



September 10, 2014

Solomon Amuno
Technical Advisor
Nunavut Impact Review Board
29 Mitik Street, P.O. Box 1360
Cambridge Bay
NU, X0B 0C0

**Re: Baffinland Response to Nunavut Impact Review Board (NIRB) Mary River Project
2013 Annual Monitoring Report**

Dear Solomon,

Thank you for your letter dated August 28th regarding agency comments on Baffinland's 2013 Annual Report to the Nunavut Impact Review Board. Please see our responses to those comments in Attachment 1 of this letter.

If you have any questions regarding our responses, please contact me at oliver.curran@baffinland.com

Sincerely,

A handwritten signature in black ink, appearing to read "Oliver Curran".

Oliver Curran
Director, Sustainable Development

CC
Erik Madsen (BIM)
Jennifer St. Paul Butler (BIM)

Attachment 1: Baffinland Response to Agency Comments on the 2013 Annual Report to the Nunavut Impact Review Board

Baffinland Response to Agency Comments on the 2013 Annual Report to the Nunavut Impact Review Board		
Reference	Comment	Baffinland Response
<i>Nunavut Impact Review Board</i>		
Project Certificate term and conditions 34 and 36 require Baffinland to conduct soil sampling to determine metal levels of soils in areas with berry-producing plants and to establish an on-going monitoring program for vegetation species used as caribou forage (such as lichens) near project development areas prior to commencing operations (respectively).	Soil Sampling: The NIRB requests that Baffinland provide information to confirm whether a consistent depth was maintained for soil sampling. Typically, it is ideal to sample surface soils at different depths in order to understand the accumulation and migration patterns of soil trace metals both in reference and onsite areas. However, in the annual Report, no information was provided which would confirm whether all soil samples collected were from the same depth. The NIRB requests that Baffinland confirm the depths of soil samples taken.	Surface soil samples were collected ≤10 cm deep. This reflects the top layer of rooting where plants may uptake metals.
Project Certificate term and conditions 34 and 36 require Baffinland to conduct soil sampling to determine metal levels of soils in areas with berry-producing plants and to establish an on-going monitoring program for vegetation species used as caribou forage (such as lichens) near project development areas prior to commencing operations (respectively).	Ambiguity between Reference and Onsite Sampling Areas: The NIRB noted that Baffinland's Annual Report did not differentiate the number of samples that were collected from the reference areas and from onsite areas (including Steensby Port and Milne site). The Annual Report did mention the total number of samples retrieved (20 soils, 17 lichens, 14 willow and 4 blue berries) but did not clearly note how many of each were collected from reference or/and onsite areas. This generalization makes it difficult for the NIRB to monitor how current onsite activities may be affecting vegetation health and crucial soil parameters relative to background and reference areas. The NIRB requests that information regarding the collection of samples from onsite and/or reference areas be provided.	<p>The 2013 Terrestrial Ecosystem Annual Report (Appendix G of the 2013 report to NIRB) analyzed the sample results by looking at distance to the Project as a continuous variable (i.e. looked at how metals levels changed in relation to increasing distance from the Project) rather than discrete categories (i.e. near site versus far site). Categorization could occur in the future if it improves communication.</p> <p>Table 6 in the Terrestrial Ecosystem Annual Report lists each of the sample sites and their proximity to the PDA (potential disturbance area). The results of the laboratory analysis of each of the samples is presented in that report's Appendices A to C.</p> <p>The vegetation and soil samples collected in 2012 and 2013 represent background/baseline values prior to operation. Given that construction did not begin on site until April 2013 and activities were relatively limited until the sealift arrived in August; the samples collected in June and July 2013 represent background values. This assumption is supported by the analysis of the vegetation and soil samples, which generally found very little relationship between distance from the Project and trace metals levels (see Section 2.2.2. of the Annual</p>

<p>Project Certificate term and conditions 34 and 36 require Baffinland to conduct soil sampling to determine metal levels of soils in areas with berry-producing plants and to establish an on-going monitoring program for vegetation species used as caribou forage (such as lichens) near project development areas prior to commencing operations (respectively).</p>	<p>Lack of Comparison: The NIRB notes that Baffinland has not provided a rationale for not having compared observed elemental changes in the samples (soils, lichens, willow and blue berries) collected in 2012 and 2013 against respective background values. The NIRB requests that Baffinland provide this information from a time series perspective.</p>	<p>Report).</p> <p>As described above, the vegetation and soil samples collected in 2012 and 2013 were intended to act as background values against which future sampling will be compared. Given that construction did not begin on site until April 2013 and activities were relatively limited until the sealift arrived in August; the samples collected in June and July 2013 represent background values. Additionally, because the 2012 and 2013 samples were collected in different geographic areas (2012 in the southern sections of the RSA and 2013 in the northern areas of the RSA) analyzing temporal trends was not justified.</p> <p>To our knowledge, there are no other background values to which the 2012/2013 data could be compared other than the sampling conducted in 2008. However, as described in the 2013 Annual Report (Section 2.2.2) we found substantial discrepancies in the metals results from 2008 versus 2012/2013 — specifically the 2008 data showed much higher levels of several metals of concern and considerably higher levels of variability. Detailed methods for the 2008 sample collections and laboratory analysis are not available, so, we were unable to determine the reason for this difference. However, we suspect that they are likely the result of a change in sampling or analytical methods since the samples were collected from similar areas in 2008 and 2012, and there is no reason to believe that the Project would have caused this decrease in metals results.</p>
<p><i>Environment Canada</i></p>		
<p>Appendix N.2 (Shipping and Marine Wildlife Management Plan), Section 7.1 (Environmental Effects Monitoring), Page 65; Appendix J (Milne Inlet Marine Baseline 2013); Appendix R (Steensby Inlet – Marine Baseline Studies 2012); 2013 Annual Monitoring Report, Section 7.5 (Marine Environment Monitoring),</p>	<p>Insufficient information is provided on the monitoring of the marine environment.</p> <p>Appendix N.2 states: “Baffinland will carry out monitoring of the effects of shipping as set out in the marine section of the Environmental Effects Monitoring Plan approved by the Government of Canada and the Government of Nunavut, on a regular basis, the Marine Environmental Working Group will review and recommend amendments to the Environmental Effects Monitoring Program as it pertains to the marine environment.” Appendices J and R provide details regarding marine baseline studies for Milne Inlet and Steensby Inlet, respectively. However it is unclear how the data generated by these baseline studies will fit in with the overall</p>	<p>Study reports on work completed by Baffinland within a calendar year may not be available in time for inclusion in the year-end report to NIRB. This lag is addressed, in part through the functioning of the Marine Environment Working Group as all relevant monitoring reports are circulated to the MEWG in draft form for review and commentary prior to their issuance as final.</p> <p>Reports on baseline surveys conducted in 2013 have been circulated to the MEWG and are under review.</p> <p>Baffinland is currently updating its Shipping and Marine Wildlife Management Plan, as well as its Marine</p>

<p>Page 91</p>	<p>marine monitoring plan. Section 7.5 (Marine Environment Monitoring) of the 2013 Annual Monitoring Report states that there was no marine environment monitoring results to report on for 2013.</p> <p>Environment Canada agrees with section 7.5.4 of the annual report where Baffinland states that “At this early stage in Project-environment interactions, the focus is on strengthening baseline (background knowledge on natural variability) and on refinement of study designs. Supplemental baseline surveys and pilot scale monitoring both serve these purposes” However Environment Canada is of the opinion that this is also the time to ensure that sufficient planning has gone into collecting the physical and ecological baselines necessary to support later assessment of impacts. Therefore EC requests that Baffinland provide an outline the overall marine environment monitoring plan, so that it can be reviewed to ensure that there are no gaps.</p>	<p>Environmental Effects Monitoring Framework. The latter document will serve to lay out the design protocols including the incorporation of baseline data into effects monitoring. These documents will be tabled with the MEWG during 2014.</p>
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