

Environmental Protection Operations Directorate
Prairie & Northern Region
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Yellowknife, NT X1A 2P7

ECCC File: 6100 000 008/002-014
NIRB File: 03MN107 / 16MN056



June 23, 2023

via email at: info@nirb.ca

Leah Klassen
Technical Advisor II
Nunavut Impact Review Board
29 Mitik Street
P.O. Box 1360
Cambridge Bay, NU X0B 0C0

Dear Leah Klassen:

RE: 103MN107 - 16MN056 – Agnico Eagle Mines (AEM) – Meadowbank Mine and Whale Tail Pit – 2022 Annual Report

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Impact Review Board (NIRB) regarding the above-mentioned annual report.

ECCC provides expert information and knowledge to project assessments on subjects within the department's mandate, including climate change, air quality, water quality, biodiversity, environmental preparedness and emergencies. This work includes reviewing proponent characterization of environmental effects and mitigation measures, and providing advice to decision makers on activities needed to mitigate these environmental effects. Any comments received from ECCC in this context does not relieve the proponent of its obligations to respect all applicable federal legislation.

The following comments are provided:

1. Weather Data

Reference(s)

- Appendix 50 Meadowbank and Whale Tail 2022 Air Quality and Dust Monitoring Reports, Section 2.4 Weather Data and Appendix A

Comment

Section 2.4 Weather Data mentions the availability in Appendix A of daily averages for wind speed, wind direction and temperature from the Meadowbank and Whale Tail permanent climate station. This section also refers to a wind sensor installed at the DF-7 monitoring site to measure hourly average wind speed and direction. ECCC agrees that wind monitoring can be used to help identify



sources of pollutants as needed, based on wind direction. Accurate wind measurements may also assist with diagnosis of fugitive dust events. However, there are multiple issues with the climate station data as presented in Appendix A. For example, the temperature sensor appears to be locked at or near -49.5C for several days in early April, and average temperatures mostly exceed +50C from June 21st through July 2nd. The wind sensor malfunctioned from April 28th through May 5th.

ECCC Recommendation(s)

ECCC requests that AEM perform a first order quality control of the weather data from the climate station, with an emphasis on wind speed and direction; the primary comparison of wind data would be with the sensor at DF-7 with the Baker Lake NAVCAN Station as a secondary station. Erroneous data should be subsequently flagged.

2. Meadowbank Compliance Monitoring

Comment

No authorizations from ECCC have been issued.

The AEM Meadowbank Gold Project is captured under several pieces of ECCC legislation such as subsection 36(3) of the *Fisheries Act*, *Metal and Diamond Mining Effluent Regulations* (MDMER), *Canadian Environmental Protection Act* (CEPA), *Environmental Emergency Regulations*, *Cross-border Movement of Hazardous Waste and Hazardous Recyclable Material Regulations*, *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*, and *Greenhouse Gas Pollution Pricing Act/Output-Based Pricing System Regulations*. In 2022, one on-site inspection was planned but got cancelled due to limited resources.

MDMER

The Project is subject to the MDMER. The purpose of the MDMER is to authorize a deposit of certain deleterious substance(s) into water frequented by fish while monitoring the environmental effects of those deposits to ensure that deleterious substances are not released in quantities or concentrations that could result in harmful effects on waters frequented by fish. To do this, certain effluent deposit conditions (concentrations, limits and parameters) apply so that regulatees are exempted and protected from the more stringent prohibition of subsection 36(3) under the *Fisheries Act*. Samples of the effluent by AEM must be taken and tested at the identified Final Discharge Point (FDP) to ensure the above conditions are met on a scheduled basis and reported. The two current FDPs are as follows:

1. Vault Discharge FDP ST-MMER-2 = Effluent from Vault Attenuation Pond pumped and discharged to Wally Lake.
2. East Dike Discharge FDP ST-MMER-3 - East Dike Seepage effluent from Second Portage Lake pumped back to Second Portage Lake.

The MDMER requires reports to be submitted in ECCC's online database (Mine Effluent Reporting System - MERS) which are reviewed by an assigned Enforcement Officer on a quarterly basis. The quarterly administrative regular report verifications are conducted to ensure that the sampling and testing has been conducted in accordance with the MDMER and ensuring the reports are submitted

on time. Each Enforcement Activity includes an administrative report verification of each quarterly report which are due 45 days at the end of each quarter: 1st Quarter (due May 15), 2nd Quarter (due Aug 14), 3rd Quarter (due Nov 14) and 4th Quarter (due Feb 14), as well as an administrative report regular verification of the 2022 Annual Effluent Monitoring Summary Report (due March 31). Furthermore, an administrative report regular verification was completed on the Environmental Effects Monitoring (EEM) 2022 Annual Report (information related to effluent and water quality monitoring studies) and as part of this verification the officer submitted a copy of the report to the EEM Coordinator for review to also confirm compliance.

In 2022, AEM submitted all required MDMER reports:

1. First Quarter:

- Report submitted on time.
- Vault Discharge FDP ST-MMER-2: Administrative verification not conducted as no effluent was discharged through this FDP during Q1 therefore no compliance issues.
- East Dike Discharge FDP ST-MMER-3: Effluent was discharged in Q1 with no exceedances.
- The following non compliance was determined:
 - a. 14(2)(a) – AEM failed to select and record the sampling date not less than 30 days in advance of collecting the acute lethality grab sample on January 3, 2022, from East Dike Discharge FDP ST-MMER-3 – Warning Letter Issued

2. Second Quarter:

- Report submitted on time.
- Vault Discharge FDP ST-MMER-2: Administrative verification not conducted as no effluent was discharged through this FDP during Q2 therefore no compliance issues.
- East Dike Discharge FDP ST-MMER-3:
- The following non compliance was determined:
 - a. 14(2)(a) – AEM failed to select and record the sampling date not less than 30 days in advance of collecting the acute lethality grab sample on April 4, 2022, , from East Dike Discharge FDP ST-MMER-3 – Warning Letter Issued
 - b. 4(1)(a) – AEM suspended solids concentration (49mg/l) exceedance in excess of the maximum authorized concentration (30mg/L) in a grab sample. Also reported as Spill Report 2022-145 – Warning Letter Issued.

3. Third Quarter:

- Report submitted on time.
- Vault Discharge FDP ST-MMER-2: Administrative verification not conducted as no effluent was discharged through this FDP during Q3 therefore no compliance issues.
- East Dike Discharge FDP ST-MMER-3: Administrative verification not conducted as no effluent was discharged through this FDP during Q3 therefore no compliance issues.

4. Fourth Quarter:

- Report submitted on time.
- Vault Discharge FDP ST-MMER-2: Administrative verification not conducted as no effluent was discharged through this FDP during Q4 therefore no compliance issues.
- East Dike Discharge FDP ST-MMER-3: Effluent was discharged in Q4 with no exceedances.

5. 2022 Annual Effluent Monitoring Report:

- Report was submitted on time and no compliance issues noted.

6. 2022 Annual EEM Report:
- Report was submitted on time and no compliance issues noted.

ECCC Files Regarding Reported 2022 Spills:

1. 2022-145 – Lead agency CIRNAC - Suspended Solids exceedance in MEMER 2022 second quarter - File closed- Warning Letter Issued under the MDMER
2. 2022-236 – Lead Agency CIRNAC - Short term Suspended Solids release from marshalling area of Meadowbank's Baker Lake Oil Handling Facility to Baker Lake – File Closed – No Enforcement Action Taken under Fisheries Act 36(3)
3. 2022-544 – Lead Agency CIRNAC - 29000L Diesel Land Spill at KM 87 on the 110 KM All Weather Access Road – File Open – CEPA 201 and E2 Regs

3. Whale Tail Compliance Monitoring

Comment

No authorizations from ECCC have been issued.

The AEM Whale Tail Project is captured under several pieces of ECCC legislation such as subsection 36(3) of the *Fisheries Act*, *Metal and Diamond Mining Effluent Regulations (MDMER)*, *Canadian Environmental Protection Act (CEPA)*, *Environmental Emergency Regulations*, *Cross-border Movement of Hazardous Waste and Hazardous Recyclable Material Regulations*, *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*, and *Greenhouse Gas Pollution Pricing Act/Output-Based Pricing System Regulations*. In 2022, one on-site inspection was planned but got cancelled due to limited resources.

MDMER

The Project is subject to the MDMER. The purpose of the MDMER is to authorize a deposit of certain deleterious substance(s) into water frequented by fish while monitoring the environmental effects of those deposits to ensure that deleterious substances are not released in quantities or concentrations that could result in harmful effects on waters frequented by fish. To do this, certain effluent deposit conditions (concentrations, limits and parameters) apply so that regulatees are exempted and protected from the more stringent prohibition of subsection 36(3) under the *Fisheries Act*. Samples of the effluent by AEM must be taken and tested at the identified Final Discharge Point (FDP) to ensure the above conditions are met on a scheduled basis and reported. The seven current FDPs are as follows:

1. FDP ST-MDMER-5: Whale Tail North Basin Dewatering into Whale Tail Lake South Basin and/or; A53 dewatering Whale Tail Lake South Basin Phase 1
2. FDP ST-MDMER-6 Whale Tail North Basin Dewatering into Mammoth Lake Diffusor
3. FDP ST-MDMER-7: Pumping Quarry 1 contact water to Mammoth Lake Diffusor and/or; Pumping water from Attenuation pond discharged to Mammoth Lake Diffuser.
4. FDP ST-MDMER-8: Pumping Whale Tail South to Mammoth Lake and/or; Attenuation Pond Discharge to Mammoth Lake

5. FDP ST-MDMER-9: Pumping Quarry 1 contact water to Mammoth Lake and/or; Attenuation pond discharged to Mammoth Lake
6. FDP- ST-MDMER-10: Pumping Exploration Stormwater Storage Pond AP-5 to Nemo Lake
7. FDP-ST-MDMER-11: Discharge water from the IVR to Whale Tail Lake and/or; Discharge water from Attenuation Ponds to Whale Tail Lake.

The MDMER requires reports to be submitted in ECCC's online database (Mine Effluent Reporting System - MERS) which are reviewed by an assigned Enforcement Officer on a quarterly basis. The quarterly administrative regular report verifications are conducted to ensure that the sampling and testing has been conducted in accordance with the MDMER and ensuring the reports are submitted on time. Each Enforcement Activity includes an administrative report verification of each quarterly report which are due 45 days at the end of each quarter: 1st Quarter (due May 15), 2nd Quarter (due Aug 14), 3rd Quarter (due Nov 14) and 4th Quarter (due Feb 14), as well as an administrative report regular verification of the 2022 Annual Effluent Monitoring Summary Report (due March 31). Furthermore, an administrative report regular verification was completed on the Environmental Effects Monitoring (EEM) 2022 Annual Report (information related to effluent and water quality monitoring studies) and as part of this verification the officer submitted a copy of the report to the EEM Coordinator for review to also confirm compliance.

In 2022, AEM submitted all required MDMER reports:

1. First Quarter:
 - Report submitted on time.
 - Only one FDP active in Q1
 - FDP-ST-MDMER-11: Effluent was discharged in Q1 with no exceedances.
 - The following non-compliance was determined:
 - a. 14(2)(a) – AEM failed to select and record the sampling date not less than 30 days in advance of collecting the acute lethality grab sample on January 10, 2022 from FDP-ST-MDMER-11– Warning Letter Issued
 - b. 14(2)(a) – AEM failed to select and record the sampling date not less than 30 days in advance of collecting the acute lethality grab sample on March 14, 2022 from FDP-ST-MDMER-11– Warning Letter Issued
2. Second Quarter:
 - Report submitted on time.
 - Only one FDP active in Q2
 - FDP-ST-MDMER-11: Effluent was discharged in Q2.
 - The following non-compliance was determined:
 - a. 4(1) MDMER - Deposit of a deleterious substance exceeding the maximum authorized concentration set out in item 1 (Arsenic), column 4, Table 2, Schedule 4, MDMER
 - b. 4(1)(a) – AEM Arsenic monthly (April 2022) mean concentration (0.3145mg/l) exceedance in excess of the maximum authorized monthly mean concentration (0.30mg/L) in a grab sample. Also reported as Spill Report 2022-156 – Warning Letter Issued.
3. Third Quarter:
 - Report submitted on time.
 - Only one FDP active in Q3
 - FDP-ST-MDMER-11: Effluent was discharged in Q3 with no exceedances.

- No non-compliance was determined.
4. Fourth Quarter:
 - Report submitted on time.
 - Only one FDP active in Q4
 - FDP-ST-MDMER-11: Effluent was discharged in Q4 with no exceedances.
 - No non-compliance was determined.
 5. 2022 Annual Effluent Monitoring Report:
 - Report was submitted on time and no compliance issues noted.
 6. 2022 Annual EEM Report:
 - Report was submitted on time and no compliance issues noted.

ECCC Files Regarding Reported 2022 Spills:

1. 2022-108 – Lead agency CIRNAC – 40L Hydraulic Oil & 3L Diesel Fuel Spill on Mammoth Lake ice surface from Drilling activity - File closed- – No Enforcement Action Taken under Fisheries Act 36(3)
2. 2022-156 – Lead Agency CIRNAC – Arsenic Exceedance from FDP-ST-MDMER-11 to Whale Tail Lake – File Closed – Warning Letter issued under MDMER
3. 2022-087 – Lead Agency CIRNAC – 1L Hydraulic Oil spill on Mammoth Lake ice surface from Dozer – No Enforcement Action Taken under Fisheries Act 36(3)
4. 2022-066 – Lead Agency CIRNAC – 20L Hydraulic Oil spill on Mammoth Lake ice surface from Drilling activity – No Enforcement Action Taken under Fisheries Act 36(3)

If you need more information, please contact Victoria Shore at Victoria.Shore@ec.gc.ca.

Sincerely,

[original signed by]

Victoria Shore
Senior Environmental Assessment Officer

cc: Melissa Pinto, Acting Head, Environmental Assessment North (NT and NU)