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Staff Report

Applicant: De Beers Canada Inc. – Gahcho Kue Project	
Location: Kennady Lake, NT	File Number: MV2005C0032 and MV2005L2-0015
Date Prepared: September 8, 2020	Date of Board Meeting: September 17, 2020
Subject: Preliminary Screening Determination – Land Use Permit MV2005C0032 Amendment #5 and Water Licence MV2005L2-0015 Amendment #3 Applications.	

1. Purpose

The purpose of this Report is to present to the Mackenzie Valley Land and Water Board (MVLWB/the Board) an amended preliminary screening conducted to include Amendment #5 Application to Land Use Permit (Permit) MV2005C0032 and Amendment #3 Application to Water Licence (Licence) MV2005L2-0015, as submitted by De Beers Canada Inc. (De Beers) for the Gahcho Kue Project (Project).

2. Background

- August 11, 2014 – Board approves and issues Permit MV2005C0032 to De Beers and submits recommendation for approval of Licence MV2005L2-0015 to the Minister of Environment and Natural Resources;
- September 23, 2014 – Minister of Environment and Natural Resources approves Licence MV2005L2-0015;
- September 24, 2014 – Board issues Licence MV2005L2-0015 to De Beers;
- March 6, 2020 – De Beers submits Amendment #5 Application for Permit MV2005C0032 and Amendment #3 Application for Licence MV2005L2-0015;
- March 16, 2020 – Applications deemed incomplete;
- March 17, 2020 – Additional information submitted by De Beers;
- March 19, 2020 – Applications deemed complete and review commenced;
- May 4, 2020 – Reviewer comments and recommendations due and received;
- April 30, 2020 – Board invokes paragraph 22(2)(b) of the Mackenzie Valley Land Use Regulations;
- May 21, 2020 – Responses due and received;
- July 7-9, 2020 – Technical Session and issuance of Information Requests (IRs);
- July 30, 2020 – Responses to IRs due and received;
- **September 17, 2020 – Amended Preliminary Screening presented to the Board for decision;**
- August 10, 2021 – Expiry of Permit MV2005C0032; and
- September 30, 2028 – Expiry of Licence MV2005L2-0015.

3. Discussion

Submission Description

On March 6, 2020, De Beers submitted Amendment #5 Application for their Type A Permit MV2005C0032 and Amendment #3 Application for Licence MV2005L2-0015. Following review, Board staff deemed the applications incomplete on March 16, 2020. On March 17, 2020, De Beers submitted additional information.

The amendment is requested to accommodate changes to the mine plan resulting from additional economically viable ore identified between the 5034 pit and the Tuzo pit. Incorporation of approximately 8 million tonnes (Mt) into the mine plan will require removal of additional mine rock (up to 65 Mt). The key changes to the Project associated with this mine plan update include:

- Extended mine life (operational life from about 11.6 to 13.6 years);
- Expansion of the existing coarse processed kimberlite pile to store additional coarse processed kimberlite as well as incorporating mine rock;
- Expansion of the perimeter dykes of the fine processed kimberlite containment facility; and
- Enlarged 5034 and Tuzo pits (depth increases from 310 m to 384 m and from 372 m to 398 m respectively).

De Beers has applied for the following changes to the existing Permit conditions:

- I. Part B: Definitions
 - a. Coarse Processed Kimberlite Containment Facility
 - i. Change the facility name to Coarse Processed Kimberlite and Mine Rock Pile and to include the storage of Mine Rock within the containment facility.
 - b. Engineered Structure
 - i. To include Coarse Processed Kimberlite and Mine Rock Pile into the definition.
- II. Condition 56
 - a. To allow for an adjustment to the financial security and alignment with the planned activities associated with the additional ore into the existing mine plan.

De Beers has applied for the following changes to the existing Licence conditions:

- I. Part A: Scope
 - a. ix.
 - i. Change the facility name to Coarse Processed Kimberlite and Mine Rock Pile and to include the storage of Mine Rock within the containment facility.
 - b. xxi.
 - i. Add in solar farm.
 - c. xxv.
 - i. Add in reference to this amendment application.
- II. Part A: Definitions
 - a. Engineered Structure
 - i. To include Coarse Processed Kimberlite and Mine Rock Pile into the definition.
 - b. Total Petroleum Hydrocarbons
 - i. Add new definition.
- III. Part G: Condition 30: Effluent Quality Criteria - Lake N11 and Area 8
 - a. Change existing EQC.
- IV. Schedule 2 Part C: condition 1 (Security Deposits)

- a. To allow for an adjustment to the financial security and alignment with the planned activities associated with the additional ore into the existing mine plan.
- V. Schedule 3 Part D: condition 1c) (Water Use)
 - a. Increase the allotted water use for downstream flow mitigation.
- VI. Annex A Part A: condition 2
 - a. Have the monthly SNP report due the last day of the month.
- VII. Annex A Part B: SNP
 - a. Replace extractable petroleum hydrocarbons with Total Petroleum Hydrocarbons.

Disturbed Area

The application stated that the Surface Disturbance (Mine Footprint) was to expand from 1,292 ha to 1,428 ha. The [updated project description](#), that was submitted with the application, provided some details of the proposed changes to the project from the 2018 project description which included:

- Coarse Processed Kimberlite and Mine Rock Pile to expand by 38.3 ha (16.8 ha on land and 21.5 ha in water),
- Fine Processed Kimberlite Containment perimeter dykes requiring an additional 2.5 ha,
- Solar Farm that was 16 ha, and
- Walking Trail that is 6 ha.

The presentation, that was included with the [Engagement Record](#), included similar footprint impacts as noted in the updated project description, but also mentioned 'Infill the gaps = 95 ha'. These documents did not provide a full breakdown/explanation as to where or what the full 136 ha would be utilized for.

Clarifying questions were asked during the review of the applications. De Beers responded with:

- Of the 38 ha referenced, the solar farm (16 ha) location is completely surrounded by existing Mine infrastructure and mine-altered water bodies. The remaining 22 ha represents changes to the current Mine footprint boundary. All proposed changes will remain within the control area boundary, as initially established from a watershed perspective. The 98 ha represents areas within the existing footprint that may be developed in the future (Ni Hadi Xa Comment ID 22), and
- The precise footprint of planned infrastructure is increasing from 1292 to 1330 ha, an increase of 38 ha. The spaces between planned infrastructure (98 ha) are also considered disturbed however through proximity to planned infrastructure and potential use as roads, pads, laydowns or ground disturbance from adjacent infrastructure. The break down of the increased footprint area is presented in Table MVLWB-1.1. (MVLWB Staff Comment ID 1).

During the Technical Session, which was held July 7-9, 2020, clarifying questions were asked of De Beers on the details of the new land use activities proposed, which resulted in an Information Request (attached). Responses to the Information Request were submitted on July 31, 2020 (attached). Table 1 below details the new land use activities proposed and the total surface disturbance (mine footprint) associated with each area.

Table 1: New land use activities proposed and total surface disturbance.

Project Description	
Proposed Land Use Activity	Surface Disturbance (ha)
airstrip	4.81
CPKMRP	16.01
dyke	28.11
explosives magazines	0.44
fine PK	2.82
intake	0.30
landfarm	1.84
mine rock pile	5.33
overburden	9.69
pad	27.45
pipeline	3.23
pit	4.27
road	15.64
Grand Total	119.94

The total Surface Disturbance (Mine Footprint) is proposed to expand from 1,308.5 ha to 1,428.44 ha, increasing by 119.94 ha as shown in Table 1.

Environmental Impact Review

On July 19, 2013, the Mackenzie Valley Environmental Impact Review Board (Review Board) released its Report of Environmental Impact Review (Report of EIR 0607-001) outlining the final scope of development.

Preliminary Screening

The Board conducted the most recent Preliminary Screening of the Project on April 30, 2020 (attached). Table 2 outlines the Final Scope of Development in EIR 0607-001, the 2013, the 2018 UPD, the Amendment #4 Application to Permit, and the Amendment #5 Application to Permit MV2005C0032 and Amendment #3 Application to Licence MV2005L2-0015. Board staff have highlighted in green the components that have changed as a result of these applications; these require preliminary screening.

Table 2: Comparison of the Final Scope of Development released in EIR 0607-001, the Project Description (and updated information provided during the MVLWB Regulatory Process) as submitted by De Beers in 2013, the March 19, 2018 Amendment Application, and the Amendment #5 Application to Permit MV2005C0032 and Amendment #3 Application to Licence MV2005L2-0015.

Project Description					
Characteristic	EIR 0607-0001 Final Scope of Development	2013 Updated Project Description and Information Submitted during MVLWB Regulatory Process	2018 Updated Project Description Submitted with March 19, 2018 Amendment Applications	Amendment #4 Application to Permit MV2005C0032	Amendment #5 Application to Permit MV2005C0032 and Amendment #3 Application to Licence MV2005L2-0015
Surface Disturbance (Mine Footprint)	N/A	Total = 1,172 ha	Total = 1,292 ha (a total increase of 85.23 ha, broken down as follows): <ul style="list-style-type: none"> • Dyke L haul road – 5 ha • Road to temporary laydown – 1 ha • Temporary laydowns – 19.25 ha • Airstrip re-alignment and increased width – 17.5 ha • ROM pad area – 12 ha • East pad extension – 4.48 ha • Expanded pits, west mine rock pile, and road – 26 ha 	Total = 1,308.5 ha (a total increase of 16.5 ha, broken down as follows): <ul style="list-style-type: none"> • Solar Farm – 16 ha • Walking Trail – 0.5 ha 	Total = 1,428.44ha (a total increase of 119.94 ha, broken down as follows): <ul style="list-style-type: none"> • airstrip – 4.81 ha • CPKMRP - 16.01 ha • dyke - 28.11 ha • explosives magazines - 0.44 ha • fine PK - 2.82 ha • intake - 0.30 ha • landfarm - 1.84 ha • mine rock pile - 5.33 ha • overburden - 9.69 ha • pad - 27.45 ha • pipeline - 3.23 ha • pit - 4.27 ha • road - 15.64 ha
Pit depths	The mining of the Tuzo and 5034 pits to approximately 300m deep and Hearne pit to approximately 205m. The development does not include the Telsa	<ul style="list-style-type: none"> • Hearne Pit = 252 m • 5034 Pit = 310 m • Tuzo Pit = 360 m 	<ul style="list-style-type: none"> • Hearne Pit = 216 m (up to 252 m) • 5034 Pit = 286 m (up to 310 m) • Tuzo Pit = 372 m (up to 373 m) 	No change	<ul style="list-style-type: none"> • Hearne pit = 216 m (up to 252 m) • 5034 pit = 384 m • Tuzo pit = 398 m

	pipe, kimberlite deposits in the Tuzo, 5034, and Hearne at depths deeper than those identified in the project description or other potential kimberlite deposits in the area. Page 34 of the EIR				
Total Amount of Mine Rock	N/A	300 Mt	Approximately 400 Mt	No change	Approximately 465 Mt
Placement of Mine Rock	Storage of mine rock in south mine rock pile, the west mine rock pile (max height 94m) and the 5034 pit. Page 35 of the EIR	<ul style="list-style-type: none"> • West Rock Pile = ~100Mt • South Rock Pile = ~100Mt • Mined-out 5034 Pit = ~85Mt • Mined-out Hearne pit = ~15Mt 	<ul style="list-style-type: none"> • West Mine Rock Pile = ~228 Mt • South Mine Rock Pile = ~100 Mt • Mined-out 5034 Pit = ~72 Mt • Mined-out Hearne pit = contingency storage area 	No change	<ul style="list-style-type: none"> • West Mine Rock Pile = ~228 Mt • South Mine Rock Pile = ~100 Mt • Mined-out 5034 pit = ~87 Mt • Coarse Processed Kimberlite and Mine Rock Pile = ~40 Mt • Mined-out Hearne pit = contingency storage area
Height of Mine Rock Piles	Storage of mine rock in south mine rock pile, the west mine rock pile (max height 94m) and the 5034 pit. Page 35 of the EIR	<ul style="list-style-type: none"> • West Mine Rock Pile = ~100 m • South Mine Rock Pile = ~120 m 	<ul style="list-style-type: none"> • West Mine Rock Pile = ~135 m • South Mine Rock Pile = ~120 m 	No change	<ul style="list-style-type: none"> • West Mine Rock Pile = ~135 m • South Mine Rock Pile = ~120 m • Coarse Processed Kimberlite and Mine Rock Pile = 120 m
Placement of Fine Processed Kimberlite (PK)	Fine PK stored in fine PK facility (mitigated) as well as in the 5034 and Hearne pits	<ul style="list-style-type: none"> • Fine PK Containment facility Area 2 • Mined-out Hearne Pit 	<ul style="list-style-type: none"> • Expanded Fine PK Containment facility Area 2 • Mined-out Hearne Pit 	No change	No change
Placement of Coarse PK	Storage of a portion of the coarse PK on land	<ul style="list-style-type: none"> • Coarse PK Pile 	No change	No change	No change

	north of the plant site in the on-land coarse PK pile with the remainder placed in the west mine rock pile and used for reclamation of the fine PK Containment facility	<ul style="list-style-type: none"> • Dyke construction and reclamation • Mine Rock Piles • Mined-out 5034 and Hearne Pits 			
Water Diversions	<ul style="list-style-type: none"> • Construction of various dykes and berms to remove water from controlled area • Water pipeline to Lake N11 in the N watershed • Water pipeline from Lake A1 to Lake J1b in the J watershed allowing water to flow to Area 8 of the Kennady Lake watershed 	<ul style="list-style-type: none"> • Diversion of clean water from Lake N11 or other sources (e.g., WMP, if quality is adequate) to augment Area 8 flow (i.e., downstream flow mitigation) 	<ul style="list-style-type: none"> • Construction of the A2 North Perimeter Berm • Diversion of clean water from Lake N11 or other sources (e.g., WMP or Area 7 if quality is adequate) to manage inflow volumes and augment Area 8 flow (i.e., downstream flow mitigation) 	No change	No change
Water Management	Removal of water from Kennady Lake for use at the mine site, both by mining personnel and for mining operations, including dust control	Annual quantity of fresh water withdrawn to not exceed 27,000 m ³ /year during the operational phase	Increase in camp water consumption to 45,000 m ³ /year	No change	<ul style="list-style-type: none"> • Water in the WMP will continue to be discharged to Lake N11 if water quality meets applicable Effluent Quality Criteria • Increase in withdrawal allowance from Lake N11 for downstream flow from 1.555 Mm³/year to 2.0 Mm³/year
Aviation Fuel	N/A	20,000 L	303,000L to 500,000 L Increase of 197,000 L	No change	No change
Equipment	N/A	N/A	Haul Trucks (4) Haul Trucks (2) Shovel (1) Excavator (1) Dozer (2)	No change	No change

Board staff have updated the draft Preliminary Screening (attached) to reflect changes proposed in the Amendment #5 Application to Permit MV2005C0032 and Amendment #3 Application to Licence MV2005L2-0015 and review comments regarding environmental and socio-economic concerns, along with mitigations, and is for the Board's consideration.

Engagement

An Engagement Record was included in the applications. De Beers noted they engaged with the following parties:

- North Slave Métis Alliance
- Łutsel K'e Dene First Nation
- Yellowknives Dene First Nation
- Northwest Territory Métis Nation
- Deninu Kue First Nation
- Tłı̨chǫ Government
- Ni Hadi Xa

Included in the engagement conducted by De Beers was a workshop to provide an update on the upcoming amendments to the Licence and Permit. A detailed record of the meeting included the presentation, a list of questions/comments asked, and responses provided.

4. Comments

Not applicable.

5. Public Review

By April 27, 2020, comments and recommendations on the Permit MV2005C0032 Amendment #5 and Licence MV2005L2-0015 Amendment #3 Applications were received from 5 reviewers:

- Environment and Climate Change Canada;
- Fisheries and Oceans Canada;
- Government of Northwest Territories (GNWT) – Environment and Natural Resources (ENR);
- Ni Hadi Xa; and
- Board staff.

Board staff indicated in the instructions for the public review that the Board must conduct a preliminary screening on these applications, unless they are exempt from Part 5 of the *Mackenzie Valley Resource Management Act* (MVRMA), and requested reviewers submit comments and recommendations (e.g. on impacts and mitigation measures) to the Board to assist with the completion of a preliminary screening. No comments or recommendations specific to the exemption from screening were submitted, indicating that these applications could be exempted from Part 5 of the MVRMA.

Preliminary Screening

The draft amended preliminary screening (attached) contains information from the Permit MV2005C0032 Amendment #5 and Licence MV2005L2-0015 Amendment #3 Applications and public review regarding environmental and socio-economic concerns, along with mitigations, and is for the Board's consideration.

6. Security

Current securities are set based on schedules in accordance with Condition 56 of Permit MV2005C0032 and Part C, Condition 1 and Schedule 2 of Licence MV2005L2-0015.

The Government of the Northwest Territories currently holds reclamation security in the amounts of \$41,508,755.00 under Licence MV2005L2-0015 ([receipt 1](#), [receipt 2](#), [receipt 3](#), and receipt 4¹) and \$38,519,939 under Permit MV2005C0032 ([receipt 1](#), [receipt 2](#), and [receipt 3](#)).

Security will be reassessed during the Permit MV2005C0032 Amendment #5 and Licence MV2005L2-0015 Amendment #3 Applications.

7. Conclusion

Board staff conclude there are no outstanding issues or concerns with this submission.

8. Recommendation

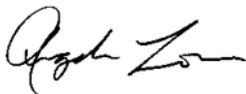
Board staff recommend the Board **make a motion to approve the amended preliminary screening** for Land Use Permit MV2005C0032 Amendment #5 and Water Licence MV2005L2-0015 Amendment #3 Applications from De Beers Canada Inc.

A draft decision letter is attached.

9. Attachments

- [Application](#)
 - [Updated Project Description](#)
 - [Environmental Screening Report](#)
- Technical Session
 - [Informaiton Requests](#)
 - [Response to Information Requests](#)
- [Mackenzie Valley Environmental Impact Review Board – Report of Environmental Impact Review](#)
- [April 30, 2020 – Preliminary Screening Report](#)
- Draft Preliminary Screening
 - Draft Letter to Review Board re 10-day pause period
- [Review Summary and Attachments](#)

Respectfully submitted,



Angela Love
Regulatory Specialist

¹ Email from GNWT received September 8, 2020 confirming additional security had been posted but formal acceptance letter will be issued at a later date.