APPENDIX 2
SELF ASSESSMENT OF SIGNIFICANCE AGAINST NIRB CRITERIA – NEWCASTLE MAX

Table 1. Capesize Trial 2023 – Self Assessment of Proposed Amendment to Approved Project

<table>
<tr><th>Self-Assessment Criteria</th><th>Baffinland Self Assessment</th></tr>
<tr><td>A sufficiently detailed scope of project components and activities to be undertaken during the proposed modification, contrasted with the scope of the original project as previously considered by the NPC, the NIRB and/or the NWB</td><td>The NIRB's approval of the Early Revenue Phase considered the use of up to 58 vessels, sized Handymax to Post-Panamax. The Production Increase Proposal series of approvals considered 80 – 86 vessels, sized Handymax to Capesize. The use of Cape size vessels was specifically assessed and submitted to the NIRB on March 5, 2023 as a response to the NIRB's 2019-2020 Mary River Project NIRB Annual Monitoring Report and Recommendations.

In 2023 two (2) Cape size (Cape size) vessels would be chartered to complete two round trips each during the shipping season. These trips would occur in open water. A Cape size vessel would be capable of carrying up to 204kt. With the average vessel load out of Milne Port being 76,862 kt in 2021, the use of Cape size could reduce the number of maximum number of vessels needed by 7:

<table>
<tr><td>Cape size Capacity</td><td>209,000t</td></tr>
<tr><td>X 4 trips (2 trips by 2 vessels)</td><td>836,000t</td></tr>
<tr><td>Avg Vessel Capacity in 2021</td><td>76,862t</td></tr>
<tr><td>Total 2022 Cape size capacity divided by Avg Vessel capacity in 2021</td><td>11 (10.87)</td></tr>
<tr><td>Difference between Cape size trips (4) and 2021 Avg vessel trips (11)</td><td>7</td></tr>
</table>

Only minor modifications to Milne Port ore dock are required (installation of additional tidal gauge screen to be reviewed live by vessel captains, installation of new fenders previously and bollards above high water mark).</td></tr>
<tr><td>Information demonstrating the proponent has considered the significance of the potential impacts associated with the proposed modification using the factors for determining significance as set out in s. 90 of the NuPPAA reflecting any other guidance or information requirements of the NPC, the NIRB and/or the NWB to evaluate the significance of the proposed modification;</td><td>See Table 2.</td></tr>
<tr><td>The proponent should also identify whether any new or modified permits, licenses or</td><td>No new or modified permits, licenses or other approvals are required to support the proposed activities.</td></tr>
</table>

other approvals are anticipated to be necessary for the proposed works or activities	• Appendix P of the North Baffin Regional Land Use Plan does not specify vessel size; Cape size trial conforms to Appendix P and does not require amendment. • There is no Project Certificate Term and Condition that dictates vessel mix or maximum vessel size. No amendment to the PC is required; the use of Cape size was explicitly assessed and submitted to NIRB in March 2021 • There are no implications for water or waste, no amendment or modification is required to the Type A or B Water License. • There are no implications on the Ore Dock #1 FAA. • There are no other permits, licenses or other approvals relevant to this activity.
For proposed modifications to approved projects with a NIRB Project Certificate, information should also be provided as to whether the grounds for a reconsideration of the existing Project Certificate terms and conditions have been met	The proposed modification to the shipping plan for 2022 does not meet the definition of 'project' under the Nunavut Planning and Project Assessment Act (NuPPAA). The use of two Cape size vessels traveling at restricted speeds (9 knots) produces less acoustic disturbance than what was assessed for Post-Panamax traveling at greater speeds (14 knots). Further, the reduction in the total number of vessels required by using larger vessels reduces the season's cumulative noise generation, which is an improvement. Accordingly, the proposed activities are better characterized as an environmental improvement. According to the NIRB's April 8th guidance document 'Approaches to Assessment of Proposed Amendments to Approved Projects', the proposal is manifestly insignificant and does not require submission to the NPC or NIRB for further review. The Cape size trial activities will be subject to Baffinland's existing marine monitoring program. No changes to the monitoring program are required to account for the modified activities.

Table 2. Change in Factors Related to Section 90 (NuPPAA) Significance Criteria

Section 90 NuPPAA Significance Criteria		Change in Factors Related to Significance of Impacts
a	Size of Geographic Area and Wildlife Habitats Likely to be Affected	**No change.** All activities and components associated with the larger vessel transits will be located entirely within the shipping lane (Baffin Bay-Eclipse Sound-Milne Inlet) considered under the Approved Project. Therefore, no changes are predicted for any VEC with respect to the size of the geographic area and wildlife habitats likely to be affected.
b	Ecosystemic Sensitivity of the Area	**No change.** The Eclipse Sound and Milne Inlet are home to the Eclipse Sound summer stock of narwhal. The area is known to host narwhal calving activities throughout the summer. The larger vessels will transit within the existing project boundaries and no new environmental sensitivities have been identified. **Note -** Given their close co-relationship with sea-ice, narwhal are predicted to be highly sensitive to effects of climate change. Direct and indirect effects of climate change on narwhal include increasingly erratic sea ice activity, seasonal and permanent sea ice decline, increased human activity in narwhal habitat (commercial fisheries, shipping), colonization of narwhal home range by species not previously present in the high north including predators, and impacts on food chain and prey availability (affecting narwhal foraging behaviour and energetics). In the FEIS (BIM 2012), the significance of potential impacts on marine mammals was evaluated in light of the state of health of the ecosystem and its predictable evolution, taking account global climate change. Therefore, the ecosystemic sensitivity of the Arctic relevant to climate change was accounted for in the original FEIS, and this has not changed since.
c	Historical, Cultural, and Archaeological Significance of Area	**No Change.** The shipping lane passes through Eclipse Sound and Milne Inlet. During the summer months, these waters are occupied by recreational traffic including local hunting boats. Hunters harvest narwhal, ringed seal, bearded seal and Arctic char from the marine environment during the open-water season. The larger vessel transits will be confined to the existing project boundaries; no new features of historical, cultural or archaeological significance will be affected.
d	Size of Human and Animal Populations Likely to be Affected	**No Change.** Vessels will be visible to the community of Pond Inlet (population 1617 (2016)) but they would continue to hug the south coast of Bylot Island and would unlikely be discernable from the Post Panamax vessels that already travel the shipping route. Hunters and land users may see the vessels on the water, or from their cabins along the shipping route at a closer range. While the differences in the size of vessels may not be generally discernable, Pond Inlet residents and hunters will experience up to 7 fewer vessels transiting the waters than they would have otherwise.

		Note - Recent aerial survey results have indicated that narwhal abundance in Eclipse Sound was statistically lower in 2020 and 2021 than in previous survey years (2013, 2016 and 2019) (Golder 2022). However, the combined narwhal abundance in Eclipse Sound and Admiralty Inlet was shown to be similar in 2020 to that observed in previous survey years (2013 and 2019); and was statistically higher in 2021 than in previous survey years (2013, 2019 and 2020) (Golder 2022). Collectively, these results suggest one or more of the following: • A portion of the Eclipse Sound stock occupied the Admiralty Inlet summering ground during the 2020 and 2021 open-water seasons. Potential primary drivers of displacement considered in 2020 included i) acoustic disturbance effects from icebreaking, ii) acoustic disturbance effects from construction activities (e.g., Year 1 of impact pile driving) associated with the Pond Inlet Small Craft Harbour (SCH) Project, and/or iii) increased killer whale presence in the RSA (Golder 2021c). Note that open-water shipping was not identified as a likely contributing factor to the observed decline in 2020 for reasons identified in Baffinland (2021), and that rationale remains valid for 2021. • Favorable environmental conditions (e.g., prey availability, ice coverage, lower predation pressure) during the spring and/or summer seasons in Admiralty Inlet may have attracted a larger influx of narwhal from the Eclipse Sound summer stock, and potentially from other proximal summer stock areas (i.e., Somerset Island, East Baffin Island) during the 2020/2021 open-water seasons. • There is a natural exchange of narwhal between the two putative summer stock areas (i.e., Eclipse Sound and Admiralty Inlet) during the open-water season. This has been previously suggested by DFO based on historical aerial survey results (Doniol-Valcroze et al. 2015, 2020; DFO 2020b) and telemetry studies (DFO 2020b). Natural exchange of narwhal between these stock areas during the open-water season is also strongly supported by available Inuit Qaujimajatuqangit (IQ) (NWMB 2016a, 2016b; QWB 2022). As noted in Golder (2021c), the above factors may have independently or cumulatively contributed to the observed decrease in narwhal numbers in Eclipse Sound. Prior to the start of the 2021 shipping season, it was not possible to determine whether one of these factors alone was the source of the narwhal decline in Eclipse Sound, whether the combined influence of one or more of these factors was responsible, or whether the observed change was natural in occurrence. Baffinland's commitment to the community of Pond Inlet to not undertake icebreaking during the early shoulder season of 2021 provided an opportunity to determine whether Project activities were the cause of the

		observed changes in narwhal abundance in Eclipse Sound in 2020 (Baffinland 2021; Golder 2021c). The precautionary and temporary adaptive management measure applied in 2021 eliminated the possibility of acoustic disturbance to narwhal from icebreaking during the timing of narwhal migration into Eclipse Sound in 2021, and also served to avoid the potential for cumulative noise effects associated with the Pond Inlet SCH Project. As a result of this, underwater noise from icebreaking operations was not considered to be an influencing factor on narwhal abundance in Eclipse Sound during the 2021 season. It also provides additional confidence that observed changes in 2020 were likely not a result of Project activities (i.e., early shoulder season icebreaking). With respect to underwater noise generated by the SCH construction in Pond Inlet, DFO confirmed that impact pile driving undertaken in 2021 was limited to seven days between 24 June and 01 July (DFO 2021), prior to breakup of the landfast ice and what DFO stated to be the possible arrival of narwhal into Eclipse Sound. DFO therefore concluded that underwater noise from pile driving could not be considered an influencing factor on narwhal abundance in Eclipse Sound or nearby waters during the 2021 season (DFO 2021). No further analysis on this can be completed given the lack of publicly available data. Any additional analysis would remain the responsibility of the Proponent for the SCH construction Project and associated regulatory authorities (i.e., DFO). <u>Other Considerations:</u> For the past three consecutive years (2019-2021), combined surveys of both Admiralty Inlet and Eclipse Sound summering stock areas have been undertaken. The primary impetus for running the combined stock surveys (as opposed to the Eclipse Sound summer stock only) was based on available IQ, which indicates that the geographic and genetic distinction between these two summering stocks may be invalid (NWMB 2016a; 2016b; QWB 2022). DFO has also been investigating the extent to which there is a natural exchange of narwhal between these stock areas during the open-water season (Doniol-Valcroze et al. 2015, 2020; DFO 2020b). Natural exchange between the two summering areas was proposed as a possible reason why the 2013 survey results for Admiralty Inlet (~35,000 narwhal) and Eclipse Sound (~10,000 narwhal) differed substantially from previous survey results for the same stocks (18,000 for Admiralty Inlet in 2010 and 20,000 for Eclipse Sound in 2004) (Doniol-Valcroze et al. 2015). All of these surveys (i.e., 2004, 2010, 2013) occurred prior to the start of Baffinland iron ore shipping operations. In summary, despite the adaptive management measure of eliminating underwater noise from icebreaking in 2021, results from the 2021 monitoring programs again indicated lower narwhal numbers in Eclipse Sound during the 2021 shipping season. While underwater noise from open-water shipping cannot be ruled out as a potential cause of narwhal displacement from the RSA, monitoring results collected to date demonstrate that responses to Project-related shipping activities are temporary and localized, suggesting that there are likely

		other factors contributing to the observed change (Austin et al. 2022a, 2022b; Baffinland 2021; Golder 2020a, 2021b). Given that the combined stock estimate for Admiralty Inlet and Eclipse Sound indicates that the regional narwhal population remains stable relative to pre-shipping conditions, and in consideration of the available IQ regarding the degree of exchange between narwhal groups on their summering grounds, the observed decrease in narwhal relative abundance in Eclipse Sound likely reflects natural exchange between the two putative stock areas, or alternatively, that animals shifted to Admiralty Inlet due to more favorable ecological conditions related to sea ice conditions, prey availability and/or predation pressure (Chambault et al. 2020; Franeira et al. 2017; Heide-Jorgensen et al. 2021; Higdon et al. 2012; Laidre et al. 2008, 2015; Lefort et al. 2020; Steiner et al. 2019, 2021), all of which are known to be influenced by a rapidly changing climate in the Arctic (Stroeve et al. 2012; IPCC 2013; Overland and Wang 2013). To better understand what is occurring, additional engagement and monitoring with Inuit stakeholders and regulatory agencies are needed, inclusive of collaborative regional scale monitoring that looks at the population dynamics of the entire Baffin Bay narwhal stock
e	Nature, Magnitude, and Complexity of Impacts	**No Change/Improvement**. While Capesize vessels do have a marginally larger acoustic sound field than Post-Panamax vessels, the use of larger vessels offset the total number of vessels needed in a season to call on Milne Port. Acoustic modeling completed for the FEIS indicated that a Post-Panamax carrier traveling at 14 knots would generate underwater noise capable of resulting in a behavioral disturbance at distances up to 70 km from the source (Zykov and Matthews (2010). Acoustic modeling undertaken in support of the FEIS Addendum for Phase 2 (BIM 2018) indicated that a Capesize carrier traveling at 9 knots would generate underwater noise capable of resulting in a behavioral disturbance at distances up to 29.5 km (Quijano et al 2018). The noise field associated with a Cape size vessel traveling at 9 knots would be similar to that of the Capesize vessel described above, and would therefore result in a smaller acoustic footprint than what was predicted in the original assessment (FEIS). Furthermore, the cumulative noise exposure on marine mammals would be slightly lower in 2022 given that the introduction of two Cape size voyages in 2022 would result in a net decrease in the overall number of transits animals would be exposed to during the season. *Quijano, J.E., C. O'Neill and M. Austin. 2018. Underwater Noise Assessment for the Mary River Project – Phase 2 Proposal: Construction and operation activities in Milne Port and along the Northern Shipping Route. Document 01621. Vesrion 1.0.* *Zykov, M and M.N.R. Matthews. 2010. Assessment of Underwater Noise for the Mary River Iron Mine Constrtion and Operitona of the mIlne Inlet Port Facility. Version 2.1. Technical report prepared for LGL Limited by JASCO Applied Sciencs.*

f	Probability of Impacts Occurring	**No Change.** The effects of the larger vessel transits are consistent with the Approved Project and will not exceed any significance thresholds or change the determination of significance, including the probability of an impact occurring.
g	Frequency and Duration of Impacts	**No Change.** The effects of the larger vessel transits are consistent with the Approved Project and will not exceed any significance thresholds or change the determination of significance, including the frequency or direction of an impact occurring. In fact, the reduction in overall vessel requirements will reduce the frequency of impacts from shipping transits.
h	Reversibility or Irreversibility of Impacts	**No Change.** The effects of the larger vessel transits are consistent with the Approved Project and will not exceed any significance thresholds or change the determination of significance, including the reversibility or irreversibility of environmental effects.
i	Cumulative Impacts	**No Change.** The cumulative effects assessed for the Approved Project are not evaluated to change as a result of the larger vessel transits.
j	Any Other Factor that the Board Considers Relevant	Baffinland is not aware of any other factor that NIRB considers relevant to the assessment of the significance of environmental effects.