



MEADOWBANK DIVISION

Monitoring Program Summary Report

October 2014

Type A Water License 2AM-MEA0815

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SECTION 1 • BACKGROUND

As required under Part I, Item 25 of Type A Water License 2AM-MEA0815, this report documents the water management and monitoring activities at the mine site for the month. This includes water usage, Portage Attenuation Pond discharge water quality, Vault Attenuation Pond discharge water quality, East Dike Seepage discharge water quality, RSF Seepage, Assay Road Seepage and sewage treatment plant discharge water quality (which is directed to the onsite storm water management pond).

In addition, a summary of spills/actions for the month are reported.

SECTION 2 • WATER MANAGEMENT

2.1 WATER USAGE

Freshwater usage for October 2014 is summarized in Table 2.1 below. Total freshwater used for the month was 94,556 m³ for a total year to date of 910,630 m³. The total amount of reclaim water used in the mill for October was 175,331 m³.

Table 2-1: Freshwater Usage (m³)

	October
Freshwater Storage Tank	94,556
Emulsion Plant	193
Water Truck	0
Total	94,749
Year to date total	910,630

2.2 WASTE ROCK STORAGE FACILITY SEEPAGE

In October, no water was pumped from ST-16 to the North Cell TSF due to frozen conditions. The total year to date is 32,169 m³ pumped directly to the TSF storage area from ST-16.

AEM continues to complete weekly inspection at RSF and NP-2 Lake. As sump water is frozen no more monitoring for CN WAD occurred. The monitoring will restart in the spring when we start the Freshet Action Plan.

2.3 ASSAY ROAD SEEPAGE

As in the previous months, in October the water in the interception trench and the original containment berm and sump was pumped back to the mill for a total of 1,043 m³ during the month. Year to date volume that has been pumped is 12,984 m³.

Weekly inspections of the area were conducted in October. At the end of October, water was frozen in the original sump and trench so no more samples were taken. Well monitoring for CN downstream of the trench, has also ceased as all the water in the wells are frozen. Repairs to the containment areas inside the mill are ongoing and are progressing well.

2.4 SEWAGE TREATMENT PLANTS

One (1) effluent wastewater sample was taken from the onsite sewage treatment plant (STP's) in October.

The Seprotech STP results are shown in Table 2.3.1 below; the LJ-Mix STP results are shown in Table 2.3.2. The results of the discharge indicate the system is working well. The effluent is discharged to the stormwater management pond and is sent to the TSF and back to the mill as reclaim water. This water is not discharged to land or into the receiving water.

Table 2.3.1: Seprotech Effluent Results

Parameters	Units	October 7, 2014
Ammonia	mg N/L	<0.01
Ammonia-Nitrogen	mg N/L	6.3
Total Kjeldahl Nitrogen	mg N/L	9.7
BOD-5	mg/L	9
COD	mg/L	50
Total Suspended Solids	mg/L	19
Nitrate	mg N/L	21.80
Nitrite	mg N/L	0.2
pH*	Units	5.30
Fecal Coliform	UFC/100 mL	28
Total Coliform	UFC/100 mL	1500

*Parameter measured by STP operators

Table 2.3.2: LJ-Mix Effluent Results

Parameters	Units	October 7, 2014
Ammonia	mg N/L	<0.01
Ammonia-Nitrogen	mg N/L	8.8
Total Kjeldahl Nitrogen	mg N/L	10.1
BOD-5	mg/L	1
COD	mg/L	34
Total Suspended Solids	mg/L	9
Nitrate	mg N/L	25.40
Nitrite	mg N/L	0.06
pH*	Units	3.90
Fecal Coliform	UFC/100 mL	<4
Total Coliform	UFC/100 mL	10

*Parameter measured by STP operators

2.5 PORTAGE ATTENUATION POND EFFLUENT

July 5th, 2014 was the last day of discharge from the Portage Attenuation Pond. AEM does not plan to discharge anymore water from the south cell in 2014. Total year to date is 207,813 m³ of water discharged into Third Portage Lake.

2.6 VAULT ATTENUATION POND EFFLUENT

Vault Attenuation Pond discharge was completed on August 14, 2014. Total year to date (including dewatering water) discharge volume is 329,101 m³.

2.7 EAST DIKE SEEPAGE EFFLUENT

East Dike Discharge was continuous for the month of October. During the month, a total of 17,880 m³ was discharged thru the diffuser into Second Portage Lake for a total year to date of 110,302 m³. Monitoring results are shown in Table 2.7.1 below.

TSS results did not exceed the maximum average concentration (15 mg/L) and maximum allowable grab sample concentration (30 mg/L) permitted by the Water License, Part F, Item 4.

Table 2.7.1: East Dike Seepage Discharge Results

Parameters	Units	8-Oct-14	15-Oct-14	21-Oct-14	27 Oct-14	Average Concentration
Total Suspended Solids	mg/L	8	24	12	3	11.75

2.8 NON CONTACT WATER

In October, rain and runoff water was discharged through the non-contact West diversion ditches at the beginning of the month and began freezing later in the month. TSS results did not exceed the maximum average concentration (15 mg/L) and maximum allowable grab sample concentration (30 mg/L) permitted by the Water License, Part F, Item 4. Furthermore, to comply with Water License Part D Item 22, sediment barriers were installed throughout the month of October, weekly visual inspections were conducted to prevent entry of sediments into the receiving environment. Portage Area West diversion ditch (ST-6) results are shown in Table 2.4.1. There was no discharge of water from the East diversion non-contact water ditches.

Table 2.4.1: Portage Area West Diversion Ditch (ST-6) Results

Parameters	Units	Oct-07-14
Total Suspended Solids	mg/l	7

SECTION 3 • SPILL MANAGEMENT

AEM has developed a thorough internal system of tracking spills on-site. Table 3.1 summarizes the AEM spill reports for the month. Five (5) spills occurred on site and 0 were reported to the GN spill hotline. AEM contained, cleaned up and disposed of the spill material adequately.

Table 3-1: Summary of AEM Internal Spill Reports

Date of Spill	Hazardous Material	Quantity (L/Kg)	Location	Cause of spill	Clean-up action taken	Reported to Spill Hot Line
2014-10-01	Mix coolant and oil	50	Winter Parking	Leaking reservoir and hoses on Bac 10 Overhaul	Most of contaminants were removed with absorbent pads. Remaining contaminants was removed by site services loader. Contaminated material sent to landfarm.	No
2014-10-09	Engine oil	30	Waste dump ramp	Engine failure on haul truck	Contaminated material cleaned up and disposed adequately.	No
2014-10-22	Diesel	20	Powerhouse	Tanker has been filled at full capacity and was parked in an angle. Then, fuel starts to flow by the overflow of the tank.	Contaminated snow has been removed and brings to the yellow roll-off bin. Tanker driver has been informed to not fill the tank at full capacity.	No
2014-10-25	Hydraulic oil	90	Top of Pushback Ramp	Hydraulic pump broke on RH120	A tote was installed under equipment to prevent further spilling. Berm was created and contaminated material was picked up with shovel and disposed of at the contaminated soil pad.	No
2014-10-25	Hydraulic oil	60	Vault Pit	Hydraulic pump broke on BACK 10	Absorbant pads were placed down and then sent to Hazmat area	No