

Closure Planning for Diavik Diamond Mine: A Workshop to Gather Community Input

**Workshop hosted by the Environmental Monitoring
Advisory Board (EMAB)
February 14-16, 2017, Yellowknife (with Diavik site tour)**



**Report prepared by
Shauna Morgan**

March 20, 2017

Table of Contents

Executive Summary	1
Introduction	4
Background and Context	5
The Environmental Monitoring Advisory Board (EMAB)	5
Closure Planning Process	5
Description of the Workshop	6
Objectives	6
Participants	6
Workshop structure and format	7
Site Visit	8
Summary of Workshop Discussions	9
Community Engagement	9
Overarching Themes	11
Discussions about Mine Facilities	16
Longer Term Monitoring and Considerations	22
Regulatory Process	24
Other Concerns	24
Analysis of Closure Criteria and Objectives	25
Conclusion and Summary of Recommendations	28
Appendix A. List of Workshop Participants	32
Appendix B: Revised Workshop Agenda	33

Executive Summary

From February 14-16, 2017, the Environmental Monitoring Advisory Board (EMAB) hosted a closure planning workshop for Board members and representatives from each of the five Aboriginal Parties affected by the Diavik mine. The purpose of the workshop was threefold:

- Help participants learn about closure;
- Get feedback on issues and concerns, particularly from community participants; and
- Plan for next steps on input into closure decision-making.

The workshop included presentations by two expert resource people contracted by EMAB to review Diavik's proposed closure plans (Bill Slater and Randy Knapp) as well as a presentation by EMAB's Diavik Diamond Mines Inc (DDMI) Board member (Gord Macdonald), each of whom were on-hand throughout the three days to provide information supporting plenary and break-out group discussions. There was also a presentation and Q&A with a staff person from the Wek'eezhii Land and Water Board, covering the regulatory process and steps being taken to address regulatory gaps. The main topics covered were:

- DDMI's proposed closure plans for various mine site facilities;
- Participants' vision for the site post-closure;
- Community engagement to date and the work of the TK Panel;
- DDMI's closure objectives and proposed criteria for meeting those objectives; and
- Considerations for long-term monitoring/maintenance and financing.



It became clear during the workshop that DDMI's proposed closure plans do not match participants' vision for the restoration of plant communities, and there are remaining questions and concerns about whether contaminant levels will be minimized and whether there will be adequate ramps for wildlife to pass over. In addition, much more attention must be paid to long-term monitoring plans and funding. These issues should be addressed during more comprehensive community engagement.

The following is a summary of recommendations that were generally supported by workshop participants:

1. Communication and Community Engagement

1a) Who to engage - DDMI should engage more fully with Aboriginal government organizations and leadership/representatives about proposed closure plans, as well as elders' councils, youth, and the community at large.

1b) How to engage – In accordance with best practices, DDMI should conduct longer sessions with communities specifically focused on closure, and encourage more meaningful dialogue with the help of a facilitator chosen by the community.

1c) How to engage - A diorama or 3D model of the entire site (particularly the NCRP and PKC facility) would be a useful tool during community engagement sessions.

1d) Results of engagement – DDMI should present a clear summary to communities as to how community input has been incorporated or considered in closure planning.

1e) Record of engagement – DDMI should follow WLWB requirements in preparing a Record of Engagement.

1f) Collaboration – DDMI should pursue opportunities for collaboration with TK Panels or research projects associated with the other diamond mines in the area.

1g) EMAB Board responsibilities – EMAB Board members should update the members of their own communities and Aboriginal Parties on EMAB activities and bring back any community concerns for board discussion. Community members to report concerns to their own governments who appoint the community's EMAB representative.

2. Future site visits

2a) Plan a longer site tour with more opportunities to leave the bus. Include opportunities to walk on the waste rock pile, get closer to the pits, and examine the re-vegetation plots in more detail.

2b) Plan another site tour in spring and/or summer.

3. Re-vegetation

3a) In order for the site to be “friendly” for plant growth, fine material that holds water must be laid down. Participants suggested the use of fine PK as a substrate.

3b) Active re-vegetation efforts using seeds from wild local plants should take place, including on the North Country Rock Pile.

3c) The PKC facility should be at least partially revegetated, perhaps around the edges, so that it would become closer to pre-development conditions.

3d) Infrastructure routes (eg. roads and laydowns) could be a prime opportunity for re-vegetation since finer materials already exist as a base.

3e) Given that Ekati and Diavik are located so close to one another, and Ekati seems to be having some success in re-vegetating its rockpiles, Ekati and Diavik should collaborate in sharing results of their respective re-vegetation research.

4. Wildlife

4a) In order to avoid increased predation (Site Wide Objective #8) – there should not be barriers or holes on the landscape that could trap wildlife.

4b) More work is needed on developing effective criteria for SW11 (site is “safe for use by people and wildlife”). Diavik should use TK and results from research on other sites in order to establish these criteria.

4c) Ramps should be built with gentle, smooth slopes over any steep areas or edges of roads.

5. Water quality criteria

5a) Aquatic Effects Benchmarks are preferred closure criteria over the SSRBC since the expectation is that water quality in Lac de Gras should return as closely as possible to pre-development conditions after closure.

5b) New water monitoring locations for the closure period will need to be chosen with input from the TK Panel, community members, and EMAB. These should include creeks which flow into Lac de Gras throughout the lake.

6. Long-term maintenance and monitoring

6a) A program should be established for long-term community-based monitoring – as a collaborative effort between DDMI, multiple levels of government and the affected communities.

6b) The GNWT, in collaboration with regulatory boards and Aboriginal governments, should establish financial mechanisms to ensure neither governments nor taxpayers will be responsible for long-term mine closure costs.

6c) The waste rock pile should be closely monitored during and after closure to ensure the cover and freezing are functioning as predicted. It could take fifty years or more to begin to detect any seepage from the pile.

6d) A plan should be established for long-term monitoring of the PKC facility, including any potential thaw and proper functioning of the spillway. The plan should include what response actions will be taken should problems be detected.

6e) DDMI should leave some accommodation facilities on site for future monitoring and educational activities.

Introduction

From February 14-16, 2017, the Environmental Monitoring Advisory Board (EMAB) hosted a closure planning workshop for Board members and representatives from each of the five Aboriginal Parties affected by the Diavik mine. The purpose of the workshop was threefold:

- Help participants learn about closure;
- Get feedback on issues and concerns, particularly from community participants; and
- Plan for next steps on input into closure decision-making.

Over the course of the workshop—which included presentations by expert resource people, break-out groups and a mine site visit—participants discussed:

- DDMI's proposed closure plans for various mine site facilities, including the North Country Rock Pile (NCRP), pits, North Inlet and Processed Kimberlite Containment (PKC) facility;
- Participants' vision for the site post-closure;
- Community engagement to date and the work of the TK Panel;
- DDMI's closure objectives and proposed criteria for meeting those objectives; and
- Considerations for long-term monitoring/maintenance and financing.



This report is structured as follows:

- ❖ Background and context related to EMAB and the closure planning process so far;
- ❖ Description of the workshop (objectives, participants, format, site visit);
- ❖ Summary of workshop discussions (community engagement, vision for the site post-closure, comments about specific mine facilities);
- ❖ Analysis of DDMI's proposed closure criteria in comparison to its established closure objectives; and
- ❖ Conclusion and summary of recommendations.

Background and Context

The Environmental Monitoring Advisory Board (EMAB)

The Environmental Monitoring Advisory Board (EMAB) was formed as a requirement of the Environmental Agreement (EA) for the Diavik Diamond Project, which came into effect in 2000. EMAB has seven Board members, including representatives from each of the five Aboriginal Parties to the Agreement, the company, and the Government of the Northwest Territories (GNWT). As a result of the devolution process, the federal government has taken steps to withdraw from the EA and has stopped appointing a representative to the Board, instead delegating its authority to the GNWT. EMAB operates independently of Diavik and any government agency.

EMAB's overall role is to provide an integrated and co-operative approach to the environmental management of the Diavik Diamond Project, facilitating communication with Parties to the Agreement and making recommendations regarding environmental effects.

Closure Planning Process

Closure planning is not new to the Diavik mine; it was considered as part of the original environmental assessment and permitting process. Closure plans have evolved, changed, and become more detailed with the actual development and operation of mine facilities, and with the results of various research and monitoring projects conducted over the years.

So far, regulators have approved three versions of Diavik Diamond Mines Inc.'s (DDMI's) Interim Closure and Reclamation Plan (ICRP), and DDMI is expected to submit version 4 by the end of March 2017.

Every year, DDMI is required to submit a progress report on closure to the Wek'eezhii Land and Water Board (WLWB). The progress report that DDMI submitted on March 31, 2016 included a final closure plan for the North Country Rock Pile (NCRP), an interim closure and reclamation plan for the A21 Pit, and a revised security deposit estimate. Each of those items requires WLWB approval, and the Land and Water Board invited input from Affected Communities, government agencies, EMAB, and the general public.

EMAB has reviewed and commented on each part of the March 2016 progress report, with the help of Arcadis Canada and Slater Environmental Consulting. Overall, EMAB expressed concerns that the plan may not set high enough minimum standards to ensure protection of the environment, and that some of Diavik's proposed closure criteria may not ensure its closure objectives are met. EMAB also urged greater attention to long-term monitoring plans.

Furthermore, EMAB echoed concerns expressed by Affected Communities that community engagement on the NCRP final closure plan has been inadequate. One of the main objectives of this workshop was to provide a forum for community members to give their feedback on draft closure plans and to suggest ways Diavik could better engage communities on closure planning in the future.

EMAB intends to use the feedback gathered at this workshop in reviewing version 4 of Diavik's ICRP and any revisions to the NCRP closure plan, which DDMI is also expected to submit by the end of March 2017.

Description of the Workshop

Objectives

The main objectives of this Closure Planning Workshop for Diavik Diamond Mine were:

- **Help participants learn about closure, including:**
 - general closure and reclamation concepts;
 - NWT mine closure and reclamation guidelines; and
 - particular issues and background context associated with Diavik Diamond Mine.
- **Get feedback on issues and concerns, particularly from community participants.**
 - Get input on DDMI's proposed final closure plan for the North Country Rock Pile (NCRP).
 - Get input that will help EMAB review version 4 of DDMI's Interim Closure and Reclamation Plan (ICRP).
- **Plan for next steps on input into closure decision-making.**
 - Produce recommendations for involvement of communities in development and review of a revised closure and reclamation plan.



Participants

A total of 25 people participated in the workshop. The aim was to ensure that there was strong representation from the communities, and this was achieved with a total of 15 Dene, Métis and Inuit people participating, from all five Aboriginal Parties.

Participants included the following:

- EMAB Board members (6)
- Community participants (10)
- Presenters / Resource people (4)
- Observers (2)
- Staff and facilitator (3)

A complete list of participants is found in Appendix A.

Workshop structure and format

The workshop was held over three days, with 2.5 days of presentations and discussions in Yellowknife and a half-day site tour at the Diavik mine.

The first morning featured a presentation by EMAB's DDMI representative (Gord Macdonald) about Diavik's proposed closure plans so far, with opportunities for participants to ask questions and establish a solid understanding of unfamiliar terms and concepts.

The mine site tour was planned for the second half of Day 1; however, poor weather conditions forced EMAB to delay the flight until Day 2. Again on the morning of Day 2, poor weather resulted in the flight being delayed a second time. Participants gathered at the airport early in the morning on Day 3, and after an hour's delay were finally able to board the plane and proceed with a shortened site visit. These complications resulted in the workshop agenda being revised multiple times on the fly, depending on the availability of presenters. While these continuing changes and adjustments caused some frustration amongst participants, they proved themselves to be remarkably patient and adaptable. The group was able to cover all of the topics and fulfill the workshop objectives in the end. The final agenda is outlined in Appendix B.



Current Diavik mine site facilities

The portion of the workshop held in Yellowknife was split between presentations by resource people, which included considerable group discussion, and lengthy break-out group discussions (with about 6 people in each group). The most extensive presentations were by Randy Knapp (Arcadis Canada) and Bill Slater (Slater Environmental Consulting), who have been working with EMAB over the past year to evaluate DDMI's proposed closure plans. Three aerial maps were provided to each break-out group showing the Diavik site pre-development, the site with current mine facilities, and Diavik's projections for what the site will look like post-closure.

Site Visit

The purpose of the Diavik mine site tour was to allow participants to get a better sense of scale and to experience the mine facilities in person—particularly the facilities that have been the focus of closure planning. The tour did not include worker accommodation buildings, the wind farm, or the inside of processing/treatment facilities.

For several workshop participants, this was their first visit to the Diavik mine site. Unfortunately, the visit had to be shortened due to flight delays, and many aspects were difficult to view or experience in winter conditions. Most of the tour was conducted from inside the bus.

One of the elders remarked afterward that during the site tour it really sunk in for him that the land and the lake will never be the same, once he saw the giant holes that have been created in the ground.

Once the group returned to Yellowknife, we held a sharing circle so each participant could give their feedback about the tour. Highlights of the tour, according to participants, included:

- Participants observed hundreds (possibly thousands) of caribou – both from the plane on the way in, and from the road just south of the A21 pit. Participants remarked they had never seen that many caribou at the Diavik site before. Group members were surprised, amazed the caribou were not scared away by the noise and activity, and pleased to see caribou still using that route.
- Other wildlife observations included foxes, a wolf, and a golden eagle.
- Participants appreciated the efforts of Diavik’s tour guide, a staff member with the environmental management team.

The group asked about mine protocols when caribou are observed so close to the mine site, but the Diavik tour guide was not clear on what the protocols say. Participants also expressed interest in learning more about the role of wildlife monitors on site.

Participants’ frustrations and disappointments about the tour included:

- The tour was too short and there were few opportunities to leave the bus.
- Only a few snacks and no water or meals were provided.
- The group did not get to go up and walk around on the waste rock pile (NCRP) or see it up close.
- Snow everywhere made it hard to see some of the facilities.

On the other hand, participants noted that the dust on site is much easier to see in the winter than in the summer. The snow was visibly grey/brown. The group noticed a crusher dropping crush directly onto a pile without hooding, so lots of dust was being spread.

For future tours, participants mentioned an interest in seeing:



- the entire site in the spring (freshet) and summer seasons;
- the pits closer up;
- the A418 pit being filled;
- portions of the winter road;
- the processing plant, water treatment plant, and worker accommodations; and
- a closer view of the revegetation plots, ideally in the summertime.

The GNWT Lands Inspector, who came along on the tour in an unofficial capacity, remarked how impressed he was with how observant the community participants were—both on the plane and during the tour, noticing various species of wildlife and counting the number of trucks they observed on the winter road. The inspector told participants to contact him if they want to view his collection of photos of the site during various seasons, including spring and summer.

Summary of Workshop Discussions

Community Engagement

One of EMAB’s main responsibilities is to provide and receive information from the affected communities, with the goal of promoting meaningful community engagement in the oversight and regulation of Diavik mine. During the workshop, Executive Director John McCullum made a brief presentation outlining ways DDMI has engaged so far with communities, and acknowledging concerns raised by EMAB and Affected Communities that engagement on the NCRP final closure plan has been inadequate. Until recently, DDMI’s closure-related presentations to communities have been a brief part of its annual update, which is required under the Participation Agreements. DDMI’s reporting on closure-related engagement has been limited to the date of the meeting and any broad topics raised.

A YKDFN participant informed the group that while community consultation in the past has been inadequate, DDMI and YKDFN have recently been working on improving engagement. Company representatives met with the YKDFN Chiefs, took them on a site tour, and tried to set up a community meeting. They also met with the elders’ senate. However, YKDFN remains unclear as to how community input has been or is being incorporated into closure planning.

The DDMI representative at the workshop argued that Diavik has become more comprehensive in its engagement within the last six to eight months. He objected to the Land and Water Board requirements for Records of Engagement (where proponents are required to report to the WLWB detailed results of community engagement, including what input has been received and how it is being used/considered in planning). DDMI believes that it should be the responsibility of communities to report to WLWB directly about the results of community engagement. An updated version of DDMI’s Engagement Plan is currently under review by the WLWB.

One workshop participant voiced concern about the degree to which EMAB Board members are reporting back to communities. EMAB Board members are appointed by Aboriginal Parties and are expected to update community members on EMAB activities and bring back any community concerns for board discussion. Board members at the workshop discussed ways to better hold their fellow Board members accountable, and urged community members to report concerns to their own governments who appoint the Party’s EMAB representative.

Traditional Knowledge (TK) Panel

Back in 2011, EMAB was actively involved in establishing the TK Panel for the Diavik mine; however, in 2013 DDMI began to take a greater role in facilitating and organizing the TK Panel. EMAB currently monitors and assesses results of the TK Panel's work and DDMI's responses. The Panel's recommendations and Diavik's responses are included in DDMI's closure planning reports and can be found on the EMAB website (www.emab.ca).

North Slave Métis Alliance (NSMA) participant Kathy Arden made a short presentation on the Diavik TK Panel, of which she is a member. According to Kathy, TK Panel members:

- contribute elders' knowledge of the land, animals and fish;
- offer observations on how the Diavik mine has impacted the land and environment;
and
- give recommendations on how to get the land back as closely as possible to the way it was before.

Each meeting is recorded and detailed transcripts are kept to ensure records are accurate and complete. Kathy emphasized how thorough the Panel's process is – items are discussed; then recommendations are drafted, reviewed, and corrected, before being presented to DDMI for response. The recommendations and responses are provided to the WLWB as part of Diavik's regular reports and are posted on the public registry. Kathy told the group that she has a long spreadsheet she could share, listing all of the Panel's recommendations.

Another participant asked how Panel members feel about DDMI's responses to the recommendations so far, and Kathy responded that the Panel is generally happy. DDMI provides technical reasons when they do not implement a recommendation. Sometimes it takes a while to reach agreement. DDMI also asks questions to the Panel. It is a respectful relationship.

When asked whether Panel members engage with communities on their recommendations, Kathy stated that she is not aware of this, and she herself does not engage directly with other NSMA members. Instead she forwards notes from the meetings to her organization's land/environment staff person.

There was some discussion on the need for each mine to have a TK Panel of its own, or possibly a single Panel for all diamond mines. The challenge with such a collaboration would be that each mine has a separate environmental agreement with different requirements. However, there may be opportunities for better coordination and mutual learning.

A YKDFN representative stated his concern that DDMI has been using the TK Panel as a proxy for community engagement while remaining less engaged with Aboriginal government organizations and leadership/representatives.

Community Engagement Recommendations

- ❖ *Who to engage* - DDMI should engage more fully with Aboriginal government organizations and leadership/representatives about proposed closure plans, as well as elders' councils, youth, and the community at large.
 - Some workshop participants acknowledged that in the last six to eight months, DDMI has begun to make increased efforts to engage with affected community members.
- ❖ *How to engage* – In accordance with best practices, DDMI should conduct longer sessions with communities specifically focused on closure, and encourage more meaningful dialogue with the help of a facilitator chosen by the community.
- ❖ *How to engage* – Hands-on models would support greater understanding and dialogue. Workshop participants suggested a diorama or 3D model of the entire site (particularly the NCRP and PKC facility) would be a useful tool during community engagement sessions (see further discussion below).
- ❖ *Results of engagement* – DDMI should present a clear summary to communities as to how community input has been incorporated or considered in closure planning.
- ❖ *Record of engagement* – DDMI should follow WLWB requirements in preparing a Record of Engagement.
- ❖ *Collaboration* – DDMI should pursue opportunities for collaboration with TK Panels or research projects associated with the other diamond mines in the area.
- ❖ *EMAB Board responsibilities* – EMAB Board members should update their own community members and Aboriginal Parties on EMAB activities and bring back any community concerns for board discussion. Community members should report concerns about this process to their own governments who appoint the community's EMAB representative.

Overarching Themes

Vision for the Site

In a break-out group format, workshop participants were asked to reflect on their long-term vision for the Diavik mine site, including their vision for how it would be used by people and wildlife and what kind of plant life would exist there. The purpose of this exercise was to explore to what extent participants' vision and expectations for long-term future use of the area is reflected in proposed mine closure plans.



Overall, participants envisioned the site being returned as closely as possible both to the way it was before mine exploration and development, and to surrounding natural areas.



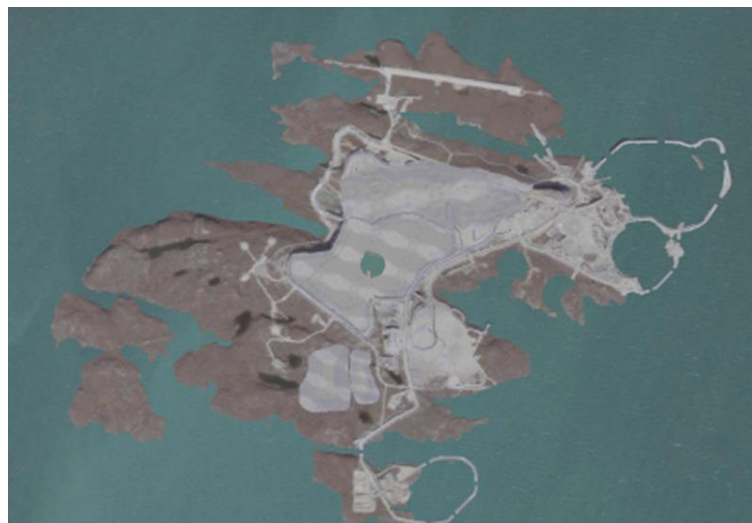
Clockwise: Arnold Enge, Roger Catholique, Randy Knapp, Charlie Evaglok

Participants envisioned a place where:

- ❖ **Plant communities are restored, providing habitat for wildlife and people.**
 - The site must be made “friendly” for plant growth, which includes laying down fine materials that hold water and support plant roots.
 - Active re-vegetation efforts should take place, including on the North Country Rock Pile.
 - Active re-vegetation efforts should use seeds from wild local plants to encourage re-growth. No foreign or invasive species should be allowed into the site.
 - Vegetation should be restored as much as possible to pre-development conditions; this includes healthy food and habitat for caribou.

- ❖ **Wildlife and people know that it is safe and healthy for them to travel through the area as they did before.**
 - Once blasting and other mine activities stop, caribou and other wildlife are expected to return and use the area in a similar way as before mining exploration and development took place.
 - Local community members will likely avoid hunting there at first, but will visit the site to actively monitor the land and water to see how it is changing and recovering.
 - As long as wildlife return to the area, local people will eventually use the area again for harvesting.
 - The site should be made safe for both people and wildlife, by removing both physical barriers/hazards and sources of contaminants (such as dust, chemicals, hydrocarbons, metals).
 - There should be no holes or traps that animals or people could get caught in, especially when the land is covered in snow.
 - Ramps should be smooth and built with gentle slopes along any steep areas or edges of roads.
 - There should be no artificial attractants for wildlife.
 - When the land is healthy, wildlife will be healthy, which provides healthy food for people.

- Any danger areas should be clearly marked to make the site safer for people.
- ❖ **Long-term monitoring and education occurs, led by local community members.**
 - Long-term monitoring should be community-based and continue indefinitely.
 - Some accommodation facilities should be left on site for use by community monitors and educational tours.
 - The site should house an educational facility with programming related to traditional knowledge, environmental monitoring, and the mineral industry.
 - The site should become a place to learn, practice and transmit traditional knowledge.
 - Local indigenous people should have long-term jobs in environmental monitoring and education based around the site.



Diavik’s post-closure vision for the site

It became clear during the workshop that DDMI’s proposed closure plans do not match participants’ vision for the restoration of plant communities, and there are remaining questions and concerns about whether contaminant levels will be minimized and whether there will be adequate ramps for wildlife to pass over. In addition, much more attention must be paid to long-term monitoring plans and funding.

The discussions that took place about many specific aspects of closure planning are covered in more detail below.

Re-vegetation

Questions and Concerns by Workshop Participants

- Randy Knapp noted that Diavik has done a great deal of research on re-vegetation but does not have a re-vegetation plan in its proposed NCRP final closure plan or in its approved Interim Closure and Reclamation Plan, nor do its reclamation estimates include any funds for re-vegetation specifically.

- Diavik explained that it does not plan to enhance vegetation on the rock pile; it believes natural re-vegetation will occur on the rockpiles.
- Randy emphasized that unless the ground contains fine material that can hold water, natural revegetation will not occur, including on the rockpiles.
- Workshop participants noticed that very little re-vegetation is shown on Diavik’s post-closure map illustrating its vision of the site post-closure. Participants noted that this does not match their vision, which includes vegetation being restored as much as possible to pre-development conditions.
- Concern was expressed about use of non-local seeds and invasive species.
 - Diavik explained that all plants used in its re-vegetation research are local.



Suggestions Offered

- In order for the site to be “friendly” for plant growth, fine material that holds water must be laid down. The use of fine PK was suggested as a substrate.
- Active re-vegetation efforts using seeds from wild local plants should take place, including on the North Country Rock Pile.
- One of the breakout groups recommended that the PKC facility be at least partially revegetated, perhaps around the edges, so that it would become closer to pre-development conditions.
- Infrastructure routes (eg. roads and laydowns) could be the best opportunity for re-vegetation since finer materials already exist as a base.
- Given that Ekati and Diavik are located so close to one another, and Ekati seems to be having some success in re-vegetating its rockpiles, workshop participants suggested that Ekati and Diavik collaborate in sharing results of their respective re-vegetation research.

Wildlife

An elder Board member told the group that there used to be thousands of caribou near Diavik, but now hardly any are observed.¹ Elders shared during break-out groups that the East Island was on the caribou travel route (particularly as a summer crossing).



¹ According to scientists, the average population size of the Bathurst caribou herd dropped from 349,000 in 1996 to 20,000 in 2015 (EMAB Annual Report, 2015/16, p.5).

While DDMI plans to change the shape of the NCRP to make the slopes more gradual and the pile more stable, its most recent drawings do not show caribou trails or placement of fine material to ensure better footing. These aspects were requested by the TK Panel and were included in previous proposed closure plans, and supported by EMAB.

Questions and Concerns by Workshop Participants

- While one of Diavik’s closure objectives is for the site to be neutral to wildlife (meaning the site will not attract animals any more or less than before development), what does “neutral” really mean? How is this measured? There are differing views on this.
- Questions about how objectives SW3 and SW4 regarding dust levels can be monitored and enforced.
 - Site Wide Objective #3- “Dust levels safe for people, vegetation, aquatic life, and wildlife”.
 - Site Wide Objective #4- “Dust levels do not affect palatability of vegetation to wildlife.”
 - A YKDFN representative suggested the zone of influence (ZOI) could be used as a criterion for indirectly measuring wildlife use and vegetation palatability. DDMI strongly disagreed. The ZOI is not specifically mentioned in the Closure Objectives.
 - The ZOI for caribou has been much larger than predicted and EMAB has recommended in the past year that Diavik study what operational changes it can make to reduce the ZOI.
- There was concern that wildlife will be able to sense materials are left behind in the landfill and will avoid the site.
- There was concern that the PKC facility will interfere with caribou crossing, acting like quick-sand.



Clockwise: Sean Richardson, Jack Kaniak, Kathy Arden, Jonas Sangris, John McCullum

Suggestions Offered

- In order to avoid increased predation (Site Wide Objective #8) – there should not be barriers or holes on the landscape that could trap wildlife. Diavik should use TK and results from research on other sites in order to accomplish this objective.
- Ramps should be built with gentle slopes over any steep areas or edges of roads.

Discussions about Mine Facilities

North Country Rock Pile

The North Country Rock Pile (NCRP) holds waste rock dug out from the pits surrounding the kimberlite pipes. It stands about 40 metres above the surrounding land and 85 metres above lake level. DDMI wants to begin closure of the NCRP in 2017 (building a cover using till and waste rock from its new A21 pipe while it is under construction and can be hauled directly). According to DDMI's plan (as proposed in the NCRP Final Closure Plan), the more dangerous Type III waste rock—which could leach contaminants if in contact with air and water—is to be covered by 1.5 metres of till plus three metres of safer Type I rock as protection. The cover is designed to keep the pile frozen, but the active zone within the cover (which thaws each summer) is predicted to be 3.7 metres deep.

Questions and Concerns by Workshop Participants

- Concerns about height of the rockpile compared to rest of the landscape.
- Concerns that the shape, particularly the steep part on top will make it difficult for wildlife to pass over it.
 - The Diavik representative explained that the surface of the pile will tend to be smoother on the sides – the top will be rougher with gaps between the rocks.
- Confusion about whether the designed cover is meant to keep water out.
 - Diavik clarified that the till is not meant to be a barrier to water – it is simply meant to keep the pile frozen. As long as the pile is frozen there shouldn't be any seepage.
- Concern about water entering the pile, becoming contaminated or acidic, then seeping out of the waste rock pile slowly.
 - Consultant Randy Knapp described the “sponge effect”, where water may collect slowly within the pile for many years before starting to seep out, thus delaying response to the problem. It took fifty years for water that entered the waste rock pile at the Faro Mine in the Yukon to be detected as seepage.



Workshop participants asked how the sizes of the Diavik and Faro mine waste rock piles would compare. According to Randy, they are similar sizes but the Faro rock pile is much “dirtier.” Also, unlike Faro, Diavik lies within a permafrost zone so the core of the waste rock pile is likely to stay frozen (unless or until climate change dramatically impacts the site).

- One third of the rock in the pile is Type 2 or Type 3 – potentially acid generating.
- Concern that high acidity rock could create “hot spots” that do not freeze.
 - The DDMI representative explained that this is unlikely to occur at Diavik (or Ekati), since the waste rock does not contain particularly reactive material.
- Concern that the portion of the cover layer that thaws each summer will eventually be eroded away by precipitation and runoff.
 - Randy described the till layer as “self-healing”; if it cracks, it will re-consolidate. This would be a much greater concern if it was clay.
- Question about what will happen as the climate changes.
 - Diavik explained that the thaw zone will increase with climate warming. It is important to realize that the core of the pile will stay frozen (as confirmed by extensive monitoring on the pile); the challenge will be to manage the depth of the thaw zone (active layer).
 - Randy noted that the worst-case climate change estimate is an increase of 4 degrees over 100 years. The estimates have not gone beyond 100 years.
- Question about whether thermosyphons would help to keep the pile frozen under conditions of climate warming.
 - Diavik explained that thermosyphons would not help with the key challenge, which is minimizing the depth of the thaw zone. Also, thermosyphons would be extremely expensive for a pile of that size, and they only have a lifespan of 50 to 100 years.

Randy noted that there is a need for close monitoring of the waste rock pile to ensure the cover and freezing are functioning as predicted. EMAB has expressed concern in its written responses that long-term maintenance and monitoring of the cover may be required since the NCRP design report itself recognized that the cover system could fail.

Suggestions Offered

- *Enhancing community engagement* – A diorama or 3D model of the NCRP (and the rest of the site) would be a useful tool during community engagement sessions since it is hard to understand the proposed shape and relative size of the rockpile using only maps and 2D diagrams.

Pits

DDMI's proposed plan for pit closure is to flood the pits, monitor for a period of time to ensure good water quality, build fish spawning sites within shallow parts of the pits, then breach the dykes to allow free flow of water, fish and boats between the pits and Lac de Gras. There will be salty groundwater at the bottom of pits and clean water on top, but these layers are not expected to mix.



Questions and Concerns by Workshop Participants

- Concern about water in pits mixing, allowing salty groundwater to affect water quality in Lac de Gras. Concern that tests/models are too small scale to give confidence it will work.
 - Randy noted this method has been used successfully in Saskatchewan in similar situations, but each situation is unique.
- Concern about the potential plan to dispose of fine PK in pits or underground – this material needs to be kept separate from Lac de Gras.
- Concerns about dikes being breached – concern about fish spawning or feeding in pit lakes.

North Inlet

The North Inlet operates as a holding tank for water that is pumped out of the pits as they are being mined, and other water that has collected on the mine site. Diavik's representative explained in his presentation that the major challenge with reclaiming the North Inlet is the presence of hydrocarbon contamination, likely from vehicles operating in the pits, breaks in hoses, and small spills. In addition to hydrocarbons, some metals are at elevated levels but not at a level that would cause harm.

Options for reclamation include: allowing only water to move back and forth through the dike; a limited break in the dike allowing both water and fish to move through it; or a full break (remove dike). DDMI is considering dredging the sediments to remove the contaminated material. Its final proposed plan is still unclear.

EMAB's 2015 intervention in Diavik's water licence renewal expressed concern about hydrocarbon contamination in the North Inlet and negative effects on benthic invertebrates and zooplankton communities.



Questions and Concerns by Workshop Participants

- Question about the fraction (type) of hydrocarbons present.
 - Diavik answered they are PHC F3 – have been traced back to heavy equipment.
- Question about how long it would take for the hydrocarbon contamination to clean itself (as happens on land).
 - Diavik explained this process would be very slow in cold water. Diavik is reassured that the hydrocarbon levels are not getting worse; however, they do

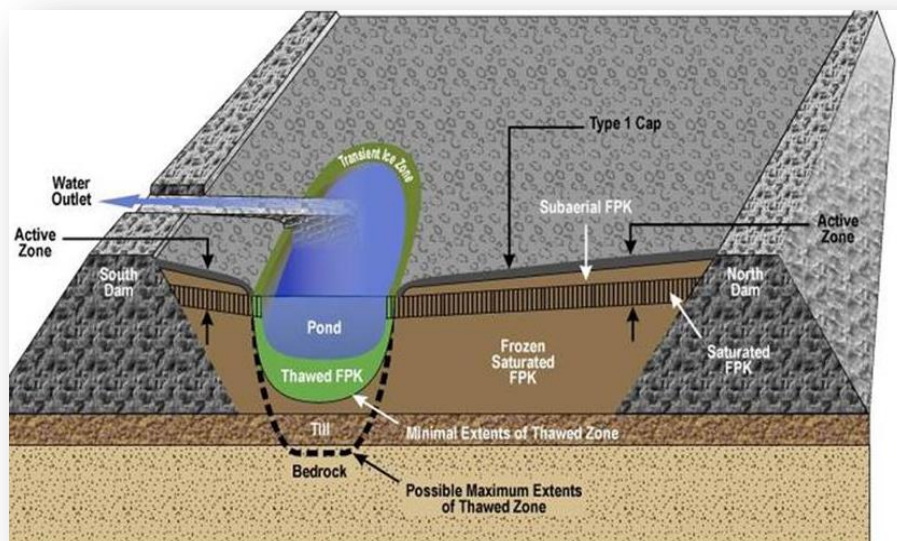
not expect it to naturally subside to a clean enough level by 2025, so some remediation action is required.

- Concern about fish, birds and other animals getting into the North Inlet.
 - Some participants felt it was best to keep the North Inlet isolated from Lac de Gras to minimize the effect on lake water quality and wildlife.

PKC (Processed Kimberlite Containment) Facility and Tailings

The Diavik representative explained in his presentation that one proposed plan for the PKC facility (tailings pond) is to keep the fine processed kimberlite (FPK) protected by perimeter dams. The PKC would be covered by rock, with a spillway for water on top of the pond to flow in and out. EMAB's consultant Randy Knapp noted:

- spillways must be designed to withstand a Probable Maximum Flood;
- climate change scenarios must be planned for; and
- an engineered structure like this would potentially require long term care, monitoring and maintenance.



Randy noted an example of another mine's spillway that jammed with ice and required repair.

Diavik also outlined some alternatives to the above plan for storing remaining fine PK materials still to be produced. The company is interested in exploring PK storage underground below the pits, similar to Ekati. If Diavik was to pursue this idea through technical feasibility studies, it would require WLWB approval and EMAB and community organizations would have a chance to comment.

Questions and Concerns by Workshop Participants

- Concerns about long term safety – ground stability for wildlife and people.

- The TK Panel wants something to be done with the toothpaste-like material in the PKC, since animals or people could get stuck in it. This could interfere with caribou crossing, acting like quick-sand.
- Concerns about the quality of water entering Lac de Gras from the spillway.
- There will be ice lenses in the fine material; if they melt, could there be a slump in the rock cover?
 - DDMI responded that there will be fine material throughout the PKC, but most will be closer to the pond.
- Concern that the engineered structure proposed for the PKC facility may require active long-term care and maintenance – eg. liners have a set lifespan.
- Confusion about what is going to be done with fine PK material – is it going to be put in pits? Underground? How will it be separated from Lac de Gras?
- Could more of the PK be used as fine material to promote re-vegetation?
- Concern about PK being put in pits since it could impact the water quality of the lake.



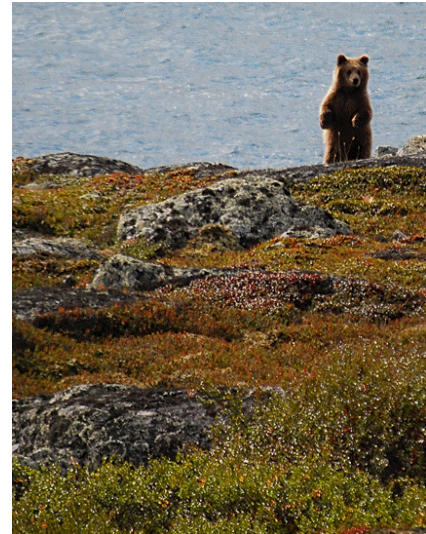
Suggestions Offered

- *Enhancing community engagement* – Similar to the NCRP, a diorama or 3D model of the PKC facility would be a useful tool during community engagement sessions in order to better understand the depth and size of the tailings pond.
- Since Ekati is re-vegetating its tailings pond (PKC) – could there be better collaboration to learn from each other’s research and technology?
- Participants recommended Diavik at least partially re-vegetate the PKC tailings pond to make it look more similar to pre-development conditions.

Longer Term Monitoring and Considerations

EMAB's consultant Randy Knapp explained in his presentation that there are almost no cases where a company can safely walk away from a site completely; there are many areas that usually need to be inspected and maintained. However, the goal is to have as little need as possible for ongoing/active maintenance (one of Diavik's guiding principles for closure). In particular, care and maintenance is required at closure for all mines with engineered and hydraulic structures (such as dams, covers, spillways and channels). Factors which could damage those structures include glaciation, erosion, seismic events, extreme precipitation and climate change.

Workshop participants emphasized that there must be a program for long-term community-based monitoring – as a collaborative effort between DDMI, multiple levels of government and affected communities. The “long-term” in this case should be at least the next 500 years.



Security Deposits and Long-Term Financing

EMAB's consultant Randy Knapp relayed the following historical lessons learned in his second presentation, referring to mines in general (rather than Diavik specifically):

- Early mine closure is a real possibility.
- Temporary closure may be used to delay closure expenditures.
- Research Programs should not be used to delay decisions. Make financial provisions and revise over time through R&D.
- Closure Costs when default occurs would typically greatly exceed the financial security. It always costs a lot more for the government to close a mine than if the company does it.
- Long term funding for monitoring, care and maintenance is often inadequate.

EMAB noted in its 2015/16 Annual Report that the laws are not clear on who is responsible for long-term care and maintenance at closed or abandoned mine sites in the NWT. Any failures at the minesite that happen after the government returns the security deposit to the company must be fixed and paid for by the government and taxpayer.

Randy gave the example of Faro Mine in the Yukon, where the government has already spent \$200 million on care and maintenance and they have yet to implement the full closure plan.

Questions and Concerns by Workshop Participants

- Does the security estimate include cost of research into closure planning options?
 - DDMI advised that it does not.
- Are there financial mechanisms to ensure the taxpayer will not be responsible for long-term closure costs?

- DDMI noted the potential for a “qualifying environmental trust”.
- DDMI notes that they expect a portion of their security deposit will be held back as a long-term closure fund.
- Example of Saskatchewan’s insurance fund - this would require new GNWT legislation before WLWB could order such a mechanism.
- Criticisms of the Saskatchewan model include:
 - The amount that goes into the fund is arbitrary (20%), not based on actual risk of long-term contamination from the particular mine.
 - Mining companies want a sign-off (release of liability), but they do not get that under the Saskatchewan system – they are always potentially liable.
 - There is poor transparency.
 - The Saskatchewan system may have caused companies to decide not to work in that province.
- Question about the future determination of negligence. If the company fails to fulfill its closure obligations, but the inspector and WLWB sign off on it and return the security deposit, who is responsible?

Community participants offered varying perspectives on which parties they believe should be responsible for long-term closure monitoring and maintenance:

- Decisions are made by the company and by government, so they are both responsible. Whoever was involved in decision making should take responsibility.
- Companies are working on Aboriginal land. They make billions of dollars. Sometimes they make the land unusable for wildlife. Long-term care funds are needed; they should be collected during the EA phase.
- Diavik should pay. However, responsibility often falls onto people who live on the land and are left to face the mess.



Presentation by Randy Knapp

Regulatory Process

Randy Knapp noted in his presentation that a major issue is there are no Closure Regulations or Regulated Standards in the NWT, only guidelines, which cannot be enforced in the same way.

Patty Ewaschuk from the WLWB made a presentation on the role of the WLWB in closure and post-closure, and the steps to be followed in the regulatory process. Patty acknowledged that the GNWT policy framework is lacking in terms of long-term monitoring and maintenance, liability and relinquishment of security. Patty is part of a team that now includes the GNWT, which is working on relinquishment issues. Part of the team's goal is to estimate how much security should be held for monitoring and maintenance. The Mackenzie Valley Land and Water Board is hoping to have guidelines in place by mid-2017. While Diavik's current security estimate does not include long term care, going forward the WLWB has asked Diavik to estimate this in future submissions. Workshop participants were surprised and pleased to hear this news.

Questions included:

- Can communities/governments ask for changes in an interim closure plan if it has already been approved by the WLWB?
 - Yes, the next version of an Interim Closure Plan can be changed if new evidence is provided.
- How many years of monitoring is required before the WLWB will sign off and return a security deposit? This is unclear.

Other Concerns

Landfills

Several community participants expressed strong concerns that Diavik planned to leave non-hazardous waste buried on-site in a landfill, even though the WLWB has already approved this. These participants insisted that all materials that were brought in should be taken back out again.

While the buried materials are expected to remain frozen for now, there is concern that with climate change the buried materials will not stay frozen forever and will contaminate the surrounding land and water. Others mentioned that animals can sense when there is foreign material underground, and this may cause them to stay away from the site.



Dust/surface runoff

As mentioned above in the discussion about the site tour, workshop participants noticed that the snow on-site was distinctly grey/brown, and a lot of dust was being created by a crusher operating without hooding.

Participants wondered how much runoff goes from the site into Lac de Gras annually, and how is it monitored? The GNWT Lands Inspector noted that there are questions by the WLWB about what Diavik defines as surface runoff. It was emphasized that the Aquatic Effects Monitoring Program will need to evolve when operations shut down, and new water monitoring locations will need to be chosen with input from the TK Panel, community members, and EMAB.

Analysis of Closure Criteria and Objectives

Diavik has developed about 34 closure objectives based on the Mackenzie Valley Land and Water Board guidelines, which have been approved in Diavik's interim closure plans. Eleven of the closure objectives relate to the entire site, while the rest are for specific facilities on the minesite. As Bill Slater explained to workshop participants, closure *objectives* describe what reclamation is meant to achieve.

While closure objectives are the end goals, closure *criteria* should be designed to tell us whether or not those objectives are being met. Bill Slater explained that criteria are the standards to measure success of meeting closure objectives. Good criteria should be:

- Effective (are we measuring all of the right things?)
- Measurable (can we get a reliable measurement?)
- Thresholds (identifying what are acceptable conditions)
- Allowing for a timely response (once we detect a problem, how quickly can we respond?)



Bill Slater and Napoleon Mackenzie in break-out group

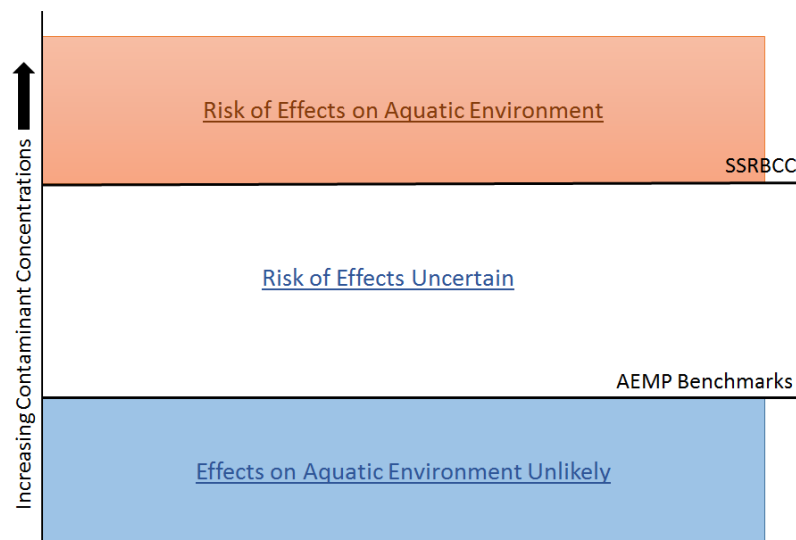
EMAB asked its consultants to review how well the closure criteria Diavik proposed in its March 2016 Final Closure Plan for the North Country Rock Pile would work to measure whether the closure objectives were being met, both for the NCRP specifically (3 objectives) and site-wide (9 relevant objectives).

The presentation by EMAB’s consultant Bill Slater offered examples of where Diavik’s proposed closure criteria were not adequate for measuring progress on its closure objectives.

Closure Objective	Proposed Criterion	Analysis
SW11: Mine areas are physically stable and safe for use by people and wildlife.	Satisfactory final inspection by a professional engineer	Does not define acceptable threshold/condition: what should the engineer be looking for?
SW2: Surface runoff and seepage water quality that will not cause adverse effects on aquatic life or water uses in Lac de Gras or the Coppermine River.	Water quality standards for runoff and seepage	Problem of timely response: when? Where is monitoring done to ensure we can respond quickly enough?

Bill also explained how it is important, when developing appropriate criteria, to pay attention to whether objectives indicate a *non-degradation approach* or a *use-protection approach*. A non-degradation approach means the goal is to keep contaminant levels similar to pre-mining conditions. A use-protection approach means the goal is contaminant levels that will not harm water users e.g., fish, people, animals.

Even within a use-protection approach, some sets of criteria are more protective than others. Diavik has proposed using Site Specific Risk Based Criteria for measuring water quality (of seepage and surface runoff), which is less protective than standards set by the Aquatic Effects Monitoring Program Benchmarks. Essentially, the SSRBC would allow higher levels of contaminants to develop before a problem is flagged and addressed. Bill noted that Aquatic Effects Benchmarks are reasonable criteria for closure if the expectation is that water quality in Lac de Gras should not deteriorate (or should improve) during closure period, which indeed was the stated expectation of workshop participants.



In terms of wildlife objectives, Bill's research concluded that more focused criteria are still needed, and these must be supported by a detailed wildlife monitoring plan that can measure relevant changes. Monitoring should include the size of the zone-of-influence and the aim should be to reduce the ZOI over time. Diavik disagreed with this recommendation, as ZOI is not mentioned explicitly in the Closure Objectives; however many of the wildlife objectives take a non-degradation approach, which implies reducing zone-of-influence in order to return to pre-development conditions. Bill also suggested that Diavik develop a detailed response plan outlining how it will respond if objectives are not being met.

Reflections from Break-out Groups evaluating closure criteria

After hearing the perspective of the consultants, workshop participants were split into small groups and asked to evaluate for themselves to what extent they felt Diavik was on-track with achieving its closure objectives through its proposed closure plans and criteria. The following is a summary of the results from those break-out group discussions:

Closure Objectives where Diavik is somewhat on-track

- ❖ Plans to reduce dust (SW3 and SW4) are expected to be successful.
- ❖ Aspects of SW8 (no increased predation) may be on track – since Diavik's plan is to avoid blocking movement; ramps are supposed to make sure caribou cannot get trapped on them.
- ❖ Aspects of SW9 (restore landscape topography and vegetation) are on track – Diavik plans to add some boulders and ensure no sharp angles.
- ❖ Aspects of SW10 (ensure safe passage for caribou) should be achievable – ramps are expected to ensure safe passage.



Closure Objectives where Diavik is not on-track

Site Wide Objectives (SW)

- ❖ SW2 (no adverse effects from surface runoff and seepage water quality) - long term monitoring needs to include new monitoring sites (beyond existing AEMP sites) – these should include creeks which flow into Lac de Gras throughout the site.
- ❖ SW2 - Water quality criteria are at least being worked on, but some criteria still need work, and may not be protective enough to be acceptable (eg. SSRBCC).

- ❖ SW5 (re-vegetation targeted to priority areas) – this is not mentioned in NCRP final closure plan or approved version of ICRP.
- ❖ SW8 (no increased opportunities for predation of caribou) – DDMI should use TK and results from other sites to help with design.
- ❖ SW9 (landscape topography and vegetation should match surrounding area) - Restoring landscape is off-track – current plan for re-vegetation does not address the objective.
- ❖ SW11 (mine areas are physically stable and safe for use by people and wildlife) – no one has yet sorted out what exactly ‘safe for people and wildlife’ would look like.



Open Pit, Underground and Dike Areas (M)

- ❖ M1 (water quality in flooded pit and dike area) – there is uncertainty regarding the future water quality in the pit.
- ❖ M2 (pit and dike closure do not have adverse effects on aquatic life or water uses) – long-term plans for maintaining dikes are unknown. Long-term monitoring is required.
- ❖ M3 (enhanced lake-wide fish habitat) – still need to see results of fish habitat compensation research/activities.

Processed Kimberlite Containment Area (P)

- ❖ P1 (no adverse effects) – concern that the current plan for the PKC area could affect animals.
- ❖ P2 (physically stable) - concern about long-term stability of the PKC facility with climate warming; need to have a plan for monitoring and responding to potential thaw

North Inlet (NI)

- ❖ North Inlet – all objectives are difficult to assess because of uncertainty in the closure plan.
- ❖ More work is needed to determine if it can be re-connected to Lac de Gras.

Conclusion and Summary of Recommendations

An elder participant reminded the group, during the presentation and discussion about closure objectives and criteria, of the need to keep the bigger picture in mind. The closure plan needs to consider ‘forever’, not just 100 years from now.

For him, the most relevant questions are:

- Will caribou return? The mine was built in the middle of the migration route.

- Who benefitted from the mine? (and have benefits targets such as employment been realized?) Have all of the promises been fulfilled?
- Can the land be restored to the way it was before?
- Will their food be healthy in the future?
- Will water quality in Lac de Gras stay pristine, and how will it affect the watershed downstream, since it flows into the Coppermine River all the way to Kugluktuk?

Workshop participants acknowledged that the site will never be the same as it was before.

It became clear during the workshop that DDMI's proposed closure plans do not match participants' vision for the restoration of plant communities, and there are remaining questions and concerns about whether contaminant levels will be minimized and whether there will be adequate ramps for wildlife to pass over. In addition, much more attention must be paid to long-term monitoring plans and funding. These issues should be addressed during more comprehensive community engagement.

The following is a summary of recommendations that were generally supported by workshop participants:

1. Communication and Community Engagement

1a) Who to engage - DDMI should engage more fully with Aboriginal government organizations and leadership/representatives about proposed closure plans, as well as elders' councils, youth, and the community at large.

1b) How to engage – In accordance with best practices, DDMI should conduct longer sessions with communities specifically focused on closure, and encourage more meaningful dialogue with the help of a facilitator chosen by the community.

1c) How to engage - A diorama or 3D model of the entire site (particularly the NCRP and PKC facility) would be a useful tool during community engagement sessions.

1d) Results of engagement – DDMI should present a clear summary to communities as to how community input has been incorporated or considered in closure planning.

1e) Record of engagement – DDMI should follow WLWB requirements in preparing a Record of Engagement.

1f) Collaboration – DDMI should pursue opportunities for collaboration with TK Panels or research projects associated with the other diamond mines in the area.

1g) EMAB Board responsibilities – EMAB Board members should update the members of their own communities and Aboriginal Parties on EMAB activities and bring back any community concerns for board discussion. Community members to report concerns to their own governments who appoint the community's EMAB representative.

2. Future site visits

2a) Plan a longer site tour with more opportunities to leave the bus. Include opportunities to walk on the waste rock pile, get closer to the pits, and examine the re-vegetation plots in more detail.

2b) Plan another site tour in spring and/or summer.

3. Re-vegetation

3a) In order for the site to be “friendly” for plant growth, fine material that holds water must be laid down. Participants suggested the use of fine PK as a substrate.

3b) Active re-vegetation efforts using seeds from wild local plants should take place, including on the North Country Rock Pile.

3c) The PKC facility should be at least partially revegetated, perhaps around the edges, so that it would become closer to pre-development conditions.

3d) Infrastructure routes (eg. roads and laydowns) could be a prime opportunity for re-vegetation since finer materials already exist as a base.

3e) Given that Ekati and Diavik are located so close to one another, and Ekati seems to be having some success in re-vegetating its rockpiles, Ekati and Diavik should collaborate in sharing results of their respective re-vegetation research.

4. Wildlife

4a) In order to avoid increased predation (Site Wide Objective #8) – there should not be barriers or holes on the landscape that could trap wildlife.

4b) More work is needed on developing effective criteria for SW11 (site is “safe for use by people and wildlife”). Diavik should use TK and results from research on other sites in order to establish these criteria.

4c) Ramps should be built with gentle, smooth slopes over any steep areas or edges of roads.

5. Water quality criteria

5a) Aquatic Effects Benchmarks are preferred closure criteria over the SSRBC since the expectation is that water quality in Lac de Gras should return as closely as possible to pre-development conditions after closure.

5b) New water monitoring locations for the closure period will need to be chosen with input from the TK Panel, community members, and EMAB. These should include creeks which flow into Lac de Gras throughout the lake.

6. Long-term maintenance and monitoring

6a) A program should be established for long-term community-based monitoring – as a collaborative effort between DDMI, multiple levels of government and the affected communities.

6b) The GNWT, in collaboration with regulatory boards and Aboriginal governments, should establish financial mechanisms to ensure neither governments nor taxpayers will be responsible for long-term mine closure costs.

6c) The waste rock pile should be closely monitored during and after closure to ensure the cover and freezing are functioning as predicted. It could take fifty years or more to begin to detect any seepage from the pile.

6d) A plan should be established for long-term monitoring of the PKC facility, including any potential thaw and proper functioning of the spillway. The plan should include what response actions will be taken should problems be detected.

6e) DDMI should leave some accommodation facilities on site for future monitoring and educational activities.



Appendix A. List of Workshop Participants

Board Members

Napoleon Mackenzie (Chair) – YKDFN
Arnold Enge – North Slave Métis Alliance (NSMA)
Doris Enzoë – LKDFN (alternate)
Jack Kaniak - KIA
Gord Macdonald – Diavik Diamond Mine Inc.
Sean Richardson – Tlicho Government

Community Participants

Roger Catholique – LKDFN (youth)
Brian Sanderson – LKDFN
Charlie Evaglok - KIA
James Algona - KIA
Kathy Arden – NSMA
Lawrence Mercredi – NSMA
Richard Weyallon – Tlicho Government
Jonas Sangris – YKDFN
Alex Power – YKDFN
Shin Shiga - NSMA

Other

Rebecca Alty – Diavik (first morning only)
Marc Casas – IEMA (observer – first day only)

Presenters / Resource People

Randy Knapp – consultant
Bill Slater – consultant
Patty Ewaschuk – WLWB
Tracy Covey – GNWT Lands

Staff

John McCullum – EMAB staff
Allison Rodvang – EMAB staff

Facilitator - Shauna Morgan

Appendix B: Revised Workshop Agenda

REVISED Agenda (Feb 15) – EMAB Closure Workshop – Feb 14-16, 2017
2-day workshop plus site visit

Workshop objectives:

- **Learn about closure**
- **Get feedback on issues and concerns, particularly from community participants**
- **Plan for next steps on input into closure decision-making**

Day 1 (Tues Feb 14/17)

Gather at Champagne Room

9:00 -9:15 am

- Opening Prayer and Introductions; welcome from EMAB
- Go over objectives for workshop

9:15–10:00 am

- Presentation with Q&A: Overview of current Diavik closure plan (Gord Macdonald)
 - *Review maps and individual closure components*
 - *Note closure commitments made during environmental assessment process*
 - *Diavik’s interactive model*

10:00-10:30 am

- Discussion about things to watch for on site
 - *Comments by GNWT Lands Inspector*
-

1:00-1:30 pm

- Review community involvement to date (John McCullum, Board members, TK Panel member – Kathy Arden)
- Work and role of TK Panel

1:30 – 2:15 pm

- Breakout Group Discussions (3 groups) – Strengthening understanding of Diavik closure
 - *Do you have any questions about the site maps – prior to development, current, post-closure?*
 - *Which parts of the current closure plan do you find difficult to understand? What could help you and your community to better understand the plan?*

2:15 – 2:30 pm

- Review Breakout Group Results- *Strengthening understanding of Diavik closure*

Day 1 (cont...)

2:30–3:15 pm

- Presentations with Q&A: Closure objectives and criteria (Bill Slater)
 - *What are closure criteria and why do they matter?*
 - *How can we tell whether closure criteria are good enough?*
 - *Taking a look at Diavik's proposed closure criteria*
 - *Non-degradation and use-protection approaches – which kinds of criteria create more risk, and when are each appropriate?*

3:15 – 3:30 pm Break

3:30 – 4:15 pm

- Breakout Group Discussions (3 groups): Objectives and criteria for Diavik closure
 - *What kinds of uses by wildlife and community members do you envision for this site in the future?*
 - *How can we encourage wildlife and people to return to this site?*
 - *Where do you think revegetation should take place?*
 - *What do you think are the strengths in the current plan?*
 - *What do you think are the weaknesses in the current plan? What could be done to improve it?*
 - *What do you think the site should be like after closure activities are complete?*

4:15 – 4:30 pm

- Review Breakout Group Results from Day 2 – Objectives and criteria for Diavik closure

4:30 – 4:45 pm Wrap-up; Plan for Day 2

Day 2 (Wed Feb 15/17)

9:15 am

- Presentation with Q&A: Overview of mine closure practices (Randy Knapp)
 - typical closure components as applicable to Diavik
 - areas that tend to cause problems

10:30 am

- Presentation with Q&A: Long-term Issues with Closure (Randy Knapp)
 - Ongoing / long-term issues with closure and unknowns – what happens if...?
 - Monitoring – how will we know if problems occur? How long do we continue monitoring?
 - Security deposits –when is it given back to company? How will long-term problems be paid for?

11:30 am

- Breakout Group Discussions (3 groups): How to Address Long-Term Issues
 - What aspects of long-term issues do you find most difficult to understand? What could help you and your community better understand?
 - What is your vision for the Diavik site in the future?
 - What are your expectations for long-term monitoring of the Diavik site?

Noon – 1pm Lunch (not provided)

1:00-2:00 pm

- Breakout Group Discussions (3 groups): Evaluating how on-track Diavik’s closure criteria are

2:30- 3:00 pm

- Review Breakout Group Results

3:30 – 4:30 pm

- Presentation with Q&A: Closure regulation / guidelines in NWT - Wek’eezhii Land and Water Board
 - *Which agencies in the NWT make decisions about what?*
 - *Who can give input into those decisions, how, when?*
 - *How are security deposits calculated and held?*

4:30 - 5:00 pm

- Review Day 2 and get participant feedback
- Go over plan and objectives for Day 3

Day 3 – Thurs Feb 16/17

7:30 am – MEET AT G&G

8:00 am – Leave for Diavik site

9 am -2 pm - Tour of Diavik site

3 pm – Return to Yellowknife

3:30 pm

- Reflections and observations from site visit

3:15 – 4:30 pm

- Summary and Recommendations
 - *For each closure component*
 - *For research*
 - *For community involvement*

Lead Contacts

John McCullum
Executive Director
Environmental Monitoring Advisory Board
emab1@northwestel.net

Shauna Morgan
Facilitator, Yellowknife
Shauna.yk@gmail.com