

January 14, 2010

Via Email

Mr. Richard Dwyer
Licensing Administrator
Nunavut Water Board
P.O. Box 119
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Phone: (867) 360-6338
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Dear Mr. Dwyer,

## Re: Water License 2AM-MEA0815 Executive Summary Translations

On November 16, 2009, Agnico-Eagle Mines Limited - Meadowbank Division (AEM) received letters of approval from the Nunavut Water Board (NWB) for the Operational Acid Rock Drainage and Metal Leaching (ARD/ML) Testing and Sampling Plan, Version 1 under 2AM-MEA0815 Part I, Item 4 and for the Sewage Treatment Plant Operation and Maintenance Manual Version 1, under 2AM-MEA0815 Part D, Item 19. The NWB also requested, for both of these plans, the submission of an Executive Summary with an Inuktitut translation. Please find the following documents attached to satisfy this request:

- ARD/ML Testing and Sampling Plan, Version 1 Executive Summary with Inuktitut Translation; and
- Sewage Treatment Plant Operation and Maintenance Manual Version 1 Executive Summary with Inuktitut Translation.

Additional comments from interested parties will be incorporated into the next revision of each plan as required by 2AM-MEA0815 Part B, Item 20.

Should you require any further information, please contact me directly at 819-763-0229 or via email at <a href="mailto:stephane.robert@agnico-eagle.com">stephane.robert@agnico-eagle.com</a>.

Regards,

Stéphane Robert

**Environment Superintendent** 

cc: David Abernethy, INAC

## EXECUTIVE SUMMARY

The Meadowbank Gold Project consists of three main gold-bearing deposits, found within four major bedrock types: intermediate volcanic (IV), iron formation (IF), ultramafic (UM), and quartzite (QZ). The Acid Rock Discharge (ARD) and Metal Leaching (ML) potential of Meadowbank waste rock and overburden has been evaluated through both static and kinetic testing; details on the test methods used and results obtained are provided in Appendix A. The waste types that will report to the Rock Storage Facilities show variable ARD potentials, some of which will require control measures.

Sampling and testing of waste materials produced at Meadowbank is required in order to segregate the Potential Acid Generating (PAG) and/or ML waste from the Non-Potential Acid Generating (NPAG) waste. Total Sulphur and Total Inorganic Carbon analyses are conducted at the on-site assay lab on drill hole cuttings to differentiate between the rock types. The frequency of sampling is determined by the Chief Geologist. This frequency will vary based on previous drilling results and visual inspections of the rock.

At Meadowbank Total Sulphur is being used as a surrogate for acid-base accounting (ABA) potential. To allow Total Sulphur to be used as a surrogate a correlation between Total Sulphur and Acid Generating Potential for the specific type of rock being mined at Meadowbank needs to be developed and confirmed. A Total Sulphur and Neutralization Potential Ratio (NPR) curve will be plotted for each lithology at Meadowbank as access becomes available. These curves should be updated and validated at least once per quarter.

Geology staff will classify waste rock and overburden as not potentially acid generating (NPAG) if the NPR value is greater than 2. The material will be classified as potentially acid generating (PAG) if the NPR value is less than 1. For NPR values between 1 and 2 the material will be classified as having an uncertain acid generating potential (uncertain ARD potential). Uncertain ARD material is to be treated as PAG material unless otherwise advised in writing by the Chief Geologist or Chief Engineer.

Waste rock and overburden materials can also potentially leach metals when they come into contact with snow melt and precipitation runoff. Metal leaching can even occur if the materials are non acid generating. Consequently at Meadowbank it is proposed to use specific metals analysis of the drill hole cuttings to characterize ML potential so that they can be segregated at source and disposed of in a manner where they will not result in significant future release of metals into the environment.

Previous characterization work conducted by Golder Associates has allowed AEM to determine that four metals are of potential concern at Meadowbank: arsenic (As), copper (Cu), nickel (Ni) and zinc (Zn) although not for all rock types. Based on the results of the static and kinetic testing and water quality modeling conducted by Golder Associates during the exploration phase, a set of guiding rules have been developed to determine when and what form of ML characterization work is required before mining. These are presented in the form of a decision tree (one for each of the three pits) to guide the mine engineering and geology staff.

To allow specific metals analyses to be used to predict ML, a correlation curve needs to be developed and confirmed between the arsenic, copper, nickel and zinc metals analysis for the specific type of rock being mined at Meadowbank with the metal leaching potential as determined by Shake Flask

Extraction test procedures which in turn can be compared to humidity measured metal release rates. Total As, Cu, Ni and Zn in the drill cuttings and Total and Dissolved As, Cu, Ni and Zn as measured in the SFE leachates are to be plotted for all samples (separate set of curves for each lithology for each assayed parameter). In a similar manner a series of correlation curves between Total As, Cu, Ni and Zn in the drill cuttings and average steady state Total and Dissolved As, Cu, Ni and Zn as measured in the Humidity cell leachates are to be plotted. The curves developed from this data are to be used by the geology staff to identify, if possible, any rock type or location where elevated metal leaching appears to be a potential. Rock with a classification of high ML potential should be treated as PAG rock with the added stipulation that it cannot be used in dike or fish habitat compensation feature construction.

The Mine Chief Geologist is responsible for implementing the Operational ARD/ML Sampling and Testing Plan. The overall plan is to be reviewed annually by the Chief Geologist and updated if necessary to reflect any adaptive changes made in the operational sampling and testing procedures contained within. The changes should be made in consultation with the mine engineer and chief assayer.

The Operational ARD/ML Sampling & Testing Plan is a critical element of the Meadowbank Environmental Management System. It is the primary tool to ensure that all overburden and waste rock generated on the Meadowbank Project is appropriately characterized for acid generating and metal leaching potential. Performance monitoring activities, including water quality sampling of drainage coming from the Portage and Vault rock storage facilities, are to be implemented in accordance with the Meadowbank Type A water license. In addition, the Chief Geologist will be responsible to see that periodic auditing is conducted to verify that the plan is being implemented as outlined and the waste and overburden segregation programs are being implemented as designed.

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