

Agnico Eagle (AE) - Meliadine Extension

Summary of SDFN/NDFN Comments in Response to AE Commitments (as of January 31, 2023)

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February 25, 2023

Below is a summary of SDFN/NDFN comments in respect of the supplemental information provided by AE and the updated Commitments List, with an emphasis on outstanding issues.

1. Is supplemental information provided to date sufficient to complete SDFN/NDFN assessment of all components within the revised scope?

- No.
- **Post-Calving Range Analysis:** Based on a review of the technical comments and discussion at the November 2022 technical meeting, the First Nations submit that AE's cumulative effects analysis of the Qamanirjuaq caribou herd's post-calving range is unacceptable. A range-wide cumulative effects assessment is not the same as a focused spatial assessment of the caribou herd's post-calving range. It is SDFN/NDFN's observation that the analysis was based on the "caribou effects study area (CESA)" which dilutes impacts to caribou near the mine site because it represents a large area (including spring/fall migration routes & calving areas that are not impacted by the mine) of the Qamanirjuaq caribou herd annual home range. The AE analysis should include assessment of impacts on a smaller post-calving range polygon because this is the primary period in which the caribou herd interacts with the Meliadine mine infrastructure and it is of utmost importance to assess impacts to caribou during this vulnerable time in its life cycle. Caribou demography is very "forage driven" by protein requirements (Johnson et. al. 2021) and negative impacts from disturbance to caribou foraging (both adults and calves) during post-calving could be very detrimental to future productivity.
 - SDFN/NDFN request that the revised post-calving range polygon is agreed to by interested parties and the analysis is completed prior to setting a public hearing date. This analysis must include the analysis of the 2020, 2021 and 2022 caribou data.
- **2021 Technical Memorandum entitled "Collared Caribou Meliadine All-Weather Access Road Interactions":** Pursuant to the Minister of Northern Affairs' Decision Letter of January 31, 2022 related to the waterlines project and Term and Condition 44 of the Amended Project Certificate, Agnico Eagle is required to revise the 2021 Technical Memorandum entitled "Collared Caribou Meliadine All-Weather Access Road Interactions" before waterlines construction. (Term and Condition 44 includes the following, "*The Proponent in consultation with the Terrestrial Advisory Group shall revise the 2021 Technical Memorandum entitled "Collared Caribou Meliadine All Weather Access Road Interactions" describing the crossings and deflections of caribou in relation to the all-weather access road as assessed using caribou collar data and shall provide a copy to the NIRB prior to construction/installation of the waterlines.*").

At the December 2022 meeting of parties to the Terrestrial Advisory Group ("TAG"), it was SDFN/NDFN understanding that a new "collared caribou memo" would be completed to replace the April 22, 2022 technical memorandum (220511-11MN034-

Updated AWAR Caribou Deflections Memo-TC 44 -IA1E) to meet the requirements of Term and Condition 44. It was the First Nations' expectation this new analysis would be presented to the interested parties by January 31, 2023. Reviewing the AE re-analysis of updated collared caribou data in relation to the Meliadine Extension project is critical to the First Nations' understanding and assessment of the Meliadine Extension proposal.

The technical memorandum will also address what constitutes a "crossing" versus a "deflection" and how it is measured, including the spatial boundary (e.g., LSA versus ZOI). SDFN/NDFN consider this to be an immediate priority not only because the deflection rate is a TEMMP monitoring indicator for sensory disturbance (with a threshold of less than 10% deflections) but also because the AWAR will be further widened in 2023 as part of future development. AE committed to providing detailed analysis that justifies their statement that caribou will cross the AWAR and two waterlines the same as they currently cross the AWAR. The definition of 'deflection' is a key requirement for the 2022 Meliadine Extension FEIS. This term is the primary threshold metric for assessing caribou impacts from the AWAR, as per the 2021 TEMMP. SDFN/NDFN requests that the revised collared caribou analysis (based on TAG member feedback provided at the Dec 2022 meeting) should include 2020, 2021 and 2022 collared caribou data.

- SDFN/NDFN submit that the new "collared caribou memo" analysis be completed before a public hearing date is set to allow interested parties to review and provide feedback. Based on the discussion at the December 2022 meeting of the TAG, this collared caribou analysis should include the 2020, 2021 and 2022 collared caribou data.

2. Identify which SDFN/NDFN technical review comments and commitments have been resolved and how and identify which remain outstanding.

- ***Commitment 5: Definition of deflection, caribou movement and monitoring including noise levels, zone of influence.***
 - **SDFN/NDFN-TC-01. Windfarm impacts. Partly resolved.**
 1. While AE has committed to shut down the rotating wind farm turbines during caribou migration, the turbine's tall structure (i.e., 144.5 m height) will still have a visual and sensory disturbance zone of influence (ZOI) and needs to be assessed.
 - **SDFN/NDFN-TC-03. Noise Levels. Not resolved.**
 1. Outstanding. AE's offer to conduct a non-regulatory scientific research program to record high frequency noise levels (potentially heard by caribou) is welcomed and needs to be discussed further.
 2. AE should employ additional remote noise receptors (at the current human detectable frequency levels) at a greater distance from the mine than currently done, to establish a baseline level of actual measured noise for the mine site to verify the 2014 Final Environmental Impact Statement (FEIS) model predictions. This should be done instead of using 2022 model predictions for verification. This request was not

answered in a satisfactory fashion by AE in the technical review response received on November 8, 2022.

- **SDFN/NDFN-TC-04. Not resolved.**

1. Post-calving ground range analysis (including 2020-21-22 data) still has not been provided by AE as requested by SDFN/NDFN. This analysis should be a focused spatial assessment of caribou distribution, movement and migration near the current and proposed mine infrastructure. This was requested because the 2022 FEIS addendum assessed caribou impacts at the 'caribou effects study area (CESA)' scale and due to the CESA large spatial extent, it diluted possible effects to caribou near the mine infrastructure.

- **Commitment 25: *Provide schematic of Discovery waterline and junction with AWAR schematic***

- **SDFN/NDFN-TC-02: Partly Resolved.**

1. Outstanding. While the cross-section road schematic displays the waterline dimensions, spacing from the roads and 3:1 rise to run of the coverings, the schematic is still confusing. The top schematic on page 2 indicates the 2 waterlines will be placed and covered on the east side of the AWAR. However, the large diagram titled "Agnico Eagle-Meliadine Division 180- Saline Effluent Discharge 230- Generak Earth Works Plan" shows the 2 waterlines along the west side of the AWAR. While it is assumed this is an error, this needs to be clarified.
2. In addition, the schematic labelled "rock surface road embankment typical section" on page 2 shows the surface of the covering to be at a level close to the roadbed surface. However, the schematic labelled "well drained overburden-road embankment typical section" shows a covering surface much lower than the roadbed surface which would represent a higher step for caribou to cross from covering to roadbed surface. This inconsistency in the covering surface to roadbed surface needs to be addressed as inconsistent covering height may serve to be a caribou crossing deterrent.
3. Further details of covered locations on Discovery waterline have not been provided as requested. AE indicated they would respond to NIRB-TM-04 within 60 days of construction. SDFN/NDFN requests the details on the Discovery waterline covering locations in a timely fashion.
4. The road schematic diagrams provided by AE still do not identify how the waterline coverings at key caribou crossing locations will differ from the general waterline coverings. This is especially important as it pertains to the key caribou crossing site at the SE part of Meliadine Lake just prior to the Discovery mine expansion area.
5. Based on Alberta government wildlife crossing directives (Alberta 2014), slope profiles at key caribou crossings must be 'feathered out' (e.g., extended 'run' compared to rise of covering at 1:6) to allow easier access to the roadbed for caribou crossings. Waterline coverings should consist of fine surface material (not coarse pit-run gravel material) to prevent injury to young caribou calf hooves. Coverings should therefore be of a sufficient depth (greater than 400 mm as indicated in the schematics) to prevent erosion of the covering and reduce waterline vibration noise as a deterrent to caribou crossing.

6. In addition, AE must provide a diagram and picture of the markers to be used for waterline mitigation (as requested in *SDFN/NDFN-TC-01*), illustrating their spacing along the waterline route, dimensions, wording, and height above ground level for SDFN/NDFN to assess for potential to deflect caribou.

- **Commitment 33: *Summary of Wind Analysis***

- **Partly resolved.**

- Outstanding. SDFN/NDFN requested the 3rd party wind analysis to verify if AE assessed more than just wind resource values to decide on wind turbine locations. The 3rd party wind analysis was done to determine long term wind resource values from a single monitoring station southeast of the Meliadine camp. Wind speeds increase at greater heights above ground level (AGL) and are at their lowest speeds during June-July. Most winds are from a northwest direction at average wind speeds of 9m/s when estimated at 86 metres AGL.

1. Based on the review of the wind analysis report and the 2022 FEIS (section 2.3.12 Power generation), other variables assessed (terrain, wind resource maps, airstrip location, archaeology, land use and an unobstructed exposure to NW winds) for location of wind turbine pad and access roads did not include preferred caribou foraging habitat or caribou travel corridors (although undefined wildlife and vegetation 'baselines' were mentioned). While AE indicated they assessed criteria in selecting turbine locations, no justification or explanation was provided by AE for wind turbine locations as it pertains to impacts to caribou trails or preferred caribou foraging habitat.
2. The 2022 FEIS Meliadine Extension addendum needs to identify the specific criteria metrics used and how decisions were made (based on a decision tree or assessment matrix for example) for selecting wind turbine pad locations. Alternate locations were identified but no specific criteria or details were reported (other than wind resource values) to clarify how decisions were made based on environmental concerns for current proposed or alternate locations. Now that the airstrip is not planned to proceed more options may be available to select alternate wind turbine and access road locations.
3. There may be better sites for turbine pads which avoid caribou migration trails and preferred caribou foraging habitat while also being closer to the existing and planned extension footprint to allow wind turbines to 'blend' into the background outline of the mine and tall waste rock storage piles. The proposed wind turbine pad locations should not be "cast in stone" and further assessment should be done. The current wind turbine locations are 1 to 2 km NW of the mine footprint and would visibly "stand out" due to their isolated locations, separate from the mine footprint. Having wind turbines close to the mine footprint would 'break up' the wind turbine visual outline and make it less isolated. Placing wind turbines within the approved footprint may reduce the zone of influence for caribou as the background of the mine infrastructure will allow the turbines to 'blend in', without compromising wind speed, if faced into the optimal NW direction.

- **Commitments 35, 37 & 38:** *SDFN/NDFN request for involvement in post-calving range polygon discussion with AE & GN*
 - **Not resolved.**
 - Outstanding. SDFN/NDFN requested to be involved with the discussions with GN and KIA regarding the post-calving range polygon for a re-assessment of caribou movements in relation to the proposed extension in their “Comments on the List of Commitments for Meliadine Extension Proposal NIRB File No. 11MN034” dated December 8, 2022, but SDFN/NDFN were not invited to the meeting held pursuant to Commitment 35, 37 or 38.
- **Commitment 39:** *2014 viewshed map, excluding wind turbines.*
 - **Resolved.**
 - Outstanding. The mine and turbines are visible in 49% of the 30 km LSA according to the 2022 FEIS addendum. AE supplied the 2014 viewshed but did not provide a percentage estimate of visible mine infrastructure within the 30 km LSA. SDFN/NDFN requests that percentage estimate.
 - If wind turbines were placed closer to the existing footprint, the visibility of the mine to caribou would be less obvious due to building and infrastructure in the background, which would ‘break up’ the outline of the wind turbines.
 - While the 2014 and 2022 viewsheds are based on the visibility of the mine without and with turbines, (respectively), it is the viewability of the mine (with or without turbines) at the ground (or caribou) level that is most pertinent. Based on that perspective, caribou will be aware of the active mine site for most directions around the mine and from up to 32 km away.
 - This observation emphasizes the need to observe & monitor caribou at greater distances from the mine (currently not done) to determine caribou behaviour in natural undisturbed landscapes so they can provide baseline observations and compare to those observations of caribou in and around the mine footprint for subsequent measurement of disturbance metrics and for potential revisions to the TEMMP ‘caribou alert’ protection protocols.
- **Commitment 43:** Provide pre-construction imagery of windfarm, waste storage pits and borrow pits
 - **Partly resolved.**
 1. Miscommunication between AE and SDFN/NDFN resulted in aerial satellite imagery being provided. SDFN/NDFN wanted pre-disturbance photos.
 - Outstanding. SDFN/NDFN only received pre-disturbance photos of 4 (of 11) windfarm pads and no pre-disturbance photos of waste rock or borrow pit locations.
 - The 4 windfarm pad images indicate that prime caribou forage habitat and travel corridors are being disturbed when alternate locations closer to the existing footprint (which may not be prime caribou habitat) could be considered for pad placement.
 - SDFN/NDFN did also request pre-disturbance photos of the proposed waste rock storage pit and borrow pit areas to assess their suitability for preferred caribou foraging habitat and are awaiting reception of those photos.
 - SDFN/NDFN recommends that pre-construction photographic records of planned disturbance areas (e.g., proposed wind turbine pads, new road

construction such as the Discovery Road, and waterline installation) should be a requirement for AE. This request is like the Meliadine waterline licence (e.g., *Water License 2BB-MEL1424 Part B, Item 6k: A description of all progressive and/or final reclamation work undertaken, including photographic records of site conditions before, during and after completion of operations*). This requirement would allow interested parties and the regulator to provide feedback on new or alternate mitigations from those suggested by the proponent.

3. Identify other outstanding issues that SDFN/NDFN consider need to be addressed.

- The windfarm shut-down commitment is being added to the TEMMP under the road protocol, but the road protocol “triggers” are likely insufficient to address caribou approaching from a greater distance than 10 km. If turbines are rotating in June and the current protocol won’t shut down turbines until caribou groups are observed, it may be too late to prevent caribou from deflecting from their current migratory route.
- SDFN/NDFN requests that AE assess alternate AWAR slope profiles as per the requirements of Term & Condition 54-Movement of Wildlife to develop ways to allow seamless caribou crossings along the AWAR and Discovery Road and to discuss different options with the TAG members.