

November 6, 2012

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**Re: October 2012 – Monthly Monitoring Report for Water Licence 2AM-DOH0713**

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This report is comprised of monitoring requirements as set out in Schedule J of water license 2AM-DOH0713 and additional requirements from AANDC. License items include:

- Part D (Conditions Applying to Construction) Items 7 and 19;
- Part E (Conditions applying to Water Use) Item 1;
- Part G (Conditions Applying to Waste Management and Waste Management Plans) Items 3(e) and 3(b), Item 21 (a) and 22 (e);
- Part J (Conditions Applying to General and Aquatic Effects Monitoring) Items 12 and 14.

Other monitoring requirements stipulated in the license refer to facilities that have not been constructed. Doris Camp closed on October 12, 2012 and will be operated seasonally for compliance and reclamation activities under care and maintenance. The facility will be reopened in late-April/early-May 2013.

**Part D: Conditions Applying to Construction**

**Item 7. Construction Monitoring**

Construction activities did not take place in this month.

**Item 19. Surface Runoff Effluent Quality Limits**

There was no runoff from construction areas, therefore, turbidity and total suspended solids samples were not collected.

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

**Item 1: Water Usage**

Fresh water used for domestic camp use, portable wash cars, and dust suppression is reported in Table 1.

Table 1: Water Usage for Doris North, October 2012

Parameters	Water Use
Water Source	Doris Lake
Geographical Coordinates	68°8'17.04" N, 106°36'52.68"W
Monthly Cumulative	48 m <sup>3</sup>
Annual Cumulative	16,686 m <sup>3</sup>
2AM-DOH0713 Permitted Water Volume (Total Annual)	480,000m <sup>3</sup>

## Schedule J: Water Quality Monitoring at Water Intake

Monthly compliance samples, in accordance with Schedule J requirements of the licence, were taken from monitoring station ST-7 (Table 2).

Table 2: Monthly Compliance Sample Results for SNP Monitoring Station ST-7, October 2012

Parameter	Units	ST7-01OCT12
ALS ID		L1217547-1
Sample Date/Time		10/1/2012 9:20:00 AM
Conductivity (EC)	uS/cm	274
Hardness (as CaCO <sub>3</sub> )	mg/L	45.4
pH	pH	7.43
Total Suspended Solids	mg/L	<3.0
Ammonia, Total (as N)	mg/L	<0.050
Nitrate (as N)	mg/L	<0.071
Nitrite (as N)	mg/L	<0.050
Orthophosphate-Dissolved (as P)	mg/L	<0.050
Phosphorus (P)-Total	mg/L	<0.0010
Cyanide, Free	mg/L	<0.0050
Cyanide, Total	mg/L	<0.0050
Aluminum (Al)-Total	mg/L	<0.0050
Antimony (Sb)-Total	mg/L	<0.00040
Arsenic (As)-Total	mg/L	<0.00040
Barium (Ba)-Total	mg/L	<0.0030
Beryllium (Be)-Total	mg/L	<0.0010
Boron (B)-Total	mg/L	<0.050
Cadmium (Cd)-Total	mg/L	<0.000010
Calcium (Ca)-Total	mg/L	9.42
Chromium (Cr)-Total	mg/L	<0.0010
Cobalt (Co)-Total	mg/L	<0.0020
Copper (Cu)-Total	mg/L	0.003
Iron (Fe)-Total	mg/L	<0.030
Lead (Pb)-Total	mg/L	<0.00010
Lithium (Li)-Total	mg/L	<0.010
Magnesium (Mg)-Total	mg/L	6.47
Manganese (Mn)-Total	mg/L	<0.0050
Mercury (Hg)-Total	mg/L	<0.000020
Molybdenum (Mo)-Total	mg/L	<0.0050
Nickel (Ni)-Total	mg/L	<0.0020
Potassium (K)-Total	mg/L	2.36
Selenium (Se)-Total	mg/L	<0.00040
Silver (Ag)-Total	mg/L	<0.000020
Sodium (Na)-Total	mg/L	31.2
Thallium (Tl)-Total	mg/L	<0.00010
Tin (Sn)-Total	mg/L	<0.050
Titanium (Ti)-Total	mg/L	<0.0010
Uranium (U)-Total	mg/L	<0.00010
Vanadium (V)-Total	mg/L	<0.0010
Zinc (Zn)-Total	mg/L	0.0051
Calcium (Ca)-Dissolved	mg/L	8.75
Magnesium (Mg)-Dissolved	mg/L	5.72
Biochemical Oxygen Demand	mg/L	2.8

Parameter	Units	ST7-01OCT12
ALS ID		L1217547-1
Sample Date/Time		10/1/2012 9:20:00 AM
Oil and Grease	mg/L	<1.0
Oil And Grease (Visible Sheen)		NO VISIBLE SHEEN
Fecal Coliforms	CFU/100mL	<1
Sample ID		PDC10-01OCT12
ALS ID		L1217537-1
Sample Date/Time		10/1/2012 7:50:00 AM
Blue-green algae	Cells/100 mL	125,000

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

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

A Notification was provided September 25, 2012 for a planned discharge of water from the fire suppression system supply tank as part of the Doris Camp seasonal decommissioning. Water quality samples were collected prior to discharge and in the absence of compliance criteria, results were compared with criteria from the Sediment Control Pond (ST-1) and site fuel berm discharge criteria. Water quality results are provided in Table 3. Water quality was compliant for all parameters, although iron was slightly elevated above the maximum average concentration.

Table 3: Water Quality Sample Results for Fire Water Tank Discharge, October 2012

Parameters	Units	Maximum Average Concentration (mg/L)	Maximum Concentration in any Grab Sample (mg/L)	DOHMISC-21SEP12
				L1213056-1
				9/21/2012 6:05:00 AM
Hardness (as CaCO <sub>3</sub> )	mg/L			45.1
Total Suspended Solids	mg/L	15	30	<3.0
Alkalinity, Total (as CaCO <sub>3</sub> )	mg/L			27.8
Ammonia, Total (as N)	mg/L	2	4	0.186
Bicarbonate (HCO <sub>3</sub> )	mg/L			27.8
Carbonate (CO <sub>3</sub> )	mg/L			<2.0
Chloride (Cl)	mg/L			68.1
Hardness (as CaCO <sub>3</sub> )	mg/L			45.1
Hydroxide (OH)	mg/L			<2.0
Nitrate and Nitrite (as N)	mg/L			<0.0051
Nitrate (as N)	mg/L			<0.0050
Nitrite (as N)	mg/L			<0.0010
pH	pH	6.0 - 9.0	9	7.6
TDS (Calculated)	mg/L			149
Sulfate (SO <sub>4</sub> )	mg/L			<0.50
Aluminum (Al)-Total	mg/L	1.0	2.0	<0.0050
Antimony (Sb)-Total	mg/L			<0.00050
Arsenic (As)-Total	mg/L	0.05	0.1	<0.00050
Barium (Ba)-Total	mg/L			<0.020
Beryllium (Be)-Total	mg/L			<0.0010
Boron (B)-Total	mg/L			<0.10
Cadmium (Cd)-Total	mg/L			0.000665

Parameters	Units	Maximum Average Concentration (mg/L)	Maximum Concentration in any Grab Sample (mg/L)	DOHMISC-21SEP12
				<b>L1213056-1</b>
				<b>9/21/2012 6:05:00 AM</b>
Calcium (Ca)-Total	mg/L			7.55
Chromium (Cr)-Total	mg/L			<0.0010
Cobalt (Co)-Total	mg/L			<0.00030
Copper (Cu) - Total	mg/L	0.02	0.3	<0.0010
Iron (Fe)-Total	mg/L	0.3	0.6	0.318
Lead (Pb)-Total	mg/L	0.01	0.02	0.00064
Lithium (Li)-Total	mg/L			<0.0050
Magnesium (Mg)-Total	mg/L			6.37
Manganese (Mn)-Total	mg/L			0.0701
Mercury (Hg)-Total	mg/L			<0.000010
Molybdenum (Mo)-Total	mg/L			<0.0010
Nickel (Ni)-Total	mg/L	0.05	0.1	<0.0010
Potassium (K)-Total	mg/L			2.8
Selenium (Se)-Total	mg/L			<0.0010
Silver (Ag)-Total	mg/L			<0.000020
Sodium (Na)-Total	mg/L			35.9
Thallium (Tl)-Total	mg/L			<0.00020
Tin (Sn)-Total	mg/L			<0.00050
Titanium (Ti)-Total	mg/L			<0.010
Uranium (U)-Total	mg/L			<0.00020
Vanadium (V)-Total	mg/L			<0.0010
Zinc (Zn)-Total	mg/L	0.01	0.02	0.0078
Oil and Grease	mg/L	5	10	<1.0
Oil And Grease (Visible Sheen)		No Visible Sheen	No Visible Sheen	no visible sheen
Benzene	mg/L	0.37	-	<0.00050
Toluene	mg/L	0.002	-	<0.00050
Ethyl Benzene	mg/L	0.090	-	<0.00050
				<b>DOHMISC-01OCT12</b>
				<b>L1217526-1</b>
				<b>10/1/2012 2:00:00 PM</b>
Cyanide, Total	mg/L	1	2	<0.0050
Biochemical Oxygen Demand	mg/L	80	80	<2.0

### Item 3(b): Conditions applying to sewage effluent quality

Sampling station ST-8 is located within the Doris Camp sewage treatment plant. Sampling station ST-8A was phased out of service during June and July as sewage effluent treatment was directed through a single operating plant for the remainder of the season. Effluent samples were collected from ST-8B and were compliant for all parameters (Table 4) with the exception of slightly elevated oil and grease in the discharge.

Table 4: Water Quality Data Summary for Monitoring Station ST-8B, October 2012

Parameter	Units	ST8B-01OCT12	Doris: 2AM-DOH0713	
ALS ID		L1217547-2	(Part G: Item 3 (b))	
Sample Date/Time		10/1/2012 9:30:00 AM	Maximum Average Concentration	Maximum Allowable Grab Sample Concentration
Conductivity (EC)	uS/cm	698		
pH	pH	6.83	6.5 - 9.0	9
Total Suspended Solids	mg/L	<3.0	100	100
Biochemical Oxygen Demand	mg/L	2.4	80	80
Oil and Grease	mg/L	12.1	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

Helicopter-supported work for 2012 was completed in September; Station ST-9 was not sampled in October as this monitoring location is accessible only by helicopter.

#### **Item 3(e): Treated Sewage Effluent Release in cubic meters**

The volume of treated sewage effluent released at ST-8 and the volume of sludge removed and incinerated during the reporting period are shown in Table 5. Doris Camp closed for operation October 12 and during shut-down of the facility, temporary greywater discharge occurred direct to the overburden storage area in accordance with the notification provided October 3, 2012, and subsequent approval by the Inspector. A total of 22m<sup>3</sup> was discharged over the period October 9 – 12, 2012.

Table 5: Treated Sewage Effluent released in cubic meters (m<sup>3</sup>) and total sludge volume removed October, 2012

Parameters	Effluent Released ST-8 (m <sup>3</sup> )	Sludge Volume (m <sup>3</sup> )
Monthly Cumulative	58	0.23
Annual Cumulative	4898	27.24

#### **Item 21 (a) and Items 22 (c), (e): Sedimentation pond, land farm, and fuel containment sumps**

As described in the 2012 Interim Water Management Plan, the Sedimentation Pond (ST-1) was being used as a collection pond for the water that accumulated in the Pollution Control Pond (ST-2) and the two Underflow Sumps (ST2S1 and ST2S2). Water was transferred from ST-1 to the TIA beginning in June 2012 and was stopped on Sept 15 to allow for winterization of the pumping system. Residual volumes of water in the ponds and sumps were transferred directly to the TIA in October just prior to complete system shut down (Table 6).

Table 6: Water in cubic meters (m<sup>3</sup>) transferred to the TIA, October 2012

Parameters	Total water volume transferred from all sources to TIA (m <sup>3</sup> ) in 2012
Monthly Cumulative	48
Annual Cumulative	12,565

The Land Farm (ST-4), received 7.5m<sup>3</sup> of residual water from decommissioning of the fire suppression piping distribution system but no discharges occurred from the facility.

No water was accumulated at the Doris Tank Farm (ST-5) or Roberts Bay Bulk Fuel Containment berms (ST-6a and ST-6b) during October.

#### **Item 26, 27, 28 and Part J Item 8: Water Discharged from Tailing Impoundment Area**

Water samples were not collected from TL-1, TL-2, TL-3, TL-4, and TL-10 as discharge from the TIA was completed for the 2012 season on Sept 13, 2012.

#### **Item 30: Tailings Impoundment Area Discharge Volume**

Dewatering of the Tailings Impoundment Area commenced on June 11, 2012 and was completed for the season on September 13, 2012. No discharge occurred during October.

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

Samples were not collected at station TL-10 during October; discharge from the TIA ceased September 13, 2012.

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

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

Underground mining is no longer occurring. Waste rock has not been removed from the pile. The total volume of rock on the temporary waste rock pad is 182 716 tonnes, as per the December 2011 survey.

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

There was no ice cover on Tail Lake.

## **Environmental Incident Reporting**

There were no environmental incidents in this reporting period.

Should there be any questions regarding this monthly report, please contact Angela Holzapfel, Manager of Environmental Compliance for Hope Bay Mining Limited at (604) 345-3122 or [Angela.Holzapfel@Newmont.com](mailto:Angela.Holzapfel@Newmont.com).

Yours sincerely,

**Angela Holzapfel**

Manager of Environmental Compliance

Hope Bay Mining Limited