Crown-Indigenous Relations and Northern Affairs Canada
Relations Couronne-Autochtones et Affaires du Nord Canada

Water Resources Division
Resource Management Directorate
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Your file - Votre référence
2AM-MEL1631
Our file - Notre référence
GCdocs # 97952229

October 4, 2021

Mr. Richard Dwyer
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0
sent via e-mail: licensing@nwb-oen.ca

Re: Crown-Indigenous Relations and Northern Affairs Canada's (CIRNAC) Reply to AEM Response on the 2020 Annual Report for Meliadine Gold Mine Project, Type A Water Licence No. 2AM-MEL1631

Dear Mr. Dwyer,

Thank you for your September 16, 2021 invitation to reply to Agnico Eagle Mines (AEM) response to CIRNAC's comments on the 2020 Annual Report for the Meliadine Gold Mine Project, Type A Water Licence No. 2AM-MEL1631.

CIRNA-01: Higher than Expected TDS in CP1

Recommendation: Provide information with the 2021 Annual Report on the nature and make-up of "rest of site" (as per the SNC upper bound model report) areas/facilities that contributed so significantly to the TDS loadings to CP1.

CIRNAC Comment to AEM Response: AEM has provided a list of what facilities comprise the "rest of site" area, specifically: all areas and facilities on site where runoff reports directly to CP1 including natural ground with vegetation, disturbed ground, a portion of Waste Rock Facility 1 (WRSF1), a portion of the Tailings Storage Facility (TSF), the Landfill area, and the Ore Stockpile (OP2) and additionally, treated effluent produced by the Sewage Treatment Plant (STP), Land farm Oil-Water treatment, and Reverse Osmosis Plant (RO).

While this information provides slightly more description of the components that make up the "rest of site", additional information is required by CIRNAC to understand

potential sources of TDS loadings from these areas. For example, AEM states that the "rest of site" included,

- "a portion of Waste Rock Storage Facility 1 (WRSF1)" - how large an area and a description of the condition of the pile? (Was it an active with fresh waste rock, was it compacted, etc., anything that would help in understanding how the runoff from this portion of the site might have contributed concentrations and loadings..)

- "a portion of the Tailings Storage Facility pile" – as per WRSF1 above, no information is provided on how large an area, or the condition of the area that was draining to CP1.

- "the ore stockpile" – no information is provided on the size or amount of ore in the ore stockpile.

Given the significant contribution of the "rest of site" to CP1 loadings, a more fulsome understanding of the components that make up the "rest of site" would help to assess how the unexpected elevated TDS situation arose. For example, was it related to the pre-start of milling operations (buildup of ore stockpile, etc.) and would not continue during operation or whether these sources could be expected to continue to contribute TDS loadings in future. Note that the SNC model shows significant reduction in future loadings from the "rest of site"

CIRNAC recommends that to obtain a better understanding of the contribution of the "rest of site" going forward, information on the concerns stated above should be provided and monitored.

CIRNA-02: Higher than Predicted Acid Rock Drainage (ARD) Potential of Filtered Tailings

Recommendation: Provide the report on the laboratory findings regarding the determination of Neutralizing Potential Ratio (NPR), when it is completed.

CIRNAC Comment to AEM Response: In response, AEM provided an SGS letter dated 27 April 2021 which provided the results of a comparison of the Carbonate Analysis carried out by SGS Lakefield in 2020 (using a pyrolysis technique as referenced in ASTM E1915) compared to a Carbonate Analysis carried out by SGS Burnaby (using a coulometric titration (MEND-2009) .The test noted that both laboratories reported equivalent total carbon values, but that the carbonate values reported by the Burnaby Laboratory was consistently higher than those reported by Lakefield. On the basis of these findings, SGS re-analyzed all 2020 tailings samples to compare acid leaching values to the pyrolysis values and found the same results.

Based on these finding SGS stated that using the ASTM pyrolysis method was not ideal for tailings samples and the coulometric techniques provided a more robust analytical method. Per the SGS letter the pyrolysis results in the Annual Report did contain a bias toward low the carbonate results for the site tailings samples analyzed.

CIRNAC is satisfied with AEM's response.

CIRNA-03: Surface Disposition of Waste Rock

Recommendations:

1. Provide additional discussion/information in the Annual Report with respect to the distribution by location and quantity of waste rock used for construction and placed in the waste rock storage facilities;
2. Provide information confirming that waste rock used for construction was Non-PAG;
3. Provide summary tables of annual and cumulative waste rock volumes in the Annual Report that use the same formats as Tables 3.3 and 4.3 of the Mine Waste Management Plan; and
4. Provide plans and sections illustrating the status of the WRSFs as at the end of 2020.

CINAC Comment to AEM Response:

Bullet 1 – AEM has stated that the information requested is provided in the Mine Waste Management Plan Version 7 and has committed to providing more details and referencing in the Annual Reports going forward.

CIRNAC notes that the details are at times not provided, or not clear in the MWMP, given the commitment that AEM has provided CIRNAC is of the opinion that this response is sufficient to address the concern raised.

Bullet 2 – AEM has stated that the findings of predictions for the waste rock derived as part of this mine development will be non-PAG with a low ARD potential. No reference to the report where these results were presented has been provided. AEM is reiterating a summary from the document that was used to report the analytical work done in this regard.

CIRNAC would like AEM to provide results of the non-PAG with a low ARD potential.

Bullets 3 & 4 – AEM has committed to liaise with CIRNAC on the format for the presentation of information with respect to the placement of material into the WRSFs. It is not clear if AEM plans to complete this work for the 2020 Annual Report or going forward with future Annual Reports.

CIRNAC's opinion is that this response only partially addresses the concern raised. It is not clear if AEM would like to discuss this with CIRNAC in the future. More clarity is required for these identified concerns.

CIRNA-04 – Tailings Storage Facility (TSF) Capacity

Recommendations:

1. Provide a discussion of 2020 placement that includes reference to how and where materials were placed along with "as built" plans or sections as at the end of 2020;
2. Provide additional information in the Annual Report verifying placement was in accordance with the Mine Waste Management Plan; and
3. Provide plan(s) and section(s) illustrating the physical status of the TSF as at the end of 2020.

CIRNAC Comment to AEM Response:

Bullets 1 & 2 – AEM has stated the information requested is provided in the Mine Waste Management Plan Version 7 and has committed to providing more details and referencing in the annual reports going forward.

CIRNAC notes that the details are at times not provided, or not clearly provided in the MWMP, CIRNAC is satisfied that this response is sufficient to address the concern raised.

Bullet 3 – AEM has committed to liaise with CIRNAC on the format for the presentation of information with respect to the placement of material in to the TSF. It is not clear if AEM plans to complete this work for the 2020 Annual Report or going forward with future Annual Reports.

CIRNAC's opinion is that this response only partially addresses the concern raised. It is not clear if AEM would like to discuss this with CIRNAC in the future. More clarity is required for this identified concern.

CIRNA-05 – Reporting on Milling Operations

Recommendations:

1. Add a section to future Annual Reports describing mill operations at the Meliadine site (e.g., days of milling, tons of ore processed, tailings generated, water used, and

related activities on cyanide management and consumption and tailings detoxification, etc.); and,

2. Provide information regarding 2020 milling operations and activities at the Meliadine Mine for review by interested parties.

CIRNAC Comment to AEM Response:

AEM's response makes it clear that AEM does not plan to provide the information requested in this comment within the context of the Annual Report but rather points out that this information is provided in other submissions provided to the regulator throughout the year.

CIRNAC's opinion is that AEM's response does not address the concerns raised in the CIRNAC Annual Report review. CIRNAC reiterates the request that this information be summarized in the Annual Report.

CIRNA-06: Tracking Acid Rock Drainage (ARD) Classified Waste Rock Volumes

Recommendations: In all future Annual Reports, track volumes of waste rock classified as PAG and uncertain ARD from the underground mine and open pits.

CIRNA Comment to AEM Response:

As per earlier comments, AEM asserts that the information is contained in the Mine Waste Management Plan but has committed

- future Annual Reports will have: improved referencing to the MWMP; a statement if placement was in accordance with the MWMP; and
- that AEM will liaise directly with CIRNAC with respect to the type of information CIRNAC wishes to see on the plans and sections to ensure appropriate information is provided.

CIRNAC is of the opinion if all aspects are implemented, that the commitments provided address the recommendations,.

CIRNA-07: Geotechnical Concerns/Issues

Recommendations:

1. Add a section to the Geotechnical Inspection Report that provides clear and concise information on the status of any permafrost degradation that may be occurring on site; and,

2. Include reporting of piezometric and inclinometer measurements in the Annual Report.

CIRNAC Comment to AEM Response:

Bullet 1 – AEM states that the Annual Geotechnical Report provides the required information regarding monitoring and mapping of permafrost conditions. It was not clear from CIRNAC's review of the Annual Geotechnical Report that there was a summary discussion regarding permafrost degradation nor comment on any locations where this may be of concern other than to say some was observed.

CIRNAC's opinion is that a summary of the Annual Geotechnical Report, that includes a section specific to CIRNAC's requests with respect to permafrost degradation should be provided with specific references.

Bullet 2 – AEM states that there are currently no operational inclinometers or piezometers on site. Once this instrumentation is present and operational then AEM will report on the monitoring results.

CIRNAC is satisfied with the response. Would like to know the timing to have these instruments installed and when reporting will be initiated by AEM.

CIRNA-08: Cyanide Management and Use Handling

Recommendations: Provide a discussion of cyanide management practices and use in all future Annual Reports complete with appropriate appendix details as needed with respect to cyanide source, transportation to site, on site handling and storage, and emergency procedures.

CIRNAC Comment to AEM Response: AEM states that they are working to have the site certified under the International Cyanide Management Code (ICMC) and once this is in place the reporting of cyanide management will be a matter of public record. AEM state that at present, while not included in the Annual Report, the information requested is provided throughout the year in other regulatory submissions.

CIRNAC's opinion is that a summary of this cyanide management procedure should be provided in the Annual Report, that may reference other submissions provided throughout the year.

CIRNA-09: Reporting on Flow Volumes of Any Watercourse Diverted During Construction Activities

Recommendations:

- Provide information with respect to "Schedule B, Item #1(e)" of the Water Licence 2AMMEL1631 that includes expected or projected consequences of the newly constructed access road to water balance and water quality of all freshwater bodies located south of Dike D-CP5 for 2020 Annual Report; and
- Provide information with respect to "Schedule B, Item #1(h)" of the Water Licence 2AMMEL1631 on whether or not, any water course(s) was diverted during the construction of the new access road downstream of Dike D-CP5 for 2020 Annual Report. If no watercourses were diverted during construction, this should be specified.

CIRNAC Comment to AEM Response: Further clarification in this regard has been provided by AEM who have stated that no watercourses were diverted for the construction of the Access Road on the downstream side of D-CP5.

Based on this information CIRNAC's opinion that these concerns have been addressed.

CIRNA-10: Tracking Volume of Freshwater Obtained from Other Permitted Locations for Road Dust Suppression Activities

Recommendations: Provide information with respect to "Schedule C, Item #1 (Amend)" of the Water Licence 2BBMEL1424 for 2020 Annual Report that includes a breakdown of the monthly and annual volumes of freshwater obtained from other permitted freshwater bodies (locations) other than the Meliadine Lake; used for the purpose of road dust suppression activities.

CIRNAC Comment to AEM Response: AEM's response provided the volume of water recovered from small ponds proximal to the All Weather Access Road for dust suppression in the month of August 2020 and as such has answered the questions regarding timeline and volume. However, the location of the ponds from which water was collected is not defined.

CIRNAC's opinion is that more detailed information should be provided on the locations from which water was taken and the volume collected from each of these locations should be detailed in a matrix provided in Annual Reports moving forward (it is understood that AEM would not likely be able to provide the location of all the small proximal ponds along the AWAR).

CIRNAC appreciates the opportunity to participate in this review. If there are any questions, please contact John Onita at (867) 975-3876 or Andrew Keim at (867) 975-4550 or andrew.keim@canada.ca

Sincerely,

John Onita
Regional Water Coordinator