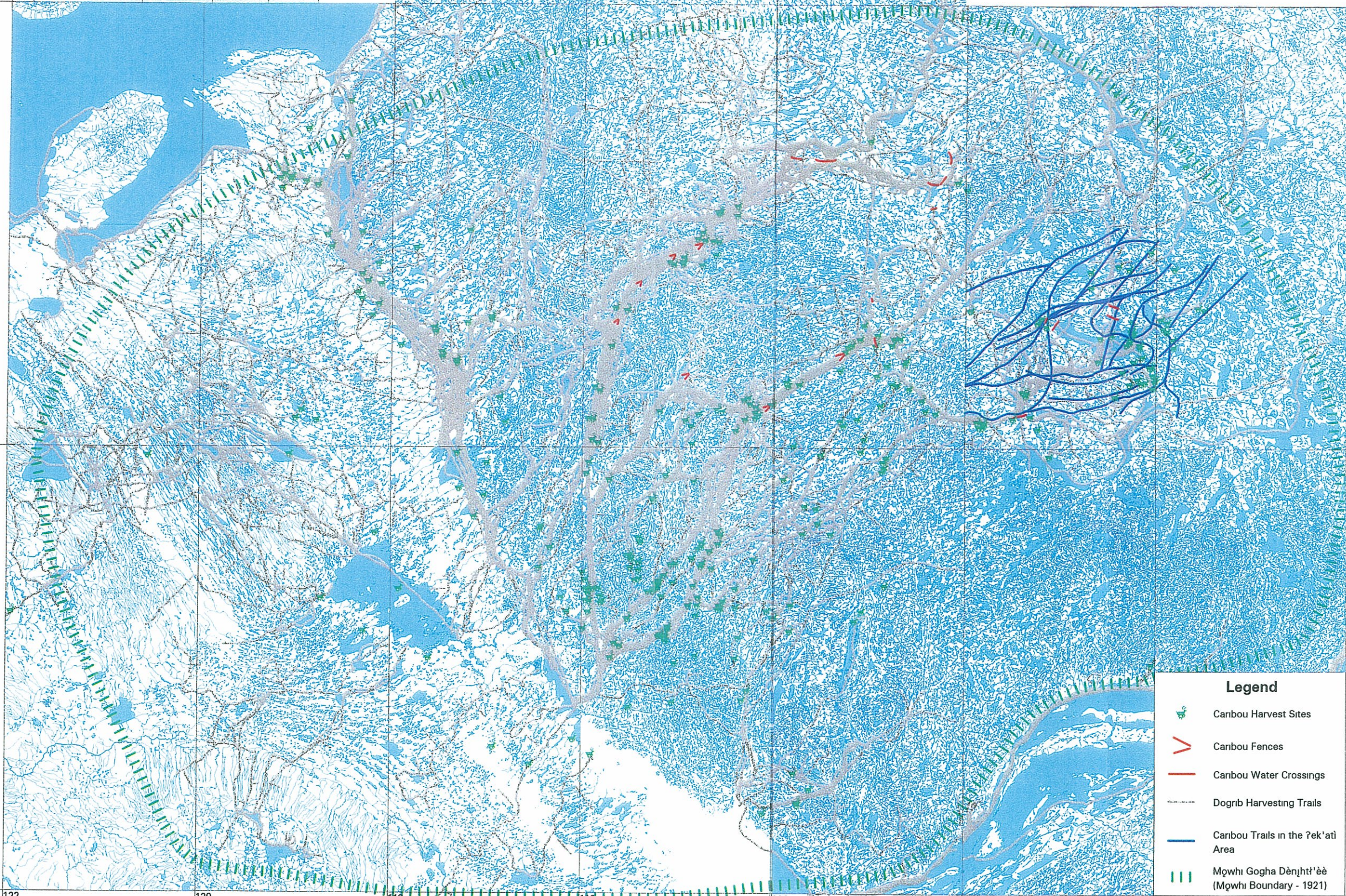
## **Appendix E**

### **Maps Documenting Public Traditional Knowledge Specific to Caribou**



# Ṭḥcḥo and ʔekẉò

(Credit: Whaèhdòò Nàowòò K'ò, Dogrib Treaty 11 Council)



122

120

118

116

114

112

110

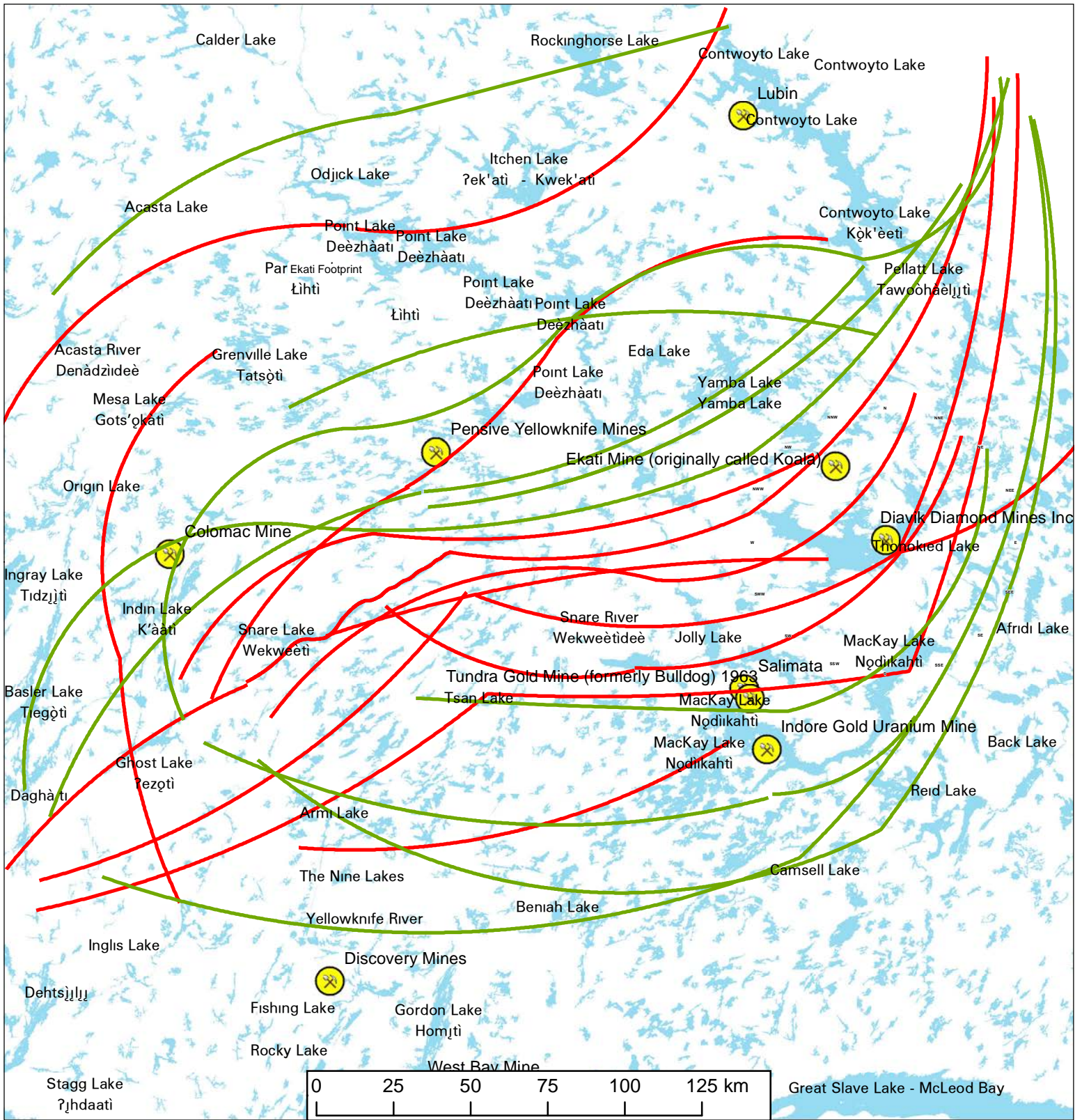
108

66

64




62





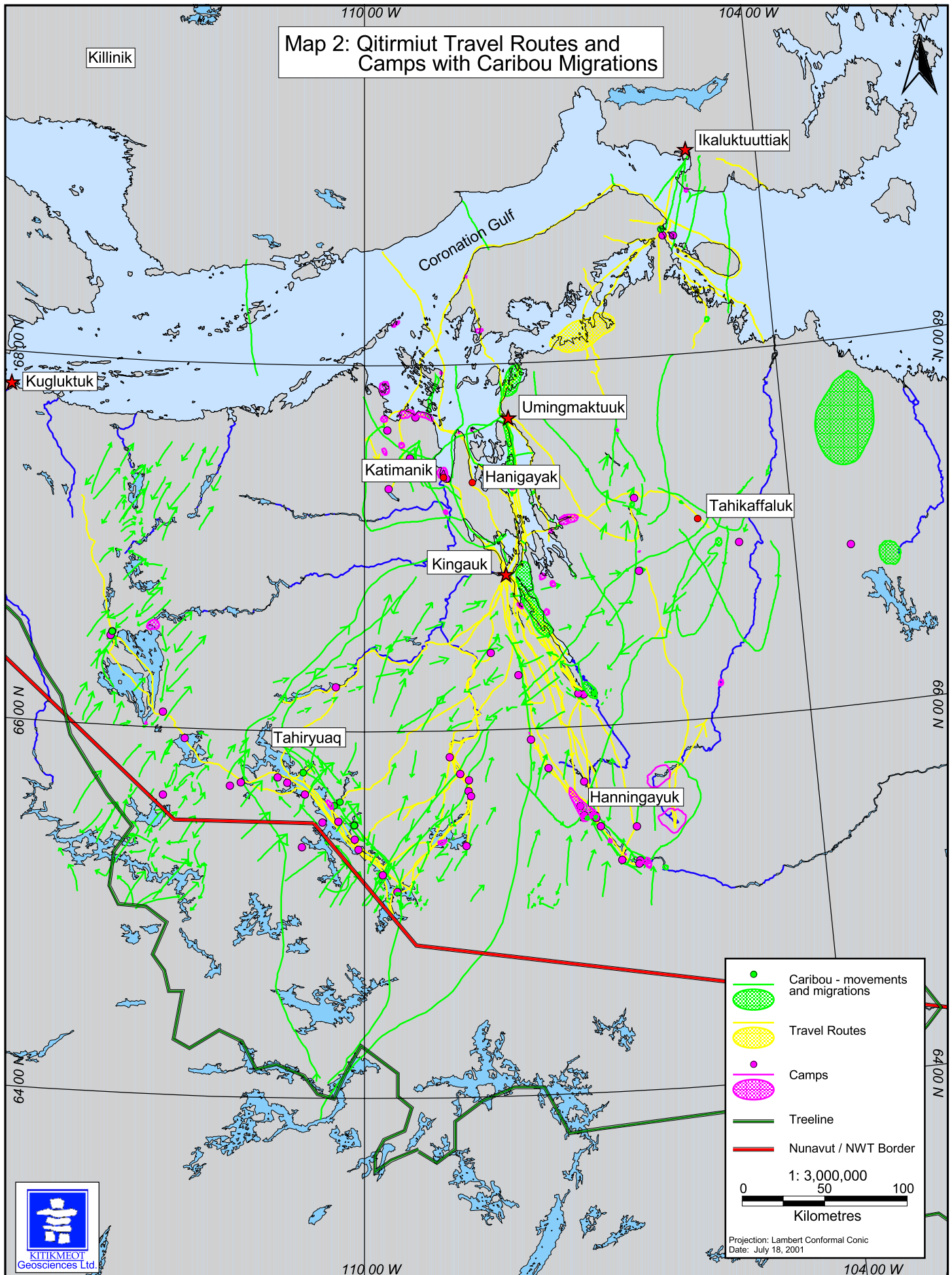
# Bathurst Caribou Migration Trails

Tłıchq Traditional Knowledge

-  After the mines
-  Prior to the mines
-  Mine Sites



Map 2: Qitirmiut Travel Routes and Camps with Caribou Migrations



- Caribou - movements and migrations
- Travel Routes
- Camps
- Treeline
- Nunavut / NWT Border

1: 3,000,000

0 50 100  
Kilometres

Projection: Lambert Conformal Conic  
Date: July 18, 2001





# Yellowknives Dene First Nation

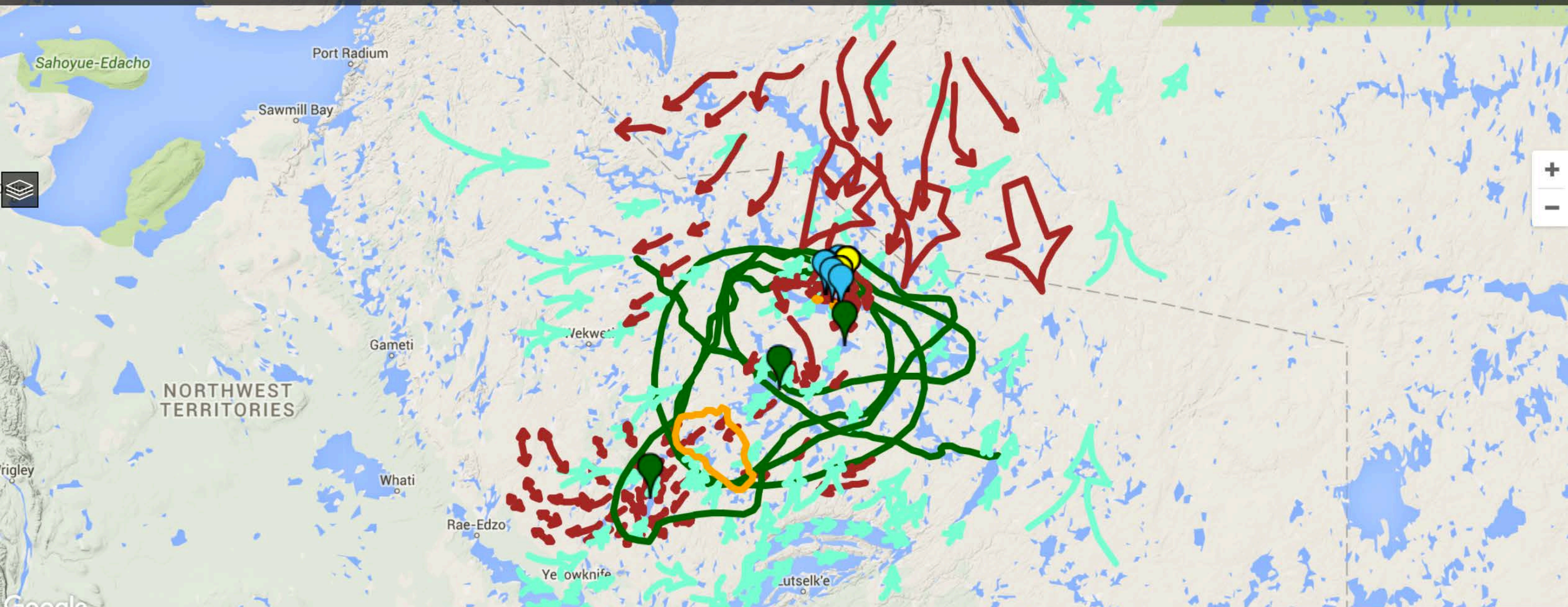
## Traditional Knowledge Website

CIMP NWT (Cumulative Impact Monitoring, Environment and Natural Resources, Government of the Northwest Territories) funded project. This Traditional Knowledge on caribou is the property of the Yellowknives Dene First Nation. Any use of this information must acknowledge this ownership.

Login

Collections

Search





# Yellowknives Dene First Nation

## Traditional Knowledge Website

CIMP NWT (Cumulative Impact Monitoring, Environment and Natural Resources, Government of the Northwest Territories) funded project. This Traditional Knowledge on caribou is the property of the Yellowknives Dene First Nation. Any use of this information must acknowledge this ownership.

Login

Collections

Search



## **Appendix F**

### **Summary of TK Panel Recommendations Relating to Caribou**



DDMI TK Panel Recommendations and Response Tracking - Caribou						
NUMBER	REFERENCE	RECOMMENDATION	CONTEXT	TK VALUE/CONCEPT	DDMI RESPONSE	DDMI ACTION ITEMS
Assigned by DDMI unless otherwise indicated in report	Be as specific as you think is appropriate; for example a section or page of the document, a recommendation #, general comment, etc.	Recommendations should be as specific as possible and explain an action that you believe is necessary; supporting information or rationale should be explained in the "context" column.	Context should contain all the information needed to understand the rationale for the accompanying recommendation.	Distinct values/concepts that are contained in Traditional Knowledge and can help to guide decision process	Responses should be as specific as possible, relating the issues raised in the "recommendation".	Actions should be as specific as possible, relating the issues raised in the "recommendation"; where possible, a timeframe may be included.
1.1	A Way of Life, 25 Oct 2012, pg. 19	During July/August, a regular training session should be planned for Diavik staff in ways of properly respecting caribou and other animals	Cross-cultural learning is important when there are two ways of knowing wildlife. Scientists and Environment staff have a different way of doing work and understanding wildlife compared to that of TK holders. Respect for wildlife by TK holders means following the traditional laws that govern the relationship between humans and individual species. A successful monitoring program requires good communication and this can be challenging in a cross-cultural setting. Strong relationships and a special effort to understand the differences are key to success.	Respect Reciprocity Traditional Laws	Diavik staff and community assistants participating in the monitoring program undergo onsite and field training prior to initiation of the program. In addition standard operating procedures are revisited in the field throughout the process. In 2012 and 2013, Diavik invited community Elders and youth to participate in the monitoring program to observe staff performance and evaluate procedures. Minor changes were suggested and are currently being reviewed.	Involve community members in caribou monitoring and share knowledge of different practices relating to wildlife.
1.3	A Way of Life, 25 Oct 2012, pg. 19	The TK-Science camp at the mine site is an important place for developing skills and capacity in cross-cultural caribou monitoring	Elders feel that they can be creative in collaborating with Diavik in a cross-cultural setting that includes observations and knowledge exchanges at the TK/IQ Camp.	Reciprocity	Recommendation is outside the scope of the Caribou Behavioural Monitoring SoP. Such opportunities may be considered for future camps, depending upon the focus of the camp.	N/A
1.4	A Way of Life, 25 Oct 2012, pg. 19	The TK-Science camp (known as the CBM Camp) should be moved to a location north of Diavik on Lac du Sauvage. The setup must be in the Aboriginal way, not in a square, so that it's not threatening to the caribou.	In keeping with traditional laws governing relationship with caribou, the camp should be closer to the caribou migration route in order to develop skills and capacity in cross-cultural caribou monitoring. Aboriginal camps on the land have a specific way of being set up, and this should be respected for the set-up of the TK/IQ camp.	Traditional laws	The camp site has been established in consultation with community members under a land use permit with the WLWB and will not be relocated. The footprint of buildings and other infrastructure will not be changed significantly, in order to reduce further impacts on the environment.	N/A
1.5	A Way of Life, 25 Oct 2012, pg. 19	Monitoring results should be reported back to the communities on a consistent basis.	Participants expressed frustration at the lack of communication (and involvement) with community members relating to caribou monitoring at the mine site to date.	Reciprocity	Diavik prepares annual wildlife monitoring reports and an Environmental Agreement (EA) summary report. Additionally, EMAB produces an annual report that summarizes findings and recommendations. Wildlife monitoring updates are also included in annual presentations to communities. Diavik welcomes any further recommendations on how best to ensure that this information reaches individual community members.	Continue to distribute annual reports (which include executive summaries) to community organizations and visit communities as available. Investigate and request feedback on more appropriate methods for communication of monitoring programs & results.
1.6	A Way of Life, 25 Oct 2012, pg. 19	It will be valuable to "check nets" and synthesize what's already been done by Diavik to incorporate TK/IQ into its processes, and document/share lessons learned from these experiences in order to avoid repeating work already done.	Participants felt that they are often repeating themselves (to same and different companies) about many of these topics/concerns. A sign of being respected is "being heard"; so to have to continually repeat themselves, TK holders feel disrespected. There is value in reviewing what Diavik has done to incorporate TK/IQ into their work.	Respect	Unclear if recommendation is addressed to the TK/IQ Panel or Diavik. Diavik is open to sharing information about current and upcoming TK/IQ plans and programs with the Panel for their review. Literature reviews have also been done to determine TK/IQ use for closure planning and vegetation.	Confirm if the recommendation is to Diavik or to TK Panel members/facilitators.
1.7	A Way of Life, 25 Oct 2012, pg. 20	Use pictures and/or other visual tools as part of the form for caribou behavioral scans.	Visual representation of the different behaviours of caribou is likely more accurate and would be helpful for people conducting the scans, especially new hires. People see things through a cultural lens and may interpret what is seen differently.	Reciprocity	An effort to take photos displaying various caribou behaviours was undertaken during the 2012 and 2013 monitoring seasons.	DDMI staff are evaluating opportunities to incorporate visual tools into the SoP.
1.8	A Way of Life, 25 Oct 2012, pg. 20	TK holders should be hired on a seasonal basis (i.e. spring through summer) to work with Diavik staff in caribou monitoring.	A TK holder on staff would be helpful in conducting cross-cultural training and monitoring considerations. Tradition requires TK holders to report their observations to each other and to discuss interpretation of those observations.	Reciprocity	Most caribou monitoring is completed from August - October. DDMI brings Elders to site to participate in these monitoring programs each year.	Investigate options for transitioning caribou behaviour monitoring to communities, while continuing to include Elders in current monitoring programs.
1.9	A Way of Life, 25 Oct 2012, pg. 20	Community meetings are a good way to gather more information on how caribou are doing	This can be a means of extending traditional monitoring practices to include scientists. Both parties are able to share their observations on caribou in a face-to-face meeting. Such an approach provides a good opportunity for community members to learn about what is happening at the mine in relation to caribou. And mine employees have a chance to learn what the communities are seeing in their areas.	Reciprocity	Recommendation is outside the scope of the Caribou Behavioural Monitoring SoP. Diavik hosts annual community meetings that include discussions on caribou and other wildlife. Diavik has also coordinated and participated in many wildlife forums to discuss caribou health and management with numerous stakeholders.	N/A

DDMI TK Panel Recommendations and Response Tracking - Caribou						
NUMBER	REFERENCE	RECOMMENDATION	CONTEXT	TK VALUE/CONCEPT	DDMI RESPONSE	DDMI ACTION ITEMS
1.10	A Way of Life, 25 Oct 2012, pg. 20	Caribou observation logs can also be used by community members when they are on the land	TK holders adapt and are willing to use new tools to carry out their stewardship responsibilities. Harvesters in the community may find the Diavik forms useful, and it may be helpful information for ENR.	Social	Recommendation is outside the scope of the Caribou Behavioural Monitoring SoP. Diavik can supply the field sheets to communities, if requested.	N/A
1.11	A Way of Life, 25 Oct 2012, pg. 20	Include more behaviors in the list for observation	Participants felt that there were other common behaviours not captured in the list. Community members are more familiar with different caribou behaviours and could help to expand the list and capture more detailed information. The intricate TK about caribou and caribou behaviour is required to inform good decisions. For example, caribou that are scared will often put their nose in the air, sometimes jump and then gallop fast; they are threatened because they do not know what is going on.	Reciprocity	Elders from the YKDFN, NSMA and Tlicho participated in caribou behavior surveys in the fall of 2012 and 2013. One additional behavior has been recommended so far: curious (approached).	Consider changes to SoP based on feedback from community members.
1.12	A Way of Life, 25 Oct 2012, pg. 20; Closure Reclamation & Landscape History Interim Report, 19-22 February 2013, pg.6	Include more categories for herd composition and behaviour; involve two individuals nominated by the TK Panel to assist with updating the SOP.	Community members see caribou herds differently than scientists. For example, there are leaders and followers within a herd. Participants felt this would be helpful information to record because the relationship between herd members is important to understand in making decisions to reduce impacts on caribou.	Reciprocity	Elders from the YKDFN, NSMA and Tlicho participated in caribou behavior surveys in the fall of 2012 and 2013. No additional categories have been recommended to date.	Plans to review suggestions and improve the information in these categories is being considered by Diavik.
1.13	A Way of Life, 25 Oct 2012, pg. 20	Utilize Aboriginal terms/concepts as identifiers	Participants expressed that there are Aboriginal terms that capture caribou activity or behaviour, perhaps more accurately than English terminology for them. Specific terms and concepts contain unique understandings important in governing the way we treat or 'manage' caribou. Specific terms and concepts contain unique understandings important in governing the way we treat or 'manage' caribou. Addition of such terms to the data form may be helpful for community members participating in surveys.	Symbolism	This may be beneficial in the future, if caribou behavioural monitoring were to transition to communities.	N/A
1.14	A Way of Life, 25 Oct 2012, pg. 20	Injured animals should be sent to ENR for assessment	It would be helpful to have as much information as possible about injured or dead caribou, so that community members are made aware of the cause. TK holders may have other ideas about how to safeguard caribou in the future.	Stewardship Capturing knowledge	Recommendation is outside the scope of the Caribou Behavioural Monitoring SoP. Diavik has a specific policy and procedures in place for reporting and handling of injured or deceased wildlife, and this involves ENR.	N/A
1.15	A Way of Life, 25 Oct 2012, pg. 20	Scientists and TK holders analyze dead caribou together	It would be helpful to have as much information as possible about injured or dead caribou, so that community members are made aware of the cause, can share information and learn the way that government analyzes caribou carcasses. TK holders and scientists can exchange ideas on causes and ways to prevent future deaths.	Stewardship Recording knowledge Reciprocity	Recommendation is outside the scope of the Caribou Behavioural Monitoring SoP. Diavik has a specific policy and procedures in place for reporting and handling of injured or deceased wildlife. Diavik staff do not analyze dead caribou themselves; it is done by ENR.	N/A
1.16	A Way of Life, 25 Oct 2012, pg. 20-23	Four key areas for monitoring: 1. Behaviours 2. Herd composition 3. Caribou health 4. Environmental conditions	These were identified as the key concerns of community members that are all factors considered in the traditional monitoring system; they should be monitored by Diavik. Indicators or signs of herd condition were identified within each of these areas.	Stewardship	Many of the indicators recommended that relate to herd composition, health and environment are more appropriate to be studied by government at a regional level. Behaviours and local conditions are included in the current SoP.	N/A
4.1.1	Checking Nets, 23-25 Oct 2012, pg.8; Closure/Reclamation and Landscape History Interim Report, 23-25 October 2012, pg.8	The TK/IQ Panel should develop a report that more fully represents our knowledge and practice for maintaining the well-being of the caribou. TK assumes that all who live on the land of the caribou have stewardship responsibilities and must take these responsibilities seriously.	Many planning and monitoring gaps exist in relation to caribou and Diavik that have yet to be addressed, such as: Aboriginal monitoring approach (harvest camp), stewardship (traditional caribou laws), movement & cumulative impacts (monitor migration with youth), behaviour and herd composition (response to environmental influences, not just to mining). Preference is to monitor the herds when they are moving, north of Diavik.	Stewardship	Recommendation is to the TK/IQ Panel, however Diavik does not view this as within the mandate of the Panel. The Panel could recommend considerations for planning and observing caribou well-being in relation to the development of closure plans & post-closure monitoring programs.	A future Panel session to discuss closure monitoring is expected and caribou will be a part of that discussion.

DDMI TK Panel Recommendations and Response Tracking - Caribou						
NUMBER	REFERENCE	RECOMMENDATION	CONTEXT	TK VALUE/CONCEPT	DDMI RESPONSE	DDMI ACTION ITEMS
7.3	Re-vegetation Report, TK Panel Session #7, 14-18 August 2014	Use traditional techniques (e.g. flags, trees) to keep caribou away from areas that are unsafe (both near and far from site).	Caribou will find their old migration routes, but they also make their own trails that change over time. Some participants recognized that it is important to try to encourage caribou away from harmful areas far before they reach the mine site/East Island. Others felt that it would be impossible to prevent animals from coming to the mine site area. Consideration for guiding caribou on the mainland or around the island is a possible topic for future discussions.	Stewardship	DDMI proposes to hold a TK Panel session in the spring 2016 to discuss wildlife monitoring and management at closure. Further discussions to advance this concept would be well suited to this meeting.	Confirm TK Panel support for a 2016 spring session on wildlife monitoring and management at closure. If supported, DDMI to plan session for April/May 2016.
7.5	Re-vegetation Report, TK Panel Session #7, 14-18 August 2014	Create safe passage for caribou over the rock pile and through the site following their old migration routes on the north and south east sides (refer to map developed during session).	Panel members felt that it was not necessary to plan too much for the animals safe passage, as caribou will ultimately go where they want and will find the ramp, road or easy way. Preference was to align the path with the old migration route and to keep the slope similar to that of the test pile - as natural as possible. There are some big rocks at the bottom of the rock pile that would need to be covered. It was seen as important to think about the slope in the winter too - how wind will deposit snow - not just when it is snow free. The berms on top of the rock pile were viewed as a barrier to caribou movement, so it would be preferred to remove them and also to remove the berm around the top of the pile.	Stewardship Seasonality	This is very similar feedback to what community members said at a 2009 workshop relating to caribou at closure. Current closure plans, most notably for the rock pile, generally support this recommendation and the underlying reasons for the recommendation.	DDMI to consider design features that support this recommendation during the next major update to the ICRP (2016).
7.8	Re-vegetation Report, TK Panel Session #7, 14-18 August 2014	Allow more time for the TK Panel to discuss options for keeping animals away from certain areas (e.g. fencing).	Inuksuit are used to mark caribou crossings (nalluit) in Inuit culture. Other cultures use different techniques as well - e.g. flags, trees. More discussion on traditional and modern methods that can be used to prevent or deter animal presence in certain areas of concern may be useful. For example, some Panel members felt that a fence would be beneficial, while others felt it may be harmful and hard to maintain over time.	Stewardship Recording knowledge	DDMI proposes to hold a TK Panel session in the spring 2016 to discuss wildlife monitoring and management at closure. Further discussions to advance this concept would be well suited to this meeting.	Confirm TK Panel support for a 2016 spring session on wildlife monitoring and management at closure. If supported, DDMI to plan session for April/May 2016.
2.2	Renewing Our Landscape, 7 December 2012, pg. 22	Do not allow water to pool on top of the rock pile	Once a small pool of water forms, it gets bigger and becomes a lake that attracts animals. Animals then start to use it. Because the Panel is concerned with the quality of water within or flowing from the pile, there is concern for the health of caribou and other wildlife.	Stewardship	Diavik is not planning to have a water pond on top of the rock pile at closure.	N/A
6.1	Processed Kimberlite Containment Interim Report, 24-28 October 2013, pg. 5	Cover PKC area with a combination of natural sand and soil to ensure that the PKC is not over-heating the area (and melting permafrost) and to support natural re-vegetation	Concern was expressed that the dark colour of both the coarse PK and the liner would attract more sun (heat) that would result in permafrost melt. There was also a desire to see the area revegetated as Panel members expect that caribou and other wildlife will attempt to access the area after closure.	Stewardship Respect	The revised closure plan discussed in the October 2013 TK Panel session was approved by the WLWB in May 2014. The current plan includes a rock cover that would be lighter in colour and serve the same purpose as the sand and soil cover proposed by the TK/IQ Panel. The rock cover required to contain the Processed Kimberlite and protect it against wind & water could limit opportunities for revegetation.	Determine relative importance of overall function compared to specific material use with communities.
8.27	Reefs & Monitoring Water Report, TK Panel Session #8, 2-4 December 2015	Break-up the 1 km cliff on pit A418 with slopes (to make it safe for caribou).	There was a concern that a cliff feature at the edge of a lake could result in caribou or other animals being injured or killed, especially if it was used by predators as a hunting technique. Additionally, the length of the existing cliff would mean that caribou would have to swim up to 1 km to get out of the water. As such, it was felt that adding slopes at regular intervals would be helpful for animals to get in/out of the water safely.	Stewardship Experiential learning Sharing knowledge	Diavik plans to accommodate this request when finalizing closure designs for the A418 pit. A visit to this area is planned for May 2016, during TK Panel Session 9, and it would be helpful to have the TK Panel confirm that this recommendation still holds after seeing the area with their own eyes.	Plan to visit the pit shorelines during the May 2016 TK Panel meeting at the Diavik site and determine if the TK Panel reconfirms this recommendation.
8.28	Reefs & Monitoring Water Report, TK Panel Session #8, 2-4 December 2015	Leave current roads into the pits (e.g. A154).	Panel members found it acceptable to leave the ramps (that are currently used for vehicles to enter the pits) in place at closure, as they could provide safe access for wildlife into and out of the lake.	Stewardship	This recommendation aligns with Diavik's current closure plans.	N/A
4.1.4	Checking Nets, 23-25 October 2012, pg.20	Women have opportunities to participate in TK/IQ Panel - especially for discussions on caribou and vegetation.	Women have specific roles in Aboriginal communities and the knowledge they can contribute is different from that of men. There needs to be respect for the distinct knowledge of women, as Elder women have special gifts and understandings that are important for carrying out stewardship responsibilities.	Respect Recording knowledge	Recommendation is to the TK/IQ Panel or their community organizations. DDMI does not select Panel participants but could request community organizations to include women participants, as recommended by the Panel.	A request to add women participants for the August 2014 re-vegetation Panel session was sent to communities, as this had been suggested by the Panel in the past.

## **Appendix G**

### **Traditional Knowledge on Caribou: 1990s to Present (Presentation)**

Presented to the TK Panel  
TK Panel Session #9  
May 13, 2016

# Traditional Knowledge Insights about Caribou in the Lac de Gras Region

# Since the 1990s ...

- Caribou people from both NU and NWT say the same things . . . and they are the same over time
- Caribou people have always known the places important to caribou (crossings, calving grounds, land bridges)
- Caribou people forecasted changes in caribou and feel partially responsible for these changes
- Caribou people feel like their relationship with caribou has changed and needs to be repaired

# Caribou are . . .

- People must safeguard caribou for future generations

- Subsistence and sustenance

Future

Life

Self

Wealth

People are caribou;  
caribou are people

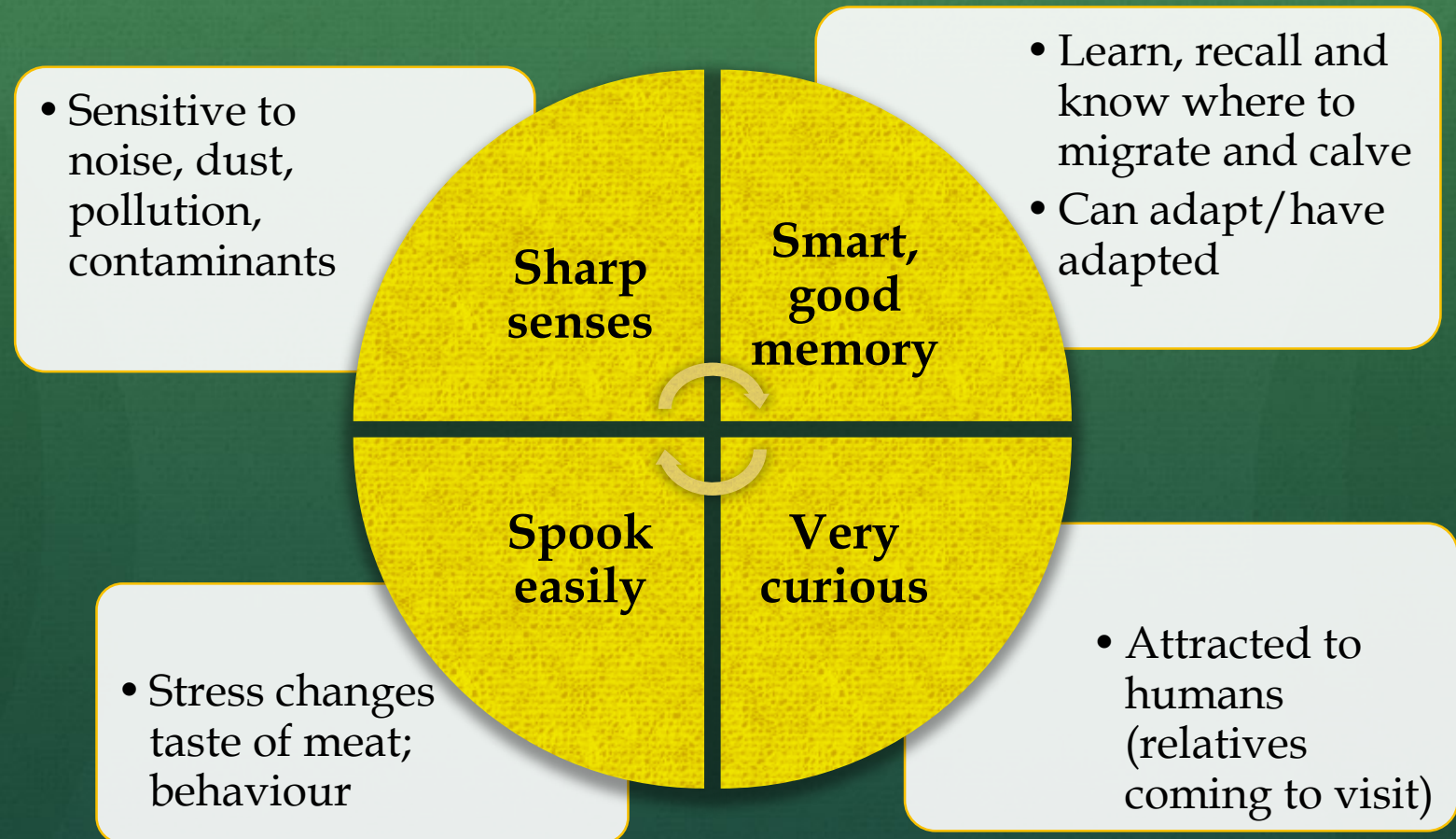
- Financial, material, nutritional, spiritual, cultural

# We hear that . . .

- People and animals could speak the same language
- Caribou are a sacred animal that we all depend on
- Every human has a bit of *vadzaih* heart



# Traditional Knowledge of Caribou . . .



# Roads

Fragment  
habitat

Avoid if busy

Barriers to  
migration

Loss of habitat

Caribou won't  
cross steep  
snow banks

Create 'easy'  
walking

Allow good  
look-outs for  
predators

Provide escape  
from insects  
(wind)

Behaviour  
depends on  
time of year

# Roads

No matter what you do, caribou will be affected by these mines and roads. The only way to not affect the caribou is to have no mines and roads. If there is a mine, there will be roads. And if you have a road, there will be trucks on it. If they put it through, you can't stop everything for the caribou. But maybe that is what the caribou need. (Pierre Catholique of Łutsel K'e in Parlee et al.2005: 35)

Now that there are mines with roads and high snow drifts on the sides, the caribou won't cross and their migration route is disrupted. The old people said if you pile up snow into drifts, the caribou would not cross them. They just move alongside of it. This is what is happening with the winter roads. They don't teach kids about this anymore. The white man does not know this. The way the caribou migrate has been disrupted. The roads bisect the migration routes and disrupt the natural behaviour of the caribou. (Liza Enzoë of Łutsël K'e in Kendrick and Lyver 2005: 183)

# Vehicles and Aircraft

Run, gallop

Injuries,  
death

Stressed out

Isolation,  
dispersion,  
small groups

Heart  
pumps;  
panic

The meat  
changes

Collisions

Hunter  
access

Noise  
pollution,  
contaminants

# Vehicles and Aircraft

- In a few years, the caribou will change their route again. They will go a different way; they will be disturbed by the winter road, planes, and blasting. You will see [these changes] in three to five years from now.” (Louis Abel of Łutsel K’e in Parlee et al. 2005: 35).
- Although we have all seen ekwò in association with the ice road, the do not like to cross roads unless they are in the migration mode. They become very skittish when trying to cross roads, as they can smell the human scent. When they are not in migration mode and simply foraging during the winter, if the ekwò sniff our scent, they will turn back. (Romie Wetrade of Gamètì in Legat and Tłìchọ 2001: 13)

# Important Places

Water  
crossings

Land  
crossings  
(*tataa*)

Calving  
grounds  
(hospital,  
nest)

Post-calving

Key habitat /  
feeding

# Important Places

- This crossing of the Coppermine ['The Narrows/Degha?à(?)'], by the way, is an important spot in the history of the Dog-Ribs and Yellow Knives. It has always been a favourite swimming-place for the caribou, and many a struggle took place for the possession of this hunting-ground in the old days when there was continual warfare between the two tribes. At present day it is a breach of etiquette for any Indians to camp here, as it is supposed that if the caribou are once headed back at this point they will not come south of Mackay Lake. This rule had evidently been broken lately, as we found signs of a recent encampment, and King considered that this amply accounted for our not finding the caribou before we reached the Lac du Rocher. -- Pike, Warburton The Barren Ground of Northern Canada, Macmillan and Co., London, 1892: 67

# Important Places

- Somewhere on Egati [Ek'ati] is another camp that is like a small village; people returned to this camp every year to melt [caribou] fat; there are burials at this camp too. (Crapeau et al. Interview, Aug. 12, 1997 in YKDFN).
- Nàk'ooʔaa (the Narrows) between Ek'ati and [Nàk'ooʔaatı] Lac du Sauvage near here is considered to be an important area for the wildlife. We have to document that so that mines will not be developed near there. And along that area where there is a long stretch of sand (Misery Point), where there are grave sites, is the long stretch of esker that the wildlife use during migration season. Those are the areas that the mining companies want us to research and document so that those areas will not be used. They said, they don't want to use all the land, but they want this kind of information documented for future mine development. (Betsina et al. Interview, Aug. 11, 1997 in YKDFN).



# Human Development

## Avoid

- migration detour
- learn for 'next time'

## No Influence

- migration instinct is strong
- follow leaders

## Attract

- predator refuge
- shade
- easy walking
- security

# Human Development

- The animals, after they come back from the calving ground area. Coming back this way [south], they are not rushing back into the tree line, while on the north side of Ek'atì [Lac de Gras]. But they still hang around over there, because they know that everything here is in front of them, it's really noise and they can't eat. So they hang around coming back slowly. With their babies, small ones, then they start moving away from these mines and from these [outfitter] hunting camps. They know that people are ready for them to shoot. The [caribou] have to watch all those things. But they don't rush themselves because they just walk slowly and eat, stop, eat, stop, eat, stop all the way from the Barrenlands. I don't know how many times it goes like that. That's when they start to get fat, in August, September. (Joseph Judas, February 6th, 2013 in TRI 2016: 36)

# Human Development

- There's roads and mines and all activities where all the caribou pass, I mean, that block the caribou...elders said that when something like that happens, caribou don't go there again. (Harvester in Parlee and Furgal 2010: 37).
- The caribou used to migrate to our land. But now there are mines in the way of their major migration route. That's the reason why caribou mind-spirit is weak – it is too weak to come toward our land now. The caribou feel like there is something in their path, so they turn the other way. The smell of fumes and smoke can blow far on the barren ground, and the caribou can sense that (Caroline Beaulieu of Behchoko in Legat et al. 2008: 28).

# Human Development (cont'd)

- These caribou are growing accustomed to mines like a landmark...now they are using them in their travels. (Anonymous in KHTO and Golder 2011)
- There were caribou around the tank farms. They were hanging around in the shade. They love it! Hiding from the big tanks and building, I was surprised. (Colin Adjun in KHTO and Golder 2011)
- With human activity, they sometimes change their migration routes. Lac de Gras, before the diamond rush, caribou used to migrate through there in great big herds...today it is totally different. Only a few in a group, not like hundreds. (Anonymous in KHTO and Golder 2011 )

# Regional / Range Level



# Local Level: Disturbance Means Stress

Run,  
gallop

Injuries,  
isolation,  
separation

Collapse

Smaller  
groups,  
less  
brave

Smaller  
range

# Cumulative Effects



# Mining Closure

- What should be monitored?  
How? When?

- Protect key areas

**Monitoring**

**Food  
(forage) is  
key driver**

**Calving  
grounds,  
migration  
routes shift**

**Movement**

- What can we do  
at Diavik to  
help them?

- How can we  
support safe  
movement through  
site?



## **Appendix H**

**Diavik Presentations: Closure Overview, Introduction to Session #9:  
Caribou, Response to Session #8 Recommendations,  
the NCRP Final Closure Plan and the Results of the PK Slimes Toxicity  
Study and PK Deposition Trial**

# Diavik Diamond Mines

Diavik Closure Planning Overview  
TK/IQ Panel – May 2016



# Closure Planning

---

## Content

---

Closure Plan – How we got here

---

Session 8 Responses – Water Quality & Fish Habitat

---

Caribou – the focus for TK Panel Session 9

---

# 1998 Pre-feasibility



400 0 4



# Closure Goals

---

- Land and water that is physically and chemically stable and safe for people, wildlife and aquatic life
- Land and water that allows for traditional use
- Final landscape guided by Traditional Knowledge
- Final landscape guided by pre-development conditions
- Final landscape that is neutral to wildlife – being neither a significant attractant nor deterrent relative to pre-development conditions
- Maximize northern business opportunities during operations and closure
- Develop northern capacities during operations and closure for the benefit of the north, post-closure
- Final site conditions that do not require a continuous presence of mine staff

# Overview of Closure Plan by Area

---



# North Country Rock Pile

---



# PKC

---





# North Inlet

---



# Infrastructure



# Open Pits & Underground

---



# Response to Session 8 – Water Quality & Fish

---

## Supported

- Maintain current TK camp site until at least 2018 (8.1)
- Ensure long term scientific monitoring of NCRP to determine if it remains frozen and stable (8.30)
- Do not breach dikes until the TK Panel is satisfied with the water quality through visual inspection and reviewing results from scientific analysis (8.9)
- Leave dikes as they are (i.e. do not modify the slope or current construction) (8.21)
- Vary depths of built reefs (8.22)
- Don't build, or minimize building reefs on previous lake bottom areas inside the dike area (i.e. protect undisturbed and naturally vegetated areas) (8.23)
- Ensure good fish habitat for rearing, feeding and resting on reefs inside dike (8.24)
- Provide opportunity for the TK Panel to view the present shoreline when snow-free to consider further recommendations (in spring) (8.26)
- Break-up the 1 km cliff on pit A418 with slopes (to make it safe for caribou) (8.27)

# Response to Session 8 – Water Quality & Fish

---

## Supported Cont'd

- Leave current roads into the pits (e.g. A154) (8.28)
- In future programs, document why certain fish are rejected by Elders (8.3)
- Water testing should be done by tasting fresh water and by boiling the water, letting it set overnight and drinking it the following day (observe scum and clarity) (8.4)
- Set fish nets on both sides of the island (north and south). (8.5)
- Consider additional water sampling locations from different areas. (8.8)
- Focus water quality monitoring on the NCRP. (8.10)
- Monitor fish spawning areas closely, especially in the SE part of island (i.e. area just south of the pits). (8.12)
- Monitor and test water in pits and around East Island regularly. (8.13)
- Test water (on East Island) scientifically and not by tasting. (8.15)
- Regularly measure heavy metals all around island. (8.16)
- Monitor water in late May and early June as these are critical times (i.e. melt). (8.17)
- Regularly measure water quality in all bays, drainage and run-off. (8.18)

# Response to Session 8 – Water Quality & Fish

---

## Supported Cont'd

- Annually check for algae growth around shorelines as too much can be an indicator that there is less oxygen for the fish. (8.19)
- Continue to provide the TK Panel with teaching and communication 'tools' (i.e. videos, books, photos), to share progress and findings on closure planning with communities. (8.31)
- Plan for climate change hundreds of years into the future. (8.32)
- Re-seed land and use dirt and safe sewage to facilitate re-growth. (8.33)

# Response to Session 8 – Water Quality & Fish

---

## Modify

- Consider options to donate camp facilities to people traveling to LdG after the mine closes (8.2)
  - DDMI prefers to close the camp, reclaim the land and relinquish the lease for liability reasons. DDMI would consider 'selling' or donating the camp equipment to community organizations or a coordinating body, pending legal review, for their own use.
- Monitor and filter two streams from the east and west sides of the PKC by Mother Nature through mosses, bogs; moss should be placed throughout the channel. In the short term, install an industrial filtering system. Monitor this water quality. (8.11)
  - DDMI agrees with the Panel that the distance PKC water flows before entering Lac de Gras will be an important consideration. However, options may be limited in some areas, particularly on the west side. Should site-specific treatment of PKC water be required, relevant options (both industrial and natural) to achieve the required performance would be evaluated.

# Response to Session 8 – Water Quality & Fish

---

## Modify Cont'd

- Leave the land between the pits and the dikes as it is for natural regrowth when flooding (8.20)
  - Engage other stakeholders to determine the preferred approach for re-vegetated areas inside the dikes prior to filling the open pits with water.
- Stock water in open pits with bugs to improve water quality (8.25) and Regularly stock on-island pond water with bugs to improve water quality (8.14).
  - Evaluate if it is possible to assist with the establishment of bugs on the bottom of the pond.
- Ensure two Elders and two youth from each group attend future camps and meetings. (8.6)
  - Evaluate camp accommodations and participant needs in advance of the 2018 AEMP TK Study and advise community organizations and the TK Panel on options for attendees.
- Sample fish and water from the Narrows (In both LdG and LdS) (8.7)
  - The current area identified for fishing in LDG includes the area of the lake below the Narrows. Any concerns or interest in sampling LDS in relation to the Jay Pipe should be directed to Ekati.



# Response to Session 8 – Water Quality & Fish

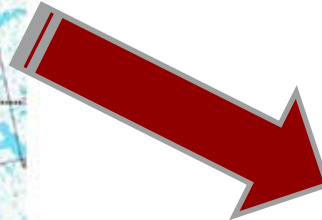
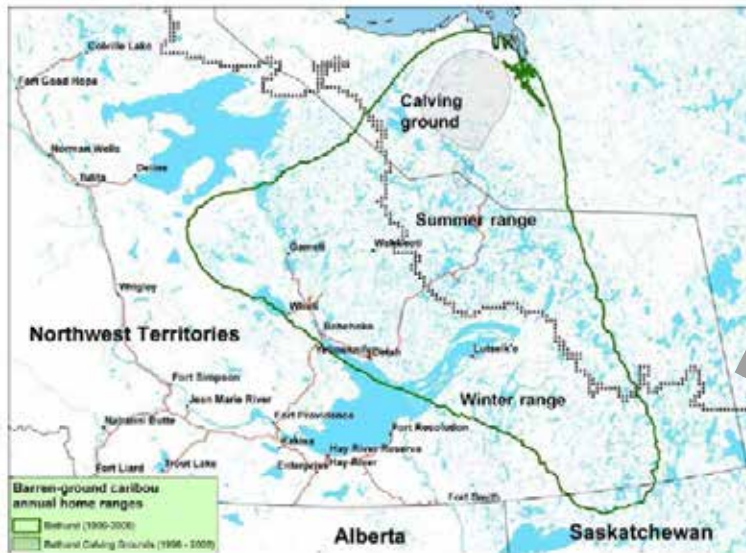
---

## Unsupported

- Explore long term monitoring options including how to coordinate and administer an ongoing post-2030 program that continues to integrate TK and science and involves both Elders and youth trained in science. (Consider funding, and if some of the bond can be used) (8.29)
  - Diavik needs to plan for ultimate closure and relinquish ownership of the property back to the government. As such, any long-term monitoring plans past 2030 would need to be funded and coordinated by other parties.

# Session 9: Caribou Management & Monitoring

- Regional vs Local Questions & Monitoring



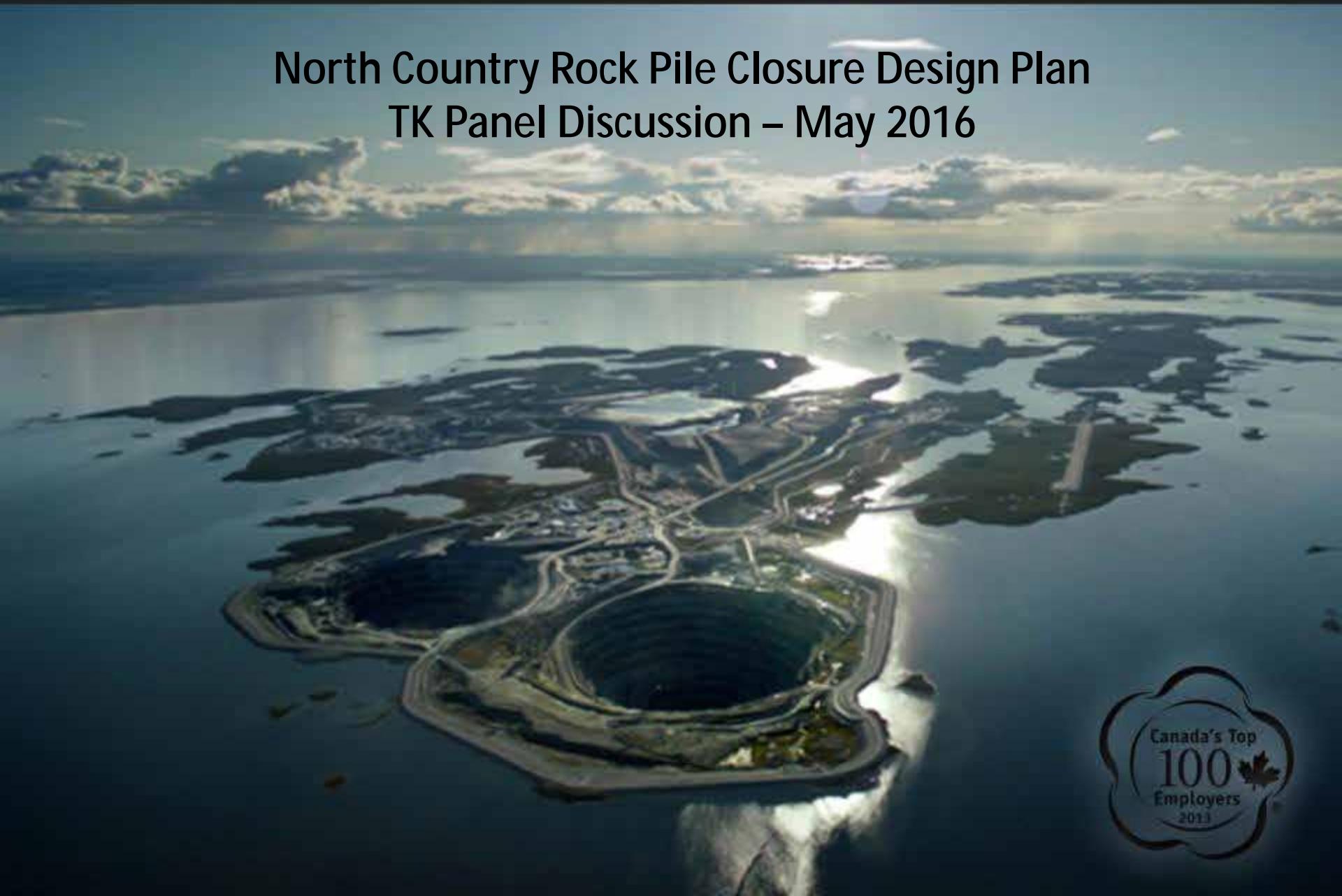
# Session 9: Caribou Management & Monitoring

- How can we help caribou travel safely around the mine site after closure?
- How do we watch caribou to see if they are safe?



# Diavik Diamond Mines

North Country Rock Pile Closure Design Plan  
TK Panel Discussion – May 2016



# North Country Rock Pile (NCRP) – Closure Design

---

## Content

---

How does closure planning work?

---

What is Progressive Reclamation?

---

Closure Design Goals

---

Closure Design Plan & Timeline

---

You spoke, we listened – how your recommendations were included

---

What will it look like at closure?

---

What will be monitored once its closed?

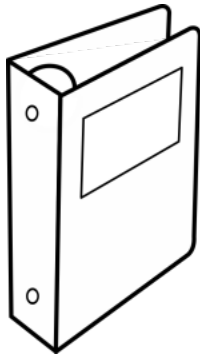
---

Key Questions for the Panel

# How does closure planning work?

---

Initial Plan - 1999



Closure Guidelines  
& Site Plans

Interim Plan – v4,  
2016



Current State of  
Closure Planning

Final Plan - 2020



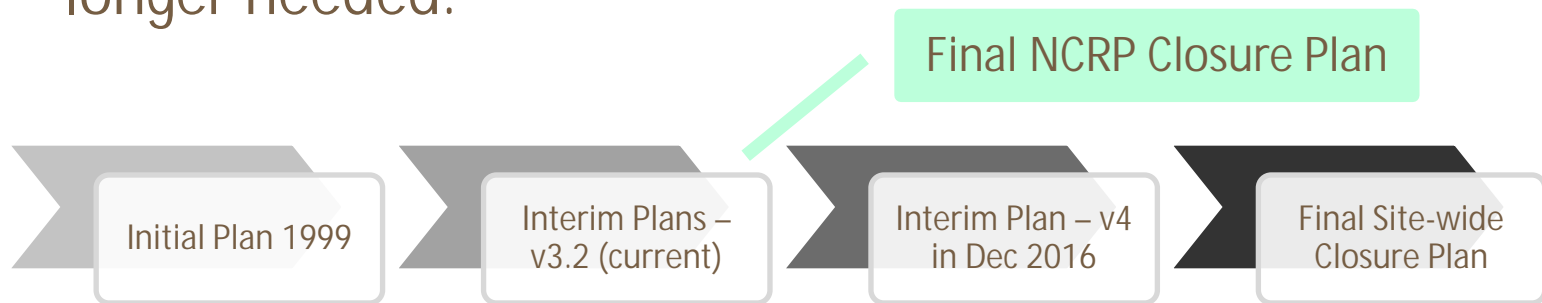
Plan for the End  
of the Mine



# Progressive Reclamation – what and why?

---

- **Progressive Reclamation** is the opportunity to ‘close’ and reclaim, or fix, specific areas of the mine that are no longer needed.



- **The Final Closure Plan for the North Country Rock Pile** is being prepared in advance of the Final Closure Plan for the mine site, so that progressive reclamation of this structure can occur.

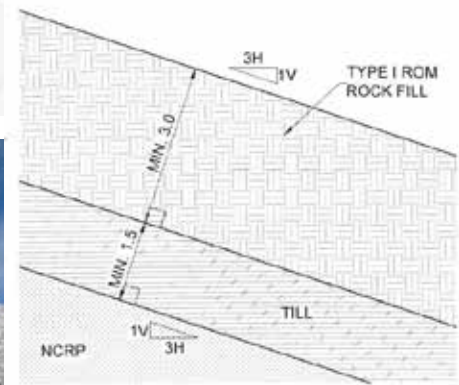
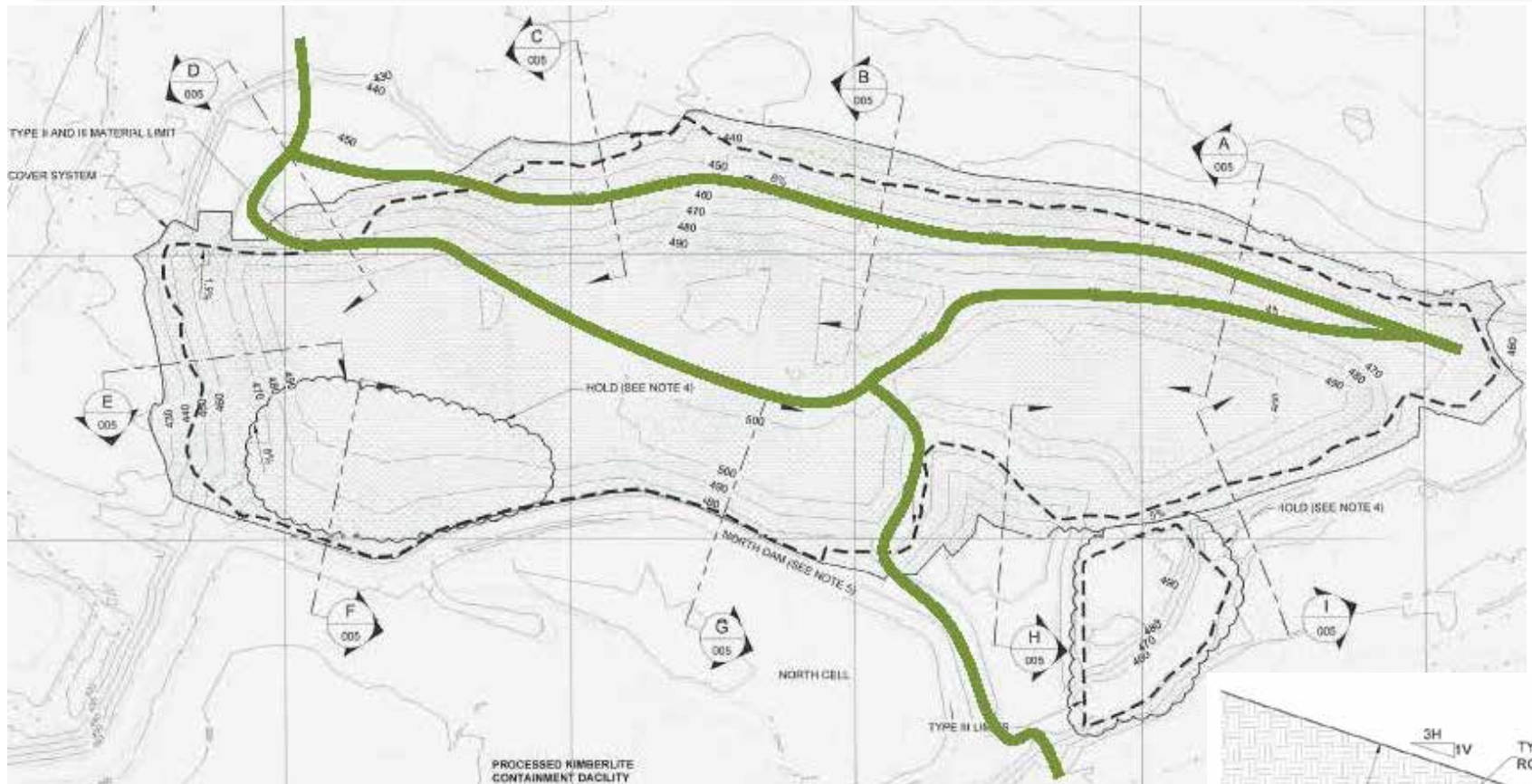
# Closure Planning Goals for the NCRP

---

TK Panel Goals	Technical Goals
Chemical stability & control of runoff water	Chemical stability
Safe use for wildlife	Physical stability
Minimize visual impact on the landscape	Future use & aesthetics (visual impact)



# NCRP Closure: The Plan



# NCRP Closure Timeline

---



# You spoke, we listened – TK Panel Recommendations

---

- Total of 15 recommendations from the Panel
- Of these:
  - 13 recommendations were supported ✓
  - 0 recommendations were modified
  - 2 recommendations could not be supported ■

# What will it look like at closure? NCRP

---

- [Diavik Closure Visualization\\_May2016.pdf](#)

# What will be monitored after closure?

---

- *Geotechnical inspections (stability)*
  - geotechnical inspections including observations and measurement of settlement,
  - erosion, surface drainage and thermal condition
- *Runoff/Seepage Water Quality (chemistry)*
  - seepage quality and using a system similar to the Surveillance Network Program (SNP)
- *Dust and Dust Deposition*
  - TSP and deposition/quality measurements of any dust generated from the closed waste rock and till area
- *Wildlife*
  - wildlife use of the area








Community Monitoring – seeing with your own eyes






# Questions for the TK Panel

---



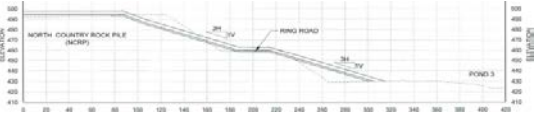




1. Do you accept the responses to your recommendations as to what can and cannot be accommodated?
2. Do you support the north country rock pile closure plan?

# TK Panel Recommendations for the NCRP

Recommendation	Actioned?	How Addressed or Why Can't it be Done?
<p>Create safe passage for caribou over the rock pile and through the site following their old migration routes on the north and south east sides (refer to map developed during session).</p>		<p>A caribou trail has been planned to go up and over pile with 3 access areas that align with old migration routes on the north and south east sides of the island; the slope would be as natural as possible and similar to that of the test pile, with re-shaping work done on the pile in wildlife access areas.</p>
<p>Do not allow water to pool on top of the rock pile</p>		<p>Areas on the top surface of the pile are to be levelled out to minimize snow accumulation (and associated water infiltration) into the pile; berms around the outside of the pile would be removed; the top and slopes of the pile would be graded to prevent a significant volume of standing water.</p>
<p>Have a 'moat' around the rock pile as a way of being able to contain and monitor the water that is coming out of the pile.</p>		<p>A series of engineered ponds (Ponds 1, 2 and 3) currently surround the NCRP. They will remain as NCRP collection ponds until it can be confirmed that runoff/ seepage is of adequate quality to be released to Lac de Gras. At this time, the idea would be to construct outlets in the ponds so that they would still function as settling ponds but then would naturally drain back to Lac de Gras.</p>
<p>Some revegetation should be planned for the rock pile. Consider use of good, black soil from the tundra or other eskers in the area. Plant native shrubs such as dwarf birch and willow in the soil near the bottom and allow the remainder to revegetate naturally.</p>		<p>It is not practical to simulate the natural environment on the NCRP. The final design would use available mine materials and reduce further impacts to the environment during reclamation. Similar materials and methods used to cover the test pile will be utilized for the NCRP and Panel members seem satisfied with the look of the test pile.</p>
<p>Simulate an esker when considering the final shape of the rock pile.</p>		<p>With the exception of the PKC tie-in zone, all of the slopes planned for the NCRP at closure are 3H:1V, similar to the test pile. In keeping with Panel recommendations, the north side of the pile will be pushed out past the current airport road and will have some bench areas along the slope that would serve to simulate varying levels of steepness and reduce the effort required for an animal to climb the slope. The berms on top of the NCRP will be removed, as will those around the edge of the pile, so that the edges appear to be rounded with a relatively flat top.</p>

Recommendation	Actioned?	How Addressed or Why Can't it be Done?
Safe wildlife access needs to be considered for all seasons when designing the final shape of the rock pile. There needs to be soft material in areas where caribou will be; consider the use of PK material for animal paths.		Access locations were aligned with old migration routes on the north and south east sides of the island, and the slopes of the pile are as natural as possible, and similar to that of the test pile. The placement and leveling of the cover will largely remove the boulder hazards at the bottom of the pile, and the designated pathway areas would be free of obstacles to allow for safe caribou movement. Panel members have stated that the test pile surface is good for caribou to walk on safely and the need for placement of specific materials on the pathways may not be necessary or suitable. Therefore, placement of PK or other materials on the pathways has not been confirmed.
Channel water flow to prevent contaminants from reaching Lac de Gras.		A series of engineered ponds (Ponds 1, 2 and 3) currently surround the NCRP. They will remain as NCRP collection ponds until it can be confirmed that runoff/ seepage is of adequate quality to be released to Lac de Gras. At this time, the idea would be to construct outlets in the ponds so that they would still function as settling ponds but then would naturally drain back to Lac de Gras. Water quality criteria will be established for runoff/seepage.
Preference is to lower the height of the rock pile. However, if that is not possible, keep the rock pile height as low as possible while ensuring that contaminants within the Type II and III rock areas are contained.		DDMI has been undertaking research on the chemical, physical, biological and thermal aspects of waste rock piles with a team of university researchers since 2004. The construction of a thermal cover is a recognized best practice to minimize the generation of poor quality seepage water from waste rock in permafrost environments. Only areas that contain Type II/III rock will be capped with additional materials.
Cap the rock pile with the best materials for biodiversity based on TK and science, using nearby hills as a reference.		It is not practical to simulate the natural environment on the NCRP. The final design would use available mine materials and reduce further impacts to the environment during reclamation. Similar materials and methods used to cover the test pile will be utilized for the NCRP and Panel members seem satisfied with the look of the test pile.
Create slopes on the rock pile similar to that on the test pile to support safe travel for animals.		The test pile structure closely resembles the slope ratio (3H:1V) and cover material that will encapsulate the NCRP at closure. The north slope of the NCRP will be re-sloped to 3H:1V to enable placement of a closure cover.



Recommendation	Actioned?	How Addressed or Why Can't it be Done?
Ensure long term scientific monitoring of NCRP to determine if it remains frozen and stable.		<p>Planned monitoring for the NCRP includes: geotechnical inspections (observations and measurement of settlement, erosion, surface drainage and thermal condition), seepage quality using a system similar to the Surveillance Network Program (SNP), dust deposition measurements from the closed waste rock and till area and wildlife use of the area.</p>
Leave some areas steep to encourage snow accumulation for wolverine and other denning wildlife (e.g. wolf, bear, fox, ground squirrel, etc.)		<p>The slope between the NCRP and PKC will be designed steeper than other areas of the pile (see below). All other slopes will be 'stepped' at a 3H:1V slope (similar to the test pile) and should still provide some denning opportunities.</p> 
Create barriers and other means between the rock pile and PKC to discourage animals from going into the PKC area		<p>The final slope between the NCRP and the PKC surface is designed to remain at a steeper 1.5H:1H ratio, in order to deter animal movement into the PKC area.</p> 
Focus water quality monitoring on the NCRP		<p>The potential for poor quality seepage/ runoff is the potential effect of greatest concern for NCRP Closure. Construction of the closure cover is expected to mitigate this risk and research has shown that seepage from drainage basins with an active zone completely within a 3 m cover of Type I waste rock would have a lower concentration of metals and circum-neutral pH, compared to an active zone in uncovered Type III waste rock. Estimates of runoff/seepage quality have been compared against closure objectives and criteria for wildlife, human health and aquatic life in Lac de Gras. Estimated post-closure runoff/ seepage water quality is expected to be of acceptable quality, and a monitoring program would be conducted to test against criteria.</p>
Plan for climate change hundreds of years into the future		<p>Under the predicted and accepted climate change scenarios, models show that the active zone in a covered pile would be limited to 3.9 m (11.7 ft) of depth, which means that freeze/thaw processes would stay within the cover zone and the Type III material below this zone would remain frozen.</p>

# Characterization of Extra-Fine Processed Kimberlite

TK Panel May 15, 2016

Document Control #:  
Template #: DCON-029-1010 R7



# TK Panel Recommendation

<p>Upon discussion, Panel members stated that should the slimes prove to be non-toxic, they would be more willing to assess on-site containment options for this material. TK holders need to see for themselves that something is not harmful to the environment. Participants would want to be confident in the results of the scientific testing.</p>	<p>Stewardship</p>	<p>Should the material prove to be non-toxic to people and wildlife, Diavik plans to leave the slimes on site and determine the preferred method for containment that allows for safe use or passage of wildlife in the PKC area.</p>	<p>Diavik plans to begin a toxicological study on PK material in 2015.</p>
--	--------------------	---	--

**Characterization of Extra Fine Processed Kimberlite Tailings  
from the Diavik Diamond Mine  
Processed Kimberlite Containment Pond**

**Final Report**

Submitted to:

Gord MacDonald  
Diavik Diamond Mines Inc.  
Calgary, AB, T2M 3G8

Submitted by:

Karsten Liber and Lorne Doig  
Toxicology Centre, University of Saskatchewan  
Saskatoon, SK, S7N 5B3

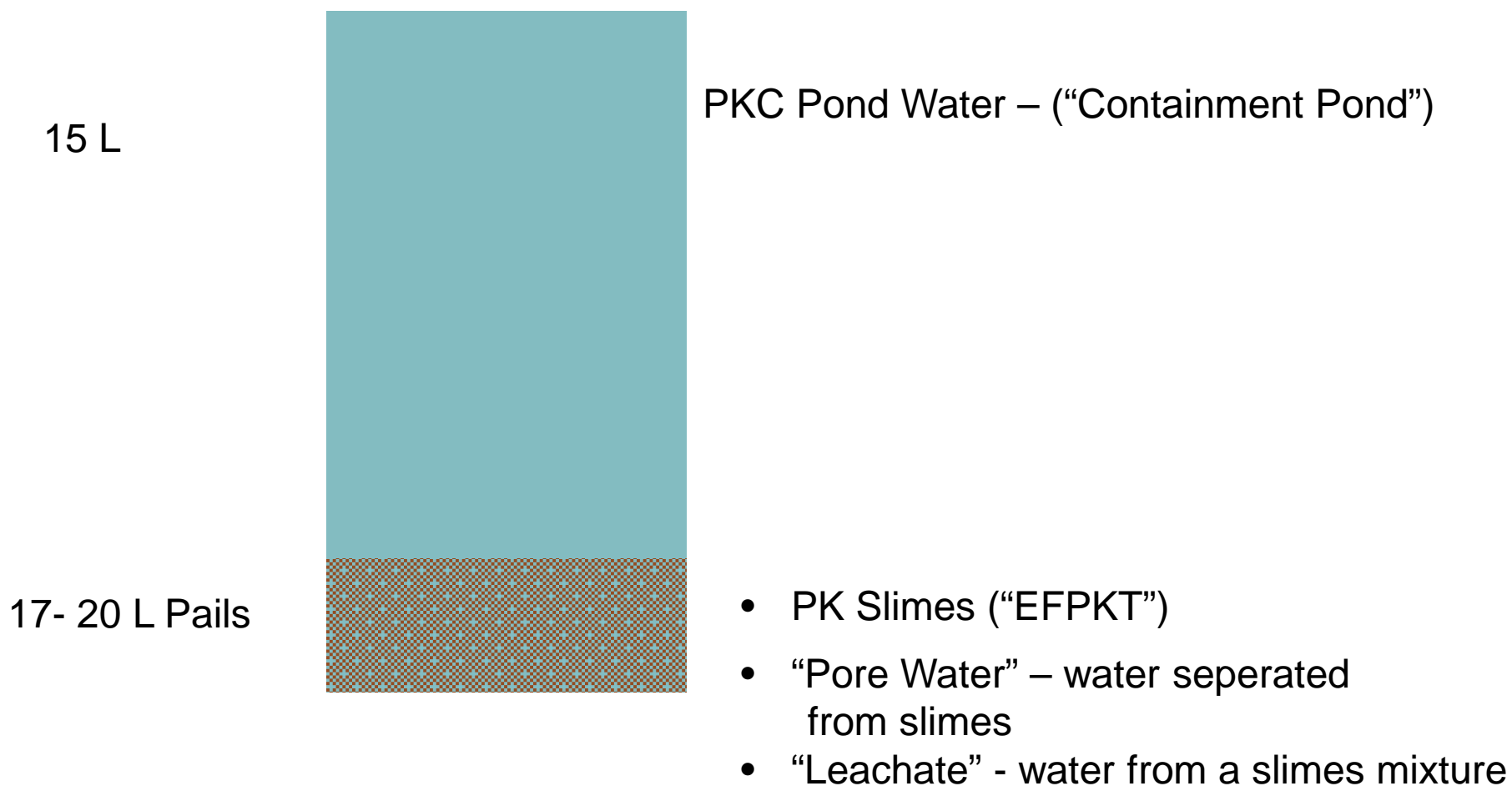
**January 18, 2016**

DDMI asked the Toxicology Center at the University of Saskatoon to propose a toxicological testing program.

DDMI accepted their proposal and provided research funding of \$116,000

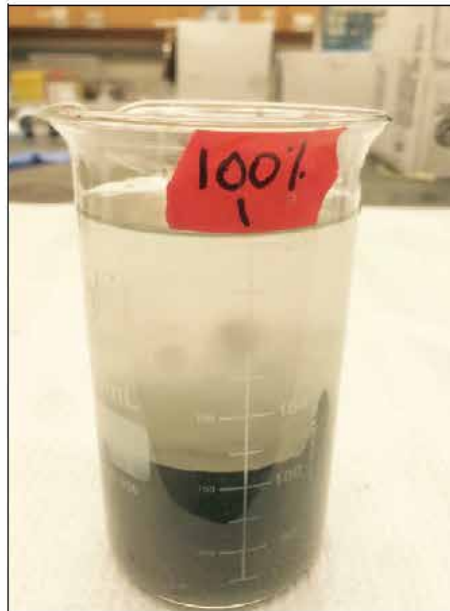
The report was completed January 2016 and has been distributed for review/comment.

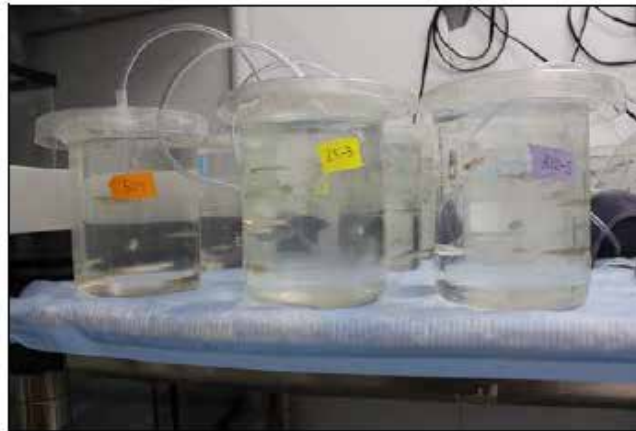
# What was tested



# How was it tested?

1. Physical
  - Particle size
  - Total organic content
  - Moisture content
2. Chemical
  - 24 metals/trace elements
  - Major ions
3. Toxicity
  - fish – trout
  - water flea
  - algae species
  - 2 benthic invertebrate species

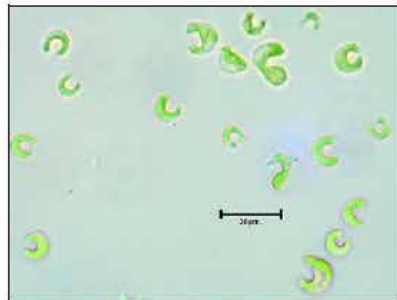
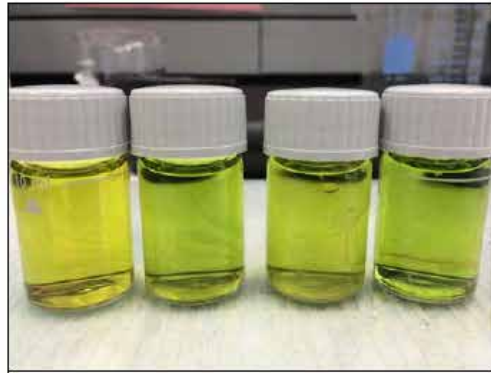




*Oncorhynchus mykiss*



Algae Toxicity Test



*Pseudokirchneriella subcapitata*

Daphnia Toxicity Test



*Daphnia pulex*

Chironomid Toxicity test





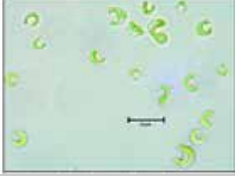


*Chironomus dilutus*

Hyalella Toxicity Test



*Hyalella azteca*

# Results

Toxicity Test	PK Slimes	Pore Water	Leachate	
Fish				OK
Water Flea			OK OK	OK
Algae			OK	OK
Benthic (1)		Reduced survival in 100%		
Benthic (2)		Reduced growth in 100%	Reduced growth in 100% and 50%	Reduced growth in 100%

# 1. Fish in “leachate”- 28 days



Table 26. Mean survival, length (mm) and growth (dry weight) of *Oncorhynchus mykiss* in a 28-d bioassay conducted with leachate extracted from EFPKTs collected from the Containment Pond, Diavik Diamond Mine, NT. All data are  $\pm$  SD.

Endpoint	Control	% EFPKT					
		3.12	6.25	12.5	25	50	100
Survival (%)	100	98 $\pm$ 4.9	96 $\pm$ 5.4	86 $\pm$ 8.3	100	100	100
Length (mm)	33.1 $\pm$ 2.0	33.5 $\pm$ 1.6	33.4 $\pm$ 1.8	33.4 $\pm$ 1.9	33.7 $\pm$ 1.8	34.2 $\pm$ 1.8	34.4 $\pm$ 1.9
Biomass (mg per animal d.w.)	48.2 $\pm$ 10.9	50.4 $\pm$ 9.7	50.2 $\pm$ 13.2	50.5 $\pm$ 11.1	51.0 $\pm$ 11.9	53.7 $\pm$ 12.3	58.1 $\pm$ 12.8

## 2a. Water Flea in “pore water” and “leachate” – 48 hrs

Table 16. Mean survival ( $\pm$  SD) in the 48-h *Daphnia pulex* bioassays conducted with pore water and leachate extracted from EFPKT collected from the Containment Pond at the Diavik Diamond Mine, NT.

EFPKT Manipulation	Concentration of solution (%)	Survival (%)
Pore water	Control	100
	3.12	100
	6.25	100
	12.5	100
	25	98 $\pm$ 4.4
	50	98 $\pm$ 4.4
	100	80 $\pm$ 10
Leachate	Control	94 $\pm$ 5.4
	3.12	92 $\pm$ 8.3
	6.25	100
	12.5	100
	25	100
	50	96 $\pm$ 8.9
	100	94 $\pm$ 8.9



## 2b. Water flea in pore water – 21-days



Table 19. Survival and reproduction (mean  $\pm$  SD number of neonates per replicate) in the 21-d *Daphnia pulex* bioassay conducted with pore water extracted from EKFPs collected from the Diavik Containment Pond, Diavik Diamond Mine, NT.

Endpoint	Control	Concentration of pore water (%)					
		3.12	6.25	12.5	25	50	100
Survival (%)	90	90	40	10	20	60	90
Neonates per replicate	51 $\pm$ 9	55 $\pm$ 9	41 $\pm$ 9	15	34 $\pm$ 5	59 $\pm$ 10	64 $\pm$ 13

### 3. Algae in “pore water” and “leachate”



Table 14. Mean ( $\pm$  SD) number of cell divisions in the 72-h *Pseudokirchneriella subcapitata* bioassays conducted with pore water and leachate extracted from EFPKTs collected from Diavik Containment Pond, Diavik Diamond Mine, NT.

EFPKT Manipulation	Concentration of solution (%)	Mean cell growth	Coefficient of Variation (%)	Mean ( $\pm$ SD) cell divisions
Pore water	Control	634,000	21.3	51 $\pm$ 18
	3.12	831,000	14.8	61 $\pm$ 12
	6.25	664,500	25.5	61 $\pm$ 15
	12.5	593,750	37.4	43 $\pm$ 22
	25	487,500	35.1	35 $\pm$ 16
	50	475,625	36.2	34 $\pm$ 9
	100	414,500	38.7	28 $\pm$ 7
	Leachate	Control	553,500	23.6
3.12		644,000	30.6	51 $\pm$ 21
6.25		704,000	33.0	49 $\pm$ 14
12.5		719,500	27.5	61 $\pm$ 18
25		784,000	40.4	68 $\pm$ 32
50		812,500	37.3	65 $\pm$ 24
100		520,500	22.7	38 $\pm$ 7

# 1. Bethic invertebrate (1) in Slimes

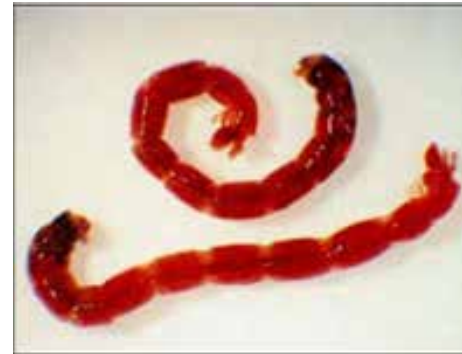


Table 21. Survival ( $\pm$  SD) and mean ( $\pm$  SD) biomass (dry weight) of *Chironomus dilutus* larvae in a 10-d bioassay conducted with EFPKTs from the Containment Pond, Diavik Diamond Mine, NT.

Endpoint	Control	% EFPKT				
		6.25	12.5	25	50	100
Survival (%)	82.0 $\pm$ 20.1	76.0 $\pm$ 18.2	84.0 $\pm$ 8.9	82.0 $\pm$ 19.2	64.0 $\pm$ 18.2	38.0 $\pm$ 23.9*
Biomass (mg d.w. per animal)	0.10 $\pm$ 0.06	0.23 $\pm$ 0.14	0.15 $\pm$ 0.03	0.11 $\pm$ 0.02	0.12 $\pm$ 0.05	0.19 $\pm$ 0.08

\* Statistically significant.



## Benthic invertebrate (2) in slimes



Table 23. Mean survival ( $\pm$  SD) and growth ( $\pm$  SD) (dry weight) of *Hyalella azteca* in the final 10-d bioassay conducted with different manipulations of EFPKTs from the Containment Pond, Diavik Diamond Mine, NT.

Overlying medium	Reconstituted Containment Pond water		Saskatoon municipal Water		Containment Pond water		50% pore water	100% pore water	100% leachate
	Sand	100% EFPKTs	Sand	100% EFPKTs	Sand	100% EFPKTs	Sand	Sand	Sand
<b>Endpoint</b>									
Survival (%)	70 $\pm$ 20	44 $\pm$ 26	82 $\pm$ 24	74 $\pm$ 13	58 $\pm$ 15	46 $\pm$ 17	72 $\pm$ 19	76 $\pm$ 13	68 $\pm$ 23
Biomass ( $\mu$ g d.w. per animal)	20.3 $\pm$ 5.7*	18.9 $\pm$ 6.9*	43.0 $\pm$ 3.8	22.7 $\pm$ 3.2*	26.0 $\pm$ 1.8*	14.0 $\pm$ 4.2*	22.3 $\pm$ 7.5*	24.0 $\pm$ 2.7*	20.9 $\pm$ 9.7*

\* Significantly different from the positive control ( $p \leq 0.05$ ).

# DDMI Conclusions

- § Acceptable water and slimes quality for aquatic life – good indicator.
- § Next step will be to evaluate water chemistry and slimes chemistry with possible exposure scenarios for wildlife and human.

## Other Related Activities

The TK Panel requests that DDMI starts to remove any new slime from site, effective immediately	The Panel felt it important to stop adding to the volume of slimes that has already accumulated on site.	Stewardship	DDMI is unable to immediately start removing slimes from site, as there is no alternative storage options available or permitted, nor is there an acceptable method of transport available.	N/A
---	--	-------------	---	-----

- § Engineered a Process Plant change to create more coarse PK and less FPK
  - § Currently 70% FPK – 30% CPK
  - § Trial 30% FPK – 70% CPK
  - § Trial to start in June 2016
  
- § Initiating engineering and regulatory feasibility studies of putting some PK back into underground/pit once mining completed.
  - § Viewed as better long-term option

## **Appendix I**

### **Diavik Caribou Monitoring Presentation**

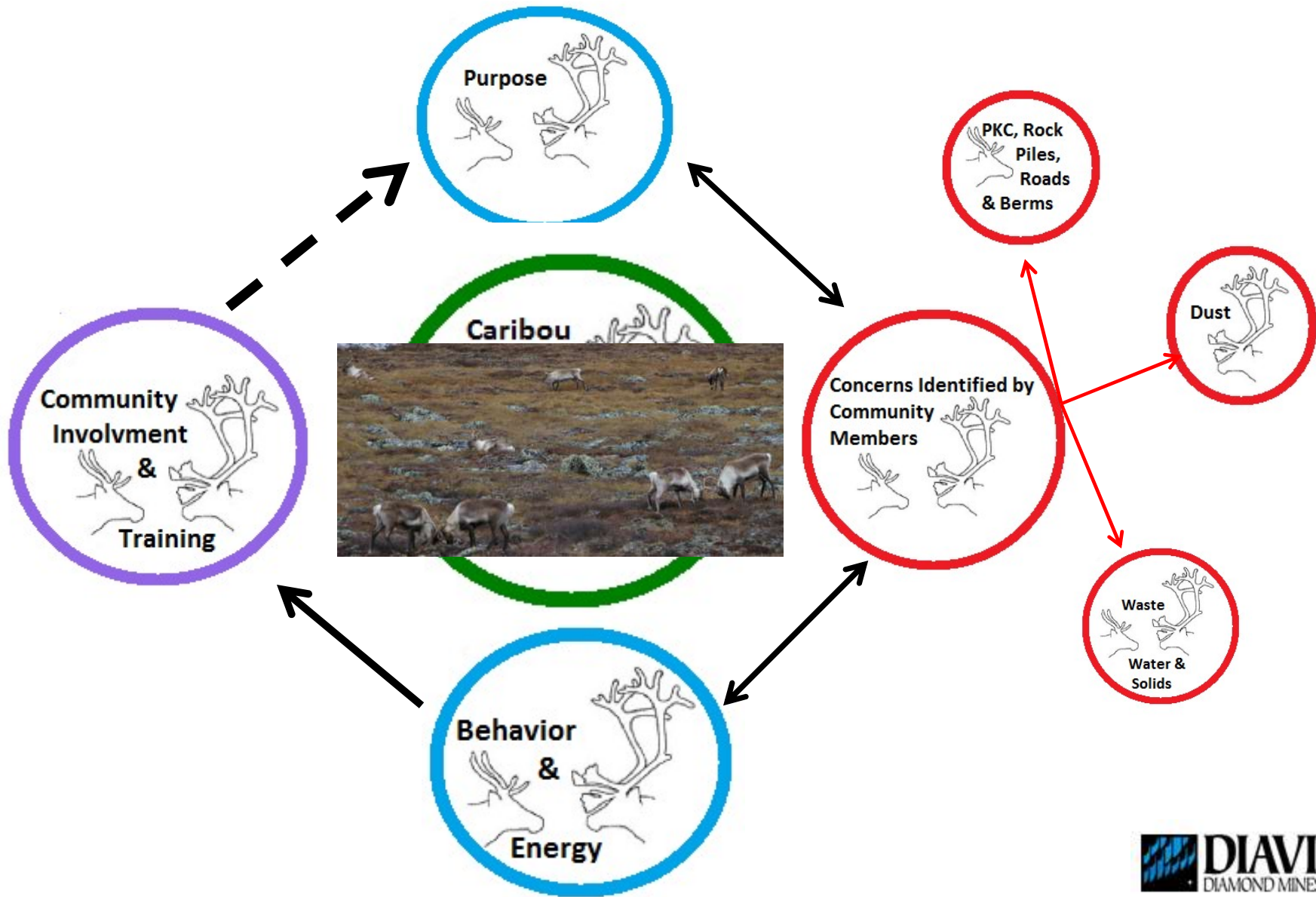
## TK Panel Caribou Monitoring

May 13, 2016

Document Control #: DCON-029-1010 R1  
Template #: DCON-029-1010 R7



# Activity Budgets – Behavioral Observations



# PURPOSE

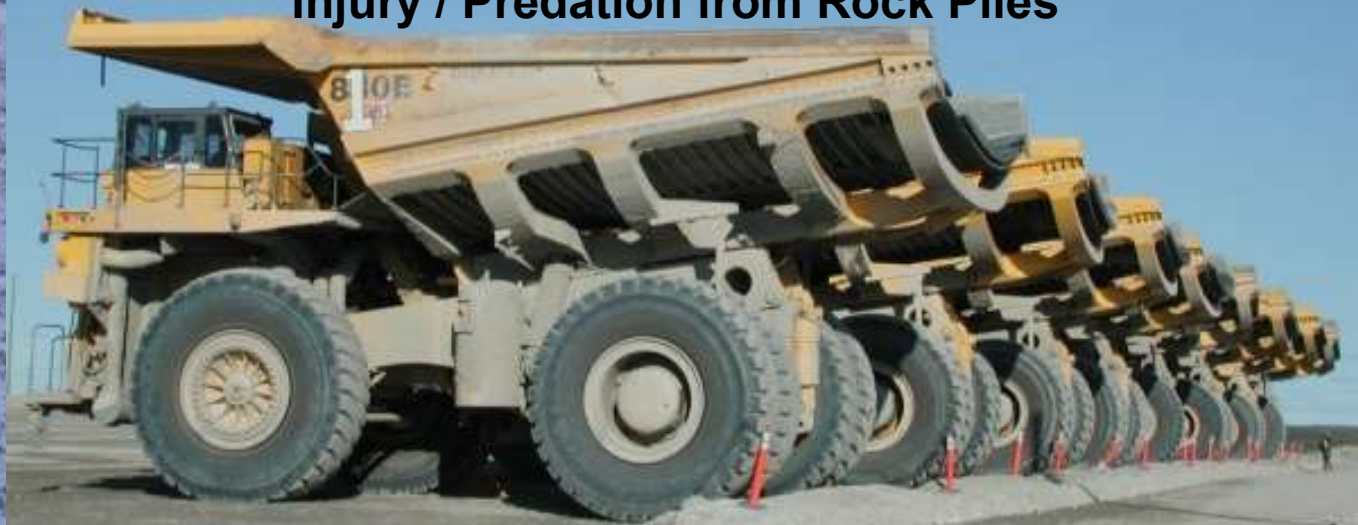


Gather information on caribou

# Mining Concerns from Community Members

**Causing injury to wildlife and creating noise**

**Injury / Predation from Rock Piles**



**Dust fall out from Blasts**

**Roads & Berms injuring wildlife**



# Mining Concerns from Community Members



**Dust Contaminating Vegetation**

# Mining Concerns from Community Members

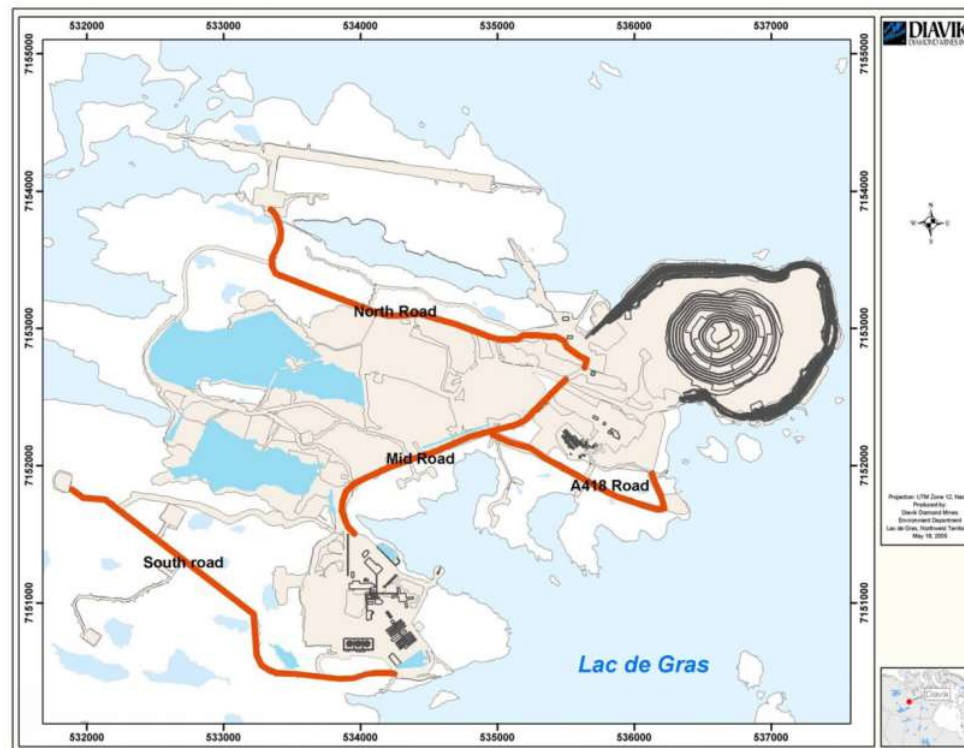


**Drinking From or Getting Stuck in Tailing Ponds**

# PKC, Rock Piles, Roads & Berms



**Observations  
3 day Intervals**



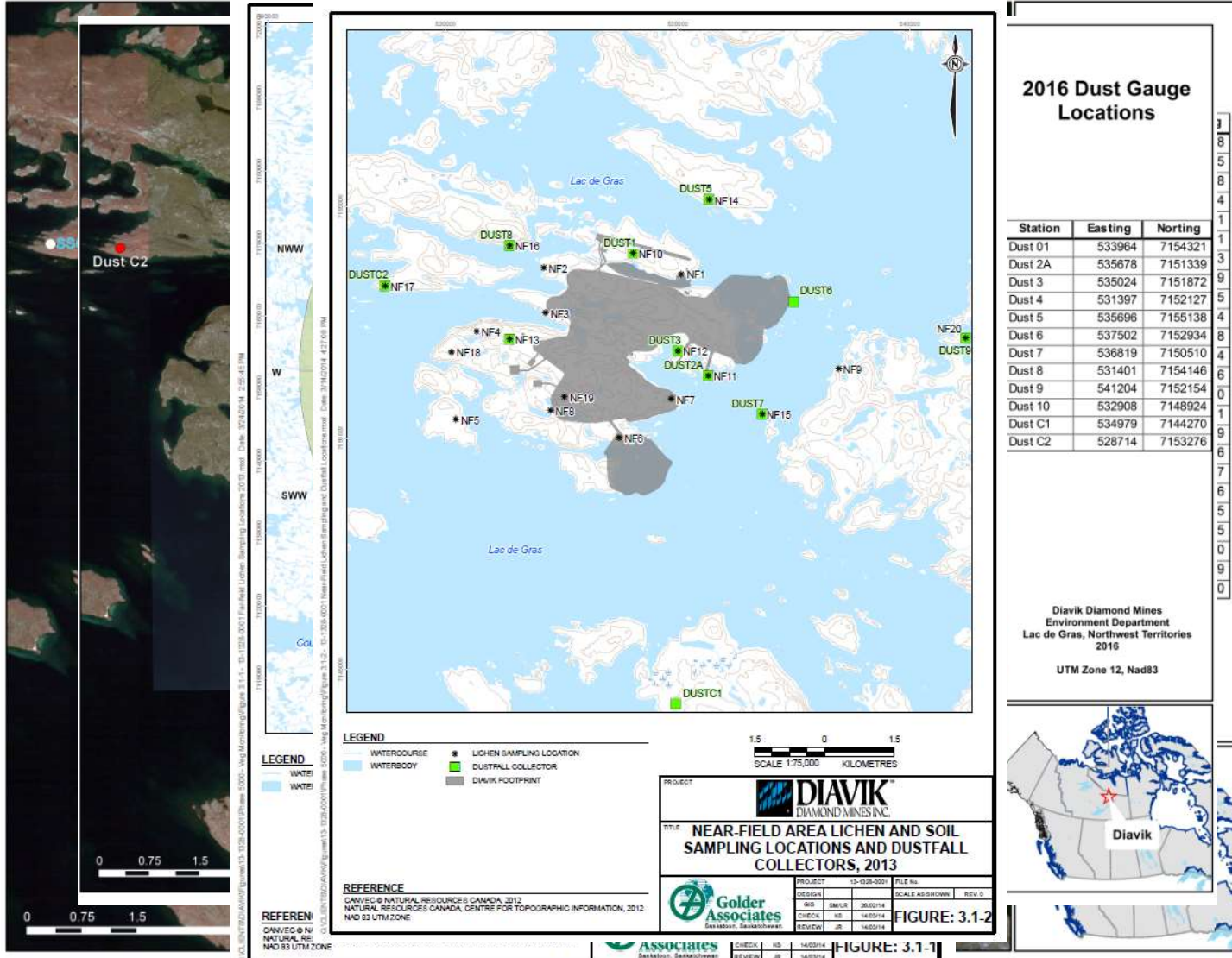
**2014 Trigger Action Plan**

# Waste Control

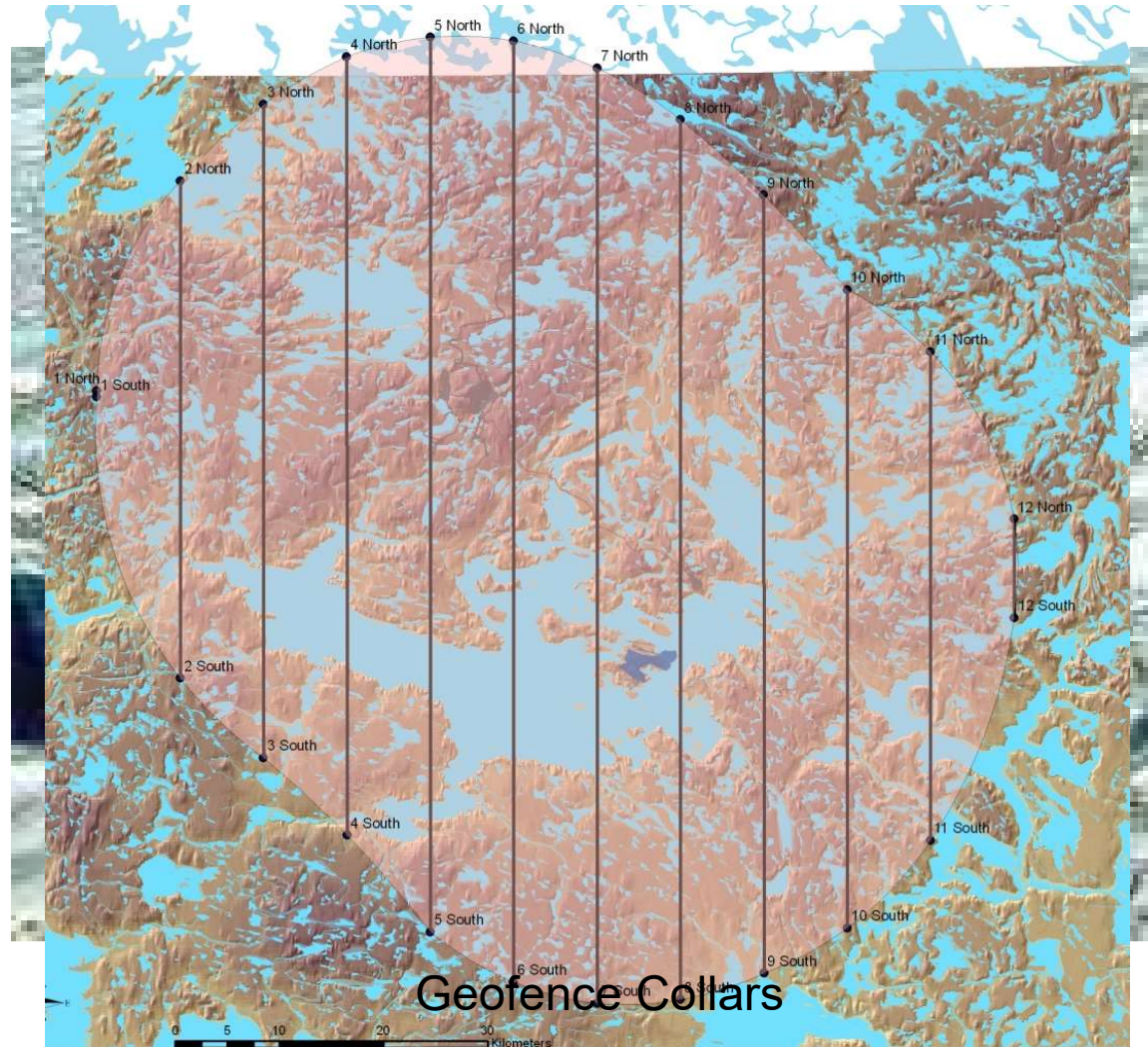
## Mine water



# Dust



# Regional Caribou Monitoring

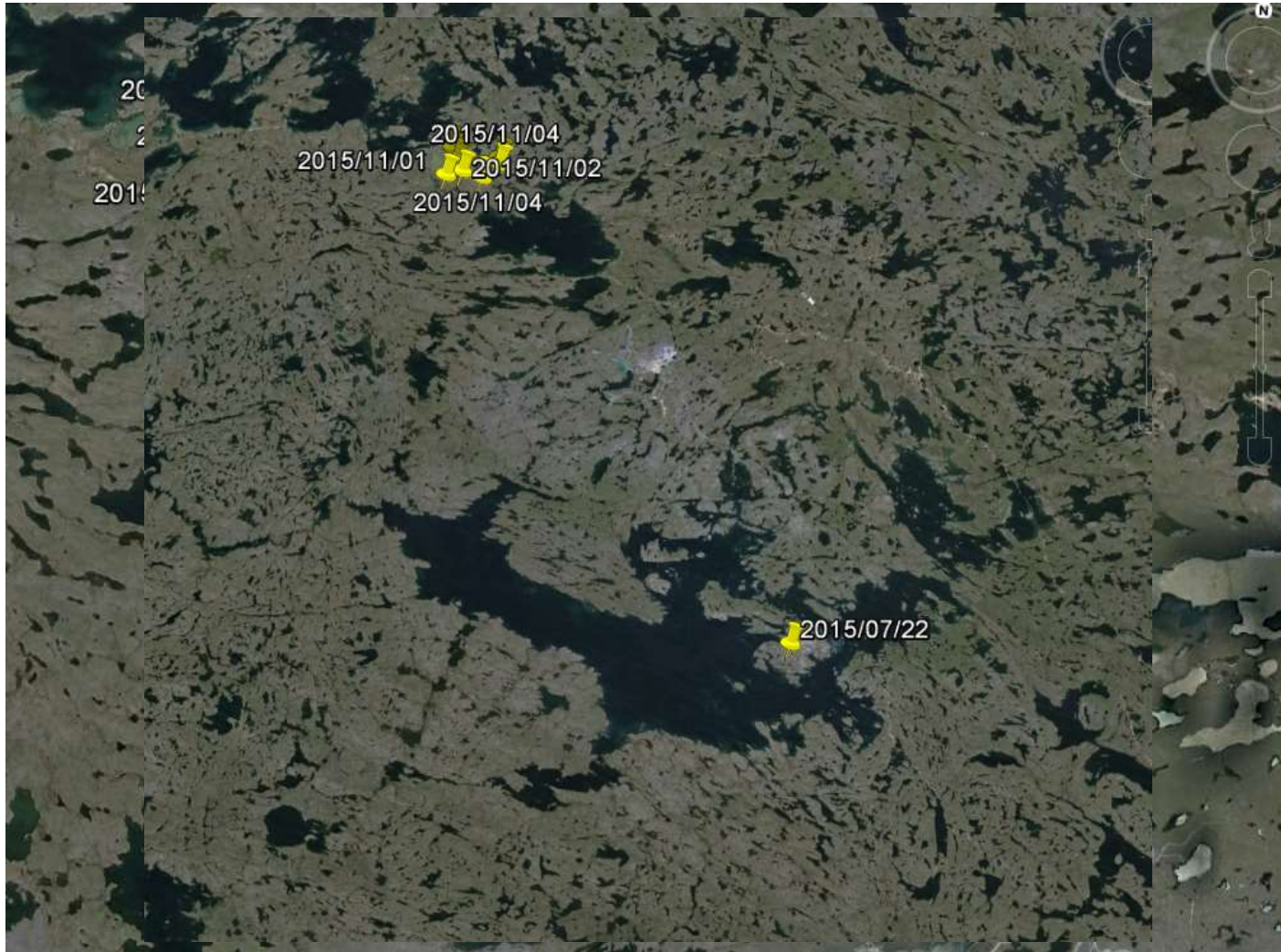


Aerial Caribou Surveys - ZOI

# Activity Budgets – Behavioral Observations



# Location of 2015 Scans – LDG Area



38 Behavioral Scans in 2015

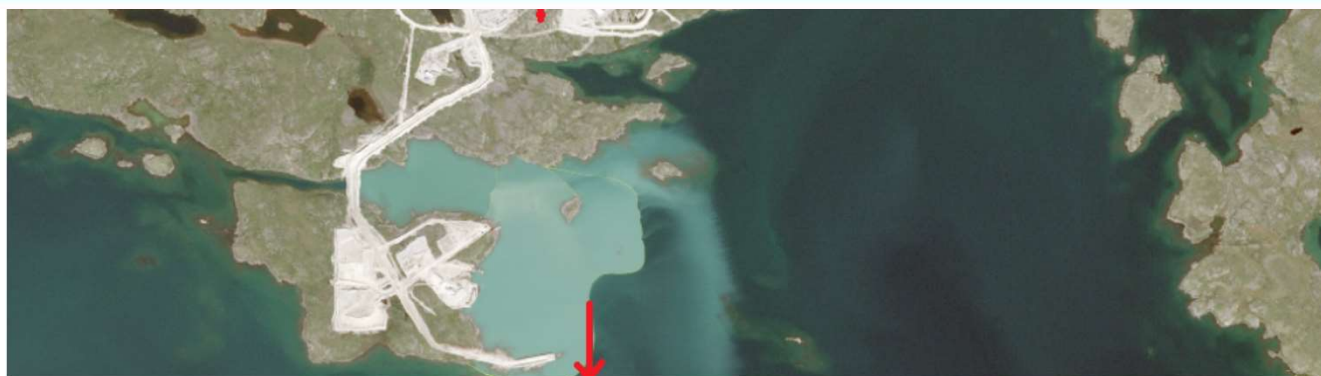


# Location of 2015 Observations – East Island



Table 4: Caribou Incidental Observations on East Island, 2015

Date	Number	Location	Comments
2015-Feb-18	1	outside of E wing	
2015-Feb-18	1	west of airport	
2015-Apr-10	1	south of Mine site on lake	observed during snow core collection
2015-Apr-20	1	between H dorm and process plant	
2015-Jun-03	35	north of Mine site on lake	on ice being chased by wolves
2015-Jun-22	2	emulsion plant area	young bulls
2015-Jun-24	2	west of pond 3	
2015-Jun-24	1	pond 3	large male
2015-Jun-28	1	south of A418 dyke	grazing
2015-Jun-30	1	rose garden	observed in shallow bay area later in the day
2015-Jul-01	1	below south tank farm	



# Previous Observations – East Island

2014										2015										2016									
Species & Number										Species & Number										Species & Number									
REFO	Wolverine	Wolf	Grizzly	Caribou	Peregrine	R. L. Hawk	Gyr Falcon	Snowy Owl	Other	Red Fox	Wolverine	Wolf	Grizzly	Caribou	Peregrine	R. L. Hawk	Gyr Falcon	Snowy Owl	Other	Red Fox	Wolverine	Wolf	Grizzly	Caribou	Peregrine	R. L. Hawk	Gyr Falcon	Snowy Owl	Other
29	1	5	69	58	7	8	1	1	5	11	120	23	134	47	4	3	0	0	15	7	84	24	29	2	3	0	0	0	2

10 Different sighting  
 1~30 Emulsion Plant  
 1~18 By MF3-4  
 1~2 North Inlet  
 8~8 Various locations

# Findings to Date from Behavior Monitoring



Distance from the mine does not influence caribou without calves  
Distance from the mine does not influence caribou with calves  
- they spend less time feeding/resting closer to the mine (i.e. within 7 km)  
- they are influenced by environmental factors (temperature, rainfall, insects)

# Community Participation

**Community Members participate in the Behavioral Monitoring Program**

**Monitoring remains focused on western scientific approach**

**Diavik is always looking for ways to improve the program**



# Photographs Activity Budgets



**Thank you/  
Mahsi/ Masi/  
Marsi /Koana**

## **Appendix J**

### **GNWT Environment and Natural Resources Presentation: Bathurst Caribou Range Plan and Current Wildlife Research**

# Bathurst Caribou Range Plan

Diavik TK Panel workshop

May 14, 2016

Karin Clark,  
Wildlife Division, ENR



# Habitat management

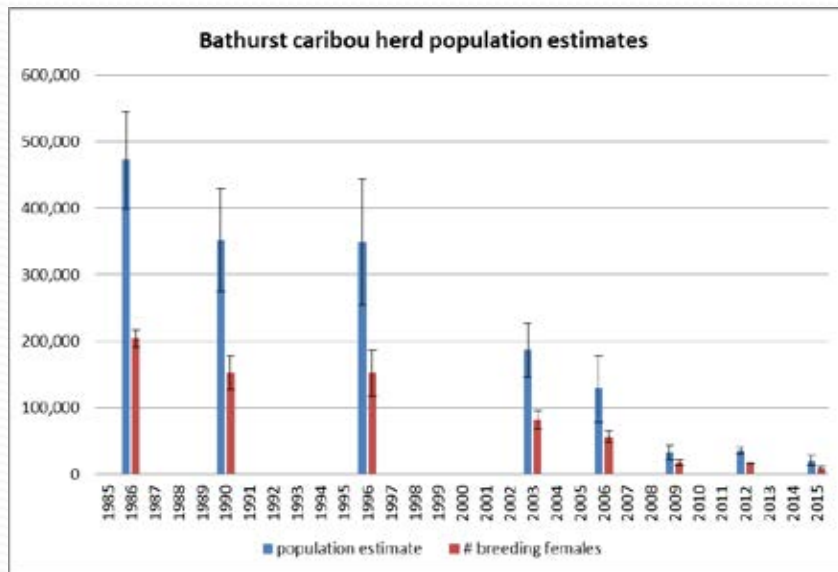
- food
- water
- shelter
- space





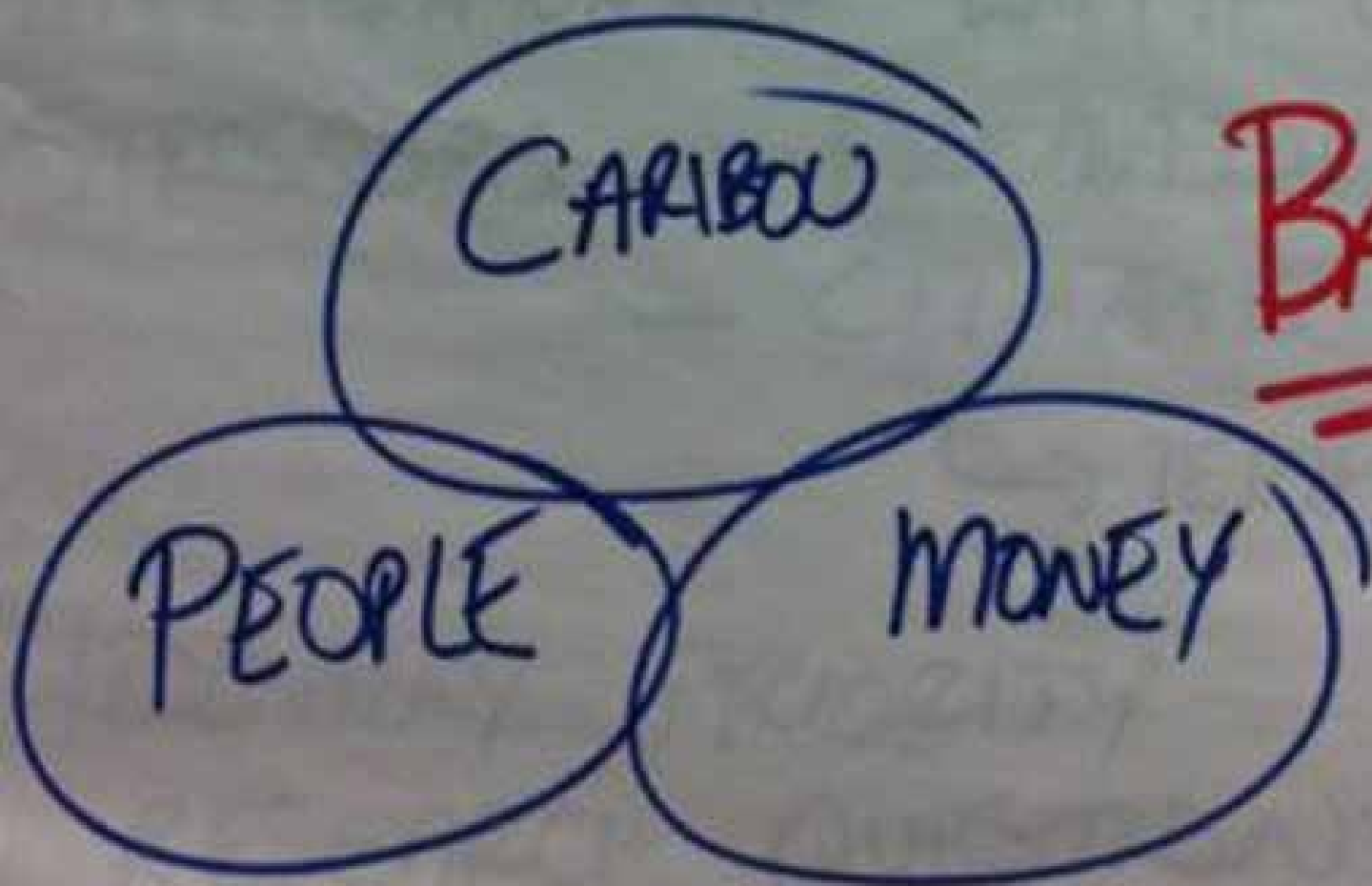
# Bathurst Caribou Herd

- Population decline of 96% over 30 years
- cumulative effects concerns in recent EAs
- take action in areas other than harvest restrictions



# Working Group – diverse interests

- 1 Tẖcho Government
- 2 Łutsel K'e Dene First Nation
- 3 Athabasca Denesuline
- 4 North Slave Métis Alliance
- 5 NWT Métis Nation
- 6 Yellowknives Dene First Nation
- 7 Government of Nunavut  
Environment
- 8 Government of Nunavut  
Economic Development and  
Transportation
- 9 Chamber of Mines – Mineral  
Development
- 10 Chamber of Mines – Mineral  
Exploration
- 11 Kugluktuk HTO
- 12 Kitikmeot Inuit Association
- 13 Kitikmeot Regional Wildlife  
Board
- 14 Nunavut Tunngavik Inc.
- 15 GNWT – Lands
- 16 GNWT – ITI
- 17 GNWT – ENR
- 18 AANDC (Nunavut)
- 19 CPAWS
- 20 Barrenground Outfitters  
Association
- 21 NWT Wildlife Federation
- 22 Wek'èezhì Renewable Resources  
Board



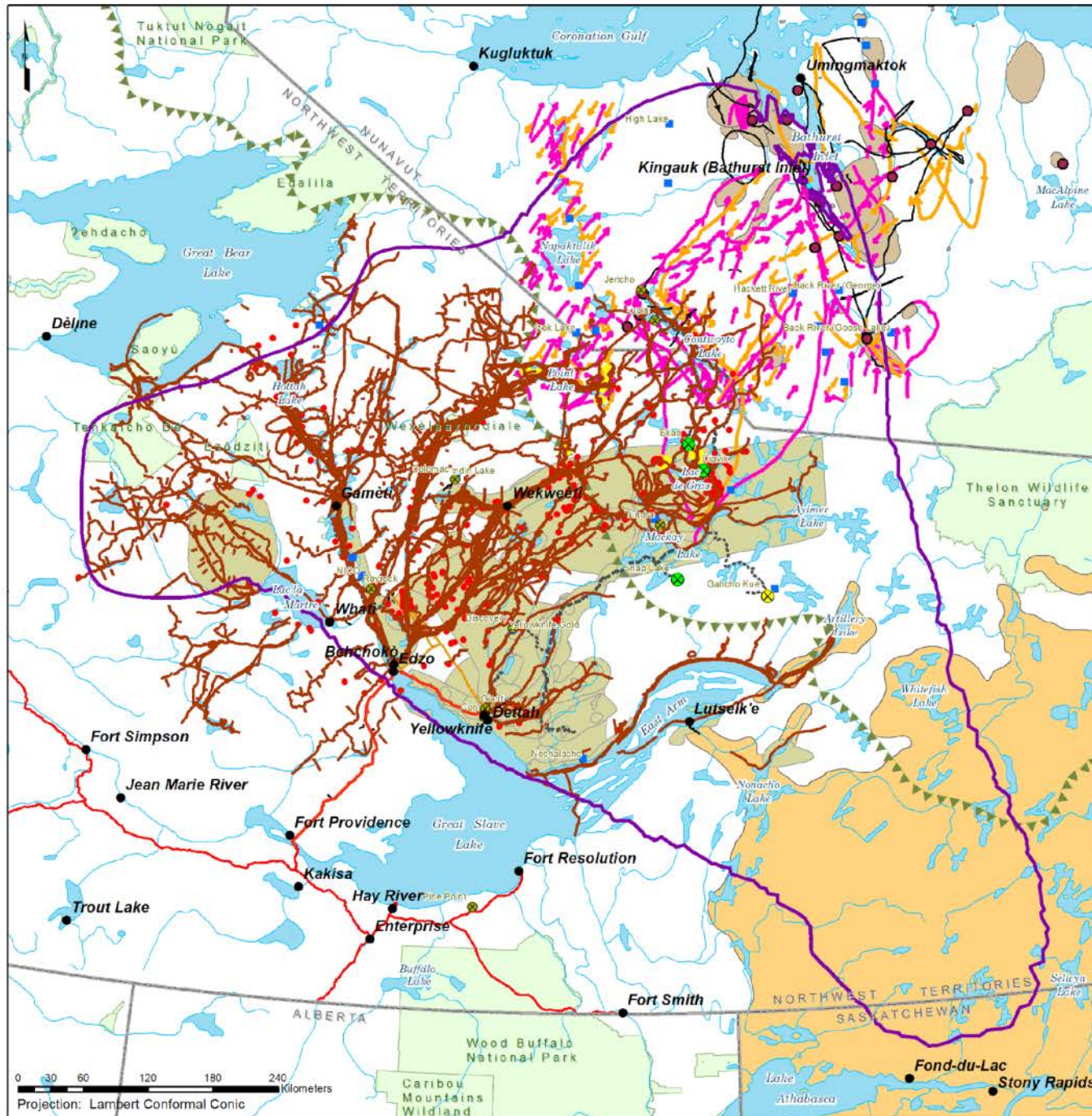
BALANCE

# Bathurst Caribou Herd Range Plan

## Bathurst Caribou Traditional Knowledge

FOR DISCUSSION

Working Group Meeting #4, May 2015



### LEGEND:

- |                                     |  |
|-------------------------------------|--|
| <b>Tłı̄ch̄ Information</b>          | <b>Athabasca Denesuline</b>                  |
| — Caribou Trails                    | ■ Culturally and Ecologically Sensitive Area |
| — Caribou Water Crossings           | <b>North Slave Métis Alliance</b>            |
| ● Caribou Harvesting                | ■ Caribou Harvesting                         |
| <b>KIA Information</b>              | <b>Planning Boundary</b>                     |
| — Spring Migration                  | — Range Planning Boundary                    |
| — Fall Migration                    |  |
| ● Other Bathurst Information        | <b>Major Mining Projects</b>                 |
| ■ Other Bathurst Information        | ● Producing Mine                             |
|                                     | ● Proposed Mine (Under Construction)         |
|                                     | ● Past Mine                                  |
|                                     | ■ Advanced Exploration                       |
|                                     | ◆ Proposed Port                              |
| <b>Base Features</b>                | □ Provincial Border                          |
| ● Communities                       | □ Protected or Conservation Area             |
| — Highway                           | ▲▲ Treeline                                  |
| — Access Road                       | — Major River                                |
| --- Tibbit to Contwoyto Winter Road | — Major Lake                                 |
| ----- Other Winter Road             |  |
| — Major Power Transmission Line     |  |

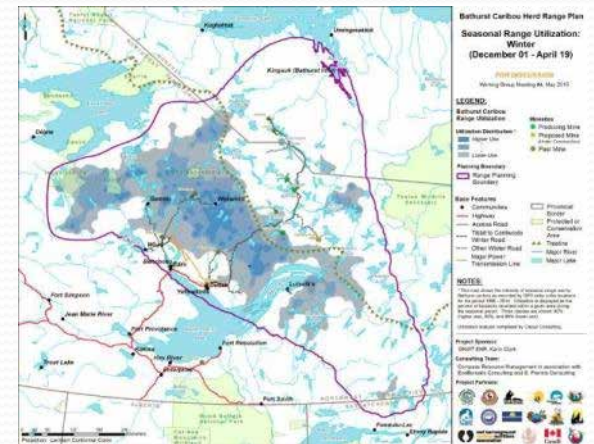
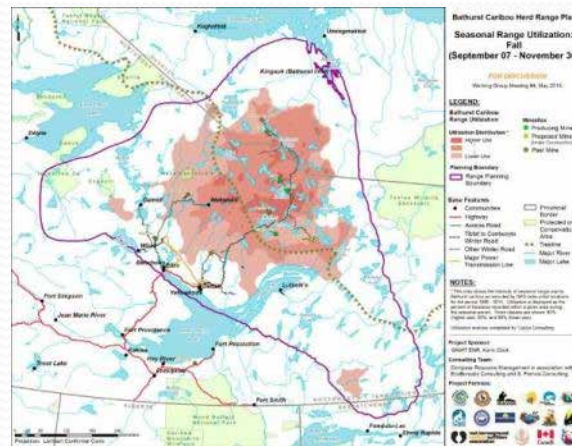
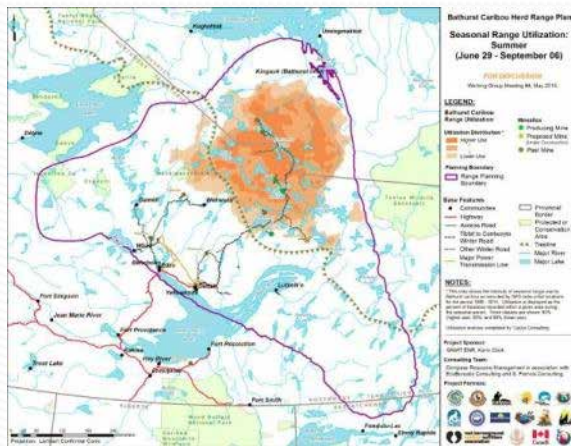
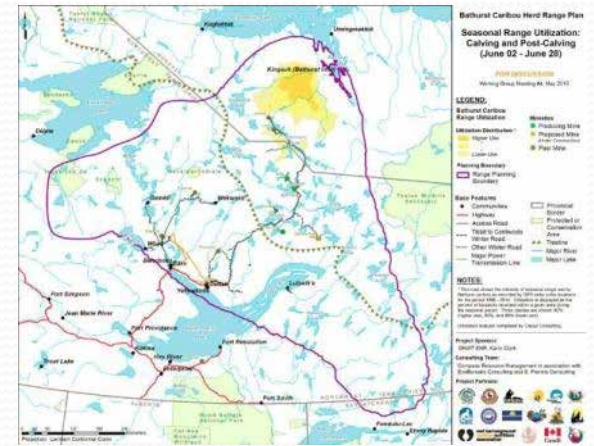
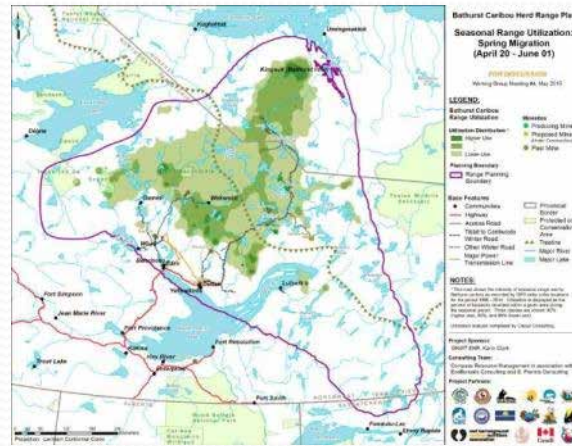
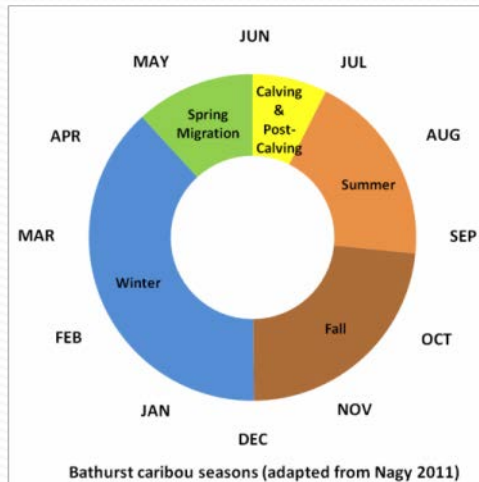
**Project Sponsor:**  
GNWT ENR, Karin Clark

**Consulting Team:**  
Compass Resource Management in association with EcoBorealis Consulting and S. Francis Consulting.

**Project Partners:**



# Seasonal Ranges



# Looking ahead...



# Bathurst Caribou Herd Range Plan

## Development Scenarios: CURRENT SITUATION

FOR DISCUSSION

Updated November 10, September 2015

### LEGEND:

#### Planning Boundary

Range Planning Boundary

#### Direct Human Development Zone of Influence (ZOI) \*

Potential Human ZOI

Active Minesite

#### Land Use Features

Community	Tibbit to Contwoyto Winter Road
Highway	Other Winter Road
Access Road	Major Power Transmission Line
Main Haul Road	

#### Base Features

Major River	Provincial Border
Major Lake	Protected or Conservation Area
Treeline	

### NOTES:

\* This map shows potential ZOI around mapped human land use features (i.e., direct footprint).

Many human land use features and their corresponding zones of influence are not active all-year. Some mineral exploration activities occur in the late-spring, summer and fall periods, and winter roads are only present and used in the late-winter period.

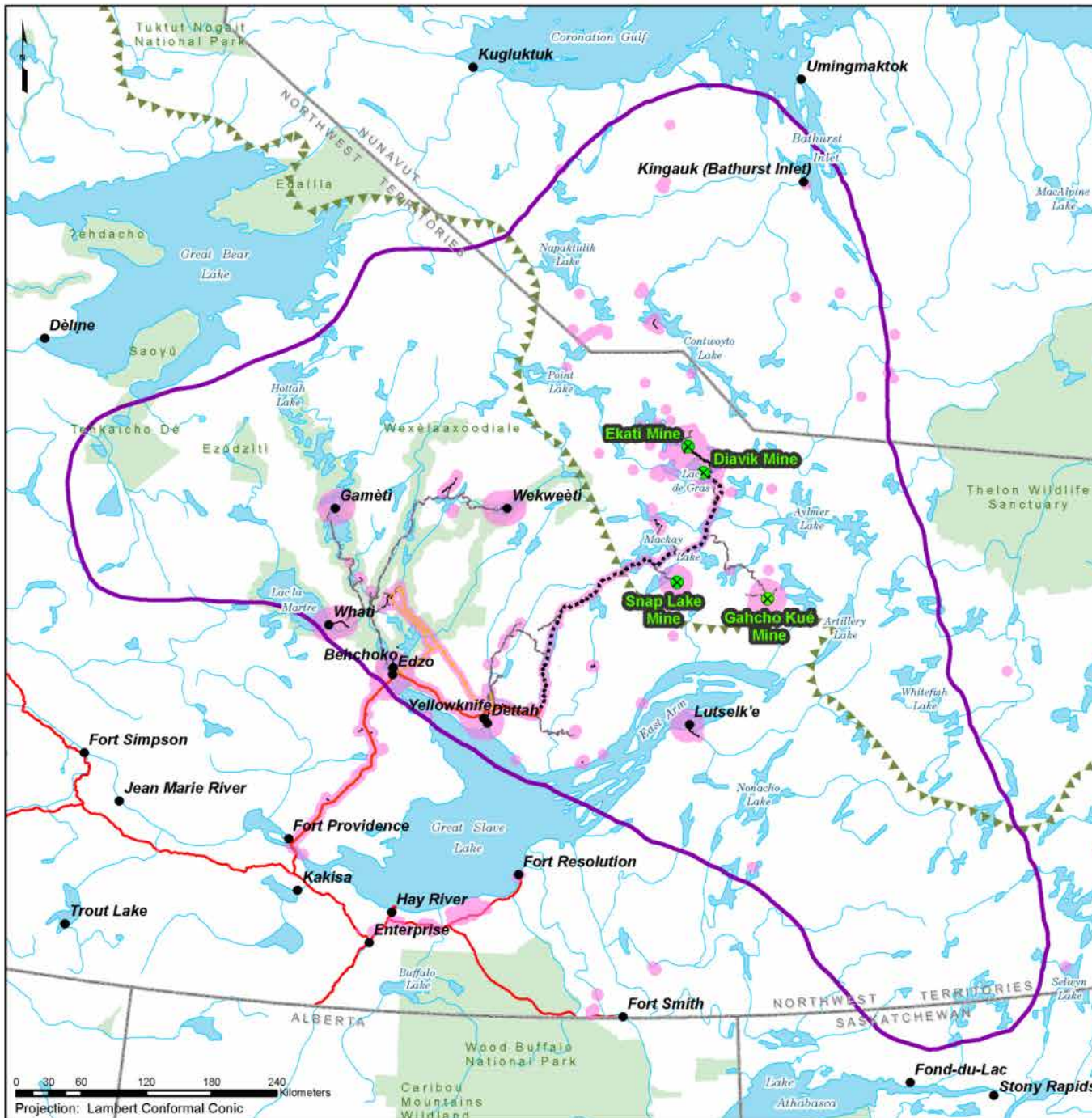
#### Project Sponsor:

GNWT ENR, Karin Clark

#### Consulting Team:

Compass Resource Management in association with EcoBorealis Consulting and S. Francis Consulting.

#### Project Partners:



0 30 60 120 180 240 Kilometers  
Projection: Lambert Conformal Conic

# Bathurst Caribou Herd Range Plan

## Development Scenarios: FUTURE - Case 1

FOR DISCUSSION

Updated November 10, September 2015

### LEGEND:

Planning Boundary

Range Planning Boundary

Direct Human Development  
Zone of Influence (ZOI) \*

Potential Human ZOI

Active Minesite

### Land Use Features

Community

Highway

Access Road

Main Haul Road

Tibbit to Contwoyto  
Winter Road

Other Winter Road

Major Power  
Transmission Line

### Base Features

Major River

Major Lake

Treeline

Provincial  
Border

Protected or  
Conservation  
Area

### NOTES:

\* This map shows potential ZOI around mapped human land use features (i.e., direct footprint).

Many human land use features and their corresponding zones of influence are not active all-year. Some mineral exploration activities occur in the late-spring, summer and fall periods, and winter roads are only present and used in the late-winter period.

### Project Sponsor:

GNWT ENR, Karin Clark

### Consulting Team:

Compass Resource Management in association with EcoBorealis Consulting and S. Francis Consulting.

### Project Partners:



0 30 60 120 180 240 kilometers

Projection: Lambert Conformal Conic



# Bathurst Caribou Herd Range Plan

## Development Scenarios: FUTURE - Case 2

FOR DISCUSSION

Updated November 10, September 2015

### LEGEND:

Planning Boundary

Range Planning Boundary

Direct Human Development  
Zone of Influence (ZOI) \*

Potential Human ZOI

Active Minesite

### Land Use Features

Community

Highway

Access Road

Main Haul Road

Tibbit to Contwoyto  
Winter Road

Other Winter Road

Major Power  
Transmission Line

### Base Features

Major River

Major Lake

Treeline

Provincial  
Border

Protected or  
Conservation  
Area

### NOTES:

\* This map shows potential ZOI around mapped human land use features (i.e., direct footprint).

Many human land use features and their corresponding zones of influence are not active all-year. Some mineral exploration activities occur in the late-spring, summer and fall periods, and winter roads are only present and used in the late-winter period.

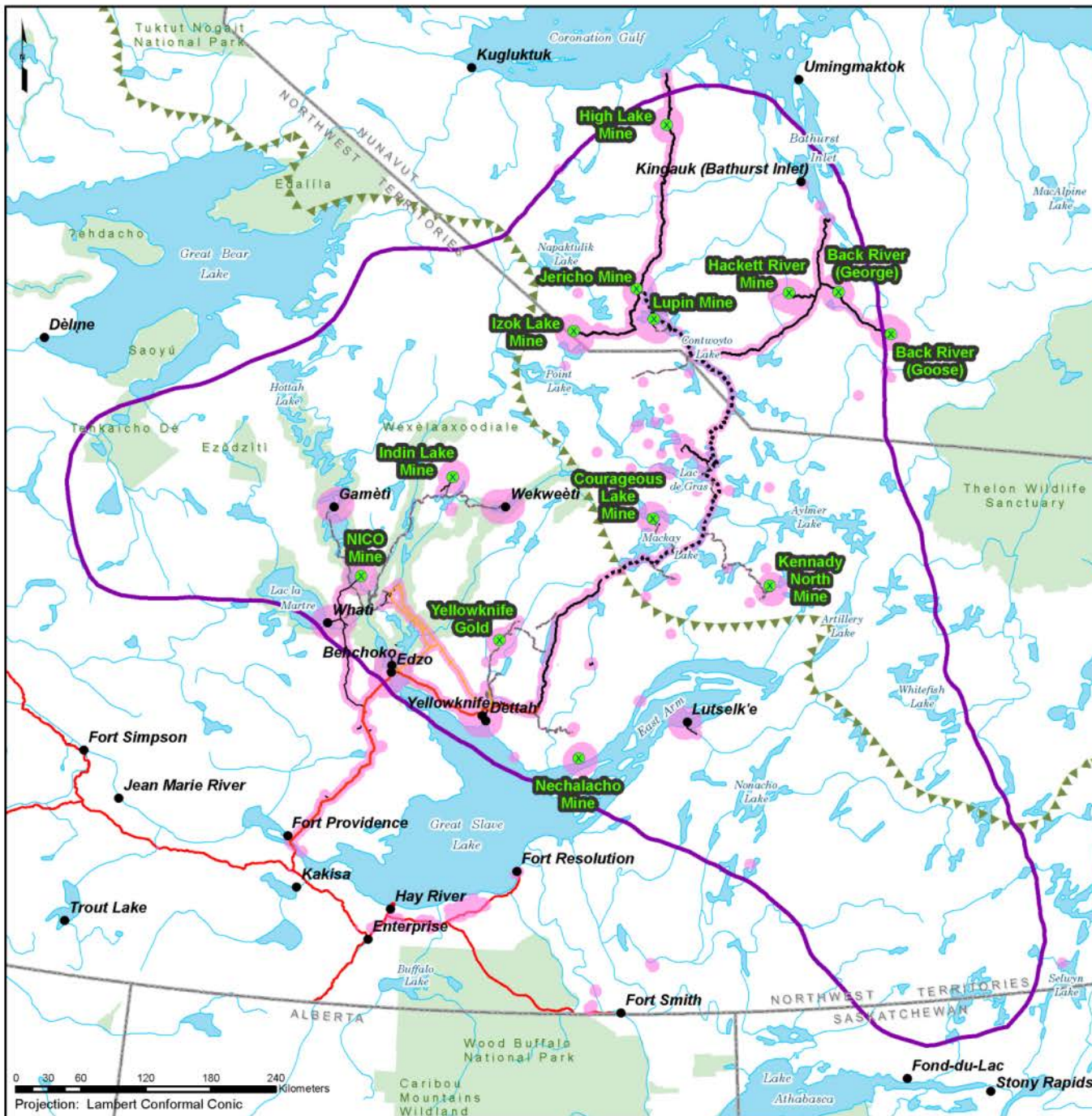
### Project Sponsor:

GNWT ENR, Karin Clark

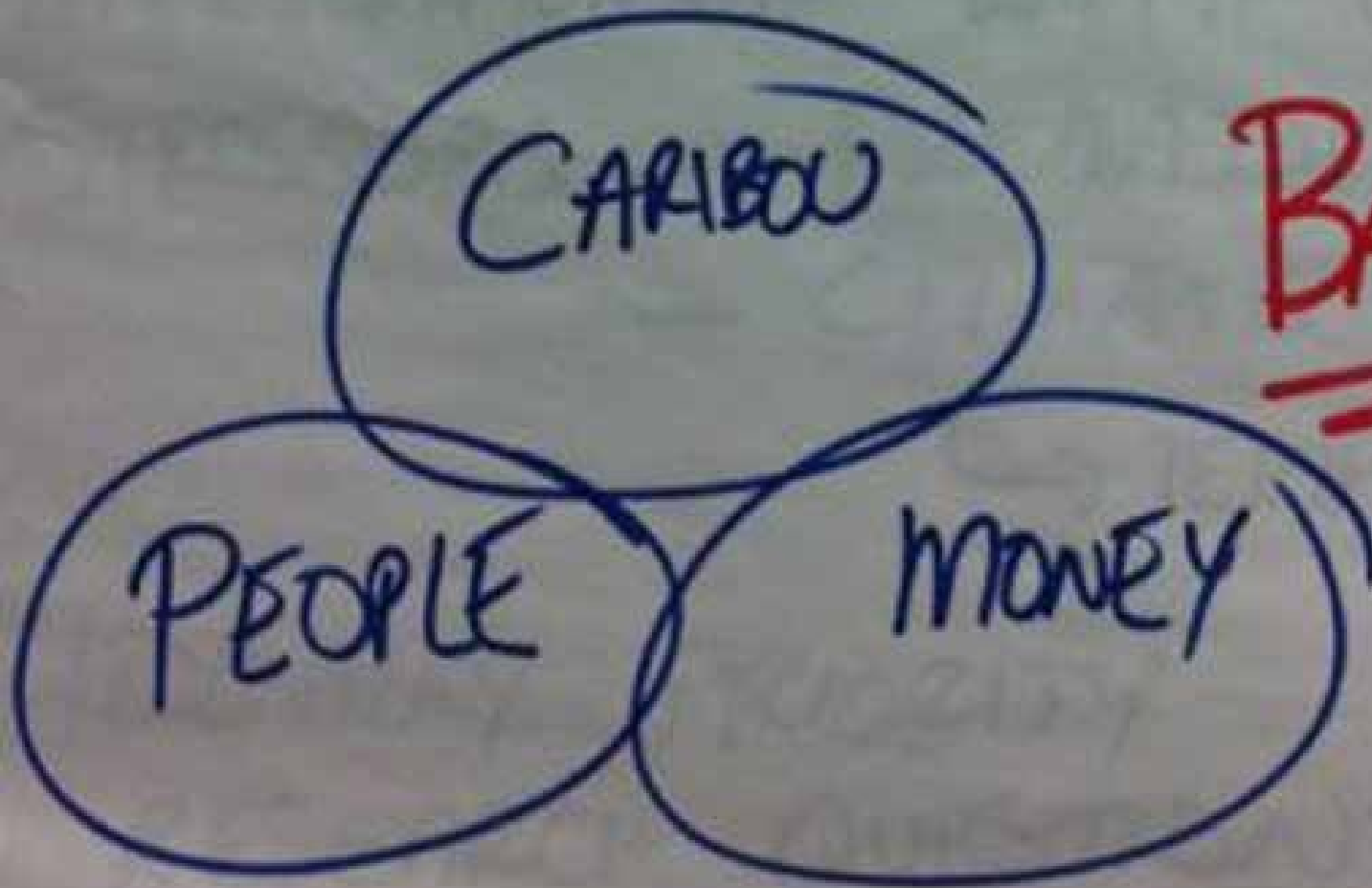
### Consulting Team:

Compass Resource Management in association with EcoBorealis Consulting and S. Francis Consulting.

### Project Partners:



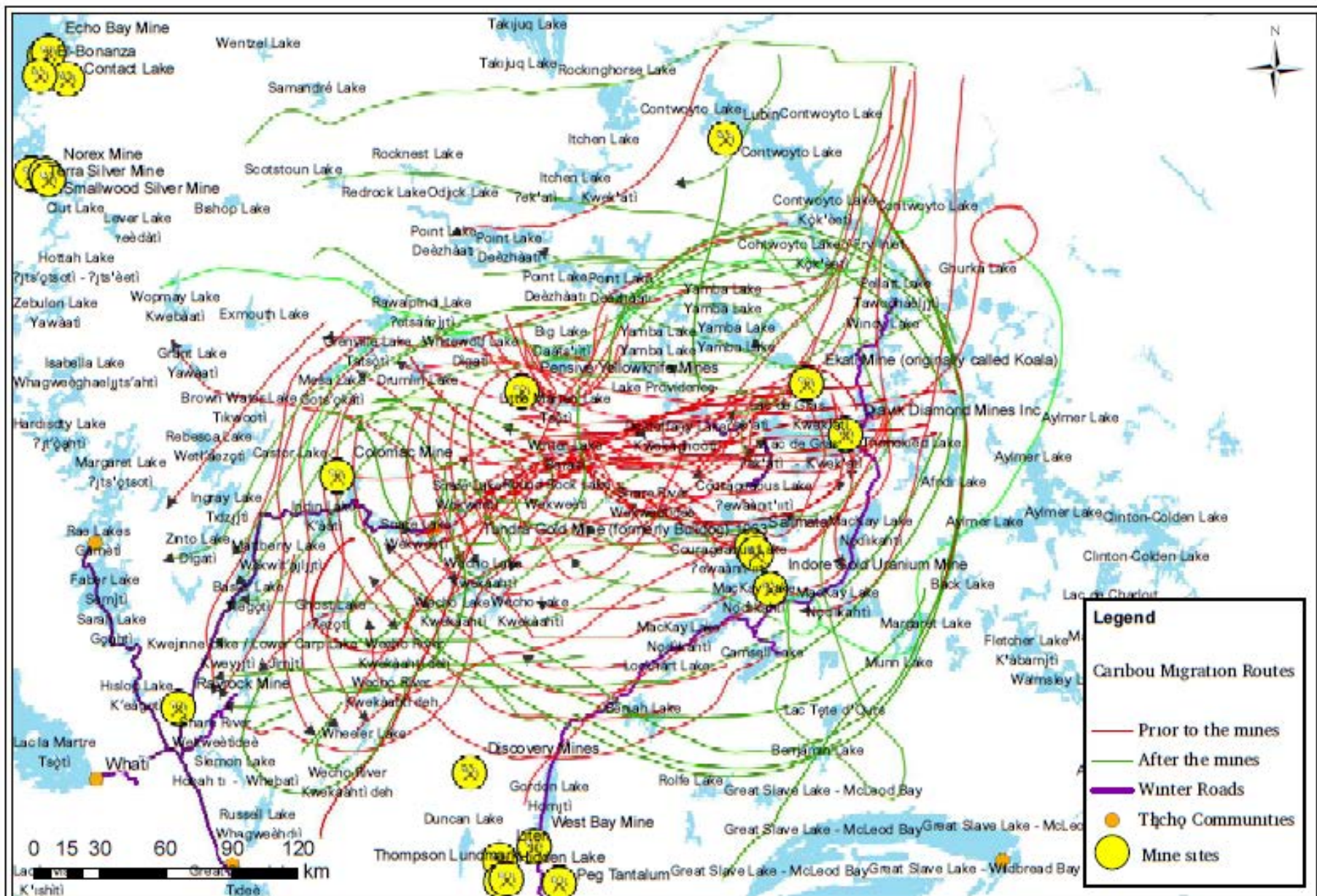
Projection: Lambert Conformal Conic



BALANCE

# Caribou response





Overview Map - Bathurst Caribou Migration Routes -  
 Tłı̨ch̨o Traditional Knowledge Study for Cumulative Impact Monitoring Program

# Caribou responses

- # times contact development
  - Small amount of stress
  - More running/walking
  - Less feeding



# Types of recommendations:

- limits to amounts of disturbance (how much is enough)
- Special management of features such as land bridges and water crossings
- Shutting down during certain times
- Protection of calving grounds
- Fire management



# Recommendations directed to:

- Land Use Planning
- Environmental Assessment
- Permitting / Licensing
- Wildlife management and monitoring



# Next Steps:

- Continued Working Group meetings:
  - Build habitat management alternatives
- TK guidance
- Community engagement – fall 2016
- Completed Plan by March 2018







# Questions?

Karin Clark

867-767-9237x.53225

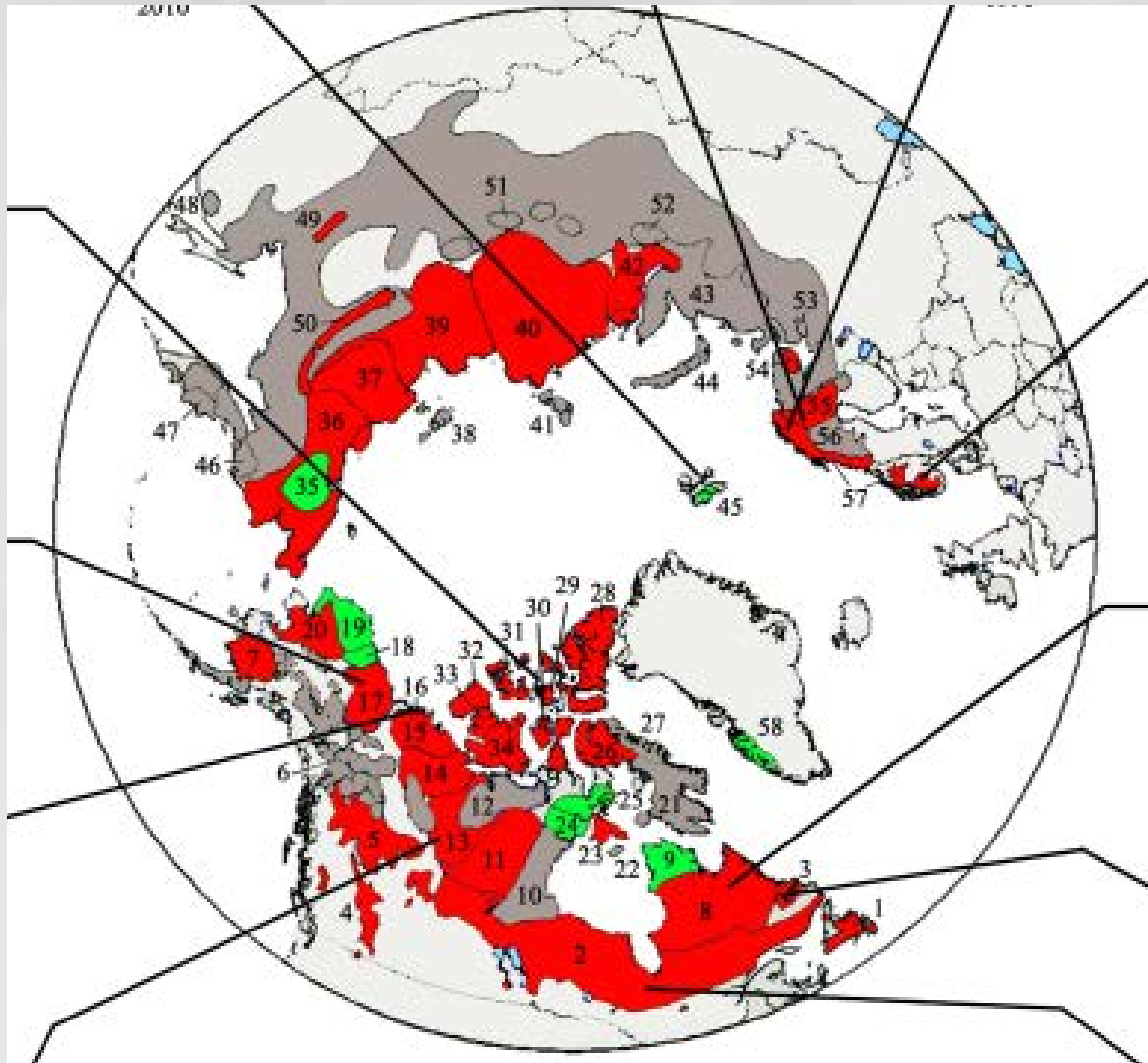
[Karin\\_clark@gov.nt.ca](mailto:Karin_clark@gov.nt.ca)



Summary of ENR Caribou Monitoring Initiatives  
Diavik TK Panel Workshop  
May 2016

Northwest Territories  
Environment and  
Natural Resources

# Global Trends



- Declining
- Increasing
- Uncertain



(From Vors and Boyce. 2009. Global declines of caribou and reindeer, *Global Change Biology* 15: 2626-2633)

Northwest Territories

Environment and  
Natural Resources

# Cumulative effects on caribou



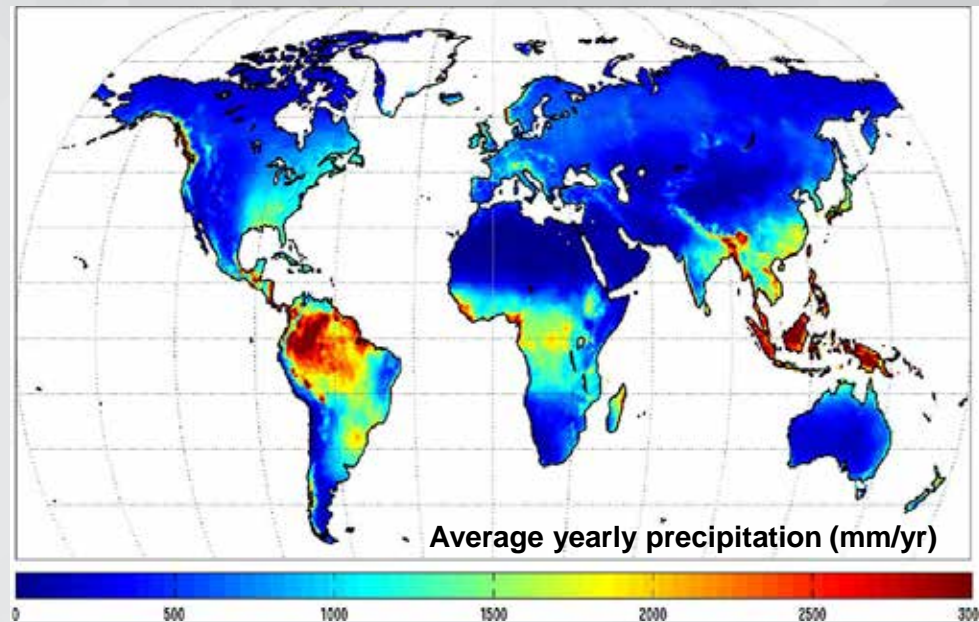
Photo J. Adamczewski, ENR

- Weather
- Fire
- Predators
- Development (Range Plan)



# Weather trends

- Weather maps derived from satellite images (1979 onwards)
- Daily values for:
  - Temperature
  - Precipitation
  - Snow depth
  - Rate of snow melt
  - Wind speed
  - .....lots more



# Weather trends



- Increasing:
  - fly harassment
  - temp/drought



- Decreasing:
  - mushrooms
  - Snow depth

\* 2014 particularly severe....



# Breeding females in 2015

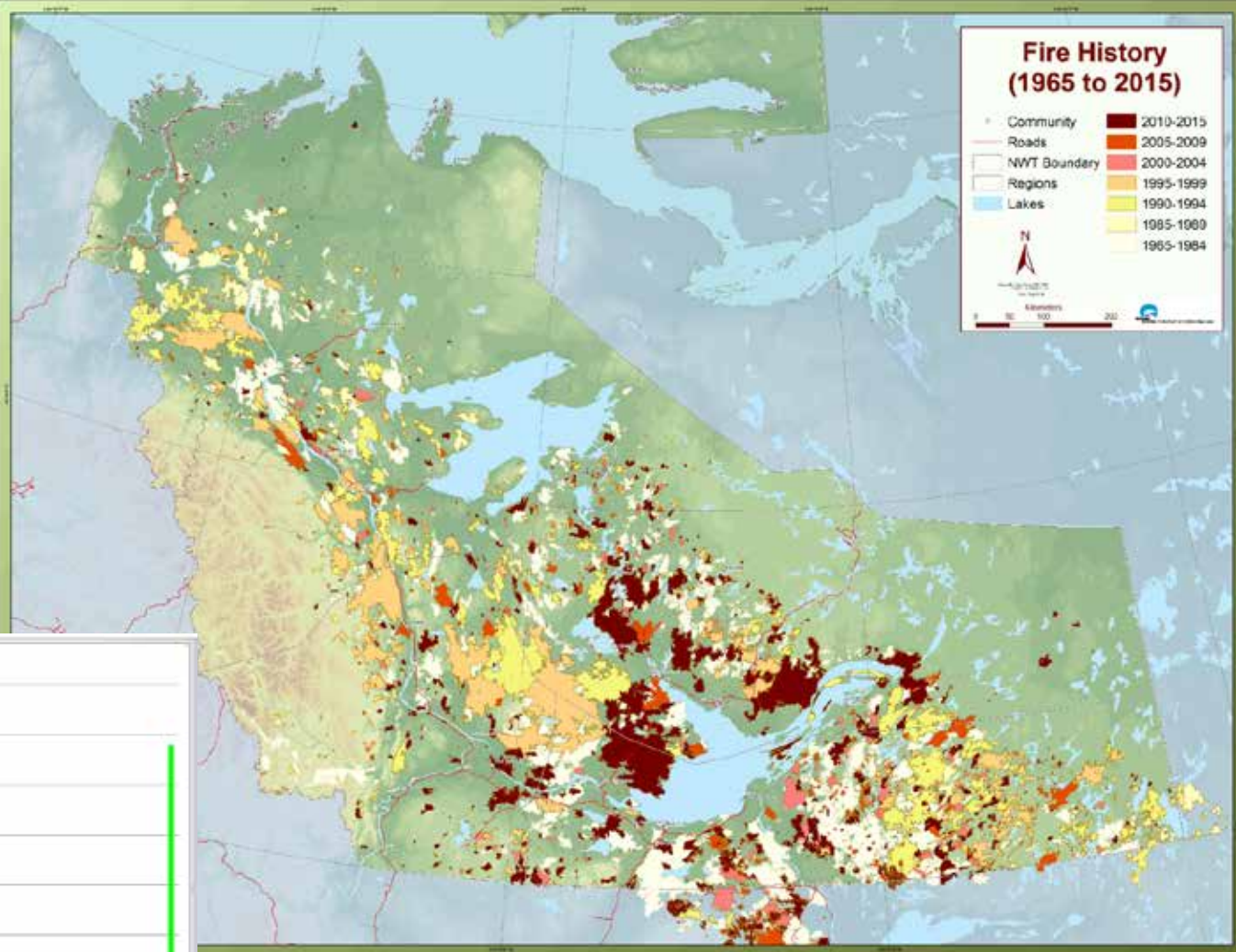


- Decreasing
  - Pregnancy
  - # calves

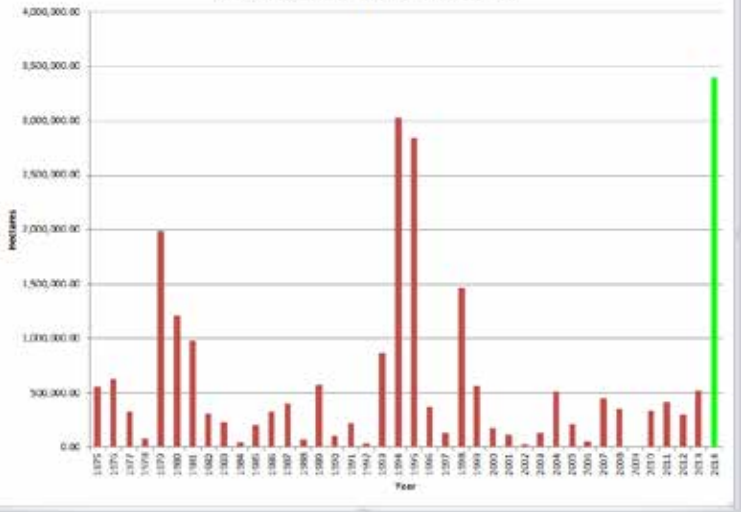
\* 60% females had calves in 2015



# Fire



NWT Total Area Burned (1975-2014)



\* 38% of Bathurst winter range has been burned in the last 50 years





# Predators



- Decreasing:
  - Wolf abundance(Based on aerial and ground den surveys)

Estimated Wolf Density on Bathurst Summer Range 1996-2014 (Klaczek 2015)



# Proposed Actions 2016-2019: Wolves



1. Pilot TG project – Wolf Harvest by Tłıchǫ hunters on winter range.
2. ENR-led collaborative feasibility assessment of predator reduction options.
3. ENR: Increased wolf harvest incentives (all hunters)



## Wolf Harvested

### No Handling

A harvester brings an intact wolf to any ENR office throughout the Territory.

Harvester Receives: \$200

**Total: \$200**

### Traditional Handling

A harvester brings a wolf pelt prepared to traditional standards.

Harvester Receives: \$ 400

Processed Skull: \$50

**Total: \$450**

### GMVFP Handling

A harvester brings a good quality, prime, well-handled and properly prepared wolf pelt.

Harvester Receives: \$ 400

Processed Skull: \$50

Prime Fur Bonus: \$350\*

**Total: \$800**

\* If the pelt sells for more than \$200 at auction, the harvester receives the prime fur bonus.



# 2016-2019: Monitoring

1. Calving photo survey (every 3 years) - 2018
2. Aerial surveys on calving grounds (annual)
3. Spring calf:cow survey (annual)
4. Movements (Collars - 30 females, 20 bulls)
5. Environmental trends updated annually
6. Wolf harvest (annual)
7. Wolf abundance
8. Monitor compliance in Bathurst mobile zone
9. Calving ground composition surveys (every 3 years)
10. Fall sex ratio composition survey (every 2-3 years)
11. Cow survival rate estimation (every 3 years)



Photo J. Adamczewski, ENR



# Collaboration with Industry in Caribou Monitoring

- ENR is working with Industry to develop common approaches to:
  - caribou behaviour monitoring
  - Zone of Influence monitoring (aerial surveys)
  - Caribou movements close to minesites (geofencing collars)



## **Appendix K**

### **TK Panel #9 Recommendations Presented to DDMI**

**Traditional Knowledge Panel  
Guidance and  
Recommendations**

---

Session #9: Caribou  
May 12-16, 2016

# Guidance

---



# North Country Rock Pile

---

- The TK Panel supports the 3:1 slope and 'caribou ramps' up and down the NCRP
- The TK Panel supports the current closure plans for the NCRP with conditions (see following recommendations)

# Helping Caribou

---

- Learn from other countries about how they are trying to bring back caribou populations
- Contribute to educational programs that teach traditional practices based in respect for caribou, including predator harvesting practices, using all parts of the caribou, processing hides for clothing and other traditional uses
- Recognize and honour the real sense of urgency regarding caribou health and the desire of caribou people to slow and/or stagger industrial development

# Directing Caribou Movement

---

- Consider boulder fences to block access to areas (recognizing that caribou may use them for shade)
- Consider traditional fencing (e.g. inukshuks, trees, traditional flags) to guide movement
- Consider decoys (such as owls are used to scare away birds) and/or devices that emit high pitch frequency, noise, or wolf sounds to discourage caribou from going to specific areas on the mine site. Determine if there are larger versions of vehicle “deer whistles” that can be used with wind power to keep caribou away from certain areas.
- Consider controlled burns of vegetation to discourage wildlife from going to specific areas and to encourage natural re-growth over the long term

# Monitoring Caribou

---

- Install motion-sensitive wildlife cameras on the north and west sides of East Island and at important caribou crossings. The north side camera(s) would point to the lake and mainland, the west side camera would point towards the mine. Other possible locations on East Island: 1 on top of the rock pile as it is a high point like a lookout (determine if the camera could rotate around); 1 on the south dike of A21; 1 on the west point (near the accommodations); 1 on the south dike of A418 (these 3 would face southeast). Cameras should also be located at both sides of important caribou crossings of water and land.

# Fostering Stewardship

---

- Explore transferring ownership of the TK Camp to the GNWT or another designated organization (e.g. EMAB?) for use by community monitors after 2025
  - Provide transportation, accommodation and equipment to meet monitoring needs of community monitors at the TK Camp
- Participate in the development of a Stewards Program with industry/government/community/academic partners that would assume long term monitoring and management of the site in the Lac de Gras area (i.e. similar to the Haida Watchman model)

# Recommendations

---

# North Country Rock Pile: Additional Recommendations

---

- 9.1 Re-vegetate the base of the NCRP around the ponds.
- 9.2 A limited number of boulders (e.g. 3-4) should be placed on top of the NCRP to provide some shade for caribou, create habitat for small mammals and encourage natural re-vegetation.
- 9.3 Study the wind and snow accumulation on caribou ramps/trails as well as the top of the NCRP before finishing/finalizing the sloping/grading of the NCRP.
- 9.4 Ensure a gradual slope on the top of the NCRP so that there is a slight dome down the centre.

# Helping Caribou

---

- 9.5** Sponsor (or co-sponsor) a contest to gather ideas from communities on how to help the caribou to get strong
- 9.6** Recognize and honour the importance of ceremony in healing the relationship to caribou and contribute to healing events that are currently being planned by communities



# Directing Caribou Movement

---

- 9.7 Place boulders along the southern edge of the NCRP, along the edge of where the steep slope between the NCRP and the PKC will meet to keep caribou away (refer to map).
- 9.8 Place a circle of boulders around the PKC pond, in an area that is stable enough to support the weight and where they won't sink into the slimes, and around the shore of the North Inlet (refer to map).

# Monitoring Caribou (General)

---

- 9.9**     Contribute to training community monitors in using both traditional knowledge and western science so that common approaches across communities are used and results can be pulled together from many places
  
- 9.10**    Work with Ekati on developing monitoring plans for caribou after 2025

# Monitoring 2023 - 2025

---

**9.11** Recognizing that Aboriginal communities are committed to their traditional responsibility to take care of the environment, participate with Diavik and other partners (e.g. Dominion Diamonds) to explore ideas and develop capacity to establish a Cumulative Effects Monitoring and Management Station (CEMMS) using the TK camp as a base that has program links to the GNWT Daring Lake Research Station

**9.12** In partnership with communities and the GNWT, begin planning a joint TK and WS monitoring program that would begin in 2023 to be ready for implementation in 2025 by building on and expanding the current Diavik monitoring program

# Monitoring 2023 - 2025

---

**9.13** Offer monitor training to provide traditional land users with new skills and techniques to monitor from mine closure through to when Diavik completely leaves the site (expected to be 2030) and beyond for long term monitoring

**9.14** Focus monitoring on wildlife health and safety and possible impacts of other mines in the Lac de Gras area

**9.15** Design monitoring training with the objective of understanding what is happening in the eco-system with cumulative effects

**9.16** Employ community monitor trainees and ensure they have a meaningful role in the design of various aspects of closure work, including the building of wildlife ramps; the reclamation of the PKC, the North Inlet and contaminated sites; and any re-vegetation work on site.

# Monitoring 2025 - 2030

---

**9.17** Employ and ensure opportunities for high level employment/career advancement of trained community monitors (graduates of the training program) funded by Diavik and/or others. In addition to community members, a minimum of one Elder and one youth from each community should participate in the training program.

# Monitoring 2025 - 2030

---

**9.18** Focus monitoring to determine if steps taken/closure and reclamation actions are working the way they were intended, through the following measures:

- Slopes for safe passage of wildlife, boulders for keeping wildlife out of areas, the use of natural water filtering systems, the use of video cameras to detect wildlife presence, the testing of water from the North Inlet and PKC area, understanding ecosystem dynamics and the linkages between components, cumulative effects
- Include plant growth, plants dying, fur & antler condition, and presence/absence of injuries or spots on the side of caribou as some of the indicators of caribou well-being
- Caribou presence identified on cameras, collars, and sightings would trigger monitoring
- Other animals can be indicators that the land is not healthy (e.g. smaller rodents, birds, fish can tell of change happening in larger animals like caribou, bears, etc.)

# Caribou Monitoring & Cameras: Recommendations

---

**9.19** Ensure that all communities are involved in choosing where to establish monitoring locations for the cameras, etc. -- building on the locations and concepts identified by the TK Panel (i.e. refer to map). Train community members to operate monitoring technologies. Start using cameras now and continue to 2030.

**9.20** Check to see if Ekati has a camera at the caribou crossing at the Narrows; if not, Diavik should install one there.

.

# Supporting Stewardship

---

**9.21** Support the focus of long term monitoring goals of CEMMS on natural re-vegetation, return of caribou and other wildlife, and water quality in Lac de Gras area



# Supporting Ceremonial Traditions

---

**9.22** Respect spiritual beliefs and the importance of healing ceremonies of Aboriginal communities, work with the TK Panel to plan spiritual gatherings on site now through 2030;

- One would be held early/soon to help people on-site understand Aboriginal ceremonial ways, possibly timed with a TK Panel session (e.g. 2017);
- Second would be to start healing the environment (e.g. land) (e.g. 2020);
- Third would be designed to seek guidance on the finalization of the closure plan (e.g. 2023);
- Fourth would be large and involved to formally invite the spirits to return to the Island before Diavik leaves (all communities invited, drumming, etc.) (e.g. 2030)

# Supporting Ceremonial Traditions

---

**9.23** Whenever the TK Panel and community members come on-site, allow opportunity, time, space, etc. for the TK Panel to practice ‘feeding the land or water’ by Panel members and others (visitors or workers) travel to/from the site and consider other ways to raise awareness (e.g. signage).

# Other

---

**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

**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.

## **Appendix L**

### **TK Panel Process Presentation**

# Responses for Questions to Diavik

- What is the approximate volume of slimes and dimensions of slime area in the pond right now?
  - **End of mine estimate: 38 m deep, ~200 m wide E-W, ~100 m wide N-S, 50-70 m deep**
- How much will the lake water level go down when Diavik fills the pits?
  - 0.033m (**1.3 inches**) if fill both pits in the same summer
- Who are the community liaisons for Diavik?
  - **Helen Tologanak (KIA), Lesley Ann Evans (YKDFN), Grace MacKenzie (Tłıchǫ),** others currently vacant
- How many Aboriginal employees are there in Environment and at the mine in total?
  - **Environment: 5** (50%, 10 employees); **Diavik (end of 2015): 280** (25%, 1134 people)
- What do the rocks on the shoreline of the North Inlet look like?
  - See following slides















# 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	<b>Post-closure Wildlife Monitoring</b>
10	Fish Habitat Design Reviews	<b>Closure Plan Update &amp; Landscape Overview</b>

- Reached the end of the topics you originally suggested
- Need to plan for future sessions – 1/year is realistic
- DDMI Interests: South Country Rock Pile design, building disposal plans, 2018 AEMP TK Study, North Inlet closure plans

## **Appendix M**

### **TK Panel Session #9 Evaluation Summary**

**2016 Diavik TK Panel, Session 9: Evaluation Form Summary**

Question	Very Good	Good	Neither Good nor Poor	Poor	Very Poor	Total Responses	Comments
How would you rate the session for working and communicating together?	13	2	0	0	0	15	
How would you rate the session for mutual respect among participants?	11	4	0	0	0	15	
How would you rate the recording of TK during the session?	10	4	1	0	0	15	
How would you rate the facilitation of the session?	12	3	0	0	0	15	Excellent job of helping us pull our ideas together
How would you rate the outcomes and findings of the session?	8	7	0	0	0	15	
How would you rate the venue and food for the session?	10	4	1	0	0	15	
How would you rate the logistics for the session (e.g. hotel, travel, honoraria)	8	3	3	0	0	14	1 unanswered
Overall, how would you rate the session?	11	3	0	0	0	14	1 unanswered

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?	2	13	0	15	
How would you rate the amount of time to discuss the topics during the session?	2	13	0	15	

**What were the strengths of the session? What did you enjoy most about the session?**

- *Helping each other in our ideas*
- *Being with people from other communities*
- *Sharing stories related to subjects (2)*
- *Enjoyed everything about the session*
- *Everyone respects one another so that each person can have their say*
- *Excellent tours: guides very informative*
- *Facilitators were good & brought issues and ideas forward*
- *Supportive session with good people working together (x2)*
- *Enjoyed the consideration of ceremonial practices and open discussions*
- *Opportunity to participate and discuss thoughts and concerns*
- *Job well done*
- *Very well organized*

**How could the session be improved?**

- *More time outdoors*
- *Panel members should be involved with other mines, too*
- *Increase the honoraria for Elders (x3)*
- *Good the way it is*
- *More involvement of Elders and youth*
- *Go underground*
- *Provide written material to translators ahead of time*
- *Weekends don't work great*
- *More storytelling*