Solomon Amuno
Technical Advisor II
Nunavut Impact Review Board

June 14, 2019

Re: **Oceans North Concerns Regarding the Technical Review Process for Baffinland Iron Mines Corp.'s Phase 2 Development Proposal.**

Dear Solomon,

We are writing in response to the letter sent by Oceans North to the Nunavut Impact Review Board (**NIRB**) on May 21, 2019 as well as the follow up letter sent by the NIRB to Oceans North on June 7, 2019, both of which relate to concerns expressed by Oceans North regarding information requests and meetings external to the NIRB process.

While we respect Oceans North's active engagement in the NIRB reconsideration process, as discussed during the Technical Meeting on April 10, 2019, Baffinland does not agree the requested information is necessary in order to enable a thorough understanding of the Phase 2 Development Proposal and its potential for impacts on the marine environment. For this reason, Baffinland did not commit to providing this information during the first Technical Meeting, and Baffinland continues to be of the view that the NIRB should not require this information to be provided within the reconsideration process. We have provided further rationale for this view in the table below.

Information request as described in May 30, 2019 letter from Oceans North	***Supplemental Baffinland response to information request***
SEL at TTS level along the shipping route including all project related vessels (e.g. 'worst case' 4 ore carrier transit, 2 supply vessel transit, 2 tug transits) during shoulder season and open water (maps e.g. figs E30-41; AND transit simulations 20m off track line figs E42-52)	The maps such as those in Figures E30-E41 were only generated for stationary sound sources. For transiting vessels, sound exposure level (SEL) results were presented in plots of the accumulated sound energy at a stationary receiver located 20 m from the transit route during a vessel passage (Figures E42-E52). The maximum SEL value is reached as the vessel passes its closest point of approach to the receiver. Additional sound energy received from more distant vessels does not appreciably increase the SEL beyond that reached when the nearest vessel is it its closest point of approach. Therefore, we assume that the maximum sound exposure occurs from the single passage of a vessel (or convoy of vessels). It is unreasonable to assume that later transits of different vessels would also approach within 20 m of the same animal and for this reason, we have not modelled such a case.

	In Baffinland's view, the reasonable worst-case scenario for SEL accumulation from transiting vessels has already been modelled; the modelling conducted to assess noise from icebreakers transiting along the northern shipping route in the shoulder season includes a Scenario with two icebreakers transiting through thick ice along with two cape size ore carriers. The SEL thresholds for injury were not exceeded for that max-case scenario. Based on that result, we do not anticipate any realistic scenario, in either shoulder season or open water conditions, in which thresholds for acoustic injury (i.e., permanent threshold shift (PTS)) would be surpassed. Results at the level that would cause a temporary threshold shift (TTS) were not provided, in either the SEL maps for stationary sources or the SEL plots for transiting vessels, because TTS is not considered injury (NOAA 2018). It is evident from the SEL plots for transiting vessels (Figures E42 to E52) that the TTS thresholds were never reached in the considered open water scenarios. This is also true for the shoulder season scenarios (Figures D39 to D76 in the Icebreaking Assessment).
Maps of SPL in 10 dB steps down to RL 100 dB for **all** modeled scenarios (e.g. E1-24)	Maps of SPL in 10 dB steps down to 110 dB have been provided for all modeled scenarios through the supplemental materials provided to the NIRB on May 13, 2019. Maps showing contours down to 100 dB SPL were also provided for two of the modelled scenarios (one cape size ore carrier transiting at 9 knots at Milne Inlet and at Eclipse Sound). These maps provided on May 13, 2019 are the most conservative results of the open water scenarios modelled. The provision of results to a level of 100 dB would require re-modelling, using an expanded model grid, requiring weeks of effort and significant cost and would not provide better information on which to base the environmental assessment. In meetings with DFO during the April 2019 Technical Review meeting, it was agreed that it was not practical, reasonable, or necessary to provide results to 100 dB SPL for all Scenarios. There would be no value added to the assessment by providing these maps, so the additional work was not deemed to be warranted by DFO.

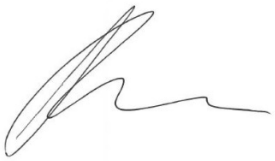
An estimate of the distance to vessels and the received sound levels at which narwhal behaviour changes indicating disturbance or avoidance. If this is not possible, we request the following raw data for the purpose of determining the answer to the above: • Raw acoustic data recorded at active acoustic mooring locations during periods of visual observation at Bruce Head Time. Alternatively, time series of sound pressure levels (e.g. time and SPL data file in 1 second bins). If SPL time series, these should include 10-100 Hz, 100-1000 Hz, and 1000-10000 Hz frequency bands as reported in JASCO, 2018. • Time and focal follow visual data collected during periods when acoustic recording occurred in the Milne Inlet, Koluktoo Bay, Milne Port area. These data might include geographic location, group size, spread, formation, and demographic composition, direction and speed of travel, visible surface behavior.	As discussed during the April 2019 technical meeting, Baffinland is carrying out research during 2019 to investigate this issue. While the results of this work will not be available until after the NIRB Public Hearings for Phase 2, in order to resolve Oceans North's information request, Baffinland can commit to providing regular updates on this work to the MEWG, of which Oceans North is an observing member.

It is our hope that the additional rationale provided in our table above satisfies Oceans North's information requests, however, we would be available to meet with Oceans North in Iqaluit should you wish discuss these matters further prior to, or during, the Technical Meetings.

Since the Technical Meetings in April 2019, Baffinland has met directly with several intervenors, in order to better understand the context for their respective information requests and to provide an opportunity for longer discussions than are practically available within the NIRB process. The approach of arranging meetings with intervenors external to the regulatory process is not unique to Baffinland and is a standard practice within Nunavut review processes. Baffinland confirms that it is following NIRB's advice and will provide a summary to NIRB where any external meetings with intervenors result in the resolution of any issues raised during the NIRB process, in order to ensure transparency. We are also prepared to further discuss and summarize any items resolved as a result of external meetings during the Technical Meetings next week.

We look forward to productive discussions during the Technical Meeting and building more consensus on matters relating to the marine environment as well as other important issues raised during the NIRB's reconsideration process to date.

Sincerely,



Lou Kamermans
Director, Sustainable Development

cc: Kristin Westdal, Oceans North
Ryan Barry, Nunavut Impact Review Board
Cory Barker, Nunavut Impact Review Board
Jared Ottenhof, Senior Manager, QIA
Joshua Arreak, Secretary Manger, MHTO
Megan Lord Hoyle, Baffinland
Grant Goddard, Baffinland