ENVIRONMENTAL MONITORING ADVISORY BOARD FOR THE DIAVIK MINE

Working with *the* People *for the* Environment

ENVIRONMENTAL MONITORING ADVISORY BOARD
FOR THE DIAVIK PROJECT

ANNUAL REPORT 2020 2021

Photo courtesy of Diavik Diamond Mine

ENVIRONMENTAL MONITORING ADVISORY BOARD FOR THE DIAVIK MINE

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REPORT CARD ON THE ENVIRONMENT

Photo courtesy of Diavik Diamond Mine

PURPOSE

This report card has three purposes:

- Set out broad changes in the environment at Diavik since the mine started.
- Compare changes to predictions Diavik made during the Environmental Assessment of the project.
- Assess how well Diavik and the regulators are managing the changes.

WATER

[see pages 19-24 for more details]

The main way Diavik monitors water and fish in Lac de Gras (LdG) is through the Aquatic Effects Monitoring Program (AEMP). Water quality at Diavik is within the Water Licence limits, and within the predictions Diavik made.

Highlights for 2020/2021:

- Lac de Gras continues to experience nutrient enrichment as a result of Diavik's activities.
  - › Nutrient enrichment is caused by an increase in phosphorus and nitrogen in Diavik's effluent discharge into LdG.
  - › More nutrients in fresh water leads to an increase in chlorophyll *a*, and feeds the growth of algae, which can be harmful to fresh water ecosystems.
- Nutrient enrichment is variable in Lac de Gras.
  - › 44% of the lake in 2016, 26% in 2017, 15% in 2018, 0.1% in 2019, and 22% in 2020.
    - » Predicted extent was 20% of Lac de Gras.
  - › Diavik studied whether dust from the mine adds to nutrient enrichment, and found that it didn't make much difference.
  - › EMAB would like Diavik to take samples from all areas of LdG every year. Right now Diavik only samples the far-field every three years.

FISH AND AQUATIC LIFE

[see pages 19-24 for more details]

There are many kinds of aquatic life in LdG. Aquatic life can be useful indicators of aquatic health. They are also food for fish. Diavik measures plankton and benthics to assess aquatic health. Monitoring results for fish and other aquatic life are within water licence limits, and predictions.

Highlights for 2020/2021:

- Diavik measures plankton biomass (microscopic plants and animals that live in the water) and benthic invertebrates (bugs that live on the bottom of the lake).
  - Diavik monitors amounts and types of plankton and benthic invertebrates because they are good indicators of ecosystem health.
  - There are different types of plankton near the mine compared to farther away, as well as a higher number of benthic invertebrates, because of increased nutrient levels where the mine discharges treated water.
  - Fish eat benthics, so changes in the number and type of benthics can affect fish populations.
- EMAB conducted a special analysis of all Diavik's Lake Trout Mercury data, and found:
  - Different data collection methods were used at different times.
  - Different labs were used to do analysis. Each lab used different analytical methods.
  - The baseline data, before the mine was built, are not comparable to any other mercury data for Lake Trout.
  - EMAB's view is that Diavik should begin monitoring mercury levels in Lake Trout again.
  - A recent GNWT study found mercury in Diavik's effluent.

WILDLIFE

[see pages 42-46 for more details]

Diavik monitors caribou, grizzly bear, wolverine, raptors and the vegetation they feed on through a Wildlife Monitoring Program (WMP). In general the mine's effects on these animals and plants are within the predictions Diavik made during the environmental assessment. While the Bathurst caribou population has declined from 186,000 animals in 2003 to 8,200 in 2018 the contribution of the mine to this drop remains unknown.

Highlights for 2020/2021:

- Diavik (and other mines) have a Zone of Influence (ZOI) that caribou tend to avoid. A ZOI would include disturbances such as traffic, and loud noises.
- There are much fewer caribou around the mine than in the past. This is likely because the number of caribou has declined, and the animals stay further north than they used to.
- Diavik says there is no caribou ZOI around the mine.
  - EMAB and GNWT say Diavik's analysis is flawed. Previous scientific studies that use aerial survey and satellite collar data show a ZOI around the mine of about 14 km.
  - EMAB recommended that Diavik use more advanced methods for ZOI surveys, such as reinstating the aerial surveys, using satellite collar data, or drones.
- There is now an eight year gap in caribou behavioural data analysis because Diavik is struggling to collect enough data.
  - There are less caribou around the mine, and they tend to be in the area in the winter when it is too cold to be safe for Diavik staff to observe them.
- Diavik has proposed ending grizzly bear and wolverine hair snagging programs because the populations seem stable.


Photo courtesy of Diavik Diamond Mine

  - EMAB recommended Diavik work with the GNWT to develop triggers for future hair snagging programs to make sure populations remain stable.
- Diavik submitted a new Wildlife Management and Monitoring Program for review by EMAB, GNWT and communities.
  - EMAB recommended Diavik continue monitoring the ZOI for caribou, and find ways to make it smaller.
  - EMAB also recommended continuing the grizzly and wolverine hair snagging.

AIR QUALITY

[see pages 47-49 for more details]

Diavik monitors dust that falls to the ground through its Environmental Air Quality Monitoring Program (EAQMP). The results are generally within predictions but EMAB has concerns about the way the monitoring is being done, and recent changes.

Highlights for 2020/2021:

- Total Suspended Particulate (TSP) monitoring was removed from the EAQMP. TSP measures particles that are in the air.
  - TSP comes from sources like exhaust from mine operations, and dust particles produced from blasting rock and road traffic.
- EMAB disagrees with the changes Diavik made, and submitted a request for the Minister of ENR to review Diavik's EAQMP.
  - ENR has committed to doing a review by March 2022.

CLOSURE PLANS

[see pages 31-41 for more details]

Diavik submitted a revised closure plan, ICRP Version 4.1, in December 2019. This plan is significantly improved over ICRP Version 4.0 and addresses many of the concerns EMAB raised in our previous review.

ICRP 4.1 includes much more detail, allowing for EMAB to do a useful review and develop comments and recommendations for the WLWB. The Closure Plan is supposed to be finalized by 2022. Overall, ICRP Ver. 4.1 is an improvement from previous versions although EMAB still has many concerns. The WLWB has approved the ICRP Ver. 4.1 while requiring many significant changes.

Highlights from 2020/2021:

- Revegetation – Diavik is proposing to revegetate about 18% of the site using native grasses. Vegetation covered about 70% of the site before development; EMAB wants revegetation to cover that same amount.
  - Diavik had a study of revegetation done by University of Alberta, but does not plan to follow the study's recommendations. The WLWB directed Diavik clarify the purpose of revegetation and develop closure criteria for success, as well as explaining how TK was used. Diavik planned to submit a revegetation design by March/April 2021, but has not.
- Mixing Zones - Diavik is proposing 15 mixing zones covering over 2 square kilometers. This is a big improvement over the 25 square km zone they proposed in the previous plan. These zones are areas

where contaminated runoff and seepage from the mine flow into LdG. Diavik doesn't have to meet aquatic health guidelines inside these zones. EMAB wants the mixing zones to be smaller, and to be thoroughly monitored.
  - The WLWB has not approved Diavik's mixing zone proposal. They have given Diavik guidance to help finalize the plans for mixing zones.

- Effectiveness of the cover on the North Waste Rock Pile is still uncertain, particularly when the effects of climate change are considered. Sampling shows that much of the cover does not meet moisture content requirements. If the cover thaws it could result in contaminated runoff.
  - WLWB directed Diavik to say how they will study the effect of climate change on the cover, and to monitor the cover for a longer time.
- Wildlife Safety – Diavik should plan to make sure wildlife cannot get hurt walking around the mine, and that the vegetation and water are safe for wildlife to eat and drink. EMAB has concerns about:
  - Diavik's plan to leave some large areas of the rockpiles steep and rocky.
  - Insufficient criteria for water safety for wildlife and humans.
  - A lack of criteria for contamination of vegetation. The plan should be revised to address these inadequacies.
  - WLWB directed Diavik to do more work on identifying possible hazards to wildlife.
- Processed Kimberlite Containment Facility (PKC) or tailings pond – the proposed plan to close the PKC has many risks and uncertainties. Diavik is still deciding whether a wet cover or dry cover will be more likely to succeed. Diavik said they would submit a PKC Closure Design Plan in early 2021 that EMAB hoped would address the current concerns. Diavik did not submit the plan.
  - WLWB gave Diavik detailed direction on issues the design must address.
- Contaminated soil – Diavik wants to bury any soil that doesn't meet guidelines. EMAB wants Diavik to begin treating any contaminated soil as soon as possible and take if offsite if it doesn't meet agricultural standards.
  - WLWB did not approve disposing of hydrocarbon-contaminated soil that doesn't meet guidelines.
- Closure Criteria – these are critical to successful closure. Diavik has improved many of its proposed criteria, but some are still not adequate.
  - WLWB has approved about ¼ of the proposed criteria.
- Security Estimate – Diavik has submitted an updated security estimate. There are still several big uncertainties where the security is likely not high enough, including the NWRSA, PKC, long term monitoring including TK-based monitoring, and the possible need for long-term water treatment.
  - WLWB gave Diavik several directives about improving the security estimate.
- Long-term maintenance and monitoring – EMAB expects that parts of the mine will need a very long time before we can be sure there will not be problems. Diavik has extended the length of its monitoring program after closure, but it may not be long enough.
  - WLWB directed Diavik to include a contingency for longer-term monitoring.
- Traditional Knowledge (TK) – Diavik has committed to developing a TK-based monitoring program. Diavik includes input from a TK Panel in its closure plan. The Panel includes members from each Aboriginal Party to the EA. EMAB has observed the Panel's meetings. EMAB reviewed the Panel's recommendations to see how well they have been included in the plan.
  - WLWB directed Diavik to provide details on the TK monitoring program and how Diavik consulted with communities. WLWB also directed Diavik to show how it included TK Panel recommendations in the ICRP.

ABOUT US

TK Panel members and Diavik staff on a tour of the Diavik mine site.

EMAB Photo

HOW EMAB WAS FORMED

The Environmental Monitoring Advisory Board (EMAB or the Board) exists because of the Environmental Agreement for the Diavik Diamond Mine. The Environmental Agreement came into effect in March 2000. It was signed by five Aboriginal Parties, the Federal and Territorial governments and Diavik. EMAB is the environmental watchdog organization created by the Environmental Agreement. EMAB makes sure the environment around Diavik remains protected. The Environmental Agreement states EMAB will work independently and at arm's length from Diavik and the other Parties who signed the agreement.

WHY THE ENVIRONMENTAL AGREEMENT IS IMPORTANT

The Environmental Agreement is a legal contract between the Parties. It says what Diavik and the Parties must do to minimize environmental effects of the mine. The Environmental Agreement says Diavik must meaningfully involve the Aboriginal Parties in environmental monitoring at Diavik mine. This includes the use of Traditional Knowledge and Inuit Qaujimajatuqangit (TK/IQ). The Environmental Agreement sets out EMAB's mandate.

WHAT EMAB DOES

EMAB was set up in 2001 and is in its 20th year of operations. EMAB's mandate covers four main areas:

1. Oversight and Monitoring
2. Aboriginal and Community Involvement
3. Communications
4. Leadership and Governance

WHO WE ARE

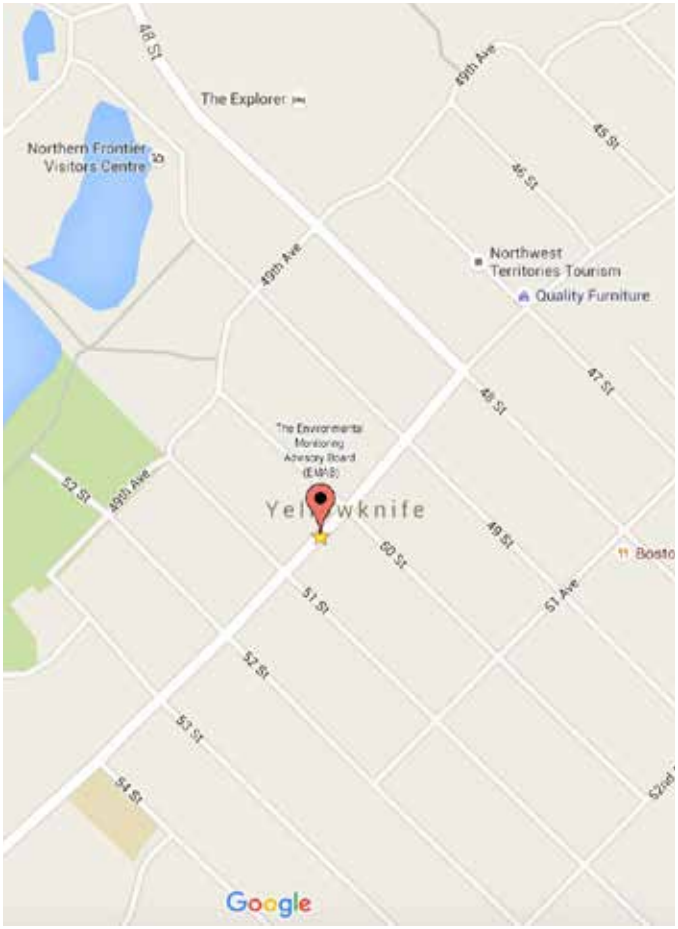
There are eight Parties to the Environmental Agreement. Each Party appoints one Director to the Board. EMAB has two staff members:

- Executive Director
- Environmental Specialist

Since December of 2013, the GNWT and the Government of Canada have taken steps to amend the Environmental Agreement as a result of the Devolution process. Their plan is for Canada to remain a Party but with many of Canada's responsibilities transferred to the GNWT. This is an ongoing process. Canada has delegated its authority regarding the Environmental Agreement to the GNWT in the meantime.

WHERE WE ARE LOCATED

Our office is in downtown Yellowknife at 5006 Franklin Ave, suite 204 on the 2nd floor of the 50/50 Mini Mall.



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Website: **www.emab.ca**

Facebook: **facebook.com/EMAB2015**

CHAIR'S MESSAGE

EMAB is the watchdog for the environment at the Diavik mine. Our job is to make sure the mine, and the regulators, are doing their best to protect the water, animals, fish and air. We also keep communities informed about what EMAB is doing and what is going on at the mine.

Board members are appointed by each of their Parties to help protect the environment around the mine.

EMAB goes over Diavik's reports on the effects they are having on the environment to make sure we understand any changes the mine has caused, and make recommendations about ways to improve the monitoring. We look at Diavik's plans for protecting the environment, and for closing the mine, and make recommendations on how to make them better. We

talk to our community members, tell them what we've learned about the mine's effects, and future plans, and bring their concerns back to the other Board members.

The COVID-19 pandemic affected EMAB's operations again this year. We wanted to make sure we kept everyone safe and didn't contribute to any possible spread of the virus. I told EMAB staff they could work from home, and put all community updates on hold. All our Board meetings were held by teleconference or as a combination of face-to-face meetings and teleconference, to accommodate Board member needs while maintaining social distancing and meeting COVID-19 restrictions and guidance.

Diavik decided that the TK Panel would not meet this year due to concerns about possibly exposing elders to COVID-19. EMAB felt this was a sensible decision.

EMAB has new Board members this year that I would like to welcome: Marc Whitford (NSMA) and Ngeta Kabiri (GNWT) were appointed to the Board this year. I would also like to recognize the contributions of Arnold Enge and Julian Kanigan, our outgoing Board members. Arnold sat on the Board for eight years including two years as Chair and one as Secretary-Treasurer. Julian was on the Board for five years and was Secretary-Treasurer for four of those years.

EMAB is now two years into our 2019-24 Action Plan. We will continue to focus on technical reviews of plans and reports in our key priority areas while working with communities to keep them informed of EMAB's role, activities and key findings and recommendations.

Diavik plans to keep mining for another four years, then start closing the mine in 2025. EMAB has been paying close attention to Diavik's closure plans. They submitted a very detailed updated closure plan this year, and a follow-up discussion paper on the effect of the mine on water quality around the East Island after the mine is closed. We hear from communities that they want the minesite to be returned as closely as possible to the way it was before the mine started, and we used this approach to guide our recommendations. We continue to talk with Diavik about involving people from local communities in monitoring the environment after closure, and recommend communities contact Diavik directly about this. We have been pushing to make sure that monitoring after closure will include Traditional Knowledge/Inuit Qaujimajatuqangit.

This will be a busy year coming up for EMAB as the mine gets closer to closing. We will continue to work with Affected Communities to keep you informed and involved in helping to protect the environment at Diavik. Your views and concerns are very important to our work and I encourage anyone with ideas or concerns to talk to your local Board member or contact EMAB.

Marsi Cho
Charlie Catholique,
Chair

WHAT HAVE WE DONE THIS YEAR?


EMAB Photo

EMAB works with the people of the Affected Communities to help protect the environment around the Diavik mine.

This is a summary of our activities in 2020-21, with more detail on the following pages. Readers can also visit our website: www.emab.ca.

COVID-19

The COVID-19 pandemic had a significant effect on EMAB's activities in 2020-21, and this will continue as the virus and response evolve. EMAB's goal continues to be doing our best to follow the directives and guidance of the GNWT and Government of Canada, and particularly the NWT Chief Public Health Officer. We want to make sure our staff, our Board members, members of our communities and others we work with are safe and that we are not exposing them to the virus. This affects our operations, and particularly our Board meetings and community updates.

GOVERNANCE:

The Board continues to follow our Action Plan for 2019-24. EMAB's emphasis continues on doing technical reviews of Diavik's plans and reports, and making them accessible, particularly to Aboriginal Parties and Affected Communities. We provide these to the Parties for their information and use in making their own interventions to regulators. The plan also recognizes the changed role of the Traditional Knowledge Panel, and EMAB's role in working with the panel. It highlights the need for tracking collection and use of TK/IQ by Diavik.

COMMUNITY INVOLVEMENT:

EMAB did not hold any community update meetings this year due to COVID-19. Our Board members from Affected Communities continue in their role of communicating with communities.

OPERATIONS:

EMAB spent $518,564 in 2020-21 of a budget of $626,660. The difference will be returned to Diavik, less any amount rolled over to 2021-22.

REVIEWING REPORTS:

In 2020-21 EMAB reviewed 12 reports and plans from Diavik, including documents related to water licence applications; most of them were also reviewed by our technical experts. These reports are required by the water licence, fisheries authorizations and the Environmental Agreement. EMAB focuses on reports that are in our priority areas (water, air, wildlife, closure and TK/IQ).

One of our main activities this year was to make recommendations about Diavik's application to put processed kimberlite into the open pits. This year Mackenzie Valley Environmental Impact Review Board (MVEIRB) completed an environmental assessment of the project. The next step was for the Wek'èezhìı Land and Water Board (WLWB) to hold hearings to amend Diavik's water licence. We made an intervention to the WLWB explaining our concerns about the project and making recommendations. Our main concerns were about effects on water quality, on fish, and on Lac de Gras. We made recommendations about setting up an Independent Review Panel to review Diavik's water quality modelling. We also reviewed the draft water licence for the project. Diavik expects to start placing PK in the A418 pit late in 2022.

Diavik had also applied to amend its water licence to allow underground mining of the A21 pit. EMAB reviewed the application and did not have any major concerns, since Diavik already has good experience underground mining at the A154 and A418 pits. The amended water licence was approved in October 2020.


EMAB Photo

Another major activity was EMAB's review of the new closure plan, including expert technical reviews and Diavik's use of Traditional Knowledge/Inuit Qaujimajatuqangit, especially the recommendations from the TK Panel.

COMMUNICATIONS:

EMAB regularly updated our website. We circulated our annual report in March and developed a two-page annual report summary. People can comment on reports or EMAB recommendations through our Facebook page: facebook.com/EMAB2015.

BOARD MEETINGS:

The Board met ten times in 2020-21: eight meetings as a combination of face-to-face and conference call to respect COVID-19 restrictions, and two conference calls on specific issues. Board members were not able to visit the mine due to COVID-19 restrictions.

The Board membership changed during 2020-21. New Board members were appointed by NSMA and TG, and the Government of Canada seat became vacant.

WHAT DO WE DO?

REVIEW Diavik's monitoring programs and reports with the help of technical experts.

PROVIDE comments and recommendations to Diavik, the regulators and Parties to the Environmental Agreement.

EVALUATE Diavik and regulators to make sure commitments are kept.

PARTICIPATE in the regulatory process as a reviewer and intervenor.

ADDRESS regulatory gaps including wildlife management, air quality and securities.

COMMUNICATE through workshops, community information sessions, our website and annual report.

ASSESS Diavik's use of TK/IQ in environmental monitoring program design.

SUPPORT participation of Aboriginal Peoples in monitoring Diavik.

LISTEN to community concerns and bring those forward to Diavik.

WHO ARE WE?

There are eight parties to the Environmental Agreement. Each party appoints a member to the Board.

Charlie Catholique, Chair
Łutselk'e Dene First Nation

Jack Kaniak, Vice Chair
Kitikmeot Inuit Association

Violet Camsell-Blondin, Secretary Treasurer
Tłı̨chǫ Government

Ngeta Kabiri
Government of the Northwest Territories

Marc Whitford
North Slave Métis Alliance

Gord Macdonald
Diavik Diamond Mines (2012) Inc.

Sarah Gillis
Yellowknives Dene First Nation

Vacant – Canada (Dinah Elliott resigned in June 2020)

Ngeta Kabiri replaced Julian Kanigan in October 2020 | Marc Whitford replaced Arnold Enge in July 2020

ENVIRONMENTAL SETTING OF DIAVIK MINE

Lac de Gras (LdG) is a large lake, 60 kilometers in length, with an average width of 16 kilometers and 740 kilometers of shoreline. This lake is located roughly in the center of the Slave Geological Province, north of the tree line, and in Canada's Southern Arctic ecozone. The area is cold and dry. LdG is the headwaters of the Coppermine River, which flows 520 kilometers north to the Arctic Ocean. Typical of arctic lakes, it is cold with long ice-covered periods and with little food for fish and other creatures. Fish species include Lake Trout, Cisco, Round Whitefish, Arctic Grayling and Burbot. Lac de Gras is also near the center of the Bathurst caribou herd range. The Bathurst caribou population has declined considerably from 186,000 in 2003 to 8,200 in 2018 (most recent GNWT numbers). Since 2016 there has been a noticeable increase in Beverly/Ahiak caribou in the LdG area in the winter and spring. The Beverly herd has also declined from 136,000 in 2011 to 103,000 in 2018. Many other animals include the LdG area in their home ranges, such as grizzly bears, wolves, wolverines, smaller mammals, migratory birds and waterfowl.

Photo courtesy of Diavik Diamond Mine

DIAVIK NOW

(courtesy of Diavik)

Diavik at a glance

- **Four ore bodies: A21, A154 South, A154 North, and A418**
- **Spending (2000 to 2020): C $8.9 billion ($6.4 billion Northern, of which $3.3 billion with Indigenous firms)**
- **Operations workforce (2020): 1,100 employees (486 Northerners)**
- **2020 rough diamond production: 6.2 million carats**
- **Reserves: 9.0 million tonnes at 2.1 carats per tonne (31 December 2020)**

INVOLVING AND SUPPORTING COMMUNITIES


EMAB Photo

Diavik TK Panel Meeting.

EMAB Board members appointed by Aboriginal Parties are a key link between the Board and Affected Communities. They are able to update community members on EMAB activities and report to the Board on concerns raised by the community. In the past EMAB has set aside a budget to support members to update their communities, but with cuts to EMAB's overall budget and a lack of uptake by Board members, this community consultation budget is now minimal.

EMAB reviewed 12 reports and plans in 2020-21. All these reviews were forwarded to the Parties to the Environmental Agreement and the land/environment managers for each Party. Technical reviews always include a plain-language summary to make them more useful for general readers. EMAB also makes these reports available on our website.

EMAB's community involvement was affected by the COVID-19 pandemic in a number of ways:

- Directives from the Chief Public Health Officer.
- Board decisions regarding actions to assure the safety of Board members, community members and staff with respect to COVID-19 exposure.
- Respect for concerns of community leadership regarding potential exposure.

Due to COVID-19 restrictions and concerns EMAB decided not to hold community updates in 2020-21. We hope that with vaccines and easing restrictions we will be able to hold updates in communities in 2021-22.

Following the finalization of EMAB's Action Plan for 2019-24, EMAB added some additional actions to provide more information to communities. In particular EMAB now provides a 1-2 page summary of each Board meeting to the leadership of each Aboriginal Party. EMAB has also developed a 2-page annual report summary which is available on our website and provided to community members as a brochure.

COMMUNITY INVOLVEMENT IN POST-CLOSURE MONITORING

EMAB met with Diavik staff in June 2019 about ways for Aboriginal people and communities to be involved in monitoring the environment at the mine during and after closure. We have requested that Diavik provide information on qualifications the company will require. At that time Diavik told the Board that they are in the planning

EMAB Photo

TK Panel inspecting mine site.

phase for post-closure monitoring, and expected this would be complete by end of 2021. EMAB noted that it will be important to have training programs ready, to ensure interested people meet qualifications before the start of hiring. Diavik also noted that they could look at contracting for monitoring as an option.

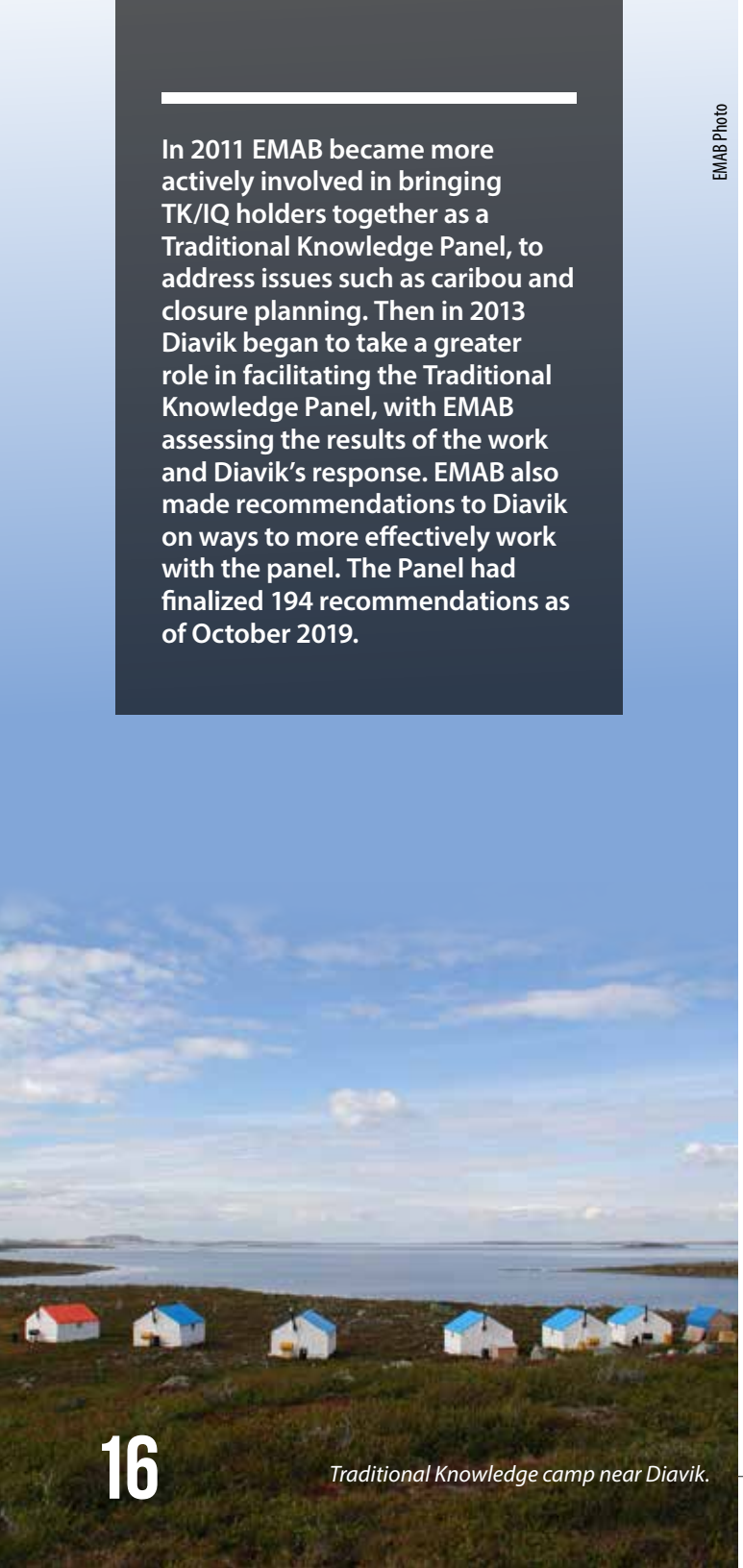
Recently Diavik told EMAB that they plan to work directly with each community on community involvement in monitoring, and that qualifications vary for each position. Diavik wants communities to contact them if their members are interested in doing post-closure monitoring. EMAB has a mandate to make recommendations about participation of communities/community members in training and environmental monitoring at Diavik, and plans to follow up to get more information on Diavik's plans, to support possible recommendations.

TRADITIONAL KNOWLEDGE / INUIT QAUJIMAJATUQANGIT (TK/IQ)

One of EMAB's objectives is to assess the use of TK/IQ in Diavik's monitoring programs. We also request that Diavik provide an annual update on use of TK/IQ at the mine. Staying aware of Diavik's use of TK/IQ in environmental management at the mine is an EMAB priority. Ensuring that involvement of community members is meaningful is also a priority. EMAB has tried various ways to encourage Diavik to take more action to meaningfully involve Indigenous groups. Meaningful involvement of Indigenous groups is an EA commitment by all Parties.

In 2011 EMAB became more actively involved in bringing TK/IQ holders together as a Traditional Knowledge Panel, to address issues such as caribou and closure planning. Then in 2013 Diavik began to take a greater role in facilitating the Traditional Knowledge Panel, with EMAB assessing the results of the work and Diavik's response. EMAB also made recommendations to Diavik on ways to more effectively work with the panel. The Panel had finalized 194 recommendations as of October 2019.

EMAB Photo



Traditional Knowledge camp near Diavik.

EMAB is pleased to see that Diavik has made efforts to include TK/IQ in closure planning through the TK Panel. Panel recommendations, and Diavik's responses, are included as part of Diavik's closure planning reports and can be found on the EMAB website: www.emab.ca. Full TK Panel reports can also be found on EMAB's website. EMAB reviews of Diavik's closure planning includes assessing how Diavik has incorporated TK Panel recommendations in its closure planning and designs (see Closure section).

TK PANEL IN 2020

Diavik cancelled TK Panel meetings for 2020 due to potential exposure of participants to COVID-19. Diavik has planned a TK Panel meeting at its TK camp in late summer 2021.

TK PANEL RECOMMENDATIONS REVIEW

EMAB does an ongoing review of Diavik's responses to the Panel recommendations. EMAB has examined all of the Panel recommendations to 2019, and Diavik responses, and assessed whether or not Diavik accepted the recommendation.

In general it appears Diavik accepted a little over half of the Panel's recommendations, sometimes with modifications. In some cases, it is unclear how Diavik has accepted, rejected, or implemented a TK Panel recommendation. EMAB is developing a list of questions to clarify the status of each recommendation that Diavik accepted.

EMAB's review is being updated to include 16 new TK recommendations from the September 2019 Panel. EMAB will report back on the results when complete. EMAB will continue to look at how the Panel's recommendations have been incorporated into future closure plans.

OVERSIGHT AND MONITORING

EMAB Photo

EMAB monitors Diavik and regulators to make sure they are doing a thorough job protecting the environment around the Diavik mine, and are keeping the promises they made in the Environmental Agreement.

Most of EMAB's focus is on Diavik's environmental monitoring programs and reports, and on the way the regulators handle them. When EMAB notes concerns coming from regulators we take that as a signal that we need to know more about the issues. These issues are outlined in the following pages.

Each year we do our own reviews of the Wildlife Monitoring Program report and the AEMP report. We also review reports on Air Quality and on Closure and Reclamation. We review other reports and documents on a case-by-case basis.

WHO ARE THE REGULATORS AND MANAGERS?

- **Wek'èezhìı Land and Water Board (WLWB)** is responsible for the issuance of Diavik's water licence and land use permits and the technical review of all documents required under the licence and permits. The WLWB is a regional panel under the Mackenzie Valley Land and Water Board.

- **Canada**
  - **Department of Fisheries and Oceans (DFO)** reviews some of the reports submitted under the water licence and all the reports submitted under the fisheries authorizations.
  - **Environment and Climate Change Canada (ECCC)** reviews the reports required by the water licence focusing on water and air quality as well as section 36 of the *Fisheries Act*.

- **Government of the Northwest Territories (GNWT)**
  - **Department of Lands** reviews reports required by the land use permits. Lands has an inspector assigned to Diavik. This inspector updates the Board regularly to keep us aware of what is happening at the site. The inspector is also responsible for ensuring Diavik meets the terms of its water licence, land use permits and land leases.
  - **Environment and Natural Resources (ENR)**, has responsibility for environmental protection, including air and water quality, and provides detailed reviews of reports in these areas. It also has regulatory responsibility for wildlife, including monitoring under the *Wildlife Act*. It also proposes better ways to monitor effects of Diavik on wildlife. The Minister of ENR approves Diavik's Type A water licence.
- **Wek'èezhìi Renewable Resources Board (WRRB)** is a wildlife co-management authority established by the Tłı̨chǫ Agreement. The WRRB is responsible for managing wildlife and wildlife habitat (forests, plants and protected areas) in the Wek'èezhìı area. It reviews reports submitted under the Water Licence.

TECHNICAL DOCUMENTS EMAB RECEIVED FOR REVIEW IN 2020-21

Report Name	Date Received	Regulatory Instrument
Engagement Plan V3.0	March 24, 2020	Water Licence
Terms of Reference for Independent Review Panel for Water Quality Monitoring (PKMW)	March 30, 2020	Water Licence
Type 'A' Water Licence (Annual, 2019)	March 31, 2020	Water Licence
Wildlife Monitoring Program (WMP) (Annual, 2019)	April 8, 2020	Environmental Agreement
A21 Underground Draft Water Licence	May 28, 2020	Water Licence
Interim Closure & Reclamation Plan (ICRP) V4.1	May 13, 2020	Water Licence
Environmental Air Quality Monitoring Program (EAQMP) (Annual, 2019)	July 22, 2020	Environmental Agreement
Environmental Agreement Annual Report (EAAR) (Annual, 2019)	September 16, 2020	Environmental Agreement
Processed Kimberlite to Mine Workings (PKMW) Water Licence Amendment Application Post-Environmental Assessment Package	October 2020	Water Licence
Aquatic Effects Monitoring Program (AEMP) (Annual, 2019)	October 27, 2020	Water Licence
Waste Rock Management Plan (WRMP) V10.1	November 5, 2020	Water Licence
Processed Kimberlite to Mine Workings (PKMW) Project Draft Water License	January 27, 2021	Water Licence
Mixing Zone Discussion Paper	February 18, 2021	Water Licence
Wildlife Management Plan (WMP) (Annual, 2020)	March 31, 2021	Environmental Agreement
Seepage Report (Annual, 2020)	March 31, 2021	Water Licence
Wildlife Management & Monitoring Plan (WMMP)	April 1, 2021	Wildlife Act

ENR LEGISLATION UPDATE

EMAB has reported on two legislative initiatives by GNWT's Department of Environment and Natural Resources (ENR) that started in 2017:

- Changes to the Waters Act as it relates to Diavik's water licence.
- Changes to the Environmental Protection Act, including enacting air regulations.

However, in an effort to accommodate the capacity of partner Indigenous governments and organizations the GNWT is currently focused on the 5-Year Review of the Devolution Agreement. When this is complete, ENR will shift focus to amending the *Waters Act*, *Environmental Protection Act* and developing air regulations. EMAB is concerned about the lack of air regulations and need for changes to the *Waters Act* and encourages ENR to move forward with these initiatives as a priority.

AQUATIC EFFECTS MONITORING PROGRAM

Diavik's Aquatic Effects Monitoring Program (AEMP) monitors:

- Dust
- Water quality
- Eutrophication indicators
- Sediment quality
- Plankton
- Benthic invertebrates
- Fish health

Diavik submits many different reports for the AEMP. These include Re-evaluation Reports, Design Plans, and Annual Reports. EMAB submits recommendations on Diavik's AEMP reports. Below is a summary of the highlights for this year. The full report documents, and list of EMAB recommendations can be found on our website.

THE ENVIRONMENTAL AGREEMENT AND THE WATER LICENCE

The water licence and the Environmental Agreement both contain requirements for the AEMP. Most of the water licence requirements are more detailed than those in the Environmental Agreement. The WLWB cannot make Diavik meet any of the Environmental Agreement commitments unless they are also in the water licence. In the Environmental Agreement Diavik said it would do its best to involve Aboriginal People in designing monitoring programs, and that all its monitoring programs would include activities to:

- **consider TK/IQ,**
- **establish or confirm thresholds or early warning signs,**
- **trigger adaptive mitigation measures,**
- **provide ways to involve each of the Aboriginal Peoples in the monitoring programs and**
- **provide training opportunities for each of the Aboriginal Peoples.**

EMAB is working with Diavik to help it meet its commitments as described throughout this annual report.

EMAB Photo

Photo courtesy of Diavik Diamond Mine

1. AEMP 2019

Diavik requested an extension on the 2019 AEMP deadline of March 31, 2020, which the WLWB granted for April 30, 2020. EMAB had our technical consultants at North-South Consultants review the 2019 AEMP, which guided EMAB's recommendations. Comments and recommendations were also submitted by the GNWT-ENR, and Fisheries and Oceans Canada (DFO). On April 16, 2021 the WLWB approved Diavik's 2019 AEMP Annual Report.

Below is a summary of our review, with key recommendations. For a full copy of the review and our recommendations, visit our website: www.emab.ca.

1.1 EFFLUENT AND WATER QUALITY

1.1.1 DUST DEPOSITION EFFECTS ANALYSIS

Diavik assessed the effects of dust on water quality within 4 km's circling the mine. This is where effects of dust deposition would be expected. EMAB's technical consultants pointed out that the 2019 AEMP report shows that dust monitoring control sites (sites that are not expected to be affected by the mine) are now being affected by the mine.

EMAB RECOMMENDATION: Clarify if the ZOI for dust deposition in Lac de Gras has changed, given the recent findings that control sites are affected by dust from the mine. If ZOI has changed, revise to include an updated ZOI for dust deposition.

WLWB DECISION: The Board notes that the Re-evaluation Report is where Diavik calculates the ZOI, and will evaluate it in the next Re-evaluation Report.

1.2 EUTROPHICATION INDICATORS

The cumulative effects assessment measures the effects from Diavik and Ekati on eutrophication of Lac de Gras. This assessment looks at monitoring data for nutrients from both mines. The 2019 AEMP did not include results for a cumulative effects assessment for algae, which is an important indicator of eutrophication. Diavik noted that chlorophyll *a* (a type of chlorophyll found in algae, and an early indicator of food supply for fish) was not increased by cumulative effects of the mines.

EMAB RECOMMENDATION: Include chlorophyll *a* and phytoplankton biomass metrics in the cumulative effects assessments.

WLWB DECISION: The WLWB decided that Diavik has appropriately addressed this recommendation.

1.3 FISH

Diavik indicated that Action Level 2 for the Fish Component of the AEMP was exceeded and that no further action was required. The Action Level 2 was triggered because fish from the near-field area were smaller than those in the far-field.

EMAB RECOMMENDATION: Clarify why a response plan is not required given that the same effects (direction and magnitude) were observed in two consecutive monitoring cycles (i.e. a four-year period).

WLWB DECISION: The WLWB has directed Diavik to submit an updated version of the Fish Response Plan to include 2019 sampling data within 90 days of the WLWB's decision (i.e. by July 15).

2. AEMP DESIGN PLAN 5.2

EMAB reported on the AEMP Design Plan (DP) 5.1 in the 2019-20 Annual Report. The WLWB did not approve DP 5.1 They agreed with most of EMAB's recommendations, and directed Diavik to include several changes regarding action levels, Slimy Sculpin sampling schedules, and the development for action levels for total phosphorus. Diavik submitted the updated DP on July 16, 2020.

WLWB DECISION: The WLWB approved Version 5.2 of the AEMP Design Plan.

3. 2017-2019 AEMP RE-EVALUATION REPORT

Diavik submits a re-evaluation report every three years to give a summary of AEMP results and discuss trends over time. It also compares the AEMP results from each component to predictions made at the beginning of the project to see if they were accurate. Diavik submitted the 2017-2019 AEMP Re-evaluation Report to the WLWB on December 29, 2020. EMAB had North-South Consultants help with the review of this report. EMAB submitted 62 recommendations to the WLWB. The WLWB decision was not available at the time of writing this report. The GNWT-ENR also submitted recommendations to the WLWB on this report.

Below is a summary of our review, with key recommendations. For a full copy of the review and our recommendations, visit our website: www.emab.ca.

3.1 DUST DEPOSITION

Part of the dust deposition monitoring is to examine a number of Substances of Interest (SOI). These SOI's are chemicals in the effluent that are investigated because they may be causing an effect. In the 2017-2019 AEMP Re-evaluation Report (AEMP RER) it is unclear to EMAB why only six of the SOI's were measured in the snow chemistry analysis.

EMAB RECOMMENDATION: Include an assessment of all parameters identified as SOI's in dust assessments.

3.2 SEDIMENT QUALITY

In Diavik's 2017-2019 AEMP RER, the methods for sediment data collection have changed over time, and this may affect the results of the analyses.

EMAB RECOMMENDATION: Diavik should analyse the results of the sediment quality monitoring program before and after the sampling method changed.

3.3 PLANKTON

Diavik reported an issue with the preservation of phytoplankton samples in the 2019 AEMP and the use of multiple laboratories, which could lead to poor data quality.

EMAB RECOMMENDATION: Diavik compare phytoplankton counts for 2019 to results from previous years.

3.4 FISH HEALTH

Diavik collects fish health data on Slimy Sculpin, however, documentation show changes in data analysis methods with data as far back as 2007. In some years, fish health data was compared to far field data collected in the same year, but in other years, fish health data was compared to far field data that was collected in previous years. Diavik only presented the critical effect sizes (CES's; which describe the magnitude of effects on fish) for 2019.

EMAB RECOMMENDATION: Diavik should use the same approach to data analysis for all years of monitoring, and compare all data to the normal ranges and present CES's for each year of monitoring.

Diavik noted that the fish size in the near field area were smaller compared to those in the far field areas. They believe that differences in habitat (i.e. water temperature) were causing the size difference, and was not a mine effect. Diavik did not discuss the potential role of mine effluent discharge on water temperature in Lac de Gras. EMAB believes effluent discharge could have an effect on water temperature in Lac de Gras.

EMAB RECOMMENDATION: Include effluent temperature data and an assessment of possible effects of effluent discharge on water temperature in Lac de Gras.

3.5 SLIMY SCULPIN – METALS

Diavik measures metals in Slimy Sculpins. When analyzing for metals, there is a normal range of concentrations that are typically in fish. The data collected in study years after 2007 show unusually high ranges for some metals. This may be a result of a change in the detection limit (minimum concentration that is detectable) post 2007.

EMAB RECOMMENDATION: Diavik should revisit the normal ranges and modify as required to adequately represent reference conditions.

Mercury and selenium were reported to show no significant relationships with total length or weight of Sculpin. Diavik did not show the analyses in their 2017-2019 AEMP RER. EMAB is unclear how regression analysis (a process for estimating the relationship between multiple variables; i.e. – mercury in fish vs. size of fish) were conducted since the samples were composites of fish, not single fish.


EMAB Photo

Slimy Sculpin in the lab.

EMAB RECOMMENDATIONS:

- **Present mercury vs. length and weight regressions and a detailed description of methods.**
- **Diavik should add a description in their 2017-2019 AEMP RER of how data were analysed in regression analyses based on composite samples.**
- **Analyse mercury in individual Sculpin rather than as composite samples of multiple fish in future monitoring.**

3.6 MERCURY IN LAKE TROUT

EMAB's technical consultants found issues with moisture content measurements for Lake Trout tissue samples that were collected in 2014. These issues were related to the differences that occurred in the duplicate samples (which should have very close, if not matching results), and the large range of the results.

EMAB RECOMMENDATION: Conduct the analyses with and without the 2014 dataset to look at the differences.

4. AEMP 2020

Diavik submitted their 2020 AEMP Annual Report on March 31, 2021. EMAB had their technical consultants review the 2020 AEMP and submitted comments on July 29, 2021. At the time of writing this report, Diavik has not submitted their responses, and the WLWB has not made any decision on the report. The following is a summary of key areas of concern for EMAB, and the recommendations that were made.

Below is a summary of our review, with key recommendations. For a full copy of the review and our recommendations, visit our website: www.emab.ca.

4.1 DUST DEPOSITION

Diavik noted elevated levels of SOI's in the mid field that exceeded two times the normal range, which may be a result of dust deposition or effluent discharge. There are seven water quality variables (boron, cobalt, iron, lead, thallium, tin, and zinc) on the list of SOI's. Diavik only discussed lead and zinc in the dust assessment. Results only show concentrations in snow samples and do not discuss deposition rates.

EMAB RECOMMENDATION: Diavik should include an assessment of all SOI's in dust assessments.

Photo courtesy of Diavik Diamond Mine

4.2 EFFLUENT AND WATER QUALITY

Diavik did not provide water temperature data for the effluent quality or mixing zone Surveillance Network Program (SNP) stations in the 2020 AEMP. This is important because in previous AEMP reports, Diavik has suggested differences in fish size and other fish health metrics, are because of habitat differences (i.e. water temperature).

EMAB RECOMMENDATION: Diavik should include temperature monitoring for effluent and the mixing zone SNP stations and assess the effects that effluent discharge has on water temperature in the receiving environment.

EMAB has identified ongoing issues with the quality of results for ammonia in water. The results of a multi-laboratory comparison study showed issues with the contamination of preservatives in sample bottles from one lab. EMAB has recommended in the past that Diavik add an analysis of ammonia in preserved and unpreserved samples at both laboratories to confirm the usefulness of ammonia data sets.

EMAB RECOMMENDATION: Analyse ammonia in preserved and unpreserved samples at both laboratories to help confirm the usefulness of the 2020 dataset.

4.3 PLANKTON AND EUTROPHICATION INDICATORS

Diavik has used four different laboratories to analyse phytoplankton samples since 2002. The 2020 AEMP assessed the effects of changing the last two laboratories (Biologica and Eco-Logic) on phytoplankton richness and biomass, and found that there is variability of results between the two laboratories. The most likely reason for this variability is the differences in methods used to determine phytoplankton composition and biomass. These issues make it harder to apply action level triggers, determine the extent of effects, and to track and compare changes over time.

EMAB RECOMMENDATION: Diavik should:

- **Recalculate normal ranges for all phytoplankton metrics.**
- **Describe how comparisons between years will be done given the issues between each dataset.**
- **Consider modifying the study design to account for changes in laboratories over time.**
- **Ensure future laboratories use the same methods.**
- **Compare laboratory results through examination of more samples.**

SPILL REPORT FOR DIAVIK DIAMOND MINE 2020 - 2021
(GNWT DATABASE)

Spill No.	Date	Commodity	Quantity (L)	Source
2020091	March 31, 2020	Hydraulic Oil	200	Truck
2020102	April 15, 2020	Hydraulic Oil	350	Other transportation
2020104	April 16, 2020	Hydraulic Oil	100	Truck
2020207	July 3, 2020	Sewage	20	Other transportation
2020213	July 6, 2020	Wastewater (sewage and tailings)	400	Storage tank
2020227	July 20, 2020	Diesel	113	Fuel tank
2020229	July 22, 2020	Runoff Water	Unknown	South Country Rock Pile
2020251	August 3, 2020	Gasoline	0.2	Marine Vessel
2020267	August 7, 2020	Diesel	600	Other Transportation
2020305	August 31, 2020	Hydraulic Oil	200	Pipeline
2020304	September 1, 2020	Gasoline	10	Fuel tank
2020347	September 22, 2020	Hydraulic Oil	150	Truck
2020401	October 15, 2020	FPK slurry	156,000	Pipeline
2020429	November 7, 2020	Hydraulic Oil	418	Truck
2021038	February 14, 2021	Water above turbidity EQC	230,000	Retention Pond
2021085	March 8, 2021	Chemicals (Transformer oils)	750	Drum or barrel

UNDERGROUND SPILLS:

The number of underground spills, and amount spilled, was lower than in previous years, and this is good news. These spills are considered to have an effect on the hydrocarbon contamination in sediments in the North Inlet.

Volume and Number of Underground Hydrocarbon Spills									
2016		2017		2018		2019		2020	
Quantity (L)	# of spills	Quantity (L)	# of spills	Quantity (L)	# of spills	Quantity (L)	# of spills	Quantity (L)	# of spills
2696	163	1850	94	1385	113	1955	121	1256	62

DIAVIK COMMUNITY ENGAGEMENT PLAN VERSION 3.1

Engagement plans are required by Diavik's water licence. MVEIRB required Diavik to address engagement with communities as a mitigation measure for the PKMW proposal (see p. 26-30). Diavik submitted Version 3.1 of the Plan to WLWB on July 8, 2020 to respond to direction from the WLWB on Version 3.0 (see 2019-20 Annual Report). The revised plan was not circulated for review.

WLWB DECISION:
The WLWB approved Version 3.1 of Diavik's Engagement Plan on October 22, 2020. They determined that the revised plan addressed all the WLWB's direction on Version 3.0.

The WLWB also noted that MVEIRB Measure 5 regarding engagement for the PKMW project would be addressed through the PKMW Water Licence Amendment Hearing. In the amended licence the WLWB required Diavik to submit an engagement plan for the PKMW project within 3 months of the issuance of the licence (i.e. by September 8, 2021). It also included Schedule 2 setting out minimum requirements for the Engagement Plan.

PK TO MINE WORKINGS PROJECT PROPOSAL:

WATER LICENCE AMENDMENT AND ENVIRONMENTAL ASSESSMENT

Diavik applied to amend their Water Licence in June 2018 to dispose of Processed Kimberlite (PK) in the mine pits, instead of the PKC. The project is called the PK to mine workings (PKMW) Project. EMAB supports putting PK in the pits, as long as it is done in a way that does not harm the environment.

MVEIRB did an Environmental Assessment of the project and approved it to proceed as long as Diavik fulfilled MVEIRB's Measures, and carried out the commitments it made during the hearings. MVEIRB's Measures focused on water quality and engagement with Indigenous communities (see 2019-20 Annual Report for more information). The Minister approved the Environmental Assessment Report (EAR) in June 2020.

Following the Minister's decision on the EAR the WLWB started a review of Diavik's application to amend its Water Licence. EMAB was concerned that the WLWB's workplan leading up to the hearings did not allow enough time for communities and EMAB to review all the information and prepare interventions, and the WLWB agreed to push back the deadline for interventions, and the hearing dates.

EMAB has been involved with the entire application review process from the beginning, including participating in the initial review of the application, to the Environmental Assessment, and then the Water Licence hearings. You can find a full summary of EMAB's concerns, and participation in the Environmental Assessment of the project in our 2018/19 and 2019/20 annual reports.


EMAB Photo

Depositing PK in the PKC Facility.

INDEPENDENT REVIEW PANEL

One of the MVEIRB Measures required that an Independent Review Panel (IRP) be established to review Diavik's water quality modelling for the PKMW Project. All participants were invited to comment on the draft Terms of Reference for the IRP, and to submit names for the Panel. EMAB made recommendations on principles to guide the terms of reference such as independence and transparency. We also made recommendations on:

- Governance
- Duties
- Communications
- Number of Panel members and areas of expertise

EMAB also proposed experts to sit on the Panel.

WLWB also received comments from: NSMA, TG and WRRB. GNWT chose not to participate in the review because the Minister had not yet approved the EAR.

The Water Licence Hearing took place from December 16-18, 2020. EMAB reviewed all the documents, including technical reviews from Slater Environmental and North-South Consultants. We submitted an intervention and


EMAB Photo

A154 and A418 pits.

made a presentation at the hearing. Many of the key issues that EMAB raised during the Environmental Assessment were not fully addressed in the EAR and we raised them again during the Water Licence Hearing. Quite a few organizations intervened at the hearings including: ECCC, GNWT, TG, NSMA, YKDFN, DKFN, and Fort Resolution Metis Government (FRMG). The Independent Review Panel for Water Quality Modelling also made a presentation and responded to questions.

1. SUMMARY OF EMAB RECOMMENDATIONS TO WATER LICENCE HEARING

1.1 WATER QUALITY MODELLING

- While Diavik improved its water quality modelling a great deal for the Water Licence Hearing, EMAB continued to have a number of questions and concerns about the accuracy of the modelling, including model inputs and modelling a worst-case scenario.
  - › EMAB was pleased that the Independent Review Panel was set up to review the modelling results.
  - › Diavik predicts the top 40m of water will be safe for fish, and that fish won't swim below 40m. EMAB is concerned that fish may go below the top 40m of water.
    - » Diavik should model water quality throughout the pit lake, not just top 40m.
  - › Diavik should propose mixing zones for the pit lakes to account for contaminated runoff from the minesite into the pit lakes.

WLWB DECISIONS

Diavik provided modeled water quality throughout the pit lake in its response to interventions.

WLWB approved the October 2020 model but may require Diavik to submit an updated model if they feel it's necessary.

Diavik should address mixing zones for pit lakes in its next closure plan.

1.2 WATER QUALITY

- Water quality must meet AEMP benchmarks wherever there is aquatic life.

WLWB DECISION

Diavik must meet AEMP benchmarks in the top 40 meters of the pit lake.

1.3 DECISION TO RECONNECT PIT LAKES TO LAC DE GRAS

- Concern about whether the pit lake can be reconnected to LdG, and the need for both scientific and TK-based criteria for deciding:
  - › Criteria should include sediment quality as well as water quality.
  - › Communities must accept cultural criteria for reconnecting.

WLWB DECISIONS

WLWB included a requirement for Diavik to identify all TK recommendations they received, describe how they were addressed and justify any they did not include in the criteria.

Include criteria for reconnecting the pit lake to Lac de Gras in the next closure plan, including TK criteria, and associated monitoring.

WLWB included a requirement for Diavik to develop an Engagement Plan for working with communities on reducing the project's effects, including development of cultural criteria.

Photo courtesy of Diavik Diamond Mine

1.4 MONITORING BEFORE AND AFTER RECONNECTING

- Need for comprehensive monitoring of the pit lake before reconnecting with LdG, and after to confirm model predictions and confirm pit lake is safe for fish.
- Water and sediment quality:
  - Sample in all seasons for at least two years before reconnecting.
  - Sample throughout pit lake.
- Extent of effect on LdG after reconnecting.
- Health of fish and other aquatic life.

WLWB DECISIONS

WLWB deferred a decision on the monitoring plan for pit lakes since it will need review and Board approval.

WLWB expects monitoring for dike breaching can be discussed during review of breaching criteria for the dikes.

Diavik will address sediment quality monitoring in the pit lake in the next closure plan.

Diavik must address EMAB comments on aquatic monitoring as part of a future submission on a Closure AEMP in the next closure plan.

1.5 MINIMIZE MIXING PK AFTER DEPOSITING

- Have a plan to minimize mixing of PK with freshwater.

WLWB DECISION

Include a design plan for placing the freshwater cap in the next closure plan.

1.6 EFFECTS ON FISH AND HABITAT

- Monitor whether fish and other aquatic life go below 40m.
- Confirm depth of contaminated water before reconnecting.
- Monitor habitat use.
- Monitor metals in fish tissue.

WLWB DECISIONS

Concerns about mercury, or other metals, in lake trout, can be assessed through the review of the 2017-19 AEMP Re-evaluation Report.

WLWB deferred decision on the monitoring plan for pit lakes since it will need review and Board approval.

Diavik must address EMAB comments on aquatic monitoring as part of a future submission on a Closure AEMP in the next closure plan.

1.7 EFFECTS ON WILDLIFE

- Diavik to develop plans for wildlife monitoring and deterrence during deposit of PK.

WLWB DECISION

This is outside the WLWB mandate. WLWB noted that GNWT-ENR has required Diavik to provide an updated WMMP.

1.8 CONTINGENCY PLANS

- Develop more detailed contingency plans for re-closing dike if required.

WLWB DECISION

Diavik must update the Contingency Plan to include the PKMW project by Dec 31'21. It must address unacceptable water quality in the pit lake and potential for not breaching the dike, or closing the breaches.

1.9 UPDATE CLOSURE PLAN

- Update closure plan to address project.
- Update closure objectives as required.
- Update security.

WLWB DECISIONS

Diavik must update its closure cost estimate to include the PKMW project in the next version of the Closure and Reclamation Plan, and adequate security must be in place before PK is deposited in the pit.

Diavik must address closure objectives and criteria related to the PKMW project in the next closure plan

1.10 EVALUATE MOVING PK SLIMES TO PIT

- The proposal did not include removal of slimes from the PKC. EMAB's view is that moving the slimes from the PKC to the mine pit would be a better closure option than leaving the slimes in the PKC, where they are a hazard to wildlife and humans. We recommended Diavik study the feasibility of doing this.

WLWB DECISION

Diavik committed to provide an updated PKC Closure Design by March/April 2021 that would address EMAB's recommendation so WLWB decided not to require a feasibility study.

2. DRAFT WATER LICENCE

In early January, following the hearing, the WLWB circulated a draft water licence for comment. EMAB did a detailed review and made 28 recommendations related to implementing our intervention recommendations. DKFN, ECCC, DFO, FRMG, GNWT-ENR, GNWT-Lands, TG, and YKDFN all made comments.

EMAB submitted closing arguments to the WLWB in March 2021. These reflected our key intervention recommendations.

The WLWB sent the recommended amended water licence for the PKMW project to the Minister on April 28, 2021 and the Minister approved the licence on June 8, 2021.

Complete versions of EMAB's intervention, presentation to the WLWB hearing and comments on the draft Water Licence are on EMAB's website: www.emab.ca.

WHAT IS MEROMIXIS

Meromixis is a condition in a lake where the water does not fully mix. Usually this has to do with salts in the water. The salty water is heavier and forms a layer on the bottom of the lake, or pit**. Modelling shows that after closure, the pit lakes at Diavik will become meromictic** for a time, although they will mix slowly, over decades. **It is because of this meromixis that Diavik is confident that PK will remain at the bottom of the pit lakes, and not mix with the surface water.**

A21 DEEP: WATER LICENCE AMENDMENT

In last year's annual report EMAB discussed Diavik's application to amend their water licence to allow them to begin underground mining in the A21 pit. EMAB did not have any major concerns about the project since Diavik already mines underground at their other pits. EMAB did not participate in the amendment hearings, and did not have any objections to the draft water licence.

WLWB DECISION:
In September 2020, the WLWB recommended to the Minister of ENR to approve the A21 Deep Water Licence Amendment. In October 2020 the Minister approved the water licence amendment as recommended by the WLWB.

CLOSURE PLAN

Diamond mining disturbs the land and creates large amounts of waste. Diavik's Interim Closure and Reclamation Plan (ICRP) provides detailed information about how Diavik plans to reclaim the land to be as close to its original state as possible. Diavik continues to update its ICRP with more details following the direction of the WLWB. According to Diavik's water licence, a Final Closure and Reclamation Plan must be approved by 2022.

Diavik works with a TK Panel to seek input on closure plans. The Panel's recommendations can be found on EMAB's website: www.emab.ca.

Diavik Mine Site 2021

1. ICRP VERSION 4.1

Diavik submitted its ICRP 4.1 in December 2019. There are a number of significant changes in ICRP 4.1 that EMAB believes are improvements from version 4.0. Some of these important changes from the previous ICRP include the addition of new security estimates, as well as an update on progressive reclamation done on the North Waste Rock Storage Area (NWRSA).

EMAB's 2019-20 Annual Report was published before the review of ICRP 4.1 was completed. In addition to EMAB's technical reviews a number of other organizations made recommendations: ECCC, DFO, GNWT-ENR, NSMA, TG, and YKDFN. The 2019-20 Annual Report included the main areas that EMAB was concerned about in ICRP 4.0, whether they were addressed in ICRP 4.1, and additional comments on key areas in ICRP 4.1. This section will review the key areas that EMAB had concerns with, any recommendations that were made, and the WLWB decisions.

The WLWB has approved the ICRP 4.1 while directing Diavik to make a number of significant changes.

1.1 NORTH WASTE ROCK STORAGE AREA (NWRSA)

Diavik continues to propose to cover the NWRSA as a way to keep the pile underneath frozen, and prevent contaminated runoff or seepage. Diavik has modelled the cover's expected performance for the next 100 years showing that it will be effective. EMAB has concerns with the modelled performance during, and after the 100 year period, as poor performance of the cover could result in contaminated runoff or seepage into Lac de Gras.


EMAB Photo

Re-sloping the NWRSA.

EMAB RECOMMENDATION: Conduct a study on the potential impact of climate change beyond 100 years for the NWRSA, to be completed and informed by the construction monitoring and initial years of performance monitoring data.

WLWB DECISION: In the final CRP, describe plans to evaluate potential impact of climate change, including a description, and the timing for completion of any anticipated studies.

1.1.1 NWRSA COVER

Diavik has been working on the NWRSA cover since 2017. Cover construction includes re-sloping the pile for stability, placing a 1.5-metre layer of till over the pile, and placing a 3-metre rock layer over top of the till. Progress to end of 2020:

- Re-sloped 75% of the pile.
- Placed 72% of the till layer.
- Placed 11% of the rock cover.

DIAVIK PROPOSAL: a 5 year period of post closure monitoring of the NWRSA to ensure the cover is performing.

WHAT IS TILL

Till is sediment that was deposited by glaciers a long time ago. The till they are using to cover the WRSA comes from the A21 pit. This till was also covered up by Lac de Gras before Diavik took the water out of A21.

EMAB RECOMMENDATION: Diavik should explain how they will adaptively manage monitoring schedules, and the conditions that might require extension of monitoring, keeping in mind the need to demonstrate stable performance.

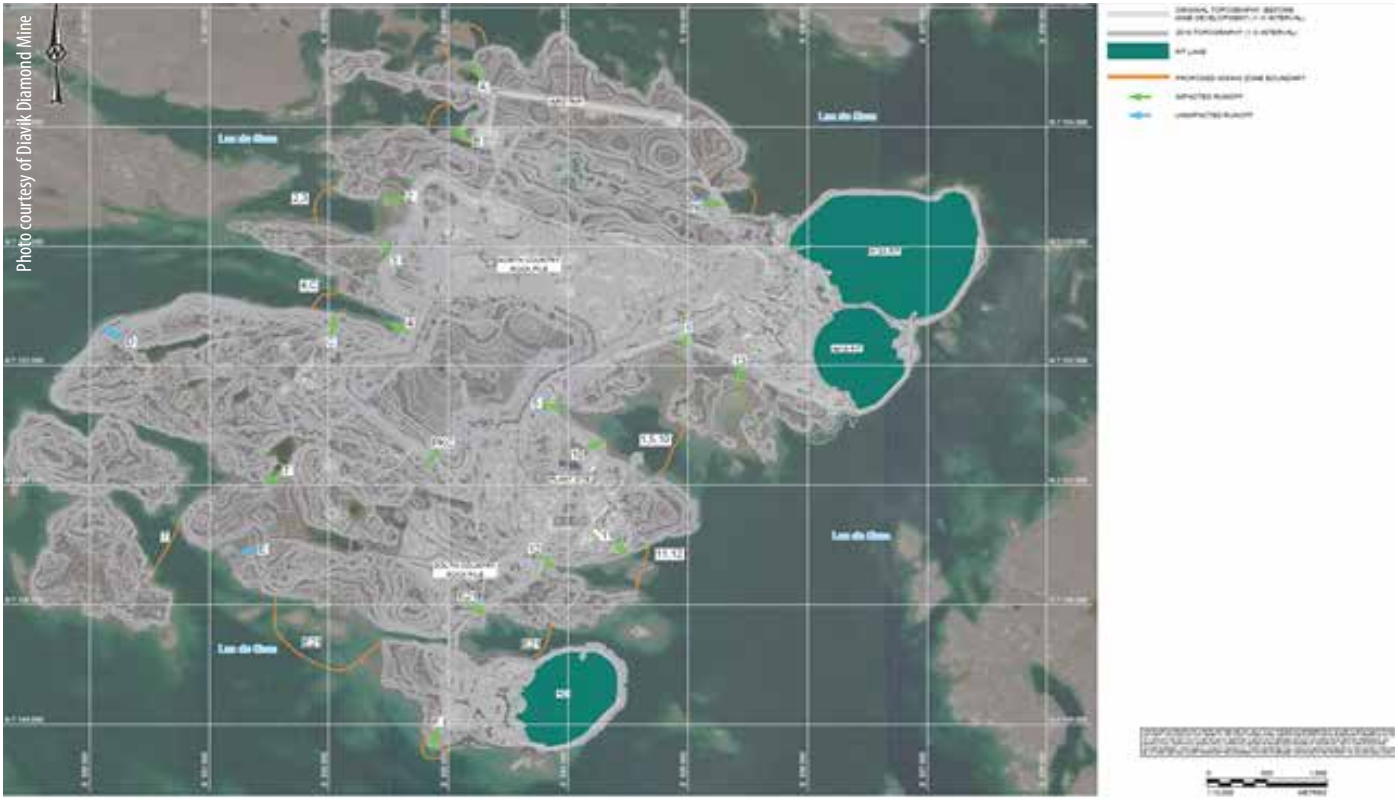
WLWB DECISION:
WLWB believes 5 years is too short to capture any effects climate change may have on the NWRSA, and has directed Diavik to update the post closure monitoring plan to address a time beyond 5 years.

EMAB RECOMMENDATION: Include requirements for additional visual inspection following extreme weather events in the post-closure monitoring plan.

WLWB DECISION: Include a description of the plan for adaptive management that relates to the performance of the spillway and deformations of the foundation for the NWRSA and show it is informed by the post-closure monitoring.

1.2 SOUTH WASTE ROCK STORAGE AREA (SWRSA)

Diavik's closure plan for the SWRSA is still very general, with closure cost estimates of less than $4,000. The plan includes leaving a benched profile, without a cover or re-vegetation. EMAB is not satisfied with the current approach, and believes Diavik should provide details of the SWRSA closure based on best estimates of final



Diavik's proposed mixing zones.

rock quantities at closure. EMAB believes that Diavik's cost estimate should include an amount for minor grading of the pile, vegetation of the residual till stockpile and construction of caribou access ramps. EMAB also identified that the TK Panel made recommendations on the design of the SWRSA that relate to wildlife migration, wildlife corridors, and the shape and size of the pile.

Diavik had said it would submit a closure design for the SWRSA by March/April 2021, but has moved this back to 2022.

EMAB RECOMMENDATION: Diavik should incorporate TK Panel recommendations 10.1, 10.2, 10.3, and 10.8 in its SWRSA Closure Design.

WLWB DECISION: Diavik must include a closure design of wildlife ramps for the SWRSA, include a description of how the SWRSA closure design incorporates recommendations from the TK Panel.

1.3 RUNOFF AND SEEPAGE WATER QUALITY

Mixing zones in Lac de Gras (where contaminated runoff from the mine mixes with lake water) are an important part of ICRP 4.1. In ICRP 4.0, Diavik proposed a 25 square-kilometer mixing zone around East Island (all waters within one kilometer of the shore). This proposal was unacceptable to EMAB and not accepted by the WLWB. Diavik has changed their proposal to include 15 smaller mixing zones of different sizes.

EMAB had many concerns over the proposed mixing zones and made a number of recommendations. GNWT also had concerns and as a result Diavik requested an extension to the review period to allow them to respond to GNWT's concerns. In February Diavik submitted a Mixing Zone Discussion Paper as an appendix to ICRP 4.1. Key points included:

- Diavik pointed out that contaminated water above AEMP benchmarks would only run off for a few days each year so the mixing zones would be much smaller, or zero, for most of the year.
  - In addition the proposed zones are based on the contaminant that is predicted to be highest during that period.
- Modelling of four methods to improve water quality and decrease the size of the mixing zones:
  - The only method Diavik found would be useful was to move the outflow from the PKC.
- A proposal to do toxicological testing on the mixing zones to understand the effect of the contaminated water on fish and other aquatic life.
- A request to WLWB to confirm the maximum allowable mixing zone size.
- A proposed table of maximum levels of contaminants allowed to flow into Lac de Gras.

Summary of EMAB concerns and recommendations on Mixing Zone Discussion Paper:

- Mixing zones that occur in shallow bays where mixing through currents and wind may be limited:
  - contaminated runoff may stay within the mixing zones and harm fish habitat.
- Volume of proposed mixing zones is much greater than MVLWB guidelines. Diavik's method for proposing the mixing zones makes many of the proposed zones larger than they need to be.
- Exceedances of acute and chronic benchmarks are predicted ,and could affect some species:
  - Also need to ensure runoff is safe for humans and wildlife to drink.
- Continuous runoff into the lake could result in contaminants building up in lake sediments.
- Flaws in methods used to model the ways Diavik could improve runoff water quality.
- EMAB supported Diavik developing a detailed proposal to do toxicological testing in the mixing zones. Diavik should provide additional details.
- WLWB should not approve Diavik's requests, or the mixing zones, as presented.

EMAB RECOMMENDATION: EMAB recommends that the physical mixing zones be presented for each discharge location, and the regulatory and physical mixing zones be presented for each source control option.

EMAB RECOMMENDATION: Diavik be required to make best efforts to meet the MVLWB/GNWT Guidelines for Effluent Mixing Zones (2017).

WLWB DECISION: WLWB did not approve the mixing zones, or the water quality criteria proposed by Diavik. Instead, they provided guidance to Diavik to help finalize the water quality criteria in the Final CRP, and requested additional information about some of the mixing zone criteria in the next version of the ICRP. They also gave direction for updating the water quality modelling and mixing zone predictions.

1.4 WILDLIFE SAFETY

EMAB had several concerns about wildlife safety in ICRP 4.1. One of Diavik's closure objectives is "Safe passage and use for caribou and other wildlife".

Water Quality from surface runoff and seepage is a major area of concern for EMAB. In Diavik's ICRP 4.1, they proposed closure and post closure sampling of runoff and

seepage at representative locations where human and wildlife consumption is likely.

A summary of EMAB's key recommendations include:

- Provide predicted runoff water quality in catchbasins.
- Use of complete guidelines from acknowledged standards for protection of drinking water for wildlife and humans.
- Create suitable closure criteria for identified contaminants of concern, that are protective of humans and wildlife.
- Address TK Panel Recommendations on wildlife safety.

Diavik still has work to do to ensure acceptable water quality standards for human and wildlife consumption after closure.

EMAB had some concerns regarding the contamination of vegetation, specifically related to dust and contaminated soils. Diavik has switched from the British Columbia air quality standards to the less strict Alberta Ambient Air Quality guidelines (more on page #48) for industrial and commercial areas (during operations) and recreation and residential areas (post closure).

EMAB RECOMMENDATION: Diavik provide justification for changing air quality guidelines.

WLWB DECISION: Diavik to revise SW3-1 to be able to evaluate whether dust levels are safe for people, vegetation, aquatic life, and wildlife.

EMAB also had concerns about criteria SW4-1 (monitoring evidence of post-closure wildlife use of area) in ICRP 4.0. Diavik has not proposed any changes. There is still work to be done to limit Diavik's impact on wildlife during closure, and post closure.

EMAB RECOMMENDATION: Diavik should consult TK holders and biologists to identify potential hazards for wildlife and include adaptive management responses.

WLWB REVISION: Moving forward, Diavik is to identify potential hazards to wildlife use, wildlife safe passage, and/or caribou predation.

1.5 NORTH INLET

North Inlet water quality is acceptable; however, its bottom sediments are contaminated with hydrocarbons and do not meet requirements for aquatic health. Diavik researched whether the bacteria in the sediments of the North Inlet will eat the hydrocarbons in the sediment, and showed the amount could be reduced by half in 10 years.

EMAB believes that if there is a chance that the North Inlet will become suitable for aquatic life through natural processes, the option to reconnect with Lac de Gras should remain.

EMAB RECOMMENDATION: Diavik should continue to monitor the sediments in the North Inlet past 10 years. If the sediments eventually meet aquatic health requirements, Diavik should breach the dike to allow fish to use the North Inlet.

WLWB DECISION: The WLWB has not approved a change to the closure activity for the North Inlet, and has not approved removing the objective of reconnecting of North Inlet with Lac de Gras.

1.6 RE-VEGETATION

Diavik has committed to re-vegetating roughly 18% of the disturbed mining areas during closure. This is much less than the 65-70% vegetated area that was there before mining began. Diavik said it would provide a Re-vegetation Design Report in early 2021 as part of the 2020

Annual Closure Progress Report, however, EMAB has not received it. EMAB notes that re-vegetation is a large part of Diavik's closure objective SW9. It is important to ensure that more than 18% of the disturbed area is re-vegetated. Communities have clearly stated they want the land returned as closely as possible to its pre-development condition.

A study done for Diavik by the University of Alberta (U of A) recommended establishing re-vegetation "islands" using finely crushed rock with added nutrients and organic matter. EMAB believes Diavik should implement the U of A recommendations, and establish re-vegetation islands. Diavik has stated that it has fully considered the results of the U of A study, and will give more information regarding the incorporation of the results in their re-vegetation plan. We look forward to reviewing this plan.

Lastly, Diavik has noted its preference not to re-seed if first attempts fail. EMAB believes it is their responsibility to make sure that vegetation re-establishes itself, even if re-seeding is necessary.

EMAB RECOMMENDATION: Diavik should address TK Panel recommendations 3.2, 6.1, and 6.4 and EMAB Closure Workshop (2017) Recommendations regarding re-vegetation, in its re-vegetation plan.

WLWB REVISION: Diavik is to describe how TK Panel Recommendations informed the design, and how or whether follow-up to recommendations 7.15 has occurred (Create safe passage for caribou over the rock pile and through their old migration routes on the north and south-east sides).

1.7 CONTAMINATED SOILS

Diavik expects to have roughly 1500 cubic meters of hydrocarbon contaminated soils by the time the mine closes. In review of the ICRP 4.1, EMAB agreed with Diavik's view that best efforts should be made to reduce hydrocarbon levels through active landfarming. EMAB also agreed that treated hydrocarbon contaminated soils meet the Canadian Council of Ministers of the Environment (CCME) agricultural standards. We also raised the TK Panel's concerns that no contaminated materials remain on the site.

EMAB RECOMMENDATION: Hydrocarbon contaminated soil should be treated at site and if it does not meet CCME Agricultural Standards after treatment it should be shipped offsite.

WLWB DECISION: The WLWB has not approved the onsite disposal of hydrocarbon-contaminated soils at this time.

The WLWB directed Diavik to include treating contaminated soils to CCME agricultural standards, and propose contingency options if CCME standards cannot be met.

1.8 PROCESSED KIMBERLITE CONTAINMENT FACILITY

The Processed Kimberlite Containment Facility (PKC) closure plan has made advances since EMAB's 2019-2020 Annual Report, however, EMAB's view remains that Diavik does not have a credible plan for closing the PKC. Previously, Diavik was proposing a "wet cover" option, however, it has since conducted research on a "dry cover" option as well. Both options are explained in more detail below:

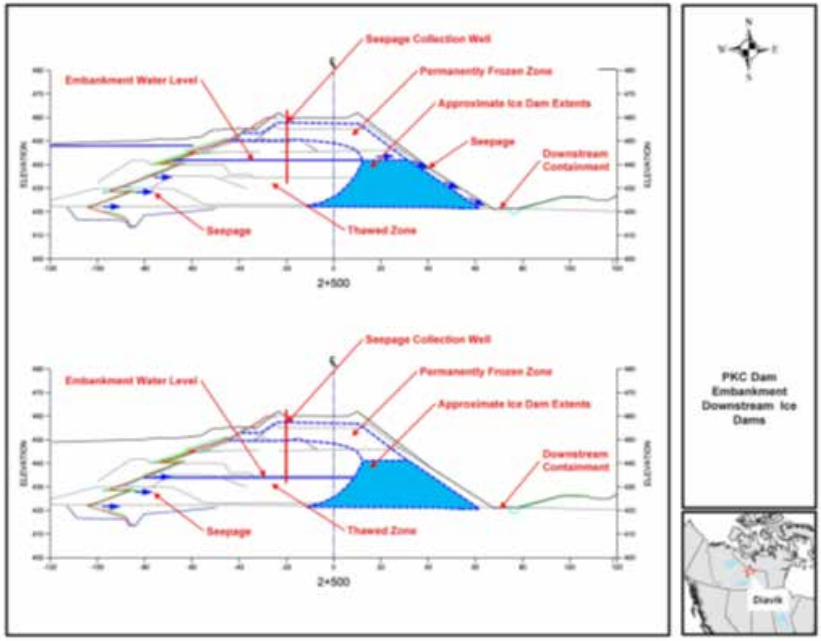
1.8.1 WET COVER:

The wet cover approach would include covering the slimes with a pond and surrounding the rest of the tailings with a rock cover. EMAB covered the concept of a wet cover and our concerns in the 2019-20 annual report. The following is a condensed version:

WHAT IS THE PKC FACILITY?

The PKC Facility is where Diavik's tailings are dumped after the diamonds are taken out of the kimberlite. The tailings (called fine processed kimberlite or PK, similar to sand) are over 40 metres deep and are contained in a dammed area. There is a pond located near the center of the PKC that changes size depending on the time of year and the mine's activities. There is a thick layer of very fine PK under and around the pond that is like quicksand. It is also called slimes. Any person or animal walking on it would sink in.

EMAB Photo



PKC Dam Embankment.

- Tailings would be covered with a filter, and a layer of rock.
- Diavik believes the rock cover would be safe for humans and wildlife to walk on.
- Diavik reduced the proposed rock cover thickness from 2 meters to 1 meter.

EMAB believes there are some key issues:

- Exposed slimes could be dangerous for humans and wildlife.
- Seepage of tailings water through dam walls.
- Ability of slimes to support rock cover.
- Long-term monitoring of wet cover.
- Concerns with the post closure monitoring inspection for spillways and other structures that facilitate drainage of runoff into Lac de Gras and their ability to perform under extreme weather events.

PKC pond with PK.

1.8.2 DRY COVER:

The dry cover option consists of draining the tailings pond and covering the entire PKCF with geotextile fabric and a layer of rock. This option cannot be initiated until Diavik is finished putting PK into the PKC and started dewatering it. Diavik believes that a similar analysis to the wet cover option is not necessary. The WLWB has stated that understanding the predicted water quality for both options is needed to select the appropriate closure activity, and directed Diavik to:

- Provide analysis and evidence to support a preferred closure activity.
- Include an analysis of the water routing, thermal modelling, seepage, and water quantity and quality for the facility for both options.

EMAB RECOMMENDATION: Diavik should complete thermal and seepage modelling for the dry cover closure design.

WLWB REVISION: WLWB believes an assessment of water quality from the PKCF at closure for a wet and dry cover must be completed to aid in selecting the preferred cover options, as well as evaluating the assessment of potential impacts downstream.

1.9 CLOSURE CRITERIA

EMAB has been pleased to see the advancement of Diavik's Closure Criteria in recent years. The criteria measure performance and outcomes of each objective. In WLWB's decisions on the ICRP 4.1, 9 objectives and 11 criteria were approved. The closure objectives and their associated criteria can be found in the ICRP 4.1 report on the WLWB website.

EMAB generally agreed with the WLWB's decisions on the approval of the closure objectives and criteria. There are a number of closure objectives that were not approved by the WLWB, and EMAB believes they are still unsatisfactory and do not address the need for long-term assessment of performance for closure objectives.

Some closure objectives and criteria that EMAB believes Diavik should improve include:

- Surface and runoff seepage water quality (SW1 and SW2).
- Dust levels post-closure (SW3 and SW4).
- Re-vegetation and leaving the land so it matches the natural conditions of the surrounding area (SW9).
- Protecting the health and safety of wildlife post-closure, and incorporating TK in decision making (SW10).

There are still 29 closure criteria that need approval from WLWB. EMAB is eager to see updated closure criteria from Diavik.

1.10 LONG TERM MAINTENANCE AND MONITORING

Diavik's post closure long term maintenance and monitoring plan has improved from previous versions of the ICRP. ICRP 4.1 Appendix VI outlines plans to measure conditions at the end of closure for comparison in the post-closure period. Diavik also committed to monitoring water quality at undisturbed areas for comparison across East Island. Diavik has extended its commitment for closure monitoring from 2026-2030, and post closure monitoring between 2040 and 2050 (see following table).

Proposed End-Date and Frequency for Post-Closure Monitoring Components

Program	End Date	Frequency
AEMP	2050	Every 3 years to 2037, then every 6 years to 2049
Geotech	2050	Every year to 2032, then every 3 years to 2050
Wildlife	2041	Report every year to 2035, then every 3 years to 2041 (varies by component)
Vegetation	2040	Every year from 2026 to 2032, then 2036, then 2041
SNP	2040	(varies by station)
Dust	2032	Every year from 2025 to 2032
Soils	2030	Every year from 2025 to 2030

EMAB is happy to see that the plans to develop a complimentary Traditional Knowledge-Based Monitoring Plan have advanced, however, there is still a lot more to be covered. The ICRP 4.1 does not contain any details about the community-based monitoring or how it will be designed or implemented. It is important to EMAB, and other Parties, that Diavik engage with TK holders to design and plan the specifics of the TK-based long-term monitoring program so that it can be ready before closure.

Other areas that EMAB has concerns with include:

- Having only one monitoring station in the North Inlet.
- Ending the monitoring of seepage wells after closure in the PKCF.
- Ending the monitoring of the NWRSA dam.
- Ending the TSP monitoring.

EMAB RECOMMENDATION: Diavik should add a contingency for increasing duration and or frequency of post closure monitoring.

WLWB DECISION: Diavik must add the cost of long-term maintenance activities to the RECLAIM estimate for the final CRP. Estimated costs and length of maintenance period should be consistent with Board Policy, Guidelines, RECLAIM Manual, and ICRP 4.1.

EMAB RECOMMENDATION: Diavik should ensure broad involvement of communities in developing and implementing TK monitoring during the closure and post-closure periods. Diavik should address TK Panel Recommendations regarding use of TK in monitoring.

Note: Diavik committed to working with the Traditional Knowledge Panel to develop and advance the TK-based monitoring program.

WLWB DECISION: Diavik must propose a Traditional Knowledge Monitoring Plan in the final closure plan and show how community input was included. Also show how the monitoring will be used to do Traditional Knowledge verification of closure criteria.

1.11 SECURITY

Security must cover the full cost of closing the mine. GNWT holds security for the Diavik Mine. Once Diavik meets the closure criteria for a part of the mine, they can request a refund of security for that part. Security is held under the water licence, land leases and the

Environmental Agreement. The total security held for Diavik is roughly $171 million as follows:

- $142 million under the water licence (set by WLWB).
- $11 million under surface leases (set by GNWT – Lands).
- $17 million under Environmental Agreement (set by GNWT).

Securities are set using a calculator called RECLAIM, and are initially proposed by Diavik and the GNWT. Then all parties can make comments to the WLWB, who will make the final decision on security amounts. Security is only used if Diavik is unable to meet their required closure and reclamation commitments. Securities will be refunded once Diavik closes a part of the mine satisfactorily to the GNWT, subject to possible holdbacks if it is uncertain whether the closed area will perform as designed.

SUMMARY OF EMAB RECOMMENDATIONS:

- **Estimate closure cost of the SWRSA.**
- **Contingency to move slimes from PKC, to allow for PKC closure.**
- **Contingency for additional cover on the NWRSA if modelling shows the current cover will not keep the rock frozen.**
- **Cost for a TK monitoring program.**
- **Contingency for long-term monitoring if proposed frequency or duration needs to be changed.**
- **Concern about use of likelihood ratings to adjust holdback amounts for NWRSA, PKC and re-vegetation.**
- **Cost for the contingency of water treatment has been calculated, but is not included in the security estimate.**
  - › **Some portion of this cost should be included in the closure estimate.**

WLWB DECISIONS

There are several important WLWB decisions about security:

Decision #1: If Diavik does not submit a RECLAIM with the update to the PKCF CRP, provide a rationale and describe engagement with the GNWT.

Decision #2: In future requests for return of security for progressive reclamation of the NWRSA, Diavik must discuss how any identified discrepancies and uncertainties were considered.

Decision #3: Diavik must propose the cost of long-term maintenance activities in the RECLAIM estimate for the final CRP. Estimated costs and length of maintenance period should be consistent with Board Policy, Guidelines, RECLAIM Manual, and ICRP 4.1.

Decision #4: Diavik should identify any proposed changes from the approved RECLAIM estimate and provide reference and rationale.

Decision #5: Update RECLAIM estimate to include the placement of till on SWRSA ramps in final CRP.

Decision #6: Identify how RECLAIM estimate for water treatment includes the estimated quantity of water to be treated that is attributed to lowering the pond level in the PKCF.

Decision #7: Address the uncertainties associated with the performance of the PKCF spillway and update RECLAIM accordingly.

Decision #8: Include an update to the PKCF spillway characteristics at closure and update RECLAIM accordingly.

WILDLIFE MONITORING PROGRAM

The Wildlife Monitoring Program (WMP) is required by the Diavik Environmental Agreement (2000), between Diavik, Indigenous groups, and the federal/territorial governments formalizing Diavik's commitment to environmental protection. Every year, Diavik must submit an annual Wildlife Monitoring Report (WMR) comparing annual results of the program to predictions made at the beginning of the project, and to revise any objectives. Diavik submitted their 2020 WMR to EMAB on March 31, 2021. EMAB had Management and Solutions in Environmental Science Inc. help with the review.

1. 2020 WILDLIFE MONITORING REPORT

Highlights from the 2020 WMR and EMAB's review:

For a full list of recommendations on Diavik's 2020 WMP, visit our website: www.emab.ca.

1.1 BARREN GROUND CARIBOU:

Diavik's caribou research focuses on the Bathurst herd, which travels through the area of Lac de Gras during their annual migrations. Sightings in recent years suggest that the Beverly/Ahiak herd are also within the area of Lac de Gras in winter, and are considered to be affected by Diavik's mining activity.

The monitoring of caribou includes:

- Monitoring the Zone of Influence (ZOI) of the mine.
- Collection and analysis of behavioral data.
- Monitoring movement of the caribou herds.
- Recording caribou incidents and fatalities that are a result of the mine.


EMAB Photo

1.1.1 ZONE OF INFLUENCE

A ZOI is the area surrounding the mine where behaviour and distribution of wildlife is impacted. Diavik did not complete any additional analyses for ZOI monitoring of caribou for the 2020 WMR. Diavik's 2020 WMR restates the results of their 2019 analysis of aerial survey data that concluded no ZOI exists. Two peer-reviewed studies use aerial survey and collar data to show there is a ZOI around the mine. EMAB recommended that:

- ZOI monitoring continue as a component of the WMP.
- Use of multiple types of analyses (e.g. Aerial survey, collar data).
- Explore new sampling methods (e.g. Drones).
- ZOI Technical Task Group (TTG) reconvene to discuss and determine the approach to future ZOI monitoring.

The ZOI has not been assessed since 2012 (before work on A21 began).

Caribou with Diavik accomodations in the background.

1.1.2 BEHAVIOUR

It is important to monitor caribou behaviour to see how they behave inside the ZOI versus outside. Caribou movement and migration around the mine has changed, and analyzing their behaviour is an important step in understanding why. Diavik observes and records the types and duration of activity of the caribou herds, such as running, trotting, and eating. Diavik has had trouble collecting data on caribou outside the ZOI, as their safety measures do not permit staff to complete this type of activity when temperatures are below -30^{0}C. Behaviour analysis could be useful in helping us understand the effect of the specific stressors created by the mine (e.g. blasting, human presence, dust, noise etc.).

EMAB has recommended (DDMI-WMP-11) to Diavik to resume their efforts to collect annual caribou behaviour data, as new data is needed for new analysis that reflects current conditions. Diavik has responded by committing to continuing collection of caribou behaviour data.

1.1.3 DISTRIBUTION AND MIGRATION

Monitoring the distribution and migration patterns helps understand the effects that the mine has on the caribou. One method of monitoring is called deflection monitoring. Initial predictions said that caribou would:

- Travel west of East Island during spring migration (northern migration).
- Travel east of Lac de Gras during fall migration (southern migration).

In the last several years more caribou have travelled west of Lac de Gras on the southern migration. EMAB has recommended that Diavik re-evaluate the collar data and confirm whether the mine is having an effect on caribou migration, and on any additional energy they use because of the change.

EMAB RECOMMENDATION: EMAB recommends Diavik evaluate the energetic cost of migration.

Photo courtesy of Diavik Diamond Mine

Photo courtesy of Diavik Diamond Mine

1.2 GRIZZLY BEARS

Diavik tracks grizzly bear abundance and distribution. Diavik has shown they have had minimal impacts on grizzly bear population with hair snagging surveys, although no survey has been completed since 2017. The study showed:

- A stable or increasing grizzly bear population in the area.
- No negative effects on regional grizzly bear population because of mining operations.

Although the bear population surrounding Diavik is stable, that does not mean that incidents do not occur. There were two bear mortalities and one relocation in 2020. A sow and a yearling cub were euthanized because they became habituated, and entered the camp cafeteria.

1.3 WOLVERINE

Diavik uses snow track surveys, hair snagging surveys, and incidental observations to estimate wolverine abundance and distribution over time.

1.3.1 SNOW TRACK SURVEYS

Completing snow track surveys helps give Diavik an idea of wolverine use of an area. It is important to note that these surveys cannot give an exact number of wolverines, just a general idea of whether there are wolverines in the area. Additionally, snow tracks can be covered up by drifting snow in high winds, which make them harder, or even impossible to detect.

Typically, two snow track surveys are completed annually, but because of COVID-19, Diavik only completed one round in 2020. The 2020 surveys results showed that tracks were identified at 12 of 40 transects, and had a lower average track density than in 2019.

1.3.2 HAIR SNAGGING SURVEYS

The GNWT-ENR organizes hair snagging surveys with Diavik, and helps determine wolverine abundance and distribution near the mine. Wolverine hair snagging surveys did not occur in 2020. The last survey was in 2014.

1.3.3 DETERRENT ACTIONS

In 2020 there were zero wolverine mortalities. There was a single relocation and a total of 35 deterrent actions that were used on wolverines. There were 17 incidental observations of wolverines on East Island from February to December.

Photo courtesy of Diavik Diamond Mine

1.4 RAPTORS

In 2020, 55 pit wall and infrastructure nest surveys were completed in June and July, and two active nests were confirmed:

- A rough-legged hawk nest at the south ramp of the A21 Pit.
- A raven nest in the site services line up area.

Diavik used deterrent actions 22 times between May and July 2020 to prevent nesting near the south ramp, and successfully deterred a pair of peregrine falcons from nesting in the A21 Pit.

1.5 WASTE MANAGEMENT

Food waste must be disposed of properly at Diavik to limit the attraction of wildlife. On average, Diavik reported a 35% reduction in misdirected attractants found during inspections than last year. Red fox was the most commonly observed animal at the waste transfer area. EMAB believes the overall outcome of waste management appears to be positive.

2. WILDLIFE MANAGEMENT & MONITORING PLAN (WMMP)

In July 2019, the GNWT released requirements for wildlife monitoring programs as regulations under the *Wildlife Act*. The WMMP is a program description that lays out specific monitoring that must be done by Diavik. Diavik submitted their WMMP to the GNWT-ENR on April 1, 2021. EMAB asked their technical consultants at MSES to review Diavik's WMMP to help EMAB ensure a complete approach to wildlife management is taken. GNWT had not made a decision on the WMMP at the time of this report.

The MSES consultants believe that many of the wildlife monitoring methods are adequate and would like them to be maintained within the WMMP, including:

- Vegetation and wildlife habitat monitoring.
- Incidents and mortality monitoring for wildlife.
- Waste Management.

There were a number of topics that stood out in the WMMP:

For a full list of recommendations on Diavik's 2020 WMP, visit our website: www.emab.ca.

2.1 CARIBOU MOVEMENT

Although Diavik is retaining this part of the monitoring program, they do not want to restart aerial surveys. They believe there are difficulties reaching conclusions about the presence of a ZOI. Diavik would like to use only GPS collar data to track caribou movement. EMAB is glad that Diavik will continue using GPS collar data, but would like to see Diavik continue aerial surveys as a way to validate GPS collar data. EMAB also believes Diavik should explore other monitoring methods that would help the monitoring of caribou movement, like the use of drones.

EMAB RECOMMENDATION: ZOI monitoring should continue as a component of the WMP. Monitoring should include the use of multiple methods (e.g. aerial survey, satellite collar data) to confirm presence/absence and potential size of a ZOI.

DIAVIK RESPONSE: Diavik will continue ZOI monitoring using satellite collar data, but will not include aerial surveys. Diavik's analysis of 13 years of aerial surveys was unable to detect a ZOI.

Note: Published scientific articles written by wildlife experts detected a ZOI.

2.2 CARIBOU BEHAVIOUR

The behaviour data is important for understanding the influence of the mine on caribou. One type of data Diavik collects is the reaction of caribou to specific stressors (e.g., noise from airplane, vehicle, or pit blasting). Walking, trotting, and running are all recorded through ground-based behavioural observations. These data help Diavik determine any behavioural changes in the caribou compared to the original prediction.

EMAB RECOMMENDATION: Compare caribou running bouts as a function of distance, and consider both grouping, and separating running and trotting activities as part of the analysis, for comparison.

DIAVIK RESPONSE: Caribou behaviour will be monitored and analysed to test for effects of mine activity, habitat, group composition, and distance from mine on the amount of time caribou spend feeding. The 2020 WMP includes running in accordance with distance and shows no pattern between distance, and that caribou spend very little time running.

2.3 CARIBOU DISTRIBUTION

Diavik has proposed to remove part of the monitoring program and has not included discussion of caribou migration in the WMMP. EMAB recommended Diavik provide a discussion that described the friction model, which was used to predict the energetic cost of caribou using different migration routes through the Lac de Gras area.

Diavik's response states that under Diavik's full development, the pathway of least resistance shifted from the East Island crossing to routes between Lac du Sauvage and Lac de Gras. The increased cost of movement was calculated to be 3.9% (relative to baseline conditions).

2.4 GRIZZLY HAIR SNAGGING

Diavik has states that program partners at the 2021 Slave Geological Provincial Wildlife Workshop agreed that the hair snagging program no longer needs to be completed based on current results that show a stable population. EMAB believes that ensuring grizzly bear populations in the area remain stable should be a goal of the monitoring program, and monitoring should continue, perhaps on a less frequent basis (e.g. every five years instead of annually).

EMAB RECOMMENDATION: EMAB continues to support Diavik's involvement in the GNWT-ENR hair snagging program, but recognize that annual surveys may not be necessary given the stable regional grizzly bear populations, and no apparent negative demographic effects associated with the Mine.

2.5 WOLVERINE HAIR SNAGGING

Much like the grizzly bear hair snagging surveys, Diavik has suggested ending the wolverine hair snagging surveys. EMAB recommends repeating these surveys every four to six years to confirm the population is stable.

EMAB RECOMMENDATION: The schedule for future hair snagging should be determined in collaboration with the GNWT-ENR.

Photo courtesy of Diavik Diamond Mine

ENVIRONMENTAL AIR QUALITY MONITORING PROGRAM

Diavik's Environmental Air Quality Monitoring Program (EAQMP) started in 2012. The program is required by the Environmental Agreement (EA), but is not required by the water licence, or reviewed/approved by the WLWB. Diavik submits an EAQMP report annually, and submitted an EAQMP re-assessment in January 2019.

1. 2019 EAQMP ANNUAL REPORT

Diavik submitted its 2019 EAQMP in July 2020. EMAB had Arcadis Canada help with the technical review of the annual report and submitted 6 recommendations to Diavik on December 9, 2020.

For a full list of recommendations on Diavik's 2019 EAQMP visit our website: www.emab.ca.

1.1 DUSTFALL MONITORING

Diavik monitors dustfall at the mine. Dustfall is the amount of total suspended particulate (TSP) that falls out of the air and settles on the ground. Larger particles are not able to travel as far and settle closer to the mine, while smaller dust particles can be carried farther from the mine in the wind. Diavik measures dustfall at different distances from the mine. They test for chemicals in the dust through collection of dust using dust gauges and collecting snow core samples. Dustfall and snow core monitoring results indicate that A21 open pit operations are impacting dust levels off-site.

SUMMARY OF EMAB CONCERNS AND RECOMMENDATIONS AND DIAVIK RESPONSES

EMAB RECOMMENDATION:
Document high dust events and provide rationale.

DIAVIK RESPONSE:
Dustfall data is only collected every three months, so unable to do this.

EMAB RECOMMENDATION:
Compare actual dustfall to modeled dustfall.

DIAVIK RESPONSE:
Varying conditions from year to year mean a comparison wouldn't tell anything.

EMAB RECOMMENDATION:
Include details on calculating greenhouse gas emissions.

DIAVIK RESPONSE:
Calculation details are in Environment Canada manuals.

EMAB RECOMMENDATION:
Update dispersion model and confirm locations for dustfall sampling.

DIAVIK RESPONSE:
Diavik does not recommend updating the model.

EMAB RECOMMENDATION:
Provide rationale for switching to Alberta air quality guidelines.

DIAVIK RESPONSE:
B.C. guidelines were rescinded by the province of B.C. because the guidelines were pollution control objectives, and had no basis in assessing health effects.

EMAB RECOMMENDATION:
Move two stations to give a more accurate understanding of dustfall.

DIAVIK RESPONSE:
Diavik disagrees; this would prevent comparing older data to new data.

EMAB plans to follow up on a number of Diavik's responses.

Diavik conducted TSP monitoring from 2013-2018 and have since discontinued this monitoring. EMAB disagrees with this action and has requested the Minister review the adequacy of the program (see below).

2. MINISTERIAL REVIEW OF EAQMMP V2.0

Diavik released the revised Environmental Air Quality Monitoring and Management Plan V2.0 (EAQMMP) in January 2019. In the revised plan Diavik removed the TSP monitoring component. EMAB believes that TSP monitoring is required under various sections of the original EA to:

- Verify the accuracy of the EA of the project.
- Determine the effectiveness of measures taken to mitigate any adverse environmental effects of the project.
- Establish or confirm thresholds or early warning signs.
- Trigger action by adaptive mitigation measures where appropriate.

EMAB asked Arcadis Canada to do a technical review of EAQMMP V2.0, which we gave to Diavik. In May 2020 Diavik told EMAB they would not make any changes to the new EAQMMP. On July 30, 2020 EMAB requested the Minister review Diavik's EAQMMP V 2.0 to determine the program's adequacy, under section 7.5 of the Environmental Agreement. ENR provided Diavik with the opportunity to provide feedback on EMAB's request, and has decided to proceed with the review.

ENR has provided EMAB with an EAQMMP review work plan. They aim to conduct a review in January 2022, based on guidelines they will develop in fall 2021, and will issue a Minister's report by March 2022.


EMAB Photo


Photo courtesy of Diavik Diamond Mine

3. YELLOW HAZE

EMAB began investigating the issue of Yellow Haze after community members raised it as a concern. We recommended Diavik sample the Yellow Haze in March of 2020. Diavik responded that they are unaware of a yellow haze phenomenon, and that they have not seen a yellow haze over the mine. A number of EMAB Board members said they had also seen the Yellow Haze, including a photo taken by EMAB's Chair, so EMAB sent the photo, and re-stated the recommendation. Diavik responded that they couldn't be sure the photo was Diavik, but agreed that it was possible that Yellow Haze was occurring from time to time. They noted that they monitor air quality and effect of air emissions on vegetation and have not found any significant effects.

EMAB followed up by requesting Arcadis Canada provide technical comments. Arcadis' review from March 2021 says it's likely that the yellow haze is due to air pollution related to combustion of gasses (Nitrogen oxides (NOx) from vehicle exhaust, generators, boilers etc.) during temperature inversion conditions.

These conditions would occur during extended calm periods in the winter where heat from the sun warms the air near the ground. Overnight, the ground temperature drops, and the warm air is replaced with cold air. The warmer air rises and acts like a lid, trapping the cool air, and any pollution from burning fossil fuel, like vehicle exhaust. This layer of warmer air is called an inversion layer.

To confirm the source of the yellow haze is emissions from site activities, Diavik needs to sample for nitrogen dioxide (NO_2) over the site when the yellow haze is present. Arcadis recommends two possible sampling techniques.

3.1 PASSIVE SAMPLING

- Provides longer term information for a specific location.
- Can assess the average exposure of individuals to selected pollutants.

3.2 ACTIVE SAMPLING

- Provides shorter term measurements to collect information during inversion conditions.
- Can test air quality in specific areas when yellow haze is present.

EMAB's technical consultants at Arcadis recommended a shorter duration of active sampling combined with

continuous passive sampling of NO_2. This approach would help pinpoint the haze in real time, where and when it occurs.

EMAB sent a follow up letter recommending Diavik sample the yellow haze on June 29, 2020.

EMAB RECOMMENDATION: Sample the yellow haze and report on its chemical make-up and concentration, or develop a program to sample it.

ENVIRONMENTAL AGREEMENT ANNUAL REPORT

As part of the EA, Diavik must submit an Annual Report to the Parties, the Government of Nunavut, and EMAB every year. The Environmental Agreement Annual Report (EAAR) must be approved by the Minister. The purpose of the EAAR is to summarize the mine's activities and results of the environmental monitoring programs from the past year.

Diavik submitted their draft 2019 EAAR on June 30, 2020. EMAB reviewed the report and submitted 13 recommendations. All recommendations can be found on EMAB's website.

Key EMAB recommendation were:

EMAB RECOMMENDATION: Appendix III lists the TK panel recommendations from September 2019, but it does not include Diavik's responses or indicate how Diavik will incorporate the recommendations. In accordance with the EA section 12.1 (c-x), Diavik should include details about concerns raised by the Panel, Diavik's responses to the recommendations, and details about how recommendations were implemented.

EMAB RECOMMENDATION: EMAB found Diavik's EAQMP to be inadequate because it did not meet Environmental Agreement commitments to monitor Total Suspended Particulates.

EMAB RECOMMENDATION: There was some monitoring that Diavik indicated had taken place in 2019 (Fish Health tissue chemistry, and TSP monitoring), however sampling had not been done. EMAB recommended Diavik make sure to indicate that.

Diavik sent back a revised EAAR on September 16, 2020 to EMAB and the Minister.

MINISTER DECISION: On December 16, 2020 the Minister determined that the 2019 EAAR was satisfactory.

REPORT CARD ON DIAVIK AND THE REGULATORS

EMAB's mandate includes oversight of the regulatory process. This section summarizes how Diavik and other Parties have responded to EMAB recommendations. It also summarizes the level of engagement of the various regulators responsible for the Diavik file.

1. WATER LICENCE

Diavik's responsiveness to EMAB recommendations last year has been good with respect to issues related to its water licence, including closure planning. Diavik has responded promptly and thoroughly to EMAB's recommendations as made through the WLWB review process.

Regulator responses to Diavik's requests and reports has been variable (see Table of Review Responses on page 52).

Photo courtesy of Diavik Diamond Mine

Since 2015 EMAB has been expressing concern about the involvement of two key federal government departments in the review of monitoring reports and management plans related to Diavik's Water Licence. EMAB's view is that both the Department of Fisheries and Oceans (DFO), and Environment and Climate Change Canada (ECCC) have an important role to play in providing oversight on Diavik's impact on the air and water in the Diavik mine area. EMAB has recommended ECCC, and DFO in particular, be more active in making comments and recommendations. EMAB continues to be disappointed by DFO's lack of substantive comment on reports that bear on the health of fish and fish habitat.

DFO commented on three of the six documents listed in the Table of Reviewer Responses. They did not intervene at the Water Licence Amendment Proceeding for the PKMW Project.

EMAB notes that DFO has an ongoing process to implement the amended *Fisheries Act* and it is our hope that this renewed interest will also result in greater DFO engagement in reviewing reports from Diavik under their Water Licence.

This year ECCC commented on three of the reports listed as well as intervening in the MVEIRB PK to Pits project hearings.

In 2020 in response to COVID-19 GNWT Lands implemented an approach that included remote inspections as well as the usual in-person inspections. The Inspector visited the Diavik mine site eight times: two remote inspections and six in-person. The Inspector made 4 presentations to EMAB throughout the year on the results of the inspections. The Inspector commented on the draft Water Licence for the PK to Pits Project; otherwise he did not comment on any reports.

Table of Reviewer Responses

Reviewer	ECCC	DFO	GNWT - ENR	EMAB
Independent Review Panel – PK to Pits Project	No comment	No comment	No comment	Commented
ICRP Ver. 4.1	Commented	Commented	Commented	Commented
Water Licence Amendment – PK to Pits Project	Intervened	No Intervention	Intervened	Intervened
2019 AEMP Report	No comment	Commented	Commented	Commented
Draft Water Licence – PK to Pits Project	Commented	Commented	Commented	Commented
ICRP Mixing Zone Discussion Paper	Commented	No comment	Commented	Commented

ENR-Waters commented on all the reports we looked at except the Independent Review Panel for the PKMW project, and we commend their continued thorough and substantive reviews of the Diavik Water Licence plans and reports. EMAB notes that ENR did not comment on the PK to Pits Review Panel TOR out of concern that the proper procedures for the PK to Pits hearings were not being followed.

Similarly, the WLWB consistently provided detailed reviews of all documents submitted by Diavik for review.

We note that the WRRB has made submissions on a number of water licence report reviews stating that they had no comments.


Photo courtesy of Diavik Diamond Mine

2. WILDLIFE MONITORING

Diavik's responses to EMAB's recommendations on wildlife monitoring was much improved in 2020, following implementation of EMAB's new recommendation tracking system.

- Diavik responded 8 days late to EMAB's follow-up recommendations on the 2018 WMP report.
- Diavik's responses on the WMP Program Description were all within the 60 day period required by the EA.
- Diavik's responses on the 2019 WMP report were all within the 60 day period required by the EA.
- EMAB submitted comments to Diavik on the 2020 WMP report in July 2021 and responses are not expected before publication of this report.
- ENR-Wildlife was much more involved with Diavik's wildlife monitoring in 2020.

Photo courtesy of Diavik Diamond Mine

Photo courtesy of Diavik Diamond Mine

- ENR Wildlife reviewed the 2019 WMP report and provided comments to Diavik.
- ENR Wildlife also reviewed Diavik's updated WMP Program Description from summer 2020.
- ENR-Wildlife directed Diavik to submit a Wildlife Management and Monitoring Plan as required under Section 95 of the new Wildlife Act Regulations.
- ENR-Wildlife has not given follow-up direction to Diavik on re-starting ZOI monitoring but did hold a workshop in February 2021 to discuss the diamond mine wildlife monitoring programs.
  - › The workshop included discussions on DNA hair snagging for Grizzly bear and wolverine and caribou monitoring including ZOI monitoring, caribou behavior and migration monitoring.
- ENR-Wildlife did not submit comments on closure criteria for wildlife as part of the review of ICRP Version 4.1. EMAB continues to encourage ENR-Wildlife to provide input on closure criteria for wildlife as they relate to how the post-closure landscape will accommodate wildlife in the area, and monitoring effects on wildlife, post-closure.

EMAB Photo

TSP monitoring station.

3. AIR QUALITY MONITORING

Diavik's response to EMAB's recommendations on air quality monitoring was also much improved in 2020, following implementation of EMAB's new recommendation tracking system.

Diavik submitted the 2019 EAQMP report and EMAB's review is discussed earlier in this report. EMAB made 6 recommendations and Diavik's response was within the 60 day period required by the EA.

EMAB made 2 recommendations regarding yellow haze sampling and Diavik's response was within the 60 day period required by the EA.

EMAB made 3 recommendations on re-assessing the Environmental Air Quality Monitoring program. Diavik's responses were 13 days overdue.

EMAB submitted a request to the Minister to review Diavik's EAQMP under section 7.5 of the Environmental Agreement in July 2020. The Minister responded in September that ENR would proceed with the review. EMAB followed up in May 2021 requesting an update on the status of the investigation. ENR has now committed to develop an air quality guideline for diamond mines in fall 2021, and to assess Diavik's EAQMP against the guideline during Q1 of 2022, almost two years after EMAB's formal request was submitted.

To EMAB's knowledge ENR - Air Quality did not make any comments on Diavik's 2019 EAQMP report. EMAB looks forward to ENR - Air Quality's comments and recommendations on Diavik's future air quality monitoring reports.

4. INSPECTOR'S AUTHORITY TO GIVE DIRECTION

The delay in ENR's legislative updates means that any change to section 67(1) of the *Waters Act* will also be delayed. We believe the changes previously proposed by ENR would resolve our concern about possible limitations on the Inspector's authority to give direction to Diavik in the current wording of the Act. We trust that ENR will advance this change as soon as reasonably possible (see 2016-17 Annual Report for details on this issue).

COMMUNICATIONS


EMAB Photo

ANNUAL GENERAL MEETING (AGM)

Each September, we hold our AGM in our Yellowknife office boardroom. Parties to the Environmental Agreement are invited to attend and provide input on EMAB's activities and direction. In September 2020 we held our AGM through a combination of virtual and in-person participation. Charlie Catholique was re-elected as Chair, Jack Kaniak was re-elected Vice Chair and Violet Camsell-Blondin was re-elected as Secretary-Treasurer.

EMAB DIRECTORS

EMAB Directors are one of the main ways EMAB communicates with Affected Communities. Our Directors are responsible for updating communities on what is going on at Diavik and bringing any concerns and questions about the environment at Diavik back to EMAB. Due to funding reductions from Diavik, and lack of uptake, EMAB has cut back the budget that covers Director consultation in communities.

COMMUNITY MEETINGS

As discussed in the section on Involving and Supporting Communities, EMAB holds public updates in the communities of the Aboriginal Parties. The goal is to keep people informed and allow them to ask questions and voice opinions and concerns. Due to COVID-19 and concerns from communities we did not hold any community updates in 2020-21.

PUBLIC LIBRARY

EMAB is responsible for making sure that people have access to materials that relate to the Environmental Agreement. Anyone interested can visit our office and access plans and reports, expert reviews, correspondence, Board meeting minutes, maps and images. Our office hours are 8:30 a.m. – 4:30 p.m. Monday to Friday. EMAB's library was closed to the public during the COVID-19 pandemic.

Much of this information is also available on our website, www.emab.ca

WEBSITE

EMAB's website is another way for EMAB to reach out to the people. We use our website to post our comments and recommendations on Diavik's WMP and EAQMP reports. We also post EMAB Annual Reports, Diavik's EAARs, meeting minutes and correspondence. ICRP and AEMP comments can be found on the WLWB public registry. You can visit us at our website, **www.emab.ca** and our Facebook page, **facebook.com/EMAB2015**.

ANNUAL REPORT

EMAB circulates its annual report and a plain language summary to all Parties to the Environmental Agreement, as well as key leaders in the Affected Communities and throughout the NWT.

BROCHURE AND POSTER

EMAB has a brochure and poster summarizing our work. These are available on request.

EMAB GOVERNANCE AND OPERATIONS

Photo courtesy of Diavik Diamond Mine

The Board met ten times in 2020-21; eight Board meetings took place as a combination of face-to-face meetings and teleconference, to respect COVID-19 restrictions while meeting the needs of our Board members, as well as two conference calls on specific issues. The Annual General Meeting took place on September 9. The Board passed 16 email motions over the year.

Some Parties appointed new Board members in 2020-21: North Slave Metis Alliance replaced Arnold Enge with Marc Whitford, and GNWT replaced Julian Kanigan with Ngeta Kabiri. Canada's member, Dinah Elliott, resigned early in the year and has not been replaced.

BUDGET AND FINANCE

EMAB's budget for 2020-21 was $626,660; this included $108,000 rolled over from 2019-20 coupled with Diavik's payment of $516,960. EMAB spent $518, 564 during the year. With Diavik's agreement we will roll over $53,149 for activities in 2021-22 and will return $57,985 to Diavik.

EMAB negotiates its budget with Diavik every two years, for the following two years. At the end of the two-year period any surplus must be returned to Diavik, except as agreed between Diavik and EMAB. The Environmental Agreement says that EMAB will try to keep any budget increases to the rate of inflation. EMAB recommends a budget to Diavik that we both have to agree on. If there is no agreement Diavik submits its own proposed budget to the Minister, and they can choose EMAB's or Diavik's. EMAB and Diavik agreed on the last two 2-year budgets, but for the previous three budget periods EMAB and Diavik did not agree, and each time the Minister chose Diavik's budget. This has resulted in EMAB's budget being cut back from $726,000 in 2011 to $516,960 in 2020. To conduct any activities above and beyond those budgeted EMAB must submit a separate funding request to Diavik for approval.

EMAB recommended our two-year budget for 2021-23 to Diavik in September and Diavik has accepted the budget.

Photo courtesy of Diavik Diamond Mine

DIAVIK SITE VISIT

Board members and staff have not had a site tour of Diavik since June 2019, due to restrictions set by the Chief Public Health Officer and Diavik.

Board members and staff look forward to the opportunity to tour the site as soon as possible.

ACTION PLAN

EMAB finalized and adopted an Action Plan for 2019-24 during 2019. Much of the plan aims at continuing EMAB's ongoing approach of focusing on technical reviews of key Diavik plans and reports, and keeping Affected Communities and others informed about activities at Diavik, and any issues or concerns. Some key changes to the plan include:

- Providing 1-2 page meeting summaries to Parties; these are now sent after each meeting.
- Continuing assessment of Diavik response to TK Panel recommendations; this is ongoing.
- Developing a 1-page summary of the role of EMAB Board members; this is ongoing.
- Addressing potential for conflict of interest (COI) at Board meetings through a broader COI policy; this is being developed with legal advice.

ENVIRONMENTAL AGREEMENT

GNWT proposed amendments to the Environmental Agreement in 2013 to reflect the transfer of certain powers under devolution. The draft Environmental Agreement amendments have been circulated to the Parties to the Environmental Agreement for review and comment. EMAB will provide updates as this process moves forward.

OPERATIONS

Janyne Matthiessen has been the Environmental Specialist since May 2019. John McCullum has been the Executive Director since November 2015.

EMAB's Operations Manual was reviewed and updated.

WHAT ARE EMAB'S PLANS?

EMAB will continue to address the challenge of the COVID-19 pandemic next year. In particular we will be working to meet the needs of Board members and communities to be informed about Diavik's environmental activities, plans and monitoring programs, while minimizing potential for exposure, and meeting directives from the Chief Public Health Officer.

Our priorities for 2021-22 will continue to focus on closure plan developments. Other planned activities include:

OVERSIGHT AND MONITORING

Participate in ENR Ministerial investigation of adequacy of current Environmental Air Quality Monitoring Program.

Review the new Wildlife Monitoring Program description that Diavik is required to submit to ENR.

Continue monitoring development of the A21 pit as mining proceeds.

Continue participation in GNWT-Lands initiative to develop regulations for the *Public Lands Act*.

Continue participation in ENR initiative to revise environmental legislation including the *Waters Act* and *Environmental Protection Act*.

Continue to monitor and participate in development of GNWT policy on security and long-term liability and monitoring for closed minesites.

REVIEW REPORTS:

- 2020 AEMP Annual Report.
- 2017-2019 AEMP Re-Evaluation Report.
- 2020 Annual WMP Report.
- 2020 EAQMP Report.
- ICRP Progress Report and closure designs.
- 2020 EAAR.

ABORIGINAL AND COMMUNITY INVOLVEMENT

- Community engagement and attendance at TK Panel meetings continue to be affected by COVID-19 directives and safety measures. We are adapting our activities to fulfill these plans safely.
- Attend Traditional Knowledge Panel meetings as possible in the context of COVID-19.
- Engage Communities through Board members and community update meetings.
- Assess implementation of TK Recommendations including assessment of Diavik response and follow-up.

COMMUNICATIONS

- Annual Report.
- Website.
- Public Registry.
- Facebook Page.
- Meeting Summaries.

GOVERNANCE

- Hold regular meetings while respecting COVID-19 restrictions.
- Oversee EMAB operations.
- Continue to implement Action Plan for 2019-24.

EMAB Photo

AUDITED FINANCIAL STATEMENTS

To the Board of Directors of
Environmental Monitoring Advisory Board

Opinion
We have audited the financial statements of Environmental Monitoring Advisory Board, which comprise the statement of financial position as at March 31, 2021, and the statements of operations, changes in net assets and cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies and other schedules and supplementary information.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the organization as at March 31, 2021, and its results of operations and its cash flows for the year then ended in accordance with ASNPO.

Basis for Opinion
We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the organization in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of Management and Those Charged with Governance for the Financial Statements
Management is responsible for the preparation and fair presentation of the financial statements in accordance with ASNPO, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the organization's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the organization or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the organization's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements. As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

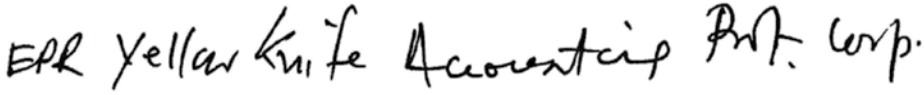
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the organization's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the organization's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the organization to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.



Yellowknife, NT
November 9, 2021

EPR Yellowknife Accounting Professional Corporation
Chartered Professional Accountants

ENVIRONMENTAL MONITORING ADVISORY BOARD
Statement of Operations
For the year ended March 31, 2021

	2021 Budget	2021 Actual	2020 Actual
Revenues			
Diavik Diamond Mines Inc.	$ 516,960	$ 516,960	$ 506,820
Transfer to deferred revenue	-	-	(111,134)
Transfer from deferred revenue	108,000	111,134	39,575
Contributions repayable	-	(111,134)	(878)
Interest income	1,700	1,604	6,976
	626,660	518,564	441,359
Expenditures			
Amortization	-	3,925	1,904
Administration, Schedule 1	82,935	71,717	64,883
Management Services, Schedule 2	208,600	201,210	184,724
Governance, Schedule 3	123,488	99,045	93,640
Oversight and monitoring, Schedule 4	177,187	115,468	88,912
Involving and supporting communities, Schedule 5	24,650	406	391
Communications, Schedule 6	9,800	10,037	8,809
	626,660	501,808	443,263
Surplus (deficit) before transfer of capital items	-	16,756	(1,904)
Other item			
Transfer to Tangible Capital Asset Fund	-	(3,925)	(1,904)
Purchase of capital assets	-	20,681	-
	-	16,756	(1,904)
Surplus for the year	$ -	$ -	$ -

ENVIRONMENTAL MONITORING ADVISORY BOARD
Statement of Changes in Net Assets
For the year ended March 31, 2021

	Operating Fund	Tangible Capital Asset Fund	Total 2021	Total 2020
Balance, opening	$ -	$ 4,444	$ 4,444	$ 6,348
Surplus	-	-	-	-
Amortization	(3,925)	-	(3,925)	(1,904)
Additions	20,681	-	20,681	-
Transfer from operating fund	(16,756)	16,756	-	-
Balance, closing	$ -	$ 21,200	$ 21,200	$ 4,444

ENVIRONMENTAL MONITORING ADVISORY BOARD
Statement of Financial Position
As at March 31, 2021

	2021	2020
ASSETS		
Current		
Cash	$ 31,192	$ -
Prepaid expenses	3,715	5,352
Restricted cash (Note 3)	680,418	666,514
	715,325	671,866
Tangible Capital Assets (Note 4)	21,200	4,443
	$ 736,525	$ 676,309
LIABILITIES		
Current		
Bank indebtedness (Note 5)	$ -	$ 13,816
Accounts payable and accrued liabilities (Note 6)	76,891	29,077
Deferred revenue (Note 7)	527,300	628,094
Contributions repayable (Note 8)	111,134	878
	715,325	671,865
Net Assets	21,200	4,444
	$ 736,525	$ 676,309

APPROVED ON BEHALF OF THE BOARD

Member

Member

ENVIRONMENTAL MONITORING ADVISORY BOARD
Statement of Cash Flows
For the year ended March 31, 2021

	2021	2020
Operating activities		
Surplus	$ -	$ -
Change in non-cash working capital items		
Decrease in accounts receivable	-	274
Decrease (increase) in prepaid expenses	1,637	(3,773)
Increase (decrease) in accounts payable and accrued liabilities	47,813	(20,599)
(Decrease) increase in deferred revenue	(100,794)	81,699
Increase (decrease) in contributions repayable	110,256	(40,350)
Increase in cash	58,912	17,251
Cash, opening	652,698	635,447
Cash, closing	$ 711,610	$ 652,698
Cash consists of:		
Cash	$ 31,192	$ -
Restricted cash	680,418	666,514
Bank indebtedness	-	(13,816)
	$ 711,610	$ 652,698

1. ORGANIZATION AND JURISDICTION

Environmental Monitoring Advisory Board (the "Board") is a not-for-profit organization established as a requirement of the *Diavik Environmental Agreement.* It aims to provide a meaningful role for Aboriginal People in the review and implementation of environmental monitoring plans with respect to the Diavik Diamond Mine site in the Northwest Territories. The Board will be in place until full and final reclamation of the mine is complete.

The Board is exempt from income tax under section 149(1)(l) of the *Income Tax Act*.

2. SIGNIFICANT ACCOUNTING POLICIES

The Board applies the Canadian accounting standards for not-for-profit organizations.

(a) *Financial instruments*

The Board initially measures its financial assets and liabilities at fair value. The Board subsequently measures its financial assets and financial liabilities at amortized cost, except for securities quoted in an active market, which are subsequently measured at fair value.

Financial assets measured at amortized cost include cash and restricted cash. Financial liabilities measured at amortized cost include accounts payable and accrued liabilities.

At the end of each reporting period, management assesses whether there are any indications that financial assets measured at cost or amortized cost may be impaired. If there is an indication of impairment, management determines whether a significant adverse change has occurred in the expected timing or the amount of future cash flows from the asset, in which case the asset's carrying amount is reduced to the highest expected value that is recoverable by either holding the asset, selling the asset or by exercising the right to any collateral. The carrying amount of the asset is reduced directly or through the use of an allowance account and the amount of the reduction is recognized as an impairment loss in operations. Previously recognized impairment losses may be reversed to the extent of any improvement. The amount of the reversal, to a maximum of the related accumulated impairment charges recorded in respect of the particular asset, is recognized in operations.

(b) *Fund accounting restricted*

The Board uses fund accounting to segregate transactions between its Operating Fund and Tangible Capital Asset Fund. The Operating Fund accounts for the Board's operating and administrative activities. The Tangible Capital Asset Fund reports the assets, liabilities, revenues and expenses related to tangible capital assets.

(c) *Tangible capital assets*

Tangible capital assets are recorded at original cost plus any costs of betterment less accumulated amortization and excludes any assets not in current use. Amortization is calculated when the tangible capital assets are ready in use by the declining balance at rates set out in note 4.

2. SIGNIFICANT ACCOUNTING POLICIES, continued

(d) *Revenue recognition*

The Board follows the deferral method of accounting for contributions. Restricted contributions are recognized as revenue in the year in which the related expenses are incurred. Unrestricted contributions are recognized as revenue when received or receivable if the amount to be received can be reasonably estimated and its collection is reasonably assured. Contributions which are not expensed in the current year are set up as deferred funding to be used in the future year when services are provided and goods acquired or refundable contributions that must be repaid to the contributor. Interest income is recognized on the basis of the time funds are in the account and interest is accrued.

(e) *Unexpended funds*

On January 16, 2011 an Arbitration Award findings resulted in a change in accounting policy for the recognition and treatment of unexpended funds. Previously the Board classified the unexpended funds as unrestricted net assets. Beginning in 2011, unexpended funds are classified as net unexpended contributions repayable or deferred revenue. The Board may not accumulate unrestricted net assets from unexpended Diavik Diamond Mines Inc.

(f) *Allocated expenses*

The Board allocates expenditures according to its activities. Expenditures are allocated to Administration, Management Services, Board, Science Program, Involving and Supporting Communities and Communication.

(g) *Cash and cash equivalents*

Cash and cash equivalents consist primarily of cash in chequing account and restricted cash.

(h) *Use of estimates*

The preparation of financial statements in conformity with Canadian accounting standards for not-for-profit organizations requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. By their nature, these estimates are subject to measurement uncertainty. The effect of changes in such estimates on the financial statements in future periods could be significant. Accounts specifically affected by estimates in these financial statements are .

3. RESTRICTED CASH

Restricted cash represents cash received from Diavik Diamond Mines Inc. that is intended for a specific purpose or represents the amount to repay.

	2021	2020
Carried forward funding	$ 153,118	$ 149,554
Cash received in advance for the 2020/2021 fiscal year	-	516,960
Cash received in advance for the 2021/2022 fiscal year	527,300	-
	$ 680,418	$ 666,514

4. TANGIBLE CAPITAL ASSETS

			2021	2020
	Cost	Accumulated amortization	Net	Net
Office equipment	$ 33,017	$ 32,237	$ 780	$ 1,114
Furniture and fixtures	24,209	22,971	1,238	1,768
Computer equipment	81,575	62,393	19,182	1,561
	$ 138,801	$ 117,601	$ 21,200	$ 4,443

5. BANK INDEBTEDNESS

The bank indebtedness balance represents the excess of outstanding cheques over the balance in the operating account as of the year-end date.

	2021	2020
Outstanding cheques in excess of cash	$ -	$ 13,816

6. ACCOUNTS PAYABLE AND ACCRUED LIABILITIES

	2021	2020
Trade accounts payable	$ 63,121	$ 16,731
Accrued payroll	7,529	6,381
Government remittance	6,241	5,965
	$ 76,891	$ 29,077

7. DEFERRED REVENUE

	Balance, opening	Received	Recognized	Repayable	Balance, closing
Diavik Diamond Mines Inc.	$ 628,094	$ 527,300	$ (516,960)	$ (111,134)	$ 527,300

8. CONTRIBUTIONS REPAYABLE

	2021	2020
Diavik Diamond Mines Inc.	$ 111,134	$ 878

9. COVID-19

On March 11, 2020, the World Health Organization categorized COVID-19 as a pandemic. The potential economic effects within the Board's environment and in the global markets due to the possible disruption in supply chains, and measures being introduced at various levels of government to curtail the spread of the virus (such as travel restrictions, closures of non-essential municipal and private operations, imposition of quarantines and social distancing) could have a material impact on the Board's operations.

The extent of the impact of this outbreak and related containment measures on the Board's operations cannot be reliably estimated at this time.

10. ECONOMIC DEPENDENCE

The Board is dependent upon funding in the form of contributions from Diavik Diamond Mines Inc. Management is of the opinion that if the funding was reduced or altered, operations would be significantly affected. Under the Environment Agreement, $6M of funds is held to ensure that Diavik Diamond Mines Inc. meets all of its obligations

11. FINANCIAL INSTRUMENTS

Interest rate risk

Interest rate is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in market interest rates. The Board's financial assets that are exposed to interest rate risk consists of cash and restricted cash. The cash flow from variable rate financial instruments fluctuate as market rates of interest change. The risk has not changed from the prior year.

Credit risk

Credit risk is the risk that a third party to a financial instrument might fail to meet its obligations under the terms of the financial instrument. The Board does have credit risk in cash of $666,514 (2019 - $635,447) with a chartered bank in excess of the insurable limit throughout the year. Furthermore, the Board has a concentration risk as the full balance of cash is maintained with a single federally regulated financial institution. This risk has not changed from the prior year.

Liquidity risk

Liquidity risk is the risk that the Board cannot repay its obligations when they become due. The Board does have a liquidity risk in the accounts payable and accrued liabilities. the Board reduces its exposure to liquidity risk by ensuring a budget process is in place and through monitoring of expenses. This risk has not changed from the prior year.

12. COMMITMENTS

The Board is commited to a lease of office space until December 31, 2022. The Board has the option to renew the lease for an additional one-year period ended December 31, 2023 with the same terms and conditions. The lease is payable $2,493.75 per month (inc. GST) to December 31, 2021. The lease payable commencing January 1, 2022 will increase to $2,543.63 per month (inc. GST), an increase of 2%.

ENVIRONMENTAL MONITORING ADVISORY BOARD
Schedules of Expenditures
For the year ended March 31, 2021

SCHEDULE OF ADMINISTRATION

Schedule 1

	2021 Budget	2021 Actual	2020 Actual
Audit fees	$ 8,000	$ 7,980	$ 7,980
Bank charges and interest	800	873	407
Bookkeeping fees	5,000	4,110	5,670
Capital equipment	11,485	-	-
Insurance	6,600	4,195	3,464
Janitorial	2,900	2,205	2,520
Library/Publications	200	227	-
Office supplies	2,700	2,565	2,337
Postage and freight	500	190	359
Printing and photocopy	2,700	1,847	2,037
Professional fees	1,000	5,410	2,553
Rent	31,500	31,500	31,500
Repairs and maintenance	350	162	192
Technical Support	2,500	-	-
Telephone and internet	6,700	10,453	5,864
	$ 82,935	$ 71,717	$ 64,883

SCHEDULE OF MANAGEMENT SERVICES

Schedule 2

	2021 Budget	2021 Actual	2020 Actual
Employee benefits	$ 18,300	$ 21,069	$ 18,930
Employer's costs - CPP, EI, WSCC	12,000	14,109	12,594
Professional development	5,300	-	913
Salaries	173,000	166,013	152,253
Travel	-	19	34
	$ 208,600	$ 201,210	$ 184,724

ENVIRONMENTAL MONITORING ADVISORY BOARD
Schedules of Expenditures
For the year ended March 31, 2021

SCHEDULE OF GOVERNANCE

Schedule 3

	2021 Budget	2021 Actual	2020 Actual
Accommodations	$ 8,400	$ 4,206	$ 8,971
Board of directors - Training	1,000	-	-
Executive Committee	4,877	4,877	4,650
Food and beverage	-	-	1,530
Honoraria	29,667	26,010	24,694
Meeting expenses	5,064	315	-
Per diems	6,690	4,822	4,028
Preparation	47,955	50,601	39,800
Teleconference honoraria	6,385	180	105
Transportation	12,700	8,034	9,862
Personnel committee	750	-	-
	$ 123,488	$ 99,045	$ 93,640

SCHEDULE OF OVERSIGHT AND MONITORING

Schedule 4

	2021 Budget	2021 Actual	2020 Actual
Aquatic Effects Monitoring Program	$ 35,500	$ 14,984	$ 19,981
Air Quality Management Program	7,000	9,240	7,222
Interim Closure and Reclamation	59,798	27,165	30,438
Other reviews and reports	40,169	34,109	22,118
Traditional Knowledge Panel Review	9,700	-	38
Wildlife Monitoring Plan	25,020	29,970	9,115
	$ 177,187	$ 115,468	$ 88,912

ENVIRONMENTAL MONITORING ADVISORY BOARD
Schedules of Expenditures
For the year ended March 31, 2021

SCHEDULE OF INVOLVING AND SUPPORTING COMMUNITIES

Schedule 5

	2021 Budget	2021 Actual	2020 Actual
Board member consultation honoraria	$ 3,000	$ 406	$ 391
Kitikmeot Inuit Association	6,300	-	-
Lutsel K'e	5,700	-	-
North Slave Metis Alliance	1,850	-	-
T'licho Government	3,100	-	-
Yellowknives Dene First Nation	2,400	-	-
Board member consultation honorarium	2,300	-	-
	$ 24,650	$ 406	$ 391

SCHEDULE OF COMMUNICATIONS

Schedule 6

	2021 Budget	2021 Actual	2020 Actual
Advertising, public relations and promotions	$ 1,700	$ 2,010	$ 2,102
Annual report	8,100	7,869	6,707
Website maintenance	-	158	-
	$ 9,800	$ 10,037	$ 8,809

EMAB

RECOMMENDATIONS

EMAB RECOMMENDATIONS TABLE 2020-2021

AEMP 2020
EMAB submitted 19 recommendations to Diavik via the WLWB on AEMP 2020. Highlights can be found on pages 23-24. The complete list of recommendations can be found on the WLWB Public Registry.

AEMP 2019
EMAB submitted 24 recommenendations to Diavik via the WLWB on the AEMP 2019. Highlights can be found on pages 20-21. The complete list of recommendations can be found on the WLWB Public Registry.

AEMP Re-evaluation Report 2017-2019
EMAB submitted 62 recommendations to Diavik via the WLWB on the AEMP Re-evaluation Report 2017-2019. Highlights can be found on pages 21-23. The complete list of recommendations can be found on the WLWB Public Registry.

ICRP Version 4.1
EMAB submitted 94 recommendations to Diavik via the WLWB on ICRP Version 4.1. Highlights can be found on pages 32-41. The complete list of recommendations can be found on the WLWB Public Registry.

2019 EAAR
EMAB submitted 13 recommendations to Diavik on the DRAFT 2019 EAAR. Diavik addressed most of the recommendations so EMAB did not comment on the Final Version of the 2019 EAAR. Highlights can be found on page 50. The complete list of recommendations can be found on our website: emab.ca.

Water Licence Amendment Application - PK to Pits Water Licence Amendment Proceeding
EMAB made 63 recommendations during the WLWB Proceeding for Diavik's Water Licence Amendment Application to Deposit PK in the Mine Workings. Highlights can be found on page 26-30. The complete list of recommendations can be found on the WLWB Public Registries.

2019 EAQMP Report

EMAB submitted 6 recommendations to Diavik on the 2019 EAQMP Report. Highlights can be found on pages 47-48. EMAB's recommendations and Diavik's responses are listed below. EMAB's technical review of this document can be found on our website, www.emab.ca.

EMAB Recommendation	Diavik Response
DDMI-EAQ-16: Data pertaining to meteorological observations and records of on-site activities, including any visual dust observation and mitigation logs, be used to document the cause/rationale for events of high dustfall values measured at the various stations.	Dustfall deposition rates are calculated roughly every three months, therefore, it is not possible to correlate deposition rates with individual dust generating or meteorological events. However, meteorological observations (i.e., annual wind rose diagrams) and general mining activity intensity and locations are captured in the EAQMP Report and the amount of water used on roads is provided in monthly SNP reports. This information is used to understand overall dustfall rates at different locations. It has been found that in general dustfall rates will be lower in the winter due to snow cover suppressing dust generation. Natural dust suppression from precipitation is stronger during the summer months as the majority of precipitation falls during this time. In addition, dust suppression through road watering only occurs in warmer months. Therefore, there may be cases where dustfall rates are lower in summer due to the increased natural and anthropogenic dust suppression.
DDMI-EAQ-17: A detailed comparison of monitored and modelled dustfall be included within the AQMR.	Comparing modelled and measured dustfall rates is of limited value on a year-to-year basis. Firstly, the model was run for one year of meteorology (2002) that is not necessarily representative of any other specific year. Wind speed and direction are naturally variable, which will result in spatially varying dust deposition rates from year to year. Secondly, particulate matter emission rates and locations will vary as mining activity changes. The modelled emission year (2015) is different from emissions during other years. The year-to year variability in meteorology and emissions is reflected by the year-to-year variability of dustfall deposition rates at measurement sites presented in the EAQMP Report (see Figures 3.1-2 and 3.1-3 in the 2019 Dust Deposition Report). Additionally, the results of the modelled dust deposition only include locations greater than 250 metres from the mine area boundary and many of the monitoring locations are within this range and therefore cannot be compared. Background dust deposition rates were also assumed to be zero which, based on the results of the control sites, is an underestimation.
DDMI-EAQ-18: Details of the NPRI and GHG calculations be included, or a reference to an external document containing such details, to allow for validation of methods and quantities reported.	The calculation details are provided in ECCC's technical guidance documents, which were referenced in the 2019 EQAMP. The links provided previously no longer function but an updated link would be: https://www.canada.ca/en/environment-climate-change/services/climatechange/greenhouse-gas-emissions/facility-reporting/reporting/technical-guidance-2019.html All the data that report into ECCC are also publicly available and validated by federal regulators.
DDMI-EAQ-19: The 2012 dispersion modelling assessment be updated to reflect current operations and be used to evaluate the appropriate locations for assessment of dustfall observations with predicted concentrations within the updated assessment.	For the same reasons that comparing modelled and measured dustfall for previous modelling studies are not recommended (see DDMI-EAQ-17 above), conducting additional modelling is not recommended. The general locations where increased dustfall are expected are downwind of emissions sources and these regions already have dustfall stations. Additional modelling is not needed to locate these areas and continued monitoring will provide a more accurate assessment of actual dustfall deposition rates than would modelling.

DDMI-EAQ-20: In comparison of the two guideline values, the BC MOE had more stringent values than Alberta's. On this basis, it is recommended a rationale must be included in the AQMR report for the change prior to implementation as part of assessment in this 2019 report.	The reason the former BC guidelines are no longer used is that they were rescinded by the Province of BC. They were rescinded because the former guidelines were pollution control objectives and had no basis in assessing health effects and were solely used as a "soiling index" and to assess nuisance dusting. The former BC guidelines were not health related and using them to evaluate any effects on human or environmental health is inappropriate. Continuing to compare the results of dustfall monitoring at Diavik to these values is not appropriate as it gives the reader the impression that these former guidelines are based on measureable effects, which they are not. Conversely, the Alberta guidelines are still in effect in that jurisdiction and hence, can be applied in the Northwest Territories.
DDMI-EAQ-21: Since there are increased dust observations for the series of these stations, it is recommended relocating the SS3-4 and SS3-8 stations to the west and east of the current locations respectively, where the source of the dustfall can likely be verified and confirmed. Furthermore, reassessment of the 2012 model should be considered to reflect the current findings.	DDMI does not support moving dustfall station locations for the following reasons; • assessing annual variability in dustfall rates due to changing meteorology and emissions at any given station would no longer be possible because the time series for those specific locations would no longer be comparable to the new dustfall station locations; • the alignment of the snow survey stations is set up to be close to linear (not all alignments conform to ideal); and • road alignments change over time. It is important to remember that there is no strongly dominant wind direction and winds are most accurately described as omnidirectional. Therefore, describing stations as being upwind or downwind of emissions sources can only be stated in a very general sense. The current number of dustfall stations and their spatial distributions should be sufficient to assess the effects of mining activities and road traffic on dustfall deposition rates. For reasons previously discussed, DDMI does not support updating air dispersion modelling.

2020 WMP Report

EMAB submitted 17 recommendations to Diavik on the 2020 WMP Report. Highlights can be found on pages 42-45. As per section 4.3. of the EA, Diavik is required to respond to recommendations within 60 days of their receipt. At the time of writing this report we have not recieved Diavik's response, which is due on September 13, 2021.

EMAB Recommendation

DDMI-WMP-10: We recommend DDMI clarify their responses to DDMI-WMP-10 and GNWT-20-WMP-3 to clearly address EMAB's original recommendation and the apparent contradiction as to the applicability of the approach used in White and Gregovich (2017) to estimate a ZOI.
Also see Caribou Movement (DDMI-WMP-47).

DDMI-WMP-11: Please provide documentation supporting the decision to discontinue caribou behaviour monitoring.
We recommend that behaviour surveys continue to be conducted because the information could be useful in understanding the mechanism behind the ZOI and, subsequently, in developing associated mitigation measures. Ground-based behavioural data will also be needed for comparison against behaviour data collected during closure and post-closure phases to test predictions. The data may also assist in understanding the impacts of mine activity on caribou energetics, which can be used to inform future development applications and cumulative effects assessments. The challenge, as with all approaches presented during the workshop, continues to be sample size and the availability of mine-activity covariates.

DDMI-WMP-12: We agree with the GNWT and recommend that DDMI revise their approach for future annual reports.

DDMI-WMP-13: See Wolverine (DDMI-WMP-54 and DDMI-WMP-55).

DDMI-WMP-14 Please see recommendations by EMAB through the Wek'èezhìi Land and Water Board (WLWB) review process under ICRP 4.1 review (SW4 Closure Objective).

DDMI-WMP-15: See Caribou Movement (DDMI-WMP-47).
DDMI-WMP-16: EMAB will request ENR provide behaviour data from the Ekati mine for the years 2017-2019. Data permitting, it may be informative to distinguish running from trotting from walking in future behavioural analyses. Please also see issue DDMI-WMP-11.
DDMI-WMP-17: We recommend that DDMI re-evaluate these relationships through quantitative analysis of GPS collar data at the time of the next comprehensive analysis (2022). The analysis would verify that autumn range fidelity remains high and that the travel routes for the northern migration remain correlated with the location of the winter range (i.e., that the mine is having no measurable effect on the caribou migration). If changes in caribou range attributes are detected in future GPS collar data analysis that incorporates more recent data, this assumption regarding the extent of the energetic cost may need to be reconsidered.
DDMI-WMP-44: Please clarify this difference in disturbance area reporting. The methods applied for this part of monitoring are adequate
DDMI-WMP-46: Can DDMI please clarify what is meant by 'annual but unmeasured factors' and discuss how 'unmeasured factors' were incorporated in their previous analysis of the aerial survey data.
DDMI-WMP-47: We recommend DDMI integrate the findings of Boulanger et al. (2012; 2021), particularly regarding the analysis of collared caribou habitat selection, into the discussion of ZOI around the mine in the WMR. Further, based on the published analyses of caribou collar data, we recommend EMAB request GNWT and DDMI develop a ZOI mitigation and monitoring plan to be implemented immediately.
DDMI-WMP-48: In addition, based on the published analyses showing the presence of a ZOI around the mine, we recommend EMAB request DDMI, in collaboration with GNWT, immediately develop monitoring techniques to identify mine-related sources of sensory disturbance and new methods for monitoring caribou abundance and distribution relative to the mine whenever they are in the area.
DDMI-WMP-49: We support this type of forum as it could be a successful avenue to adaptively manage mine-related changes in caribou movement. We encourage Indigenous community participation in the forum, particularly those already involved in caribou monitoring programs. We support this forum and recommend that actionable items from meetings be developed whenever possible to ensure that relevant advancements in managing ZOI issues are implemented in Mine monitoring programs.
DDMI-WMP-50: We continue to emphasize the importance of these data in understanding the influence of the Mine on caribou and recommend that DDMI continue their efforts to collect caribou behaviour data annually and complete statistical analyses when data permits (also see Table 1, Reference #: DDMI-WMP-11).
DDMI-WMP-53: We recommend EMAB review the meeting notes from the 2021 workshop, when made available by GNWT, before determining the appropriate frequency of future hair snagging surveys. We recommend EMAB confirm with GNWT the need for and preferred frequency of hair snagging surveys moving forward. We recommend developing triggers for reinstituting future annual hair snagging at an increased frequency (e.g., annually), for example, if the number of mortalities associated with the mine increases substantially, or if mortalities are recorded for 3 years in a row.
DDMI-WMP-54: We recommend following the guidance of Efford and Boulanger (2018) who recommended repeating the hair snag surveys every four to six years to confirm regional wolverine populations remain stable.
DDMI-WMP-55: We recommend developing triggers for reinstituting future annual hair snagging surveys, for example, if the number of wolverine mortalities associated with the mine increases substantially, or if mortalities are recorded for 3 years in a row.

2020 WMP Program Description

EMAB submitted 13 recommendations to Diavik on the 2020 WMP Program Description. Highlights can be found on pages 42-45.

EMAB Recommendation	Diavik Response
DDMI-WMP-20: ZOI Monitoring should continue as a component of the WMP. We recommend utilizing multiple lines of evidence (i.e., aerial survey, satellite collar data) to confirm the presence/absence and potential size of a ZOI. We recommend that the ZOI Technical Task Group (TTG) reconvene to discuss and determine the approach to future ZOI monitoring, including the need for additional aerial surveys. Should the TTG determine the need for additional aerial surveys, we recommend revising sampling methods to address some of the data analysis issues found using the old design (e.g. geometric phenomena (Golder 2020, pg.33)).	The Wildlife Management and Monitoring Plan (WMMP) indicates that DDMI will continue ZOI monitoring using caribou collar data as a new sampling method. DDMI does not see the benefit of continuing to use aerial surveys for ZOI monitoring when analysis of 13 years of aerial survey data was unable to detect a ZOI. As well, the current abundance of the Bathurst caribou herd results in a limited number of caribou moving through the study area and disturbing sensitive herds when the herds are already tracked through satellite collars does not add value. Therefore DDMI has removed aerial surveys from the WMMP.
DDMI-WMP-21: We recommend that DDMI continue their efforts to collect caribou behaviour data. Regarding caribou activities other than foraging, we recommend DDMI evaluate whether the data can be pooled and analyzed while considering covariates such as year, gender, and distance to the Mine. We recommend DDMI compare caribou running bouts as a function of distance. Please also consider grouping or separating running and trotting activities for the analysis.	The WMMP indicates that caribou behaviour will be monitored and that the analyses will be performed to test for the effects of year (Mine activity), habitat, group composition, and distance from the Mine on the proportion of time caribou spend feeding, resting, and moving. Environmental variables such as wind speed, rainfall, and level of insect activity may be included as factors in the statistical models. Appendix D of the 2019 WMP includes running in accordance to the distance strata (i.e., <15 km and >15 km) requested by EMAB. The results show no discernible pattern between distance strata and that caribou spend very little time running.
DDMI-WMP-22: We recommend caribou distribution monitoring continue to be a component of the WMP. We recommend DDMI consider an approach to monitoring that evaluates the energetic cost of migration (e.g. "cost-of-movement index")	The key reasons for monitoring are to test impact predictions, determine mitigation effectiveness, reduce uncertainty of effects and mitigation, and/or provide feedback for adaptive management. The impact prediction in the WMP regarding caribou movement during the southern migration (and northern migration) was initially generated from baseline observations and the effects analysis using a friction model to estimate the energetic cost of movement. Baseline data collected during two years observed that most caribou coming onto East Island from the north retreat northward and move around the east end of Lac de Gras rather than swimming across to the eastern or southern shores (Penner and Associates 1998). Baseline data also indicated that during the southern migration, caribou would typically move back off the East Island onto the mainland and then travel either west or east around Lac de Gras. The friction model assessed the energetic cost of caribou using different migration routes through the Lac de Gras area, including the known route from the mainland to the East Island to the mainland (i.e., East Island crossing). Under the Diavik mine full development scenario the pathway of least resistance shifted from the East Island crossing to routes at the narrows between Lac du Sauvage and Lac de Gras, which is east of Lac de Gras (DDMI 1998). The increase in cost of movement was calculated to be 3.9% relative to baseline conditions, but was likely overestimated because caribou rarely use the East Island crossing. In other words, the frequency of caribou shifting from the East Island crossing to routes at the narrows east of Lac de Gras was purposefully inflated (a precautionary approach was applied). Furthermore, it was anticipated that if movements onto. *Continued on next page*

East Island are deterred by Mine-related activities, caribou would select the most common movement corridors (west and east) around the lake. Deflections during the ice-free season would have little influence on regional patterns of movement, and may benefit caribou by limiting risks of interacting with Mine-related hazards (page 6-15: DDMI 1998). In retrospect, the prediction in the WMP regarding the movement of caribou during the southern migration is not well developed and likely incorrect (and perhaps was not warranted) because the change associated with the loss of the East Island route was overstated to maximize energetic cost and not be reflective of both west and east movements observed during baseline. Baseline data observations and the results of the friction model and assumptions do not strongly indicate that the Mine would cause caribou to be consistently deflected east of Lac de Gras during the southern migration. In contrast, the information predicts that if the Mine prevents caribou from selecting the rarely used East Island crossing, then movement would be largely around the west and/or east side of Lac de Gras. The analysis of Bathurst collar data in the 2019 WMP report (and previous reports) supports this prediction. Collared caribou have travelled east and/or west around Lac de Gras from 1996 to 2018 with no strong difference in direction. The results from the EER (DDMI 1998) and long-term monitoring data indicate that any changes in caribou migration around Lac de Gras from the Mine during the southern migration would likely have no measurable effect on the population. Similarly, the prediction for caribou movement around East Island during the northern migration was premised on baseline data and the friction model. Briefly, baseline observations suggested that caribou spring migration movement paths were widely distributed across and around Lac de Gras (DDMI 1998). One predevelopment travel route skirted the east side of East Island and this pathway was used to examine effects on spring movement costs. At the full development, disturbance from the Mine was predicted to cause caribou to divert from this path around the west side of East Island (DDMI 1998). The increased movement cost relative to baseline conditions was 2% (or 0.12% relative to the total cost of spring migration). However, the spring migration corridor is wide relative to the East Island and the number of individuals influenced by the Mine would be small. Long-term monitoring data has shown that caribou movement around East Island is highly consistent with the prediction in the EER. Importantly, the data also indicate that northern movement on either side of East Island is correlated with the location of the winter range (Golder 2017), which has largely been west of Diavik since the decline of the Bathurst herd. Support for the prediction during the northern migration may be largely spurious and more related to the location of the collared caribou on the winter range than the influence of the Mine. In conclusion, a retrospective evaluation of the development and strength of the predictions concerning caribou movement, and analysis of long-term collar data supports removing this component from the WMP. The predictions, particularly during the southern migration, were not well developed and perhaps incorrect, and likely included as a precautionary approach to manage uncertainty in effects predictions in the EER. Since 2002 when the WMP was implemented, the analysis of 23 years of collar data has provided confidence that caribou movement around Lac de Gras during the southern migration has not deviated from baseline observations. However, the monitoring data are not consistent with an assumption of the friction model concerning removal of the East Island crossing route and a shift to a least resistant route east of Lac de Gras. This does not imply that there is an effect on caribou, particularly as the friction model was stated to overestimate effects because caribou rarely use the East Island crossing and typically migrate west or east around Lac de Gras. Although the prediction for the northern migration has been more strongly supported by the monitoring data, which also provides confidence in the predicted effects, the result is more likely related to location of caribou on the winter range than the potential influence of the Mine. Overall, the Diavik mine has likely had little influence on the variation in caribou northern and southern migration movements through the Lac de Gras region. The analysis above demonstrates unequivocally that the precautionary approach applied to the WMP because of uncertainty in effects predictions for caribou migration movements is no longer required and this component can be removed from the monitoring program. Therefore DDMI has removed deflection analysis from the WMMP.

DDMI-WMP-27: The methods applied for this part of monitoring are adequate. We recommend the future of this program be a joint decision by all program partners.	Acknowledged and DDMI awaits a joint decision by all program partners.
DDMI-WMP-29: The methods applied for the snow track component of the monitoring program are adequate. We recommend the continuation of the snow tracking program to monitor impacts of the mine on wolverine detectability, occupancy, colonization and extinction. The methods applied for the hair snagging component of the monitoring program are adequate. We recommend that the schedule for future hair snagging be determined in collaboration with GNWT-ENR.	Acknowledged and snow track surveys have been retained in the WMMP. DDMI awaits a joint decision by all program partners on the benefit of additional hair snagging.
DDMI-WMP-35: We recommend DDMI continue to discuss how the information gained from the various wildlife datasets could be used in terms of mitigation and adaptive management for the Diavik Mine in particular and for other future projects in the region in general	As responded to 16 January 2012 on Comprehensive Analysis Report comments and again in Golder (2016), DDMI continues to review the results of annual monitoring programs in an effort to determine any management actions that can be implemented at the Mine to reduce impacts to caribou, other wildlife, and the terrestrial and aquatic environments. For example, adaptive management of mitigation policies and practices has resulted in the successful avoidance and minimization of direct mine-related mortality of caribou and other wildlife from collisions with vehicles and aircraft, open pits, mine rock piles and processed kimberlite containment areas. A screening level risk assessment confirmed that mine-related contaminants in lichen should have no adverse health effects for caribou (Golder 2011a). Results from the 2013 Comprehensive Vegetation and Lichen Monitoring Program (Golder 2014) also showed that dust deposition has been decreasing on the Mine site over time, effects are localized to the immediate area within the Mine footprint and adjacent habitat, and metal concentrations in lichen were lower in 2013 than in 2010, which may reflect a change from open pit to underground mining operations. Results from the analysis of behavioural scanning observations in the 2010 Comprehensive Analysis of Effects from the Diavik Diamond Mine on Wildlife in the Lac de Gras Region (Golder 2011b) showed that caribou groups with calves spent about 10% less time feeding/resting within 5 km of the Ekati-Diavik mines. Analysis of aerial survey data has estimated a zone of influence of 14 km from the Ekati-Diavik mines (Boulanger et al. 2012). These studies demonstrate the importance of mitigating the influence of mine-related mechanisms (e.g., dust and noise) on caribou behaviour and distribution. Mitigation used by the Mine to limit sensory disturbances includes housing the crusher inside, the vehicle reduction program, watering roads during summer, and the use of ultra-low sulfur diesel (DDMI 2012). The switch from surface to underground mining also limited sensory disturbance, however with the start of A21 surface mining potential sensory disturbance has increased (still below peak levels). Therefore, results from the monitoring programs at Diavik and at other operating diamond mines can be used by government to analyze and manage cumulative effects, in future environmental assessments to increase confidence in impact predictions, and applied to future projects to mitigate effects. The overall Monitoring Framework and Adaptive Management process is described in the WMMP.

DDMI-WMP-36: Diavik should include TK monitoring components for all species studied under the WMP (caribou, grizzlies, wolverine, raptors). Diavik should use previous recommendations from the TK panel to inform where they can incorporate TK into the monitoring of each species.	The TK Panel represents the primary source of TK integration into Diavik mine operation. The TK Panel determines its own agenda, which has focused on Mine closure. DDMI has incorporated TK Panel recommendations for operation monitoring such as recording the caribou behaviour category of "curious" during scan surveys. DDMI has included TK in monitoring programs and has provided examples of these in Section 2.0 of the 2019 WMP report. DDMI does not intend to have separate and parallel scientific and TK monitoring programs. Section 3.0 of the WMMP covers Engagement and TK integration at the Diavik mine.
DDMI-WMP-37: Similarly to wolverine snow track monitoring, Diavik should regularly include community members in monitoring activities for caribou and grizzly bear. Diavik should report on the individuals involved and the activities they were engaged in.	DDMI does ask communities to participate in monitoring. DDMI will consider asking communities to participate in regular site monitoring of wildlife, although wildlife presence at site is unpredictable. Up to 2013, communities, including Elders, were regular participants in caribou monitoring. Participation has decreased since then because of the Bathurst caribou herd decline and subsequent low numbers of caribou in the study area. Hair snagging surveys for grizzly bear included community participants. As noted by EMAB communities regularly participate in the wolverine snow track monitoring. Section 3.0 of the WMMP describes the framework for integration of community participants in Diavik programs.
DDMI-WMP-38: The TK Panel recommended that Diavik should hire TK holders on a seasonal basis to work with Diavik Staff on caribou monitoring. As a part of the response, Diavik indicated they would investigate options for behaviour monitoring by communities. EMAB recommends that Diavik include TK holders in caribou behaviour monitoring. Diavik should include a report on the results of the investigation of options for community behaviour monitoring in an appendix to the Program Description.	Section 3.0 of the WMMP describes the framework for integration of community participants in Diavik programs. At this time Diavik is not considering hiring additional full time staff on a seasonal basis to work on caribou monitoring. Up to 2013, communities, including Elders, were regular participants in caribou monitoring. Participation has decreased since then because of the Bathurst caribou herd decline and subsequent low numbers of caribou in the study area. Without sufficient caribou to monitor, further investigation of options is not beneficial.
DDMI-WMP-39: The TK panel made a number of recommendations for changes to caribou behavior monitoring that Diavik said it was reviewing. Diavik should report on this review as an appendix to the program description, and incorporate the recommendations from the TK panel into the WMP program description, or explain why they did not include them.	Diavik is aware of two specific recommendations for caribou behaviour monitoring, which Diavik has responded. One included recording the behaviour category of "curious" and another was to take photos, both of which DDMI has adopted. It would be helpful if EMAB could be more specific about the TK Panel recommendations they believe have not been considered if others exist.
DDMI-WMP-40: The TK Panel recommended that Diavik should use visual tools (e.g. taking pictures) as a part of caribou behaviour scans. Diavik's response indicated they took photos in 2012 and 2013 and are evaluating them. EMAB recommends that Diavik report on the results of the evaluation (as an appendix to the program description). Those results should be incorporated into the behaviour monitoring section of the Program Description, where appropriate.	Per the previous response, Diavik does take photos of caribou during behaviour group scans and at other times when caribou are observed (e.g., cover photo of the 2020 WMMP). Methods for incorporation of photographs are described throughout the WMMP.

DDMI-WMP-41: Diavik should incorporate side-by-side comparison tables in the Program Description and future annual WMP reports. The tables should show where TK and Western Science are used in the Wildlife Monitoring Program. For Example: COLUMN A: TK Wildlife Monitoring components: • List all TK monitoring under the WMP COLUMN B: Scientific Monitoring Components: • List all scientific monitoring under the WMP	A section in the annual WMP report (Section 2.0) regarding community engagement and TK was added in the 2018 WMP report as recommend by EMAB. The WMMP also includes a section on community engagement and TK (Section 3.0). Section 3.0 of the WMMP includes tables that show linkage between TK components and wildlife monitoring.
DDMI-WMP-42: EMAB recommends that Diavik regularly consult with TK holders on wildlife monitoring methods, activities and results. Yearly consultations about annual WMP reports would be ideal. These consultations should include collecting feedback from TK holders about their thoughts on the results.	The TK Panel is the primary way that DDMI gathers TK for the Mine and the TK Panel meets at least once per year. DDMI already incorporates TK and local knowledge through community participation in wildlife monitoring programs. DDMI does share the annual WMP report with communities but has received no feedback to date. DDMI understands that EMAB also engages with communities annually to keep communities informed about the environment and Diavik monitoring programs (emab.ca). EMAB also holds workshops that bring together community members, regulators, experts and others to reach a better understanding of Diavik-related environmental issues (emab.ca). DDMI suggests this is another valuable avenue to solicit community feedback.
DDMI-WMP-43: EMAB recommends that Diavik hold a TK panel session which focuses on Wildlife Monitoring during the Closure and Post-Closure phases. This session should inform future versions of the Wildlife Monitoring Program Description.	DDMI has already held TK Panels that deal with closure concepts (Panels 10, 11 and 12). DDMI does not dictate the content of the TK Panel Sessions, each Panel establishes an agenda that is agreed on by the participants ahead of the TK Panel Session. DDMI could suggest such a topic as part of a future TK Panel Session but there is no assurance that participants will agree on the subject. TK Panel Sessions on closure and post-closure monitoring will inform the Closure and Reclamation Plan. The WMMP is not the appropriate place to dictate the framework and duties of the TK Panel.

TABLE OF ACRONYMS

Acronym	Definition
AEMP	Aquatic Effects Monitoring Program
AGM	Annual General Meeting
CCME	Canadian Council of Ministers of the Environment
DFO	Department of Fisheries and Oceans
DKFN	Deninu Kue First Nation
EAAR	Environmental Agreement Annual Report
EAQMP	Environmental Air Quality Monitoring Program
ECCC	Environment and Climate Change Canada
ED	Executive Director
EIS	Environmental Impact Statement
EMAB	Environmental Monitoring Advisory Board
ENR	Environment and Natural Resources
EPA	Environmental Protection Act
EQC	Effluent Quality Criteria
FF	Far-Field
FRMG	Fort Resolution Metis Government
GNWT	Government of the Northwest Territories
ICRP	Interim Closure and Reclamation Plan
KIA	Kitikmeot Inuit Association
LdG	Lac de Gras
LKDFN	Lutsel K'e Dene First Nation
MVEIRB	Mackenzie Valley Environmental Impact Review Board
MVLWB	Mackenzie Valley Land and Water Board
NCRP	North Country Rock Pile (aka WRSA – see below)

TABLE OF ACRONYMS

Acronym	Definition
NI	North Inlet
NF	Near Field
NSC	North-South Consultants
NSMA	North Slave Metis Alliance
NWRSA	North Waste Rock Storage Area (aka NCRP or WRSA)
PK	Processed Kimberlite
PKC	Processed Kimberlite Containment Facility
PKMW	PK to Mine Workings
SEC	Slater Environmental Consulting
SGP	Slave Geological Province
SNP	Surveillance Network Program
SOI	Substance of Interest
SWRSA	South Waste Rock Storage Area
TG	Tłı̨chǫ Government
TK/IQ	Traditional Knowledge / Inuit Qaujimajatuqangit
TSP	Total Suspended Particulates
TTG	Technical Task Group
WTA	Waste Transfer Area
WLWB	Wek'èezhìı Land and Water Board
WMP	Wildlife Monitoring Program
WMR	Wildlife Monitoring Report
YKDFN	Yellowknives Dene First Nation
ZOI	Zone of Influence

Photo courtesy of Diavik Diamond Mine

Working with *the* People *for the* Environment

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