

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 Comment	Proponent's Response	Subsequent Comment
			<i>Date: March 2014</i>	<i>Date: June 2015</i>	
MNR-7	Tailings		<p><i>To be able to provide this response, it is expected that the proponent used various models to reach their conclusions. This needs to be clearly stated in a discussion about the TMF water quality. It is questionable how one would expect to find information about water quality in the Geology and Soils TSD unless it was directly stated in the EA. This information should be included in the EA report. Also, there needs to be more information about the waterbody left behind in the TMF - this response is the first time we have learned about a smaller pond. Please confirm this waterbody is 65ha.</i></p> <p><i>When statements about the significance of long term changes to the biophysical resource are made, it is required that a description as best as possible, be presented of what the long term changes will be.</i></p> <p><i>As well, the TMF will have open access to wildlife at closure (if not earlier) and we need to be able to assess potential impacts on wildlife.</i></p> <p><i>It is also unclear how the statement made in this response that "the TMF reclaim pond is not proposed to become aquatic habitat at any time" can be supported. Please identify where it is claimed that the water quality in a 65 ha 5m average depth water body will be fine and meet PWQO.</i></p> <p>The EA report does not present any site specific information, but it is expected the proponent has it. Water quality objectives need to be identified through approvals, so this request is not unreasonable. Again, you are basing significance of the project on long term impacts to the biophysical resources - you need to be as clear as possible in the EA document what these changes are (for example, at very times I have heard that post-closure, the waterbody in the TMF will be a) 65 ha lake, b) a "small pond" and c) eliminated. You need to be clear what will be left behind and what its condition will be so the long term changes can be assessed.</p>	<p>Long term changes to the biophysical environment are detailed in the EA Report. These changes are outlined in Chapter 6 Effects Assessment, Chapter 12 Conclusions and the revised Executive Summary.</p> <p>The water quality modelling was completed assuming conservative input parameters. Water quality modeling methods and results are provided in the Site Water Quality TSD, Section 4 Water Quality Model. Site water quality post-closure is described in Section 4.3.2 of the Site Water Quality TSD.</p> <p>Predicted open pit water quality after pit flooding is provided in Table 4-15 of the Site Water Quality TSD. The detailed results of geochemical modeling of the pit flooding are provided in Appendix 4.III and Appendix 4.IV of the Site Water Quality TSD.</p> <p>Predicted TMF water quality after closure is provided in Table 4-14 of the Site Water Quality TSD (this table was incorrectly referenced in the responses to MNR-245 and MNR-252 as being located in the Geochemistry, Geology and Soils TSD). This table provides a comparison with PWQO and the TMF water is expected to meet PWQO for all parameters post-closure.</p> <p>TMF water quality will be monitored after closure and once it is deemed to be acceptable for discharge to the environment, the emergency spillway invert will be lowered leaving a residual pond with an estimated surface area of 65 ha and an average depth of 5 m.</p> <p>There will be no measures to create, encourage or discourage aquatic habitat in the residual TMF pond and there will no measures taken to keep wildlife away from the pond. The Ecological Risk Assessment evaluated the potential effect on wildlife drinking from the TMF reclaim pond and no unacceptable risks were predicted. The predicted concentrations were compared against guidelines for livestock consumption, since these would also protect wildlife. None of the parameters exceeded the guidelines and as a result there is no predicted effect on wildlife from ingestion of water from the TMF reclaim pond.</p> <p>Water quality modelling was completed assuming conservative input parameters. Water quality modeling methods and results are provided in the Site Water Quality TSD, Section 4 Water Quality Model. Site water quality post-closure is described in Section 4.3.2 of the Site Water Quality TSD.</p> <p>Predicted open pit water quality after pit flooding is provided in Table 4-15 of the Site Water Quality TSD. The detailed results of geochemical modeling of the pit flooding are provided in Appendix 4.III and Appendix 4.IV of the Site Water Quality TSD. The pit water quality modelling included assessment of both stratified and unstratified conditions. In both cases, the predicted water quality in the upper pit waters meet PWQO and MISA guidelines at time of discharge.</p> <p>A description of the TMF at closure is provided in the Conceptual Closure and Rehabilitation Plan, Section 4.2 Tailings Management Facility and summarized below.</p> <p>At the end of operations, the TMF will contain about 231 million tonnes (Mt) of tailings. The deposition plan for the thickened tailings will result in a flat conical surface with slopes of about 3%. The TMF will include a reclaim</p>	<p><a href="#">MNRF 7</a></p>

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				<p>water pond impounded along its southeastern limit. A seepage collection system will be operated around the TMF perimeter with collection ponds at low points along the downstream toes of the TMF dams.</p> <p>The tailings dams will remain in place as permanent impoundment structures. They will be designed and constructed to be stable under long return period floods and seismic events associated with closure. It should not be necessary to further upgrade the stability of the dams at closure.</p> <p>After closure, the inactive exposed tailings surfaces will be re-vegetated directly. Details of the re-vegetation (i.e., seed mixture, fertilizer, mulch) will be verified prior to closure using test plots on inactive parts of the TMF surface. It is expected that runoff from the re-vegetated tailings surfaces will concentrate in certain areas in response to the final topography of the TMF. Appropriate erosion protection ditches will be applied in such areas to prevent possible gully formation.</p> <p>Water in the seepage collection ponds will continue to be monitored after closure and will continue to be pumped back into the TMF Reclaim Pond until such time as the water quality in the individual ponds becomes acceptable for direct discharge. When water quality is shown to consistently meet acceptable discharge levels, individual seepage pond dykes will be breached and their pumping systems will be removed. The reclaim water pipeline will continue to be used to transfer runoff from the TMF Reclaim Pond to the open pits until such time that the run-off water quality from the TMF becomes suitable for direct discharge to the environment.</p> <p>The water quality in the TMF reclaim pond is expected to improve after closure. Cyanide, ammonia and thiosalts will decay fairly rapidly after processing ceases. Suspended solids will also drop as the tailings surface is re-vegetated. Predicted TMF water quality after closure is provided in Table 4-14 of the Site Water Quality TSD and is predicted to meet PWQO for all parameters. When the water quality in the reclaim pond improves sufficiently, the spillway will be lowered and runoff will be conveyed from the TMF reclaim pond eastward toward Sawbill Bay. At that point, pumping and treatment of water from the TMF will cease and the reclaim water pump and pipeline system will be decommissioned. As noted in the response to MNR-248 and MNR-285, a residual pond with an estimated surface area of 65 ha and an average depth of 5 m will remain after the spillway is lowered.</p>	