April 17, 2014

To all parties,

**Re: Information Requests Resulting from Joint MVEIRB/MVLWB Technical Session for the Snap Lake Mine Amendment (EA1314-02 and MVLWB water licence MV2011L2-0004)**

The Mackenzie Valley Environmental Impact Review Board (MVEIRB) and the Mackenzie Valley Land and Water Board (MVLWB) would like to thank all parties who participated in the April 15/16, 2014 technical sessions to discuss the amendment application for De Beers Canada's Snap Lake Diamond Mine. The sessions were beneficial in helping to identify and clarify several issues raised by reviewers and Board staff and have hopefully contributed to a better understanding of the information on the record, as well as each party's position.

There were several requests for specific information and numerous commitments to provide information made by parties during the technical sessions. In an effort to ensure an adequate level of evidence is on the record for this proceeding, which will allow parties to make informed submissions to the Board and allow the Board to make an informed decision, the MVEIRB and the MVLWB are requesting the following information from De Beers Canada Incorporated (DBCI) by April 30, 2014:

***Information Requests (IR) from April 15, 2014:***

**IR#1:** During the presentation entitled "Snap Lake Mine Site Water Balance and Water Quality Model Predictions", the department of Environment and Natural Resources (ENR) enquired about the assumptions used in the model to generate the periodicity shown in the graphs of the model calibration of TDS on page 14 of the presentation. Therefore, DBCI is to provide a description of the assumptions and/or factors used to generate the calibration curves (e.g., ice thickness etc). DBCI also to explain how it carried these assumptions forward in the model. Quantitatively and qualitatively describe level of uncertaintiy in the model.

**IR#2**: Based on a request from the Snap Lake Environmental Monitoring Agency, DBCI is to provide information about TDS concentrations in Snap Lake at the water intake location over time.

**IR#3**: DBCI is to provide further information on mitigation options for TDS treatment in the form of historical Best Treatment Available documentation.

**IR#4**: During the technical session, Ecometrix pointed out a discrepancy between the selection of TDS concentrations equal to 5728 mg/L and 3,490 mg/L for Scenario A and Scenario B in the water quality predictions models instead of the values of 6,187 mg/L and 3, 170 mg/L TDS, respectively, that were used in August 2013 Itasca model. DBCI provided a clarification for this apparent discrepancy by

referencing an additional Itasca model submission dated October 2013. DBCI should now provide this submission for the record (see also IR#6).

**IR#5**: In its April 11, 2014 supplemental information submission, DBCI provided predictions of TDS concentrations in lakes downstream of Snap Lake (for 2014 to 2029) under the scenario that no mitigations are applied for TDS and under the scenario that the DBCI's proposed EQC would be met. As initially requested by ENR, DBCI is to provide the same analysis for chloride, as well as the other constituents of TDS that the Review Board scoped in, and hardness downstream of Snap Lake over time.

**IR#6**: Ecometrix requested that DBCI submit the Itasca updated model dated October 2013 – see IR#4.

**IR#7**: During the technical session, ENR had several questions related to scientific literature on TDS and chloride water quality objectives and guidelines that, in ENR's opinion, may not be consistent with some of the DBCI's conclusions on the toxicity of those parameters. ENR has committed to providing these references by April 22, 2014. DBCI is to provide clarification and rationale on the exclusion of any relevant studies, including those provided by ENR in response to this IR, and any other comments about the material that the Boards may want to consider.

**IR#8**: DBCI to provide revised version of CH2MHill Assessment Report.

**IR#9**: DBCI to provide the Golder 2008 Snap Lake Water Management Treatment Alternatives Report.

**IR#10**: On slide 14 of DBCI's presentation on the TDS Response Plan, DBCI outlined a timeline of the planning, testing and implementation of mitigations to reduce TDS levels in the effluent. At the technical session, MVLWB staff expressed a concern about how to best align the water licensing process to amend the TDS EQC with DBCI's constraints around making final decisions on TDS mitigations and then implementing those mitigations before the current TDS EQC is exceeded. Therefore, the MVLWB staff requests that DBCI provide a graphic or table that aligns their timeline for the TDS mitigations with the predictions of end-of-pipe TDS concentrations. It would be helpful if DBCI could discuss its vision of how best to ensure that the water licensing process can be carried out to ensure that EQC for TDS are in place that are both protective and achievable.

**IR#11**: In the absence of firm details about the mitigations to be put in place to reduce TDS, Board staff request that DBCI provide an assessment of what the environmental effects on Snap Lake would be if no additional mitigation was put in place for TDS at the Snap Lake Mine. The assessment should be similar what was provided by DBCI in the "Accidents and Malfunctions" section of the supplemental material submitted on April 11, 2014. This assessment should be done with respect to any parameter that is predicted to exceed its respective SSWQO in the receiving environment if no additional mitigation is put in place (i.e., TDS, chloride). The purpose of this assessment is to ensure that the Boards have all the information they need to assess this project.

**IR#12**: As requested by EcoMetrix, DBCI is to provide information in regards to nitrate toxicity to Rotifers and Copepods as dominant taxa in Snap Lake.

**IR#13**: During the technical session, there were several questions by the Yellowknives Dene (YKDFN) and Board staff with respect to DBCI's efforts to reduce the amount of nitrate through improvements to blasting practices underground. In section 2.3 of the Nitrogen Response Plan, DBCI lists a recommendation to "continue to monitor trends in the amount of explosives used per tonne of ore mined (kg/tonne) as a means of monitoring the effectiveness of explosives management measures". The YKDFN has requested whatever monitoring data has been collected in this regard.

**IR#14**: In the same line of questioning as IR#13, DBCI said that the rate of mining is driving the increase in Nitrogen loading making it hard to see increased efficiencies of blasting techniques. DBCI to provide supporting rationale for this statement and/or a clarification of how improvements in blasting techniques may be evaluated in future.

***Information Requests from April 16, 2014***

**IR#15**: In response to questions from EcoMetrix on the EQC Report, DBCI is to provide an Excel spreadsheet containing the calculations that were used to develop the results in Tables I-1 to I-6 of Appendix 1 of the EQC report.

**IR#16**: MVEIRB staff requests that DBCI submit, for placement on the MVEIRB registry, all pertinent information regarding accidents and malfunctions related to the project. This should include the draft Water Management Plan (which in turn contains a risk assessment matrix) and the risk assessment submitted to the MVLWB for the North Pile.

**IR#17**: DBCI to provide its most recent AEMP Annual Report for the MVEIRB record.

**IR#18**: DBCI to provide the grouting study recently completed by DBCI's grouting expert.

**IR#19**: DBCI to provide a PDF version of the Poster titled Effect of total dissolved solids on fertilization and development of two salmonids. Alternatively, DBCI may submit the meeting notes from its information session in January (which contains this poster) to MVEIRB for its registry.

In order to ensure the regulatory process proceeds efficiently, we ask that De Beers endeavor to submit the requested information as soon as possible to allow parties to begin preparing their technical reports. Unless otherwise specified above, all information requested must be submitted no later than April 30, 2014.

All information regarding this proceeding will be posted on both the MVEIRB and MVLWB online registry and Board staff will post IR responses in a timely manner, as they are submitted. If you have any questions please contact Simon Toogood stoogood@reviewboard.ca or at 867-766-7053 or Kathleen Racher at racherk@wlwb.ca or 867-765-4591.