

LUTSEL K'E DENE FIRST NATION

**SUSTAINABLE DEVELOPMENT BASED ON DENESOLINE
BELIEFS AND TRADITIONS**

**Presentation to the MVEIRB Panel on the
Proposed Avalon Thor Lake Project**

THE LUTSEL K'E DENE FIRST NATION

- LKDFN → AKDFN → Traditional Territory
- Travel route between LK and YK
- Subsistence harvesting → Bathurst caribou
- Subsistence harvesting → GSL Fish
- TK of mining impacts → Environmental/Cultural



PROPOSED DEVELOPMENT

- Bathurst Herd Range
- Traditional travel route
- Traditional land use
- Reclamation → Not sufficient for reuse
- Transportation risk → barge
- New minerals being explored → new concerns



CONSULTATION AND NEGOTIATIONS

- There will be significant impacts to the land, water and wildlife, this is why an agreement is necessary
- Though LKDFN's agreement with Avalon is still pending, the LKDFN members have not yet had a public information session with Avalon, and remain uneducated and very concerned about the potential for significant environmental impacts
- The LKDFN members must understand the environmental, socio-economic, and cultural losses to be incurred in order to ratify the agreement
- Without a full understanding of the project, LKDFN will not sign the agreement, without the agreement, LKDFN will not support the project through the permitting phase



OVERVIEW

- Caribou – Direct and Cumulative Impacts
- Traditional Knowledge
- Traditional Use – Fatt Family
- Traditional Use – Travel
- Barge Concerns
- Tailings – Contaminant Concerns
- Oversight



CARIBOU

- South end of Bathurst Herd Range
- 400,000 → 35,000 Population
- Ingestion of contaminants through air emissions
- Cumulative impacts a real threat, action required
- Indirect impact mitigation measures have been ineffective



RECOMMENDATIONS

Commitment:

Avalon commits to conducting a study of the impacts of their airborne contaminants to the health of caribou, and the subsequent impacts to human health from caribou consumption

Measure:

Requirement from the Panel that Avalon participate in any regional cumulative effects framework that comes into effect through the life of the mine



TRADITIONAL KNOWLEDGE

- TK report poorly done
- Information was general and generally not site specific
- Interviews took place over 3 days and then a consultant wrote the report up
- Interviews took place in LK, not on site
- Information gathered does not inform design of the operation or propose recommendations



TRADITIONAL LAND USE

- Though other First Nations have submitted Traditional Knowledge Studies, Avalon has not discussed LKDFN members' understanding and use of the area
- The Fatt family has documented history of land use in the area, including a trap-line that ran across Thor Lake
- The Fatt family as well as other community members have important knowledge of the area that should be included in the assessment to enhance Avalon's understanding of the land they use



TRADITIONAL USE

- The proposed project and its associated barge routes intersect heavily used travel routes between Lutsel K'e and Yellowknife
- The shores of GSL near the mine site are common fishing locations for LKDFN members
- This area is commonly used as a resting and eating location on trips from Yellowknife to Lutsel K'e before crossing the open water section of the Lake in the East Arm



RECOMMENDATIONS

Commitments:

That Avalon meet in Lutsel K'e to consult the land users of that area, and address their concerns and receive their advice accordingly

That Avalon discuss land use and access of commonly traveled corridors and shorelines near the proposed development with the First Nation



BARGE

- TK suggests climate conditions changing, and an impact is the altering of water levels in GSL
- Over the life of the mine changes in water levels could mean reef and ridge exposure, making it more problematic for barges to navigate safely
- Though the company claims no barge incidents in recent memory, the sheer number of barge trips required throughout the summer months is the cause of significant concern
- We want to ensure that Avalon is aware of the gravity of any significant barge incidents for the Dene people



RECOMMENDATIONS

Commitment:

That Avalon monitor the water levels of Great Slave Lake in an attempt to ensure that changing water levels do not impact the ability of the barges to safely navigate

Measure:

That the Board require Transport Canada to include LKDFN in the section 23 regulatory process for the Governor in Council (GIC) exemption, and allow LKDFN to have meaningful input into the terms and conditions of the exemption



TAILINGS - CONTAMINANTS

- Environment Canada's *Review of Rare Earth Elements and Lithium Mining Sectors*, posted to the registry on January 28th, 2013:
 - “Nearly all by-products or waste material from rare earth processing are naturally radioactive due to contained thorium.”
 - “Thorium disposal and radiation are the main concerns that could shut down or delay the Lynas Corporation plant in Malaysia.”
 - “Thorium disposal also caused the shut down of a Mitsubishi rare earth element plant in Malaysia in 1992. The company has since needed to spend an estimated \$100 million to clean up the site.”



TAILINGS - CONTAMINANTS

- “Additionally, thorium radiation from improper disposal has been cited as a major reason the Chinese have slowed production and tried to increase environmental oversight for rare earth element mining and processing. **How to properly capture and dispose of thorium remains a challenge in the industry.**”
- In Avalon IR response to LKDFN #5.1 – “there will be no production of thorium or uranium resulting from the mining, flotation processing and hydrometallurgical processing of the Nechalacho rare earth deposit.”



TAILINGS - CONTAMINANTS

- US EPA's *Rare Earth Elements: A Review of Production, Processing, Recycling, and Associated Environmental Issues* posted the public registry on January 28th 2013:
 - “In general, limited toxicological or epidemiological data are available to assess the potential human health effect of rare earth elements.”
 - “The production of large amounts of waste material (often very acidic) and particulate emissions have led to major environment and health concerns with ore extraction and concentration.”
 - Potential exposure to workers through dust, radiologicals and hazardous materials



RECOMMENDATIONS

Measure:

That a radioactivity enforcement entity be developed to monitor all aspects of mining, processing, refining, and disposal, for both environmental impacts and human health effects



SUMMARY

- Community consultation inadequate
- Wildlife and fish not adequately protected or monitored
- Community knowledge and frequent use of the area has not been taken into consideration
- The frequency of barge trips and route selection is cause for significant public concern
- The unknown nature of the dangers of REE mining and the significant potential for radioactive releases into the environment are reasons for significant public and environmental concern
- New kind of mine in the NWT, too many unknowns for the Panel not to suggest strong oversight



CONCLUSIONS

- The measures and commitments recommended in this presentation will serve to limit most of the public concern for this project, though the community will still, and will continue to be wary about potential impacts to the environment from this operation.
- We cannot stress enough the need for strong, enforceable environmental measures to be enacted in response to global industry concerns of the real environmental impacts that will result from the proposed development.
- It is important that we learn from other REE mining developments and do not suffer the environmental degradation that other countries currently deal with, and will continue to be problematic into the future

