

Follow Up Report – 2017-410, 2017-421, 2017-432 MEL-07 Fecal Coliforms Exceedance

Description of Exceedance:

On October 30th 2017, a sample of Sewage Treatment Plant (STP) effluent, MEL-07, was collected and submitted for water quality analysis as per the Water License 2BB-MEL1424. Upon receiving the water quality results, fecal coliforms were measured at 1100 CFU/100 mL, which exceeds the permitted discharge of 1000 CFU/100 mL. Two further exceedances for fecal coliforms at MEL-07 were also observed on November 7th (14000 CFU/100 mL) and 13th (2300 CFU/100 mL). Spill reports for each exceedance were issued through the NT-NU Spill Report. The following spill numbers are listed below:

Date of Spill	Spill Number	Fecal (CFU/100 mL)	Volume discharged to the Environment
October 30 th 2017	2017-410	1100	195 m ³
November 7 th 2017	2017-421	14000	148 m ³
November 13 th 2017	2017-432	2300	51 m ³

Spill Discharge Location:

The MEL-07 effluent discharges to land at a location situated approximately 65 m from the ordinary high water mark of Meliadine Lake (see Figure 1). The GPS coordinates are: 63°1'24" (N); 92° 11'7" (E). Once the effluent reaches the end of the pipe, it travels along a rock channel intended to reduce the flow and prevent erosion. The effluent will then follow the rock channel to Meliadine Lake.



Figure 1: View from above - MEL-07 discharge configuration with rock channel and flow path to Meliadine Lake

Spill cause:

Upon investigation of the causes related to the fecal coliform exceedances on the above-mentioned dates, the root cause is hypothesized to be due to a significant build-up of sludge in the system. This may be due to insufficient de-sludging of the bioreactors and plant maintenance. The ozone system was also taken offline due to a health and safety concern, which may have impacted the water quality of the sample.

Spill response:

As communicated to INAC (see attached letter), following the second consecutive exceedance, the plant discharge to the environment was stopped immediately (November 15th). The sewage is being trucked to the other sewage treatment plant on site. The plant discharge to the environment will not resume until the following action items are achieved and approval is received by INAC inspector:

- Plant maintenance and de-sludging of bioreactors;
- Install a primary screen at the feed;
- Install an oil filter at the influent of the primary oil and grease source to the system;
- Addition of a jet mixer between the equalisation tanks to ensure raw water homogeneity;
- Install a mixer in the mixing tank;
- Improve functionality of the grease trap (daily dosing of chemicals and mechanical modifications).



November 16, 2017

Christine Wilson
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**Re: Agnico Eagle Mines – Meliadine Division Action Plan to Improve the Exploration Site
STP effluent quality**

Dear Ms. Wilson,

In response to your concern, Agnico Eagle is providing the summary of the mitigation measures taken in 2017 as well as the future measures planned to improve the quality of effluent from the sewage treatment plant (STP) at the exploration camp.

The STP was put in service in 2010; where several modifications were implemented gradually to accommodate for the rising population at the exploration camp. At present, the STP is comprised of two BIODISK and two BIONEST sewage treatment units, working in parallel; the effluent from the units is treated with UV and ozone before its discharge into the environment. Agnico Eagle is monitoring the quality of the effluent by collecting and sending for analysis samples of the effluent every week. As the result of this monitoring campaign, in 2017 Agnico detected several instances of exceedance of the effluent limits, set forth in the water licence 2BB-MEL1424; all those instances were reported to the GN and investigated.

To identify the underlying causes of the effluent limit exceedances, in Q2 2017, Agnico hired two dedicated water treatment technicians to look over the daily operation and maintenance activities. In addition, in June 2017, Agnico retained a third party engineering firm (Hatch). Consultants from Hatch visited the site between July 3rd and July 6th 2017, inspected the STP, and provided Agnico with recommendations on how to improve the effluent quality. Based on the report by Hatch (issued on September 1st 2017) and internal expertise, Agnico began planning for implementation of the main key recommendations provided by the Hatch report. Agnico commits to implement the following upgrades by end

of 2017. In the event of any delays, the plant will not be started up until the upgrades have been completed.

1. Install a primary screen at the feed;
2. Install an oil filter at the influent of the primary oil and grease source to the system;
3. Addition of a jet mixer between the equalisation tanks to ensure raw water homogeneity;
4. Install a mixer in the mixing tank;
5. Improve functionality of the grease trap (daily dosing of chemicals and mechanical modifications).

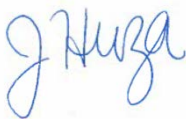
In addition to the above-mentioned medium term action items, due to the occurrence of two consecutive faecal coliform exceedances at Mel-07, the following additional short-term action items are being undertaken:

1. Suspend the discharge of water into the environment on November 15, 2017; all sewage water, produced at the exploration camp, is trucked to the main camp to be processed by the main STP until the above-mentioned improvements have been implemented and that the STP can be confirmed through water quality sampling to produce a compliant effluent;
2. Complete an extensive cleaning and preventative maintenance of the system prior to start-up, including desludge and loop cleaning.

Agnico Eagle is committed to the protection of the environment and is determined to implement the outlined action plan in a timely manner. Until the operation of the STP is not improved, all sewage from the exploration camp will continue to be processed at the main camp STP.

Should you have any questions, comments or suggestions, please do not hesitate to contact me.

Sincerely,



Jessica Huza, General Supervisor Environment - Meliadine