



MEADOWBANK DIVISION

Monitoring Program Summary Report

March 2015

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, 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 March 2015 is summarized in Table 2.1 below. The total freshwater consumption for the month was 121,020 m³. It should be noted that in March, no water was taken from the unnamed lake to supply the Emulsion Plant as the pump in the lake needs to be repaired and has not functioned since January. The water is supplied through the Meadowbank freshwater supply and is trucked to the emulsion plant. Approximately 185 m³ is the March consumption for the Emulsion Plant. The total amount of reclaim water used in the mill for March was 164,872 m³. Reclaim water is now supplied by the TSF South Cell.

Table 2-1: Freshwater Usage (m³)

| | March |
|---------------------------|----------------|
| Freshwater Storage Tank | 121,020 |
| Emulsion Plant | 0 |
| Water Truck | 0 |
| Total | 121,020 |
| Year to date total | 308,464 |

2.2 WASTE ROCK STORAGE FACILITY SEEPAGE

In March, the sump at ST-16 was frozen and therefore water was not pumped to the North Cell TSF.

AEM continues to complete weekly visual inspections at the RSF and NP-2 Lake. As the sump water is frozen, monitoring water quality at these locations has not been possible. Monitoring will restart in the spring as per the Freshet Action Plan.

2.3 ASSAY ROAD SEEPAGE

Water in the interception trench and the original containment berm and sumps is frozen and therefore was not pumped back to the mill in March. Weekly visual inspections of the area were conducted. For the month of March a total of 500 m³ of water was pumped from well MW-203 back to the mill. Total year to date pumped from MW-203 is 1,677m³. Well monitoring for CN downstream of the trench, has also ceased as all the water in the wells is frozen. Repairs to the containment areas and sumps inside the mill were completed in December, 2014.

2.4 SEWAGE TREATMENT PLANTS

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

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 pumped to the TSF (2x/year). This water becomes part of the reclaim pond. There is no discharge to the receiving environment.

Table 2.3.1: Seprotech Effluent Results

| Parameters | Units | March 2, 2015 |
|-------------------------|------------|---------------|
| Ammonia | mg N/L | 0.16 |
| Ammonia-Nitrogen | mg N/L | 24.4 |
| Total Kjeldahl Nitrogen | mg N/L | 31.4 |
| BOD-5 | mg/L | 14 |
| COD | mg/L | 33 |
| Total Suspended Solids | mg/L | 28 |
| Nitrate | mg N/L | 13.9 |
| Nitrite | mg N/L | 0.56 |
| pH* | Units | 6.5 |
| Fecal Coliform | UFC/100 mL | 19 |
| Total Coliform | UFC/100 mL | 1,300 |

*Parameter measured by STP operators

Table 2.3.2: LJ-Mix Effluent Results

| Parameters | Units | March 2, 2015 |
|-------------------------|------------|---------------|
| Ammonia | mg N/L | <0.01 |
| Ammonia-Nitrogen | mg N/L | 11.6 |
| Total Kjeldahl Nitrogen | mg N/L | 13.2 |
| BOD-5 | mg/L | 4 |
| COD | mg/L | 21 |
| Total Suspended Solids | mg/L | 31 |
| Nitrate | mg N/L | 24.6 |
| Nitrite | mg N/L | 0.15 |
| pH* | Units | 5.0 |
| Fecal Coliform | UFC/100 mL | 10 |
| Total Coliform | UFC/100 mL | 10,000 |

*Parameter measured by STP operators

2.5 VAULT ATTENUATION POND EFFLUENT

There was no Vault Attenuation Pond discharge during the month.

2.6 EAST DIKE SEEPAGE EFFLUENT

East Dike Discharge was continuous for the month of March. During the month, a total of 15,526 m³ was discharged thru the diffuser into Second Portage Lake. Total year to date discharge is 43,075 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 | 3-Mar-15 | 10-Mar-15 | 18-Mar-15 | 23-Mar-15 | 30-Mar-15 | Average Concentration |
|------------------------|-------|----------|-----------|-----------|-----------|-----------|-----------------------|
| Total Suspended Solids | mg/L | 4 | <1 | 1 | 8 | 5 | 3.8 |

2.7 NON CONTACT WATER

In March, there was no water discharged through the non-contact water diversion ditches as the ditches were frozen.

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. Nine (9) spills occurred on site and none were reportable to the GN spill hotline. AEM contained, cleaned up and disposed of the spill material adequately. The majority of the clean-up material was taken to the AEM Landfarm. Absorbent pads are eventually disposed of at the on-site incinerator. Spill clean-up material containing a majority of snow is disposed in the TSF.

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 |
|---------------|--------------------|-----------------|----------------------------------|--|--|----------------------------|
| 2015/03/01 | Hydraulic Oil | 20L | Winter Parking | Transmission filter cover broke at start up. | Used absorbent pads and disposed of in waste pad container. | No |
| 2015/03/01 | Compressor oil | 15L | Push back | Compressor filter leaked. | Used absorbent pads and disposed of in waste pad container. | No |
| 2015/03/03 | Hydraulic Oil | 10L | PIT E3-Pattern 5067619 hole 2623 | Back jack cylinder broke | Collected with waste oil pads and then sent to oily rag sea can at incinerator/hazmat area. | No |
| 2015/03/12 | Hydraulic Oil | 30L | Site services parking | Broken hydraulic hoses on the loader. | Removed the contaminant with rags, shoveled the contaminated snow and dump it in the yellow roll off bin. | No |
| 2015/03/26 | Diesel | 50L | MBK Fuel Farm | The Valve for the fuel pump to refill the fuel tanker was left open by previous operator. When the fuel man started the pump fuel spilled on the ground. | Fuel Pump was stopped. Site Services was notified to clean up the spill with loader. Contaminated material adequately disposed of. | No |
| 2015/03/28 | Diesel | 80L | MBK Fuel Farm | The valve on the top loading arm was open because the rope to manipulate the arm was rolled around the valve. The fuel operator did not check the top loading arm valve before pushing the start button. | Fuel pump was stopped. Env. was called and spill pads were laid down on the ground to absorb spill. Area was then scraped with loader and 0-3/4 material was placed on the ground. | No |
| 2015/03/29 | Hydraulic Oil | 20L | Pushback Parking | Hydraulic Hose ruptured | Vehicle was shut down and hose was replaced. Spill contained and Site Services notified to clean up area. Contaminated material adequately disposed of. | No |
| 2015/03/31 | Hydraulic Oil | 30L | Push back parking | Broken hose on HTR 02 | Spill pick up by Site services and contaminated material adequately disposed of. | No |
| 2015/03/31 | Hydraulic Oil | 20L | Push back parking | Broken hose on HTR 04 | Spill pick up by Site services and contaminated material adequately disposed of. | No |