



MEADOWBANK DIVISION

Monitoring Program Summary Report

July 2016

Type A Water License 2AM-MEA1525

Table of Contents

SECTION 1 • BACKGROUND..... 3

SECTION 2 • WATER MANAGEMENT 4

2.1 WATER USAGE4

2.2 WASTE ROCK STORAGE FACILITY SEEPAGE4

2.3 CENTRAL DIKE SEEPAGE4

2.4 ASSAY ROAD SEEPAGE4

2.5 SEEPAGE AND RUNOFF FROM THE LANDFILL.....4

2.6 SEEPAGE AT PIT WALL AND PIT WALL FREEZE/THAW AND PERMAFROST AGGRADATION5

2.7 SEWAGE TREATMENT PLANT5

2.8 VAULT ATTENUATION POND EFFLUENT6

2.9 EAST DIKE SEEPAGE EFFLUENT.....6

2.10 NON CONTACT WATER.....7

SECTION 3 • SPILL MANAGEMENT 8

SECTION 1 • BACKGROUND

As required under Part I, Item 20 of Type A Water License 2AM-MEA1525, 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, Central Dike Seepage, Assay Road Seepage, and sewage treatment plant discharge water quality (which are 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 July 2016 is summarized in Table 2-1 below.

Table 2-1: Freshwater Usage (m³)

Water Location	Source	January	February	March	April	May	June	July	Total 2016
Camp	Third Portage Lake	3,181	3,061	3,418	3,297	3,478	3,235	3,441	23,111
Mill (freshwater tank)	Third Portage Lake	35,397	44,255	80,836	81,012	33,910	38,194	35,270	348,874
Emulsion plant	No-name Lake	135	125	119	138	147	144	116	924
Total Freshwater Usage (m³)		38,713	47,441	84,373	84,447	37,535	41,573	38,827	372,909
Reclaim Water Usage (m³)	South Cell TSF	261,513	207,769	204,407	200,883	268,825	231,995	273,558	1,648,950

2.2 WASTE ROCK STORAGE FACILITY SEEPAGE

In July 2016, 1,418 m³ of water was pumped back to the North Cell TSF from the ST-16 sump. Of that amount, 531 m³ was transferred from the WEP1 sump to the ST-16 sump.

In July, Agnico Eagle completed inspections at the Portage and Vault RSFs, and NP-2 Lake as per the 2016 Freshet Action Plan. No major issues were observed. Open water sampling at WEP1 (Station ST-30), WEP2 (Station ST-31), ST-16, NP2, and the downstream lakes required under the Freshet Action Plan was completed in July.

2.3 CENTRAL DIKE SEEPAGE

In July 2016, 441,435 m³ of water was pumped from the ST-S-5 sump back into the South Cell TSF. Total year to date is 2,416,997 m³.

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 July 2016, 2,270 m³ of water was pumped from the interception trench back to the mill. The total for 2016 is 4,858 m³. Weekly inspections of the area were conducted this month.

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 July, water was observed seeping on the eastern wall of the Vault Pit. It was not possible to assess flow. In July, 1,558 m³ and 2,320 m³ of water were pumped out of Portage Pit North and South, respectively, to the South Cell TSF. 5,660 m³ of water was pumped out of Vault Pit to the Vault Attenuation Pond.

2.7 SEWAGE TREATMENT PLANT

One (1) effluent wastewater sample was collected at the onsite sewage treatment plant (STP) in July 2016.

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 twice a year.

Table 2.7.1: Seprotech Effluent Results

Parameters	Units	July 4, 2016
Ammonia (NH ₃)	mg N/L	0.45
Ammonia-Nitrogen (NH ₃ -NH ₄)	mg N/L	37.6
Total Kjeldahl Nitrogen	mg N/L	40.2
BOD-5	mg/L	6
COD	mg/L	66
Total Suspended Solids	mg/L	11
Nitrate	mg N/L	9
Nitrite	mg N/L	0.49
pH*	Units	6.6
Fecal Coliform	UFC/100 mL	460
Total Coliform	UFC/100 mL	<10,000

*Parameter measured by STP operators

Table 2.7.2: LJ-Mix Effluent Results

Parameters	Units	July 4, 2016
Ammonia	mg N/L	<0.01
Ammonia-Nitrogen	mg N/L	13.3
Total Kjeldahl Nitrogen	mg N/L	14.8
BOD-5	mg/L	3
COD	mg/L	78
Total Suspended Solids	mg/L	9
Nitrate	mg N/L	17
Nitrite	mg N/L	0.38
pH*	Units	5.5
Fecal Coliform	UFC/100 mL	36
Total Coliform	UFC/100 mL	4000

*Parameter measured by STP operators

2.8 VAULT ATTENUATION POND EFFLUENT

Discharge from the Vault Attenuation pond started on July 17. A total of 238,588 m³ of water was discharged into Wally Lake in July 2016.

Two (2) weekly effluent samples were taken at ST-10 in July. No Actiflo Water Treatment Plant was necessary during the month as the TSS levels were below the effluent criteria stated in Part F, Item 4 of Water Licence 2AM-MEA1525.

Table 2.9.1: ST-10 Effluent Results

Date Parameters	Units	Max. grab conc.	18-Jul-16	25-Jul-16	Monthly Average	Max. avg. conc.
pH*		6.0-9.0	7.63	7.5	7.57	6.0-9.0
TSS	mg/L	30	2	6	4	15
TDS	mg/L	1400	119	120	119.5	1400
Turbidity*	NTU	15	1.59	2.17	1.88	15
Aluminium	mg/L	3.0	0.032	<0.006	0.0175	1.5
Dissolved Aluminium	mg/L	2.0	<0.006	<0.006	0.0017	1.0
Arsenic	mg/L	0.2	<0.0005	<0.0005	0.00025	0.1
Cadmium	mg/L	0.004	0.00004	<0.00002	0.00004	0.002
Copper	mg/L	0.2	0.0025	0.002	0.0023	0.1
Mercury	mg/L	0.008	<0.00001	<0.00001	0.000005	0.004
Ammonia nitrogen	mg N/L	40	0.63	0.69	0.66	20
Nickel	mg/L	0.4	0.0046	0.0035	0.0041	0.2
Nitrate	mg N/L	100	3.11	3.54	3.33	50
Lead	mg/L	0.2	<0.0003	<0.0003	0.00015	0.1
Phosphorus	mg/L	3.0	0.03	<0.01	0.018	1.5
Zinc	mg/L	0.4	<0.001	<0.001	0.0005	0.2
Chloride	mg/L	1000	5	4.9	4.95	500

2.9 EAST DIKE SEEPAGE EFFLUENT

Discharge from the East Dike Seepage occurred for the entire month of July. A total of 18,262 m³ of water was discharged into Second Portage Lake in July 2016. Total year to date is 103,854 m³.

Four (4) weekly effluent samples were collected at ST-8 in July 2016. TSS results did not exceed the maximum allowable grab sample concentration (30 mg/L) and maximum average concentration (15 mg/L) permitted by Water License, Part F, Item 6. TSS monitoring results for July 2016 are shown in Table 2.9.2 below.

Table 2.9.2: July 2016 East Dike Seepage Discharge Results

Parameters	Units	4-July-16	11-July-16	18-July-16	25-July-16	Maximum Average Concentration
Total Suspended Solids	mg/L	7	9	6	17	9.8

Regular sampling pursuant to MMER and the Water license was also conducted at this location. Results are shown in Table 2.9.3 below. There have been no exceedances of MMER or Water License criteria.

Table 2.9.3: July 2016 Monthly Monitoring Results

Parameters	Units	18-July-16
Aluminum	mg/L	0.085
Sulphate	mg/L	19.2
Arsenic	mg/L	0.0012
Copper	mg/L	0.001
Nickel	mg/L	0.0026
Lead	mg/L	<0.0003
Zinc	mg/L	0.004
Radium 226	mg/L	*
Total Cyanide	mg/L	<0.005

* No sample was collected. When compliance technician noticed, it was too late to take another sample for the month.

2.10 NON CONTACT WATER

In July, Agnico Eagle completed inspections at ST-5 and ST-6 as per the 2016 Freshet Action Plan. Portage Area East (ST-5) and West diversion ditches (ST-6) water quality results are shown in Tables 2.10.1 and 2.10.2, respectively. TSS results didn't 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 2.10.1: Portage Area East Diversion Ditch (ST-5) Results

Parameters	Units	12-July-16
Total Suspended Solids	mg/l	1

Table 2.10.2: Portage Area West Diversion Ditch (ST-6) Results

Parameters	Units	12-July-16
Total Suspended Solids	mg/l	<1

SECTION 3 • SPILL MANAGEMENT

Figure 3.1 shows reported and non-reported spills for 2016 broken down per month and Table 3.1 summarizes AEM spill reports for July 2016. All spills reported internally and to regulators were managed appropriately on site according to AEM's spill contingency plan. 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. 2016 Reported and Non-Reported Spills

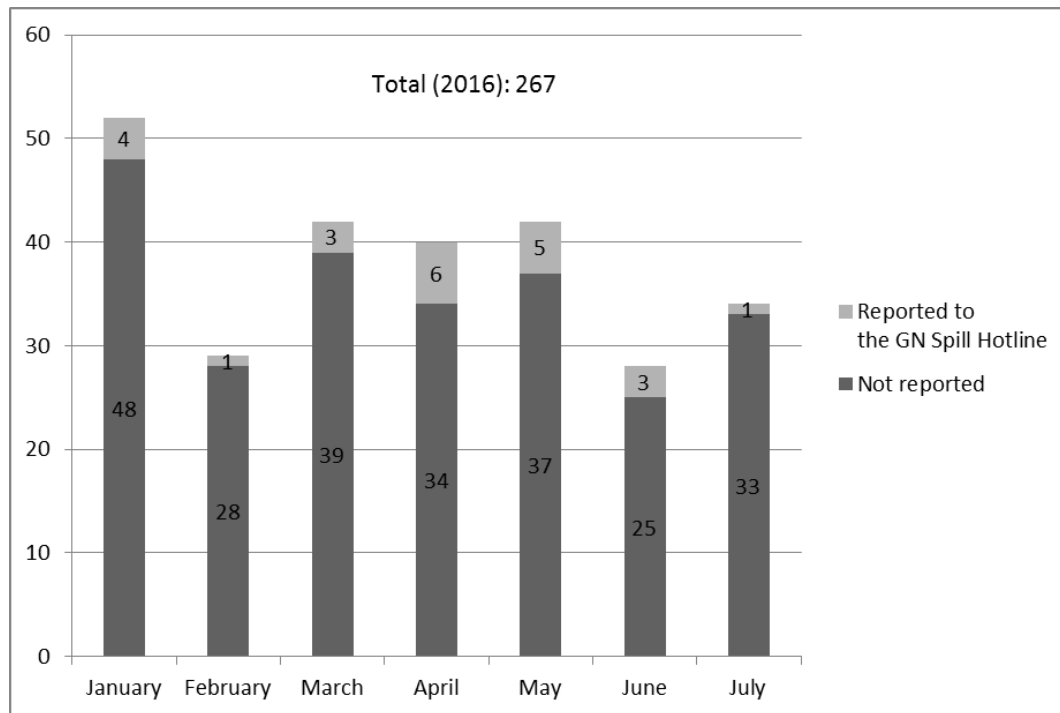


Table 3.1: Summary of Agnico Eagle Internal Spill Reports, July 2016

Date	Hazardous Material	Quantity (L/kg)	Location	Cause of spill	Clean-up action taken	Reported to Spill GN Hotline?
July 2, 2016	Hydraulic oil	50	Vault pit	Broken hydraulic hose	Spill was contained with absorbent pads. Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
July 2, 2016	Hydraulic oil	90	Vault pit	O'ring failure on hydraulic line	Contaminated soil was picked up and disposed of adequately.	No

Type A Water License 2AM-MEA1525
Monitoring Program Summary Report

July 3, 2016	Hydraulic oil	80	Vault parking	Broken hydraulic hose	Contaminated soil was picked up and disposed of adequately.	No
July 3, 2016	Hydraulic oil	15	Vault parking	Hydraulic hose leak during maintenance operations	Contaminated soil was picked up and disposed of adequately.	No
July 4, 2016	Hydraulic oil	5	Vault pit	Hydraulic hose leak during maintenance operations	Contaminated soil was picked up and disposed of adequately.	No
July 4, 2016	Engine Oil	800	Warehouse	Zoom boom hit bottom of oil tote	Oil spilled in the seacan was pumped into drums and will be disposed of in the Hazmat are. Oil spilled on the ground mixed with water was pumped into the truck, brought to the tailings storage facility, and the contaminated soil was removed and sent to the landfarm	Yes
July 4, 2016	Transmission oil	40	Push back parking	Transmission oil leak	Contaminated soil was picked up and disposed of adequately.	No
July 5, 2016	Rock drill oil	20	Vault pit	Worker dropped the pail while filling tank	Spill was contained with absorbent pads. Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
July 6, 2016	Coolant	20	Vault pit	Coolant hose failure	Spill was contained with absorbent pads. Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
July 6, 2016	Diesel fuel	15	Vault pit	Fuel tank breather failure	Spill was contained with absorbent pads. Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
July 7, 2016	Hydraulic oil	20	Vault pit	O'ring failure on hydraulic line	Spill was contained with absorbent pads. Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No

Type A Water License 2AM-MEA1525
Monitoring Program Summary Report

July 9, 2016	Diesel fuel	3	Vault pit	Loose fuel filter	Spill was contained with absorbent pads. Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
July 9, 2016	Coolant	90	Portage pit	Broken hydraulic hose	Spill was contained with absorbent pads. Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
July 9, 2016	Hydraulic oil	15	Vault pit	Broken body valve	Contaminated soil was picked up and disposed of adequately.	No
July 10, 2016	Hydraulic oil	40	Portage pit	Broken hydraulic hose	Contaminated soil was picked up and disposed of adequately.	No
July 10, 2016	Hydraulic oil	15	Vault pit	O'ring failure	Contaminated soil was picked up and disposed of adequately.	No
July 11, 2016	Coolant	15	Vault pit	Broken coolant line	Contaminated soil was picked up and disposed of adequately.	No
July 11, 2016	Diesel fuel	15	Vault pit	Fuel cap missing	Contaminated soil was picked up and disposed of adequately.	No
July 12, 2016	Coolant	20	Portage pit	Broken hydraulic hose	Spill was contained with absorbent pads. Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
July 15, 2016	Hydraulic oil	35	Portage pit	Pin hole on hammer hose	Spill was contained with absorbent pads. Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No
July 15, 2016	Hydraulic oil	40	Site Service Coverall	Bumps on the road and improper storage of material carried	Spill was contained with absorbent pads. Contaminated material soil was picked up and disposed of in yellow contaminated soil roll off container.	No

Type A Water License 2AM-MEA1525
Monitoring Program Summary Report

July 16, 2016	Coolant	25	Portage pit	Broken coolant hose	Contaminated soil was picked up and disposed of adequately.	No
July 16, 2016	Hydraulic oil	60	Vault pit	O-ring failure	Contaminated soil was picked up and disposed of adequately.	No
July 16, 2016	Hydraulic oil	70	Vault pit	O-ring failure	Contaminated soil was picked up and disposed of adequately.	No
July 17, 2016	Engine oil	20	Vault pit	Engine failure	Contaminated soil was picked up and disposed of adequately.	No
July 24, 2016	Diesel fuel	60	MB Fuel farm	Fuel arm slip off the fuel man's hands causing the excess of fuel left in the arm to go on the ground and not in the tank	Contaminated soil was picked up and disposed of adequately.	No
July 28, 2016	Hydraulic oil	15	Vault parking	Leaking hose	Contaminated soil was picked up and disposed of adequately.	No
July 29, 2016	Hydraulic oil	50	Vault pit	Broken hydraulic hose	Contaminated soil was picked up and disposed of adequately.	No
July 30, 2016	Diesel fuel	35	Saddle dam 3	Fuel truck was not on level ground with a full tank. Employee opened the air traps causing the tank to spill.	Contaminated soil was picked up and disposed of adequately.	No
July 30, 2016	Hydraulic oil	25	Vault pit	Hydraulic hose failure during re-fuelling	Contaminated soil was picked up and disposed of adequately.	No
July 30, 2016	Coolant	45	Vault pit	Broken coolant hose	Contaminated soil was picked up and disposed of adequately.	No
July 30, 2016	Hydraulic oil	40	Vault parking	Broken hydraulic hose	Contaminated soil was picked up and disposed of adequately.	No
July 31, 2016	Hydraulic oil	30	Vault pit	Blown steering hose	Contaminated soil was picked up and disposed of adequately.	No
July 31, 2016	Hydraulic oil	80	Vault pit	Hydraulic hose failure	Contaminated soil was picked up and disposed of adequately.	No