July 31st, 2023

Leah Klassen
Technical Advisor II
Nunavut Impact Review Board
P.O. Box 1360
Cambridge Bay, NU X0B 0C0

Re: Agnico Eagle's response to Meadowbank (03MN107) and Whale Tail (16MN056) 2022 Annual Report comments

Dear Ms. Klassen,

The following information are intended to address regulator's comments regarding the Meadowbank (03MN107) and Whale Tail (16MN056) 2022 Annual Report:

- Government of Nunavut – June 23, 2023: Comment Request for Agnico Eagle Mine's Meadowbank and Whale Tail Project 2022 Annual Report
- Fisheries and Oceans Canada – June 23, 2023: 03MN107 & 16MN056 – Agnico Eagle – Meadowbank Gold Mine and Whale Tail Pit Projects (Meadowbank Complex) – 2022 Annual Monitoring Report.
- Crown-Indigenous Relations and Northern Affairs Canada – June 23, 2023: Comment Request for Agnico Eagle Mines Limited's Meadowbank Complex 2022 Annual Report.
- Kivalliq Inuit Association – June 23, 2023: Review of Agnico Eagle Mines Limited's Meadowbank Complex 2022 Annual Report; NIRB File No.: 03MN107 & 16MN056
- Environment and Climate Change Canada – June 23, 2023: 03MN107 - 16MN056 – Agnico Eagle Mines (AEM) – Meadowbank Mine and Whale Tail Pit – 2022 Annual Report
- Transport Canada – June 6, 2023: Transport Canada's comments for Agnico Eagle Mine Limited's Meadowbank Complex 2022 Annual Report
- Health Canada – June 8, 2023: Health Canada's response to the Comment Request for Agnico Eagle Mines Limited's Meadowbank Complex Project 2022 Annual Monitoring Report

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

Regards,
Agnico Eagle Mines Limited – Meadowbank Complex

Eric Haley
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Environment & Critical Infrastructures Superintendent

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1 Government of Nunavut (GN)

1.1 Helicopter Traffic Monitoring and Reporting

Term and Condition: 61 and 62(f) (NIRB Project Certificate No. 004), and 28 (NIRB Project Certificate No. 008)

References: Agnico Eagle Mines (AEM) Ltd. (2019). Meadowbank Division Terrestrial Ecosystem Management Plan, Version 7.; Agnico Eagle Mines (AEM) Limited. (2023). Meadowbank Complex 2022 Annual Report, Appendix 47 – Meadowbank and Whale Tail 2022 Wildlife Monitoring Summary Report.; Government of Nunavut (GN). (2017). Final Written Submission for Agnico Eagle Mines' Environmental Impact Statement for the; proposed Whale Tail Pit Project.; Nunavut Impact Review Board (NIRB). (2017) Final Hearing Report, Agnico Eagle Mines Ltd. Whale Tail Project. NIRB File No. 16MN056.; Nunavut Impact Review Board (NIRB). (2006) Project Certificate for the Meadowbank Gold Mine Project. Project Certificate 004.

Identification of issue: Helicopters are a potential source of disturbance for caribou and other wildlife. In the Meadowbank and Whale Tail 2022 Wildlife Monitoring Summary Report (AEM 2023), the Proponent has made significant improvements in the monitoring and reporting of Project related helicopter traffic. However, the Government of Nunavut (GN) notes that a majority of reported flights in 2022 had average altitudes below the minimum altitudes set in the Project's Terrestrial Ecosystem Management Plan (TEMP) and in Terms and Conditions 61 and 62(f) of Project Certificate No. 004 (NIRB 2006). This includes flights during caribou migration periods. The GN is concerned about the potential impacts of this low level flying on wildlife and requests that the Proponent provides additional information to demonstrate whether low-level flights below the mandatory minimum altitudes were justified or whether there is a compliance issue.

Importance to review and supporting rationale: NIRB Project Certificate No. 004 Terms and Conditions 61 and 62(f) state that:

> "61. In consultation with EC, Cumberland shall incorporate into the Terrestrial Ecosystem Management Plan and the Air Traffic Management Plan a commitment for aircraft to maintain (whenever possible) a cruising altitude of at least 610 metres during point to point travel when in areas likely to have migratory birds, and 1000 metres vertical and 1500 metres horizontal distance from observed concentrations of migratory birds, and use flight corridors to avoid areas of significant wildlife importance."

and

> "62. Cumberland shall develop and implement a noise abatement plan to protect people and wildlife from significant mine activity noise, including blasting, drilling, equipment, vehicles and

aircraft. The noise abatement plan will be developed in consultation with Elders, GN, Health Canada (HC), and Environment Canada (EC) and include:

> "Require (with the exception of take-off and approach for landing), a minimum flight altitude of 610 metres above ground when flights to and from the mine site are passing sensitive wildlife and bird areas." (NIRB 2006)

Additionally, the Project's Terrestrial Ecosystem Management Plan (TEMP, AEM 2019) includes the following restrictions for helicopters:

1. That long-range flights are a minimum of 650 m above ground level, except for take-off and landing;
2. Short-range flights are a minimum of 300 m above ground level, except for take-off and landings;
3. Caribou groups of 50 or more animals, and muskoxen of 10 or more animals must be avoided by a minimum of 1,000 m vertically and 1,500 m horizontally;
4. Flocks of migratory birds must be avoided by 1,100 m vertically and 1,500 m horizontally; and
5. Harassing wildlife (flying below 300 m) is expressly forbidden unless animals pose an immediate danger to humans.

During the NIRB's Review of the Whale Tail Project, the GN noted concerns about the potential for helicopters to disturb wildlife such as caribou (GN 2017, Comment GN-10). Similar concerns were expressed by community members from Baker Lake (e.g., Whale Tail Final Hearing Transcripts, 2019, page 561). Accurate and fully transparent reporting of helicopter traffic is important for assessing compliance with mandatory minimum flight altitudes intended to protect wildlife. Identifying where legitimate exceptions to these minimums occurred versus where lack of compliance is occurring is important in order to avoid unacceptable risks to wildlife and access to wildlife by Nunavummiut.

In the 2022 Wildlife Monitoring Summary Report (AEM 2023) data on helicopter flights are summarized by average and average maximum flight altitudes (Table 4-9). The report then goes on to discuss some of the types of flights that occurred below the mandatory minimum altitudes specified in the Project Certificate and/or TEMP. Upon review this information the GN offers the following comments:

1. Of the more than 900 hours of Project-related helicopter flights between spring and fall 2022, a majority occurred below even the lowest of the mandatory minimum altitudes; that set at 300 m for short-range flights only. The GN is concerned about the potential impacts of this low-level flying on wildlife and seeks more from the Proponent to determine if this low-level flying was justified.

2. Mandatory minimum altitudes in the TEMP and Project Certificate are 300 m and 600 m for short- and long- range flights, respectively. However, no definition of 'short' or 'long' -range, in terms of flight time or distance, is provided in either document. In order to properly monitor compliance, the GN requests that the Proponent establish reasonable definitions for short and long-range, and present flight summary data such as that in Table 4.9 of the annual report, according to these types of flights. As a starting point, the GN suggests that short-range be defined as flights of 5 km or less.

3. Table 4.9 of the report summarizes average altitudes and average maximum altitudes of the 266 helicopter flights that occurred in 2022. An additional metric, potentially more useful for assessing impacts of helicopters, would be the amount of time spent flying below the 300 and 600 m altitude minimums. This information can be easily acquired from the GPS track data already available to the Proponent.

4. The report presents three maps showing helicopter flight lines for spring, summer, and fall, 2022 (Figure 4-1 - 4-3). Flight lines for flights that had a maximum altitude of less than 300 m are presented in a different colour from other flights. Presenting in this format is somewhat misleading for 2 reasons:

   (a) It only distinguishes flights with reference to the 300 m mandatory minimum altitude set for short-range flights. Many of the flights on these maps are clearly not short-range some being over 100 km in length. Flights should be presented with reference to both of the minimum altitudes (300 and 600 m) depending upon whether they are classified as short or long-range.

   (b) The maps only distinguish flights where the maximum altitude is less than 300 m. This presents an extremely biased view since a flight with a maximum altitude above 300 m could still involve flying below 300 m for a substantial portion of the journey. A more accurate representation is to use the average flight altitude (minus take-off and landings) to identify flights that occurred below mandatory minimums.

5. The report provides limited justification for flights occurring below the mandatory minimum altitudes with statements such as:

   "Many low elevation flights are related to slinging operations, and short-distance flights (Figure 4-2). Flights that involve slinging, and some passenger loads required flights under 300 m."

   And

> "Some flights for environmental monitoring require lower altitudes, including flights to visually inspect water quality of the water bodies around bridges and roads, inspection of various mine infrastructure for runoffs, lake water sampling, and raptor surveys."
>
> And
>
> "Flights occurred in 2022 related to search and rescue operations in Baker Lake, where low elevation flights are expected." "Meteorological conditions and visibility may also limit flight altitudes."
>
> (AEM 2023, Section 4.5.9)
>
> (AEM 2023, Section 4.5.9)

More justification for flying below mandatory minimum altitudes is required. In reporting helicopter traffic, AEM should distinguish between flights where low-level flying is required by law, regulations, safety, or the performance of environmental monitoring required under the Project Certificate versus flights where low level flying was the preferred means of flying (but not required by statute, regulation or Project Certificate). For example, statements such as "Flights that involve slinging, and some passenger loads required flights under 300 m" (AEM 2023, Section 4.5.9) seem to be flights where there is no legal requirement to fly low-level but it is the preferred means from an efficiency/time-saving perspective. Transport Canada regulations only specify minimum altitudes for slinging cargo over residential areas.

Recommendation 1: Noting the concerns of the community members from Baker Lake and those of the GN regarding potential impacts of helicopters on wildlife, the GN recommends to both NIRB and the Proponent that the following revisions be made to reporting of helicopter traffic in the 2022 and all future annual reports:

1. Based on consultation with the Project's Terrestrial Advisory Group, provide a definition of short and long -range helicopter flights.

   Agnico Eagle's Response: *Agnico Eagle will determine what it considers to be short- and long-range helicopter flights and discuss them with the TAG.*

2. Summarize annual helicopter flight data, as presented in Table 4.9 of the 2022 report, according to flight range category (short vs long-range) and the appropriate mandatory minimum altitude for each range category (i.e., 300 m for short-range, 600 m for long-range).

Agnico Eagle's Response: *Agnico Eagle will provide this metric in the 2023 Wildlife Monitoring Summary Report.*

3. Report the metric "Hours of Flying Below the 300 and 600 m Altitude Minimums".

   Agnico Eagle's Response: *Agnico Eagle will provide this metric in the 2023 Wildlife Monitoring Summary Report, minus take-offs and landings when possible.*

4. Provide maps that show short and long-range flights where the average flight altitude (minus take-off and landing) was below 300 and 600 m, respectively.

   Agnico Eagle's Response: *Flight data provided by helicopter contractors do not allow take-off and landings to be easily distinguished. Agnico Eagle will attempt to reconcile this so it can be included in the 2023 Wildlife Monitoring Summary Report.*

5. Provide tables, reporting total flight hours and number of flights for short and long-range flights, where average altitudes were below the mandatory minimums of 300 and 600 m respectively; distinguishing, via separate summaries, between flights where low-level flying was required by statute, regulation, or the performance of environmental monitoring required under the Project Certificate versus flights where low level flying was the preferred means of flying (but not required by statute, regulation or Project Certificate). Specific laws, regulations or Project monitoring requirements should be cited for each flight below mandatory minimums based on average flight altitude (minus take-off and landing).

   Agnico Eagle's Response: *Past flight data provided by Agnico Eagle's helicopter contractor does not allow direct linkage between flight purpose and altitude tracking. Agnico Eagle will attempt to resolve this issue with its contractor in order to fulfill the GN's request.*

1.2 Trends in Number of Caribou Observed Along the Whale Tail Haul Road

Term and Condition: 28 (NIRB Project Certificate No. 008)

References: Agnico Eagle Mines (AEM) Ltd. (2019). Meadowbank; Division Terrestrial Ecosystem Management Plan, Version 7. Agnico Eagle Mines (AEM) Limited. (2020). Meadowbank Complex 2019 Annual Report.; Agnico Eagle Mines (AEM) Limited. (2021). Meadowbank Complex 2020 Annual Report. Agnico Eagle Mines (AEM) Limited. (2022). Meadowbank Complex 2021 Annual Report.; Agnico Eagle Mines (AEM) Limited. (2023). Meadowbank Complex 2022 Annual Report, Appendix 47 – Meadowbank and Whale Tail 2022 Wildlife Monitoring Summary Report.; Government of Nunavut (2022). Comment Request for Agnico Eagle Mine's Meadowbank and Whale Tail Project 2021 Annual Report.

Identification of issue: The Annual Report provides a good summary of caribou observational data from road surveys in 2023. However, with the growing time series of data, collected since the Project began, a more in-depth analyses of these data should be conducted and presented in-order to detect potentially important emerging trends that may warrant more detailed investigation. This is especially important for data regarding caribou interactions with the Whale Tail Haul Road (WTHR) given the intensity of traffic on this road is more than twice that of the All-Weather Access Road (AWAR), and the large size of haul trucks using it.

Importance to review and supporting rationale: The report presents a good summary of caribou observational data but fails to conduct the types of in-depth analyses needed to detect trends and associations that may indicate significant impacts are occurring, changes in mitigation are needed or further investigation is required. Given the accumulated time series of data collected since the Project began, more in depth analyses should become an integral part of the annual report. The report should not simply be a basic summary of the data collected in the reporting year but should instead provide a more rigorous examination of whether impacts are occurring. For example:

Section 3.6.3. of the report states:

> "The total number of caribou observed along the WTHR in 2022 was slightly lower than numbers observed in 2020 and 2021, and total numbers from 2020- 2022 were much lower than 2019 counts (Figure 3-1). Note, total counts across years are not corrected for differences in sampling effort (i.e., the number of surveys), meaning that increases in caribou total counts may be a direct result of a higher number of surveys conducted annually." (AEM 2023)

The significance of this potentially important observation is not discussed further in the report nor is there discussion about more in-depth analyses that could be conducted using data already available. The Government of Nunavut (GN) notes that caribou counts could have been easily corrected for sampling effort and the results presented in the report. These would have provided a more accurate and informative means of comparing annual variation in caribou counts along Project roads. For example, correcting the total number of caribou counted annually along the Whale Tail haul road during road surveys from 2019 to 2022 by the number of surveys conducted each year demonstrates that caribou counts have steadily declined (Figure 1). During the same period, traffic on the haul road has increased such that caribou counts appear to be negatively associated with haul road traffic levels (Figure 2). While there are multiple explanations for the apparent decline in haul road caribou counts and the association with traffic levels, one hypothesis is that increased traffic on the road (in particular, large haul trucks that operate on the haul road) has led to strong avoidance of the area around the road by caribou. Given the road's location within the migration routes of several caribou herds, this is a potentially important impact.

Section 3.6.8 of the report summarizes data on caribou that were observed crossing Project roads in 2022. It is noted that a vast majority of caribou observed crossing project roads did so when the roads were closed. For example:

> "During spring migration, 91% (478 of 527 caribou) of observed caribou crossings on the WTHR occurred on dates with a WTHR closure (Table 3-15). For annual caribou crossing observations on the WTHR, 83% (706 of 849 caribou) of observed crossing events occurred on dates with a WTHR closure and 15% (128 of 849 caribou) occurred on a day with a speed restriction in place."

There are two interpretations for these observations. The first is that roads were closed in a highly effective and timely manner allowing approaching caribou to cross. In other words, 2022 road closure mitigation was successful in closing roads often enough, for long enough, and at the right time to allow caribou to cross and avoid delays in migration. The second is that caribou strongly avoid crossing open roads crossing; thus providing quantitative evidence of the importance of closures as a mitigation measure and the need to ensure sufficient periods of closure occur. However, the report does not differentiate or discuss these key differences in interpretation, provide more in-depth analyses to investigate them or draw conclusions about the impact of road closure status on caribou crossing. Instead, the report states that "[C]aribou movement patterns continue to require close monitoring and analysis in 2023." (AEM 2023)

The suggestion that caribou movements have been, and should continue to be, closely monitored and analyzed is not supported by the lack of depth in the reporting of 2022 caribou crossing observations. More in-depth analyses are needed in-order to closely monitor project effects and support adaptive management. For example, in response to the 2021 Annual Report, the GN presented evidence, derived from data contained within the report, that after correcting for differences in numbers seen, caribou were 2-4 times more likely to be observed crossing closed versus open roads (GN 2022, GN comment #5). This finding suggests that most caribou are observed crossing roads during periods of closure in part because they strongly avoid crossing open roads; not simply because mitigation efforts were successful in closing roads often enough, for long enough, and at the right time to allow caribou to cross. Although a rudimentary approach, this highlights the importance of distinguishing between findings that could indicate the success of mitigation measures or the strength of negative effects.

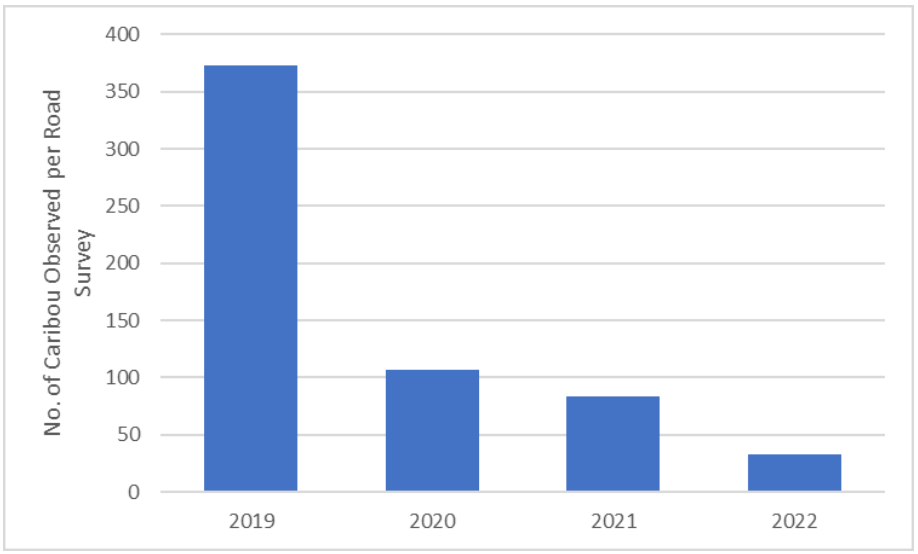


Figure 1 Annual variation in the average number of caribou observed per road survey on the Whale Tail haul road. (Data from AEM 2020, 2021, 2022, 2023. Note: Data for 2018 were excluded since road survey effort did not span the full year, in particular the peak spring migration period, and most surveys [36 of 41] were conducted in the winter)

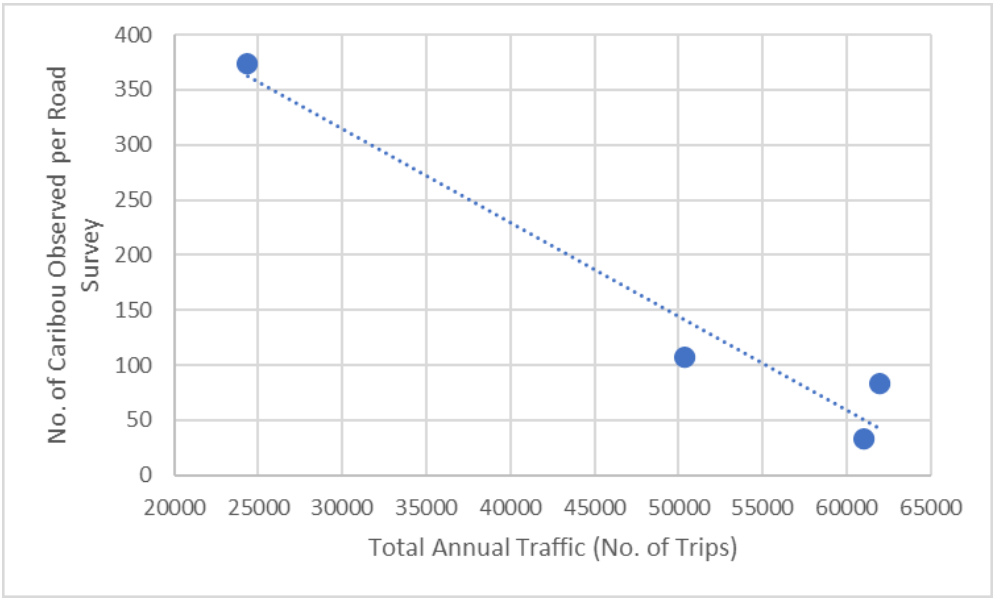


Figure 2 Association between total annual traffic levels on the Whale Tail haul road and the average number of caribou observed during surveys of this road for each year since mining operations began at the Whale Tail pit, 2019-2022. (Data from AEM 2020, 2021. 2022, 2023. Note: Data for 2018 were excluded since road survey effort did not span the full year, in particular the peak spring migration period, and most surveys [36 of 41] were conducted in the winter)

Recommendation 2: The GN recommends that:

1. In future reports, the Proponent includes summaries of the number of caribou observed annually and seasonally during road surveys, corrected for survey effort, for the AWAR and WTHR. Comparison of annual variation in these metrics should also be presented.

   Agnico Eagle's Response: *Agnico Eagle appreciates the GN's review of monitoring data. However, it is important to note for second interpretation provided by the GN, that when caribou are close to the road, monitoring effort is higher and the road is closed to facilitate crossing. Alternatively, when caribou are far from the road, less monitoring effort is required, and the road remains open, and the frequency of crossing will be low because caribou are not close enough to cross. This is how the TEMP decision trees are designed to work for the protection of caribou and is a consistent approach to the KivIA mobile conservation measures.*
   Agnico Eagle will discuss changing annual report summaries with the TAG.

2. In future reports, the Proponent includes analysis of caribou road crossing probability for open versus closed roads based on crossing events observed during road surveys; corrected for survey effort and number of caribou present near roads.

   Agnico Eagle's Response: *Please refer to previous response.*

3. Prior to drafting the 2023 Annual Report, the Proponent hold a workshop with the Project's Terrestrial Advisory Group (TAG) to reach consensus on additional analyses of caribou monitoring data and metrics that will be included in future reports.

   Agnico Eagle's Response: *Agnico Eagle already discusses, implements, and reports independently of the annual wildlife monitoring summary report on additional caribou analyses with the TAG. Examples include the previous analyses on lead caribou (EDI 2020), caribou migration timing (Golder 2021), the snow study (ERM 2022). Additional analyses have been proposed and discussed throughout the year at TAG meetings and in annual wildlife summary report comments. Agnico Eagle will continue to discuss proposed monitoring alternatives and alternative analyses for caribou with the TAG.*

   References

EDI (Environmental Dynamics Inc.) 2020. Caribou road crossing mitigation – Technical Memorandum. Prepared for Agnico Eagle Mines Limited by Environmental Dynamics Inc. February, 2020.

ERM (Environmental Resource Management). 2022. Caribou behaviour study, 2021. Prepared for Agnico Eagle Mines Limited by Environmental Dynamics Inc. March 2022.

Golder (Golder Associates Ltd.) 2021. Caribou migration timing with the Whale Tail Haul Road and All-weather Access Road. Prepared for Agnico Eagle Mines Limited by Golder Associates Ltd. August, 2021.

1.3 Convoys on Project Roads During Periods of Road Closure for Caribou

Term and Condition: 28 (NIRB Project Certificate No. 008)

References: Agnico Eagle Mines (AEM) Ltd. (2019). Meadowbank Division Terrestrial Ecosystem Management Plan, Version 7.; Agnico Eagle Mines (AEM) Limited. (2023). Meadowbank Complex 2022 Annual Report, Appendix 47 – Meadowbank and Whale Tail 2022 Wildlife Monitoring Summary Report.

Identification of issue: During 2022, a notable number of vehicle convoys were allowed to use the Whale Tail Haul Road while it was closed for migrating caribou. From the annual report, it is unclear whether all these convoys fit the definition of 'essential traffic' as defined in the Project's Terrestrial Ecosystem Management Plan (TEMP) (AEM 2019); the only type of traffic permitted on closed roads. The frequency of some convoys is also a concern. In one instance during April, 10 convoy trips took place in a single week suggesting use of convoy opportunities may have been inefficient.

Importance to review and supporting rationale: The Project's TEMP requires closure of roads when caribou above specific Group Size Thresholds (GSTs) are observed within 1.5 km during migration periods in the spring and fall (Figures 7 and 8, AEM 2019). During periods of closure, a road can only be used by essential traffic, defined in the TEMP as vehicles operated for the purpose of maintaining the safety of personnel, Emergency Response Team (ERT), security, and wildlife monitoring. Non-essential vehicles, those not permitted to use closed roads, are defined in the TEMP as all vehicles or heavy equipment except those operated for the purpose of maintaining the safety of personnel. For clarity, the TEMP also states that non- essential vehicles shall include vehicles and equipment used to continue mining operations or hauling of ore.

Section 3.6.7 of the 2022 Annual Report, states:

> "During periods of road closures or Level 3 status, a daily meeting is held with all departments to validate the essential needs requiring access to the roads (road maintenance, food, etc.). From this meeting, departure time, departure location, and the list of vehicles authorized to travel on the road will be determined. Only essential vehicles are permitted in convoys." (AEM 2023)

The convoys operated on closed roads in 2022 are summarized in Table 3-14 of the report. Upon review of this table the following concerns are noted:

- For thirteen of the convoys on the Whale Tail Haul Road (WTHR), 11 of which occurred during the spring caribou migration, the purpose is described as for "passenger transport". It is unclear from the information provided how this purpose fits the definition of essential traffic in the TEMP. Why are the passenger transports necessary for maintaining the safety of personnel, Emergency Response Team (ERT), security, or wildlife monitoring?

- Between April 10 to 17, there were 10 one-way convoys south or north-bound on the WTHR, including 3 round-trip (two way) convoys to bring what is described as "essential needs (food, etc.)" to the Whale Tail mine site. This raises questions about whether convoys are being managed efficiently to minimize the number needed. For example, why were 3 round-trip convoys for essential needs required within a week?

Recommendation 3: The GN recommends that:

1. The Proponent explain how the passenger transport convoys that took place on the closed WTHR in 2022 fit the definition of essential traffic in the Project's TEMP. Why were passenger transports necessary for maintaining the safety of personnel, ERT, security, or wildlife monitoring?

   Agnico Eagle's Response: *Agnico Eagle takes the health and safety of its employees very seriously. The number of shift hours and the duration of shifts is managed for the health and safety of Agnico Eagle employees, as well as ensuring compliance with labour regulations, which are designed to protect the health and safety of workers. Crew changes (the transport of personnel from their work location to their home) are a necessity to allow Mine staff adequate down time to recover physically and mentally from work at the Mine site and to prevent accidents due to worker fatigue. It has been demonstrated that to improve mental health and wellbeing among roster-shift workers, it is strongly recommended to offer better and more consistent quality food, regular and predictable work schedule, and sufficient buffer period outside of work. (Dorow, et.al., 2021) For these reasons, Agnico Eagle considers passenger crew change (both for Nunavummiut and South-based employees) and food transport as essential needs, to maintain the safety of personnel, and intends on clarifying these points in the upcoming 2023 TEMP update.*

   References

   Dorow, S., O'Leary, V., Hilario, C., Chery, N., Daigle, A., Kelly, G., Lindquist, K., Garcia, M. M., & Shmatko, I. 2021. Mobile Work and Mental Health - A Preliminary Study of Fly-In Fly-Out Workers in the Alberta Oil Sands. University of Alberta. October, 2021.

2. The Proponent explain why 3 round-trip convoys for essential needs (food, etc.) were necessary between April 10 and 17.

Agnico Eagle's Response: *As reported in the 2022 Wildlife Monitoring Summary Report, a total of 10 one-way trips occurred between April 10th and April 17th, inclusively, 8 of which were part of round trips. These 4 round trips were necessary to ensure adequate delivery of fresh goods at the Whale Tail Camp, and the transportation of personnel to and from Meadowbank. It is important to highlight that while the 2 sites are separated, they are not operated independently. The kitchens at each site were designed to support each other, to ensure efficient operations.*

3. The Proponent explain how convoys are managed to minimize the frequency of trips.

Agnico Eagle's Response: *In order to minimize frequency of trips, daily meeting with all departments are held, and a review of needs is completed. The needs are evaluated to ensure they fit the TEMP criteria, and no alternative exist at their current site (Meadowbank or Whale Tail). The essential needs are then consolidated into a single convoy. This ensure the potential disturbance to caribou is minimal.*

4. The Proponent explain what procedures are in place to manage stores of essential supplies (including food and fuel for maintenance of facilities) at the Whale Tail site in preparation for and during caribou migration seasons? Does the Proponent stockpile these supplies prior to migration seasons in anticipation of road closures? Since the Whale Tail site went into production in 2019, what specific measures has the Proponent taken to stockpile supplies prior to caribou migration periods in-order to minimize the need for convoys on closed roads?

Agnico Eagle's Response: *Prior to each migration, a review of the forecasted needs is completed by each department, and an action plan is launched to increase the required inventories. For example, additional contractor long-haul trucks are often rented and utilized to transport additional ore from the Whale Tail Site to the Meadowbank complex, ensuring the mill is able to sustain 20 days of road closures. Furthermore, the warehouse and spare parts inventory at the Whale Tail Site have increased significantly since 2019. Prior to the spring migration of 2022, Agnico Eagle completed the permanent installation of four 50,000L fuel tanks, next to the underground portal, further increasing the autonomy of the Whale Tail site. However, as previously described, the Whale Tail Site was not designed to be fully independent from the Meadowbank Site. In recent years, Agnico Eagle launched an energy savings committee reducing the overall site energy consumption, minimizing fuel needs.*

Further capacity increases would require a change to the Mine Plan, which may have other environmental impacts (e.g., additional habitat loss owing to an increase in the Mine's footprint).

1.4 Road Closures for Caribou

Term and Condition: 28 (NIRB Project Certificate No. 008)

References: Agnico Eagle Mines (AEM) Ltd. (2019). Meadowbank Division Terrestrial Ecosystem Management Plan, Version 7.; Agnico Eagle Mines (AEM) Limited. (2023). Meadowbank Complex 2022 Annual Report, Appendix 47 – Meadowbank and Whale Tail 2022 Wildlife Monitoring Summary Report.

Identification of issue: The Project's Terrestrial Ecosystem Management Plan (TEMP) requires automatic closure of a road when caribou above a Group Size Threshold (GST) are observed within 1.5 km of the road during the spring or fall migration seasons. Also in the TEMP is the requirement to consult the Kivalliq Inuit Association (KivIA), Baker Lake Hunters and Trapper Organization (HTO) and the Government of Nunavut (GN) prior to reopening roads closed for migrating caribou.

Based on information provided in the annual report, it appears on several occasions in 2022 that roads were not closed in response to caribou observations as required under the Project's TEMP. In other instances, it is unclear how long roads remained closed. Finally, the report contains no record of the consultation that occurred prior to road reopening making it difficult for reviewers to confirm this consultation occurred and what information formed the basis for road reopening.

Importance to review and supporting rationale:

1. Response to caribou observations
   A review of Appendix A of the report (AEM 2023), indicates that in general project roads were closed in 2022 in accordance the caribou decision tree procedures in the TEMP (Figure 7 and 8, AEM 2019). However, several areas of uncertainty were found as summarized in Table 1 below.

Table 1 Dates in 2022, when caribou groups above the GST were observed within 1.5 km of a project road, for which there are questions regarding the mitigation response.

Road	Date	Caribou Group Size	Question to AEM
WTHR	April 9	110	Seems road was not closed until the 10th. Why was closure delayed?
	April 14	63	Mitigation listed in Appendix A is "open/closed". What does this mean?
	April 15	55	Mitigation listed in Appendix A is "open/closed". What does this mean?
	April 20	40	Mitigation listed as speed restriction. Why wasn't the road closed?
AWAR	April 9	70	Mitigation listed in Appendix A is "open/closed". What does this mean?

	April 18	134	Mitigation listed in Appendix A is "open/closed". What does this mean?

2. Duration of road closures and consultations prior to reopening
   Table 3-9 of the report summarizes the number of days each month of 2022 that Project roads were closed for caribou. The table distinguishes between closures that last 24 hours versus those less than 24 hours. While this a useful table, the report does not provide information on the specific duration of road closure, the rationale for reopening or the required consultation that occurred on each occasion. A table is needed in the report that provides the specific dates during caribou migration seasons on which roads were closed for caribou, the duration of each closure, a summary of the consultation conducted prior to reopening on each occasion (including whether consensus was reached) and the final rationale for reopening. This table is requested so that reviewers can more fully understand how road mitigation is being implemented and how the consultation process leading to reopening is functioning. Demonstrating that the obligation to consult has been met is of particular importance.

Recommendation 4: The GN recommends that:

1. The Proponent responds to the GN's questions listed in Table 1 above.

Agnico Eagle's Response: *For mitigation listed in Appendix A, "open/closed" indicates that the road was open for part of the day and closed for part of the day. For details regarding road restrictions in place, it is best to refer to Appendix B – Road Restrictions of the Wildlife Monitoring Summary Report, further detailing road restrictions on any given day.*

- *On the WTHR on April 9, the road was closed following the observation of a group of caribou above GST. This road status is presented in Appendix B – Road Restrictions.*
- *On the WTHR on April 14, HTO/KivIA monitored the WTHR up to KM123. The road closed due to a large group of caribou observed at Km 110. The road was re-opened at the end of the day shift after the monitoring of the sensitive area was performed by KivIA, HTO and the Agnico Eagle environment without any caribou observations. This road status is presented in Appendix B – Road Restrictions.*
- *On the WTHR on April 15, the road was closed following the observation of a group of caribou above GST. This road status is presented in Appendix B – Road Restrictions.*
- *For the AWAR on April 18, during the morning assessment of the road, only a small group of 6 caribou was observed on the east side of Km 33. The road was closed after a group of 134 caribou was observed 200m west of Km 95. The roads remained closed throughout the night to all traffic, including the road maintenance, to allow the caribou to cross. This road status is presented in Appendix B – Road Restrictions.*

- *On the WTHR on April 20, the road was closed following the observation of a group of caribou above GST. This is presented in Appendix B – Road Restrictions.*

2. That in future annual reports the Proponent include a table providing the following information:
   - The specific dates during caribou migration seasons on which roads were closed for caribou;
   - The duration of each closure;
   - A summary of the consultation conducted prior to reopening on each occasion (including whether consensus was reached); and
   - The final rationale for reopening.

   Agnico Eagle's Response: *Agnico Eagle would like to refer the GN to Appendix B – Road Restrictions of the 2022 Wildlife Monitoring Summary Report, where a Table detailing the specific road restrictions and closures on every day of the year is presented, which includes reasons for closure (e.g. caribou migration, weather, etc.), duration of closure and reason for reopening. During caribou migration, an email is sent to the Baker Lake HTO, members of the KivIA and members of GN DoE, informing of the daily caribou migration activities. Agnico Eagle will work with the TAG to clarify required documentation for road reopening in the upcoming TEMP update.*

1.5 Caribou Behaviour Study

Term and Condition: 28 (NIRB Project Certificate No. 008)

References: Agnico Eagle Mines (AEM) Limited. (2023a). Meadowbank Complex 2022 Annual Report, Appendix 47 – Meadowbank and Whale Tail 2022 Wildlife Monitoring Summary Report.; Agnico Eagle Mines (AEM) Limited. (2023b). Meadowbank Complex 2022 Annual Report.

Identification of issue: The 2023 Annual Report provides some interesting preliminary analyses of the caribou behaviour study, looking at how behaviour changes in response to project infra-structure and disturbances such as roads and vehicle traffic (Appendix I, AEM 2023a).

The results so far indicate that caribou behaviour is significantly affected by traffic and that a return to 'normal' behaviour seems to occur after 3-6 minutes after disturbance.

The report could go further in placing this important finding in the context of traffic intensity on Project roads. For example, how does the 3-6 minutes required for caribou behaviour to normalize compared to the frequency of traffic on the Whale Tail Haul Road (WTHR)? What does this mean for the permeability of the road?

Based on recommendations from the Project's Terrestrial Advisory Group (TAG) the study methodology has been modified to treat walking as a separate behaviour category. However, since caribou may walk when foraging, migrating, or responding to a threat, the Government of Nunavut (GN) recommends further refinement of study methods to differentiate between walking as a response or non-response behavior. Finally, as the body of data collected by the study grows, distinction should be made, through analyses, between the Project's different roads or the different vehicle types ranging from ATVs to haul trucks since these factors may represent differing levels of disturbance to caribou.

Importance to review and supporting rationale: In reviewing the caribou behaviour study, the GN offers the following comments:

1. Vehicle/Road Type
   The analyses presented in Appendix I (AEM 2023a) pool data collected along the Project's AWAR and WTHR. These two roads have differing intensities and types of traffic as well as different levels of hunting pressure. As such, behavioural responses of caribou near these two roads may differ to some degree. As the body of data collected by the study increases, future analyses should differentiate between roads and/or types of traffic (e.g., haul trucks, vans, pick-ups/cars, ATVs).

2. Walking behaviour
   Walking was a common behaviour observed during the study. However, the report states that:

   > "The occurrence of disturbances resulted in a statistically significant increase in the proportion of response behaviour (Table 6.4-1; estimate: 0.07±0.26, p-value = 0.001), but was not important for the proportion of walking behaviour (Table 6.4-2). This may be because the amount of variability in caribou walking is much higher than caribou alert or running. Caribou are more likely to be walking as both a baseline behaviour and a response behaviour, and therefore the effect of disturbances is more difficult to detect in the modelling process." (Section 6.4.3, AEM 2023a)

   Although the analyses presented in the report treat walking as a separate behavioral category, they do not attempt to differentiate it as a response or non-response behaviour with respect to disturbance. Caribou may walk for the purpose of foraging, migration, or response to a disturbance. Direction of travel should therefore be incorporated into analyses to try and differentiate between caribou that are walking towards, away, or parallel to perceived disturbances such as roads and vehicles. It is noted that the study methodology was modified in 2022 to begin collecting data on direction of travel, but it appears from the report that direction is being categorized as either perpendicular to road or parallel. Travel perpendicular to a road should be further categorized as travel towards or away from a road, considering direction of migration as an interacting factor.

3. Time to return to 'normal' behaviour
   The study found that caribou behavior seems to return to normal 3 to 6 minutes after disturbance from traffic. This is a useful finding, but its significance as an effect of the Project on caribou is not placed into context with the Project's operational landscape. For example, no comparison is made to the frequency of traffic on the different roads despite there being traffic data available. In 2022, traffic frequency on the WTHR averaged 1 vehicle every 8.6 minutes when simply averaged across the year (AEM 2023b, Table 11-3). Actual frequencies may be higher since this average assumes 24-hour traffic and no days of road closure both of which are not valid assumptions.

Recommendation 4: The GN recommends that:

1. Future analyses of the caribou behaviour study in the annual report should differentiate between different Project roads and/or types of traffic (e.g., haul trucks, vans, pick-ups/cars, ATVs).

   Agnico Eagle's Response: *The proposed analysis to differentiate between roads and vehicle types 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. Categories of vehicle type may have to be reduced to heavy vehicle, light vehicle, and ATV to reduce the impact on statistical power. Further discussions will take place with the TAG to ensure future analyses answer the questions and concerns raised during the hearings and project approval process.*

2. Study methodology should be modified such that future analyses are able to categorize travel direction as towards, away, or parallel to roads, accounting for prevailing direction of migration as an interacting factor.

   Agnico Eagle's Response: *Since this was first suggested by the TAG in 2021, direction of travel has been recorded as parallel or perpendicular. For the late 2023 season, that field will be expanded in data collection forms to allow users to record whether caribou were moving away or towards the road. However, as the dataset will be significantly limited, Agnico Eagle would like to tamper expectation of the ability to provide statistically significant results on additional analyses not originally captured within the methodology of the study.*

3. Study results should be discussed in the context of data on daily and seasonal traffic frequencies on Project roads and the potential for open roads to act as a barrier to movement of caribou.

   Agnico Eagle's Response: *Agnico Eagle has a daily traffic log for each road, but the current format of data recorded will make it difficult to have precise information. It should be noted that because traffic data are only available for two spatial points on the haul road and on the AWAR (i.e. entry*

point and exist point), the estimate of traffic intensity would have to be extrapolated for the whole road for every day and then redistributed, and may not perfectly reflect the conditions experienced by caribou at that location in that moment. This uncertainty will be a caveat on any conclusions that can be reached on subsequent data analyses. This information will be explored for the 2023 report to determine the approximate traffic intensity for the period in which the behaviour surveys occur.

2 Fisheries and Oceans Canada (DFO)

2.1 Effects Monitoring

2.1.1 Fish Passage at Road Crossings

References: Appendix 46: Whale Tail Haul Road Management Plan Version 4 – Section 7.1.2

Comment: Gap/Issue: Culverts crossing fish bearing waters along the AWAR and WTHR requiring repair maintenance.

Annual report does not identify issues with culverts affecting fish passage. Annual report does not provide a plan for repair/replacement.

Conclusion/Request: Proponent to provide a plan for repair and/or replacement of damaged and obstructed culverts prioritizing repairs to culverts with potential to affect fish passage and those affecting fish and fish habitat along Whale Tail Haul Road and AWAR.

Agnico Eagle's Response: *Agnico Eagle acknowledges DFO's comment. Annually, a complete geotechnical inspection is performed by a third party along the AWAR and WTHR. The report is submitted as an appendix of the Annual Report along with the implementation plan. Agnico Eagle will include in future annual report a list of culverts crossing fish bearing along with proposed plan for the repair and or replacement, if needed.*

2.1.2 Location Data of Vessels

References: Appendix 39: Meadowbank and Meliadine Mines Marine Mammal and Seabird Report, 2022

Comment: Gap/Issue : 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 ongoing Automatic Identification System issues lasting 12 hours to several days.

Conclusion/Request: 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 where feasible.

> ***Agnico Eagle's Response:*** *Agnico Eagle acquires archived AIS data from Vesseltracker, a commercial AIS supplier that aggregates AIS data for 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 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.*

2.1.3 Marine Mammal Monitoring Program

References: Appendix 39: Meadowbank and Meliadine Mines Marine Mammal and Seabird Report, 2022.

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

Conclusion/Request: 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's Response:*** *The marine mammal monitoring protocol is described in the MMMMP (within the Shipping Management Plan) and the Marine Mammal Survey 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. 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.

2.1.4 Aquatic Invasive Species

References: Shipping Management Plan (Version 4)

Comment: Gap/Issue: 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 ship coming from Quebec.

Conclusion/Request: 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's Response: *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 Meadowbank Mine though 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.

2.1.5 Underwater Noise

References: Shipping Management Plan (Version 4)

Comment: Gap/Issue: 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, 27 vessels served the project. We currently do not know what noise level and characteristic is produced by those shipping vessels and its potential impact on marine mammals.

Conclusion/Request: 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. The Shipping Management Plan should be updated according to the model.

Agnico Eagle's Response: *The FEIS predicted that in some cases, vessel noise may elicit behavioral changes in individual marine mammals that are in close proximity to these vessels. The residual environmental effect of a change in marine mammal behavior as a result of Project vessel noise was considered to be low in magnitude, and the likelihood of behavioral 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.*

2.2 Compliance Monitoring

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

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

For Project Certificate No. 004 Amendment 3, Terms and Conditions 30, 31, 46, 47, 49, 50, 53, 85 were incorporated into Fisheries Act Authorizations

For Project Certificate No. 008 Amendment 1, Terms and Conditions 19, 20, 21, 22, 23, 24, 46, 47, 50, 51 and 52 were incorporated into Fisheries Act Authorizations.

ii. A summary of any inspections conducted during the 2022 reporting period, and the results of these inspections:

No compliance monitoring or site visits/inspections were conducted by DFO in 2022.

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

The proponent is largely compliant with the terms and conditions that pertain to DFO's mandate. DFO will continue to work with the proponent to ensure compliance.

Agnico Eagle's Response: *Agnico Eagle acknowledges DFO's assessment of the 2022 compliance.*

3 Crown-Indigenous relations and Northern Affairs Canada (CIRNAC)

3.1 IVR Pit Geochemical Characterization

References: Meadowbank Complex 2022 Annual Report: Section 5.1.2; Table 5-3; NIRB Project Certificate No. 008, Terms and Conditions 7 and 8

Issues/Rationale: Table 5-3 of the 2022 Annual Report summarizes the geochemical Acid Rock Drainage (ARD) determination for the Whale Tail Project from 2018 to 2022. The table indicates that, for the IVR Pit, the proportion of Potentially Acid Generating (PAG) rock increased from 2% in 2021 to 82% in 2022. Based on a review of prior project documentation, it is unclear to CIRNAC whether the increase is consistent with design expectations at the time the Whale Tail Mine Expansion was approved.

Recommendation to Address Issues: CIRNAC recommends that AEM:

1. Indicate whether the 2022 PAG ratio for the IVR pit (i.e., 82%) is consistent with design expectations at the time the Whale Tail Mine Expansion was approved.

Agnico Eagle's Response: *Table 5-3 of 2022 Annual report contains an error. The classification for IVR pit NPAG and PAG are mixed and should be opposite of what was presented. Refer to the table below for the corrected version. The 82 % of NPAG in IVR pit is more consistent with previous year and with design expectation although a large percentage of this NPAG waste material remains unusable for construction & cover (closure) activity due to arsenic content.*

Table 3-1 (corrected) - Whale Tail Site Geochemical ARD determination 2018-2022 (including all waste types)

Year	Whale Tail Pit			IVR Pit		
	PAG (%)	Uncertain (%)	NPAG (%)	PAG (%)	Uncertain (%)	NPAG (%)
2018	28	11	61	NA	NA	NA
2019	42	11	47	NA	NA	NA
2020	30	11	58	2	1	93
2021	30	13	57	2	2	96
2022	20	13	66	**9**	8	**82**

2. If the PAG ratio for the IVR pit is higher than originally predicted, indicate:
   a) How this will influence environmental performance and waste rock management practices during operations and Waste Rock Storage Facilities closure strategies.
   b) How the higher PAG ratio has been incorporated into post-closure water quality predictions for the site.

Agnico Eagle's Response: *As described in response above, the PAG ratio presented in the Table 5-3 of the 2022 annual report contains an error. The corrected NPAG and PAG percentage for IVR pit are consistent with the design expectations from the approval of the Whale Tail Mine Expansion.*

3.2 Whale Tail Project Pit Sump Water Quality/Quantity

References: Meadowbank Complex 2022 Annual Report: Sections 8.5.3.2.4 and 8.5.3.2.5; Appendix 6-H to the Whale Tail Project Expansion Environmental Assessment (Figure 6); NIRB Project Certificate No. 008, Term and Conditions 8,15, and 16

Background/Rationale: The quality and quantity of water reporting to the Whale Tail Project pit sumps during operations is relevant to the post-closure water quality of the pit lakes that will form during closure. This is particularly important for arsenic, which is considered to be a contaminant of potential concern in the flooded pit lakes. It is, therefore critical that the quality and quantity of water reporting to the pit sumps is consistent with Environmental Assessment (EA) predictions.

In the case of the IVR pit, the Whale Tail Project Expansion Environmental Assessment predicted that the maximum concentration of arsenic in the IVR Pit sump in 2022 would be approximately 1.5 mg/L. But, the 2022 Annual Report indicates that arsenic concentrations in the IVR pit sump are roughly 3X greater, at 4.5 mg/L. Further, the volume of water reporting to the pit sump is greater than originally predicted. The combined increase of arsenic concentrations and water volumes will result in total arsenic loadings to the IVR pit that are well above EA predictions. Increases for these two parameters have also been noted for the Whale Tail Pit sump.

It is unclear to CIRNAC what influence the increased arsenic loadings to the pit sumps will have on post-closure water quality in the flooded pit. CIRNAC was also unable to identify what factors resulted in the higher-than-anticipated arsenic loadings and whether any adjustments to the closure strategy may be necessary.

Recommendation to Address Issues: CIRNAC recommends that AEM:

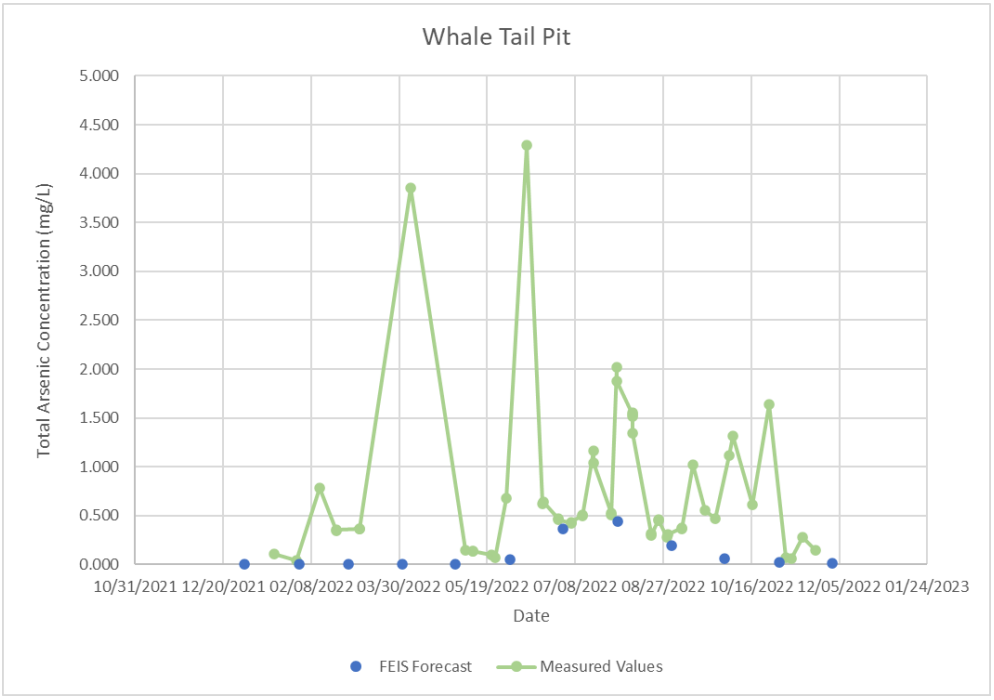
1. Confirm if arsenic loadings to the Whale Tail and IVR pits, as indicated by sump monitoring, are greater than the predictions presented in the FEIS documents for the project.

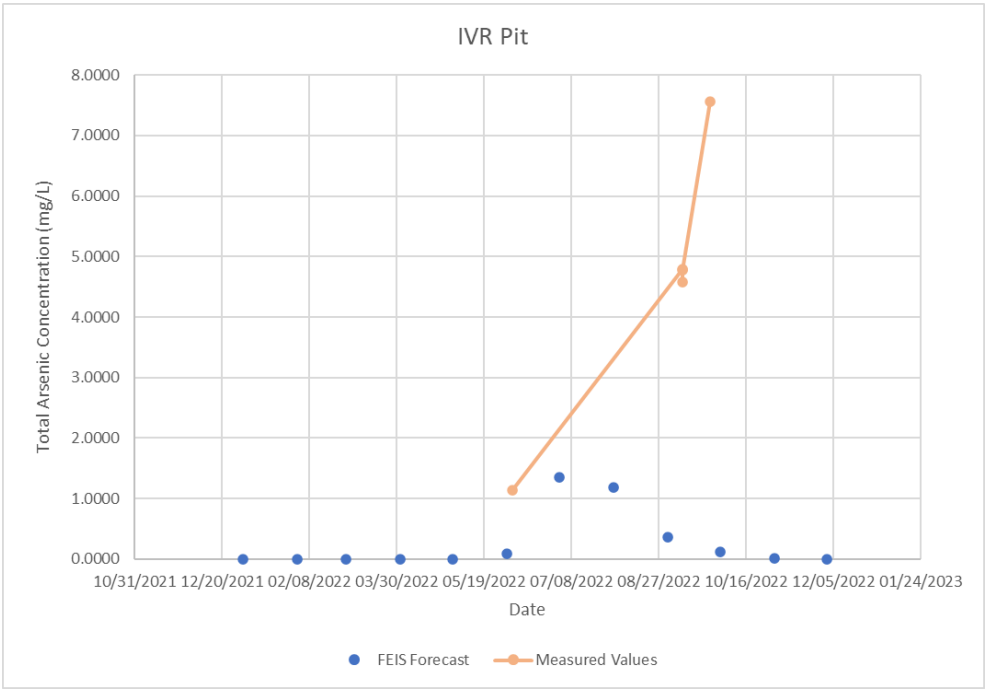
   Agnico Eagle's Response: *The following graphs present the water quality forecast based on the FEIS assessment against the measured values in Whale Tail and IVR Pits. The concentration of total arsenic measured in the pits in 2022 are generally higher than the FEIS forecast. Predictions for the FEIS were developed using a model (Golder 2018) and included various assumptions. For example:*

   - *Geochemical testing results were used in the model. At the time of model development, static test results were available but kinetic test results were not available.*
   - *Mass loads (or water volume and concentrations) to model nodes (e.g., pits, sumps) accounted for chemical loadings from natural areas and developed areas (e.g., waste rock runoff and seepage).*
   - *Predictions were developed for various nodes (e.g., WRSF pond, pits) that were estimated based on predicted flows and chemistries and assumed exposed lithologies. The actual exposed lithology in a given mine year, or the lithology most influenced by runoff may differ than assumptions used in the model.*

   The higher arsenic load reporting to the pit sumps could be due to a higher release of arsenic being leached from the pit walls upon contact with seepage water and runoff water, or a change in water management (IVR Pit is quite dry because of permafrost conditions and water is not pumped out as often as Whale Tail Pit), and different lithology encountered than anticipated.

   There are no fixed coordinates to the IVR Pit/sump sampling location. As noted in the annual report (Section 8.5.3.2) samples are collected from IVR and Whale Tail pit/sump when conditions are safe, and when water is present.


Whale Tail Pit
Total Arsenic Concentration (mg/L)
5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
10/31/2021 12/20/2021 02/08/2022 03/30/2022 05/19/2022 07/08/2022 08/27/2022 10/16/2022 12/05/2022 01/24/2023
Date
FEIS Forecast
Measured Values


IVR Pit
Total Arsenic Concentration (mg/L)
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0000
10/31/2021 12/20/2021 02/08/2022 03/30/2022 05/19/2022 07/08/2022 08/27/2022 10/16/2022 12/05/2022 01/24/2023
Date
FEIS Forecast
Measured Values

References:

Golder. 2018. Addendum Mine Site and Downstream Receiving Water Quality Predictions. Appendix 6-H to Whale Tail Pit – Expansion Project Final Environmental Impact Statement. December 2018.

2. Investigate and describe the factors that are contributing to the pit sumps having arsenic loadings that are higher than predicted in the FEIS (e.g., pit wall seepage).

   Agnico Eagle's Response: *see response to CIRNAC 3.2-1*

3. Indicate any modifications that will be needed to the Whale Tail and IVR Pit closure strategy to ensure that water quality in the pit lakes will serve as viable aquatic habitat.

   Agnico Eagle's Response: *For the 2023 Annual Report Water Quality Forecast Agnico Eagle will evaluate and if necessary re-calibrate the model using recent geochemical data (e.g., static and kinetic tests), and recent monitoring data (e.g., pits, sumps).*

   Improving the modelling of arsenic loading in the water quality forecasts will help provide a more accurate forecast to support adaptive measures and determine if modifications need to be made to the Whale Tail and IVR Pit closure strategy.

   Note that for IVR Pit, per the Interim Closure and Reclamation Plan (ICRP), the current mitigation plan is that exposed pit walls that are prone to leach arsenic shall be sloped back and covered with overburden and rip rap. Note that the need and feasibility of such mitigation on the exposed pit walls prone to arsenic leaching will be evaluated and updated in the final closure plan. For Whale Tail Pit no pit wall mitigation is currently planned.

   It should be noted that as per the ICRP, following completion of flooding of the open pits, the flooded pit lake will meet water quality objectives and demonstrate steady state conditions to confirm the pit lake can be reconnected to the downstream receiving environment. Routine pit lake water quality monitoring will be undertaken during closure and collected data will be used to calibrate and update the water quality model. In-situ treatment or treatment with the operational WTP could be done if required.

   As per the water license 2AM-WTP-1830, Part E, condition 9: "The Licensee shall not breach dikes until the water quality in the re-flooded area meets CCME Water Quality Guidelines for the Protection of Aquatic Life, baseline concentrations, or appropriate site-specific water quality objectives, such as the predictions in Final Environmental Impact Statement (FEIS) (…) If water quality parameters are above CCME Guidelines and/or FEIS predictions, unless otherwise approved by the Board, a site-specific risk assessment must be conducted to identify Site Specific Water

Quality Objectives for the site that are protective of the aquatic environment. Where they are required, Site Specific Water Quality Objectives shall be incorporated in the approved Final Reclamation and Closure Plan."

3.3 Whale Tail Project Pit Sump and Attenuation Pond Water Quality Variability

References: Meadowbank Complex 2022 Annual Report: Section 8.5.3.2; NIRB Project Certificate No. 008, Term and Conditions 8,15, and 16

Background/Rationale: Section 8.5.3.2 of the 2022 Annual Report presents summaries of water quality monitoring data for the Whale Tail and IVR pit sumps and attenuation ponds. CIRNAC notes that there is a high degree of temporal variability between sampling events. To illustrate, the following arsenic concentrations were measured in the Whale Tail Pit sump (see Table 8-44):

- May 29, 2022 = 0.676 mg/L
- June 10, 2022 = 4.29 mg/L
- June 19, 2022 = 0.645 mg/L

Based on this example, arsenic concentrations spiked by approximately 6X on June 10 (to levels above impact predictions) and then returned to baseline levels, all within several weeks. Similar concentration swings are observed for other parameters (e.g., aluminum and nutrients) and sampling locations in pits and attenuation ponds, without any explanation being provided

It is unclear to CIRNAC what factors are causing the observed high temporal variability in water quality in pit sumps and attenuation ponds. Similarly, the potential implications of this substantial temporal variability to environmental management are unclear. For instance, it is unclear if these elevated arsenic concentrations in attenuation ponds were a factor in AEM's non-compliant discharges to Whale Tail South Lake in April of 2022.

Recommendation to Address Issues: CIRNAC recommends that AEM:

1. Investigate and explain the factors that are resulting in substantive temporal variability in the water quality of Whale Tail pit sumps and attenuation ponds.

   Agnico Eagle's Response: *See response to CIRNAC 3.2.*

2. Discuss any potential implications that the temporal variability will have on the environmental performance of the site, both during operations and the post-closure phase.

Agnico Eagle's Response: *The temporal variability of concentrations in the pits is controlled during operations by pumping water collected in the pit sumps to the attenuation ponds then sending it by the operations water treatment plant (O-WTP) for water quality treatment, prior to discharge to the receiving environment. The O-WTP is designed to treat Total Arsenic and total suspended solids (TSS)*

See response to CIRNAC 3.2-3 for the approach to update the water quality forecast model and for closure and post-closure preparation.

3.4 Meadowbank Landfill Burning

References: Meadowbank Complex 2022 Annual Report: Section 6.1.1.2; NIRB Project Certificate No. 004, Amendment 003: Term and Condition 24

Background/Rationale: The 2022 Annual Report states: "In December 2021, the Meadowbank landfill burned from an undetermined cause". CIRNAC was unable to identify any information in the Annual Report or supporting documents indicating the causes, environmental impacts and mitigations associated with the event.

Recommendation to Address Issues: CIRNAC recommends that AEM provide a detailed description of the causes, environmental impacts, and mitigations associated with the burning of the Meadowbank landfill.

Agnico Eagle's Response: *The cause of the landfill fire cannot be proven to an acceptable level of certainty as there are no eyewitness to assist in defining an area of origin or to assist in determining which ignition source caused the fire. The most likely cause could be from improper waste segregation during the transfer from the roll off bin to the landfill.*

During the investigation, preventative measures were established to minimize the potential of a fire within the landfill or other areas on site in the future. Environmental awareness toolboxes were completed with all departments to review and communicate the expectations regarding the hazmat/waste process on site. A procedure was created to establish a fire watch after pushing new material at the landfill and an inspection process for roll off operators when dumping at the landfill. Additional signage was installed on general waste roll off bins to present acceptable material to be disposed of in the bins.

Lastly, no environmental impacts associated with the landfill burn were measured through the various environmental monitoring program around site, including: the Core Receiving Environmental Monitoring Program, which includes the monitoring of water quality in the

surrounding lakes and the air quality monitoring program, which monitors air quality (including air particulate matter) around the project.

3.5 Spill Management Action Plan

References: Meadowbank Complex 2022 Annual Report: Section 7.1; NIRB Project Certificate No. 004, Amendment 003: Term and Condition 26

Background/Rationale: The 2022 Annual Report (Section 7.1) states that, in an effort to address rising significant environmental incidents, AEM developed a new action plan to identify and address root causes of spills, as well as raising environmental awareness across the site. As part of the action plan, AEM stated they reviewed spills which occurred in 2021 and the first half of 2022 to identify common causes. The maintenance department also launched an equipment spill root cause analysis, which included a Failure Mode and Effect Analysis (FMEA) on the equipment models with the highest spill frequency. AEM also stated that the identification of causes and rectifying actions will be completed in 2023. Furthermore, to identify and better address incident root causes, an investigation process was designed and launched in 2022. Corrective measures are reportedly tracked for completeness.

The above-noted initiatives as described in the 2022 Annual Report, represent improvements in AEM's spill management approach. However, the Annual Report does not include the detailed findings and recommendations related to these initiatives. For example, it does not describe the new spill action plan, the spill FMEA and the corrective measures that are being put in place.

Recommendation to Address Issues: CIRNAC recommends that AEM provide details of findings and recommendations for all new spill management initiatives in future Annual Reports. This should include, but not be limited to, the new spill action plan, the spill FMEA and any new corrective measures.

Agnico Eagle's Response: *Agnico Eagle acknowledge CIRNAC'S comment and will provide more information in the 2023 Meadowbank Complex Annual Report.*

3.6 Annual Closure Planning Update Meetings

References: Meadowbank Complex 2022 Annual Report: Section 9; NIRB Project Certificate No. 004, Amendment 003: Term and Conditions 78,79, and 80; NIRB Project Certificate No. 008, Amendment 001: Term and Conditions 7 and 13

Background/Rationale: Section 9 of the 2022 Annual Report provides high-level discussions of the closure planning and implementation process: the section describes the state of the closure planning process, ongoing studies, information gaps and progressive reclamation. While CIRNAC appreciates receiving these

descriptions, CIRNAC has a wide range of questions and comments regarding the closure planning process for the Meadowbank and Whale Tail sites. Many of these questions and comments have been submitted in prior annual report reviews conducted by CIRNAC, as summarized in Table A.

While these questions and comments could be deferred until the submission of formal closure planning documents (e.g., periodic updated Interim Closure and Reclamation Plans and security estimates), CIRNAC is of the view that a more active dialogue on closure planning is justified. This is particularly important for the Meadowbank and Whale Tail Projects given that they are currently scheduled to begin active closure within three years (i.e., by 2026). Taking into consideration the relatively limited time remaining before the implementation of closure, additional and regular dialogue between AEM, regulators, and interested parties would be beneficial. This would help to facilitate reaching technically sound closure and reclamation decisions in a timely manner.

Recommendation to Address Issues: CIRNAC recommends that AEM convene an annual workshop with regulators and interested parties to discuss the status of closure planning for the Meadowbank and Whale Tail Mines beginning in 2023. The overall goal of the workshop would be to ensure that all organizations (including Agnico Eagle Mines (AEM)) are fully informed of closure requirements and to proactively identify key issues that need to be resolved on a priority basis. This will facilitate the timely design, approval, and implementation of an appropriate closure strategy for the sites. CIRNAC has also appended Table A, which presents a list of CIRNAC's closure-related questions raised in previous Annual Report TRCs, for AEM's use as discussion points during the closure workshops.

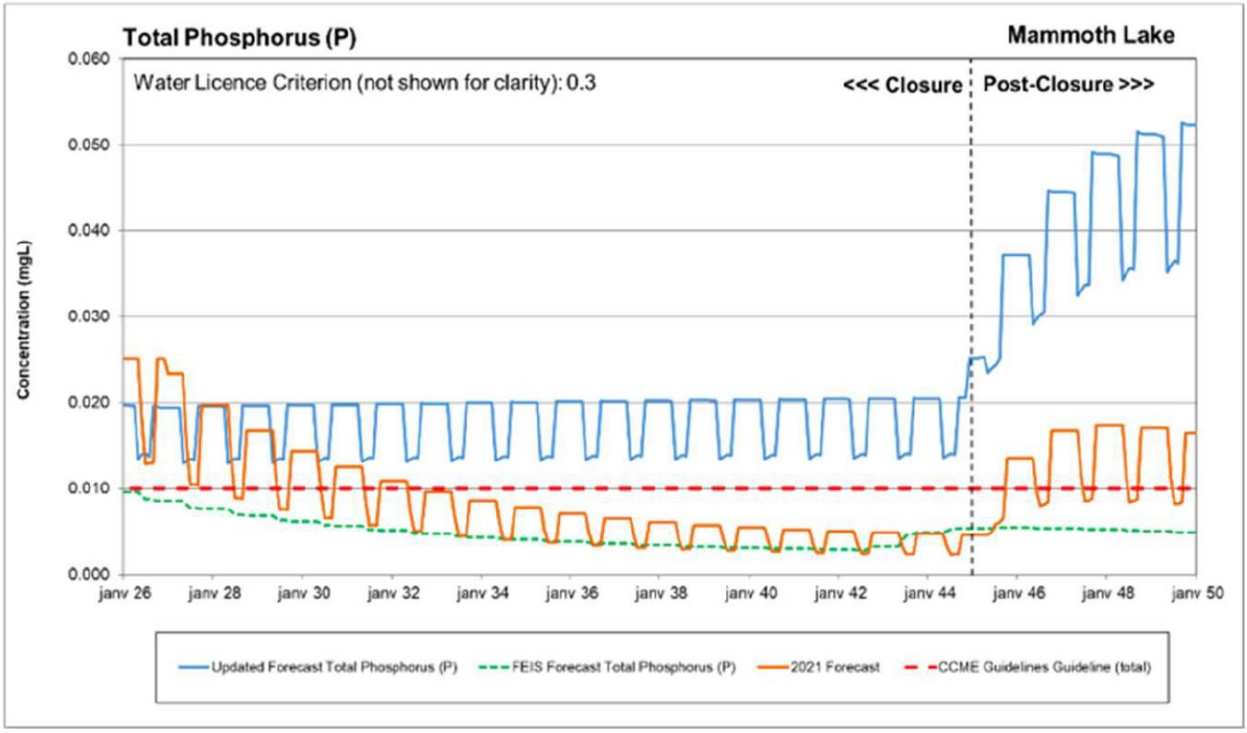
> ***Agnico Eagle's Response:*** *Agnico Eagle acknowledges that active dialogue on closure planning is justified between the involved organizations and regulators. Agnico intends to continue providing updates on progressive closure work, closure planning and closure engineering concepts, for both Meadowbank and Whale Tail sites, through the Annual Report and the next version of the Interim Closure and Reclamation Plan. Agnico believes that the responses and actions provided in regard to the previous comments from CIRNAC related to closure (Table A) were adequate as per the progress of the closure work and will be further answered as additional information related to closure becomes available.*
>
> *The submission of the next version of the Interim Closure and Reclamation Plan for Meadowbank and Whale tail is planned for 2024. In the next version of the plan, a preliminary schedule of workshop with regulators and interested parties will be presented, for the remaining part of operation until the submission of the Final Closure and Reclamation Plans. As per the Water Licenses (2AM-MEA1530 and 2AM-WTP1830), the Licensee shall submit the Final Closure and Reclamation Plan to the Board for approval at least twelve (12) months prior to the expected end of planned mining.*

3.7 Whale Tail Revised Water Quality Predictions

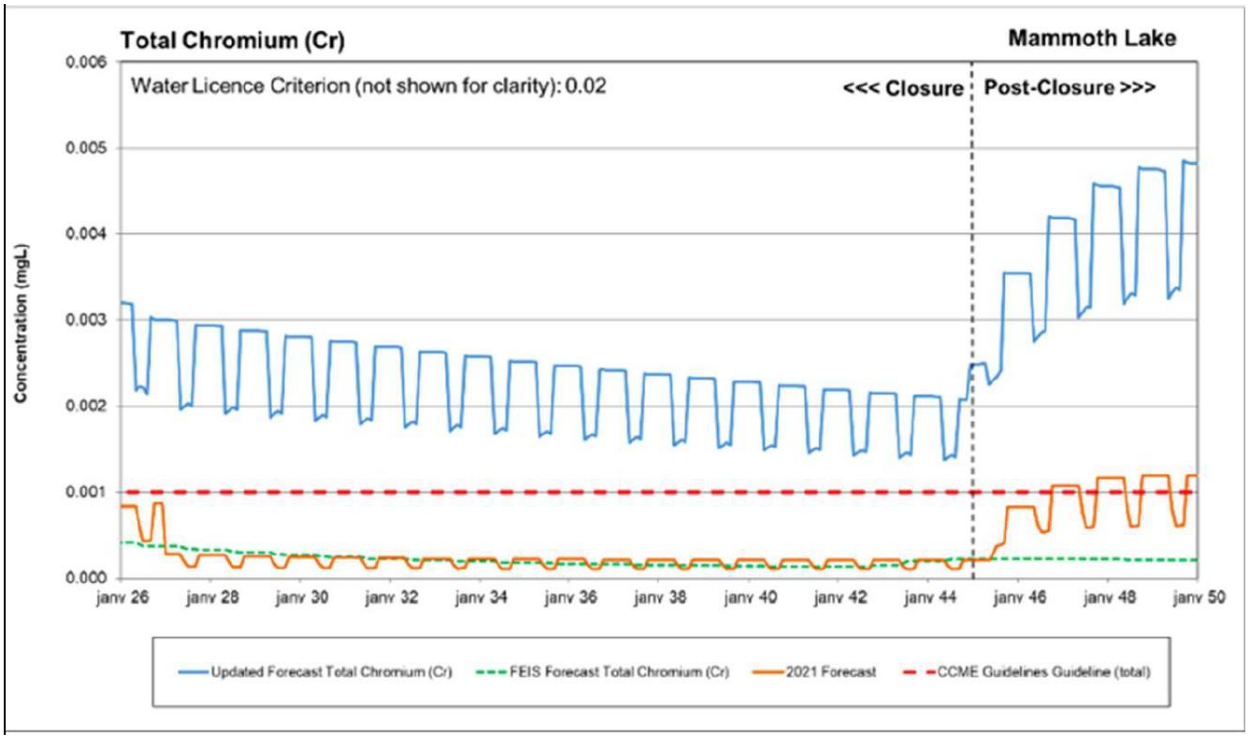
References: Meadowbank Complex 2022 Annual Report: Appendix 13, Appendix D; Meadowbank Complex 2021 Annual Report: Appendix 13, Appendix D; Final Environmental Impact Statement Addendum for the Whale Tail Pit Expansion Project (2018)

Background/Rationale: Appendix 13 (Appendix D) of the 2022 Annual Report presents updated water quality predictions for the Whale Tail site. The predictions for some parameters are substantively different from predictions presented in the FEIS Addendum for the Whale Tail Pit Expansion Project. Notably, the following parameters are now predicted to exceed the FEIS values in Mammoth Lake during the post-closure phase: cadmium, chromium, copper, iron, manganese, nickel, selenium, zinc, phosphorous, nitrate and chloride.

In addition to exceeding FEIS predictions, some parameters are also predicted to be above the predictions presented in the 2021 Annual Report and, in some instances, above the applicable environmental quality criteria (e.g., CCME criteria for the protection of freshwater aquatic life). This situation is demonstrated in the following two plots for total phosphorous and total cadmium. In both cases, revised predictions are well above: a) the FEIS predictions; b) the 2021 predictions; and, most importantly c) the applicable CCME criteria during the post-closure phase.

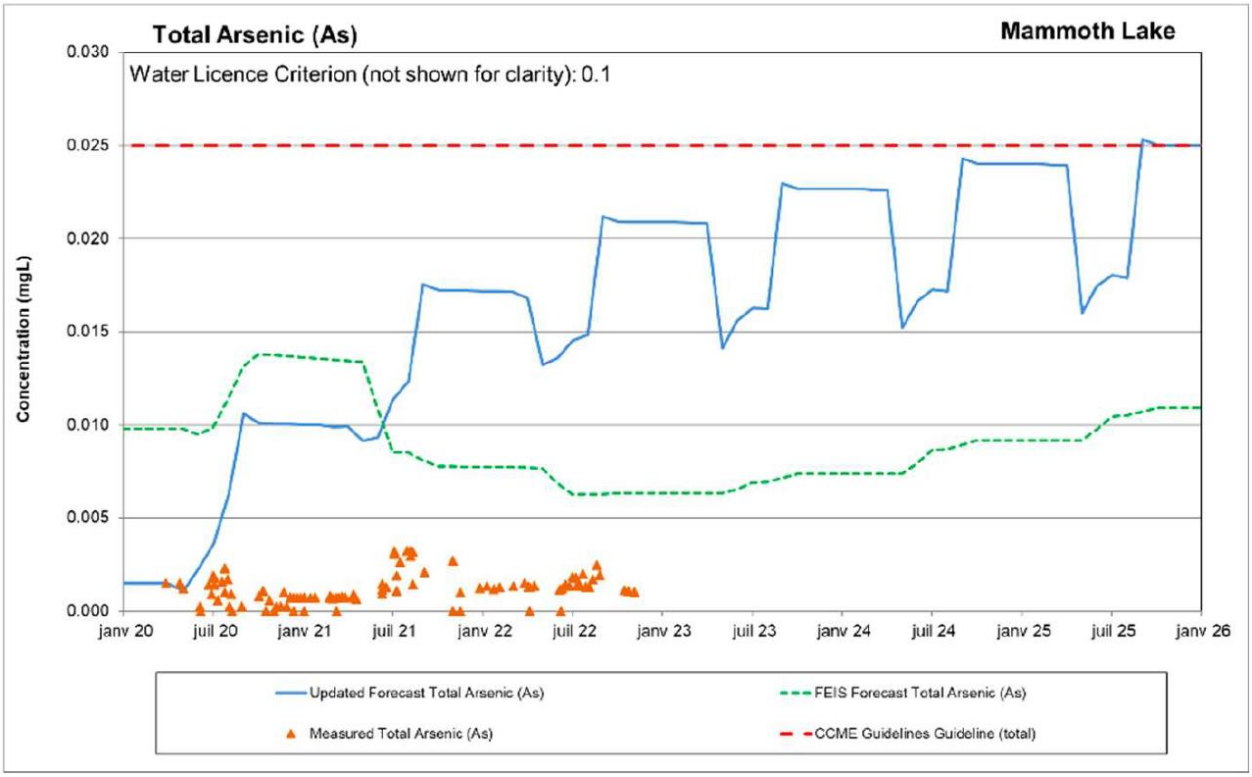


(As extracted from Figure 4-3 of Appendix 13, Appendix D of the 2022 Annual Report)



(As extracted from Figure 4-4 of Appendix 13, Appendix D of the 2022 Annual Report)

In addition to the increases noted above, arsenic concentrations in Mammoth Lake (as shown in the following figure) are now predicted to be well above the FEIS Addendum predictions. They are also predicted to be approaching the applicable CCME effluent quality criterion (0.025 mg/L) at the time of closure (i.e., three years from now, in 2026).



(As extracted from Figure 4-1 of Appendix 13, Appendix D of the 2022 Annual Report)

Appendix 13 of the 2022 Annual Report acknowledges increases relative to FEIS predictions with the following statement: "The WQF model forecasted concentrations that are generally higher than the FEIS forecasted values." Despite this acknowledgement, the 2022 Annual Report presents limited information regarding the factors that are contributing to the predicted increases. For example, it is unclear whether the increases are attributable to revised modelling assumptions or site conditions that are worse than originally expected (e.g., elevated seepage loading rates).

Furthermore, with regard to predictions that exceed the CCME criteria during post-closure (e.g., cadmium and phosphorous), the 2022 Annual Report presents limited information regarding the potential implications to the closure strategies for the site. To the contrary, the Annual Report states: "At closure, no water treatment is forecasted to be required." This conclusion appears to be inconsistent with predicted water quality exceedances during the post-closure phase.

Recommendation to Address Issues: Given the limited time prior to the initiation of closure (i.e., 2026), CIRNAC recommends that AEM respond to the following requests on a priority basis:

1. Provide a detailed table describing the factors that contributed to 2022 water quality predictions being higher than one or more of the following: a) FEIS predictions; b) predictions from 2021; and c) predictions that exceed environmental quality criteria.

Agnico Eagle's Response: *The model platform used for the 2022 annual forecast was changed from the platform used in the 2021 annual forecast and the FEIS. In addition, assumptions and inputs were changed for the 2022 annual forecasts. Examples include:*

- *Arsenic mitigation applied to Whale Tail and IVR pits (ICRP assumes mitigation only applied to IVR pit);*
- *higher runoff coefficient*
- *The water quality for the different input streams to the model is based on the yearly average measured values and are assumed to be constant over a given year.*
- *The model was not re-calibrated with the most recent monitoring data.*

Changes in the model platform and model assumptions can produce variable results.

However, monitoring data (example arsenic figure included by CIRNAC) do not show an increasing trend over time. In addition, results from the CREMP (see Appendix 33 from the 2022 Annual Report) concluded: Of the parameters with trigger exceedances, FEIS predictions were exceeded for total phosphorus at WTS and total alkalinity, TDS, total lithium, and several ionic compounds at WTS and MAM in one or more sampling events. Importantly, ***the absolute concentrations of these parameters remain low****. Total phosphorus and arsenic at WTS and MAM are within the normal operating ranges and Level 0 water management strategy is in effect in 2023 as per the Adaptive Management Plan. Routine water quality monitoring will continue in 2023 to track emerging spatial and temporal trends.*

During operation, the main parameter that influences the water quality forecast in Mammoth Lake and Whale Tail South Lake is the water treatment % removal efficiency applied to the model. The % removal was calculated based on the average yearly concentration measured in the Attenuation Pond and in the treated effluent.

For example, for arsenic, a constant % removal efficiency of 88% was used for the model based on the average removal of 2021 and 2022. In 2021, the average was estimated at 90% while in 2022, the average was estimated at 86% based on the analytical results take at site. By using a higher % removal efficiency over 93%, the water quality forecast could trend similar to the FEIS forecast.

The next water quality forecast models will provide a discussion on the factors contributing to the water quality predictions being higher than the previous predictions (FEIS and previous years model predictions) and predictions that exceed environmental quality criteria.

2. Describe why there is a high-degree of variability between the 2021 and 2022 predictions;

   Agnico Eagle's Response: *See response to CIRNAC 3.7-1*

   The 2022 model is based on the site water/mass balance model and assumes completely mixed ponds. It uses as input all of the water volumes transferred on the site in 2022 and the water volumes forecasted based on an average year.

   The 2022 model is more conservative than the 2021 model, especially when compared to the measured arsenic values. For the 2023 Annual Report the water quality forecast model will be adjusted based on recent field measured values.

3. For any parameters that are predicted to exceed 75% of the environmental quality criteria during post-closure, describe the approaches that will be taken to ensure significant adverse impacts do not occur.

   Agnico Eagle's Response: *To ensure adverse impacts do not occur for parameters that are predicted to exceed 75% of the environmental quality criteria during post-closure, Agnico Eagle will first examine the WTP to ensure that it is performing at its maximum % removal. In addition, as described above, the water quality forecast will be updated with available geochemistry and on-site water quality data. These additional data will contribute to improve the models, inform on adaptive management measures, and provide better predictions of water quality for closure and post-closure.*

   It is important to note that CCME guidelines have been used for the water quality forecasting, as the final closure site-specific water quality criteria for certain parameters are not yet established. Further discussion on site-specific criteria will be presented in the next Interim Closure and Reclamation Plan and in the Final Closure and Reclamation Plan.

4. Describe the studies that AEM will undertake between now and the finalization of the closure plan to verify the accuracy of water quality predictions.

   Agnico Eagle's Response: *The water quality forecast will be updated as additional geochemistry data and on-site water quality data becomes available, which will contribute to improve the models, inform on adaptive management measures, and provide better predictions of water*

quality for closure and post-closure. Site-specific criteria will be developed and presented in the next Interim Closure and Reclamation Plan and in the Final Closure and Reclamation Plan.

5. Describe if and how the higher than originally anticipated water quality predictions will affect closure strategies for the site.

Agnico Eagle's Response: *Currently the closure strategies for the site remain unchanged.*

As per the ICRP, following completion of flooding of the open pits, the flooded pit lake will meet water quality objectives and demonstrate steady state conditions to confirm the pit lake can be reconnected to the downstream receiving environment. Routine pit lake water quality monitoring will be undertaken during closure and collected data will be used to calibrate and update the water quality model. In-situ treatment or treatment with the operational WTP could be done if required. As per the water license condition, the dikes will not be breached until the water quality in the re-flooded area meets CCME Water Quality Guidelines for the Protection of Aquatic Life, baseline concentrations, or appropriate site-specific water quality objectives, such as the predictions in the Final Environmental Impact Statement (FEIS).

3.8 Water Quality Prediction Models

References: Meadowbank Complex 2022 Annual Report: Section 12; Meadowbank Complex 2022 Annual Report: Section 13; CIRNAC Technical Review Comments on the 2021 Annual Report to NWB (TRC #1); CIRNAC Technical Review Comments on the Whale Tail Pit Project Expansion Environmental Assessment (TRC #3)

Background/Rationale: Updated water quality predictions for the Meadowbank and Whale Tail sites are presented in appendices 12 and 13 of the 2022 Annual Report. In both instances, the reports describe the general modelling approaches. Key aspects of these approaches include the following statements which have been extracted directly from Appendix D of Appendix 13 (similar statements are also provided in Appendix 12):

1. Table 3-1: *"Water quality for the different input streams to the model is based on the yearly average measured values and are assumed to be constant over a given year."*

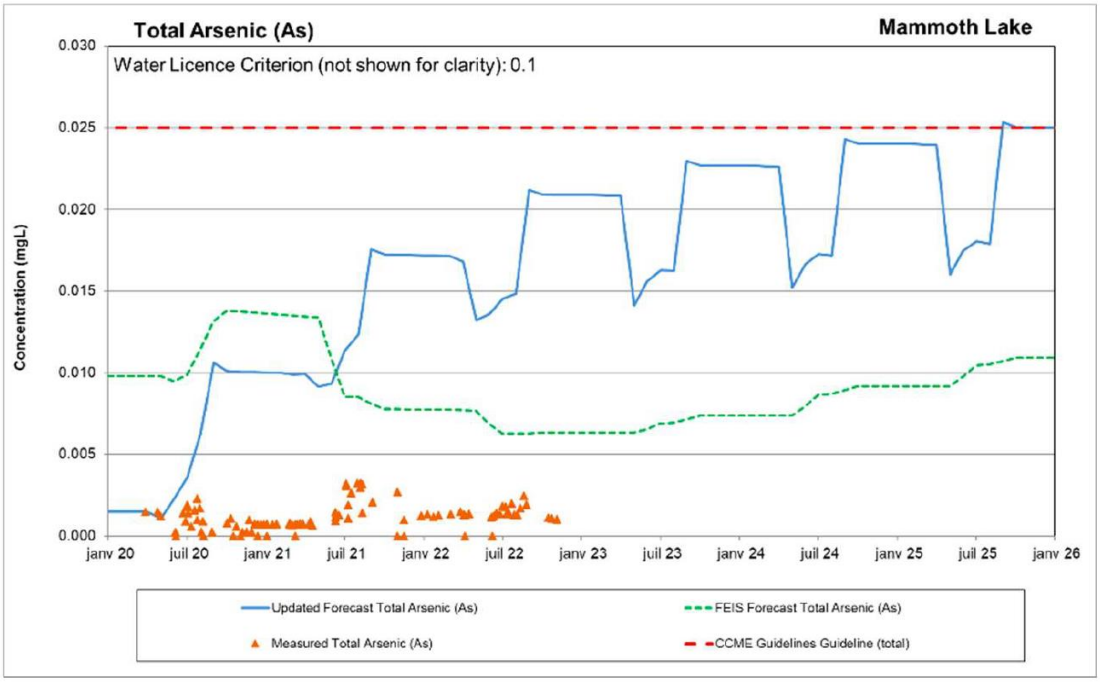
   In the opinion of CIRNAC, the use of annual average input streams represents a potential underestimation of loadings at some points of time. For instance, loadings before, during, and after freshet often vary significantly. There is, therefore, a potential that the approach is missing intra-year peak events that are environmentally significant.

2. Section 3.3: *"In order to simplify the model, the mass balance model assumes that the ponds, pits and lakes are completely mixed systems. Consequently, the results from this model provide an indication of the concentrations in these areas and should not be considered as an absolute value at this time."* (emphasis added)

   CIRNAC agrees that this approach provides only an indication of concentrations and should not be relied on as a definitive indicator of potential environmental impacts. On multiple occasions CIRNAC has expressed a concern that the "fully mixed" modelling assumption fails to provide sufficient spatial resolution to identify localized areas with elevated concentrations (e.g., in the vicinity of effluent discharges). Recently (in a letter to NWB dated May 29, 2023), AEM stated that the modelling presented in the 2022 Annual Report had been modified to address this concern. However, the 2022 Annual Report and supporting documentation (e.g., Appendices 12 and 13) continue to use the fully mixed assumption in all modelling.

3. Section 3.3: *"It should be noted at this point that the model should be used to evaluate at a high level the impact of operation and closure activities at the Whale Tail Mine site on the future water quality in the WT Pit / WTN Basin, the IVR Pit, Mammoth Lake and WTS Lake. The forecasted concentration should be considered as an order of magnitude estimate only considering that the model uses monthly volumes that are transferred around the site and assumes a fixed water quality concentration for each input stream over time."* (emphasis added)

   CIRNAC agrees with AEM that the modelling approach is suitable for making high-level screening decisions, similar to those that were reached for the FEIS. However, the "order of magnitude" approach is not sufficient for an operating mine that is approaching closure, particularly in instances where parameters are predicted to approach and exceed applicable environmental quality criteria. To illustrate, the following figure indicates that arsenic is predicted to approach the CCME effluent quality criterion (0.025 mg/L). Given that predictions are only accurate to within an order of magnitude, actual arsenic concentrations could reach levels that are ten-times the CCME criterion. The proximity of the current predictions to the criterion therefore represent a potential concern that warrants more detailed modelling.



(As extracted from Figure 4-1 of Appendix 13, Appendix D of the 2022 Annual Report)

CIRNAC has cited this concern on multiple occasions, most recently in its submission on the 2021 Annual Report to the NWB (TRC #1). In response to that comment, AEM indicated (in a May 29, 2023 letter to NWB) that appropriate modifications would be made to the 2022 Annual Report. Based on our review of the 2022 Annual Reports submitted to NIRB and NWB, CIRNAC was unable to identify any evidence to demonstrate that the recommended changes had been made.

4. Section 3.3: *"The present mass balance model cannot simulate the treated effluent plume discharged in Mammoth Lake or Whale Tail South Lake. A hydrodynamic model is required to simulate the discharge of treated effluent in these lakes, which is beyond the scope of this study."*

CIRNAC agrees with AEM that their "fully mixed" approach is insufficient to predict the localized effects of contaminant loadings from sources such as treated effluent plumes, seepage from Waste Rock Storage Facilities (WRSFs), seepage from pit walls, etc. Consequently, the modelling is unable to evaluate localized concentrations, some of which will be greater than those which have been predicted under AEM's fully mixed modelling approach. This is particularly important given the fact that some parameters are near, or above, applicable environmental quality criteria (see the arsenic figure presented above under the third point). CIRNAC therefore fully supports AEM's conclusion that a hydrodynamic model is required to simulate the discharge of treated effluent and predict potential

project impacts. However, it is unclear to CIRNAC whether AEM is planning to perform hydrodynamic modelling in the future.

From Recommendations in Section 5.2, SNC-Lavalin (AEM's technical advisor) provided the following recommendation: "To recommendation: "To better understand the loading of potential COCs from the exposed pit wall during Operation and following Closure, determine if it is possible to sample the pit wall runoff safely. Consider advancing the hydrogeological model and understanding of the pit wall lithology to assess the potential loading of COCs during Operation and Closure."

On multiple occasions (e.g., CIRNAC TRC #3 during the FEIS for the Expansion Project), CIRNAC indicated that additional sampling and modelling of pit wall seepage would be beneficial. CIRNAC is, therefore, fully supportive of SNC Lavalin's recommendation which would help to refine postclosure water quality predictions in the pit lakes. However, it is unclear how AEM intends to act on the recommendation. As noted in TRC #2, contaminant concentrations (e.g., arsenic) in the Whale Tail and IVR pit sumps are significantly higher than originally predicted. This justifies additional efforts to characterize the loadings associated with pit walls, including seepage.

Collectively, the points noted above demonstrate there are multiple simplifying assumptions and approaches being used by AEM to predict water quality that warrant reconsideration. While CIRNAC supported using simplifying assumptions and approaches during project approval and the initial years of operation, the project is now at a stage that justifies the development of more refined and accurate water quality predictions.

While the above-noted observations are related to the Whale Tail project, CIRNAC notes that updates to assumptions and approaches should be completed for the Meadowbank Mine as well.

Recommendation to Address Issues: Given the limited time prior to the initiation of closure (i.e., 2026), CIRNAC recommends that AEM, on a priority basis, revisit the water quality modelling assumptions and approaches used for both Meadowbank and Whale Tail to ensure all future project decisions (particularly closure) are informed by sufficiently accurate predictions. At minimum, factors to consider when revisiting the assumptions and approaches should include:

1. using monthly (or smaller) time steps for all model inputs instead of the current one-year time step;

   Agnico Eagle's Response: *The water quality forecast model uses a monthly time-step for water movement. In theory, it may be possible to integrate to the model a monthly time step with regard to water quality and assess if it is possible to vary the input stream water quality over time. This will be investigated further for both the Meadowbank and Whale Tail water quality forecast model.*

Note that this would add another level of complexity to the model and this is not something AEM can guarantee is possible for the next iteration of the model.

2. performing hydrodynamic modelling of receivers instead of assuming fully mixed conditions;

   Agnico Eagle's Response: *Hydrodynamic modelling is another type of tool used to predict possible future conditions but models that assume fully mixed conditions are appropriately conservative and can be used to support operations and adaptive management. Agnico Eagle will consider a hydrodynamic model but cannot guarantee this is possible for the next iteration of the model, or even if it could be completed on an annual basis.*

3. performing sensitivity analyses to accurately capture the range of uncertainty associated with water quality predictions;

   Agnico Eagle's Response: *Sensitivity analysis will be performed for next year's water quality forecast model for a few key parameters. For example: runoff volumes to manage for a dry and wet year, increase in arsenic loading from pit walls, etc. Results will be included in the next Water Quality Forecast Reports.*

4. expanding efforts to characterize loadings from pit walls.

   Agnico Eagle's Response: *Further geochemistry analysis and additional pit sumps water quality data will be integrated when available to the yearly updated water quality forecast model. Strategies are being developed to obtain additional in situ water quality data from the pits.*

4 Kivalliq Inuit Association (KivIA)

4.1 Meadowbank and Whale Tail 2022 Wildlife Monitoring Summary Report (March 2023) - Terrestrial Advisory Group

References: Appendix 47: S 1.7; Terrestrial Advisory Group.

Comments: The KivlA appreciates that Agnico Eagle has made efforts to modify the 2022 monitoring in response to the KivlA comments. However, the KivlA has concerns about how the TAG's advice is summarized in the annual reports and how TAG' s meetings are archived. Increasingly, Agnico Eagle (and

others including KivlA) are relying on the TAG for advice and recommendations. KivlA is also aware of published concerns about the TAG' s operation[1].

1. In its review of the 2021 Annual Monitoring report, KivlA had requested a table summarizing TAG comments and recommendations in the annual wildlife monitoring reports. Agnico Eagle agreed (Appendix 1; pg. 7-11) but then explained the table was not in the 2022 report because TAG has not provided official advice according to the Terms of Reference and the Terrestrial Ecosystem Management Plan (Appendix 1; pg.7-11). KivlA considers it essential that the TAG' s recommendations, input, and formal advice are summarized in the annual report. KivlA recommends that Agnico Eagle clarify during the TAG meetings when the TAG advice is 'official'.

   The 2022 Annual Monitoring report mentions topics discussed during TAG meetings 9 February, and 29 November to 1 December (Appendix 47; S. 1.7; pg 1-6) and that there were several TAG meetings in October and November 2022 on mitigation for the fall caribou migration but without summarizing any details (Appendix 47; S. 1. 7; pg 1 -6). The KivlA is concerned because the meetings arose from Baker Lake's concerns about traffic impacts and effectiveness of mitigation for the caribou fall migration (see KivlA recommendation 23-02).

2. The annual Mitigation Audit (App. 47; S. 1. 8) is a key component of the annual report as its objectives include" which mitigation is perceived or shown to be effective. Evaluating mitigation effectiveness is also one of the purposes of the TAG (App. 47; S. 1.7). KivlA considers the experience of TAG during the year reviewing and commenting on mitigation would also be useful for the Mitigation Audit. Although Agnico Eagle responded to KivlA's recommendation and said they would welcome TAG comments on the Annual Mitigation Audit (Appendix 1; pg 7-11), the Audit was not included in the TAG's agenda in 2022.
3. The Annual Report refers to several topics for TAG's advice and some topics are accompanied by technical reports. Currently, those reports, agendas and minutes are not readily available on the public record.

Recommendation 1: Agnico Eagle should:

1. Clarify during TAG meetings how the TAG's advice and recommendations are to be included in Agnico Eagle's Annual Monitoring Report and ensure that the TAG' s advice and recommendations are summarized in the Annual Monitoring Report.

[1] Warren Bernauer, Glen Hostetler, Ezra Greene, Frank Tester, Rowan Harris & Laura Tanguay (2022): Undermining Assessment: EIA follow-up, stake-holder advisory groups, and extractive industries in Nunavut, Canada, Impact Assessment and Project Appraisal, DOI: 10.108 0/ 146155 17.2022.213 9469

Agnico Eagle's Response: *Agnico Eagle will clarify during a future TAG meeting where the TAG's recommendations are included in the Meadowbank Annual Report.*

2. Include TAG input to the annual Mitigation Audit by ensuring that this topic is on the TAG agenda.

   Agnico Eagle's Response: *Please refer to Angico Eagle's response to KivIA recommendation 2.*

3. Agnico Eagle propose how TAG's work will be archived and the role of the Annual Reports in documenting TAG's advice, recommendations, and reports.

   Agnico Eagle's Response: *The TAG's advice is documented in Section 8-18 of the Meadowbank Annual Report. The Meadowbank Annual Reports are submitted to and archived on the NIRB registry.*

4.2 Meadowbank and Whale Tail 2022 Wildlife Monitoring Summary Report (March 2023) - Caribou Management Decision Tree

References: Appendix 47: S 2.0 Caribou Management Decision Tree

Comment:

1. Section 2 (App. 47; pg. 2-1) on the Caribou Management Decision Tree includes its three objectives (detect if effect thresholds have been exceeded; test the efficacy of mitigation; and understand project-related effects to ungulates specifically to manage sensory disturbance). For roads, Section 3.6.3.1 and Appendix B describe group size as the effect threshold to trigger mitigation and Table 9 (S 3. 6.6, pg 3-14) summarizes the number of days by month with speed restrictions or road closures. Agnico Eagle does not comment on differences for the fall GST from the TEMP (115 caribou) relative to an estimated GST of 93 based on 2022 fall data (Table 3.6) and what difference that would have made to the number of road closures.

   The KivlA appreciates Agnico Eagle's road closure details (Appendix B). KivlA suggests that Agnico Eagle's graphs showing group size relative to the Group Size Threshold and speed restrictions or road closure presented at TAG#12 meeting (21 February 2023) would have been especially useful to include in the 2022 Annual Report. The figures summarize days with caribou group size in the days preceding the first road closure and following the last closure. However, the 2022 Annual Report did not summarize Baker Lake's concerns raised during the 2022 fall migration about effectiveness of mitigation and group size thresholds. While Section 3.6.3.1 and Appendix B meet the Decision Tree objective to detect how group size as a threshold to trigger mitigation, KivlA remains concerned that community concerns especially about caribou group size thresholds and leadership are unresolved. KivlA also suggests that caribou behavior relative to traffic and the roads may differ between fall and

pre-calving migration. The KivlA agrees with Agnico Eagle that further discussion with the TAG is needed on the GST approach and alternatives including mitigation for protection of leaders.

2. The 2022 Annual monitoring Report does not address the Decision Tree's objective to test the efficacy of mitigation. The KivlA also notes that how Agnico Eagle distinguishes between mitigation effectiveness (as required in the annual Mitigation Audit) and efficacy is not explained[2] Section 2.6 notes that the Decision Tree's third objective is to reduce sensory disturbance to caribou but this is currently not linked to an impact prediction. KivlA suggests that describing behavioral monitoring results can be used to propose an impact prediction to determine if the Decision Tree reduces sensory disturbance.

   Effectiveness of mitigation is unmeasured: most observed crossings were when the road is closed (effect of partial road closures is uncertain) which is also when the highest number of caribou were reported. Relatively few crossings were reported during speed restrictions.

Recommendation 2:

1. Agnico Eagle should address how to test the efficacy of mitigation as to the objective of the Mitigation Audit (to describe mitigation effectiveness) and the TAG (evaluate the effectiveness of mitigation).

   Agnico Eagle's Response: The TEMP, version 7 (Agnico Eagle 2019) does not require that mitigation audits are reported as stand-alone documents but included as part of the annual wildlife summary report. The purpose of a mitigation audit is to identify which mitigation was implemented and whether it was effective and, if not, what changes may be required. Mitigation audits are completed annually through monitoring and mitigation reviews by the TAG, which is described in Section 4.2 of the TEMP, version 7 (Agnico Eagle 2019). The discontinuation of Height-of-Land (HOL) monitoring is an example of monitoring was deemed ineffective and adaptively managed. Mitigation audits are also completed through the comparisons of impact predictions, thresholds and management recommendations provided in annual wildlife summary reports. For example, Table 3.15 in the 2019 annual wildlife summary report describes potential impacts, wildlife thresholds for sensory disturbance and mortalities at Mine roads and whether they were exceeded. Exceedance of impact predictions or thresholds might be an indication that mitigation is ineffective. Table 3.15 also identifies whether adaptive management was implemented, which is an outcome of evaluating mitigation effectiveness.

   References

[2] ***Efficacy*** *means getting things done;* ***Effectiveness*** *means doing the right things and* ***Efficiency*** *means doing things right (https://nesslabs.com/efficacy-effectiveness-efficiency).*

Agnico Eagle. 2019. Meadowbank Division, Terrestrial Ecosystem Management Plan. Version 7. June, 2019.

2. For the objective on thresholds to trigger mitigation, Agnico Eagle should undertake further review on the GST approach including the behavioral and camera data as well as road surveys to estimate, annual variations and alternatives including a threshold to support protection of leader s for both fall and pre-calving migration to allay community concerns. The review should be closely coordinated with Baker Lake hunters and Elders and include testing automatic closure at the beginning of migrations to allow the passage of leaders.

   Agnico Eagle's Response: *Agnico Eagle is open to further discussions with the TAG on alternatives to the GST and protection of lead caribou.*

3. Agnico Eagle should apply the results of the behavioral monitoring (duration and frequency of responses) to define an impact prediction to determine if the Decision Tree reduces sensory disturbance.

   Agnico Eagle's Response: *Agnico Eagle is open to discussing this topic with the TAG.*

4.3 Meadowbank and Whale Tail 2022 Wildlife Monitoring Summary Report (March 2023) - Traffic, Convoys, and Caribou Crossings

References: Appendix 47: S 3.6.7

Comment:

1. The KivlA appreciates that Agnico Eagle provided a monthly summary of traffic type and annual trends and details of road closure. Traffic volumes are high; on the WTHR in August 2022 a heavy equipment vehicle passed on average every 6.9 minutes. However, understanding impacts on caribou and the effectiveness of mitigation is still incomplete and requires the daily frequency of traffic (or the duration of gaps between traffic) both when group size is below the threshold for closure and for essential traffic during closure. The daily traffic frequency should be integrated with daily caribou counted/ road survey to assess the probability of caribou exposed to the road under conditions of closure (>GST), non-closure (<GST), partial closure (<24h) and reduced speed.

2. The KivlA appreciate the additional details on the 31 convoys (S. 3.6.7; Table 3-14; pg.3-19) which included 2 convoys/day on 9 days (return trips). The additional fuel storage has apparently reduced the need for fuel supply to a single convoy. Table 3-14 is unclear about what 'escort back to hubs' refers to; why the number of vehicles for passenger transport is variable and high (couldn't a single

bus be used for transporting people?) and whether the number of vehicles and convoys for dry goods could be reduced. Section 3.6.7. does not explain trade-offs for the convoys: whether to increase the number of days with no essential traffic or reduce the number of vehicles per convoy as well as the number of convoys (to reduce the duration of traffic exposure to the caribou).

3. The KivlA appreciates the increased effort to document caribou behavior responses to convoys (Appendix I; S. 6.3.8; pg. 21) which suggested that responses to convoys were longer than responses to single disturbances but sample size remains a limitation. Data were lacking on the duration of the convoys relative to the number of vehicles and their spacing.

   Overall, there is no monitoring to measure how caribou cross roads as no one method is designed to assess probability of crossing relative to number of caribou encountering the roads and traffic or their behavior. The road surveys are designed to measure numbers of caribou encountering the road rather than crossing rates. Uncertainty remains about the camera surveys and the behavioral monitoring has not yet been applied specifically to crossing behavior.

Recommendation 3: Agnico Eagle should:

1. Report daily traffic frequency for days when the road is open, days when 24h closure and <24h closure days.

   Agnico Eagle's Response: *Agnico Eagle's methodology for data collection of road traffic does not easily allow for the desired analysis. However, this metric will be explored and attempted to be provide in the 2023 annual report.*

2. Provide information on how to reduce the frequency of convoys and the number of vehicles in the convoys when road closures are in effect.

   Agnico Eagle's Response: *The frequency of convoys and number of vehicles in convoys fluctuates and is determined based on operational requirements. As noted in the response to GN recommendation 3-4, Agnico Eagle already maximized stockpiles and inventories. Expansion to further increase stockpiling and inventory capacities may require a change to the Mine Plan, which may have other environmental implications (e.g., additional habitat loss).*

3. In collaboration with the Terrestrial Advisory Group (TAG), Agnico Eagle design and implement a behavioral study integrated with cameras and road surveys to measure how and when caribou cross the road s to improve mitigation effectiveness.

Agnico Eagle's Response: Agnico Eagle is open to discussion with the TAG on this project, and looks forward to further discussions with the TAG.

4.4 Meadowbank and Whale Tail 2022 Wildlife Monitoring Summary Report (March 2023) – Caribou Collar Data

References: Appendix 47: S 6.0 Caribou satellite-collaring program

Comment: The KivlA notes that a data sharing agreement for caribou collar data is now signed (March 2023). The KivlA is requesting that the "catch-up" analyses for 2020-2022 not be deferred until the 2023 Annual Monitoring report but be provided earlier. Agnico Eagle (Appendix I} acknowledged that integrating the road surveys, collar data and the behavioral monitoring to assess the timing of caribou encountering the road (and representativeness of the collars) and road mitigation effectiveness could be undertaken. Additionally, as discussed at the November/ December 2022 TAG meeting, caribou crossing rates may be better assessed using caribou satellite collar data, and vehicle traffic collected using the remote camera data (S.8.4.3; pg. 8-3).

Recommendation 4: Agnico Eagle to provide a 2020-2022 report based on satellite collar analyses by October 2023.

Agnico Eagle's Response: *Agnico Eagle gained access to Government of Nunavut collared caribou data in March 2023. Agnico Eagle will present analyses of collar data, consistent with past reporting, in the 2023 annual wildlife summary report. The 2023 annual wildlife summary report is anticipated to be available in spring 2024. The analysis will include the years of 2020 to 2023. However, further discussions will be held with the TAG prior to the submission of the 2023 annual report, and collared caribou analysis are expected to be included in the topics.*

4.5 Meadowbank and Whale Tail 2022 Wildlife Monitoring Summary Report (March 2023) – Remote Camera Program

References: Appendix 47: S 5 8.0 Remote camera program

Comment: Caribou detection rates by cameras were low (5 8.5; Table 8.2) and relatively few caribou crossing events were recorded while the road was open (13), subject to speed restriction (10) or closed (2; 5 8.5; Table 8-3). Given the limited sample size, Agnico Eagle recommended discussion wit h the TAG for the future design (5 8.6, pg. 8-7; Appendix I). Using the cameras to measure the frequency of traffic at the daily scale and the duration of traffic-free gaps would be useful data to integrate with collar and road surveys to examine mitigation effectiveness.

Recommendation 5: The KivlA recommends Agnico Eagle provide options to review with TAG for re-designing the remote camera program to integrate it with other monitoring (collars, behavior and road surveys) to contribute to effective mitigation and impacts of traffic on caribou.

> ***Agnico Eagle's Response:*** *Agnico Eagle would welcome recommendations from the TAG on a re-design of the remote camera program. Further discussion on the objectives of the proposed study will be needed with the TAG.*

4.6 Meadowbank and Whale Tail 2022 Wildlife Monitoring Summary Report (March 2023) – Behaviour

References: Appendix 47: Appendix I Caribou Behaviour Monitoring

Comment: The report provides both analyses and the data and is well-presented and meets the objectives of the program. Caribou groups tend to be smaller closer to the road and larger further away and the larger groups had lower responses to traffic on the road. However, caribou in small groups or close to the road were not more likely to cross the roads. Responses were similar during road closure or when the road was open (convoys occurred during road closures). After the passage of a convoy, caribou took a longer but variable time to return to their previous behavior.

The results lend themselves to integrating with other aspects of Agnico Eagle's caribou monitoring and mitigation. For example, Appendix I reports that larger groups of caribou tended to be recorded further from the road which may be a factor in assessing group size threshold s (defined as within 250 m to 1,000 m of the road) for mitigation. Understanding caribou behavior as individuals and groups relative to the frequency of traffic could improve the efficiency of mitigation such as the duration of road closures.

The behavioral analyses found that that road closure status did not affect behaviour, possibly due to it having less explanatory power than the other variables included which in the context of mitigation effectiveness is a finding to be followed up. However, it is unclear if and how the behavioral monitoring accommodated complete and partial closures (<24 h) and the level of disturbance during closures.

The behavioral study reports an overall 3-year consistency in behavioral responses (Appendix I; 5. 6.3.8; pg. 21). The consistency may suggest re-allocating sampling design and effort to convoys test the effectiveness of group size as a threshold and assess whether behavioral responses can indicate sensory disturbance as an impact prediction.

Recommendation 6: The KivIA recommends Agnico Eagle provide options to review with TAG for re-designing the behavior monitoring to integrate it with other monitoring (collars, road surveys, traffic volumes) to contribute to monitoring how caribou cross roads and mitigation effectiveness.

> ***Agnico Eagle's Response:*** *Agnico Eagle appreciates the collaborative relationship with the TAG and the KivIA and appreciates the discussions and suggestions made by the KivIA on the behaviour program to date. These suggestions, including objectives of the study, survey methods and data analyses have been incorporated, where possible, into the behaviour program and we believe the program has benefitted from this collaboration. Agnico Eagle is happy to continue discussing options for updating and improving the behavioru program with the TAG and updating the objectives of the program to integrate with other monitoring programs as needed and as technically feasible.*

4.7 Meadowbank and Whale Tail 2022 Wildlife Monitoring Summary Report (March 2023) – Project-Related Mortality (Predatory Mammals)

References: Appendix 47: S 3.6.9 Road-related Wildlife Mortality and S 4.5.4 Wildlife Deterrent Records

Comment: S 3.6.9 stated that *"there was one wolverine mortality that took place on the AWAR on 2 August 2022 (Table 3-17)"* (pg 3-24), which was detailed in a Wildlife Incident Report in Appendix C. The animal (a young female) was struck by a truck on a bridge, with the driver having no time to react.

S 4.5.3 and 4.5.7 stated that a wolverine was dispatched on 4 April 2022 in the South Cell Tailings Area. The presence of this individual was unaltered by deterrents, and a wildlife destruction authorization was issues by GN DOE. Further details are also found in a Wildlife Incident Report in Appendix C.

The threshold for Project-related Mortality (predatory mammals) is *"Predatory mammals (i.e., grizzly bear, wolverine, wolf) will not be killed or injured by vehicle collisions. Threshold level of mortality is two individuals per year."* (Table 3-19, pg 3-26) or *"Two individuals (cumulative across Project)."* (Table 18-1, pg 18-1). Yet the both tables state that the threshold was not exceeded in 2022, citing the one wolverine killed on AWAR.

The KivIA is unclear how this conclusion was reached. It is obvious that both mortalities were mine-related, even if they were reported in different monitoring sections, thus together result in an exceedance of the annual threshold.

Recommendation 7: Agnico Eagle should:

1. Clarify why they determined that the Project-related Mortality for predatory mammals was not exceeded in 2022; and

   Agnico Eagle's Response: *The KivIA is correct that threshold for predatory mammals identified in the TEMP (Agnico Eagle 2019) is two. As they noted in their comment, two wolverine mortalities were reported in 2022, which equals the threshold but does not exceed it. The TEMP (Agnico Eagle 2019) identifies that additional mitigations are applied when the threshold is exceeded.*

   References

   Agnico Eagle. 2019. Meadowbank Division, Terrestrial Ecosystem Management Plan. Version 7. June, 2019.

2. Provide concrete adaptive management to prevent these mortalities for preventing future occurrences, especially for the incident in the South Cell Tailings Area.

   Agnico Eagle's Response: *All wildlife mortality events are reported and investigated with consideration to adaptive management for prevention or additional mitigation. Adaptive management is recorded on the report forms, which are included in Appendix C of the 2022 annual wildlife summary report (WSP 2023).*

   References

   WSP. 2023. Meadowbank Complex: 2022 Wildlife Monitoring Summary Report. Prepared for Agnico Eagle Mines Limited by WSP. Edmonton, AB.

4.8 Meadowbank and Whale Tail 2022 Wildlife Monitoring Summary Report (March 2023) – Overview of Annual Report

References: Appendix 47

Comment: The KivlA appreciates the extra information that Agnico Eagles has provided.

KivlA again requests that monitoring results from different methods be integrated and not just summarized (Table 11.1).

The KivlA did not find the results of the 2022 Annual Mitigation Audit and suggests a table summarizing concordance with the NIRB Project Certificate Terms and Conditions would be useful.

Table 18 (S 3.6.9, pg 3-25) repeats previous errors and inflates the number of road-related caribou mortalities on AWAR between 2007 and 2013.

Recommendation 8: Agnico Eagle should:

1. Integrate results from different monitoring methods such as the behavioral data and road survey data.

   Agnico Eagle's Response: *Agnico Eagle welcomes the KivIA's suggestion for discussion at a future TAG meeting including and understanding of the proposed analysis/questions. Based on these discussions, a study design could be implemented.*

2. Provide the 2022 Annual Mitigation Audit and a table summarizing concordance with the NIRB Project Certificate Terms and Conditions

   Agnico Eagle's Response: *See previous response to KivIA recommendation 2 regarding the Mitigation Audit. NIRB provides an annual report summarizing concordance with Project Certificate Terms and Conditions.*

4.9 Pit Lake Conductivity Profiles

References: Appendix 12

Comment: In the Meadowbank Water Forecasting Update, Agnico Eagle contemplates measuring depth profiles of conductivity in the pits to determine the presence of stratification in the pit lakes. Discussions surrounding the creation of end pit lakes with suitable fish habitat reference the presence of a chemical gradient, with higher concentrations of dissolved solids near the bottom of the end pit lakes. Further information on the presence and stability of stratification in the pits would assist in evaluating the suitability of these lakes for providing fish habitat.

Recommendation 9: Agnico Eagle should commit to measuring depth profiles of conductivity in the reflooded pits.

Agnico Eagle's Response: *Measurement of pH, temperature, dissolved oxygen, and conductivity at different depths in Goose pit have been completed in 2022. Additional profiles will be completed in 2023. These results will provide information on the stratification of the Goose pit and will be discussed in the pits water quality forecast model. Based on the results, additional profiles may be completed during the operation period before closure. The program for water quality sampling in the pits for closure and post-closure, including the reflooding period, will be based on the pit water quality model predictions and will be presented in the Final Closure and Reclamation Plan*.

4.10 Document Control

References: Appendix 37

Comment: A large number of documents are submitted for review annually. Use of the documents control tables to outline changes in subsequent document versions enable reviewers to efficiently focus their efforts.

Recommendation 10: Agnico Eagle should ensure the pages and sections modified in subsequent document versions is reflected in the document control table.

> ***Agnico Eagle's Response:*** *Agnico Eagle acknowledges KivIA's comments and will continue effort to ensure pages and section modified in subsequent document update are adequately outline in the document control section.*

4.11 November 28, 2022 - 29,000 Litre Fuel Spill at Km 87 on the AWAR

References: Meadowbank Complex, 2022 Annual Report, Table -2; Appendix 6 -Agnico Eagle's Training Management System and Learning Management System Reports; Appendix 28 - Meadowbank 2022 GN Spills Reports.

Comment: Did the investigation into this significant fuel spill include a review of the training records and maintenance records of mobile equipment for the Inuit Contractors used for hauling fuel? When will AEM determine if this is an insurable event for the Inuit Contractor involved in the spill?

Recommendation 11: The KivlA would like to see the requested information at AEM's earliest convenience.

> ***Agnico Eagle's Response:*** *Agnico Eagle completed a full investigation of the incident at KM87 including training, maintenance records and operating procedures. A follow-up spill report outlining the details of the spills, corrective, and remediation actions was submitted under the Nunavut Water Board License 2AM-MEA1530 Part H, Item 8c on December 28, 2022. The incident has been deemed an insurable event for the contractor involved.*

4.12 Wildlife Right of Way

References: Appendix 47

Comments:
Table 3-16: Observations of Tolerant Caribou in 2022

Table does not indicate any follow ups nor next day observances

Section 4.5.4 Wildlife deterrent records
Wildlife were habituated to the areas before the mine was created. When the mine was created, all parties agreed and signed off for the project to carry on which includes protection of wildlife, hence the saying "Wildlife have the right of way".

Table 4-4: Details of Deterrence Activities for 2022
Issue:

- Dated 2022-06-22 - 2 musk ox that are feeding were deterred from the near the airstrip - disturbing feeding.

- Dated 2022-07-01- 4 caribou were deterred when plane was landing.

- Dated 2022-07-28 - 2 musk ox feeding between AWAR and the airstrip deterred from the area so the plane can land.

- Dated 2022-08-09 5 caribou deterred from blast area so the blast can move ahead.

Recommendation 12: All occasions listed in Table 4-4: *Details of Deterrence activities for 2022* could have been handled to protect the wildlife, not deter them, as all observances indicate them to be feeding. "Wildlife have Right of way" needs to practiced where and when preached.

> ***Agnico Eagle's Response:*** *Agnico Eagle's deterrent actions noted by the KivIA were applied in accordance with the TEMP (Table 7: Agnico Eagle 2019) and are designed to protect ungulates and other wildlife by avoid or minimizing injury- and mortality-risk from Mine hazards.*
>
> ***References***
> *Agnico Eagle. 2019. Meadowbank Division, Terrestrial Ecosystem Management Plan. Version 7. June, 2019.*

4.13 Wildlife Mortality

References: Appendix 47

Comments: Table 4-8: Summary of Project -Related Wildlife Mortality Records for Caribou and Predatory Mammals (2007 to 2022) indicates there has been no caribou mortalities since the mine became operational.

A Grader working on the AWAR northbound during the winter in a blizzard hit 3 to 5 caribou which all did not survive so they were brought to the mine site. Carcasses had to be thawed out at the Environment office than butchered into quarters to be incinerated. I was the Environmental technician on site when this happened and I took care of the carcasses.

Recommendation 13: Table 4-8 should be updated to accurately reflect project-related mortality. Further, reporting protocols should be re-examined to ensure mortality incidences are recorded.

> ***Agnico Eagle's Response:*** *Table 4-8 of the 2022 Wildlife Monitoring Summary Report presented the mortalities that occurred on Meadowbank and Whale Tail sites from 2007 to 2022. This Table 4-8 doesn't include the wildlife mortalities along the AWAR and the WTHR. Mortality along both roads is presented in Table 3-18 and include the incident mentioned above that occurred on March 6, 2013 resulting in five (5) Caribou mortalities. Agnico Eagle also want to highlight that there is an error in Table 3-18 as some superscript numbers were missing for this table, due to formatting error, leading to an over estimated number of mortalities along the road. Agnico Eagle will update the table to reflect the mortalities for the 2023 annual report.*

4.14 Helicopter Activity

References: Appendix 47: S 4.5.9 Helicopter Activity

Comments: Pilots are made aware to avoid caribou and muskox by 1,000 m vertically and 1,500 m horizontally, flocks of migratory birds by 1,100 m vertically and 1,500 m horizontally, and to avoid known raptor nests. Locations of these flight s in relation to caribou and other wildlife was not assessed in 2022. Point locations of caribou and other wildlife from road surveys, pit and mine site surveys, and viewshed surveys may be too coarse to assess in relation to helicopter flight tracks. Helicopter flight tracks would ideally be assessed in relation to caribou satellite collar data, to assess avoidance of caribou by the required setback distances. However, caribou satellite collar locations would not necessarily represent groups of caribou of 50 individuals or larger.

Recommendation 14: Findings from ground surveys can be relayed to the helicopter pilots to assist in avoiding caribou and musk ox.

> ***Agnico Eagle's Response:*** *Agnico Eagle circulates maps of collared caribou among different operational departments at the Mine (e.g., exploration) that use helicopters to carry out activities for this purpose. Agnico Eagle agrees communicating results of ground surveys to pilots is a good idea but there will be some challenges and limitations, such as road surveys require several hours to complete and helicopters may be in use before surveys are complete. Agnico Eagle will determine a communication protocol to facilitate this.*

5 Environment and Climate Change Canada (ECCC)

5.1 Weather Data

References: Appendix 50 Meadowbank and Whale Tail 2022 Air Quality and Dust Monitoring Reports, Section 2.4 Weather Data and Appendix A

Comment: Section 2.4 Weather Data mentions the availability in Appendix A of daily averages for wind speed, wind direction and temperature from the Meadowbank and Whale Tail permanent climate station. This section also refers to a wind sensor installed at the DF-7 monitoring site to measure hourly average wind speed and direction. ECCC agrees that wind monitoring can be used to help identify sources of pollutants as needed, based on wind direction. Accurate wind measurements may also assist with diagnosis of fugitive dust events. However, there are multiple issues with the climate station data as presented in Appendix A. For example, the temperature sensor appears to be locked at or near -49.5C for several days in early April, and average temperatures mostly exceed +50C from June 21st through July 2nd. The wind sensor malfunctioned from April 28th through May 5th.

Recommendation 1: ECCC requests that AEM perform a first order quality control of the weather data from the climate station, with an emphasis on wind speed and direction; the primary comparison of wind data would be with the sensor at DF-7 with the Baker Lake NAVCAN Station as a secondary station. Erroneous data should be subsequently flagged.

> ***Agnico Eagle's Response:*** *Following this recommendation from ECCC, Agnico has initiated a review of internal procedures for quality control and reporting of the onsite weather data, including instrument maintenance and calibration records. In the meantime, Agnico has reviewed the Meadowbank weather station wind data (daily average speed and direction) in comparison with the wind data collected at the Whale Tail weather station. This is considered to be the most appropriate comparison, given the proximity and similarity of the installations. In this evaluation, any deviations from the normal range of expected wind speed values were identified, along with trends suggestive of instrument drift or malfunction. From this evaluation, the following time points are considered erroneous, and have been flagged for further investigation as part of the review described above: April 28 – May 8 (zero values recorded), June 21 – July 2 (values identical between the two stations). Results of this investigation will be provided in the next reporting cycle.*

5.2 Meadowbank Compliance Monitoring

Comment: No authorizations from ECCC have been issued.

The AEM Meadowbank Gold Project is captured under several pieces of ECCC legislation such as subsection 36(3) of the *Fisheries Act, Metal and Diamond Mining Effluent Regulations* (MDMER), *Canadian Environmental Protection Act (CEPA), Environmental Emergency Regulations, Cross-border Movement of Hazardous Waste and Hazardous Recyclable Material Regulations, Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*, and Greenhouse *Gas Pollution Pricing Act/Output-Based Pricing System Regulations.* In 2022, one on-site inspection was planned but got cancelled due to limited resources.

MDMER

The Project is subject to the MDMER. The purpose of the MDMER is to authorize a deposit of certain deleterious substance(s) into water frequented by fish while monitoring the environmental effects of those deposits to ensure that deleterious substances are not released in quantities or concentrations that could result in harmful effects on waters frequented by fish. To do this, certain effluent deposit conditions (concentrations, limits and parameters) apply so that regulatees are exempted and protected from the more stringent prohibition of subsection 36(3) under the Fisheries Act. Samples of the effluent by AEM must be taken and tested at the identified Final Discharge Point (FDP) to ensure the above conditions are met on a scheduled basis and reported. The two current FDPs are as follows:

1. Vault Discharge FDP ST-MMER-2 - Effluent from Vault Attenuation Pond pumped and discharged to Wally Lake.
2. East Dike Discharge FDP ST-MMER-3 - East Dike Seepage effluent from Second Portage Lake pumped back to Second Portage Lake.

The MDMER requires reports to be submitted in ECCC's online database (Mine Effluent Reporting System - MERS) which are reviewed by an assigned Enforcement Officer on a quarterly basis. The quarterly administrative regular report verifications are conducted to ensure that the sampling and testing has been conducted in accordance with the MDMER and ensuring the reports are submitted on time. Each Enforcement Activity includes an administrative report verification of each quarterly report which are due 45 days at the end of each quarter: 1st Quarter (due May 15), 2nd Quarter (due Aug 14), 3rd Quarter (due Nov 14) and 4th Quarter (due Feb 14), as well as an administrative report regular verification of the 2022 Annual Effluent Monitoring Summary Report (due March 31). Furthermore, an administrative report regular verification was completed on the Environmental Effects Monitoring (EEM) 2022 Annual Report (information related to effluent and water quality monitoring studies) and as part of this verification the officer submitted a copy of the report to the EEM Coordinator for review to also confirm compliance.

In 2022, AEM submitted all required MDMER reports:

1. First Quarter:

- Report submitted on time.
- Vault Discharge FDP ST-MMER-2: Administrative verification not conducted as no effluent was discharged through this FDP during Q1 therefore no compliance issues.
- East Dike Discharge FDP ST-MMER-3: Effluent was discharged in Q1 with no exceedances.
- The following non compliance was determined: a. 14(2)(a) – AEM failed to select and record the sampling date not less than 30 days in advance of collecting the acute lethality grab sample on January 3, 2022, from East Dike Discharge FDP ST-MMER-3 – Warning Letter Issued

2. Second Quarter:
   - Report submitted on time.
   - Vault Discharge FDP ST-MMER-2: Administrative verification not conducted as no effluent was discharged through this FDP during Q2 therefore no compliance issues.
   - East Dike Discharge FDP ST-MMER-3:
   - The following non compliance was determined:
     a) 14(2)(a) – AEM failed to select and record the sampling date not less than 30 days in advance of collecting the acute lethality grab sample on April 4, 2022, , from East Dike Discharge FDP ST-MMER-3 – Warning Letter Issued
     b) 4(1)(a) – AEM suspended solids concentration (49mg/l) exceedance in excess of the maximum authorized concentration (30mg/L) in a grab sample. Also reported as Spill Report 2022-145 – Warning Letter Issued.

3. Third Quarter:
   - Report submitted on time.
   - Vault Discharge FDP ST-MMER-2: Administrative verification not conducted as no effluent was discharged through this FDP during Q3 therefore no compliance issues.
   - East Dike Discharge FDP ST-MMER-3: Administrative verification not conducted as no effluent was discharged through this FDP during Q3 therefore no compliance issues.

4. Fourth Quarter:
   - Report submitted on time.
   - Vault Discharge FDP ST-MMER-2: Administrative verification not conducted as no effluent was discharged through this FDP during Q4 therefore no compliance issues.
   - East Dike Discharge FDP ST-MMER-3: Effluent was discharged in Q4 with no exceedances.

5. 2022 Annual Effluent Monitoring Report:
   - Report was submitted on time and no compliance issues noted.

6. 2022 Annual EEM Report:

- Report was submitted on time and no compliance issues noted.

ECCC Files Regarding Reported 2022 Spills:

1. 2022-145 – Lead agency CIRNAC - Suspended Solids exceedance in MEMER 2022 second quarter - File closed- Warning Letter Issued under the MDMER
2. 2022-236 – Lead Agency CIRNAC - Short term Suspended Solids release from marshalling area of Meadowbank's Baker Lake Oil Handling Facility to Baker Lake – File Closed – No Enforcement Action Taken under Fisheries Act 36(3)
3. 2022-544 – Lead Agency CIRNAC - 29000L Diesel Land Spill at KM 87 on the 110 KM All Weather Access oad – File Open – CEPA 201 and E2 Regs

> ***Agnico Eagle's Response:*** *Agnico Eagle acknowledges ECCC's assessment of the 2022 compliance at Meadowbank Site. Response to Warning letter as detailed above was submitted on June 16, 2023.*

5.3 Whale Tail Compliance Monitoring

Comment: No authorizations from ECCC have been issued.

The AEM Whale Tail Project is captured under several pieces of ECCC legislation such as subsection 36(3) of the *Fisheries Act, Metal and Diamond Mining Effluent Regulations (MDMER), Canadian Environmental Protection Act (CEPA), Environmental Emergency Regulations, Cross-border Movement of Hazardous Waste and Hazardous Recyclable Material Regulations, Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations,* and *Greenhouse Gas Pollution Pricing Act/Output-Based Pricing System Regulations.* In 2022, one on-site inspection was planned but got cancelled due to limited resources.

MDMER

The Project is subject to the MDMER. The purpose of the MDMER is to authorize a deposit of certain deleterious substance(s) into water frequented by fish while monitoring the environmental effects of those deposits to ensure that deleterious substances are not released in quantities or concentrations that could result in harmful effects on waters frequented by fish. To do this, certain effluent deposit conditions (concentrations, limits and parameters) apply so that regulatees are exempted and protected from the more stringent prohibition of subsection 36(3) under the Fisheries Act. Samples of the effluent by AEM must be taken and tested at the identified Final Discharge Point (FDP) to ensure the above conditions are met on a scheduled basis and reported. The seven current FDPs are as follows:

1. FDP ST-MDMER-5: Whale Tail North Basin Dewatering into Whale Tail Lake South Basin and/or; A53 dewatering Whale Tail Lake South Basin Phase 1
2. FDP ST-MDMER-6 Whale Tail North Basin Dewatering into Mammoth Lake Diffusor
3. FDP ST-MDMER-7: Pumping Quarry 1 contact water to Mammoth Lake Diffusor and/or; Pumping water from Attenuation pond discharged to Mammoth Lake Diffuser.
4. FDP ST-MDMER-8: Pumping Whale Tail South to Mammoth Lake and/or; Attenuation Pond Discharge to Mammoth Lake
5. FDP ST-MDMER-9: Pumping Quarry 1 contact water to Mammoth Lake and/or; Attenuation pond discharged to Mammoth Lake
6. FDP- ST-MDMER-10: Pumping Exploration Stormwater Storage Pond AP-5 to Nemo Lake
7. FDP-ST-MDMER-11: Discharge water from the IVR to Whale Tail Lake and/or; Discharge water from Attenuation Ponds to Whale Tail Lake.

The MDMER requires reports to be submitted in ECCC's online database (Mine Effluent Reporting System - MERS) which are reviewed by an assigned Enforcement Officer on a quarterly basis. The quarterly administrative regular report verifications are conducted to ensure that the sampling and testing has been conducted in accordance with the MDMER and ensuring the reports are submitted on time. Each Enforcement Activity includes an administrative report verification of each quarterly report which are due 45 days at the end of each quarter: 1st Quarter (due May 15), 2nd Quarter (due Aug 14), 3rd Quarter (due Nov 14) and 4th Quarter (due Feb 14), as well as an administrative report regular verification of the 2022 Annual Effluent Monitoring Summary Report (due March 31). Furthermore, an administrative report regular verification was completed on the Environmental Effects Monitoring (EEM) 2022 Annual Report (information related to effluent and water quality monitoring studies) and as part of this verification the officer submitted a copy of the report to the EEM Coordinator for review to also confirm compliance.

In 2022, AEM submitted all required MDMER reports:

1. First Quarter:
    - Report submitted on time.
    - Only one FDP active in Q1
    - FDP-ST-MDMER-11: Effluent was discharged in Q1 with no exceedances.
    - The following non-compliance was determined:
        a) 14(2)(a) – AEM failed to select and record the sampling date not less than 30 days in advance of collecting the acute lethality grab sample on January 10, 2022 from FDP-ST-MDMER-11– Warning Letter Issued
        b) 14(2)(a) – AEM failed to select and record the sampling date not less than 30 days in advance of collecting the acute lethality grab sample on March 14, 2022 from FDP-ST-MDMER-11– Warning Letter Issued

2. Second Quarter:
    - Report submitted on time.
    - Only one FDP active in Q2
    - FDP-ST-MDMER-11: Effluent was discharged in Q2.
    - The following non-compliance was determined:
        c) 4(1) MDMER - Deposit of a deleterious substance exceeding the maximum authorized concentration set out in item 1 (Arsenic), column 4, Table 2, Schedule 4, MDMER
        d) 4(1)(a) – AEM Arsenic monthly (April 2022) mean concentration (0.3145mg/l) exceedance in excess of the maximum authorized monthly mean concentration (0.30mg/L) in a grab sample. Also reported as Spill Report 2022-156 – Warning Letter Issued.

3. Third Quarter:
    - Report submitted on time.
    - Only one FDP active in Q3
    - FDP-ST-MDMER-11: Effluent was discharged in Q3 with no exceedances.
    - No non-compliance was determined

4. Fourth Quarter:
    - Report submitted on time.
    - Only one FDP active in Q4
    - FDP-ST-MDMER-11: Effluent was discharged in Q4 with no exceedances.
    - No non-compliance was determined.

5. 2022 Annual Effluent Monitoring Report:
    - Report was submitted on time and no compliance issues noted.

6. 2022 Annual EEM Report:
    - Report was submitted on time and no compliance issues noted.

<u>ECCC Files Regarding Reported 2022 Spills:</u>

1. 2022-108 – Lead agency CIRNAC – 40L Hydraulic Oil & 3L Diesel Fuel Spill on Mammoth Lake ice surface from Drilling activity - File closed- – No Enforcement Action Taken under Fisheries Act 36(3)
2. 2022-156 – Lead Agency CIRNAC – Arsenic Exceedance from FDP-ST-MDMER-11 to Whale Tail Lake – File Closed – Warning Letter issued under MDMER
3. 2022-087 – Lead Agency CIRNAC – 1L Hydraulic Oil spill on Mammoth Lake ice surface from Dozer – No Enforcement Action Taken under Fisheries Act 36(3)
4. 2022-066 – Lead Agency CIRNAC – 20L Hydraulic Oil spill on Mammoth Lake ice surface from Drilling activity – No Enforcement Action Taken under Fisheries Act 36(3)

Agnico Eagle's Response: *Agnico Eagle acknowledges ECCC's assessment of the 2022 compliance at Whale Tail Site. Response to Warning letter as detailed above was submitted on July 13, 2023.*

6 Transport Canada (TC)

6.1 Marine Safety and Security

6.1.1 Compliance and Inspections

Comment: On onsite of the Project's Oil Handling Facility (OHF) was completed in October 2022. No issues or concerns were identified from the inspection. The Project was in compliance with the regulatory requirements of part 8 of *the Canada Shipping Act, 2001* (CSA 2001) and the Environmental Response Regulations.

An inspection of the Project's marine facility was last conducted in 2021. The facility was in compliance with the Marine Transportation Security Regulations.

Agnico Eagle's Response: *Agnico Eagle acknowledges Transport Canada's assessment of the 2022 compliance period.*

6.1.2 Information regarding the Oil Pollution Emergency Plan (OPEP) and Oil Pollution Prevention Plan (OPPP) for the Project

Comment: For the information of the Board and the Proponent, under section 12 of the Environmental Response Regulations passed pursuant to CSA 2001, there is a requirement for the owner of an OHF to complete annual reviews and if necessary update the Project's Oil Pollution Emergency Plan (OPEP) and Oil Pollution Prevention Plan (OPPP). If plans are updated, they must be submitted to Transport Canada no later than one year after the update. As required under the CSA 2001, the facility will need to notify Transport Canada of proposed changes to the OHF's operations relating to the loading or unloading of oil to or from vessels (180 days in advance of the change). The facility is also required to submit a revised OPEP/OPPP 90 days before a change in operation.

Recommendation: Transport Canada recommends to the Board and the Proponent that an up-to-date OPEP/OPPP continue to be included in future annual reports for the Meadowbank Complex.

Agnico Eagle's Response: *Agnico Eagle acknowledges Transport Canada's comment and will continue to include the most up to date OPEP/OPPP as part of future annual reports.*

6.1.3 Additional Information – Marine Safety and Security:

Comment: Transport Canada would like to remind the Proponent of two particular pieces of information regarding marine safety and security:

- Before the facility interfaces with a foreign flagged vessel or a Canadian flagged vessel on an international voyage, AEM is required to comply with the Marine Transportation Security Act and Regulations.
- Marine shipping standard operating procedure: Vessel operators serving the Project should be made aware of the 2023 Annual Notice to Mariners, and in particular section A2 Marine Mammal Guidelines and Marine Protected Areas and section 7A Voyage Planning for Vessels Intending to Navigate in Canada's Northern Waters (see: Annual Notice to Mariners at https://publications.gc.ca/collections/collection_2023/mpo-dfo/Fs151-4-2023-eng.pdf).

Agnico Eagle's Response: *Agnico Eagle appreciates Transport Canada's reminders regarding marine safety and security and have forwarded this information to the shipping companies Group Desgagné's and Woodward to ensure that all applicable regulations are being followed.*

6.2 Transportation of Dangerous Goods

6.2.1 Inspections and Compliance

Comment: Transport Canada did not conduct a Transportation of Dangerous Goods (TDG) inspection, either remotely or on-site, of the Project in 2022. Transport Canada's TDG group did not receive any complaints or concerns about the Project in 2022. No enforcement actions were undertaken.

Agnico Eagle's Response: *Agnico Eagle acknowledges Transport Canada's comment.*

7 Health Canada

7.1 Cited References

References: 2022 Annual Monitoring Report, Appendix 48: 2022 Wildlife and HHRA Country Foods Screening Level Risk Assessment Plan v8

Comment: Use of outdated guidance to support the human health risk assessment (HHRA) Country Foods Screening Level Risk Assessment Plan.

Some of the HC guidance documents cited in Appendix 48 have not been updated to their most contemporary versions (e.g., Health Canada 2010, 2012). HC notes that the young child or toddler receptor described in Section 1.11.2 (age 7 months – 4 years) differs from current HC guidance for defining this age group (i.e., 6 months to <5 years). With respect to Table 5 of Appendix 48, more recent sources of country food consumption rates that are applicable to the Kivalliq Region might also be available and are recommended to be used for future revisions of the plan.

Conclusion/Request:

1. HC recommends that outdated HC guidance is replaced with updated versions (where applicable), such as the following:
   - Health Canada. 2019. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Human Health Risk Assessment;
   - Health Canada. 2021. Federal Contaminated Site Risk Assessment in Canada: Guidance on Human Health Preliminary Quantitative Risk Assessment (PQRA), version 3.0;
   - Health Canada. 2021. Federal Contaminated Site Risk Assessment in Canada: Toxicological Reference Values (TRVs), version 3.0.
2. If more recent country food consumption data are available and are representative of the Kivalliq Region, HC recommends updating Table 5 and the risk assessment accordingly.

   Agnico Eagle's Response: *Agnico recognizes this comment and will update these references as applicable to the established country foods assessment pathways in advance of the next assessment (2024).*

7.2 HHRA Problem Formulation – Exposure Pathways and Contaminants of Potential Concern (COPCs)

References: 2022 Annual Monitoring Report, Section 8.14.1.4 – Air Quality Monitoring - Community Engagement, PDF pg. 365

2022 Annual Monitoring Report, Appendix 48: 2022 Wildlife and HHRA Country Foods Screening Level Risk Assessment Plan Version 8, Section 1.11 – Human Health – Country Foods Assessment, Problem Formulation, PDF pg. 28-30

Comment: The rationale provided is insufficient to support the exclusion of fish and berries in the Country Foods Screening Level Risk Assessment Plan and the screening of certain COPCs.

The specific country food items to be evaluated in the Country Foods Screening Level Risk Assessment Plan are listed in Section 1.11.1 of Appendix 48 and include caribou and Canada goose. Fish was excluded due

to the “no fishing policy” at the project site and because fish are non-migratory. However, mercury is required to be assessed under Whale Tail Certificate Condition 63 and sampling under the country foods plan will encompass Whale Tail sampling locations in 2022 (as per Appendix 48, PDF pg. 42). This implies the consumption of fish should also be considered in the potential exposure pathways or further information should be provided regarding the integration of results from the country foods plan with those from the Mercury Monitoring Plan (Appendix 53).

Likewise, berries were excluded from the country foods HHRA plan due to the rationale that public access is prohibited past km 85 on the access road. It is indicated on PDF pg. 365 of the 2022 Annual Monitoring Report that a berry picking session was held with harvesters in August 2022 to help inform dust mitigation activities. Should the Inuit Qaujimajatuqangit (IQ) shared by harvesters support inclusion of berries within the country foods list for assessment, the plan should be updated accordingly.

Finally, HC notes that it is not appropriate for a chemical to be screened out of a quantitative HHRA based on a rationale that the predicted concentrations are less than 10% above background (as proposed on PDF pg. 30 of Appendix 48), as there is no established justification that such concentrations would not have the potential to impact human health. A rationale would be recommended on a chemical-specific basis as well as a site-specific basis (Health Canada, 2019).

Conclusion/Request:

1. HC recommends including consumption of fish in the potential exposure pathways for the Country Foods Screening Level Risk Assessment Plan or providing further justification for its exclusion from the country foods plan.
2. HC supports updating the Country Foods Screening Level Risk Assessment Plan to include berries if IQ indicates potential for a complete exposure pathway.
3. HC recommends that additional chemical-specific rationale be provided for screening out any COPCs where the use of maximum measured baseline + 10% is proposed as a screening value.

   Agnico Eagle’s Response: *Agnico Eagle appreciates this review, and will present a revised Wildlife and HHRA Country Foods Screening Level Risk Assessment Plan incorporating responses to Health Canada’s recommendations (as detailed below) in March, 2024, which is ahead of the next scheduled assessment (summer 2024).*

   1. *Agnico Eagle notes that the evaluation of mercury in fish, as required under NIRB Project Certificate No. 008 Condition 63, is conducted as a component of the Whale Tail Mine Mercury Monitoring Plan (MMP; most recently, updated as Version 4, March 2023 and provided as Appendix 54 of the 2022 Meadowbank Complex Annual Report). The annual Mercury Monitoring Report describes the assessment of tissue concentrations, and is provided as an*

appendix of the Annual Report to the NIRB. Agnico Eagle will clarify this reporting structure in the next country foods risk assessment report, and include a summary of results. However, at this point, hazard quotient calculation is not planned, as described in the MMP. Instead, the data analysis for mercury will focus on comparison of analytical results with predictions made in the FEIS Addendum for the Whale Tail Pit Expansion Project and supporting documents. Specifically, Azimuth (2019)[3] modeled expected concentrations in fish tissue (average of 1.55 mg/kg wwt in a 550 mm Lake Trout), and addressed the potential for impacts based on Health Canada's recommended consumption rates. Further risk-based analyses will be implemented in the event that monitoring results exceed model predictions.

2. *Agnico appreciates this insight and recognizes the apparent discrepancy. In advance of the next country foods risk assessment, Agnico Eagle will review IQ to confirm whether consumption of berries is a complete exposure pathway for this project and will update the model accordingly. Agnico Eagle has also reviewed the last HHRA report (2021) and notes that all measured soil concentrations for AWAR monitoring locations met the identified health-based screening values[4,5], so no COPCs would be identified for berries under that evaluation.*

3. *Agnico Eagle recognizes this recommendation, and moving forward, will adjust these screening criteria to reflect site-specific measured background concentrations, rather than background + 10%.*

7.3 Conclusion/Request: HC requests that future monitoring reports provide Lake Trout sampling data from baseline (i.e., 2015 and 2018) and post-impoundment (i.e., 2020) sampling events in Appendix C of the Lake Trout Sampling Data

References: 2022 Annual Monitoring Report, Appendix 53: Whale Tail 2022 Mercury Monitoring Program Report, Appendix C.

Comment: Additional data recommended for the Mercury Monitoring Program Report

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[3] Azimuth, 2019. Technical Memorandum – Revised Predictions of Fish Mercury Concentrations in Whale Tail Lake (South Basin). August 19, 2019.
[4] CCME (Canadian Council of Ministers of the Environment) 2022. Canadian Environmental Quality Guidelines – Soil Quality Guidelines for the Protection of Environmental and Human Health (residential). Accessed February, 2022.
[5] BC CSR, 2022. BC Reg. 375/96 British Columbia Contaminated Sites Regulation Schedule 3.1 Part 1 - Matrix Numerical Soil Standards (human health - agricultural/low density residential). Accessed February, 2022.

A small-bodied fish mercury database is provided in Appendix C of the Whale Tail 2022 Mercury Monitoring Program Report, but data for Lake Trout pre- and post-impoundment sampling events were not provided.

Conclusion/Request: HC requests that future monitoring reports provide Lake Trout sampling data from baseline (i.e., 2015 and 2018) and post-impoundment (i.e., 2020) sampling events in Appendix C of the Mercury Monitoring Program Report. As was done for the small-bodied fish, future monitoring data can be added to the Lake Trout database.

> ***Agnico Eagle's Response:*** *Agnico Eagle agrees with the comment from HC about providing Lake Trout sampling data from baseline (i.e., 2015 and 2018) and post-impoundment (i.e., 2020) sampling events in Appendix C of the Mercury Monitoring Program Report.*
>
> *Lake Trout sampling data from baseline (i.e., 2015 and 2018) and post-impoundment (i.e., 2020) sampling events were provided in Appendix C1 (large-bodied fish database) in the 2021 Mercury Monitoring Program Report (Azimuth, 2022a). No Lake Trout were collected in 2021 or 2022 and the next sampling event is planned for 2023. The plan is to add the 2023 Lake Trout data to the existing large-bodied fish database and provide the updated database in the 2023 Mercury Monitoring Program Report.*
>
> ***Reference:*** *Azimuth. 2022a. 2021 Mercury Monitoring Program – Whale Tail Pit Project. Report prepared by Azimuth Consulting Group, Vancouver, BC for Agnico Eagle Mines Ltd., Baker Lake, NU. March 2022.*

7.4 Decision-Making Framework for Implementing the Mercury Monitoring Program

References: 2022 Annual Monitoring Report, Appendix 54: Whale Tail Mercury Monitoring Plan Version 4, Table 5-2 (PDF pg. 26)

Azimuth 2017. Whale Tail Pit Project: Predicted changes in fish mercury concentrations in the flooded area of Whale Tail Lake (South Basin). Prepared for Agnico Eagle Mines Ltd. 74 pp.

Azimuth 2019. Technical Memorandum. Whale Tail Permitting Support – Revised predictions of fish mercury concentrations in Whale Tail Lake (South Basin) FINAL. 15 pp.

Comment: Additional details are recommended in the future monitoring scenarios for managing methylmercury risks.

In Appendix 54, Table 5-2 outlines four scenarios and the implications for managing methylmercury risks. Scenario 3 (Reservoir Effects Exceeds Predictions and is Ongoing) includes limited details relative to other scenarios and could be updated for consistency, i.e.:

- Lake Trout mercury concentrations exceed predictions, and
- evidence from other media (e.g., water, small-bodied fish) indicate the reservoir effect is ongoing (i.e., no indication that concentrations are decreasing).

Also, Scenario 4 (Reservoir Effect Exceeded Predictions and have Decreased to New Baseline) does not account for a situation where both the reservoir effect and the "new baseline" are above predictions. Although HC acknowledges conservatism build into the mercury modelling, the original peak mercury predictions (Azimuth 2017) were updated in 2019 (Azimuth 2019) due to higher anticipated methylmercury production from modified activities, so further increases in peak mercury concentration (and subsequent "new baseline") remain possible. Sediment monitoring results in the 2022 Annual Monitoring report (PDF pg.182) also indicate concentrations of sulphate above Final Environmental Impact Statement predictions that could potentially drive methylmercury production by sulphate-reducing microbes. As such, it is recommended that the decision-making framework consider this additional scenario.

Finally, one of the key decision criteria in Table 5.2 is whether Lake Trout mercury concentrations are above or below predictions. It is unclear how the decision-making framework and reliance on the predicted concentration informs a decision on potential risks to human health (i.e., due to fish consumption). HC notes that a peak concentration of 1.55 mg/kg wet weight was used with a standard lake trout size of 550 mm to calculate tolerable servings per month (Azimuth 2019), however it is unclear how the monitoring decision framework interacts with this assessment or informs any need for mitigation or management to protect fish consumers.

Conclusions/Request:

1. HC recommends that Table 5-2 be updated to describe all scenarios with the same level of detail, including a scenario where the new baseline exceeds peak mercury predictions.

Agnico Eagle's Response: *Agnico Eagle agrees with HC's recommendation to update Table 5-2 in future versions of the Whale Tail Mercury Monitoring Plan to describe all scenarios with the same level of detail, i.e., for Scenario 3 the following details would be included:*

- *Lake Trout and/or water Hg concentrations exceed predictions, and*
- *evidence from other media indicate the reservoir effect is ongoing (i.e., no indication that concentrations are decreasing).*

Agnico Eagle agree with the comment from HC to include an additional scenario to consider a situation where both the reservoir effect and the "new baseline" exceed predictions in future versions of the Whale Tail Mercury Monitoring Plan. This additional scenario will be described with the same level of detail as the other scenarios.

2. HC requests that future versions of the Whale Tail Mercury Monitoring Plan include additional rationale for using Lake Trout predicted Mercury concentrations for decision-making and explain how the decision-making framework is used to determine the potential for significant risks to human health due to fish consumption.

Agnico Eagle's Response: *As per HC's request, Agnico Eagle plan to include additional rationale to future versions of the Whale Tail Mercury Monitoring Plan for using Lake Trout predicted Hg concentrations for decision-making and explain how the decision-making framework is used to determine the potential for significant risks to human health due to fish consumption, i.e., Fish consumption guidance will be updated if the results from the monitoring program indicate Hg concentrations in Lake Trout have exceeded the predicted concentrations. The number of meals per month for adults and women of child-bearing age were presented in the 2019 Technical Memorandum (Azimuth 2019) for a range of Hg concentrations in Lake Trout. The range of Hg concentrations spanned from baseline to the upper 95th percentile of peak predicted Hg concentrations (1.76 µg/g). Using the upper 95th percentile, the number of servings per month of Lake Trout (550 mm) would be approximately three for adults in general and one for women of child-bearing age (based on Health Canada 2007).*

7.5 Noise Monitoring at Locations Protective of Off-Duty Workers

References: 2022 Annual Monitoring Report, Appendix 49 – Meadowbank and Whale tail 2022 Noise Monitoring Report.

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

HC acknowledges and supports the Proponent's stated intention to fully implement the Noise Monitoring and Abatement Plan through two surveys in 2023 after data were missed for 2022 (Appendix 49, PDF pg. 3).

HC also sees value in a monitoring station located near the camp accommodations for off-duty workers to enable characterization of exposure for the closest human receptors. HC notes that adverse impacts to 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). As such, HC is of the view that the

Proponent's noise monitoring program should include noise monitoring at off-duty worker locations to allow for the implementation of additional mitigations should noise levels inside of dwelling spaces (i.e., sleeping quarters) exceed noise guideline levels.

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

Conclusion/Request:

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's Response: *Agnico Eagle acknowledges Health Canada's response. Agnico Eagle will complete a noise survey campaign. Results and mitigation measures will be provided in the 2023 annual report.*

7.6 Monitoring for Non-Threshold Air Quality Contaminants

References: 2022 Annual Monitoring Report, Appendix 50 – Meadowbank and Whale tail 2022 Air Quality and Dust Monitoring Report.

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.

HC considers nitrogen dioxide (NO2) and particulate matter with diameter less than 2.5 µm (PM2.5) non-threshold air contaminants, 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. Despite measured concentrations of air quality contaminants generally remaining below the CAAQS or other relevant guidelines (e.g., Appendix 50, Fig. 5 and Fig. 16), HC emphasizes the importance of reducing air emissions as much as possible, especially for non-threshold air contaminants such as PM2.5 and NO2. Also, the applicable air quality standards, such as the CAAQS, should not be considered as "pollute up-to" levels and the project is encouraged to strive for continuous improvement.

In addition, HC noted the continuous NO2 monitoring instrument was only active from January to July due to mechanical failure (Appendix 50, PDF pg. 37). HC encourages efforts to prevent future instrument

failures (e.g., securing spare instrument parts - Appendix 50, pg. 54), and the development of additional strategies to ensure robust future monitoring datasets. Considering the non-threshold nature of NO2, HC would also recommend using the 2025 CAAQS value for future reporting purposes.

Conclusion/Request:

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's Response:

1. *As per the approved Air Quality and Dustfall management plan, Agnico Eagle is already comparing air quality monitoring results to the current CAAQS. Agnico Eagle will continue to provide comparisons to the current CAAQS in future annual reports.*

2. *Agnico Eagle concurs with this approach and is continually reviewing air quality management measures onsite, as described in the most recent Air Quality and Dustfall Monitoring Plan (Version 6; March 2022). In addition, the implementation and effectiveness of all prescribed air quality controls in constraining Project-related impacts to the scope of FEIS predictions is assessed annually in the Meadowbank Complex Post-Environmental Assessment Monitoring Program (Section 12 of the 2022 Annual Report to the NIRB).*