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March 16, 2017

File: MV2005C0032 and MV2005L2-0015

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Email: [Sarah.McLean@debeersgroup.com](mailto:Sarah.McLean@debeersgroup.com)

Dear Ms. McLean:

**Interim Closure and Reclamation Plan - Reclamation Research Plan and Closure Options  
De Beers Canada Inc. – Diamond Mining, Kennady Lake, NT**

The Mackenzie Valley Land and Water Board (MVLWB or the Board) met on March 16, 2017 to consider the De Beers Canada Inc. (De Beers) submission of the Gahcho Kué Mine Interim Closure and Reclamation Plan (ICRP) Objectives, submitted on February 1, 2017 to fulfill Part J, item 1 of Licence MV2005L2-0015 and condition 84 of Permit MV2005C0032.

As outlined in the decision letter of January 12, 2017, the draft work plan outlines the process forward for revising the ICRP. Following the Board's decision on the interim objectives on March 16, 2017, the Board shall provide direction to De Beers for the refinement of closure options and research plans.

Board direction on revisions required for the reclamation research plan and closure options, based on the comments and recommendations received through the ICRP (V.3) review, are attached in Tables 1 and 2. **Please revise the reclamation research plan and closure options of the ICRP in accordance with Tables 1 and 2, and resubmit the reclamation research plan and closure options to the Board by April 6, 2017.** The updated reclamation research plan and closure options will then go out for a focussed review before moving on to the next sections of the ICRP (closure criteria). Please note that technical workshops may be held in order to further clarify and discuss specific elements of the ICRP if deemed necessary.

If you have any questions or concerns, please contact Angela Love at (867) 766-7456 or email [angela.love@mvlwb.com](mailto:angela.love@mvlwb.com).

Yours sincerely,

A handwritten signature in black ink, appearing to read "V. Camsell-Blondin".

Violet Camsell-Blondin  
MVLWB, A/Chair

Copied to: Distribution List

Attached: Table 1: MVLWB Directive on Reclamation Research Plan Updates  
Table 2: MVLWB Directive on Closure Options/Activities

Proponents develop reclamation research plans to resolve uncertainties and answer questions pertaining to environmental risks for closure options or selected closure activities. Reclamation research can be designed to identify the closure option best suited to achieve closure objectives and the best way to implement the chosen closure activity. It is essential that proponents initiate reclamation research as early as possible and that it be fully supported so that the Board and stakeholders can use the resulting information in the closure planning process in a timely manner.

Now that interim closure objectives have been approved for the Gahcho Kué Mine, and as closure options and activities are being clarified, please make any necessary edits to the reclamation research plans that were presented in the ICRP (V.3) in response to reviewer comments and the questions identified in Table 1, below. It is suggested that De Beers provide an updated version of Appendix E of the ICRP to be circulated for review prior to a Board decision. The goal of reviewing this information is to provide certainty to all parties regarding the planned research programs that will inform closure criteria.

**TABLE 1: MVLWB DIRECTIVE ON RECLAMATION RESEARCH PLAN UPDATES<sup>i</sup>**

Objectives – approved March 16, 2017	Reclamation Research	Reviewer Comment and Response Reference <sup>ii</sup>	Comments
SW1 - Air quality levels safe for people, vegetation, aquatic life and wildlife	N/A		
SW2 - Drainage pathways for surface runoff are physically stable.	N/A		
SW3 - Surface runoff and seepage water quality that is safe for people, vegetation, aquatic life, and wildlife.  and  MR2 - Contaminated rock and non-hazardous waste disposal areas within piles will be safe for aquatic life, people or wildlife.	Seepage (Quality and Quantity)	DKFN 2 DKFN 13 DKFN 22 MVLWB 7 MVLWB 8 MVLWB 10 MVLWB 11 NSMA 41 & Tłı̨chq 40	Please identify how this reclamation research plan will address potential action level exceedance or identify mitigation measures to reduce seepage (i.e. different cover options).  Ongoing modelling and monitoring does not support the achievement of a closure goal. Please identify through the research how monitoring data will be used to identify closure activities or criteria.  Please explain how ongoing monitoring (SNP, Geochemical Characterization, water balance, etc.) will contribute to this research.

Objectives – approved March 16, 2017	Reclamation Research	Reviewer Comment and Response Reference <sup>ii</sup>	Comments
			<p>Please refine the timelines for research so that research findings are established and inform closure options and criteria prior to the submission of the Final Closure and Reclamation Plan (FCRP, 2025).</p> <p>Please clarify and explain if any of the contingencies identified in the ICRP for seepage will no longer be viable at a particular point in time.</p>
SW4 - Mine areas are physically stable for use by people and wildlife.	N/A		
SW5 - Safe passage and use for Caribou and other wildlife.	Landform Options (Wildlife Habitat)	DKFN 2 DKFN 23 DKFN 24 ENR 29 MVLWB 9 NSMA 41 & Tłıchq 40 NSMA 44 & Tłıchq 43 Tłıchq 51	<p>Please describe all potential habitat functions (and species) De Beers will consider in the closure design and monitoring of all mine components.</p> <p>Please provide more information on how the results of this research will contribute to final mine site conditions and the development of closure criteria that reflect reviewer concerns and recommendations.</p> <p>Please identify how progressive reclamation and associated wildlife monitoring results will inform landform research options, including the population and diversity of small mammals and birds.</p> <p>Please refine the timelines for research so that research findings are established and inform closure options and criteria prior to the submission of the FCRP (2025).</p>
PK1 - Prevent PK from entering the surrounding terrestrial and aquatic environment.  PK2 - Physically stable PK disposal	Physical Stability of Rock Covers	DKFN 2 ENR 19 ENR 20 ENR 21 MVLWB 10 MVLWB 11 NSMA 13 & Tłıchq 12 NSMA 41 & Tłıchq	<p>Please explain why research into the physical stability of the mine rock covers is not required similar to the requirement for research into the stability of PK covers.</p> <p>Please discuss cover options for the mine rock piles providing rationale for why vegetative covers are not being considered for closure.</p>

Objectives – approved March 16, 2017	Reclamation Research	Reviewer Comment and Response Reference <sup>ii</sup>	Comments
<p>areas to limit risk of facility failure.</p> <p>and</p> <p>MR1 - Physically stable slopes to limit risk of failure that would impact the people or wildlife.</p>		<p>40 NSMA 45 &amp; Tłıchq 44</p>	<p>Please clarify the links between the cover design research and the revegetation research, including a timeline for knowing when and if the PK facilities will incorporate vegetative covers.</p> <p>Please clarify and explain if any of the contingencies identified in the ICRP for mine rock pile stability will no longer be viable at a particular point in time.</p> <p>Please include research into the effects of weathering on the stability of waste rock and PK piles and covers. This can include an analysis of ongoing research of both the physical and chemical stability of storage areas at other diamond mines in the NWT.</p> <p>Please refine the timelines for research so that research findings are established and inform closure options and criteria prior to the submission of the FCRP (2025).</p>
<p>PK3 – Chemically stable Processed Kimberlite Facilities (Piles) that do not endanger human, wildlife, or environmental health and safety.</p> <p>and</p> <p>MR3 - Chemically stable mine rock piles that are safe for aquatic life, humans and wildlife.</p>	<p>Chemical Stability of PK and Mine Rock Facilities</p>	<p>ENR 17 ENR 19 ENR 20</p>	<p>De Beers has committed to updating chemical stability objectives and criteria. Please indicate if and how this will be captured through updates to Reclamation Research Planning. Please clarify how these updates change any research plans currently described in the ICRP.</p> <p>De Beers has committed to updating the text within Section 2.2 to consider weathering of the PK. Please include the chemical stability of the mine rock piles which has also been identified as a closure objective.</p> <p>Please include research into the effects of weathering on the chemical stability of waste rock and PK piles and covers. This can include an analysis of ongoing research of both the physical and chemical stability of PK storage areas at other diamond mines in the NWT.</p>

Objectives – approved March 16, 2017	Reclamation Research	Reviewer Comment and Response Reference <sup>ii</sup>	Comments
<p>OP1 - The backfilled and/or flooded pits will not adversely impact establishment and/or maintenance of sustainable aquatic ecosystems and life in the overlying Kennady Lake and downstream waterbodies.</p>	<p>Stability of Chemocline</p>	<p>DKFN 2 ECCC 10 ENR 7 ENR 9 MVLWB 10 NSMA 41 &amp; Tlichó 40 NSMA 46 &amp; Tlichó 45</p>	<p>Please include a discussion of long-term interactions with groundwater, and how that may affect meromictic conditions.</p> <p>Please provide clarification, and research details into effective mitigations in the event water quality in Kennady Lake is not following the intended trajectory as a result of interactions with the open pit(s).</p> <p>The research objective should clarify its goals to establish effective numerical criteria to ensure meromictic conditions are established and maintained – not just events that could disrupt it.</p> <p>Please refine the timelines for research so that research findings are established and inform closure options and criteria prior to the submission of the FCRP (2025).</p>
<p>OP2 - Physically stable pit walls to limit risk of a failure impacting people and aquatic life.</p>	<p>N/A</p>		
<p>I1 - Disturbed areas will be safe for people, wildlife, and vegetation.</p>	<p>N/A</p>		
<p>I2 - Re-vegetation targeted to priority areas.</p> <p>and</p> <p>I3 - Aesthetic conditions of the infrastructure areas are similar to surrounding natural conditions.</p>	<p>Revegetation</p>	<p>DKFN 2 DKFN 14 DKFN 16 DKFN 17 DKFN 18 DKFN 19 DKFN 20 DKFN 21 ENR 27 ENR 28 MVLWB 10 NSMA 41 &amp; Tłıchq 40 NSMA 42 &amp; Tłıchq 41</p>	<p>Please describe the actual actions that can be applied to disturbed areas to accelerate recovery in the Reclamation Research Plans. This can be informed by the ultimate closure objective and criteria, such as returning disturbed areas to the baseline habitat structures (vegetation complexes), where possible.</p> <p>Please explain why goals are not being set and research designed to ensure these goals are met, as opposed to potentially reaching lower standards that are easier to achieve. The research design is too vague to assure revegetation success.</p>

Objectives – approved March 16, 2017	Reclamation Research	Reviewer Comment and Response Reference <sup>ii</sup>	Comments
			<p>Acknowledging that certain areas will not be returned to the exact land classification that they were prior to disturbance, target ecological land classifications should be used as a starting point from where to develop research objectives. Please identify the target ecological land classifications that will be used to guide reclamation/ revegetation efforts so that disturbed areas are returned to their natural state as much as possible. Effort (and the research) should strive to return the disturbed areas to ecological land classification units that are common/unique to the Gahcho Kué area.</p> <p>Please refine the timelines for research so that research findings are established and inform closure options and criteria prior to the submission of the FCRP (2025).</p> <p>Please describe when vegetation trials will be conducted and when they need to be concluded in order to be incorporated into the FCRP.</p> <p>There has been a lot of revegetation work and research carried out since 2009. The reference to Environmental Dynamics Inc. and MPERG, 2009 should be updated.</p>
KL2 - Physically stable constructed banks of Kennady Lake to limit risk of failure that would impact aquatic life, wildlife, and people.	N/A		
KL3 - Kennady Lake is reconnected with the upstream and downstream and small craft navigation is possible within the	N/A		

Objectives – approved March 16, 2017	Reclamation Research	Reviewer Comment and Response Reference <sup>ii</sup>	Comments
Kennady Lake basin through the dyke and pit areas.			
All	Risk-Assessment	MVLWB 12	Please include details, including the timing, of the post-closure risk assessment and how the results will be used to inform the FCRP.

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<sup>i</sup> Detailed Post-Closure Monitoring Plans and Contingency Planning are outstanding and will differ from that of operational monitoring programs.

<sup>ii</sup> See Reviewer Comment Table during the review of the ICRP (V.3).

It is important to document all closure options considered throughout the life of a project to ensure there is a record of the rationale used for certain decisions and to learn from past experiences. It is the responsibility of the proponent to ensure that the closure options proposed would achieve the stated closure objectives, comply with all closure and reclamation requirements, and include best practices. While there is limited flexibility to make major adjustments to the technical approaches described in the ICRP, refinements can be made to some aspects of the plan (e.g., mine rock pile contouring, revegetation, filling rates, etc.).

Please make any necessary edits to the closure activities/options that were presented in the ICRP (V.3) in response to reviewer comments and the questions identified in Table 2, below. Where possible, please include a summary of closure options analyzed during the Environmental Impact Review to provide the background and context for De Beers' final closure activities (as applicable). Updated closure options/activity descriptions will be circulated for review prior to a Board decision. The goal of this review is to provide certainty to all parties regarding the closure options and activities that will inform closure criteria of the plan.

The selected closure activity may change prior to the Final Closure and Reclamation Plan (FCRP, 2025) based on factors such as environmental considerations, stakeholder input, the availability of new technologies/practices, the results of environmental monitoring programs, or the results of specific reclamation research. Proponents should develop a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful. The goal of this review is to provide certainty to all parties regarding the planned research programs and closure options that will inform closure criteria of the plan.

**TABLE 2: MVLWB DIRECTIVE ON CLOSURE OPTIONS/ACTIVITIES**

Objectives – approved March 16, 2017	Activities/Options – Table 20 in ICRP	Reviewer comment and response reference	Comments
SW1 - Air quality levels safe for people, vegetation, aquatic life and wildlife.	Engineering design and construction of a cover placed over the fine PK deposited within the Fine PKC Facility.  Cessation of mining and construction activities (e.g. diesel combustion, surface vehicle traffic, blasting, material crushing and handling, etc.) will play a large role in diminished air emissions.	-	While there is limited flexibility to make major adjustments to the technical approaches described in the ICRP, refinements can be made to some aspects of the plan (e.g., mine rock pile contouring, revegetation, filling rates, etc.). Might any changes during mine operations or mine closure impact the closure activity described to meet the SW1 objective? Are designs for the PKC Facility cover completed? If so, please reference where they can be found, and if not when they might be available. Are there several design options that have been or will be



Objectives – approved March 16, 2017	Activities/Options – Table 20 in ICRP	Reviewer comment and response reference	Comments
			<p>evaluated in order to meet objective SW1? If so, please describe the options that have been or will be assessed.</p> <p>Is there a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful?</p>
<p>SW2 - Drainage pathways for surface runoff are physically stable.</p>	<p>Final grading where required to promote positive drainage.</p> <p>Drainage pathways (e.g., spillway at the Fine PKC Facility) will be established as per design and QA/QC. QA/QC protocol completed by a professional engineer.</p>	-	<p>Are designs for drainage pathways already prepared? If so, please reference where they can be found, and if not when they might be available. Are there several design options that have been or will be evaluated to promote physically stable drainage pathways in order to meet objective SW2? If so, please describe the options that have been or will be assessed.</p> <p>Is there a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful?</p>
<p>SW3 - Surface runoff and seepage water quality that is safe for people, vegetation, aquatic life, and wildlife.</p>	<p>Characterization and management of PAG rock during operations will occur as per the approved management plans (De Beers, 2016b, 2015e).</p> <p>Fine-grained PK deposited in the Fine PKC Facility will be capped with an engineered cover, as per approved design and QA/QC protocol.</p> <p>The cover will promote runoff and reduce interaction between runoff and PK.</p> <p>Drainage pathways will be established for long-term stability to mitigate against erosion.</p> <p>All potentially hazardous materials and equipment will be</p>	<p>ECCC 3</p> <p>ENR 24 MVLWB 5</p>	<p>De Beers response on November 25, 2016 provides further clarity on how water that has come in contact with hydrocarbons will be collected and deposited.</p> <p>Please list all options being considered for the management of all waste waters generated during closure activities. If activities have been chosen addressing this concern, please clarify in detail how the closure activity addresses waste waters generated during closure activities.</p> <p>De Beers response on November 25, 2016 commits to providing an analysis of PAG rock management options. Please list all options being considered.</p> <p>De Beers has also committed to updating Section 5.2.9.1 to include a</p>

Objectives – approved March 16, 2017	Activities/Options – Table 20 in ICRP	Reviewer comment and response reference	Comments
	removed from site.		<p>clear statement of the approved locations for PAG rock storage with reference to the specific plans that manage the control of PAG rock.</p> <p>Is there a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful?</p>
SW4 - Mine areas are physically stable for use by people and wildlife.	<p>Final grading will promote positive drainage towards pre-disturbance drainage pathways where possible.</p> <p>Drainage pathways will be established for long-term stability to avoid issues with erosion.</p> <p>Engineered earthen structures remaining at the site (i.e. Mine Rock Piles, Fine PKC Facility and Coarse PK Pile) will be physically stable. See MR and PK closure objectives below for details specific to stability of mine waste areas.</p>	-	<p>Where will closure activities to establish pre-disturbance drainage pathways to meet objective SW4 be possible? Where will they not be possible? Please explain with rationale.</p> <p>Is there a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful?</p>
SW5 - Safe passage and use for Caribou and other wildlife.	<p>Removal of all buildings, equipment, and surface hazards.</p> <p>Engineered earthen structures remaining at the site (i.e. Mine Rock Piles, Fine PKC Facility and Coarse PK Pile) will be physically stable. See MR and PK closure objectives below for details specific to stability of mine waste areas.</p> <p>Mitigation of environmental risk to wildlife from soil, sediment or water will be completed as required based on the applicable closure criteria for environmental media.</p>	DKFN 6 Tłı̨chq 53	<p>De Beers response on November 25, 2016 has committed to working with Ni Hadi Xa to inform final closure design; roads will be scarified and re-contoured to help with safe passage of wildlife.</p> <p>Please list for all options being considered for the safe passage of wildlife for each mine component. If activities have been chosen addressing objective SW5, please clarify in detail how the closure activity addresses safe passage for each mine component.</p> <p>What types of soil, sediment, or water mitigation options may be most likely required to eliminate environmental risk to wildlife? Please provide</p>

Objectives – approved March 16, 2017	Activities/Options – Table 20 in ICRP	Reviewer comment and response reference	Comments
			<p>examples.</p> <p>Is there a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful?</p>
<p>PK1 - Prevent PK from entering the surrounding terrestrial and aquatic environment.</p>	<p>Engineering design of the Fine PKC Facility and Coarse PK Pile by a professional engineer.</p> <p>Deposition of the fine PK within the Fine PKC Facility, which will include a material cover at closure, or into Hearne pit.</p> <p>Coarse PK will be disposed of within the Coarse PK Pile, Hearne and 5034 pits, and the Coarse PK Pile.</p>	-	<p>Are designs for the PKC Facility and cover completed? If so, please reference where they can be found, and if not when they might be available. Are there several design options that have been or will be evaluated in order to meet objective PK1? If so, please describe the options that have been or will be assessed.</p> <p>Is there a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful?</p>
<p>PK2 - Physically stable PK disposal areas to limit risk of facility failure.</p>	<p>Final landscape inspected and submission of as-built conditions in a summary report completed by a professional engineer.</p> <p>Post-closure geotechnical monitoring at appropriate locations.</p>	-	<p>Is there a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful?</p>
<p>PK3 – Chemically stable Processed Kimberlite Facilities (Piles) that do not endanger human, wildlife, or environmental health and safety.</p>	<p>NEW OBJECTIVE – no options or activity described in ICRP V.3</p>	<p>DKFN 6 Tłjchq 53</p>	<p>It is important to document all closure options considered throughout the life of a project to ensure there is a record of the rationale used for certain decisions and to learn from past experiences. It is the responsibility of the proponent to ensure that the closure options proposed would achieve the stated closure objectives, comply with all closure and reclamation requirements and include best practices.</p> <p>Please provide closure options and activities.</p>
<p>OP1 - The backfilled and/or</p>	<p>Poor quality and high TDS water encountered throughout mining</p>	<p>Tłjchq 48</p>	<p>Tłjchq Lands Protection Department asked if alternative options to</p>

Objectives – approved March 16, 2017	Activities/Options – Table 20 in ICRP	Reviewer comment and response reference	Comments
<p>flooded pits will not adversely impact establishment and/or maintenance of sustainable aquatic ecosystems and life in the overlying Kennady Lake and downstream waterbodies.</p>	<p>will be managed in the WMP, then pumped into the bottom of the Tuzo pit at closure.</p> <p>Meromictic conditions will establish within Tuzo.</p>	<p>Tłjchq 56</p>	<p>establishing meromictic conditions in Tuzo pit.</p> <p>Have any other options been considered for the management of water in flooded pit? Or is this option the only reasonable activity?</p> <p>While there is limited flexibility to make major adjustments to the technical approaches described in the ICRP, refinements can be made to some aspects of the plan (e.g., mine rock pile contouring, revegetation, filling rates, etc.).</p> <p>Please list for discussion all options being considered for the safe return of aquatic life in Kennady Lake (including the flooded pit portions of the lake). If activities have been chosen addressing this concern, please clarify in detail how the closure activity addresses the safe return of aquatic life in the flooded pit portions of Kennady Lake.</p> <p>Is there a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful?</p>
<p>OP2 - Physically stable pit walls to limit risk of a failure impacting people and aquatic life.</p>	<p>Backfilling at the 5034 pit will be completed with consideration to slope stability at the adjacent Tuzo pit wall.</p> <p>No additional reclamation efforts are expected to be required at final closure, but options will be assessed following final inspection.</p>	<p>-</p>	<p>While there is limited flexibility to make major adjustments to the technical approaches described in the ICRP, refinements can be made to some aspects of the plan (e.g., mine rock pile contouring, revegetation, filling rates, etc.). Might any changes during mine operations or mine closure impact the closure activity described to meet the OP2 objective?</p> <p>Please provide examples of the type of closure options that may be required to address objective OP2 at final closure following final inspection.</p>

Objectives – approved March 16, 2017	Activities/Options – Table 20 in ICRP	Reviewer comment and response reference	Comments
			Is there a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful?
I1 - Disturbed areas will be safe for people, wildlife, and vegetation.	Post-closure Environmental Site Assessment and Remedial Action Plan completed by a professional engineer or geoscientist, in accordance with GNWT guidelines (GNWT, 2003)	DKFN 6 Tł̄chq̄ 53	De Beers response on November 25, 2016 has committed to working with Ni Hadi Xa to inform final closure design and that roads will be scarified, and re-contoured to help with safe passage of wildlife.  Please list for discussion all options being considered for the safe passage of wildlife for mine infrastructure. If activities have been chosen addressing this concern, please clarify in detail how the closure activity addresses safe passage for mine infrastructure.  Is there a contingency plan to outline how the selected closure activities will be modified if it is unsuccessful?
I2 - Re-vegetation targeted to priority areas.	Revegetation efforts will include some combination of the following activities across the various mine areas: <ul style="list-style-type: none"> <li>• Grading surfaces to promote drainage and limit pooling, surface material loosening (scarification);</li> <li>• Placement of salvaged overburden and lake sediments as a growth amendment to priority locations;</li> <li>• Application of native species; and,</li> <li>• Additional activities will be determined by research findings at the revegetation test plots.</li> </ul>	-	Is there a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful?
I3 - Aesthetic	Removal of all buildings,	-	Is there a contingency plan to outline

Objectives – approved March 16, 2017	Activities/Options – Table 20 in ICRP	Reviewer comment and response reference	Comments
conditions of the infrastructure areas are similar to surrounding natural conditions.	<p>equipment, and surface hazards.</p> <p>Final grading will reflect surrounding topography and re-establish natural drainage pathways where possible.</p> <p>Application of native vegetation.</p>		how the selected closure activity will be modified if it is unsuccessful?
KL1 - Return Kennady Lake to a state that will support a functioning aquatic ecosystem and traditional uses.	<p>Management and mitigation of potential risk from mine waste products in accordance with approved engineering designs and management plans.</p> <p>Construction of fish habitat as per DFO authorization.</p> <p>Discharge of poor quality water into the bottom of the Tuzo pit, establishment of meromictic conditions to inhibit the upward transport of potentially harmful water quality constituents.</p> <p>Breaching of perimeter dykes allowing Kennady Lake to refill.</p> <p>Supplemental pumping from up gradient lakes to shorten the time required for flooding.</p>	<p>Tłjchq 56</p> <p>ECCC 9</p>	<p>De Beers response on November 25, 2016 provides further clarity on how Kennady Lake will support a functioning ecosystem. Closure activities described include fish habitat features such as finger dykes, artificial reefs, and littoral habitat construction to offset the disturbance caused by the mine.</p> <p>De Beers response on November 25, 2016 provided an explanation on what information is required prior to fully describing all potential water treatment options at closure if water quality in Kennady Lake is not as predicted. This may be reasonable given that this is an interim closure and reclamation plan, however it may be helpful to have further discussion surrounding the most likely treatment options that would be considered.</p> <p>Please list for discussion all options being considered for to support the safe return of aquatic life in Kennady Lake. If activities have been chosen addressing this concern, please clarify in detail how the closure activity addresses the safe return of aquatic life in Kennady Lake.</p> <p>Is there a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful?</p>
KL2 - Physically stable	Banks constructed within Kennady Lake (e.g., interface of	-	While there is limited flexibility to make major adjustments to the technical

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constructed banks of Kennady Lake to limit risk of failure that would impact aquatic life, wildlife, and people.	lake and mine rock piles) will be physically stable.		<p>approaches described in the ICRP, refinements can be made to some aspects of the plan (e.g., mine rock pile contouring, revegetation, filling rates, etc.). Might any changes during mine operations or mine closure impact the closure activity described to meet the KL2 objective?</p> <p>Please provide examples of the type of closure options that may be required to address objective KL2 at final closure following final inspection.</p> <p>Is there a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful?</p>
KL3 - Kennady Lake is reconnected with the upstream and downstream and small craft navigation is possible within the Kennady Lake basin through the dyke and pit areas.	<p>The downstream slope of Dykes B, J, N, and K will be flattened and covered with a 1 m thick erosion protection material layer (2028).</p> <p>Dykes B, N, and K will be partially breached to a final crest elevation of 417.0 masl (2029), then completely breached, along with the entirety of Dyke J, to 418 masl.</p>	-	<p>While there is limited flexibility to make major adjustments to the technical approaches described in the ICRP, refinements can be made to some aspects of the plan (e.g., mine rock pile contouring, revegetation, filling rates, etc.). Might any changes during mine operations or mine closure impact the closure activity described to meet the KL3 objective?</p> <p>Please provide examples of the type of closure options that may be required to address objective KL3 (i.e. types or erosion protection material).</p> <p>Is there a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful?</p>
MR1 - Physically stable slopes to limit risk of failure that would impact the people or wildlife.	<p>Engineering design including stability analysis that meets design criteria for factor of safety as per industry guidelines (Piteau Associates Engineering Ltd., 1991).</p> <p>Construction and operation</p>	DKFN 6 Tłchq 53	<p>De Beers response on November 25, 2016 has committed to working with Ni Hadi Xa to inform final closure design for mine rock piles.</p> <p>Please list for discussion all options being considered for the safe passage of wildlife for mine rock piles. If</p>

Objectives – approved March 16, 2017	Activities/Options – Table 20 in ICRP	Reviewer comment and response reference	Comments
	<p>have been completed as per the approved Mine Rock Pile designs (De Beers, 2015j) and construction management plans (De Beers, 2015i)</p>		<p>activities have been chosen addressing this concern, please clarify in detail how the closure activity addresses safe passage for mine rock piles.</p> <p>While there is limited flexibility to make major adjustments to the technical approaches described in the ICRP, refinements can be made to some aspects of the plan (e.g., mine rock pile contouring, revegetation, filling rates, etc.). Might any changes during mine operations or mine closure impact the closure activity described to meet the MR1 objective? Are there several design options for the Mine Rock Piles that have been or will be evaluated in order to meet objective MR1? If so, please describe the options that have been or will be assessed (reference relevant section of EIR, if applicable).</p> <p>Cover options for the mine rock piles should at least be discussed and analyzed under an options analysis providing rationale for why vegetative covers are not being considered for closure.</p> <p>Is there a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful?</p>
<p>MR2 - Contaminated rock and non-hazardous waste disposal areas within piles will be safe for aquatic life, people or wildlife.</p>	<p>Isolation of contaminated rock and non-hazardous waste disposal areas within the interior of Mine Rock Piles.</p> <p>Waste areas will be covered with low permeability material to reduce infiltration.</p> <p>Permafrost is predicted to aggrade within the interior of</p>	<p>ENR 15</p>	<p>De Beers response on November 25, 2016 provided clarification on the construction method of the mine rock piles.</p> <p>While there is limited flexibility to make major adjustments to the technical approaches described in the ICRP, refinements can be made to some aspects of the plan (e.g., mine rock pile contouring, revegetation, filling rates,</p>



Objectives – approved March 16, 2017	Activities/Options – Table 20 in ICRP	Reviewer comment and response reference	Comments
	the piles to reduce permeability.		<p>etc.). Might any changes during mine operations or mine closure impact the closure activity described to meet the MR2 objective?</p> <p>Are there several design options for the Mine Rock Piles that have been or will be evaluated in order to meet objective MR2? If so, please describe the options that have been or will be assessed (reference relevant section of EIR, if applicable).</p> <p>Is there a contingency plan to outline how the selected closure activity will be modified if it is unsuccessful?</p>
MR3 - Chemically stable mine rock piles that are safe for aquatic life, humans and wildlife.	NEW OBJECTIVE – no options or activity described in ICRP V.3	DKFN 6 Tłjchq 53	<p>It is important to document all closure options considered throughout the life of a project to ensure there is a record of the rationale used for certain decisions and to learn from past experiences. It is the responsibility of the proponent to ensure that the closure options proposed would achieve the stated closure objectives, comply with all closure and reclamation requirements and include best practices.</p> <p>Please provide closure options and activities.</p>

## Amanda Gauthier

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**From:** Amanda Gauthier  
**Sent:** Wednesday, March 22, 2017 10:57 AM  
**To:** 'Sarah.McLean@debeersgroup.com'  
**Cc:** Angela Love; Shannon Allerston; 'admin\_dkfn@northwestel.net'; 'Alexandra.Hood@debeersgroup.com'; 'Amanda\_Gonari@golder.com'; 'andrew\_howton@gov.nt.ca'; 'anusa\_sivalingam@gov.nt.ca'; 'arnoldenge@gmail.com'; 'Carolc.lands@gmail.com'; 'Charity\_Beres@golder.com'; 'Charlene\_Coe@gov.nt.ca'; 'chief.lkdfn@gmail.com'; 'Clayton\_Lloyd@gov.nt.ca'; 'Colin\_merz@gov.nt.ca'; 'david.alexander@cannor.gc.ca'; 'doug\_carr@gov.nt.ca'; 'ec.ea.nwt.ec@canada.ca'; 'fisheriesprotection@dfo-mpo.gc.ca'; 'fortsmithmetiscouncil@northwestel.net'; 'frmcenvironment@northwestel.net'; 'ginger.gibson@thefirelightgroup.com'; 'gnwt\_ea@gov.nt.ca'; 'ima\_dkfn@northwestel.net'; 'Iqbal\_Arshad@gov.nt.ca'; 'jhood@fortsmith.ca'; 'joe\_heron@gov.nt.ca'; 'john\_faithful@golder.com'; 'Jon\_Posynick@gov.nt.ca'; 'Jen Potten (jpotten@mvlwb.com)'; 'katie\_rozestraten@gov.nt.ca'; Kierney Leach; 'land@wpfn.ca'; 'landsnresources@katlodeeche.com'; 'lauraduncan@tlichocom'; 'Lindsay\_Armer@gov.nt.ca'; 'Mark.D'Aguiar@dfo-mpo.gc.ca'; 'Melanie.Murphy@wscc.nt.ca'; 'melissa.pinto@canada.ca'; 'monica\_wendt@gov.nt.ca'; 'NTCard@aandc.gc.ca'; 'pat\_knutson@gov.nt.ca'; 'patrick\_clancy@gov.nt.ca'; 'Paul\_Green@gov.nt.ca'; 'president.nwtmn@northwestel.net'; 'rcc.nwtmn@northwestel.net'; Shannon Allerston; 'shin.shiga@nsma.net'; 'Tracy\_Covey@gov.nt.ca'; 'veronique.damours-gauthier@dfo-mpo.gc.ca'; 'Andrew.Williams@debeersgroup.com'; Angela Love; 'apower@ykdene.com'; 'chief.srfn@northwestel.net'; 'Clayton\_Lloyd@gov.nt.ca'; 'Erik.Madsen@debeersgroup.com'; 'esangris@ykdene.com'; 'fieldworker.frmc53@northwestel.net'; 'frmc@northwestel.net'; 'frmcenvironment@northwestel.net'; 'Glen\_Mackay@gov.nt.ca'; 'gracemackenzie@tlichocom'; 'hrmc@northwestel.net'; 'jblack@ykdene.com'; 'Jeremy\_Roberts@gov.nt.ca'; 'joe\_heron@gov.nt.ca'; 'johnny\_lennie@gov.nt.ca'; 'katie\_rozestraten@gov.nt.ca'; 'kserben@golder.com'; 'lands@denenation.com'; 'laurie\_mcgregor@gov.nt.ca'; 'Leah.Russell@debeersgroup.com'; 'lkdfnlands@gmail.com'; 'loretta.ransom@canada.ca'; 'Matthew.Spence@cannor.gc.ca'; 'monica\_wendt@gov.nt.ca'; 'Nathen\_Richea@gov.nt.ca'; 'Olivia\_Lee@gov.nt.ca'; 'Patrick.Kramers@debeersgroup.com'; 'Permits'; 'preliminaryscreening@reviewboard.ca'; 'Rick\_Walbourne@gov.nt.ca'; 'Robert\_Jenkins@gov.nt.ca'; 'Russell\_Teed@gov.nt.ca'; 'Sarah.McLean@debeersgroup.com'; 'Scott\_Stewart@gov.nt.ca'; 'screeningofficer@eastarm.com'; 'seanrichardson@tlichocom'; 'SjoerdvanderWielen@tlichocom'; 'Steven\_Shen@gov.nt.ca'; 'Tara\_Naugler@gov.nt.ca'; 'tslack@nihadixa.ca'; 'tyannasteinwand@tlichocom'

**Subject:** MV2005C0032 & MV2005L2-0015 - De Beers Canada Inc. - Gahcho Kue - ICRP - Board Direction Letter

**Attachments:** MV2005C0032 & MV2005L2-0015 - De Beers Canada Inc. - Gahcho Kue - ICRP - Board Direction Letter.pdf

Good day,

Please see the attached document. if you have any questions, please contact Angela Love at (867) 766-7456 or email [angela.love@mvlwb.com](mailto:angela.love@mvlwb.com).

Regards,  
Amanda Gauthier  
Executive Coordinator  
Mackenzie Valley Land and Water Board  
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