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June 26, 2017

Richard Dwyer
Licensing Administrator
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0

Your file - Votre référence
2BB-BOS1217

Our file - Notre référence
CIDM#1156752

Re: Indigenous and Northern Affairs Canada's comments on TMAC Resources Inc. response to recommendations for the renewal application for water licence #2BB-BOS1217 – Boston Advanced Exploration Project

Dear Mr. Dwyer,

Thank you for your June 6, 2017 invitation to comment on the above referenced application.

The Water Resources Division of Indigenous and Northern Affairs Canada (INAC) examined the responses provided by the applicant and the results of our review are provided in the enclosed memorandum for the Nunavut Water Board's consideration. Comments have been provided pursuant to INAC's mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Indian Affairs and Northern Development Act*.

INAC appreciates the opportunity to participate in this review. If there are any questions or concerns, please contact me at (867) 975-3876 or by e-mail at sarah.forte@aandc-aadnc.gc.ca.

Sincerely,

Sarah Forté
Water Management Coordinator

cc. Ian Parsons, Acting Manager, Water Resources Division, INAC
Erik Allain, Manager of Field Operations, INAC

Technical Review Memorandum

To: Richard Dwyer, Licensing Administrator, Nunavut Water Board

From: Sarah Forté, Water Management Coordinator, Water Resources Division, INAC

CC: Oliver Curran, Director Environmental Affairs, TMAC Resources Inc.

Date: June 26, 2017

Re: Comments on Proponent's Responses to the Review of Renewal Application for Type B Water Licence 2BB-BOS1217

Applicant: TMAC Resources Inc.
Project: Boston Advanced Exploration
Region: Kitikmeot

A. BACKGROUND

On February 10, 2017, the Nunavut Water Board (NWB or Board) provided notification of TMAC Resources Inc.'s (TMAC or the licensee) submission of a renewal application for Type B water licence 2BB-BOS1217 for the Boston Advanced Exploration Project.

The licence for the Boston Advanced Exploration Project has been amended and renewed since at least 1999. The latest licence, which expires on July 31, 2017, allows for the use of water up to 100 m³ per day and for the deposit of waste. The licenced undertaking includes the operation of a 65 person camp and exploration activities including drilling and bulk sampling. The site has been in care and maintenance since 2012 and TMAC proposes to re-open the site in April-May 2017.

Indigenous and Northern Affairs Canada (INAC) provided a technical review on TMAC's renewal application to the NWB on March 10, 2017. On March 24, 2017, TMAC responded to the concerns raised in the review during a teleconference organized by the NWB and attended by staff from TMAC, the NWB and INAC. At the time, the NWB requested a written response from TMAC to formalize what they presented at the teleconference. This was provided by TMAC on April 10, 2017 and on June 6, 2017, the NWB requested representations on the submission from interested parties by June 26, 2017.

B. RESULTS OF REVIEW

On behalf of INAC Water Resources, the following comments and recommendations are provided for the Board's consideration. It is expected this document will be read in conjunction with TMAC's Responses to Final Written Submissions and previous statements are not transcribed but summarized instead. The numbering of topics is identical to both our original submission and TMAC's written response.

1. Licence term and project relation with Phase 2 water licence application

INAC requested an explanation of the relation between this licence application and TMAC's concurrent Type A application. TMAC explained they planned to keep a renewed 2BB-BOS licence in the same timeframe as the possible Type A for Madrid/Boston (phase two), stating: *"Exploration activities at Boston are anticipated to continue into the future, both before and during commercial mining operations, and therefore the proponent intends to maintain the exploration licence as indicated in the renewal request for 10 years. TMAC notes that it is standard practice for companies to maintain exploration licences in conjunction with Type A licences for commercial mining, and that the renewal for 2BB-BOS1217 is in line with existing licencing on the Hope Bay belt."*

The licensee proposes to maintain the 2BB licence in the same timeframe as the possible Type A for Madrid/Boston (Phase Two), to allow for exploration, implying licensed activities related to bulk sampling would be rolled into the Type A. The remaining exploration activities could then be covered under an exploration Type B. TMAC already has an exploration licence for the Hope Bay belt, 2BE-HOP1222. INAC recommends that the 2BB licence be renewed for a shorter term under the assumption the bulk sampling activities will be rolled in to a new Type A and the exploration activities can be carried out under 2BE-HOP1222. This would be similar to other projects in Nunavut where there is a Type A and an exploration Type B. The NWB will be in the best position to determine the most appropriate licensing options.

2. Winter track/road

INAC requested more information on the winter road or winter track to be created in order to better understand the water use necessary for the road/track creation. At the time of the teleconference, TMAC had details which were not in the application because they had recently created the track. It was a track over snow and they were using snow to build embankments that may need to be firmed up with water. The quantity of water used would be little.

INAC re-iterates that the water used for building the track needs to be included in the daily water use compilation and would appreciate if this were made explicit in the licence.

3. Lead effluent discharge concentration for landfarm and bulk fuel storage facility

INAC recommended a maximum allowable grab sample concentration of 7µg/L for lead as discharge criteria for lead from the fuel storage area (BOS-5) and landfarm (BOS-6) to follow the Canadian Water Quality Guideline for the Protection of Aquatic Life, considering the typical water hardness on site. TMAC countered that that guideline is for the aquatic receiving environment and not tundra discharge, as will occur at BOS-5 and BOS-6. We agree with this argument and are now comfortable with the 10 µg/L limit suggested by TMAC.

4. Drill site reclamation

Historic drill-holes on site have not been properly remediated and there are thermokarsting issues. INAC requested a proposed schedule for reclamation of the drill holes they have inventoried as requiring intervention, because extending the licence term delays the date by which remediation is necessary. TMAC stated there is no equipment on site available to carry out necessary reclamation activities, but they would like to get this type of equipment to site if the licence was renewed.

We still recommend a proposed remediation schedule, because progressive reclamation activities are often pushed back under exploration and operation pressures. These drill sites have seen degradation over time and prompt permanent remediation will prevent further degradation.

5. Fill material for reclamation of drill holes

INAC requested the licensee specify what material they propose to use as fill for drill hole sites, partly because the estimated fill volume was large. TMAC has clarified that the fill volume required is much smaller and that *“the backfill material will be waste rock sourced during closure from the decommissioned camp pads, and airstrip in areas where the minimum fill thickness exceeds 1 m.”*

We are satisfied that sufficient fill material is available, however concern remains about the quality of the material. As discussed under topic 11, in the past, ore was used as surface dressing over the majority of the site including the airstrip. Metal leaching is a concern with this rock and is presently being monitored at seeps and ephemeral streams. INAC recommends that the licensee explain how they will differentiate potentially metal leaching ore when decommissioning the camp pads and airstrip to ensure it is not used as fill for reclamation.

6. Capacity of Doris Landfill for accepting reclamation debris

INAC requested the licensee confirm the Doris Landfill has the capacity to accept all debris from reclamation of the Boston Site, as well as material from the Doris Site. This was done and we are satisfied with the answer.

7. Interim care and maintenance in Interim Closure Plan cost estimate

INAC requested the licence revise the reclamation cost estimate provided to include an 18 month period of interim care and maintenance. TMAC has done this and we are satisfied with their response.

8. Landfarm at capacity

The landfarm at Boston is filled to capacity and INAC requested the licensee explain how they will move material from the Boston landfarm to Doris, and provide more detail on the temporary lined facility they propose to use until they have removed the material presently in the landfill. During the teleconference TMAC responded that they would bag the material this summer and take it to Doris on the winter track next year. Though they consider the use of a temporary containment facility highly unlikely, TMAC have provided some information on how it would be constructed.

We are satisfied with the answer and are assuming that the contaminated soil will be moved to Doris in winter 2018.

9. Landfarm water management

INAC requested that the licensee repair the lined containment pond before using it to store pooled landfarm water that does not meet discharge criteria. TMAC's response was that this information was contained in the application and they would be upgrading the containment pond to ensure its integrity and capacity. We had not seen this in the initial application and are satisfied with the reply.

10. Current water management procedures

INAC requested the licensee provide an updated Water and Ore/Waste Rock Management Plan within 60 days of licence issuance that describes how water will be managed on site for the proposed and licensed activities. In their written response, TMAC suggest submitting an updated plan to the NWB 60 days prior to new waste rock/ore being brought to surface.

Re-opening the portal may require water management before rock or ore is brought to the surface. INAC therefore recommends the updated plan be provided within 60 days of licence issuance or, if accommodations are made for a possible delay in work, 60 days prior to re-opening the portal.

11. Monitoring seeps and ephemeral streams

The Water and Waste Rock/Ore Management Plan describes the sampling at ephemeral streams around the camp pad and seeps or ephemeral streams along the airstrip to monitor metal concentrations in the water since part of the materials used in infrastructure construction is metal leaching. INAC requested that a renewed licence include additional Surveillance Network Program (SNP) stations at these sampling locations.

TMAC countered that additional SNP stations are not necessary because the Water and Waste Rock/Ore Management Plan forms part of the licence. They have agreed to include the seepage monitoring stations described in Section 5.2.1 of the plan in Table 2.4 and Figure 2.4 that list sampling sites.

We are satisfied with TMAC's response and during the teleconference, NWB staff suggested a reporting requirement could be added to the licence, which would help make the monitoring results easier to find.

12. Monitoring water use

INAC recommended that Table C1 of the Quality Assurance and Quality Control Plan be modified to indicate water intake from drill sites is measured "daily during pumping", instead of "daily during periods of discharge" and when necessary, mine water pumping should be monitored monthly as required in Part J, Item 3 of the licence. TMAC did not express concern with this request.

13. Revised closure estimate

TMAC have provided a revised closure estimate following further scrutiny, exchanges during the application process, and their experience in March 2017 with the winter track to Boston.

INAC is satisfied with the changes made and the new estimate of \$3 611 000. The largest reduction in cost comes from using a winter track instead of a winter road to move material between the Boston and Doris Sites. This was not explicitly described in the body of the Interim Closure Plan but it is in Appendix A.

An inconsistency between the updated closure estimate and the Interim Closure Plan is section 3.12 on drill site reclamation. INAC recommends that this inconsistency and the reference to the winter track be modified the next time the Interim Closure Plan is updated.