NWB Annual Report **Year being reported:** 2016

License No: 2AM-DOH1323 **Issued Date:** August 16, 2013
Expiry Date: August 15, 2023

Project Name: Doris North Project

Licensee: TMAC Resources Inc.

Mailing Address:
95 Wellington St. W.
Suite 1010, PO Box 44
Toronto, Ontario M5J 2N7

Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):

Licence 2AM-DOH0713 was assigned from Hope Bay Mining Ltd. to TMAC Resources Inc. on June 18, 2013. This licence was renewed on Aug. 16, 2013 and renamed 2AM-DOH1323. This license was subsequently amended in December, 2016.

General Background Information on the Project (*optional):

Doris North remained in construction phase for all of 2016 with primary focus on civil construction associated with mill commissioning. No milling activities occurred and no tailings were deposited into the tailings impoundment area (TIA) in 2016. The 2016 exploration program consisted of lake based and underground drilling at Doris North as well as regional drilling programs within the Hope Bay belt as per 2BE-HOP1222 and 2BB-BOS1217. In 2016, TMAC's underground operations focused on lateral development of infrastructure and longhole sill access. Limited backfill operations during 2016 will contrast with much higher backfill volumes in 2017, as longhole stopes are mined out and filled with waste rock stored on the surface pad.

Licence Requirements: the licensee must provide the following information in accordance with

Part B | Item 3

A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.

Water Source(s):	Doris Lake/Windy Lake	
Water Quantity:	480000 cu.m/yr*	Quantity Allowable Domestic (cu.m)
	8437 cu. m/yr	Actual Quantity Used Domestic (cu.m)
	not specified	Quantity Allowable Drilling (cu.m)
	332 cu. m/yr	Total Quantity Used Drilling (cu.m)

**Part E, Item 1 total volume from "all sources and for all purposes"*

Waste Management and/or Disposal

- ☑ Solid Waste Disposal
- ☑ Sewage
- ☑ Drill Waste
- ☑ Greywater
- ☐ Hazardous

☑ Other: Containment Berm and Control Pond Effluent

Additional Details:

Water for domestic use at Doris Camp was obtained from Windy Lake. Water is drawn from the lake at the freshwater intake and trucked to Doris Camp. The Doris Lake pumphouse is not supplying domestic water to Doris Camp at this time.

Waste produced on site is treated according to Part G of the licence, and in accordance with the relevant Management Plans *(Incinerator Management Plan, Non-Hazardous Waste Management Plan, Hazardous Waste Management Plan, Ore and Waste Rock Management Plan, Landfarm Management Plan, Waste Water Treatment Management Plan, and Interim Water Management Plan*).

Some specifics are as follows:

-Food waste is incinerated as per Part G Item 5
-Paper products, paperboard packing, and untreated wood waste is open burned as per Part G Item 6.
-TMAC is authorized to dispose of all non-hazardous solid waste in a landfill on site as per Part G Item 8. To date, a landfill has not been built. All waste that cannot be incinerated on site is backhauled to an approved facility off site or will be held for deposit in a landfill once constructed. Backhauls of non-hazardous waste were initiated in 2016.
-Sewage and greywater produced onsite is processed in the sewage treatment plant as per Part G Item 4. Sludge produced by the treatment plant is burned in the incinerator or disposed as outlined in the Waste Water Treatment Management Plan.
-Hazardous materials such as waste oil, glycol, and contaminated soil are shipped offsite for disposal at an approved site as per Part G Item 11.
-All containment berm water is sampled for water quality against the discharge criteria of the licence. Water that meets the standards for discharge is released in accordance with the licence following a notification to the Inspector; water that does not meet the licence criteria is treated onsite until it is remediated to acceptable levels for discharge to the tundra, and/or it is discharged to the TIA.
-Runoff and contact seepage at site is managed in accordance with the Quarry Management and Monitoring Plan and Water Management Plan.

A list of unauthorized discharges and a summary of follow-up actions taken.

Spill No.: (as reported to the Spill Hot-line)
Date of Spill:
Date of Notification to an Inspector:
Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc.)

Please see Item 8 of the attached Annual Report Supplement for a summary of all unauthorized discharges that occurred in 2016 under license 2AM-DOH1323.

Revisions to the Spill Contingency Plan

Other: (see additional details)

Additional Details:

Please see Item 7 of the attached Annual Report Supplement for details.

Revisions to the Abandonment and Restoration Plan

Other: (see additional details)

Additional Details:

Please see Item 7 and Item 10 of the attached Annual Report Supplement for details.

Progressive Reclamation Work Undertaken

Additional Details (i.e., work completed and future works proposed)

Please see Item 11 of the attached Annual Report Supplement for details.

Results of the Monitoring Program including:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;

Details attached

Additional Details:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;

Details attached

Additional Details:

Results of any additional sampling and/or analysis that was requested by an Inspector

No additional sampling requested by an Inspector or the Board

Additional Details: (date of request, analysis of results, data attached, etc.)

N/A

Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

Select

Additional Details: (Attached or provided below)

Please see Item 19 of the attached Annual Report Supplement for details.

Any responses or follow-up actions on inspection/compliance reports

Inspection Report received by the Licensee (Date):

Additional Details: (Dates of Report, Follow-up by the Licensee)

Please see Item 18 of the attached Annual Report Supplement for details.

Any additional comments or information for the Board to consider

Please see the attached Annual Report Supplement.

Date Submitted:	March 31 2017	
Submitted/Prepared by:	John Roberts	
Contact Information:	**Tel:**	416.628.0216 ext. 109
	Fax:	
	email:	john.roberts@tmacresources.com

GPS Coordinates for water sources utilized

Source Description	UTM Easting	UTM Northing
ST-7 Doris Freshwater Intake	433598	7558710
ST-7a Windy Freshwater Intake	432529	7550500
Unnamed Lake to support regional exploration efforts	433440	7561460
Unnamed Lake to support regional exploration efforts	434180	7562020

GPS Locations of areas of waste disposal

Location Description	UTM Easting	UTM Northing
TL-1 (temp during dewatering)	434401	7559099
ST-4	432450	7559600
ST-5	432960	7559270
ST-6A	432910	7563340
ST-6B	432730	7563200
ST-8 STP Discharge	432933	7559057
ST-9 STP Tundra Discharge	430798	7559290

GPS Locations of Active Monitoring Stations not included above*

Monitoring Station	UTM Easting	UTM Northing
ST-1	7558923	433146
ST-2	7558921	432232
ST-10	various locations as required	
TL-2	434053	7559507
TL-3	434204	7559983
TL-10	434890	7558238

** Thermal monitoring locations are documented in the Annual Geotechnical Report*

2016 2AM-DOH1323 Type A Water Licence Annual Report Supplemental Document

Doris North Project

Nunavut Water Board

Prepared by
TMAC Resources Inc.
Toronto, ON

Prepared for
Nunavut Water Board
Gjoa Haven, NU

March 2017

Executive Summary
2AM-DOH1323 Annual Report

This report is filed by TMAC Resources Inc. ("TMAC") on its activities during 2016 under Water Licence No. 2AM-DOH1323 issued by the Nunavut Water Board on November 4, 2016. Licence 2AM-DOH1323 is a amendment of licence 2AM-DOH1323t issued to TMAC on August 16, 2013.

As set out in Schedule B, Item 1 to 19 of the Licence, the report includes information with respect to the following topics:

- summary of monthly monitoring data
- information with respect to Geochemical Monitoring and Waste Rock Storage Assessment
- information with respect Quarry Rock Seepage Monitoring and management Program
- summary of the results of monthly water balance and water quality model assessments
- update on current capacity of the Tailings Impoundment Area
- information on flows at monitoring stations TL-2 and measurements of Doris Lake Water level
- annual review and any revisions of management plans and Emergency Response and Contingency Plan
- a list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up actions taken
- results of the Aquatic Effects Monitoring Program
- annual adjustments to reclamation security
- annual incineration stack testing results
- annual Landfill Management Report
- a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and an outline of any work anticipated for the next year
- a summary of any closure and reclamation work undertaken and an outline of any work anticipated for next year, including changes to implementation and scheduling
- a summary report describing consultation and participation with local organizations and residents of nearby communities, including a schedule of upcoming events/information sessions
- GPS locations of monitoring stations
- a summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector any other details on water use and waste disposal requested by the board

Atanguyan Naetomik Okaohen
2AM-DOH1323 Ukeotoagaagan Unipkaak

TMAC Resources Inc.-kon ("TMAC-kon") tunihihimaliktun Ukeotoagaagan Unipkaamik havaamigun 2016-mi ilagagun Imaknik Atogeagani Laeseoyum Napaani 2AM-DOH1323 toniyaohimayum Nunavumi Imalikiyin Katimayin August 16-mi 2013-mi. Laeseoyok 2AM-DOH1323 nutaguktigun laeseoyomik 2AM-DOH0713-mik tunihaolgaktok Miramar-konun September 19-mi 2007-mi, tuniyaovlonilo Hope Bay Mining-konun January 23-mi 2008-mi, kigoani toniyaohimayok TMAC-konun June 18-mi 2013-mi.

Okaotaoyomi Naonaepkotimi B-mi, Okaoheoyun 1-min 9-mun Laeseoyomi, unipkaak ilakaktok hivonikhiyutikhanik ukuniga okaoheoyun:

- naetomik okaohik tatkikheon naatkagan amigiyotinun naonaepkotin
- hivonikhiyutikhan Kuvilaaktonun Amigiyotin Ikaguniklo Oyakanik Tutkktigiveon Ihivgeoktaoniga
- ilitturnikhaq ihumaginahuarlugu Uyaraqtarviup Maqihimaningit Amiqhainikhainut unalu amiriyangit Piliriakhaq
- naetomik okaohik kanogilinigagun tatkikheon naatkagan imakakniga imagiknigalo ilitokhaknigagun
- naetomik okaohik Nunameotanik Ihivgoekhiyotinik Unipkaak
- kanoginiga taya imiktoktaolaakniganik Atagukveom Nuna
- ilitturnikhaq qurluaqhimayuq uvani amiqhaqarvingit TL-2 uuktuqhimayangillu uvani Doris Tahiq Imaup aktilaanga
- ukeotoagaagan ihivgoekniga nutaguktiniglo monagiyotinun oplaogaeyaotini Opaloknaktokageakalo Upiyotin Ihoakhaotilo Opalogaeyaon
- titigaknigin okateaknigilo tamaeta agiktaohimagitun kuktiyotin ila kanogaalok, kuviyomik unipkaak naonaepkun napaanik naetomiklo okaoeoyun kigoagun havaanik
- kanogilinigin Imakmeotan Aktokniginun Amigiyotinik Havaak
- ukeotoagaagan ihoakhakniga nunan otiktitaagani ilitkohenun akileotaoyaakekhimayok
- ukeotoagaagan ikulativikmin poyukniganik ilitokhaotin kanogilinigagun
- ukeotoagaagan Haohivikmik Monagiyotinik Unipkaak
- naetomik okaohik ihoakhakniginik hanaloagutiniklunen Imiktakvikmi Atagukvikmilo Pikotini, ukoalo tamaeta ilaoyun napayun kituniklo havaanik nahugikmagaa atoktukhami ukeomi
- naetomik okaohik hunamiklikaa umiktiknigagun nunalo utiktinigagun ilitkohenun havaan nahogiyaoyun atoktukhami ukeomi, ukoalo aalaguknigin atokpaleanigagun kagugulo pineaknigagun
- naetomik unipkaak okateaknigagun okakatigegutinik ilaoyotiniklo nunagiyaoyoni timeyonin inuknilo kanitomi nunagiyaoyoni, ukoalo pivikhakaknigin tikitukhan hulilogaakven hivonikhiyotiniklo okaohikaklotik katimavikhan
- GPS-mi humenigin amigiyotinun iglukpaen
- naetomik okaohik upiyotinik ihoakhiyaagani ihomalutaoyun ilakoenaelo titigakhimayun ihivgoekhonikun unipkaani maligoaknigagulo unipkaan Ihivgeokhiyomin
- anenik okateakhimayonik imaknik atoknigagun atagukveoyoniklo piyomayaenik katimayin

ᑐᓴᕋᒃᓴᑦ ᓇᐃᓈᖅᓯᒪᔪᑦ
2AM-DOH1323 ᐊᕐᕌᒍᓕᒫᖅᓯᐅᑏᑦ ᑐᓴᕋᒃᓴᑦ

ᐅᑯᐊ TMAC Resources Inc.–ᑯᑦ ᑐᓂᓯᔪᒻᒪᑕ ᑎᑎᕋᖅᓯᒪᔪᓂᒃ ᐊᕐᒍᓕᒫᖅᓯᐅᑎᓂᒃ ᑐᓴᕋᒃᓴᓂᒃ ᐱᔾᔪᑎᓕᖕᓂᒃ ᐊᐅᓚᖃᑦᑕᔪᔪᓂᒃ 2016–ᒥ ᐅᑯᓂᖓ ᒪᓕᒃᓱᑎᒃ ᐱᔪᓐᓇᐅᑎᓂᒃ ᓚᐃᓴᓂᒃ No. 2AM-DOH1323 ᐱᔭᐅᔪᔪᓂᒃ ᓄᓇᕗᑦᒥ ᐃᒥᓕᕆᔨᑦ ᑲᑎᒪᔨᖏᓐᓂᒃ ᐊᐅᒡᒍᓯ 16, 2013–ᒥ. ᓚᐃᓴ 2AM-DOH1323 ᓄᑖᕈᕆᐊᖅᓯᒪᔭᖅ ᓚᐃᓴ 2AM-DOH0713 ᓱᕗᓪᓕᖅ ᑐᓂᔭᐅᔪᔪᖅ ᐅᑯᓄᖓ Miramar Hope Bay Mining Ltd.–ᑯᓐᓄᑦ ᐅᕙᓂ ᓯᑦᑕᑉᕙ 19, 2007–ᒥ, ᑐᕌᔪᔪᑦ Hope Bay Mining Ltd.–ᑯᓐᓄᑦ ᐅᕙᓂ ᔭᓐᓄᐊᕆ 23, 2008–ᒥ, ᐊᓱᐃᓪᓗᒃ ᐊᓵᑎᓕᔪᔭᖓᑦ ᐅᑯᐊ TMAC ᐅᕙᓂ 18, 2013.

ᐋᕿᒃᓯᒪᔭᖅ ᐅᕙᓂ Schedule B–ᒥ, ᐱᔾᔪᑕᐅᔪᖅ 1–ᒥᒃ ᑎᑭᑦᓱᒍ 19–ᒧᑦ ᐊᑐᖅᓱᒍ ᓚᐃᓴᖃᕈᑦ, ᑐᓴᕋᒃᓴᑦ ᑕᒡᕗᖓᖓᔪᓂᒃ ᒪᑯᓂᖓ ᐃᓚᓖᑦ ᑐᓴᕋᒃᓴᓂᒃ:

- ᑐᓴᕋᒃᓴᑦ ᓇᐃᓈᖅᓯᒪᔪᑦ ᑕᕿᑕᒫᑦ ᖃᐅᔨᓴᖅᑕᐅᕙᒃᑐᓂᒃ ᐱᔾᔪᑎᓖᑦ ᓄᐊᑕᐅᕙᒃᑐᓂᒃ
- ᑐᓴᕋᒃᓴᑦ ᐱᔾᔪᑎᓖᑦ ᓄᓇᒥᒃ ᖃᐅᔨᓴᕈᑏᑦ ᖃᓄᖅ ᓱᕋᔪᖃᒻᒪᖓᖅ ᐊᒻᒪᓗ ᐊᒃᑕᑯᓂᒃ ᐅᔭᖃᓂᒃ ᖃᐅᔨᓴᕈᑏᑦ
- ᑐᑭᓯᒋᐊᕈᑏᑦ ᐃᑉᐱᒋᑦᑎᐊᕐᓂᒃᑯᑦ ᓄᓇᐅᑉ ᖃᖓᓂ ᐅᔭᕋᐃᑦ ᑕᑯᓗᒍ ᖃᐅᔨᓴᕐᓂᖅ ᐊᒻᒪᓗ ᐊᐅᓚᓂᕐᒧᑦ ᐱᓕᕆᐊᒃᓴᖅ
- ᐱᔾᔪᑎᓖᑦ ᖃᓄᐃᑦᑐᑦ ᓱᕐᕌᕙᖓᒫᖓᑕ ᑕᕿᑕᒫᑦ ᐃᒥᐅᑉ ᖃᓄᐃᑦᑑᓂᖓ ᓇᓕᒧᖕᓂᖓ ᐊᒻᒪᓗ ᐃᒥᓕᕆᔾᔪᑎᑦ
- ᑐᓴᕋᒃᓴᑦ ᒫᓇᕐᓂᑕᑦ ᖃᓄᐃᓪᓗᐊᖅᑎᕆᔪᑦ ᐊᒃᑕᑯᑦ ᐅᔭᕋᒃᓯᐅᑎᓕᕆᒥᓃᑦ ᐃᓂᒥᓃᑦᑐᑦ
- ᑐᑭᓯᒋᐊᕈᑏᑦ ᐃᒪᐅᑉ ᐊᐅᓚᓂᖓᓄᑦ ᖃᐅᔨᓴᕐᓂᖅ ᓇᔪᕐᕕᑦ TL-2 ᐊᒻᒪᓗ ᐆᒃᑐᕋᐅᑏᑦ ᑐᐊᕆᔅ ᐃᒪᐅᑉ ᐃᑎᓂᖓᓄᑦ
- ᐊᕐᕌᒍᑕᒫᑦ ᕿᒥᕐᕈᔭᐅᕙᒃᑐᑦ ᐊᒻᒪᓗ ᖃᓄᐃᓐᓇᖅ ᐋᕿᕆᐊᖅᑕᐅᕙᒃᑐᑦ ᐊᐅᓚᑦᓯᒍᑎᑦ ᐸᕐᓇᐃᒍᑎᑦ, ᑐᐊᕕᕐᓇᕐᑐᖃᕐᓂᐸᓪᓗ ᐊᑑᑕᐅᒐᔭᖅᑐᑦ ᐊᒻᒪᓗ ᓇᓪᓕᐅᒃᑯᒫᑦ
- ᑎᑎᕋᖅᓯᒪᔭᑦ ᐊᒻᒪᓗ ᓇᓗᓇᐃᔭᖅᓯᒪᔭᑦ ᕿᓱᐃᑦ ᐃᓅᓐᓇᑎᒃ ᖃᐅᔨᓴᔭᐅᓯᒪᖕᒋᑦᑐᑦ ᑲᔪᓯᑎᑦᓯᒍᑎᒃᑯᑦ ᒪᑯᐊ ᐃᓚᒋᔭᐅᓪᓗᑎᒃ ᖃᓄᐃᓪᓗᐊᖅᑐᑦ, ᑯᕕᔪᕕᓃᑦ ᑐᓴᕋᒃᓴᑦ ᖃᓄᖅ ᓇᓗᓇᐃᒃᑯᑕᓖᑦ ᓈᓴᐅᑎᓖᑦ ᐊᒻᒪᓗ ᓇᐃᓈᖅᓯᒪᔪᓂᒃ ᐅᓂᒃᑳᑕᓖᑦ ᐱᓕᕆᐊᕐᒋᐊᓖᑦ ᖃᓄᖅ ᐊᐅᓚᑕᐅᓗᑎᒃ
- ᖃᐅᔨᔭᐅᓂᑯᑦ ᕿᕝᒍᖓᒍᑦ ᐃᒪᕐᒥᐅᑕᑦ ᖃᓄᖅ ᓱᕋᖅᓯᒪᔪᓂᒃ ᖃᐅᔨᓴᕈᑏᑦ ᐱᓕᕆᔾᔪᑏᑦ
- ᐊᕐᕌᒍᓕᒫᖅᓯᐅᑎᑦ ᐋᕿᒋᐊᖅᑕᐅᓯᒪᔪᑦ ᓴᓗᒻᒪᖅᓴᐃᒍᑎᑦ ᓇᓪᓕᐅᒃᑯᒫᑦ
- ᐊᕐᕌᒍᓕᒫᖅᓯᐅᑎᑦ ᐃᑭᑦᓯᕙᖕᒥ ᓄᐊᑕᐅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᑯᑦ ᕿᕝᒍᖓᒍᑦ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑎᓪᓗᒋᑦ
- ᐊᕐᕌᒍᓕᒫᖅᓯᐅᑎᑦ ᓄᓇᒦᑦᑐᑦ ᐊᒃᑕᑯᑦ ᐊᐅᓚᑦᓯᒍᑎᑦ ᑐᓴᕋᒃᓴᑦ
- ᓇᐃᓈᖅᓯᒪᔪᑦ ᐋᕿᒋᐊᕈᑏᑦ ᐊᒻᒪᓗ ᐅᕙᓗᑭᐊᖅ ᐊᖏᔫᑎᑦ ᐋᕿᒋᐊᖅᑕᐅᓯᒪᔪᑦ ᑲᔪᓯᒪᔪᑦ ᐃᒪᖃᕈᒪᒨᖓᔪᖅ ᐊᒻᒪᓗ ᐊᒃᑕᕕᖓᒥᑦᑐᑦ, ᐃᓚᖃᖅᓱᑎᒃ ᒪᑯᓂᖓ ᐃᓘᓐᓇᑎᒃ ᑕᒡᕗᖓᖓᔪᑦ ᓴᓇᔭᐅᓯᒪᓂᖓᓄᑦ ᐊᒻᒪᓗ ᖃᓄᖅ ᕿᒡᓕᖓᓅᖓᔪᑦ ᖃᓄᑐᐃᓐᓇᖅ ᐱᓕᕆᐊᕐᒋᐊᓕᑦ ᐊᕐᕌᒍᓛᖅᑐᖅ
- ᓇᐃᓈᖅᓯᒪᔪᑦ ᑐᓴᕋᒃᓴᑦ ᖃᓄᑐᐃᑦᑐᑐᐃᓐᓇᐃᑦ ᒪᑐᔭᐅᓂᐊᖅᑐᑦ ᐊᒻᒪᓗ ᓴᓗᒻᒪᓴᖅᑕᐅᕆᐊᓕᑦ ᐱᓕᕆᐊᑦ ᐊᒻᒪᓗ ᖃᐅᔨᒪᔭᐅᕙᓖᖅᑐᑦ ᐱᓕᕆᐊᒃᓴᑦ ᓱᓕ ᖃᓄᑐᐃᓐᓇᖅ ᐊᕐᕌᒍᓛᖅᑐᖅ, ᐃᓚᓖᑦ ᐊᓱᕈᖅᑎᕆᐊᓕᖕᓂᒃ ᐊᒻᒪᓗ ᖃᖓ ᑲᒪᒋᔭᐅᓛᖅᑐᑦ
- ᑐᓴᕋᒃᓴᑦ ᓇᐃᓈᖅᓯᒪᔪᑦ ᐅᓂᒃᑳᑦ ᐱᒃᑯᔾᔭᐅᒍᑕᐅᕙᒃᑐᑦ ᐊᒻᒪᓗ ᐃᓚᐅᔾᔪᑕᐅᕙᒃᑐᑦ ᓄᓇᓖᑦ ᑲᑐᔾᔨᖃᑎᒌᑎᒍᑦ ᐊᒻᒪᓗ ᓄᓇᓕᖕᓂᒃ ᖃᓂᒋᔮᖏᓐᓂᒃ, ᐃᓚᒋᔭᐅᓪᓗᑎᒃ ᖃᖓ ᐱᓕᕆᐊᕐᒎᑦ ᖃᓄᑐᐃᓐᓇᖅ ᐱᔾᔪᑕᐅᒋᐊᓖᑦ ᐋᖂᕈᑕᐅᕙᒃᑐᑦ
- ᑕᒻᒪᕇᒃᑯᑎᒃᑯᑎᑦ (GPS) ᐊᑐᖅᑕᐅᖃᑦᑕᖅᑐᑦ ᓇᒥ ᖃᐅᔨᓴᖅᕕᒃᑕᓖᑦ
- ᑐᓴᕋᒃᓴᑦ ᓇᐃᓈᖅᓯᒪᔪᖅ ᖃᓄᖅ ᐊᐅᓚᑕᐅᖃᑦᑕᖅᓯᒪᔪᑦ ᐃᓱᒫᓗᒋᔭᑦ ᐅᕙᑦᑐᑭᐊᖅ ᕿᕝᒍᓂᖅᑕᓖᑦ ᑎᑎᕋᖅᓯᒪᔭᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᑯᑦ ᑐᓴᕋᒃᓴᓃᑦᑐᑦ ᐅᕙᑦᑐᑭᐊᖅ ᒪᓕᒃᑐᑦ ᒪᓕᒃᑕᐅᒋᐊᓕᖕᓂᒃ ᐱᕐᑯᔭᖅᑎᒍᑦ ᑐᓴᕋᒃᓴᓂᒃ ᑎᑎᕋᖅᕕᒋᓯᒪᔭᕐᒋᑦ ᖃᐅᔨᓴᖅᑎᐅᑉᖃᓄᑐᐃᓐᓇᖅ ᐊᓯᕐᒋᓐᓂᒃ ᐱᔾᔪᑎᓖᑦ ᐃᒥᕐᒥᒃ ᐊᑐᖃᑦᑕᕐᓂᖅ ᐊᒻᒪᓗ ᐊᒃᑕᑯᓕᕆᔪᑦ ᐊᓵᑕᐅᕐᑯᓯᒪᔨᕐᒋᑦ ᑲᑎᒪᔩᑦ

Résumé opérationnel
2AM-DOH1323 Rapport annuel

TMAC Resources Inc. (« TMAC ») a déposé son rapport annuel sur ses activités au cours de l'année 2015 en conformité avec le Permis no 2AM-DOH1323 émis par l'Office des eaux du Nunavut (« Nunavut Water Board ») le 16 août 2013. Le Permis no 2AM-DOH1323 est le renouvellement du Permis 2AM-DOH0713 préalablement émis à Miramar Hope Bay Mining Ltd. le 19 septembre 2007, ce permis a par la suite été attribué à Hope Bay Mining Ltd., le 23 janvier 2008 et finalement cédé à TMAC, le 18 juin 2013.

Tel qu'énoncé à l'annexe B (« Schedule B »), point 1 à 19 du Permis no 2AM-DOH1323, le rapport comprend des renseignements sur les sujets suivants:

- un résumé des résultats mensuels du programme de surveillance
- des renseignements sur les résultats du programme de surveillance géochimique et de la gestion de stockage des déchets rocheux
- Renseignements concernant le programme de surveillance et de gestion des infiltrations à Quarry Rock
- un résumé des résultats mensuels du bilan hydrique et des modèles des évaluations de la qualité de l'eau et des modèles d'analyse de l'utilisation des eaux
- une mise à jour de la capacité de la zone du bassin d'accumulation de résidus de mine
- Renseignements concernant les flux aux postes de surveillance TL-2 et mesures du niveau d'eau à Doris Lake
- une revue annuelle ainsi que tous ajustements des plans de gestion ainsi que du plan d'intervention en cas d'urgence et mesures exceptionnelles
- une liste et une description de tous les rejets non autorisés, y compris les volumes des rejets, les numéros de dossier attribués, ainsi que des résumés des mesures de suivi prises à la suite de ces incidents
- les résultats du programme de surveillance des répercussions sur le milieu aquatique
- l'ajustement annuel du dépôt de garantie relatif à la remise en état
- les résultats annuels de l'analyse des émissions de l'incinérateur
- un rapport annuel de gestion d'enfouissement
- un résumé des travaux d'entretien mineurs ou majeurs effectués sur les réserves d'eau potable et les installations d'élimination des déchets et de toutes leurs composantes s'y rattachant, ainsi qu'un aperçu des travaux prévus l'année suivante
- un résumé de toute fermeture et de travaux de remise en état entrepris ainsi qu'un aperçu des travaux prévus l'année suivante, y compris les modifications apportées à l'échéancier et la mise en œuvre de cette remise en état
- un aperçu décrivant la participation et la réalisation de consultations avec les organisations locales et les habitants des communautés voisines, y compris un calendrier des forums de discussion et séances d'information à venir
- les coordonnées GPS des stations de surveillance
- un résumé des mesures de suivi prises pour régler les problèmes décrits dans les rapports d'inspection et de conformité établies par l'inspecteur
- tout autre détail en lien avec l'utilisation et du traitement de l'eau et de l'évacuation des rejets, tel que demandé par l'Office

Table of Contents

List of Tables

1. Summary of monthly monitoring reporting [see Part J Item 21]

Doris Camp was in Construction status in 2016. Construction activities in 2016 included; completion of the mill building, initiation of installation of the processing plant and associated tailings discharge line, emergency catchment basins and reclaim water pipeline associated with the TIA, continued expansion of the airstrip, construction of an explosives storage berm, initiation of construction of the Reagent and Cyanide storage facility, and continued construction of the Tailings Impoundment Area access road towards the south dam.

Some deposit definition drilling in support of the Doris North Mine was conducted and Regional exploration activities, permitted under 2BE-HOP1222, were also based out of Doris Camp in 2016. Underground mining activities at the Doris North Portal to increase ore stockpiles continued in 2016.

During 2016, TMAC collected data from the following active or seasonally active monitoring stations: ST-1, ST-2, ST-4, ST-5, ST-6a, ST-6b, ST-7, ST-7a, ST-8, ST-9, ST-10 and ST-12.

Monitoring station ST-3 (Landfill Sump) and station ST-13 (Pollution Control Pond #2) were not sampled as these facilities were not constructed as of 2016.

Monitoring station ST-11 (Reagent and Cyanide Storage Facility Sumps) was not sampled as construction of this facility was not completed as of 2016.

Monitoring of the Tailings Impoundment Area (TIA) was undertaken at monitoring station TL-1. In 2016, construction of the processing plant had not yet been completed so no ore processing occurred and no tailings were produced. As described in the Hope Bay Project Water Management Plan, dated August 2016, the sedimentation pond (ST-1) was used as a collection pond for the water that accumulated in the pollution control pond (ST-2) and the two underflow sumps (ST2-S1 and ST2-S2). The water collected in ST-1 was then transferred to the TIA by pipeline. Dewatering of the TIA did not occur in 2016.

Monitoring associated with the mill and tailings discharge stations (TL-5 through TL-9) and underground seepage and mine water stations (TL-11 and TL-12) was not conducted as these activities did not occur or the facilities had not been constructed.

All monitoring was conducted in accordance with the Hope Bay Mining Ltd. Quality Assurance and Quality Control Plan 2AM-DOH0713, 2BB-BOS1217, 2BE-HOP1222 HB-QA-ENV-MP-001, November 2012 (REV 7.1) that was found to be acceptable to an Analyst by letter dated November 27, 2012.

TMAC uses an external certified laboratory to carry out all analyses reported in the monthly and annual reports. The QA/QC data produced by ALS Canada Ltd. are used to determine the accuracy and precision of results in these reports.

Thermal monitoring was undertaken in 2016 at active ground temperature monitoring stations. Results of this monitoring are included in the annual Geotechnical Inspection report.

Conditions of the Doris North Diversion Berm's effectiveness during spring freshet, major rain events, and periods of sustained (non-frozen) precipitation were monitored and documented.

Details of all monitoring follows.

ST-1 Sedimentation Pond

This facility was constructed and first used in 2011. In 2016, during open water season, all discharges from the facility were made directly to the TIA via pipeline as per Part G Item 22. All discharges from the facility were metered. Water quality samples were collected from an outlet on the discharge pump with the intake on the pump submerged approximately 0.25m below the water surface in the Sedimentation Pond. If the pump was not running, samples were collected from the pond itself. Samples were taken prior to discharge and then monthly thereafter during periods of discharge for internal monitoring purposes.

Water was transferred from ST-1 to the TIA beginning in June and continued into September. The final day of discharge from the Sedimentation Pond was September 30, 2016.

Volumes transferred to the TIA from ST-1 are summarized in Table 1. This includes water transferred from ST-2, ST2-S1, and ST2-S2 to ST-1, as described above, and water transferred from fuel storage facility berms ST-5, ST-6a and ST-6b. Results of water quality samples, collected monthly from ST-1, are summarized in Table 2**Error! Reference source not found.**.

Table 1 – Summary of Monthly Water Management Volumes for Monitoring Station ST-1, June to September 2016

Month	Monthly Volume (m^3)	Cumulative Volume (m^3)*
June	5963	5963
July	7358	13,321
August	3776	17,097
September	3163	20,260
Total Volume of Water Transferred from ST-1 (includes water from ST-2, ST2-S1, and ST2-S2) to TIA in 2016		**20,260**

**values rounded to nearest whole cubic meter*

Table 2 – Water quality monitoring program results for ST-1, May to October, 2016, in mg/L, unless specified otherwise

TMAC Sample ID		ST1-21MAY16	ST1-19JUN16	ST1-25JUL16A	ST1-25JUL16B*	ST1-25AUG16	ST1-16SEP16
ALS ID		L1772857-1	L1786676-1	L1804048-1	L1804048-5	L1819897-1	L1830345-1
Sample Date/Time		05/21/2016 11:20	06/19/2016 10:55	07/25/2016 10:20	07/25/2016 10:20	08/25/2016 12:35	09/16/2016 08:40
Parameter	**Units**	**Results**					
Hardness (as CaCO3)	mg/L	123	685	760	768	2490 [C]	1970 [C]
pH	pH	7.74	7.86	7.87	7.87	7.81	7.79
Total Suspended Solids	mg/L	13.3	5.9	3.6	<3.0	11.8	<3.0
Alkalinity, Total (as CaCO3)	mg/L	45.4	75.1	85.7	86.9	105	112
Ammonia, Total (as N)	mg/L	1.25	7.79	7.56	7.63	45.3	29.8
Bromide (Br)	mg/L	0.154	<1.0 [A]	<1.0 [A]	<1.0 [A]	3	<2.5 [A]
Chloride (Cl)	mg/L	82.2	596	665	677	2430	1900
Fluoride (F)	mg/L	<0.020	<0.40 [A]	<0.40 [A]	<0.40 [A]	<1.0 [A]	<1.0 [A]
Nitrate (as N)	mg/L	2.97	26.7	33.3	33.8	116	91.1
Nitrite (as N)	mg/L	0.0575	0.373	0.332	0.371	1.97	1.01
Sulfate (SO4)	mg/L	6.64	54.1	93.3	94.2	143	136
Cyanide, Total	mg/L	<0.0050	0.0080 [B]	<0.0050	<0.0050	0.0113 [B]	0.0076 [B]
Aluminum (Al)-Total	mg/L	0.545	0.301	0.173	0.189	0.023	0.023
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)-Total	mg/L	<0.00050	0.00101	0.00143	0.00141	0.00105	0.00092
Barium (Ba)-Total	mg/L	<0.020	0.05	0.048	0.049	0.206	0.123
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)-Total	mg/L	<0.10	0.19	0.24	0.24	0.27	0.27
Cadmium (Cd)-Total	mg/L	0.0000262	0.0000704	0.000105	0.0000983	0.000635	0.000382
Calcium (Ca)-Total	mg/L	42.4	223	249	252	820	638
Chromium (Cr)-Total	mg/L	0.0028	0.0015	0.0121	0.0121	0.0042	0.0029
Cobalt (Co)-Total	mg/L	0.00069	0.00118	0.00137	0.00135	0.00489	0.00431
Copper (Cu)-Total	mg/L	0.0035	0.0084	0.0063	0.0066	0.0096	0.0106
Iron (Fe)-Total	mg/L	0.939	0.451	0.292	0.309	0.079	0.086
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Lithium (Li)-Total	mg/L	0.0036	0.0152	0.0144	0.0169	0.0371	0.034
Magnesium (Mg)-Total	mg/L	4.28	30.9	33.4	33.8	108	90.4
Manganese (Mn)-Total	mg/L	0.105	0.201	0.287	0.292	1.72	1.5
Molybdenum (Mo)-Total	mg/L	<0.0010	0.0026	0.0094	0.0108	0.0109	0.0076
Nickel (Ni)-Total	mg/L	0.0018	0.0023	0.0027	0.0029	0.0087	0.007
Potassium (K)-Total	mg/L	<2.0	13.7	20.6	20.8	52.7	39.9
Selenium (Se)-Total	mg/L	0.00011	0.00105	0.0014	0.00143	0.00244	0.0017
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000050 [A]	<0.000050 [A]
Sodium (Na)-Total	mg/L	24.8	183	213	214	608	482
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Titanium (Ti)-Total	mg/L	0.033	0.02	0.023	0.021	<0.010	<0.010
Uranium (U)-Total	mg/L	<0.00020	0.0006	0.00074	0.00083	0.00186	0.00153
Vanadium (V)-Total	mg/L	0.00245	0.00131	0.00129	0.0013	<0.0025 [A]	<0.0025 [A]
Zinc (Zn)-Total	mg/L	0.0067	0.039	0.0226	0.0231	0.0724	0.0615
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Oil And Grease (Visible Sheen)		No	No	No	No	No	No

** Duplicate Sample*

[A] *Detection Limit adjusted for required dilution.*

[B] *Test result for Total Cyanide may be biased high due to interference from high nitrite in this sample. Nitrite can cause false positives for T-CN at up to ~ 0.8% of the nitrite concentration. Interpret result as a maximum possible value.*

[C] *Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).*

ST-2 Pollution Control Pond

This facility was constructed in 2011. In 2016, it was active between June and October. Samples from ST-2 were collected from a depth of 0.25 m below the water surface. All water from the Pollution Control Pond was directed to the Sedimentation Pond.

Water quality monitoring sampling at ST-2 occurred as per Schedule J of the water licence. Results of the sampling are presented in Table 3.

Table 3 – Water quality monitoring program results for ST-2, May to October, 2016, in mg/L, unless specified otherwise

TMAC Sample ID		ST2-21MAY16	ST2-19JUN16	ST2-25JUL16A	ST2-25JUL16B*	ST2-25AUG16	ST2-16SEP16
ALS ID		L1772857-2	L1786676-2	L1804048-2	L1804048-6	L1819897-2	L1830345-2
Sample Date/Time		05/21/2016 11:40	06/19/2016 11:10	07/25/2016 10:40	07/25/2016 10:40	08/25/2016 12:40	09/16/2016 08:30
Parameter	**Units**	**Results**					
Hardness (as CaCO3)	mg/L	1210	306	561	574	2620 [C]	1960 [C]
pH	pH	7.62	8.08	7.88	7.87	7.6	7.64
Total Suspended Solids	mg/L	10.3	21.1	<3.0	3.5	6.3	3.7
Alkalinity, Total (as CaCO3)	mg/L	55.9	95.5	92.7	89.9	105	110
Ammonia, Total (as N)	mg/L	14.3	1.3	4.55	4.63	53.1	29
Bromide (Br)	mg/L	1.5	0.47	<1.0 [A]	<1.0 [A]	3.3	<2.5 [A]
Chloride (Cl)	mg/L	1200	233	505	518	2760	1780
Fluoride (F)	mg/L	<0.40 [A]	0.1	<0.40 [A]	<0.40 [A]	<1.0 [A]	<1.0 [A]
Nitrate (as N)	mg/L	40.1	15.1	27.1	28.1	132	85.4
Nitrite (as N)	mg/L	0.472	0.112	0.292	0.306	2.26	0.65
Sulfate (SO4)	mg/L	66.5	93.2	107	108	157	146
Cyanide, Total	mg/L	<0.0050	<0.0050	0.0053 [B]	0.0053 [B]	0.0225 [B]	0.0099 [B]
Aluminum (Al)-Total	mg/L	0.154	0.866	0.232	0.296	0.129	<0.015 [A]
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)-Total	mg/L	0.00097	0.00214	0.00209	0.00217	0.00108	0.00099
Barium (Ba)-Total	mg/L	0.061	0.023	0.032	0.033	0.198	0.124
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)-Total	mg/L	0.13	0.22	0.29	0.28	0.26	0.25
Cadmium (Cd)-Total	mg/L	0.0000849	0.0000355	0.0000695	0.0000776	0.000693	0.000349
Calcium (Ca)-Total	mg/L	411	91.7	182	186	867	631
Chromium (Cr)-Total	mg/L	<0.0010	0.0041	0.0181	0.0186	0.0036	0.0043
Cobalt (Co)-Total	mg/L	0.00168	0.00108	0.00139	0.00145	0.00595	0.00457
Copper (Cu)-Total	mg/L	0.0071	0.0053	0.0076	0.0079	0.0089	0.0082
Iron (Fe)-Total	mg/L	0.226	1.04	0.388	0.506	0.221	0.033
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Lithium (Li)-Total	mg/L	0.0365	0.0136	0.0167	0.0147	0.0418	0.0329
Magnesium (Mg)-Total	mg/L	44.6	18.8	26	26.4	111	93
Manganese (Mn)-Total	mg/L	0.693	0.105	0.235	0.241	1.98	1.54
Molybdenum (Mo)-Total	mg/L	0.002	0.0044	0.0138	0.0121	0.0097	0.0086
Nickel (Ni)-Total	mg/L	0.0026	0.0022	0.0026	0.0028	0.0095	0.007
Potassium (K)-Total	mg/L	18.8	8.8	20.1	20.5	53.6	41.8
Selenium (Se)-Total	mg/L	0.000669	0.00133	0.00153	0.00159	0.00244	0.00161
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000050 [A]	<0.000050 [A]
Sodium (Na)-Total	mg/L	307	114	192	195	642	470
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Titanium (Ti)-Total	mg/L	0.018	0.049	0.024	0.026	0.013	<0.010
Uranium (U)-Total	mg/L	0.00072	0.00087	0.00071	0.00063	0.00192	0.00168
Vanadium (V)-Total	mg/L	0.00094	0.00338	0.00189	0.00213	<0.0025 [A]	<0.0025 [A]
Zinc (Zn)-Total	mg/L	0.0065	<0.0050	<0.0050	<0.0050	0.0059	<0.0050
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Oil And Grease (Visible Sheen)		No	No	No	No	No	No

** Duplicate sample.*

[A] Detection Limit adjusted for required dilution.

[B] Test result for Total Cyanide may be biased high due to interference from high nitrite in this sample. Nitrite can cause false positives for T-CN at up to ~ 0.8% of the nitrite concentration. Interpret result as a maximum possible value.

[C] Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).

ST-4 Landfarm

A discharge notification for this facility was provided to the Inspector on May 3, 2016. Water from the Landfarm (ST-4) was sampled on July 19, 2016 and was compliant with criteria outlined in Part G Item 23(c) of the water licence. No discharge from this facility occurred in 2016. Results of Landfarm water sampling are presented in Table 4**Error! Reference source not found..**

Table 4 – Water quality monitoring program results for ST-4, pre-discharge and daily discharge in June, July and August 2016, in mg/L, unless specified otherwise

TMAC Sample ID		ST4-19JUL16A	ST4-19JUL16B*	Part G Item 23(c)
ALS ID		L1800752-1	L1800752-2	Maximum Allowable Concentration (mg/L)
Sample Date/Time		07/19/2016 08:15	07/19/2016 08:15	
Parameter	**Units**	**Results**		
pH	pH	8.35	8.36	6.0-9.0
Total Suspended Solids	mg/L	3.4	3.3	15
Total Oil and Grease	mg/L	<5.0	<5.0	5
Oil And Grease (Visible Sheen)		No	No	No Visible Sheen
Total Ammonia - N	mg/L	0.0128	0.0151	2
Total Lead	mg/L	0.000152	0.000169	0.01
Benzene	mg/L	<0.00050	<0.00050	0.37
Toluene	mg/L	<0.00050	<0.00050	0.002
Ethylbenzene	mg/L	<0.00050	<0.00050	0.09

Note: Bold indicates exceedance of Part G Item 23(c) Maximum Allowable Concentration.
** Duplicate sample.*

ST-5 Doris Plant Site Fuel Storage and Containment

Water from the Doris tank farm (ST-5) was sampled on May 19, 2016 prior to discharge events and was compliant with discharge criteria for all parameters outlined in Part G Item 23(e). A discharge notification was provided to the Inspector May 3, 2016.

A total of 218 m^3 of water was discharged during May and June to a location just north of the berm (13W 432966 7559268) as approved by the Inspector. Daily samples were collected during discharge and were compliant with discharge criteria. Results of pre-discharge and daily discharge sampling are presented in Table 5.

Beginning on June 15, 2016, water accumulating in ST-5 was redirected to the Sedimentation Control Pond for transfer to the Tailings Impoundment Area. A total of 791 m^3 of water was transferred to the Sedimentation Control Pond in 2016. An additional 42 m^3 of water was transferred from ST-5 to a sump underground to support mining activities and reduce the volume of freshwater from lakes used for this purpose.

ST-6a Roberts Bay Bulk Fuel Storage Facility

Water from the Roberts Bay 5ML tank farm (ST-6a) was sampled on May 19, 2016 prior to discharge and was found to be compliant with discharge criteria for all parameters outlined in Part G Item 23(e). A discharge notification was provided to the Inspector May 3, 2016.

A total of 98 m^3 of water was applied to road surfaces for dust suppression in May and June as approved by the Inspector. Daily samples collected during discharge were found to be compliant with discharge criteria. Results of pre-discharge and daily water quality monitoring during discharge are presented in Table 6.

Beginning on June 15, 2016, water accumulating in ST-6a was redirected to the Sedimentation Control Pond for transfer to the Tailings Impoundment Area. A total of 378 m^3 of water was transferred to the Sedimentation Control Pond in 2016.

ST-6b Roberts Bay Bulk Fuel Storage Facility

Water from the Roberts Bay 3x5ML tank farm (ST-6b) was sampled on May 19, 2016 prior to discharge and results were found to be compliant with discharge criteria outlined in Part G Item 23(e). A discharge notification was provided to the Inspector May 3, 2016.

Discharge from the facility occurred in May and June. A total of 194 m^3 of water was discharged southwest of the berm onto a rock outcrop (13W 432731 7563153). Daily samples collected during discharge were compliant with discharge criteria. Results of pre-discharge and daily discharge monitoring are presented in Table 7.

Beginning on June 15, 2016, water accumulating in ST-6b was redirected to the Sedimentation Control Pond for transfer to the Tailings Impoundment Area. A total of 1,066 m^3 of water was transferred to the Sedimentation Control Pond in 2016. An additional 28 m^3 of water was

transferred from ST-6b to a sump underground to support mining activities and reduce the volume of freshwater from lakes used for this purpose.

Table 5 – Water quality monitoring program results for ST-5, pre-discharge and daily discharge in May and June 2016, in mg/L, unless specified otherwise

TMAC Sample ID		ST5-19MAY16	ST5-27MAY16	ST5-28MAY16	ST5-29MAY16	ST5-06JUN16	ST5-09JUN16	Part G Item 23(e)
ALS ID		L1772223-1	L1776203-1	L1776203-2	L1776203-3	L1779665-5	L1781650-1	Maximum Allowable Concentration (mg/L)
Sample Date/Time		05/19/2016 14:15	05/27/2016 13:10	05/28/2016 08:00	05/29/2016 08:05	06/06/2016 08:00	06/09/2016 08:30	
Parameter	**Units**	**Results**						
pH	pH	8.22	8.12	8.13	8.15	8.06	8.2	6.0– 9.0
Total Suspended Solids	mg/L	8.3	6.7	4.4	3.4	3.8	<3.0	15
Lead (Pb)-Total	mg/L	0.000191	0.000346	0.000265	0.000189	0.000068	<0.000050	0.01
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5
Oil And Grease (Visible Sheen)		No	No	No	No	No	No	
Benzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.37
Ethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.09
Toluene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.002

Note: Bold indicates exceedance of Part G Item 23(e) Maximum Concentration Allowable Concentration.

Table 6 – Water quality monitoring program results for ST-6a, pre-discharge and daily discharge in May and June 2016, in mg/L, unless specified otherwise

TMAC Sample ID		ST6A-19MAY16	ST6A-26MAY16	ST6A-04JUN16	Part G Item 23(e)
ALS ID		L1772223-2	L1774961-1	L1779665-1	Maximum Allowable Concentration (mg/L)
Sample Date/Time		05/19/2016 15:10	05/26/2016 14:10	06/04/2016 08:20	
Parameter	**Units**	**Results**			
pH	pH	8.19	8.29	8.07	6.0– 9.0
Total Suspended Solids	mg/L	4.2	<3.0	<3.0	15
Lead (Pb)-Total	mg/L	0.000069	<0.000050	0.000067	0.01
Oil and Grease	mg/L	<5.0	<5.0	<5.0	5
Oil And Grease (Visible Sheen)		No	No	No	
Benzene	mg/L	<0.00050	<0.00050	<0.00050	0.37
Ethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	0.09
Toluene	mg/L	<0.00050	<0.00050	<0.00050	0.002

Note: Bold indicates exceedance of Part G Item 23(e) Maximum Allowable Concentration.

Table 7 – Water quality monitoring program results for ST-6b, pre-discharge and daily discharge in May and June 2016, in mg/L, unless specified otherwise

TMAC Sample ID		ST6B-19MAY16	ST6B-26MAY16	ST6B-04JUN16	ST6B-05JUN16	ST6B-06JUN16	ST6B-09JUN16	ST6B-11JUN16	ST6B-12JUN16	ST6B-13JUN16	Part G Item 23(e)
ALS ID		L1772223-3	L1774961-2	L1779665-2	L1779665-3	L1779665-4	L1781650-2	L1783051-1	L1783051-2	L1783051-3	Maximum Allowable Concentration (mg/L)
Sample Date/Time		05/19/2016 15:45	05/25/2016 13:30	06/04/2016 16:55	06/05/2016 09:20	06/06/2016 07:40	06/09/2016 08:05	06/11/2016 14:15	06/12/2016 09:25	06/13/2016 09:00	
Parameter	**Units**	**Results**									
pH	pH	8.2	8.28	7.83	7.77	8.1	8.3	8.15	8.12	8.13	6.0– 9.0
Total Suspended Solids	mg/L	7.5	3.1	<3.0	<3.0	6.2	4	<3.0	<3.0	<3.0	15
Lead (Pb)-Total	mg/L	0.000159	0.000156	0.000332	0.000227	0.00015	0.000087	0.000079	<0.000050	<0.000050	0.01
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5
Oil And Grease (Visible Sheen)		No	No	No	No	No	No	No	No	No	
Benzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.37
Ethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.09
Toluene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.002

Note: Bold indicates exceedance of Part G Item 23(e) Maximum Allowable Concentration.

ST-7 and ST-7a Freshwater Usage from Doris and Windy Lakes

Table 8 provides the volumes of water usage at the Doris North project area as required under Part E Item 1 of water licence 2AM-DOH1323. The water extraction pump for Doris operations is located off the northwest shoreline of Doris Lake and the sampling station ST-7 is located within the Doris Lake pump house. In 2016, water from Doris Lake was not used for domestic consumption; all water for domestic consumption was obtained from Windy Lake at ST-7a (equivalent to location HOP-1 of the Regional Exploration Licence 2BE-HOP1222). Water for dust suppression in 2016 was obtained from Doris Lake, as well as from containment berm effluent when found to be compliant for discharge to the environment under the criteria established in Part G of Licence 2AM-DOH1323 as approved by the Inspector. Surface drilling, underground development and construction occurred in support of the Doris North mine; water was sourced from Doris Lake, and compliant berm water was also recycled for these purposes. Table 8 provides only water volumes used from lake sources and does not include water recycled from berms that would otherwise have been discharged to tundra as effluent.

Table 8 – Doris North water usage in 2016, in cubic meters (m^3)*

Month	Domestic Use from Windy Lake ST-7a/HOP-1 (m^3)	Drill Water Usage from Doris Lake (m^3)	Industrial Usage** from Doris Lake (m^3)	Dust Suppression from Doris Lake (m^3)	Cumulative Usage (m^3)
January	540	0	96	0	636
February	605	145	360	0	1746
March	678	134	66	0	2624
April	655	5	97	0	3381
May	735	14	656	154	4940
June	712	36	809	1106	7603
July	709	0	446	1816	10574
August	759	0	373	1840	13546
September	710	0	244	0	14500
October	776	0	55	0	15331
November	766	0	82	0	16179
December	795	0	1700	0	18674

** All values rounded to nearest whole cubic meter*

*** Industrial Usage includes activities associated with underground mine development and construction.*

Additionally, a total of 1,068 m^3 was used from Doris Lake for seasonal ice road construction in January, February, March and April of 2016.

Table 9 and Table 10 provide the results of water quality sampling for monitoring station ST-7a (HOP-1) at Windy Lake in compliance with the requirements set out in Schedule J of water licence 2AM-DOH1323. Results of sampling at ST-7 at Doris Lake are provided inTable 11 and Table 12.

Table 9 – Water sampling monitoring program results for January to June, 2016 taken from ST-7a (HOP-1), in mg/L, unless otherwise specified

TMAC Sample ID		ST7A-05JAN16	ST7A-02FEB16	ST7A-01MAR16A	ST7A-01MAR16B^	ST7A-12APR16	ST7A-03MAY16	ST7A-07JUN16
ALS ID		L1720377-1/ L1720381-1*	L1729908-1/ L1730121-1*	L1740010-1/ L1740005-1*	L1740010-2	L1754971-1/ L1754849-1*	L1763655-1/ L1763671-1*	L1779661-1/ L1779679-1*
Sample Date/Time		01/05/2016 09:45	02/02/2016 08:48	03/01/2016 09:50	03/01/2016 09:50	04/12/2016 08:35	05/03/2016 08:30	06/07/2016 08:20
Parameter	**Units**	**Results**						
Hardness (as CaCO3)	mg/L	88.1	91.7	94.1	94.3	90.2	93.1	28.3
pH	pH	7.83	7.92	7.97	7.92	7.96	8	7.27
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	3.8
Ammonia, Total (as N)	mg/L	0.0091	0.0116	0.0114	0.0085	<0.0050	<0.0050	0.0071
Nitrate (as N)	mg/L	0.0054	<0.0050	<0.0050	<0.0050	<0.0050	0.0347	0.0067
Nitrite (as N)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0032
Orthophosphate-Dissolved (as P)	mg/L	0.0011	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total	mg/L	0.0035	0.0032	0.0025	0.0021	0.0039	<0.0020	0.0124
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fecal Coliforms [1]	MPN/100mL	<1 *	<1 *	<1 *	-	<1 *	<1 *	<1 *
Aluminum (Al)-Total	mg/L	0.0185	0.0144	0.0126	0.0119	0.0089	0.0143	0.38
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)-Total	mg/L	<0.00050	0.0009	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Barium (Ba)-Total	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium (Ca)-Total	mg/L	15.2	15.5	15.9	16	15.5	16.1	5.74
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Copper (Cu)-Total	mg/L	0.0016	0.0014	0.0012	0.0011	0.0013	0.0015	0.0012
Iron (Fe)-Total	mg/L	0.044	<0.030	<0.030	<0.030	<0.030	0.105	0.461
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Lithium (Li)-Total	mg/L	0.0037	0.0032	0.0038	0.0038	0.0036	0.0097	0.0017
Magnesium (Mg)-Total	mg/L	12.2	12.8	13.2	13.2	12.5	12.8	3.38
Manganese (Mn)-Total	mg/L	0.00148	0.0009	0.0008	0.00076	0.00077	0.00132	0.0113
Mercury (Hg)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Nickel (Ni)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Potassium (K)-Total	mg/L	5.4	5.5	5.8	5.8	5.1	5.4	<2.0
Selenium (Se)-Total	mg/L	<0.000050	0.000059	<0.000050	<0.000050	0.000052	<0.000050	<0.000050
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	68.8	67.6	72.7	72.9	69.8	69.9	16.1
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Titanium (Ti)-Total	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.018
Uranium (U)-Total	mg/L	0.00021	0.00023	0.00021	0.00022	0.00021	<0.00020	<0.00020
Vanadium (V)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00085
Zinc (Zn)-Total	mg/L	0.008	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Biochemical Oxygen Demand	mg/L	2	3	2	<2.0	<2.0	3	2
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Oil And Grease (Visible Sheen)		No	No	No	No	No	No	No

^ *Duplicate sample.*
** Results on Lab Work Order for Potable Water Station PDC10 (same location as ST7-a)*
[1] *Analytical methodology used by laboratory to determine Fecal coliform concentrations provides results as Most Probable Number per 100mL (MPN/100mL).*

Table 10 – Water sampling monitoring program results for July to December 2016, taken from ST-7a (HOP-1), in mg/L, unless otherwise specified

TMAC Sample ID		ST7A-05JUL16	ST7A-02AUG16	ST7A-06SEP16	ST7A-04OCT16	ST7A-01NOV16	ST7A-06DEC16
ALS ID		L1793713-1/ L1793451-10*	L1806907-1/ L1806915-1*	L1824152-1/ L1824147-1*	L1838476-1/ L1838438-1*	L1851851-1/ L1851835-1*	L1866791-1/ L1866798-1*
Sample Date/Time		07/05/2016 08:25	08/02/2016 08:15	09/06/2016 09:05	10/04/2016 08:40	11/01/2016 08:50	06/12/2016 08:15
Parameter	**Units**						
Hardness (as CaCO3)	mg/L	69.7	70.7	70.4	71.1	74.2	78.4
pH	pH	7.81	7.59	7.92	7.83	7.95	7.99
Total Suspended Solids	mg/L	5.4	<3.0	<3.0	<3.0	<3.0	<3.0
Ammonia, Total (as N)	mg/L	<0.0050	<0.0050	<0.0050	0.0469	<0.0050	0.0061
Nitrate (as N)	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite (as N)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Orthophosphate-Dissolved (as P)	mg/L	0.0026	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total	mg/L	0.0089	0.0032	0.0035	0.009	0.003	0.0022
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fecal Coliforms	MPN/100mL	<1 *	<1 *	<1 *	<1 *	<1 *	<1 *
Aluminum (Al)-Total	mg/L	0.33	0.0618	0.0537	0.109	0.0385	0.0181
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)-Total	mg/L	<0.00050	<0.00050	<0.00050	0.00072	<0.00050	<0.00050
Barium (Ba)-Total	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000078
Calcium (Ca)-Total	mg/L	12.1	12.2	12.3	12.4	12.7	13.2
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Copper (Cu)-Total	mg/L	<0.0015 **	0.0011	0.0015	0.0011	<0.0010	0.0012
Iron (Fe)-Total	mg/L	0.296	0.048	0.055	0.108	0.032	0.048
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Lithium (Li)-Total	mg/L	0.0034	0.0037	0.003	0.0028	0.0034	0.0034
Magnesium (Mg)-Total	mg/L	9.59	9.77	9.65	9.78	10.3	11
Manganese (Mn)-Total	mg/L	0.00483	0.00193	0.00434	0.00435	0.00098	0.00134
Mercury (Hg)-Total	mg/L	<0.0000050	<0.0000050	0.0000069	0.0000095	<0.0000050	<0.0000050
Molybdenum (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Nickel (Ni)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Potassium (K)-Total	mg/L	3.9	4	3.7	4	4.2	4.1
Selenium (Se)-Total	mg/L	<0.000050	<0.000050	0.000051	<0.000050	<0.000050	<0.000050
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	55.6	53.7	52.6	53.6	56.7	57.9
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Titanium (Ti)-Total	mg/L	0.019	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Vanadium (V)-Total	mg/L	0.00074	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Biochemical Oxygen Demand	mg/L	<2.0	<2.0	<2	<2.0	<2.0	<2.0
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Oil And Grease (Visible Sheen)		No	No	No	No	No	No

^ *Duplicate sample.*
* *Results on Lab Work Order for Potable Water Station PDC10 (same location as ST7-a)*
** *Detection limit raised. Analyte detected at comparable level in Method Blank.*
[1] *Analytical methodology used by laboratory to determine Fecal coliform concentrations provides results as Most Probable Number per 100mL (MPN/100mL).*

Table 11 – Water sampling monitoring program results for January to June, 2016 taken from ST-7, in mg/L, unless otherwise specified

TMAC Sample ID		ST7-19JAN16	ST7-16FEB16A	ST7-16FEB16B^	ST7-15MAR16	ST7-19APR16	ST7-17MAY16	ST7-28JUN16
ALS ID		L1725139-1	L1734857-1	L1734857-2	L1745031-1	L1757584-1	L1770135-1	L1790650-1
Sample Date/Time		01/19/2016 11:20	02/16/2016 08:40	02/16/2016 08:40	03/15/2016 08:15	04/19/2016 07:45	05/17/2016 09:20	06/28/2016 08:20
Parameter	**Units**	**Results**						
Hardness (as CaCO3)	mg/L	53.1	56.5	56.8	56.6	57.2	56.1	45.7
pH	pH	6.68	7.54	7.54	7.67	7.45	7.79	7.61
Total Suspended Solids	mg/L	4.4	3.8	3.7	4.5	4.8	4.8	3.3
Ammonia, Total (as N)	mg/L	0.285	0.0245	0.0236	<0.0050	<0.0050	<0.0050	<0.0050
Nitrate (as N)	mg/L	<0.0050	0.0066	0.0065	<0.0050	<0.0050	<0.0050	0.0162
Nitrite (as N)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Orthophosphate-Dissolved (as P)	mg/L	0.003	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total	mg/L	0.0198	0.0254	0.0247	0.0271	0.0259	0.0263	0.0148
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Aluminum (Al)-Total	mg/L	0.0211	0.0985	0.0269	0.0125	0.0225	0.0095	0.0496
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Barium (Ba)-Total	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium (Ca)-Total	mg/L	9.48	9.86	9.9	10	10.1	9.87	8.11
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0056	<0.0010	<0.0010
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Copper (Cu)-Total	mg/L	0.0033	0.0077	0.0023	0.0018	0.002	0.0018	0.0017
Iron (Fe)-Total	mg/L	2.83	0.17	0.122	0.119	0.387	0.061	0.432
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Lithium (Li)-Total	mg/L	0.0036	0.0042	0.0044	0.0042	0.0039	0.0031	0.0029
Magnesium (Mg)-Total	mg/L	7.15	7.73	7.78	7.65	7.79	7.64	6.18
Manganese (Mn)-Total	mg/L	0.138	0.00407	0.00498	0.00459	0.00889	0.00675	0.0123
Mercury (Hg)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000054	<0.0000050
Molybdenum (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Nickel (Ni)-Total	mg/L	0.0012	<0.0010	<0.0010	<0.0010	0.0031	<0.0010	<0.0010
Potassium (K)-Total	mg/L	2.8	2.8	2.8	2.8	3.3	2.7	2.4
Selenium (Se)-Total	mg/L	<0.000050	<0.000050	<0.000050	0.00005	0.000052	<0.000050	<0.000050
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	36	38.1	39.1	38.6	41.1	38.2	30.9
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Titanium (Ti)-Total	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Vanadium (V)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00073
Zinc (Zn)-Total	mg/L	<0.0050	0.0093	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Oil And Grease (Visible Sheen)		No	No	No	No	No	No	No

^ *Duplicate sample.*
Note: Analytical results for chlorophyll-a are provided in the Aquatic Effects Monitoring Program report.

Table 12 – Water sampling monitoring program results for July to December, 2016 taken from ST-7, in mg/L, unless otherwise specified

TMAC Sample ID		ST7-19JUL16	ST7-16AUG16	ST7-20SEP16	ST7-18OCT16	ST7-15NOV16	ST7A-01NOV16	ST7-20DEC16
ALS ID		L1800567-1	L1814224-1	L1831824-1	L1844993-1	L1857948-1	L1851851-1	L1872232-1
Sample Date/Time		07/19/2016 07:30	08/16/2016 07:45	09/20/2016 08:25	10/18/2016 08:45	11/15/2016 07:55	11/01/2016 08:50	12/20/2016 07:30
Parameter	**Units**							
Hardness (as CaCO3)	mg/L	45.4	45.7	48.2	47.2	52.5	74.2	49
pH	pH	7.63	7.84	7.77	7.8	7.84	7.95	7.45
Total Suspended Solids	mg/L	4.2	3.1	5.9	6.1	6.6	<3.0	3.2
Ammonia, Total (as N)	mg/L	<0.0050	<0.0050	<0.0050	0.0053	0.012	<0.0050	0.0367
Nitrate (as N)	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.007	<0.0050	<0.0050
Nitrite (as N)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Orthophosphate-Dissolved (as P)	mg/L	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total	mg/L	0.0151	0.0082	0.0167	0.0263	0.021	0.003	0.0207
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Aluminum (Al)-Total	mg/L	0.0582	0.0293	0.0861	0.0874	0.0569	0.0385	0.0314
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Barium (Ba)-Total	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium (Ca)-Total	mg/L	8.11	8.16	8.65	8.56	8.83	12.7	8.65
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Copper (Cu)-Total	mg/L	0.0016	0.0021	0.0021	0.0017	0.0021	<0.0010	0.0018
Iron (Fe)-Total	mg/L	0.218	0.156	0.231	0.129	1.59	0.032	0.066
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00258
Lithium (Li)-Total	mg/L	0.0041	0.0034	0.0029	0.003	0.0032	0.0034	0.0036
Magnesium (Mg)-Total	mg/L	6.1	6.15	6.47	6.27	7.4	10.3	6.65
Manganese (Mn)-Total	mg/L	0.0192	0.00777	0.0257	0.0126	0.0748	0.00098	0.00523
Mercury (Hg)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000077
Molybdenum (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Nickel (Ni)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Potassium (K)-Total	mg/L	2.2	2.2	2.5	2.3	2.2	4.2	2.1
Selenium (Se)-Total	mg/L	<0.000050	<0.000050	<0.000050	0.000057	0.000066	<0.000050	0.000052
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	30.5	29.8	32.5	31.5	31	56.7	30.2
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Titanium (Ti)-Total	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Vanadium (V)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.007	<0.0050	0.0128
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Oil And Grease (Visible Sheen)		No	No	No	No	No	No	No

^ *Duplicate sample.*
Note: Analytical results for chlorophyll-a are provided in the Aquatic Effects Monitoring Program report.

ST-8 Discharge from Sewage Treatment Plant Bio-Membrane

The Water Treatment Plant (WTP) at Doris Camp is made up of two sewage treatment plant modules. Each plant has the capacity to treat wastewater for up to 180 personnel. From January to June 2016, TMAC operated one of these modules (ST8-b) to treat all sewage and wastewater. The second module (ST8-a) was reinstalled and commissioned for use in 2016. Notification of this was submitted on April 15, 2016. Treated effluent samples were collected from ST8-a in June to confirm effluent quality prior to discharge. This sample was in compliance with criteria outlined in Part G Item 4(b) of the water licence. For the remainder of 2016 treated effluent was discharged from both plants.

Treated effluent samples were collected from a sampling port inside each module to test the quality of the effluent to be discharged to the tundra, in accordance with Part G, Item 4(b) of the Licence. In-plant sampling facilitates year-round compliance evaluation of plant performance.

All effluent quality samples collected in 2016 were in compliance with the discharge criteria. All water quality monitoring results for ST-8a are provided in Table 13 and results for ST-8b are provided in Table 14 and Table 15.

Table 13 – Water quality monitoring program results for ST-8A (Sewage Treatment Plant ST-8), June to December 2016, in mg/L, unless otherwise specified

TMAC Sample ID		ST8A-21JUN16	ST8A-12JUL16	ST8A-09AUG16	ST8A-13SEP16	ST8A-11OCT16	ST8A-08NOV16a	ST8A-08NOV16b*	ST8A-13DEC16	Part G Item 4(b)
ALS ID		**L1786700-1**	**L1797029-3**	**L1810688-1**	**L1827917-1**	**L1841486-1**	**L1855010-1**	**L1855010-4**	**L1869474-1**	**Maximum Allowable Concentration (mg/L)**
Sample Date/Time		**06/21/2016 08:10**	**07/12/2016 08:20**	**08/09/2016 09:15**	**09/13/2016 08:20**	**10/11/2016 08:55**	**11/08/2016 08:31**	**11/08/2016 08:31**	**12/13/2016 08:00**	
Parameter	**Units**	**Results**								
pH	pH	7.27	7.74	7.35	7.96	7.98	7.81	7.81	7.55	6.0 - 9.0
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	100
Fecal Coliforms ^	MPN/ 100mL	1	<1	<1	<1	<1	<1	<1	<1	10,000
Biochemical Oxygen Demand (BOD_5)	mg/L	2	4	2	11	4	2	<2.0	2	80
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5
Oil And Grease (Visible Sheen)		No	No	No	No	No	No	No	No	No Visible Sheen

Note: Bold indicates exceedance of Part G Item 4(b) Maximum Allowable Concentration.

Table 14 – Water quality monitoring program results for ST-8B (Sewage Treatment Plant ST-8), January to June 2016, in mg/L, unless otherwise specified

TMAC Sample ID		ST8B-12JAN16A	ST8B-12JAN16B	ST8B-09FEB16	ST8B-08MAR16	ST8B-12APR16	ST8B-10MAY16	ST8B-14JUN16	Part G Item 4(b)
ALS ID		**L1722546-1**	**L1722546-2**	**L1732613-1**	**L1742519-1**	**L1754966-1**	**L1766621-1**	**L1783056-1**	**Maximum Allowable Concentration (mg/L)**
Sample Date/Time		**01/12/2016 08:15**	**01/12/2016 08:15**	**02/09/2016 08:07**	**03/08/2016 08:55**	**04/12/2016 09:25**	**05/10/2016 10:50**	**06/14/2016 09:05**	
Parameter	**Units**	**Results**							
pH	pH	7.74	7.84	7.86	7.79	7.65	7.86	7.87	6.0 - 9.0
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	100
Fecal Coliforms	MPN/100mL	<1	<1	<1	3	<1	<1	<1	10,000
Biochemical Oxygen Demand (BOD_5)	mg/L	2	<2.0	2	2	2	3	4	80
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5
Oil And Grease (Visible Sheen)		No	No	No	No	No	No	No	No Visible Sheen

Note: Bold indicates exceedance of Part G Item 4(b) Maximum Allowable Concentration.

Table 15 – Water quality monitoring program results for ST-8B (Sewage Treatment Plant ST-8), July to December 2016, in mg/L, unless otherwise specified

TMAC Sample ID		ST8B-12JUL16	ST8B-09AUG16	ST8B-13SEP16	ST8B-11OCT16	ST8B-08NOV16	ST8B-13DEC16	Part G Item 4(b)
ALS ID		**L1797029-1**	**L1810688-2**	**L1827917-2**	**L1841486-2**	**L1855010-2**	**L1869474-2**	**Maximum Allowable Concentration (mg/L)**
Sample Date/Time		**07/12/2016 08:10**	**08/09/2016 09:25**	**9/13/2016 08:30**	**10/11/2016 08:40**	**08/11/2016 08:18**	**13/12/2016 08:05**	
Parameter	**Units**	**Results**						
pH	pH	7.69	7.53	8.03	8.05	8.04	7.46	6.0 - 9.0
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	100
Fecal Coliforms	MPN/100mL	<1	<1	<1	<1	<1	<1	10,000
Biochemical Oxygen Demand (BOD_5)	mg/L	3	<2.0	<2.0	4	3	<2.0	80
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5
Oil And Grease (Visible Sheen)		No	No	No	No	No	No	No Visible Sheen

Note: Bold indicates exceedance of Part G Item 4(b) Maximum Allowable Concentration.

Treated effluent volumes released from ST-8 are metered daily and summary volumes reported in the monthly monitoring reports. In 2016 all treated effluent from ST-8 was discharged to the tundra west of the facility laydown areas (13W 432933 7559057) as approved by the Inspector. The monthly volumes of effluent discharged are presented in Table 16.

Table 16 – Treated effluent released from the Doris sewage treatment plant (ST-8), 2016, in cubic meters (m^3)

Month	Monthly Volume (m^3)*	Cumulative Volume (m^3)*
January	460	460
February	543	1003
March	632	1635
April	646	2281
May	728	3009
June	741	3750
July	697	4447
August	760	5207
September	749	5956
October	797	6753
November	793	7546
December	778	8324
Total Volume of Treated Effluent Released 2016 (m^3)		**8,324**

**values rounded to nearest whole cubic meter*

The sludge produced at the sewage treatment plant is pressed regularly to remove processed solids and to allow for proper functioning of the plant. Each press produces approximately 0.11 m^3 of sludge. In 2016, pressed sludge was sent to the incinerator for disposal. The volume of pressed sludge produced in 2016 is presented in Table 17.

Table 17 – Volume of pressed sludge removed from the Doris sewage treatment plant, 2016, in cubic meters (m^3)

Month	Monthly Volume (m^3)	Cumulative Volume (m^3)
January	2.71	2.71
February	0.79	3.5
March	1.13	4.63
April	1.25	5.88
May	1.47	7.35
June	1.13	8.48
July	0.34	8.82
August	0.76	9.58
September	0.14	9.72
October	0.4	10.12
November	4.87	14.99
December	2.89	17.88
Total Volume of Sludge Produced in 2016 (m^3)		**17.88**

ST-9 Runoff from Sewage Treatment Plant Discharge

In consultation with the Inspector during the 2009 inspection tour, the location of sampling point ST-9 was set at geographical coordinates 68°8’20” N, 106°39’55” W. This point is east of Glenn Lake and down slope from the ST-8 tundra discharge location. Monthly monitoring was conducted at ST-9 May through September in 2016 in accordance with Schedule J of 2AM-DOH1323. The station is frozen during the remainder of the year. There is no water quality criteria specified in the licence for this monitoring station. Table 18 provides results of the 2016 seasonal monitoring.

Table 18 – Water quality monitoring program results for ST-9, May to September 2016, in mg/L, unless otherwise specified

TMAC Sample ID		ST9-17MAY16	ST9-14JUN16A	ST9-14JUN16B ^	ST9-12JUL16	ST9-09AUG16	ST9-13SEP16
ALS ID		L1770128-1	L1783056-2	L1783056-3	L1797029-2	L1810688-3	L1827917-3
Sample Date/Time		05/17/2016 11:00	06/14/2016 09:40	06/14/2016 09:40	07/12/2016 08:06	08/09/2016 09:35	09/13/2016 08:27
Parameter	**Units**	**Results**					
pH	pH	7.65	7.6	7.66	7.35	7.65	8.01
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0	<3.0	25.9	5.9
Fecal Coliforms	MPN/ 100mL	5	<1	<1	1	<1	1
Biochemical Oxygen Demand (BOD_5)	mg/L	11	<2.0	2	3	<2.0	2
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Oil And Grease (Visible Sheen)		No	No	No	No	No	No

^ *Duplicate sample*

ST-10 Site Runoff from Sediment Controls

In 2016, construction activities continued at the Doris Site. This included the continued expansion of the existing airstrip and Tailings Impoundment Area (TIA) access road towards the future location of the South Dam, and construction of an explosive magazine berm located near the TIA. Construction of the emergency catchment basins for the tailings discharge line and the reagent storage berm were also initiated in 2016.

Site runoff monitoring from sediment controls (ST-10) was conducted during spring freshet and heavy or sustained (non-frozen) precipitation events. No uncontrolled sediment release with the potential of reaching water occurred in 2016. Construction took place upslope of water management structures that collected all runoff for deposit in the TIA (i.e. construction of the TIA access road and explosives storage berms were upslope of the TIA) or were located such that flow could not directly or indirectly enter a water body (e.g. the airstrip expansion which is located on a plateau away from waterbodies).

Construction of the emergency catchment basins and the reagent storage berm began after freshet and potential rainfall events; therefore, no runoff was observed from these structures in 2016. Monitoring of these areas for sediment release will be conducted in 2017.

Tl-1 TIA Monitoring

This section presents the results of monitoring of the Tailings Impoundment Area (TIA) as per the applicable sections of Part G (Conditions Applying to Waste Management and Waste Management Plans) and Part J (Conditions Applying to General and Aquatic Effects Monitoring) of the water licence.

Dewatering of the TIA was not conducted and no tailings were deposited into this facility in 2016. No reclaim water was obtained from the TIA for process water as permitted in Part J Item 11(b).

Water quality samples were collected at the TIA Reclaim Pipeline monitoring station TL-1 in June 2016. The reclaim pipeline had not yet been constructed in 2016, but representative monitoring was undertaken from the shoreline adjacent to the North Dam on the TIA.

In compliance with the requirements of Part G Item 28 and Part J Item 8, acute lethality testing conducted at TL-1 (on June 6) indicated that this water was non-acutely toxic to trout and daphnia. Sampling results are provided in Table 19.

Monitoring results for TL-1 are provided in Table 20.

Table 19 – Acute Toxicity Bioassay at sampling stations TL-1 (June), 2016

TMAC Sample ID	**TL1-06JUN16**
ALS ID	**L1779671-1**
Sample Date/Time	**06/06/2016 16:50**
Trout	
96-h LC50 Rainbow Trout Acute Toxicity EPS 1/RM/13	**>100%**
Daphnia	
48-h LC50 Daphnia magna Acute Toxicity EPS 1/RM/14	**>100%**

Note: LC50 = lethal concentration that results in mortality of 50% of the test organisms; a result of 100% indicates all organisms survived

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Table 20 – Water Quality in the Tailings Impoundment Area (TL-1), June, 2016

TMAC Sample ID		TL1-06JUN16	TL1-08JUN16	TL1-10JUN16	TL1-12JUN-16	TL1-14JUN-16	TL1-16JUN16	TL1-19JUN16
ALS ID		L1779671-1	L1781642-1	L1781642-4	L1783067-1	L1783067-4	L1785401-1	L1786668-1
Sample Date/Time		06/06/2016 16:50	06/08/2016 14:40	06/10/2016 08:40	06/12/2016 08:50	06/14/2016 08:40	06/16/2016 15:05	06/19/2016 11:25
Parameter	**Units**	**Results**						
Hardness (as CaCO3)	mg/L	38.6	30.6	36.6	60	50.2	51.6	57
pH	pH	7.54	7.52	7.6	7.55	7.56	7.59	7.66
Total Suspended Solids	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	3.1
Total Dissolved Solids	mg/L	98	92	82	174	114	127	134
Ammonia, Total (as N)	mg/L	0.0492	0.0258	0.0084	0.0088	0.0054	0.0064	0.0104
Bromide (Br)	mg/L	<0.050	<0.050	<0.050	0.081	0.056	0.066	0.083
Chloride (Cl)	mg/L	27.8	22.8	26.4	46.9	37.3	37.7	41.1
Fluoride (F)	mg/L	0.045	0.039	0.04	0.061	0.051	0.051	0.059
Nitrate (as N)	mg/L	<0.0050	<0.0050	0.0057	<0.0050	<0.0050	0.0303	0.164
Nitrite (as N)	mg/L	0.0038	<0.0010	<0.0010	<0.0010	<0.0010	0.0022	0.0035
Orthophosphate-Dissolved (as P)	mg/L	0.0021	0.0017	0.0015	0.002	0.0017	<0.0010	<0.0010
Phosphorus (P)-Total	mg/L	0.0245	0.0163	0.0124	0.0138	0.0152	0.0134	0.0106
Sulfate (SO4)	mg/L	2.08	1.54	1.8	3.12	2.17	2.5	5.37
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, Free	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Aluminum (Al)-Total	mg/L	0.0455	0.0281	0.0248	0.0238	0.0187	0.0206	0.0713
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Arsenic (As)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Barium (Ba)-Total	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium (Ca)-Total	mg/L	9.06	7.18	8.46	13.4	11.4	11.5	12.6
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Copper (Cu)-Total	mg/L	0.0011	<0.0010	<0.0010	0.0011	<0.0010	0.0011	0.0015
Iron (Fe)-Total	mg/L	0.256	0.185	0.13	0.137	0.142	0.163	0.2
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Lithium (Li)-Total	mg/L	0.0022	0.0021	0.0025	0.0041	0.0033	0.0039	0.0033
Magnesium (Mg)-Total	mg/L	3.87	3.09	3.77	6.44	5.28	5.59	6.24
Manganese (Mn)-Total	mg/L	0.0292	0.0105	0.0118	0.0124	0.00872	0.0122	0.0185
Mercury (Hg)-Total	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0015
Nickel (Ni)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Potassium (K)-Total	mg/L	<2.0	<2.0	<2.0	2.2	<2.0	2	2.4
Selenium (Se)-Total	mg/L	<0.000050	<0.000050	<0.000050	0.000056	<0.000050	<0.000050	0.000085
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	15	11.3	12.8	21.2	17	19.4	24.5
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Titanium (Ti)-Total	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium (U)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Vanadium (V)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Radium 226*	Bq/L	<0.0100	-	-	-	-	-	-

Hydrology Monitoring – Doris Lake Water Level and Ice Thickness (ST-12) and Doris Creek Flow (TL-2)

Doris Lake and Doris Creek were monitored as part of the 2016 hydrometric monitoring program. The Doris Lake water level monitoring station operated year round as per Schedule J of the water licence, while the Doris Creek compliance monitoring station TL-2 operated during the open water season from June 12 to September 17 (Part J Item 2). Both Doris Lake and TL-2 are established monitoring stations, and were visited throughout the open water season to perform water level surveys and/or discharge measurements. Ice thickness measurements were also collected on Doris Lake in May 2016. Water level surveys were performed using an engineer's level and stadia rod using a minimum of three local benchmarks at each station. Discharge measurements at TL-2 were performed using the velocity area method with a Hach FH950 electromagnetic current meter. Details regarding the standard methods used for installation of hydrometric stations, development of stage-discharge rating equations, and daily flow hydrographs can be found in the Doris Project 2013 Hydrology Compliance Monitoring Report.

The Doris Lake level monitoring station collected data from January 1 through to December 31, 2016 and continues to collect data. The station uses a Solinst Levelogger unvented pressure transducer coupled with a Solinst Barologger to compensate for changes in atmospheric pressure. The Levelogger and Barologger recorded a pressure reading. A total of six water level surveys were performed between June 12 and September 19 to confirm the proper functioning of the pressure transducer. Water level data from April 18 to June 11 were estimated as the Levelogger memory filled up on April 17. Lake level is reported as mean daily water level in meters above sea level (masl) and this data is provided in Table 21.

Ice thickness on Doris Lake was measured by auguring through the ice surface and measuring the total thickness. Measurements were collected at the Doris Lake North monitoring station identified in the Aquatic Effects Monitoring Program and at five replicate stations (approximately 10 m apart) south of this location. Results of these measurements are provided in Table 22.

The Doris Creek hydrometric monitoring station TL-2 was reactivated on June 12 after being deactivated during the winter. The station uses an INW PS9800 vented pressure transducer connected to a satellite telemetry station, which allows near real time access to the station data. Water level readings were recorded every 10 minutes. The station operated throughout the open water season until September 17, when the station was deactivated for winter. During the 2016 open water season, nine visits were made to the station for a total of nine discharge measurements and eight water level surveys. Water level (stage) measured by the pressure transducer was converted to discharge using a stage-discharge curve, also known as a rating curve. The rating curve at TL-2 is well established, with small changes from year to year due to aggradation and scour of the channel. A small adjustment for the 2016 rating curve was made to account for minor sedimentation around the station, which was consistent with the annual variability observed at TL-2. Flow during periods that were not observed during the 2016 open water season was estimated using a logarithmic growth curve from May 13 to June 11, a power regression between Doris Lake water level and monitored flow at TL-2 from September 17 to October 31, and a linear decay from November 1 to 23. It was estimated that there is no flow in Doris Creek prior to May 13 or after November 23. Discharge at the TL-2 hydrometric monitoring station is reported as mean daily

discharge in cubic meters per second (m^3/s). Results from this monitoring are presented in Table 23.

Table 21 – Summary of Doris Lake Mean Daily Water Levels, in meters above sea level (masl), 2016

Date	January	February	March	April	May	June	July	August	September	October	November	December
1	21.823	21.835	21.826	21.822	*21.818*	*21.938*	22.343	21.969	21.850	21.873	21.782	21.787
2	21.825	21.831	21.829	21.829	*21.818*	*21.945*	22.321	21.963	21.847	21.877	21.779	21.791
3	21.810	21.831	21.825	21.823	*21.818*	*21.951*	22.295	21.955	21.843	21.879	21.778	21.792
4	21.815	21.834	21.820	21.823	*21.818*	*21.957*	22.265	21.952	21.846	21.880	21.776	21.794
5	21.831	21.835	21.822	21.822	*21.818*	*21.964*	22.242	21.946	21.843	21.883	21.773	21.799
6	21.828	21.836	21.817	21.822	*21.818*	*21.970*	22.220	21.941	21.843	21.882	21.769	21.801
7	21.830	21.839	21.814	21.822	*21.818*	*21.976*	22.189	21.931	21.841	21.882	21.767	21.804
8	21.827	21.835	21.814	21.819	*21.818*	*21.983*	22.154	21.923	21.841	21.880	21.766	21.807
9	21.828	21.834	21.815	21.819	*21.818*	*21.989*	22.141	21.916	21.846	21.877	21.765	21.803
10	21.821	21.828	21.818	21.816	*21.818*	*21.996*	22.126	21.910	21.847	21.871	21.765	21.797
11	21.824	21.836	21.820	21.813	*21.818*	*22.002*	22.115	21.902	21.845	21.866	21.767	21.800
12	21.827	21.829	21.807	21.808	*21.818*	22.008	22.100	21.895	21.844	21.868	21.766	21.800
13	21.828	21.833	21.811	21.807	*21.820*	22.015	22.078	21.895	21.852	21.868	21.764	21.800
14	21.820	21.837	21.812	21.808	*21.824*	22.024	22.058	21.889	21.853	21.865	21.767	21.801
15	21.834	21.833	21.815	21.815	*21.831*	22.026	22.038	21.884	21.853	21.863	21.765	21.803
16	21.833	21.830	21.815	21.814	*21.837*	22.026	22.021	21.883	21.856	21.855	21.766	21.802
17	21.833	21.821	21.813	21.820	*21.843*	22.054	22.004	21.884	21.855	21.848	21.768	21.802
18	21.823	21.812	21.820	*21.818*	*21.849*	22.099	21.991	21.884	21.846	21.844	21.770	21.803
19	21.826	21.831	21.830	*21.818*	*21.856*	22.162	21.978	21.876	21.845	21.841	21.767	21.801
20	21.826	21.829	21.822	*21.818*	*21.862*	22.288	21.964	21.871	21.836	21.834	21.765	21.803
21	21.824	21.832	21.818	*21.818*	*21.868*	22.345	21.953	21.869	21.833	21.829	21.765	21.803
22	21.825	21.832	21.822	*21.818*	*21.875*	22.419	21.939	21.873	21.831	21.824	21.766	21.802
23	21.827	21.829	21.825	*21.818*	*21.881*	22.469	21.933	21.865	21.836	21.819	21.765	21.803
24	21.831	21.823	21.824	*21.818*	*21.888*	22.479	21.954	21.863	21.834	21.814	21.766	21.802
25	21.836	21.822	21.824	*21.818*	*21.894*	22.470	21.968	21.858	21.829	21.808	21.768	21.803
26	21.836	21.833	21.819	*21.818*	*21.900*	22.454	21.964	21.855	21.827	21.803	21.770	21.801
27	21.824	21.829	21.807	*21.818*	*21.907*	22.435	21.968	21.853	21.841	21.801	21.774	21.803
28	21.819	21.826	21.810	*21.818*	*21.913*	22.415	21.973	21.850	21.853	21.798	21.778	21.804
29	21.828	21.819	21.810	*21.818*	*21.919*	22.391	21.973	21.848	21.864	21.796	21.779	21.805
30	21.836		21.816	*21.818*	*21.926*	22.363	21.973	21.847	21.869	21.792	21.781	21.800
31	21.835		21.819		*21.932*		21.971	21.853		21.788		21.803
Minimum	21.810	21.812	21.807	21.807	21.818	21.938	21.933	21.847	21.827	21.788	21.764	21.787
Maximum	21.836	21.839	21.830	21.829	21.932	22.479	22.343	21.969	21.869	21.883	21.782	21.807
Mean	21.827	21.830	21.818	21.818	21.853	22.154	22.071	21.894	21.845	21.845	21.770	21.801
Level Change	0.026	0.027	0.023	0.022	0.114	0.541	0.410	0.122	0.042	0.095	0.018	0.020
Low Action Level Trigger*	21.495	21.495	21.495	21.495	21.495	21.495	21.495	21.495	21.495	21.425	21.425	21.425

** Low action level trigger is relative to the average water level value (September 10-30, 2015-16) measured in Doris Lake. Low action level trigger (-0.42 m) outlined in Section 5.4 of the Doris Aquatic Effects Monitoring Plan, August 2016.*
Note: Estimated and modelled values are italicized.

Table 22 – Summary of Doris Lake Ice Thickness, in meters (m), May 2016

Location	Ice Thickness (cm)
Doris Lake North	1.89
Replicate 1	1.89
Replicate 2	1.89
Replicate 3	1.94
Replicate 4	1.94
Replicate 5	1.93
Minimum	1.89
Maximum	1.94
Mean	1.91

Table 23 – Summary of Doris Creek (TL-2) Daily Flow Rate, in cubic meters per second (m^3/s), 2016

Date	January	February	March	April	May	June	July	August	September	October	November	December
1	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.074*	3.517	0.804	0.433	*0.502*	*0.264*	*0.000*
2	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.093*	3.210	0.788	0.429	*0.513*	*0.252*	*0.000*
3	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.117*	2.954	0.761	0.422	*0.518*	*0.240*	*0.000*
4	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.147*	2.685	0.735	0.423	*0.520*	*0.228*	*0.000*
5	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.184*	2.422	0.717	0.425	*0.529*	*0.216*	*0.000*
6	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.231*	2.190	0.698	0.413	*0.528*	*0.204*	*0.000*
7	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.289*	1.968	0.670	0.414	*0.528*	*0.192*	*0.000*
8	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.363*	1.775	0.655	0.410	*0.521*	*0.180*	*0.000*
9	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.455*	1.582	0.641	0.419	*0.511*	*0.169*	*0.000*
10	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.571*	1.478	0.622	0.428	*0.495*	*0.157*	*0.000*
11	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.717*	1.383	0.598	0.421	*0.481*	*0.145*	*0.000*
12	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	0.899	1.300	0.575	0.437	*0.487*	*0.133*	*0.000*
13	*0.000*	*0.000*	*0.000*	*0.000*	*0.001*	0.916	1.220	0.565	0.425	*0.486*	*0.121*	*0.000*
14	*0.000*	*0.000*	*0.000*	*0.000*	*0.001*	0.945	1.143	0.558	0.432	*0.477*	*0.109*	*0.000*
15	*0.000*	*0.000*	*0.000*	*0.000*	*0.002*	0.981	1.046	0.553	0.441	*0.471*	*0.097*	*0.000*
16	*0.000*	*0.000*	*0.000*	*0.000*	*0.002*	1.018	0.988	0.539	0.448	*0.448*	*0.085*	*0.000*
17	*0.000*	*0.000*	*0.000*	*0.000*	*0.002*	1.068	0.932	0.531	0.459	*0.429*	*0.073*	*0.000*
18	*0.000*	*0.000*	*0.000*	*0.000*	*0.003*	1.271	0.888	0.524	*0.423*	*0.419*	*0.061*	*0.000*
19	*0.000*	*0.000*	*0.000*	*0.000*	*0.004*	1.783	0.839	0.528	*0.419*	*0.410*	*0.049*	*0.000*
20	*0.000*	*0.000*	*0.000*	*0.000*	*0.005*	2.543	0.804	0.506	*0.395*	*0.391*	*0.037*	*0.000*
21	*0.000*	*0.000*	*0.000*	*0.000*	*0.006*	3.658	0.755	0.497	*0.387*	*0.377*	*0.025*	*0.000*
22	*0.000*	*0.000*	*0.000*	*0.000*	*0.008*	4.697	0.718	0.489	*0.382*	*0.365*	*0.013*	*0.000*
23	*0.000*	*0.000*	*0.000*	*0.000*	*0.010*	5.331	0.693	0.486	*0.397*	*0.352*	*0.001*	*0.000*
24	*0.000*	*0.000*	*0.000*	*0.000*	*0.012*	5.476	0.760	0.466	*0.391*	*0.338*	*0.000*	*0.000*
25	*0.000*	*0.000*	*0.000*	*0.000*	*0.015*	5.292	0.802	0.460	*0.376*	*0.324*	*0.000*	*0.000*
26	*0.000*	*0.000*	*0.000*	*0.000*	*0.019*	5.053	0.800	0.450	*0.371*	*0.312*	*0.000*	*0.000*
27	*0.000*	*0.000*	*0.000*	*0.000*	*0.024*	4.813	0.807	0.445	*0.409*	*0.306*	*0.000*	*0.000*
28	*0.000*	*0.000*	*0.000*	*0.000*	*0.030*	4.520	0.824	0.438	*0.442*	*0.300*	*0.000*	*0.000*
29	*0.000*	*0.000*	*0.000*	*0.000*	*0.038*	4.192	0.828	0.437	*0.474*	*0.294*	*0.000*	*0.000*
30	*0.000*		*0.000*	*0.000*	*0.047*	3.858	0.829	0.431	*0.490*	*0.284*	*0.000*	*0.000*
31	*0.000*		*0.000*		*0.059*		0.819	0.435		*0.276*		*0.000*
Minimum	0.000	0.000	0.000	0.000	0.000	0.074	0.693	0.431	0.371	0.276	0.000	0.000
Maximum	0.000	0.000	0.000	0.000	0.059	5.476	3.517	0.804	0.490	0.529	0.264	0.000
Mean	0.000	0.000	0.000	0.000	0.009	2.052	1.386	0.568	0.421	0.426	0.102	0.000
Total	0.000	0.000	0.000	0.000	0.288	61.555	42.957	17.602	12.632	13.194	3.050	0.000

Note: Estimated and modelled values are italicized.

Doris Site Diversion Berm Effectiveness

The Diversion Berm north of the camp and mine infrastructure appears to effectively route surface runoff away from the camp pads. The berm is monitored during spring melt and in association with heavy or sustained rainfall events and is included in the routine inspection of all site water management structures.

2. Summary of Geochemical Monitoring and Waste Rock Storage Assessment [see Schedule B Item 2]

The only section of Schedule B, Item 3 reporting relevant to Doris Site at this time is Part (c) pertaining to waste rock. The mill did not operate in 2016 therefore geochemical Monitoring pertaining to Parts (a), (b), and (d) do not yet apply. No waste rock from surface has been placed underground as backfill.

Since October 2015, a total of 179,100 tonnes of mineralized waste rock was placed on Pad T and the temporary waste rock pad. The total volume of waste rock on the surface as of the end of 2016 was 368,707 tonnes, all of which has been designated by TMAC as mineralized.

3. Summary of Quarry Rock Seepage Monitoring and management Program [see Schedule B, Item 3]

The quarry rock seepage monitoring program was conducted between June 11 and June 16, 2016. The program included visual inspection and opportunistic sampling of seepage from Pad T, mill pad expansion, the temporary explosives berm by the North dam, tailings impoundment area (TIA) access road, and airstrip expansion.

Peak freshet had already occurred and there were fewer seeps observed than in previous years. A total of 14 seepage sites were established downstream of all areas except the temporary explosives berm. A total of 8 were submitted to the lab for analysis. Pad T and mill pad are within Doris Site, which also hosts the waste rock stockpile. Accordingly, seepage samples collected downstream of Doris Site are referred to as from the waste rock influenced area (WRIA).

The results of the 2016 sampling program indicate that there are no major issues with respect to metal leaching and acid rock drainage in seepage associated with infrastructure at Hope Bay. Seepage from the WRIA had elevated levels of ammonia, chloride, nitrate, arsenic, copper and selenium concentrations in comparison to seeps from the other infrastructure areas. The flushing of chloride is attributed to the use of drilling brines in the underground whereas ammonia and nitrate levels are from blasting residues in the waste rock. Arsenic, copper and selenium levels may have been influenced by the timing of the survey, which was after the peak of freshet when flows rates and water volumes were lower. The majority of seepage from the WRIA is captured in the water management system implemented at Doris and directed to the TIA.

4. Summary of the results of the monthly water balance and water quality model assessments referred to in Part G, Item 33 and any re-calibrations that have been carried out [see Schedule B, Item 4]

The TIA has not yet been fully commissioned, and no mill tailings have been deposited. The Doris mine plan is currently being re-evaluated and new modelling will be developed to incorporate planned changes. Updates to the water balance and water quality model have been provided to the NWB through the Doris Water Licence Amendment Process, as outlined in TMAC's *Revisions to TMAC Resources Inc. Amendment Application No. 1 of Project Certificate No. 003 and Water Licence 2AM-DOH1323 (the Amendment Application)* submitted to the Nunavut Impact and Review Board (NIRB) and the Nunavut Water Board (NWB) in June 2015.

5. An update on the current capacity of the Tailings Impoundment Area [See Schedule B, Item 5]

The North Dam which ensures containment of the TIA was completed in 2012 but no mill tailings have been deposited to date. The available capacity is 100%.

6. Information on flows at monitoring station TL-2 and measurements of Doris Lake Water Level [See Schedule B, Item 6]

Details for this section are provided in Section 1 of this report.

7. Annual review and any revisions submitted in the form of addendums to the Management Plans or Emergency Response and Contingency Plan [See Schedule B, Item 7]

On November 4, 2016, TMAC received Amendment No.1 Type A Water Licence and the following plans were approved:

- Hope Bay Mining Ltd., Quality Assurance and Quality Control Plan, 2AM-DOH0713, 2BB-BOS0712, 2BE-HOP1222, HB-QA-ENV-MP-001, November 2012 (REV 7.1);
- Hope Bay Project Quarry A, B & D Management and Monitoring Plan - Revision 01 (SRK 2010a);
- Hope Bay Mining Ltd., Hazardous Waste Management Plan, March 2012 (Rev 1.1)
- Landfarm Management and Monitoring Plan, March 2014;
- Revised Spill Contingency Plan, Hope Bay, Nunavut, April 2016;
- Revised Domestic Wastewater Treatment Plan Doris Project, Nunavut,
- April 2016;
- Doris North Mine Interim Closure and Reclamation Plan, June 2015, and closure amendment September 2016;
- Hope Bay Project Doris Aquatic Effects Monitoring Plan, August 2016;
- Hope Bay Project Groundwater Management Plan, August 2016;
- Hope Bay Project, Tailings Impoundment Area Operations, Maintenance,
- and Surveillance Manual, August 2016;
- Waste Rock and Ore Management Plan Hope Bay Project, August 2016; and

- Hope Bay Project Water Management Plan, August 2016

Subsequent to the year-end TMAC has provided updates to the following plans on February 16, 2017

- Quality Assurance and Quality Control Plan;
- Quarry A, B & D Management and Monitoring Plan;
- Landfarm Management and Monitoring Plan;
- Spill Contingency Plan, Hope Bay, Nunavut;
- Domestic Wastewater Treatment Plan Doris Project, Nunavut; and
- Hope Bay Project Water Management Plan.

Management Plans will be updated as required throughout the life of the Project.

8. A list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up action taken [See Schedule B, Item 9]

During 2016, 4 spills were reported to reported to the Nunavut Spill Line, Water Licence Inspector and KIA. These spills met or exceeded the reporting threshold as outlined in the Nunavut Spill Contingency Planning and Reporting Regulations. In addition to the required Spill Line report, a more detailed follow-up report was filed within thirty days of each reported spill that included a description of the event together with the immediate cause, corrective and preventative action. The four reportable spill events are summarized in Table 24 below. The follow-up spill reports detail basic causes and short/long term corrective actions.

The remaining spills that occurred during 2016 were minor in nature, occurring on land, with quick response and clean up resulting in negligible impact to the receiving environment. TMAC keeps track of all minor spills (internal reporting and follow-up action) and Inspectors have the opportunity to review the information when at site conducting inspections. TMAC continues to work to identify root causes so that effective long term corrective actions can be implemented for all spills at site.

Table 24 – Summary of Reportable Spill in 2016

Date of Occurrence	Spill Number	Date of Notification to an Inspector	Spilled Material and Volume	Details of Spill Event and Follow up Activities	Date Follow Up Report Provided to an Inspector
18-Jun-16	16-228	18-Jun-16	Sewage - 5L	An operator was using the vac-truck to transfer sewage from portable washroom/wash cars into the main building lift station. After completing the transfer, the operator lifted the hose line to drain the remaining contents into the lift station but failed to disconnect the hose from the truck prior to draining the line. A small amount of sewage remained in the hose. When the operator disconnected the hose from the lift station and placed it back onto the side of the truck approximately 5L of sewage was released from the open end of the hose onto the camp pad. Contaminated snow and gravel were removed and disposed of on the overburden stockpile.	29-Jul-16
13-Aug-16	16-293	13-Aug-16	Sewage - 5L	An operator was discharging sewage collected from the various site portable washrooms/wash cars to the main camp lift station using the vacuum truck. The material breached the lid joint and approximately 5-L of sewage was discharged to the camp pad. Lime was added to inhibit bacterial/pathogen growth and to reduce odours. Soiled crush and lime was excavated into buckets and managed within the overburden pile.	02-Sep-16
07-Sep-16	16-328	07-Sep-16	Wastewater - 10-20L	A spill of approximately 10-20L of wastewater from the wash car at the Sealift Command center at the Rob Bay Laydown was discovered at approximately 8:30am. The cap on the access port on the wash car wastewater tank (where the vac-truck hose connects) was loose. The tank over-filled allowing the wastewater to be released from the cap. No solid material was observed on the ground. Contaminated crush scraped from the surface of the pad and placed in the overburden stockpile.	30-Sep-16

Date of Occurrence	Spill Number	Date of Notification to an Inspector	Spilled Material and Volume	Details of Spill Event and Follow up Activities	Date Follow Up Report Provided to an Inspector
15-Dec-16	16-427	16-Dec-16	Wastewater - 1.5m^3	The STP is electrically augmented with a UPS (Uninterruptable Power Supply). This UPS had faulted out. This fault caused the control system for the plant to run on the UPS battery power until the battery had drained. Once the battery had drained, the control system went offline and was inoperable. This system failure caused the overflow of approximately 1.5m^3 of wastewater. The operator stated that he had observed the UPS unit making some "odd noises" on the cooling fan end of the unit. He proceeded to reset the UPS. Once reset, the "odd noise" had ceased, and the plant was operating normally. Upon investigation after the incident, it was discovered that the UPS has two areas that need to be reset if needed, and the operator was unaware of the second reset button. Contaminated materials were recovered to the most practical extent and relocated to the overburden stockpile.	19-Dec-16

9. The results of the Aquatic Effects Monitoring Program in accordance with Part J, Item 3 [See Schedule B, Item 9]

Results of the 2016 Aquatic Effects Monitoring Program (AEMP) for the Doris site are provided in the 2016 AEMP Report submitted to the Nunavut Water Board on March 31, 2017 and are summarized in the sections below. The AEMP was designed to detect effects on the aquatic environment largely due to discharge of tailings effluent from the Tailings Impoundment Area (TIA). However, to date, no mine tailings have been placed in the TIA.
The AEMP was conducted in accordance with the *Doris North Gold Mine Project: Aquatic Effect Monitoring Plan* (Rescan 2010c). Five stream sites (Doris Outflow, Roberts Outflow, Little Roberts Outflow, Reference B Outflow, and Reference D Outflow), five lake sites (Doris Lake North, Doris Lake South, Little Roberts Lake, Reference Lake B, and Reference Lake D), and three marine sites (Roberts Bay East, Roberts Bay West, and REF-Marine 1) were monitored. Aquatic components evaluated in 2016 included the following: lake and marine under-ice dissolved oxygen concentrations; lake Secchi depth; stream, lake, and marine water and sediment quality; stream periphyton biomass; lake and marine phytoplankton biomass; and stream, lake, and marine benthic invertebrate community density, taxa richness, evenness, diversity, and Bray-Curtis Index. Statistical and/or graphical analyses were performed in order to determine whether there were any apparent effects of Project activities on the aquatic monitoring components in the exposure sites in 2016. The analyses included comparisons of baseline data to current (2016) data and/or comparisons of reference sites to exposure sites through time. Lake and marine fish communities were last surveyed in 2010 (Rescan 2011) and were not resurveyed in 2016.

Table 25 below presents a summary of the overall findings of the evaluation of effects for the 2016 AEMP, as well as the corresponding section in this report in which to find the discussion of the evaluation of effects for each monitoring component. Differences in the aquatic monitoring components between baseline years and 2016 were attributed to natural spatial or temporal variability, and there was no evidence of adverse effects to the aquatic environment resulting from Project activities.

Table 25 – Summary of Evaluation of Effects for 2016 Aquatic Effects Monitoring Program

Evaluated Variable	Stream Exposure Sites	Lake Exposure Sites	Marine Exposure Sites	Report Section
Winter Dissolved Oxygen	Not Evaluated	No Effect	No Effect	3.1
Secchi Depth	Not Evaluated	No Effect	Not Evaluated	3.2
Water Quality	No Effect	No Effect	No Effect	3.3
Sediment Quality	No Effect	No Effect	No Effect	3.4
Primary Producers	No Effect	No Effect	No Effect	3.5
Benthic Invertebrates	No Effect	No Effect	No Effect	3.6

10. Annual adjustments to reclamation security including any additional security that may be required [See Schedule B, Item 10]

TMAC have an approved Doris North Mine Interim Closure and Reclamation Plan, June 2015 and September 2016 Addendum. On September 23, 2016 TMAC provided to the NWB an

updated and final Closure and Reclamation cost estimate, which constitutes an agreement between TMAC and INCA as stated during the Doris Project Water Licence Hearing held in Cambridge Bay on September 13, and 14, 2016. The revised estimate amounts to $31,289,321. Details of this report can be found on the Nunavut Water Board Website at this link: ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-DOH1323%20TMAC/2%20ADMIN/4%20HEARINGS/2%20HEARING/160627%202AM-DOH1323%20Public%20Hearing/

11. A summary of any closure and reclamation work undertaken and an outline of any work anticipated for the next year, including any changes to implementation and scheduling [See Schedule B, Item 11]

In 2016, reclamation work was conducted in one set of track depressions to the west of Doris Camp near the lower reagent pad and Quarry 2 where historical tundra vehicle trials occurred. This set of tracks was backfilled with material from the overburden stockpile mixed with peat moss. Monitoring was done to evaluate the effectiveness of the reclamation methods in mitigating pooling water in this area.

On-going progressive reclamation of both current and historic drill hole collars occurred throughout 2016. In total, 112 surface drill hole collars from 2015 have been reclaimed/closed (7 remaining), and all 47 surface drill hole collars from 2016 have been reclaimed and closed There are 52 drill hole sites from 2013, and 54 drill hole sites from 2014 that require closure and reclamation.

12. Annual Incineration stack testing results [See Schedule B, Item 12]

Annual incinerator stack testing is required under the Canada Wide Standards (CWS) for Dioxins and Furans and the Canada Wide Standards for Mercury, when volumes incinerated exceed 26 tonnes per year.

The results of the refuse incinerator stack testing are presented below in Table 26 below. Concentrations and flowrates are expressed at standard conditions of 25°C and 101.3 kPa (dry)

Table 26 – Refuse Incinerator Stack Testing Results Summary

Parameter	Mean Result	CWS
Particulate (mg/Rm^3 @ 11% O_2)	194	n/a
Particulate (kg/hr)	0.2	n/a
Mercury (µg/Rm^3 @ 11% O_2)	0.07	20
Mercury (g/hr)	0.0007	n/a
PCDD/PCDF (ng/Rm^3 TEQ @ 11% O_2)	**13.8**	0.080
Flowrate (Rm^3/min)	16.0 (15.7 for D/F tests)	n/a

Notes:
Values in bold greater than applicable CWS.
n/a = no emission limit (not applicable).

The refuse incinerator emissions were less than the CWS for mercury but greater than the CWS for PCDD/PCDF. The QA/QC program showed analytical accuracy in proving the avoidance of any significant sample contamination and in maintaining leak free sampling procedures.

As a result of these monitoring outcomes, TMAC will undertake an assessment of operating procedures and waste stream segregation in 2017 to identify improvements which may reduce dioxin and furan production. Improvements will be implemented prior to 2017 stack testing, at which time the success of these adaptive management measures will be evaluated.

13. Annual Landfill Management Report [See Schedule B, Item 13]

TMAC is authorized to dispose of all non-hazardous solid waste in a landfill on site as per Part G Item 9. To date, a landfill has not been built. All waste that cannot be incinerated on site is backhauled to an approved facility off site or stored on site for later landfilling. Because a landfill has not been constructed, no landfill management report has been prepared. TMAC will continue to manage solid waste produced in Hope Bay according to three waste management plans:

- Interim Non-Hazardous Waste Management Plan
- Hazardous Waste Management Plan
- Incinerator Management Plan

These plans describe how various streams of waste are managed. See Item 8 of this supplement for details on any revisions to these plans.

14. A summary of modifications and/or maintenance work carried out on the Water Supply and the Waste Disposal Facilities, including all associated structures, and an outline of any work anticipated for the next year [See Schedule B, Item 14]

In 2016, the following construction activities occurred:

- Replacement and commissioning of a new Sewage Treatment Plant module
- Second burn pan was constructed on site same design as the existing burn pan
- The water uptake line for Windy Lake is also planned to be replaced by a slightly longer line of the same design (notification of this was submitted to the NWB on April 16, 2016). - occurred
- Construction on the TIA road
- Commenced installation of TIA tailings discharge line, emergency catchment basins, and reclaim water pump house and uptake line
- Laydown area constructed for Pad T for waste rock and ore

The following activities are planned for 2017:

- Exploration activities for 2017 in the Hope Bay Belt includes underground diamond drilling at Doris. Drilling at Doris will begin in late February and will focus on upgrading and expanding the resources of the East Limb and Extension BTD (Below The Diabase). TMAC anticipates diamond drilling program on the Naartok zone of

the Madrid deposit. Similarly, this drilling will focus on the upgrading and expansion of existing resources in 2017.

- TMAC will initiate the mobilization of provisions and surface drilling equipment to the Boston camp on the winter access road starting in mid-March. The Boston camp will be refurbished in early spring in preparation for surface diamond drilling budgeted for the July-August period
- Regional exploration programs will include an estimated 350-hole reverse circulation (RC) drilling program aimed at characterizing the bedrock geology and gold grain distribution in glacial tills. RC drilling will begin in late March targeting prospective valleys West of Doris (Qaiqtuq) and North and South of Naartok (Akunniq and Fed Shear). The June-September period will see manual till sampling as well as geological mapping and up to 5,000 meter of helicopter-supported, surface diamond drilling on greenfields targets
- In 2017, Hope Bay will be transitioning to production longhole blasting The exploration success in 2016 has translated into development of the BTD zone in 2017 with the high productivity rates in the BTD access ramp expected to continue. Limited backfill operations during 2016 will contrast with much higher backfill volumes as longhole stopes are mined out filled with waste in 2017
- Completion of the power plant
- Ongoing reclamation of historic drill sites as resources permit
- Expansion of gravel airstrip and construction of an aircraft de-icing pad
- Construction of Pad U and associated pollution control pond
- Complete construction of the TIA road to the proposed South Dam area
- Construction of the South Dam
- Construction of the Roberts Bay Discharge access road and Roberts Bay Discharge System
- Expansion of the Roberts Bay Laydown Areas
- Construction of the Doris Central and Doris Connector Vent Raise access roads The existing burn pans will be replaced with one manufactured on site of similar design (notification of this was submitted to the NWB on April 15, 2016).
- The water uptake line for Windy Lake is planned to be replaced by a slightly longer line of the same design (notification of this was submitted to the NWB on December 13, 2016).

15. A summary report describing public consultation and participation with local organizations and the residents of the nearby communities, including a schedule of upcoming community events/information sessions [See Schedule B, Item 15]

TMAC Resources Inc. in consideration of the amended 2016 Doris NIRB Project Certificate, amended and updated the existing *Community Relations Plan* governing community engagement activities, to create a new *Community Involvement Plan*.

This Plan integrates and includes a number of TMAC policies that related to community engagement under one document, and makes distinctions between engagement activities and those related to human resource management covered under another Plan. Further, the new Plan organizes engagement activities into functional areas consistent with the Mining Association of

Canada *Towards Sustainable Mining - Community Engagement Protocol*, and generally updates activities based on the most current communications practices utilized in the Kitikmeot region. Going forward into 2017, the *Community Involvement Plan* will be the basis by which TMAC Resources Inc. informs, seeks feedback and responds to the public in Nunavut.

Community relations in 2016 focused on public discussion on amended Doris mine plan under consideration by both the Nunavut Impact Review Board and Nunavut Water Board, supporting the deliberations of the Inuit Environmental Advisory Committee pursuant to Schedule I of the 2015 Hope Bay IIBA, and acting as a resource for the region and TMAC in beginning to recruit and staff a permanent mine production workforce for Doris Mine.

TMAC continued to maintain a Kitikmeot office, located on the 2nd floor of the Kitikmeot Center, above the Northern Store at #18 Mitik Street. TMAC maintains an open door policy and Cambridge Bay residents and Inuit regularly visit the TMAC office for their own interest.

TMAC continued to participate in territorial, regional and community organizations and groups aligned to support community relations and consultation efforts. These groups include the NWT/Nunavut Chamber of Mines, the Nunavut Mining Symposium Society, the Nunavut Mine Training Roundtable, the KIA regional ASETS Stakeholder group, Kitikmeot Socio-Economic Monitoring Committee and the Cambridge Bay Canadian High Arctic Research Station Committee. TMAC also participated and financially supported the 40th Anniversary celebrations for the Kitikmeot Inuit Association in 2016.

TMAC involvement in the Chamber of Mines and Mining Symposium promotes industry awareness and advocacy and mine focused dialogue at a territorial level. Participation in the Mine Training Roundtable and ASETS Stakeholder group promotes understanding and coordination of training and education initiatives in the region and territory Participation in the Kitikmeot Socio-Economic Monitoring Committee supports discussion on the effects of major development on Kitikmeot communities and residents.

TMAC Resources undertook a regional tour of the Kitikmeot region in May 2016 to consult with the public on the Phase 2 proposal for Madrid and Boston, and actively participated in regulatory hearings held within the region for the amendment of the Doris Project Certificate and Water Licence.

During the course of community engagement activities, TMAC notes a measured degree of support for our mining and exploration operations, and a strong and growing interest in permanent employment and training opportunities related to mine production.

Cambridge Bay Logistics Hub

Cambridge Bay continues to be the logistics hub for TMAC in the Kitikmeot. However, several changes occurred in the routing of employees to and from work in 2016. During the early part of the year, direct air charter flights were extended to Kugluktuk from Cambridge Bay and the Hope Bay site on a bi monthly basis. The decision to do so was based growth in the Kugluktuk workforce. Later in 2016, air charter service was again extended this time to the eastern

Kitikmeot communities. These easterly flights alternating with westerly flights bi-monthly This change was made in response to growth in the eastern Kitikmeot workforce. With all such routing adjustments, TMAC aims to transport workers to and from Hope Bay in the most effective and efficient manner possible, avoiding Yellowknife and overnight accommodations, to and from all Points of Hire.

Other Communications

TMAC continues the use of a project/company Facebook page to provide information on Hope Bay primarily to northern stakeholders. Content of this page includes permitting information, meeting notices, job advertisements, and pictures of site activities linked to Kitikmeot community news pages. Feedback from TMAC information from this social media source is growing and it may be surmised that many younger Kitikmeot residents make better use of this information source than Elders or others more typically reliant on information received during public meetings. The page can be viewed at the following link: https://www.facebook.com/tmacresources.

Community Relations Monthly Summary

January

- Received one request from Kitikmeot Inuit business wishing to meet with TMAC during the Cordilleran Roundup. Given current planned TMAC attendance at event, alternative meetings now planned.
- Provided Inuinnaqtun place name options for Doris Lake Exploration Target area.
- Assist Environmental staff in finalizing visiting hunter poster, for use in public communications on procedures to use when in the Hope Bay area. Maps currently being revised; final product to be translated into Inuinnaqtun.
- Delivered Hope Bay project update presentation to KIA Board of Directors meeting January 13th with slides provided by Mr. Morrison.
- Facilitated 3rd Inuit Environmental Advisory Committee meeting per Schedule J of the 2015 Hope Bay IIBA. Meeting held primarily to solicit Fish habitat compensation ideas in relation to Doris Lake drawdown issue.
- Attended Nunavut Water Board (NWB) community session in Cambridge Bay regarding our Type A Water License amendment application. Session was poorly attended by the public due to lack of local advertising by the NWB. Community member comments on our application focused on caribou and socio-economic matters not considered as part of the water licensing process.

February

- Provided project update to Minister Keith Peterson.
- Attended the 2016 Kitikmeot Trade Show in Cambridge Bay with Mr. McCreadie. Highlights included:
  -Meeting with Premier Taptuna to provide a project update.

-Meeting with Minister Tootoo to provide a project update and request a future meeting between the Minister and TMAC Executive.
-Delivered career awareness presentation to Kitikmeot Trade Show Youth delegates.
-Delivered project update and contract forecast presentation to KTS delegates in main session.

-Met with attending Kitikmeot Qualified Business during the Trade Show to discuss inclusion on the KIA Registry and verbally review 2016 contract opportunities in support of Schedule F, IIBA implementation.

- Attended Cambridge Bay Community Readiness Meeting; reviewed initial results of Conference Board of Canada work to compile socio-economic baseline information, and discussed timeline for Hamlet of Cambridge Bay to compile results of community survey.
- Met with Polar Knowledge Canada staff to discuss potential collaboration on Plant Traditional Knowledge study per KIA NTKP Report recommendation; PKC is engaged in broad based vegetation mapping project with NASA that includes a traditional knowledge component, which provides an opening for this.
- Received inquiry from Gjoa Haven Inuit business inquiring about surplus equipment.

March

- Community Relations staff on leave.

April

- Attended 2016 Nunavut Mining Symposium in Iqaluit. Activities during conference included:
  -Attended Nunavut Leaders Forum on behalf of Chamber of Mines. Attendees included Premier Taptuna, Minister Ell-Kanayok, Senator Patterson, Minister Tootoo, NTI President Cathy Towtongie, and KIA President Stanley Anablak as well as Nunavut developer representatives. Topics of discussion included Infrastructure, caribou protection and land use planning, and over bonding.
  -Attended meeting with GN-DOE officials to reconcile draft wildlife commitment list for the Doris Amendment application.
  -Attended meeting with INAC Nunavut officials to reconcile water and mine operations commitment list for the Doris Amendment application.
  -Presented Hope Bay project update to delegates in front of full theater audience. Feedback provided indicated a high level of interest from delegates in TMAC news.
  -Nunavut Mine Training Roundtable meeting prepared for but postponed at last minute due to weather delays affecting Kivalliq delegate attendance.
  -Attended KIA Inuit Agreement lessons learned presentation delivered by Geoff Clarke relying heavily on TMAC negotiation experience.
- Assisted in the Community Roundtable portion of the NIRB Doris Amendment Public Hearing including partially presenting a project summary and answering questions posed by the public.
- Presented a project update to the 2016 Kitikmeot Mayors Meeting held in Cambridge Bay this week. As the event was severely behind schedule, only answered one question in

relation to the expected timeline for a NIRB Board recommendation on the Doris Amendment application.

- Attended an ECCC/GN-DOE joint Dolphin and Union caribou management planning public meeting in Cambridge Bay. Although some mining related comments were expressed, none were negative. GN-DOE acknowledged TMAC support in researching this herd during the meeting.
- One media contact with Jane George of Nunatsiaq News. Intention of interview was to gather information on a newspaper article on the Doris Amendment Public Hearing.
- Attended Nunavut Leadership Forum debrief session via teleconference with key other participants including Minister Ell-Kanayok and MAC representatives. Key discussion item was the Northern Infrastructure Bank concept and garnering support for Canada to consider this vehicle for northern development.
- Chaired Nunavut Mine Training Roundtable 2016/17 funding allocation meeting via teleconference. The following projects were supported:

  -Hamlet of Arviat – Heavy Equipment and Employee Counselling.
  -Kitikmeot Corporation – Food Services training.
  -Qikiqtaaluk Inuit Association – Financial management for mine employees.

May

- On May 3rd, TMAC presented to the Kitikmeot Inuit Association (KIA) Board of Directors meeting held in Kugluktuk. The KIA clearly has an Inuit employment focus, as a number of employment related matters were voiced by Board members during the presentation. During this meeting, the KIA Board formally approved the 2015 IIBA Evaluation Report pursuant to Schedule A of the IIBA.
- SR and Environment staff participated in a round of community consultations throughout the Kitikmeot region on Phase II (Madrid and Boston) plans in preparation for submitting a Draft Environmental Impact Statement (DEIS) within a year. Community sessions were well attended except for Cambridge Bay, which may be a result of consultation fatigue due to the number of recent public hearings held in that community. Public comment on our Phase II plans centred on employment and training and impacts to fish and wildlife. Signage used during the community sessions is being utilised at our Cambridge Bay office location to continue to provide information to the public on our future plans.
- Facilitated and participated in an Executive meeting with Fisheries Minister Tootoo in Ottawa. A short project update was provided.
- SR staff processed one complaint this month. A Government of Nunavut Environment employee attending Site in April expressed concern to the KIA that TMAC was disturbing caribou with unrestricted helicopter flights. SR staff reviewed Caribou sightings compiled by Site Environment staff. The results of this review was provided to the KIA in response to this complaint. This information demonstrated that air operations complied with our Wildlife Monitoring and Mitigation Plan guidelines. KIA has advised that the matter is closed.
- Two local senior high school Social Studies classes attended the Cambridge Bay office to learn more about our company and our activities this month.

June

- Attended Hamlet of Cambridge Bay 2016 Career Fair Planning Session; no new developments with Hamlet staff still reaching out to potential attendees.
- Assisted in communicating a family emergency to an onsite Nuna West worker from information provided by KIA President Stanley Anablak. Subsequently the employee was airlifted to Cambridge Bay to return to his home community. Hope Bay site telephone listing provided to senior KIA staff in order to facilitate possible emergency communications in the future.

July

- Attended KIA 40th anniversary and Nunavut Day celebrations with TMAC Executive meeting with numerous members of the public and TMAC staff in Cambridge Bay.
- Facilitated meeting between TMAC executive and Premier Taptuna; 2 takeaways include request for additional information on fish toxicity testing issue and asset description for temporary work camp stored in Quebec.
- Provided communication support to site environment staff stemming from the use of bear deterrents at the Waste Management facility this week; GN DOE and KIA satisfied with our response to the juvenile bear, and provided minor recommended improvements for the future.
- Received and forwarded to Site a request from local resident to purchase a weather haven shelter cover to replace wind-damaged equipment purchased as surplus from Hope bay in 2012.

- Walk in visitation from Brent Else, Physical Geographer at University of Calgary involved with local bathymetric studies – referred to Roberts bay bathymetric studies with potential for DFO oceanography team to visit next week for additional information.
- Responded to INAC regional geologist request for Nunavut employment and economic impact statistics for Hope Bay; INAC preparing summary of mineral exploration and development benefits for presentation to NPC Land Use Plan Final Hearing.
- Daily communications with both GN-DOE and KIA on problem bear situation including decision to destroy the animal. Wildlife Compensation Claim from KIA pending and valuable parts of animal to be turned over to GN-DOE next week after NCC flight.

August

- Provided grizzly bear meat to Cambridge Bay wellness center for distribution to the Food Bank.
- Was approached by the Cambridge Bay Men's group for logistical support for their on the land camp at Naujaat this month. Provided request details to Operations staff for consideration. Also, attended Men's Group trip planning session to provide emergency contact information for Hope Bay.
- Received email request from Nunavut Arctic College for a letter of support for the continuation of funding the Environmental Technology Program in Cambridge Bay. Drafted letter for VP of Environment signature and delivered to the College.

- Courtesy meeting with Horizons North trainers in town to deliver Hope Bay focused hospitality training. Courtesy meeting with Kitikmeot Corporation with news shared on increased ownership of Nuna Logistics.
- Liaison between Cambridge Bay Men's group and Site operations personnel regarding urgent need for gasoline in order to allow for return to Cambridge Bay from Parry Bay. Group was severely short of fuel due to poor planning, and operations indicated that we need to have gasoline replaced. Informed Men's Group organizers that repayment for gasoline required.
- Attended Kitikmeot Catering Hospitality Training course graduation ceremony in Cambridge Bay. Provided training results summary to TMAC executive.
- Participated in Killinik High School trip to Ovayok Territorial Part including geological interpretation.

September

- Attended Kitikmeot Corporation Board of Directors meeting and provided a brief verbal project update. Questions from the Board included status of the TMAC sealift, review of KC group training initiatives and status of KCMD miner training proposal.
- Reviewed TMAC project mention in future North of 60 mining overview article in draft from the Chamber of Commerce and made several corrections to suggested text.
- Reviewed details of Nunatsiaq News article implicating TMAC in Cambridge Bay alcohol problems with TMAC staff; discussed with RCMP staff sergeant quoted in article and determined that he had been grossly misquoted.
- Attended Doris Site visit with Nunavut Water Board public hearing bound regulators and Senator Patterson. Delivered a presentation on Employment and Training for Hope bay to portion of tour group at site during afternoon session.
- Attended Nunavut Water Board Public hearing on Doris Type A water license amendment application, with support to permitting team in town for these proceedings. Was available for HR/SR questions during public presentation section of hearing, however no questions were made by the public.
- Attended Cambridge Bay Career Fair event with HR staff. Adult public participation limited.
- Assisted in 2016 Cambridge Bay Food Bank collection drive with request to Site for any surplus food to be sent back on next week's Northern Crew Change.
- Participated and supported 2 day workshop on Caribou effects of Phase II development with IEAC and other Inuit advisors; a number of recommendations on further caribou monitoring and mitigation received by group and to be summarized in workshop report by next month.

October

- Attended the Kitikmeot Inuit Association Annual General meeting held in Cambridge Bay October 4,5 and 6th. Highlights included:

  -Kitikmeot Corporation CEO John Stevenson mentioned the potential of TMAC self-performing surface site operations instead of Nuna West. KIA Board member Andre

Otokiak questioned whether Nuna West Inuit hires would be eligible for employment directly with TMAC if this function were self-performed. John Stevenson responded that Nuna staff at Hope Bay were highly skilled and would be well suited to this work, however this was a question better answered by TMAC. During break, Director Otokiak informed of the balance sought between poaching contract workers and recognizing site experience.
-Also during Kitikmeot Corporation presentation, delegate Jimmy Haniliak expressed the concern that Inuit employees have access to older Inuit in order to express any workplace concerns at remote camp workplaces. Nuna West representative Dan Kane responded generally that KC adheres to specific site practices put in place by project ownership, and that often there is provision for Elders and advisors to be present on site and accessible to staff.
-Met with Premier Taptuna and Minister Peterson to provide project update; note to executive on same.
-Informal discussions with many of the KIA community delegates to share project update information and encourage local Inuit to respond to our current job ads.

- Chaired KIA ASETS Stakeholder Working Group Meeting, with a number of government training organizations and other industry representatives in attendance.
- Reported Arctic Hare traffic mortality to NIRB, GN-DOE and KIA. GN-DOE advised to incinerate the carcass, and KIA advised that they will not be seeking wildlife compensation payment.

November

- Attended Polar Knowledge Canada open house in Cambridge Bay. Research station on schedule for full operations mid-2017, with opening ceremony scheduled during Q3 2017.
- Attended 2016 Geoscience Forum in Yellowknife with following highlights
- Chamber of Mines Annual General Meeting
  -Meeting with KIA Lands staff to discuss water licence security, Phase II DEIS review timelines and use of tracked miniature RC drill on Inuit Owned Lands.
  -Meeting with CANNOR staff to discuss Community Readiness Initiative Cambridge Bay project follow up and water licence Ministerial approval.
  -Met with representative of Canadian Professional Accountants association and was provided materials related to Financial Literacy outreach program that could be useful for TMAC northern hire delivery.
- Responded to Facebook comment from a Kugaaruk resident expressing concern over potential arsenic contamination and our operation causing declines in caribou populations.

December

- Attended Kitikmeot Socio-Economic Monitoring Committee (KitSEMC) meeting and Doris North Project Specific Committee (DNSEMC) meeting held in Cambridge Bay.
- KitSEMC meeting included over 30 government and community representatives. Statistics, community, program information and departmental reports received from 3 Government of Nunavut groups, with additional presentations made by INAC Nunavut

General Monitoring Program, Sabina Gold and Silver, KIA, and Gray's Bay Road and Port Project.

- TMAC Hope Bay 2016 project specific socio-economic monitoring indicators were presented to the group with primarily technical and data collection related feedback. TMAC interpretation of indicator results accepted. The Doris project is progressing with social and economic impacts in line with TMAC predictions, with no issues of concern.
- Attended Nunavut Economic Forum (NEF) public meeting in Cambridge Bay. NEF conducting consultations on update of Nunavut Economic Development Strategy for the Government of Nunavut, Government of Canada and Nunavut Tunngavik Inc. Provided Hope Bay related input to highlight the need to continue to support Nunavut mineral exploration and mining development. More information on the NEF can be seen at: http://www.nunavuteconomicforum.ca/public/index.php

16. GPS locations of monitoring stations as confirmed with the Inspector Part J, Item 5 [See Schedule B, Item 17]

Please refer to the Annual Report Form for the GPS locations of the monitoring stations.

18. A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector [See Schedule B, Item 178]

In 2016 TMAC hosted regulatory inspections from INAC, NIRB and KIA. Details of when those visits occurred and a summary of the reports and follow up from those visits are detailed in Table 27 below.

Table 27 – Summary of Inspections in 2016

Date	Agency	Summary	Follow up	Response
April 5-7, 2016	Indigenous and Northern Affairs Canada	Inspection to verify compliance with the Type A water license, 2AM-DOH1323. The inspection focused on uses of water, waste management, and new construction/changes at site. Section 2 – Non-Compliance with Act or License; D.23: The license shall not use Waste Rock from underground for any purpose, including the construction of any infrastructure, unless otherwise approved by the Board under Part G, Item 9 and in accordance with the plan provided under Part G, Item 14, revised and approved accordingly. TMAC has converted the existing waste rock pile to an ore storage pad. TMAC must ensure that that changes to plans are reviewed and approved by the Board prior to implementation in the future.	1. Continue recording and reporting water used for all purposes, including ice road development. 2. Resume seasonal backhauls of hazardous waste as per Hazardous Waste Management Plan. 3. Monitor drainage function of, and sediment resulting from, newly constructed works. 4. Monitor dustfall as per licence requirements. 5. Ensure extensive sediment control measures during spring freshet. 6. Ensure that changes to licensed facilities are approved prior to implementation.	1. Acknowledged. TMAC has continued to record and report all water used, and has also recorded and reported water applied to ice roads. 2. TMAC made one test backhaul of packaged waste by air in December (the material was a non-hazardous animal attractant) and will commence routine air backhaul of Hazardous Wastes in 2017, making use of flight and/or sealift backhaul opportunities. TMAC is also working with shippers to arrange backhaul of waste stored in sea containers. 3. Prior to freshet, sediment control (rolled coconut matting) was placed downslope of the newly constructed Tailings Impoundment Area (TIA) roadway to ensure sediment was not flushed to a natural water body. During freshet, monitoring along the roadway indicated no runoff of sediment-laden water or drainage concerns. As is the case with all roads constructed on site, only rock is used for construction. This minimizes or eliminates potential for sediment runoff in most areas, except where overburden has been previously removed. In areas of overburden removal fine sediments may be exposed and/or liberated and sediment control measures may be appropriate. Generally, removal of overburden is not conducted in road building or pad expansion. Overburden disruption is also minimized by constructing roads while the ground is frozen. 2016 construction activities have not required overburden removal. 4. TMAC continues to monitor dustfall routinely at the Doris Project, and results are reported to the Board. The Doris Air Quality Management Plan was revised in 2016, with improvements made in winter dustfall collection methodologies and overall sampling design.

Date	Agency	Summary	Follow up	Response
				5. To limit sediment runoff during freshet of 2016, sediment controls (coconut matting) were installed across surface drainages downslope of areas with notable visible dust. Visual inspections were also conducted during freshet to ensure runoff did not contain excessive quantities of dust; no turbid runoff was noted. 6. Acknowledged, TMAC will seek approval where required.
June 21-22, 2016	Kitikmeot Inuit Association	On June 21-22 the KIA inspected the Doris Commercial Lease area and infrastructure including Roberts Bay, the Jetty, Doris Site and Area, the North Dam at Tail Lake, and the Doris Windy, All- Weather Road. Windy Camp and Boston were also toured. An inspection report was not issued for this visit.	No follow up actions required at this time.	
August 26, 2016	Nunavut Impact Review Board	The NIRB Monitoring Officer, and Technical Advisor, conducted the 2016 NIRB site visit and flew on August 26, 2016 from Cambridge Bay, Nunavut to the Doris Project site. Sites Visit included inspection of Roberts Bay, All-weather road and airstrip, Camp site and	On November 4, 2016 NIRB issued 6 recommendations along with the 2015-2016 Annual Monitoring Report for the Doris Project.	TMAC submitted a response to these recommendations on February 3, 2017. A copy of the NIRB Site visit report, and Board recommendations and TMAC's response can be found on the NIRB Public registry.

Date	Agency	Summary	Follow up	Response
		mine facilities, Tailings Impoundment Area. Overall, TMAC has generally complied with the original Project Certificate No. 003 Terms and Conditions, the site remains in good condition as TMAC progresses construction in preparation for operations.		
August 9-12, 2016	Environment and Climate Change Canada	Inspection of the contact water management at the Doris site, explosives storage area and waste management facilities at Roberts Bay.	1.Inspector requested testing record for fuel procured for site. 2. ECCC requested that TMAC provide documentation on what entity imports fuel for site.	TMAC provided analysis results for ultra low sulphur diesel fuel procured and confirmed that TMAC was not an importer of fuel.
November 4-5, 2016	Indigenous and Northern Affairs Canada	Inspection to verify compliance with the Water licence(s) Windy Licence, 2BE-HOP12222 and 2AM-DOH1323. Inspector noted that the site conditions an practice are found to be generally excellent, even with increased levels of activity an personal.	1. Inspector requested that TMAC notify them when waste backhaul begins. 2. Inspector requested that secondary containment is maintained by removing snow regularly through the winter.	1. As noted above, TMAC made one test backhaul of packaged waste (kitchen grease) in 2016 and plans additional backhauls of hazardous waste via air in 2017. TMAC acknowledges this request and will report backhaul in monthly reports. 2. Snow removal occurs routinely throughout the winter on an as needed basis to maintain adequate containment capacity.

19. Any other details on Water use or Waste Disposal requested by the Board [See Schedule B, Item 19]

No additional details on water use or waste disposal were requested by the Board in 2016 related to the existing Doris Project.