



Mackenzie Valley Land and Water Board
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De Beers Canada Inc. – Gahcho Kué Mine
Technical Workshop – October 7, 2016
MV2005C0032 and MV2005L2-0015

These meeting notes attempt to provide a general summary of the meeting. Ideas expressed by participants are paraphrased and summarized; they are not reproduced here verbatim.

Date and Location:

October 7, 2016 – 8:30 a.m. to 4:30 p.m.
Mackenzie Valley Environmental Impact Review Board Room
(2nd Floor, Scotia Centre)
5102 50th Ave Suite 200

Attendees:

Todd Slack (Ni Hadi Xa)
Randy Knapp (Ni Hadi Xa)
Shin Shiga (NSMA)
Zhong Liu (SLEMA)
Tyanna Steinwand (Tlicho Government)
Michael Birlea (Tlicho Government)
Marc d'Entremont (DKFN/LGL Limited)
Shawn McKay (Fort Resolution Metis Council) – phone in
Rick Walbourne (GNWT-ENR)
Paul Green (GNWT-ENR-WRD)
Laurie McGregor (GNWT-ENR)
Kelly Fischer (GNWT-ENR)
Andrew Howton (GNWT-Lands)
Lara Fletcher (Brodie Consulting for GNWT-ENR)
Véronique D'Amours-Gauthier (DFO)
Robyn Paddison (MVEIRB)
Anne Wilson (ECCC)
Melissa Pinto (ECCC)
Brian Asher (ECCC) – phone in
Reg Ejeckam (ECCC) – phone in

Rebecca Chouinard (MVLWB)
Kierney Leach (MVLWB)
Angela Love (MVLWB)
Kathy Racher (K. Racher Consulting for MVLWB)
Tony Brown (Envision Consulting for MVLWB) – phone in
Shannon Shaw (pHase Geochemistry for MVLWB) – phone in

De Beers:

Sarah McLean
Kevin Gostlin
Patrick Kramers
Alex Hood

Consultants to De Beers:

John Faithful (Golder Associates)
Jamie Van Gulck (Arktis Solutions Ltd.)
Bill Horn (EBA) – phone in

Meeting Notes

- Introductions: Round-table and phone introductions
 - Discussions on the design of the [Agenda](#) and the intent of the Technical Workshop ie. Informal discussions to help provide clarity and inform comments that are due for the draft ICRP review.
 - Any outstanding issues will be documented as 'Information requests' and will be addressed after the workshop at a separate time.
- [Presentation](#) by De Beers focussing on **Permanent Closure and Reclamation** and **Progressive Reclamation**.
- Questions were asked about De Beers' plan.
 - Slide 5 – discussion on volumes of water in the mined out pits and on long term stability of the lake at closure.
 - Discussion on the fine PK chemistry and placement near the surface of the water. Could cause issues with TSS and Ni.
 - Discussion on the backfilling of Hearne pit. Fine PK will be placed in Hearne pit, whereas the 5034 pit will be backfilled with coarse PK.
 - Question regarding the dewatering of Hearne pit before backfill. De Beers confirms that this will be considered based on water level and quality at the time.
 - Question regarding Slide 10 – how conservative are the high level water mark values?
 - De Beers - Annual and long term flux of water is expected to be less than a meter.
- General Question of [Version 3 of the ICRP](#) – what has been changed between V2 and V3 of the ICRP? Is there a summary of changes? How were our changes incorporated, how were previous concerns/recommendations addressed, etc.?
 - De Beers - Table 1 of V3 lists commitments for the ICRP.

Meeting Break

- Clarification provided on the Board staff's views and understanding of PAG rock use, interpretation of the definition of Construction materials, and the deposition of PAG rock underwater.
 - MVLWB – there is criteria of classifying PAG within the Licence and understanding that it can be placed underwater, within mine rock piles and in the pits.
 - De Beers – PAG is being sequestered under water within mine rock piles, in the pits, and placed in interior dykes.
 - What kind of risk is there for ARD/metal leaching to occur for PAG rock sequestered in the dykes?
 - Understanding that the PAG zones within dykes will vary with the level of saturation (one side will be saturated and the other open) but there are monitoring stations in place.
 - Further detailed questions to be provided in comments/recommendations to the MVLWB.
- GNWT questions on Overburden/lake sediment storage and management; any lessons learned from Snap Lake Mine?
- Ni Hadi Xa questions about revegetation objectives – ideal outcomes, and what constitutes a successful closure?

- De Beers - there are objectives and criteria that would be required to be met. Section 2.2 of the ICRP (V3) covers 'Goal of the closure and reclamation plan'.
- Discussion on the development of Closure Criteria vs. Objectives, and determining how objectives will be met moving forward.
 - Language adjustments will be made to the ICRP after review comments are submitted to explain that there is a plan moving forward to adjust of criteria over the life of the mine as research and other information are collected.
 - Board staff to reviewers: Make sure the reclamation research plan has what reviewers would like in it, as this will lead the way to eventual closure criteria development.

Lunch

- Discussion on Table 20 of the ICRP (V3): Closure objectives, criteria, method of measurements to evaluate achievement of criteria, and any planned reclamation research.

Site Wide (SW) Objectives - Overview

- Discussion on SW1:
 - Ni Hadi Xa - Asked why considering use of site-specific criteria?
 - De Beers - To keep options open in the future. Site specific criteria may be the most appropriate closure criteria given the circumstances at the site and the unique environment there. A guideline or standard developed for a different circumstance or environment may not be appropriate for the site.
- Discussion on SW2:
 - Ni Hadi Xa - Would like further clarity on restoration of drainage in the criteria, ok with objective as is.
- Discussion on SW5:
 - Ni Hadi Xa - Asked how is this objective going to be met? Does not agree with the objective as is. Further clarification is required as this does not include mine rock piles.
 - DKFN - Suggested that further clarity is needed – too much interpretation as currently written.
- Discussion on SW6:
 - DKFN – Discussion around waste rock piles. Asked what are the slopes going to look like.
- Discussion on SW7:
 - Ni Hadi Xa - Remarked that there were no criteria for habitat units.
 - De Beers - wants this to be informed with the research plans.
 - Ni Hadi Xa – Remarked that further clarification is required as this does not include mine rock piles.

Open Pits (OP) Objectives - Overview

- Discussion on OP1:
 - ENR – Will closure or water quality objectives be in place for meromictic conditions?
 - ECCC - Fine PK pumping concerns during winter months?
 - Ni Hadi Xa - Suggested that criteria should be re-worded.

Kennady Lake (KL) Objectives - Overview

- Discussion on KL1:
 - ENR - Asked why are numerical closure criteria not provided in this ICRP/at this time?
 - De Beers - providing criteria that the MVLWB would likely approve at this time and to have some operational water monitoring data before setting these.

- Discussion on KL general:
 - Ni Hadi Xa - Concerned with wording compared to intent of MVEIRB panel decision on providing an environment to sustain fish. Numeric values to be included (species numbers in sampling). Would like to have the DFO authorization integrated into the ICRP (with a research plan to establish what the criteria would be).

Mine Rock (MR) Piles Objectives - Overview

- Discussion on MR1:
 - Ni Hadi Xa - Asked to include aboriginal parties into the risk assessment criteria.
 - De Beers is ok with this.
 - Ni Hadi Xa - Asked to commit to making ramps on the piles.
 - De Beers will evaluate the potential for wildlife pathways through research plans.
 - ENR - Asked to include chemical stability of the mine rock pile.
 - De Beers has included a site-wide objective on seepage, and chemical stability is accounted for in the construction of the waste rock pile.

Processed Kimberlite (PK) Disposal Areas Objectives - Overview

- Discussion on PK1:
 - Ni Hadi Xa - Suggested that numerical values be provided and how they will be met (for criteria).
- Discussion on PK2:
 - Ni Hadi Xa - Asked why numerical values were not used? Suggested surveying in post-closure monitoring.

Infrastructure (I) Objectives - Overview

- Discussion on I1:
 - Ni Hadi Xa - Asked what soil criteria will De Beers meet?

De Beers – does have a plan to refine criteria to help provide clarity.

- Board staff – De Beers should look at providing a very general timeline as to when final criteria will be developed.

Ni Hadi Xa – Asked for an extension to the reviewer deadline from October 18, 2016 to November 10, 2016. DKFN showed support for this request.

End