



MEADOWBANK DIVISION

## **Monitoring Program Summary Report**

**September 2019**

Type A Water License 2AM-MEA1526

Table of Contents

SECTION 1 • BACKGROUND ..... 3

SECTION 2 • WATER MANAGEMENT ..... 4

2.1 WATER USAGE .....4

2.2 WASTE ROCK STORAGE FACILITY SEEPAGE .....4

2.3 CENTRAL DIKE SEEPAGE .....4

2.4 ASSAY ROAD SEEPAGE .....5

2.5 SEEPAGE AND RUNOFF FROM THE LANDFILL.....5

2.6 SEEPAGE AT PIT WALL AND PIT WALL FREEZE/THAW AND PERMAFROST AGGRADATION .....5

2.7 SEWAGE TREATMENT PLANT .....5

2.8 VAULT ATTENUATION POND EFFLUENT .....6

2.9 PHASER ATTENUATION POND .....6

2.10 EAST DIKE SEEPAGE EFFLUENT.....6

2.11 NON CONTACT WATER.....6

2.12 IN-PIT DISPOSAL .....7

SECTION 3 • SPILL MANAGEMENT ..... 8

## **SECTION 1 • BACKGROUND**

---

As required under Part I, Item 20 of Type A Water License 2AM-MEA1526 (Amendment No.3), 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, Phaser Attenuation Pond, East Dike Seepage discharge water quality, RSF Seepage, Central Dike 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 is reported.

## SECTION 2 • WATER MANAGEMENT

### 2.1 WATER USAGE

Fresh and reclaim water usage for September is summarized in Table 2-1 below.

**Table 2-1: Freshwater Usage (m<sup>3</sup>)**

| Water Location                                | Source Lake        | Jan            | Feb            | March          | April          | May            |
|---|--------------------|----------------|----------------|----------------|----------------|----------------|
| Camp  | Third Portage Lake | 3 577          | 3 238          | 3 539          | 3 188          | 3 624          |
| Mill (freshwater tank)                        | Third Portage Lake | 214 981        | 182 096        | 112 326        | 142 405        | 147 851        |
| Emulsion plant                                | No-name Lake       | 50             | 13             | 48             | 57             | 83             |
| <b>Total Freshwater Usage (m<sup>3</sup>)</b> |                    | <b>218 608</b> | <b>185 347</b> | <b>115 913</b> | <b>145 650</b> | <b>151 558</b> |
| <b>Ore Water (m<sup>3</sup>)</b>              | Ore                | 4 610          | 3 045          | 2 727          | 4 539          | 6 203          |
| <b>Reclaim Water Usage (m<sup>3</sup>)</b>    | Tailings Pond      | 7 180          | 29 023         | 91 207         | 69 216         | 82 018         |

| Water Location                                | Source Lake        | June           | July           | Aug           | Sept           | Total            |
|---|--------------------|----------------|----------------|---------------|----------------|------------------|
| Camp  | Third Portage Lake | 3 418          | 3 194          | 3 197         | 3 193          | 30 168           |
| Mill (freshwater tank)                        | Third Portage Lake | 218 935        | 220 398        | 76 341        | 209 339        | 1 524 672        |
| Emulsion plant                                | No-name Lake       | 16             | 64             | 52            | 78             | 460              |
| <b>Total Freshwater Usage (m<sup>3</sup>)</b> |                    | <b>222 369</b> | <b>223 656</b> | <b>79 590</b> | <b>212 610</b> | <b>1 555 300</b> |
| <b>Ore Water (m<sup>3</sup>)</b>              | Ore                | 6 927          | 7 251          | 5 992         | 2 454          | <b>43 748</b>    |
| <b>Reclaim Water Usage (m<sup>3</sup>)</b>    | Tailings Pond      | 17 693         | 41 309         | 157 510       | 6 706          | <b>501 862</b>   |

### 2.2 WASTE ROCK STORAGE FACILITY SEEPAGE

In September, 4,051 m<sup>3</sup> of water was pumped back to the North Cell TSF from the ST-16 sump. Of that amount, 757 m<sup>3</sup> and 1,755 m<sup>3</sup> were transferred from respectively the WEP1 and WEP2 sumps to the ST-16 sump.

Agnico Eagle completed in September inspections at the Portage and Vault RSFs. No non conformity were found. Open water sampling at WEP1 (Station ST-30), WEP2 (Station ST-31) were also completed during the month.

### 2.3 CENTRAL DIKE SEEPAGE

In September, a total of 214,232 m<sup>3</sup> of water was pumped from ST-S-5 sump to Portage Pit.

Sampling was conducted monthly at ST-S-5 and the South Cell TSF (ST-21) as per the requirements of the NWB water license.

Daily visual inspections were also completed by the Engineering Department.

## 2.4 ASSAY ROAD SEEPAGE

In September, 20,225 m<sup>3</sup> of water was pumped back from the mill trench back to the mill. Inspections of the area were conducted during the month. Trench sampling and wells monitoring for CN downstream has been taken, when possible.

## 2.5 SEEPAGE AND RUNOFF FROM THE LANDFILL

The landfill was inspected weekly and no seepage or runoff was observed.

## 2.6 SEEPAGE AT PIT WALL AND PIT WALL FREEZE/THAW AND PERMAFROST AGGRADATION

In September, ice wall continued to be observed into Vault Pit. There is no more mining activities in Vault Pit.

## 2.7 SEWAGE TREATMENT PLANT

One (1) effluent wastewater sample was collected at the onsite sewage treatment plant (STP) in September.

The Seprotech STP results are shown in Table 2.7.1 below; the LJ-Mix STP results are shown in Table 2.7.2. The effluent is discharged to the Stormwater Management pond, which is pumped to the South Cell TSF during summer months. In September, 12,358 m<sup>3</sup> of water was discharged from the Stormwater Management pond to the South Cell TSF.

**Table 2.7.1: Seprotech Effluent Results**

| Parameters   | Units      | September 2, 2019 |
|--|------------|-------------------|
| Ammonia (NH <sub>3</sub> )                           | mg N/L     | 0.27              |
| Ammonia-Nitrogen (NH <sub>3</sub> -NH <sub>4</sub> ) | mg N/L     | 22.4              |
| Total Kjeldahl Nitrogen                              | mg N/L     | 25.2              |
| BOD-5  | mg/L       | 11                |
| COD  | mg/L       | 65                |
| Total Suspended Solids                               | mg/L       | 15                |
| Nitrate  | mg N/L     | 6.11              |
| Nitrite  | mg N/L     | 1.72              |
| pH*  | Units      | 7.20              |
| Fecal Coliform                                       | UFC/100 mL | 730,000           |
| Total Coliform                                       | UFC/100 mL | <10,000           |

\*Parameter measured by STP operators

**Table 2.7.2: LJ-Mix Effluent Results**

| Parameters   | Units      | September 2, 2019 |
|--|------------|-------------------|
| Ammonia (NH <sub>3</sub> )                           | mg N/L     | <0.01             |
| Ammonia-Nitrogen (NH <sub>3</sub> -NH <sub>4</sub> ) | mg N/L     | 7.87              |
| Total Kjeldahl Nitrogen                              | mg N/L     | 13.0              |
| BOD-5  | mg/L       | 20                |
| COD  | mg/L       | 77                |
| Total Suspended Solids                               | mg/L       | 28                |
| Nitrate  | mg N/L     | 12.0              |
| Nitrite  | mg N/L     | 2.02              |
| pH*  | Units      | 7.20              |
| Fecal Coliform                                       | UFC/100 mL | 18,000            |
| Total Coliform                                       | UFC/100 mL | 360,000           |

\*Parameter measured by STP operators

## 2.8 VAULT ATTENUATION POND EFFLUENT

No discharge from Vault Attenuation Pond since October 9, 2017. There is currently no plan to restart the discharge in 2019.

## 2.9 PHASER ATTENUATION POND

No water was pumped out from the Phaser Attenuation Pond in September.

No water transferred from BB Phaser Pit sumps to the Phaser Attenuation Pond during the month.

## 2.10 EAST DIKE SEEPAGE EFFLUENT

East Dike Seepage discharge was stopped on March 30, 2019 and diverted back to the Pit. In September, there was no discharge to the environment as all the water was accumulated in the pits. However, with the freezing period observed in September, it was determined that water will need to be diverted back to Second Portage Lake to avoid health and safety risk that were not initially expected. Discharge to environment should restart in November.

## 2.11 NON CONTACT WATER

In September, Agnico Eagle completed inspections at ST-5 and ST-6 as per the 2019 Freshet Action Plan. Portage Area East (ST-5) and West diversion ditches (ST-6) water quality results are shown in Tables 2.11.1 and 2.11.2, respectively.

TSS results for both stations 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 6.

**Table 2.11.1: Portage Area East Diversion Ditch (ST-5) Results**

| Parameters             | Units  | September 3, 2019 |
|------------------------|--------|-------------------|
| Total Suspended Solids | mg N/L | <1                |

**Table 2.11.2: Portage Area West Diversion Ditch (ST-6) Results**

| Parameters             | Units  | September 3, 2019 |
|------------------------|--------|-------------------|
| Total Suspended Solids | mg N/L | 2                 |

## **2.12 IN-PIT DISPOSAL**

Received on May 24, 2019 from NWB the Ministers Approval regarding the Amendment No.3 to Type A Water Licence No. 2AM-MEA1526 to authorize Water Uses and Waste Deposits associated with the In-Pit Tailings Disposal Proposal.

In-Pit disposal in Goose Pits started on July 5.

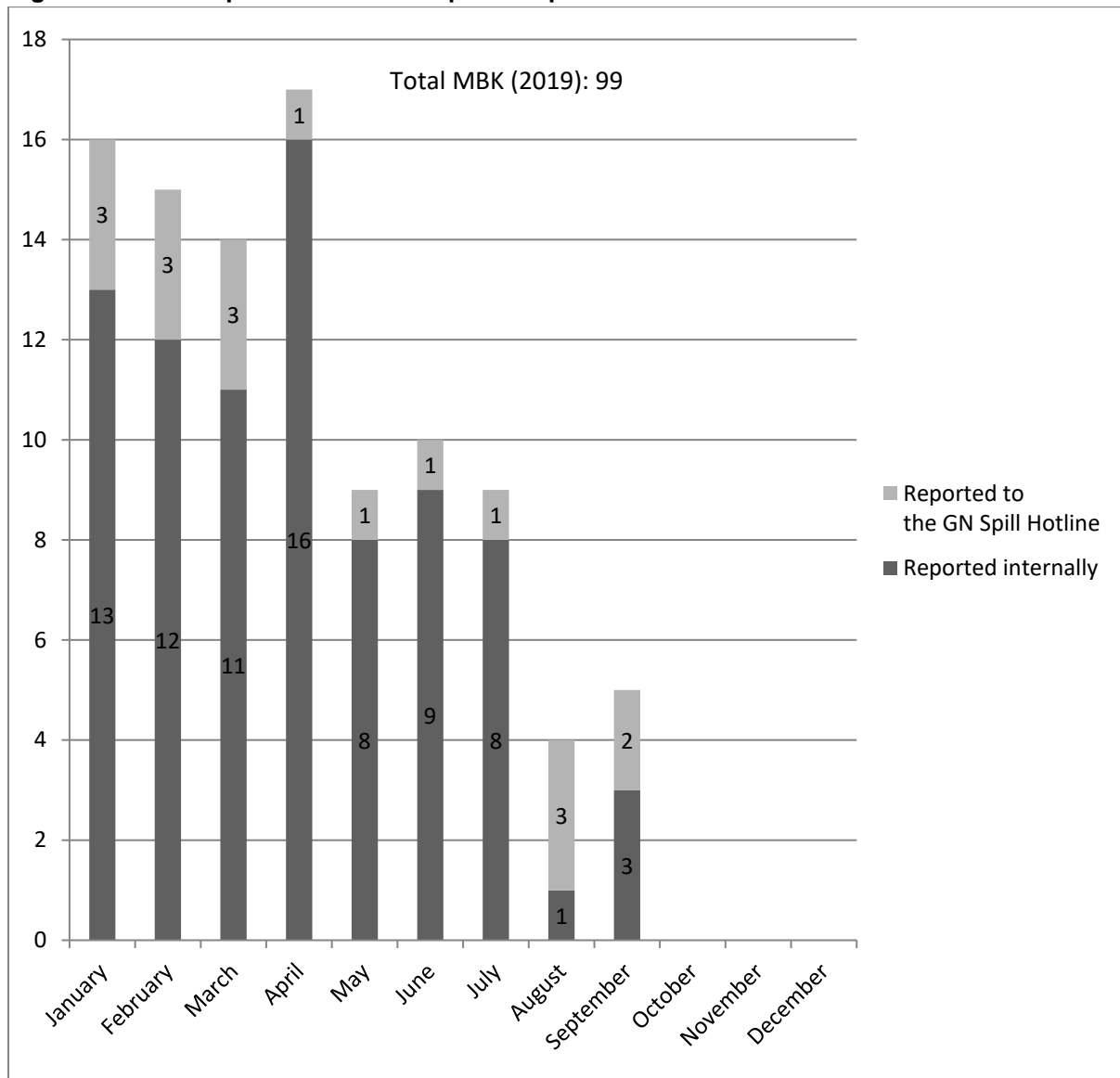
Submission on July 24 and 26 of management plans (Interim Closure and Reclamation Plan, Pore Water Quality, Groundwater, Waste and Tailings) required by Water License 2AM-MEA1526 Amendment – Reasons for Decision for the Meadowbank In-Pit Tailings disposal Section VI Part B. Received Regulator's comments on August 27. Agnico provided responses on September 20, 2019.

### SECTION 3 • SPILL MANAGEMENT

Figure 3.1 shows reported and non-reported spills for 2019 broken down per month and Table 3.1 summarizes Agnico Eagle spill reports for September.

All spills reported internally (3) were managed appropriately on site according to Agnico's spill contingency plan. Two (2) spills were reported to regulators in September. Spills were contained and cleaned, contaminated material was disposed to the appropriate area (landfarm, TSF if required), and the clean-up actions were monitored closely by the Environment Department. There was no off site impact to any watercourses.

**Figure 3.1 2019 Reported and Non-Reported Spills**





**Table 3.1: Summary of Agnico Eagle Internal and Reported Spill Reports, September 2019**

| <b>Date of Spill</b> | <b>Hazardous Material</b> | <b>Qty</b> | <b>Units (L / Kg)</b> | <b>Location</b>              | <b>Cause of spill</b>  | <b>Clean-up action taken</b>   |
|----------------------|---------------------------|------------|-----------------------|------------------------------|--|--|
| September 2          | Hydraulic Oil             | 10         | L                     | Outside of secondary crusher | Accumulation of hydraulic oil under the skid steer due to equipment malfunction                    | Equipment was stopped and supervisor notified. Mechanic called for repairs. Contaminated soil picked up and disposed of appropriately  |
| September 2          | Tailings                  | 24         | m <sup>3</sup>        | Goose Pit Discharge pipe     | Some tailings had splashed outside of the berm surrounding the Goose pit tailings storage facility | The berm containing the splashed tailings were immediately excavated and placed back inside the TSF. New material was then placed on the ground and a higher berm was constructed around the deposition point. |
| September 5          | Sulphur Prills            | 40         | Kg                    | SO2 Plant                    | Damaged bags of sulphur prills into sea can  | Contaminated material and soil picked up and disposed off appropriately  |
| September 8          | Diesel                    | 10         | L                     | Meadowbank Fuel Farm         | Fuel tank breather didn't work properly generating overflow.                                       | Trainer and driver put some absorbent pads to control the spill. Contaminated material and soil picked up and disposed off appropriately   |
| September 10         | Diesel                    | 3          | L                     | Meadowbank Fuel Farm         | Vent on equipment not working properly while refueling   | Absorbent pad were put on the ground. The contaminated soil was removed using a loader and will be disposed properly.  |