

NWB Annual Report

Year being reported: 2014 ▼

License No: 2BE-HOP1222

Issued Date: June 30, 2012

Expiry Date: June 30, 2022

Project Name: Hope Bay Regional Exploration Project

Licensee: TMAC Resources

Mailing Address: 95 Wellington St. W.
Suite 1010, PO Box 44
TD Centre
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 2BE-HOP1222 was issued June 30, 2012 to Hope Bay Mining Ltd.
Effective June 18, 2013, the NWB authorized the assignment of Licence 2BE-
HOP1222 from Hope Bay Mining Ltd. To TMAC Resources Inc.

General Background Information on the Project (*optional):

Licence 2BE-HOP1222 allows TMAC to carry out activities in support of
exploration drilling at the Hope Bay Regional Exploration Project and the Windy
Camp, which supports exploration activities.

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

Part B ▼ Item 2 ▼

**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):	Domestic from Windy Lake; drill water from local water sources	
Water Quantity:	22995 cu.m	Quantity Allowable Domestic (cu.m)
	2758 cu. m.	Actual Quantity Used Domestic (cu.m)
	29200 cu.m	Quantity Allowable Drilling (cu.m)
	2683 cu. m.	Total Quantity Used Drilling (cu.m)
	30600 cu.m	Quantity Allowable Dust Suppression (cu.m)
	0	Total Quantity Used Dust Suppression

Waste Management and/or Disposal

☒ Solid Waste Disposal

☐ Sewage

☒ Drill Waste

☐ Greywater

☐ Hazardous

☒ Other:

Contaminated Soil

Additional Details:

The Hope Bay Project was placed into Care and Maintenance in October 2012. Occupancy of the Old Windy Camp ended October 23, 2008 and dismantling and reclamation of the area is on-going.

Water was used from Windy Lake to supply domestic water to Doris Camp in accordance with 2BE-HOP1222 Part C, Item 1. Water used for drilling is taken from the closest lake to each drill using a similar system to the domestic system, or for drill locations accessible by road or winter ice road, water is hauled by truck from Windy Lake, or compliant berm effluent from the Doris Project is recycled through the drills to lessen freshwater lake use. In the case of regional drilling, water is taken from the closest lake to the drill site in accordance with Part C Item 1. Water is supplied to a water tank at the drill, and recirculation to cool equipment occurs through this tank. Non-saline drill cuttings produced under this licence are deposited in a depression at Quarry D along the Doris-Windy AWR; saline cuttings are removed to the waste rock pile at the Doris Project where any runoff is captured through the site water management system.

The Waste Water Treatment Facility for management of domestic sewage at Old Windy Camp was removed in 2010 to the Boston Camp.

The Landfarm at Windy Camp and Bulk Fuel Storage Facilities at Windy Camp and Patch Lake have been dismantled and are in the process of reclamation. No effluent is produced at these locations, but water is removed from a historical drill cuttings sump at the Patch Lake laydown to prevent migration of saline runoff into the surrounding tundra. Capping and closure of the sump is pending.

Water accumulated in Quarries A, B and D will be managed in accordance with the approved *Quarry A, B, D Management and Monitoring Plan* and the relevant sections of Part D of the licence. No discharges occurred in 2014.

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 3 of attached Annual Report Supplement for a list, including details, of all unauthorized discharges that occurred in 2014 under licence 2BE-HOP1222.

Revisions to the Spill Contingency Plan

Other: (see additional details)

Additional Details:

See Item 5 of attached Annual Report Supplement for details.

Revisions to the Abandonment and Restoration Plan

Other: (see additional details)

Additional Details:

A revised Closure Plan for the licence was submitted to the NWB on May 26, 2014 and confirmation was received from the NWB August 27, 2014 that the plan was approved under Motion # 2014-B1-023.

Progressive Reclamation Work Undertaken

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

Reclamation activities pertaining to 2BE-HOP1222 were undertaken in 2014; see Item 6 of 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 described below

Additional Details:

Drilling water source coordinates are maintained on file by the TMAC Exploration Department for all water sources utilized proximal to the drill targets.

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 described below

Additional Details:

Monitoring Stations HOP-2 and HOP-3 had no discharge because Windy Camp was closed in 2008 and these facilities were not operational in 2014. Discharges did not occur at the monitoring station HOP-4 because the landfarm at the location was dismantled in 2008.

Monitoring Stations HOP-5 and HOP-6 had no discharges in 2014, as these fuel storage facilities were decommissioned in 2012.

No discharges occurred at Quarries A, B or D (HOP-7a, b and d) as no water accumulated at these locations.

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)

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

No additional sampling requested by an Inspector or the Board



Additional Details: (Attached or provided below)

N/A

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

Inspection and Compliance Report received by the Licensee (Date):



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

Details are set out at Item 4 of the attached supplement.

Any additional comments or information for the Board to consider

Please see attached supplement for additional information requirements set out in Licence No. 2BE-HOP1222.

Date Submitted:

March 31, 2015

Submitted/Prepared by:

John Roberts

Contact Information:

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(416) 628-0216

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GPS Coordinates for water sources utilized

Source Description	Latitude			Longitude		
	Deg °	Min ,	Sec "	Deg °	Min ,	Sec "
HOP-1 - Raw water supply intake at Windy Lake	68	3	38	106	37	6

GPS Locations of areas of waste disposal

Location Description (type)	Latitude			Longitude		
	Deg °	Min ,	Sec "	Deg °	Min ,	Sec "



**2014 2BE-HOP1222 Type B Water Licence
Annual Report
Supplemental Document**

Hope Bay Regional Exploration Program

Nunavut Water Board

Prepared by
TMAC Resources Inc.
Toronto, ON

Prepared for
Nunavut Water Board
Gjoa Haven, NU

March 2015

Executive Summary

2BE-HOP1222 Annual Report

TMAC Resources Inc. (“TMAC”) has filed its Annual Report on its activities during 2014 under Water Licence No. 2BE-HOP1222 issued by the Nunavut Water Board. As set out in Part B Item 2 of the Licence, the report includes information with respect to the following topics:

- a summary report of water use and waste disposal activities
- a summary of all information requested and results of the Monitoring Program
- a list of unauthorized discharges and a summary of follow-up actions taken
- a brief description of follow-up actions taken to address concerns detailed in inspection and compliance reports prepared by the Inspector
- an update to the Spill Contingency Plan, if required, including contact information in the form of an addendum
- a description of all progressive and/or final reclamation work undertaken, including photographic records of site conditions before, during and after completion of operations
- a summary of modification 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 specific studies or reports requested by the board, and a brief description of future studies planned or proposed
- any other details on water use or waste disposal requested by the board

Atanguyan Naetomik Okaohen
2BE-HOP1222 Ukeotoagaagan Unipkaak

TMAC Resources Inc.-kon (“TMAC-kon”) tonihimaliktaan Ukeotoagaagan Unipkagiyaktik havaamigun 2014-mi ilagani Imaknik Atoknigagun Laeseoyum Napaani 2BE-HOP1222-mi toniyaohimayok Nunavumi Imalikiyin Katimayinin. Okaotaoyomi Ilagani B Titigaknigani 2 Laeseoyum, unipkaak ilakaktok hivonikhiyotikhanik ukuniga:

- naetomik okaohik imaknik atoknigagun atakugutiniklo havaoheoyonik
- naetomik okaohik tamaenik hivonikhiyotikhanik tukhigaoyonik kanogilinigilo Amigiyotinun Havaami
- titigaknigin agiktaohimagitun kuvipkaeyotin naetomiklo okaohik kigoagun havaanik
- naetomi okateagun kigoani havaanik ihoakhiyaagani ihomalutaoyun okateakhimayun ihivgeokhiyotik atoteaknigagulo unipkaagini Ihivgeokhiyin
- kaogiliniganik Kuviyokakan Havaakhanun Opaogaeyaon, piyageakakan, okakatikhaniklo hivonikhiyotik makpigaami oegugilogo
- okateagutin tamaeta atoenaktun kigulelo nunan utiktiniganun havaagiyaoyun, ilakaklotik piksaleoganik iglukpakakveom kanoginiganik hivoani, havaktilogin inikmatalo
- naetomik okaohik ihoakhaotik agiyoniklunen hanayotik imiktakvikni atagukviknilo, ukoalo tamaeta iglukpaen atoktun, kanogitoniklo havaanik nahogiyamiknik atoktukhani ukeomi
- naetomik okaohik kituniklikaa naonaeyaotik unipkaanilunen tukhiktaenik katimayin, naetomiklo okaohik hivonikhami ilitokhaotik opalogaeyaotinun atoktaoyomayoniklunen
- hunaniklikaa ahenik okateagutinik imaknik atoknigagun atagukveoyoniklo tukhiktaenik katimayin

- [illegible]

Résumé opérationnel 2BE-HOP1222 Rapport annuel

TMAC Resources Inc. (« TMAC ») a déposé son rapport annuel sur ses activités au cours de l'année 2014 en conformité avec le Permis no 2BE-HOP1222 émis par l'Office des eaux du Nunavut (Nunavut Water Board), tel qu'énoncé dans la partie B, point 2, du permis. Le rapport comprend des renseignements sur les sujets suivants :

- un aperçu de l'utilisation et du traitement de l'eau et de l'évacuation des rejets
- un résumé des résultats du programme de surveillance des requêtes au sujet du programme
- une liste des déversements non autorisés et un résumé des mesures de suivi prises à la suite de ces incidents
- une brève description des mesures de suivi prises pour régler les problèmes décrits dans les rapports d'inspection et de conformité établies par l'inspecteur
- si nécessaire, une mise à jour du plan d'urgence en cas de déversement « Spill Contingency Plan », comprenant une liste de contacts et leurs coordonnées pour le signalement des déversements fournie sous forme d'addenda
- une description de tous les travaux de remise progressive et terminés qui ont été entrepris, y compris les documents photographiques des conditions du site avant, pendant et après l'achèvement des travaux de remise
- un résumé des travaux d'entretien mineurs ou des travaux majeurs effectués sur les réserves d'eau potable et les installations d'élimination des résidus miniers et de toutes leurs composantes s'y rattachant, ainsi qu'un aperçu des travaux prévus l'année suivante
- un résumé des rapports ou études scientifiques exigés par l'Office et une brève description des éventuelles recherches ou celles prévues par l'Office
- 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

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1. A summary report of water use and waste disposal activities [see Part B Item 2 (a)]

General details on water use and waste disposal activities under licence 2BE-HOP1222 can be found at Item A of the annual report form. Further details on water use in 2014 are presented in part B of Appendix A.

Waste disposal activities under licence 2BE-HOP1222 in 2014 were focused on the removal of approximately 150m³ of contaminated soil from the old Patch Lake shop facility laydown. The soil was bagged and staged at Quarry D until it was removed to Roberts Bay waste management in preparation for removal from site on the sealift. Windy Camp was not operational in 2014 so no domestic waste was produced and the incinerator was not put into service.

2. A summary of all information requested and results of the Monitoring Program [see Part B Item 2 (b) and Part J Item 21]

This information is set out in Appendix A to this document.

3. A list of unauthorized discharges and a summary of follow-up actions taken [see Part B Item 2 (c)]

Date of Spill: May 10, 2014

Spill No: N/A

Date of Notification to an Inspector: N/A

Product Spilled: High TSS Water

Details of Spill: During drilling on Patch Lake, the cuttings catchment tray overflowed due to a misdirected hose flushing out the contents of the tray. An estimated 80L of turbid water flowed out onto the ice surface adjacent to the drill. The turbid water was contained to the ice surface and did not enter the environment (lake). The dirty slush around the drill was cleaned up and contained with the cuttings. The hose angle was adjusted and recommendations were made to raise the sides of the catchment tray on the winter rigs to provide better containment. (Note: an omission in the 2014 May monthly SNP report failed to include this incident)

4. A brief description of follow-up action taken to address concerns detailed in inspection and compliance reports prepared by the Inspector [see Part B Item 2 (d)]

Inspection under the Hope Bay Regional Exploration Licence was conducted by AANDC July 17, 2014. No non-compliances were noted, but the Inspector requested an updated timeline for mitigation measures at the Patch Cuttings Sump. A response was provided to the Inspector November 24, 2014 indicating that in accordance with the Patch Laydown Drill Cuttings Sump Remediation Plan (originally submitted May 29, 2014), water management to mitigate runoff and prepare the site for closure had occurred at the sump from June through August. All pooling water was pumped to interim containment at the site, or pumped directly to a water truck on the Doris-Windy All-Weather Road and transported to the Doris North Tailings Impoundment Area (TIA) for disposal.

An inspection and monitoring program was undertaken over summer, including in-situ conductivity measurements and collection of water quality samples from small pockets of standing water along the potential path of contaminant migration between the sump and Imniagut Lake. Very little overland flow of water was noted on the tundra, but elevated conductivity remained detectable at the sump, with decreasing values downslope towards the lake. Water quality sampling indicated chloride also remained elevated with the highest concentrations immediately adjacent to the sump, but significant improvement in vegetative health and regeneration in the original area of impact was observed. The sump closure plan submitted in May was modified due to a change in equipment availability at site, and in consultation with the site engineer Option 1 of the plan to cap the sump to halt further migration brine runoff into the surrounding tundra is still scheduled for early 2015. This work is anticipated to start in mid-March and proceed into April. Monitoring of runoff from the area will continue in 2015.

5. An update to the Spill Contingency Plan, if required, including contact information in the form of an addendum [see Part B Item 2 (e)]

The Hope Bay Project Spill Contingency Plan was revised to appropriately reflect the Care and Maintenance phase of the project under the new Project ownership and to update all contact information. The revised Plan was submitted to the NWB on February 5, 2014.

6. A description of all progressive and or final reclamation work undertaken, including photographic records of site conditions before, during and after completion or operations [see Part B Item 2 (f)]

In February, 203 mega bags of contaminated soil were removed from the closed Patch Lake facility. This soil had been excavated in 2013 under supervision of EBA and site ESR staff (Figure 1) in accordance with the Phase III contaminated site assessment report prepared in 2012. The bags were removed from the site and stored in Quarry D until September, when they were loaded into sea cans for transport to the Doris North waste management area for staging until they can be shipped offsite. The estimated volume of material removed was approximately 150m³.

Work continued in 2014 on reclamation of historic exploration drill holes (Figure 2). A total of 43 sites were fully reclaimed and work is anticipated to continue in 2015 as personnel and resources permit. Current exploration drill holes are remediated once drilling is completed and sites are inspected to document complete clean-up and restoration of each collar location.



Figure 1. Patch Laydown Contaminated Soil Clean-up Mega Bags Staged for Removal



Figure 2. Historical Drill Site Reclamation at hole 07KNK003 with casing cut and hammered closed

7. A summary of modification and/or major 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 Part B Item 2 (g)]

Windy Camp was closed on October 23, 2008. In 2010, the Waste Water Treatment Facility for management of domestic sewage at Old Windy Camp was removed to the Boston Camp. No modification and/or maintenance work was carried out on the Water Supply and the Waste Disposal Facilities in 2014. To obtain water for domestic use at Doris Camp (ST-7a), during the open water season a temporary pump with screened intake was submerged in Windy Lake off the lakeshore access road. This pump has an on-shore connection for access by the water truck. A sunken heat-traced line was installed in 2013 to allow domestic water to be obtained during periods the lake is frozen.

8. A summary of any specific studies or reports requested by the Board, and a brief description of any future studies planned or proposed [see Part B Item 2 (h)]

No specific studies or reports were requested by the Board in 2014 and no studies are planned or proposed for 2015.

9. Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported [see Part B Item 2 (i)]

No other details on water use or waste disposal were requested by the Board by November 1, 2014.

10. Report of any artesian flow occurrences [see Part F Item 3]

No artesian flow occurrences were encountered in 2014.

11. Where drilling activity has penetrated below the permafrost layer, the NWB requests that the proponent record the depth of permafrost and location of the drill hole to be included within the Annual Report [see Part F Item 4]

For areas where exploration is carried out, depth of permafrost is calculated using thermistor strings that measure ground temperature, installed in geotechnical drill holes (thermistor strings are not installed in all drill holes). The thermistor strings are used because it is not possible to visually assess when a drill hole has passed through the permafrost layer. Results obtained from the thermistor strings are used to extrapolate the lower depth of permafrost using thermal gradient. There are several such thermistor strings throughout the Hope Bay Belt and measurements are taken on an on-going basis. The depth of permafrost extrapolated from data collected at thermistor string SRK-50 (200 m in length) is 570 m. The depth of permafrost extrapolated from data collected at thermistor string 08TDD632 (350 m in length) is 435 m. Results collected from all thermistor strings are presented in the Annual Geotechnical Inspection Reports filed under licence 2AM-DOH1323.

Appendix A

Annual Monitoring Report – 2BE-HOP1222

a) Summary of Monitoring Information

The following tables summarize the results of sampling undertaken as part of the monitoring program detailed in Part J of 2BE-HOP1222.

The camp water treatment and wastewater treatment facility (WWTF) permitted under this licence were not operational in 2014, therefore no sampling was conducted at monitoring stations HOP-1 (freshwater intake), HOP-2 (WWTF discharge), or HOP-3 (point of entry of WWTF discharge to Windy Lake). Water was utilized from Windy Lake for domestic consumption at Doris Camp and the monitoring station ST-7a (HOP-1) was sampled for the monitoring station ST-7 criteria under the Doris North Water Licence 2AM-DOH1323. For the ST-7a results see the 2AM-DOH1323 annual report. The Landfarm at Windy Camp (HOP-4) was dismantled in 2008, so no sampling was conducted at this monitoring station.

The bulk fuel storage tanks at Windy Camp were moved to Doris Camp in winter 2009 for use there, and the bulk fuel storage berm (HOP-5) was dismantled in 2012. The bulk fuel storage berm at Patch Lake laydown (HOP-6) was also dismantled in 2012. No sampling was conducted at either of these monitoring stations.

No sampling occurred at monitoring stations HOP-7A HOP-7B, or HOP-7D (located in Quarries A, B, and D, respectively) during 2014 because there was no ponded water to sample.

On-ice exploration drilling occurred in 2014, therefore samples were taken through lake ice (as required by Part F Item 7 and Part J Item 7) to establish water quality prior to and upon completion of drilling program. Results are provided in Table 1 and Table 2.

Table 1 – Water Quality Sampling Prior to On-Ice Drilling on Patch, Wolverine and Doris Lakes, in April 2014, with results in mg/L unless otherwise specified.

Sample ID		PLN-APR14	PLS-APR14	WLV-APR14A^	WLV-APR14AB^	DLN-APR14	DLS-APR14
ALS ID		L1447637-1	L1447637-2	L1447637-3	L1447637-4	L1447637-5	L1447637-6
Sample Date/Time		4/19/2014 12:00	4/19/2014 11:15	4/24/2014 9:00	4/24/2014 8:50	4/19/2014 16:35	4/19/2014 14:15
Parameter	Units	Water	Water	Water	Water	Water	Water
Hardness (as CaCO3)	mg/L	111	99.1	219	213	59.5	64.2
pH	pH	7.7	7.74	7.67	7.56	7.71	7.73
Total Suspended Solids	mg/L	3.2	<3.0	155	127	3.5	3.9
Alk. Total (as CaCO3)	mg/L	63.5	56	124	125	36.4	35.6
Ammonia, Total (as N)	mg/L	0.0051	0.006	0.0497	0.021	<0.0050	0.0056
Bromide (Br)	mg/L	0.431	0.38	0.82	0.77	0.264	0.285
Chloride (Cl)	mg/L	136	122	321	310	80.6	82.5
Fluoride (F)	mg/L	0.102	0.095	<0.20 *	<0.20 *	0.063	0.065
Nitrate (as N)	mg/L	0.0091	0.0066	<0.050 *	<0.050 *	<0.0050	<0.0050
Nitrite (as N)	mg/L	0.0018	<0.0010	<0.010 *	<0.010 *	<0.0010	<0.0010
Sulfate (SO4)	mg/L	4.14	3.86	<5.0 *	<5.0 *	3.45	3.54
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0010	<0.0010
Aluminum (Al)-Total	mg/L	0.0143	0.0135	3.4	3.76	0.0062	0.0056
Antimony (Sb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	0.000310	0.000035
Arsenic (As)-Total	mg/L	0.00067	0.00099	0.00194	0.002	0.00354	0.000335
Barium (Ba)-Total	mg/L	<0.020	<0.020	0.054	0.056	<0.0000050	0.00354
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.000050	<0.0000050
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	0.0329	0.0326
Cadmium (Cd)-Total	mg/L	<0.000010	<0.000010	0.000065	0.000059	0.0000214	<0.0000050
Calcium (Ca)-Total	mg/L	19.9	18	31.7	30.7	10.8	11.6
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	0.0074	0.0085	<0.00050	<0.00050
Cobalt (Co)-Total	mg/L	<0.00030	<0.00030	0.00217	0.00236	<0.00050	<0.000050
Copper (Cu)-Total	mg/L	<0.0020 **	<0.0020 **	0.0046	0.0047	0.00131	0.00134
Iron (Fe)-Total	mg/L	0.035	<0.030	8.26	9.01	<0.030	<0.030
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	0.00126	0.00134	<0.000050	<0.000050
Lithium (Li)-Total	mg/L	0.0081	0.0073	0.0171	0.0169	0.00426	0.00451
Magnesium (Mg)-Total	mg/L	14.8	13.1	33.9	33.1	7.91	8.54
Manganese (Mn)-Total	mg/L	0.00693	0.00441	0.821	0.884	0.00889	0.00840
Moly. (Mo)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.000223	0.000238
Nickel (Ni)-Total	mg/L	<0.0010	<0.0010	0.0057	0.0063	0.00045	0.00048
Potassium (K)-Total	mg/L	5	4.3	7.8	7.6	2.7	3.0
Selenium (Se)-Total	mg/L	<0.00010	<0.00010	0.00012	0.00011	<0.00020	<0.00020

Sample ID		PLN-APR14	PLS-APR14	WLV-APR14A^	WLV-APR14AB^	DLN-APR14	DLS-APR14
ALS ID		L1447637-1	L1447637-2	L1447637-3	L1447637-4	L1447637-5	L1447637-6
Sample Date/Time		4/19/2014 12:00	4/19/2014 11:15	4/24/2014 9:00	4/24/2014 8:50	4/19/2014 16:35	4/19/2014 14:15
Parameter	Units	Water	Water	Water	Water	Water	Water
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.0000050	<0.0000050
Sodium (Na)-Total	mg/L	68.6	61.5	158	153	39.2	42.4
Thallium (Tl)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.0000020	<0.0000020
Tin (Sn)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00020	<0.00020
Titanium (Ti)-Total	mg/L	<0.010	<0.010	0.161	0.176	<0.00020	<0.00020
Uranium (U)-Total	mg/L	<0.00020	<0.00020	0.00026	0.00027	0.0000335	0.0000356
Vanadium (V)-Total	mg/L	<0.0010	<0.0010	0.008	0.0089	0.000068	0.000070
Zinc (Zn)-Total	mg/L	<0.0050	0.0052	0.0188	0.0185	<0.0030	<0.0030
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

**Detection Limit Adjusted due to sample matrix effects.*

^Note that Wolverine Lake is very shallow, and under-ice samples were observed to contain suspended lake sediments and algae.

Table 2 – Water Quality Sampling on Completion of On-Ice Drilling on Patch, Wolverine and Doris Lakes, in June 2014, with results in mg/L unless otherwise specified.

Sample ID		PLS-05JUN14	PLN-05JUN14	WLV-08JUN14	DLN-12JUN14	DLS-12JUN14
ALS ID		L1467046-1	L1467046-2	L1468539-1	L1470648-1	L1470648-2
Sample Date/Time		6/5/2014 3:31:00 PM	6/5/2014 4:00:00 PM	6/8/2014 10:20:00 AM	6/12/2014 9:45:00 AM	6/12/2014 10:25:00 AM
Parameter	Units	Results				
Hardness (as CaCO ₃)	mg/L	11.9	36.1	20.9	26.5	27.8
pH	pH	7.03	7.51	7.64	7.36	7.28
Total Suspended Solids	mg/L	3.8	3.4	6.6	<3.0	<3.0
Alk. Total (as CaCO ₃)	mg/L	8.3	23.9	65.5	12.7	14.8
Ammonia, Total (as N)	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Bromide (Br)	mg/L	<0.050	0.151	0.38	0.075	0.112
Chloride (Cl)	mg/L	11.1	49.9	161	22	32.1
Fluoride (F)	mg/L	0.023	0.049	0.16	0.032	0.038
Nitrate (as N)	mg/L	<0.0050	<0.0050	<0.025 *	<0.0050	<0.0050
Nitrite (as N)	mg/L	<0.0010	<0.0010	<0.0050 *	<0.0010	<0.0010
Sulfate (SO ₄)	mg/L	0.56	1.77	<2.5 *	1.2	1.5
Cyanide, Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Aluminum (Al)-Total	mg/L	0.0402	0.0241	0.0107	0.0105	0.0119
Antimony (Sb)-Total	mg/L	<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
Barium (Ba)-Total	mg/L	<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
Boron (B)-Total	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium (Cd)-Total	mg/L	<0.000010	0.000018	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	mg/L	1.96	6.69	3.5	5.42	5.23
Chromium (Cr)-Total	mg/L	<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
Copper (Cu)-Total	mg/L	<0.0010	0.001	<0.0010	<0.0010	<0.0010
Iron (Fe)-Total	mg/L	0.075	0.037	0.043	<0.030	<0.030
Lead (Pb)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Lithium (Li)-Total	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Magnesium (Mg)-Total	mg/L	1.7	4.71	2.96	3.15	3.58
Manganese (Mn)-Total	mg/L	0.0129	0.00555	0.038	0.00956	0.00885
Molybdenum (Mo)-Total	mg/L	<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
Potassium (K)-Total	mg/L	2.8	<2.0	2	<2.0	<2.0

Sample ID		PLS-05JUN14	PLN-05JUN14	WLV-08JUN14	DLN-12JUN14	DLS-12JUN14
ALS ID		L1467046-1	L1467046-2	L1468539-1	L1470648-1	L1470648-2
Sample Date/Time		6/5/2014 3:31:00 PM	6/5/2014 4:00:00 PM	6/8/2014 10:20:00 AM	6/12/2014 9:45:00 AM	6/12/2014 10:25:00 AM
Parameter	Units	Results				
Selenium (Se)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silver (Ag)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	5.5	22.6	15.6	15.8	17.8
Thallium (Tl)-Total	mg/L	<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
Titanium (Ti)-Total	mg/L	<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
Vanadium (V)-Total	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	0.0062	<0.0050	<0.0050	<0.0050	<0.0050
Oil and Grease	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Oil And Grease (Visible Sheen)		No	No	No	No	No

*Detection Limit Adjusted due to sample matrix effects.

b) Quantities of water utilized for camp, drilling and other purposes

During 2014, water was used from Windy Lake for domestic purposes at Doris Camp. This included consumption for drinking water, all camp domestic water supply, some ancillary domestic use for provisioning of portable wash cars, and filling site mobile fire suppression units. No water was used domestically at Windy Camp. Water was not used seasonally from Windy Lake in 2014 for dust suppression on the Doris-Windy All-Weather Road, but a total of 2,524 m³ of water was used in January, February, April, October and December for the development of ice roads to support exploration. Exploration drill water usage occurred between April and November from Wolverine, Patch, Windy and Doris Lakes. All drill usage from raw lake sources was metered or measured by truck haul load when holding tanks were filled. Water was recirculated from the drills to the holding tanks for equipment cooling. Daily water utilization is provided in Table 3.

Table 3 - Volume of Water Utilized for Camp, Drilling and Other Purposes, 2014, in cubic metres (m³)

Date	Dust Suppression (m ³)	Regional Drill Water Usage Metered (m ³)	Regional Drill Usage Trucked (m ³)	Regional Drill Usage Total (m ³)	Domestic Consumption at Doris (m ³)	Total Daily Usage (m ³)^
Jan 15	0	0	0	0	24	24
Jan 22	0	0	0	0	20	20
Feb 14	0	0	0	0	14	14
Feb 17	0	0	0	0	24	24
Mar 2	0	0	0	0	22	22
Mar 13	0	0	0	0	22	22
Mar 25	0	0	0	0	12	12
April 2	0	0	0	0	24	24
April 15	0	0	0	0	28	28
April 26	0	0	0	0	24	24
April 27	0	0	0	0	12	12
April 30	0	4	0	4	0	4
May-01	0	13	0	13	12	25
May-02	0	11	0	11	0	11
May-03	0	27	0	27	12	39
May-04	0	23	0	23	0	23
May-05	0	18	0	18	24	42
May-06	0	17	0	17	0	17
May-07	0	11	0	11	12	23
May-08	0	33	0	33	0	33
May-09	0	37	0	37	0	37
May-10	0	24	0	24	36	60
May-11	0	41	0	41	0	41
May-12	0	21	0	21	0	21
May-13	0	21	0	21	12	33
May-14	0	36	0	36	0	36
May-15	0	13	0	13	42	55
May-16	0	12	0	12	0	12
May-17	0	29	0	29	0	29
May-18	0	19	0	19	35	54

Date	Dust Suppression (m³)	Regional Drill Water Usage Metered (m³)	Regional Drill Usage Trucked (m³)	Regional Drill Usage Total (m³)	Domestic Consumption at Doris (m³)	Total Daily Usage (m³)^
May-19	0	16	0	16	0	16
May-20	0	18	0	18	0	18
May-21	0	19	0	19	0	19
May-22	0	21	0	21	44	65
May-23	0	61	0	61	0	61
May-24	0	18	0	18	0	18
May-25	0	21	0	21	12	33
May-26	0	38	0	38	13	51
May-27	0	31	0	31	23	54
May-28	0	48	0	48	0	48
May-29	0	20	0	20	24	44
May-30	0	31	0	31	0	31
May-31	0	19	0	19	24	43
Jun-01	0	22	0	22	0	22
Jun-02	0	7	0	7	24	31
Jun-03	0	4	12	16	0	16
Jun-04	0	7	0	7	24	31
Jun-05	0	4	12	16	0	16
Jun-06	0	3	0	3	12	15
Jun-07	0	11	14	25	24	49
Jun-08	0	13	2	15	0	15
Jun-09	0	17	1	18	26	44
Jun-10	0	2	2	3	0	3
Jun-11	0	0	0	0	24	24
Jun-12	0	0	13	13	0	13
Jun-13	0	0	0	0	24	24
Jun-14	0	0	10	10	0	10
Jun-15	0	9	7	15	24	39
Jun-16	0	2	4	6	0	6
Jun-17	0	1	5	5	0	5
Jun-18	0	2	11	13	31	44
Jun-19	0	5	0	5	0	5
Jun-20	0	0	0	0	0	0
Jun-21	0	4	0	4	36	40
Jun-22	0	0	0	0	0	0
Jun-23	0	16	5	21	0	21
Jun-24	0	9	0	9	24	33
Jun-25	0	3	0	3	30	33
Jun-26	0	8	0	8	20	28
Jun-27	0	7	15	22	36	58
Jun-28	0	8	0	8	0	8
Jun-29	0	5	2	7	0	7
Jun-30	0	6	0	6	36	42
Jul-01	0	2	0	2	0	2
Jul-02	0	15	0	15	0	15
Jul-03	0	9	10	19	24	43
Jul-04	0	3	0	3	0	3
Jul-05	0	8	8	16	24	40
Jul-06	0	6	0	6	12	18

Date	Dust Suppression (m³)	Regional Drill Water Usage Metered (m³)	Regional Drill Usage Trucked (m³)	Regional Drill Usage Total (m³)	Domestic Consumption at Doris (m³)	Total Daily Usage (m³)^
Jul-07	0	10	0	10	0	10
Jul-08	0	1	0	1	24	25
Jul-09	0	4	2	6	0	6
Jul-10	0	10	0	10	24	34
Jul-11	0	4	8	12	2	14
Jul-12	0	9	7	16	24	40
Jul-13	0	5	0	5	0	5
Jul-14	0	3	4	7	24	31
Jul-15	0	13	0	13	0	13
Jul-16	0	6	5	11	24	35
Jul-17	0	13	0	13	24	37
Jul-18	0	4	0	4	0	4
Jul-19	0	4	7	11	12	23
Jul-20	0	5	0	5	0	5
Jul-21	0	2	0	2	24	26
Jul-22	0	10	8	18	0	18
Jul-23	0	15	0	15	37	52
Jul-24	0	9	0	9	0	9
Jul-25	0	6	0	6	24	30
Jul-26	0	13	10	23	12	35
Jul-27	0	0	0	0	36	36
Jul-28	0	13	0	13	0	13
Jul-29	0	7	0	7	24	31
Jul-30	0	11	0	11	0	11
Jul-31	0	7	0	7	12	19
Aug-01	0	5	12	17	36	53
Aug-02	0	2	4	6	0	6
Aug-03	0	4	6	9	24	33
Aug-04	0	17	8	25	2	27
Aug-05	0	13	4	17	1	18
Aug-06	0	10	0	10	36	46
Aug-07	0	6	10	15	0	15
Aug-08	0	4	6	10	31	41
Aug-09	0	4	0	4	0	4
Aug-10	0	7	8	15	22	37
Aug-11	0	0	0	0	0	0
Aug-12	0	12	6	18	24	42
Aug-13	0	4	0	4	0	4
Aug-14	0	0	0	0	24	24
Aug-15	0	4	14	18	0	18
Aug-16	0	1	18	19	24	43
Aug-17	0	0	10	10	0	10
Aug-18	0	0	3	3	12	15
Aug-19	0	0	10	10	24	34
Aug-20	0	4	4	8	12	20
Aug-21	0	0	6	6	0	6
Aug-22	0	4	4	8	24	32
Aug-23	0	16	0	16	0	16
Aug-24	0	0	0	0	24	24

Date	Dust Suppression (m³)	Regional Drill Water Usage Metered (m³)	Regional Drill Usage Trucked (m³)	Regional Drill Usage Total (m³)	Domestic Consumption at Doris (m³)	Total Daily Usage (m³)^
Aug-25	0	6	0	6	0	6
Aug-26	0	10	0	10	24	34
Aug-27	0	6	14	20	0	20
Aug-28	0	0	3	3	24	27
Aug-29	0	0	9	9	23	32
Aug-30	0	11	8	19	0	19
Aug-31	0	0	2	2	24	26
Sep-01	0	1	28	29	0	29
Sep-02	0	0	11	11	24	35
Sep-03	0	17	0	17	0	17
Sep-04	0	9	13	22	22	44
Sep-05	0	0	3	3	0	3
Sep-06	0	5	9	14	22	35
Sep-07	0	7	13	20	0	19
Sep-08	0	0	7	7	25	32
Sep-09	0	0	26	26	0	26
Sep-10	0	0	27	27	24	51
Sep-11	0	0	14	14	0	14
Sep-12	0	0	7	7	12	19
Sep-13	0	0	14	14	12	26
Sep-14	0	0	8	8	1	9
Sep-15	0	0	20	20	12	32
Sep-16	0	0	16	16	24	40
Sep-17	0	0	9	9	12	21
Sep-18	0	0	10	10	0	10
Sep-19	0	0	10	10	24	34
Sep-20	0	20	14	34	0	34
Sep-21	0	8	6	14	1	15
Sep-22	0	0	2	2	34	36
Sep-23	0	0	6	6	0	6
Sep-24	0	0	0	0	12	12
Sep-25	0	0	12	12	0	12
Sep-26	0	0	8	8	24	32
Sep-27	0	0	22	22	0	22
Sep-28	0	0	11	11	26	37
Sep-29	0	0	5	5	17	22
Sep-30	0	0	10	10	0	10
Oct-01	0	0	3	3	12	15
Oct-02	0	0	7	7	12	19
Oct-03	0	0	10	10	12	22
Oct-04	0	0	19	19	0	19
Oct-05	0	0	13	13	24	37
Oct-06	0	0	18	18	15	33
Oct-07	0	0	8	8	0	8
Oct-08	0	0	14	14	20	34
Oct-09	0	0	12	12	0	12
Oct-10	0	0	10	10	18	28
Oct-11	0	0	7	7	1	8
Oct-12	0	0	16	16	0	16

Date	Dust Suppression (m³)	Regional Drill Water Usage Metered (m³)	Regional Drill Usage Trucked (m³)	Regional Drill Usage Total (m³)	Domestic Consumption at Doris (m³)	Total Daily Usage (m³)^
Oct-13	0	0	14	14	36	50
Oct-14	0	0	16	16	0	16
Oct-15	0	0	14	14	13	27
Oct-16	0	0	17	17	12	29
Oct-17	0	0	19	19	0	19
Oct-18	0	0	19	19	24	43
Oct-19	0	0	15	15	0	15
Oct-20	0	0	10	10	36	46
Oct-21	0	0	17	17	12	29
Oct-22	0	0	9	9	0	9
Oct-23	0	0	13	13	24	37
Oct-24	0	0	15	15	12	27
Oct-25	0	0	24	24	0	24
Oct-26	0	0	17	17	26	43
Oct-27	0	0	20	20	0	20
Oct-28	0	0	10	10	14	23
Oct-29	0	0	16	16	12	28
Oct-30	0	0	23	23	18	41
Oct-31	0	0	21	21	0	21
Nov-01	0	0	13	13	24	37
Nov-02	0	0	14	14	0	14
Nov-03	0	0	17	17	24	41
Nov-04	0	0	15	15	0	15
Nov-05	0	0	10	10	12	22
Nov-06	0	0	23	23	24	47
Nov-07	0	0	12	12	0	12
Nov-08	0	0	4	4	0	4
Nov-09	0	0	12	12	24	36
Nov-10	0	0	4	4	0	4
Nov-11	0	0	6	6	12	18
Nov-12	0	0	9	9	13	21
Nov-13	0	0	2	2	0	2
Nov-14	0	0	3	3	12	15
Nov-15	0	0	11	11	22	33
Nov-16	0	0	6	6	0	6
Nov-17	0	0	1	1	18	19
Nov-20	0	0	0	0	28	28
Nov-25	0	0	0	0	14	14
Nov-27	0	0	0	0	14	14
Dec-01	0	0	0	0	14	14
Dec-07	0	0	0	0	21	21
Dec-12	0	0	0	0	14	14
Dec-21	0	0	0	0	14	14
Dec-22	0	0	0	0	14	14
Dec-28	0	0	0	0	14	14

c) Quantity of effluent discharged

Windy Camp was closed throughout 2014 therefore no discharges occurred related to the waste water treatment facility (WWTF) at monitoring station HOP-2.

No discharges occurred at the Windy Camp bulk fuel storage facility (HOP-5) in 2014 as this facility was decommissioned in 2012 and the containment berm removed.

No discharges occurred at the Patch Lake bulk fuel storage facility (HOP-6) in 2014 as this facility was decommissioned and the berm removed in 2012.

d) Volume of sludge removed from sewage disposal facility

No sludge was removed from the Windy Camp WWTF in 2014 because this facility was not operational and the camp was closed.

e) Results of Toxicity Testing

TMAC did not perform toxicity testing to demonstrate the non-acute toxicity of the effluent discharged from the WWTF at HOP-3 (at a point of entry to Windy Lake), as the camp is closed and this facility has been removed. The testing is normally conducted in accordance with the following test procedures:

- i. Acute lethality to Rainbow Trout, *Oncorhynchus mykiss* (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/13); and
- ii. Acute lethality to the crustacean, *Daphnia magna* (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/14).