

August 4th, 2023

Emily Koide
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Nunavut Impact Review Board
P.O. Box 1360 Cambridge Bay
Nunavut NU X0B 0C0

**RE: Opportunity to Address Comments Received for Agnico Eagle Mines Limited's
Meliadine Gold Mine Project 2022 Annual Report**

Dear Mrs. Koide,

Agnico Eagle Mines Limited thanks the Nunavut Impact Review Board (NIRB) for the opportunity to address comments received for Agnico Eagle Mines Limited's Meliadine Gold Mine Project 2022 Annual Report.

The following information and comments are intended to address comments outlined in the below referenced letters.

230608-11MN034-CIRNAC Comments-IA2E
230608-11MN034-HC Comments-IA2E
230615-11MN034-TC Comments-IT9E
230629-11MN034-ECCC Comments-IT9E
230630-11MN034-DFO Comments-IT9E
230630-11MN034-GN Comments-IA2E
230630-11MN034-KivIA Comments-IA2E
230630-11MN034-SDFN&NDFN Comments-IA2E

Should you have any questions or require further information, please do not hesitate to contact us.

With my best regards,



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Environment and Climate Change Canada (ECCC)

ECCC-1: Ammonia and total phosphorous predicted concentrations in CP1

Comment

For the 2021 Annual Report, ECCC commented on the water quality model over-predicting ammonia and total phosphorous levels in water in Containment Pond 1 (CP1) and recommended identifying the source of discrepancy between observed and predicted concentrations, including consideration of validating under ice predictions. The 2022 water quality model results in the 2022 Annual Report still over-estimate ammonia and total phosphorous concentrations. The Proponent proposes that measured concentrations were lower because algal growth reduced these nutrient concentrations and the model concentrations do not include nutrient attenuation. They acknowledge further investigation is required to support the hypothesis. They were not able to validate cryo-concentrated water in 2022 because water in CP1 froze to the bottom due to low water levels.

Recommendations

ECCC's recommendation from last year remains unchanged. When logistically feasible, ECCC recommends review of the modeling for ammonia and total phosphorus in CP1 to identify the source of the discrepancy in observed versus predicted concentrations and that consideration be given to validating under-ice predictions.

Agnico Eagle Answer

As per the response to CIRNAC-4, Agnico Eagle will conduct a study to further explore the cause of the discrepancy and will provide a discussion on this study in the 2023 Annual Report.

ECCC-2: Tailings pore water salinity

Comment

The salinity of pore water in the tailings with respect to the tailings storage facility (TSF) design assumptions is not clear. Section 3.1.9 of the annual report includes both statements that the pore water salinity "has been above the design assumptions for the TSF since initial deposition" and "is below the design assumptions". These statements appear contradictory.

Section 4.1.10 states "freezing point depression due to TDS within the pore water of the tailings is not expected to negatively affect the long-term physical performance of TSF", without speaking to the effect of pore water salinity above design assumptions on chemical performance of the TSF. One of the assumptions to support the tailings not posing acid rock drainage (ARD) risk in section 4.2.4, is that "tailings are being stored in a facility that will freeze back (i.e. re-develop permafrost) and inhibit water movement within a few years postoperations".

Recommendations

ECCC recommends the Proponent clarify what the tailings pore water salinity is in relation to the TSF design assumptions and how this will affect the chemical performance of the facility.

Agnico Eagle Answer

As detailed in response to CIRNAC-3, starting in 2021, the average porewater salinity was marginally above the design limit and in 2022, the average porewater salinity was slightly below the design limit. Thus far in 2023, the average porewater salinity is below the design limit.

Assessment of the impact of elevated salinity within the porewater on the TSF is ongoing, but the main impact will be freezing point depression, which may alter the thermal performance of the TSF from that which was predicted in design. The laboratory testing conducted to measure the freezing point temperature is only slightly lower (-0.02°C) than what was assumed during the design.

The tailings with the higher porewater salinity were produced early on and therefore are generally at the base of the TSF where any additional freezing point depression occurring will have less of an impact on the thermal performance due to the colder temperatures observed currently and predicted during the design at these depths. Currently, most of the tailings are near the measured freezing point or cooler. Below about 2 m from the tailings surface, the tailings are below zero degrees, but slightly warmer than the depressed freezing point, however, the tailings are continuing to cool as the permafrost aggrades into the TSF.

Given the above, minimal negative impact to the geochemical performance of the TSF is expected at this time.

ECCC-3: Inconsistent wind directions for high Total Suspended Particulate (TSP) events

Comment

Section 3.1.1, Current Year TSP, PM10 and PM2.5, states that the wind directions on March 18 and 24 were 307° and 310° respectively, placing dust monitoring station DF-5 directly downwind of the Containment Pond 2 (CP2) construction area when high concentrations of TSP were sampled. However, Appendix B Table 1 shows average wind directions of 4° and 64° respectively for these dates. It is unclear whether the differences in directions are due to different time durations used for averaging, or whether a different averaging method (e.g., vector vs. scalar) was employed.

Recommendations

ECCC requests that an explanation be provided to resolve the inconsistency in stated wind directions.

Agnico Eagle Answer

Agnico Eagle wishes to clarify that the date of February 29th 2023 was erroneously included in Table 1 of Appendix B of *Appendix 25- Air Monitoring Report* of the 2022 Annual Report which shifted the subsequent data set.

The complete and corrected data set is presented in Appendix and is consistent with the information provided in section 3.1.1 of *Appendix 25- Air Monitoring Report* of the 2022 Annual Report.

Agnico Eagle confirms that wind directions of 307° and 310° for March 18 and 24 respectively are the correct values.

ECCC-4: Compliance Monitoring

Agnico Eagle Answer

Agnico Eagle thanks ECCC for its Comment 4 on Compliance Monitoring including summaries of May and September inspections as well as confirmation of MDMER compliance throughout 2022 and status of spills reported in 2022.

Government of Nunavut (GN)

GN-01: Direct Mortality and Attraction of Predators and Scavengers

Comment

In the introduction to the 2022 Terrestrial Environment Management and Monitoring Plan Annual Report (TEMMP), the Proponent states: “The purpose of this report is to summarize the 2022 data collected from wildlife and vegetation monitoring programs, and to describe natural variation and potential Project-related changes...”. Similarly, the Proponent describes how residual effects will require adaptive management. The objectives of the TEMMP are to evaluate monitoring and mitigation, summarize adaptive management strategies, and provide recommendations for 2023. In Table 9, wildlife observations on site appear to be increasing; however, it is unclear if this is related to increased survey effort as the data are not standardized. However, in Table 10, it appears that fewer surveys have been completed in the mine area during the snow-free seasons when wildlife observations might be expected to be higher. In subsequent tables (Table 12-14) there has been no reporting of trends since monitoring began to describe natural variation or potential Project-related changes.

Table 14 and 15 show that the threshold for direct mortality of fox has been exceeded and there appears to be a significant attraction to the incinerator, kitchen, landfill among other areas. The Proponent stated: “Environment Department deployed many mitigation measures to minimize the presence of foxes on site” (paragraph two after Table 14 [page 38]) which included regular toolbox meetings about company policy and waste segregation and on-going waste management and “Inspections are completed regularly in every location outside to prevent food waste availability”. However, these measures are a standard approach to mitigating human-wildlife interactions and are not examples of adaptive management

Managing attraction of wildlife to the mine is critical to prevent animals from becoming habituated, tolerant, or food-conditioned to prevent human-wildlife interactions and to prevent direct mortality and the need to euthanize.

Recommendations

The Government of Nunavut recommends the following regarding the above concerns:

1. That wildlife data be standardized by effort and that trends on mortalities, injuries, and wildlife observations be reported.
2. That wildlife observations be categorized to indicate observations that may indicate habituated, tolerant, and/or food-conditioned individuals
3. That the details and frequency of waste management inspections be reported.
4. Finally, that adaptive management actions be taken immediately to reduce attraction of wildlife to the incinerator, kitchen, landfill, and other problem areas and that these actions be reported.



Agnico Eagle Answer

Agnico Eagle collects wildlife data from various means including surveys and incidental sightings. Over the past years, efforts have been made to increase incidental sighting collection through rolling out of a text message system to log incidental sightings in 2021 and the implementation of a QR code as a means to improve worker accessibility to the tool in 2023.

Although the number of survey and incidental observations is available in Tables 11 and 12 of *Appendix 27 – 2022 Terrestrial Effects Monitoring and Mitigation Program (TEMMP) Annual Report* Agnico Eagle will assess how to improve presentation of the wildlife data by effort in subsequent annual reports. In 2022, the number of surveys during the snow-free season was of 12 around the mine site, compared to 9 and 8 surveys in 2021 and 2020, respectively. In total (mine site and AWAR), 42 surveys were completed in 2022, compared to 29 and 37 surveys in 2021 and 2020.

As per behaviour observations, they are collected as part of wildlife observations, independently of the observation source (survey or incidental sighting), as reported in the monthly wildlife report submitted to the GN throughout the year. When an individual appears to be habituated, tolerant and/or food conditioned, this behaviour is documented and is communicated to the GN wildlife officer.

As per internal inspections, in 2022, a total of 1,086 inspections were conducted at the mine site. These inspections are tailored to the sites various working area, and all include a waste segregation and management section. Internal inspections are typically scheduled with a weekly frequency, with minor adjustments occurring throughout the year depending on the site's operational reality (caribou migration, blizzards, etc.). The results of these inspections are communicated with the relevant Department supervisors and corrective actions, when applicable, are followed up upon by the Environment Department.

As part of its continuous improvement process, and as recommended by NIRB, Agnico Eagle brought in an external consultant to site to conduct a wildlife audit in April 2023. The results of this audit will be detailed in the 2023 annual report, however at this point Agnico Eagle would like to share that significant improvements in waste management practices on site were noted by the consultant and Agnico Eagle is working on implementing the consultant's recommendations.

Agnico Eagle remains available to further discuss adaptative management related to foxes with the GN as it remains a complex issue, with health and safety considerations that need to be accounted for and under which Agnico Eagle may be directed by the GN to place wildlife attractants on site for the purpose of trapping problematic animals...

GN-02: Wildlife Awareness Training & Reporting

Comment

In Section 9.5 and Table 15 of the 2022 Terrestrial Environment Management and Monitoring Plan Annual Report (TEMMP), the Proponent discusses how environmental awareness training can limit mortality of wildlife and that on-going and regular toolbox meetings on awareness have occurred. However, in Appendix 38, training records show no indication of wildlife awareness training. According to T&C 58 the Proponent shall ensure all employees receive awareness training related to birds and bird habitat.

In addition, despite training programs, the Marine Mammal and Seabird Observation (MMSO) Program (Appendix 30) has been subject to poor data collection, specifically with respect to collecting survey effort. Quality data is required for confidence in the results and interpretation of monitoring programs.

Awareness training is key to prevent direct and indirect effects on wildlife. Human-wildlife incidents and subsequent euthanasia of habituated or food-conditioned animals is likely a result of improper waste management. Targeted training of workers is needed to maintain good facility housekeeping and follow waste management procedures. Awareness training should include a discussion of the importance of waste and prohibitions on feeding wildlife to prevent wildlife from becoming habituated or food conditioned. Similarly, other key mitigations such as reporting nesting birds and species at risk should be communicated. In this way, human-wildlife interactions can be avoided or minimized. In addition, training, data management, and Quality Assurance/Quality Control (QA/QC) procedures are important to ensure required information is collected to inform monitoring programs. Missing data can hinder the ability to make inferences regarding the efficacy of mitigations or establish trends in the data. Documenting and providing examples of training would provide confidence to regulators that these important mitigations are followed.

Recommendations

The Government of Nunavut recommends the following regarding the above concerns:

1. That records be kept tracking and annually reporting wildlife awareness training and toolbox meetings.
2. That Marine Mammal and Seabird Observation training is continued and focuses on data collection procedures.
3. That a Quality Assurance and Quality Control procedure be developed to verify that data is complete.

Agnico Eagle Answer

Agnico Eagle agrees awareness training is key to preventing direct and indirect effects on wildlife and is committed to ensuring its staff and contractors are properly trained and qualified relative to wildlife awareness training and reporting.

Relative to the first item, wildlife awareness training is provided to staff and contractors through various means and continuously throughout the year. Wildlife awareness is part of the mandatory site induction for all staff or contractors coming to site.



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This mandatory induction includes topics such as:

- the importance of respecting wildlife,
- proper waste management practices on site to avoid attracting wildlife,
- prohibition of feeding or harassing the wildlife,
- instructions on how to report wildlife sightings, and
- disciplinary measures individuals may face should they not comply with the wildlife protection measures.

Additionally, toolbox presentations are conducted with the different departments on site throughout the year. These toolbox presentations are scheduled according to operational needs and seasonal factors. Details relative to the number of toolboxes presented throughout the year as well as their detailed content are available in *Appendix 26 – 2022 Toolbox Presentations*.

Furthermore, Agnico Eagle conducts seasonal or punctual awareness efforts through other communication means such as daily operational meetings with supervisors, weekly management meetings with all the department managers and “Meliadine Minutes” which is a daily communication to all employees to raise awareness on health and safety and occasionally environment topics.

Regarding the second item, Agnico Eagle wishes to underline that the MMSO program has undergone significant and continuous improvements throughout the years. As stated in *Appendix 30 – 2022 Marine Mammal and Seabird Observation (MMSO) Annual Report*, Agnico Eagle has been working with a third-party consultant on program improvements since 2020, which has resulted in greater surveys efforts every year compared to previous years.

Training sessions are conducted on a yearly basis using various interactive materials, including webinars which are recorded and available for consultation throughout the season, in both French and English. Yearly kick-off meetings and postmortems are conducted with the shipping companies to ensure lessons learned from the previous season are accounted for in the next one.

As per quality assurance and quality control (QA/QC) for wildlife, Agnico Eagle is continuously revising and updating its management plans and will assess during next revisions of the relevant management plans how to further integrate the QA/QC aspect.

GN-03: Caribou Monitoring

Comment

In Section 6.3.7 of the Meliadine Project Caribou Behaviour Study (Appendix J of the Terrestrial Environment Management and Monitoring Plan Annual Report (TEMMP)), the Proponent stated that “Summarizing the data over the entire 30-minute survey is useful for broad comparisons but has the disadvantage that response behaviour can be washed out in a relatively uneventful



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survey.” When discussing the effect of group size in Section 6.4.2, it was stated: “These results should be taken with caution as smaller groups of caribou naturally have greater variability in values and this could bias the results.” It was also stated in Section 6.4.4 that “These results should be treated with caution due to the high number of variables and the variability in the behaviours observed, and because response behaviours were averaged over each 30-minute survey period.” and “Using average behaviour type across the 30-minute (10 sampling periods) effectively dilutes the caribou response, and likely explains why duration of response models performed so poorly.”

These statements and results suggest improvements to the analysis can be made. Analyzing data in a generalized linear mixed effect model may address issues if the 3- minute surveys are nested within the 30-minute survey period, survey period and group is treated as a mixed effect, independent variables are treated as continuous to prevent loss of information and convergence issues, and non-linear relationships in the data (if existing) are explored. Finally, the executive summary reported that peak migration occurred June 28 and 29, but elsewhere in the TEMMP it is reported that peak migration was between July 11 and 15.

As discussed by the Proponent, averaging behavioural data in a 30-minute survey may result in loss of information or bias the results. This can have implication on the accurate interpretation of the findings or the ability to detect any effects. Adopting such a modeling approach may result in low confidence in the results, especially if they suggest that an effect has not occurred. Additionally, relying on such an approach may undermine the reliability of assessing the efficacy of mitigations. Conversely, if an effect is present but remains unidentified due to modelling approach, it may hinder the implementation of necessary adaptive management actions to rectify the issue.

Recommendations

The Government of Nunavut recommends the following regarding the above concerns:

1. That the Proponent confirm peak caribou migration as either between June 28 and 29 or between July 11 and 15.
2. That the Proponent adjust the modelling approach to reduce bias, improve power, and retain information. It is recommended that the Proponent consider analyzing the 3-minute behaviour data as nested within the 30-minute survey and that each survey and group be treated as a mixed effect, rather than averaging data.
3. That group size and distance is not treated as categorical but considered a continuous variable to improve the power of the model, retain potentially important information, prevent convergence issues, and allow for the examination of other non-linear patterns in the data.
 - a. Alternatively, identifying other potential modeling approaches to overcome loss of information and biased results is recommended.

Agnico Eagle Answer

1. During 2022, caribou occurrence at the Meliadine Mine site occurred in two phases – a series of pulses of observations of caribou moving east in the last week of June and a second more concentrated pulse in the second week of July. As such, both are correct.
2. The proposed analysis analysing the 3-minute data nested within the survey period has been tried in the past, but with limited success due to sample size. With additional years of data, however, the sample size has grown, and this analysis may be possible. For the 2023 annual report, this analysis approach will be attempted as suggested.
3. The analysis for the 2023 annual report will attempt to use continuous variables for group size and distance. Until now, categorical variables have been to maximize the power to detect change in other variables, but there may now be sufficient sample size to analyze these variables as continuous rather than categorial variables. The use of categorical variables does not inherently bias the results obtained. Agnico Eagle remains available to discuss this matter with the TAG as needed.

GN-04: Harvest Study

Comment

In Table 6.2, the average annual caribou harvest from the 2022 Rankin Inlet Hunter Harvest Study is reported as 243.4 caribou which appears to be incorrectly reported and should be 608.5. The Proponent compares the results of the 2022 study with the historical study around Rankin Inlet which included three other participating communities. It is unclear if the 2022 Harvest Study reports exclusively reports data from Rankin Inlet or if data from other communities was included. Direct comparison to historical data may be inappropriate if methods are not similar or if assumptions regarding the studies are not explicitly stated. When comparing to historical studies, the number of participants and the proportion of active hunters should also be reported.

Incorrectly reporting harvest data or inappropriate comparisons to historical data may introduce bias into the trends observed in harvest data. Given the first three years of harvest monitoring are to be used to establish thresholds that will be used in future harvest monitoring and to determine the efficacy of mitigations and the need for adaptive management actions, it is critical that these data be free of errors or bias. Reported data must be accurate, effort amongst studies reported, and assumptions explicitly stated if direct comparisons are made to historical or other studies. In this way, data can be compared free of bias and proper interpretation can be made. Otherwise, improper thresholds may be established leading to the failure to implement mitigations and potentially leading to overharvest.

Recommendations

The Government of Nunavut recommends the following regarding the above concerns:

1. That Table 6.2 be adjusted to reflect accurate average harvest data

2. That more detail be provided on the communities that participated and/or assumptions made when comparing 2022 data with historical surveys.

Agnico Eagle Answer

Agnico Eagle thanks the GN for their comment. The average number of caribou was incorrectly reported in Table 6.2 and should have been 608.5 individuals.

The 2022 Rankin Inlet Hunter Harvest Study only reports data collected from hunters (participants) in Rankin Inlet. Some of these hunters may report harvests from other communities depending on where they hunt. For the 2023 annual report, an attempt will be made to access hunter number data (i.e., number of participants and active hunters) for the Rankin Inlet component of the Nunavut Wildlife Management Board (NWMB) study and compare these numbers and harvest rates to Rankin Inlet data from 2021 to 2023.

GN-05: Nesting Raptors

Comment

In Section 8.2.2 and in Appendix G (Arctic Raptors Research Program Report) of the 2022 Terrestrial Environment Management and Monitoring Plan Annual Report (TEMMP), the Proponent describes how the null model (that without distance to disturbance) best explained occupancy and stated: “The analysis completed for the Arctic Raptors Research Program found no evidence of an effect of distance to disturbance on occupancy.” However, the support for the models (peregrine falcon for instance) is weak with an Akaike Information Criterion (AIC) weight of only 0.53 and alternative models in close support. Indeed, Delta AICc for alternative models were within close range of the top model and log likelihoods were similar. For M3, which models distance to disturbance on occupancy, there was close support, particularly for rough-legged hawk, with nearly identical support to the null model (AIC weight: 0.34 compared to 0.32) respectively. M2 was similarly supported for rough-legged hawk. Although the results suggest some other factor is likely responsible for occupancy, given that the models were relatively similar in fit and support, results also suggest that distance to disturbance may explain some variation in the data and may be associated with changes in occupancy. Therefore, results suggest that evidence is weak for the conclusion that there is no effect of distance to disturbance on occupancy.

In addition, the raptor study reported the distance to disturbance for all reported raptor nests. Thirty-nine nests were within 1.5 km of project infrastructure including rough-legged hawks within 90 m of footprint and peregrine falcons within 50 and 70 m of footprint. The report states in the Discussion that it “...meets the T&C outlines by Nunavut Impact Review Board (NIRB) by documenting and mapping raptor nesting sites within 1.5 km of the project infrastructure, including minimum ‘no disturbance buffers’”. T&C 62 states that “The Proponent shall protect any nests found (or indicated nests) with a buffer zone determined by the setback distances outlined in its 2022 Terrestrial Environment Mitigation and Monitoring Plan (TEMMP), until the young have



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fledged. If it is determined that observance of these setbacks is not feasible, the Proponent will develop nest-specific guidelines and procedures to ensure bird's nests and their young are protected." It is unclear if minimum 'no disturbance buffers' or setbacks were implemented for these nests or whether these distances were simply a product of how close they nested to the mine. It is also unclear what, if any, nest-specific guidelines, and procedures were implemented to ensure nest and young were protected, or whether young fledged the nest.

Industrial development can disturb nesting birds, including raptors and this may be a violation of legislation. Disturbance during nesting can lead to direct effects such as nest destruction or indirect effects such as nest abandonment or failure. Therefore, it is essential that potentially disturbing activities be avoided in areas that may disrupt normal nesting behaviour. Typically, buffers and setbacks are implemented to prohibit entry and work in areas where birds may become disturbed. Buffer and setback distances may differ depending on the individual, the species, the work, and the site-specific conditions around the nest (e.g., vegetation or topography). When buffers or setbacks are not feasible, other nest-specific guidelines and procedures may be necessary to protect nests. Indeed, when setbacks are not feasible, T&C 62 requires that nest-specific guidelines and procedures are implemented to ensure nests are protected until young fledge.

It is important that the annual report demonstrate how raptor nests were protected by reporting the minimum no disturbance buffers or setbacks. This may require specifying if work encroached within 1.5 km of nests or whether nests were constructed in proximity to existing disturbance and work activities. If buffers and setbacks were not feasible, it is required to report the nest-specific guidelines and procedures used to protect the nest and demonstrate that the young successfully fledged the nest.

Recommendations

The Government of Nunavut recommends the following regarding the above concerns:

1. That the annual report explicitly state what buffers or setbacks were applied to protect nests, identify nests where work encroaches within 1.5 km of nests or where nests were constructed in proximity to existing disturbance and work activities, and/or provide the nest-specific guidelines and procedures that were implemented to ensure the nests were protected and confirm that the young fledged.
2. That the Proponent report on the fate of nesting for those nests where mitigation was necessary.
3. That the Proponent continue to explore the relationship of raptor nesting and the potential for disturbance to affect occupancy.

Agnico Eagle Answer

Agnico Eagle would like to provide clarification relative to the GN's comment. The log likelihood values are difficult to interpret when comparing how likely one model is to another. To get such a likelihood the AIC weight of one model is divided with the AIC weight of the other fitted model (Wagenmakers and Farrel, 2004). For peregrine falcon, this would mean that the null model is



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2.65 times more likely that m1, 2.94 times more likely than m3, and 5.89 times more likely than m2. When comparing models, best statistical practice obligates one to choose the simplest explanation (i.e., the one with fewest model parameters), particularly when measure such as log-likelihood are similar. For peregrine falcon, the null model has greater parsimony. Also, m1 evaluates the effect of distance to infrastructure on "detection" assuming "occupancy" is held constant. If m2 is to be considered at least equivalent to m1 (which would not be consistent with best statistical practice), the interpretation in this case would be that "detection" is affected by distance to infrastructure, not "occupancy" per se.

In general, the above four points also apply to rough-legged hawk, but interpretation of model differences is less straightforward given model rank, and selection metrics specific to the species. For this reason, the interpretation was limited to stating simply that adding distance to disturbance did not improve model fit. This is a true statement given the data.

Agnico Eagle does not conclude that distance to disturbance has no effect on occupancy. Rather, that "no evidence of an effect of distance to disturbance on occupancy" was found, which is an accurate statement given the data.

With regards to the GN's recommendations, as indicated in the Terrestrial Environmental Monitoring and Management Plan (TEMMP), raptor nesting activities observed on the Mine or within 1.5 km of the Mine are reported to the GN Department of Environment. The mitigation measures around active raptor nests consist mainly of implementing setbacks to mitigate impacts with monitoring as detailed in the TEMMP section 4.9.4.

For 2022, no nesting activities from raptors at previously identified nests were reported. For that reason, no setback, mitigation or monitoring was required.

Through its annual participation at the Arctic Raptors Research Program, Agnico Eagle keeps exploring the relationship of raptor nesting and the potential for disturbance to affect occupancy as per applicable NIRB Project Certificate Term and Conditions.

References

Wagenmakers, E.J. and Farrell, S. 2004. AIC Model Selection Using Akaike Weights. *Psychonomic Bulletin and Review*, 11, 192-196.

GN-06: Spills – Spills Contingency Plan

Comment

Section 6 of the 2022 Annual Report describes reportable and non-reportable incidents, primarily spills, that occurred during the reporting period. 2022 saw a significant increase in reportable incidents over 2021 (56 versus 27), as did incident totals (183 versus 129). Moreover, incident totals show a significant increasing trend from 2019-2022. The report describes training of staff in spill prevention, with increased awareness leading to more events being properly identified and reported as spills, thus increasing report counts. The Government of Nunavut (GN) understands that improvements to incident reporting awareness can lead to increased report counts, however increasing trends are of concern. Improvements in spill prevention can be obtained through root cause analysis and corrective actions, and through a continuous improvement process to apply lessons learned from incidents. Although the Spill Contingency Plan (SCP) has seen significant

updates since 2019, Section 8 of the SCP does not identify inclusion of lessons learned in its spill prevention training curriculum. The SCP does not include specifics on how it is to be continuously improved.

Incident and accident prevention and management programs rely on the continuous improvement cycle for their effectiveness, covering planning, implementation, quality control and review/lessons learned/continuous improvement phases. Program improvement can come about through both reactive and proactive measures – amongst proactive measures are the tracking and analysis of trends, as increasing incident trends can indicate issues with program effectiveness and can forecast an increasing probability of a major incident occurring. Increasing incident trends since 2019 are of concern.

Recommendations

The GN recommends the following regarding the above concerns:

1. That spill prevention training for employees includes a lessons learned topic, whereby the results of root cause analyses of past incidents are outlined, and the lessons learned and improvements made to the spill prevention program and related processes (spill identification, response/clean-up and reporting) are detailed.
2. That the SCP Section 8.1 Training be updated to note inclusion of past incident root cause analyses and lessons learned in the training program.

Agnico Eagle Answer

Agnico Eagle agrees with the fact that continuous improvement to apply lessons learned is key in health, safety and environment (HSE) incident and accident prevention and management.

Agnico Eagle is a strong champion of the proactive approach in HSE management and all incidents, regardless of their consequence, are recorded and tracked through an internal software (Intalex). This software allows tracking and trending of the type and quantity of material spilled, the areas where the spill happened, the type of equipment involved, immediate corrective actions, root causes of the incident, lessons learned, follow-up actions and spill consequence and probability. For all spills reported through the spill line, more thorough investigations are conducted, results of which are presented in spill follow-up reports, available in *Appendix 16 – 2022 Reportable Spills*. Furthermore, on a daily basis, environmental incidents are discussed at the daily operational meetings.

Lessons learned from investigations on past spills are communicated to workers by various means such as toolbox meetings, changes in operational procedures, updates in training material or development of new mandatory trainings, site-wide communications, etc. There is a Spills Working Group which provides inputs on the communication strategies relative to lessons learned through various incidents.

Additionally, Agnico Eagle is developing a summary communication that would be sent out to staff across different divisions when an incident with a consequence of moderate or up occurs. This communication will include the description of the incident and key lessons learned.

Over the first two quarters of 2023, and as will be reported in the 2023 annual report, reportable spill occurrences have significantly decreased as a result of lessons learned from previous years spill and the resulting corrective actions and proactive measures taken by Agnico Eagle.

Agnico Eagle believes the above-mentioned elements address the intent of the GN's first item and remains available to further discuss this item with the GN should the GN wish to do so.

As per the GN's second item relative to SCP improvements, Agnico Eagle thanks the GN for their feedback and will account for it in the next revision of the SPC.

GN-07: Air Quality

Comment

Section 7.7 and Appendix 25 of the 2022 Annual Report describe the ambient air quality monitoring program.

As indicated in Table 3 of Appendix 25, equipment failures were the leading cause of the loss of total suspended particulates (TSP) and Particulate Matter (PM_{2.5}/PM₁₀) datapoints in 2022. Although an explanation and mitigation strategy were provided for the losses from the dichotomous unit at DF-5, discussions were not provided for other failures including the extended period of data loss from the Partisol unit at DF-5 in June and July. Furthermore, Figure 9 indicates a gap in cadmium data in September; this gap is not seen in the TSP or iron results and no explanation has been provided.

On a similar note of missing data/information, the frequency of Quality Assurance and Quality Control (QA/QC) samples was not maintained in accordance with the Air Quality Monitoring Plan and the report lacks detail on the sampler calibration, maintenance, or audit schedule/results.

The Government of Nunavut (GN) notes that Section 7 (Mitigative and Adaptive Strategies) of Appendix 25 indicates efforts will be made to increase the use of trip/travel blanks but lacks information on how equipment issues will be addressed. Section 7 also states that, following the elevated TSP and dust concentrations measured in March, dust mitigation options will be reviewed to inform future practices for any similar construction activities taking place during the winter. It is unclear why such reviews would only be conducted for construction activities to take place in the winter.

Consistent sample collection is key to understanding trends in air quality and a robust QA/QC program is meant to identify potential sources of error in the data. Therefore, barriers to sample collection and analysis need to be removed. Mitigation of these issue through regular



maintenance, availability of backup equipment, and adequate training/communication plans are important to avoiding or addressing data loss in a timely fashion.

Recommendations

The GN recommends the following regarding the above concerns:

1. That the specifics of all equipment failures be reviewed, and a plan be developed to avoid extended periods of data loss due to such failures in the future. This may include increasing the availability of backup equipment on the site or re-evaluating the equipment maintenance schedule or elements.
2. Although Section 7 of Appendix 25 indicates “efforts will be made to increase the use of trip/travel blanks”, GN recommends that a greater commitment be made to QA/QC program outlined in the Air Quality Monitoring Plan which states travel blanks will be included with each shipment.
3. Finally, that dust mitigation options be reviewed for construction activities that are conducted throughout the year, not just the winter.

Agnico Eagle Answer

1. While Partisol equipment failures have been combined as such for reporting purposes, Agnico Eagle does maintain specific records on each downtime incident, as well as audits and calibrations, and will provide greater detail for non-sampling events in future reports. Although Agnico Eagle is continuously improving onsite capacity for resolving Partisol equipment failures, including regular instrument maintenance and increasing stocks of replacement parts, these are complex instruments operating under extreme conditions, and some amount of downtime is anticipated, as described in the monitoring plan. Nevertheless, Agnico Eagle will review the primary causes of equipment failure to date to identify any trends and mitigate potential future events.
2. As noted in Section 7.2 of the report, Agnico Eagle does aim to collect and send travel blanks with each shipment. In 2022, travel blanks were accidentally not shipped for suspended particulates from August to November, due to an error in communications. Agnico Eagle has reviewed the travel blank requirements with all relevant employees to ensure travel blanks are collected and sent at the appropriate frequency moving forward. So far in 2023, travel blanks were included in each shipment.
3. The construction activity which resulted in two elevated TSP measurements in 2022 occurred during the winter months, when watering was not a feasible option for dust suppression. In summer months, dust is efficiently controlled through the use of watering. Overall, monitoring results to date indicate that both suspended particulates and dustfall are generally controlled below FEIS predictions and regulatory criteria on the Meliadine site with the management practices currently in place. Hence, a broad-scale review of dust management options for construction activities is not considered necessary. However, as per Agnico Eagle’s adaptive management strategy, Agnico Eagle has planned to specifically review alternate potential winter dust mitigation options ahead of future similar construction events. Agnico Eagle remains committed to controlling dust on site to the



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extent practical, and should any new mitigation options be identified, their year-round implementation will be evaluated.

Kivalliq Inuit Association (KivIA)

KivIA-1: Terrestrial Advisory Group

Comment

The KivIA appreciates the progress during 2022 with getting the Technical Advisory Group (TAG) operational to meet NIRB Project Certificate N.006 (Amendment 002) Terms and Condition #132. Agnico Eagle filed a TAG annual report with NIRB as a separate Appendix 35 (230331-11MN034-App 35-TAG Annual Report-IA1E.pdf) The report has a summary (App 35; Table 2) of TAG recommendations which is useful in tracking the collaborative approach. In future years the TAG annual report will be included in the Terrestrial Environment Management and Monitoring Plan Annual Report.

The TAG has a collaborative and key role in reviewing and designing monitoring and adaptive mitigation. The TAG reviews reports and provides recommendations on monitoring and adaptive mitigation and the KivIA is requesting that any reports and presentations provided for the TAG should be archived and publicly available.

Recommendations

Agnico Eagle should ensure that TAG annual report include either copies of reports and presentations or, alternatively, where they are archived.

Agnico Eagle Answer

Agnico Eagle thanks the KivIA for recognizing the progress made towards getting the TAG operational in 2022. Agnico Eagle reiterates its commitment to maintaining an operational TAG and will prepare subsequent TAG annual report in accordance with item 7.2 of the TAG's Terms of Reference, which can be further discussed as required within the TAG setting.

KivIA-2: Review of Impact Predictions

Comment

The KivIA has previously drawn attention to the inapplicability of the caribou behavior monitoring for the proposed threshold for impact assessment (S.2.0; Table 2) which is <10% deflections. Agnico Eagle had agreed (App. 42 - 2021 Annual Report Comments Table) but the text (App. 27; S.2.0) has not been modified to clarify that satellite collar analysis is needed to describe the level of deflection (Appendix J does clarify the objectives for the behavior monitoring).

The behavior monitoring describes that caribou in smaller groups tend to be closer to the AWAR and respond more to disturbance than larger groups further away. The responses typically last for 2-3-min sampling periods (mean of 5.83 minutes) although the variability is not specified (App.

27; App. J). KiviA requests more information on this response time at Meliadine compared to the duration of responses measured at Meadowbank and Whale Tail to describe if post-calving caribou are more responsive, and whether the response time can be used as an indicator for sensory disturbance. The KiviA recognizes the complexity of analyses of behavior but is questioning how the behavioral monitoring can be used as an indicator for sensory disturbance with a threshold to measure impacts.

Recommendations

Agnico Eagle should develop options for indicators of sensory disturbance, especially the duration of the return to baseline behaviors measured during the behavioral monitoring. Agnico Eagle should provide these options for TAG to consider during a Terrestrial Environment Management and Monitoring Plan review.

Agnico Eagle Answer

Agnico Eagle agrees to discuss options for indicators of sensory disturbance using the behaviour monitoring with the Meliadine TAG during the Terrestrial Environment Management and Monitoring Plan review.

KivIA-3: Traffic, convoy, and caribou crossings

Comment

In the context of caribou crossing behavior and the impact of AWAR, the monthly traffic totals (S. 12.4.3.; Table 18) provide only indications of broad changes in traffic throughout the year. Instead, monitoring the duration of gaps in traffic (time between vehicle passages) would support developing predictive models for caribou crossing and more effective mitigation. The remote camera monitoring had three cameras dedicated to traffic monitoring (App.J; S.6.4.) and concluded that "*Observations showed that caribou are willing to cross the road during relatively short pauses in traffic*" but did not provide the data to substantiate the statement about the relatively short pauses.

Understanding traffic frequency relative to gaps in vehicle passage is necessary even when the AWAR is closed in response to the presence of caribou. When the AWAR was closed, disturbances from traffic (trucks, ATVs and convoys) occurred about 50% of the time (S.12.1; App. J; Table 6.4.1.). The annual report should include specific details of the daily frequency of convoys and the daily number of vehicles (or estimates of the duration of each convoy passing a fixed point).

The threshold of 50 or more caribou within 100 m of the AWAR (S. 12.4.1.) is an untested threshold and does not include the concept of caribou leadership in road crossing behavior. The KiviA acknowledges that the applicability of the >50 caribou as a group size was discussed at a TAG meeting and will be further considered (App. 35; Table 2) but wishes to ensure that the

behavior monitoring and remote cameras data are included to test the concept of leadership and the applicability of the >50 caribou threshold.

Recommendations

Agnico Eagle should:

1. Report daily traffic frequency for the two broad periods when many caribou (post-calving and early summer) or few caribou (the rest of the year) are in the vicinity of the AWAR and mine site.
2. Provide remote camera data to demonstrate the probability of caribou crossing AWAR relative to the duration of gaps in the traffic and provide data on the duration of the gaps in traffic.
3. Use the behavior and remote camera monitoring data to describe the frequency of group sizes and crossing behavior relative to the concept of leadership in developing options for a group size threshold for TAG.

Agnico Eagle Answer

1. Agnico Eagle proposes this item be further discussed within the TAG context.
2. An analysis of duration of gaps vs. caribou crossings will be included in the 2023 Camera Trail Camera Study Compilation Report.
3. Agnico Eagle proposes this item be further discussed within the TAG context.

KivIA-4: Harvest

Comment

The 2021-2022 concluded that *"These very preliminary numbers suggest that the presence of the AWAR and the Meliadine Mine has not dramatically increased hunting in the area"* (S.13.2.: pg. 52). This preliminary conclusion was based on similar annual levels of harvest in the Regional Study Area and within 5 km of the AWAR between 1996-2001 and 2021 and 2022.

The KivIA suggests that after only 2 years even a preliminary conclusion is premature, especially as the harvest increased 10-fold within the LSA (S.13.2.: Table 20). The threshold levels for monitoring the effects of the Meliadine mine on caribou harvest distribution will not be established until after 3 years of hunter harvest (App.27; App. M; S.8). The effect of the AWAR on June-July harvesting is not reported. Caribou were harvested within 5 km of the AWAR only during May to October (App. 27; App. M; Fig. 6.5) which raises a question of how the AWAR is related to any changes in use of ATVs for hunting.

The 2022 HHS did not report on monitoring the extent of hunting relative to the 1 km no-shooting zone on either side of the AWAR (App. 27; S. 13.0; App. M) or community comments about if and how AWAR has impacted harvesting. NIRB Project Certificate No. 006 (Amendment 002) Terms and Condition # 46 requires that the Harvest Study address *"The potential effects on caribou*



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populations and on caribou behaviour resulting from increased human access caused by the all-weather access road and associated roads and trails; "

The behavior monitoring lists ATVs as one of the types of disturbance (App. 27; App. J; App. B). The importance of how the AWAR is used for hunting is whether ATV-based hunting impacts the responses of caribou to other vehicles.

Recommendations

Agnico Eagle should:

1. Delay conclusions about the impact of Meliadine mine site and AWAR on caribou harvesting until at least 3 years harvest study data are available.
2. Provide more information and the extent of monitoring for caribou harvests relative to ATV use within 1 km of the AWAR relative to the presence of caribou post-calving aggregations.

Agnico Eagle Answer

1. Preliminary conclusions about the effect of the Meliadine mine site and AWAR on caribou harvesting will be made in the 2023 report. Data from the Rankin Inlet component of the NWMB study will be reassessed to determine hunter numbers and harvesting success so that direct comparisons to 2021 to 2023 data can be made.
2. Agnico Eagle will summarize and provide the available information on ATV use during the post calving and early summer (when behaviour and camera monitoring are conducted). Agnico Eagle has data on the number of ATVs recorded on cameras and during behaviour observations. Note that ATVs presence could but are not automatically associated with harvesting acts. Furthermore, health and safety considerations impact gathering of harvest data as employees are required to avoid areas where harvesting is occurring.

KivIA-5: Remote camera program

Comment

The KivA is concerned about how Agnico Eagle has summarized the 3-year remote camera program. Firstly, the statement that *"the highest number of caribou detections events recorded during the three years of this study was recorded in 2022 (150 detections), suggesting no pattern of learned avoidance of the AWAR year to year."* (App. 27; App. K; S.7) is not based on analyses that considered annual variations in the relative numbers of caribou. Secondly, the statement *"Caribou were observed crossing the AWAR in different group sizes, ranging from single individuals to hundreds, suggesting no strong avoidance by small or large caribou amalgamations"* (App. 27; App. K; S7) is also not based on analyses considering annual variation in the relative numbers of caribou and group sizes exposed to the AWAR.

NIRB Project Certificate No. 006 (Amendment 002) Terms and Condition # 56d requires the use of statistical analyses to support conclusions. The analyses for the remote camera data relative to the objectives were sound, but the KivIA questions the basis for statements about learned avoidance and no strong avoidance without detailed analyses.

Recommendations

Agnico Eagle should provide the analyses that the statements are based on or explain the limitations of the statements about impacts on caribou from the AWAR in the 2022 Annual Report.

Agnico Eagle Answer

Agnico Eagle will make it clear when statements are supported by statistical analyses in future versions of the report. In some cases, patterns in the data are not sufficient for statistical analyses and Agnico Eagle may state that the data are “suggestive” of a certain outcome but will provide caveats as suggested.

KivIA-6: Wildlife observations, incidents, and mortality

Comment

Incidental wildlife sightings and wildlife surveys should not have been combined into annual totals (Table 9; App.27; S. 9.0) as sampling effort is unknown for the incidental sightings. Annual trends should be assessed from the wildlife surveys as sampling effort is known and trends can be determined from the relative sighting rate per survey (which is not but could be calculated in Tables 10 and 11 (App. 27; 5.9.1).

The text does not comment about how the wildlife surveys show that the total number of both Arctic foxes and hares in 2022 was high compared to the two previous years. The remote cameras recorded similar trends: the camera data from along the AWAR recorded 77 foxes compared to 13 and 14 in 2020 and 2021, respectively and Arctic hare observations were 33 in 2022 compared to 4 in 2021 and 2020. (App. 27; App. K; Table 6.2.1). Table 11 (App. 27; S. 9.1) shows the high number of hares and Arctic foxes at the mine site compared to the AWAR in 2022. Integrating the wildlife sightings with the remote camera data suggests the high number of Arctic foxes at the mine site may reflect a regional trend.

The KivIA acknowledges Agnico Eagle took an innovative approach to the den site surveys (including an Unmanned Vehicle) to meet NIRB Project Certificate No. 006 (Amendment 002) Terms and Condition # 53. The 9 Arctic fox dens included 6 within mine site but the subsequent mitigation that was undertaken is unclear (App.27; App. I; S.4) as the text lists what mitigation would be implemented when dens are within 150 m of development activities.

Section 9.0 does not comment on the high number of Arctic fox sightings in 2022 and the proximity of dens to the mine site as predictable factors in the high number of Arctic fox incidents (App. 27;



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S. 9.5). Between January and May, 20 foxes were killed and a further 16 foxes from October to December (App. 27; S. 9.5) mostly in reference to the incinerator area. The number of foxes killed later in the year does not suggest mitigation (tool box meetings and waste segregation surveys; App. 26) were effective as required by NIRB Project Certificate No.006 (Amendment 002) Terms and Condition # 55. The annual report notes that the 37 foxes killed was under GN guidance. The number killed (37) exceeds 20 foxes specified as the impact threshold for Arctic fox (App. 27; S. 9.7; Table 15).

Recommendations

Agnico Eagle should:

1. Provide details of the mitigation undertaken in 2022 for fox dens at the mine site.
2. Work with GN to explain specifically how the monitoring and mitigation can be improved to prevent attractants and resulting Arctic fox deaths.
3. Provide options for a TAG discussion on how wildlife sightings from the different types of monitoring can be integrated to describe an indicator during the year to trigger when adaptive mitigation will be required to reduce the probability of wildlife incidents.

Agnico Eagle Answer

In 2022, no construction occurred around fox dens, hence no mitigations listed in section 4 of *Appendix I: 2022 Den Survey of Appendix 27 2022 Terrestrial Effects Monitoring and Mitigation Program (TEMMP) Annual Report*, was required.

Agnico Eagle is in communication with the GN throughout the year relative to wildlife management and as stated in its answer to GN-01, Agnico Eagle is available to further discuss fox management with the GN.

As per KivIA's suggestion on TAG discussion items, Agnico Eagle thanks the KivIA for their feedback which could be further discussed within the TAG setting.

KivIA-7: Muskoxen

Comment

Similar to the 2021 Annual Report, Agnico Eagle reported that GN had not requested in-kind contributions to muskox surveys, but Agnico Eagle did not report any information on a habitat assessment for muskoxen (NIRB Project Certificate No. 006 (Amendment 002) Terms and Condition # 52).

Recommendations

Agnico Eagle should clarify the status of a muskox habitat assessment.



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Agnico Eagle Answer

As stated in section 11 of *Appendix 27- 2022 Terrestrial Effects Monitoring and Mitigation Program (TEMMP) Annual Report* no muskox habitat assessment was conducted in 2022.

Term and Condition #52 states:

The Proponent shall undertake periodic surveys and a habitat assessment for muskoxen in the regional study area by partnering with, or complementing, the existing regional muskox monitoring programs.

An assessment of what types of habitat are being used by muskox would be conducted if and when a regional monitoring programs are conducted by the Government of Nunavut; Agnico Eagle remains committed to collaborating with the GNDoe with future muskoxen surveys as applicable.

KivIA-8: Water Quality in Meliadine Lake

Comment

The AEMP report highlights general increases through the Kivallig in metals concentrations based on temporal trends in Pipedream Lake (PDL) and Inuggugayualik (INUG) by comparing increases from 2013 to 2022 (Table 3-4). Trends are often more useful than percent increase from an arbitrary start date for evaluating mine-related impacts vs. normal fluctuations. Uranium is used as an example of metals broadly increasing across the region, but Meliadine Lake does not show the same trend. Uranium in INUG decreased 11% over 2021-2022, PDL decreased 3%, while Meliadine increased 19% in the same time frame (site MEL1). Both arsenic and strontium show sharp concentration increases in 2019-2020, which is absent in PDL and INUG. Further, the magnitude of increase over historical data is much greater for Meliadine lake.

Chlorophyll-a concentrations in Meliadine Lake also continue to rise year over year, and while the average Total Phosphorus concentrations have slightly decreased from 2021, several individual samples exceed the AEMP action level of 0.0075 mg/L, as shown in Fig 3-16. Near Field MEL1 concentrations remain significantly higher than at reference areas MEL-4 and MEL-5.

Recommendations

1. Once the saline waterline is operational, the Proponent should adopt changes from the WBWQM update submitted to the Nunavut Water Board (Jan 2023) to prioritize discharge of contact water containing higher concentrations of nutrients and metals, such as waste rock runoff, tailings runoff, and camp waste, to Itivia Harbour. Until this time, if feasible, water from the ST, CP3, CP4, and CP5 should be redirected to TIR02 for storage.
2. The Proponent should ensure that the capacity of the planned waterline is sufficient to allow the possibility of eliminating discharge to Meliadine Lake, alleviating mine-related impacts to this culturally sensitive area.

Agnico Eagle Answer

The current strategy to manage saline groundwater from the underground mine is to pump it to TIRI02 and store it until the waterline is available and this water can be discharged to Itivia Harbour. As storage capacity is finite, Agnico Eagle is required to mitigate the risk of exhausting saline storage capacity by limiting the input of non-saline water (i.e., water that is not from the underground mine) to TIRI02.

For this reason, the addition of water from the STP, CP3, CP4, CP5, or other surface runoff collection facilities to TIRI02 is not currently feasible, as the annual volumes of water produced/received by these facilities would rapidly compromise the available volume capacity in TIRI02 for its primary purpose of storing saline groundwater.

The capacity of the approved waterline will be 20,000 m³/day. Agnico Eagle will minimize discharge of contact water to Meliadine Lake by means of maximizing the available capacity of the waterline for discharge of surface contact water to Itivia Harbour.

KivIA-9: Operational Capacity of the Dual Waterline

Comment

Operational capacity of the dual waterline is assumed to be 70% due to planned or unplanned shutdowns and required maintenance, decreasing the nominal capacity of the waterline to 14,000 m³ per day. Does this assumption reflect the uptime of other water management-related infrastructure on site, or at other, similar, projects? A 30% decrease in modelled capacity would impact the ability of the Proponent to manage contact water through the waterline with the proposed extension.

Recommendations

The Proponent should clarify the assumptions leading to a 70% uptime of the planned waterline. As the 70% is stated to be conservative, the Proponent should provide a realistic uptime for the planned waterline based on similar infrastructure on site.

Agnico Eagle Answer

Assumed availability of the SETP-WTC and waterline is based on data collected at other water treatment-related infrastructures on site. At the Effluent Water Treatment Plant (EWTP), an availability of 84% and 87% was observed over the 2021 and 2022 discharge seasons, respectively. The operation of the EWTP is simple and problems rarely occur, with downtimes primarily due to electrical shutdowns and routine maintenance. Whereas the EWTP requires the operation of a single Actiflo unit, the SETP-WTC requires the operation of two Actiflo units in parallel, as well as a breakpoint chlorination process. The operation of the waterline itself adds complexity to the system.



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Agnico Eagle will strive to achieve a maximum possible availability of the SETP-WTC and waterline and has assumed 70% availability as a conservative input for modeling. Moreover, Agnico Eagle is considering options to improve flexibility of the water treatment process as a means to maintain a high degree of availability.

KivIA-10: Tailings Storage Facility

Comment

This section (2022 AR; Section 4.4.2) states *"No field trials to determine effective capping thickness to the TSF were undertaken in 2022"*

Recommendations

Does the proponent plan to complete any field trials to determine effective capping thickness to the TSF in 2023 or 2024?

Agnico Eagle Answer

The thermal performance of the capping is meeting expectations currently based on the instrumentation results. No field trials are currently planned as the capping is meeting expectations.

KivIA-11: Acid Rock Drainage

Comment

This section (App. 10; section 4.3.1) states:

- 1) *"While tailings may be classified as uncertain, they still contain enough carbonate to neutralize the acidity produced until many decades after operations have ended."*
- 2) *"Furthermore, it is worth noting that the analytical laboratory completed an investigation showing that dust carbonate analyses were biased low (section 3), meaning that there is more carbonate than previously shown, which would only extend the delay to consumption of carbonate."*

Recommendations

- 1) Can the proponent be more specific on the number of years after operations have ended that the carbonate will neutralize the acidity.
- 2) Can the proponent be more specific on the number of additional years after operations have ended that the additional carbonate will add for neutralizing the acidity.

Agnico Eagle Answer

Agnico Eagle would like to clarify that the referenced statements are presented in the context of other factors discussing the low risk for ARD generation from the Tailings Storage Facility (TSF).

Generation of acidic water requires exposure of potentially acid generating material to air and water, sufficient timescales for neutralization potential to be consumed, as well as sufficiently warm temperatures to facilitate sulfide oxidation at meaningful rates. By compacting the placed tailings, sloping the facility to shed water, and allowing permafrost to freeze-back within the facility, infiltration of water and diffusion of oxygen into the facility is inhibited. Following freeze-back, sulfide oxidation rates are expected to be negligible.

While the delay to ARD onset has not been specifically calculated for PAG tailings owing to the small portion of PAG samples identified over the LOM, the delay to ARD onset for similar materials is typically on the scale of decades. Based on the design analysis, the tailings temperatures are expected to fall below -1.8°C starting about 4 years after placement. So far, the measured temperatures seem to align well with the expectations and most of the tailings are already below -1.8°C . Based on the above, the potential for development of localized acidic weathering conditions within the TSF before freeze back is very low.

In the theoretical event that localized masses of the most reactive PAG tailings did develop acidic porewater prior to freeze-back, there is enough carbonate present within the non-PAG tailings to neutralize acidic porewaters along flow paths such that net acidic drainage would not likely occur.

With this context, the statements referenced in Comment KivA-11 discuss a hypothetical scenario which would be applicable for a facility that will not undergo freeze back. In practice, sulfide oxidation is not expected to occur at meaningful rates within the TSF due to several mitigating factors (e.g., limited air and water ingress, co-disposal with non-PAG materials, freezing conditions), and neutralization potential is expected to be sufficient to buffer acidity in the long term.

KivIA-12: Source(s) of water Used for Dust Suppression at the Meliadine site in 2022

Comment

- 1) It states on page 37 of Appendix 25 that “*over the year, a total application of 8738 m³ of water was recorded for dust suppression at the Meliadine site.*” However the total amount in Appendix A, Table 1 is 8,609.30 m³, a difference of 118.70 m³. Further, in S 3.1.9 it is stated that 6253 m³ of reclaim water is used for dust suppression, but no withdrawal from other sources for dust suppression is noted in S 3.2.1.
- 2) The two entries on the m³ of water used on 6/15/22 in Appendix 25, Appendix A, Table 1 are incomplete.



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- 3) The entry for 8/8/22 in Appendix 25, Appendix A, Table 1 lists water used for dust suppression on the AWAR.
- 4) The water sources(s) for the water used for dust suppression in 2022 are not listed in the table.
- 5) It is not clear if the total m³ of water used for dust suppression in 2022 is included in the annual volume of water (463,484 m³) withdrawn from Meliadine Lake

Recommendations

Can the proponent provide the following information:

- 1) The total m³ of water used for dust suppression in 2022?
- 2) The correct volumes for the two entries on 6/15/22?
- 3) If reclaim water is used for dust suppression on the AWAR, runoff is recaptured to the contact water management facilities?
- 4) The source(s) of the water used for dust suppression in 2022? And,
- 5) if the total m³ of water used for dust suppression in 2022 is included in the annual volume of water (463,484 m³) withdrawn from Meliadine Lake?

Agnico Eagle Answer

Agnico Eagle thanks KivIA for their comment.

- 1) Agnico Eagle would like to clarify that section 3.1.9 of the Annual Report presents the volume of reclaim water from Collection Pond 1 (CP1) that was used for dust suppression purposes within the mining footprint area, where runoff is captured by the Contact Water management facilities reporting back to CP1. The total volume of reclaim water used for dust suppression in 2022 was 6,253 m³.

In addition, approximately 2,225 m³ of water from MEL-11 (i.e., fresh water obtained from Meliadine Lake under the NWB Type A Water Licence) was used for dust suppression purposes in 2022. This volume is included in the numbers presented in section 3.1.1 of the Annual Report.

No other sources of water were used for dust suppression in 2022.

Please find below a corrected table listing dust suppression water usage in 2022.

- 2) The 2 entries on June 15th are typos. The corrected values (of 60 m³ each) are included in the totals indicated in the response to comment 1).
- 3) Agnico Eagle would like to clarify that the water which was used on August 8th on the AWAR was sourced from MEL-11, and not CP1.

No reclaim water is used for dust suppression on the AWAR. As mentioned above and in section 3.1.9 of the Annual Report, reclaim water is used for dust suppression in areas



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within the mining footprint area, where runoff is captured by the Contact Water management facilities reporting back to CP1.

- 4) As mentioned above, the sources of water used for dust suppression in 2022 are reclaim water from CP1, and freshwater obtained from Meliadine Lake (MEL-11) under the NWB Type A Water Licence.
- 5) As mentioned in response to comment 1) above, the volume of water sourced from MEL-11 and used for dust suppression is included in section 3.1.1 of the Annual Report and is therefore part of the total 463,484 m³ withdrawn from Meliadine Lake.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

CIRNAC-1: Permafrost Monitoring

Comment

As per T&C 17 and 21 of the NIRB Project Certificate for this project, CIRNAC previously recommended (CIRNAC #1.4 on 2021 Annual Report) that AEM provide a discussion on the status of permafrost degradation that may be occurring because of AEM's construction and operation activities. To address this request, AEM included Section 4.1.9 in the 2022 Annual Report, which provided the following discussion:

"In general, permafrost aggrades into the fills placed on the natural ground and Agnico Eagle has not observed permafrost degradation across the industrial pad. Some localized permafrost degradation has been observed within/adjacent to some of the water management structures (downstream collection channel of D-CP1, CP3, CP4, channel 1, channel 3 and access, channel 5, channel 9, and channel 10) as well as the saline water treatment plant. These areas correspond to areas where ice rich materials are present within the natural ground and where the natural vegetation has been removed and/or where water is allowed to accumulate. Agnico Eagle monitors these areas and repairs them when required. Additionally, the lessons learned from the performance of older infrastructure is being implemented into new infrastructure to minimize future permafrost degradation.

Further information on the observed localized permafrost degradation (areas of settlement) can be found in the 2022 Annual Geotechnical Inspection Report (Appendix 6)."

From CIRNAC's review of the 2022 Annual Report and the 2022 Geotechnical Report, CIRNAC concurs with the observations and information provided by AEM.

CIRNAC notes that while Section 4.1.9 of the 2022 Annual Report provides general comments on permafrost degradation across the site, there is no detailed discussion of permafrost condition of areas of interest across the site including areas between critical infrastructure such as dikes, channels, and tailings and waste rock facilities and adjacent to water conveyance features at which permafrost degradation has been noted. Similarly, there is no discussion of permafrost conditions adjacent to the roads (site roads, All Weather Access Road, bypass roads) and borrow areas. This information is important for the understanding of potential long-term impacts on presently stable infrastructure due to long-term permafrost degradation around, and in the vicinity, of these features (for example permafrost degradation within water diversion channels as noted in the 2022 Geotechnical Inspection Report).

Recommendation

CIRNAC recommends that AEM:

1. Monitor thermal conditions at the portions of the site in the vicinity of areas where permafrost degradation has been observed including areas adjacent to channels and



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ditches close to existing berms and material storage facilities to ensure that any permafrost degradation does not impact the long-term stability of these infrastructure elements. This should include the installation of horizontal and/or vertical thermistors in critical areas where degradation has already begun,

2. Comment on the monitoring of thermal conditions at ancillary facilities (e.g., roads, borrow areas) where standing water continues to be observed, and
3. Expand the discussion in Section 4.1.9 of the Annual Report to include additional permafrost thermal monitoring and discussions as per items 1 and 2 above.

Agnico Eagle Answer

1. Agnico Eagle has installed thermistors within the infrastructure per the designs to monitor the performance. Additional thermistors are planned to be installed as the infrastructure under construction (WRSF1, WRSF3, and TSF) are completed, per the design. The permafrost degradation observed so far has been localized and hasn't negatively impacted surrounding infrastructure. These areas have either been repaired or are planned to be repaired. Agnico Eagle will continue monitoring and will repair areas of degradation that may negatively impact the performance of the structure itself, or surrounding structures if not repaired. No new thermistors are currently planned outside of those specified within the designs.
2. Agnico Eagle thanks CIRNAC for their recommendation and will request the design engineer to comment on areas where no permafrost degradation has been observed along with where it has been in future Annual Geotechnical Reports. Currently, only the areas mentioned within the Annual Geotechnical Report or Annual Report have had observable permafrost degradation, areas not mentioned, have not.
3. See responses above.

CIRNAC-2: Improvements to Annual Report

Comment

The Annual Report is a comprehensive document responding to both NIRB and NWB terms and conditions. Review of this document and its numerous appendices requires extensive time and effort and CIRNAC thinks that additional improvements could be made to ease the review and understanding of a) items referenced, and b) information on site conditions.

Although AEM included references to supporting documents in discussions within the main body of the Annual Report (e.g., Golder 2014; OKC 2022a; 2022b), the report does not provide a reference section where the full citation of each document is included so the reader can verify the document being referred to. Furthermore, maybe providing hyperlinks in the pdf to the table of contents and lists of tables and figures as well as to table and figure references within the text, would lend functionality to the document making it easier to navigate and scroll through it and



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would ultimately facilitate the review of the report. This in turn would help track information that responds to specific NIRB terms and conditions.

AEM's geotechnical report provided photographs of site conditions during annual inspections. While all photographs are labelled, it is often challenging for interested parties to specifically identify the location of the item/area being photographed (e.g., regarding the site photograph of the north side toe of the tailings storage facility and associated channel, it is unclear where this specific location occurs along the north side (east, west or center?)). This makes it particularly challenging to assess AEM comments regarding a location condition and potential impacts/statements as the reviewer may not be sure what area they are actually looking at in a photograph.

Recommendation

CIRNAC recommends that AEM include:

1. A reference section in future Annual Reports providing full citations to documents referenced in the main body of the report,
2. Better links such as Hyperlinks in the pdf to the table of contents, list of tables and figures and references to tables and figures in the text, and
3. A site plan that clearly indicates the location and view direction of each photograph in future reporting that provides site specific photographs, especially the Geotechnical Report.

Agnico Eagle Answer

Agnico Eagle thanks CIRNAC for their comment.

1. Agnico Eagle will include a reference section in future Annual Reports, providing full citations to documents referenced in the main body of the report. To clarify, the full citations of the documents were included in footnote in the 2022 Annual Report.
2. Agnico Eagle will assess additional improvements to improve navigation in the main Annual Report document in future submissions.
3. Agnico Eagle will request the design engineer to include a photograph location plan in the 2024 Annual Geotechnical Report.

CIRNAC-3: Tailings Salinity and Reclaim Water

Comment

In response to a past recommendation (CIRNAC #1.3 on 2021 Annual Report), CIRNAC appreciates the addition of Section 3.1.9 to the 2022 Annual Report discussing the use of Reclaim Water from Contact Water management facilities for use in the mill, drilling and for dust



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suppression (as per Water Licence 2AM-1631 Part E, Item 1). CIRNAC seeks further clarity on the information provided in Section 3.1.9.

In Section 3.1.9, AEM noted that in 2022, *“the use of water collected by the Contact Water management facilities was not practical and the decision was made to continue monitoring the pore water salinity and see if the downward trend in the porewater salinity continued throughout 2022 to protect the performance parameters of the TSF [tailings storage facility].”*

AEM did not elaborate on why or how the use of Contact Water as Reclaim Water was not “practical” in 2022. Was it not practical due to the porewater salinity of the tailings still being above the TSF design assumptions or does a further problem exist that prevents the use of Contact Water?

AEM also stated that *“the porewater salinity of the filtered tailings has been above the design assumptions for the TSF since initial deposition, with an oscillating downward trend from late 2020. The pore water salinity of the filtered tailings has been elevated due to the saline moisture entrained in the ore being hauled from underground and processed. Previously, when Contact water was used as reclaim water for milling purposes, the pore water salinity of the tailings increased significantly. The pore water of the filtered tailings is a critical control parameter for the performance of the dry stack tailings storage facility (TSF).”*

In order to verify that a potential environmental impact is not occurring, it would be helpful if AEM clarifies what the design assumptions are for the TSF with respect to tailings porewater salinity, and further describe, with some figures, the noted downward oscillating porewater concentration trend observed since initial tailings deposition.

Recommendation

CIRNAC recommends that AEM:

1. Clarify why was it not practical in 2022 to use water from the Contact Water management facilities as Reclaim Water for milling purposes,
2. Clarify what the TSF design assumptions are with respect to tailings porewater salinity, which is a critical control parameter for the performance of the dry stack TSF, and
3. Provide further information to clearly illustrate and describe the observed oscillating decreasing trend in the tailings porewater salinity over time and the reason for the decreasing trend.

Agnico Eagle Answer

1. CP1 water contains a slightly elevated degree of total dissolved solids (TDS) relative to the concentration of TDS in Meliadine Lake. Although it is well within the Water Licence limits, the use of CP1 as mill feed would represent an additional TDS (salt) load to the mill when compared to the freshwater from Meliadine Lake, which has very low TDS content. Given that the porewater salinity of the tailings is very close to the upper design target and was not sufficiently and consistently below the design target, feeding the mill with CP1



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water was considered not practical in 2022 from a geotechnical risk management perspective.

2. A porewater salinity of 15 ppt was assumed for the TSF design.
3. In 2019, the average porewater salinity was 20 parts per thousand (ppt) (TDS) with a min. of 11 ppt and a max. of 30 ppt. In 2020, the average porewater salinity was 19 ppt with a min. of 15 ppt and a max. of 25 ppt. In 2021, the average porewater salinity was 16 ppt with a min. of 13 ppt and a max. of 20 ppt. In 2022, the average porewater salinity was 14 ppt with a min. of 12 ppt and a max. of 17 ppt. Figure 1 below shows the TDS trend in the tailings process water between June 2019 and May 2023.

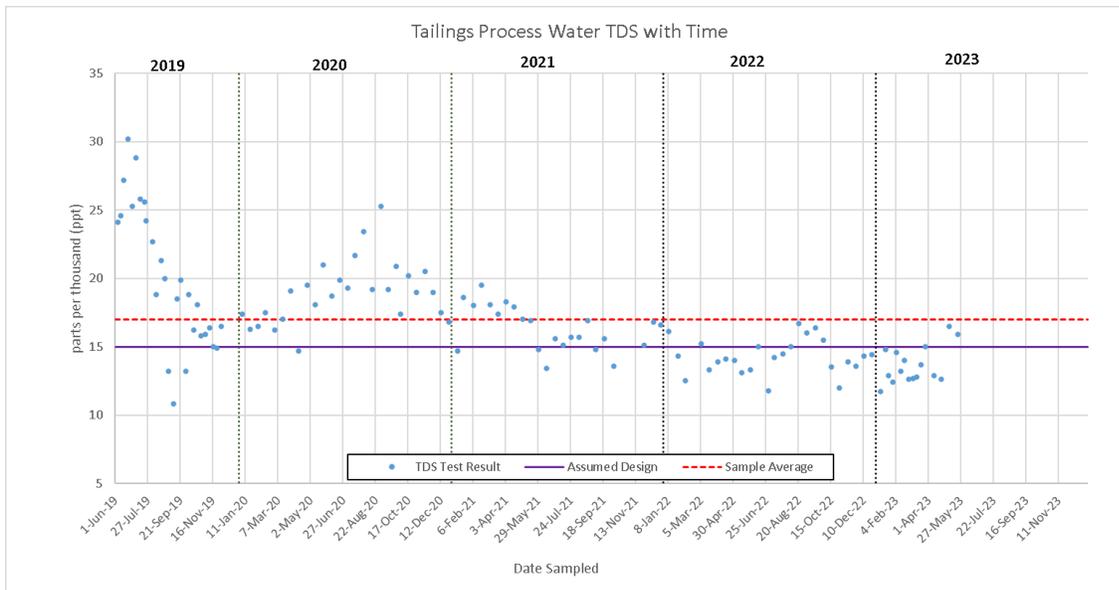


Figure 1: Tailings Process Water TDS with time (2019-2023)

As stated in response to ECCC-2 above, starting in 2021, the average porewater salinity was marginally above the design limit and in 2022, the average porewater salinity was slightly below the design limit. Thus far in 2023, the average porewater salinity is below the design limit, with a few points at the limit and two points above it. Assessment into the impact of elevated salinity within the porewater on the TSF is ongoing, but the main impact will be freezing point depression, which may alter the thermal performance of the TSF from that which was predicted in design. The laboratory testing conducted to measure the freezing point temperature is only slightly lower (-0.02°C) than what was assumed during the design.

The tailings with the higher porewater salinity were produced early on and therefore are generally at the base of the TSF where any additional freezing point depression occurring will have less of an impact on the thermal performance due to the colder temperatures observed currently and predicted during the design at these depths. Currently, most of the tailings are near the measured freezing point or cooler. Below about 2m from the tailings surface, the tailings are below zero

degrees, but slightly warmer than the depressed freezing point, however, the tailings are continuing to cool as the permafrost aggrades into the TSF.

Porewater salinity has no impact on the physical performance of the tailings themselves. No negative impact to the physical stability of the TSF is expected due to a potential change in the thermal performance of the facility, as the facility was designed to remain physically stable under fully thawed conditions.

It is expected that the decrease in porewater salinity is due to the inclusion of open pit ore into the mill feed which is less saline compared to the underground ore.

CIRNAC-4: Underpredicted Ammonia and Phosphorous Concentrations in CP1

Comment

Accurate predictions of water quality in the collection ponds over time is an important aspect of water management at the Meliadine site. In section 3.2.4.2 of the 2022 Annual Report, AEM noted that in 2021 water quality predictions in CP1 for ammonia and phosphorous concentrations was overpredicted. As shown in Figures 10 and 11 of Appendix 5 of the 2022 Annual Report, these parameters were also overpredicted in 2022. AEM attributed this overprediction to nutrient attenuation by algal growth, which has been periodically observed in CP1, but is not considered in the water quality model. AEM also noted that further investigation is required to validate this hypothesis, but no commitment was made to conduct such a study.

Recommendation

CIRNAC recommends that AEM commit to conducting a study to verify the attenuation of nutrients (specifically ammonia and phosphorous) by algae in CP1 and provide a timeline for completing the study in the Meliadine 2023 Annual Report.

Agnico Eagle Answer

Agnico Eagle thanks CIRNAC for their comment and would like to refer CIRNAC to the response provided to comment ECCC-1. AEM will conduct a study to further explore this hypothesis and will provide a discussion on this study in the 2023 Annual Report.

CIRNAC-5: Marine Discharges to Melvin Bay

Comment

Sections 3.1.6 and 7.3.1.24 of the Annual Report noted that in 2022, there was no saline effluent discharge to sea at Melvin Bay through MEL-26.



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In the 2022 Annual Report, Section 3.2.2.2 describing the water balance model setup stated that *“currently, saline water from the underground mine is stored in Tiriganiaq Open Pit 2 (Tiri 02) and as such no actual discharge quantities were applied in the 2022 model. year update. Previous discharges applied to the WBWQM [Water Balance Water Quality Model] include the discharge of saline water from SP4 to Itivia Harbour using trucks. The proposed Waterline (i.e., the installation of an effluent waterline discharging to Itivia Harbour) will deliver treated effluent to Itivia Harbour via a diffuser. This model assumes the waterline will be operational beginning in 2025 with a seasonal discharge from June 20th to September 29th at 20,000 m³/day.”*

Section 3.11 of Appendix 31-10 Water Management Plan of the 2022 Annual Report stated that *“Currently due to sufficient forecasted storage capacity until 2026, saline water on site is managed through storage and treatment of marginally saline water. Punctual operations of hauling of saline water treated by the SETP to Melvin Bay are only conducted if necessary. The suspension of continuous hauling operation followed the approval of the waterline to discharge to sea (section 3.3.3) under the Amendment 002 of the NIRB Project Certificate No. 006 issued on March 2nd. The waterline is currently under construction and is expected to be commissioned in 2025, once in operation, the waterline will be used in combination with the SETP-WTC to discharge treated saline water to Melvin Bay.”*

When describing the water balance model setup in the 2021 Annual Report, Section 3.2.3 stated that *“Discharge of saline water to Melvin Bay is assumed to continue by trucks for the operation years 2022 and 2023 and to change to waterline discharge in 2024”* and that *“Based on the discharge to sea schedule in the model and considering TIRI02 as a major saline water surface storage with a capacity of 1,616,554 m³, a maximum of 46% of TIRI02 storage capacity will be utilized in future years (2022 - 2027). In 2022, a maximum of 500,000 m³ saline water is expected to be stored in TIRI02, which accounts for 30% of the TIRI02 capacity.”*

While there is capacity for temporary storage of saline water in TIRI02 to manage saline water in the short-term, it is not clear from the 2022 Annual Report why the approved discharge of 1,600 m³/day to the marine environment, as planned in the 2021 Annual Report, was stopped completely in 2022.

Recommendation

CIRNAC requests that AEM provide:

1. Additional discussion on why no saline water was discharged in 2022 and why no saline water discharge is planned to occur until 2025;
2. Discussion of why completion of the waterline construction has been rescheduled to 2025; and
3. Discussion on potential consequences of any schedule delays in saline water discharge via the waterline.

Agnico Eagle Answer

Following the approval of the waterline for discharge to sea, Agnico Eagle made the decision to utilize onsite saline water storage capacity and to suspend the discharge to Melvin Bay via trucking, thereby reducing traffic and potential dust emissions on the All-Weather Access Road (AWAR) until the waterline is commissioned. The available storage capacity in TIRI02 in relation to groundwater inflow rates allowed this optimization to be made. This decision was supported by the magnitude of saline water storage capacity in TIRI02 relative to the discharge volumes that were achieved via trucking in 2020 and 2021.

The remote and northern nature of the Meliadine Gold Mine led to waterline construction constraints, which, in conjunction with permitting delays and caribou migration constraints resulted in the waterline construction schedule to be revised and the commissioning of the waterline being forecasted for 2025.

The main consequence of schedule delays in saline water discharge is the requirement to store water in TIRI02 for an additional year, however, as shown in Figure 14 of Section 3.2.4.4 of the 2022 Annual Report, TIRI02 provides sufficient capacity for saline water storage in order to accommodate for this delay in waterline operation. At the rates of discharge to sea achieved in 2020 and 2021, the impact of operating this discharge through 2023 and 2024 would be negligible on the long-term water balance outlook. Thus, in order to continue to mitigate traffic and dust generation on the AWAR, discharge to sea via trucking remains to be suspended in 2023 and 2024.

AEM will provide updated predicted groundwater inflow rates in the 2023 Annual Report, which will consequently be reflected in the updated WBWQM.

Fisheries and Oceans Canada (DFO)

DFO-1: Erosion of CP1 Berm

Comment

Erosion issues were identified in the CP1 Berm and a toe berm was constructed downstream of the CP1 Berm.

Recommendations

AEM to provide details on if the toe berm construction interacted with Fish or Fish Habitat and whether erosion resulted in sediment being mobilized to the aquatic environment downstream of CP1.

Agnico Eagle Answer

The berm was constructed between the downstream toe of the dike and the downstream water collection ditch. The construction did not interact with fish habitat. Rock fill was used as the construction material and as such minimal sediment was observed coming from the berm. All contact water from the berm is collected within the downstream water collection ditch where it is pumped to CP1.

DFO-2: Culvert

Comment

Some culverts on the AWAR and Rankin Inlet Bypass Road are undersized for flow and more than half of the culverts inspected show signs of erosion. The roads (AWAR and Rankin Inlet Bypass Road) are blocking flow causing ponding of water at identified locations.

The Annual report does not identify fish and fish habitat issues with culverts and flow management and does not provide a plan to address the issues identified. Appendix 7, 2021 Annual Geotechnical Report Agnico Eagle Responses and Action Table, identifies a few actions that AEM is committed to, but does not address the potential of sediment entering fish habitat nor the impacts to fish passage. AEM also states that additional culverts will be installed during the waterline construction in 2024 (Appendix 8, 2022 Annual Geotechnical Report Agnico Eagle Responses and Action Table).

Recommendations

Proponent to provide a plan for repair and/or replacement of damaged culverts prioritizing repairs to culverts with potential to affect fish passage and those affecting fish and fish habitat along the roads.

AEM should provide an updated Road Management Plan that includes actions to be taken to avoid contravention of the Fisheries Act by the deposit of sediment into fish habitat and addresses potential fish passage concerns at crossings.

Agnico Eagle Answer

Agnico Eagle is prioritizing further work (repair/replacement) at the crossing locations containing salmonids (Culvert 11- Rankin Inlet Bypass Road KM 3.5, Culvert 10- AWAR KM 16.5, and Culvert 7-AWAR KM 27.5). Work is planned for summer/fall of 2023 upon reception of the required authorizations. In addition, a new culvert will be installed at KM 8.8 of the AWAR.

The next update of the Road Management Plan will address assessment of potential fish passage for eventual future culvert replacement. Section 7.1 of the Road Management Plan, as well as the Sediment and Erosion Management Plan, addresses sediment control mitigation measures that are implemented.

DFO-3: Location Data of Shipping Vessels

Comment

Project Certificates 004, 006, and 008 require vessels supplying the Meadowbank Complex and Meliadine mines to avoid sensitive marine mammal and seabird habitats such as haul-outs and breeding colonies.

Ongoing outages for location data of ships - AEM stated in 2020, 2021, and 2022 report that “Additional effort will be made in 2022 to ensure Groupe Desgagnés provides accurate track data to Agnico Eagle”. To this day, vessels continue to have AIS issues lasting 12 hours to several days.

Recommendations

Proponent to provide additional details on the “Additional effort” being implemented to ensure accurate vessel tracks, and compliance with setbacks from sensitive habitats. Proponent to retrieve the missing information from other sources of information.

Agnico Eagle Answer

Agnico Eagle acquires archived AIS data from Vesseltracker, a commercial AIS supplier that aggregates AIS data from satellite and shore-based stations. These data vary in frequency based on distance from shore, location of shore-based stations, and position of satellites. In some cases, AIS position data is available on an hourly or sub-hourly basis, but in other cases, position data can be 12 hours or more between fixes. The frequency of fixes is beyond the control of Agnico



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Eagle, as it is often due to a “gap” in satellite availability over the location of the vessel in the Arctic at the time.

Agnico Eagle continues to investigate alternative commercial AIS suppliers regularly; however, Vesseltracker remains the most reliable at this time. Agnico Eagle continues to train vessel captains regularly and remind them of the importance of maintaining sensitive habitat buffers prior to the start of each shipping season.

DFO-4: Marine Mammal Monitoring Program

Comment

Current Marine Mammal Monitoring survey efforts (1 survey per day, lasting 1.5-2 hours) are not sufficient for effective marine mammal monitoring.

Recommendations

Proponent to update their marine mammal monitoring protocol and include increased monitoring efforts. This updated protocol should be developed by a marine mammal expert, be reviewed and approved by DFO and aim at effectively detecting and avoiding marine mammals during shipping.

Agnico Eagle Answer

The marine mammal monitoring protocol (MMMP) is described in the approved Shipping Management Plan and the Marine Mammal Survey Standard Operating Procedure (SOP). The protocol is for a dedicated MMSO to complete a minimum of one survey per day, however two or three surveys daily is preferred when timing allows, with each marine mammal survey lasting for a minimum of 1.5 hours to not more than two hours to mitigate observer fatigue and eyestrain. The approved MMMP is well implemented; more than one dedicated marine mammal survey per day is frequently conducted during shipping, and survey effort continues to improve each year.

For example, since 2020, survey effort has almost doubled, with approximately 110 survey hours (moving transects) in 2020, 2021, and 2022, compared to 62 survey hours or less in previous years. Agnico Eagle will continue to emphasize the importance of multiple surveys per day.

In addition, crew members are always scanning for marine mammals. If a marine mammal is observed during the voyage outside of the dedicated marine mammal observation period (i.e., off-effort), this is recorded as an incidental sighting, and any mitigation required to avoid marine mammals during shipping is recorded and reported in the annual report.

DFO-5: Aquatic Invasive Species

Comment

Current monitoring plans do not include a monitoring program for aquatic invasive species.

There is a risk of introducing aquatic invasive species through haul contamination from ships coming from Quebec.

Recommendations

Proponent to include a non-Indigenous Species/Aquatic Invasive Species Monitoring Program around zones of higher risk. This monitoring plan should be developed by an expert, be reviewed and approved by DFO and response measure should be added to the shipping management plan.

Agnico Eagle Answer

Agnico Eagle thanks DFO for their comment and wishes to reiterate its commitment to mitigating risks of introducing aquatic invasive species.

As per its Shipping Management Plan, Agnico Eagle requires the shipping companies contracted to supply the Meliadine Mine through the annual sea-lift operations to comply with the Ballast Water Regulations, which reduces the risk of invasive species being introduced as a result of mine related shipping activities.

Under the Ballast Water Regulations, all vessels are required to have a Ballast Water Management Plan. The Ballast Water Management Plan is written in accordance with the requirements of Regulation B-1 of the International Convention for the Control and Management of Vessels' Ballast Water and Sediments and aims to prevent, minimize and ultimately eliminate the risk of introducing harmful aquatic organisms and pathogens from vessels' ballast water and associated sediments, while protecting vessel's safety. The ballast water treatment systems from the vessels used to supply the Meliadine Mine also comply with the applicable requirements and regulation D-2 for ballast water management.

The Shipping Management Plan was developed in collaboration with third party experts and was reviewed by Parties through the NIRB process. Subsequent updates of the Shipping Management Plan have been submitted to NIRB and have been made available for Parties to review and comment.

Agnico Eagle believes the above-mentioned information addresses the intent of DFO's recommendation and remains available to further discuss potential improvements to its approved Shipping Management Plan with DFO as required.

DFO-6: Underwater Noise

Comment

Underwater noise from shipping vessels has the potential to elicit disturbance effects on marine mammals by reducing their ability to travel, communicate, and find food.

During the 2022 shipping season, 14 vessels served the project. We currently do not know what noise level and characteristic is produced by those shipping vessels and the potential impact on marine mammals.

Recommendations

Proponent to monitor and model their noise footprint using expert support. This model should aim at evaluating the impact of shipping noise on marine mammals present on the shipping route. A Shipping Management Plan should be updated according to the model.

Agnico Eagle Answer

The FEIS predicted that in some cases, vessel noise may elicit behavioural changes in individual marine mammals that are in close proximity to these vessels. The residual environmental effect of a change in marine mammal behaviour as a result of Project vessel noise was considered to be low in magnitude, and the likelihood of behavioural disturbance from Project-related vessel noise was considered likely, but would be reversible soon after underwater noise effects subsided. Agnico Eagle continues to follow the Shipping Management Plan and the Marine Mammal Management and Monitoring Plan that was developed for the Project to meet commitments made during the Nunavut Impact Review Board (NIRB) hearings related to Marine Shipping.

DFO-7: Appendix on fish and fish habitat

Comment

The Meliadine Mine Project reporting does not include an appendix specific to fish and fish habitat. Such a report is provided by AEM for the Meadowbank complex and allows Fisheries and Oceans Canada to properly monitor compliance with the Fisheries Act.

Recommendations

Proponent to provide an appendix including, but not limited to:

- Report on death of fish;
- Report on Harmful Alteration, Disruption and Destruction of fish habitat;
- Report on fish passage issues;
- Fish-out activities;
- Measures implemented to avoid and mitigate impacts to fish or fish habitat; and
- Offsetting activities.



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Agnico Eagle Answer

Agnico Eagle would like to clarify the referred Appendix 38 of the Meadowbank Complex Annual Report (*Whale Tail 2022 Report o the Implementation if Measures to Avoid and Mitigate Serious Harm to Fish*) is provided in accordance with Condition 3 of the Fisheries Act Authorizations (FAAs) 16-HCAA-00370 and 20-HCAA-00275 for the Whale Tail Mine. There is no FAA issued for the Meliadine Mine; as stated in Section 1 of the Meliadine Annual Report, the Annual Report is intended to address annual reporting requirements under the current authorizations, namely the NWB Water Licences, NIRB Project Certificate, KivIA Permits and Production Lease, and Inuit Impact and Benefit Agreement (IIBA).

Agnico Eagle is committed to fulfilling reporting requirements from its various authorization and proposes to have a meeting with DFO to clarify current reporting requirements related to DFO authorizations.

Health Canada (HC)

HC-01: Elevated arsenic concentrations in soil and vegetation

Comment

HC encourages continued arsenic monitoring in soil and vegetation and analysis of trends over time.

As stated in HC's review comment HC-CF-02 in the February 28, 2023, Government of Canada submission for the Meliadine Extension Project Proposal, arsenic in soil and water under current mine site conditions may warrant further monitoring and scrutiny. In that submission, HC noted that some measured concentrations of arsenic in soil reported in the 2017 and 2019 TEMMP reports were in exceedance of the Canadian Soil Quality Guideline (results were reported up to 110 mg/kg compared to the guideline of 12 mg/kg). In the 2022 Annual Monitoring Report, some arsenic concentrations reported at waste rock storage area sampling locations were greater than levels reported in the 2017 and 2019 TEMMP reports, up to 1,100 mg/kg (Appendix 27, PDF pg. 248). It was also noted that several vegetation tissue samples collected in 2022 (primarily lichen and birch leaves) had elevated concentrations of arsenic (up to 884 mg/kg in one sample – Appendix 27, PDF pg. 259).

Similarly, Section 7.1.2 of the 2022 Annual Monitoring Report (PDF pg. 77) indicates that since 2019, arsenic concentrations have increased four-fold in Lake A8 and eight-fold in Lake B7. The Tailings Storage Facility (TSF) was identified as the probable source of arsenic via "off-site migration of fine particulate dust from the TSF" (PDF pg. 78). While measured concentrations of arsenic in these lakes remained below aquatic environment action levels, these observed changes in water quality were attributed to mining activities and suggest potential deposition of arsenic onto other environmental media (i.e., soil and vegetation) via particulate dust.

The most recent soil and vegetation monitoring results demonstrate the value in continued monitoring of arsenic during the life of the mine and in doing trend analyses to confirm that concentrations are not increasing over time, particularly in locations already elevated under baseline conditions. Monitoring data could help to inform community outreach initiatives and closure mitigation and/or institutional controls during site closure.

The annual monitoring report offers an opportunity for proactive risk communication in advance of the closure and post-closure phases and HC encourages accessible and transparent presentation of data in future annual monitoring reports.

Recommendation

1. Annual monitoring reports demonstrate increasing arsenic concentrations in exceedance of health-based guidelines. HC supports the continued monitoring of arsenic during all project phases.

2. To facilitate review and observe trends, HC requests that future TEMMP reports compare arsenic results for each sampling location over time in order to determine whether additional mitigation or adaptive management is needed.

Agnico Eagle Answer

Agnico Eagle thanks HC for their comment and will continue to monitor arsenic in all project phases as per current and approved Management Plans including the TEMMP and AEMP. As stated in the 2022 AEMP report (Appendix 19 of the 2022 Annual Report), no exceedances of the AEMP Action Levels were observed in any of the samples collected in 2022, including the Peninsula Lakes water quality samples.

Agnico Eagle will include a comparison of arsenic results for each sampling station over time in future TEMMP reports and would like to reiterate the fact the results from the 2022 soil and vegetation health monitoring indicate that soil characteristics and vegetation health remain comparable to baseline conditions, with the exception of a small, localized area near the WRSF and TSF which showed higher arsenic concentrations in the soil and vegetation.

HC-02: Non-threshold air contaminants

Comment

HC encourages the use of the Canadian Ambient Air Quality Standards (CAAQS) in effect at the time of monitoring, and ongoing efforts to limit emissions of non-threshold air contaminants to the extent possible.

Appendix 25 of the 2022 Annual Monitoring Report (PDF pg. 40), indicates annual mean concentrations of nitrogen dioxide (NO₂) at both monitoring stations were “well below the Government of Nunavut Ambient Air Quality Standard of 32 ppb.” HC recommends using the CAAQS value in effect at the time of monitoring for future reporting purposes.

HC also notes that NO₂ is a non-threshold air contaminant, meaning that associations with different health outcomes have been demonstrated throughout the range of concentrations. Therefore, any increase in exposure will result in an increased health risk. The applicable air quality standards, such as the CAAQS, should not be considered as “pollute up-to” levels and the Proponent is encouraged to strive for continuous improvement.

Recommendation

1. HC recommends using the most stringent federal, provincial, or territorial air quality standards applicable to the given area. In many cases, although they are not based on health effects alone, the CAAQS will be the most stringent levels for key air pollutants, especially for longer-term projects with emissions after 2025.
2. HC supports implementing all economically and technologically feasible mitigation measures to limit emissions of non-threshold air contaminants to the extent possible.

Agnico Eagle Answer

1. In consideration of Health Canada’s recommendation, Agnico Eagle will provide additional comparison to the 2020/2025 CAAQS in future reports, where these standards are



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available for parameters and averaging times measured at the Meliadine Mine (i.e. 24 h $PM_{2.5}$, annual NO_2 and SO_2). Agnico Eagle does stress that to date, measured values of these parameters have never exceeded current or future CAAQS. For example, the highest ever recorded monthly average concentration of NO_2 at Meliadine was 2.3 ppb, which is well below the 2025 CAAQS for the annual average (12 ppb).

2. Agnico Eagle concurs with this approach and is continually reviewing air quality management measures onsite, as described in the Air Quality Monitoring Plan.

HC-03: Noise monitoring at locations protective of off-duty workers

Comment

HC encourages noise monitoring in locations that are protective of off-duty workers.

Based on Figure 1 of the 2022 Noise Monitoring Report (Appendix 24, PDF pg. 11), noise monitoring stations are located on the production lease boundary or just outside of it. It is unclear whether these locations are representative of conditions experienced by off-duty workers, particularly at the on-site camp location (as shown in the 2023 FEIS Addendum, Figure 1.1-4). Adverse health impacts on sleep may begin when average sound levels inside sleeping quarters exceed 30 dBA for continuous noise sources, or 45 dBA (max) for discrete noise events (WHO, 1999). The only L_{eq} (nighttime) values (28.6 dBA and 40.1 dBA) reported for 2022 were at station NPOR008, which is located approximately 2 km from the mine lease (Appendix 24, Figure 1, Table 7). Additional noise monitoring stations located closer to the camp accommodations could be considered to characterize noise exposure for the closest human receptors.

World Health Organization (WHO). 1999. Guidelines for community noise. Geneva: World Health Organization.

Recommendation

1. HC encourages locating noise monitoring stations where they can monitor future noise levels (particularly night-time levels) experienced inside of dwelling spaces (i.e., sleeping quarters) and inform the need for additional mitigations should measured levels exceed noise guidelines.
2. HC supports the implementation of additional mitigations under the Proponent's noise abatement plan (Project Certificate Condition 10) should monitoring results indicate potential adverse noise-related health impacts for off-duty workers.

Agnico Eagle Answer

Agnico Eagle thanks Health Canada and wishes to clarify that it is currently monitoring noise as per its approved Noise Abatement and Monitoring Plan. As part of its continuous improvement process, Agnico Eagle remains available to further discuss improvements to its monitoring plan with HC and will assess inclusion of these recommendations in future iteration of the monitoring plan.



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Transport Canada (TC)

TC-1: Marine Safety and Security

Comment

- The oil handling facility is in compliance with regulatory requirements as per part 8 of the Canada Shipping Act, 2001. OPEP and OPPEP, were reviewed- no issues or any non compliance. Last inspection was carried out in 2022
- The facility is in compliance with the Marine Transportation Security Regulations. No inspection were conducted in 2022 and the most recent inspection occurred in 2021.
- Vessel operators should be made aware of the Annual Notice to Mariners, in particular section, A2 Marine Mammal Guidelines and Marine Protected Areas and 7A Voyage Planning for Vessels Intending to Navigate in Canada's Northern Waters
Annual Notice to Mariners : <https://www.notmar.gc.ca/publications/annual/annual-notice-to-marinerseng.pdf>
- No enforcement activities were undertaken or required last year

TC-2: Navigation Protection

- Transport Canada Navigation Protection Program (NPP) has issued two approvals for works associated with the Project:
 - 2010-600573 - Bridge Meliadine River
 - 2019-600003 – Outfall/diffuser, Melvin Bay
- NPP conducted an inspection trip in August of 2022. This inspection included the bridge over the Meliadine River as well as viewing the area of the diffuser outfall. The bridge appeared to be in operational condition with no impacts to navigation over the Meliadine River.
- Views from shore of the location of the diffuser outfall did not result in any issues of noncompliance or impacts to navigation. All conditions of approval were adhered to and no impact was noted.
- No complaints/concerns were received and no enforcement actions have been undertaken.

TC-3: Civil Aviation (Meliadine mine flights)

- There were no site inspections or enforcement activities related to the Meliadine Mine aerodrome in 2022.
- The amended Meliadine Gold Mine Project Certificate No. 006 Term and Condition #70 deals with flight altitudes to and from the Meliadine Mine aerodrome. There were no complaints related to this aerodrome in 2022.

TC-4: Transportation of Dangerous Goods



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- One TDG inspection was conducted remotely for Meliadine Gold Mine Project in 2022. Non compliances were noted for training and Agnico Eagle provided the compliance response within the timeframe. Therefore, there are no outstanding issues.
- No other monitoring was conducted by TDG in 2022 and no concerns or complaints were received.

Agnico Eagle Answer to Comments TC-1 to TC-4:

Agnico Eagle thanks TC for their comments. As for the Annual Notice to Mariners (Comment 1, Bullet 3), the vessel operators are made aware of the notice and related requirements and reminders are sent by the shipping companies at the start of the season.



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Sayisi Dene First Nation and Northlands Denesuline First Nation (SDFN/NDFN)

SDFN/NDFN-1: Waterline spills and discharges; spill response and training

Comment

In Figure 18 of the 2022 Annual Report, AEM displays a continual and somewhat alarming increase of reportable and non-reportable spill occurrences from 2019 to 2022 (Figure 18 label incorrectly states 2018). Yet, there is no explanation or conclusions drawn from this trend. On P.56 and P.57, AEM mentions spill prevention training for its staff in 2022, but the trend was evident by 2021 and actions to address this trend should have occurred sooner. In Table 19, P.54 on May 8, 2022, two spills occurred. The saline water spill of 800 L along the haul road has no supporting information in Appendices 16 or 17. This incident is also not colour-coded (e.g., blue colour-coded spills are exceedances, orange are due diligence, etc.). So, under what type of spill category does a white, non-colour coded spill get classified? On P.68 in the Annual Report and in the May 8 follow-up report #2022172 regarding the total suspended solids runoff exceedance, Figures 2 and 3 show the surface water runoff before and after response and in “Corrective Measures” a statement in the second paragraph “water from the upstream area ponded area on site (Figure 2) is being collected via water truck as feasible” is mentioned. This spill is precisely the type of occurrence that SDFN/NDFN expressed concern regarding a potential waterline leak or spill (See Technical Review Comment Number: SDFN-03-November 12, 2020 - Agnico Eagle Mines Limited’s “Saline Effluent Discharge to Marine Environment” Project Proposal, NIRB File No.: 11MN034). Clearly, a treated groundwater spill of this size along the AWAR during caribou migration should not be cleaned up “as feasible” but instead be addressed immediately. It is noted that AEM has drafted “Appendix H - GENERAL RESPONSE PROCEDURES FOR SPILLED SALINE WATER – Point 7c - Spills on the AWAR and/or Bypass Road due to Waterline Leak” which seems to address SDFN/NDFN concerns. However, when indicating that a spill will be isolated to prevent caribou access it is not clear how this will be done. Temporary fencing is not mentioned as an isolation mitigation technique and should be considered. In the Spill Contingency Plan, P.28, Tables 7-2 and 7-3 which list response equipment and material stored in emergency mobile trailers and sea-cans, no fencing to exclude wildlife from a spill is listed. Silt-fencing was listed but is not sufficient to exclude wildlife. In addition, the use of wildlife deterrents should be employed during a spill, but are not mentioned. Finally, the “mock spill exercise” described on P.57 in the Annual Report is focused on a marine spill response and appears to be comprehensive in detail. But no mock scenario spill exercise is mentioned for a land-based spill. This type of spill response exercise (including timing of containment and follow-up remediation) must be practiced along the AWAR, By-Pass Road, and the future Discovery Road as well, preferably before waterlines are operational.

Recommendation

AEM has begun to address SDFN/NDFN concerns about waterline spill impacts on land to migrating caribou and their vulnerable calves. More needs to be done. Revisions should be made to “Appendix H - GENERAL RESPONSE PROCEDURES FOR SPILLED SALINE WATER - Point 7c - Spills on the AWAR and/or Bypass Road due to Waterline Leak” which does not include



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specific mention of employing fencing and deterrents to exclude caribou from accessing saline waterline discharges. In addition, AEM should ensure annual mock spill exercises for saline water discharges on land and near water along the AWAR, By-Pass Road, and future Discovery Road, be conducted. The objective of this type of mock spill exercise would be to minimize the average response time that would occur for waterline discharges on land along the waterlines next to the AWAR. To minimize response time, spill materials may need to be strategically placed near caribou crossing locations, if not already done.

Agnico Eagle answer

As mentioned in the Appendix H of the Spill Contingency Plan, in a case of a spill or leak from the waterline during caribou migration, mitigation measures will be deployed to protect caribou from being in contact with the saline water. In addition, as committed during the waterline application, and as outlined in the Spill Contingency Plan, additional measures are in place specific to the waterline such as a leak detection system, which will respond to the slightest changes in pressure waterline. This leak detection system is the primary mitigation to address leaks and spills.

Agnico Eagle will ensure that a Mock Spill related to the waterline will be conducted before the first discharge and annually afterwards.

SDFN/NDFN-2: Wildlife Observations

Comment

There seems to be a lot of information here, but it does not seem to be integrated or used to support impact predictions for wildlife. Perhaps a re-structuring of data collected could make the data more useful.

Recommendation

Does AEM have any intention of using the wildlife survey and incidental wildlife observation information for any Project objective, additional analysis or to draw any conclusions as indicated in T & C 56?

Agnico Eagle Answer

As per the 2022 NIRB Project Certificate Concordance Table presented in Appendix 40 of the 2022 Annual Report. Sections 7.8, 11.11 of the annual report, and related appendices (*Appendix 27 – 2022 Terrestrial Effects Monitoring and Mitigation Program Annual Report* and *Appendix 35 – 2022 Terrestrial Advisory Group Annual Report*) present the information related to T&C56.

The TEMMP is currently being revised through the TAG and Agnico Eagle remains available to discuss improvements to this document within the TAG context during which the SDFN/NDFN could clarify their comment and recommendations.

SDFN/NDFN-3: Caribou advisory maps by week

Comment

While Section 12.4 provides information in partial commitment to Term and Condition 56, and Figure 5 and Table 17 are helpful, T & C 56, point 'c' specifically states "a detailed presentation and analysis of the distribution relative to Project infrastructure and activities for caribou and other terrestrial mammals observed during surveys and incidental sightings." SDFN/NDFN interpret this to mean a map would be compiled by AEM of the caribou advisory observations during caribou migration. The daily caribou alert maps that are sent to interested parties are helpful, but a summary map (by week) would be more illustrative of caribou distribution in relation to project infrastructure.

Recommendation

SDFN/NDFN request AEM to produce a summary caribou distribution map (by week) during caribou migration from the caribou alert maps.

Agnico Eagle Answer

Agnico Eagle complies with the NIRB Project Certificate No. 006 Amendment 002 T&C56c by detailing its monitoring programs conducted over the year in the Annual TEMMP Report which includes caribou monitoring.

Caribou collaring maps are shared with the SDFN/NDFN on a daily basis and the caribou alert maps are shared up to 3 times a day during the migration.

It is Agnico Eagle's view, that weekly summary maps are not needed in light of the above and as discussed during the December 16th, 2022 TAG meeting.

SDFN/NDFN-4: Acronym missing

Comment

It is suggested this topic be labelled more specifically as it only refers to falcons and hawks. In addition, the acronym PRISM is mentioned but this acronym is missing in the Abbreviations list.

Recommendation

Please add PRISM to Abbreviations list

Agnico Eagle Answer

Agnico Eagle thanks SDFN/NDFN for this comment and will ensure to add all the abbreviations in the Abbreviations list in future Annual Reports.

SDFN/NDFN-5: 2022 AWAR monthly traffic summary exceeds FEIS traffic predictions

Comment

In 2022, actual traffic exceeded the predicted traffic numbers in the FEIS in every other month, except for January, February, and March. There is no discussion or conclusion to explain this discrepancy with the FEIS predictions other than trucking treated saline effluent, even though traffic numbers were less in 2022 than 2021. While Section 12.4.3 Traffic Data provides a bit more details, it is still unclear as to the discrepancy between actual and predictions.

Recommendation

Please explain if the discrepancy is solely due to AEM not estimating saline groundwater correctly in the FEIS or if additional factors are in play. This is important for SDFN/NDFN to know if this underestimation will be a future concern when the Discovery Road and waterline is built, as it pertains to caribou crossing interactions with vehicles.

Agnico Eagle Answer

Agnico Eagle thanks SDFN/NDFN for this comment.

Agnico Eagle prepared a response on traffic volume on the AWAR relative to predictions for the Government of Nunavut (GN) (GN-TRC-07) as part of the Waterline FEIS Addendum in November 2020. The response acknowledges that traffic monitoring results have been reported in a number of different ways making comparison to the FEIS (Agnico Eagle 2014) and 2018 FEIS Addendum (Agnico Eagle 2018) challenging. GN-TRC-07 shows that the results from 2019 traffic monitoring were 35 round trips per day during July whereas 44 and 49 round trips per day in July were predicted in the FEIS and 2018 FEIS Addendum, respectively, Traffic during the operations phase on the AWAR during July has been less than predicted in either the FEIS or the 2018 FEIS Addendum.

SDFN/NDFN-6: New training programs

Comment

Trainee programs conducted by AEM are commendable; however, young Indigenous people (Inuit or Dene) would benefit from a Biological Trainee Program to learn to identify native plants and resident birds and mammals and scientific survey techniques and methods. This could encourage some to enter the field of biology and possibly be hired by AEM for bird, mammal, and plant surveys.

Recommendation

Investigate the implementation of a Biological Trainee Program with the assistance and leadership of elders and biological staff as the surrounding area of the mine would provide numerous opportunities for “hands-on” learning.

Agnico Eagle Answer

Agnico Eagle concurs with the SDFN/NDFN view that training of young Indigenous people is highly beneficial, and also believes this serves as an equally beneficial learning experience for non-Indigenous Agnico Eagle employees through learning of IQ and TK and related biological monitoring techniques. In fact, Agnico Eagle works with young Indigenous people through various means throughout the year, namely supporting students from the Arctic College and young Indigenous people being recruited as part of Agnico Eagle’s Environment Department to work on various tasks related to biological monitoring.

SDFN/NDFN-7: Clarification on AWAR suspension protocol

Comment

The third bullet down states that “Fuel delivery from M&T will not go on the AWAR if the site is closed, unless exception by KIA is provided.” From the point of view of a person seeing this for the first time, this statement seems to indicate that exceptions will be granted, even during a Level 3 closure. It is suggested this statement be removed or explained with details under which circumstances that an exception would be granted. The first bullet under “Crew Change” is confusing. A suggested adjustment for clarity would be: “flight schedule delays are planned after reviewing the morning AWAR survey results”

Recommendation

The suggestion to remove the statement or clarify on fuel delivery is a recommendation which stems from reading the information for the first time with the understanding that a Level 3 closure is the highest level of caribou advisory; yet exceptions exist. SDFN/NDFN requests AEM to assess this suggestion and the Toolbox presentation and make the necessary changes for clarity and reinforce the importance of a Level 3 shutdown.

Agnico Eagle Answer

Agnico Eagle thanks SDFN/NDFN for their comment, and proposes it be further discussed with the TAG within the context of the ongoing TEMMP review.

SDFN/NDFN-8: Noise monitoring at levels detected by wildlife

Comment

SDFN/NDFN will remind AEM of the need to measure noise at levels of high and low frequencies detected by wildlife and not just noise heard by humans. This is not currently being done and is a gap in knowledge.

Recommendation

A program to monitor noise using noise monitoring equipment that measure frequencies specific to caribou, should be developed in conjunction with the TAG to gather baseline information and determine if and how caribou are responding to Project noise levels.

Agnico Eagle Answer

Agnico Eagle completes regular noise monitoring at locations surrounding the Meliadine Mine as part of the Noise Abatement and Monitoring Plan (NAMP). This monitoring is conducted using Type I integrating sound level meters, which are configured to log noise levels in unweighted decibels (dBZ) at frequency bands from 12.5 Hertz (Hz) to 20,000 Hz. During the data processing stage, A-weighting is applied to the measured noise levels to account for the frequency sensitivity of the human auditory system, and then noise levels measured in the different frequency bands are summed to obtain single-number noise levels expressed in A-weighted decibels (dBA). These single-number dBA noise levels are suitable for comparison to predictions from the Final Environmental Impact Statement (FEIS) and to noise thresholds set out in the NAMP. However, it is important to note that the unweighted spectral noise data is not lost during the data processing. For each monitoring program, unweighted noise measurements from 12.5 Hz to 20,000 Hz are saved by Agnico Eagle to an internal database.

Perra et al. (2022) collected measurements to establish hearing thresholds for reindeer in frequency bands from 30 Hz to 16,000 Hz. As noted above, the sound level meters used for regular noise monitoring at Meliadine log data for a wider range of frequencies (i.e., 12.5 Hz to 20,000 Hz) than the reindeer hearing thresholds provided in the literature (i.e., 30 Hz to 16,000 Hz). In other words, the noise data that Agnico Eagle currently collects at Meliadine spans the entire frequency range reported in Perra et al. (2022) and extends beyond this frequency range at both the low and high ends. As such, Agnico Eagle respectfully submits that new/additional noise monitoring is not required to capture “frequencies specific to caribou” since the current noise monitoring program already collects data at these frequencies.

References

Perra M, Brickman T, Scheifele P, Barcalow S. Exploring auditory thresholds for Reindeer, Rangifer tarandus. Journal of Veterinary Behaviour. 52:37-44.

SDFN/NDFN-9: Use of one definition for TEMMP

Comment

In the 2022 Annual Report “List of Appendices”, the reader is referred to Appendix 27 - 2022 Terrestrial Environment Management and Monitoring Plan Report. Yet, the title page of Appendix 27 is titled “Terrestrial Environment Monitoring and Mitigation Program (TEMMP) Annual Report.” In 2021, Appendix 26 was labelled as “Terrestrial Effects Monitoring and Mitigation Program” and this labelling confusion was raised by SDFN/NDFN in Comment 1 of their review of the 2021 Annual Report. AEM clarified that the implementation of the TEMMP requirements and monitoring results is the “Terrestrial Effects Monitoring and Mitigation Program Annual Report” and is referred to as “TEMMP Report.” But in 2022, AEM named Appendix 27 with another new title “Terrestrial Environment Monitoring and Mitigation Program (TEMMP) Annual Report” which creates additional confusion.

Recommendation

It is recommended that AEM stick to one definition of the acronym “TEMMP” for future clarity.

Agnico Eagle Answer

Agnico Eagle thanks the SDFN/NDFN for identifying overlap in the use of acronyms.

Agnico Eagle will refer to the Terrestrial Environment Management and Monitoring Plan as “TEMMP”. The annual report discussing the implementation of TEMMP requirements and monitoring results will be referred to as the “TEMMP Report”.

SDFN/NDFN-10: T & C 74 - To minimize the impact of Project activities on water birds and T & C #75 - To minimize the impact of predatory species on nesting birds are missing from the Concordance Table 1 on Page 4.

Comment

T & C 74 and T & C 75 have reporting requirements but other than a short description of deterrents used in Section 10 Wildlife Deterrents in TEMMP-1, and in the “Wildlife Protection and Response Plan - Version 9” in Section 4.4 Wildlife deterrents there was no discussion about mitigation measures to deter waterbirds from water attenuation ponds or the monitoring of the effectiveness of mitigation measures employed as required in T & C 74. In addition, Section 9.4, Table 13 mentions bird nests detected on the mine site, but no discussion of mitigation measures and monitoring programs to limit the attraction of predators and scavengers to Project facilities. For example, the details of the ECCC monitoring protocols used for the June 11, barn swallow nest are lacking.

Recommendation



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SDFN/NDFN would like to know why T & C 74 and T & C 75 are missing in the TEMMP Concordance Table and provide an update on these activities as per the T & C reporting requirements.

Agnico Eagle Answer

Agnico Eagle thanks the SDFN/NDFN for noting this oversight and will ensure this is corrected in the 2023 Annual Report, however Agnico Eagle would like to note that the 2022 NIRB Project Certificate Concordance Table presented in Appendix 40 of the 2022 Annual Report may also be consulted.

SDFN/NDFN-11: Shutdown of waterlines in the event of a leak or spill

Comment

It is stated, “To be protective to caribou, any notification from the leak detection system would result in an immediate shutdown of that waterline, when caribou are in the vicinity of the AWAR, until it can be confirmed whether a leak has occurred.” While the leak detection system is very helpful (as mentioned in Section 4 - Prevention and Inspections, P.12 of the Spill Contingency Plan) to allow AEM to be responsive to waterline spills, it seems that if the waterline is shutdown, the leak may be difficult to find. Does the leak detection system allow AEM to pinpoint the leak location before shutting down the waterline? Most pipelines with a leak detection system also have valve shut-off stations at strategic locations along the length of the pipeline to allow for shut down of sections of the pipeline without needing to purge the entire line. Are there plans to install valve stations on the waterline (for example, between the AWAR and the planned Discovery road) and if not, why?

Recommendation

SDFN/NDFN request AEM to clarify the details of the waterlines leak detection system and potential valve stations as the need to purge a waterline or the inability to shut-down a certain section of the waterline during caribou migration could be problematic to caribou, their calves, and the emergency response team.

Agnico Eagle Answer

As was presented during the waterline application, the leak detection system uses multimode leak detector to identify the physical characteristics of a leak, such as changes in temperature, pressure, ground strain and acoustics. The fiber-optic cable acts as a fully distributed sensor that offers thousands of detection points along the entire pipeline, capable of pinpointing the location of a leak within 10 m, in real time.

A Failure Modes and Effects Analysis (FMEA) was completed and presented to the NIRB for the waterline application to evaluate the effects of a spill to the environment. As outlined in that FMEA,

a potential consequence of an effluent release event generally depends on the location and magnitude of effluent release, where the magnitude depends on the size of waterline failure, the flow rate, pump and valve shutoff times (which in turn is a function of the leak detection system and its connections to the pumps and valves).

Additional details regarding the waterline design are provided in response to technical comments and information requests received during the waterline application.

SDFN/NDFN-12: Prevention of arctic fox deaths

Comment

Based on Table 14 presented, it seems that the incinerator on the mine site is a “hotspot” for arctic fox occurrences, yet it seems that the only mitigative measure employed is “capture and euthanize.” If deterrent efforts were implemented at the incinerator, approximately 19 of the 37 arctic fox deaths could have been avoided. Arctic fox deaths can be prevented. Remote cameras positioned in various locations near the incinerator could assist in identifying the main areas of access for arctic fox. Electric fencing and fine page wire fencing are also effective measures to deter arctic fox. The “Recommendations” section mentions mitigative measures such as “to avoid mixing food waste with other types of waste, to educate personnel to not feed wildlife, to ensure that all waste containers are sealed, and to ensure that doors of buildings that contain waste remain closed.” These measures need a specific staff person assigned to this effort to ensure success in reducing arctic fox mortalities.

Recommendation

It is recommended that AEM place specific and strategic effort and staffing towards the prevention of arctic fox deaths on the Meliadine mine site.

Agnico Eagle Answer

As detailed in responses to GN-01, GN-02 and KivIA-06, several mitigation measures are implemented at the Meliadine Mine site to limit wildlife attraction and potential resulting animal deaths. The Environment Department has a Team of qualified personnel dedicated to educating site personnel and ensuring appropriate management of wildlife on site. Furthermore, and as mentioned previously, a wildlife audit was conducted by a third-party expert in April 2023 which confirmed several good waste management practices adapted to the site’s operational reality are implemented. Site specific recommendations provided during this audit are currently being assessed and implemented as applicable which address the SDFN/NDFN’s above recommendation.

Relative to the arctic fox deaths, Agnico Eagle wishes to clarify that other factors such as health and safety considerations also need to be accounted for when analyzing fox mortality numbers.

Agnico Eagle works in close collaboration with the GNDoE on matters related to wildlife management and it is the GN's decision whether arctic foxes need to be captured and euthanized.

SDFN/NDFN-13: Caribou crossing relationship to vehicles or road structure

Comment

In Subsection 12.2.2, it might be premature to state that “the lack of a strong relationship between caribou crossing and either vehicles or road structures suggests that existing mitigations for caribou along the AWAR are effective at reducing potential Project effects.” Thirty-four trail cameras that only cover a sub-set of the length of the AWAR are not likely to be able to measure the relationship between mitigations and caribou crossings. A greater number of trail cameras should be installed (especially back-to-back) to measure relative abundance. At the TAG, AEM mentioned that cameras facing south will pick up sun glare. While that may be true, not all days are sunny and the increase of data collected both day and night will increase sample size (thereby reducing the need to pool data) and will allow for reporting of additional metrics such as caribou per kilometre. Cameras placed at the same locations annually allow for comparison but also may be introducing sampling bias. Therefore, back-to-back cameras would give a better representation of what events are occurring in all directions around each camera location. In addition, extra cameras at caribou crossings could allow researchers to better record caribou behaviours in relation to the AWAR at these locations.

Recommendation

SDFN/NDFN request AEM to enhance the caribou remote camera study by installing more cameras along the AWAR.

Agnico Eagle Answer

The 2020 to 2022 camera program used 34 cameras along the 30 km long AWAR and represents excellent coverage of the road with an average of 1 camera per km of the road. It should be noted that any number of cameras still represents a sample of caribou interactions with the AWAR, as complete coverage is impractical.

The results of the camera program have been discussed with the members of the TAG on several occasions. These discussions have included detailed presentations on the effects of road design on caribou and on road closures on caribou.

It should be noted that the KivIA consultants have suggested moving camera effort away from the AWAR because questions about use of the road have been addressed. The KivIA consultants have suggested moving the cameras to the mine site and future windfarm location to answer questions at these locations.

SDFN/NDFN-14: Monitoring method for sensory disturbance for the preliminary threshold

Comment

Table 19 indicates that “Caribou Behavior Monitoring” will be used to measure the preliminary threshold of “less than 10% caribou deflections from AWAR”. However, on the August 19, 2022, SDFN/NDFN comments on the 2021 Annual Report, Comment 3, this issue was questioned as the “Caribou Behavior Monitoring” does not have a stated objective of measuring caribou deflections and this was confirmed by AEM by their statements, “The spatial and temporal requirements of detecting deflections necessitate the use of satellite collar data. The text will be modified to reflect that satellite collar data is the primary method that can be used for monitoring deflections.” Apparently, this AEM commitment was not done in Table 19.

Recommendation

Please re-confirm that statement from the 2021 Annual report response and make corrections to Table 19

Agnico Eagle Answer

Agnico Eagle will update the text in question for the 2023 report.

SDFN/NDFN-15: How the AWAR may affect caribou movement during migration

Comment

The conclusion: “The highest number of caribou detections events recorded during the three years of this study was recorded in 2022 (150 detections), suggesting no pattern of learned avoidance of the AWAR year to year” is speculation. The caribou trail camera study did not have an objective to measure “learned behavior.” There is no way of knowing that the caribou detected in 2022 are the same caribou that crossed in 2021 or 2020. Caribou not detected because they are missed behind the camera or just outside of the camera detection zone could be exhibiting different behavior that was not detected by this study. There are alternate interpretations for the high number of caribou, such as the natural range of variation.

Recommendation

SDFN/NDFN refers AEM back to their response to SDFN/NDFN in the August 12, 2022 Comment 4 where Agnico Eagle states “Agnico Eagle was careful not to place too much emphasis on numbers because groups may partially pass behind cameras or beyond trigger distance, and as a result numbers will almost certainly be underestimates. In addition, because the whole road is not covered by the cameras, the information captured by the cameras represent a fraction of the caribou crossing the road.”

Agnico Eagle Answer

Agnico Eagle will make it clear when statements are supported by statistical analyses in future versions of the report. In some cases, patterns in the data are not sufficient for statistical analyses and Agnico Eagle may state that the data are “suggestive” of a certain outcome but will provide caveats as suggested.

SDFN/NDFN-16: Term and Condition 44, Collared Caribou Memorandum

Comment

As noted in the follow-up column for this item, at this time, SDFN/NDFN do not agree that Term and Condition 44 has been fulfilled/satisfied with respect to 2021 Technical Memorandum entitled “Collared Caribou Meliadine All-Weather Access Road Interactions.” This aspect of Term and Condition 44 may be satisfied once the new analysis by Agnico Eagle is shared and discussed with the TAG, based on updated data and comments discussed between the members of the TAG.

Recommendation

SDFN/NDFN are hopeful that the new analysis will be available shortly for review and discussion with the TAG.

Agnico Eagle Answer

Agnico Eagle confirms that the analysis was recently completed and presented to the TAG. A brief history of the process and status is provided below.

During technical discussions for the waterline file, Agnico Eagle was requested to complete a collared caribou analysis of caribou movements relative to the Meliadine Mine and AWAR. Agnico Eagle committed (Commitment 38 of waterline file) to this analysis and to also include input from the KivIA, SDFN/NDFN, and GN to the study.

A summary of the evolution of the study design and analysis is as follows:

- December 15, 2022 (TAG meeting):
 - Agnico Eagle solicited input on the study design from TAG members
- April 12, 2023:
 - Agnico Eagle issued the Draft Study Design (RevC) via email to TAG members, indicating the design would be presented at the upcoming TAG meeting to receive input to the final design
- April 12, 2023 (TAG meeting):



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- Agnico Eagle presented the Draft Study Design which incorporated feedback from the December TAG meeting
- Agnico Eagle solicited further input on the Study Design during the meeting
- After presentation and discussion, there was agreement by parties on the scope and path forward to execute the analysis
- April 26, 2023:
 - Agnico Eagle issued the Final Study Design via email to TAG members to initiate and execute the analysis to complete Commitment 38
- June 27, 2023 (TAG meeting):
 - Agnico Eagle presented the results of the analysis during the Meliadine TAG meeting
- July 14, 2023:
 - Agnico Eagle issued the Final Report to TAG members to address the commitment 38

Agnico Eagle emphasizes that the execution of the Commitment 38 analysis followed the Final Study Design, which included direct involvement, input, and feedback from TAG members. The execution of this study was not done in isolation but rather through collaboration of the committee.

Based on specifics of the commitment, Agnico Eagle considers this item resolved as i) the analysis was executed based on the TAG's approval of the Study Design; ii) the results were presented to the TAG on June 27, 2023; and iii) the final report was issued on July 14, 2023.



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Appendix



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Corrected Appendix B Table 1, 2022 Air Quality Monitoring Report: *Daily maximum relative humidity (RH), average temperature, average wind speed, average wind direction, average solar radiation, and total precipitation as measured by the Meliadine onsite weather station.*

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation (mm)
2022-01-01	-21.7	93	20	4	4.3	0.5
2022-01-02	-20.5	94	16	353	3.6	0.0
2022-01-03	-21.7	92	21	6	3.7	0.3
2022-01-04	-22.3	91	38	347	2.9	0.2
2022-01-05	-24.1	93	38	358	3.6	0.1
2022-01-06	-33.0	72	26	319	3.2	0.0
2022-01-07	-34.4	75	10	236	3.3	0.3
2022-01-08	-28.0	80	8	272	4.0	0.1
2022-01-09	-32.1	74	3	333	2.9	0.0
2022-01-10	-37.0	66	19	349	4.1	0.1
2022-01-11	-33.5	71	24	322	3.1	0.0
2022-01-12	-33.5	71	24	325	3.3	0.1
2022-01-13	-32.8	71	24	354	3.7	0.0
2022-01-14	-35.2	68	9	325	3.5	0.0
2022-01-15	-28.8	88	10	235	4.1	1.5
2022-01-16	-21.7	95	28	37	5.7	1.5
2022-01-17	-24.8	88	42	8	7.1	0.0
2022-01-18	-32.2	79	33	354	6.8	0.2
2022-01-19	-32.2	73	29	354	4.9	0.0
2022-01-20	-29.4	77	35	340	6.3	0.0
2022-01-21	-28.2	87	14	279	4.2	0.2
2022-01-22	-28.7	85	43	347	6.9	0.0



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Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation (mm)
2022-01-23	-31.7	74	52	348	8.8	0.3
2022-01-24	-33.7	70	39	357	9.4	0.1
2022-01-25	-32.6	71	31	356	7.7	0.0
2022-01-26	-31.1	82	18	324	6.9	0.9
2022-01-27	-26.7	86	27	48	8.3	0.0
2022-01-28	-32.8	72	27	345	9.3	0.0
2022-01-29	-33.3	71	26	342	8.1	0.0
2022-01-30	-31.5	74	25	333	11.2	0.0
2022-01-31	-33.4	73	11	325	9.7	0.0
2022-02-01	-31.8	73	8	274	11.4	0.1
2022-02-02	-37.1	70	18	343	10.9	0.2
2022-02-03	-37.2	67	29	352	11.3	0.0
2022-02-04	-36.2	67	27	323	11.0	0.0
2022-02-05	-37.5	65	27	331	13.2	0.0
2022-02-06	-36.4	66	23	332	12.1	0.0
2022-02-07	-34.2	77	10	254	12.9	0.1
2022-02-08	-26.3	81	5	200	12.5	0.1
2022-02-09	-29.0	82	18	27	11.3	0.0
2022-02-10	-37.9	65	22	351	12.9	0.1
2022-02-11	-38.8	64	30	358	13.8	0.5
2022-02-12	-36.2	67	35	345	13.1	0.0
2022-02-13	-34.2	70	29	345	13.3	0.0
2022-02-14	-35.4	69	30	341	13.8	0.1
2022-02-15	-33.3	70	35	338	15.1	0.0



AGNICO EAGLE

MELIADINE

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation (mm)
2022-02-16	-33.2	69	19	342	14.9	0.0
2022-02-17	-35.6	68	27	346	14.8	0.0
2022-02-18	-33.8	68	14	290	18.2	0.0
2022-02-19	-33.9	70	16	309	18.5	0.1
2022-02-20	-39.5	61	22	349	17.9	0.0
2022-02-21	-37.2	68	24	349	18.2	0.0
2022-02-22	-33.2	70	35	335	21.5	0.0
2022-02-23	-36.2	67	18	347	19.4	0.0
2022-02-24	-36.4	67	15	346	20.5	0.0
2022-02-25	-32.9	76	10	299	25.5	0.5
2022-02-26	-27.8	79	12	270	22.7	0.2
2022-02-27	-29.8	74	31	343	8.9	0.0
2022-02-28	-29.9	75	29	333	21.4	0.0
2022-03-01	-34.5	72	11	341	24.0	0.0
2022-03-02	-34.2	73	19	349	26.2	0.3
2022-03-03	-31.1	75	20	349	27.1	0.1
2022-03-04	-27.4	80	28	356	29.0	0.0
2022-03-05	-22.0	84	22	340	33.4	0.0
2022-03-06	-18.0	95	14	323	45.2	0.2
2022-03-07	-22.1	95	30	351	44.1	0.0
2022-03-08	-25.7	85	14	3	47.1	0.0
2022-03-09	-26.5	86	21	355	45.8	0.2
2022-03-10	-27.3	86	29	349	52.9	0.0
2022-03-11	-30.6	75	22	338	55.5	0.1



AGNICO EAGLE

MELIADINE

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation (mm)
2022-03-12	-27.3	81	15	320	52.6	0.0
2022-03-13	-29.7	76	20	328	64.1	0.0
2022-03-14	-32.0	72	27	332	93.1	0.0
2022-03-15	-30.9	76	28	325	115.0	0.0
2022-03-16	-27.4	81	19	289	120.1	0.0
2022-03-17	-25.4	90	26	296	115.9	0.0
2022-03-18	-20.1	92	23	308	111.9	0.0
2022-03-19	-22.5	94	9	4	116.4	0.1
2022-03-20	-20.7	94	9	6	91.7	0.0
2022-03-21	-21.8	90	5	317	123.4	0.4
2022-03-22	-17.0	97	7	200	127.1	0.1
2022-03-23	-11.5	99	18	179	83.3	0.8
2022-03-24	-12.1	100	12	311	100.5	0.0
2022-03-25	-15.0	97	18	64	113.3	0.2
2022-03-26	-23.8	91	43	11	120.4	0.2
2022-03-27	-28.9	78	43	357	137.8	0.0
2022-03-28	-28.0	80	28	354	157.4	0.0
2022-03-29	-26.8	81	19	356	163.9	0.0
2022-03-30	-25.1	83	14	354	168.4	0.0
2022-03-31	-20.5	94	6	22	152.8	0.2
2022-04-01	-23.0	93	16	11	171.2	0.0
2022-04-02	-23.1	91	9	7	174.2	0.2
2022-04-03	-19.6	91	18	337	164.1	0.0
2022-04-04	-24.4	81	24	333	184.6	0.0



AGNICO EAGLE

MELIADINE

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation (mm)
2022-04-05	-20.4	95	10	45	183.0	0.0
2022-04-06	-12.1	100	7	124	110.4	0.2
2022-04-07	-8.9	100	8	190	177.3	10.0
2022-04-08	-9.6	98	13	216	193.6	0.0
2022-04-09	-9.1	100	7	208	153.1	0.3
2022-04-10	-6.0	100	14	146	163.0	0.1
2022-04-11	-6.6	100	19	134	143.3	0.6
2022-04-12	-6.5	100	32	105	152.2	0.2
2022-04-13	-14.6	96	29	45	205.5	0.0
2022-04-14	-22.8	90	21	360	221.7	0.0
2022-04-15	-19.5	96	6	345	224.2	0.0
2022-04-16	-18.6	93	14	15	196.2	0.0
2022-04-17	-23.1	89	22	336	228.4	0.2
2022-04-18	-23.4	88	14	272	235.3	0.0
2022-04-19	-20.6	95	8	240	228.9	0.0
2022-04-20	-20.8	94	6	307	225.3	0.1
2022-04-21	-16.8	94	13	148	210.4	0.3
2022-04-22	-20.7	94	12	331	245.5	0.1
2022-04-23	-17.0	92	16	315	248.8	0.0
2022-04-24	-22.0	88	25	16	248.1	0.0
2022-04-25	-22.1	89	21	353	258.8	0.0
2022-04-26	-17.5	90	16	312	260.8	0.0
2022-04-27	-17.0	91	10	348	262.8	0.0
2022-04-28	-13.9	93	18	336	263.5	0.0



AGNICO EAGLE

MELIADINE

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation (mm)
2022-04-29	-9.2	100	11	310	245.4	0.0
2022-04-30	-10.5	100	16	2	233.7	0.0
2022-05-01	-14.6	96	17	19	258.1	0.0
2022-05-02	-13.0	97	14	360	221.7	0.0
2022-05-03	-14.3	99	10	51	277.6	0.1
2022-05-04	-11.7	98	10	31	237.9	0.0
2022-05-05	-11.1	95	5	349	277.5	0.1
2022-05-06	-7.2	100	12	173	265.6	0.0
2022-05-07	-4.3	100	15	167	228.2	0.1
2022-05-08	-1.0	100	18	136	171.1	0.4
2022-05-09	-0.1	100	33	111	214.1	0.0
2022-05-10	-1.6	100	27	105	152.5	1.2
2022-05-11	-3.2	100	26	95	200.9	0.0
2022-05-12	-3.6	100	9	146	124.2	0.6
2022-05-13	-0.6	100	11	91	160.1	2.8
2022-05-14	-1.3	100	12	11	293.7	0.0
2022-05-15	-1.9	100	19	129	227.5	0.1
2022-05-16	-0.4	96	18	78	256.5	0.0
2022-05-17	-0.4	100	15	20	201.0	0.1
2022-05-18	-1.0	100	27	28	251.4	0.0
2022-05-19	-1.7	99	33	34	243.7	0.0
2022-05-20	-1.4	100	37	56	121.0	0.0
2022-05-21	-1.3	100	32	31	211.7	0.0
2022-05-22	-3.7	95	34	8	318.0	0.0



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MELIADINE

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation (mm)
2022-05-23	-7.9	96	25	6	313.1	0.1
2022-05-24	-8.7	92	15	27	205.2	0.1
2022-05-25	-4.4	100	21	331	168.7	0.5
2022-05-26	-3.7	100	21	340	187.0	0.0
2022-05-27	-2.1	100	13	290	243.7	0.1
2022-05-28	1.2	100	17	222	315.4	0.0
2022-05-29	6.2	98	15	235	323.7	0.0
2022-05-30	2.8	100	13	159	262.1	0.0
2022-05-31	2.2	100	24	147	199.2	0.1
2022-06-01	1.6	100	26	114	83.3	0.4
2022-06-02	1.1	100	35	87	48.9	14.0
2022-06-03	2.2	100	8	121	145.1	1.3
2022-06-04	3.2	100	17	68	185.0	0.0
2022-06-05	5.7	100	13	94	334.8	0.0
2022-06-06	7.3	99	10	85	334.0	0.0
2022-06-07	7.1	92	9	92	327.5	0.0
2022-06-08	8.4	100	6	288	346.0	0.1
2022-06-09	13.5	92	8	340	329.5	0.0
2022-06-10	6.3	95	12	150	329.4	0.0
2022-06-11	6.5	96	14	193	333.0	0.0
2022-06-12	10.8	89	11	208	325.3	0.0
2022-06-13	6.7	99	12	191	326.5	0.0
2022-06-14	7.0	99	13	167	333.8	0.0
2022-06-15	10.0	99	12	192	303.4	0.0



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MELIADINE

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation (mm)
2022-06-16	13.2	96	15	66	314.7	0.0
2022-06-17	7.4	86	27	44	323.9	0.0
2022-06-18	9.3	87	23	329	347.4	0.0
2022-06-19	11.6	90	11	309	330.0	0.0
2022-06-20	6.9	96	14	145	99.0	0.6
2022-06-21	4.8	98	22	117	51.2	2.8
2022-06-22	4.9	100	29	104	51.0	3.9
2022-06-23	8.6	94	32	80	151.0	0.0
2022-06-24	13.7	85	21	36	302.3	0.1
2022-06-25	10.0	99	21	319	248.1	0.8
2022-06-26	9.7	100	22	334	342.6	0.0
2022-06-27	10.7	92	16	335	322.1	0.1
2022-06-28	9.9	85	23	353	310.3	0.0
2022-06-29	8.7	100	16	312	212.6	1.7
2022-06-30	7.2	100	15	344	213.6	7.9
2022-07-01	7.8	100	20	93	209.5	0.0
2022-07-02	12.7	94	22	68	335.2	0.0
2022-07-03	13.2	93	9	137	320.9	0.0
2022-07-04	13.8	95	12	324	237.8	0.0
2022-07-05	13.0	92	20	334	213.6	0.1
2022-07-06	13.3	93	22	1	282.3	0.0
2022-07-07	14.4	89	10	14	325.4	0.0
2022-07-08	16.6	90	9	300	286.0	0.0
2022-07-09	19.3	98	9	310	281.4	0.0



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MELIADINE

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation (mm)
2022-07-10	16.4	99	15	166	297.2	0.0
2022-07-11	13.2	98	10	197	283.4	0.1
2022-07-12	13.9	99	14	215	199.4	4.8
2022-07-13	17.0	100	9	195	278.2	0.0
2022-07-14	22.3	99	7	207	282.3	0.0
2022-07-15	14.9	100	17	159	225.3	28.0
2022-07-16	15.1	100	11	198	258.5	1.1
2022-07-17	13.5	100	30	327	107.1	0.2
2022-07-18	14.7	100	19	353	242.0	0.0
2022-07-19	15.1	92	15	331	280.5	0.0
2022-07-20	14.5	97	8	158	250.6	2.6
2022-07-21	13.1	100	12	143	268.6	0.0
2022-07-22	13.5	86	10	137	208.6	0.0
2022-07-23	14.9	91	7	154	277.3	0.0
2022-07-24	17.5	97	8	340	215.3	0.0
2022-07-25	16.9	100	7	180	287.3	0.0
2022-07-26	16.0	100	8	152	282.2	0.0
2022-07-27	16.4	97	12	111	283.9	0.0
2022-07-28	18.8	95	9	343	279.7	0.0
2022-07-29	18.3	84	17	313	223.0	0.0
2022-07-30	13.7	100	21	329	190.0	4.4
2022-07-31	11.9	91	37	348	170.9	0.0
2022-08-01	9.9	91	30	333	138.3	0.6
2022-08-02	9.2	100	33	318	102.8	0.7



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MELIADINE

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation (mm)
2022-08-03	10.0	100	21	346	179.5	1.0
2022-08-04	9.5	100	20	54	152.3	5.6
2022-08-05	12.2	98	26	360	236.9	0.0
2022-08-06	13.3	94	10	342	219.8	0.0
2022-08-07	13.4	100	8	80	216.5	0.0
2022-08-08	14.9	99	7	237	259.4	0.0
2022-08-09	14.5	96	16	117	257.4	0.0
2022-08-10	15.9	93	16	36	237.2	0.0
2022-08-11	18.3	92	13	316	248.1	0.0
2022-08-12	14.5	100	20	264	124.1	4.0
2022-08-13	12.8	95	27	305	169.4	0.2
2022-08-14	13.4	99	23	309	224.7	2.0
2022-08-15	16.2	91	14	293	209.9	0.0
2022-08-16	18.8	98	12	208	233.2	0.0
2022-08-17	20.8	92	10	209	218.3	0.0
2022-08-18	19.0	100	13	332	201.8	0.0
2022-08-19	14.6	97	18	21	178.5	0.0
2022-08-20	13.6	100	14	202	158.3	0.0
2022-08-21	13.7	100	14	81	155.1	6.2
2022-08-22	9.6	100	32	359	133.2	0.3
2022-08-23	8.2	94	24	328	105.1	0.2
2022-08-24	6.8	93	39	356	123.8	0.0
2022-08-25	8.2	90	30	346	171.9	0.0
2022-08-26	8.1	95	26	348	206.1	0.0



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MELIADINE

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation (mm)
2022-08-27	6.5	100	7	19	173.7	0.0
2022-08-28	6.5	100	17	135	46.4	1.3
2022-08-29	6.9	97	27	109	90.3	0.0
2022-08-30	6.1	100	27	95	34.5	2.4
2022-08-31	5.5	100	28	65	50.8	7.0
2022-09-01	5.7	100	19	39	118.9	0.0
2022-09-02	6.2	100	15	28	171.8	0.0
2022-09-03	6.2	99	17	354	188.0	0.0
2022-09-04	8.7	100	11	233	170.0	0.0
2022-09-05	8.6	100	9	163	142.8	0.1
2022-09-06	7.0	100	26	144	59.0	0.3
2022-09-07	8.8	279	14	100	38.0	8.1
2022-09-08	8.8	272	37	306	23.2	33.6
2022-09-09	6.0	100	26	268	85.0	0.7
2022-09-10	7.1	100	13	52	74.5	0.7
2022-09-11	7.1	100	34	316	45.9	0.8
2022-09-12	7.0	100	15	317	64.7	0.3
2022-09-13	6.9	100	28	349	86.7	0.1
2022-09-14	5.1	100	24	330	100.5	0.1
2022-09-15	6.6	100	14	281	134.3	0.8
2022-09-16	5.3	100	22	311	92.9	0.8
2022-09-17	4.8	97	18	355	133.6	0.1
2022-09-18	6.4	100	11	182	49.4	0.0
2022-09-19	7.8	100	11	225	37.8	0.0



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MELIADINE

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation (mm)
2022-09-20	5.2	100	13	48	68.9	0.0
2022-09-21	3.5	98	22	31	122.0	0.1
2022-09-22	1.9	96	14	353	89.7	0.0
2022-09-23	5.7	100	12	240	29.9	2.7
2022-09-24	2.4	100	18	130	70.3	0.2
2022-09-25	8.7	100	14	247	116.8	0.3
2022-09-26	2.0	100	32	355	75.6	0.1
2022-09-27	-1.3	100	25	358	71.4	0.0
2022-09-28	2.6	100	10	218	73.2	1.8
2022-09-29	5.6	100	20	278	31.6	7.0
2022-09-30	1.2	100	45	334	45.4	0.1
2022-10-01	-0.8	97	33	353	71.9	0.0
2022-10-02	1.1	100	15	238	31.3	3.8
2022-10-03	7.9	100	18	247	0.2	3.7
2022-10-04	1.8	100	51	318	48.7	1.5
2022-10-05	-0.6	88	39	354	63.4	0.0
2022-10-06	-2.0	96	35	7	50.8	0.0
2022-10-07	-0.6	100	25	278	76.9	1.2
2022-10-08	0.7	100	38	355	30.6	0.0
2022-10-09	-1.0	100	14	340	44.1	0.6
2022-10-10	-0.1	100	24	341	34.2	0.0
2022-10-11	-1.5	98	10	169	53.3	0.0
2022-10-12	0.3	100	29	137	28.4	0.6
2022-10-13	1.7	100	36	133	24.9	3.4



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MELIADINE

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation (mm)
2022-10-14	1.9	100	19	64	14.3	0.7
2022-10-15	2.4	100	18	97	15.5	3.7
2022-10-16	-0.7	100	29	327	16.7	5.4
2022-10-17	-6.2	93	44	10	53.8	0.1
2022-10-18	-7.0	100	15	332	58.9	0.0
2022-10-19	-0.5	98	20	194	17.9	1.6
2022-10-20	-0.1	100	17	301	35.7	2.8
2022-10-21	-0.1	100	22	149	8.3	2.5
2022-10-22	-2.7	100	27	47	31.2	0.0
2022-10-23	-5.2	98	27	352	42.3	0.2
2022-10-24	-8.3	97	22	320	30.0	0.1
2022-10-25	-9.5	97	10	231	37.8	0.0
2022-10-26	-8.1	98	26	47	22.8	0.0
2022-10-27	-8.9	100	13	336	21.5	0.1
2022-10-28	-1.9	100	16	186	21.0	1.4
2022-10-29	0.4	100	11	181	14.3	7.1
2022-10-30	-6.6	100	36	348	27.5	0.1
2022-10-31	-13.7	99	17	34	39.0	0.9
2022-11-02	-4.9	100	43	85	20.0	3.0
2022-11-03	-17.4	97	43	352	31.5	0.1
2022-11-04	-18.5	94	19	319	29.8	0.1
2022-11-05	-18.6	94	14	338	24.1	0.0
2022-11-06	-16.4	95	10	327	17.5	0.1
2022-11-07	-6.9	185	22	148	19.4	11.3



AGNICO EAGLE

MELIADINE

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation (mm)
2022-11-08	-14.3	159	10	345	27.4	0.0
2022-11-09	-21.3	95	33	339	24.6	0.0
2022-11-10	-21.8	92	19	297	17.7	0.0
2022-11-11	-24.4	84	7	345	18.1	0.2
2022-11-12	-24.9	83	12	347	23.2	0.0
2022-11-13	-22.9	89	11	324	22.8	0.0
2022-11-14	-18.4	91	18	243	32.9	0.0
2022-11-15	-13.7	96	14	255	9.8	0.3
2022-11-16	-8.8	100	10	240	10.9	0.8
2022-11-17	-16.9	100	9	0	19.8	0.0
2022-11-18	-17.1	96	17	13	11.3	0.4
2022-11-19	-18.8	94	17	341	9.9	0.1
2022-11-20	-23.8	93	23	14	10.7	0.1
2022-11-21	-27.3	83	7	359	8.5	0.0
2022-11-22	-25.0	92	22	19	7.9	0.4
2022-11-23	-26.4	87	38	347	7.7	0.2
2022-11-24	-22.4	95	12	343	9.1	0.4
2022-11-25	-12.9	100	12	136	6.1	0.2
2022-11-26	-12.1	100	5	54	6.6	0.0
2022-11-27	-11.1	100	14	95	3.9	0.7
2022-11-28	-11.5	98	14	92	4.7	0.0
2022-11-29	-18.8	95	8	282	5.0	0.0
2022-11-30	-20.1	95	16	12	5.1	0.4
2022-12-01	-29.5	88	23	7	5.0	0.0



AGNICO EAGLE

MELIADINE

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation (mm)
2022-12-02	-33.3	70	13	3	4.6	0.0
2022-12-03	-33.1	70	7	357	4.1	0.0
2022-12-04	-33.1	71	4	315	2.5	0.1
2022-12-05	-24.7	87	13	96	3.2	0.4
2022-12-06	-22.0	92	30	66	3.8	0.2
2022-12-07	-23.0	91	28	20	3.1	0.3
2022-12-08	-24.8	91	9	162	2.9	0.0
2022-12-09	-27.3	79	12	153	3.7	0.0
2022-12-10	-30.7	76	14	314	3.0	0.0
2022-12-11	-23.6	95	15	179	2.1	2.8
2022-12-12	-13.0	99	11	168	2.5	2.2
2022-12-13	-20.8	99	10	217	2.4	0.0
2022-12-14	-13.8	99	13	145	2.3	1.9
2022-12-15	-10.5	100	12	195	2.5	1.5
2022-12-16	-12.3	98	16	247	3.9	0.0
2022-12-17	-17.2	95	12	15	2.2	1.2
2022-12-18	-20.4	94	32	358	3.1	0.5
2022-12-19	-28.8	81	26	347	3.0	0.1
2022-12-20	-33.0	72	13	308	2.9	0.0
2022-12-21	-34.8	69	8	341	2.7	0.0
2022-12-22	-34.2	69	21	5	2.7	0.0
2022-12-23	-31.2	73	25	13	2.6	0.0
2022-12-24	-25.0	91	26	16	2.3	0.1
2022-12-25	-19.1	93	17	33	3.5	1.1



AGNICO EAGLE

MELIADINE

Date	Temp. (°C)	RH (%)	Wind Speed (km/h)	Wind Direction (deg.)	Solar Rad. (watts/m ²)	Precipitation (mm)
2022-12-26	-19.8	94	14	13	3.1	0.7
2022-12-27	-20.4	94	29	1	3.3	0.0
2022-12-28	-18.8	93	30	17	4.6	0.0
2022-12-29	-25.6	86	18	0	3.7	0.1
2022-12-30	-30.7	76	11	1	3.8	0.0
2022-12-31	-24.7	94	5	105	3.7	0.2