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Our review comments are summarized in Section 1.1. Full comments and recommendations are provided in Section 2 of this technical memorandum.

## 1.1 Summary of Comments

Comments pertaining to the terrestrial environment are summarized as follows:

- Traffic volume along the All-Weather Access Road (AWAR) in 2020 continues to exceed volumes predicted in the FEIS, even without the saline water trucking.
- The titles and terminology surrounding the terrestrial reporting require clarification.
- Details on objectives and methodology regarding the wildlife track surveys are needed.
- Agnico Eagle and the Government of Nunavut need to develop a long-term data share agreement to enable Agnico Eagle to examine collared caribou data in a timely manner, to aid in interpretation of monitoring and efficacy of mitigation.
- Clarity is required to quantify delays and deflections from AWAR as per impact predictions.
- Clarity is required how monitoring is conducted 5 to 10 km from site to trigger mitigation.

- Analysis of behaviour surveys could benefit by consideration which side of the AWA the group is located (i.e., 'upstream' or not).
- Consistently high dustfall levels upwind of the road should be clarified.

## 2. Technical Review

### 2.1 Terrestrial Technical Comments

Reviewer	#	Reference	Comment	Recommendation
<b>Meliadine Gold Project 2020 Annual Report (March 2021)</b>				
AWR on behalf of KivIA	1	S 10.3 AWAR	The traffic volumes along the All-Weather Access Road (AWAR) in 2020 continue to exceed levels predicted for the AWAR in the FEIS by 42% overall (S 10.3, Table 25, pg 108). Traffic volumes during July, which coincided with caribou movement through the site, exceeded levels predicted in the FEIS by 91% (S 10.3, Table 25, pg 108) despite the closure of AWAR over a 10-day period for a total of 165 hours between 7 and 19 July due to caribou migration and no apparent water tanker traffic that month (Appen. 34, 2020 AWAR Usage, Table 1).	Agnico Eagle should clarify whether and when traffic volumes predicted in the FEIS will be attained, and if they won't be attained, what implications this has for assessment of impacts of the project on wildlife.
<b>Appendix 26 2020 Terrestrial Effects Monitoring and Mitigation Program Annual Report (April 2021)</b>				
AWR on behalf of KivIA	2	TEMMP	Terminology: The Meliadine Project Final Environmental Impact Statement (FEIS) included a <b>Terrestrial Environment Management and Monitoring Plan</b> (V2, November 2015; using 'TEMMP' as the acronym). This Plan and the subsequent update (V3; June 2020) stated that "An annual <b>Terrestrial Environment Monitoring Summary Report</b> for the project will be completed". Appendix 26 to the current annual report is titled "Appendix 26: 2020 <b>Terrestrial Environment Management and Monitoring Plan Report</b> ", yet the Golder document after the title page is titled "2020 <b>Terrestrial Effects Monitoring and Mitigation Program Annual Report</b> " (5 April 2021) and uses TEMMP as the acronym. These titles, intermixing of management, monitoring and mitigation, and	Agnico Eagle should clarify the various titles of the TEMMP plans, programs and reports.

			reference to plan or a program, not to mention the use of similar acronyms, are confusing.	
AWR on behalf of KivIA	3	S 9.0 Wildlife Observations and S 9.1 Wildlife Track Surveys	Project certificate T&C 118 includes “... <i>weekly winter track surveying and summer and fall surveys undertaken on foot twice per month</i> ” (Table 1-1, pg 4). Summaries of wildlife observations (incidental observations) are provided in S 9.0 and of wildlife track surveys in S 9.1, but it is unclear if and how the values reported relate, or whether they are integrated. No objectives, locations or methodology are provided for wildlife tracks survey section (S 9.1, pg 32), especially for the summer surveys, and no detailed results are provided other than a summary of overall annual numbers and percentages for different species. In response to KivIA comments on the 2019 TEMMP, Agnico Eagle stated that the track surveys are (“ <i>are not completed systematically</i> ”) and deflected further information to after 2021. The KivIA suggests that this response is unacceptable. The usefulness of these surveys to wildlife monitoring and mitigation is unclear and requires clarification, sooner rather than later.	Agnico Eagle should clarify the objectives of the wildlife track surveys and present the results in a manner to enable examination of objectives and of spatial and temporal trends over time.
AWR on behalf of KivIA	4	S 12.0 Barren-ground Caribou	“ <i>A request for access to caribou collar data for this report was submitted to the GN DoE on October 27, 2020. Collar data were not provided to Agnico Eagle at the time this report was completed.</i> ” (S 12.0, pg 35). Broad movement figures for the Meliadine area would inform timing of patterns of annual variation in interactions of the Qamanirjuaq herd with the mine. Fine scale mapping (e.g., 2019 Meadowbank Annual Report Fig. 6.2 – individual collar trajectories) would provide a visual showing individual collared caribou movement through the mine site and AWAR. The KivIA is frustrated that Agnico Eagle is unable to obtain current collar data for use in annual report monitoring, despite an invitation to submit a request	Agnico Eagle and the Government of Nunavut should develop a long-term data share agreement to enable Agnico Eagle to provide figures of collar movements at broad and fine (individual collar trajectories) scales in Meliadine Annual Reports to aid in interpretation of monitoring and efficacy of mitigation.

			from GN on 21 August 2020 (A. Robinson, GN, email) and a formal request sent by Agnico Eagle on 27 October 2020 (TEMMP, pg. 35).	
AWR on behalf of KivIA	5	S 12.2 Collared Caribou Inventory	<p>One of the impact prediction thresholds is “&lt;10% <i>caribou deflections from AWAR</i>” to be monitored using ground surveys (Table 2-1, pg 9). The text (pg 40) refers to the 8 January 2021 Golder report (Appendix E) on caribou-AWAR interactions, concluding that between 2014 and 2019 “93% of movements within the LSA crossed the AWAR, other roads and Mine infrastructure” (pg 40). This Golder report was roundly criticized by KivIA (memo from 25 January 2021) and the Sayisi Dene First Nation (letter from 29 January 2021). Issues included the 1.5 km zone of influence used to “encounter” the road, definitions of deflection, and not accounting for exposure to insect harassment. Given these concerns, the KivIA suggests that the 93% crossing rate of collared individuals is premature and is based on a partial analysis which lacks insight into caribou behaviour. The 2020 collar data were unfortunately not examined for this annual report (see Comment 4, above).</p> <p>The 2020 TEMMP recommends that to “<i>quantify the threshold impact prediction of &lt;10% caribou deflections from AWAR, the number of times a caribou group was deflected from the AWAR should be explicitly quantified as part of the caribou behaviour surveys</i>” (S 12.5, pg 44). The KivIA agrees that it would be informative to see these data, but is doubtful whether 30-minute behaviour surveys will adequately address the question of caribou deflection.</p>	<p>a) Agnico Eagle should clarify how 30-minute behaviour surveys will be able to quantify delays and deflections from AWAR.</p> <p>b) Agnico Eagle should conduct a more comprehensive analysis of collared caribou-mine interactions at appropriate spatial and temporal scales and including relevant variables (e.g., insect harassment and daily traffic levels) to ensure that the conclusions are rigorous. This evaluation of caribou movements through the mine site and AWAR should examine displacement/deflection of caribou and responses to operations during migration.</p>
AWR on behalf of KivIA	6	S 12.3 Caribou Advisory	Rigorous reporting is required to enable effective adaptive management of caribou and other wildlife at the Meliadine project. Agnico Eagle provided greater details on caribou monitoring, observations and triggers in the 2020 TEMMP report, which the KivIA appreciates. Levels 1-3 action levels and the caribou	Agnico Eagle should clarify how trigger distances of 10 and 5 km are monitored on the lead-up and during migration. This clarification should include whether helicopter surveys

			<p>advisories (Table 12-2, pg 41) show trigger distances of 10 and 5 km, distances which are far beyond the range of detection from the ground. Twice weekly review of collar maps do not have the temporal resolution to be effective monitoring triggers at these spatial scales (especially given delays in collar downloads and map generation). There is no mention in the TEMMP of aerial surveys to determine caribou abundance at distances beyond visual range (~3 km at the outside limit), however, the Meliadine caribou migration protocol presentation (Appen. 25, 2020 Toolbox Presentations, pdf pg 71) indicates “<i>Helicopter flights will be completed mid to late June to assess herd general proximity to Meliadine</i>”.</p>	are part of monitoring and how these surveys are conducted.
<b>Appendix 29: 2020 Caribou Behaviour Study (March 2021)</b>				
AWR on behalf of KivIA	7	2020 Behaviour report	<p>The 2020 behaviour report is well written with clearly presented methods, results and interpretation. Caribou closer to the road were more likely to cross, but this could be confounded by the 30-minute scan period, restricting the observers from determining the ultimate “fate” of groups initially located further out from the road. The KivIA agrees that inclusion of information on harvesting activities and traffic levels would strengthen inferences about caribou behaviour near the road.</p> <p>However, while the behaviour report (Appendix 29) makes fair and balanced conclusions from the results, the TEMMP report states that “<i>The fact that there are individuals, and not large groups, near the road would suggest that the road is not seen as a threat as herding is a predator swamping behaviour</i>” and “<i>...caribou observed during the surveys may be further from the road because they are not planning on crossing the road at the survey location</i>” (TEMMP, S 12.1.2, pg 37). These statements are totally unfounded and not supported by the data. A more plausible interpretation is that caribou are likely further from the road because, as noted in the behaviour report, it “<i>may be indicative of a trend that caribou tend to avoid</i></p>	<p>a) Agnico Eagle should clearly clarify how the behaviour 30-minute scan surveys will be able to assess whether &lt;10% of caribou are deflected from the AWR, as noted in TEMMP Table 2-1 (pg 9).</p> <p>b) Agnico Eagle should justify their conclusions regarding caribou perception of the AWR as non-threatening (implying little perceived risk?) and caribou decisions on where to cross the road.</p> <p>c) Agnico Eagle should consider added to their behaviour analysis the side of the road the caribou group being scanned is on.</p>

			<p><i>areas within 100-300 m of the road unless they intend to cross it</i>" (Behaviour report, S 6.3.1, pg 11).</p> <p>Caribou movement through AWAR generally occurs east to west. Caribou behaviour and movements appear to differ whether they are on the 'upstream' or 'downstream' side of roads (see Boulanger et al. 2020). Analysis of the behaviour data may benefit by addition of a covariate whether the group being scanned was on the up- or downstream side of the migration.</p>	
<b>Appendix 24 - 2020 Air Quality Monitoring Report (March 2021)</b>				
AWR on behalf of KivIA	8	Air quality reporting	<p>The 2020 Air Quality Monitoring Report includes details on dust suppressant application, and the KivIA appreciates Agnico Eagle's inclusion of these data.</p> <p>Figure 19 (pg 26; as well as Figures 20 and 21) indicates that maximum dustfall values were consistently higher on the upwind side of the road (if negative values in the figure represent the west/upwind side of the road, as indicated in the figure caption). This seems contrary to what would be expected for dust deposition adjacent to a road.</p>	Agnico Eagle should clarify why dustfall values are consistently higher on the upwind side of the AWAR.



### 3. Closing

KivA appreciates the opportunity to provide comments on the 2020 Annual Report for the Meliadine Gold Project. Please contact Luis Manzo, Director of Lands, should you require more information.

Regards,

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