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July 31, 2017

Licensing
Nunavut Water Board
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Re: June 2017 – Monthly Monitoring Report for Water Licence 2AM-DOH1323

This report is comprised of monitoring requirements as set out in Part J and Schedule J of water licence 2AM-DOH1323 Amendment 1, and additional requirements from INAC.

During the subject period of this report the focus of activities at Doris North was underground mining, construction, ore processing, water management and environmental compliance. Sampling locations monitored under this licence (seasonally or when facilities are operational) are provided in Figure 3 at the end of this report.

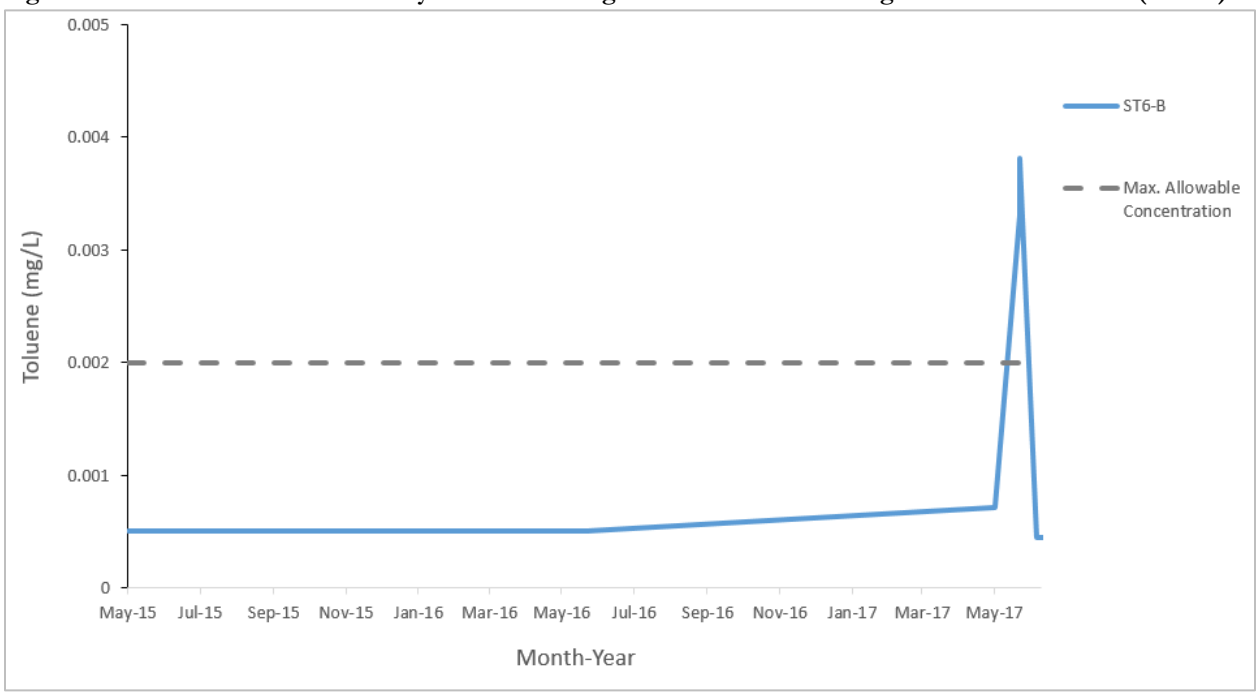
Site Wide Water Quality Monitoring Program (Part J Items 3, 8, and Schedule J)

Water quality sampling was conducted in June at monitoring stations identified in Schedule J of the licence (ST-1 through ST-13, TL-1 through TL-12). Water quality samples were not collected for monitoring stations that were inactive during the month being reported (e.g., facilities that had not yet been constructed, were frozen during the month, or were not operationally active). All parameters were compared to the applicable effluent quality limits outlined in Part G of the licence. Results of this monitoring are attached to the report in Appendix A.

Routine samples collected on June 12, 2017 from a fuel storage secondary containment berm (ST6-B) located at Roberts Bay exceeded the effluent quality limits outlined in Part G Item 23e for Toluene. Upon receipt of this result, discharge of effluent from the containment berm was halted. A sample was collected on June 26, 2017 to confirm effluent quality; Toluene levels in this sample were below detection limits. Pre-discharge effluent quality samples collected from this facility in May were also below the effluent quality limit for Toluene. Toluene results for this facility are illustrated in Figure 1 below.

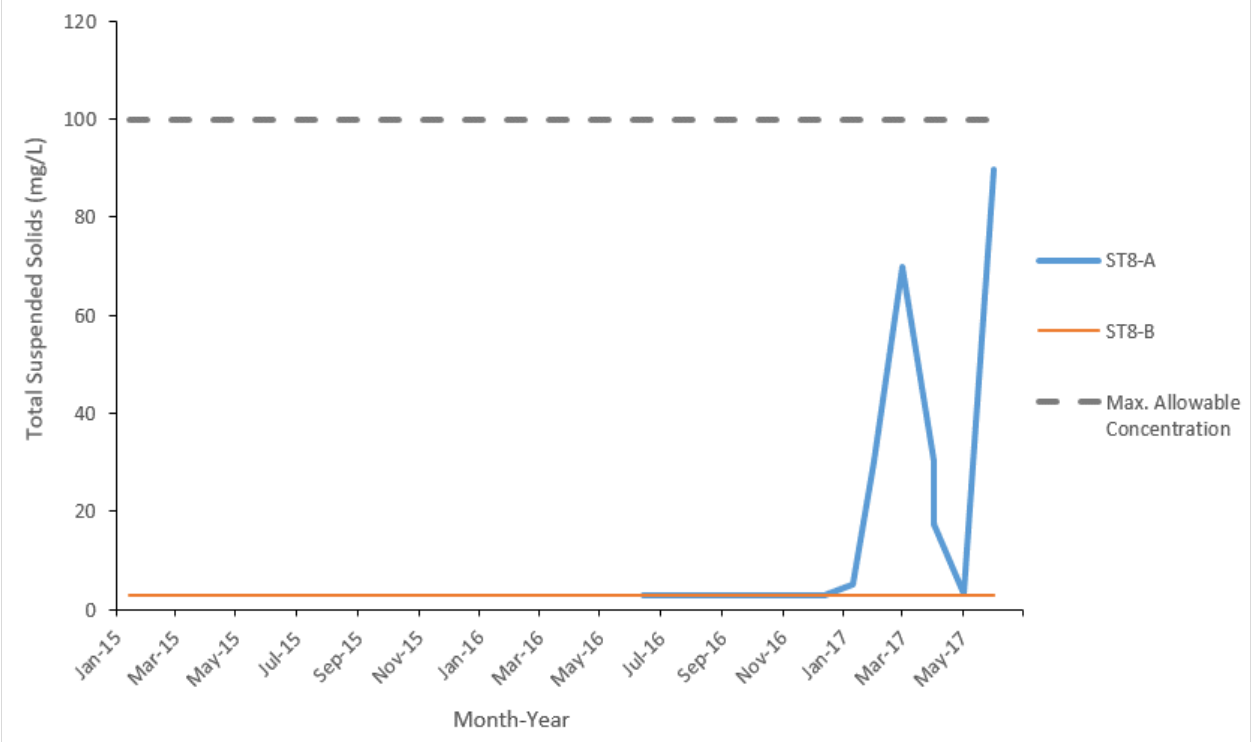
Figure 2 illustrates effluent quality characteristics for parameters of interest at select monitoring stations.

Figure 1. Toluene Results Historically Below Discharge Criteria for Fuel Storage Containment Berm (ST6-B)



Note: Maximum Average Concentration as per Part G Item 23(e).

Figure 2. Total Suspended Solids Results Consistently Below Discharge Criteria for Wastewater Treatment Plant (ST-8A, ST8B)



Note: Maximum Average Concentration as per Part G Item 4(b).

Flow and Volume Measurements (Part J Items 11, 12, and Schedule J)

Table 1. Effluent discharge, June 2017

Facility	Station Code	Discharge Volume (m^3)	Exceedances of Discharge Criteria	Discharge Location	Licence Reference
Sedimentation Pond	ST-1	8278	0	Tailings Impoundment Area	Part G Item 22
Pollution Control Pond #1	ST-2	8277	N/A	Tailings Impoundment Area	Part G Item 22
Landfill Sump	ST-3	0	0	Facility not constructed	Part G Item 24 (a, b, g)
Landfarm Sump	ST-4	0	0	Tundra Discharge 13W 432450 7559600	Part G Item 24 (c, d, g)
Doris Tank Farm	ST-5	17	0	Tundra Discharge 13W 432960 7559270	Part G Item 24 (e, f, g)
Rob Bay 5ML Tank Farm	ST-6a	228	0	Tundra Discharge 13W 432973 7563440	Part G Item 24 (e, f, g)
Rob Bay Three 5ML Tank Farm	ST-6b	255	0	Tundra Discharge 13W 432730 7563200	Part G Item 24 (e, f, g)
Wastewater Treatment Plant, Effluent	ST-8	849	0	Tundra Discharge 13W 432933 7559057	Part G Item 23(b-d)
Wastewater Treatment Plant, Sewage Cake	N/A	2.27	N/A	Tailings Impoundment Area	Part J Item 12 (g)
Reagent and Cyanide Storage Facility Sump	ST-11	0	0	Facility not constructed	Part G Item 23 (a)
Pollution Control Pond #2	ST-13	0	0	Tailings Impoundment Area	Part G Item 22
Mine Water Discharge	TL-12	0	N/A	Tailings Impoundment Area	Schedule J Table 2

Records of daily visual monitoring of discharged to tundra are maintained on file as per Part J Item 18.

Table 2. Discharge from TIA to Doris Creek, June 2017

Month	Number of days of discharge	Discharge Volume (m^3)	Exceedances of Discharge Criteria*
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	**0**	**0**	**0**
June	0	0	0
Annual Cumulative	**0**	**0**	**0**

* Discharge criteria outlined in Part G Items 29, 30, 31 and Part J Item 8.

A comparison of flows between TL-4 and TL-2 as per Part G Item 32 of the licence was not conducted as no water was discharged for the Tailings Impoundment Area to Doris Creek this month.

Table 3. Water usage, June 2017

Month	Windy Lake (ST-7A)				Doris Lake (ST-7)				Total Usage
	Domestic Water* (m^3)	Surface Exploration (m^3)	Industrial Usage** (m^3)	Dust Suppression (m^3)	Domestic Water* (m^3)	Surface Exploration (m^3)	Industrial Usage** (m^3)	Dust Suppression (m^3)	
January	849	0	15	0	0	0	0	0	864
February	801	0	0	0	0	0	0	0	801
March	925	1	0	0	0	0	32	0	958
April	873	0	2	0	0	0	608	0	1,483
May	892	0	3	0	0	0	512	32	1,439
June	946	0	1	0	0	0	26	838	1,811
Annual Total	5,286	1	21	0	0	0	1,178	870	7,356
Annual Allowance	**22,995**								**480,000**

* As permitted by water licences 2BE-HOP1222 and 2AM-DOH1323

** Includes industrial uses such as underground drilling, core processing, mill commissioning, concrete batching, etc.

June Ice Road Development: 0m^3. Cumulative total for Ice Road Development in 2017: 16m^3.

Table 4. Volume of Reclaim Water from the TIA, June 2017

Month	Reclaim Water (m^3) *
January	31,200
February	94,080
March	107,880
April	100,800
May	107,880
June	104,400
Annual Cumulative	**538,800**

* As per Part J Item 11(d)

Table 5. Waste Rock and Process Volumes, June 2017

Month	Waste Rock Stored Temporary Waste Rock Pile (tonnes)*	Waste Rock Returned Underground* (tonnes)	Quantity of Ore Processed** (tonnes)	Dry Tailings Placed in TIA** (tonnes)	Dry Cyanide Leach Tailings Placed Underground** (tonnes)	Volume of Void Space Underground (tonnes)	Volume of Void Space Underground (m^3)
January	24,811	0	2,020	600	0	-	-
February	22,584	1,392	6,174	5,927	247	-	-
March	23,917	5,060	11,177	10,970	207	618,048	220,731
April	23,437	11,226	19,058	17,761	1,297	-162	-58
May	24,341	7,660	20,867	20,418	449	4,269	1,525
June	22,189	4,320	20,662	19,867	796	30,607	10,931
Cumulative Total	540,246	29,658	79,958	75,543	2,996	652,762	233,129

* As per Part J Item 11(e, f)
** As per Part J Item 12.

Table 6. Doris Lake Water Level (ST-12), June 2017

Month	Minimum Water Level (masl)	Maximum Water Level (masl)	Mean Water Level (masl)	Water Level Change (masl)	Low Action Level Trigger (masl)*
January	21.783	21.833	21.810	0.049	21.425
February	21.804	21.862	21.831	0.058	21.425
March	21.814	21.869	21.837	0.055	21.425
April	21.827	21.864	21.850	0.037	21.425
May	21.845	22.375	21.929	0.530	21.425
June	22.114	22.407	22.235	0.293	21.425

* Low action level trigger is relative to the average water level value (September 10-30, 2016) 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.

Summary of Assessments of Water Balance and Water Quality Model (Part G Item 34)

Average monthly water quality, hydrologic, and climatic monitoring data were collected while in operations during June. Data will contribute to the assessment of the water and load balance model, and will be compared to the predicted water quality and elevation within the TIA and will be reported in the annual report for 2017.

Thermal Monitoring (Part J Items 13 and 14)

Thermal monitoring undertaken as per Part J Items 13, 14 and Schedule J is reported in the annual Geotechnical Report.

Doris North Camp Diversion Berm Effectiveness (Part J Item 19(d))

Visual monitoring was conducted during June to evaluate the diversion berm's efficacy of diverting runoff away from the camp pad. The diversion was observed to be functioning as per its design purpose.

Incident Reporting

Spill #17-249 – On June 12, 2017, routine sampling was conducted at a fuel storage secondary containment berm (ST6B) located at Roberts Bay, in order to determine compliance with the effluent quality limits established for this particular monitoring station. Results for this sample were received on June 26, 2017, and reported an exceedance of Toluene. Discharge from this facility was immediately discontinued and non-compliant effluent was diverted to the tailings impoundment area (TIA). After discussion with the Inspector, the Nunavut Spill Line was notified of the release of 246 m^3 of non-compliant effluent on July 9, 2017.

Pre-discharge sampling occurred on May 22, 2017, and all parameters were below the effluent quality limits for this monitoring station. Another round of samples were collected upon receipt of the non-compliant results, and all parameters were within compliance with the effluent quality limits for this monitoring station.

TMAC personnel discharge effluent to locations approved by the Inspector, upon the receipt of compliant results, as per the conditions of the Water Licence. Sampling activities are also conducted as per the frequencies identified in Schedule J, Table 2. For this occurrence, discharge from the containment pond was continuous upon receipt of complaint results, as a large amount of water had accumulated within the berm during spring melt. Voluntary samples were collected to confirm compliance while discharge continued, and discharge ceased immediately upon observing the exceedance of Toluene.

TMAC internally reviewed the incident to identify root cause and any corrective actions. During spring melt, or periods where discharge events will take longer than a week, discharge will be suspended until another round of samples are collected to confirm compliance with the effluent quality limits. Upon receipt of complaint results, discharge will recommence and the sampling frequency will continue until the berm has be dewatered.

Yours sincerely,

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Hope Bay Project
(416) 628-0216

cc. Eva Paul, Water Resources Officer, INAC

Figure 3. 2AM-DOH-1323 SNP Monitoring Locations