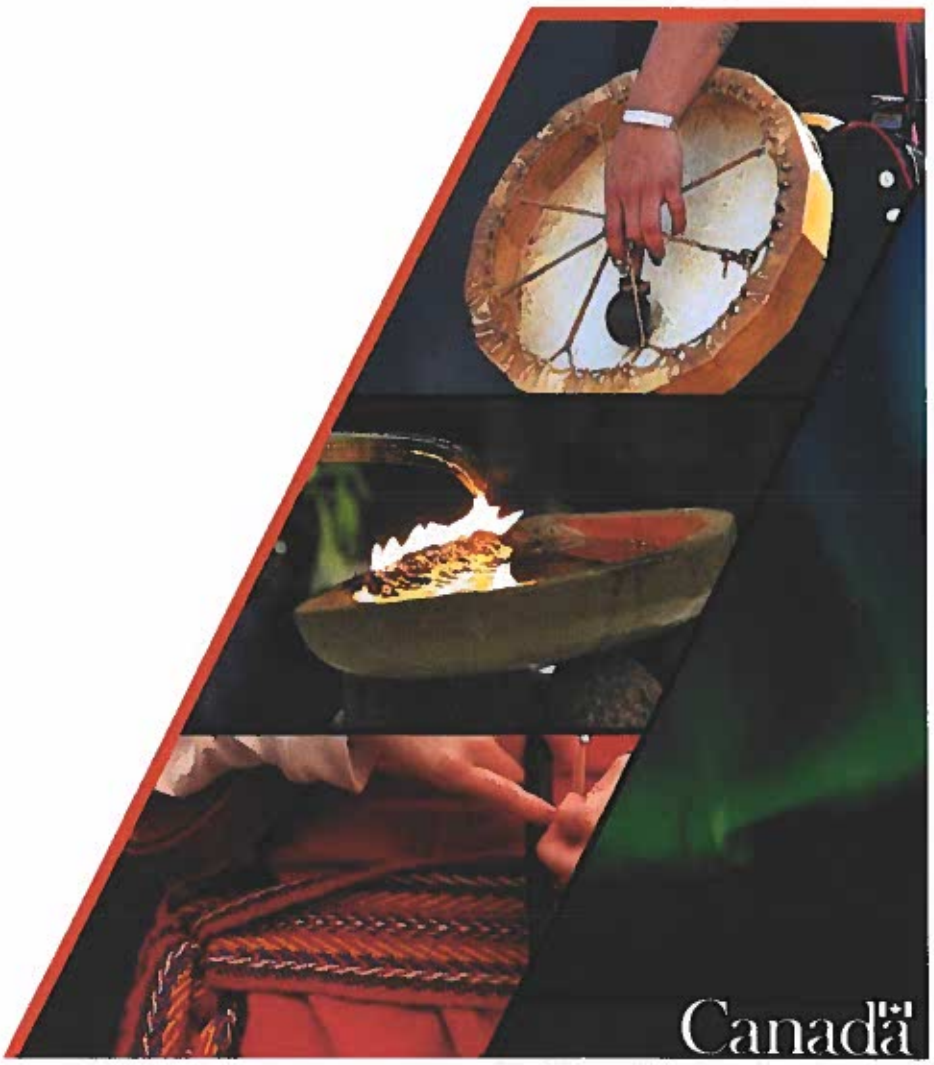
Crown-Indigenous Relations and Northern Affairs Canada
Relations Couronne-Autochtones et Affaires du Nord Canada

CIRNAC Comments to NIRB Re: Agnico Eagle Mines Ltd.'s Meadowbank Gold Mine & Whale Tail Pit Projects 2018 Annual Monitoring Report



Nunavut Regional Office
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Your file - Votre référence
03MN107 & 16MN056
Our file - Notre référence
CIDMS # 1251058

May 27, 2019

Erin Reimer
Technical Advisor I
Nunavut Impact Review Board
P.O. Box 1360
Cambridge Bay, NU, X0B 0C0
Via electronic mail to: info@nirb.ca

Dear Ms. Reimer,

Re: Comment Request for Agnico Eagle Mines Ltd.'s Meadowbank *Gold Mine & Whale Tail Pit Projects 2018 Annual Monitoring Report*

On April 12, 2019, as per Section 12.7 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty The Queen in Right of Canada* (Nunavut Agreement) and the Meadowbank Gold Mine Project Certificate [No. 004] & Whale Tail Pit Project Certificate [No. 008], the Nunavut Impact Review Board (NIRB or the Board) requested parties to review Agnico Eagle Mines Ltd.'s (Proponent's or AEM's) 2018 Annual Report with respect to effects and compliance monitoring.

Crown-Indigenous relations and Northern Affairs Canada (CIRNAC or the Department) has conducted a review of the 2018 Annual Report and related documents in areas under its mandate pertaining to effects and compliance monitoring. On this basis, the Department would like to provide the comments below for the Board's consideration.

CIRNAC appreciates the opportunity to review AEM's Meadowbank Gold Mine & Whale Tail Pit Projects 2018 Annual Monitoring Report and looks forward to working with the NIRB and Proponent through any future reviews for these projects. Should you have any questions, please do not hesitate to contact Amal Roy at 867-975-4554 or by email at amal.roy@canada.ca.

Sincerely,

Felexce Ngwa
Manager, Impact Assessment

1. ***Effects Monitoring***

   a. ***Whether the conclusions reached by Agnico Eagle in the Meliadine Gold Project 2018 Annual Monitoring Report are valid; and,***
   b. ***Any areas of significance requiring further supporting information or any changes to the monitoring program which may be required***

Comment Number:	CIRNAC #1
Subject:	Resolution of Issues Identified during 2017 Annual Report Review
Reference:	• 2018 Annual Report, • Appendix 1, Table 1.3 • Appendix 17
Background/Rationale:	CIRNAC's Review of the 2017 Annual Report resulted in the generation of 35 comments for AEM consideration. As demonstrated in the 2018 Annual Report, and summarized in Table 1.3 of Appendix 1, AEM has provided appropriate responses and completely addressed 29 of these comments. Outstanding items remaining are listed below in sequence.
CIRNAC # 1.1	**Lake Level Monitoring - Turn Lake** – Turn Lake water levels are not being monitored. As per Section 4.2.1, AEM indicated Turn Lake water level monitoring will be initiated during the 2019 open water season and the results will be reported and compared to predictions in the next annual report.
Recommendation:	CIRNAC looks forward to reviewing the 2019 Annual Report to confirm changes in Turn Lake water levels.
CIRNAC # 1.2	**Tailings Freezeback and Capping Thickness** - CIRNAC recommended that AEM include a meaningful discussion of the results from the permafrost monitoring in the Annual Report. FEIS predictions should be compared with monitoring results and be clearly presented. AEM should present the updated modeling supporting their conclusions that the conceptual plans for thermal encapsulation of the Tailing Storage Facility and the Waste Rock Storage Facility remain effective to prevent and control deleterious seepage over long term. Finally, if results show discrepancies from the predicted values, AEM should discuss the management actions that should be implemented to address the risk. AEM notes the following in Section 7-2 of the Waste Rock and Tailings Management Plan (Appendix 17 of the 2018 Annual Report): "*Mandate with consultant ongoing - more details to be provide in future annual report*".
Recommendation:	CIRNAC re-iterates the importance of implementing the abovementioned recommendations and looks forward to reviewing the requested information in the 2019 Annual Report.

Comment Number:	CIRNAC #1
CIRNAC # 1.3	**Tailings Freezeback and Capping Thickness** - CIRNAC recommended AEM provide more information on the nature and extent of research efforts, results of the research and a discussion of how the proposed cover design has been influenced by these results. In Section 5.4.1 of the 2018 Annual Report, AEM indicates that in 2018, the Research Institute in Mine and Environment (RIME) continued to collect and analyze data on the cover field trial and on the long-term performance of ultramafic rockfill as a cover material. Studies are ongoing and no additional data are available to be shared at the moment. Publications are expected in 2019.
Recommendation:	CIRNAC re-iterates the importance of implementing the abovementioned recommendations and looks forward to reviewing results of the cover trials in the 2019 Annual Report.
CIRNAC # 1.4	**Progressive Reclamation – Mine Site** - CIRNAC recommended that 2018 updates to Interim Closure and Reclamation Plan (ICRP) include more details on progressive reclamation such as: areas of Tailings Storage Facility (TSF) and Waste Rock Storage Facility (WRSF) facilities covered in 2017 and total areas to date, along with the volumes associate with these areas, amongst others. In the 2018 Annual Report, AEM noted that *the 2018 ICRP update was submitted to NWB on August 22, 2018. Following the authorities' review period of this plan, no comments were received regarding the current CIRNAC's recommendation. In the 2018 updated version, information regarding the progressive closure of TSF and WRSF can be found in Section 6.2 of the report, however it does not include all the details requested by CIRNAC. Agnico may consider adding some of this information in the next ICRP revision. The annual report will continue to include detailed progressive closure completed during the year.*
Recommendation:	CIRNAC recommends that the next ICRP revision, including updates requested by CIRNAC, be presented in the 2019 Annual Report.
CIRNAC # 1.5	**Inspections, Compliance Reports and Non-Compliance Issues -** CIRNAC recommended that AEM provide a summary statement on findings of all inspections and if and where necessary, provide a list of issues that have been identified and the status of these issues. AEM in Section 11.5 of the 2018 Annual Report provided summary statements on findings for some (e.g. TC, ECCC, CIRNAC), but not all, of the inspections that occurred during the year, notably no comment on NIRB inspection findings.
Recommendation:	CIRNAC recommends that in addition to providing the list of items discussed as per Section 11.5.1.4 of the 2018 Annual Report, AEM should provide high level statements as to whether or not there are any issues associated with each of the areas of discussion.

Comment Number:	CIRNAC #1
CIRNAC # 1.6	**Post-Environmental Assessment Monitoring Program (PEAMP)** – Evaluation of Impact Predictions - CIRNAC recommended that AEM include a temporal analysis identifying trends over time in the data interpretation. In its response to this comment, AEM indicated the following: "*It is Agnico's belief that a comprehensive update is not warranted as part as the PEAMP. According to the proponent's responsibilities identified under Appendix D of the Project Certificate, examinations are provided as required in individual monitoring reports. As such, trending analyses would also not be required under the aforementioned responsibilities. Agnico is confident that these discussions reference any potential impacts observed. In addition, the annual report is based on an extensive review of the FEIS throughout its content.* *Nonetheless, Agnico, is committed on improving identification of noted effects within the PEAMP summary report in this section and intends to highlight any trends observed for VEC's exceeding predictions with the 2018 Annual report and moving forward*." AEM's interpretation of Appendix D of the Project Certificate is to discuss trends only when impacts are observed, and thus AEM believes that the condition is being met and further interpretation is not necessary.
Recommendation:	CIRNAC recommends that AEM include a temporal analysis identifying trends over time in the data interpretation.
CIRNAC # 1.7	**Results of Thermistor Measurements for Tailings and Waste Rock Storage Facilities** - CIRNAC recommended that AEM analyze the thermistor monitoring results against early thermal modelling predictions and update its Waste Rock and Tailings Management Plans if large discrepancies are observed between the monitoring results and model predictions in the 2018 Annual Report. AEM acknowledged CIRNAC's comment and indicated that this task has been assigned to the consultant and that the requested information will be provided in the 2019 Annual Report.
Recommendation:	CIRNAC re-iterates the importance of implementing the abovementioned recommendations and looks forward to reviewing these results in the 2019 Annual Report.

Comment Number:	CIRNAC #2
Subject:	Compliance Monitoring
Reference:	• Section 8.3.1.3 & Section 8.3.2.1 of 2018 Annual Report
Background/Rationale:	While the requirements of various monitoring programs such as those conducted under the Meadowbank Dike Review Board (MDMER) were generally met, occasional non-compliances were observed relating to avoidable missed opportunities for sampling or analysis resulting from what appears to be poor planning and

Comment Number:	CIRNAC #2
	tracking. For example, as noted in Section 8.3.2.1 for the Whale Tail project, effluent discharge occurred from July 27 to August 10 and from August 14 to August 27, during the in-water portion of the Whale Tail Dike Construction, making the site subject to the MDMER. However, the effluent was not sampled for pH and deleterious substances when discharge was initiated on July 27 as well as the following week (July 29 to August 4). Similarly, toxicity sampling to assess acute lethality of the effluent to fish (three spine stickleback) was not conducted in July. Toxicity testing under the Environmental Effects Monitoring (EEM) program to assess sub-lethal toxicity of the effluent to fish, invertebrate, aquatic plant and algal species was also not conducted on the effluent. The reason for this was because the discharge stopped earlier than anticipated and prior to the scheduled test date, and an accredited laboratory was not available for the analysis at this earlier time. Radium-226 was not analyzed on the effluent sample from August 6 because the sample bottle was never sent to the laboratory for analysis. Similarly, as noted in Section 8.3.1.3. for the Meadowbank site, pH was not measured on the East Dike discharge on May 14, due to an omission by the field technician while effluent was not sampled the week of December 2 to 8, due to plane delays on December 3, and issues with field execution the following day. Due to an error by the laboratory, acute lethality testing was not completed on the effluent sample collected on November 19, and because of ineffective communication between the laboratory and AEM, AEM was not aware that the analysis had not been completed.
Recommendation to Address Issues:	CIRNAC recommends that AEM review its internal planning, communications protocols, and management plans and assess if improvements can be incorporated to existing procedures to ensure planning and timely execution of all sampling requirements.

Comment Number:	CIRNAC #3
Subject:	Tailings Storage Facility Capacity Limitations
Reference:	• Section 5.3.1 of 2018 Annual Report
Background/Rationale:	In Section 5.3.1 of the annual report, AEM indicates that the tailings deposition model was updated to comply with the new Life of Mine (LOM) and draws the following main conclusions from the modelling: • The total estimated residual capacity of the Tailings Storage Facility (TSF) North Cell (structures at EI.150masl and 154masl) and South Cell (structures at EI.150m), based on tailings dry density is 9.6 Mt; o The total capacity of the North Cell is estimated at 3.8 Mt; o The total capacity of the South Cell is estimated at 5.8

	Mt; • The LOM mill throughput is stated as 9.6 Mt, indicating there is sufficient capacity in the approved TSF. Through review of the modelling it is concluded that the TSF provides sufficient capacity (9.6 Mt) to accommodate the expected mill throughput (9.6 Mt). CIRNAC notes that these two numbers match exactly and there doesn't appear to be any contingency built into these estimates. For instance, the available storage capacity in the TSF North and South cells is based on the assumption of a particular dry density for the tailings. However, changes in the dry density resulting from variations in ore characteristics (e.g. Whale Tail pit ore) and deposition methodology could affect the estimate of available storage capacity. It is unclear as to what would happen in the event that more tailings storage is required prior to approval of In-Pit disposal.
Recommendation to Address Issues:	CIRNAC requests that AEM provide a discussion of the implications of existing tailings capacity not being adequate to address current or future LOM throughput.

Comment Number:	**CIRNAC #4**
Subject:	Geotechnical Implementation and Inspections
Reference:	• Section 3 of 2018 Annual Report • Appendix 7 • Appendix 11
Background/Rationale:	Golder 2018 Geotechnical inspections continue to flag some areas of potential concern related to some site features both on the mine sites and at off-site locations such as the all-weather road and at the Baker Fuel facility. In particular, CIRNAC notes that Golder has recommended that "... *consideration should be given to expand AEM's monitoring program to include all culverts and bridges along the road in order to assess whether they are providing adequate capacity during the freshet and following large precipitation events"*. In the cases of bridges and culverts, these concerns have been raised before and AEM's ongoing response to these concerns is that the bridges and culverts are being monitored on a regular basis as required. In other cases, concerns are new items and commitments have been made to assess and address them including: 1. Standing water downstream Saddle Dam 3 and Saddle Dam 4; 2. Unstable blocks and loose rocks at Quarries 3, 7, 9, 10, 12, 16 and 23; 3. North access Esker 3 ramp undercut; 4. Granular fill erosion off geomembrane at Tanks 1, 3, 4, 5 at Baker Lake; 5. 300 mm hole in geomembrane at Tank 1 at Baker Lake;

	6. Bituminous geomembrane liner damage at 20 Jet A fuel tanks; AEM has provided responses to all items noted in Appendix 11. While responses have been provided to issues raised as noted above, in the case of those associated with repeat inspection recommendations, it is concerning when items are flagged on a year over year basis, without any actual field work being done to correct the concern. In the case of the new items raised, some of the responses are conditional and lack specific commitments for action or when actions may be undertaken.
Recommendation to Address Issues:	CIRNAC requests that AEM address the continued ongoing issues of culvert obstruction, blockage, or not being properly located. If continued monitoring is proposed, AEM should undertake a risk assessment of potential impacts associated with failure of the culverts during freshet or major storm events. CIRNAC also requests that no unsafe hazard conditions resulting from physical works (e.g., unsafe slopes, loose rocks, etc.) be left "as-is" once such conditions have been identified. AEM should list all such conditions and set out a timeline for addressing them.

Comment Number:	**CIRNAC #5**
Subject	Updated Socio-economic Monitoring Program
Reference	• NIRB Project Certificate No. 008, Conditions 45, 46, and 50; and • 2018 Annual Report, Section 11.10.2
Background/Rationale	AEM states its Whale Tail Socio-economic Monitoring Program will be submitted to the NIRB by June 30, 2019. This monitoring program will be provided as part of an updated Kivalliq Projects Socio-economic Monitoring Program (i.e., specific to the Meadowbank, Whale Tail, and Meliadine projects). Condition Nos. 45 and 46 of the Whale Tail NIRB Project Certificate require AEM to provide an updated Kivalliq Projects Socio-economic Monitoring Program.
Recommendation to Address Issues	CIRNAC will review the updated Kivalliq Projects Socio-economic Monitoring Program following its submission to the NIRB. Conditions 45 and 46 of the NIRB project certificate remain unfulfilled until the Whale Tail Socio-economic Monitoring Plan is provided to the NIRB.

Comment Number:	**CIRNAC #6**
Subject	Staff Schedules
Reference	• NIRB Project Certificate No. 008, Condition 48; and • 2018 Annual Report, Section 11.11.1.1
Background/Rationale	Pursuant to Condition 48 of the Whale Tail NIRB Project Certificate (No. 008), AEM is required to submit staff schedule forecasts to the NIRB six months prior to the commencement of each project phase (i.e., construction, operations, and closure). AEM states that its Construction Phase staff schedule was sent to the NIRB on May 2, 2018 and the schedule will be updated before the project's

	Operations Phase
Recommendation to Address Issues	To streamline the submission of staff schedule forecasts, future annual reports should include copies or hyperlinks to staff schedule forecasts to demonstrate compliance with the project certificate.

Comment Number:	**CIRNAC #7**
Subject	Collaboration with the Government of Nunavut on Career Development
Reference	• NIRB Project Certificate No. 008, Condition 49 • 2018 Annual Report, Section 11.11.1.2
Background/Rationale	Pursuant to Condition 49 of the Whale Tail NIRB Project Certificate (No. 008), AEM is required to collaborate with the Government of Nunavut's Career Development Officer, Regional Manager of Career Development, and Director of Career Development on a range of career development related topics. At a minimum, semi-annual calls are to be held and summary information provided to the NIRB in annual report submissions. In its annual report, AEM states it will initiate discussions with the Government of Nunavut on the requirements of this project certificate condition in 2019.
Recommendation to Address Issues	To ensure compliance with the project certificate, CIRNAC recommends that AEM provide written summaries of meetings it has with the Government of Nunavut on career development initiatives specific Nunavummiut in future annual report submissions.

Comment Number:	**CIRNAC #8**
Subject	Annual joint "AEM Kivalliq Projects" Socio-economic Monitoring Reports
Reference	• NIRB Project Certificate No. 008, Condition 50; and • 2018 Annual Report, Section 11.10.3
Background/Rationale	Pursuant to Condition 50 of the Whale Tail NIRB Project Certificate (No. 008), AEM is required to produce annual joint "AEM Kivalliq Projects" Socio-economic Monitoring Reports for the Meadowbank, Whale Tail, and Meliadine projects. AEM will provide their 2018 socio-economic monitoring report to the NIRB by June 30, 2019 in accordance with the timeline agreed upon in the AEM Socio-economic Monitoring Working Group's terms of reference.
Recommendation to Address Issues	CIRNAC will review the final 2018 socio-economic monitoring report once it is made available for review by the NIRB.

Comment Number:	**CIRNAC #9**
Subject	Monitoring demographic changes
Reference	• NIRB Project Certificate No. 008, Condition 53; and • 2018 Annual Report, Sections 11.10.3 and 1.10.3.1.1.1
Background/Rationale	Pursuant to Condition 50 of the Whale Tail NIRB Project Certificate (No. 008), AEM is required to collect and provide project-specific data concerning employee community of residence and number of

	employees that relocated from the year prior, based on the availability of information. Section 11.10.3.1.1.1 of the 2018 Annual Report provides information on the home communities of Inuit employees for the years 2017 and 2018. Information on the number of Inuit employees that relocated from 2017 to 2018 cannot be found. However, this information may be provided in the upcoming Socio-economic Monitoring Report submission (to be provided to the NIRB by June 30, 2019).
Recommendation to Address Issues	To ensure compliance with the project certificate, CIRNAC will review the upcoming 2018 Socio-economic Monitoring Report to confirm whether information is provided on the number of Inuit employees who relocated from 2017 to 2018.

Comment Number:	**CIRNAC #10**
Subject	Access to housing
Reference	• NIRB Project Certificate No. 008, Condition 61 • 2008 Annual Report, Section 11.11.1.6
Background/Rationale	Pursuant to Condition 61 of the Whale Tail NIRB Project Certificate (No. 008), AEM is to "*collaborate with the Government of Nunavut and the Nunavut Housing Corporation to investigate measures and programs designed to assist Project employees with pursuing home ownership or accessing affordable housing options in the Kivalliq region. The Proponent should provide access to financial literacy, financial planning, and personal budgeting as part of the regular Life Skills Training and/or Career Path Program.*" In its annual report, AEM indicates that it has been unsuccessful in collaborating with the Nunavut Housing Corporation to date but it will continue to reach out to this organization to address home ownership and affordable housing options.
Recommendation to Address Issues	To ensure compliance with the project certificate, CIRNAC recommends that AEM to continue its efforts to coordinate with relevant Government of Nunavut departments on training efforts. Measures taken to address this project certificate condition should be summarized in future annual reports.

Comment Number:	**CIRNAC #11**
Subject	Community infrastructure monitoring
Reference	NIRB Project Certificate No. 008, Condition 62
Background/Rationale	Pursuant to Condition 62 of the Whale Tail NIRB Project Certificate (No. 008), AEM is to work with the Government of Nunavut to develop an effects monitoring program that identifies project-related pressures to community infrastructure in all point-of-hire communities in the Kivalliq region. This effects monitoring program could not be found in the submitted Annual Report.
Recommendation to Address Issues	CIRNAC recommends that AEM ensure an effects monitoring program is developed with the Government of Nunavut to identify project-related pressures to community infrastructure in all point-of-hire communities in the Kivalliq region. Once available, the results of

	this monitoring program for the year 2018 should be provided to the NIRB. Subsequent results should be provided to the NIRB in future annual report submissions.

2. <u>Compliance Monitoring</u>

a. Provide a summary of any compliance monitoring and/or site inspections undertaken in association with the project, including specifically:

i. Identify the terms and conditions from the Project Certificate which have been incorporated into any permits, certificates, licenses or other approvals issued for the Project, where applicable;

CIRNAC has a broad mandate for the co-management of water resources and the management of Crown Land in Nunavut under the following applicable acts and regulations:

- The *Department of Indian Affairs and Northern Development Act (DIAND Act);*
- The *Nunavut Land Claims Agreement Act, and Nunavut Agreement;*
- The *Arctic Waters Pollution Prevention Act* and *Regulations;*
- The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and *Regulations; and*
- The *Territorial Lands Act* and *Regulations.*

In terms of water management in Nunavut, CIRNAC has a number of different responsibilities. The Minister of CIRNA has a decision-making role with regards to the Nunavut Water Board's (NWB) issuance of any Water Licences associated with a project. Furthermore, the Department participates as an intervenor in the water licensing process, providing advice and expertise.

When a proposed project is approved to proceed, CIRNAC is responsible for inspecting and enforcing any terms and conditions (T&Cs) contained within any Water Licence associated with the project. The Nunavut Water Board ensures that Project Certificate T & Cs are incorporated in Water Licences.

Although CIRNAC is not responsible for implementing water related T&Cs, we have reviewed the Type 'A' Water Licence associated with the Meadowbank Gold Mine and Whale Tail Pit Projects with respect to Project Certificates [No. 004 and No.008] and have included concordance tables (Appendices A and B) that outline how these T&Cs have been incorporated in the Water Licences.

In 2018, AEM's Meadowbank Gold Mine & Whale Tail Pit Projects activities and monitoring were conducted under the following Water Licences:

- Type A Water Licence 2AM-MEA1525 (Meadowbank), and
- Type A Water Licence 2AM-WTP1826 (Whale Tail)

ii. A summary of any inspections conducted during the 2018 reporting period, and the results of these inspections; and,

On August 28, 2018, CIRNAC's Water Resource Officer (WRO) conducted an onsite inspection of the Agnico Eagle Mines' ('AEM') Whale Tail Pit project site, authorized under water licence no. 2AM-WTP1826. The intent of the inspection was to ensure the compliance with the above stated water licence and approved management plans. The Whale Tail dyke construction, Whale Tail North pond, Whale Tail South pond, and Whale Tail powerhouse and associated fuel tanks construction area were inspected. Overall, no concerns were noted with any aspects of the Whale Tail construction.

On August 29, 2018, CIRNAC's WRO performed an inspection of the AEM's Meadowbank Gold Mine site, authorized under water licence no. 2AM-MEA1525. The site visit included an inspection of the hazardous waste laydown area located near the main camp, Goose pit, the Vault Road area, Vault pit, the sewage treatment plant, Tailings pond, Tailings Reclaim Pond North Cell, South Cell Tailings Pond, the Baker Lake marshalling facility and the runway. No non-compliance with the Act or Licence was noted during the inspection. The Water Resource Officer did request the following documents/information:

- Active life of each remaining pit (Not Received)
- Report the tailings spill that occurred near the south cell (Completed, Spill #18-353)
- Water meter usage for both the camp and the mill (Received on August 30th 2018)
- Keep the Inspector updated with major milestones at the Meadowbank site.
- Most recent sample results from ST-40.2 and 40.3 (Not Received)

Detailed inspection reports can be accessed through the NWB Public Registry:

Meadowbank:

ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-MEA1526%20Agnico/3%20TECH/0%20SCOPE%20ENFORCE%20(A)/1%20INSPECTION/2018/180914%202AM-MEA1525%20-%20180829%20CIRNAC%20Inspection%20Report-IMLE.pdf

Whale Tail:

ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-WTP1826%20Agnico/3%20TECH/A%20SCOPE%20ENFORCE/1%20INSPECTION/180928%202AM-WTP1826%20-%20August%2028th%20-%2029th%202018%20Inspection%20Report-IMLE.pdf

iii. A summary of Agnico Eagle's compliance status with regard to authorizations that have been issued for the Project.

Overall, CIRNAC inspectors did not identify any non-compliances with aspects of the Meadowbank Gold Mine and Whale Tail Pit construction that were inspected. CIRNAC will continue to work with AEM to ensure continued compliance with all water licence requirements associated with these two projects.

Appendix A: Meadowbank Project Certificate Terms and Conditions (T&C) incorporated into any permits, certificates, licenses or other approvals issued for the Project

T&C #	NIRB Project Certificate No. 004 Term & Condition	Implemented in Licences or Permits?
5	Cumberland shall meet with respective licensing authorities prior to the commencement of construction to discuss the posting of adequate performance bonding. Licensing authorities are encouraged to take every measure to require that sufficient security is posted before construction begins. This bonding should not duplicate other amounts of security required (eg. the NWB).	Yes, all of Part C within the water licence (2AM-MEA1525). Part 16 -19 of Lease No. 66A/81-71-2 (covers the sections of the all-weather access road (AWAR) located on crown land). Part 34-37 of Lease No. 66A/8-72-2 (covers the quarries on crown land).
8	Cumberland shall, within 30 days of re-opening of the camp, re-sample existing groundwater monitoring wells and combining the sampling data with existing rounds of groundwater sampling data, re-evaluate the salinity, major ion concentrations, and dissolved metal load of groundwater flowing to the mine pits and incorporate the results into the water quality monitoring and treatment program. At the time samples are taken Cumberland shall also assess the condition of existing groundwater monitoring wells and replace any defective wells. Cumberland shall continue to undertake semi-annual groundwater samples and re-evaluate the groundwater quality after each sample collection. Cumberland shall report the results of each re-evaluation to NIRB's Monitoring Officer, CIRNAC and EC, and incorporate the results of the additional data into the water license application to the NWB.	No, but Part J, Item 5 within the water licence (2AM-MEA1525) relates to monitoring plans while under care in maintenance.
9	Cumberland shall provide detailed plans for water treatment for the tailings (reclaim pond) discharge, and on a contingency basis for the attenuation pond discharge(s) and for the pits, including estimates of treatment efficiency for each parameter of concern and the description of pH adjustments in the water license application to the NWB.	Yes, Part B, Item 13 within the water licence (2AM-MEA1525).
10	Cumberland shall provide details of the camp sewage treatment, including the type of treatment to be used and the expected treatment capabilities, in the water license application to the NWB.	No, this was not captured within the water licence as it was already completed prior to licence approval.
11	Cumberland shall provide details regarding the effluent outfall configuration, including discharge characteristics,	No, this was not captured within the water licence as it

	the likely behavior of the plume(s), and bathymetric information for Wally Lake in the water license application to the NWB.	was already completed prior to licence approval.
12	Cumberland shall provide details of a comprehensive water use and water management plan for the Baker Lake marshalling area, including monitoring of the discharge from the marshalling area sump, in the water license application to the NWB.	No, this was not captured within the water licence as it was already completed prior to licence approval.
13	Cumberland shall not permit the water discharged into Wally Lake and Third Portage Lake to exceed receiving environment discharge criteria established by the NWB or as otherwise required by law.	Partially, the portion referring to criteria established by the NWB is found in Part F, Items 3 and 4 within their water licence (2AM-MEA1525).
14	Cumberland shall not remove dewatering dikes until the quality of water contained within them is of sufficient quality to meet receiving environment discharge criteria established by the NWB or as otherwise required by law.	Yes, Part E, Item 7 within their water licence (2AM-MEA1525).
15	Cumberland shall within two (2) years of commencing operations re-evaluate the characterization of mine waste materials, including the Vault area, for acid generating potential, metal leaching and non-metal constituents to confirm FEIS predictions, and re-evaluate rock disposal practices by conducting systematic sampling of the waste rock and tailings in order to incorporate preventive and control measures into the Waste Management Plan to enhance tailing management during operations and closure. The results of the re-evaluations shall be provided to the NWB and NIRB's Monitoring Officer.	Yes, Part B, Item 13 within the water licence (2AM-MEA1525).
17	Cumberland shall undertake a detailed technical review of all dike and pitwall designs at the final design stage, and submit the final dike designs for water depths of greater than 10 metres for an expert analysis and Cumberland shall include the detailed technical review and the expert analysis in the application to the NWB for a water license.	No, this was not captured within the water licence as it was already completed prior to licence approval.
18	Cumberland shall commit to a pro-active tailings management strategy through active monitoring, inspection, and mitigation. The tailings management strategy will include the review and evaluation of any future changes to the rate of global warming, compliance with regulatory changes, and the ongoing review and evaluation of relevant technology developments, and will respond to studies conducted during the mine operation.	Yes, Part B, Item 13 within the water licence (2AM-MEA1525).

19	Cumberland shall provide for a minimum of two (2) metres cover of tailings at closure, and shall install thermistor cables, temperature loggers, and core sampling technology as required to monitor tailing freezeback efficiency. Cumberland shall report to NIRB's Monitoring Officer for the annual reporting of freezeback effectiveness.	Yes, Schedule B, Item 18 and Part B Item 13 within their water licence (2AM-MEA1525).
20	Prior to construction, Cumberland shall identify mitigation measures that can be taken if groundwater monitoring around the tailings facility demonstrates that contamination from tailings has occurred through the fault. Upon drawdown of the North arm of Second Portage Lake, Cumberland shall conduct further tests to assess the permeability of any faults and provide the results to regulators. If doubt remains Cumberland shall seal the fault and conduct further permeability testing and monitoring.	Yes, Part B Item 13 within their water licence (2AM-MEA1525).
21	Cumberland shall fund and install a weather station at the mine site to collect atmospheric data, including air temperature and precipitation.	No.
22	Prior to the commencement of the Project, Cumberland shall fund and install an on site lab that has the capability to monitor parameters at a type and at a frequency acceptable to the NWB and EC at all site discharge points. The results of these analyses, as well as any other water quality monitoring required by regulatory authorities shall be used in the submission of a receiving water assimilative capacity water quality assessment study of concern to regulators. The lab shall be certified for environmental water quality analysis purposes with standards to include the calibration of water quality monitoring instruments. Cumberland shall file proof of application to become accredited upon the request of the NWB.	Partially, Part I, Item 16, 17, 18, 19 and 20 of their water licence (2AM-MEA1525) relate to this condition, but not the installation of an on-site lab prior to construction.
23	For the purposes of monitoring quality assurance and quality control ("QA/QC"), Cumberland shall ensure that water quality monitoring performed at locations within receiving waters that allow for an assimilative capacity assessment of concern to regulators, be carried out by an independent contractor and submitted to an independent accredited lab for analysis, on a type and frequency basis as determined by the NWB. Results of analysis shall be provided to the NWB and NIRB's Monitoring Officer.	Yes, Part I, Item 16 within their water licence (2AM-MEA1525).

24	Cumberland shall identify an area and design for a landfill for disposal of operational and closure non-salvageable materials, including a list of any nonsalvageable materials, and a procedural manual for preparation of location and placements of these materials, and incorporate the design into the final Waste Management Plan as instructed by the NWB.	Yes, Part B, Item 13 within their water licence (2AM-MEA1525).
25	Cumberland shall manage and control waste in a manner that reduces or eliminates the attraction to carnivores and/or raptors. Cumberland shall employ legal deterrents to carnivores and/or raptors at all landfill and waste storage areas. The deterrents are to be developed taking into consideration Traditional Knowledge and in consultation with the HTO, EC and CIRNAC and incorporated into the final Waste Management Plan prior to filing the Plan with the NWB.	Partially, this was not captured within the water licence as it was already completed prior to licence approval. AEM's water licence (2AM-MEA1525) does however, require adherence to the Waste Management Plan under Part B, Item 13.
26	Cumberland shall ensure that spills, if any, are cleaned up immediately and that the site is kept clean of debris, including wind-blown debris.	Yes, Part H, Items 1 and 2 within their water licence (2AM-MEA1525). Partially, Condition 4547 of Lease No. 66A/81-71-2 (covers the sections of the AWAR located on crown land). Partially, Conditions 47 and 52-56 and 55 of Lease No. 66A/8-72-2 (covers the quarries on crown land).
27	Cumberland shall ensure that the areas used to store fuel or hazardous materials are contained using safe, environmentally protective methods based on practical, best engineering practices.	Yes, Part H, Item 3 within their water licence (2AM-MEA1525). Partially, Condition 45-47 of Lease No. 66A/81-71-2 (covers the sections of the AWAR located on crown land). Partially, Conditions 52-56 of Lease No. 66A/8-72-2 (covers the quarries on crown land).
28	Cumberland shall become a signatory to the International Cyanide Management Code, communicate this to shippers, and do so prior to Cumberland storing or handling cyanide for the Project.	Not incorporated into an authorization, but CIRNAC verified that AEM is a signatory company.
29	Cumberland shall report to NIRB if and when Cumberland	Not incorporated into an

	develops plans for an expansion of the Meadowbank Gold Mine, and in particular if those plans affect the selection of Second Portage Lake as the preferred alternative for tailings management.	authorization.
30	Cumberland shall meet with EC and the DFO to ensure that the information required for the application to add the northwest arm of Second Portage Lake as a tailings impoundment area under Schedule 2 of the Metal Mining Effluent Regulations, including the No Net Loss Plan to offset losses expected as a result of all other Project infrastructure, is complete and the application can be processed according to law.	Not incorporated into an authorization as this is already a requirement under Metal Mining Effluent Regulations.
33	Cumberland shall update the Access and Air Traffic Management Plan to: 1. include an All-weather Private Access Road Management Plan, including a right-of-way policy developed in consultation with the KivIA, GN, CIRNAC and the Hamlet of Baker Lake, for the safe operation of the all-weather private access road; and 2. to facilitate monitoring of the environmental and socio-economic impacts of the private road and undertake adaptive management practices as required, including responding to any concerns regarding the locked gates.	Partially, item 1 is addressed under condition 54 of Lease No. 66A/8-71-2 (covers the sections of the AWAR located on crown land).
35	Cumberland shall reclaim the all-weather private access road at the end of the mine life to prevent any future use of the road, including scarification of the road and restoration of the natural hydrology, topography, and vegetation, subject only to Cumberland and/or its successor seeking NIRB Article 12 approval for the road to be maintained and operated beyond the life of the mine.	Partially, Condition 12 and 15 of Lease No. 66A/81-71-2 (covers the sections of the AWAR located on crown land).
78	Cumberland shall file a complete Closure and Reclamation Plan developed to comply with CIRNAC's policy of full cost of restoration and any related NWB requirements such that the Inuit and taxpayers are not liable for any cost associated with the cleanup, modification, decommission, or abandonment.	Partially, Part B, Item 13 within their water licence (2AM-MEA1525). Partially, Condition 12, 15, 16-19, 26 of Lease No. 66A/81-71-2 (covers the sections of the AWAR located on crown land). Partially, Conditions 14, 17, 26, 34-38 of Lease No. 66A/8-72-2 (covers the quarries on crown land).

79	79. In addition to the NWB's requirements, the final Closure and Reclamation Plan shall require Cumberland to: a. Ensure that mine facilities and infrastructure are abandoned in such a manner that: i. The Project site is physically stable and any requirements for long term maintenance and monitoring are minimized; ii. Threats to public safety and wildlife are eliminated; and iii. Affected areas are returned to the original undisturbed conditions to the fullest extent possible. b. Prevent continuing impacts from contaminants and wastes on the environment including those associated with acid rock drainage; c. Remove all hazardous materials and waste and as much salvageable waste as practicable from the Project area; and d. Enter into written arrangements with its abandonment and reclamation contractors to ensure all site debris is cleaned up off the lands, including wind-blown debris.	Partially, Part B, Item 13 within their water licence (2AM-MEA1525). Partially, Condition 12, 15, 16-19, 26 of Lease No. 66A/81-71-2 (covers the sections of the AWAR located on crown land). Partially, Conditions 14, 17, 26, 34-38 of Lease No. 66A/8-72-2 (covers the quarries on crown land).
80	Cumberland shall file annually with NIRB's Monitoring Officer an updated report on progressive reclamation and the amount of security posted, as required by KivIA, CIRNAC, and/or the NWB.	Does not incorporate filing to the NIRB's Monitoring Officer, but does speak to reporting on progressive reclamation and security: Partially, Condition 19 (bi-annual reporting requirement), 20, and 33 of Lease No. 66A/81-71-2 (covers the sections of the AWAR located on crown land). Partially, Condition 24 and 38 of Lease No. 66A/8-72-2 (covers the quarries on crown land).

Appendix B: Whale Tail Project Certificate Terms and Conditions (T&C) incorporated into any permits, certificates, licenses or other approvals issued for the Project

T&C #	NIRB Project Certificate No. 008 Term & Condition	Implemented in Licences or Permits?
2	Prior to commencing construction activities the Proponent shall update the existing Dust Management and	Water licence (2AM-WTP 1826) Part F:12

	Monitoring Plan for the Meadowbank Mine site to address and/or include the following additional items: • Align plan requirements with commitments made in the Final Environmental Impact Statement and during the Final Hearing to monitor dust along the existing all-weather access road, the Amaruq haul road and any other roads and trails associated with the Project. • Verify commitments to the utilization of dust suppressants along the all-weather access road, the Amaruq haul road and any other roads and trails associated with the Project, including a description of the type of suppressant to be utilized and the frequency and timing of applications to be made throughout the various seasons of road use. • Outline the specific triggers, thresholds, and adaptive management measures that will apply if monitoring indicates that dust deposition is higher than predicted.	
6	The Proponent shall conduct detailed hydrodynamic modelling during operations and closure to evaluate the mixing of the Waste Rock Storage Facility seepage into Mammoth Lake post-closure; and Based on the results of the modelling implement monitoring programs and adaptive management strategies that minimize the need for active intervention, including long-term treatment of mine contact water.	Water licence (2AM-WTP 1826) Part E: 8
9	The Proponent shall undertake the additional site-specific geotechnical investigations required to identify sensitive land features and to inform final engineering design prior to the construction of project components such as the waste rock storage facility and quarries.	Water licence (2AM-WTP 1826) Part D: 2
12	As part of the Closure and Reclamation Plan, the Proponent shall develop and implement a program to: a) Progressively reclaim disturbed areas within the project footprint, with an emphasis on restoring the natural aesthetics of the area through re-contouring to the extent practicable; and b) In a manner that demonstrates that the Proponent has considered the aesthetic values of local communities (e.g. information regarding the acceptability of the topography and landscape of the project areas following progressive reclamation efforts).	Water licence (2AM-WTP 1826) Part J:2

13	The Proponent shall explore the feasibility of topsoil/organic matter salvage as part of project development and provide updates to the Closure and Reclamation Plan based on this investigation.	Water licence (2AM-WTP 1826) Part J:3
15	Subject to the additional direction and requirements of the Nunavut Water Board, the Proponent shall prepare and implement a Groundwater Monitoring Plan that, at a minimum includes: • The collection of additional site-specific hydraulic data (e.g., from new monitoring wells) in key areas during the pre-development, Nunavut Impact Review Board Page 23 of 49 Project Certificate No. 008 construction and operation phases; • Definition of vertical and horizontal groundwater flows in the project development areas; • Delineates monitoring plans for both vertical and horizontal ground water; and • Thresholds that will trigger the implementation of adaptive management strategies that reflect site-specific conditions encountered at the project site.	Water licence (2AM-WTP 1826) Part I:1e
16	Within two years of commencing operations, the Proponent shall: a) Conduct additional analyses to determine the approximate fill time for the Whale Tail Pit at closure; b) Undertake a hydrogeological characterization study to assess the potential for arsenic and phosphorous diffusion from submerged Whale Tail pit walls; c) If the results of the characterization study indicate a moderate to high potential for arsenic and/or phosphorous diffusion, perform detailed hydrodynamic modelling of the flooded pit lake prior to closure to evaluate meromictic conditions and flooded pit water quality; and d) Add these required activities to the site Groundwater Monitoring Plan.	Water licence (2AM-WTP 1826) Part E:7
17	The Proponent shall: a) Monitor the effects of project activities and infrastructure on surface water quality conditions; b) Ensure the monitoring data is sufficient to compare the impact predictions in the Environmental Impact Statement	Water licence (2AM-WTP 1826) Part D:10-14

	(EIS) for the Project with actual monitoring results; c) Ensure that the sampling locations and frequency of monitoring is consistent with and reflects the requirements of the Water Quality and Flow Plan and the Core Receiving Environmental Monitoring Program; and d) On an annual basis, the Proponent will compare monitoring results with the impact assessment predictions in the EIS and will identify any significant discrepancies between impact predictions and monitoring results.	
18	The Proponent shall, reflecting any direction from the Nunavut Water Board, maintain a Site Water Monitoring and Management Plan designed to: • Minimize the amount of water that contacts mine ore and wastes; • Appropriately manage all contact water and discharges to protect local aquatic resources; and • Implement water conservation and recycling to maximize water reuse and minimize the use of natural waters. The Plan should include monitoring that demonstrates contact water (runoff and shallow groundwater) from the ore storage and waste rock storage areas is captured and managed, as per the Waste Rock Facility Management Plan.	Water licence (2AM-WTP 1826) Part E:7-11
19	The Proponent shall, reflecting any direction from responsible authorities such as the Nunavut Water Board, Fisheries and Oceans Canada and Environment and Climate Change Canada, maintain a Core Receiving Environment Monitoring Program (CREMP) designed to: • Determine the short and long-term effects in the aquatic environment resulting from the Project; • Evaluate the accuracy of Project effect predictions; • Assess the effectiveness of mitigation and management measures on Project effects; • Identify additional mitigation measures to avert or reduce environmental effects due to Project activities; • Comply with Metal Mining Effluent Regulations requirements, should an Environmental Effects Monitoring program be triggered; • Reflect site-specific water quality conditions; • Include details comparing the watershed features	Water licence (2AM-WTP 1826) Part E:7-11

	in the Whale Tail watershed to those watersheds used as reference lakes; and • Evaluate the mixing and non-mixing portion of the pit. The CREMP should include sufficient sampling and monitoring programs to appropriately characterize the receiving environment to ensure that adequate data is available to assess impact predictions made within the Environmental Impact Statement for the Whale Tail Pit Project.	
20	Unless otherwise authorized, the Proponent shall maintain an appropriate setback distance between project quarries and borrow pits from fishbearing or permanent waterbodies as required to prevent acid rock drainage or metal leaching into such waterbodies.	Water licence (2AM-WTP 1826) Part I-1
21	The Proponent shall ensure that all project infrastructures in watercourses are designed and constructed in such a manner that they do not unduly prevent or limit the movement of water or fish species in fish bearing streams and rivers, unless otherwise authorized by Fisheries and Oceans Canada.	Water licence (2AM-WTP 1826) Part E-25
22	The Proponent shall engage with Fisheries and Oceans Canada to develop project specific thresholds, mitigation and monitoring for any blasting activities that would exceed the requirements of Fisheries and Oceans Canada's Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters.	Water licence (2AM-WTP 1826) Part I-1
24	The Proponent shall engage Fisheries and Oceans Canada, and other interested parties to further assess: • Whether the increased surface area of Whale Tail Lake is a viable offset to habitat losses resulting from development of the Project; and • Whether Whale Tail end pit would support fish in the post closure scenario. Results of this assessment should be incorporated into the Habitat Compensation Plan and/or the Conceptual Fisheries Offsetting Plan as appropriate.	Water licence (2AM-WTP 1826) Part I-1
26	The Proponent shall include revegetation strategies within its Mine Closure and Reclamation Plan that support progressive reclamation, and promote natural revegetation and recovery of disturbed areas	Water licence (2AM-WTP 1826) Part J-8

	compatible with the surrounding natural environment. These strategies should include exploration of the feasibility and practicality of topsoil/organic matter salvage through Project development. Consideration for the results of similar reclamation efforts at other northern projects, including the Meadowbank Gold Mine Project, must be demonstrated.	