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July 10, 2021

Jacqueline Ho
Regulatory Specialist
Mackenzie Valley Land and Water Board
PO Box 2130
Yellowknife, NT X1A 2P6

Via Email: jho@mvlwb.ca

Dear: Ms. Ho

Re: 2020 Annual Water Licence Report (MV2019L2-0004) Snap Lake Mine De Beers Canada Inc – Resubmission based on Public Review

De Beers is pleased to resubmit the Snap Lake Mine 2020 Annual Water License Report as required by the Type A Water License, Part B, Item 7 in accordance with Schedule 1, item 1 (MV2019L2-0004) based on comments and responses from the public review process. Included with this cover letter is a conformity table (Table 1) outlining the comments, responses, and where updates can be found in this resubmission.

If you have any further questions, please contact me directly at (867) 679-6392 or at lisa.tran@debeersgroup.com.

Sincerely,



Lisa Tran
Permitting Coordinator
De Beers Canada Inc. (DBCI)

Cc: Sarah McLean, DBCI
Michelle Peters, DBCI

De Beers Canada inc.

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Table 1 – Conformity of Updates to the 2020 Snap Lake Water Licence Annual Report based on Reviewer Comments and Direction by the Board

| ID | Reviewer | Topic | Comment | Recommendation | De Beers Response/Edits to Annual Report | Location in Report |
|----|--|--|---|---|--|--|
| 1 | Environment and Climate Change Canada: Jennifer Sabourin | Cover Letter | N/A | N/A | | N/A |
| 2 | Environment and Climate Change Canada: Jennifer Sabourin | <p>Topic: Geochemical Sample Collection and Analysis</p> <p>Reference: 1. De Beers Snap Lake - 2020 Annual Report - 2. Appendix II: Acid/Alkaline Drainage and Geochemical Characterization 2020 Annual Report; Section 5.1.2 - Supplemental Geochemical Sample Collection and Analysis, Section 6.5.1 - Geochemic</p> | <p>In Section 5.1.2 (Supplemental Geochemical Sample Collection and Analysis), the Proponent states, “Where sample locations included coarse rock (>10 cm), the fine to medium-grained fraction was preferentially sampled to limit sample bias where large fragments comprise a large fraction of the overall sample.”</p> <p>In Section 6.5.1 (Geochemical Inspection), the Proponent states, “Material exposed on surfaces such as roadways, ditches, or rock stockpiles/outcrops were inspected to evaluate visible changes that may be indicative of the onset of sulphide oxidation. Iron staining was observed on several of the larger boulders of metavolcanics in these FAR [fresh air raise] areas; however, the staining has not changed substantially since previous inspections. One sample of finely crushed granite (2020-ARD-10) was collected from a road maintenance stockpile near the conveyer in July 2020.”</p> <p>ECCC is of the view that Iron staining observed on several of the larger boulders of metavolcanics in these FAR areas may be an indication of sulphide oxide oxidation. It is not clear why a finely crushed granite sample (2020-ARD-10) was collected instead of a metavolcanics sample which displayed iron staining. In addition, the finely crushed sample may have depleted any material that is likely to</p> | ECCC recommends that the Board require the Proponent to provide rationale for their decision to sample finely grained crushed granite instead of a larger sample of metavolcanics rock which is more likely to provide evidence of potential acid generation. | <p>The rationale to collect sample 2020-ARD-10 was based on the requirements set out in Section 8.1.3 of the Snap Lake Mine Acid/ Alkaline Rock Drainage and Geochemical Characterization Plan, which describe a requirement for evaluation of materials where a change in location, size, composition, or geochemical observations have occurred. As the Mine was in a state of Extended Care and Maintenance during 2020, there was minimal change in site conditions compared to 2019, and sample 2020-ARD-10 represents the only known geologic material moved during the previous 12 months (gravel for minor road repairs). Selection of sample 2020-ARD-10 was completed independently and was not selected as an “alternative” to material at the FAR (fresh air raise).</p> <p>With respect to metavolcanic rock in the FAR area, this material was not sampled in 2020 for the following reasons:</p> <ul style="list-style-type: none"> • Metavolcanic rock at the FAR has been sampled during previous inspections, including the previous year’s inspection (ARD/R-2019-S1). • Metavolcanic rock at the FAR has not changed with respect to volume present, disturbance, or extent of iron staining compared to previous inspections. • Observations of water quality reported in the Acid / Alkaline Rock | 2021 Annual Report will include details of the 2021 Geochemical Inspection. This will address the Board’s direction to sample the fresh air raise areas during the 2021 program if the iron staining on the granite changes compared to 2020 geochemical inspection, and if the material has not been relocated to North Pile under the closure cover in 2021. |

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| | | | cause Acid Rock Drainage(ARD)/Metal Leaching (ML) by oxidation and washed away, such that the remnants of the finely crushed sample may not yield any useful ARD/ML information. | | Drainage and Geochemical Characterization 2019 Annual Report for the station receiving runoff from the FAR metavolcanics (Bog FAR), as well as nearby station SNP 02-05 which receives runoff from metavolcanic rocks at the former BSMRP, both indicate stable water quality results which do not indicate the development of sulphide oxidation. <ul style="list-style-type: none"> Metavolcanic rock was sampled close by in 2020 (2020-ARD-05) at the former BSMRP, and the sample collected was comprised of cobble sized fragments, reflecting the material present at that location. | |
| 1 | GNWT - ENR - EAM (Environmental Assessment and Monitoring): Central Email GNWT | Topic: Underground Discharge | Table 9 outlines that 53,184 m3 was discharged to the underground in total from June to August in 2020. ENR notes under the current Water Licence (MV2019L2-0004), Board staff have noted in the Staff Report for the Water Management Plan Version 5 (Date Prepared: December 29, 2020), that the underground is only intended to be a contingency discharge location. | 1) ENR recommends De Beers clarify the purpose of the noted discharge to the underground. | Water was discharged to the Underground as per the Water Management Plan V.3 in place at the time, but also consistent with the proposed Water Management Plan V.4 which had been submitted in March of 2019. In both the approved and proposed plans, De Beers has been clear that we may pump surface water to the underground as part of our water management strategy. The RO plant requires a minimum flow through rate for operation of approximately 4,000m3/day. When flow rates are insufficient to run the RO plant, and water does not meet EQC and therefore cannot be directly discharged to Snap Lake, water is discharged to the Underground. | N/A |
| 2 | GNWT - ENR - EAM (Environmental Assessment and Monitoring): Central Email GNWT | Topic: Appendix IV – EQC | Appendix IV includes graphical summaries of 2020 SNP water quality data with EQCs. ENR notes the EQC from the Water Licence MV2011L2-0004 are presented instead of EQC | 1) ENR recommends De Beers update Appendix IV according to the EQC in Water Licence MV2019L2-0004. | De Beers updated Appendix IV according to the EQC in Water Licence MV2019L2-0004 in version 2 of the Water License Annual Report (WLAR) | Appendix IV |

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| | | | that are listed in Water Licence MV2019L2-0004. | | | |
| 3 | GNWT - ENR - EAM (Environmental Assessment and Monitoring): Central Email GNWT | Topic: Appendix II – Geochemical Characterization Annual Report | Appendix II includes comparison of water quality trends to the 2013 Base Case Site Water Quality Model predictions. ENR notes that De Beers updated the Water Quality Model during the MV2019L2-0004 Water Licence process. It isn't clear why monitoring results are not being compared to the most recent model. | 1) ENR recommends that De Beers clarify why monitoring results in the Acid/Alkaline Rock Drainage and Geochemical Characterization 2020 Annual Report are still being compared to the 2013 Base Case Site Water Quality Model predictions instead of the updated Site Water Quality Model submitted with the MV2019L2-0004 Water Licence application. | <p>The 2013 WQ Model predictions were utilized for comparison to maintain a consistent approach for a single season of discharge through 2020. This approach is more than sufficient to understand trends, while also avoiding duplication and confusion in analysis and interpretation. Updated model predictions will be utilized for the comparisons utilizing the 2021 data and reported in the 2021 water licence annual report.</p> <p>The comparisons presented indicate that measured water quality was within the bounds of previously accepted model predictions. Comparison to the updates predictions is not expected to change the conclusions of the report.</p> | Future Annual Reports |
| 4 | GNWT - ENR - EAM (Environmental Assessment and Monitoring): Central Email GNWT | None | None | 2) Unless there is appropriate rationale, ENR recommends that the monitoring results in the Acid/Alkaline Rock Drainage and Geochemical Characterization 2020 Annual Report be compared to the updated Site Water Quality Model submitted with the MV2019L2-0004 Water Licence application. | Refer to GNWT-ENR-EAM 3 | Future Annual Reports |
| 5 | GNWT - ENR - EAM (Environmental Assessment and Monitoring): Central Email GNWT | Topic: Iron Staining on Metavolcanics | Section 6.5.1 of the Geochemical Characterization 2020 Annual Report notes that "iron staining was observed on several of the larger boulders of metavolcanics in these FAR areas..." ENR notes that it isn't clear why this metavolcanic material has not been removed and placed in the North Pile, as was done for material at the Bulk | 1) ENR recommends that the metavolcanic material with iron staining in the FAR areas be placed in the North Pile. | Relocation of metavolcanic rock is included in the final closure and reclamation plan (Appendix K, Table 7, Area 4). | Final Closure and Reclamation Plan (Appendix K, Table 7, Area 4) |

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| | | | Sample Mine Rock Pad (BSMRP) in 2011 and 2012. It also isn't clear why this metavolcanic rock was not sampled in 2020. | | | |
| 6 | GNWT - ENR - EAM (Environmental Assessment and Monitoring): Central Email GNWT | None | None | 2) ENR recommends that De Beers clarify why this material was not sampled during the 2020 survey. | The purpose of the geochemical survey is to evaluate and confirm chemistry of freshly placed or moved materials. This material is known and was evaluated as part of previous reports, with a sample most recently collected in 2019. The properties of this material are not expected to have changed, and the material will be relocated during closure to the North Pile under the closure cover, thus it was not re-evaluated. | N/A |
| 7 | GNWT - ENR - EAM (Environmental Assessment and Monitoring): Central Email GNWT | None | None | 3) ENR recommends that this material is sampled during the 2021 program. | De Beers will sample the fresh air raise areas during the 2021 program if the iron staining on the granite changes compared to 2020 geochemical inspection, and if the material has not been relocated to North Pile under the closure cover in 2021. | 2021 Annual Report will include details of the 2021 Geochemical Inspection. This will address the Board's direction to sample the fresh air raise areas during the 2021 program if the iron staining on the granite changes compared to 2020 geochemical inspection, and if the material has not been relocated to North Pile under the closure cover in 2021. |
| 8 | GNWT - ENR - EAM (Environmental Assessment and Monitoring): Central Email GNWT | Topic: Iron Stained Granite at IL6 | Section 8.4.1 describes that the ABA and NAG results for two red-orange coloured granite samples classify the materials as potentially acid generating (PAG). De Beers notes that while no indications of incipient acid generation were observed, any water interacting with this material is anticipated to report to PS5 via IL6 and be treated prior to discharge. ENR notes that it isn't clear how long treatment of this water will continue, or if plans are in place for the monitoring and treatment of this | 1) ENR recommends that De Beers clarify the duration that water from PS5 will be treated prior to discharge, and how any potential acidic runoff will be monitored/treated once the WTP is no longer in operation. | Monitoring results indicate that acidic water is not present at PS5. The material in question will be treated as PAG and relocated to the North Pile under the closure cover during closure and is not expected to influence the water quality at closure. The purpose of the Water Licence Annual Report is to report results from the previous year. Water management practices, once the WTP is no longer in operation, is detailed in Section 5.3 of the Water Management Plan V 5.1 (approved by | Future Acid Rock Drainage and Geochemical Characterization and Management Plan |

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| | | | <p>potentially acidic runoff once the WTP is decommissioned.</p> <p>Section 6.8.2 notes that: “The inspection identified no visible signs of sulphide oxidation or incipient acid generation.” ENR notes that this statement conflicts with the iron staining visible on the two granite samples found to be PAG (2020-ARD-01 and 2020-ARD-02) as they were described to be “red-orange in colour”.</p> | | the Board on July 5, 2021). In addition, the future Acid Rock Drainage and Geochemical Characterization and Management Plan (submitted 90 days prior to commencement of blasting, earthwork activities, or placing of cover material) will also include additional details on the treatment of PAG. | |
| 9 | GNWT - ENR - EAM (Environmental Assessment and Monitoring): Central Email GNWT | None | None | 2) ENR recommends that De Beers clarify the discrepancy noted between Section 6.8.2 and Section 8.4.1 regarding the visible signs of oxidation on the two red-orange granite samples. | Although presence of iron staining is one possible indicator of acid generation, iron staining may occur from processes other than sulphide oxidization and must be taken with the context of the material location and surrounding materials. In this instance, although a small amount of iron staining was observed it was not considered to be sufficient to characterize the area as acid generating. However, as per the FCRP, the stained material will be removed and the area will be covered. | N/A |
| 1 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | 1) MV2011L2-004 AR and MV2019L2-0004 AR Reporting of results Appendix III Tabular Summary of 2020 SNP Water Quality Data and Appendix I 2020 Snap Lake Mine Surveillance Network Program Water Quality Data | The following errors have been identified in the reporting of SNP data: | None | N/A | N/A |
| 2 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | MV2011L2-004 AR and MV2019L2-0004 AR 1a) Reporting of Hardness: Inaccurate data information | Units: Hardness is reported as “hardness in mg/L.” i) Reporting Hardness (Standard Methods for the Examination of Water and Wastewater, 23rd Edition, APHA, | i) Please, clarify the units of hardness and hardness method of determination. ii) Please, clarify the magnesium used to calculate hardness and provide the rationale behind the option selected. | i) The units of hardness are indeed mg of CaCO ₃ /L (calcium carbonate) and the method reported by the laboratory (ALS Canada Ltd.) is APHA 2340B. De Beers has clarified this is the unit of measure in Version 2 of the Water | Appendix III |

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| | | | <p>SMWW), when reporting hardness state the method used for example, hardness calc or harness EDTA. Also "Hardness is reported as mg of CaCO₃/L".</p> <p>ii) Magnesium is reported as dissolved and total magnesium. Assuming that the reported hardness is "calculated hardness," the contribution of calcium and magnesium salts, which value of magnesium is used to calculate the hardness of the water and why. Please, clarify the magnesium used to calculate hardness and provide the rationale behind the option selected.</p> | | <p>License Annual Report (WLAR) where hardness is reported.</p> <p>ii) If only total calcium and magnesium results were available, hardness was calculated from the sum of total calcium and magnesium concentrations, expressed in CaCO₃ equivalents, and referred to as total hardness. However, where available, dissolved calcium and magnesium concentrations were preferentially used for the hardness calculation. Total concentrations of magnesium and calcium are typically similar or equivalent to dissolved concentrations of magnesium and calcium in the treated effluent; therefore using total hardness is a reasonable estimation of hardness.</p> | |
| 3 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | MV2011L2-004 AR and MV2019L2-0004 AR 1b) Reporting of mercury (Hg): Missing data | The Water Licence requires the determination and reporting of total mercury, instead, dissolved mercury is reported. | Please, report total mercury. | De Beers has revised and reported total mercury in version 2 of the WLAR. | Appendix III |
| 4 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | MV2011L2-004 AR and MV2019L2-0004 AR 1c) pH reporting: Inaccurate reporting of results | pH measurements are affected by temperature. Because of that, standard pH buffers have a specified pH value at the indicated temperature. Always report the temperature at which the pH is measured. That is the temperature at which the electrode has been calibrated (SMWW). | Recommends using good laboratory practices and rules for reporting temperature dependant parameters like pH and conductivity. | De Beers has made note of this and will implement the recommendation in next years report. | Future Annual Reports |
| 5 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | MV2011L2-004 AR and MV2019L2-0004 AR 1d) Triple reporting of the same ion: inaccurate data information | Phosphorus total has three values for the same sample, the same date. | Please, clarify that. | De Beers has clarified with the lab and the reason for multiple values was that 2 methods were used to analyze phosphorus; colourimetric (lower LOR) and a metals suite (higher LOR). De Beers has updated WLAR version 2 | Appendix III |

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| | | | | | using the result from the colourimetric method with a lower LOR. | |
| 6 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | MV2011L2-004 AR and MV2019L2-0004 AR 1e) Potassium reporting; inaccurate data information | Potassium is reported as potassium (is that total potassium?) and dissolved potassium. | Please, clarify. | Potassium reported is dissolved potassium. De Beers has updated version 2 of the WLAR to make this clear. | Appendix III |
| 7 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | MV2011L2-004 AR and MV2019L2-0004 AR 1f) Triple reporting of the same ion: Inaccurate data information | Three TDS values are reported in the same date for the same sample (MV2011L2-004 AR). Also, one value of TDS is reported (MV2019L2-0004 AR) with no clarification whether it is calc or lab TDS. | Please, clarify | One TDS value is calculated and one is the lab sample result. The 'l' is used to indicate that it is a lab value; De Beers has revised the tables in Appendix III to make this more apparent in version 2 of the WLAR. | Appendix III |
| 8 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | MV2011L2-004 AR and MV2019L2-0004 AR 1g) Double reporting of the same ion: Inaccurate data information | TSS has two values for the same sample, the same date. | Please, clarify. | One TDS value is calculated and one is the lab sample result. The 'l' is used to indicate that it is a lab value; De Beers has revised the tables in Appendix III to make this more apparent in version 2 of the WLAR. | Appendix III |
| 9 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | MV2011L2-004 AR 1h) Missing data | Missing value of TEH (C10-C30) date: May 11, 2020. There is no justification. | Please, report the TEH value | De Beers has corrected this in Appendix I of the 2020 MV2011L2-004 Annual Report. | 2020 MV2011L2-004 Annual Report |
| 10 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | MV2019L2-0004 AR Reporting of result: 1i) Missing data | SNP 02-16j missing parameters CBOD, Total oil and grease, total mercury were not reported at SNP 02-16j | Please, report the missing values | De Beers has revised and reported the missing values in version 2 of the WLAR. Total mercury is reported in the annual sample, under the MV2011L2-0004 report. | Appendix III |
| 11 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | MV2019L2-0004 AR Reporting of results 1j)SNP 02-17 b missing parameters | Effluent was discharged from SNP 02-17b during June, July, and August. Therefore, DB is required to present the full result of sampling parameters during those months. Tabulated results for SNP02-17 b shows empty rows. Please, complete or justify missing values | Please, report the missing values | There are empty cells because nutrients, TSS, turbidity, conductivity, major ions, CCMS scan (total only), total mercury, BTEX, E. Coli, oil and grease, CBOD are only required monthly. Whereas the other columns contain the parameters that required weekly during discharge - TDS (measured and calculated), nutrients, TSS, turbidity, conductivity, faecal | Appendix III |

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| | | | | | coliforms, total petroleum hydrocarbons. | |
| 12 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | MV2011L2-004 AR and MV2019L2-0004 AR 2) Missing QA/QC section and Interpretation of QA/QC data and calculations | <p>Part D of the Water Licence, Reporting Requirements requires the Proponent: Submit to the Board and an Inspector all data and information required by the Surveillance Network Program, including the approved QA/QC program results and any interpretive comments and calculations. QA/QC data is discussed neither in the monthly SNP Reports nor in the Annual Report. The monthly SNP Reports and the Annual Reports were submitted without any comments regarding the QA/QC data. Critical information to validate, interpret the data is not provided. Examples are:</p> <ul style="list-style-type: none"> QA/QC for the Calc TDS is not discussed. Methods Detection Limit is not informed. The analytical methods for the determination of the parameters are not reported. <p>Also, incomplete sample information is provided in the Annual Reports Reported with (I) are many parameters value (alkalinity, orthophosphate, TDS, TSS, Turbidity. There is no explanation/ justification of what (I) means.</p> | None | 'I' is used to indicate a lab result. De Beers has revised Version 2 of the WLAR to distinguish a lab result, by labelling it as lab instead of just indicating it with an 'I'. | Appendix III |
| 13 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | 2 a) MV2011L2-004 AR and MV2019L2-0004 AR Reporting of results -Missing QA/QC Section. Calculated TDS | The MVLWB approved method for determining TDS (calculated TDS) is a measure of the sum of the concentrations of dissolved major ions in water in mg/L (Golder for DeBeers, April 2013, Method 1030E, SMWW). Given the methodology in the | <p>Recommendation SLEMA requests the Board to ask DeBeers to validate the TDS . DeBeers to</p> <p>i) discuss and adopt a method of checking the correctness of the Calculated TDS value. ii) include a</p> | i) De Beers will adopt the same method used in the Aquatic Effects Management Plan to validate TDS concentrations. This will include reviewing laboratory reports with calculated TDS to confirm that the | Future Annual Reports |

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| | | | <p>determination of Calculated TDS, it is expected that the analytical error associated with the determination of each ion involved in the TDS calculation will contribute to the calculated TDS total error.</p> <p>The analytical error associated with the determination of alkalinity, Na+, Mg (+2), K+, + Ca2+,+ SO4(2-), Cl-, NO3-, F-, and SiO3(2-) will contribute to the total error of TDS calculated. In other words, if the analytical errors are high, the TDS calc is invalid. The TDS calculated requires to be validated by QA/QC.</p> <p>DB refers to checking the correctness of the calc TDS value in the AEMP Design Plan:</p> <p>"The calculated TDS results provided by the laboratory will be verified by comparing these results with results calculated by the Standard Methods formula. If the values are different, the laboratory will be contacted to review the TDS calculation formula and to re-issue the report."</p> <p>Part D of the Water Licence, Reporting Requirements, asks the Proponent to include the approved QA/QC program results and any interpretive comments and calculations in the monthly SNP Reports. There are interpretative comments and calculations neither in the monthly SNP nor in the Annual Reports.</p> <p>There are no comments on the accuracy/validity of the calc. TDS.</p> <p>The importance in the determination of calc TDS is highlighted in the 2014 EAR. QA/QC is required for the calc TDS to be defensible to ensure that a valid value is provided and used to assess the impact of the mine</p> | <p>section in each AR informing results of this checking and causes of rejection of TDS data, if any.</p> | <p>cation/anion sum values are not anomalous.</p> <p>ii) If results of the assessment outlined in (i) indicate the validity of the calculated TDS data is a concern, De Beers will review the results with the laboratory to either update the result to the correct value. Invalidated data will be identified and rationale for the invalidation will be provided in future Annual Water Licence Reports.</p> | |

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| | | | <p>activities on Mackay Lake. The determination of TDS should be carried out with less uncertainty possible, and a reliable, unbiased, transparent method of checking the correctness of calculated TDS should be adopted.</p> <p>There are many simple ways to check the correctness of the value, and the SMWW recommends them. For example, checking the chemical analysis's correctness through cation/anion balance, the electroneutrality of the water sample is just a simple math exercise. If any relevant anion or cation is missed or measured in defect or excess, it will be shown in the anion/cation balance error. And the Calc. TDS value should be disregarded.</p> | | | |
| 14 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | 2)b MV2011L2-004 AR and MV2019L2-0004 AR Reporting of results/ Missing QA/QC Section: Method Detection Limit MDL Appendix III Tabular Summary of 2020 SNP Water Quality Data and Appendix I 2020 Snap Lake Mine SNP Water Quality Data. Acid/Alkaline Rock Drainage and Geochemical Characterization 2020 | <p>To evaluate low-level data is critical to know the Method Detection Limit (MDL).</p> <p>For example, the paragraph in Section 6.6.4.2 Water Quality Trends (ARD Annual Report) states: “concentrations of thallium appear greater than in past years on Figure 6-8 due to increased laboratory detection limits”.</p> <p>If a person reviewing the data missed the paragraph, he or she might understand that levels of thallium (TI) went from not detectable level to a measurable level; and conclude that the concentration of TI has increased. This example highlights the importance that MDL be reported along with results of the analytical data. Also, history has shown that improvements in MDL are always possible.</p> | Report in the Annual Reports Methods Detection Limit for each parameter | De Beers will implement the recommendation to include the MDL in future reports. | Future Annual Reports |

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| 15 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | 2c) MV2011L2-004 AR and MV2019L2-0004 AR Reporting of results/ Missing QA/QC Section. Incomplete information | incomplete sample information is provided in the Annual Reports Reported with (l) are many parameters value (alkalinity, orthophosphate, TDS, TSS, Turbidity. There is no explanation/ justification of what (l) means. | Please, clarify | 'l' is used to indicate a lab result. De Beers has revised Version 2 of the WLAR to distinguish a lab result, by labelling it as lab instead of just indicating it with an 'l'. | Appendix III |
| 16 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | 3) MV2011L2-004 AR and MV2019L2-0004 AR Reporting of results. Missing QA/QC Section | <p>As per WL requirements, DB is asked to submit a tabular summary of all data and information generated during the previous year under the SNP.</p> <p>The information submitted by DB is not only concerning to current reviewers; the information is also important to members of the public and what is particularly important to future reviewers that in coming years may want to revisit the data provided in the SNP Reports.</p> <p>In 5, 10 years, when the reported data is compared to the current data, it may come as doubtful or even invalid because it is disclosed without any protocol. essential parts of the information are missing.</p> <p>Finally, "standardization in data reporting significantly enhances the ability of resource managers and reviewevers to interpret and review data because it is comparable".</p> <p>Some rules are required to standarize the reporting of the analytical results, avoiding ambiguity. Those rules are universal and are part of the good laboratory's practices.</p> <p>The whole system of water quality monitoring is aimed at generating reliable data, i.e., data that accurately reflect the actual status of the variables that influence water quality. Data generated should follow</p> | <p>SLEMA recommends the MVLWB ask DeBeers</p> <p>1) submit a revised appendix of tabulated SNP data</p> <p>2) submit a Standard Operative Procedure (SOP) for the reporting of water quality data. The requested SOP includes minimum requirements for water quality data reporting and will apply for SNP data reporting, AEMP data reporting, and any water quality data reporting under the MVLWBWL. The SOP to include (but not limited):</p> <ul style="list-style-type: none"> - Methodology of Validation of TDS calculated - Analytical methods used for determination of parameters - MDL - reporting units, data rejection, etc. | <p>1) De Beers revised Appendix III tabulated SNP data in version 2 of the WLAR. The parameters names in the tables were cut-off due to the width of the column, which resulted in apparent duplicate parameter names in some cases. In other cases, the laboratory provided two results for the same parameter (e.g., due to different methods and/or detection limits); however, all required data is included in the tables.</p> <p>2) De Beers has an approved Quality Assurance and Quality Control Plan V.3 (De Beers 2019) that is publicly available on the Board's registry. This plan is considered sufficient for the purposes of managing, reviewing and validating data collected under the Surveillance Network Program. De Beers does not agree that an additional SOP should be provided. Methods used by the laboratories for analyses of individual parameters are validated prior to approval for use in the lab. All approved methods include quality control and performance criteria that must be achieved prior to release of any data. By ensuring the quality assurance data meets method specific quality objectives, the labs ensure that the analytical results are traceable and defensible prior to their release. Data collected as part of the</p> | <p>Appendix III</p> <p>Snap Lake Quality Assurance and Quality Control Plan V.3</p> |

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| | | | adequate QC/QA protocols to ensure that any problem that may lead to incorrect conclusions is identified. | | AEMP follows QA/QC methods in the approved AEMP Design Plan; QA/QC results are included annually in Appendix 1A of AEMP reports. | |
| 17 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | 4) Appendix IV 2020 Acid Rock Drainage and Geochemical Characterization Report. 6.10 Water Treatment Plant Discharge (SNP 02-17 / SNP 02-17B), 7.3 Mass Load Distribution – Treated Discharge. | Water Licence requires the Proponent "A summary and interpretation of Water quality monitoring results for each of the main source areas and how these compare to predicted values (Schedule 1, Condition K, vii)." DeBeers states (12-7): A summary and interpretation of water quality monitoring results are provided the Snap Lake Acid/Alkaline Rock Drainage and Geochemical Characterization 2020 Annual Report. In sections 6.10 and 7.3 of the ARD Report, DB compares 2013 Base Case Site Water Quality Model predictions with current conditions and concludes that "current parameters concentrations are below predictions." | Discuss the validity of the comparison; for example, assumptions made in the 2013 WQ Model and how they apply to the current site operational conditions (cessation of mining, care, and maintenance status, effluent treatment changes from conventional filtration to RO, stop the underground water pumping, etc.) Compare water quality monitoring results with a valid WQ Model, i.e., one that considers the current operating conditions. | The document was prepared in accordance with the 2015 water licence which considered the 2013 WQ Model predictions, and which remained in effect through June 2020. As a result of the Extended Care and Maintenance status of the site, loading rates of certain constituents associated with mine processes have declined compared to the modelled conditions. The comparisons presented indicate that measured water quality was within the bounds of previously accepted model predictions. Comparison to the updates predictions is not expected to change the conclusions of the report, and it is recommended that the updated predictions be incorporated in the 2021 report (i.e., the first full year in which the 2020 water licence is in effect and solely applicable to this report). | Future Annual Reports |

DE BEERS GROUP

| ID | Reviewer | Topic | Comment | Recommendation | De Beers Response/Edits to Annual Report | Location in Report |
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| 18 | Snap Lake Environmental Monitoring Agency (SLEMA): Sonia Aredes | 5) Appendix IV 2020 Acid Rock Drainage and Geochemical Characterization Report 6.6 Bulk Sample Mine Rock Pad, North and South Pits | <p>Samples from 02-5 present higher conductivity compared to the conductivity of other samples at site. Conductivity values show that Samples from SNPO2-5 present higher mineralization compared to other runoff waters. Sulfate as high as 127 mg/L is reported.</p> <p>“The pH of AMD is usually in the range of 2-6, but mine impacted waters at circumneutral pH (5-8) are also common” (USGS).</p> <p>Mineralization data in addition to the rust-colored encrustations or sediments may indicate the generation of ARD.</p> | Please, discuss why these signs of ARD have not been considered and mitigation measures. | <p>These signs of ARD have been considered and are addressed in the closure plan. Areas where loose metavolcanic rock is present on surface in quantities sufficient to be relocated with an excavator will be removed and placed in the North Pile; the small amount of remaining materials will be covered with clean granitic materials. Of note is that, although some individual samples have shown potential for acid generation, overall the metavolcanic material is non acid generating with excess buffering potential.</p> <p>Furthermore the sample location SNP 02-05 has remained neutral over greater than 20 years of exploration and operations during periods where significantly more metavolcanic rock was present on surface, and also of consideration is that natural bogs in the vicinity of the mine naturally have pH values that are slightly acidic, down to a pH of about 5, as compared to the neutral pH observed at SNP 02-05.</p> <p>Given all of these factors, it is considered that the mitigations for dealing with metavolcanic rock in areas where the underlying bedrock is metavolcanic are reasonable and appropriate, and will not result in release of acidity.</p> | N/A |