EC's Recommendations to the NWB for the Management Plans of Licence No. 2AM-MEA1525: Agnico-Eagle Mines Ltd.

December 4, 2015

#	Topic	References	Concern/Issue	Recommendation
1	Annual Inspections	Tailings Storage Facility: Operation, Maintenance and Surveillance Manual	In Section 6.1.3, Annual Inspection, Agnico-Eagle Mines Ltd. (AEM) states that: *"Annual inspections shall be carried out by a qualified Geotechnical Engineering Consultant who is familiar with the design and on-going operation of the TSF. The objective of the inspections is to carry out a detailed review of the conditions of the facilities and facility operation during the spring freshet and prior to freeze up.* *The Geotechnical Engineering Consultant issues an inspection report to AEM containing observations and recommendations."* This Section does not list what is to be inspected.	A list of what is to be inspected should be included.
2	Ammonia Treatment	Ammonia Management Plan (Version 1, Feb 2013) Ammonia Management Plan (March 2015 version)	In August 2015, Environment Canada (EC) provided comments regarding the Ammonia Management Plan (March 2015 version). The comments are reiterated here for compilation with the current water quality review. Comments (originally provided in August 2015): *"EC notes that Section 3.3, Monitoring, lists the same potential ammonia treatment technologies as were listed in the previous Ammonia Management Plan (Feb 2013). EC has previously identified the following potential concerns with these treatment technologies: Given the problems with trying to do snowmaking at Ekati's Misery site, EC has concerns with attempting ammonia removal by snow making. In addition, the in-situ volatilization of ammonia during the summer months could result in air quality issues.* *As a result of these concerns, EC has previously recommended that further ammonia treatment options be explored. In response to this recommendation, AEM stated that assessment for alternative ammonia treatment will be provided in the final closure plan (i.e. one year prior to closure)."*	In August 2015, EC provided the following recommendation regarding the Ammonia Management Plan (March 2015 version). This recommendation is reiterated here for compilation with the current water quality review. "EC recommends that, if the same ammonia treatment options are retained in future iterations of the Ammonia Management Plan, that potential concerns are flagged for future consideration with respect to: i) in-situ volatilization of ammonia during the summer months (i.e. potential air quality issues); and ii) ammonia removal by snow making (i.e. Northern challenges)."
3	Ammonia/Nitrogen Loading Estimates	Ammonia Management Plan (Version 1, Feb 2013) Ammonia Management Plan (March 2015 version)	In December 2014, EC provided the following comments regarding the Ammonia Management Plan (Version 1, Feb 2013): *"Estimating the total loading of ammonia/nitrogen to the receiving environment is an important component of an ammonia management plan. EC notes that the Ammonia Management Plan for this project is lacking estimates of*	The revised Ammonia Management Plan (March 2015 version) did not address the following recommendation provided by EC in December 2014. Therefore the following recommendation is still outstanding:

			ammonia/nitrogen loading. Such loading estimates should be calculated for both project infrastructure and the receiving environment. Further, EC notes that, in addition to the two sources of ammonia identified in the Ammonia Management Plan (ie. AN explosives and cyanidation process), a third potential source of ammonia for this project is sewage." In conjunction with these comments, EC provided a detailed recommendation regarding how the Ammonia Management Plan should be updated to include particular ammonia/nitrogen loading estimates. In January 2015, AEM responded: *"AEM not agrees to update the Ammonia Management Plan as estimated of ammonia loading are made in the water quality model include in the Appendix B17 -2013 Water Management Plan and Report."* As indicated in AEM's response, the Ammonia Management Plan (March 2015 version) has not been revised to include the requested ammonia loading estimates. The source estimates of ammonia loading are not provided in Appendix B17 -2013 Water Management Plan and Report, contrary to what was indicated in the January 2015 AEM response. These estimates are an essential element of water quality modeling, inform management actions, and are required for the technical review of ammonia management for this project.	"EC recommends that the Ammonia Management Plan be updated to include the following additional information: - Estimate of ammonia/nitrogen loading to all mining infrastructure designed to contain mine water and mine waste. These estimates should include consideration of the cyanidation process, the use and management of explosives, and sewage management. - Estimate of ammonia/nitrogen loading to the receiving environment in relation to this project. Loading calculations should account for deposits to receiving water bodies, as well as any seepage or runoff associated with project activities."
4	Sampling Strategy	Core Receiving Environment Monitoring Program (CREMP)	1. The update indicates that AEM is proposing a change to their sampling strategy. The proposed framework identified that if no changes are identified in the near-field (NF), then sampling in the mid-field (MF) is not required. However, under the revised strategy, if minor changes are identified in the MF (statistically significant changes exceeding the early warning trigger values for parameters without effects based thresholds), then spot sampling during the under ice period is required to determine if changes have extended into the MF areas. Under the current sampling strategy the MF and far-field (FF) areas are only sampled during the open water period. No data exists on the conditions of these areas during the ice cover period. 2. As per the CREMP's data analysis process, NF results are evaluated on an annual basis, and would dictate the monitoring requirements for the MF in the subsequent year. While the full CREMP will be conducted at the NF area each year, the specific monitoring requirements for the MF and FF areas vary based on the NF and MF results, respectively. EC has concerns with the potential for effects in the MF to go unmeasured for an	1. Under the current sampling strategy the MF and FF areas are only sampled during the open water period. No data exists on the conditions of these areas during the ice cover period. Provide rationale on why the sampling in the MF, if triggered, would only take place during the ice-covered period in the proposed new sampling strategy. 2. Describe how uncertainty related to the MF will be managed in the event that changes are identified in the NF. Describe timelines for additional sampling in the MF.

			entire year until the next sampling period and the next annual CREMP analysis. If changes are detected in the NF, then confirmatory sampling on whether those changes extend into the MF should be analyzed in a timely manner.	
5	Water Management	Water Management Report and Plan	Comments from the previous review (August 2015) have not been addressed. Some sections of the report have been updated with 2015 data, however the concerns identified with Appendix A: Water Balance and Appendix C: Water Quality Forecasting Update have not been addressed.	EC will provide technical review comments when the plan is updated as part of the 2015 Annual Report submission. AEM should address previous comments and include the full 2015 data and activities.
6	Freshet Management	Freshet Action Plan	Previous comments were not addressed in this revision: 1. The 2014 Freshet Action Plan describes how snow and ice removal will be used as management methods to mitigate impacts on the environment. The Plan does not identify the snow/ice disposal locations. 2. Section 2.6, Fuel Tank Farms, of the 2015 Freshet Action Plan describes freshet water management issues and actions associated with the fuel tank farms, including how discharge of water from within berms is to be managed. Appendix 1: 2015 Freshet Action Plan Procedure provides additional detail. Information is missing for the management of water within the containment berms that does not meet discharge criteria.	1. Clarify whether snow and ice are to be removed to adjacent areas, or whether there is a dedicated disposal area. 2. Provide a description of the disposal method that would be implemented in the eventuality that water in the containment area does not meet discharge criteria for: - Section 2.6.2 Baker Lake Tank Farms, 2015 Freshet Action Plan; and - Vault Tank Farm, not listed in Appendix 1.