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**Re: January 2014 – Monthly Monitoring Report for Water Licence 2AM-DOH1323**

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This report is comprised of monitoring requirements as set out in Part J and Schedule J of water licence 2AM-DOH1323, and additional requirements from AANDC. Licence items include:

- Part E (Conditions applying to Water Use) Item 1;
- Part G (Conditions Applying to Waste Management and Waste Management Plans) Items 1, 3(b) and 23 (a), 24 (c, e), 28, 29, 30, 32;
- Part J (Conditions Applying to General and Aquatic Effects Monitoring) Items 4(a), 8, 12 (a, d, g), 14, 15, 16, 20 and 21(e, f).

Other monitoring requirements stipulated in the licence refer to facilities that have not been constructed. Doris Camp is currently operating in a care and maintenance phase with water management, drill exploration, and environmental compliance being the focus of current activities.

**Part E: Conditions Applying to Water Use**

**Item 1: Water Usage and Part J, Item 12(a) Water Volume**

44 m<sup>3</sup> of water was extracted from Windy Lake Water for Doris Camp use this month as permitted by water licences 2BE-HOP1222 and 2AM-DOH1323. Windy Lake water quality results are presented in the 2BE-HOP1222 monthly monitoring report. Total water usage is presented in Table 1.

Table 1: Water usage from Windy Lake, in cubic meters, January 2014

Water Usage	Domestic Water Use from Windy Lake ST-7a (m <sup>3</sup> )
Monthly Total	44
Annual Cumulative	44

**Schedule J: Water Quality Monitoring at Water Intake**

Monthly water quality samples were taken from monitoring station ST-7 (Doris Lake raw water) and ST-7a (Windy Lake raw water) in accordance with the Schedule J requirements of the licence (Table 2).

Table 2: Monthly Compliance Sample Results for ST-7 and ST-7a (HOP-1), January 2014

Sample ID		ST7-03JAN14	HOP1-03JAN14/ HOP1-24JAN14
ALS ID		L1408499-2	L1408499-1/L1415837-1
Date Sampled		12-06-2013 2:00:00 AM	03-01-14 12:00 PM / 24-01-14 10:15 AM
Parameters	Units	Results	Results
Conductivity (EC)	uS/cm	337	508
Hardness (as CaCO3)	mg/L	55.2	74.6
pH	pH	7.3	7.61
Total Suspended Solids	mg/L	<3.0	<3.0
Ammonia, Total (as N)	mg/L	<0.050	<0.050
Nitrate (as N)	mg/L	<0.050	<0.050
Nitrite (as N)	mg/L	<0.050	<0.050
Orthophosphate-Dissolved (as P)	mg/L	<0.0010	<0.0010
Phosphorus (P)-Total	mg/L	0.029	<0.020
Cyanide, Total	mg/L	<0.0050	<0.0050
Cyanide, Free	mg/L	<0.0050	<0.0050
Fecal Coliforms	CFU/100mL	<1	<1
Aphanizomenon (Cyanophyceae)	cells/mL	21500	-
Total cyanobacterial cell count	cells/mL	27300	<1
Limnothrix (Cyanophyceae)	cells/mL	1540	-
Planktolyngbya (Cyanophyceae)	cells/mL	3460	-
Pseudoanabaena (Cyanophyceae)	cells/mL	768	-
Aluminum (Al)-Total	mg/L	0.0095	0.0100
Antimony (Sb)-Total	mg/L	<0.00040	<0.00040
Arsenic (As)-Total	mg/L	<0.00040	<0.00040
Barium (Ba)-Total	mg/L	0.0032	<0.0030
Beryllium (Be)-Total	mg/L	<0.0010	<0.0010
Boron (B)-Total	mg/L	<0.050	0.128
Cadmium (Cd)-Total	mg/L	<0.000010	<0.000010
Calcium (Ca)-Total	mg/L	11.1	14.4
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010
Cobalt (Co)-Total	mg/L	<0.0020	<0.0020
Copper (Cu)-Total	mg/L	0.0018	0.0011
Iron (Fe)-Total	mg/L	0.020	0.014
Lead (Pb)-Total	mg/L	<0.00010	<0.00010
Lithium (Li)-Total	mg/L	<0.010	<0.010
Magnesium (Mg)-Total	mg/L	8.19	11.8
Manganese (Mn)-Total	mg/L	0.0074	0.0027
Mercury (Hg)-Total	mg/L	<0.000020	<0.000020
Molybdenum (Mo)-Total	mg/L	<0.0050	<0.0050
Nickel (Ni)-Total	mg/L	<0.0020	<0.0020
Potassium (K)-Total	mg/L	2.71	4.75
Selenium (Se)-Total	mg/L	<0.00040	<0.00040
Silver (Ag)-Total	mg/L	<0.000020	<0.000020
Sodium (Na)-Total	mg/L	38.5	60.6
Thallium (Tl)-Total	mg/L	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	<0.050	<0.050
Titanium (Ti)-Total	mg/L	<0.0010	<0.0010
Uranium (U)-Total	mg/L	<0.00010	0.00019
Vanadium (V)-Total	mg/L	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	<0.0040	0.0092
Calcium (Ca)-Dissolved	mg/L	10.7	13.0
Magnesium (Mg)-Dissolved	mg/L	6.89	10.2
Biochemical Oxygen Demand	mg/L	<2.0	<2

Sample ID		ST7-03JAN14	HOP1-03JAN14/ HOP1-24JAN14
ALS ID		L1408499-2	L1408499-1/L1415837-1
Date Sampled		12-06-2013 2:00:00 AM	03-01-14 12:00 PM / 24-01-14 10:15 AM
Parameters	Units	Results	Results
Oil and Grease	mg/L	<1.0	<1.0*
Oil And Grease (Visible Sheen)		NO VISIBLE SHEEN	NO VISIBLE SHEEN*
Microcystin	ug/L	<0.20	<0.20

*\*Oil and Grease Bottle broken in transit, resampled Jan 24/14 Lab Workorder L1415837-1*

## Part G: Conditions Applying to Waste Management and Waste Management Plans.

### Item 1: Condition to Provide Notice of a Planned Discharge

No planned discharges requiring notification occurred this month.

### Item 3(b): Conditions Applying to Sewage Effluent Quality and Schedule J, Table 2 Monitoring Requirements: Discharge from Wastewater Treatment Plant in cubic metres.

Monthly compliance samples were taken from monitoring station ST-8 (Wastewater Treatment Plant Effluent) in accordance with the Schedule J requirements of the licence (Table 3). Samples collected January 3 indicated effluent discharged at ST-8 was below compliance criteria for pH. Adjustments were made by the plant operator and the effluent was re-sampled January 24. Plant pH was corrected to within effluent quality limits during the month.

Table 3: Monthly Compliance Sample Results for ST-8B, January 2014

Sample ID		ST8-03JAN14	ST8-24JAN14	Part G Item 3 (b)	
ALS ID		L1408499-3	L1415837-2	Maximum Average Concentration	Maximum Allowable Grab Sample Concentration
Sample Date/Time		03-01-14 12:00 PM	24-01-14 10:15 AM		
Parameter	Units	Results	Results		
pH	pH	5.98	7.22	6.5 - 9.0	9
Total Suspended Solids	mg/L	<3.0	-	100	100
Biochemical Oxygen Demand (BOD <sub>5</sub> )	mg/L	<2	-	80	80
Oil and Grease	mg/L	1.2	-	5	10
Oil And Grease (Visible Sheen)		NO VISIBLE SHEEN	-	No Visible Sheen	No Visible Sheen
Fecal Coliform	CFU/ 100mL	<1	-	10,000	10,000

This month, 46 m<sup>3</sup> of sewage effluent was discharged from the sewage treatment plant.

### Schedule J, Table 2 Monitoring Requirements: Runoff from Waste Water Treatment Plant Discharge (ST-9)

No water was available for sampling at location ST-9 (prior to entry into Glenn Lake) due to freezing conditions.

**Item 23(a): Water Discharged from the Sedimentation Pond (ST-1) and Reagent and Cyanide Storage Facility Sumps (ST-11) and Schedule J, Table 2 Monitoring Requirements**

No water was discharged from the Sedimentation Pond (ST-1) this month and no sampling was conducted. The Reagent and Cyanide Storage Facility Sumps (ST-11) is not constructed. No monitoring was undertaken at the Pollution Control Pond (ST-2) this month.

**Items 24(c): Landfarm Sump (ST-4) and Schedule J, Table 2 Monitoring Requirements**

No water was discharged from the Landfarm (ST-4), this month and no sampling was conducted.

**Items 24(e): Fuel Storage and Containment Facility Sumps (ST-5, ST-6a and ST-6b) and Schedule J, Table 2 Monitoring Requirements**

No water was discharged from the Doris tank farm (ST-5), or the Roberts Bay tank farms (ST-6a and ST-6b) this month and no sampling was conducted.

**Item 28, 29, 30 and Part J Item 8: Water Quality Discharged from Tailings Impoundment Area (TL-1, TL-2, TL-3 or TL-4.)**

Dewatering of the Tailings Impoundment Area ended September 6, 2013 and has not yet re-commenced for the 2014 season. No monitoring was conducted.

**Item 32: Tailings Impoundment Area Discharge Volume – Comparison of Flows at TL-4 and TL-2**

No water was discharged from the TIA this month; a comparison of flows was not conducted.

**Schedule J: Tailings Impoundment Area Water Quality (TL-10)**

No water was discharged from the TIA this month and no water was sampled.

**Part J: Conditions Applying to General and Aquatics Effects Monitoring**

**Item 4(a): TIA Discharge Quality – Water Quality Comparison/Deviations**

No water was discharged from the TIA this month and no water quality comparisons were made.

**Item 8 and Schedule J, Monitoring Requirements: Acute Lethality Testing (TL-1 and TL-4)**

No water was discharged from the TIA this month and no water was sampled.

**Item 12d: Tonnages of Waste Rock Stored on the Temporary Waste Rock Pad**

Underground mining did not occur during the month. The total volume of rock on the temporary waste rock pad is 182,716 tonnes, as per the December 2011 survey. Waste rock has not been removed from the pile.

**Item 12g: Tail Lake Ice Thickness**

Ice thickness measurement at Tail Lake is not required during Care and Maintenance.

**Item 14, 15, 16 and Schedule J, Monitoring Requirements: Thermal Monitoring**

Thermal monitoring undertaken under this part is reported in the annual Geotechnical Inspection Report.

**Item 20: Daily Visual Monitoring of Discharges to Tundra**

No discharges to tundra occurred during the period. During periods of discharge, monitoring observations will be documented.

**Item 21 (e) Daily Visual Assessment of Suspended Sediment at TIA**

The facility was frozen during the month. No visual assessments conducted.

**Item 21 (f) Doris North Camp Diversion Berm Effectiveness**

Monitoring was not conducted on the Diversion Berm due to freezing conditions.

**Environmental Incident Reporting**

Jan 8/14 – Spill # 14-009. A leak of approximately 250L of grey water was discovered beneath the Doris Camp kitchen. The source of the leak was traced to breaks in the drainage lines leading from the sink, dishwasher and steamer to the kitchen lift station. The breaks were possibly due to a combination of freezing, ice accumulation and building settlement. The spill was cleaned up by chipping and removing ice to the Waste Water Treatment Plant. All plumbing repairs were completed Jan 23/14 and the area re-insulated. A verbal spill report was issued to Hotline (867) 920-8130 Jan 9/14, and a comprehensive 30 day follow-up report issued Feb 5/14.

Should there be any questions regarding this monthly report, please contact Katsky Venter or Léa-Marie Bowes-Lyon at (867) 988-0569 or [Katsky.Venter@tmacresources.com](mailto:Katsky.Venter@tmacresources.com) or [Lea-Marie.Bowes-Lyon@tmacresources.com](mailto:Lea-Marie.Bowes-Lyon@tmacresources.com).

Yours sincerely,



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cc. Eva Paul, Water Resources Officer, AANDC