

**File: 2AM-DOH1335** 

November 19, 2019

Oliver Curran TMAC Resources Inc. 95 Wellington Street West Suite 1010, PO Box 44 Toronto, ON M5J 2N7

E-mail: oliver.curran@tmacresources.com

Subject: Water License 2AM-DOH1335 - Naartok East Crown Pillar Recovery at

Madrid North – Proposed Site-Specific Geochemical Criteria for use of Non-Mineralized Waste Rock for Construction; Hope Bay Phase 2 Project, TMAC

Resources Inc.

Dear Mr. Curran

The Nunavut Water Board (NWB or Board) received from TMAC Resources Inc. (TMAC or Licensee) on August 14, 2019, a request to approve the implementation of site-specific geochemical criteria to be used to determine the suitability of waste rock produced from Naartok East (NE) Crown Pillar Recovery (CPR) at Madrid North for construction (The Request), as required under the Type 'A' Water License 2AM-DOH1335, Part F, Item 12.

To summarize, TMAC conducted a geochemical characterization program to assess the Metal Leaching/Acid Rock Drainage (ML/ARD) potential for the NE CPR waste rock. The program provides the results of the site-specific program, as well as an extensive review of the overall results from Madrid North, Madrid South and Boston kinetic test programs conducted as part of Boston-Madrid Project Final Environmental Impact Statement, dated December 2017.

In its request, TMAC stated that the results of a geochemical characterization program to assess the ML/ARD potential for the NE CPR waste rock, indicated that,

(A)lthough the overall risk of acid rock drainage (ARD) is low owing to high carbonate mineral content, neutral-pH metal leaching (ML) of arsenic should be considered for Madrid North waste rock management. Based on that, SRK developed site-specific geochemical criteria (ML and ARD) for the use of non-mineralized waste rock from NE CPR for construction.

The NWB conducted an internal review and on August 15, 2019, the NWB distributed the information package to interested parties inviting them to submit comments by September 12, 2019. On or before this date, comments were received from the Kitikmeot Inuit Association (KIA), Environment and Climate Change Canada (ECCC), and Crown-Indigenous Relations and Northern Affairs (CIRNA). In their submissions, all three interveners requested that TMAC provide additional information with respect to the use of NE CRP waste rock for construction, and specifically to justify and validate the 70 ppm arsenic criterion for the use of waste rock, and the mitigation measures that will be employed to ensure environmental protection.

On October 2, 2019, TMAC responded to the intervener comments providing the requested information and confirmed that,

The kinetic test database (HC and barrel tests) provides the required data to derive the site-specific arsenic criterion of 70 ppm, e.g. flushing rates for arsenic in relation to the geochemical controls for neutral pH arsenic leaching, specifically gersdorffite and arsenic content. As such, TMAC maintains that a arsenic criterion of 70ppm remains appropriate... all waste rock used as construction rock will be subjected to a verification monitoring program, including ABA and trace element content as analyzed by a commercial laboratory, and annual seepage monitoring...

By October 10, 2019, the KIA, ECCC, and CIRNA had indicated that TMAC had fully addressed their comments; however, the KIA suggested in its written submission that a conference call be held to discuss the arsenic criterion for the use of waste rock, and to confirm the ML/ARD management program has provisions to monitor leachate chemistries following placement of waste rock for construction.

On November 1, 2019, the NWB hosted a conference call. The Board provided the meeting minutes on November 5, 2019 that outlined two commitments made during the call:

- 1. to include the locations of NE CRP waste rock placement in all future seep surveys and
- 2. to investigate the need for seep surveys following large rain events.

The NWB has reviewed the request to implement site-specific geochemical criteria to be used to determine the suitability of waste rock produced from Naartok East (NE) Crown Pillar Recovery (CPR) for construction and related submissions and finds the information functional and generally satisfying Licence requirements. By copy of this letter, the Board approves The Request, dated August 14, 2019, through the Board Motion No. 2019-A1-009, dated November 19, 2019, in accordance with Licence conditions for Water Licence No. 2AM-DOH1335.

Should you have any questions or require any clarification with respect to the above, please feel free to contact the undersigned via email at <a href="mailto:Derek.Donald@nwb-oen.ca">Derek.Donald@nwb-oen.ca</a> or phone (867) 360-6338 (Ext. 32).

Sincerely,

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Derek Donald Technical Advisor Nunavut Water Board

Attachment: Comments by KIA, ECCC, and CIRNA Cc: Distribution list – Doris North

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