



Water Resources Division  
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Your file - Votre référence  
2BB-BOS1727  
Our file - Notre référence  
CIDM# 1290059

October 15, 2020

Richard Dwyer  
Manager of Licensing  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU, X0B 1J0  
E-mail: [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca)

**Re: Crown-Indigenous Relations and Northern Affairs Canada Review of TMAC Resources Inc. 2020 Interim Closure and Reclamation Plan for the Boston Exploration Site, Hope Bay Project, Type B Water Licence No. 2BB-BOS1727**

Dear Mr. Dwyer,

Thank you for the September 15, 2020 invitation to review the referenced updated Interim Closure and Reclamation Plan for the Boston Exploration Site at the Hope Bay Project, submitted by TMAC Resources Inc. in compliance with Type B Water Licence No. 2BB-BOS1727.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the application package pursuant to its mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*. Comments have been provided in the attached Technical Memorandum.

If there are any questions or concerns, please contact me at (867) 975-4282 or [bridget.campbell@canada.ca](mailto:bridget.campbell@canada.ca).

Sincerely,

Bridget Campbell,  
Water Resources Coordinator



## **Technical Review Memorandum**

**Date:** October 15, 2020

**To:** Richard Dwyer – Manager of Licensing, Nunavut Water Board

**From:** Bridget Campbell – Water Management Coordinator, CIRNAC

**Subject: Crown-Indigenous Relations and Northern Affairs Canada Review of  
TMAC Resources Inc. 2020 Interim Closure and Reclamation Plan for  
the Boston Exploration Site, Hope Bay Project, Type B Water Licence  
No. 2BB-BOS1727**

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### **A. BACKGROUND**

TMAC Resources Inc. (TMAC) has submitted an updated revision of the Interim Closure and Reclamation Plan (ICRP) for the Boston Exploration Site, which is part of the Hope Bay Project, Type B Water Licence No. 2BB-BOS1727. The previous version of the ICRP was submitted and approved by the Nunavut Water Board (NWB) in 2017 as part of the renewal of the licence. The ICRP has been submitted in compliance with the current licence, which states the following:

Under Part I, Item 1 of the 2BB-BB1727 Water Licence, the Board has approved the submitted Boston Camp Interim Closure Plan. Further to this and in order to both follow INAC's Guidelines<sup>16</sup> and also align the Water Licence requirements with similar licences regarding frequency and timing of closure plan's submissions, under Part I the Board has established conditions that require the Applicant to submit an Interim Closure Plan within three years of licence issuance (Part I, Item 2), and then update it again in 2025.

The updated ICRP also includes an updated financial security estimate, which requests a reduction in security based on progressive reclamation work which has been performed on the Landfarm, referred to as the Land Treatment Area (LTA), and 32 of the 112 historic drill sites.

CIRNAC provides the following comments and recommendations pertaining to both the ICRP and the associated estimate. A summary of the subjects of recommendations can be found in Table 1. Documents reviewed as part of this submission can be found in Table 2 of Section B. Detailed technical review comments can be found in Section C.



**Table 1: Summary of Recommendations**

<b>Recommendation Number</b>	<b>Subject</b>
<b>R-01</b>	Temporary Storage of Dry Settled Sediments from the Drill Cuttings Sump
<b>R-02</b>	Timelines for Drill Site Reclamation
<b>R-03</b>	Fill Material Used for Reclamation of Drill Holes
<b>R-04</b>	Verification of Reclamation Activities Prior to Security Reduction
<b>R-05</b>	Verification of Value of Security Increase
<b>R-06</b>	Cost Estimate for Drill Sites Reclamation
<b>R-07</b>	Cost Estimate for Landfarm Reclamation

## **B. DOCUMENTS REVIEWED**

The following table (Table 2) provides a summary of the documents reviewed under the submission of the Interim Closure and Reclamation Plan.

**Table 2: Documents Reviewed**

<b>Document Title</b>	<b>Author, File No., Rev., Date</b>
<b>Letter to the Nunavut Water Board Re: Type B Water Licence 2BB-BOS1727– Updated Interim Closure and Reclamation Plan for the Boston Advanced Exploration Project</b>	<b>Oliver Curran, September 14, 2020</b>
Attachment 1: Boston Camp Interim Closure Plan and Interim Closure Cost Estimate 2020 Update	SRK Consulting, September 2020
Appendix A: Boston Interim Closure Plan Cost Estimate – 2020 Update	SRK Consulting, September 11, 2020



## C. RESULTS OF REVIEW

### 1. Temporary Storage of Dry Settled Sediments from the Drill Cuttings Sump

#### **Comment:**

*Section 3.4.3 Sedimentation Ponds* of the ICRP says on page 8 that “The drill cuttings sump was used for drill cuttings management” and that “Settled sediments will be allowed to dry, then removed from the pond and temporarily stockpiled to allow for the removal of the liner.” It is not clear where the sediments will be stockpiled, or how the stockpiled sediments will be managed to prevent the formulation of contact water.

#### **Recommendation:**

(R-01) CIRNAC recommends that TMAC clarify the proposed stockpile location and the measures which will be set in place to prevent the formulation of contact water.

### 2. Timelines for Drill Site Reclamation

#### **Comment:**

*Section 3.12 Drill Site Reclamation* states on page 12 that, “Drill holes will be inventoried, and the extent of remediation work required for each location will be assessed.” It is not clear when this assessment is scheduled to take place. Further, *Section 4 Progressive Reclamation* states on page 13 that “Progressive reclamation will continue opportunistically when equipment and resources become available on site.”

Drill holes left unaddressed can constantly degrade permafrost, and the amount of work and cost estimate associated with the reclamation of drill holes may increase over time. There is already evidence of thermokarsts forming around the Boston Airstrip from historic drill holes which have not yet been remediated, or have not been properly remediated, as described in *Comment 4 - Drill site reclamation* of CIRNAC Technical Memo to the NWB (June 26, 2017).

Further, it is proposed on page 13 that, “An adaptive management approach will be used to reclaim areas where saline drilling fluid spills have affected vegetation. Management alternatives will be developed and implemented to ensure remediation of the affected area.” The timeline for submission of the adaptive management alternatives for this commitment are not clear.

#### **Recommendation:**

(R-02) CIRNAC recommends that TMAC clarify the proposed schedule or timeline for performing the proposed inventory and assessments of drill holes, and for submission of adaptive management alternatives for reclaiming saline drilling fluid spills.



### 3. Fill Material Used for Reclamation of Drill Holes

#### **Comment:**

*Comment 5 - Fill material for reclamation of drill holes* of CIRNAC Technical Memo to the NWB (June 26, 2017) CIRNAC expressed the concern that the material to be used for drill site fill may produce metal leachate if the metal leaching ore is not properly differentiated from the fill material, and ore is used as surface dressing. CIRNAC understand that TMAC has implemented a strategy to separate ore from fill material, and monitoring of the reclaimed sites can help to ensure cross contamination did not occur.

#### **Recommendation:**

(R-03) CIRNAC recommends that TMAC closely monitor the reclaimed drill sites for signs of metal leaching, and include a mitigation strategy in the next iteration of the ICRP, required by 2025, for a case in which metal leaching is found at the reclaimed drill sites.

### 4. Verification of Reclamation Activities Prior to Security Reduction

#### **Comment:**

A reduction in security has been requested for infrastructure that has undergone progressive reclamation in 2017. These items are the Boston Landfarm (LTA) and 32 historic drill holes. CIRNAC notes that in past CIRNAC Field Operations Inspection Reports, the Landfarm has been noted as remediated (August, 2019), and several drill holes near the Boston Air Strip have been reclaimed (August, 2017). No specific inspection has been performed on these items in the context of closure and reclamation, and no statement was made by an inspector clearly verifying that the reclamation has been performed in alignment with the Mine Site Reclamation Policy for Nunavut (2002). Release or reduction of security can only occur at the discretion of the Minister, when work is completed as planned, validated by an engineer registered to practice in Nunavut, and verified by a CIRNAC Inspector. CIRNAC is prepared to reduce financial security on reclaimed infrastructure when these conditions have been met.

#### **Recommendation:**

(R-04) CIRNAC recommends that the amount of financial security for reclaimed items not be released until the following conditions have been met:

- a. Remediation work is completed as planned;
- b. Validation is performed by an engineer registered to practice in Nunavut;
- c. Remediation work is verified by a CIRNAC Field Inspector; and
- d. Approval is granted by the Minister for the security reduction based on his/her discretion that environmental liability had been reduced.



## 5. Verification of Value of Security Increase

### **Comment:**

The Memo titled *Appendix A: Boston Interim Closure Plan Cost Estimate – 2020 Update* (SRK Consulting, 2020) indicates in the tabular summary that there is an overall increase of \$111,000, and in the report conclusion that there is an overall increase of \$134,000. The difference between these values is not clear.

### **Recommendation:**

(R-05) CIRNAC recommends that TMAC clarify the significance of the value of \$134,000, and how this total was derived.

## 6. Cost Estimate for Drill Sites Reclamation

### **Comment:**

The 2020 Cost Estimate Memo titled *Appendix A: Boston Interim Closure Plan Cost Estimate – 2020 Update* (SRK Consulting, 2020) states in Section 2.2 that “Most unit rates and indirect lump sum costs were inflated from the originally estimated unit rates, to the 2020 rate, using the 2.0% annual rate (Section 2.1).” The unit rates provided for the Drill Sites (Area B07) do not appear to reflect a consistent 2% inflation increase. It is not clear how these unit rates were calculated.

TMAC also indicates that they have reclaimed 32 of the 112 historic drill sites. The 2017 estimate (SRK Consulting Inc., 2017) indicates 545 drill sites for a subtotal of \$213,816 in Table 2. The 2020 estimate indicates a subtotal for drilling of \$32,830, in addition to the cost of \$13,633 for the remaining 80 drill sites, for a new total of \$46,463 for this subsection. It is not clear how TMAC has reduced the number of drill sites from 545 drill sites to 80 drill sites, and reduced the cost from \$213,816 to \$46,463, between 2017 and 2020. CIRNAC does not support the new security values for reclaimed drill sites until TMAC can clarify how the reduction of costs was calculated.

### **Recommendation:**

(R-06) CIRNAC recommends that TMAC clarify the process or method used to calculate:

- a. the 2020 unit costs for the drill sites; and
- b. the new number of drill sites requiring reclamation of “80” from 545 indicated in 2017.



## 7. Cost Estimate for Landfarm Reclamation

### **Comment:**

The 2020 Cost Estimate Memo titled *Appendix A: Boston Interim Closure Plan Cost Estimate – 2020 Update* (SRK Consulting, 2020) states in Section 2.3.1 that “All tasks under the ‘Current landfarmed soils’ activity (Table 1) were considered to be completed by these remedial works resulting in a cost reduction of the total closure cost of \$9,500.” The cost for this work at the 2020 inflated rate is about \$9,500. The actual amount held by the Minister for this activity as estimated in 2017 is \$9,351.70.

CIRNAC can only release the amount of security held by the Minister. The only situation in which CIRNAC could return \$9,500 would be one in which TMAC submits security for the entire project at the increased 2020 unit rates, including for reclaimed components, until the time in which the conditions outlined in Comment and Recommendation 4 are met. Once these conditions are met, CIRNAC will be able to release the full security costs for these items at the 2020 rate.

### **Recommendation:**

(R-07) CIRNAC recommends that TMAC submit security for the entire project at the 2020 rates, including for items which have been remediated and not validated. Once all conditions of security release are met, CIRNAC will be able to return security for the remediated portions at the 2020 rates. The conditions of security release are as follows:

- a. Remediation work is completed as planned;
- b. Validation is performed by an engineer registered to practice in Nunavut;
- c. Remediation work is verified by a CIRNAC Field Inspector; and
- d. Approval is granted by the Minister for the security reduction based on his/her discretion that environmental liability had been reduced.



## D. REFERENCES

### Works Cited

Crown-Indigenous Relations and Northern Affairs Canada. *Letter and Technical Memorandum to the Nunavut Water Board 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*. June 26, 2017. CIDM#1156752. Comment Numbers 4 and 5.

Crown-Indigenous Relations and Northern Affairs Canada. *Field Operations Inspection Report*. August 20, 2017.

Crown-Indigenous Relations and Northern Affairs Canada. *Field Operations Inspection Report*. August 14, 2019.

Mine Site Reclamation Policy for Nunavut. 2002.

Nunavut Water Board Licence No. 2BB-BOS1727. TMAC Resources Inc. Signed by Thomas Kabloona, Nunavut Water Board Chair, Nunavut Water Board. July 24, 2017.

SRK Consulting Inc. Hope Bay Project Boston Camp Interim Closure Plan. January, 2017. Appendix A: Boston Interim Closure Plan Cost Estimate – 2017 Update.