

Version 3 Hammond Reef Gold Project EIS/EA – Addendum (Part B)  
Responses to Provincial Information Requests

1656263

Identifier	Topic	Reference to EIS/EA Report	Summary of Previous Comment	Proponent's Response to Previous Comment	Follow-up comment/ Request for Information	New Proponent Response	Subsequent Comment
			<i>Date: August 2015</i> <a href="#">MOE SW-11B</a>	<i>Date: November 2015</i>	<i>Date: January 2016</i>	<i>Date:</i>	
MOE SW-11C	Surface water	EIS/EA § 6.1.3.1, §6.1.3.2, §6.1.3.3, §6.8, §8.2.2; Hydrology TSD §5.2.2, §6.2.2, §8.0	<p>MNRF and stakeholders (Brookfield and H2O Power) have expressed their ongoing concerns with CMC's proposed water takings from Marmion Lake during the operation of the proposed Hammond Reef Site. Since this aspect of the project has a high risk of socioeconomic effects, these effects need to be clearly outlined in the EA so that mitigation measures can be determined and so that they can be considered in the EA decision.</p> <p>Without this information in the EA, the proponent is accepting a very high level of risk. Based on the current information provided to date, the MOECC would not be able to issue a permit to take water until a thorough assessment of all cumulative effects is completed to the satisfaction of the Ministries.</p> <p>Information needs include the following:</p> <ul style="list-style-type: none"> <li>In order to assess effects under a low flow scenario, the proponent should explain in the EA how they would operate the mine under the climatic conditions experienced in 2010, an extreme low-flow year. This may require ceasing all water takings from Marmion Reservoir and recirculating water until conditions improve</li> </ul>	<p>The predicted changes in Raft Lake Dam water levels and outflows for bounding or 'worst case' scenarios are provided in Section 6.1.3.1 through Section 6.1.3.3 of the EIS/EA Report and in Section 5.2.2 and Section 6.2.2 of the Hydrology TSD. The cumulative effects assessment is described in Section 6.8 of the EIS/EA Report. Low flow conditions were considered in the assessments.</p> <p>The maximum possible changes in Raft Lake Dam outflows are less than 5% which is within the error of a flow measurement and calibration/validation of a detailed hydrologic model. Changes in Seine River flows downstream of the dam will be even smaller due to additional inflows to the river system.</p> <p>At this time, a Permit to Take Water is not being sought, only approval of the environmental assessment.</p> <p>A technical memorandum is being prepared that outlines contingency measures during low water level and flow conditions at Raft Lake Dam. It is presumed that these are defined by the lower compliance level specified in the Seine River Water Management Plan (p165). The Plan defines the lower compliance level as when reservoir outflows are at minimum values specified and water levels are below the minimum specified elevation for that day. Both conditions must exist at the same time.</p>	<p>See the response to MOE Hydrology-4 (<a href="#">MOE Hydrology 4B</a>)</p> <p><i>"The spreadsheets as received from Golder on October 27, 2015 on Upper Marmion Reservoir water balance modelling, have been reviewed by me, appeared reasonable. The results can be used for decision making.</i></p> <p><i>In my earlier comments, I recommended modelling at daily and hourly time scales to better predict Project's effects on water levels and flows considering hydraulic routing of flows. Given the amount of water CMC will be taking (on average 0.071 m<sup>3</sup>/s, roughly in the range of 0.09 to 0.54% of reservoir inflows over twelve months period) that type of precise analysis will not be required.</i></p> <p><i>In addition, there is no reliable hourly water level and flow data available that could be used for precise water balance modelling.</i></p> <p><i>Under worst case scenario it has been predicted that the reduction in existing conditions monthly mean water levels of the Upper Marmion Reservoir will not exceed 9 cm, and the percentage reduction in existing conditions monthly mean outflows from the reservoir will not exceed 5% where worst case was modelled considering the following:</i></p> <ul style="list-style-type: none"> <li><i>Modelling the end of mining operations, when the Project footprint is greatest.</i> <i>Modelling the predicted seepage from Marmion Reservoir into the ultimate configuration of the open pits, when seepage is expected to be at a maximum.</i></li> <li><i>Evaluating Project water takings and discharges during a dry year with a return period of 100 years (90% probability of exceedance in any given year) and applying these throughout the 27-year continuous lake water balances. In reality, Project water takings and discharges will vary from year to year depending on hydrologic conditions.</i></li> <li><i>Selecting target operating water levels, based on a review of the compliance bands and the objectives of the Seine River Water Management Plan, that were at the lower end of the compliance band during April when reservoir storage would be at a minimum.</i></li> </ul>	Thank you for your comment.	N/A

Identifier	Topic	Reference to EIS/EA Report	Summary of Previous Comment	Proponent's Response to Previous Comment	Follow-up comment/ Request for Information	New Proponent Response	Subsequent Comment
			<p>Date: August 2015 <a href="#">MOE SW-11B</a></p>	<p>Date: November 2015</p>	<p>Date: January 2016</p>	<p>Date:</p>	
			<ul style="list-style-type: none"> <li>Explanation of how they plan to continue operations during periods of extremely low flows including potential mitigation measures and approaches</li> <li>After assessing level and flow bands in the Seine River WMP, determine the water and flow levels at which fresh water takings for mine operations would cease in order to prevent downstream waterpower facilities from entering a state of non-compliance</li> <li>Explanation of how they will monitor and report water takings, flows, and levels in order to assess compliance with permit conditions.</li> </ul> <p>The project's hydrology reports are currently being reviewed by an MOECC regional hydrologist who will provide comments under separate cover.</p>	<p>The monitoring program proposed to assess compliance with permit conditions is outlined in Section 8.2.2 of the EIS/EA Report and in Chapter 8 of the Hydrology TSD.</p>	<ul style="list-style-type: none"> <li>Modelling year-round water taking rather than the option to take water at certain times of the year under high flow conditions.</li> </ul> <p>The predicted maximum monthly reduction in outflows and water levels of the Upper Marmion Reservoir appeared to be within the margin of errors of flow and water level measurements and the errors of most hydraulic and hydrologic modelling results.</p> <p>This flow reduction could be an issue for losing hydropower revenues if the operations were run-of- river. In that case, when river flows are between minimum and maximum turbine capacities, and if CMC takes water during that time, there is a likelihood of losing some hydropower revenues due to flow reduction in the river system. But that is not the case here. All three downstream generating stations are daily peaking operation, water mostly being taken from 7 am to 7 pm each day for power production.</p> <p>Therefore, if CMC harmonizes timing of their water takings with the timing of hydropower generation along with due consideration of reservoir inflows and water levels, impact of mine water takings on the downstream hydropower generations would be indiscernible.</p> <p>A formal real time data sharing agreement and communication protocol should be established between CMC and hydropower operators. Based on that information CMC will adjust their time of water takings and hydropower operators will manage their headponds to optimize power production while satisfying environmental constraints.</p> <p>This, along with the contingency measures (currently being developed by CMC) would be helpful to manage the risk and mitigate impacts.</p> <p>Considering all the points stated above, it is my determination, a precise water balance modeling at hourly and daily time scales will not be required for this project to predict impacts on water levels and flows.</p> <p>Decisions can be made based on the monthly modeling results Golder produced, which, according to my opinion are reasonable predictions."</p>		