



NUNAVUT WATER BOARD

WATER LICENCE NOs:

2AM-DOH1335

AND

2AM-BOS1835

**REASONS FOR DECISION
INCLUDING RECORD OF PROCEEDINGS**

NUNAVUT WATER BOARD

In the Matter of:

Applicant: TMAC Resources Inc.

Subject: Application for Amendment No. 2 to Type “A” Water Licence No: 2AM-DOH1323 (amended and renumbered Water Licence No: 2AM-DOH1335); and Application for a new Type “A” Water Licence No: 2AM-BOS1835.

Date: December 7, 2018

Precedence: Where there is any inconsistency or conflict between *the Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada (Nunavut Agreement)* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSRTA)*, the *Nunavut Agreement* prevails to the extent of the inconsistency or conflict. Where there is any inconsistency or conflict between the *NWNSRTA* and any other act of Parliament, except the *Nunavut Land Claims Agreement Act*, the *NWNSRTA* prevails to the extent of the inconsistency or conflict.



RECORD OF PROCEEDINGS

Applicant: TMAC Resources Inc.

Address: 95 Wellington Street West
Suite 1010, P.O. Box 44
Toronto, ON M5J 2N7

Purpose: Application for Amendment No. 2 to existing Type “A” Water
Licence 2AM-DOH1323 (amended and renumbered Water
Licence No: 2AM-DOH1335) and Application for a New
Type “A” Water Licence No: 2AM-BOS1835

Application Received on: December 20, 2017

Application Received from: TMAC Resources Inc.

Dates of Public Hearing: October 24 and 25, 2018

Date Public Hearing Record Closed: October 25, 2018



ATTENDEES:

NWB

Representatives:

Nunavut Water Board Panel Members (Panel P7):	Chairman Member Member	L. Toomasie R. Mrazek M. Nartok
Nunavut Water Board Staff:	Executive Director Director Technical Services Director of Board Administration and Communication Technical Advisor Licensing Administrator Legal Counsel (Meadows Law)	S. Autut K. Kharatyan B. Kogvik D. Donald I. Porter T. Meadows
Nunavut Impact Review Board:	Assistant Technical Advisor	W. Nicoll
Interpreters:	Inuktitut Inuinnaqtun	B. Kogvik H. Ohokannoak
Court Reporter:	Dicta Court Reporting, Inc.	K. Schumann, CSR(A)
Sound Technician	Nunavut Impact Review Board Assistant Technical Advisor	W. Nicoll

Applicant:

TMAC Resources Inc.:	Vice President, Environmental Affairs Manager, Environment Manager, Land Tenure and Reclamation Environmental Engineer Environmental Supervisor Consultant (SRK) Consultant (ERM)	O. Curran S. Potter A. Grzegorzczk A. Mathai K. Conway M. Rykaart N. Bishop
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Consultant (ERM)	M. Henry
Legal Counsel (Lawson Lundell)	C. Kowbel

Parties:

Interveners:

Kitikmeot Inuit Association (KIA)	Senior Hope Bay Project Officer	J. Roesch
	Legal Counsel (Willms & Shier LLP)	J. Donihee
Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)	Director of Resource Management	S. Dewar
	Manager of Water Resources	I. Parsons
	Water Management Specialist	S. Forté
	Water Management Coordinator	B. Campbell
	Student Intern	J. Hill
Environment and Climate Change Canada	Senior Environmental Assessment Coordinator	B. Summerfield
	Water Quality Specialist	M. Tobin
Fisheries and Oceans Canada	Senior Fisheries Protection Program Biologist	M. Janowicz
	Fisheries Protection Biologist	A. McLellan

Written Record of Submissions:	Available from the Board's public registry using the following links:
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Amendment No. 2 to Water Licence No: 2AMDOH1323:
<ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-DOH1323%20TMAC/>

New Water Licence No: Application 2AM-BOS----:
<ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-BOS----%20TMAC/>

Available from the Board's public registry using the following links:



Hearing Record
(including Hearing
Transcript):

Amendment No. 2 to Water Licence No: 2AMDOH1323:

<ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-OH1323%20TMAC/2%20ADMIN/4%20HEARINGS/2%20HEARING/>

New Water Licence No: Application 2AM-BOS----:

<ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-BOS----%20TMAC/2%20ADMIN/4%20HEARINGS/2%20HEARING/>



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ABBREVIATIONS

Short Form	Long Form
ARD	Acid Rock Drainage
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada (formerly INAC)
CRP	Closure and Reclamation Plan
CWTP	Contact Water Treatment Plant
DFO	Fisheries and Oceans Canada
ECCC	Environment and Climate Change Canada
IIBA	Inuit Impact and Benefit Agreement
INAC	Indigenous and Northern Affairs Canada (now CIRNAC)
KIA	Kitikmeot Inuit Association
km	Kilometre
m ³ /day	Cubic metres per day
MDMER	<i>Metal and Diamond Mining Effluent Regulations</i>
Mt	Million tonnes
NIRB	Nunavut Impact Review Board
NPC	Nunavut Planning Commission
<i>Nunavut Agreement</i>	<i>The Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada.</i>
<i>NuPPAA</i>	<i>Nunavut Planning and Project Assessment Act</i>
NWB	Nunavut Water Board
<i>NWNSRTA</i>	<i>Nunavut Waters and Nunavut Surface Rights Tribunal Act</i>
NWT	Northwest Territories
PHC	Pre-Hearing Conference
PH	Public Hearing
STP	Sewage Treatment Plant
TM	Technical Meeting
TMA	Tailings Management Area (Boston)
TMAC	TMAC Resources Inc.
TIA	Tailings Impoundment Area (Doris)
TSS	Total Suspended Solids
WRSA	Waste Rock Storage Area



REASONS FOR DECISION

Executive Summary

This decision is in relation to two applications before the Nunavut Water Board (NWB or Board), filed by TMAC Resources Inc. (the Applicant, the Proponent or TMAC) on December 20, 2017. The applications seek authorization for the uses of Water and deposits of Waste associated with gold Mining Undertakings¹ located along the Hope Bay greenstone Belt, as described in TMAC's Phase 2 Hope Bay Belt Project Proposal (Phase 2 Project; the Applications). The Phase 2 Project was assessed by the Nunavut Impact Review Board² and on October 12, 2018 was approved to proceed to licensing by the relevant Ministers, namely the Minister of Crown-Indigenous Relations and the Minister of Intergovernmental Affairs, Northern Affairs and Internal Trade. The Applications request:

- the issuance of a new Type "A" Water Licence for the uses of Water and deposit of Waste associated with gold mining activities at the site of the Boston deposit (Water Licence No: 2AM-BOS1835); and
- consequential amendments to the terms and conditions of the existing Type "A" Water Licence No: 2AM-DOH1323 (Amendment No. 2) required to reflect changes to the previously-licensed uses of Water and deposits of Waste at the existing Doris North mine site to allow for additional gold mining at the nearby Madrid North and Madrid South deposits (amended and renumbered Water Licence No: 2AM-DOH1335).

The Phase 2 Project is located approximately 125 kilometres (km) southwest of Cambridge Bay, and 75 km northeast of Omingmaktok (Bay Chimo), within the Kitikmeot Region of Nunavut. As these proposed Mining Undertakings were assessed together within the scope of the Phase 2 Project, the Applications were also considered together by the NWB in a single process that was coordinated with the Nunavut Impact Review Board's assessment of the Phase 2 Project. Consequently, the NWB's Reasons for Decision and Record of Proceedings with respect to both Applications and both Licences is included in this single decision report.

¹ As defined under Schedule 1, Item 2 of the *Nunavut Waters Regulations*, SOR/2013-69 to be an undertaking involving:

Exploration or prospecting — including bulk sampling — for minerals other than petroleum or gas, the operation of a mine, the processing of minerals other than petroleum or gas, the restoration of the site of a mine and any other mining activity other than an industrial activity described in item 1, column 2.

² Nunavut Impact Review Board, Final Hearing Report, Phase 2 Hope Bay Belt Project, TMAC Resources Inc., NIRB File No. 12MN001, June 26, 2018.



The NWB received the Applications on December 20, 2017. If the Applications are granted as requested, the Licences would authorize the use of a maximum of approximately 2.5 million cubic metres of freshwater annually from Doris Lake, Windy Lake and Aimaokatalok Lake and would allow for deposits of waste associated with the gold mining undertakings at the Madrid North, Madrid South and Boston deposits along the Hope Bay Belt. The Applicant had originally requested a 25-year term for both 2AM-BOS---- and Amendment No. 2 to 2AM-DOH1323 (2019-2044), but during the NWB's consideration of the Applications, TMAC revised their request to a term of 17 years (2018-2035). TMAC has indicated this term would allow for the expansion, construction, operation and reclamation of mining related facilities at the Doris North, Madrid North, Madrid South, and Boston sites. In addition, to better service the mines, TMAC has also proposed the construction of a marine cargo dock in Roberts Bay, and during the term of the Licences an All Weather Road of approximately 60 km in length would be constructed south from the existing Doris North site to access the Boston Mine site.

As the Phase 2 Project falls outside an area with an approved Land Use Plan in effect, as set out in the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, S.C. 2002, c. 10 (NWNSRTA), the Nunavut Planning Commission (the Commission) confirmed that the Commission did not need to conduct a land use conformity assessment for the Project.

As the Phase 2 Project was not exempt from screening by the Nunavut Impact Review Board (NIRB) under Article 12 of the *Nunavut Agreement*, the Kitikmeot Inuit Association referred the Phase 2 Project to the NIRB by for that Board's assessment of the potential ecosystemic and socio-economic effects of the Phase 2 Project. On June 26, 2018, following the NIRB's completion of the assessment, the NIRB recommended, and the relevant Ministers subsequently agreed (on October 12, 2018) that the Phase 2 Project should be allowed to proceed to the licensing stage. On November 13, 2018 the NIRB issued Project Certificate [No. 009] to TMAC to govern the mitigation and monitoring of potential effects for the Phase 2 Project throughout the project lifecycle.

As requested by TMAC, the NWB undertook various coordinated steps with the NIRB during the NIRB's assessment process for the Phase 2 Project, including coordinating, where possible, technical commenting periods, and the conduct of the NWB's Technical Meeting for the file. The Technical Meeting was held in May 2018 in the week following the conclusion of the NIRB's Final Hearing for the Phase 2 Project. The NWB's in-person Public Hearing for the file was held on October 24 and 25, 2018 in Cambridge Bay, Nunavut.



Although slight travel delays resulted in the Public Hearing commencing in the afternoon of October 24 rather than the morning of October 24, the Board was still able to host the Community Session as planned on the evening of October 24, 2018 and was able to conclude the Public Hearing on October 25, 2018.

In response to a request from TMAC, and with the consent of all parties, the NWB kept the Public Hearing Record for the file open for a few hours following the conclusion of the in-person session of the Public Hearing on October 25, 2018. The delay allowed TMAC to file updated drafts of the Water Licence Frameworks proposed by TMAC for Amendment No. 2 to Water Licence No: 2AM-DOH 1323 and new Water Licence No: 2AM-BOS----. Upon receipt of both documents in electronic form (Exhibits 41 and 42 respectively), the Public Hearing Record for the file closed, and the matter was remitted to the NWB's duly appointed Panel (P7) for decision-making.

Based on:

- the information provided with the Application by TMAC Resources Inc.;
- technical review of the Applications by the Board, interveners and the public;
- commitments and responses to information requests from all parties during the technical review of the Applications;
- comment submissions received throughout the Board's consideration of the Applications;
- the final written submissions filed with the Board in advance of the Public Hearing; and
- the information provided during the in-person Public Hearing and Community Session, the P7 Panel was able to reach their decision in respect of the Applications as expressed in the text that follows.

By way of Motions #2018-16-P7-05 and #2018-16-P7-06, passed on November 29, 2018, Panel P7 decided the following:

- To grant TMAC's request for a new Water Licence No: 2AM-BOS1835 and consequential amendments (Amendment No. 2) to existing Water Licence No: 2AM-DOH1323 in accordance with the terms and conditions outlined in this Decision and in the attached Licences No: 2AM-BOS1835 and the amended and renumbered Water Licence No: 2AM-DOH1335 (the Licences);
- Recognizing that the amendments to the existing Water Licence No: 2AM-DOH1323 were substantive and throughout the existing Licence, and noting the



advantages of both Licences associated with the Phase 2 Project containing consistent and up to date wording, the NWB has issued the substantially revised Licence No: 2AM-DOH1335 in the form of a new licence;

- Specific terms and conditions of note in the Licences include the following:
 - the term of both Licences will be 17 years from 2018, with both Licences set to expire on March 30, 2035;
 - upon issuance of the Licences several belt-wide and site-specific management plans reviewed by the NWB and parties during the Board's consideration of the Licences would be approved (such as emergency and spill response plans, water, groundwater and tailings management plans and waste rock, ore and mine backfill management plans);
 - Part C of both Licences sets out how the reclamation security for the Undertakings will be provided in phases to reflect the increase in reclamation liability that would occur over time as key project infrastructure associated with the undertakings is constructed. The specific definitions for each phase of infrastructure development linked to the security requirements in Part C are included in Schedule A of the Licences and reflects the agreement of TMAC, the Kitikmeot Inuit Association (KIA) and Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC);
 - Part C also reflects that the global amount of security that is required to be posted for each phase under each Licence is further divided to reflect a split between the amount required to be held under the Licence by CIRNAC and the amount expected to be held by the KIA under lease instruments associated with the Phase 2 Project;
 - In total, when all planned infrastructure under the amended Licence No: 2AM-DOH1335 has been constructed at the Doris North, Madrid North and Madrid South sites, Part C prescribes that the global (posted under all instruments) reclamation security posted will be just over \$62 million, and of that amount the reclamation security required to be posted under the Licence would approximately \$10.4 million;
 - In total, when all planned infrastructure under the Licence No: 2AM-BOS1835 has been constructed at the Boston site, Part C prescribes that the global (posted under all instruments) reclamation security posted will be approximately \$37.4 million, and of that amount the reclamation security required to be posted under the Licence would be approximately \$27.5 million;



- In addition, the reclamation security required to be held under Part C of the Licences may be reviewed by the Board (in the form of an amendment) if:
 - the Board is in receipt of an application requesting the review of security from TMAC, CIRNAC, or the KIA; and
 - upon any other type of material change to the Project that may have a material effect on the amount of security that should be held under the Licences.
- Part D of the Licences prescribe surface runoff and seepage quality limits for construction related effluent that must not be exceeded;
- Part E of the Licences set out the volume of water TMAC is authorized to use and specifies that the Licences authorize Water use of up to:
 - Approximately 2 million cubic metres on an annual basis for amended and renumbered Water Licence No: 2AM-DOH1335; and
 - Approximately 500,000 cubic metres on an annual basis for Water Licence No: 2AM-BOS1835;
- Part F of the Licences prescribe various effluent quality limits before discharges from tailings impoundment, landfills, waste rock storage and other water and waste management structures can take place; and
- The specific monitoring requirements for the Undertakings are set out in Part I and Schedule I in each Licence. These include the regulatory monitoring requirements with respect to discharges directly to the receiving environment as well as general aquatics effects monitoring and verification monitoring requirements.
- In Part J of the Licences, the Board has built in a periodic (every 5 years) “check in” by requiring TMAC to submit for approval in writing, every 5 years following approval of the Licences, updated conceptual or interim reclamation and closure plans and an updated reclamation cost estimate. These periodic updates are designed to ensure that TMAC’s reclamation and closure plans and security estimates filed with the NWB are updated to accurately reflect the circumstances at the sites and significant changes to market conditions that could affect closure costs.



SECTION I

FILE BACKGROUND AND REGULATORY HISTORY

The Phase 2 Hope Bay Belt Project

The Phase 2 Hope Bay Belt Project (Phase 2 Project), which includes the Doris-Madrid Project and Boston Project, is located primarily on Inuit Owned Land, approximately 125 km SW of Cambridge Bay, and 75 km northeast of Omingmaktok (Bay Chimo). It is an approximately 20 km x 80 km property extending south from Roberts Bay in the West Kitikmeot Region of Nunavut, Canada. The property contains three significant gold deposit areas: from north to south, the Doris, Madrid (comprised of the Madrid North and Madrid South locations), and Boston sites. The northern most Doris deposit was originally developed and approved under the NIRB's Project Certificate No. 003 which was issued for the Doris North Project in 2006 (this Project was considered to be "Phase 1" of the Hope Bay Belt Project). Following the development of site infrastructure, commercial gold production at the Doris North site began in 2017 and is expected to end in 2021.

The Applications before the Board involve the next stage in the development of the Hope Bay Belt Project, the Phase 2 Project, which was approved to proceed to licensing by the NIRB and relevant Ministers and is governed by NIRB Project Certificate No. 009, which was issued by the NIRB on November 9, 2018. The Phase 2 Project entails commercial gold mining operations at Madrid North (from 2019 to 2031) and Madrid South (from 2029 to 2032) sites and the development of a stand-alone mine with its own ore processing plant and tailings management facility at the Boston site (from 2022 to 2029). The mining at Madrid North and South would primarily use the existing ore processing and milling infrastructure located at the Doris North site while the Boston site would primarily use ore processing and infrastructure developed at the Boston site.

The Applications³ before the Board are in relation to water uses and waste deposits associated with TMAC's Phase 2 Project, a Mining Undertaking⁴ involving the development of three underground gold deposits: the Madrid North, Madrid South and Boston deposits. To support these mining activities, construction of the Roberts Bay Marine Loading Dock and 51 km All Weather Road from Madrid South to the Boston site will also occur.

The Phase 2 Project will undergo phased development making use of much of the infrastructure already in place under the existing licence for the Doris North site, Licence No: 2AM-DOH1323, as well as constructing additional necessary infrastructure at the

³ Unless otherwise referenced, this description of the Phase 2 Hope Bay Belt Project is paraphrased from the Applications and supporting materials filed with the NWB by TMAC Resources Inc.

⁴ As defined under Schedule 1, Item 2 of the *Nunavut Waters Regulations*, SOR/2013-69.



Madrid and Boston sites. As noted above, at the Madrid North and Madrid South sites, commercial mining will occur from 2019 to 2031 and 2029 to 2032, respectively. An ore concentrator will be constructed at Madrid North to process ore from the Madrid North and Madrid South mine sites, with the ore concentrate being transported to Doris North processing plant for final processing and gold extraction and the resulting tailings being transported to the Doris North Tailings Impoundment Area (TIA). TMAC proposes that additional infrastructure already approved under the existing Type “A” Water Licence No: 2AM-DOH1323 would be expanded and used in support of the Phase 2 Project, including the expansion of the existing camp, roads and laydown areas.

At the Boston site, construction would begin in 2019, followed by commercial mining commencing in 2022 and ending in 2029. The Boston site will function as a stand-alone mine with all associated operational facilities such as a camp, processing plant, and dry-stack Tailings Management Area (TMA). Initially, ore mined at the Boston site will be transported to the existing Doris North Processing Plant for gold extraction. Starting in 2023, ore mined at Boston will be processed on site. Tailings will be dewatered and stacked at a dry-stack tailings management facility, and the water produced during this process will be treated and discharged to Aimoakatalok Lake.

Development of the Phase 2 Project is expected to produce an estimated 12.5 Million tonnes (Mt) of ore and 646,000 tonnes of waste rock from Madrid North, 1 Mt of ore and 826,000 tonnes of waste rock from Madrid South, and 5.1 Mt of ore and 628,000 tonnes of waste rock from Boston. To accommodate tailings produced from the milling process at Madrid North and Madrid South, the existing Tailings Impoundment Area (TIA) at Doris North would be expanded from the amount currently licensed under Licence No: 2AM-DOH1323, 2.5 Mt, to an estimated 18 Mt. At Boston, the dry-stack TMA capacity required is 5.1 Mt. The final mine product, doré gold bars, would also be flown to market directly from the Doris North and Boston Mine sites.

Current Applications

On December 20, 2017, TMAC submitted the Applications and supporting documentation for a new Type “A” Water Licence and an Amendment to Type “A” Water Licence No: 2AM-DOH1323 (the Applications) associated with the Phase 2 Hope Bay Belt Project.

The following is a list of the key documents associated with the Applications filed by TMAC with the Board on December 20, 2017:

- Package 1 – Project Executive Summary



- Package 2 – Project Description
- Package 3 – NWB Application Documents
- Package 4 – Management Plans
 - Hope Bay Project Spill Contingency Plan
 - Hope Bay Project Domestic Wastewater Treatment Management Plan
 - Hope Bay Project: Boston Sewage Treatment Operations and Maintenance Management Plan
 - Hope Bay Project Groundwater Management Plan
 - Hope Bay Project Doris-Madrid Water Management Plan
 - Hope Bay Project Boston Water Management Plan
 - Hope Bay Project, Phase 2, Doris Tailings Impoundment Area - Operations, Maintenance, and Surveillance Manual
 - Hope Bay Project Boston Tailings Management Area - Operations, Maintenance, and Surveillance Manual
 - Hope Bay Project Waste Rock, Ore and Mine Backfill Management Plan
 - Hope Bay Project Water and Ore/Waste Rock Management Plan for Boston Site
 - Hope Bay Project Non-hazardous Waste Management Plan
 - Hope Bay Project Hydrocarbon Contaminated Material Management Plan
 - Hope Bay Project Hazardous Waste Management Plan
 - Hope Bay Project Incinerator Management Plan
 - Hope Bay Project Quarry Management and Monitoring Plan
 - Hope Bay Project Aquatic Effects Monitoring Plan
 - Hope Bay Project Boston Conceptual Closure and Reclamation Plan
 - Hope Bay Project Boston Conceptual Closure and Reclamation Plan, Detailed Cost Estimate
 - Hope Bay Project Doris-Madrid Interim Closure and Reclamation Plan
 - Hope Bay Project Doris-Madrid Interim Closure and Reclamation Plan, Detailed Cost Estimate
 - Hope Bay Project Explosives Management Plan
 - Quality Assurance and Quality Control Plan
- Package 5 – Reports and Designs of all major infrastructure
- Package 6 – Financial Statements and List of Officers



In addition, on February 21, 2018, TMAC filed additional information with the Board in response to Information Requests from the Kitikmeot Inuit Association and Environment and Climate Change Canada. On April 4, 6, and 27, 2018 in advance of the NWB's Technical Meeting (TM) for the file, TMAC provided additional responses to parties' technical review comments.

As a result of commitments made at the TM, on June 19, 2018, TMAC filed additional technical information in support of the Applications, and on July 23, 2018, in advance of the Pre-Hearing Conference (PHC) TMAC provided its responses to additional technical review comments received following the TM.

As indicated at the PHC, on September 5, 2018, TMAC filed two draft Water Licence Framework documents for review and comment from all parties.

On October 1 and 5, 2018 TMAC provided information packages in response to the final written submissions of the Interveners.

Shortly after the close of the Public Hearing on October 25, 2018 TMAC filed updated drafts of the Water Licence Framework documents⁵ to reflect the discussions and agreement of the parties reached at the Public Hearing.

For a complete list of all information provided by TMAC in support of the Applications, see [APPENDIX D – List of Submissions and Correspondence](#). The Application materials filed by TMAC are available from the Nunavut Water Board's public registry at the following links:

Amendment No. 2 to Water Licence No: 2AM-DOH1323:
<ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-DOH1323%20TMAC/>

New Water Licence No: Application 2AM-BOS----:
<ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-BOS----%20TMAC/>

Scope of the Applications

⁵ TMAC, NWB Public Hearing, Exhibit 41, File No. 2AM-BOS---- and Amendment No. 2 to Type "A" Water Licence No: 2AM-DOH1323, Electronic Copy "updated Draft Water Licence Framework Doris-Madrid" update of version filed on September 5, 2018 (English), and Exhibit 42, File No. 2AM-BOS---- and No. 2 to Type "A" Water Licence No: 2AM-DOH1323, Electronic Copy "updated Draft Water Licence Framework Boston site" update of version filed on September 5, 2018 (English).



The Applications requested that the new Type “A” Water Licence 2AM-BOS---- and Amendment No. 2 to existing Type “A” Water Licence No: 2AM-DOH1323 include the following scope:

The following proposed activities, which will be common to all sites:

- underground mining and surface crown pillar recovery at the Madrid North, Madrid South and Boston sites;
- construction and operation of maintenance facilities, explosives storage facilities, laydown areas, roads, helipads and quarries;
- storage of ore and waste rock on dedicated pads; and
- construction of runoff water management facilities (including Contact Water Ponds).

Proposed changes to the previously-approved activities at the Doris North Site to include the following:

- expansion of accommodations to 400-person capacity;
- increasing the capacity for sub-aerial tailings deposition from 2.5 Million tonnes (Mt) to 18 Mt at the existing Tailings Impoundment Area;
- increases to the volume of water used for domestic and industrial purposes from Windy Lake and Doris Lake, respectively;
- construction of a Windy Lake North freshwater intake;
- construction of two (2) wind turbines;
- upgrading the existing all-weather road between Doris North and Madrid North sites; and
- use of other existing facilities at the Doris North site, including the 7.5 million litre (ML) fuel storage facility; waste rock and ore storage facilities, solid waste management facilities, water management infrastructure (including contact water ponds and water treatment facilities), site roads, airstrip, and explosives storage facilities.

The following proposed activities at the Madrid North and Madrid South sites:

- construction of a 1,200 tonne-per-day (tpd) ore concentrator;
- construction of two (2) wind turbines;
- hauling of concentrate and excess ore to the existing processing plant at Doris North for gold extraction;
- construction of a tailings pipeline from Madrid North to the Doris North Tailings Impoundment Area;
- trucking of domestic waste to existing waste management facilities at the Doris North site;



- construction of a bulk fuel storage facility (4.5 ML capacity);
- water use for domestic and industrial purposes from Windy Lake and Doris Lake, respectively;
- installation of three (3) power plants at Madrid North and two (2) power plants at Madrid South; and
- construction of a 4.7 km all-weather road to the Madrid South site.

The following proposed activities at the Boston site are included within the scope requested in the Applications:

- construction of a new 300 person-capacity accommodation and associated support facilities;
- construction of a 2,400 tpd processing plant at the Boston site;
- hauling of some ore and concentrate to the existing processing plant at Doris North;
- construction and operation of a dry-stack Tailings Management Area (storage capacity of 5.1 Million tonnes (Mt));
- construction of two (2) wind turbines;
- construction and operation of a power plant and a 7.5 ML fuel tank farm;
- construction and operation of a two (2) km all-weather airstrip;
- water use for domestic and industrial purposes from Aimaokatalok Lake;
- establishment and operation of an industrial wastewater treatment plant with discharge to Aimaokatalok Lake;
- construction and operation of solid waste management facilities;
- installation and operation of eight (8) power plants and a standby plant.

Licensing History

Licence No: 2AM-DOH1323: This Licence was the renewal and amendment of the original Type “A” Water Licence No: 2AM-DOH0713, issued on September 19, 2007 to Miramar Hope Bay Ltd. to authorize the use of water and deposit of waste associated with the gold Mining Undertaking at the Doris North site. Miramar Hope Bay Ltd. subsequently became Miramar Northern Mining Limited and the Licence was assigned to the new entity on February 20, 2001. On January 23, 2008, the NWB authorized the assignment of Water Licence No: 2AM-DOH0713 from Miramar Northern Mining Limited to Hope Bay Mining Limited. On June 14, 2013, pursuant to s. 44 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*,⁶ the NWB authorized the assignment of Water Licence 2AM-DOH0713 from Hope Bay Mining Limited to TMAC Resources Inc. (TMAC), the current Licensee.

⁶ S.C. 2002, c. 10 (NWNSRTA).



On August 16, 2013, the NWB issued the renewed and amended Licence No: 2AM-DOH1323. The renewed Licence authorized TMAC's continued use of water and deposit of wastes in support of the gold Mining Undertaking associated with the Doris North Project.

In November 4, 2016 Licence No: 2AM-DOH1323 was amended to reflect changes to the scope of the original Project as assessed by the NIRB in 2006, including the following key changes:

- an extension to the mine life from 2 years to 6 years;
- access to, and mining of two additional mineralized zones from the existing Doris North portal;
- an increase to the mining and milling rates at the facility (from 720 tonnes per day to 2,000 tonnes per day);
- a change to the way tailings would be managed (a change from subaqueous/under water deposit to subaerial/above water deposit) and associated changes to the Tailings Impoundment Area (TIA); and
- the discharge of up to 7,000 cubic metres per day into the marine environment via a pipeline extending into Roberts Bay; this discharge consisting of the discharge of up to 3,000 m³/day of saline groundwater from the mine year round and the discharge of up to 4,000 m³/day of effluent from the TIA during the summer months.

TMAC's application to further amend the Licence No: 2AM-DOH1323 to reflect mining at the Madrid North and South sites as proposed under the Phase 2 Hope Bay Belt Project constitutes an application for Amendment No. 2 to this Type "A" Water Licence.

Licence No: 2BB-MAE1727: This Licence was issued to TMAC on May 23, 2017 and expires on May 22, 2027. The Licence authorizes the use of up to 108,000 m³ of water on an annual basis at a maximum rate of up to 295 m³/day, and the deposit of waste associated with Advanced Exploration activities at the Madrid Site, including bulk sampling.

Licence No: 2BB-BOS1727: This Licence is the most recent renewal of numerous previous water licences dating back to the original Water Licence N7L2-1652 issued to BHP Minerals Canada Ltd. by the NWT Water Board (the NWB's predecessor Board) on August 1, 1995. The Licence authorizes the water uses and waste deposits associated with Advanced Exploration activities at the Boston Site, including bulk sampling. The Licence was issued to TMAC on August 1, 2017 and expires on July 31, 2027 and authorizes water use of up to 100 m³/day.



Licence No: 2BE-HOP1222: This Licence is the most recent renewal of numerous previous water licences issued by the NWB to authorize the use of water and deposit of waste associated with various Exploration activities along the Hope Bay Belt, dating back to the first Water Licence issued for these activities by the NWB in 1998, Water Licence NWB2WIN. Licence No: 2BE-HOP1222 was issued to Hope Bay Mining Ltd. on June 30, 2012 and expires on June 30, 2022. The Licence authorizes the use of up to 343 m³ of water per day in support of Exploration activities along the Hope Bay Belt. On June 14, 2013, pursuant to s. 44 of the *NWNSRTA* the NWB assigned the Licence to TMAC Resources Inc.

As discussed more fully in [Part A: Scope, Definitions and Enforcement](#) of these Reasons for Decision, throughout the Board's consideration of the Applications TMAC has indicated that even if the Applications are granted, TMAC would not seek to cancel the Exploration licence noted above, and would prefer to continue to hold Type "B" Licences listed above in support of continued Exploration activities in the area.

Procedural History of the Applications

The following listing summarizes some of the key steps in the procedural history of the NWB's processing of the Applications. For a review of all process and procedure associated with the NWB's consideration of the Applications, interested parties should consult [APPENDIX D – List of Submissions and Correspondence](#).

December 20, 2017

- The Nunavut Water Board (NWB or Board) received two Type "A" Water Licence applications and supporting documentation (the Applications) from TMAC Resources Inc. (the Applicant or TMAC) for the proposed Phase 2 Hope Bay Belt Project. One application was for amendments to Type "A" Water Licence No: 2AM-DOH1323 and the other application requested a new Water Licence 2AM-BOS---- covering commercial mining activities at the Boston site.

January 17, 2018

- The NWB issued joint correspondence with the NIRB, requesting that interested parties conduct a completeness review and provide information requests by January 31, 2018, for the Applications. The NIRB provided notice of the start of their technical review of the Final Environmental Impact Statement (FEIS) for the Phase 2 Hope Bay Belt Project.

January 25, 2018



- At the request of the KIA, the NWB granted a one-week extension for the submission of information requests in relation to the Applications, from January 31, 2018 to February 7, 2018.

January 26, 2018

- At the request of DFO, CIRNAC, and ECCC, the NWB extended the deadline for comments on the completeness of the Applications for the second time, moving the deadline to February 14, 2018.

February 9, 2018

- DFO responded to the completeness review indicating they were satisfied that the information provided in the Applications was sufficient to begin their technical review, and that they had no information requests.

February 13, 2018

- The KIA responded to the completeness review with 54 information requests for the Applicant.

February 14, 2018

- CIRNAC responded to the completeness review indicating they were satisfied that the information provided in the Applications was sufficient to begin their technical review, and that they had no information requests.
- ECCC responded to the completeness review with 15 information requests.

February 21, 2018

- TMAC responded to the information requests by the KIA and ECCC.

February 23, 2018

- The NWB deemed the Applications to be complete and issued “Notices of Application” for the Type “A” Applications and indicated the commencement of the technical review period ending on March 23, 2018.

February 26, 2018 and March 1, 2018

- ECCC and KIA, respectively, confirmed that they were satisfied with TMAC’s response to their information requests.

March 20, 2018



- CIRNAC requested an extension for submitting their technical review comments about the Applications, from March 23, 2018 to March 28, 2018.

March 23, 2018

- The NWB received technical review comments from the KIA and ECCC, and requested that the Applicant provide relevant responses.

March 28, 2018 and March 29, 2018

- The NWB received technical review comments from DFO and CIRNAC, respectively, and requested that the Applicant provide relevant responses.

April 4, 2018

- The NWB received and distributed the Applicant's responses to technical review comments received from the KIA, CIRNAC, DFO, and ECCC.

April 6, 2018

- The NWB received and distributed TMAC's Response to technical comment ID #CIRNAC-TC-8.

April 13, 2018

- The NWB distributed correspondence confirming that, as part of the coordinated processing of the Applications, the NWB's Technical Meeting for the file would be held in person on May 14 and 15, 2018 in Cambridge Bay (the week following the NIRB's Final Hearing for the file).

April 26, 2018

- The NWB provided correspondence with a Draft Agenda for the Technical Meeting.

April 27, 2018

- TMAC provided a response to CIRNAC Recommendation #21, received on March 29, 2018, regarding the Boston and Doris-Madrid Closure and Reclamation Costs Estimate with its Cost Estimate sheets.
- TMAC provided (via ERM) a draft of the Hope Bay Project Aquatic Effects Monitoring Plan in response to NIRB and NWB requests.

May 3, 2018 and May 7, 2018



- The NWB received confirmation of participation at the upcoming NWB Technical Meeting (TM), and presentation documents from the Applicant, ECCC, CIRNAC and KIA, DFO, respectively.

May 8, 2018

- The NWB provided the final Agenda for the Technical Meeting.

May 14-15, 2018

- The NWB hosted the Technical Meeting and Community Session in Cambridge Bay.

May 29, 2018

- The NWB provided correspondence to the Applicant and interested parties, summarizing the List of Issues discussed and List of Commitments made by the Applicant and interested parties during the Technical Meeting.

June 1, 2018

- Natural Resources Canada (NRCan) provided the NWB with technical comments in the form of their Final Written Submission (which had originally been submitted to the Nunavut Impact Review Board (NIRB) as part of the environmental assessment).
- CIRNAC completed their commitment made during the Technical Meeting, and confirmed that CIRNAC was satisfied at this stage with TMAC's response to their technical comment #14.

June 19, 2018

- TMAC provided their Responses to the Technical Meeting Issues and Commitments.
- The NWB distributed TMAC's Responses to the Technical Meeting Issues and Commitments.

July 3, 2018

- The NWB issued a notice of the Pre-Hearing Conference (PHC) to be held by teleconference on July 31, 2018, attaching a draft Agenda, and provided clarification on the next steps.

July 16-18, 2018



- The NWB received additional technical review comments, comments on the draft Agenda and confirmation of participation in the PHC from Interveners including KIA, CIRNAC, ECCC, and DFO.
- CIRNAC completed their commitment #17 from the technical meeting, providing comments on the cost estimate.

July 25, 2018

- TMAC provided its responses to additional technical review comments, comments on the draft Agenda, and confirmation of its participation in the PHC.
- Nunavut Tunngavik Inc. (NTI) provided correspondence to the NWB indicating that a representative from NTI will be participating in the Pre-Hearing Conference.

July 27, 2018

- The NWB circulated the final Agenda for the PHC to all parties.

July 31, 2018

- The NWB conducted the PHC via teleconference.

August 13, 2018

- The NWB issued Notice of this Public Hearing. The NWB's in-person Public Hearing in Cambridge Bay was scheduled tentatively for the week of October 22, 2018.

August 22, 2018

- The NWB released the Pre-Hearing Conference Decision Report.

By September 28, 2018

- The NWB received final written submissions in advance of the Public Hearing from the KIA, DFO, ECCC, and CIRNAC.

October 1 and 5, 2018

- The NWB received TMAC's final written submission in advance of the Public Hearing.

October 15, 2018



- The NWB received copies of presentations to be relied on at the Public Hearing and Executive Summaries from the KIA, DFO, ECCC, CIRNAC, and TMAC.

October 16, 2018

- The NWB distributed a Reminder of the Public Hearing and Agendas for the Public Hearing and Community Session as set out in [APPENDIX A - Agendas for Public Hearing and Community Session](#).

October 24-25, 2018

- The NWB held the Public Hearing and Community Session in Cambridge Bay, Nunavut.

October 25, 2018

- When the updated electronic copies of Exhibits 41 and 42⁷ were received by the Board shortly after the close of the in person portion of the Public Hearing the NWB closed the Public Hearing Record for the Applications in the early evening and remitted the Applications to the NWB's duly appointed Panel for decision-making.

Regulatory History of the Applications

Pre-Licensing Requirements

Nunavut Planning Commission Conformity Determination

As the Phase 2 Hope Bay Belt Project (Phase 2 Project) falls outside an area with an approved Land Use Plan in effect, the Nunavut Planning Commission (the Commission) was not required to conduct a land use conformity assessment with respect to the Applications as set out in the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, S.C. 2002, c. 10 (NWNSRTA). It was confirmed in correspondence by the Commission on November 17, 2010 that a conformity assessment was not required.⁸

⁷ TMAC, NWB Public Hearing, Exhibit 41, File No. 2AM-BOS---- and Amendment No. 2 to Type "A" Water Licence No: 2AM-DOH1323, Electronic Copy "updated Draft Water Licence Framework Doris-Madrid" update of version filed on September 5, 2018 (English) and Exhibit 42, File No. 2AM-BOS---and No. 2 to Type "A" Water Licence No: 2AM-DOH1323, Electronic Copy "updated Draft Water Licence Framework Boston site" update of version filed on September 5, 2018 (English).

⁸ Email from B. Aglukark, Nunavut Planning Commission to P. Beaulieu, NWB, November 17, 2018.



Nunavut Impact Review Board Review

As the Phase 2 Project was not exempt from the assessment requirements under the *Nunavut Agreement*, on January 12, 2012 the Nunavut Impact Review Board (NIRB) received a referral to screen the Phase 2 Project from the Kitikmeot Inuit Association (KIA). The NIRB conducted the screening of the Phase 2 Project pursuant to the *Nunavut Agreement*, Article 12, Part 4, and recommended that the Phase 2 Project undergo a Review pursuant to the *Nunavut Agreement*, Article 12, Part 5 or 6. The relevant Federal Minister accepted the NIRB's recommendation that the Phase 2 Project undergo review by the NIRB under Article 12, Part 5 of the *Nunavut Agreement* on May 30, 2012. The NIRB's assessment of the Phase 2 Project did not proceed in 2012-2013 as the owner of the Project at that time, Hope Bay Mining Ltd., had placed the existing Doris North Project in care and maintenance and did not advance the Phase 2 Project.

In 2013, the ownership of the existing Doris North Project and associated assets, including the mineral deposits and infrastructure included within the scope of the proposed Phase 2 Project, was transferred from Hope Bay Mining Ltd. to TMAC Resources Inc. (TMAC). TMAC advanced the existing Doris North Project and re-engaged with the NIRB to advance the NIRB Review of the Phase 2 Project. On December 28, 2016 the NIRB received a *Draft* Environmental Impact Statement (DEIS) for the Phase 2 Project from TMAC (including a *Draft* Water Licence amendment application for the existing Water Licence No: 2AM-DOH1323), and following technical review of the DEIS, on December 21, 2017 the NIRB received TMAC's Final Environmental Impact Statement (FEIS) for the Phase 2 Project. From May 8 to May 12, 2018 the NIRB hosted the NIRB's Final Hearing in respect of the review of the Phase 2 Project in the community of Cambridge Bay, Nunavut, and the NIRB's Review concluded with the issuance of the NIRB's Final Hearing Report on June 26, 2018.⁹ The Final Hearing Report recommended that the Phase 2 Project be allowed to proceed to the regulatory/permitting stage subject to specific terms and conditions.

On October 12, 2018 the NIRB received correspondence from the Minister of Crown-Indigenous Relations and the Minister of Intergovernmental Affairs, Northern Affairs and Internal Trade approving the NIRB Final Hearing Report and recommendation that the Phase 2 Project be approved to proceed to the licensing stage. On November 9, 2018 the NIRB issued Project Certificate No. 009 applicable to the mitigation, monitoring and reporting of

⁹ Nunavut Impact Review Board, Final Hearing Report, Phase 2 Hope Bay Belt Project, TMAC Resources Inc., NIRB File No. 12MN001, June 26, 2018.



the potential impacts of the Phase 2 Project bringing the NIRB's project assessment function to a close under the *Nunavut Agreement*.

NIRB/NWB Co-ordinated Processing of the Phase 2 Project and the Applications

On February 16, 2017 TMAC submitted correspondence to the NIRB and the NWB requesting NIRB/NWB coordination of the technical review of the draft EIS and draft Water Licence. On March 24, 2017, the NIRB and the NWB jointly released direction regarding the project-specific coordinated process for the impact assessment and water licensing processes for the Project.

The NWB reviewed the *Draft* Water Licence Application (the *draft* Application) accompanying the DEIS (submitted in December 2016) and determined that the *draft* Application was deficient. The NWB's review of the *draft* Application and technical comments provided by interested parties identified that major deficiencies remained in terms of the level of information required to complete and support the technical review of the *draft* Application. The NWB noted that the deficiencies were substantive and required TMAC to address the deficiencies through a resubmission of the Water Licence Application(s) as a "stand-alone" appendix to the Final Environmental Impact Statement (FEIS) in order for the water licensing process to proceed in coordination with the NIRB's review of the Phase 2 Project.

Following the 2017 Pre-Hearing Conference (PHC) hosted by the NIRB and with participation by the NWB, the NWB determined that, having considered the information received, the circumstances of the Phase 2 Project, and the regulatory approach the NWB had taken in respect of a similar application by Agnico Eagle Mines Limited for a water licence to authorize the water uses and waste deposit activities associated with the Whale Tail Pit Project Proposal (NIRB File No. 16MN056), TMAC should provide two (2) water licence applications.

On December 20, 2017, TMAC, following the NWB's guidance, provided two applications:

- an application to amend the current scope of the existing Doris North Type "A" Water Licence No: 2AM-DOH1323 to include the additional water use and waste disposal activities at the Doris site associated with the Madrid North and Madrid South components of the Project and the processing at the Doris site of the additional volumes of ore originating from the Madrid North, Madrid South, and Boston components of the Project; and



- an application for a new and separate Type “A” Water Licence, 2AM-BOS---- to govern the water use and waste deposit activities associated with the construction, operation and reclamation of the mining undertaking at the Boston site.

The NIRB/NWB coordinated process followed by the Boards after TMAC’s submission of the FEIS and the two Water Licence Applications on December 20, 2017 was included in the NIRB’s Pre-Hearing Conference Decision for the Project.¹⁰ Updates to the coordinated review process were communicated to TMAC and interveners by the NIRB and NWB throughout the Review of the Phase 2 Project, including after TMAC’s submission of the FEIS and the Water Licence Applications. The NWB’s coordinated processing of the Applications with the NIRB included the following:

- The NWB’s participation in the NIRB’s Technical Meeting;
- Attachment of the NWB’s conformity assessment of the draft water licence application to the NIRB’s Pre-Hearing Conference Decision;
- The NWB providing direction in the NIRB’s Pre-Hearing Conference Decision that two applications (for amendments to the existing Type “A” Water Licence No. 2AM-DOH1323 and a new Type “A” Water Licence for the Boston site) be provided;
- The issuance of joint correspondence with the NIRB and NWB and co-ordination, to the extent possible of comment and response periods; and
- the NWB’s commitment to holding the Technical Meeting in relation to the Applications immediately following NIRB’s Final Hearing associated with the NIRB’s Review of the Phase 2 Hope Bay Belt Project.

NWB’s Continued Processing of the Applications Following the NIRB’s Final Hearing

Reflecting the NWB’s commitment to processing the Applications in coordination with the NIRB Review of the Phase 2 Project, on May 14 and 15, 2018, immediately following the conclusion of the NIRB’s Final Hearing associated with the Review of the Phase 2 Proposal, the NWB held a Technical Meeting (TM) for the Applications in person in the nearest community, Cambridge Bay, Nunavut. The purpose of the NWB’s TM was to discuss technical review comments about the Applications as identified by the NWB’s review of the Applications and as provided to the NWB by the Intervenors. With a community session scheduled for the evening of May 14, the NWB also conducted the TM to solicit questions and comments from members of the public in relation to TMAC’s Applications. As indicated in Appendix D attached to the NWB’s Technical Meeting/Pre-Hearing Conference

¹⁰ NIRB Pre-hearing Conference Decision for the Phase 2 Hope Bay Belt Project, NIRB File No. 12MN001, July 21, 2017.



Decision,¹¹ during the TM, TMAC made several commitments to provide additional information in respect of the Applications prior to the Applications proceeding to the NWB's Public Hearing.

Following the NWB's receipt of the NIRB's Final Hearing Report that recommended that the Phase 2 Project could proceed to the licensing stage, but while the NWB awaited the relevant Ministers' consideration of the NIRB's Final Hearing Report and recommendations, the NWB held the NWB's Pre-Hearing Conference for the Applications via teleconference on July 31, 2018.

As discussed at the Pre-Hearing Conference and summarized in the PHC Decision,¹² notice of the in-person Public Hearing for the Applications was published on August 17, 2018. As permitted by Article 13, Section 13.3.6 of *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and s. 29 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, S.C. 2002, c. 10 (NWNSRTA) the NWB appointed a three-member panel of the Board, (the Panel or Panel P7), to discharge the NWB's decision-making responsibilities for the Applications, including responsibilities for the conduct of the Public Hearing.

The Panel decided to hold an in-person Public Hearing in respect of the Applications, finding that in these circumstances conducting the Public Hearing in person in the community of Cambridge Bay was required to meet the Board's obligation to give due regard and weight to Inuit culture, customs and knowledge, pursuant to Article 13, Clause 13.3.13(b) of the *Nunavut Agreement* and s. 33 of the NWNSRTA. Unfortunately, due to travel delays, the start of the Public Hearing on October 24 was delayed from the morning to the afternoon. Despite this delayed start, the NWB was nonetheless able to proceed with the Community Session on the evening of October 24, 2018 as originally advertised in the Notice of Public Hearing and in advertising within the community of Cambridge Bay.

On the final day of the Public Hearing, October 25, 2018, the Board received a request from TMAC to keep the Public Hearing Record open for a few hours after the in person part of the Public Hearing concluded, in order to allow TMAC to file updated electronic versions of the two Water Licence Framework documents originally filed by TMAC on September 5, 2018. All parties present were polled regarding this slight delay in closing the Public Hearing Record, and all agreed that allowing TMAC to file properly revised versions of these

¹¹ NWB, 2AM-DOH1323 & 2AM-BOS---- Applications for a new Type "A" Water Licence and Type "A" Water Licence Amendment PHC Decision, August 22, 2018.

¹² NWB, 2AM-DOH1323 & 2AM-BOS---- Applications for a new Type "A" Water Licence and Type "A" Water Licence Amendment PHC Decision, August 22, 2018 at p. 33.



materials was appropriate. In response, the Panel directed that the Public Hearing Record for the Applications should remain open for a few hours to allow for the filing of the updated documents.¹³ Upon receipt of both documents in the early evening of October 25, 2018, the Public Hearing Record for the Applications was closed, and the Applications were remitted to the Panel for decision-making.

NWB Timeline for Processing the Applications

As set out under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, S.C. 2002, c. 10 (*NWNSRTA*), s. 55.2, the NWB is required to process applications in relation to Type “A” Water Licences within 9 months from the receipt of a complete application. However, as expressly noted in the *NWNSRTA*, s. 55.31¹⁴ this 9-month time period does not commence until the Nunavut Impact Review Board’s (NIRB) assessment is complete. In this case, and as detailed above, the NIRB’s screening and subsequent review of the Phase 2 Hope Bay Belt Project Proposal (Phase 2 Project) and required decision-making of the relevant Ministers was not completed until October 12, 2018 when correspondence from the Minister of Crown-Indigenous Relations and the Minister of Intergovernmental Affairs, Northern Affairs and Internal Trade was received, indicating that the Phase 2 Project had been approved to proceed to the licensing stage.¹⁵

Consequently, although the Board provided notice of complete Applications on February 23, 2018, as provided for under s. 55.31 of the *NWNSRTA*, the NWB’s timeline for processing the Applications did not formally commence until October 12, 2018 when the Ministers’ decision was received. On this basis, the NWB has concluded that the NWB’s decision-making has been completed and provided to the Minister of Minister of Intergovernmental

¹³ TMAC, NWB Public Hearing, Exhibit 41, File No. 2AM-BOS---- and Amendment No. 2 to Type “A” Water Licence No: 2AM-DOH1323, Electronic Copy “updated Draft Water Licence Framework Doris-Madrid” update of version filed on September 5, 2018 (English) and Exhibit 42, File No. 2AM-BOS---- and No. 2 to Type “A” Water Licence No: 2AM-DOH1323, Electronic Copy “updated Draft Water Licence Framework Boston site” update of version filed on September 5, 2018 (English).

¹⁴ As stated in s. 55.31:

If the Board is cooperating and coordinating with ...the Nunavut Impact Review Board...the time limit referred to in section 55.2 does not begin to run until the ...Nunavut Impact Review Board...has completed its screening or review of the project.

¹⁵ Correspondence from the Honourable Dominic LeBlanc, Minister of Intergovernmental Affairs, Northern Affairs and Internal Trade and the Honourable Carolyn Bennett, Minister of Crown-Indigenous Relations, dated October 10, 2018 received on October 12, 2018 to E. Copland, NIRB Chairperson. The correspondence indicated that the Final Hearing Report for the NIRB’s Review of the Phase 2 Hope Bay Belt Project had been accepted pursuant to Article 12, Section 12.5.7(a) of the *Nunavut Agreement* and that the Phase 2 Project could proceed to the permitting/licensing stage.



Affairs, Northern Affairs and Internal Trade well within the 9-month timeline for processing the Applications required under s. 55.2 of the *NWNSRTA*.

SECTION II **SUMMARY OF FINAL HEARING SUBMISSIONS OF THE PARTIES**

The Kitikmeot Inuit Association (KIA)

The Kitikmeot Inuit Association (KIA) is a Designated Inuit Organization under the *the Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada (Nunavut Agreement)*, representing the rights and values of the Inuit within the Kitikmeot Region of Nunavut. The specific focus of the KIA's representation relates to rights to water and wildlife compensation, landowner rights and negotiation of an Inuit Impact and Benefit Agreement (IIBA).

During the technical review of the Application,¹⁶ the KIA raised concerns related to the following issues:

- Geotechnical;
- Hydrological and Hydrogeological;
- Water Management and Water Quality;
- Fisheries;
- Waste Management;
- Socioeconomic, Health and Wellbeing; and
- Closure, Reclamation, and Monitoring.

In their final written submission, the KIA stated that they had resolved all outstanding technical issues with TMAC, including being in agreement with TMAC on Security amounts and the allocation of security between the KIA and the amounts to be held by CIRNAC under the water licences. The KIA stated that:

Throughout the review period, the KIA in collaboration with TMAC, were able to resolve all of the technical issues brought forward during the review of the Applications. With respect

¹⁶ The KIA, KIA's Technical Review of Hope Bay Project Phase 2 Type "A" Water License Application, March 23, 2018.



to security, the KIA was in agreement with TMAC on total security amounts, the phased bonding approach proposed, and security allocation between land and water for the Doris-Madrid and Boston Licences.

...the proposed tranches meets our first requirement of receiving staged security for major mine site components on a geographic basis (construction stages) in accordance with the planned construction schedule sixty (60) days prior to construction.¹⁷

The KIA also suggested that:

...tranches can be set out in a schedule to the water licence with triggering events or dates specified to make it clear when the security increments must be provided by TMAC.¹⁸

In response, during the Public Hearing, TMAC filed, as Exhibit 41 and Exhibit 42,¹⁹ updated Draft Water Licence Framework documents that included a schedule of phases within each Licence that would function as the triggers to require the additional posting of security.

In their final written submission, the KIA reiterated four conditions previously stated in their July 2018 submission²⁰ that should be considered by the NWB if the Board chooses to issue the amended Licence and new Licence as requested:

- *KIA's receipt of staged security must be subject to NWB review and confirmation that it fulfills the Type "A" Water Licence requirements.*
- *TMAC should be required to provide annual summary reports for construction (progress and costs), and related reclamation security.*

¹⁷ The KIA, KIA's Final Submission on the Hope Bay Project Phase 2 Type "A" Water Licence Applications, September 28, 2018.

¹⁸ The KIA, KIA's Final Submission on the Hope Bay Project Phase 2 Type "A" Water Licence Applications, September 28, 2018.

¹⁹ TMAC, NWB Public Hearing, Exhibit 41, File No. 2AM-BOS---- and Amendment No. 2 to Type "A" Water Licence No: 2AM-DOH1323, Electronic Copy "updated Draft Water Licence Framework Doris-Madrid" update of version filed on September 5, 2018 (English) and Exhibit 42, File No. 2AM-BOS---and No. 2 to Type "A" Water Licence No: 2AM-DOH1323, Electronic Copy "updated Draft Water Licence Framework Boston site" update of version filed on September 5, 2018 (English).

²⁰ The KIA, KIA's Final Submission on the Hope Bay Project Phase 2 Type "A" Water Licence Applications, July 18, 2018.



- *Reclamation costs and security should be updated annually, or upon issuing an Advanced Exploration Lease or Commercial Lease. And this review should include the NWB, KIA, and CIRNAC.*
- *Any required additional security should be posted as a Line of Credit to KIA and/or CIRNAC for anticipated escalations in reclamation costs within sixty days of review and determination by the NWB.*

In their final written submission, the KIA summarized their discussions and agreement with TMAC and CIRNAC regarding all issues, including project security and stated:

As indicated in the May 2018 Technical Meeting, the KIA has resolved all technical issues with TMAC Resources Inc. for the Hope Bay Project Phase 2 concerning hydrology, hydrogeology, fisheries, aquatic environment, and water quality monitoring.

We look forward to discussing the security issues brought forward in this submission at the Public Hearing.²¹

In TMAC's final written submission they did not directly respond to the KIA and indicated:

Submissions from the KIA did not indicate a response was requested from TMAC. TMAC would like to confirm however that it is in agreement with the KIA in regard to security quantum, land/water split and allocation for staged bonding 'tranches'.²²

In its closing remarks at the Public Hearing, the KIA indicated that all technical and security issues had been resolved and that they were in strong support of the project moving forward and stated to the Board as follows:

...wish to thank TMAC Resources for its cooperation throughout the development of Phase 2 in resolving all

²¹ The KIA, KIA's Final Submission on the Hope Bay Project Phase 2 Type "A" Water Licence Applications, September 28, 2018.

²² TMAC, TMAC's Final Submission on the Hope Bay Project Phase 2 Type "A" Water Licence Applications, July 18, 2018.



technical issues, and I also wish to thank TMAC and CIRNAC for resolving the final issue concerning overall security... and to resolve the land/water split as well²³

We consider this a great success. We have eliminated potential over-bonding for this project, which financially helps out the company. The KIA has always strongly supported the development of the Hope Bay Belt right from Phase 1 right into Phase 2. We have our framework agreement with TMAC Resources; we have our IIBA; we expect to work with TMAC in employing Inuit within this reason, have them trained, and the financial security of the company is also our concern, since we have our shareholders, and we receive net smelter royalties from the company. So we strongly support the project, and we thank everyone for their participation.²⁴

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

CIRNAC (previously Indigenous and Northern Affairs Canada or INAC) has a broad mandate for the co-management of water resources and the management of Crown land in Nunavut under the following applicable law and policy:

- the *Department of Indian Affairs and Northern Development Act*;²⁵
- the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada and the Nunavut Land Claims Agreement Act*;²⁶
- the *Territorial Lands Act*²⁷ and applicable *Regulations*;²⁸
- the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;²⁹

²³ J. Roesch, KIA, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, pp. 265, lines 18-21.

²⁴ J. Roesch, KIA, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, pp. 265, lines 25-26, pp. 266, lines 1-11.

²⁵ R.S.C. 1985, c. I-6.

²⁶ S.C. 1993, c. 29.

²⁷ R.S.C. 1985, c. T-7.

²⁸ See for example *Territorial Land Use Regulations*, C.R.C. c. 1524 and the *Northwest Territories and Nunavut Mining Regulations*, C.R.C. c. 1516.

²⁹ S.C. 2002, c. 10.



- the *Nunavut Waters Regulations*;³⁰ and
- the “Mine Site Reclamation Policy for Nunavut”.³¹

During the technical review of the Application, CIRNAC provided expert discussion on the following topic areas:

- Scope of Licences;
- Terms of Licences;
- Water Supply;
- Water Management;
- Waste Management;
- Management Plans and Reports;
- Monitoring Program; and
- Closure and Reclamation Planning.

In their final written submission,³² CIRNAC indicated that the majority of issues were resolved through discussion with TMAC, however, CIRNAC also identified issues that remained outstanding as the Applications progressed into the Public Hearing. The outstanding issues generally related to the scope of licences and the reclamation cost estimate. Throughout the NWB’s consideration of the Applications CIRNAC engaged with TMAC and the KIA in discussions on the topic of the security that TMAC should be required to post under the Licences. In their final written submission, CIRNAC also included a revised reclamation cost estimate and indicated that they would be engaging in discussions on security with TMAC and the KIA.

Final technical comments from CIRNAC included the following statements on the associated topics:

1. *Scope of Licences: CIRNAC maintains concerns regarding the Applicants holding of three exploration licences concurrently*

³⁰ S.O.R./2013-69.

³¹ Minister of Indian Affairs and Northern Development, (Ottawa: Minister of Public Works and Government Services Canada, 2002) available on-line: http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/recpolnuna_1100100036043_eng.pdf.

³² CIRNAC, Final Submission Regarding TMAC Resources Inc.’s Water Licence Applications for Hope Bay Phase 2, September 28, 2018.



with the proposed Type “A” Licences. CIRNAC recommends the scope of 2BB-BOS1727 be incorporated into any new 2AM-BOS--- licence and the scope of 2BB-MAE1727 be incorporated into an amended 2AM-DOH1323 licence. This will allow the Type “B” licences to be cancelled when the Type “A” Licences come into effect.

- 2. Term of Licences: CIRNAC recommends that the licence terms match the duration of activities scheduled to occur under the licences. They consider the duration of post-closure monitoring proposed by TMAC to be inadequate. Lengthening the duration of post-closure monitoring would require those activities to be carried out after the project schedule presented by TMAC. At the Public Hearing, TMAC agreed to a term of Licence ending in 2035, consistent with the final closure date of all mines, and is in alignment with the water compensation agreement we have with the Kitikmeot Inuit Association³³, and as such **this issues has been resolved.***
- 3. Water Supply: CIRNAC outlined clarifications provided by TMAC on volumes of water requested; **indicating the issue had been resolved.***
- 4. Water Management. CIRNAC outlined clarifications provided by TMAC on Water load & balance model validation, contact water pond design, Mine water at Boston, Madrid mine water transport, Effect of saline water in tailings impoundment area on the frozen core dam; **indicating these issues had been resolved.***
- 5. Waste Management: CIRNAC outlined clarifications provided by TMAC on water treatment plant effluent quality, waste rock volumes in relation to void volumes, Detoxified tailings deposition at Madrid, and Non-hazardous waste disposal. They are recommending that the Licences include timelines for the approval of the revised Non-Hazardous Waste Management Plan that will include operational details for the landfills.*

³³ O. Curran, TMAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS---, Transcript, October 25, 2018, Volume 2, pp. 248, lines 22-24.



6. Management Plans and Reports: CIRNAC outlined clarifications provided by TMAC on a number of management plans. They are recommending that the Licences include timelines for the approval of the revised Doris-Madrid Water Management Plan that will include information on arsenic removal from contact water.
7. Monitoring Program: CIRNAC outlined clarifications provided by TMAC on the Aquatic Effects Monitoring Program (AEMP) and is recommending that an updated version be submitted. TMAC submitted the final version of the AEMP on October 1, 2018, as such **this issues has been resolved.**
8. Closure and Reclamation Planning: CIRNAC outlined clarifications provided by TMAC on the Doris Tailings Impoundment Area, Boston Tailings Management Area seepage, and long-term climate change effects. CIRNAC indicated that closure planning requirements for the Boston Conceptual Closure and Reclamation Plan and the Doris-Madrid Interim Closure Plan do not follow many of the requirements in the Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories (2013). TMAC has committed to considering other recommendations in future plan updates.

With respect to the reclamation cost estimate: CIRNAC's final written submission noted that going into the Public Hearing, CIRNAC and TMAC were still in discussion regarding three aspects:

- Costs: Differ in cost estimates by amounts ... largely due to differences in estimates for interim care & maintenance and post-closure monitoring;
- Land-water split: There remained significant differences between the Kitikmeot Inuit Association's and CIRNAC's land-water allocations, principally due to how the tailings reclamation costs are distributed; and
- Phased bonding: CIRNAC's concerns were that: there were too many phases proposed that will complicate the bonding process; mobilization, interim care & maintenance, and post-closure monitoring costs need to be in the first phase for each Licence; and that tailings reclamation costs should be divided according to area used.



On October 23, 2018, CIRNAC provided sixty (60) specific comments related to the Applications and the draft Water Licence Framework documents provided by TMAC on September 5, 2018. The comments reviewed and commented on the wording in specific clauses throughout the Licences. CIRNAC also reminded the Board that security amounts were still under discussion between TMAC, the KIA, and CIRNAC. CIRNAC also requested discussion between the NWB and intervening parties with respect to the content and structure of water licences.

During their presentation at the Public Hearing, CIRNAC reemphasized their points made in their final written submission and stated:

Our primary concern with this issue was related to the use of water at Doris-Madrid and efforts to treat the water if required. Our Department has reviewed TMAC's various management plans and models related to water, and our concerns have been addressed.³⁴

In addition, CIRNAC indicated that its previous concerns related to the Applications were mainly resolved, and stated that: "To be clear, the vast majority of our technical comments have been addressed by TMAC."³⁵

There were however a few outstanding issues. At the Public Hearing CIRNAC maintained their position with respect to TMAC holding potentially overlapping Type "A" and Type "B" Licences and stated:

The Department recommends that the scope of the Type "B" Licences be incorporated into any new Type "A" Licences to allow the bulk sample licences to be cancelled.³⁶

³⁴ S. Dewar, CIRNAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, pp. 105, lines 24-26, pp. 106, lines 1-2.

³⁵ S. Dewar, CIRNAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, pp. 103, lines 1-3.

³⁶ S. Dewar, CIRNAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, pp. 104, lines 18-21.



Having both a Type "B" and a Type "A" Licence for the same activity on the same site can lead to confusion about water use, discharge criteria, security, and inspections.³⁷

At the Public Hearing, CIRNAC also indicated that they would like to see the addition of the proposed industrial wastewater treatment plant added to the scope of the Licences as follows:

Our first comment is with regards to the scope, and under the additional scope based on the amendment application number 2, which includes. So with regards to all the items that TMAC has listed, we would also like added the industrial process water treatment plant or the industrial wastewater plant, I'm not quite sure of the exact wording, but we would like that item added to the scope.³⁸

CIRNAC will be expecting updates to two management plans and made the statement:

The two plans which we are expecting updates are the Doris-Madrid water management plan, as TMAC is still determining if it will be necessary to build an industrial water treatment plant for the mill water when they're processing ore from Madrid North. They have committed to updating the plan should it be necessary to build one. We recommend TMAC include in the plan what -- the parameters they will monitor and what would trigger the decision to build such a plant. The other plan is the nonhazardous waste management plan. The application package included details on how the landfills will operate such lift thickness. TMAC has committed to incorporating this information in their plan prior to building the landfills. The Department recommends capturing these commitments in any licence and stating that the changes at site cannot be undertaken before the plans are approved.³⁹

³⁷ S. Dewar, CIRNAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, pp. 104, lines 25-26, pp. 105, lines 1-3.

³⁸ I. Parsons, CIRNAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, pp. 259, lines 17-24.

³⁹ S. Dewar, CIRNAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, pp. 103, lines 1-3.



In their closing statement at the Public Hearing, CIRNAC indicated that they were in support of the Phase 2 Project, stating the following:

The department has no outstanding concerns with this project at this time. The department is in agreement with Kitikmeot Inuit Association and TMAC regarding the overall security quantum. Further, we have agreement on how the security is held and when it is required to be posted by TMAC.⁴⁰

Environment and Climate Change Canada (ECCC)

ECCC provided comments reflective of their roles and obligations under the *Canadian Environmental Protection Act, 1999*,⁴¹ the “pollution prevention provisions” within the *Fisheries Act*,⁴² the *Migratory Birds Convention Act, 1994*⁴³ and the *Species at Risk Act*.⁴⁴ ECCC has general responsibility for environmental management and protection; preservation and enhancement of water, air and soil quality; conservation and protection of migratory birds, species and risk, flora and fauna; the gathering and provision of meteorological information; and coordination of various specific environmental policies and programs.

During the technical review of the Application, ECCC provided expert discussion on the following topic areas:

- Water Management;
- Water and Load Balance Model;
- Sludge Management;
- Sewage Treatment;
- Waste Rock, Quarries, and Ore Management;
- Effluent discharge;
- Tailings management;
- Environmental Monitoring; and

⁴⁰ S. Dewar, CIRNAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, pp. 266, lines 25-26, pp. 267, lines 1-4.

⁴¹ S.C. 1999, c. 33.

⁴² R.S.C. 1985, c. F-14.

⁴³ S.C. 1994, c. 22.

⁴⁴ S.C. 2002, c. 29.



- Closure and Reclamation.

In their final written submissions prior to Public Hearing, the ECCC identified three areas for discussion, and stated the following:

ECCC's comments and recommendations are with respect to the Aquatics Effects Management Plan, Effluent Quality Criteria, and mitigation and monitoring of in-water construction activities.⁴⁵

In detail, ECCC outlined their concerns as the following:⁴⁶

1. *Aquatic Effects Monitoring Program.* *While significant progress has been made to develop the AEMP, further work is required to finalize the details including study design, data analysis, the aquatic response framework, and baseline sampling. ECCC recommends that the AEMP be submitted for Board approval following the issuance of the water licence, and prior to construction. TMAC submitted the final version of the AEMP on October 1, 2018, as such **this issues has been resolved***
2. *Effluent Quality Criteria.* *Given the sensitive nature of the local aquatic ecosystems, ECCC suggests that lower limits than those set by the MDMER be considered. This is consistent with what has been indicated to be achievable by the Proponent's modelling. ECCC also suggests that the proponent consider including additional water quality parameters.*
3. *Mitigation and Monitoring of In-Water Construction Activities.* *ECCC recommends that a design-specific in-water construction plan be submitted to the Nunavut Water Board for approval prior to any in-water construction. The plan should include the*

⁴⁵ Environment and Climate Change Canada's Final Written Submission to the Nunavut Water Board, Respecting the Type A Water Licence Applications For the Hope Bay Phase 2 Project Proposed by TMAC Resources Inc., September 28, 2018.

⁴⁶ Environment and Climate Change Canada's Final Written Submission to the Nunavut Water Board, Respecting the Type A Water Licence Applications For the Hope Bay Phase 2 Project Proposed by TMAC Resources Inc., September 28, 2018.



components outlined in the TMAC's commitment to ECCC-WL-4.1.9.

From the commitment list generated following the technical meeting, under ECCC-WL-4.1.9, TMAC committed to developing an Environmental Protection Plan (EPP) prior to the initiation of in-water construction activities in the freshwater environment. The EPP will include, but not be limited to, mitigation measures for the management of total suspended solids and turbidity, monitoring procedures, as well as proposed limits and trigger values, to satisfy all applicable requirements during construction activities. This plan would include the plume delineation study requested by ECCC.⁴⁷

During the Public Hearing ECCC stated that they had resolved the two remaining concerns with TMAC:

The first one is just more details with respect to our first concern regarding the aquatic -- the AEMP, the plume delineation study. So that -- as we said last night, that TMAC has committed to -- that data will be provided to Environment Canada to our satisfaction.

The other discussion that we had was with respect to the environmental protection plan, and, again, this morning, TMAC has committed to provide that to -- the specific part that we're interested in to Environment and Climate Change Canada prior to any waterworks.

So with that our issues remain resolved in more clarity now.⁴⁸

Fisheries and Oceans Canada (DFO)

Fisheries and Oceans Canada (DFO-FPP or DFO) is responsible for the administration of the *Fisheries Act*,⁴⁹ and some aspects of the *Species at Risk Act*.⁵⁰ Under the *Fisheries Act*, DFO is responsible for the management, protection and conservation of fish (which include marine mammals as defined by the Fisheries Act) and their habitats to maintain the sustainability and ongoing productivity of commercial, recreational and Aboriginal fisheries. The Minister

⁴⁷ Phase 2 Hope Bay Belt Project Type "A" Water Licence Applications: 2AMDOH1323 Amendment No. 2 and 2AM-BOS----; Technical Meeting Issues and Commitments, dated May 29, 2018.

⁴⁸ B. Summerfield, ECCC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, pp. 239, lines 16-26, pp. 240, lines 1-2.

⁴⁹ R.S.C. 1985, c. F-14.

⁵⁰ S.C. 2002, c. 49.



of Fisheries, Oceans and the Canadian Coast Guard is one of the competent ministers under the *Species at Risk Act*.

The Fisheries Protection Program (FPP or The Program) of Fisheries and Oceans Canada (DFO-FPP or DFO) is responsible on behalf of the Department for regulatory review of proposed developments occurring in or near Canadian fisheries waters. DFO reviewed the Applications and provided comments based on its mandate under the *Fisheries Act*.

The DFO technical review raised a number of issues, with a focus on the following topics:

- Water Crossings;
- Water and Load Balance Model;
- Water intake and discharge; and
- Fish and Fish Habitat Assessments.

In the place of their final written submission DFO provided the Board with a copy of their presentation for the Public Hearing, and therein raised the following concerns.⁵¹

1. Water Crossings. DFO identified a lack of detailed engineering designs and mitigation measures for water crossings. They recommend that this information be included in a Construction Work Plan and Maintenance and Monitoring Plan.
2. Water and Load Balance. DFO identified uncertainty with surface flow models that could lead to insufficient water quantities for fish and recommend including flow monitoring stations in the AEMP.
3. Water Intake and Discharge. DFO identified a need for information on mitigation measures associated with in-water pipelines and general works.
4. Timing Assessment. It is unclear if the analysis of water quantity timing impacts on fish habitat access were resolved in the Final Environmental Impact Statement (FEIS).

⁵¹Phase 2 Hope Bay Belt Project Presentation to the Nunavut Water Board, Public Hearing Cambridge Bay, NU, October 24 & 25, 2018, submitter September 21, 2018.



More specifically, with respect to their first concern, regarding water crossings, DFO was satisfied that this information can be provided at a later date, prior to construction. DFO confirmed this at the Public Hearing:

Fisheries and Oceans Canada recommended that the Proponent provide detailed ... site-specific engineering plans for all watercourse crossing supported by a measured or modelled stream flow data. This information can be provided prior to construction.⁵²

With respect to providing a Construction Work Plan and a Maintenance and Monitoring Plan, DFO stated: “The Proponent agreed with Fishery [sic] and Oceans' recommendations for water crossings. As a result, this issue is resolved.”⁵³

With respect to water and load balance:

Fisheries and Oceans Canada recommended that the Proponent include stations to monitor water levels and stream flows in the aquatic effects monitoring plan for all fish-bearing lakes and streams that are predicted to be potentially impacted by the project. The Proponent agreed with Fisheries and Oceans' recommendations for water and load balance. As a result, this technical issue is resolved.⁵⁴

With respect to a site-specific construction work plan, during the regulatory phase, DFO noted:

The Proponent agreed with Fisheries and Oceans Canada's recommendations for water intake and discharge pipes. As a result, this technical issue is resolved.⁵⁵

With respect to an analysis of water quantity timing impacts on fish, DFO stated:

⁵² A. McLellan, DFO, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, pp. 123, lines 10-13.

⁵³ A. McLellan, DFO, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, pp. 123 line 26 and pp. 124, lines 1-3.

⁵⁴ A. McLellan, DFO, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, pp. 124 line 4-12.

⁵⁵ A. McLellan, DFO, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, pp. 124 line 16-19.



In their response to our technical comments, the Proponent clarified that an assessment of water quantity impacts on timing of flow and associated impacts on fish access to habitat was conducted and considered in their impact assessment. Based on their responses, this technical issue is resolved.⁵⁶

During the Public Hearing, DFO reiterated their concerns brought forward in their final written submission, but indicated that all issues had been resolved with TMAC. In the opening remarks to their presentation at the Public Hearing, DFO stated: "...to date, the Proponent and Fisheries and Oceans Canada have worked collaboratively to resolve all issues and none remain outstanding."⁵⁷

Natural Resources Canada (NRCan) and NIRB

Although Natural Resources Canada (NRCan) did not provide specific comments related to the water licensing process and did not attend the NWB Public Hearing, during the NIRB's Review process NRCan identified gaps in TMAC's groundwater modelling, management and monitoring. Specifically, NRCan identified that it is unclear how TMAC plans to respond if groundwater is encountered during the development of the underground mine at the Boston site.⁵⁸

The following gaps were identified within TMAC's current groundwater monitoring plan that NRCan recommended should be addressed by TMAC during the regulatory phase:

- Collection of additional site-specific hydraulic data (e.g., from new monitoring wells) in key areas during the pre-development, construction and operations phases;
- Definition of vertical and horizontal groundwater flows in the project development areas;
- Delineation of monitoring plans for both vertical and horizontal groundwater; and

⁵⁶ A. McLellan, DFO, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, pp. 124 line 26 and pp. 125, lines 1-5.

⁵⁷ A. McLellan, DFO, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, pp. 121, lines 15-18.

⁵⁸ NIRB Final Hearing Report, Phase 2 Hope Bay Belt Project, TMAC Resources Inc. NIRB File No. 12MN001, June 2018.



- Identification of adaptive management strategies that address what happens if conditions encountered at the project site are not as predicted in the FEIS.

The NIRB assessment identified that TMAC should be required to update the groundwater management plan to address all identified gaps, including the potential for TMAC to encounter saline groundwater in the underground mines. Accordingly the NIRB recommended that TMAC should be required to address these gaps by providing additional updated modelling, management and monitoring information to the Nunavut Water Board.⁵⁹ The NWB has addressed these gaps by including a condition in the Licence that requires TMAC to update the Water and Load Balance Model as follows: two years after initial processing of ore at the Madrid sites; two years after commissioning of the Boston Process Plant; and two years before Closure.

Limits on Participation of Technical Experts from Government Agencies in Board Processes

As outlined above, Natural Resources Canada (NRCan) participated in the NWB's consideration of the Applications but did not participate in the Public Hearing. While the NWB is grateful for the contributions of NRCan to the Board's review of the application by filing written comments, the Board also notes that the benefit of presenting this information and being available to answer the questions of the members of the NWB Panel who will be making the decision in respect of the Applications, as well as responding directly to the members of affected communities is lost when parties do not participate in the Public Hearing component of NWB licensing.

While the NWB is well aware of the human and financial resource constraints that limit the ability of participants to travel to Nunavut to attend Public Hearings in person, the Board nonetheless notes that, in the NWB's view, these opportunities for agencies to engage directly with the Board and the potentially affected communities are invaluable to all participants. This commitment to full participation of interveners undoubtedly contributes to a more fulsome, inclusive and accessible regulatory process for all involved. Further, the Board notes that often the representatives of government agencies who make the effort to participate fully in Board process and attend in-person Public Hearings have indicated to the NWB that they also benefit from their participation because they have an opportunity to hear and incorporate Inuit Qaujimajatuqangit into their understanding of the issues. The Board notes it is unfortunate when such opportunities are lost.

⁵⁹ NIRB, Final Hearing Report, Phase 2 Hope Bay Belt Project, TMAC Resources Inc. NIRB File No. 12MN001, June 26, 2018, at p. 100.



The Board highlights that notwithstanding that the KIA, CIRNAC, ECCC and DFO all noted at the Public Hearing that many of their technical issues had been resolved prior to the Public Hearing (due to the concerted efforts of TMAC and all parties to resolve outstanding issues), the continued participation of these interveners at the Public Hearing enabled both the Board and the community members in attendance to ask questions, seek clarifications and better understand the comments, concerns and resolution of issues for each participant. For example, DFO was present to respond to a question regarding regulatory oversight of licensed projects during the community session, as follows:

I guess a question to DFO. You're making recommendations, and how are you going to make sure that the recommendations are being followed? Are you going to be going in and making -- and checking out whether the recommendations are being followed? How are you going to be doing that?⁶⁰

In respect of the Board's consideration of these Applications specifically, the Board highlights that despite having very relevant and specific expertise with respect to the groundwater and permafrost issues in relation to the Applications, NRCAN did not continue to be actively engaged as the Phase 2 Project progressed from assessment and into the permitting/licensing stage. It seems obvious that the NWB, and regulatory system generally, would have benefitted from NRCAN continuing to provide the NWB with technical review comments and expertise in respect of issues such as tailings management structures, groundwater modelling, management and mitigation and water and waste management in the underground and crown pillar mining works. It is regrettable that NRCAN was unable to continue to participate in this way after the NIRB's Review concluded and throughout the NWB's licensing processes.

The Board truly appreciates the participation of all the interveners who were able to dedicate time and resources to participating in the Board's consideration of the Applications. In the past, the Board has noted that limits on the participation of these interveners pose grave risks to the integrity, transparency and efficacy of the integrated regulatory process established under the *Nunavut Agreement*:

...the lack of participation at the TM/PHC by both EC and by DFO is an issue of considerable concern for the NWB. The

⁶⁰ J. Sallerina, Gjoa Haven, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, p. 126 lines 3-8.



integrated regulatory system is premised on the assumption that parties with considerable expertise and experience with the technical matters before the Board will have sufficient resources to fulfill their mandates and provide meaningful contributions to the licensing process. This includes participating fully in the NWB's licensing processes, providing technical review comments and attending in person in the communities directly affected by water licence applications during technical meetings, pre-hearing conferences and public hearings.⁶¹

Reflecting these concerns, the Board urges all participants when allocating scarce resources to recognize the essential role that in person meetings in communities play in a participatory, consultative and inclusive licensing process. Although the Board does have the jurisdiction to compel the attendance of required witnesses during a Public Hearing,⁶² the Board hopes that, in future, appropriate participation of all agencies with relevant technical expertise and authority will be supported without the need to resort to such measures.

SECTION III **SUBMISSIONS BY OTHER INTERVENING PARTIES OR MEMBERS OF THE PUBLIC**

In the table that follows, the Board has provided a summary, by topic, of the key issues related to the Type "A" Water Licence Applications identified by community members during the Public Hearing and Community Session held in Cambridge Bay on October 24 and 25. Those parties interested in a review of all comments received in their entirety should consult the transcripts for the Public Hearing available on-line from the NWB's website.⁶³ The Board notes that there were no written submissions provided to the NWB by any other intervening party or members of the public.

⁶¹ Nunavut Water Board – PHC Decision 3AM-GRA1015 Type "A" – Licence Amendment Application, January 28, 2014 at p. 13.

⁶² See s. 54 of the NWNSRTA and ss. 4-5 of the *Federal Inquiries Act*, R.S.C. 1985, c. I-11.

⁶³ NWB, Public Hearing, Type "A" Water Licencem2AM-BOS---- New Application and 2AM-DOH1323 Amendment Application-, Transcript, October 24, 2018, Volume 1, Community Session, pp. 53-126.



TABLE 1: KEY ISSUES RAISED BY COMMUNITY REPRESENTATIVES DURING THE PUBLIC HEARING AND COMMUNITY SESSION

Topic	Issues/Concerns/Comments
Fish	Recognizing that there is already an approved water licence for the Doris North part of the Project, how does TMAC monitor fish health and potential for effects on fish health in the region?
Liners	What is the lifespan of the liners that TMAC will use on-site; and have these liners been tested in our Arctic environment?
Monitoring	How does TMAC communicate their monitoring data that is required under the Licence or other regulatory instruments (especially fish health data) to the surrounding communities?
Regulatory Oversight	How does Fisheries and Oceans Canada monitor and confirm that the commitments issued by TMAC are actually met and implemented as agreed to?
Tailings	Are the dry stack tailings tested before they are deposited and/or afterwards?
Tailings	What contaminants do the tailings contain?
Tailings	At closure does TMAC have to cover the dry stack tailings?
Tailings	During operations how does TMAC plan to manage the tailings to prevent the release of contaminants into the surrounding area?



SECTION IV **JURISDICTION OF THE NWB**

Under Division 2 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSRTA)⁶⁴ the NWB has jurisdiction to issue a licence,⁶⁵ amend a licence,⁶⁶ or in certain circumstances, cancel a licence.⁶⁷ In the NWB’s exercise of the Board’s statutory functions under the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada* (Nunavut Agreement) and the statutory regime governing the Board (the NWNSRTA and the *Nunavut Waters Regulations*), the NWB must be guided by the following objects:

*... to provide for the conservation and utilization of waters in Nunavut, except in a national park, in a manner that will provide the optimum benefit from those waters for the residents of Nunavut in particular and Canadians in general.*⁶⁸

In setting the terms and conditions of a licence, the NWB is guided by these objects and the NWB’s statutory duty to make *all* reasonable efforts to minimize *any* adverse effects on aquatic ecosystems. Reading several of the Articles of the *Nunavut Agreement* together,⁶⁹ the NWB relies on the broad definition of “ecosystemic” found in Article 12, Section 12.1.1 of the *Nunavut Agreement*, requiring both the NIRB and also the NWB to ensure that all components of the ecosystem, such as fish and fish habitat, are protected within the parameters of s. 71 of the NWNSRTA.

As with any applications considered by the NWB, the burden of proof for these Applications rested with the Applicant, TMAC, to demonstrate that the request for a new Type “A” Water Licence for Boston site and amendments to the existing Type “A” Water Licence 2AM-DOH1323 for the Doris and Madrid sites, should be granted. In addition, the NWB Rules state: “[a]ny party offering evidence before the NWB shall have the burden of introducing sufficient and appropriate evidence to support its position.”⁷⁰

⁶⁴ Sections 42-81 of the NWNSRTA.

⁶⁵ See ss. 42, 48, 55, 56, and 70 of the NWNSRTA.

⁶⁶ See s. 43(1)(b) of the NWNSRTA.

⁶⁷ See s. 43(1)(c) of the NWNSRTA.

⁶⁸ See s. 35 of the NWNSRTA.

⁶⁹ This approach is consistent with the direction provided in Article 2, section 2.9.1 of the NLCA.

⁷⁰ Section 23.1 of the Nunavut Water Board “Rules of Practice and Procedure for Public Hearing”, dated May 11, 2005.



Where intervening parties, community representatives and the public presented no evidence supporting or rejecting TMAC's evidence, the NWB based this decision on its own assessment of the Applicant's requests.

SECTION V **REQUIREMENTS OF THE NUNAVUT AGREEMENT AND THE NWNSRTA**

Objects of the NWB and its Relationship to other Bodies

Land Use Planning

As noted in the discussion of the regulatory history of the Applications provided above, on November 17, 2010, the Nunavut Planning Commission (the Commission) confirmed that because the Phase 2 Hope Bay Belt Project falls outside an area with an approved Land Use Plan, the Commission was not required to conduct a land use conformity assessment with respect to the Applications under the *Nunavut Agreement*.

Environmental Assessment

As noted in the discussion of the regulatory history of the Applications provided above, in June 2018 the Nunavut Impact Review Board (NIRB) completed a review of the potential eco-systemic and socio-economic effects of the Phase 2 Project and recommended that the Phase 2 Project be allowed to proceed, subject to various terms and conditions.⁷¹ In October 2018, the relevant Ministers approved the NIRB's Final Hearing Report and recommendation that the Phase 2 Hope Bay Belt Project be allowed to proceed. As directed by the Ministers, the NIRB issued Project Certificate [No. 009] to TMAC on November 9, 2018.

Inuit Water Rights

At the Public Hearing the NWB confirmed that TMAC and the Kitikmeot Inuit Association (KIA) had dealt with water user compensation as contemplated by Section 20.3.1 of the *Nunavut Agreement* and that, accordingly, that there were no outstanding issues of water user compensation:

...can the Kitikmeot Inuit Association confirm for the Board that issues of water user compensation have been addressed to your satisfaction?⁷²

⁷¹ Nunavut Impact Review Board, Final Hearing Report, Phase 2 Hope Bay Belt Project, TMAC Resources Inc., NIRB File No. 12MN001, June 26, 2018.

⁷² S. Autut, NWB, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, p. 228, lines 1-3.



John Roesch for the Kitikmeot Inuit Association. Yes, we have, under our framework agreement, which expires in 2035, we have a water compensation agreement under that, and it continues on into Phase 2. So the Water Licence expires they said, in their framework, 2035, so everything meets our requirements, and, yes, we are satisfied.⁷³

On this basis, the NWB has determined that the compensation requirements of s. 63(1)(a)⁷⁴ of the *NWNSRTA* have been met with respect to the Applications and these Reasons for Decision and associated Licences were issued.

Recommendations on Marine Areas

Section 41 of the *NWNSRTA* permits the NWB to advise and make recommendations to any department or agency of the Government of Canada or the Government of Nunavut with respect to any marine matters that may arise.⁷⁵ No issues related to marine matters were raised during the course of the Public Hearing and the Board has made no recommendations on marine areas for these Applications.

SECTION VI **DECISION TO ISSUE**

Following the Public Hearing and for the reasons elaborated further below, the NWB has decided to issue, as requested by TMAC, Amendment No. 2 to the existing Water Licence No: 2AM-DOH1323 and new Water Licence 2AM-BOS1835, subject to the conditions set out within the attached Licences. As Amendment No. 2 to existing Water Licence No: 2AM-DOH1323, includes an amendment to the term of that Licence, to ensure that the terms of both Licences associated with the Phase 2 Hope Bay Belt Project are consistent, the amended licence will be renumbered to be Water Licence No: 2AM-DOH1335 (the Amended

⁷³ J. Roesch, KIA, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, p. 228, lines 4-11.

⁷⁴ Section 63(1) states:

The Board shall not issue a licence in respect of a use of waters or a deposit of waste that may substantially affect the quality, quantity or flow of waters flowing through Inuit- owned land, unless
(a) the applicant has entered into an agreement with the designated Inuit organization to pay compensation for any loss or damage that may be caused by the change; or

⁷⁵ Section 41 of the *NWNSRTA* states:

The Board may, either jointly with the Nunavut Planning Commission, the Nunavut Impact Review Board and the Nunavut Wildlife Management Board, as established by the Agreement, acting as the Nunavut Marine Council referred to in section 15.4.1 of the Agreement, or on its own, advise and make recommendations respecting any marine area to any department or agency of the Government of Canada or the Government of Nunavut, and those governments shall consider that advice and those recommendations when making any decision that may affect that marine area.



Licence) to reflect the extension of the term from 2023 to 2035. The new Licence and Amended Licence contain terms and conditions necessary to protect the environment, conserve water resources, and provide appropriate safeguards in respect of the Licensee's use of waters and deposit of waste associated with the Mining Undertakings at the Doris North, Madrid North, Madrid South and Boston sites.

Conditions for Issuance of a Licence

Section 57 of the *NWNSRTA* provides several key legislative requirements that must be satisfied before the NWB may issue a licence.

The Board may not issue a licence unless the applicant satisfies the Board that

- (a) any waste produced by the appurtenant undertaking will be treated and disposed of in a manner that is appropriate for the maintenance of the water quality standards and effluent standards that are prescribed by the regulations or, in the absence of such regulations, that the Board considers acceptable; and*
- (b) the financial responsibility of the applicant, taking into account the applicant's past performance, is adequate for*
 - (i) the completion of the appurtenant undertaking,*
 - (ii) such measures as may be required in mitigation of any adverse impact, and*
 - (iii) the satisfactory maintenance and restoration of the site in the event of any future closing or abandonment of that undertaking.*

Financial Responsibility of the Applicant

As outlined under the *NWNSRTA*, s. 57(b), the NWB considers three aspects of financial responsibility:

- the financial ability of the Applicant to complete the appurtenant undertaking;
- the ability of the Applicant to undertake measures to adequately monitor for impacts and implement measures to mitigate any impacts; and
- the Applicant's ability to maintain and restore the site during care and maintenance, closure and abandonment.



This third aspect of financial responsibility will be specifically addressed in the section of this decision discussing the reclamation security components of the Licences, [Part C: Conditions Applying to Security](#).

Section 57 also makes it clear that the NWB's assessment of the Applicant's financial responsibility is a contextual analysis that considers not only the undertaking which is the subject matter of the Licences, but also the Applicant, with particular regard to the Applicant's past performance.

With respect to considering TMAC's past performance, the Board notes that, since June 14, 2013, when the obligations under the Doris North Type "A" Water Licence and the two Hope Bay Belt Exploration Licences authorizing Exploration activities at the Boston and Madrid sites were assigned from Hope Bay Mining Ltd. to TMAC Resources Inc., TMAC has been responsible for fulfilling the obligations of a licensee as generally established under the *NWNSRTA* and the specific terms and conditions of the existing licences.

No evidence was provided to the Board of any outstanding issues in respect of TMAC meeting the water licensing obligations associated with the existing Doris North Project or the existing exploration activities that would suggest limits on the financial ability of TMAC to complete the appurtenant undertakings as proposed in the Applications. In addition, the NWB has reviewed the financial disclosure filed by TMAC with the Applications, and this information (which was not contested by any party) also establishes that TMAC has the financial capacity to complete the appurtenant undertakings proposed in the Applications.⁷⁶

The Board also notes that with respect to all elements of the Applicant's financial responsibility, none of the Interveners or community members from the community of Cambridge Bay presented evidence that would call into question the Applicant's financial responsibility as required by s. 57(b). The Board has therefore concluded that the Applicant has established that TMAC has the financial resources to meet the obligations imposed under the new Licence and the Amended Licence issued for the Phase 2 Project.

Compensation of Existing or Other Users

The *NWNSRTA* requires that the NWB be satisfied that compensation of existing or other water users affected by the Application has been or will be paid.⁷⁷ To ensure that all parties

⁷⁶ Package P6-1, Audited Financial Statements of TMAC Resources Inc., for the years ended December 31, 2016 and 2015.

⁷⁷ See ss. 58-60 of the *NWNSRTA*.



with the potential to bring a water compensation claim have been notified of their rights under the *NWNSRTA*, the NWB provided Notice of the Applications on February 18, 2018, including an invitation to parties with water user compensation issues to advise the NWB regarding such issues in accordance with s. 55 of the *NWNSRTA*. The NWB confirms that no representations regarding users seeking compensation were made to the NWB throughout the Board's processing of the Applications.

Issuance of a Licence

As stated above and pursuant to s. 42(1) of the *NWNSRTA*, the NWB has decided to issue a new Type "A" Water Licence No: 2AM-BOS1835 and amended Type "A" Water Licence No: 2AM-DOH1335 subject to the terms and conditions set out in these Reasons for Decision and in attached new Licence and amended Licence. In issuing the new Licence and amended Licence, the NWB is satisfied that the Applications contained the required information and were in the proper form having regard to the requirements of the *NWNSRTA*⁷⁸ and associated *Regulations*.⁷⁹

Assumptions

When faced with choices regarding monitoring requirements such as standards or parameters to be imposed under the Licences, the NWB has opted to impose stringent monitoring requirements in an effort to ensure that TMAC continues to meet their on-going environmental protection obligations as prescribed under the Licences.

Applications in Relation to the Licences

The NWB is satisfied that the requirements of s. 48 of the *NWNSRTA* have been met. Following the NWB's guidance, TMAC filed the Applications in December, 2017 in compliance with the NWB's *Guide No.4 (Guideline for Completing and Submitting an Application for a New Water Licence)* and associated *Supplemental Information Guideline (MM3) for Mine Development*, accompanied by the fees required by *Nunavut Waters Regulations*, including the application fees. In addition, as outlined in the section of this Decision addressing the procedural history of the Applications, TMAC has provided the necessary applications and supplementary information required for evaluating whether the new Licence and amended Licence should be granted.

⁷⁸ See s. 48 of the *NWNSRTA*.

⁷⁹ *Nunavut Waters Regulations*, SOR/2013-69, April 18, 2013.



Application to Amend or Application for Future Modifications

In relation to future proposals to amend or modify the water uses and waste deposits within the scope of the Phase 2 Hope Bay Project Proposal and the new Licence and amended Licence, the NWB reminds TMAC that it must comply with all requirements of the *Nunavut Agreement*⁸⁰ and *NWNSRTA*⁸¹ where applicable.

Assignment of a Licence

In future, should TMAC wish to assign the Licences, TMAC should be aware that water licences are only assignable if the requirements of s. 44 of the *NWNSRTA* have been met. This section states:

A sale or other disposition by a licensee of any right, title or interest in an appurtenant undertaking constitutes, subject to the authorization of the Board, an assignment of the licence to the person to whom the sale or other disposition is made.

All necessary forms for filing an application for assignment can be obtained from the NWB's FTP site or the NWB's Licensing Department.

Cancellation or Expiry of the Licence

The NWB notes that s. 46 of the *NWNSRTA* states: “[t]he expiry or cancellation of a licence does not relieve the holder from any obligations imposed by the licence.”

In addition, based on the NWB's authority under s. 43(1)(c)(iii) of the *NWNSRTA*, the NWB may, on application by a licensee, or on its own motion, cancel a licence at any time when the NWB considers the cancellation to be in the public interest. For the NWB to consider cancellation of a licence, the NWB requires evidence from the licensee and INAC's Inspector establishing that an undertaking has been abandoned, fully reclaimed and there are no outstanding obligations under the licence.

Term of Licence

Section 45 of the *NWNSRTA* provides that the term of a licence or any renewal shall not exceed twenty-five years or the “duration of the appurtenant undertaking”.

⁸⁰ See Article 12, Clause 12.4.3 (b) of the NLCA.

⁸¹ See s. 43 of the *NWNSRTA*.



TMAC originally applied for a term of 25 years to develop the Phase 2 Project from construction through operation and into the commencement of the closure phase. This would have resulted in the term of both Licences extending from 2018-2044. However, based on discussions with the parties and negotiation of a compensation agreement with the Kitikmeot Inuit Association (KIA), TMAC confirmed at the Public Hearing that the term being sought for the Licences was revised to 17 years, with an expiry date of March 31, 2035 to coincide with the term of the compensation agreement with the KIA:

So we confirm that the term of the licence both at the Doris-Madrid Licence and the Boston Licence would expire in 2035, and that is to align with the water compensation agreement we have with the Kitikmeot Inuit Association.⁸²

The NWB notes that interveners did not express concerns regarding the 17-year term requested by TMAC. In assessing the appropriate term of the Licence, the NWB noted that TMAC's proposed schedule of construction, operation/production, closure and reclamation, and post-closure associated with the three additional mines at Madrid North, Madrid South and Boston over the course of the term must remain flexible to reflect TMAC's mining plans as they unfold. The NWB also realizes that there will be overlapping stages of construction and closure/post-closure at the various sites as the Phase 2 Hope Bay Belt Project (Phase 2 Project) is developed. Over the course of the 17-year term of the Licences the NWB notes that there are likely to be changes to the project schedule and staging of development as TMAC develops the Phase 2 Project. Consequently, the NWB, based on recommendations from Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) has built into the Licences more periodic "check in" points than would be the case for licences with shorter terms and a more straightforward development schedule.

Specifically, under Part J, Item 2 of Licence No: 2AM-DOH1335 and Part J, Item 3 of Licence No: 2AM-BOS1335, the Board has required TMAC to submit for approval in writing, every 5 years following approval of the Licences, updated conceptual or interim reclamation and closure plans and an updated reclamation cost estimate. These periodic updates to plans and estimates will ensure that as TMAC's development of the three mines progresses, the reclamation and closure plans and security estimates filed with the NWB are updated to accurately reflect the circumstances at the sites. These updates will also ensure that the total mine closure restoration costs are reconsidered periodically to reflect significant changes to not only development schedules and reclamation and closure plans, but also

⁸² O.Curran, TMAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, p. 178, lines 20-24.



significant changes to unit costs that may be indicative of changes outside of TMAC's control such as changing market conditions, inflation, etc.

With the requirement of these interim updates over the course of the 17-year term, the NWB is confident that the 17-year term requested by TMAC is appropriate and reasonable. As such, the Licences have been issued with an expiry date of March 31, 2035.

SECTION VII **WATER LICENCE TERMS AND CONDITIONS**

The Licence does not take effect until the approval of the relevant Minister is given or deemed to have been given pursuant to s. 56 of the *NWNSRTA*.⁸³ As indicated in, [SECTION VI: DECISION TO ISSUE](#) the Panel has decided to issue Amendment No. 2 to the existing Type "A" Water Licence No: 2AM-DOH1323 (as amended and renumbered Water Licence No: 2AM-DOH1335) and new Type "A" Water Licence No: 2AM-BOS1835. To provide context and clarity, the NWB has provided discussion and commentary about only specific terms and conditions in the text that follows. The Board has not included discussion or commentary with respect to those licence terms and conditions that are clear in their wording and intent on the face of the Licence.

Note that the structure of the amended and renumbered Water Licence for the Mining Undertakings at Doris North, Madrid North and Madrid South, Water Licence No: 2AM-DOH1335 has been significantly revised from the existing Water Licence No: 2AM-DOH1323 to better mirror the new Type "A" Licence for the Boston Site Water Licence No: 2AM-BOS1835. Revisions such as reordering of conditions, the inclusion of consistent wording of specific terms and conditions across both Licences and the integration of some "belt-wide" management and monitoring plans have resulted in the Board deciding to issue an entirely revised and amended Water Licence for the Doris North, Madrid North and Madrid South sites rather than simply adding individual amendments to the existing Water Licence No: 2AM-DOH1323. Water Licence No: 2AM-DOH1323 has been updated to reflect the complexity of the amendments to the original Doris North Project under the Phase 2 Project, current Board views, and the requirement to be consistent with the New Type "A" Licence for the Boston Project. For reporting purposes, upon approval of the issuance of the

⁸³ Section 56 of the *NWNSRTA* states:

The issuance, amendment, renewal and cancellation of a type A licence, and if a public hearing is held, a Type B licence are subject to the approval of the Minister.

Section 56(2.2) states:

If the Minister does not issue a decision within 45 days of receiving the Licence from the Board, (or within 90 days if the Minister has extended the decision-making period by an additional 45 days) the Minister is deemed to have approved the Licence.



Licences, the Licensee is required to follow the terms and conditions (including numbering of conditions) outlined in the amended and renumbered Water Licence No: 2AM-DOH1335.

Part A: Scope, Definitions and Enforcement

The undertakings, for which the Licences are issued, are classified as Mining Undertakings in accordance with Schedule 1, Item 2 of the *Nunavut Waters Regulations*.⁸⁴ The general scope of the Licences includes the following activities and/or facilities [note capitalized terms are defined terms under the Licences]:

The activities and facilities that were already included under the scope of the existing Water Licence No: 2AM-DOH1323 including Amendment No. 1 and that will be brought forward under the amended and renumbered Water Licence No: 2AM-DOH1335 are as follows:

- Underground mining at Doris North Mine;
- The use of Water from Doris Lake for mining, milling and associated activities and domestic purposes;
- The use of Water from Windy Lake for domestic purposes;
- The quarrying of materials from specified locations;
- The development and operation of site facilities;
- The construction of access and site roads, airstrip and airstrip bypass road, water crossings, and lay down areas;
- The construction of waste rock storage pads;
- The construction and operation of a domestic Sewage Treatment Plant (STP);
- The construction and operation of a Landfill and Landfarm;
- The construction and operation of Contact Water Ponds and Non-Contact Water Ponds;
- The management and disposal of Wastes associated with the Domestic Wastewater Treatment Plant, Contact Water Ponds and Non-Contact Water Ponds, Landfill and Landfarm, and other Wastes as described in the Application;
- The handling and storage of petroleum products and hazardous materials including explosives, cyanide and other reagents;

⁸⁴ SOR/2013-69.



- The construction of dams, spillway, and shoreline erosion control needed for the operation of the Tailings Impoundment Area (TIA);
- The deposition of tailings into the TIA;
- The disposal of Waste Rock, including potentially acid generating rock, and cyanide leach residue as mine backfill;
- The use of Waste Rock from underground for construction as approved by the Board in accordance with conditions of PART F of the Licence;

The scope of activities added to the existing scope of the previous Water Licence No: 2AM-DOH1323 under the amended and renumbered Water Licence No: 2AM-DOH1335 includes in general, the following:

The following activities at the Doris North Site:

- The scope of all facilities and activities authorized under this Licence be extended to March 30th 2035;
- Increasing of Water use for domestic and industrial purposes from Doris Lake and Windy Lake, respectively;
- Expansion of camp accommodations;
- Increasing the capacity of mill to a nominal milling throughput of 2400 tonnes per day of ore (annual average);
- Expansion of the existing TIA to accommodate up to 18 million tonnes, by raising the south dam and construction of a west dam;
- The Construction and operation of site water management facilities, including an industrial process water treatment plant;
- Backhauling of detoxified tailings from Madrid North site and ore for processing from Boston Project site at early stage of operations at Boaston site;
- Construction of a freshwater intake at Windy Lake;
- Construction and operation of wind turbines; and
- Upgrading the existing all-weather road between Doris North and Madrid North sites, and development of all-weather road from Roberts Bay jetty to Roberts Bay cargo dock.

Activities at the Madrid North and Madrid South sites, which will include:



- Water use for domestic and industrial purposes from Windy Lake and Doris Lake, respectively;
- The development and operation of site facilities, including maintenance facilities, laydown areas, roads, helipads, quarries, storage pads for ore and waste rock, power plants, and contact water ponds;
- The development of underground and surface crown pillar mining;
- The construction and operation of a 1,200 tonne-per-day (tpd) ore concentrator at Madrid North site;
- The construction and operation of wind turbines;
- Trucking of the concentrate and excess ore from Madrid North site to the existing processing plant at Doris North;
- Trucking of the ore from Madrid South site for processing at the Madrid North processing plant and at the existing Doris North processing plant;
- The construction and operation of a tailings pipeline from Madrid North site to the Doris Tailings Impoundment Area;
- Trucking of domestic waste to existing waste management facilities at the Doris North site;
- The construction and operation of a bulk fuel storage facility (4.5 ML capacity) at Madrid North site; and
- The construction and operation of all-weather road from Madrid South site to Boston Project site.

Activities at the Boston Site under Water Licence 2AM-BOS1835, which will include:

- Water use for domestic and industrial purposes from Aimaokatoalok Lake;
- The development and operation of site facilities, construction and operation of a camp and associated domestic sewage treatment plant (STP);
- The quarrying of materials from specified locations;
- The construction of access and site roads, an all-weather airstrip, and lay down areas;
- The construction and operation of a Landfill and Landfarm;
- The construction and operation of Contact Water and Non-Contact Water Ponds;



- The handling and storage of petroleum products and hazardous materials including explosives, cyanide and other reagents;
- Construction and operation of ore pads, waste rock storage pads, waste rock pile, fuel storage facility, power supply, explosives manufacturing facility and wastewater treatment facility;
- Construction and operation of a 2,400 tpd processing plant;
- Construction and operation of a 5.1 million tonne dry-stack Tailings Impoundment Area;
- Disposal of dewatered tailings in the underground mine with the waste rock backfill;
- The use of water captured in Contact Water Ponds and Non-Contact Water Ponds for processing, or treatment and discharge to Aimaokatalok Lake or to the tundra, if discharge criteria are met;
- Construction and operation of an Contact Water Treatment Plant to treat water from the gold processing plant prior to discharge to Aimaokatoalok Lake via a subaqueous diffuser; and
- Discharge of treated sewage effluent from the domestic wastewater treatment plant that meets discharge criteria to tundra or Aimaokatoalok Lake via a subaqueous diffuser.

Further information and details of the scope of the Licences and related project activities and/or facilities can be accessed using the following links:

<ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-DOH1323%20TMAC/>

<ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-BOS----%20TMAC/>

There are currently three Type “B” Licences issued by the Board for the Hope Bay Belt Property. Activities included within the scope of the existing Type “B” Licences include exploration and advanced exploration of the Madrid North, Madrid South, and Boston sites, construction and use of the all-weather access road for exploration purposes, and various authorized pre-development activities. During the Board’s review of the Application, TMAC indicated that they would like to maintain all three Type “B” Licences to support on-going exploration activities, however some aspects of the scope of two of the existing Type



“B” Licences would be subsumed under the scope of the new Type “A” Water Licences, if/when issued. In particular, the Board expects that the Licensee will be able to complete activities authorized under Licence Nos. 2BB-MAE1727 (supports Advanced Exploration and Bulk Sampling activities at the Madrid Site), and 2BB-BOS1727 (supports Advanced Exploration and Bulk Sampling activities at the Boston Site) within the scope of Type “A” Water Licences.

On this basis, upon issuance of the amended and new Type “A” Licences, TMAC may at their own discretion, apply to cancel Licence Nos. 2BB-MAE1727 and 2BB-BOS1727, and upon the receipt of the cancellation request, the Board may cancel these Type “B” Licences to the extent that the scope of the water uses and waste deposits authorized under the Type “B” Licences should be subsumed under the new Type “A” Licences.

At the Public Hearing, CIRNAC expressed concerns that if the cancellation of the Type “B” Licences is not automatic when the Type “A” Licences are approved for issue by the Minister, TMAC may end up holding both Type “A” and Type “B” Water Licences that overlap in scope until TMAC chooses to seek cancellation. CIRNAC’s concerns are that these overlapping Licences can create confusion for CIRNAC in terms of inspection and enforcement of the Licences. CIRNAC stated the following at the Public Hearing:

The Department recommends that the scope of the Type "B" Licences be incorporated into any new Type "A" Licences to allow the bulk sample licences to be cancelled.⁸⁵

Having both a Type "B" and a Type "A" Licence for the same activity on the same site can lead to confusion about water use, discharge criteria, security, and inspections.⁸⁶

However, TMAC emphasized in their closing statement at the Public Hearing that: “TMAC needs to maintain Type "B" Water Licences for exploration purposes at the same time as the Type "A" Water Licences are in use for production mining.”⁸⁷

Although the NWB shares CIRNAC’s concerns that it would be inappropriate for TMAC to be conducting production mining under the auspices of an existing Type “B” Licence

⁸⁵ S. Dewar, CIRNAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, p. 104, lines 18-21.

⁸⁶ S. Dewar, CIRNAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, pp. 104-105, lines 25-26 and lines 1-3.

⁸⁷ O. Curran, CIRNAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, p. 269, lines 25-26, pp. 105, lines 1-3



designed to govern exploration and/or bulk sampling activities, the NWB also recognizes that many existing mines require the flexibility to continue their exploration activities under a Type “B” Licence while developing the full mine under a Type “A” Licence. This is particularly the case where, as here, the Proponent intends to proceed with phased development of specific deposits into commercial mining operations while additional belt-wide exploration and bulk sampling will be taking place. TMAC and all interveners are reminded that the scope of the Type “B” Licences is intended to be limited, and despite the Licences apparently overlapping in terms of the physical location, the scope of the Type “B” Licences is nonetheless limited to certain authorized water uses and waste deposits ONLY. To ensure that TMAC has the flexibility required to undertake exploration and bulk sampling as authorized under the current Type “B” Licences, the NWB has not chosen to automatically cancel the existing Type “B” Licences held by TMAC upon the issuance of the Type “A” Licences. The NWB does, however, expect that when TMAC completes bulk sampling and exploration prior to mine development, TMAC will apply for cancellation or amendment of the applicable Type “B” Licence(s) to avoid duplication of scope.

The Board also reminds TMAC that the Licensee is responsible for the condition of all sites included in the scope of all Licences for the duration of those Licences, and is responsible to undertake any reclamation, remediation or other impact mitigation activities that may be required, if monitoring identifies impacts or potential for environmental impacts resulting from the former mine or associated infrastructure.⁸⁸ If monitoring or inspection activities identify potential for impacts or actual impacts, the Board may require the Licensee to undertake additional activities at the site. Depending on the nature of the reclamation, remediation or other impact mitigation measures required, the Licensee or the Board may revisit the scope of the Licence(s) to include any specific water use or waste deposits associated with these additional activities.

The type of activities intended to address the potential impacts from licensed undertakings may be referred to as “restoration,” “rehabilitation,” “remediation,” “reclamation,” etc. These terms are often used interchangeably in practice, but their definitions vary by authorizing and implementing agencies. For the purposes of the Licences, the Board has adopted the terminology provided by the *Guidelines for the Closure and Reclamation of*

⁸⁸ *Mine Site Reclamation Policy for Nunavut, 2002*, Minister of Indian Affairs and Northern Development, (Ottawa: Minister of Public Works and Government Services Canada, 2002) available on-line: http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/recpolnuna_1100100036043_eng.pdf.



*Advanced Mineral Exploration and Mine Sites in the NWT (the 2013 Guidelines)*⁸⁹ which uses the following definitions:

“Reclamation” is the process of returning a disturbed site to its natural state or one for other productive uses that prevents or minimizes any adverse effects on the environment or threats to human health and safety.

“Remediation” is the removal, reduction, or neutralization of substances, wastes or hazardous material from a site in order to prevent or minimize any adverse effects on the environment and public safety now or in the future.

Reflecting these definitions and the Board’s mandate to protect Nunavut’s freshwater systems and dependent ecosystems for future generations, the terms and conditions included in the Licences are designed to ensure that the potential for environmental impacts associated with the Projects both now and in the future are monitored and, if necessary mitigated.

While not a subject matter of these Licences, the Board notes that most of closure and post-closure monitoring for the Project, which will be conducted by TMAC and enforced by CIRNAC, is an activity requiring future licensing. Therefore, the primary purpose of the monitoring associated with the Project over the course of the term of the Licences will be to continue to provide information which confirms that the four closure principles are met: 1) physical stability; 2) chemical stability; 3) there are no long-term active care requirements; and 4) the actual condition does not represent any restriction on the future use of the site (including aesthetics and values).⁹⁰

Definitions

The Licensee shall refer to Schedule A of the Licences for definitions of key terms used in the Licences.

⁸⁹*Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the NWT*, Mackenzie Valley Land and Water Boards and Aboriginal Affairs and Northern Development Canada, (MVLWB/AANDC: Yellowknife, 2013) available on-line:

http://mvlwb.com/sites/default/files/documents/wg/WLWB_5363_Guidelines_Closure_Reclamation_WR.pdf

⁹⁰ *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the NWT*, Mackenzie Valley Land and Water Boards and Aboriginal Affairs and Northern Development Canada, (MVLWB/AANDC: Yellowknife , 2013) available on-line:

http://mvlwb.com/sites/default/files/documents/wg/WLWB_5363_Guidelines_Closure_Reclamation_WR.pdf



As addressed more specifically in the discussion of Part C: Conditions Applying to Security, the NWB has recommended that the requirements for posting security under the Licences be tied to the key project phases and associated infrastructure.

Water Licence No: 2AM-DOH1335 includes the following definitions of project infrastructure that are unique to this Licence:

- Pre-Existing Infrastructure
- Roberts Bay & Boston All Weather Roads
- Doris Wind Turbines
- Madrid North Turbines
- Boston Wind Turbines
- Madrid North
- Madrid South
- Doris TIA Phase 2a
- Doris TIA Phase 2b

Similarly, the Water Licence No: 2AM-BOS1835 includes the following definitions of project infrastructure that are unique to this Licence:

- Commercial Mining
- Boston TMA Phase 1
- Boston TMA Phase 2
- Boston TMA Phase 3
- Earthworks
- Buildings

Enforcement and Compliance

For the purpose of ensuring compliance with the Licences, an Inspector designated by the Minister of INAC may inspect or examine works, waters or waste and exercise other powers as set out in the *NWNSRTA*.⁹¹ The *NWNSRTA* also includes provisions authorizing the NWB to require a licensee to furnish and maintain security and prescribing serious penalties for

⁹¹ Sections 85-94 of the *NWNSRTA*.



any breaches of the Licences.⁹² Persons designated and empowered by the relevant Minister carry out investigations or inspections to support enforcement and compliance.⁹³

The Board also points out to TMAC that both Licences include a provision that states: “*Compliance with the terms and conditions of this Licence does not absolve the licensee from responsibility for compliance with all applicable legislation, guidelines and directives.*”

Part B: General Conditions

Reports and/or Plans Filed with the NWB

In support of the Applications, the Proponent submitted a number of Programs/Plans that have been commented on by the interveners in the licensing process and reviewed by the NWB. The following Plans were filed with the Board by the Applicant during the water licensing process and are considered to be reviewed and approved by the Board with the Minister’s approval of the issuance of the Licences:

- a. *Surface Emergency Response Plan (December 2017)*
- b. *Underground Emergency Responses Plan (December 2017)*
- c. *Hope Bay Project Spill Contingency Plan (December 2017)*
- d. *Hope Bay Project Domestic Wastewater Treatment Management Plan (December 2017)*
- e. *Hope Bay Project Groundwater Management Plan (May 2018)*
- f. *Hope Bay Project Doris-Madrid Water Management Plan (December 2017)*
- g. *Hope Bay Project, Phase 2, Doris Tailings Impoundment Area - Operations, Maintenance, and Surveillance Manual (December 2017)*
- h. *Hope Bay Project Boston Water Management Plan (December 2017)*
- i. *Hope Bay Project, Boston Tailings Impoundment Area - Operations, Maintenance, and Surveillance Manual (December 2017)*
- j. *Hope Bay Project Waste Rock, Ore and Mine Backfill Management Plan (December 2017)*
- k. *Hope Bay Project Non-hazardous Waste Management Plan (December 2017)*
- l. *Hope Bay Project Hydrocarbon Contaminated Material Management Plan (December 2017)*
- m. *Hope Bay Project Hazardous Waste Management Plan (December 2017)*
- n. *Hope Bay Project Incinerator Management Plan (December 2017)*
- o. *Hope Bay Project Quarry Management and Monitoring Plan (December 2017)*

⁹² Section 90 of the NWNSRTA.

⁹³ Section 85-88 of the NWNSRTA.



- p. *Hope Bay Project Aquatic Effects Monitoring Plan (October 2018)*
- q. *Hope Bay Project Doris-Madrid Interim Closure and Reclamation Plan (November 2017)*
- r. *Hope Bay Project Boston Conceptual Closure and Reclamation Plan (November 2017)*
- s. *Hope Bay Project Explosives Management Plan (December 2017)*
- t. *Quality Assurance and Quality Control Plan (January 2017)*

The NWB highlights for TMAC that the Licences include a listing of management plans that must be accepted or approved by the NWB in writing in order to comply with the requirements of the Licences. However, the NWB also notes that the Board's approval or acceptance of a given plan, does not necessarily imply that the NWB is commenting on or has otherwise approved elements of that plan that may be outside of the NWB's jurisdiction. For example, the NWB's approval of a groundwater management plan that may involve groundwater discharges into the marine environment over which the NWB does not have jurisdiction would be limited to approval of only those aspects of the plan associated with waste deposits into freshwater, with the marine discharge elements of the plan awaiting the required approvals from other regulatory authorities with jurisdiction over discharges into the marine environment such as CIRNAC, DFO and/or ECCC.

Further, the NWB may alter or modify a plan, if necessary, to achieve the legislative objectives and will notify the Licensee in writing of acceptance, rejection, or alteration of any plan. The plan must then be carried out in a manner and timeframe consistent with the NWB's direction. Every plan to be carried out pursuant to the terms and conditions of the Licence shall become a part of the Licence, and any additional terms and conditions imposed upon approval of a plan by the NWB also become part of the Licence.

Part C: Conditions Applying to Security

Requirement of Security

The *NWNSRTA* allows the Board to require the Licensee to furnish and maintain security with the relevant Minister in a form determined by the *Nunavut Waters Regulations*, SOR/2013-69 or satisfactory to the Minister. Specifically, s. 76(1) of the *NWNSRTA* states:

The Board may require an applicant, a licensee or a prospective assignee to furnish and maintain security with the Minister in the form, of the nature, subject to such terms and



conditions and in an amount prescribed by, or determined in accordance with, the regulations or that is satisfactory to the Minister.

Further, as referred to previously in the discussion included under the subheading [Financial Responsibility of the Applicant](#) the Board may not issue a Licence unless the Board is satisfied regarding the financial responsibility of the Applicant, including reviewing any costs associated with the closing or abandonment of the undertaking.⁹⁴

In addition, the *Nunavut Waters Regulations*⁹⁵ impose the following limits on the Board's jurisdiction to fix the amount of security:

10. (1) For the purposes of subsection 76(1) of the Act, the Board may fix the amount of security required to be furnished by an applicant for a licence, a licensee or a prospective assignee in an amount not exceeding the aggregate of
(a) the costs of the abandonment of the undertaking;
(b) the costs of the restoration of the site of the undertaking;
(c) the costs of any ongoing measures that may remain to be taken after the abandonment of the undertaking; and
(d) the compensation that a person, including the designated Inuit organization, who is adversely affected by the use of waters or deposit of waste may be entitled to under section 13 of the Act.

The Board's Jurisdiction over Land and Water Security

In accordance with its duties and authority under the *Nunavut Agreement*, the *NWNSRTA*, and *Nunavut Waters Regulations* the Board has a broad and widely recognized mandate to assess and order both land and water related security. Consistent with this regulatory mandate, the focus of the NWB's development of terms and conditions in relation to security are to ensure that the overall reclamation of the licensed undertaking is secured.⁹⁶

Although the NWB recognizes that parties often provide evidence in respect of reclamation security based on the assumption that the NWB is focused on determining the amount of security required to reclaim "water-based" impacts, leaving the reclamation of "land-based"

⁹⁴ Section 57(b) of the *NWNSRTA*.

⁹⁵ *SOR/2013-69*.

⁹⁶ Nunavut Water Board, Reasons for Decision for 2AM-DOH0713, September 19, 2007 at p. 25.



impacts to the relevant landowners under instruments such as land leases, land use permits or the like, the Board has repeatedly emphasized that this is NOT the inquiry the Board undertakes when fixing the appropriate amount of security. As noted under s. 10 of the *Nunavut Waters Regulations* above, the Board is not tasked with making arbitrary distinctions between land and water based security. Rather, the Board has established a practical and holistic approach to the assessment of the security required to be held by the applicants under a water licence that ensures that the total cost of reclaiming the licensed undertaking is secured when all the reclamation security secured under the applicable water licence and the land-based instruments are taken into consideration together .

The Board highlights that when the NWB was considering the renewal of the Water Licence for the advanced exploration at Boston site in 2001 the NWB took the opportunity to describe this holistic and practical approach, which was cited in the Board’s decision for the Doris North Project.⁹⁷ The holistic approach means that the NWB does not attempt to draw arbitrary distinctions between land and water based reclamation security when fixing security under s. 76 of the *NWNSRTA*. As indicated by the Board in prior decisions, such distinctions are artificial and do not reflect that reclamation must be planned for and undertaken in a holistic manner:

*The NWB takes a holistic but also practical approach to reclamation: on the one hand, the NWB believes that the elements of the environment, including land and water, are interconnected: what affects one part of the environment can ultimately have an impact on other environmental elements (water and vegetation, for example). By altering the natural elements of the environment, traditional Inuit culture and use of the water can be directly affected; on the other hand, the NWB believes, where possible, that a proponent should be required to submit one single reclamation plan, without segregating land-related reclamation and water-related reclamation because reclamation activities upon abandonment will likely be more efficient and undoubtedly less onerous if conducted at the same time by the same person.*⁹⁸

⁹⁷ From the Board’s 2001 renewal of the Boston Licence, as cited in the Hope Bay decision, see Nunavut Water Board, Reasons for Decision for 2AM-DOH0713, September 19, 2007 at p. 23.

⁹⁸ From the Board’s 2001 renewal of the Boston Licence, as cited in the Hope Bay decision, see Nunavut Water Board, Reasons for Decision for 2AM-DOH0713, September 19, 2007 at p. 23.



While TMAC, the KIA and CIRNAC did not expressly take issue with the NWB's approach, the parties did continue to use the language of the split between land and water security when describing the allocation of security amounts between the amounts of security recommended to be held under the Water Licences versus the amounts of security recommended to be held by the KIA under their form of agreement with TMAC (e.g. commercial production/land lease). At the Public Hearing, TMAC noted that this characterization of the allocation of security, although commonly used by the parties is not accurate, nor in keeping with the NWB's holistic approach to fixing the security required to be filed under the Licences. As summarized by TMAC:

The next thing, now that you've got a total cost for the project, is to develop the structure of the project in the security bond. The structure of the project has got two components to it. The first component is what's called the land or water split, and that's probably not good language to use. The better language to use here is what proportion will be secured with the Minister and what proportion will be secured with the landowner, the Kitikmeot Inuit Association.⁹⁹

The NWB agrees that the parties' use of the language of land/water split is unhelpful and inconsistent with the holistic approach to fixing security that expressly underlies all of the Board's decisions for almost two decades. To be clear, in accepting the allocation of security between the relevant Minister under the Water Licences and the KIA and TMAC's agreements for the Phase 2 Project, the NWB is not accepting that an appropriate split can be drawn between reclamation security for water-based impacts and land-based impacts. Rather, the NWB is recognizing that, given the limits on the Board imposed by s. 10 of the *Nunavut Waters Regulations*, the Board must not fix security under the Licences in an amount that exceeds the aggregate of the costs of reclaiming the licensed undertaking. If the NWB failed to consider the reclamation security held by the KIA when fixing the appropriate security amount would be inconsistent with the limit imposed under s. 10, and that is the basis for the Board's acceptance of the allocation of the total security amounts proposed by the parties under the Licences.

The NWB notes that this approach is not only consistent with the jurisdiction and mandate of the NWB under the *Nunavut Agreement*, the *NWNSRTA* and the *Nunavut Waters*

⁹⁹ M. Rykaart, TMAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, p. 176, lines 8-16.



Regulations, but also reflects the principles of reclamation set out in the *Mine Site Reclamation Policy for Nunavut*, 2002, which provides:

- *The total financial security for final reclamation required at any time during the life of the mine should be equal to the total outstanding reclamation liability for land and water combined (calculated at the beginning of the work year, to be sufficient to cover the highest liability over that time period).*
- *Financial security requirements related to reclamation should be clearly set out in water licences, land leases and other regulatory instruments, though there may be circumstances where security requirements may be more appropriately dealt with through an agreement.*¹⁰⁰

The Board's Approach to "Overbonding"

As noted above, if the Board required all of the outstanding reclamation security to be posted under the Water Licence without regard to the equivalent reclamation security that may be held by the KIA under agreements with TMAC for several components of the Undertaking, the result would be that the security amount fixed for the licensed undertakings would be "overbonded", i.e. the NWB would be requiring TMAC to post duplicate reclamation security, at least in part, with both the relevant Minister and the KIA.

As noted above, reflecting the limits on the Board's discretion to fix security consistent with the limits of s. 10 of the *Nunavut Water Regulations*, the NWB has developed and implemented an approach to allowing the Board to factor security held under land based instruments by Designated Inuit Organizations into the Board's fixing of security under water licences as follows:

... the Board's focus in assessing security is that the Applicant must have posted sufficient security, through all means, when taken together, to ensure that the overall reclamation of the site (land and water) has been adequately addressed. Consequently, the Board's starting point to assess security remains considering the security requirements holistically and then deducting from the aggregate land and water reclamation

¹⁰⁰ *Mine Site Reclamation Policy for Nunavut*, 2002, at http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/recpolnuna_1100100036043_eng.pdf.



totals any security held under other instruments, with the remainder being secured under the water licence.¹⁰¹

In fixing the security under the Water Licences as set out in detail in Part C of the Licences, the Board has therefore taken into account the reclamation security TMAC has proposed to be posted with the KIA throughout the term of the Licences. The allocation was summarized by TMAC at the Public Hearing as follows:

The split that's been agreed to in principle by all three parties for the Doris-Madrid would recommend an amount of 85 percent of that 62.1 million be proportioned to the Kitikmeot Inuit Association and 15 percent of that amount to the Minister.

For Boston, the proportionality between the two would be an amount of 24 percent of the 37.5 million being proportioned to the Kitikmeot Inuit Association and the remaining 75 percent being proportioned to the Minister.¹⁰²

The KIA also confirmed at the Public Hearing that although the precise amounts and allocations were not accepted by CIRNAC, the KIA and TMAC until the Public Hearing, due to dialogue between all three parties at the Public Hearing, the KIA was in agreement with the allocations proposed by TMAC and subsequently filed with the Board in Exhibits 41 and 42:¹⁰³

Originally CIRNAC had proposed 65.8 million in total security for Doris Madrid and 40.5 million for Boston. This represents a difference of 4.6 million and 4.2 million respectively, which we have closed through ongoing, three-way dialogue.

¹⁰¹ Nunavut Water Board, 2AM-JER1119, Reasons for Decision, Including Record of Proceedings, December 21, 2012 at p. 47.

¹⁰² M. Rykaart, TMAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, p. 180, lines 3-12.

¹⁰³ TMAC, NWB Public Hearing, Exhibit 41, File No. 2AM-BOS---- and Amendment No. 2 to Type "A" Water Licence No: 2AM-DOH1323, Electronic Copy "updated Draft Water Licence Framework Doris-Madrid" update of version filed on September 5, 2018 (English) and Exhibit 42, File No. 2AM-BOS---and No. 2 to Type "A" Water Licence No: 2AM-DOH1323, Electronic Copy "updated Draft Water Licence Framework Boston site" update of version filed on September 5, 2018 (English).



Originally CIRNAC's land and water split of security was 56.2 percent and 43.8 percent for Doris Madrid and 50.2 percent and 49.8 percent for Boston, which has now been resolved, and it's more in line with what we had originally proposed of 85 percent and 15 percent for Doris Madrid, and 24 percent and 76 percent for land and water at Boston. .¹⁰⁴

CIRNAC also confirmed at the Public Hearing that TMAC's summary of the allocation of security correctly captured the agreement of the KIA, TMAC and CIRNAC:

...I want to thank TMAC for the summary of how we've come to the conclusion of security and how we worked it out. It was well stated.

I just wanted to include that the Kitikmeot Inuit Association was part of those discussions, right, so it was a tri-party sort of discussion, and it was based on, you know, technical expertise, and I think the three of us are in support of the quantum.¹⁰⁵

On this basis, the terms and conditions in Part C of the Licences reflect the allocation between the reclamation security to be held under the Licences and the equivalent reclamation security to be held by the KIA as agreed upon at the Public Hearing.

Staged Security

Under the *NWNSRTA* the Board may include conditions of a licence where it considers this appropriate. Most specifically, s. 76(1) of the *NWNSRTA* gives the Board the authority to establish terms or conditions relating to the furnishing or maintaining of security. As always, the Board's authority must be exercised in light of its objects, stipulated under s. 35 of the *NWNSRTA*¹⁰⁶ and in accordance with the limits set out in s. 10 of the *Nunavut Waters Regulations*.

As canvassed in the Board's previous extensive discussions of security associated with the Baffinland Iron Mines Corporation's Mary River Project and recently reaffirmed in the

¹⁰⁴ J. Roesch, KIA, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, p. 96, lines 1-19.

¹⁰⁵ S. Dewar, CIRNAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, pp. 205-206, lines 21-26 and lines 1-3.

¹⁰⁶ Section 35 of the *NWNSRTA* states:



Board's consideration of the Back River Water Licence Application,¹⁰⁷ the NWB has recognized that in situations where the term of a licence is longer and the development of a licensed undertaking may be undertaken in phases and/or involves the development of several sites, it may be unreasonable for the Board to require a licensee to post the total amount of reclamation security necessary to reclaim all licensed undertakings prior to the commencement of construction of any of the infrastructure associated with the undertakings. In this case, requiring TMAC to post the entirety of the \$62.1 million in reclamation security that will eventually be required to reclaim the Doris North, Madrid North and Madrid South sites within 60 days of the Minister's approval of the issuance of Water Licence No: 2AM-DOH1335 would result in TMAC being overbonded by approximately \$30 million for several years until the Madrid North and Madrid South sites have been constructed and operations commence. Similarly, requiring TMAC to post the whole \$37.5 million in reclamation security that will eventually be required to reclaim the Boston site within 60 days of the Minister's approval of the issuance of Water Licence No: 2AM-BOS1835 would result in TMAC being also overbonded by tens of millions of dollars until the site has been constructed and operations commence.

As summarized by TMC at the Public Hearing:

TMAC recognizes and supports that the reclamation bond fully accounted for the closure of the project in the unlikely event that TMAC fails to complete its obligations. However, as TMAC has also emphasized, it is also important that the reclamation security posted with the Minister and the KIA must not significantly exceed the reclamation liability at site at any point in time.

Letters of credit are very expensive for the company to maintain, and if TMAC was required to post the entire global reclamation security amount at Doris-Madrid and at Boston upon issuance of the water licences, it would significantly constrain our ability to operate. Overbonding is a significant concern for those investing in Nunavut and mining projects in Nunavut.

The objects of the Board are to provide for the conservation and utilization of waters in Nunavut, except in a national park, in a manner that will provide the optimum benefit from those waters or the residents of Nunavut in particular and Canadians in general.

¹⁰⁷ Nunavut Water Board, Water Licence No: 2AM-BRP1831, Reasons for Decision, Including Record of Proceedings, September 21, 2018, at pp. 50-54.



We are preventing overbonding in two ways. The first way we are preventing overbonding is similar to the Back River project, where TMAC has proposed posting of security in tranches or stages so that TMAC is not required to post the full reclamation bond for infrastructure or tailings deposition years in advance.

TMAC, the KIA, and CIRNAC have all agreed that a staged bonding approach is appropriate. TMAC, CIRNAC, and the KIA are asking that the Board adopt our agreed staging approach in the amended Doris and the new Boston Water Licence.¹⁰⁸

The Board recognizes that with the development of the Phase 2 Hope Bay Belt Project being contingent on the revenues generated by the operation of the existing Doris North mine, combined with capital financing which is advanced in “tranches” or stages, it is reasonable that TMAC plans to develop the licensed undertakings in phases. The NWB accepts that the way that security should be posted under the Licences in Part C needs to reflect this reality of the development of the Phase 2 Project.

When requested by the Applicant and supported by the interveners, this approach has been accepted by the Board in both past and recent decisions. As explained by the Board in the circumstances of the Mary River Project, allowing for staged security is consistent with the NWB’s legislative mandate and limits, and also the reclamation policies applicable to mines in Nunavut:

The phased approach adopted by the Board under Part C and Schedule C of the Existing Licence [the terms and conditions related to security] and brought forward under the Amended Licence ensures that the amount of reclamation security posted by BIMC [the Licensee] at any given time over the course of the project life cycle will not only be adequate for the level of activities, risk, and scope of potential reclamation work required, but also ensures that the required amount does not exceed the aggregate costs set out in s. 10(a)-(d) of the Regulations while a project is being developed and before the full

¹⁰⁸ O. Curran, TMAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, pp. 270-271, lines 6-26 and lines 1-6.



scope of the undertaking and associated reclamation liability exists[underlining added for emphasis].

In the Board's view, this phased approach is entirely consistent with the Principles set out in the Mine Site Reclamation Policy for Nunavut, 2002 [footnote in the original omitted] and reflects, in particular, the requirement that the:

...total financial security for final reclamation required at any time during the life of the mine should be equal to the outstanding reclamation liability for land and water combined (calculated at the beginning of the work year, to be sufficient to cover the highest liability over that time period) ¹⁰⁹

As explained in detail at the Public Hearing, at the conclusion of extensive consultation and collaboration amongst TMAC, the KIA and CIRNAC, the parties reached agreement on the proposed staging of the posting of security, including the amounts and definitions associated with each stage, which have been included by the Board in Item C and Schedule A of the Licences. The following summary from TMAC outlines the general approach included in Part C of the respective Licences:

The next important part of the structure of the closure cost estimate is what we call staging. Staging has also been called phased bonding. The idea behind this is to structure the closure estimate such that the entire bond amount that gets agreed upon does not have to be posted immediately after approval of the licence, should the licence be approved.

The idea behind that is to divide that up into logical pots of money that can be posted prior to implementing certain activities on the ground. So for each of these stages or tranches, which is the language we've used in our application, for each of these tranches, there's a trigger. The trigger states explicitly when and how that stage will be triggered. The intent behind this is that should the licence be approved and should

¹⁰⁹ Nunavut Water Board, Water Licence No.: 2AM-MRY1325 – Amendment No. 1, Baffinland Iron Mines Corporation, Reasons for Decision Including Record of Proceedings, July 31, 2015 at pp. 55-56.



the Water Board agree with this philosophy, that those triggers will be written into the licence.¹¹⁰

With respect to the “stages” (the term used by the NWB in the Licences) or “tranches”(the term used by TMAC in their submissions) adopted under Water Licence No: 2AM-DOH1335, the approach was summarized by TMAC at the Public Hearing as follows:

I talked about the different tranches or the different stages. For the Doris-Madrid Project, which has a total security amount of 62.1 million, there is [sic] nine tranches proposed. The nine tranches consists of the, first one, which is the existing Phase 1 tranche; Phase 1 and Phase 2 are part of the same project.

There's currently \$31.7 million posted under Phase 1 bond, and that's the first tranche. So that's already been posted. The remaining eight tranches are being posted as we develop the project.¹¹¹

With respect to the stages proposed under Water Licence No: 2AM-BOS1835, TMAC proposed 3 fewer stages, as follows:

At Boston, there's a total of six tranches being proposed. Those six tranches will follow the same logic. For example, there is a tranche associated with tailings, and the first tailings tranche, the logic behind that would be that the trigger would be that 60 days before commissioning the processing plant and producing any filtered tailings, including the precommissioning period, that tranche needs to be posted. This ensures that the money is always posted to the Minister or the Kitikmeot Inuit Association prior to any activities taking place.¹¹²

¹¹⁰ M. Rykaart, TMAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, p. 178, lines 7-24.

¹¹¹ M. Rykaart, TMAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, p. 180, lines 13-22.

¹¹² M. Rykaart, TMAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, p. 181, lines 12-22.



The Kitikmeot Inuit Association (KIA) confirmed their agreement with the stages and amounts proposed by TMAC at the Public Hearing as follows:

TMAC has proposed staged security for Doris, Madrid, and Boston, which KIA has reviewed and agrees with. The tranches for staged security meet KIA's requirements for receiving staged security for major mine site components on a geographic basis and a planned construction schedule, and I believe some of the tranches have been consolidated as well.

As stated previously, the KIA is open to receiving security using the proposed staged split under particular water licence conditions.¹¹³

The KIA believes that the staged security is equitable and will meet KIA and TMAC's security requirements, given the relevant risks in each of the construction and operation stages. This has been revised and some tranches consolidated, which will be provided as a submission to you.¹¹⁴

CIRNAC also confirmed that the Department agreed with the proposed staged approach to the posting of security under the Licence:

The department has no outstanding concerns with this project at this time. The department is in agreement with Kitikmeot Inuit Association and TMAC regarding the overall security quantum. Further, we have agreement on how the security is held and when it is required to be posted by TMAC.¹¹⁵

Although the Board recognizes that there will undoubtedly be some complexity and on-going coordination between TMAC, the KIA and CIRNAC required to administer the security provisions over the course of the 17-year term of the Licence, especially during periods of intense construction under both Licences at the same time, the Board also respects that the stages of development and amounts linked to each stage are the product of considerable work

¹¹³ J. Roesch, KIA, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, p. 96, lines 19-26.

¹¹⁴ J. Roesch, KIA, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, p. 22, lines 11-16.

¹¹⁵ S. Dewar, CIRNAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, pp. 266-267, lines 25-26 and 1-4.



by TMAC, the KIA and CIRNAC, the parties responsible for administering the security. On this basis, the Board has accepted the staged approach to security as proposed by TMAC and supported by the KIA and CIRNAC, and has included tables summarizing the stages in Part C of the Licences. As noted in the previous discussion of the Definitions section of the Licence under Schedule A, the Board has also adopted the definitions as proposed by the parties of the nine (9) stages of development under Water Licence No: 2AM-DOH1335 and the six (6) stages of development under Water Licence No: 2AM-BOS1835 and that will trigger the requirements to file additional security under Part C.

The table included under Part C, Item 1 of the Licence sets out the specific amounts of security that must be filed with the Minister triggered in advance of each stage of development. The amounts are cumulative so that once security has been posted in advance of a given stage, it will be required to be maintained until such time as the infrastructure/site has been decommissioned and the reclamation required for that stage has been confirmed. In the event that TMAC wishes to reduce the security required for specified infrastructure to reflect decommissioning or reclamation activities that take place during the term of the Licence, TMAC may apply under Part C for a reduction.

The tables included by the Board in Part C of the Licences are based on the stages and amounts set out in Part C, of the updated Water Licence Framework Documents filed by TMAC following the Public Hearing in Exhibits 41 and 42.¹¹⁶

As required by s. 10 of the *Nunavut Waters Regulations*, the Board has determined that when the amounts agreed to by the parties in Exhibits 41 and 42, as broken out for each stage of development of the Project, are posted as required under the Licences, the security posted will adequately reflect the aggregate of: the costs of the decommissioning /abandonment) of the undertaking; restoration of the site; costs of on-going reclamation after decommissioning/abandonment and compensation to the KIA for potential adverse effects . Further, although the Board notes that in the past, financial and performance bonding institutions have indicated that amounts rounded to the hundreds or thousands of dollars are easier to work with than to the dollar, recognizing the considerable efforts expended by TMAC, the KIA and CIRNAC to arrive at the precise dollar amounts included in Exhibits 41 and 42, the Board has accepted the amounts as stated in the Exhibits, which are to the nearest dollar.

¹¹⁶ TMAC, NWB Public Hearing, Exhibit 41, File No. 2AM-BOS---- and Amendment No. 2 to Type “A” Water Licence No: 2AM-DOH1323, Electronic Copy “updated Draft Water Licence Framework Doris-Madrid” update of version filed on September 5, 2018 (English) and Exhibit 42, File No. 2AM-BOS---and No. 2 to Type “A” Water Licence No: 2AM-DOH1323, Electronic Copy “updated Draft Water Licence Framework Boston site” update of version filed on September 5, 2018 (English).



It should be noted that although the Board does not have jurisdiction to prescribe the amount of security that the KIA chooses to hold as land and resource owner for the licensed undertakings, under Part C the Board has expressly recognized that the security arrangements proposed by TMAC and agreed to by the KIA and CIRNAC, are premised on a specific portion of the total outstanding security liability associated with various stages of infrastructure development being held by the KIA. Consequently, the Board requires confirmation from TMAC under Part C of the Licences that the proposed security to be held by the KIA has in fact been provided to the KIA. As set out in the provisions of Part C of the Licences, if the NWB does not receive confirmation that the required security has been posted with the KIA, TMAC is required within 30 days to file additional security with the Minister under the Licence in order to ensure that when the security furnished to the Minister under the Licence is combined with the reclamation security held by the Kitikmeot Inuit Association the total amount of reclamation security furnished by TMAC is sufficient to meet the total reclamation security amount applicable to the stage(s) of development at the various sites.

With respect to adjustments to security that may be required if there are significant changes to the Phase 2 Project development or reclamation plans and schedules, the Board has included provisions in Part C: Conditions Applying to Security that are linked to Part J: Conditions Applying to Abandonment, Reclamation and Closure to ensure that TMAC is required to provide periodic updates (every 5 years) during the term of the Licences to the reclamations plans and associated reclamation security cost estimates to reflect, on an on-going basis significant changes to TMAC's reclamation plans and liability. These provisions ensure that the Board can revisit the security requirements under the Licences to ensure that the amounts remain adequate for the reclamation of the undertakings.

Form of Security

Pursuant to s. 76(1) of the NWNSRTA and s. 10(3) of the *Nunavut Waters Regulations* S.O.R./2013-69:

- 10(3) Security must be in the form of*
- (a) a promissory note guaranteed by a bank listed in Schedule I or II to the [Bank Act](#) and made payable to the Receiver General;*
 - (b) a certified cheque drawn on a bank listed in Schedule I or II to the [Bank Act](#) and made payable to the Receiver General;*
 - (c) a performance bond approved by the Treasury Board for the purposes of paragraph (c) of the definition "security"*



deposit” in section 2 of the [Government Contracts Regulations](#);

(d) an irrevocable letter of credit from a bank listed in Schedule I or II to the [Bank Act](#); or

(e) a cash payment.

The Board’s Conclusions Regarding Reclamation Security to be Posted by Stages of Project Development

As requested by TMAC and agreed to by the KIA and CIRNAC, the security required to be posted under Part C of Water Licence No.: 2AM-DOH1335 is apportioned into nine stages that are linked to the increase in reclamation liability that would occur as the expansion and development of key project infrastructure takes place at the Doris North, Madrid North and Madrid South sites. The Board is confident that the staging of security included under this Licence will ensure adequate security will be in place before activities are undertaken that will increase the reclamation liability of the licensed undertakings. On this basis, the tables set out below Part C, Items 1 and 2 of Water Licence No: 2AM-DOH1335 establish the following staged reclamation security requirements:

- Upon issuance of the Licence, the existing total reclamation security for **Pre-Existing Infrastructure (Phase 1)** in the amount of **\$30,725,648** shall be posted, consisting of **\$8,581,932** to be held by the Minister under the Licence and **\$22,143,715** to be held by the Kitikmeot Inuit Association;
- Sixty (60) days prior to construction of the **Roberts Bay & Boston All Weather Roads**, an additional total reclamation security amount of **\$934,395** shall be posted, consisting of **\$17,575** to be held by the Minister under the Licence and **\$916,820** to be held by the Kitikmeot Inuit Association;
- Sixty (60) days prior to construction of the **Doris Wind Turbines**, an additional total reclamation security amount of **\$1,569,016** shall be posted, with the entire **\$1,569,016** to be held by the Kitikmeot Inuit Association;
- Sixty (60) days prior to construction of the **Madrid North Wind Turbines**, an additional total reclamation security amount of **\$1,569,016** shall be posted, with the entire **\$1,569,016** to be held by the Kitikmeot Inuit Association;
- Sixty (60) days prior to construction of the **Boston Wind Turbines**, an additional total reclamation security amount of **\$1,569,016** shall be posted, with the entire **\$1,569,016** to be held by the Kitikmeot Inuit Association;



- Sixty (60) days prior to construction of the **Madrid North**, an additional total reclamation security amount of **\$4,123,262** shall be posted, consisting of **\$1,617,616** to be held by the Minister under the Licence and **\$2,505,646** to be held by the Kitikmeot Inuit Association;
- Sixty (60) days prior to construction of the **Madrid South**, an additional total reclamation security amount of **\$957,108** shall be posted, consisting of **\$181,632** to be held by the Minister under the Licence and **\$775,476** to be held by the Kitikmeot Inuit Association;
- Sixty (60) days prior to construction of the **Doris TIA Phase 2a**, an additional total reclamation security amount of **\$11,180,308** shall be posted, with the entire **\$11,180,308** to be held by the Kitikmeot Inuit Association; and
- Sixty (60) days prior to construction of the **Doris TIA Phase 2b**, an additional total reclamation security amount of **\$9,430,810** shall be posted, with the entire **\$9,430,810** to be held by the Kitikmeot Inuit Association;

In total, when all stages of the undertakings under Water Licence No: 2AM-DOH1335 have been constructed, the total reclamation security that must be posted under all sources will be **\$62,058,577** consisting of **\$10,398,755** to be held by the Minister under the Licence and **\$51,659,822** to be held by the Kitikmeot Inuit Association.

As requested by TMAC and agreed to by the KIA and CIRNAC, the security required to be posted under Part C of Water Licence No.: 2AM-BOS1835 is apportioned into six stages that are linked to the increases in reclamation liability that would occur as the development and expansion of key project infrastructure takes place at the Boston site. The Board is confident that the staging of security included under the Licence will ensure adequate security will be in place before activities are undertaken that will increase the reclamation liability of the licensed undertakings. On this basis, the tables set out below Part C, Items 1 and 2 of Water Licence No: 2AM-BOS1835 establish the following staged reclamation security requirements:

- Sixty (60) days prior to commencement of construction of **Buildings**, an additional total reclamation security amount of **\$10,499,798** shall be posted, consisting of **\$918,207** to be held by the Minister under the Licence and **\$9,581,590** to be held by the Kitikmeot Inuit Association;
- Sixty (60) days prior to commencement of **Earthworks**, an additional total reclamation security amount of **\$2,592,915** shall be posted, consisting of **\$2,433,468**



to be held by the Minister under the Licence and **\$159,447** to be held by the Kitikmeot Inuit Association;

- Sixty (60) days prior to commencement of **Commercial Mining**, an additional total reclamation security amount of **\$939,809**, shall be posted, consisting of **\$717,283** to be held by the Minister under the Licence and **\$222,526** to be held by the Kitikmeot Inuit Association;
- Sixty (60) days prior to construction of the **Boston TMA Phase 1**, an additional total reclamation security amount of **\$11,573,421** shall be posted, with the entire **\$11,573,421** to be held by the Minister under the Licence;
- Sixty (60) days prior to construction of the **Boston TMA Phase 2**, an additional total reclamation security amount of **\$5,926,274** shall be posted, with the entire **\$5,926,274** to be held by the Minister under the Licence; and
- Sixty (60) days prior to construction of the **Boston TMA Phase 3**, an additional total reclamation security amount of **\$5,926,274** shall be posted, with the entire **\$5,926,274** to be held by the Minister under the Licence.

In total, when all stages of the undertakings under Water Licence No: 2AM-BOS1835 have been constructed, the total reclamation security that must be posted under all sources will be **\$37,458,491** consisting of **\$27,494,927** to be held by the Minister under the Licence and **\$9,963,564** to be held by the Kitikmeot Inuit Association.

Part D: Conditions Applying to Construction

The scope of the Applications include the upgrade, expansion, and construction of facilities and infrastructure at the Doris North Site and Madrid North and South Sites under Water Licence No: 2AM-DOH1335, and at the Boston Site under Water Licence No: 2AM-BOS1835.

Based on the information provided in the Applications, representations made by various intervening parties and the NWB's review, the Board has included conditions in Part D of the Licences requiring TMAC to submit to the Board for review, at least sixty (60) days prior to the construction phase of the project, for-construction drawings, stamped and signed by a qualified professional, for all relevant facilities/infrastructure designed to contain, withhold, divert or retain waters and contain wastes. The Licences prescribe that these drawings shall be accompanied with detailed report(s) to include design rational, requirements, criteria, parameters, construction methods, and monitoring summary and more.



Following construction, within ninety (90) days of the completion of each structure designed to contain, withhold, divert or retain waters and contain wastes, TMAC is required under the terms and conditions in the Licences to submit a Construction Summary Report including as-built drawings and designs as well as documentation of field decisions that deviated from original plans.

The Board has included conditions requiring the Proponent to undertake geotechnical inspections of facilities/infrastructure designed and constructed to withhold, divert or retain waters and contain wastes in accordance with set intervals as well as adherence to the Canadian *Dam Association Safety Guidelines* for relevant infrastructure/facilities.

The Board has included Effluent quality limits for runoff and/or discharge from drainage management systems, during Construction/Operation of any facilities and infrastructure associated with this project, including laydown areas and the Haul Roads, where flow may directly or indirectly enter a water body.

Effluent quality limits are also included for water to be released into Aimaokatalok Lake or to the tundra. The Licences also require that all effluent exceeding the Effluent quality discharge limits shall be treated prior to release into the receiving environment.

At the request of DFO,¹¹⁷ a condition has been included in Part D of Water Licence No: 2AM-DOH1335 to require detailed engineering designs and mitigation measures for all water crossings, specifically along the All Weather Road (AWR) connecting the Madrid site to the Boston site.

Part E: Conditions Applying to Water Use and Management

Section 11 of the *NWNSRTA* states “... *no person shall use, or permit the use of, water in Nunavut except in accordance with the conditions of a licence.*”

Under Water Licence No: 2AM-DOH1335, the Board approves the Applicant’s request to obtain fresh water from Doris Lake for industrial purposes and from Windy Lake for domestic camp use, for the Doris-Madrid Project. Under Water Licence No: 2AM-BOS1835 the Board authorizes the Applicant to obtain fresh water from Aimaokatalok Lake for industrial and domestic purposes for the Boston Project.

¹¹⁷ Fisheries and Oceans Canada, Technical review comments, TMAC Resources Inc., Phase 2 Hope Bay Belt Project, Nunavut Water Board, NWB File No.: 2AM-DOH 1323 & 2AM-BOS---, DFO File: 02-HCAA-CA7-00117, March 28, 2018.



Part E of Water Licence No: 2AM-DOH1335 sets out that the total volume of water for all purposes obtained for the Doris-Madrid Project shall not exceed 2,033,800 cubic metres annually (1,930,000 cubic metres from Doris Lake for industrial purposes, 43,800 cubic metres from Windy Lake for domestic purposes, and up to 60,000 cubic metres from proximal sources for winter road construction).

Part E of Water Licence 2AM-BOS1835 establishes that the total volume of water for all purposes obtained for the Boston Project shall not exceed 503,000 cubic metres annually from Aimaokatalok Lake (450,000 cubic metres for industrial purposes, 33,000 cubic metres for domestic purposes, and up to 20,000 cubic metres from proximal sources for winter road construction).

In their response to final written submissions, TMAC agreed that they would integrate the relevant information regarding industrial water treatment plant methods to remove arsenic from contact water, into the Doris-Madrid Water Management Plan 60-days prior to the commissioning of the facility.¹¹⁸

Water and Load Balance Modeling

TMAC included within the Applications a mine site Water and Load Balance Model. The model was developed to evaluate water management needs and predict water quality at the Project footprint and downstream receiving environments, and to assess potential water quality post-closure.

Under Part E of the Water Licence No: 2AM-DOH1335, the Board will require TMAC to confirm predictions from the Water and Load Balance modelling already supplied by TMAC, by sampling water quality in Windy Lake through construction and into the first two years of operations following the protocols and sampling frequency outlined in the Aquatic Effects Monitoring Plan (AEMP). If modelling predictions are confirmed, water quality sampling in Windy Lake will cease until future monitoring for post-closure is developed. TMAC committed to the following the technical meeting and outlined as Commitment No. 1 in the PHC Decision report.¹¹⁹

¹¹⁸ TMAC Response to Final Written Submissions for Applications for 2AM-BOS---- and Amendment No. 2 of 2AM-DOH1323, TMAC Response to CIRNAC-6, pp. 14, October 1, 2018.

¹¹⁹ NWB, Pre- Hearing Conference Decision Regarding Applications for a new Type “A” Water Licence and a Type “A” Water Licence Amendment, by TMAC Resources Inc., August 23, 2018, Appendix D: List of Commitments.



The Board requires TMAC to provide, an updated Water and Load Balance Model that includes an update to baseline data and the hydrodynamic model. This requirement to update the Water and Load Balance Model periodically as required throughout the term of the Licences as well as within two years after initial processing of Madrid Ore, two years after commissioning of the Boston Process Plant and two years before closure, was discussed during the Technical Meeting on May 14 and 15, 2018, where it was recorded as Commitment No. 2.¹²⁰

Consistent with the requirements of the Federal *Fisheries Act*,¹²¹ the Board also requires TMAC to equip all water intake hoses with a screen of an appropriate mesh size to ensure that fish are not entrained, and withdraw water at a rate such that fish do not become impinged on the screen.

Part F: Conditions Applying to Waste Disposal and Management

The Board has included additional conditions in the amended Licence and new Licence to ensure that the main types of waste and/or effluent generated by the Project do not negatively impact the freshwater receiving environment. The following lists the wastes, facilities and/or activities that are associated with the NWB's mandate, and that are, therefore, included within the scope of the amended Licence and new Licence:

- Subaqueous Tailings Impoundment Area at Doris;
- Dry Stack Tailings Management Area at Boston;
- Waste Rock and Ore Storage Facilities (WRSF) ;
- Bulk Fuel Storage and Containment Facility;
- Hazardous Waste Storage Facilities;
- Mine Contact Water;
- Land Farms;
- Landfills; and
- Sewage and Industrial Wastewater Treatment Plants.

Doris Subaqueous Tailings Impoundment Area (TIA)

¹²⁰ NWB, Pre- Hearing Conference Decision Regarding Applications for a new Type "A" Water Licence and a Type "A" Water Licence Amendment, by TMAC Resources Inc., August 23, 2018, Appendix D: List of Commitments.

¹²¹ R.S.C. 1985, c. F-14.



Ore processing will include cyanidation and flotation methods, with two separate streams of tailings being produced, both captured under the tailings management system (TMS). The cyanidation tailings will be detoxified (cyanide destruction) then filtered and blended with waste rock to be returned underground as backfill. TMAC is proposing to process the ore from the Doris and Madrid mine sites using the processing infrastructure at the Doris Mine site, including the use of the mill and storage of tailings within the footprint of the existing Doris TIA. From the Doris and Madrid processing facilities, the flotation tailings will be deposited in the Doris TIA.

The currently licensed Doris TIA was designed for subaerial deposition of up to 2.5 Million tonnes (Mt) of tailings. This TIA was formerly a natural lake (Tail Lake), which has been listed on Schedule 2 of the *Metal and Diamond Mining Effluent Regulations*, SOR/2002-222 (MDMER). Terms and conditions in Part F of Water Licence No: 2AM-DOH1335 will allow TMAC to further develop and expand the TIA to accommodate the increased volume of tailings to hold up to 18 Mt.

The TIA will be impounded through three dams to ensure environmental containment: the North Dam, South Dam, and West Dam. The North Dam, which is unchanged from the previous Water Licence No: 2AM-DOH1323, will function as a water retaining frozen core dam. Alternatively, the South and West dams are frozen foundation rock fill dams incorporating a geosynthetic clay liner, and will have tailings deposited against the upstream face of the dams to keep the Reclaim Pond separated from these structures. As part of the amendment to Water Licence No: 2AM-DOH1323, TMAC requested that the South Dam be raised and the West Dam be constructed as a new structure to accommodate the additional tailings deposition.

Tailings deposition into the TIA under the existing Water Licence No: 2AM-DOH1323 commenced in January of 2017 and will continue until 2034 when mine operations at the Doris and Madrid mines are scheduled to cease. The TIA will undergo final closure through application of a 0.3 m thick quarry rock isolation cover intended to mitigate against tailings dust, and prevent direct contact of tailings with terrestrial wildlife. Water quality modeling has predicted that once the cover has been applied, water discharge from the TIA will meet environmental discharge criteria.¹²² Once the Licensee can demonstrate that the discharges meet the required criteria, TMAC proposes that the North Dam would be breached, returning the natural outflow to the pre-mining elevation.

¹²² SRK Consulting (Canada) Inc. 2017a. Hope Bay Project – Water and Load Balance. Report Prepared for TMAC Resources Inc. Project Number ICT022.013. November 2017.



The Board has found the *Hope Bay Project, Phase 2, Doris Tailings Impoundment Area-Operations, Maintenance, and Surveillance Manual* to be acceptable and has recommended approval of the Plan with the relevant Minister's approval of the issuance of Water Licence No: 2AM-DOH1335 .

Boston Dry Stack Tailings Management Area (TMA)

Similar to Doris-Madrid, ore processing at Boston will include cyanidation and flotation methods, with two separate streams of tailings being produced, both captured under the tailings management systems (TMS). The cyanidation tailings will be detoxified (cyanide destruction) to produce detox tailings. The detox tailings are then filtered and blended with waste rock to be returned underground as backfill. The flotation tailings will be filtered (to reduce water content) and then deposited in the Boston TMA. The Boston ore reserve is 5.1 Mt, and reflecting this estimate, the design capacity of the Boston TMA is 5.1 Mt; (although this amount does not reflect that TMAC plans that detoxified tailings of about 6 to 8% of this total that will be deposited underground).

Environmental containment for the Boston TMA consists of a series of contact water ponds to collect surface runoff from the facility. At closure, the TMA will be covered with a low infiltration cover consisting of a geosynthetic liner with a protective quarry rock cover placed on top of the liner.

The Boston TMA is located east of camp facilities and south of the airstrip. It is surrounded by contact water berms that prevent runoff from entering the environment.

The Board has found the *Hope Bay Project, Phase 2, Boston Tailings Management Area - Operations, Maintenance and Surveillance Manual* to be acceptable and has recommended approval of the Plan with the relevant Minister's approval of the issuance of Water Licence No: 2AM-BOS1835.

Waste Rock, Ore and Mine Backfill

The mine plans for all Hope Bay mines includes placement of structural backfill into the underground workings. Backfill material types include waste rock, detoxified tailings and/or quarry rock, depending on the specific mine. On the surface, temporary placement of all backfill materials on the waste rock stockpile will occur prior to final placement of the backfill materials in the underground stopes. At closure, there will be no waste rock and detoxified tailings remaining on the surface.



Contact water quality may be affected by the chemistry of waste rock stockpile materials and the potential for metal leaching and/or acid rock drainage (ARD) from these materials released due to the weathering of sulphide minerals. Due to the high carbonate content of rock at Hope Bay, the risk of ARD for the waste rock stockpile is low, however, neutral pH drainage issues can still occur.

Waste rock produced during mining will be stored in engineered Waste Rock Storage Areas (WRSAs). Seepage and runoff from the WRSAs will be collected in perimeter ditches/berms and directed to collection ponds. During Operations, runoff from the WRSAs will be pumped to collection ponds and to the Doris TIA for eventual use as Reclaim Water.

Bulk Fuel Storage Facilities and Hazardous Waste Storage Facilities

In Part F of the Licences the Board has included Effluent quality limits for the water that could be discharged onto land from the Bulk Fuel Storage Facility's secondary containment area. Any proposed Effluent that exceeds Effluent quality limits (tested prior to any discharge) shall be treated prior to release onto land or shall be transferred to the Doris TIA.

Mine and Process Contact Water

As proposed by TMAC, the NWB has included terms and conditions in Water Licence No: 2AM-DOH1335 requiring that all contact water from the major mine infrastructure will be diverted and/or collected in the collection ponds then discharged/pumped into the Doris TIA, including the water from the underground mines, and the seepage and runoff water from the Waste Rock Storage Facilities and Ore stockpiles.

Contact water at Doris and Madrid will be managed primarily by transporting it to the TIA, where it can be reused by the Doris process plant. Direct discharge to the environment will occur following treatment at the Doris Contact Water Treatment Plant, and discharge to the marine environment in Roberts Bay.

Direct discharge of contact water at Boston under Water Licence No: 2AM-BOS1835 will be a combination of treated water from the Industrial Water Treatment Plant and the Sewage Treatment Plant. Treated water may be discharged to Aimoakatalok Lake via a diffuser, if the Effluent discharge criteria are met.

During technical review of the Applications, Environment and Climate Change Canada (ECCC) discussed with TMAC the potential for including effluent quality discharge criteria



for parameters in addition to the criteria established under the *Metal and Diamond Mining Effluent Regulations*, SOR/2002-222 (*MDMER*) in order to be protective of the sensitive arctic environment. Ultimately, it was agreed that the updated *MDMER* criteria were sufficiently protective of the environment and as such additional discharge criteria beyond the *MDMER* have not been included.

Discharge Criteria have also been included for water that could be discharged onto tundra from the Bulk Fuel Storage Facility's secondary containment area.

Discharge of contact water at Madrid and at Boston will reflect discharge criteria already established at the Doris site, as requested by TMAC in their response to final written submissions.

*With respect to the discharge of contact water at Madrid, TMAC is proposing to add an additional clause that would permit TMAC to discharge such waters to the TIA, or if compliant, to the tundra. The criteria for such discharge would be the same as was previously included in DOH-1323...*¹²³

Landfarms

The Licences authorize TMAC to operate two landfarms for the storage and remediation of soils, rock, snow, and ice contaminated with light petroleum hydrocarbons such as diesel or gasoline. There will be two Landfarms, one operated under each Licence. The Doris Landfarm is already constructed and operating under the Water Licence No: 2AM-DOH1323, and is located approximately 0.6 km north of the existing Doris Camp Area and is situated between the existing all weather road and Quarry 2. Access to the Facility is gained via an 8.0 m wide access road originating immediately southwest of the Crusher Pad.

The Boston Landfarm is proposed to be located on a crushed rock pad between then Boston process plant and Boston contact water pond #2. The Boston Landfarm will be similar to the existing landfarm at Doris. It will consist of three cells, one for contaminated snow and water, one for clean water (pending discharge) and one for contaminated soil. The Licences require that seepage and runoff from the landfarm will be collected in perimeter ditches/berms, passed through an oil/water separator, used for the management of the landfarm, or, if it meets release criteria, this water can be released to the environment.

¹²³ TMAC Response to Final Written Submissions for Applications for 2AM-BOS---- and Amendment No. 2 of 2AM-DOH1323, October 1, 2018.



An additional Landfarm (“Boston Land Treatment Area”) is already approved under the existing Type B Water Licence 2BB-BOS1727, and is located at the existing Boston Camp Site.

Landfills

Under Part F of the Licences, TMAC is authorized to construct and operate two onsite landfills for the disposal of non-combustible and non-hazardous solid wastes. One Landfill is already permitted at the Doris North site under Amendment No. 1 to Water Licence No: 2AM-DOH1323, but is not yet built, and one will be constructed at the Boston site. The Landfill that is already permitted under the existing Water Licence No: 2AM-DOH1323 for the Doris North site will also support Madrid operations under the amended Water Licence No: 2AM-DOH1335.

In their final written submission, CIRNAC recommended¹²⁴ that the Licences include timelines for the approval of the revised Non-Hazardous Waste Management Plan that will include operational details for the landfills that will be constructed at the Doris site and the Boston site, and these terms and conditions have been included in Part F.

All seepage and runoff from the landfills is required to be managed in conjunction with the Hope Bay Project Boston Water Management Plan and the Hope Bay Project Doris-Madrid Water Management Plan and will be transferred to the active tailings management facility for eventual use as Reclaim Water. If release criteria are met, landfill seepage is permitted to be released to the tundra.

Sewage

Sewage collected from the camps and work site facilities is required to be pumped to the Sewage Treatment Plants (STP) at Doris and Boston. The objective of the STP is to treat sewage to an acceptable level prior to discharge to the Tailings Impoundment Area (Doris-Madrid), Aimaokatalok Lake (Boston), or the tundra (all sites), via sewage water discharge pipeline and diffuser as required.

Under Part F of the Licences, the Licensee is required to direct all sludge removed from the Sewage Treatment Plants and Water to the Tailings Impoundment Area (TIA) or Landfarm.

¹²⁴ CIRNAC, Final Submission Regarding TMAC Resources Inc.’s Water Licence Applications for Hope Bay Phase 2, September 28, 2018.



Under Part F, Item 6 of Water Licence No: 2AM-BOS1835, the Board requires TMAC to submit to the Board for approval, at least ninety (90) days prior to the construction/installation of facilities at the Boston site, an Operation and Maintenance Manual(s) for the Wastewater Treatment Plant(s), including for the Sewage Treatment Plant and the Manual(s), shall be prepared in accordance with the *Guidelines for the Preparation of an Operating and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories (1996)*.

Part G: Conditions Applying to Modifications

Although the provisions of Part G, Item 1 do allow the Applicant to carry out certain types of “modifications” (as defined in the Licences) without consent from the Board, it should be noted that pursuant to Articles 11, 12 and 13 of the *Nunavut Agreement* and as set out in Part G of the Licences, a proposed modification submitted under the Licences may require consideration by the Nunavut Planning Commission (NPC) and assessment by the Nunavut Impact Review Board (NIRB). It is the responsibility of the Licensee to notify and consult with the NPC and the NIRB to ensure the requirements of the *Nunavut Agreement* and the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14, s. 2 are met prior to submitting a notification of modification to the NWB under the Licences.

Further, modifications that do not meet the criteria of Part G, Item 1 may require written permission from the NWB. Without written consent from the NWB, the Applicant is not allowed to carry out modifications. Changes that do not meet the definition of modification under the Licence or the requirements of Part G would be considered to be amendments to the Licence. The Board requires that such changes would be subject to the requirements of the Type “A” water licence amendment process, including potentially requiring a public hearing before the Board considers the amendment as required under the *NWNSRTA* and the *Nunavut Waters Regulations*.

Part H: Conditions Applying to Emergency Response and Spill Contingency Planning

The development and implementation of measures to respond to spills and other emergencies are fundamental to ensuring that any potential unpredicted adverse effects on the environment from Project activities are prevented and/or minimized. The Plans developed under this Part should be designed to identify potential emergencies that could arise while carrying out the undertaking and provide a procedural framework for responding to those emergencies. Reflecting these requirements, TMAC submitted the following plans with the Applications:



- Hope Bay Emergency Response Plan;
- Hope Bay Underground Emergency Response Plan;
- Hope Bay Spill Contingency Plan;
- Hope Bay Hazardous Wastes Management Plan; and
- Hope Bay Explosives Management Plan.

As reviewed and approved by the Board upon the relevant Minister's approval of the issuance of the Licence, the *Hope Bay Emergency Response Plan* and *Hope Bay Underground Emergency Response Plan* provides all employees and contractors with written guidelines to be followed in the event of an emergency on the Hope Bay Belt, both above and below ground. These plans specify TMAC's approach to risk assessment and management and identified risk mitigation strategies, natural hazards, and accidents and malfunctions. These Plans describe TMAC's emergency response procedures, including emergency equipment, training requirements, communication systems, surveillance procedures, addressing multiple emergency situations and follow-up measures. Finally, the documents discuss plan evaluation and adaptation, record keeping, and loss prevention.

As reviewed and approved by the Board upon Board upon the relevant Minister's approval of issuance of the Licence, the *Spill Contingency Plan* discusses spill prevention planning and procedures. This Plan describes the spill response procedures to be used by TMAC at all sites along the Hope Bay Belt (both Phase 1 and Phase 2). This Plan ensures that: 1) human life is protected and the potential for injury during spill response activities is minimized to the extent possible; 2) all potentially harmful environmental impacts are kept to a minimum; 3) resources are used effectively and efficiently; and 4) all required internal and regulatory reporting is completed on time and as required. Personnel roles and responsibilities are also included within the Plan, as well as spill response equipment, procedures, and reporting.

As reviewed and approved by the Board upon the relevant Minister's approval of issuance of the Licence, the *Hope Bay Hazardous Wastes Management Plan* describes the waste management practices used at the Hope Bay Project to manage hazardous wastes. This Plan ensures that: 1) hazardous wastes are collected and separated from other non-hazardous waste streams; 2) hazardous wastes are stored, packaged and transported to a licenced disposal facility as per applicable regulations; and 3) records are kept of all waste stored and disposed of from the Hope Bay Project.



As submitted with the Applications, the *Hope Bay Explosives Management Plan* describes how explosive materials will be managed in an environmentally sound manner at the Hope Bay Project. The plan details the transportation, storage and use of explosive materials on-site.

The Board is satisfied with the Plans submitted by TMAC and TMAC's commitment to update these plans regularly to reflect any changes to Project-specific protocols, teams, and management contact information.

Part I: Conditions Applying to General and Aquatic Effects Monitoring

As previously noted, s. 73 of the *NWNSRTA*¹²⁵ requires the NWB to set conditions at least as stringent as conditions prescribed by regulation pursuant to ss. 36(5) of the *Fisheries Act*. Furthermore, for the purpose of ensuring compliance with the licence or regulations, an Inspector designated by the Minister may inspect or examine works, waters or waste and exercise other powers according to the *NWNSRTA*.¹²⁶ For the purpose of monitoring, the NWB may include terms and conditions in the licence regarding monitoring programs to be undertaken.¹²⁷

The following monitoring plans were included as part of Applications and have been approved by the Board upon the relevant Minister's approval of issuance of the Licences: the *Hope Bay Project Aquatic Effects Management Plan* (AEMP); and the *Quality Assurance/Quality Control* (QA/QC) Plan.

During the technical review of the file, an updated AEMP was requested by both ECCC and CIRNAC. The AEMP underwent revision throughout the review period and TMAC developed a site wide AEMP that applies to the developments along the whole of the Hope Bay Belt Property.

The final version of the AEMP was submitted to the Board on October 1, 2018, following revisions in response to comments by intervening parties through the review process. As described by TMAC:

¹²⁵ Section 73 of the *NWNSRTA* states:

Where the Board issues a licence in respect of any waters to which regulations made under subsection 36(5) of the *Fisheries Act* apply, any conditions in the licence relating to the deposit of waste in those waters shall be at least as stringent as the conditions prescribed by those regulations.

¹²⁶ See ss. 85-94 of the *NWNSRTA*.

¹²⁷ See s. 70(1)(c) of the *NWNSRTA*.



This Hope Bay Project (the Project) Aquatic Effects Monitoring Plan (the Plan) describes the comprehensive aquatic monitoring program that will be implemented to monitor potential effects on the freshwater environment of all projects operating along the Hope Bay Belt, including the Madrid-Boston Project and the Doris Project.

The Plan provides details of the sampling plan for various abiotic and biotic components of the aquatic ecosystem (i.e., water and sediment quality, phytoplankton, benthic invertebrates, and fish) to determine the potential effects of mining activities on the freshwater receiving environment. The Plan also summarizes the key mitigation measures that will be used to reduce the potential for Project effects to the freshwater environment in the Project area.¹²⁸

Throughout the Board's consideration of the Applications, the parties and the NWB discussed the overall monitoring programs for the Phase 2 Project and it was agreed that project monitoring under the Licences will consist of the following three types of monitoring:

- Regulated discharge monitoring which occurs at monitoring points specified in licenses or regulations. It includes discharge limits that must be achieved to maintain compliance with an authorization (i.e., Type "A" Water Licence or Site-specific Water Quality Objectives) or regulation (i.e. *Metal and Diamond Mining Effluent Regulations* (MDMER) or Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines). Enforcement action may be taken if discharge limits are exceeded for a parameter.
- Verification monitoring is carried out for operational and management purposes by the Licensee. This type of monitoring provides data for decision-making and builds confidence about the success of processes being used. There is no obligation to report verification monitoring results, although some monitoring locations and these results can be mentioned in environmental management plans (i.e. sampling to verify soil remediation in the landfarm).
- General monitoring is commonly included in the Water Licences to specify what is to be monitored according to a schedule. This type of monitoring covers all types of monitoring (i.e., geotechnical, lake levels, etc.). This monitoring is subject to compliance assessment to confirm sampling was carried out using established protocols, included quality assurance/quality control provisions, and addresses

¹²⁸ TMAC Resources Inc., Hope Bay Project Aquatic Effects Monitoring Plan, October 2018.



identified issues. General monitoring is subject to change as directed by an Inspector, or by the Licensee and is subject to approval by the NWB.

Under Schedule I, which is associated with the monitoring program requirements set out in Part I of the Licences, the NWB has included the detailed information regarding monitoring locations, monitoring parameters and criteria.

During the NWB's licensing process it was agreed that the plume delineation study requested by Environment and Climate Change Canada would be included in the Environmental Protection Plan (EEP) and would not be included in the Water Licences.¹²⁹

ECCC and TMAC discussed discharge criteria and came to the conclusion that the current plan is "consistent with the recently established metal and diamond mining effluent criteria."¹³⁰

These programs should be sufficient to monitor and address any potential impacts to the aquatic environment, and, therefore, Environment and Climate Change Canada considers this issue to be resolved as well.¹³¹

It should be noted that Radium 226 is not included in the discharge criteria under the Licences, as this parameter is already included under the *MDMER* reporting requirements for MDMER modelling sites but not for other monitoring points. This approach is consistent with ECCC's recommendations on this point at the Public Hearing:

that's correct that the radium we would expect to see in any of the points that are included in the MDMER modelling sites. The other monitoring points, that would be the Board could decide, but we don't see that they'd necessarily be required in those places.¹³²

Dr. Mike Henry, TMAC's Aquatic Specialist Consultant, emphasized the rigor of the review and development process for the AEMP as follows:

¹²⁹O. Curran, TMAC, & B. Summerfield, ECCC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, pp. 240-241.

¹³⁰M. Henry, ERM, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, p. 116, lines 2-3.

¹³¹B. Summerfield, ECCC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 24, 2018, Volume 1, p. 116, lines 6-10.

¹³²B. Summerfield, ECCC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, pp. 241-242, lines 23-26 and lines 1-2.



... we've had extensive conversations with Environment and Climate Change Canada going back and forth on, particularly, study design around the discharge to Aimaokatalok Lake. We've also responded to the most recent written comments from CIRNAC as well, and we had conversations yesterday where they were in agreement with our responses to those, and so to my understanding, that we've resolved all issues with all parties. These technical comments, information requests began, as Oliver said, during the NIRB process through the draft environmental impact statement, the final impact statement, right through up until yesterday, so the issues are resolved. The plan is solid.¹³³

Based on the Board's review and consideration of the materials provided by the Applicant and the comments and recommendations of the interveners, the Board agrees with the confidence expressed by TMAC and intervening parties that the AEMP is adequate and reasonable.

Part J: Conditions Applying to Abandonment, Reclamation and Closure

The Board requires all Type "A" Water Licence applicants to prepare an Interim, and eventually, a Final Closure and Reclamation Plan in accordance with the *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the NWT (2013)* (Guidelines)¹³⁴ and consistent with the *INAC Mine Site Reclamation Policy for Nunavut, 2002*¹³⁵ (Policy).

¹³³ M. Henry, ERM, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, p. 211, lines 8-22.

¹³⁴ Mackenzie Valley Land and Water Board, (Yellowknife: Mackenzie Valley Land and Water Board, 2013) *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the NWT (2013)* available on-line: https://mvlwb.com/sites/default/files/documents/wg/WLWB_5363_Guidelines_Closure_Reclamation_WR.pdf.

¹³⁵ Minister of Indian Affairs and Northern Development, (Ottawa: Minister of Public Works and Government Services Canada, 2002) *Mine Site Reclamation Policy for Nunavut*, available on-line: <https://www.aadnc-aandc.gc.ca/eng/1100100036042/1100100036044>



The Board's approach to the terms and conditions in this part of the Licences are summarized, as previously set out in the Type "A" Water Licence Renewal for the Jericho Diamond Mine Project.¹³⁶

The Board's approach to reclamation reflects the four main objectives outlined in the Policy:

The Mine Site Reclamation Policy for Nunavut serves four main objectives:

- *Ensure the impact of mining on the environment and human health and safety is minimized;*
- *Reduce the environmental liability that falls to government to the greatest extent possible;*
- *Provide industry and the public with a clear signal of the government's expectations; and*
- *Build positive and supportive relationships with the new regulatory authorities coming into operation in the North.*¹³⁷

With respect to the specific components of the plans, the Board adopts the approach put forward in the 2013 *Guidelines* that recognizes that there are three stages in the development of a Closure and Reclamation Plan (CRP). The first stage involves the preparation of a Preliminary Closure and Reclamation Plan that is typically prepared as part of the environmental assessment of the project that demonstrates "how the mine site is proposed to be reclaimed and describes the likely residual risks to human health and the environment". The second stage involves the development of one or more Interim Closure and Reclamation Plans through the operating life of the mine, which builds on the Preliminary CRP, and is updated to reflect significant changes to the mine plan or key milestones in terms of the mine life.

As stated in the 2013 *Guidelines*:

The general purpose of the Interim CRP is to update preceding plans according to the current mine operating plan, updated or renewed community values, or advances in mine

¹³⁶ Nunavut Water Board, Type "A" Water Licence Renewal, Water Licence No: 2AM-JER1119, Reasons for Decision, Including Record of Proceeding., December 21, 2012 at pp. 66-68.

¹³⁷ Minister of Indian Affairs and Northern Development, (Ottawa: Minister of Public Works and Government Services Canada, 2002), Mine Site Reclamation Policy for Nunavut, p. 2.



*reclamation technology. Interim Reclamation Plans provide conceptual detail on the reclamation of mine components which will not be closed until near the end of the mining operations, and operational detail for components which are to be progressively reclaimed earlier in the mine life. The Interim CRP should include increased detail and more specific closure criteria regarding reclamation components as these become available and as those areas of the mine are developed (e.g. rock piles that are completed or reclamation test studies that have been conducted).*¹³⁸

The third stage involves the preparation of a Final CRP that should be provided and approved before a scheduled permanent closure or as soon as is practical after an unplanned closure. According to the Guidelines *“the general purpose of the Final CRP is to provide complete details, usually for regulatory approval, regarding the proposed reclamation activities such that they can be subsequently implemented.”*

The Board has reviewed and approved the Doris-Madrid *Interim Closure and Reclamation Plan* dated December 2017 and the *Boston Conceptual Closure and Reclamation Plan* dated December 2017, that TMAC included as part of the Applications.

The Board has included a requirement under new Licence 2AM-BOS1835 for the submission of an Interim Closure and Reclamation Plan within six (6) months of Commercial Operation at the Boston Project.

The Board has also included a term to update the Interim Closure and Reclamation Plans every five (5) years including the reclamation cost estimate of the total mine closure restoration liability. In CIRNAC’s written submission regarding the draft licences, they included the following statement:

The licence presently requires a [sic] updated Closure and Reclamation Plan (CRP) and reclamation cost estimate two years following approval of the amended licence and 12 months prior to closure. Given the proposed term of the licence, CIRNAC recommends that the CRP be updated every five years to integrate the growing body of site specific

¹³⁸ Mackenzie Valley Land and Water Board, (Yellowknife: Mackenzie Valley Land and Water Board, 2013) *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the NWT* (2013), at p. 22.



knowledge gained in the course of production and any applicable new knowledge, technologies and experience. A requirement for CRP updates at regular intervals is consistent with what is done in other jurisdictions.¹³⁹

This was discussed and agreed upon at the Public Hearing by TMAC, the KIA, and CIRNAC, as follows:

... we have included a clause for a requirement to update the interim closure plan and estimate at least every five years, and this was based on a comment from Crown-Indigenous Relations and Northern Affairs Canada.¹⁴⁰

...between on our framework agreement with TMAC, we are obliged to review it annually and to select a third party. So we will always be ready for a review, and then when CIRNAC is ready, at a five-year date, we're already ready...¹⁴¹

What we're requesting is a review of the security amount and a review of the abandonment and restoration plan. In the event that there's a material change or a material difference, you know, we'd request that those be incorporated. So the process to do that would be an amendment. Then there's the potential for an amendment every five years, but, ultimately, an amendment may not be required.¹⁴²

As noted in the discussion of security under Part C of the Licences, the Board has included this requirement for periodic updates to TMAC's Closure and Reclamation plans under Part

¹³⁹ CIRNAC, Crown-Indigenous Relations and Northern Affairs Canada's comments on TMAC Resources Inc.'s draft 2AM-BOS---- and 2AM-DOH1323 amendment #2 water licence for phase 2 of the Hope Bay Project, October 12, 2018.

¹⁴⁰ O. Curran, TMAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, p. 190, lines 5-9.

¹⁴¹ J. Roesch, KIA, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, p. 226, lines 9-13.

¹⁴² S. Dewar, CIRNAC, NWB Public Hearing, File No. 2AM-DOH1323 and 2AM-BOS----, Transcript, October 25, 2018, Volume 2, p. 234, lines 8-15.



J and has linked the requirement to update plans to the requirement to revisit the reclamation security cost estimate as well.

The Board has included a requirement in the Licences to notify the Board in writing, as soon as practically possible, or at the least sixty (60) days prior to, of any intent to, or entering into a Care and Maintenance Phase. The Board also requires that a Care and Maintenance Plan be submitted to the Board within thirty (30) days of providing this notification to the Board, and the Plan is required to provide details regarding the Licensee's plans for maintaining compliance with the terms and conditions of the Licences while in Care and Maintenance. As noted in the discussion of Part C of the Licence (Conditions Applying to Security), if the Care and Maintenance Phase could result in material changes to the outstanding reclamation liability associated with the Undertakings, the Board may revisit and adjust the security requirements under the Licence.

The Board recognizes that, due to the schedule of development proposed for the Phase 2 Project, some of the decommissioning, closure and post-closure monitoring of the sites is planned to take place outside the scope of the 17-year term of the Licences. However, the Board urges TMAC to be mindful throughout the life of the mines of the suggested closure and reclamation planning and reporting requirements outlined in the *Mine Site Reclamation Guidelines for the Northwest Territories* (2007) ¹⁴³ or the *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the NWT* (2013). ¹⁴⁴ As set out in these Guidelines, and as raised by CIRNAC during the review of the Applications after the permanent closure of a mine and when reclamation activities are finalized, a post-closure monitoring period is required (typically 25 years is being requested by CIRNAC). The Guidelines note that this longer-term post-closure monitoring will likely be required for projects where some individual components may remain at site in perpetuity, such as mine tailings, underground structures, etc., which must be further monitored to ensure stability and full reclamation.

Schedules A through J

¹⁴³Minister of Indian Affairs and Northern Development (now CIRNAC), (Ottawa: Minister of Public Works and Government Services Canada, 2002) *Mine Site Reclamation Policy for Nunavut*, available on-line: https://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/recpolnuna_1100100036043_eng.pdf.

¹⁴⁴Mackenzie Valley Land and Water Board, (Yellowknife: Mackenzie Valley Land and Water Board, 2013) available on-line: https://mvlwb.com/sites/default/files/documents/wg/WLWB_5363_Guidelines_Closure_Reclamation_WR.pdf.



The Schedules to the Licences provide instructive and administrative detail in respect of the terms and conditions set out in more general terms in the main body of the Licences. The Schedules are set out in this format for greater clarity and to provide as an aid to interpretation for the Licensee. Except for Schedule A, the Schedules provide, if needed, specific requirements for plans or reports to be submitted to the Board.

If the Board subsequently determines that an item in any of the Schedules requires revision in order to better reflect the intent and objectives of the Licences, the Board may at its discretion, and upon consulting and providing written notice to the Licensee and intervening parties, revise the Schedule. Unless the Board directs otherwise, such revision may not necessarily be considered as an “Amendment” to the Licences.



APPENDIX A - Agendas for Public Hearing and Community Session

AGENDA

PUBLIC HEARING

NEW TYPE “A” WATER LICENCE APPLICATION NO. 2AM-BOS---- and
AMENDMENT TO TYPE “A” WATER LICENCE APPLICATION NO. 2AM-DOH1323

October 24, 2018, 3:45 pm – 7:00 pm, MST, Community Hall in Cambridge Bay

October 25, 2018, 9:00 am – 5:00 pm, MST, Community Hall in Cambridge Bay

-
1. Opening Prayer
 2. Opening Remarks by the Chairperson, which shall include the purpose of the Hearing and the scope of matters which will be considered by the Board
 3. Introduction of the Board Members and staff
 - a. History of Applications
 4. Identification and introduction of the Parties
 5. Introduction of the Elders and their role in the Hearing
 6. Introduction and identification of the persons, associations, agencies, etc., who have not submitted interventions but who have expressed a desire to speak at the Hearing
 7. Identification of any Motions or any objections
 8. Presentation by the Applicant
 9. Questioning of the Applicant by Parties respecting the Applicant’s presentation
 10. Questioning by the Board staff and Panel Members
 11. Presentation by Interveners
 12. Questioning of Interveners by Parties
 13. Questioning by the Board staff and Panel Members



14. Presentation by any other persons, associations, agencies, etc. who have advised the Chairperson that they wish to speak
15. Questioning of other persons, associations, agencies, etc. by Parties
16. Questions by the Board staff and Panel Members
17. Upon completion of presentations by all Parties, the Board will give the Applicant the opportunity to reply. Then all Parties will have the opportunity to make final closing statements taking into account matters raised at the Hearing
18. Closing Remarks by the Chairperson; and
19. Closing Prayer



AGENDA

COMMUNITY SESSION

NEW TYPE “A” WATER LICENCE APPLICATION NO. 2AM-BOS---- and
AMENDMENT TO TYPE “A” WATER LICENCE APPLICATION NO. 2AM-DOH1323

October 24, 2018, 7:00 pm -10:00 pm, MST, Community Hall in Cambridge Bay

1. Opening Prayer
2. Opening Remarks by the Chair
3. Presentation by the Nunavut Water Board (NWB) – Type “A” water licensing process for the Applications (15 minutes)
4. Questions and/or comments from community members and other participants
5. Presentation by TMAC Resources Ltd. on the Applications before the Board (20 Minutes)
6. Questions and/or comments from community members and other participants
7. Presentation from each intervening party pertaining to its mandate and role(s) in the water licensing process as well as an overview of their findings during their technical review (15 Minutes/Intervener)
8. Questions and/or comments from community members and other participants
9. Closing Remarks
10. Closing Prayer



APPENDIX B – Exhibit List

Public Hearing October 24 and 25, 2018, Cambridge Bay, Nunavut Applications for Amendment No. 2 to Water Licence No: 2AM-DOH1323 and new Water Licence No: 2AM-BOS---

Exhibit	Exhibit Description	Date	From
1	Electronic Copy Only Curriculum Vitae Dr. Michael Henry ERM (English)	October 24, 2018	TMAC Resources Inc.
2	Electronic Copy Only Curriculum Vitae Dr. M. Rykaart SRK Consulting (English)	October 24, 2018	TMAC Resources Inc.
3	Electronic Copy Only Curriculum Vitae Nicole Bishop ERM (English)	October 24, 2018	TMAC Resources Inc.
4	Hard Copy PowerPoint Presentation Boston-Madrid Project Nunavut Water Board Final Hearing (English)	October 24, 2018	TMAC Resources Inc.
5	Hard Copy PowerPoint Presentation Boston-Madrid Project Nunavut Water Board Final Hearing (Inuktitut)	October 24, 2018	TMAC Resources Inc.
6	Hard Copy PowerPoint Presentation Boston-Madrid Project Nunavut Water Board Final Hearing (Inuinnaqtun)	October 24, 2018	TMAC Resources Inc.



Exhibit	Exhibit Description	Date	From
7	Hard Copy PowerPoint Presentation Boston-Madrid Project Nunavut Water Board Final Hearing: Community Session (English)	October 24, 2018	TMAC Resources Inc.
8	Hard Copy PowerPoint Presentation Boston-Madrid Project Nunavut Water Board Final Hearing: Community Session (Inuktitut)	October 24, 2018	TMAC Resources Inc.
9	Hard Copy PowerPoint Presentation Boston-Madrid Project Nunavut Water Board Final Hearing: Community Session (Inuinnaqtun)	October 24, 2018	TMAC Resources Inc.
10	Hard Copy PowerPoint Presentation KIA Technical Review of Hope Bay Project Phase 2 Type A Water Licence (English)	October 24, 2018	Kitikmeot Inuit Association
11	Hard Copy PowerPoint Presentation KIA Technical Review of Hope Bay Project Phase 2 Type A Water Licence (Inuktitut)	October 24, 2018	Kitikmeot Inuit Association
12	Hard Copy PowerPoint Presentation KIA Technical Review of Hope Bay Project Phase 2 Type A Water Licence (Inuinnaqtun)	October 24, 2018	Kitikmeot Inuit Association
13	Hard Copy PowerPoint Presentation TMAC Resources Inc. Water Licence Applications for the Hope Bay Phase 2 Project Renewal/Amendment #2 for 2AM-DOh1323 and New for 2AM-BOS---- (English/Inuktitut)	October 24, 2018	Crown- Indigenous Relations and Northern Affairs Canada



Exhibit	Exhibit Description	Date	From
14	Hard Copy PowerPoint Presentation TMAC Resources Inc. Water Licence Applications for the Hope Bay Phase 2 Project Renewal/Amendment #2 for 2AM-DOH1323 and New for 2AM-BOS---- (<i>English/Inuinnaqtun</i>)	October 24, 2018	Crown- Indigenous Relations and Northern Affairs Canada
15	Hard Copy Executive Summary Crown-Indigenous Relations and Northern Affairs Canada (<i>English</i>)	October 24, 2018	Crown- Indigenous Relations and Northern Affairs Canada
16	Hard Copy Executive Summary Crown-Indigenous Relations and Northern Affairs Canada (<i>Inuktitut</i>)	October 24, 2018	Crown- Indigenous Relations and Northern Affairs Canada
17	Hard Copy Executive Summary Crown-Indigenous Relations and Northern Affairs Canada (<i>Inuinnaqtun</i>)	October 24, 2018	Crown- Indigenous Relations and Northern Affairs Canada
18	Hard Copy PowerPoint Presentation Environment and Climate Change Canada's Presentation to the Nunavut Water Board Respecting TMAC Resources Inc. Application for a Type "A" Water Licence and Type "A" Water Licence Amendment (<i>English</i>)	October 24, 2018	Environment and Climate Change Canada
19	Hard Copy PowerPoint Presentation Environment and Climate Change Canada's Presentation to the Nunavut Water Board Respecting TMAC Resources Inc. Application for a Type "A" Water Licence and Type "A" Water Licence Amendment (<i>Inuktitut</i>)	October 24, 2018	Environment and Climate Change Canada



Exhibit	Exhibit Description	Date	From
20	Hard Copy PowerPoint Presentation Environment and Climate Change Canada's Presentation to the Nunavut Water Board Respecting TMAC Resources Inc. Application for a Type "A" Water Licence and Type "A" Water Licence Amendment (<i>Inuinnaqtun</i>)	October 24, 2018	Environment and Climate Change Canada
21	Hard Copy Executive Summary TMAC Resources Inc.'s Hope Bay Phase 2 Project Environment and Climate Change Canada Final Written Submission (<i>English</i>)	October 24, 2018	Environment and Climate Change Canada
22	Hard Copy Executive Summary TMAC Resources Inc.'s Hope Bay Phase 2 Project Environment and Climate Change Canada Final Written Submission (<i>Inuktitut</i>)	October 24, 2018	Environment and Climate Change Canada
23	Hard Copy Executive Summary TMAC Resources Inc.'s Hope Bay Phase 2 Project Environment and Climate Change Canada Final Written Submission (<i>Inuinnaqtun</i>)	October 24, 2018	Environment and Climate Change Canada
24	Electronic Copy Executive Summary TMAC Resources Inc.'s Hope Bay Phase 2 Project Environment and Climate Change Canada Final Written Submission (<i>French</i>)	October 24, 2018	Environment and Climate Change Canada
25	Electronic Copy PowerPoint Presentation Environment and Climate Change Canada's Presentation to the Nunavut Water Board Respecting TMAC Resources Inc. Application for a Type "A" Water Licence and Type "A" Water Licence Amendment (<i>French</i>)	October 24, 2018	Environment and Climate Change Canada



Exhibit	Exhibit Description	Date	From
26	Hard Copy Phase 2 Hope Bay Belt Project Fisheries and Oceans Canada Presentation to the Nunavut Water Board Public Hearing (<i>English</i>)	October 24, 2018	Fisheries and Oceans Canada
27	Electronic Copy Phase 2 Hope Bay Belt Project Fisheries and Oceans Canada Presentation to the Nunavut Water Board Public Hearing (<i>Inuktitut</i>)	October 24, 2018	Fisheries and Oceans Canada
28	Electronic Copy Phase 2 Hope Bay Belt Project Fisheries and Oceans Canada Presentation to the Nunavut Water Board Public Hearing (<i>Inuinnaqtun</i>)	October 24, 2018	Fisheries and Oceans Canada
29	Electronic Copy Phase 2 Hope Bay Belt Project Fisheries and Oceans Canada Presentation to the Nunavut Water Board Public Hearing (<i>French</i>)	October 24, 2018	Fisheries and Oceans Canada
30	Electronic Copy Executive Summary Fisheries and Oceans Canada (<i>English</i>)	October 24, 2018	Fisheries and Oceans Canada
31	Hard Copy Executive Summary Fisheries and Oceans Canada (<i>Inuktitut</i>)	October 24, 2018	Fisheries and Oceans Canada
32	Hard Copy Executive Summary Fisheries and Oceans Canada (<i>Inuinnaqtun</i>)	October 24, 2018	Fisheries and Oceans Canada



Exhibit	Exhibit Description	Date	From
33	Electronic Copy Executive Summary Fisheries and Oceans Canada (<i>French</i>)	October 24, 2018	Fisheries and Oceans Canada
34	Hard Copy PowerPoint Slides (1-3) Summary of Draft Doris-Madrid and Boston [Draft Water Licence Framework] (<i>English</i>)	October 25, 2018	TMAC Resources Inc.
35	Hard Copy PowerPoint Kitikmeot Inuit Association Final Submission on Hope Bay Project Phase 2 Type A Water Licence Application (<i>English</i>)	October 25, 2018	Kitikmeot Inuit Association
36	Hard Copy PowerPoint Kitikmeot Inuit Association Final Submission on Hope Bay Project Phase 2 Type A Water Licence Application (<i>Inuinnaqtun</i>)	October 25, 2018	Kitikmeot Inuit Association
37	Hard Copy Table 1-1: Water Monitoring at Madrid Sites (<i>English</i>)	October 25, 2018	TMAC Resources Inc.
38	Hard Copy Proposed Water Monitoring at Boston Mining Area (<i>English</i>)	October 25, 2018	TMAC Resources Inc.
39	Hard Copy Monitoring Locations (<i>English</i>)	October 25, 2018	TMAC Resources Inc.



Exhibit	Exhibit Description	Date	From
40	Hard Copy Doris Madrid Overall Summary (English)	October 25, 2018	TMAC Resources Inc.
41	Electronic Copy Updated Draft Water Licence Framework Doris- Madrid (English)	October 25, 2018	TMAC Resources Inc.
42	Electronic Copy Updated Draft Water Licence Framework Boston Site (English)	October 25, 2018	TMAC Resources Inc.



APPENDIX C - List of Submissions and Correspondence

Additional File Submissions & Correspondence:

1. Letter from Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, To Hope Bay Project Distribution List, 2AM-HOP---- Re: Phase 2 Hope Bay Belt Project File Status **dated February 10, 2017**
2. Letter from Oliver Curran, Director, Environmental Affairs, TMAC Resources Inc.; to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, Re: Phase 2 Technical Meeting and Prehearing Conference June 12-16, 2017. 2AM-HOP----, **dated June 29, 2017.**
3. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to John Roberts, Vice President, Cc: Licensing Department, Nunavut Water Board, BCC: Doris North Distro, TMAC Resources Inc., Re: 2AM-HOP----, Submission of TMAC Letter to NWB Follow Up Regarding Technical Meeting June 12, to June 16, 2017 **dated June 30, 2017.**
4. Letter from Karen Costello, Director, Resource Manager, Indigenous and Northern Affairs Canada, to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, Re: INAC Comments on Type “A” Water Licensing process for TMAC Hope Bay Phase 2 **dated July 17, 2017**
5. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to John Roberts, Vice President, CC: Licensing Department, Nunavut Water Board, BCC: Doris North Distro, TMAC Resources Inc., Re: Submission of INAC’s Letter to NWB Follow Up Regarding Technical Meeting June 12, to June 16, 2017 **dated July 18, 2017**
6. Email from Sonia Aredes, Technical Advisor, Nunavut Water Board, to Ida Porter, Licence Administrator, Nunavut Water Board, Anticipated Submission the Madrid-Boston (Phase 2) FEIS and Type “A” Water Licence Applications **dated December 6, 2017**
7. Email from Sonia Aredes, Technical Advisor, Nunavut Water Board, to Oliver Curran, Environmental Affairs, TMAC Resources Inc., CC: David Hohnstein, Director of Technical Services, Nunavut Water Board, Shelley Potter, TMAC Resources Inc. Andrea Bowie, Srk, Cameron Hore, Srk, Ida Porter, Licence Administrator, Nunavut Water Board, Licensing Department, Nunavut Water Board, Re: Doris Amendment Application Form **dated December 22, 2017**
8. Letter from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Environmental Affairs, TMAC Resources Inc., Re: Acknowledgement and Receipt of Application Fee and Water Use Fee Deposit for New Water Licence Application –Madrid – Boston Phase 2 Project **dated December 27, 2017**
9. Letter from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Environmental Affairs, TMAC Resources Inc., Re: Acknowledgement and Receipt of



Application Fee and Water Use Fee Deposit for Amendment No.2 Water Licence Application
–Doris North Project **dated December 27, 2017**

10. Announcement of New Vice President 2AM-BOS---- **dated December 30, 2017**
11. Letter to John Roberts, Vice President, Oliver Curran, Environmental Affairs, TMAC Resources Inc. from Stephanie Autut, Executive Director, Nunavut Water Board, Re: Invitation to Industrial Type “A” Water Licence Holders to meet NWB New Technical Staff on January 17, 2017 **dated January 3, 2018**
12. Letter and Anticipated Process 2AM-DOH1323 and 2AM-BOS---- from Kelli Gillard, Acting Director of Technical Services, Nunavut Impact Review Board, and Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, to NIRB: Phase 2 Hope Bay Belt Distribution List, and NWB: Hope Bay Project Distribution List **dated January 17, 2018**
13. Email from John Roesch, Sr. Hope Bay Project Officer, Kitikmeot Inuit Association, to Licensing Department, Nunavut Water Board, KIA Request extension to submission of IR’s to NWB **dated January 24, 2018**
14. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc., CC: Licensing Department, BCC: Doris North Distribution List, Re: Extension request to 1 week on IR’s to NWB TMAC Resources Inc. **dated January 25, 2018**
15. Email from Sarah Forte, Water Management Specialist, Indigenous and Northern Affairs Canada, to Licensing Department, Nunavut Water Board, Karen Kharatyan, Acting Manager of Licensing, CC: Ian Parsons, Indigenous and Northern Affairs Canada, Bradley Summerfield, Environment and Climate Change Canada, Angie McLellan, Department of Fisheries and Oceans, Georgina Williston, Environment and Climate Change Canada, Tobin Meagan, Environment and Climate Change Canada, Anne Wilson, Environment and Climate Change Canada, Re: INAC Extension Request for Completeness Review February 21, 2018 **dated January 25, 2018**
16. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department Nunavut Water Board, BCC: Doris North Distribution List, Re: Extension Request for IR’s **dated January 26, 2018**
17. Email from Bev Ross, Acting Regional Manager, Regulatory Reviews, Department of Fisheries and Oceans Canada, to Licensing Department, Nunavut Water Board, CC: Ian Parsons, Indigenous and Northern Affairs Canada, Bradley Summerfield, Environment and Climate Change Canada, Angie McLellan, Department of Fisheries and Oceans, Georgina Williston, Environment and Climate Change Canada, Tobin Meagan, Environment and Climate Change Canada, Anne Wilson, Anne Wilson, Environment and Climate Change Canada, Sarah Forte, Water Management Specialist, Indigenous and Northern Affairs Canada, Jess Taylor, Department of Fisheries and Oceans, Laura Watkins, Department of Fisheries and Oceans, Mark D’Aguiar, Department of Fisheries and Oceans, Re: DFO Extension request for completeness review February 21, **dated January 26, 2018**



18. Email from Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, to Dave Hohnstein, Director of Technical Services, Nunavut Water Board, Licensing Department, Nunavut Water Board, Teresa Meadows, Legal Counsel, Nunavut Water Board, Re: Extension Request for Completeness Review **dated February 2, 2018**
19. Email from Ian Parsons, Manager Water Resources, Indigenous and Northern Affairs Canada, to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, Licensing Department, Nunavut Water Board, Sarah Forte, Water Management Specialist, Indigenous and Northern Affairs Canada, Re: 2AM-BOS---- Extension Request for Completeness Review to February 21, 2018 **dated February 2, 2018**
20. Email from Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. BCC: Licensing Department, Nunavut Water Board, Re: Completeness Check Extension Request **dated February 2, 2018**
21. Email from Spencer Dewar, Director, Regional Management, Indigenous and Northern Affairs Canada, to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, CC: Sarah Forte, Water Management Specialist, Indigenous and Northern Affairs Canada, Ian Parsons, Manager Water Resources, Indigenous and Northern Affairs Canada, Re: INAC Request Extension Request for Completeness Review February 21, **dated February 2, 2018**
22. Email from Spencer Dewar, Director, Regional Management, Indigenous and Northern Affairs Canada, to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, CC: Sarah Forte, Water Management Specialist, Indigenous and Northern Affairs Canada, Ian Parsons, Manager Water Resources, Indigenous and Northern Affairs Canada, Re: INAC Withdraw Extension Request for Completeness Review February 21, 2018 to February 14, 2018 **dated February 6, 2018**
23. Email from Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. BCC: Licensing Department, Nunavut Water Board, Re: Completeness Check by February 14, 2018 **dated February 6, 2018**
24. Letter from Bev Ross, Regional Manager, Regulatory Reviews Department of Fisheries and Oceans, to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, Re: TMAC Resources Inc.'s Phase 2 Hope Bay Belt Project Type "A" Water Licence Completeness Review. Water Licence 2AM-DOH1323 and 2AM-BOS---- **dated February 9, 2018, Note letter dated February 14, 2018**
25. Letter from John Roesch, P. Eng. Sr. Hope Bay Project Officer, Department of Lands & Environment, Kitikmeot Inuit Association, to Karen Kharatyan, Manager of Licensing, Nunavut Water Board, Re: KIA IR's for Type "A" Boston Water Licence Hope Bay FEIS **dated February 13, 2018**
26. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, CC: Licensing Department, Nunavut Water Board, BCC:



Doris North Distro, TMAC Resources Inc. Re: Request for Comments **dated February 14, 2018**

27. 2AM-DOH1323 & 2AM-BOS---- ECCC Response to Completeness Check **dated February 14, 2018**
28. Letter from Sarah Forte, Water Management Specialist, Indigenous and Northern Affairs Canada, to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, Re: INAC's Completeness Review of TMAC Resources Inc.'s new water Licence application 2AM-BOS--- and amendment #2 application for water Licence 2AM-DOH1323 for phase 2 of the Hope Bay Project **dated February 14, 2018**
29. Letter and Completeness Check from Susanne Forbrich, Regional Director, Environment and Climate Change Canada, to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, Re: 2AM-DOH1323/2AM-BOS---- TMAC Resources Inc. Phase 2 Hope Bay Belt Project Type "A" Water Licence Application and Amendment Completeness Check **dated February 14, 2018**
30. Letter and Response from Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, Re: TMAC response to information requests on the Type "A" Water Licence Applications for the Madrid-Boston (Phase 2) Project with attached responses **dated February 21, 2018**
31. Email from Richard Dwyer, Licence Administrator, Nunavut Water Board, to Shelley Potter, TMAC Resources Inc. CC: ;Licensing Department, Nunavut Water Board, Bcc: Doris North Distribution List, Re: Request Interested Parties Response to Applicant Submission **dated February 22, 2018**
32. Notice of Applications English, New Application for a Type "A" Water Licence 2AM-BOS-- -- Amendment Application for a Type "A" Water Licence 2AM-DOH1323 By TMAC Resources Inc. **dated February 23, 2018**
33. Email from Richard Dwyer, Licence Administrator, Nunavut Water Board, to Shelley Potter, TMAC Resources Inc. Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, Nunavut Water Board, Bcc: Doris North Distribution List, Re: Technical Review **dated February 23, 2018**
34. Letter from Stephanie Autut, Executive Director, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. Cc: Doris North Distribution List, Re: Notice of Application for a New Type "A" Water Licence, File No. 2AM-BOS----, Madrid-Boston (Phase2) Project and an Application for Amendments to Water Licence No: 2AM-DOH1323; TMAC Resources Inc. **dated February 23, 2018**
35. Email from Melissa Pinto, Sr. Environmental Assessment Coordinator, Environment and Climate Change Canada, To: Licensing Department, Nunavut Water Board, Re: ECCC Comments **dated February 26, 2018**



36. Inuinnaqtun and English Notice to Local for 2AM-BOS---- and 2AM-DOH1323 **dated February 26, 2018**
37. Letter from John Roesch, P.Eng. Sr. Hope Bay Project Officer, Kitikmeot Inuit Association, to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, Re: KIA's response to TMAC Resources Inc. Hope Bay Project Phase 2 IR responses for Type "A" Water Licence **dated March 1, 2018**
38. Email from Sarah Forte, Water Management Specialist, Indigenous and Northern Affairs Canada, to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, Cc: Ian Parsons, Manager Resources Indigenous and Northern Affairs Canada, Spencer Dewar, Indigenous and Northern Affairs Canada, Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. Re: INAC Late Technical Comments **dated March 20, 2018**
39. Cover Letter & Comments from Susanne Forbrich, Regional Director, EPOD-PNR Environment and Climate Change Canada, to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, Re: 2AM-DOH1323 and 2AM-BOS---- TMAC Resources Inc. Phase 2 Hope Bay Belt Project Type "A" Water Licence Application and Amendment Technical Review **dated March 23, 2018**
40. Letter from John Roesch, P. Eng. Sr. Hope Bay Project Officer, Department of Lands & Environment, Kitikmeot Inuit Association, to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, Re: KIA's Technical Review of Hope Bay Project Phase 2 Type "A" Water Licence Application **dated March 23, 2018**
41. Technical Memorandum dated March 15, 2018 to John Roesch, P. Eng. Sr. Hope Bay Project Officer, Department of Lands & Environment, Kitikmeot Inuit Association, and Heather Bears, Zoetica, from Richard Nesbitt, Neil Hutchinson, HESL, Re: J180015 –Boston – Madrid Final Environmental Impact Statement and Water Licence Arsenic Site Specific Water Quality Objective **dated March 23, 2018**
42. Email from Bev Ross, Regional Manager, Department of Fisheries and Oceans, to Licensing Department Nunavut Water Board, CC: Angie McLellan, Department of Fisheries and Oceans, Mark D'Aguiar, Department of Fisheries and Oceans, Re: DFO Request Extension to March 28, 2018 **dated March 26, 2018**
43. Letter to Stephanie Autut, Executive Director, Nunavut Water Board, from Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. Re: TMAC Letter to NWB Re NIRB NWB Coordinated Process and Timelines for Madrid-Boston Phase 2 Review **dated March 27, 2018**
44. Email from Ian Parsons, Manager Water Resources, Indigenous and Northern Affairs Canada, to Licensing at Nunavut Water Board, Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, Richard Dwyer, Licence Administrator, Nunavut Water Board, CC: Sarah Forte, Water Management Specialist, Indigenous and Northern Affairs Canada, Re: INAC delay on comments **dated March 28, 2018**



45. Letter and Technical Comments from C. Thomas Hoggarth, Regional Director, Ecosystems Management Central & Arctic Region, Department of Fisheries and Oceans, to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, Re: 2AM-DOH1323 and 2AM-BOS---- TMAC Resources Inc. Phase 2 Hope Bay Belt Project Type “A” Water Licence Application and Amendment Technical Review dated **March 28, 2018**
46. Letter from Sarah Forte, Water Management Specialist, Indigenous and Northern Affairs Canada, to Richard Dwyer, Licence Administrator, Nunavut Water Board, Re: INAC’s technical review of TMAC Resources Inc.’s new water licence application 2AM-BOS---- and renewal amendment no. 2 application for water licence 2AM-DOH1323 both for Phase 2 of the Hope Bay Project **dated March 29, 2018**
47. Letter to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. from Stephanie Autut, Executive Director, Nunavut Water Board, Re: Applications for a new Type “A” Water Licence No: 2AM-BOS---- Madrid Boston (Phase 2) Project and Amendment to Water Licence 2AM-DOH1323 Doris North Project; Response to TMAC Resources Inc. **dated March 29, 2018**
48. Letter and Technical Comments from Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, Re: TMAC response to Technical Comments regarding the Water Licence applications for 2AM-BOS---- and Amendment No. 2 of 2AM-DOH1323 **dated April 4, 2018**
49. Letter and Response to Technical Comments from Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, Re: TMAC response to Technical Comment INAC-TC-8 regarding the Water Licence applications for 2AM-BOS---- and Amendment No. 2 of 2AM-DOH1323 **dated April 6, 2018**
50. Email from Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, to Doris North Distribution List, Re: TMAC Responses to Technical Comments **dated April 6, 2018**
51. ECCC Inuinnaqtun and Inuktitut Executive Summaries **dated April 12, 2018**
52. Letter to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. from Richard Dwyer, Manager of Licensing, Nunavut Water Board, Re: Application for the Water Licence No: 2AM-BOS---- and for Amendment to the Water Licence 2AM-DOH1323, TMAC Resources Inc.; Confirmation of Technical Meeting **dated April 13 , 2018**
53. Email from Richard Dwyer, Manager of Licensing, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, Nunavut Water Board, BCC: Doris North Distribution List, Re: 2AM-BOS---- and 2AM-DOH1323 TMAC Resources Inc.; Confirmation of Technical Meeting **dated April 13, 2018**
54. Letter from Richard Dwyer, Manager of Licensing, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Doris North Distribution List, Re: Applications for Amendment No. 2 to Water Licence 2AM-DOH1323 & new Water



Licence 2AM-BOS----; Phase 2 Hope Bay Belt Project, TMAC Resources Inc.; Proposed Agenda for Technical Meeting **dated April 26, 2018**

55. Email from Richard Dwyer, Manager of Licensing, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, Nunavut Water Board, BCC: Doris North Distribution List, Re: Application for Amendment No. 2 to Water Licence 2AM-DOH1323 & new Water Licence 2AM-BOS----; Phase 2 Hope Bay Belt Project, TMAC Resources Inc.; Proposed Agenda for Technical Meeting **dated April 26, 2018**
56. Email from Nicole Bishop, Sr. Consultant ERM, to NIRB, Nunavut Impact Review Board, Licensing Department, Nunavut Water Board, Karen Kharatyan, Director of Technical Services, Nunavut Water Board, CC: Kofi Boa-Antwi, Nunavut Impact Review Board, Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. Re: TMAC Update Hope Bay Project Aquatic Effects Monitoring Plan, **dated April 27, 2018**
57. Email from Richard Dwyer, Manager of Licensing, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, Nunavut Water Board, BCC: Doris North Distribution List, Re: Reclaim Models, **dated April 27, 2018**
58. 2AM-BOS---- Boston Reclaim Model Version 2 March 27, 2018 Comparison **dated April 27, 2018**
59. Hope Bay Project Aquatic Effects Monitoring Plan Draft **dated April 27, 2018**
60. Memo to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. from Megan Miller, P.Eng., Jozsef Miskolczi, MASc, P. Eng, SRK Consulting, Follow-up response to INAC Recommendation # 21 received March 29, 2018 regarding the Boston and Doris-Madrid Closure and Reclamation Cost Estimate Date: April 25, 2018 **dated April 27, 2018**
61. 2AM-DOH1323 Roberts Bay DOH Reclaim Model Version 2 March 20, 2018 Comparison **dated April 27, 2018**
62. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department Nunavut Water Board, BCC: Doris North Distribution List, Re: Submission of TMAC Resources Inc. Updated Hope Bay Project Aquatic Effects Monitoring Plan as a response to NIRB and NWB **dated April 30, 2018**
63. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. Cc: Licensing Department, Nunavut Water Board, Bcc: Doris North Distribution List, Re: Submission of ECCC and INAC Pre-hearing Presentations **dated May 3, 2018**
64. Letter, Technical & Community Presentations from Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. to Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, Re: TMAC response to Applications for Amendment No. 2



to Water Licence 2AM-DOH1323 & new Water Licence 2AM-BOS----; Phase 2 Hope Bay Belt Project, TMAC Resources Inc. Proposed Agenda for Technical Meeting Application for Amendment No. 2 to Water NWB Hearing Agenda for the Madrid-Boston (Phase 2) Proposal **dated May 3, 2018**

65. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department Nunavut Water Board, and BCC: Doris North Distro, Re: Submission of TMAC's Draft Agenda Technical Meeting Presentation **dated May 3, 2018**
66. Email from Sarah Forte, Water Management Specialist, Indigenous and Northern Affairs Canada, to Licensing Department, Nunavut Water Board, CC: Ian Parsons INAC, Spencer Dewar INAC, Oliver Curran TMAC Resources Inc. Re: INAC List of attendees INAC Technical Meeting Presentation, Community Presentation, and Executive Summaries **dated May 3, 2018**
67. Environmental and Climate Change Canada, May 15, Phase 2 Hope Bay Belt Project Community and Technical Presentations **dated May 3, 2018**
68. 2AM-BOS---- and 2AM-DOH1323 Announcement Technical Meeting **dated May 7, 2018**
69. Email from Angie McLellan, Department of Fisheries and Oceans, to Karen Kharatyan, Acting Manager of Licensing, CC: Licensing Department, Nunavut Water Board, Mark D'Aguiar, Department of Fisheries and Oceans, Marek Janowicz, Department of Fisheries and Oceans, Re: DFO List of Attendees **dated May 7, 2018**
70. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, BCC: Doris North distribution list, Re: DFO List of Attendees **dated May 7, 2018**
71. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, BCC: Doris North distribution list, Re: DFO Technical Presentations **dated May 7, 2018**
72. Department and Fisheries and Oceans, Technical Presentations, English, French, Inuinnaqtun, Inuktitut **dated May 7, and 8, 2018**
73. Letter from Richard Dwyer, Manager of Licensing, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. Re: Applications for Amendment No. 2 to Water Licence 2AM-DOH1323 & new Water Licence 2AM-BOS---- ; Phase 2 Hope Bay Belt Project, TMAC Resources Inc.; Final Agenda for Technical Meeting **dated May 8, 2018**
74. 2AM-BOS---- and 2AM-DOH1323 Technical Meeting Final Agenda English & Inuinnaqtun **dated May 8, 2018**
75. Email from John Roesch, P.Eng. Sr. Hope Bay Project Officer, Kitikmeot Inuit Association, to Ida Porter, Licence Administrator, Nunavut Water Board, CC: Derek Donald, Technical



Advisor, Nunavut Water Board, Richard Nesbitt, Re: KIA Attendee Hope Bay Technical Meeting **dated May 8, 2018**

76. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, BCC: Doris North distribution list, Re: KIA Technical Presentation **dated May 8, 2018**
77. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, BCC: Doris North distribution list, Re: KIA List of attendees **dated May 9, 2018**
78. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, BCC: Doris North distribution list, Re: Submission of ECCC's Inuktitut Presentation **dated May 10, 2018**
79. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, BCC: Doris North distribution list, Re: Submission of revised KIA's presentation **dated May 10, 2018**
80. Kitikmeot Inuit Association Community and Technical Presentations **dated May 10, 2018**
81. Environment and Climate Change Canada Technical and Community Inuktitut Presentation 2AM-DOH1323 and 2AM-BOS---- **dated May 10, 2018**
82. Nunavut Water Board Community & Technical Meeting Presentation English and Inuinnaqtun **dated May 11, 2018**
83. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, BCC: Doris North distribution list, Re: Submission of Nunavut Water Board Technical and Community presentation **dated May 11, 2018**
84. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, BCC: Doris North distribution list, Re: Submission of TMAC Resources Inc. Technical and Community presentation **dated May 11, 2018**
85. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, BCC: Doris North distribution list, Re: Copies of Technical Presentation and List of Attendance **dated May 11, 2018**
86. 2AM-BOS---- and 2AM-DOH1323 INAC Technical Meeting Presentation, Community Presentation, English, Inuinnaqtun, Inuktitut, Executive Summaries, English, Inuinnaqtun, Inuktitut, **dated May 11, 2018**



87. 2AM-BOS---- and 2AM-DOH1323 TMAC Resources Inc. Technical Meeting Presentation, Community Presentation, English, Inuinnaqtun, Inuktitut, Executive Summaries, English, Inuinnaqtun, Inuktitut, **dated May 11, 2018**
88. 2AM-BOS---- & 2AM-DOH1323 Updated Responses to ECCC Technical Comments **dated May 14, 2018**
89. 2AM-BOS---- and 2AM-DOH1323 Registration Form Technical Meeting PHC, Evening Registration Form Technical Meeting PHC **dated May 14, 2018**
90. 2AM-DOH1323 Groundwater Management Plan April 2018 **dated May 14, 2018**
91. 2AM-BOS---- & 2AM-DOH1323 Registration Form Technical Meeting PHC **dated May 15, 2018**
92. 2AM-BOS---- & 2AM-DOH1323 Registration Form **dated May 17, 2018**
93. Email from Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, to Teresa Meadows, Nunavut Water Board Legal Counsel, Stephanie Autut, Executive Director, Nunavut Water Board, CC: Licensing Department Nunavut Water Board, Re: NRCan correspondence Hope Bay Phase 2 Water Licence **dated May 18, 2018**
94. Submission of INAC English & Inuinnaqtun Technical Meeting presentation **dated May 22, 2018**
95. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, BCC: Doris North distribution list, Re: Submission INAC English & Inuinnaqtun Technical Presentation **dated May 22, 2018**
96. 2AM-DOH1323 Amendment No.2 & 2AM-BOS---- To Doris North Distribution List, Natural Resources Canada, from Karen Kharatyan, Director of Technical Services, Nunavut Water Board, Re: Phase 2 Hope Bay Belt Project Type “A” Water Licence Applications: 2AM-BOS----; Technical Meeting Issues and Commitments **dated May 29, 2018**
97. Letter to Richard Dwyer, Manager of Licensing, Nunavut Water Board, from Sarah Forte, Water Management Specialist, Indigenous and Northern Affairs Canada, Water Resources Division, Re: INAC Reply to TMAC Resources Inc.’s response to our recommendation # 14 for their water licence applications 2AM-BOS---- and 2AM-DOH1323 amendment #2 for phase 2 of the Hope Bay Project **dated June 1, 2018**
98. Letter to Karen Kharatyan, Ph. D, Director of Technical Services, Nunavut Water Board, from Peter Unger, Senior Environmental Assessment Officer, Natural Resources Canada, Re: 2AM-BOS---- and 2AM-DOH1323 Re: Hope Bay Phase 2 Water Licence – Natural Resources Canada’s Submission **dated June 1, 2018**
99. Letter to Karen Kharatyan, Director of Technical Services, Nunavut Water Board, from Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. Re: TMAC Response



to Phase 2 Hope Bay Belt Project Type “A” Water Licence Applications: 2AM-DOH1323 Amendment No. 2 and 2AM-BOS----; Technical Meeting Issues and Commitments **dated June 19, 2018**

100. Letter to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. from Karen Kharatyan, Director of Technical Services / Acting Executive Director Nunavut Water Board, Re: Applications for Type “A” Water Licence File No. 2AM-BOS---- and for Amendments to the Type “A” Water Licence No: 2AM-DOH1323; TMAC Resources Inc. Confirmation of Pre-Hearing Conference and Call for Written Responses to TMAC’s Supplemental Submissions After the Technical Meeting **dated July 3, 2018**
101. Email from Richard Dwyer, Manager of Licensing, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, Nunavut Water Board, BCC: Doris North Distribution List, Re: 2AM-BOS---- and 2AM-DOH1323; TMAC Resources Inc. Confirmation of Pre-Hearing Conference and Call for Written Responses to TMAC’s Supplemental Submissions After the Technical Meeting **dated July 3, 2018**
102. Email from Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. to Karen Kharatyan, Director of Technical Services, Nunavut Water Board, CC: Sarah Forte, Water Management Specialist, Indigenous and Northern Affairs Canada, Water Resources Division, Licensing Department, Nunavut Water Board, Adam, Grzegorzczuk, Manager, Land Tenure and Reclamation, TMAC Resources Inc. CIRNA Late Submission **dated July 12, 2018**
103. Email from Bradley Summerfield, Senior Environmental Assessment Coordinator, Environmental and Climate Change Canada, to Richard Dwyer, Manager of Licensing, Nunavut Water Board, CC: EE Nord, Gabriel Bernard-Lacaille, Environmental and Climate Change Canada, Georgina Williston, Environmental and Climate Change Canada, Meagan Tobin, Environmental and Climate Change Canada, Eva Walker, Environmental Climate Change Canada, Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. ECCC No Comments Pre-Hearing Conference Call **dated July 16, 2018**
104. Kitikmeot Inuit Association Inuktitut Technical Submission to NWB May 14 to 15 first revision **dated July 17, 2018**
105. Letter to Richard Dwyer, Manager of Licensing, Nunavut Water Board, from Sarah Forte, Water Management Specialist, Crown Indigenous Relations and Northern Affairs Canada, Re: CIRNAC’s reply to TMAC Resources Inc.’s June 19, 2018 responses for their water Licence applications 2AM-BOS---- and 2AM-DOH1323 amendment #2 for Phase 2 of the Hope Bay Project **dated July 18, 2018**
106. 2AM-BOS---- & 2AM-DOH1323 702774-000 Hope Bay P2 Boston Reclaim Model VER 3 June 26, 2018 **dated July 18, 2018**
107. 2AM-BOS---- & 2AM-DOH1323 702774-000 Hope Bay Roberts Bay DOH Reclaim Model VER 3 June 25, 2018 **dated July 18, 2018**



108. Email from Angie McLellan, Department of Fisheries and Oceans to Richard Dwyer, Manager of Licensing, Nunavut Water Board, CC: Licensing Department, Nunavut Water Board, Karen Kharatyan, Director of Technical Services, Nunavut Water Board, Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. Marek Janowicz, Department of Fisheries and Oceans, Re: 2AM-BOS---- and 2AM-DOH1323; TMAC Resources Inc. Confirmation of Pre-Hearing Conference Call for Written Responses TMAC's Supplemental Submissions After the Technical Meeting **dated July 18, 2018**
109. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, Nunavut Water Board, BCC: Doris North Distribution List, Re: 2AM-BOS--- & 2AM-DOH1323 Comments Received **dated July 18, 2018**
110. Email from Karen Kharatyan, Director of Technical Services, Nunavut Water Board, to Licensing Department, Nunavut Water Board, 2AM-BOS---- & 2AM-DOH1323 July 12, CIRNAC Late Submission **dated July 18, 2018**
111. Letter to Karen Kharatyan, Manager of Licensing, Nunavut Water Board, from John Roesch, P. Eng. Sr. Hope Bay Project officer, Kitikmeot Inuit Association, Re: KIA's Final Submission on the Hope Bay Project Phase 2 Type "A" Water Licence Applications **dated July 18, 2018**
112. Email from Karen Kharatyan, Acting Manager of Licensing, Nunavut Water Board, to Peter Unger, Sr. Environmental Assessment Officer, Natural Resources Canada, Re: NRC Re Hope Bay GWMP no comments **dated July 24, 2018**
113. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Adam Grzegorzczuk, Manager, Land Tenure and Reclamation, and to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, BCC: Doris North distribution list, Re: TMAC Response to Notice of Pre-Hearing Conference & Intervener Submissions for 2AM-BOS---- and 2AM-DOH1323 **dated July 25, 2018**
114. Email from Jared Ottenhof, Resource Management Advisor Environment, Nunavut Tunngavik Inc., to Ida Porter, Licence Administrator, Nunavut Water Board, Re: NTI Participate Conference Call July 31, **dated July 25, 2018**
115. Letter to Karen Kharatyan, Director of Technical Services/Acting Executive Director, Nunavut Water Board, from Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. Re: Application for a Type "A" Water Licence No: 2AM-BOS---- and 2AM-DOH1323; Confirmation of Pre-Hearing Conference and Response to Intervener Submissions after the Technical Meeting **dated July 25, 2018**
116. Letter to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. from Karen Kharatyan, Director of Technical Services, Nunavut Water Board, Re: Application for Type "A" Water Licence File No. 2AM-BOS---- and for Amendments to the Type "A" Water Licence No: 2AM-DOH1323; TMAC Resources Inc. Pre-Hearing Conference Final Agenda and Call in Information **dated July 27, 2018**



117. Inuinnaqtun and English Notice of Public Hearing 2AM-BOS---- and 2AM-DOH1323 **dated August 14, 2018**
118. Inuinnaqtun Notice of Public Hearing for Nunatsiaq News 2AM-BOS---- and 2AM-DOH1323 **dated August 15, 2018**
119. Letter to Doris North Distribution List Re: Type “A” Water Licences 2AM-DOH1323 and 2AM-BOS---- Pre-Hearing Conference Decision Regarding Applications for a new Type “A” Water Licence and a Type “A” Water Licence Amendment **dated August 22, 2018**
120. Email to Karen Kharatyan, Director of Technical Services, Nunavut Water Board, from John Roesch, P. Eng. Sr. Hope Bay Project Officer, Kitikmeot Inuit Association, Re: Final Submission date of September 21 to September 28, **dated September 5, 2018**
121. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, Nunavut Water Board, BCC: Doris North Distribution List, Re: TMAC Proposed Framework **dated September 5, 2018**
122. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, Nunavut Water Board, BCC: Doris North Distribution List, Re: Extension Granted on Final Submissions **dated September 6, 2018**
123. DFO Public Hearing Presentation English, Inuktitut, Inuinnaqtun, French, **dated September 21, 2018**
124. Blank Registration Form **dated September 27, 2018**
125. ECCC Cover Letter & Final Written Submission **dated September 28, 2018**
126. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, Nunavut Water Board, BCC: Doris North Distribution List, Re: Final Written Submissions **dated September 28, 2018**
127. CIRNAC Final Written Submission and Reclaim Model **dated September 28, 2018**
128. 2AM-DOH1323 & 2AM-BOS---- KIA Final Submission for Hope Bay Project Type A Water Licenses **dated September 28, 2018**
129. 2AM-BOS--- & 2AM-DOH1323 TMAC Responses to Final Written Submissions on Water Licenses AEMP **dated October 1, 2018**
130. Email from Ida Porter, Licence Administrator, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. CC: Licensing Department, Nunavut Water Board, BCC: Doris North Distribution List, Re: TMAC Resources Inc. Response to Final Written Submissions **dated October 2, 2018**



131. Letter from Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. to Karen Kharatyan, Director of Technical Services, Nunavut Water Board, Re: Supplemental Response to CIRNAC-8 on Final Written Submission on Applications for 2AM-BOS---- and Amendment No.2 2AM-DOH1323 **dated October 5, 2018**
132. ECCC Final Written Submission Executive Summary French, Inuinnaqtun, and Inuktitut 2AM-BOS---- and 2AM-DOH1323 **dated October 9, 2018**
133. Letter to Ida Porter, Licence Administrator, Nunavut Water Board, from Sarah Forte, Water Management Specialist, Crown Indigenous Relations and Northern Affairs Canada, Re: CIRNAC's comments on TMAC Resources Inc.'s Draft 2AM-BOS--- and 2AM-DOH1323 amendment #2 water licence for phase 2 of the Hope Bay Project **dated October 12, 2018**
134. 2AM-DOH1323 and 2AM-BOS---- CIRNAC Public Meeting Presentation **dated October 15, 2018**
135. 2AM-BOS---- and 2AM-DOH1323 ECCC Presentation English **dated October 15, 2018**
136. 2AM-BOS---- and 2AM-DOH1323 KIA Final Submission Presentation Hope Bay Phase 2 Project English and Inuktitut **dated October 15, 2018**
137. 2AM-BOS---- and 2AM-DOH1323 KIA Public Hearing Community Presentation English and Inuktitut **dated October 15, 2018**
138. 2AM-BOS---- and 2AM-DOH1323 TMAC A.1 NWB Hearing Presentation English, Inuinnaqtun, and Inuktitut **dated October 15, 2018**
139. 2AM-BOS---- and 2AM-DOH1323 TMAC Final Hearing Presentation Community Session English, Inuktitut and Inuinnaqtun **dated October 15, 2018**
140. Letter and Agenda to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. from Stephanie Autut, Executive Director, Nunavut Water Board, Re: Applications for new Water Licence 2AM-BOS---- and Amendment No. 2 to Water Licence 2AM-DOH1323; Phase 2 Hope Bay Belt Project, TMAC Resources Inc.; Public Hearing Update and Agenda **dated October 16, 2018**
141. 2AM-BOS---- and 2AM-DOH1323 NWB Public Hearing Community Session presentation **dated October 16, 2018**
142. 2AM-BOS---- Executive Summary for Boston Type A English, Inuinnaqtun, and Inuktitut **dated October 16, 2018**
143. 2AM-DOH1323 Executive Summary for Doris Amendment No.2 English, Inuinnaqtun, and Inuktitut **dated October 16, 2018**
144. Email from Sarah Forte, Water Management Specialist, Crown Indigenous Relations and Northern Affairs Canada, to Ida Porter, Licence Administrator, Nunavut Water Board, Cc:



Bridget Campbell, Water Management Coordinator, CIRNAC, Ian Parsons, Manager, Water Resources, CIRNAC Re: CIRNAC's List of Attendees **dated October 17, 2018**

145. Email from Shelley Potter, Manager Environment, TMAC Resources Inc. to Ida Porter, Licence Administrator, Nunavut Water Board, Cc: Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. Licensing Nunavut Water Board, Re: TMAC Public Hearing List of Attendee's **dated October 17, 2018**
146. 2AM-BOS---- and 2AM-DOH1323 Announcement of Public Meeting **dated October 17, 2018**
147. 2AM-BOS---- and 2AM-DOH1323 KIA List of Attendee's **dated October 18, 2018**
148. 2AM-BOS---- and 2AM-DOH1323 Public Hearing Final Agenda Inuinnaqtun **dated October 19, 2018**
149. 2AM-BOS---- and 2AM-DOH1323 ECCC Presentation French, Inuinnaqtun, Inuktitut, **dated October 19, 2018**
150. 2AM-DOH1323 & 2AM-BOS---- CIRNAC Public Meeting Presentation Inuinnaqtun and Inuktitut **dated October 22, 2018**
151. 2AM-BOS---- and 2AM-DOH1323 B.1 NWB Final Hearing Presentation Community Session English TMAC Resources Inc. **dated October 23, 2018**
152. Email from Richard Dwyer, Manager of Licensing, Nunavut Water Board, to Sarah Forte, Water Management Specialist, Crown Indigenous Relations and Northern Affairs Canada Cc: Ida Porter, Licence Administrator, Nunavut Water Board, Derek Donald, Technical Advisor, Nunavut Water Board, Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. Adam Grzegorzczuk, Manager, Land Tenure and Reclamation, TMAC Resources Inc. Ian Parsons, Manager, Water Resources, CIRNAC Justin Hack, Water Resources Inspector, CIRNAC, Spencer Dewar, Director, Resource Management, CIRNAC, Bcc: Doris North Distribution List, Re: CIRNAC Withdraw & Revision Request CIRNAC Comments on Draft Water Licenses **dated October 23, 2018**
153. 2AM-BOS---- and 2AM-DOH1323 KIA Final Submission Presentation and Public Hearing Community Presentation Inuinnaqtun October 24-25 2018 **dated October 23, 2018**
154. 2AM-BOS---- and 2AM-DOH1323 B.1 NWB Final Hearing Presentation Community Session Inuktitut and Inuinnaqtun **dated October 23, 2018**
155. 2AM-BOS---- Proposed Monitoring Location for Boston **dated October 23, 2018**
156. Letter to Ida Porter, Licence Administrator, Nunavut Water Board, from Sarah Forte, Water Management Specialist, Crown Indigenous Relations and Northern Affairs Canada Re: CIRNAC Request to Withdraw comments on TMAC Resources Inc.'s Draft 2AM-BOS---- and 2AM-DOH1323 Amendment #2 Water Licence for Phase 2 of the Hoe Bay Project **dated October 23, 2018**



157. 2AM-DOH1323 & 2AM-BOS---- Proposed Schedule J Doris Madrid Monitoring Locations **dated October 23, 2018**
158. 2AM-BOS---- & 2AM-DOH1323 Day 1 Sign in Sheet **dated October 24, 2018**
159. 2AM-BOS---- & 2AM-DOH1323 Evening Sign in Sheet **dated October 24, 2018**
160. Email to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. Cc: Licensing Nunavut Water Board, Cc: Christine Kowbel, Lawson, from Richard Dwyer, Manager of Licensing, Nunavut Water Board, 2AM-BOS---- & 2AM-DOH1323 Presentations, CV's, and Monitoring Schedules **dated October 24, 2018**
161. 2AM-BOS---- & 2AM-DOH1323 Public Hearing Commencement 1 **dated October 24, 2018**
162. 2AM-BOS---- & 2AM-DOH1323 Public Hearing Commencement 2 **dated October 24, 2018**
163. 2AM-BOS---- & 2AM-DOH1323 Day 2 Afternoon Sign in Sheet **dated October 25, 2018**
164. 2AM-BOS---- & 2AM-DOH1323 Day 2 Morning Sign in Sheet **dated October 25, 2018**
165. 2AM-BOS---- & 2AM-DOH1323 Hope Bay Phase 2 Financial Security Boston **dated October 25, 2018**
166. 2AM-BOS---- & 2AM-DOH1323 Hope Bay Phase 2 Financial Security Doris-Madrid **dated October 25, 2018**
167. Email from Richard Dwyer, Manager of Licensing, Nunavut Water Board, to Oliver Curran, Vice President, Environmental Affairs, TMAC Resources Inc. Cc: Licensing Nunavut Water Board, BCC: Doris North Distribution List, Christine Kowbel, Lawson, 2AM-BOS---- & 2AM-DOH1323 Re: Pubic Hearing Record Closed **dated October 29, 2018**
168. Exhibit List 2AM-BOS---- & 2AM-DOH1323 **dated October 31, 2018**

APPENDIX D - Sign-in Sheets – List of Participants in the Public Hearing

PUBLIC MEETING TMAC RESOURCES INC. Cambridge Bay, Nunavut October 24-25, 2018 Registration Form Session Day One

No.	First Name	Last Name	Organization/ Address	Phone	Fax	E-mail
1.	ADAM	GRZEGORCZYK	TMAC	—	—	—
2.	MARIE	RYKARST	SRK	—	—	—
3.	Olivier	Carron	TMAC	—	—	—
4.	Ia	Darson	CIRNAC	—	—	iparson@canada.ca
5.	JACIE	HILL	CIRNAC	—	—	jacie.hill@canada.ca
6.	Spencer	Devar	CIRNAC	—	—	Spencer.Dewar@canada.ca
7.	MIKE	Healy	FRM	—	—	mike.healy@canada.ca
8.	John	Kersch	KIA	867-982-3310	—	John.Kersch@canada.ca
9.	John	DONIHUE	KIA	—	—	John.Donihue@canada.ca
10.	Angie	McKellan	DFO	—	—	Angie.McKellan@dfo-mpo.ca
11.	Marek	Janowicz	DFO	—	—	Marek.Janowicz@dfo-mpo.ca
12.	Kyle	Conway	TMAC	—	—	—
13.	MEAGAN	TOBIN	ECCC	—	—	MEAGAN.TOBIN@canada.ca
14.	Bradley	Summerfield	ECCC	—	—	Bradley.Summerfield@canada.ca
15.	ASHLEY	MATHAI	TMAC	—	—	—
16.	Candice	Pedersen	CIRNAC	—	—	Candice.Pedersen@canada.ca
17.	Nicole	Bishop	ERM & TMAC	—	—	nicole.bishop@erm.ca
18.	Shelley	Potter	TMAC	—	—	Shelley.Potter@tmacresources.com
19.	Sarah	Forte	CIRNAC	—	—	Sarah.Forte@canada.ca
20.	Bridget	Campbell	CIRNAC	—	—	bridget.campbell@canada.ca
21.	Henry	O'Donnell	Investigator	—	—	—
22.	William	Nicoll	NWB	—	—	—
23.	Stephanie	Aufut	NWB	—	—	—
24.	Karen	Kharatyan	NWB	—	—	—
25.	Ben	Kogvik	NWB	—	—	—
26.	Derek	Donald	NWB	—	—	—
27.	Ida	Peter	NWB	—	—	—
28.	Teresa	Meadows	NWB Legal	—	—	—
29.	MaKabe	Narok	NWB member	—	—	—
30.	Loatie	Teomasie	NWB Chair	—	—	—
31.	Ross	Mrazek	NWB member	—	—	—



PUBLIC MEETING TMAC RESOURCES INC.
Cambridge Bay, Nunavut October 24-25, 2018
Registration Form Session Day One

No.	First Name	Last Name	Organization/ Address	Phone	Fax	E-mail
32.	Caroline	Shuman	Court Reporter			
33.	Jana	Kuluktra				
34.	John	John	John			
35.	Vernon	Kitison				
36.	John	Roesch	KIA	861-982-3310-231		John Roesch
37.	Mike	Henry	Cam			
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Morning Session
October 25, 2018

PUBLIC MEETING TMAC RESOURCES INC.
Cambridge Bay, Nunavut October 25, 2018
Registration Form Session Day Two

No.	First Name	Last Name	Organization/ Address	Phone	Fax	E-mail
1.	John	Roesch	KIA	867-982-3310 - ext 251		John.Roesch
2.	William	Nicoll	NIRB			
3.	SETH KAROLINE	SCHUMANN	DICTA	370-8326		
4.	Joanne	Sallerma	Amlet Grathwa	365 741		Mayo@g-nq.com
5.	Angie	McLellan	DFO			
6.	MEGAN	TOBIN	ECCC			
7.	MARCK	JANOWICZ	DFO	780-727-5733		
8.	Bradlet	Sumner Rd	ACC			BC
9.	Henry	Chokkonos	Translator			
10.	John	DONIHUE	KIA			
11.	MARIZ	EYKAAST	SRIC			
12.	Oliver	Curran	TMAC			
13.	Shelley	Potter	TMAC			
14.	Kyle	Conway	TMAC			
15.	MIKE	Henry	ERM			
16.	Spencer	Dawson	CTRMAC			Spencer.Dawson@Canada.ca
17.	Jade	Hill	CIRNAC			jade.hill@canada.ca
18.	Bridget	Campbell	CIRNAC			bridget.campbell@canada.ca
19.	Sarah	Forte	CIRNAC			sarah.forte@canada.ca
20.	Ian	Parsons	CRNAC			Ian.Parsons@canada.ca
21.	Adam	Gregorczyk	TMAC			
22.	NICOL	Bishop	ERM & TMAC			nicol.bishop@erm.com
23.	Stephanie	Autut	NWB ED			
24.	Karen	Kharatyan	NWB DTS			
25.	Derek	Donald	NWB IA			
26.	Ben	Kogvik	NWB Translator			
27.	Ida	Porter	NWB LA			
28.	Teresa	Meadows	Legal (NWB)			
29.	Lootie	Toomasie	NWB Chair			
30.	Ross	Mrazek	NWB Board			
31.	Makabe	Narvik	NWB Board			
32.	ASHLEY	Mathai	TMAC			
	Christa	Kowul	LL			

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Afternoon Session
October 25, 2018

PUBLIC MEETING TMAC RESOURCES INC.
Cambridge Bay, Nunavut October 25, 2018
Registration Form Session Day Two

No.	First Name	Last Name	Organization/ Address	Phone	Fax	E-mail
33.	Angie	McLellan	DFO			
34.	MEAGAN	TOBIN	ECCE			
35.	Bradley	Sumner Field	ECCE			
36.	MAREK	TANAWICZ	DFO			
37.	Henry	Chalcovsk	Translator			
38.	John	Koesch	KIA	867-982-3310		ext 231 JR
39.	Olivier	Curran	TMAC			
40.	Shelley	Potter	TMAC			
41.	Ta	Parsons	CERNAC			ta.parsons@canada.ca
42.	Sarah	Forte				
43.	Kyle	Conway	TMAC			
44.	Spencer	Dewar	CERNAC			Spencer.Dewar@canada.ca
45.	Bridget	Campbell	CERNAC			bridget.campbell@canada.ca
46.	Jade	Hill	CERNAC			jade.hill@canada.ca
47.	Mike	Henry	ECCE			
48.	Christian	Kowal	LL			
49.	MARITZ	RYKAART	SRK			
50.	JOHN	DOWHEE	KIA			
51.	William	Nicoll	NIB			
52.	ADAM	GAZDORZYK	TMAC			
53.	Stephanie	Autut	NWB ED			
54.	Karen	Kharatyan	NWB DTS			
55.	Dorek	Donald	NWB TA			
56.	Ida	Porter	NWB LA			
57.	Ben	Kogvik	NWB Translator			
58.	Teresa	Meadows	NWB Legal			
59.	Barot					
60.	Karoline	Schumann	Dicta			
61.	Leetie	Tomasie	NWB Chair			
62.	Makabe	Nartok	NWB Member			
63.	Ross	Mrazek	NWB member			
64.	MARCO AVALAK					

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