NWB Tools

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Baffinland Iron Mines Corporation, Mary River Project - Notification of Test of Alternative Explosive for Blasting in Deposit No. 1 Pit

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Good afternoon.

Over the last two years, since commencing mine operations, Baffinland has been experiencing technical challenges with the current bulk explosive product being used in our Deposit No. 1 Pit. Blasting in Deposit No. 1 Pit has proved challenging due to the density of the ore, permafrost and structural characteristics of the ore and wall rock material. The current bulk explosives product type being manufactured and used at Mary River is Emulsion. From a blasting perspective, Emulsion has greater shock energy than Emulsion and Ammonium Nitrate fuel oil (ANFO) blends but produces less explosive gases. As a result, Emulsion increases fragmentation but does not throw or heave the rock as well as Emulsion-ANFO blends. This throwing and heaving of the rock has been shown (at other operations), to improve digging/loading and also has the potential to improve product quality.

In an effort to optimize digging/loading and product quality parameters, Baffinland intends to examine the cost, benefit and risk of changing the explosives type from Emulsion to an Emulsion-ANFO blend. The first step in considering such a change is to proceed cautiously with some highly monitored test blasts within the iron ore at the pit.

Emulsion-ANFO blends are commonly used in the mining industry, and with proper environmental controls, can result in acceptable environmental risk. The main environmental risk associated with explosives is explosive residues that leach and result in runoff/ seepage high in leached nitrogen compounds, principally ammonia and nitrate. Golder Associates has been retained to assist Baffinland in the monitoring and assessment of environmental risk associated with a potential changeover in explosives type.

Three test blasts within the ore zone of Deposit No. 1 Pit are scheduled to commence during the week of December 4, 2016. The tests will be highly monitored from an environmental, operational, and product quality perspective. The tests are considered to be of low risk from an environmental perspective based on the following factors and controls that will be in place:

- The time of year for this test is ideal since ambient surface conditions are frozen and with no groundwater observed or expected in blast holes.
- The blast holes will have plastic inserts to provide further protection against moisture in the blast holes.
- The blasts will be monitored/videotaped for blast efficiency; a highly efficient blast indicates maximum ignition of ANFO during the blast and resulting low risk of residual Ammonium Nitrate (AN) that can leach into surface water.
- Once the blast has been detonated, Baffinland will, under the direction of Golder, collect samples for the purpose of conducting leachate testing under controlled conditions that will assess the level of dissolution and loading of nitrogen compounds generated from typical test material.

- The blasted ore will be tracked and stored separately as it is processed through the site. It will be stored in isolated stockpiles during the crushing operation and will be shipped to the Milne Port Ore Storage Area for loading on ships during the 2017 shipping season. At Milne Port, it will also be stockpiled separately from other ore piles.

- Additional samples will be collected for further leach tests once the material is stockpiled at Milne Port to assess the potential for nitrogen leaching during and post freshet. Based on these tests, if there is a demonstrated high potential for leaching, steps can be taken to minimize the leaching and transport of AN (e.g., tarping) until the material is shipped off-site.

If the test work is successful, Baffinland will share the monitoring and test results with stakeholders by way of a consultant's report. After careful consideration, Baffinland will make a decision regarding the long-term potential plan and schedule for changing the explosive used in the current operations. Proposed changes to explosive types and use would include revisions to relevant environmental management plans and procedures. These revisions would be submitted to key stakeholders for their review/approval as required under our Type A Water Licence prior to changing explosive use.

Please do not hesitate to contact the undersigned should you have any comments or concerns regarding the planned test work.

Kind regards,

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