

May 22, 2015

Reference No. 1416641-001-L-Rev0

Mr. Larry Connell, Director Regulatory Affairs Agnico Eagle Mines Limited Suite 400 - 145 King Street East Toronto, ON M5C 2Y7

## COMMENTS ON TECHNICAL REVIEW OF SPLIT ON LIABILITY ON RECLAIM MODEL CLOSURE AND RECLAMATION PLAN FOR MEADOWBANK MINE, NU

Dear Mr. Connell,

Golder Associates assisted with the development of the current cost estimate to support the latest Meadowbank Closure and Reclamation Plan. The estimate was developed using the current Reclaim model (Reclaim V7) and was based on the current understanding of the Project and the current plan to complete mining at the property. The cost estimate is a best estimate on the allowance that should be budgeted to cover the liability to close and reclaim the mine site once the all mining operations are complete. It is anticipated the Agnico Eagle Mines Limited (the mine operator) would complete the closure and reclamation as part of the closure task.

The closure estimate considers costs to close mines in Nunavut and considers the liability for both land and water portions of the closure and reclamation effort. It is anticipated that the both components are key and equal with some tasks potentially having more impact on land or water, but the overall objective is to protect the environment on land and on the water. Engineering estimates initially consider the overall effort and the cost to close a particular element of the mine (i.e. infrastructure and/or buildings) using local contractors (non-mining company personnel) and to make sure the environment is protected after mining is complete. The second consideration for estimates in Nunavut would be the impact to land or to water to assign a portion of the costs to either part of the closure liability. The split will be different for each component and would be different for different mines based on specific site conditions. The split should be objective, but is generally subjective based on previous experience closing mines and the current mine operation and mine location.

The key element of the Meadowbank closure is the tailings storage facility (TSF). The design and implementation of the closure of the tailings storage facility would take place on land as the final elevation of the closed facility is above the water level of the surrounding lakes, but the closure and effort must also consider the liability to the adjacent water bodies and the regional groundwater. Capping the tailings storage facility would enable the surface run off to move off the facility without contacting the tailings and impacting the water quality in the adjacent lakes. The cap will also reduce water passing into or seeping into and through the underlying tailings to move contaminants out of the area of the storage facility. The waste rock cap planned will also enable the tailings to freeze over time and further reduce infiltration to the groundwater. Thus, the cap will protect the land at, and adjacent to, the closed tailings facility and the water / groundwater adjacent to and beneath the tailings storage facility. The cap equally protects the land and the water on site and the environment.



The purpose of the cap has more do with ultimate protection of the water resources adjacent to and under the closed tailings storage facility, and thus we would propose to assign a split of 75% to water and 25% to land for this activity. However, the cap is for the protection of both land and water, and thus how the split is made is a subjective judgement. It could be considered 50%-50% or 75%-25% in favour of land or 75%-25% in favour of water protection, but it should not be 100% in favour of land or water.

The single largest cost component in this estimate is the reclamation of the tailings storage facility with the placement of a 4 meter deep waste rock cover. Most of the estimated cost is the placement of the capping cover material. As noted above, the purpose of the cover is to:

- 1) prevent movement of contaminants to the surrounding water and land;
- to enable re-establishment or encourage maintenance of the tailings in a permanently frozen state so that contaminants do not seep into the tailings and then exit the tailings storage facility into surrounding waters (surface and groundwater); and
- 3) to shed surface runoff water / snow melt flows and prevent this runoff from carrying contaminants into surrounding land and water through displacement and erosion.

As stated above, in determining what proportion of the estimate would be related to water or land is subjective, but an important element is related to water liability and water quality long term. We would take the approach that a key to the success of the cover is protecting both components and minimizing contaminants from reaching the surrounding land and water. Therefore, a split of 75% water to 25% land would be considered reasonable for this site based on the above points. However, it is possible to take the view point that if the tailings are already frozen or are freezing before the final closure cap is placed, then the split may be 33 % water liability and 67% land liability. The split should then depend on the actual conditions at closure or as predicted in modelling of freezing the tailings long term.

In conclusion, the split is subjective and in making this split the engineer must use best judgement and provide a best perspective as to what proportion of the cost is related to protecting water versus protecting land resources. The split is important, but both parts of the activity need to be completed with equal success to provide the overall objective of the reclamation and protecting the local and regional environment in the long term.

If there are any questions, please contact the undersigned.

Yours very truly,

**GOLDER ASSOCIATES LTD.** 

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