NWB Tools

Richard Dwyer <richard.dwyer@nwb-oen.ca>

Back River Project Primary Pond – Goose Site Design Report and Drawings for water licence 2AM-BRP1830

John Roesch <JRoesch@lands.kitia.ca> Tue, Nov 29, 2022 at 11:24 AM
To: Richard Dwyer <richard.dwyer@nwb-oen.ca>

Hello Richard, our Water Quality specialist has the following comments on the Primary Engineering Design Report Responses. Our other consultants have no comments.

KIA-NWB-1: We accept Sabina's response with the understanding that a) predicted and observed concentrations are consistent in the upper 1m of the lake, and b) stratification is unexpected thus the upper metre is likely to be representative of lower depths. This issue is resolved.

KIA-NWB-2: We appreciate Sabina's response but note that they have not yet demonstrated that the existing level of treatment is both reasonable and practical. We do however acknowledge that the MVLWB guidance is a starting point and agree that a 100 m mixing zone may not be appropriate for all waterbodies. We will continue to push for higher levels of treatment as the project and associated modelling is refined, but will consider the issue deferred for the time being a) based on the additional context provided in Sabina's response, and b) the understanding that some aspects of the project may still be in flux that may facilitate improvements in discharge water quality, and c) the option to explore appropriate and refined effluent quality criteria still exists prior to the commencement of discharges.

KIA-NWB-3: We consider this issue resolved.

KIA-NWB-4: We appreciate Sabina's reference to the updated dataset and consider the 0.01 mg/L total phosphorus water quality benchmark to be acceptable. This issue is resolved.

KIA-NWB-5: We appreciate Sabina's reference to the updated dataset in their response to KIA-NWB-04 and consider the 0.01 mg/L total phosphorus water quality benchmark to be acceptable. This issue is resolved.

KIA-NWB-6: We appreciate the clarifications and consider this issue resolved.

KIA-NWB-7: We appreciate Sabina's clarification as to how climate change has been incorporated into the precipitation values within the model. We further appreciate Sabina's statement that *"Future versions of the WLB model may incorporate more recent precipitation projections as more data becomes available. If the more recent precipitation projections fall outside of the range considered in the Hydrodynamic and Water Quality Model, an updated sensitivity analysis may also be completed for the Hydrodynamic and Water Quality Model."* We look forward to reviewing an updated sensitivity analysis in future iterations of the model as per Sabina's statement.

KIA-NWB-8: We appreciate Sabina's commitment to continued monitoring of water temperature and providing comparisons to the data used in the model. We consider the issue resolved for this iteration of the model.

KIA-NWB-9: We appreciate the additional discussion provided by Sabina and accept that the model generally has good fidelity between observed data and model predictions. We also accept that the remaining 4% of the lake with low model fidelity is not considered critical or limiting habitat. This issue is resolved.

KIA-NWB-10: We appreciate the finer resolution figures provided by Sabina in response to our technical comment. We still maintain reservations about potential impacts of exceedances, particularly selenium as a bioaccumulative metal, during the closure period. However, as with our evaluation of Sabina's response to KIA-NWB-2, we will continue to push for higher levels of treatment as the project and associated modelling is refined, but will consider the issue deferred for the time being a) based on the additional context provided in Sabina's response, and b) the understanding that some aspects of the project may still be in flux that may facilitate improvements in discharge water quality, and c) the option to explore appropriate and refined effluent quality criteria still exists prior to the commencement of discharges.

KIA-NWB-11: We appreciate the context provided by Sabina that the vast majority of mercury samples were below detection. We further acknowledge that the detection limit used (0.002 mg/L) is relatively insensitive suggesting that even using ½ the detection limit is a relatively conservative approach to incorporating mercury concentrations into the model. This issue is resolved.

KIA-NWB-12: We appreciate that TSS is expected to be low in discharges from the mine. However, we note that other proponents have used TSS effluent quality criterion as a modifier to predict total concentrations. We maintain our request that future iterations of the WLB model consider total concentrations, particularly as the majority of WQOs for COPCs are still evaluated against total concentrations.

KIA-NWB-13: We appreciate the clarification from Sabina and the additional figures provided in KIA-A. We consider this issue resolved.

KIA-NWB-14: We appreciate the clarification provided in Sabina's response and considered this issue resolved. We recommend Sabina amend the Figure B-12 and B-13 to better reflect their response.

KIA-NWB-15: We appreciate the additional figures provided by Sabina and consider this issue resolved.

KIA-NWB-16: We appreciate the additional figures provided by Sabina and their response. We consider this issue resolved.

All highlighted comments can be responded to by Sabina at a later date and are not considered urgent by KIA.

Thank you.

John

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