



# **Lutsel K'e Dene First Nation's Technical Presentation for MVEIRB**

## **Depositing Processed Kimberlite into Pits and Underground, Diavik Mines Inc. – EA 1819-01**

**September 5, 2019**

**Yellowknife, Treaty 8 territory**

# Acknowledgement & Mandate



- Diavik Diamond Mine is located in the traditional and unceded territory of the Akaitcho Dene First Nations, which includes the Lutsel K'e Dene First Nation (LKDFN)
- Lutsel K'e Denesoline have survived and thrived in the region since time immemorial
- Lutsel K'e Denesoline are stewards of the land and have a responsibility to protect the land
- Lutsel K'e Denesoline have/continue to exercise our inherent and Treaty rights in the Lac de Gras area
- This area was/is of high ecological, cultural, social, spiritual, and economic significance to many Indigenous peoples

## Limited Capacity



- LKDFN has participated to the best of our abilities, given inadequate funding (\$12,255) and limited internal staff
- Due to inadequate funding, LKDFN was unable to hire subject matter experts
- As such, LKDFN has focused on the meaningful application and inclusion of TK

# Cultural Uses



## Issue:

Have the *actual* and *perceived* effects to Lac de Gras been identified and assessed so that, if necessary, cultural use impacts may be mitigated appropriately?

## LKDFN's Conclusions:

- Lutsel K'e Denesoline land users' have already been impacted by the mine
- 100-year post closure phase used to assess cultural use impacts is too short
- DDMI's assessment of cultural use impacts relied on outdated and/or scant publicly available literature
- Further research is required to adequately assess cultural use impacts and identify mitigation strategies

# Cultural Uses Continued



## LKDFN's Conclusions:

- AEMP benchmarks, based on Traditional Knowledge (TK), are required to assist Lutsel K'e Denesoline land users' in assessing the safety, quality, and health of Lac de Gras
- The TK Panel is an advisory body, not an environmental monitoring program
- If processed kimberlite (PK) is deposited in mined out pits, Lutsel K'e Denesoline land users' would not feel safe consuming traditional foods from Lac de Gras and surrounding area
- Overall, DDMI failed to adequately identify and assess how the proposed project may affect how Lutsel K'e Denesoline land users' perceive the safety, quality, and health of Lac de Gras and mitigation measures

# Caribou and other Wildlife



## Issue:

Will caribou and other wildlife be impacted by drinking contaminated water during pit filling and dike breaching?

## LKDFN's Conclusions:

- The Bathurst caribou herd population is critically low (current baseline) and any magnitude of change is significant (<1% is high)
- The proposed project is located in an area that is known to be habitat for caribou
- LKDFN is not involved in wildlife monitoring at the mine
- TK should be integrated into the Wildlife Monitoring Program

# Caribou and other Wildlife Continued



## Issue:

Access to and availability of *healthy* caribou and other wildlife is vital to the LKDFN and needs to be recognized. We need to know if caribou and other animals are safe to eat?

## LKDFN's Conclusions:

- LKDFN's concerns regarding the health of caribou and other wildlife that come into contact with the proposed project have not been adequately addressed
- DDMI should incorporate an opportunistic CircumArctic Rangifer Monitoring and Assessment (CARMA) sampling program for caribou that are found dead or killed within the mine's site/ZOI and partially fund a LKDFN-led CARMA sampling program

# Fish and Fish Habitat



## Issue:

Will fish be able to live in pit lake(s) containing PK? And will those fish be healthy and safe to eat?

## LKDFN's Conclusions:

- “Fish palpability and texture studies” are not fleshed out and formalized in the AEMP
- Use of TK to monitor and mitigate impacts to fish habitat is absent from the AEMP
- DDMI should hire consultants with TK or hire TK holders, and work with them to co-create the TK component of the AEMP, which should be reviewed by the TK Panel and public comments
- Need to monitor fish use in pit lake(s)



# Water Quality



## Issue:

Is meromixis a viable very long term containment strategy for processed kimberlite in an Arctic environment?

## LKDFN's Conclusions:

- LKDFN is pleased that DDMI has accepted the Interveners' recommendations to remove A21 open pit from consideration for PK deposition
- LKDFN cannot find any examples of meromictic lakes in an Arctic environment
- Meromixis is an unproven containment strategy in an Arctic environment

# Water Quality Continued



## LKDFN's Conclusions:

- AEMP benchmarks should be based on pre-mine, baseline conditions in Lac de Gras
- If meromixis is not established in pit lake(s), the socio-ecological impacts are irreversible
- It is unclear if DDMI can promote stratification if it is not established within 2 years of pit filing
- If meromixis is established, but not maintained, the socio-ecological impacts are irreversible
- 100-year temporal scale used to assess water quality impacts is too short

# Recommended Measures



Impact	Measures
General	DDMI shall revise the Engagement Plan to include specific engagement and participation in activities during closure and post-closure phases
Cultural Use	DDMI shall meaningfully engage with the LKDFN to identify and assess actual and perceived cultural use impacts and mitigation strategies
Cultural Use	DDMI shall revise the AEMP to include benchmarks based on TK in order to assist land users' in assessing the safety, quality, and health of Lac de Gras and pit lakes

# Recommended Measures



Impact	Measures
Caribou and other Wildlife	DDMI shall revise the Wildlife Monitoring Program to include monitoring activities based on TK in order to mitigate impacts to caribou and other wildlife during operations
Caribou and other Wildlife	DDMI shall revise the Wildlife Monitoring Program to include an opportunistic CircumArctic Rangifer Monitoring and Assessment (CARMA) sampling program for caribou that are killed or found dead within the mine site and ZOI
Caribou and other Wildlife	DDMI shall partially fund a 3-year CARMA caribou sample program led by the LKDFN as outlined in our Caribou Stewardship Plan / Yúnethé Xá ʔetthën Hádi

# Recommended Measures



Impact	Measures
Fish and Fish Habitat	The TK fish and fish habitat monitoring components of the AEMP should be described in sufficient detail (e.g., who, what, where, when, and how) in order to determine the health, safety, and quality of fish and fish habitat in Lac de Gras and the pit lakes
Fish and Fish Habitat	DDMI shall revise the AEMP to include a fish use of pit lakes monitoring component in order to assess the ability of fish to live in pit lakes and the health of fish in pit lakes
Water Quality	DDMI shall use pre-mining, baseline conditions in Lac de Gras for AEMP benchmarks

# Recommended Measures



Impact	Measures
Water Quality	Before any PK is deposited into mined out pit(s) at Diavik Diamond Mine, the viability of meromixis must be proven at Ekati Diamond Mine in beartooth pit or another similar pit lake containing PK with at least a 40 m fresh water cap in the Arctic. Within the demonstration pit lake, meromixis must be established and maintained over at least one open water season.
Water Quality	DDMI shall revise the Interim Closure and Reclamation Plan to include goal(s), objective(s), and criteria based on TK

# Closing Remarks



- LKDFN has made recommendations for 11 measures related to the VCs to MVEIRB
- LKDFN requires these measures to be addressed in the EA report
- LKDFN supports the placement of PK in pit lakes A418 and A154 if it is done in a manner that protects the socio-ecological health of the pit lakes and surroundings
- This support is contingent demonstration of success in establishing and maintaining meromixis in a pit lake in the arctic
- Otherwise, LKDFN feels that depositing PK in pit lakes will alter cultural uses and relationships to Lac de Gras and effectively alienate Lutsel K'e Denesoline land users' from Lac de Gras and the surrounding area