

# Mackenzie Valley Environmental Impact Review Board

EA1819-01: Depositing Processed  
Kimberlite into Pits and Underground

**REA Workshop**

January 17, 2020



Mackenzie Valley  
Review Board

# Agenda

I. Introduction

II. Review Board decision and rationale

III. Prescribed measures, suggestions and follow-up

IV. Next steps





# I. Introduction



# Purpose

This presentation is intended to help interveners understand:

- the format of the Report of Environmental Assessment and reasons for decision
- the Review Board's decision and rationale
- prescribed measures, suggestions, and follow-up program



## Ground rules

- if there is a conflict between this presentation and the written *Report of Environmental Assessment and Reasons for Decision* (REA) the **REA prevails**
- Review Board staff can answer clarification questions but will not engage in discussion about the merits of the decision or the measures





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# Document layout

Front end

Chapter 1: The Project and setting

Chapter 2: The environmental assessment

Chapter 3: Evidence about impacts

Chapter 4: Evidence about mitigations

Chapter 5: The Review Board's findings

Chapter 6: Mitigation and follow-up

Chapter 7: Conclusion

Appendices





## II. The Review Board's findings



## Chapter 5 - Review Board findings

- findings on impacts to cultural use (5.1)
- findings on impacts to water quality (5.2)
- a suite of measures is required (5.3)
- cumulative impacts on caribou (5.4)
- potential benefits of the Project (5.5)





## Section 5.1 – findings on impacts to cultural use

### **The acceptability of changes in Lac de Gras is low**

- Lac de Gras is culturally important to Indigenous people and must remain clean for future generations
- clean water is essential for a healthy environment
- past and present experiences have reduced Indigenous peoples' tolerance for uncertainty

### **The Project is likely to reduce cultural use of the Lac de Gras area**

- Diavik has not properly assessed the potential for impacts on cultural use
- Diavik did not develop culturally relevant water quality standards for Lac de Gras



## Section 5.1 – findings on impacts to cultural use

The acceptability of changes in Lac de Gras is low

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The Project is likely to reduce cultural use of the Lac de Gras area

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**Conclusion: this project, without additional mitigation, is likely to cause a significant adverse impact on cultural use of Lac de Gras.**



## Section 5.2 – findings on impacts to water quality

### **Preliminary modelling leaves too much uncertainty**

- the Review Board agrees with interveners who expressed that there is too much uncertainty about the preliminary water quality modelling
- the Project is irreversible, and more certainty and a high level of confidence in modelling is needed

**Conclusion: Diavik has not done enough to demonstrate that adverse impacts to water quality will not occur**



## Section 5.4 – cumulative impacts on caribou

- pre-existing cumulative impacts have already affected Bathurst caribou significantly
  - Review Board heard how important these impacts are and that any additional impacts are unacceptable
- Review Board accepts evidence that the Project is unlikely to lead to additional impacts on caribou
  - therefore unlikely to contribute to the pre-existing cumulative impacts

**Conclusion: the Bathurst caribou herd is under threat, but the Project is not likely to make this problem worse**

## Section 5.5 – potential benefits of the project

- removing extra-fine processed kimberlite from the containment facility is not part of the Project
  - but there could be benefits of removing the extra-fine processed kimberlite
- the Project may lead to environmental benefits for closure of the processed kimberlite containment facility



### III. Prescribed measures, suggestions and follow-up



## Chapter 6 – mitigation and follow-up

- a suite of measures is required to prevent or reduce the likelihood of Project impacts
- most of the measures build on recommendations from Diavik and intervenors
- the measures are not intended to act in isolation
- in combination, the measures are necessary to:
  - prevent or reduce the risk of impacts on water
  - build confidence in the Project

**Water must meet water quality objectives and criteria**

1. Water must meet water quality objectives

2. Water quality objectives need clear, measurable and culturally relevant criteria

*inform*

**Modelling needs to be updated and independently reviewed**

3. Water quality models need to be updated

4. Model updates need independent review

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6. GNWT will develop cultural well-being indicators to adaptively manage project-specific and cumulative impacts on cultural use

5. Diavik needs to do additional and more effective engagement





## Preamble for measures 1 and 2: Water must meet water quality objectives which include measurable criteria

- Indigenous intervenors need more than just scientific numbers to be confident that an area is good for cultural use
- water quality objectives are required to ensure that water remains safe and good for cultural use
  - must be tied to key Project decision points
  - adaptive management is required to ensure that objectives can be met
- criteria for judging when water meets objectives should be developed collaboratively with and meaningful to potentially affected Indigenous communities



## **Measure 1: Diavik will meet water quality objectives at closure**

To prevent significant adverse impacts on the cultural use of Lac de Gras, Diavik will design and operate the Project so that water in at least the top 40 meters of the pit lake(s) at closure and post-closure meets the following objectives:

**Water quality objective 1: safe for people<sup>55</sup>, aquatic life, and wildlife**

**Water quality objective 2: suitable for cultural use (see Measure 2)**

Diavik will not put processed kimberlite into the pits until it demonstrates through updated modelling (see Measure 3a) that water in the pit lake(s) will meet these objectives.

Diavik will neither partially nor fully reconnect<sup>56</sup> the pit lake(s) to Lac de Gras until it demonstrates through updated modelling (see Measure 3c) and monitoring that water in the pit lake(s) will meet these objectives.

Diavik will update all relevant monitoring plans and management programs<sup>57</sup> to ensure these objectives are met, including updating the Aquatic Effects Monitoring Program Response Framework to include action levels, triggers for response and potential mitigation options. The Wek'èezhì Land and Water Board will review and approve any updates to plans required under the water licence and land use permit before processed kimberlite is put into the pit(s) and underground.

## **Measure 2: Diavik will work collaboratively with Indigenous groups to develop criteria for determining water in the pit lake(s) is acceptable for cultural use**

Diavik will develop clear, measurable, and meaningful criteria to determine if water is suitable for cultural use (see Measure 1, water quality objective 2). Diavik will work directly, in a culturally appropriate manner, with Traditional Knowledge holders and other experts identified by Indigenous intervenors<sup>58</sup> in developing these criteria. The Wek'èezhì Land and Water Board will review and approve these criteria before Diavik puts processed kimberlite into the pit(s) and underground.

Diavik will support involvement of communities represented by the Indigenous intervenors to develop and implement long-term monitoring, informed by Traditional Knowledge, of the pit lake(s) using the criteria developed above. These programs will be in place before reconnection occurs. “intervenors” refers intervenors to this environmental assessment process.



## Preamble to measures 3 and 4: Modelling needs to be updated and independently reviewed

- preliminary modeling contributes to uncertainty about the Project which could result in reduced cultural use of Lac de Gras
- updated models and independent review will reduce likelihood of cultural impacts by:
  - improving accuracy of predictions
  - ensuring that changes in water quality will be small
  - increasing confidence and trust in the process and results
  - producing better information for key decision points
- timing matters and most important update is the one prior to PK being deposited into pits



### **Measure 3: Diavik will update modelling periodically to show whether water in the pits and Lac de Gras will meet the water quality objectives**

To mitigate significant adverse impacts on the cultural use of Lac de Gras, Diavik will update its modelling to show whether water will meet water quality objectives defined in Measure 1 at the following stages of the Project:

- a) **Before depositing** processed kimberlite into the pit(s) and underground
- b) **Before filling the pit(s)** with water from Lac de Gras: This update will include the detailed conditions of the processed kimberlite in the pit(s) and the planned pore water layer depth.
- c) **Before reconnecting (partially or fully)** the pit lake(s) containing processed kimberlite to Lac de Gras: This update to the model will include real data from monitoring of the pit lake(s) to calibrate the model predictions.



### **Measure 3, continued from previous slide**

These updates will address deficiencies identified by model review and include all available and relevant input data, to better understand (at minimum):

- i. consolidation and behaviour of fine processed kimberlite and extra-fine processed kimberlite in the pit lake(s)
- ii. water quality in the pit lake(s)
- iii. long-term stability of meromixis in the pit lake(s)
- iv. spatial extent of effects on water quality in Lac de Gras

Diavik will update all relevant monitoring plans and management programs under the supervision and authority of the Wek'èezhì Land and Water Board to ensure they are collecting all necessary input information for updated modelling.

The Wek'èezhì Land and Water Board will review and approve all plans for updated modelling.

## **Measure 4: Diavik will establish an independent review panel for water quality modelling**

To prevent significant adverse impacts on cultural use of Lac de Gras, Diavik will establish and fund an independent review panel for the updated modelling described in Measure 3.

Diavik will develop the terms of reference for this panel for approval by the Wek'èezhì Land and Water Board. The Wek'èezhì Land and Water Board will engage Diavik and intervenors to identify and select panel members with appropriate expertise in:

- hydrodynamic water quality modelling, and
- extra-fine processed kimberlite or clay hydrodynamics.

The terms of reference and panel member selection will be approved in a timeframe that leaves adequate time for it to carry out the tasks below.

## **Measure 4, continued from previous slide**

For each modelling update defined in Measure 3, the panel will review and make recommendations on:

- a) model selection and design,
- b) model input data, assumptions, and processes,
- c) monitoring requirements for informing the modelling process, and
- d) model results.

The panel will provide reports to the Wek'èezhì Land and Water Board for inclusion on its public registry. Diavik will report to the Wek'èezhì Land and Water Board and communities about how it responded to panel recommendations. If Diavik does not accept, or modifies, panel recommendations, it will explain why and provide reasons. The Wek'èezhì Land and Water Board will consider panel reports and Diavik's responses when reviewing and approving any plans for updated modelling.



## Preamble to measure 5: Diavik needs to conduct additional and more effective engagement

- Diavik's engagement was insufficient to:
  - communicate impacts of the Project
  - understand how the Project could affect cultural use
- Diavik must do project-specific engagement that includes all groups
- engagement should be used to improve monitoring and adaptive management

**Additional and more effective engagement will build confidence in the Project and reduce the likelihood of impacts on cultural use**



## **Measure 5: Diavik will conduct additional and more effective engagement with potentially affected Indigenous communities**

Diavik will conduct additional and more effective engagement with potentially affected Indigenous communities<sup>59</sup> to accomplish Measures 2, 3, and 4 and prevent significant adverse impacts on cultural use of Lac de Gras from this Project. Diavik's engagement for this Project will:

- a) include all potentially affected Indigenous communities,
- b) ensure potentially affected Indigenous communities' access to meaningful and plain language results from monitoring programs,
- c) include Traditional Knowledge in monitoring plans and management programs,
- d) enhance opportunities for potentially affected Indigenous communities to provide feedback directly to Diavik about the Project, its potential impacts, and mitigation options, and,
- e) include reporting back to potentially affected Indigenous communities on how Diavik acted (or reasons for not acting) in response to feedback from communities.

## Measure 5, continued from previous slide

As part of its engagement for this Project, Diavik will collaborate with each potentially affected Indigenous community individually to develop meaningful engagement protocols that are culturally appropriate to each group. At a minimum, each of these engagement protocols will describe:

- i. how often Diavik will engage to discuss the Project,
- ii. an updated contact list for each potentially affected Indigenous community, relevant to specific purposes for engagement (listing contacts such as community government staff, technical consultants, Traditional Knowledge advisors, community leadership), and,
- iii. preferred engagement methods, frequency, and triggers.

Diavik will submit an updated engagement plan incorporating this measure for review and approval by the Wek'èezhì Land and Water Board with sufficient time for the engagement to inform Measures 2-4.

Preamble to measure 6 and suggestions 1 and 2: Government of the Northwest Territories needs to manage project-specific and cumulative impacts on cultural well-being

- the Project contributes to existing, significant cumulative impacts on cultural environment

**Improved engagement and adaptive management by the GNWT would help mitigate these impacts**

- GNWT should support communities to develop cultural well-being indicators
- GNWT can use the indicators to monitor and adaptively manage project-specific and cumulative impacts



## Measure 6: Adaptive management of cultural impacts

To mitigate significant cumulative adverse cultural impacts of the Project, the Government of the Northwest Territories will engage and work with Indigenous intervenors, and the communities they represent, to **monitor and adaptively manage** adverse impacts on cultural well-being from the Project, in combination with the Diavik Mine and other diamond mining projects.

The Government of the Northwest Territories will support the Indigenous intervenors to **develop community-specific cultural well-being indicators** to monitor and evaluate cultural well-being impacts associated with the Project, in combination with other diamond mining projects.

## Measure 6, continued from previous slide

The Government of the Northwest Territories will meet with potentially affected Indigenous communities<sup>61</sup> within one year of Ministerial approval of this Report of Environmental Assessment, and annually afterwards (or as agreed to by the Indigenous Intervenors), to:

- a) prioritize cultural well-being impacts related to the Project and other diamond mines, as identified by communities and by the Government of the Northwest Territories,
- b) evaluate the effectiveness of Government of the Northwest Territories programs or other programs to address these identified impacts, and
- c) discuss improvements to existing Government of the Northwest Territories programs to mitigate identified impacts, new Government of Northwest Territories programs, or support for new community-based programs.



## Measure 6, continued from previous slide

The Government of the Northwest Territories will **submit an annual progress report** on the three items above to the Indigenous intervenors, describing its engagement on and adaptive management of cultural impacts, and the Government of the Northwest Territories' plans to help address identified impacts.

Wherever feasible, the Government of the Northwest Territories should coordinate and collaborate with Diavik and the other diamond mining operators in the Northwest Territories when carrying out this measure.

Outcomes of this measure should be used, where relevant and available, to inform work on other measures.





## **Suggestion 1: The Government of the Northwest Territories should coordinate cultural well-being and socio-economic well-being requirements of the Project and the Ekati Jay Project**

Implementation of Measure 6 should be coordinated with the Government of the Northwest Territories' work required by Measure 8-1 (and the accompanying suggestion), from the Ekati Jay Project environmental assessment which addressed cumulative socio-economic impacts, health, and well-being in relation to diamond mining. The Government of the Northwest Territories should use a similar adaptive management framework to that set out in Measure 8-1 from the Ekati Jay Project environmental assessment.



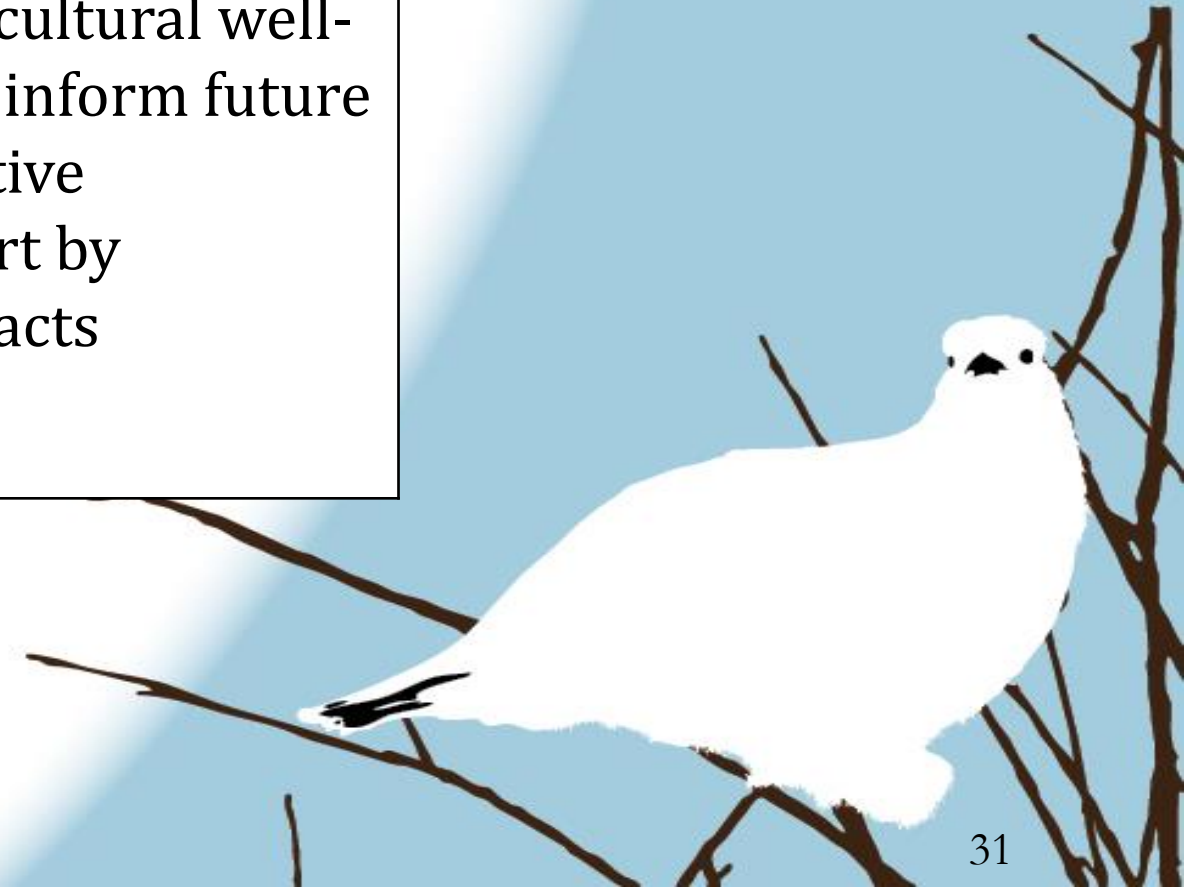


## **Suggestion 2: The Government of the Northwest Territories should support improved community-based monitoring of cumulative impacts on cultural well-being**

As cultural well-being indicators are developed, the Government of the Northwest Territories should support long-term community-based monitoring of the cultural well-being indicators developed under Measure 6 to inform future environmental assessment processes and adaptive management. This could be accomplished in part by expanded programming by the Cumulative Impacts Monitoring Program.



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Preamble to suggestion 3: Diavik should examine the feasibility of moving extra-fine processed kimberlite off the containment facility

- Diavik has not proposed the activity of moving extra-fine processed kimberlite
  - but it intends to do a feasibility study
- there could be benefits of moving the extra-fine processed kimberlite, including reduced risk to caribou



**Suggestion 3: Diavik should conduct a feasibility study of moving extra-fine processed kimberlite off the containment facility**

As soon as possible, Diavik should conduct a feasibility study of moving extra-fine processed kimberlite off the surface of the processed kimberlite containment facility. The results of this study should be incorporated into decision making about closure options for the processed kimberlite containment facility.

## Diavik, government, and regulators will report on implementation of EA measures

- Review Board can require a follow-up program under subsection 111(1) of the Act to evaluate:
  - the soundness of an environmental assessment or
  - the effectiveness of the mitigative or remedial measures
- Diavik, governments, and regulators are responsible under the Act for implementing or ensuring implementation of measures
  - measure requires them to communicate the actions taken to implement the measures
- reports will be posted on the public registry



## **Follow-up Program: Reporting on implementation of environmental assessment measures**

To demonstrate how measures are being implemented and to help evaluate their effectiveness, Diavik, government, and any regulatory authority that is wholly or partly responsible for implementation of any measure in this Report of Environmental Assessment will communicate to the Review Board on the implementation of measures.

**Part A: Diavik and governments** will provide annual reports to the Review Board beginning one year after the date of the final approval of this *Report of Environmental Assessment*, and annually afterwards. These reports will:

- i. describe the actions, including actions carried out through adaptive management, being undertaken (by the organization submitting the report) to implement the measures; and
- ii. based on available information, comment on how effective these actions have been in reducing or avoiding impacts on the environment (for example, considering the results of monitoring programs or adaptive management frameworks) from the Project.

## Follow-up Program, continued from previous slide

**Part B: Regulatory authorities** will report as described in Part A, above, **or** will clearly and explicitly include details about implementation of environmental assessment measures in Reasons for Decision documents whenever a regulatory decision (including future changes to a licence, permit, or management plan) relates to a Project environmental assessment measure. If relying on Reasons for Decision, regulatory authorities will provide a summary of how they are implementing each measure directly to the Review Board in a reasonable time after the Reasons for Decision are published.





## IV. Next steps



## Next steps

- GNWT and Crown consultation process is ongoing
- GNWT Minister of Lands will decide under subsection 130(1) of the Act
  - decision must be made within 5 months, unless extension is requested





# Questions?



Photo from PR#13

