Karén Kharatyan
Director of Technical Services
Nunavut Water Board

April 26, 2022

Re: Application for Amendment to Water Licence No. 2AM-MRY1325 associated with the "Phase 2 Development" Project Proposal submitted by Baffinland Iron Mines Corporation

Dear Karén,

Further to our updated responses filed March 8, 2022, please find enclosed a copy of Baffinland Iron Mines Corporation's (Baffinland) updated disposition of technical comments received in relation to the Application to Amend Type A Water License 2AM-MRY1325, August 2018, updated September 2021 (the Application) for Phase 2 of the Mary River Project.

An updated summary table of the resolution status of technical comments is enclosed as Attachment 1 This document replaces our filing of March 8, 2022. Since our previous update, we have resolved a further 10 comments. This updated table represents Baffinland's continued work with parties to advance resolution on outstanding issues. A simplified summary of current resolution status is provided here for quick reference:

Status	#	%
Resolved, Resolved with Commitment	176	73%
Path Forward Identified, Ongoing	52	22%
Unresolved	12	5%
Total	**240**	**100%**

Further to our March 8, 2022 request, the level of consensus that has been reached in the NWB process on the Phase 2 Type A Water Licence amendment application to date supports NWB scheduling a second technical meeting and prehearing conference. Baffinland has been transparent about the significant harm that has resulted from the extended Phase 2 regulatory timelines experienced in the NIRB process. Baffinland encourages the NWB to provide further procedural guidance as soon as possible after the NIRB recommendation on Phase 2 is released, including prompt scheduling of a second technical meeting and prehearing conference. This step is supported by and consistent with both the *Nunavut Planning and Project Assessment Act* and the *Nunavut Waters and Surface Rights Tribunal Act*, and is procedurally fair given the progress that has been made in respect of the Type A Water Licence Amendment Application.

For any questions or clarifications please do not hesitate to contact the undersigned for further information.

Best Regards,

Lou Kamermans
Senior Director – Sustainable Development
Baffinland Iron Mines

Attachment 1 – Technical Comment Disposition Table – Status as of April 26, 2022

cc: Karen Costello, Cory Barker, Tara Arko (NIRB)
Karén Kharatyan, Assol Kubeisinova (NWB)
Jared Ottenhof, Chris Spencer (Qikiqtani Inuit Association)
Bridget Campbell, Lauren Perrin (CIRNAC)
Alasdair Beattie, Daniel Coombs (DFO)
Abigayle Blackmore, Melissa Pinto (ECCC)
Megan Lord-Hoyle, Steve Borcsok (BIM)

ATTACHMENT 1

TECHNICAL COMMENT DISPOSITION TABLE - STATUS AS OF APRIL 26, 2022

Item No.	Agency	Technical Comment ID#	Document Reference	Subject Area	Intervenor July 2019 Recommendation/Request	Baffinland's Aug 2019 Response	Intervenor's October 25, 2021 Updated Recommendation /Request	Baffinland's November 4, 2021 Response	Intervenor Nov 12, 2021 Presentations	Baffinland Response to Nov 12, 2021 Presentations	Status of Resolution (Dec 16, 2021)	Intervenor Comment (Dec 16, 2021)	Intervenor Comment (March 2022)	Status of Resolution (Apr 20, 2022)	Commitments
1	CIRNAC	CIRNAC TR#1	Mary River Phase 2 Proposal Update (Knight Piésold, May 2, 2019); Section 4.3 and Attachment 29 Interim Waste Rock Management Plan (Golder 2019); Section 2	Ph1 WRMP	1) CIRNAC maintains our request that the updated Phase 1 Waste Rock Management Plan that BIMC committed to developing by the end of December 2019 be provided to CIRNAC for review. 2) CIRNAC recommends that the Phase 1 Waste Rock Management Plan be finalized and approved prior to initiating the increased ore production rate associated with Phase 2. 3) In addition, CIRNAC requests that BIMC continue to provide CIRNAC frequent updates on other research plans and activities that directly or indirectly relate to predictions of waste rock geochemistry, seepage and water quality as they become available.	Baffinland will submit the updated Phase 1 Waste Rock Management Plan in December 2019. Baffinland maintains that this is an operational document, and that approval of this plan is independent of the Phase 2 process and will be required regardless of the permitting timeline for Phase 2. Updates on the investigation and strategy to address the Waste Rock Facility have been regularly provided to all stakeholders, and Baffinland will continue to engage all interested parties to provide updates.		Response to R-02 While Baffinland maintains that the Ph1 WRMP is independent of the Phase 2 Proposal, we agree to have this plan reviewed and approved before initiating the increased ore production rate associated with Phase 2. Note the Rev B version of this plan included with the Updated Water Licence Application is consistent in content with the Rev 3 but with additional adaptive management including a trigger action response plan. Response to R-03 Yes, Baffinland has been and will continue to provide updates to CIRNAC on research plans and activities that directly or indirectly relate to predictions of waste rock geochemistry, seepage and water quality.	Resolved: (R-01) Submit updated Phase 1 Waste Rock Management Plan. Resolved by Commitment: (R-02) Finalize and approve Phase 1 Waste Rock Management Plan prior to initiating Phase 2. Resolved: (R-03) Provide updates on other research plans and activities related to waste rock.		Resolved			Resolved	
2	CIRNAC	CIRNAC TR#2	Mary River Phase 2 Proposal Update (Knight Piésold, May 2, 2019); Section 4.3 and Attachment 29 Attachment 29 - Interim Closure and Reclamation Plan (BIMC 2018e); Sections 5.2.1.1 to 5.2.1.9 and Appendix D1 and D2 Research Plans CIRNAC Information Requests to BIMC for the Phase 2 Amendment of the Mary River Project under Type "A" Water Licence No. 2Am-MRY1325 Amendment No. 1 (IR #3; CIRNAC, November 23, 2018)	ICRP	4) CIRNAC recommends that prior to commencing work on the advancement of the open pit, BIMC demonstrate a thorough understanding of the future pit conditions including methods and timelines for pit flooding, geochemistry and ARD/ML potential of waste rock and pit walls based on information/data obtained through the numerous research commitments stated in the ICRP. Periodic updates to the ICRP will need to be completed to include the results of research programs and their implications with respect to pit development and closure planning.	Deposit 1 remains a hilltop outcrop, and development of the pit was projected to occur after 10 years of full scale production for the Approved Project. Baffinland has committed to reclamation research through the most recent revision of the ICRP so that prior models on pit flooding, geochemistry and ARD/ML potential presented in the FEIS can be validated with observations from active mining of the deposit and further assessment of local hydrology. Results of the reclamation research programs will be incorporated into future versions of the ICRP, as intended.		Baffinland will continue operational monitoring and advance studies to refine closure predictions related to future pit conditions. The requirement to further refine modelling for pit flooding and water chemistry is built into the ICRP, which states in Section 5.2.1.4 that "The mining plan and the ongoing waste rock characterization plan will inform the prediction modeling of the mine pit water quality at the end of mine life." A specific condition is not required in the Water Licence for this work, given the ICRP forms part of the Licence.	Resolved by Commitment: (R-04): • Demonstrate future pit conditions through research prior to flooding, and update ICRP with new information. • Baffinland plans to conduct research to validate models for pit flooding, and to incorporate findings into closure plans. • CIRNAC is satisfied with this response and recommends Baffinland's commitments be captured in an amended licence.		Resolved			Resolved	Baffinland commits to: • Demonstrate future pit conditions through research prior to flooding, and update ICRP with new information. • Baffinland plans to conduct research to validate models for pit flooding, and to incorporate findings into closure plans.
3	CIRNAC	CIRNAC TR#3	Mary River Phase 2 Proposal Update (Knight Piésold, May 2, 2019); Attachment 29 - Interim Closure and Reclamation Plan (BIMC 2018e)	ICRP	5) CIRNAC requests that BIMC update the ICRP to appropriately address the issue of information gaps by including missing information, or updating contradictory or outdated information, in the sections identified in TR#3.	Baffinland appreciates the review and feedback provided by CIRNAC on the ICRP, and will incorporate these comments into the updated draft of the ICRP to be provided in advance of the Technical Meeting.		Baffinland commits to incorporating CIRNAC's comments in the updated ICRP and reclamation security estimate, aiming for prior to the NWB public hearing. The timing is contingent on advancing work on the ICRP with the Qikiqtani Inuit Association	• Resolved by Commitment: (R-05) Update the ICRP to include missing information, or correcting contradictory or outdated information.		Resolved			Resolved	BIM commits to incorporating CIRNAC's comments in the updated ICRP and reclamation security estimate, aiming for prior to the NWB public hearing. The timing is contingent on advancing work on the ICRP with the Qikiqtani Inuit Association
4	CIRNAC	CIRNAC TR#4	Mary River Phase 2 Proposal Update (Knight Piésold 2019, May 2, 2019)	Blasting Mgnt Plan	6) CIRNAC requests that the Blasting Management Plan and the Quarry Management Plan QMR2 are submitted for review in advance of the Technical Review meeting.	The QMR2 Quarry Management Plan will be updated if the quarry limits require expansion. Updates to Quarry Management Plans for quarries on Inuit-Owned Land are managed under Baffinland's Commercial Lease. The Blasting Management Plan will be reviewed to determine its adequacy for rail construction, and if updated, will be provided for review in advance of the technical meeting.			• Resolved: (R-06) Submit the Blasting Management Plan and the Quarry Management Plan QMR2 for review in advance of the Technical Meeting. • These plans have been submitted, as requested.		Resolved			Resolved	
5	CIRNAC	CIRNAC TR#5	Mary River Phase 2 Proposal Update (Knight Piésold 2019, May 2, 2019) Railway Emergency Response Plan (Baffinland, May 13, 2019) Railway Operation and Maintenance Management Plan (Baffinland, May 13, 2019); Section 9.2 Attachment 28 - Environmental Protection Plan (Baffinland, May 1, 2019); Section 2.26	Railway ERP	7) CIRNAC recommends that the Railway Emergency Response Plan be further updated to include the following information: a. Procedures identifying the medical services that should be contacted in the event of injuries, the first aid responses that should be executed at the site of the accident, and the modes of transportation that should be used for injured persons depending upon the location of the accident and ambient conditions; b. Company personnel and government departments that require advisories of an accident/incident; c. Type and location of emergency equipment and the procedures to be followed in the event of a derailment, including check lists and accident reports; and d. Information on health and safety emergencies.	A revised version of the Railway Emergency Response Plan is provided in Attachment 01. This draft Plan will be updated further prior to the commencement of railway operations.			• Resolved: (R-07) The Railway Emergency Response Plan be further updated. • This plan has been updated to include the information CIRNAC requested.		Resolved			Resolved	
6	CIRNAC	CIRNAC TR#6	Modification Request No. 12 – Milne Port Stockpile #1 and Water Management Expansion (Baffinland, May 3, 2019); Attachments 3, 4 and 5 Modification No.12 Attachment 5 – Civil Design Philosophy (Hatch 2018); Section 6.6	Design criteria	8) CIRNAC recommends that BIMC revise its design storm criteria from the 1:10yr 24 hour to a minimum of 1:25 year storm for the design of the new sedimentation ponds at the Milne Port associated with the expansion of the stockpile facilities. 9) CIRNAC recommends that BIMC revise its Civil Design Philosophy design storm criteria from the 1:10yr 24 hour to a minimum of 1:25 year storm for the design of any future permanent Life of Mine sedimentation ponds.	Sedimentation ponds designed for the Approved Project have utilized the 1:10 24 hr storm presented in the Civil Design Philosophy. Application of this design criteria for new infrastructure is consistent with its previous application.	Appropriate planning, design, and construction of facilities is needed for the effective management of site water erosion and sedimentation to ensure potential impacts are minimized during all times of the year over the life of the project. CIRNAC reiterates recommendation numbers R-08 and R-09 that BIMC revise its storm design criteria for sedimentation ponds, and suggests that BIMC also assess the feasibility of expanding existing sedimentation ponds to meet the MSWMP design criteria. CIRNAC supports the initiative to address the past and ongoing erosion issues at the Mine Site and would appreciate additional schedule details on implementation of the plan.	With respect to CIRNAC's request to expand the existing sedimentation ponds to the design criteria adopted in Modification Request No. 13, the existing crusher pad pond will be replaced by a future SDLT-1 pond designed to the Modification Request No. 13 criteria. The design criteria for the WRF pond will remain unchanged for now, as the current design criteria (1 in 10-year, 15-day storm; 310 mm) reflect both the expected lifespan of that facility as well as the holding time required for water treatment. As part of ongoing water management planning at Milne Port, Baffinland is currently evaluating the appropriate design criteria considering site-specific conditions including the lifespan of the facilities, our experience with settling times before discharge, and site-specific climatic conditions at Milne Port, which notably drier compared to the mine. The schedule for implementation is presented in Modification Request No. 13.	• Resolved: (R-08) Revise the design storm criteria for new sedimentation ponds at the Milne Port associated with the expansion of the stockpile facilities. • Resolved by commitment: (R-09) Revise the Civil Design Philosophy design storm criteria for the design of any future permanent Life of Mine sedimentation ponds.		Resolved with commitment			Resolved with commitment	R-08 - BIM is reviewing its design storm criteria for new sedimentation ponds at Milne Port associated with the expansion of the stockpile facilities. R-09 - BIM has adopted revised design criteria for life-of-mine sedimentation ponds at the Mine Site as per Modification Request No. 13.

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7	CIRNAC	CIRNAC TR#7	Mary River Phase 2 Proposal Update (Knight Piésold 2019, May 2, 2019) Railway Operation and Maintenance Management Plan (Baffinland, May 13, 2019); Section 3.3	SWAEMP	10) CIRNAC requests that dust monitoring data and any other relevant information, if available, are provided to assess potential environmental impacts to surface water/snow from dust generation along the northern transportation corridor from the railway and truck traffic.	Information on the low potential for ore dusting from rail cars is provided in an email to the GN following a Terrestrial Environment Working Group meeting on Phase 2 management plans, dated Feb 14, 2019, and provided as Attachment 02. Baffinland's ore dusting exposure assessment (TSD 11) reviewed the chemistry of dustfall from stations along the Tote Road and at the Mine and Port, and this demonstrated that while the ore dust at the Project sites have the chemistry resembling the ore, the dust generated by the Tote Road does not have chemistry resembling the ore. Dust monitoring data is reported annually to the NIRB through the Terrestrial Environment Annual Monitoring Report, which can be found in the NIRB public registry or on Baffinland's document portal (http://www.baffinland.com/document-portal-new/?cat=5&archive=1)	To confirm predictions, CIRNAC maintains recommendation R-10 that BIMC continue to monitor dust deposition impacts from ore blow-off on the freshwater receiving environment throughout the lifetime of the project, to provide updates as they become available, and implement approved mitigations if significant effects are observed. CIRNAC would consider this comment resolved with a commitment from BIMC.	The lakes and streams within the Mine Site receive comparatively high levels of deposited ore dust, compared to the transportation corridor, as acknowledged by CIRNAC. For this reason, the Aquatic Effects Monitoring Program at the mine includes a lake sedimentation monitoring program in Sheardown Lake NW. If ore dust generated by the Project had the potential to adversely affect fish populations, it would be detected first by this monitoring program. In response to the QIA's Final Written Submission QIA-41 in the NIRB review, Baffinland committed to lower the lake sedimentation threshold in this monitoring program (Commitments 148 and 200). The latest draft Surface Water and Aquatic Ecosystem Management Plan presented as Attachment 22 adopts the lower sedimentation threshold.	• Resolved: (R-10) Monitor to assess potential environmental impacts to surface water and snow from dust generation along the northern transportation corridor from the railway and truck traffic. • CIRNAC recommends that Baffinland implement approved mitigations if significant effects are observed.		Resolved			Resolved	
8	CIRNAC	CIRNAC TR#8	Mary River Phase 2 Proposal Update (Knight Piésold, May 2, 2019); Attachment 29 - Interim Closure and Reclamation Plan (BIMC 2018e)	ICRP	11) CIRNAC requests that BIMC update the ICRP to appropriately address the concerns raised in TR#8 surrounding insufficient financial security by updating the ICRP to increase Interim Care and Maintenance and Post Closure Monitoring time as	Baffinland appreciates the review and feedback provided by CIRNAC on the ICRP, and will incorporate these comments into the updated draft of the ICRP to be provided in advance of the Technical Meeting.		R-11: Future iterations of the ICRP will evaluate the need for increased Closure and Post Closure Monitoring. Baffinland maintains that the duration of closure activities (3 years) is adequate given the total person-hours required to execute	• Ongoing: (R-11) Update the ICRP to increase Interim Care and Maintenance and Post Closure Monitoring time. • Resolved: (R-12) Include a cost for open pit water treatment in the security until such time that		Ongoing			Ongoing	
9	CIRNAC	CIRNAC TR#9	Nunavut Water Board Water Licence No. 2AM-MRY1335 – Amendment No. 1, Baffinland Iron Mines Corporation, Mary River Iron Mine, Signed by Thomas Kabloona on July 21, 2015.	ICRP	13) CIRNAC proposes that all parties use the opportunity for any future amendments to Water Licence 2AM-MRY1325 – Amendment No. 1 to change the procedure for the Annual Security Review to one of the following options: a. A phased approach with security applied in tranches, as is used on other mining projects; b. Decreasing the frequency of the security review to occur every 5 years rather than every year; or c. Other suggestions made by interested parties.	Baffinland agrees with CIRNAC that the current amendment to the Type A Water Licence provides an opportunity to review current practice for setting and updating security for the project and is open to considering changes, subject to further review and discussion with all parties. Baffinland recognizes that QIA as the landowner will ultimately need to approve any changes to the security review process. Baffinland will engage QIA on this matter and any agreed upon path forward will be presented to the Board.		Baffinland continues to agree with CIRNAC that the current amendment to the Type A Water Licence provides an opportunity to review current practice for setting and updating security for the project and is open to considering changes, subject to further review and discussion with all parties. Baffinland is open to discussing options during the technical meeting, but recognizes that QIA as the landowner will ultimately need to approve any changes to the security review process.	• Resolved by Commitment: (R-13) CIRNAC encourages parties to use this licence amendment opportunity to review the procedure for the Annual Security Review. Alternative options include: – A phased approach with security applied in tranches, as is used on other mining projects; – Decreasing the frequency of the security review to occur every 3-5 years rather than every year; or – Other suggestions made by interested parties.		Resolved with commitment			Resolved with commitment	BIM will discuss alternatives to the current Annual Security Review (ASR) process with CIRNAC and the QIA
10	CIRNAC	CIRNAC TR#10	Borrow Pit and Quarry Management Plan, Section 3.0, Implementation, Section 5.0, Monitoring; WL 2AM-MRY1325 - Amendment No. 1, Part D Item 9	Borrow Pit and Quarry Mgnt Plan	14) CIRNAC recommends that BIMC provide additional text in the plan to discuss the development of the borrow sources and their impact on the permafrost regime on a borrow-by-borrow source/quarry-by-quarry evaluation. Furthermore, CIRNAC recommends details also be provided on how borrow area development will be done on a case-by-case basis to minimize the potential long-term damage to the permafrost regime.			Most of the material for rail construction will be from rock quarries and not borrow pits. Nonetheless, overburden (some of which may be ice-rich) will be encountered during quarry development. Geotechnical investigations to date provides some delineation of ice-rich and ice-poor areas as a starting point for understanding which quarries pose a potential concern from a permafrost perspective. Baffinland plans to complete exploratory drilling to verify material characteristics and overburden thicknesses that require stripping, and to identify the presence of ice or thaw-sensitive soils that can either be avoided or planned for in quarry design. Identified permafrost issues will be managed by applying measures identified in each quarry-specific management plan. Generic measures for dealing with permafrost during borrow pit development are described in Appendix D of the Borrow Pit and Quarry Management Plan. Designs established for excavations and cuts in ice-rich and ice-poor soils along the railway will be applied to excavations in overburden encountered in the rock quarries. Slopes will be monitored against any destabilizing of the cut surfaces. If necessary, cover materials will be placed or cut slopes altered to reduce potential thawing. The above additional text will be added to the Plan.	• Resolved: (R-14) Include information in the Borrow Pit and Quarry Management Plan regarding: – the expected impact of each quarry and borrow pit on permafrost; and – how potential long-term damage to the permafrost will be minimized.		Resolved with commitment			Resolved with commitment	Add additional text on permafrost protection to the Borrow Pit and Quarry Management Plan
11	CIRNAC	CIRNAC TR#11	Geotechnical Studies - Geotechnical Recommendations for North Railway, Hatch, Rev. 0, Apr. 26, 2019	Rail O&M Mgnt Plan	15) CIRNAC recommends that BIMC undertake supplementary investigation work within the Route 3 realignment to complete the geotechnical assessment of the Northern Railway, and integrate the findings into a management strategy to minimize the impact of construction on permafrost.			A geotechnical field program was recently completed in summer 2021. Laboratory testing work is currently underway and the results and an updated report will be made available when the work is completed. Baffinland expects this work will be complete by February/March 2022. This work will inform design but will not further influence the overall alignment in a major way.	• Resolved by Commitment: (R-15) Complete a geotechnical assessment of the new Route 3 of the Northern Railway, and integrate the findings into a management strategy to minimize the impacts of construction on permafrost.		Resolved			Resolved	
12	CIRNAC	CIRNAC TR#12	AEMP; BMP; FWSSWMP	Waste Mgnt Plan and FWSSWMP	16) CIRNAC recommends that the following updates, which have not been addressed in other TRCs, be made to the Management Plans listed. a) Aquatic Effects Monitoring Plan: provide for review prior to the Technical Meeting. b) Blasting Management Plan: Update to include procedures and blasting of frozen ground and for spoils management. c) Fresh Water Supply, Sewage, and Wastewater Management Plan: Update to include the new Mine Site stations added to the SNP based on Modication No. 13, and the water withdrawal volumes to indicate the proposed volumes under the Updated Amendment Application. Note - recommendations R-16d and R-16e are minor suggestions for editorial purposes and would not impede approval of the amendment: d) Draft Emergency Response Plan and Draft Spill Contingency Plan: For consistency with other plans that have been updated, BIMC might consider reorganizing in the next update to conform with ISO 14001:2015, and to include sections on IQ consideration and adaptive management. e) Waste Management Plan: for clarity, BIMC might consider updating to remove references to the Roads Management Plan.			AEMP - The AEMP is currently available on the public registry. Blasting Management Plan - Procedures for blasting of frozen ground will be added to the next update. Baffinland suggests that the management of spoils is best handled in the Borrow Pit and Quarry Management Plan. Fresh Water Supply, Sewage and Wastewater Management Plan - this plan will be updated incorporating changes to the SNP program and proposed water withdrawal volumes. Draft Emergency Response Plan and Draft Spill Contingency Plan - Baffinland suggests that as response plans, they do not lend themselves to adopting CIRNAC's recommended changes. Waste Management Plan - the editorial issues are noted and will be addressed in the next revision. Plan updates will be filed with sufficient review time ahead of the NWB public hearing.	• Resolved: (R-16) Update the following Management Plans: – Aquatic Effects Monitoring Plan – Blasting Management Plan – Fresh Water Supply, Sewage, and Wastewater Management Plan • Suggestions for editorial purposes: – Draft Emergency Response Plan and Draft Spill Contingency Plan – Waste Management Plan		Resolved with commitment			Resolved with commitment	Update the SNP information in the FWSSWMP; make editorial changes to Waste Management Plan
13	CIRNAC	WRMP R-01		Ph1 WRMP			CIRNAC recommends that BIMC revise Section 9.2 to reflect the actual site water management issues with regard to the WRF [Waste Rock Facility] and how BIMC now plans to address and manage them, as outlined below:	Baffinland provided a response to this technical comment on July 30, 2020. Baffinland will continue to work with CIRNAC to address this ongoing concern through the collection of additional data.			Ongoing			Ongoing	

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14	CIRNAC	WRMP R-02		Ph1 WRMP			CIRNAC recommends that BIMC update and calibrate the water balance model for the Waste Rock Facility, as per the recommendations provided by Golder (2019), with reliable measurements of pond water elevation, surface	Baffinland provided a response to this technical comment on July 30, 2020. Baffinland will continue to work with CIRNAC to address this ongoing concern through the collection of additional data			Ongoing			Ongoing	
15	CIRNAC	WRMP R-03		Ph1 WRMP			CIRNAC recommends that BIMC provide CIRNAC with an update of progress made to date and a specific timeline for when the earliest update to the water balance model could be expected.	Baffinland provided a response to this technical comment on July 30, 2020. Baffinland will continue to work with CIRNAC to address this ongoing concern through the collection of additional data			Ongoing			Ongoing	
16	CIRNAC	ICRP R-01		ICRP			Waste Rock Pile and Open Pit closure costs be calculated directly by BIMC and be included in the next updated ICRP.	As provided in Baffinland's Jan 10, 2021 response to CIRNAC's recommendations /requests as part of the 2021 ASR process: Baffinland agrees that opportunities for reduction in contingency may be possible in future iterations of the reclamation estimate. Due to the outcome of the 2019 Work Plan arbitration, Baffinland has carried 20% contingency in order to align with the final award. Baffinland notes that the estimate currently accounts for the uncertainty at the waste rock facility through the addition of water treatment in closure. Additionally, while uncertainty may exist regarding predictions associated with the open pit, and open pit does not exist at the Mary River Project as mining at Deposit 1 remains a hilltop outcrop.			Resolved			Resolved	
17	CIRNAC	ICRP R-02		ICRP			Update the ICRP according to the updated Waste Rock Management Plan approved by the NWB.	As provided in Baffinland's Jan 10, 2021 response to CIRNAC's recommendations /requests as part of the 2021 ASR process: Baffinland agrees that future updates to the ICRP should respect any updates to the Waste Rock Management Plan. The current waste rock management plan maintains a final closure strategy of freezing waste rock in permafrost to mitigate the generation of ARD, and has revised the waste placement strategy accordingly with the objective of freezing material in place to mitigate ARD. Baffinland has integrated adaptive management into the Waste Rock Management Plan to further demonstrate a commitment to ensuring the final closure objectives are met.			Resolved with commitment			Resolved with commitment	The ICRP will be updated according to the updated Phase 1 WRMP approved by the NWB
18	CIRNAC	ICRP R-03		ICRP			Increase interim care and maintenance to 5 years, and post-closure cost to 25 years.	As provided in Baffinland's Jan 10, 2021 response to CIRNAC's recommendations /requests as part of the 2021 ASR process: Future iterations of the ICRP will evaluate the need for increased Closure and Post Closure			Ongoing			Ongoing	
19	CIRNAC	ICRP R-04		ICRP			Update a WRF cover layer in the ICRP and include Prevention of Fugitive dust in the cost estimate.	As provided in Baffinland's Jan 10, 2021 response to CIRNAC's recommendations /requests as part of the 2021 ASR process: Dust impacts were considered in the FEIS for the life of mine, including closure, and no significant adverse residual effects were identified for dust. It is noted that the primary sources of dust (ore crushing, ore stockpiling, and ore transport) will no longer be in operation at closure, and therefore negligible contribution to air quality. Air quality monitoring is included as a Post Closure Monitoring activity in the ICRP and is included in the reclamation security estimate. Baffinland will gain better understanding of revegetation success relative to cover material through future reclamation research studies.	Commitment		Resolved			Resolved	
20	CIRNAC	ICRP R-05		ICRP			Update Long term criteria for permafrost conditions in the ICRP and include in the cost estimate.	As provided in Baffinland's Jan 10, 2021 response to CIRNAC's recommendations /requests as part of the 2021 ASR process: The ICRP is an iterative document that will evolve throughout the life of mine, based on reclamation research studies, results of on-going monitoring, development of new/novel mitigation measures and feedback from Inuit and intervenors. No additional adjustments to reclamation security are required at this time based on the currently understanding of the project effects and desired reclamation objectives.	Commitment		Resolved			Resolved	
21	CIRNAC	ICRP R-06		ICRP			Include cost for studies and instrumentation at the end of mine operations. The currently approved ICRP is dated 2018, and should be updated with additional equipment needed for geotechnical / thermal engineering monitoring.	As provided in Baffinland's Jan 10, 2021 response to CIRNAC's recommendations /requests as part of the 2021 ASR process: Costs for monitoring, including any required instrumentation, are included in the Closure & Post Closure Monitoring costs. Details of the monitoring programs included in this allocation are outlined in Section 9 of the ICRP (Rev. 5, Oct 2018). Geotechnical engineering monitoring is outlined in Section 9.4 of the ICRP, which includes stability, erosion and permafrost analyses and monitoring.	Commitment		Resolved			Resolved	
22	DFO	DFO 3.1.1	Various	FAA Application	Recommendation 3.1.1: DFO-FFHPP recommends Baffinland provide rationale for the selection of crossing infrastructure for fish bearing watercourses. DFO-FFHPP notes this can be provided to DFO as part of the Proponent's 'DFO Request for Review' submission and/or Application for Fisheries Act authorization, during DFO's regulatory phase.	As follow-up to the June 2019 NIRB technical meetings, Baffinland issued a July 2, 2019 memo by Knight Piésold (Additional Information on Fish Habitat Interactions), provided as Attachment 03 to this response. This memo is not listed in the referenced DFO documents. The document provides supplemental fisheries information, including a discussion regarding the basis of selecting crossing types in Section 5.	n/a	Update: A final deliverable documenting the crossing design selection process will be included in the Application for Fisheries Act Authorization	Resolved		Resolved			Resolved	
23	DFO	DFO 3.1.2	Various	FAA Application	Recommendation 3.1.2: DFO-FFHPP reiterates the recommendation that Baffinland provide the full scope and visual of catchment areas associated with fish-bearing water crossings.	Catchments of fish-bearing crossings along the Tote Road and proposed North Railway are shown on Figures 1 and 2 of Attachment 03 (Additional Information on Fish Habitat Interactions).	n/a	Update: Fish-bearing status is shown on the detailed railway figures presented as Attachment 10. These figures have been updated to reflect to change to Route 3.	Resolved		Resolved			Resolved	
24	DFO	DFO 3.1.3	Various	FAA Application	Recommendation 3.1.3: DFO-FFHPP recommends the Proponent provides maps for the entirety of the road and label all crossings, which includes the locations of proposed changes to existing Tote Road crossings (as currently provided) and the locations for crossings that are expected to remain as they are.	An updated version of the detailed railway figures that appeared as Attachment 10 of the May 2019 water licence amendment application appear as Figures 4 to 36 of the July 2, 2019 memo provided as Attachment 03 to this response (Additional Information on Fish Habitat Interactions). This updated version shows the entirety of the Tote Road including water crossing labels and proposed changes.	n/a	Update: Relevant updates have been made to the detailed railway figures included as Attachment 10, including Route 3.	Resolved		Resolved			Resolved	

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25	DFO	DFO 3.2.1	Various	FAA Application	Recommendation 3.2.1: DFO-FFHPP recommends that Baffinland clarify when they will provide updated hydrological modelling.	Updated hydrological modelling is presented in a June 18, 2019 memo by Knight Piésold provided as Attachment 04 (Fish Passage Risk Assessment of Water Crossings and Stream Diversions). Baffinland is undertaking an engineering review of crossings assessed by KP to be high risk of being a barrier to fish passage, and the outline of a fish passage monitoring program is provided as Attachment 05 (Proposed North Railway Aquatic Monitoring Programs).	n/a	Update: A final fish passage risk assessment will be provided with the FAA Application	Resolved		Resolved			Resolved	
26	DFO	DFO 3.2.2	Various	FAA Application	Recommendation 3.2.2: DFO-FFHPP recommends that Baffinland provide the flow volumes referenced as section 7.1.5.3 on page 23, in section 7.2.1.5 of attachment 7.2 of the updated application: North Railway Design Criteria, or provide the appropriate reference.	Section 7.1.2.5 of the Rail Design Criteria document (Attachment 7.2 of the Updated Water Licence Amendment Application) includes an incorrect reference: "The flow volumes calculated in 7.1.5.3 will be used to determine the ultimate sizing of the culvert structure in terms of number and size of barrels." DFO is correct that there is no Section 7.1.5.3, and flows are not presented elsewhere in the same document. Catchment areas and mean monthly flows for July and August are presented for fish-bearing crossings in the updated fish passage assessment presented as Attachment 04 (Fish Passage Risk Assessment of Water Crossings and Stream Diversions).	n/a	Update: A final fish passage risk assessment will be provided with the FAA Application	Resolved		Resolved			Resolved	
27	DFO	DFO 3.2.3	Various	FAA Application	Recommendation 3.2.3: DFO-FFHPP recommends Baffinland clarify which flood return period is intended for use for the hydrologic analysis.	The design return period is the 1:200-year flood, and the reference to the 1:100-year flood in Section 7.2.3 is incorrect.	n/a	No update required.	Resolved		Resolved			Resolved	
28	DFO	DFO 3.2.4	Various	FAA Application	Recommendation 3.2.4: DFO-FFHPP recommends Baffinland provide further information in regard to the potential cumulative impacts of all crossings on flow and fish passage (short-term and permanent; Tote Road, North Rail and Temporary Access Roads), including clear identification of crossings that occur on the same waterbody.	North/South Consultants Inc. conservatively assumed in Attachment 13.1 of the Application that rail crossings that are located <20 m from an existing Tote Road culvert are locations where two culverts in proximity could be a potential barrier to fish passage. Within Attachment 04 of this response (Additional Information on Fish Habitat Interactions), these locations are identified in Table 1 and are shown on the detailed railway figures (Figures 4 to 36).	n/a	Update: A final fish passage risk assessment will be provided with the FAA Application.	DFO recommends Baffinland provide further information in regard to the potential cumulative impacts of all crossings on flow and fish passage (short-term and permanent; Tote Road, North Rail and Temporary Access Roads), including clear identification of crossings that occur on the same waterbody.	This information will be provided in the FAA Application.	Unresolved	See proposed commitment below for DFO 3.2.4.2.	DFO is currently in discussions with the proponent to address concerns surrounding the Tote Road and the proposed remediation strategies. DFO recommends the proponent continue to meet with DFO prior to any proposed instream remediation.	DFO states this item is unresolved. DFO's March 2022 comment is related to the tote road, which is covered under DFO 3.2.4.2. Baffinland suggests this item was resolved with its Nov 12, 2021 commitment to provide a final fish passage risk assessment in the future FAA application for the North Railway.	FAA Application commitment to DFO.
29	DFO	DFO 3.2.4.1							DFO recommends Baffinland submit an application to DFO for any new crossings or modifications to existing crossings for the Tote Road to ensure there are no residual impacts to fish and fish habitat.	BIM proposed to include new and modified tote road crossings due to the North Railway in the same FAA application for the North Railway.	Resolved			Resolved	FAA Application commitment to DFO
30	DFO	DFO 3.2.4.2		SWAEMP					DFO recommends remediation of Tote Road crossings be completed prior to completion of the proposed Northern Railway.	The current tote road crossings are remediated as required as part of the current operation, subject to the existing FAA.	Unresolved	**Proposed Commitment from DFO:** Baffinland commits to meeting with DFO in advance of any proposed instream remediation of the Tote Road to discuss remediation strategies, and will submit Requests for Review to DFO for any additional instream works that do not follow DFO's Codes of Practice.	DFO is currently in discussions with the proponent to address concerns surrounding the Tote Road and the proposed remediation strategies. DFO recommends the proponent continue to meet with DFO prior to any proposed instream remediation.	DFO states this item is unresolved. Baffinland previously accepted DFO's proposed commitment to continue to meet with DFO in advance of any instream remediation of the Tote Road. These discussions have been occurring with DFO in 2022. Baffinland suggests that this item be considered resolved for the purposes of the water licence application, and ongoing under the DFO's *Fisheries Act* processes.	Baffinland commits to meeting with DFO in advance of any proposed instream remediation of the Tote Road to discuss remediation strategies, and will submit Requests for Review to DFO for any additional instream works that do not follow DFO's Codes of Practice.
31	DFO	DFO 3.2.4.3							DFO recommends that culverts proposed for the Northern Railway within 20 m of Tote Road culvert crossings be modified to bridges or open-bottom structures, or that additional mitigation and contingency measures be provided to ensure cumulative impacts are avoided, mitigated, and offset, where required.	BIM will consider this approach on a crossing-specific basis, with the intent to address cumulative impacts, where possible. BIM's final approach will be consistent with its crossing selection process document that will accompany the FAA Application.	Resolved			Resolved	FAA Application commitment to DFO
32	DFO	DFO 3.2.4.4							DFO recommends the AEMP be reviewed and ensure cumulative effects monitoring is included in the AEMP.	Fish passage monitoring including cumulative effects forms part of the Surface Water and Aquatic Ecosystems Management Plan.	Resolved			Resolved	
33	DFO	DFO 3.2.4.5							DFO recommends that Baffinland analyze monitoring reports related to the Tote Road existing watercourses crossings and provide a comprehensive report on "lessons learned" for the Tote Road that would include strategic analysis of what will be done differently to ensure the fish-passage issues will be avoided, mitigated and addressed for the Northern Railway.	BIM previously committed to presenting a lessons learned report on the tote road as part of the FAA Application (Commitment #80 in the NIRB review).	Resolved			Resolved	FAA Application commitment to DFO
34	DFO	DFO 3.2.5	Various	FAA Application	Recommendation 3.2.5: DFO-FFHPP recommends the Proponent clarify the intent of the statement: "mitigation measures, specific to bridges along the rail corridor, will be applied if flow velocities are found to restrict fish passage", and respond with clarification why the proposed bridges will not incorporate appropriate fish passages in the initial design	The aquatic considerations cited in Section 8.6 of Attachment 13.7 of the Application are adopted from a generic list of mitigation measures for water crossings. Preliminary bridge drawings are presented in Attachment 13.8. of the Application. The final bridge designs included with the application for a Fisheries Act authorization will maintain fish passage.	n/a	Update: The Bridge Hydraulics Report (Attachment 13.7) and Rail Bridge Drawings (Attachment 13.8) have been updated to reflect the change in the location of Bridge #3 on the Ravn River associated with Route 3.			Resolved			Resolved	
35	DFO	DFO 3.2.6							DFO remains concerned about fish passage for the Northern Railway. DFO recommends Baffinland annually monitor crossings identified as high-risk for fish passage issues to proactively identify and remediate fish-passage issues.	BIM will commit through the FAA process to annual monitoring of crossings that are high-risk for fish passage issues.	Resolved			Resolved	FAA Application commitment to DFO
36	DFO	DFO 3.3.1	FEIS addendum, Surface Water Assessment (TSD 13); Sections 2.1.1, 2.4, 2.5 & 4.0 of Appendix C FEIS addendum, Surface Water Assessment (TSD 13); Appendix D, Figure 1, p. D-7 DFO Technical Review Comments to the Nunavut Impact Review Board (NIRB), March 7, 2019. Technical comment 3.12.2 Baffinland Iron Mines Technical Comment Responses, March 25, 2019. DFO 3.12.2, page 43 Fresh Water Supply, Sewage, and Wastewater Management Plan, attachment 23 of the Updated Application for Amendment No. 2 of Type A Water Licence, Document #: BAF-PH1-830-P16-0010. Section 4.2, pg. 18.	FWSSWMP	Recommendation 3.3.1: DFO-FFHPP recommends Baffinland provide a detailed water withdrawal plan, which can be provided to DFO as part of the Proponent's 'DFO Request for Review' submission and/or Application for Fisheries Act authorization, during DFO's regulatory phase.	At the second NIRB technical meeting in June 2019, Baffinland committed to providing more details on fish habitat features and potential effects to littoral areas at proposed water withdrawal locations (DFO technical review comment 3.12.2 in NIRB review process). A detailed water withdrawal plan will be provided that includes fish habitat information and that considers the DFO's 2013 Environmental Flow Requirements guideline as part of Baffinland's Request for Review and/or Application for a Fisheries Act authorization. .	n/a	Update: the Detailed Water Withdrawal Plan has been provided as Attachment 16 of the updated Application.	DFO recommends Baffinland provide a detailed water withdrawal plan, which can be provided to DFO as part of the Proponent's 'DFO Request for Review' submission and/or Application for Fisheries Act authorization, during DFO's regulatory phase. DFO remains concerned about water withdrawal activities for the Phase 2 Development Proposal.	This plan was provided as Attachment 16 of the Sept 17, 2021 Updated Water Licence Application.	Unresolved	See proposed commitment below for DFO 3.3.1.1.	DFO has reviewed the Detailed Water Withdrawal Plan (Attachment 16) and considers this concern resolved.	Resolved	

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37	DFO	DFO 3.3.1.1		FWSSWMP					DFO recommends Baffinland provide additional details on site-specific characteristics for water withdrawal sites, including shallow water areas that may be affected during drawdown.	BIM presented site-specific characteristics on water withdrawal sites in the Detailed Water Withdrawal Plan (Attachment 16 of the Updated Water Licence Application).	Unresolved	**Proposed commitment from DFO:** Baffinland commits to establish a designated area for each fish-bearing watercourse/body where water intake hoses may be placed and water withdrawal may occur. Baffinland will submit a Request for Review and a fish habitat assessment to DFO for these designated areas, including information such as water depth and substrate.	DFO has reviewed the Detailed Water Withdrawal Plan (Attachment 16) and considers this concern resolved.	Resolved	This information was presented in the Detailed Water Withdrawal Plan (Attachment 16) requested by DFO. Baffinland will seek to discuss this subject further with DFO.
38	DFO	DFO 3.3.1.2							DFO recommends Baffinland follow DFO's 'Interim code of practice: End-of-pipe fish protection screens for small water intakes in freshwater' and provide details to DFO in a Request for Review in the event this code of practice cannot be followed.	BIM has committed to following the interim code of practice. This appears in the Detailed Water Withdrawal Plan and the Fresh Water Supply, Sewage and Wastewater Management Plan (Attachment 23 of the Updated Water Licence Application).	Resolved			Resolved	
39	DFO	DFO 3.3.2	FEIS addendum, Surface Water Assessment (TSD 13); Sections 2.1.1, 2.4, 2.5 & 4.0 of Appendix C FEIS addendum, Surface Water Assessment (TSD 13); Appendix D, Figure 1, p. D-7 DFO Technical Review Comments to the Nunavut Impact Review Board (NIRB), March 7, 2019. Technical comment 3.12.2 Baffinland Iron Mines Technical Comment Responses, March 25, 2019. DFO 3.12.2, page 43 Fresh Water Supply, Sewage, and Wastewater Management Plan, attachment 23 of the Updated Application for Amendment No. 2 of Type A Water Licence, Document #: BAF-PH1-830-P16-0010. Section 4.2, pg. 18.	FWSSWMP	Recommendation 3.3.2: DFO-FFHPP recommends Baffinland clarify what site specific conditions would indicate, that a greater water withdrawal than 10% in proposed withdrawal lake sites, would not be significant in the context of fish bearing habitat.	The referenced text from page 18 of the FWSSWMP stated as follows, "Monthly cumulative withdrawals from lakes represent less than 10% of the monthly outflow, unless site-specific conditions indicate that a greater water withdrawal will not be significant in the context of fish bearing habitat (i.e. Camp Lake)." This is in reference to circumstances such as described in the 2014 water take assessment, (July 16, 2014 letter report by Knight Piésold, Hydrology Assessment of Water Sources for Dust Suppression along the Tote Road - Mary River Project - Early Revenue Phase; Ref. No. NB19-00376): Each of the identified lakes will meet the threshold of 10% reduction of outflow under all flow conditions including 10-year return period low flow conditions that can be experienced during the month of September. The only exception to this is Camp Lake, which meets the 10% reduction of outflow threshold under mean flow conditions but not under low flow conditions. Under the 10-year low flow condition, however, a reduction of up to 27% of lake outflows could occur (Table 4), warranting further evaluation and consideration of potential effects to fish and fish habitat. While the proposed water withdrawal in Camp Lake will exceed the 10% lake outflow reduction threshold under the 10-year low flow condition, there are site-specific conditions to be considered.	n/a	The Detailed Water Withdrawal Plan (Attachment 16) applied a withdrawal threshold of 10% of the monthly flow. The previous estimate that withdrawals from Camp Lake would represent 27% of the 10-year low flow. This previous estimate was based on the 10-year low flow of the lowest flow month (September), which is unnecessarily constraining. In the Detailed Water Withdrawal Plan, the 10-year annual low flow threshold was applied as a more appropriate threshold that is sufficiently conservative. The proposed water withdrawal volumes will be less than the revised threshold of 10% of the 10-year annual low flow volume in Camp Lake.	DFO recommends Baffinland support and clarify their statement that site-specific conditions would indicate that water withdrawal in fish bearing waters in excess of the 10% guidelines would not have significant impacts to fish habitat.	The Updated Water Licence Application presents revised water withdrawal sites, pumping rates (streams) and volumes, based on the assessment completed in the Detailed Water Withdrawal Plan (Attachment 16 of the Updated Water Licence Application).	Unresolved	See note below for DFO 3.3.2.1.	DFO has reviewed the Detailed Water Withdrawal Plan (Attachment 16) and considers this concern resolved.	Resolved	
40	DFO	DFO 3.3.2.1							DFO recommends that Baffinland provide an analysis on the proposed threshold of 10% of the 10-year annual low flow volume would not impact fish habitat in Camp Lake.	This analysis was presented in Table B.1 of the Detailed Water Withdrawal Plan (Attachment 16 of the Updated Water Licence Application).	Unresolved	DFO is further reviewing Baffinland's response to determine if this technical comment is resolved or if it requires a commitment.	DFO has reviewed the Detailed Water Withdrawal Plan (Attachment 16) and considers this concern resolved.	Resolved	
41	DFO	DFO 3.3.2.2							DFO additionally recommends that Baffinland follow the 'DFO Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut' for any winter water withdrawals in fish-bearing waterbodies.	BIM has committed to following this DFO protocol for winter withdrawals from lakes. This appears in the Detailed Water Withdrawal Plan (Attachment 16) and the Fresh Water Supply, Sewage and Wastewater Management Plan (Attachment 23 of the Updated Water Licence Application).	Resolved			Resolved	
42	DFO	DFO 3.3.3	FEIS addendum, Surface Water Assessment (TSD 13); Sections 2.1.1, 2.4, 2.5 & 4.0 of Appendix C FEIS addendum, Surface Water Assessment (TSD 13); Appendix D, Figure 1, p. D-7 DFO Technical Review Comments to the Nunavut Impact Review Board (NIRB), March 7, 2019. Technical comment 3.12.2 Baffinland Iron Mines Technical Comment Responses, March 25, 2019. DFO 3.12.2, page 43 Fresh Water Supply, Sewage, and Wastewater Management Plan, attachment 23 of the Updated Application for Amendment No. 2 of Type A Water Licence, Document #: BAF-PH1-830-P16-0010. Section 4.2, pg. 18.	FWSSWMP	Recommendation 3.3.3: DFO-FFHPP recommends Baffinland conduct a thorough localized assessments on the waterbodies selected for water withdrawal in order to adequately assess the potential impacts on the fish habitat resulting from 20% of the 10-year dry unit runoff water withdrawal on fish-bearing watercourses and connecting waterbodies. This assessment should include, but not be limited to, an assessment of the effects to littoral/shore/riparian areas from the proposed water withdrawal, the specific withdrawal locations proposed for each waterbody including fish habitat in the area and updated rationale on how this level of withdrawal will be environmentally protective threshold. DFO-FFHPP notes this information can be provided as part of the Proponent's 'DFO Request for Review' submission and/or Application for Fisheries Act authorization, during DFO's regulatory phase.	n/a	n/a	Update: As per Baffinland's August 2019 commitment, a Detailed Water Withdrawal Plan was included in the updated Water Licence Amendment Application (Attachment 16).	DFO recommends Baffinland conduct a thorough localized assessments on the waterbodies selected for water withdrawal in order to adequately assess the potential impacts on the fish habitat resulting from 20% of the 10-year dry unit runoff water withdrawal on fish-bearing watercourses and connecting waterbodies. [...] DFO notes this information can be provided as part of the Proponent's 'DFO Request for Review' submission and/or Application for Fisheries Act authorization, during DFO's regulatory phase.	The Detailed Water Withdrawal Plan (Attachment 16) adopted a 10% threshold.	Unresolved	See proposed commitment below for DFO 3.3.3.3.		Resolved	
43	DFO	DFO 3.3.3.1							DFO recommends Baffinland provide a comprehensive list of all water-withdrawal sites for all activities in summer and winter.	This is provided in Section 3.5 of the Updated Application (main report) and in the Detailed Water Withdrawal Plan (Attachment 16).	Resolved			Resolved	
44	DFO	DFO 3.3.3.2		FWSSWMP					DFO requests clarification on how Qualified Professionals will determine safe water withdrawal rates for fish, and when these activities will be conducted relative to biologically significant periods for fish.	The Detailed Water Withdrawal Plan (Attachment 16) applied DFO's 10% threshold and a site-specific habitat assessment was presented in Section 4.4 of that Plan.	Resolved with commitment	DFO accepts Baffinland's proposed commitment.	Not listed in DFO's update.	Resolved	Baffinland will amend its FWSSWMP to note that the interim code of practice only applies to withdrawals <150 L/s, and if water withdrawal rates will exceed 150 L/s, Baffinland will seek further guidance from DFO regarding the proper sizing of fish screens.
45	DFO	DFO 3.3.3.3		FWSSWMP					DFO recommends Baffinland develop a management plan to respond to potential impacts from water withdrawals during low water periods, including the management of stranding fish such as occurring at Site BG32.	A 10% threshold was adopted in the Detailed Water Withdrawal Plan (Attachment 16). Water withdrawals at BG32 did not meet this threshold, and hence is no longer proposed for use as a water withdrawal station.	Unresolved	**Proposed commitment from DFO:** During identified low water periods, environmental monitors will inspect water withdrawal sites and identify modifications or prohibitions on water withdrawals as necessary to prevent fish stranding. Fish stranding will be reported to the Environment Department, who would immediately undertake to relocate stranded fish. Fish stranding events, including rescue and relocation activities, and incidences of death of fish from stranding or fish rescue will be reported to DFO within 24 hours.		Resolved	Baffinland will amend its FWSSWMP to include the requirement for environmental monitors to inspect water withdrawal sites during low water periods to prevent fish stranding, and that operators are to report any observed fish stranding to the Environment Department, who will immediately rescue and relocate stranded fish. Incidences of fish mortalities arising from standing or fish rescue will be reported to the DFO within 24 hours.

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46	DFO	DFO 3.3.3.4							DFO recommends Baffinland provide a monitoring plan for daily water withdrawals to track near real-time water use, and monitor changes in flow to identify a decrease of 10% of instantaneous flow at the withdrawal site or downstream withdrawal sites.	The assessment in the Detailed Water Withdrawal Plan used flow duration curves based on 12 years of site hydrology data. Several of the water stations closer to the Mine Site will require valves to be installed on the pumps to restrict the flow. Real-time monitoring of changes in flow at each water withdrawal station is impractical. Can DFO provide a comparable example of where this is required and done?	Resolved			Resolved	
47	DFO	DFO 3.3.3.5							DFO recommends that Baffinland submit Requests for Review and fish and fish habitat information for any waterbodies and watercourses where DFO's guidelines on water withdrawals cannot be met	Fish and fish habitat information at water withdrawal sites are presented in Section 4.4 of the Detailed Water Withdrawal Plan.	Resolved			Resolved	
48	DFO	DFO 3.3.4		FWSSWMP	Recommendation 3.3.4: DFO-FFHPP further recommends Baffinland provide additional rational/ assessment to support the assertion that 40% of the 10-year dry unit runoff water withdrawal from non-fish-bearing streams will not negatively affect downstream fish-bearing waterbodies. DFO-FFHPP notes this information can be provided as part of the Proponent's "DFO Request for Review' submission and/or Application for Fisheries Act authorization, during DFO's regulatory phase.	As per Baffinland's response to DFO 3.3.1, an detailed water withdrawal plan will be provided in advance of the NWB technical meeting.	n/a	Update: Revised thresholds have been applied in the Detailed Water Withdrawal Plan (Attachment 16). The revised thresholds are based on DFO's published guidance.			Resolved			Resolved	
49	DFO	DFO 3.4.1	Updated Application for Amendment No. 2 of Type A Water Licence, attachment 27: Aquatic Effects Monitoring Plan, Document #: BAF-PH1-830-P16-0039. Section 2.4.4, pg. 37.	Blasting Mgnt Plan	Recommendation 3.4.1: DFO-FFHPP recommends that Baffinland revise their instantaneous pressure threshold limit of 100 kPa to 50 kPa when calculating setback distances and update their conclusions as necessary.	Baffinland will adopt the lower threshold of 50 kPa as a precautionary measure. Applicable draft management plans for Phase 2 will be revised accordingly when next updated in advance of the NWB technical meeting.	n/a	Update: the 50 kPa threshold has been reflected in the applicable management plans, including the Surface Water and Aquatic Ecosystem Management Plan (Attachment 22), Blasting Management Plan (Attachment 27) and the Environmental Protection Plan (Attachment 29).			Resolved			Resolved	
50	ECCC	ECCC 3.1	Baffinland Iron Mines Corporation. May 2019. Mary River Project – Phase 2 Proposal Updated Application for Amendment No. 2 of Type A Water Licence 2AM-MRY1325, Attachment 23 (Part 1): Fresh Water Supply, Sewage, and Wastewater Management Plan, Section 5.4.1 and Appendix F: Polishing Waste Stabilization Ponds (PWSP) Effluent Discharge Plan. Baffinland Iron Mines Corporation. May 2019. Mary River Project – Phase 2 Proposal Updated Application for Amendment No. 2 of Type A Water Licence 2AM-MRY1325, Attachment 18.2: Milne Port Water and Sewage Schematic	FWSSWMP	ECCC's Recommendation(s): Clarify whether there would also be a treatment system for the Polishing Waste Stabilization Ponds (PWSP) at Milne Port (similar to what is at the Mine Site), and, if so, provide details on the system. Update the PWSP Effluent Discharge Plan (Appendix F).	The Port Site PWSP has a treatment system that is used to treat the contents of the PWSP to meet the applicable discharge requirements, before being discharged to Milne Inlet. As at the Mine Site PWSPs, a portion of the treatment occurs naturally, through the growth of algae through the summer season. The treatment system consists of a dissolved air floatation unit (DAF), housed inside an insulated and heated seacan, with an air injection system, sludge removal system, coagulant dosing, and flocculant dosing. There is also provision in the system for acid or caustic dosing, if required for pH adjustment. During the summer season, algae grows in the PWSP, consuming any remaining nutrients in the off-spec water, leaving behind TSS in the form of algae solids. The DAF system uses a saturated air-water mixture, injected into the influent stream, to remove solids through floatation. The influent stream is first dosed with a coagulant and flocculant, to promote the formation of large floc solids. These solids nucleate around the microscopic air bubbles formed by the saturated air-water mixture, and rise to the surface of the main tank. The "float" sludge is then skimmed from the surface of the tank, and pumped to totes for disposal. Clarified effluent overflows from the system into a break tank, which is then pumped to Milne Inlet if it meets the discharge criteria. The PWSP Effluent Discharge Plan is being updated					Resolved			Resolved	
51	ECCC	ECCC 3.2	May 2019. Updated Application Attachment 22: Surface Water, Aquatic Ecosystem Management Plan, Sections 10.2.3.1 and 10.2.3.2.		ECCC recommends that the Proponent provide a detailed description of proposed construction monitoring for the Phase 2 activities.	A detailed outline of construction monitoring is provided as Attachment 05 (Proposed North Railway Aquatic Monitoring Programs).					Resolved			Resolved	
52	ECCC	ECCC 3.3	Baffinland Iron Mines Corporation. May 2019. Mary River Project – Phase 2 Proposal Updated Application for Amendment No. 2 of Type A Water Licence 2AM-MRY1325, Attachment 23 (Part 1): Fresh Water Supply, Sewage, and Wastewater Management Plan, Section 7.1, Table 7-2, and Appendix J: Waste Pond Water Treatment Plant Operations – Appendix A. Government of Canada. June 2019. Metal and Diamond Mining Effluent Regulations		ECCC recommends that the Proponent: Update references from the MMER to MDMER. Provide clarification on the discharge criteria that will be applicable.	The need to update discharge criteria and references to the MDMER is acknowledged (Sections 7.1 and 7.2 including Table 7-2; Appendix A of Appendix J; Appendix H). These changes will be completed in the next update to the Fresh Water Supply, Sewage, and Wastewater Management Plan, to be submitted in advance of the NWB technical meetings.					Resolved			Resolved	

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53	ECCC	ECCC 3.4	Baffinland Iron Mines Corporation. May 2019. Mary River Project – Phase 2 Proposal - Updated Application for Amendment No. 2 of Type A Water Licence 2AM-MRY1325, Attachment 23 (Part 5): Fresh Water Supply, Sewage, and Wastewater Management Plan.	FWSSWMP	ECCC's Recommendation(s): ECCC recommends that the Proponent clarify pdf pages 52 to 57.	Baffinland appreciates ECCC's thorough review of the Fresh Water Supply, Sewage, and Wastewater Management Plan. Pages 52-58 of Attachment 23 FSWWP (Part 5) have been reviewed and the following clarifications are provided: Page 52: This figure is the final page of Appendix F. It is noted that this figure is upside down in the PDF. Page 53: This is the flysheet for Appendix G - Mobile Oily Water Separator (OWS) Manual. Appendix G has been added to the FWSSWMP - Part 5 file that was included in the Application, provided as Attachment 06 to this response. Page 54: This is the flysheet for Appendix H - MDMER Sampling and Reporting Requirements Memo (Minnow). This Appendix can be found in pages 59-67 of the PDF. Pages 55-56: These pages were erroneously included and have been removed from the FWSSWMP - Part 5 file provided as Attachment 06 of this submission. Pages 57-58: These pages are appendices to Appendix G of the FWSSWMP; see Attachment 06 of this submission. All required changes will be made in the next update to the FWSSWMP which will be submitted prior to the technical meeting.					Resolved			Resolved	
54	ECCC	ECCC 3.2.1	Surface Water and Aquatic Ecosystems Plan Table 5.2 Construction Activities; Site operations including stockpiling snow; Quarry and Borrow Pit Operation; and Landfill Operations	SWAEMP	ECCC recommends that the Proponent: - Add text in the Low Risk column that identifies the condition status of elevated concentrations/approaching criteria as a trigger for action. - Clarify that thresholds are triggered by exceedance of any one or more of the regulated [illegible]			Baffinland will amend the low risk condition in the TARP to note any trends in increasing concentrations of regulated parameters, and an exceedance of any discharge limit will trigger action. This will be filed in the next update of the SWAEMP provided ahead of the NWB public hearing.			Resolved			Resolved	Update the SWAEMP by amending the low risk condition to note any trends in increasing concentrations of regulated parameters, and an exceedance of any discharge limit will trigger action.
55	ECCC	ECCC 3.2.2	Surface Water and Aquatic Ecosystems Plan Table 5.2 Water crossing installations and/or modifications row.	SWAEMP	ECCC recommends that the Proponent: - Clarify the purpose for TDS as a performance indicator - Add Oil and Grease as a performance indicator; and - Clarify how comparisons to background will be evaluated.			Total Dissolved Solids (TDS) is a supporting parameter in the Northern Corridor Monitoring Program to assist with interpretation of other monitoring results, including total and dissolved metals. Sedimentation is the primary concern with respect to monitoring during water crossing installations and modifications. Hence, Baffinland suggests	• Clarify the purpose for Total Dissolved Solids as a performance indicator • Add Oil and Grease as a performance indicator; and • Clarify how comparisons to background will be evaluated.	ECCC to indicate if visual evidence of sheen, with a response framework if sheen is observed, is adequate in lieu of oil & grease testing.	Partially resolved		Resolved with the commitment to analyze for oil & grease if a visual sheen is observed.	Resolved	SWAEMP will be updated to: - clarify that TDS is a supporting parameter, and not a performance indicator - clarify how comparisons to background will be evaluated (focusing on comparison to upstream) - runoff will be analyzed for oil & grease if a visual sheen is observed
56	ECCC	ECCC 3.2.3	Surface Water and Aquatic Ecosystems Plan Table 5.2 Road operation row.	SWAEMP	ECCC recommends that the Proponent: - Clarify the performance indicator for metals as "total and dissolved metals".			The Northern Corridor Monitoring Program includes the analysis of total and dissolved metals. The word "and" was omitted in the TARP, but Table H.2 in Appendix H correctly states "total and dissolved metals" as monitoring parameters.			Resolved with commitment			Resolved with commitment	Revise Appendix H of the SWAEMP to reflect both total metals and dissolved metals will be tested.
57	ECCC	ECCC 3.2.4	Surface Water and Aquatic Ecosystems Plan Section 5.6; Table 5.2 Trigger Action Response Plans (TARP); Figure 5.1 Northern Corridor Monitoring Adaptive Management	SWAEMP	ECCC recommends that the Proponent: - Includes a Low Risk Threshold in the Northern Corridor Monitoring Program, and clarifies whether it is entirely post-construction. - Clarify the comparisons to upstream in Section 5 for TSS Action Thresholds.			A low risk threshold has been established in the Northern Corridor Monitoring Program. This has been presented in the TARP (Table 5.2) in the SWAEMP. The Northern Corridor Monitoring Program presented in Appendix H, however, does not currently incorporate the low risk threshold.	ECCC recommends for the Surface Water and Aquatic Ecosystem Plan concerning the threshold levels for Total Suspended Solids, that the Proponent: • Includes a Low Risk Threshold in the Northern Corridor Monitoring Program, and clarifies	Re: low-risk threshold for TSS in the NCMP, a low-risk threshold is in the TARP (Table 5.2). Appendix H of the SWAEMP will be revised to incorporate the low-risk threshold presented in the TARP (Table 5.2). Re: comparisons to upstream in SWAEMP	Resolved with commitment			Resolved with commitment	Revise Appendix H of the SWAEMP to incorporate the low risk threshold for the NCMP as identified in the TARP (Table 5.2), and to indicate that upstream concentrations will be used as background for comparison in monitoring.
58	ECCC	ECCC 3.2.5	Fresh Water Supply, Sewage, and Wastewater Management Plan; Tables 3.7 and 5.2	FWSSWMP	ECCC recommends the Proponent: - Ensures that all plans that make reference to the requirements of the MDMER be updated in accordance with the amended Regulations.			ECCC's comments about all parts of the MDMER coming into force are noted. Table 3.7 in the next revision of the FWSSWMP will reflect the fact that parts of the latest regulation came into force on June 1, 2021 (for example, the addition of un-ionized ammonia to Schedule 4 of the regulations).	ECCC recommends the Proponent: • Ensures that all plans that make reference to the requirements of the MDMER be updated in accordance with the amended Regulations.		Resolved with commitment			Resolved with commitment	Update the FWSSWMP re: MDMER references (completed in Rev C)
59	ECCC	ECCC 3.2.6	Fresh Water Supply, Sewage, and Wastewater Management Plan; Section 3.5; Table 3.8; Appendix D	FWSSWMP	ECCC recommends the Proponent: - Clarify water management planning at Milne Inlet, addressing the four points - No information is provided in the text on the			1. Contact water from the lump ore stockpile perimeter pond will be either trucked or pumped to the East or West Ponds. Alternatively, the water will be discharged at one of the existing final discharge points by bypassing the east/west	ECCC recommends the Proponent clarify water management planning at Milne Inlet, addressing the following four points: 1. No information is provided on the management of Lump Ore Stockpile Perimeter ditching contact	Existing ponds will typically not be used to hold stormwater volumes transferred from new ponds prior to discharge of the water. Water quality will be managed at the new ponds and water will be discharged directly to	Resolved with commitment			Resolved with commitment	BIM will update the FWSSWMP specifying final plans in terms of conveyance and discharge of contact water at Milne Port.
60	ECCC	ECCC 3.2.7	Aquatic Effects Monitoring Program; Table 3.1 & 3.2; Section 3.1.1.1 - Water Quality Benchmarks	AEMP	ECCC recommends that the Proponent: - Review recent research and guidelines, including for those parameters listed above, and determine the applicability of more recent guidelines to the Project. The benchmarks for the AEMP analysis should be updated accordingly.			Baffinland has reviewed the recent guidelines indicated by ECCC and will adopt those for cobalt, (dissolved) lead, strontium, and zinc as AEMP benchmarks. The AEMP benchmarks for these parameters will be derived using baseline data (when available) to conform to the same methods used to derive AEMP benchmarks for other	ECCC recommends that the Proponent: • Review recent research and guidelines, including Cobalt, Copper, Lead, Strontium and Zinc, and determine the applicability of more recent guidelines to the Project. The benchmarks for the Aquatic Effects Monitoring Program analysis should be updated accordingly.	Baffinland will adopt the FEQGs for Co, Pb, Sr and Zn, and will consider adoption of the copper FEQG.	Resolved with commitment		Substantially resolved pending confirmation that the comment was addressed in the latest AEMP submission.	Resolved	BIM will evaluate AEMP benchmarks for dissolved lead and zinc using 75th percentile and an additional central statistic (mean, median) of the toxicity modifying parameters (pH, DOC, and/or hardness) at the time of baseline as the basis for determining AEMP benchmarks according to FEQG and CCME
61	ECCC	ECCC 3.2.8	Aquatic Effects Monitoring Plan - Section 5.1 & Table 5.1	AEMP	ECCC recommends the Proponent: - Provide additional details on the specific requirements to trigger the action levels - Identify triggers that increase the protectiveness of the proposed moderate action level.			Baffinland is in the process of considering additional details for triggers related to action levels proposed in the existing Data Assessment and Response Framework (Section 5.1, Table 5.1) for the water quality study component.	ECCC recommends in Section 5 of the Aquatic Effects Monitoring Plan the Proponent: • Provide additional details on the specific requirements to trigger the action levels • Identify triggers that increase the protectiveness of the proposed moderate action level.	BIM will consider adopting the applicable regulatory guideline as the high risk thresholds in the AEMP.	Unresolved		Substantially resolved pending confirmation that the comment was addressed in the latest AEMP submission.	Resolved	BIM will include additional description of framework response, including timing for review of data against action levels, under the TARP (Section 5) in next AEMP update. BIM will provide further description on potential moderate- and high-risk response scenarios.
62	ECCC	ECCC 3.2.9	Attachment 32 - Phase 1 Waste Rock Management Plan - BAF-PH1-830-P16-0029' Phase 2 Proposal Revisions. For Review Purposes Only Rev B; Golder Report - Waste Rock Management Plan - For 2020 through 2021; Section: 10.3 Waste Rock Facility (WRF) Closure	Ph1 WRMP	Statement: ECCC notes that once a mine is subject to MDMER, it remains subject to MDMER until it acquires the recognized closed mine (RCM) status, and as such, all effluent discharges will have to be discharged through a designated final discharge point (FDP) monitored and reported through Mine Effluent Reporting System (MERS).			ECCC's comment is acknowledged, and Baffinland will adhere to the regulations.	Comment, no resolution required		Resolved			Resolved	
63	QIA	QIA 1.1	190502-2AM-MRY1325-Amend2-Applic-Att-29-ICRP	ICRP	Baffinland's May 2019 submission of the Interim Reclamation and Closure Plan (ICRP) has not yet been approved by QIA through the Commercial Lease. QIA can provide an update on this approval process as requested by the NWB; however, QIA will manage the ICRP through the Commercial Lease and not the Water Licence Process.	Baffinland will continue to engage QIA on the updates to the ICRP, to meet the conditions of both the Commercial Lease and the Type 'A' Water Licence.	QIA and Baffinland have exchanged feedback on the Phase 2 ICRP. At this time, QIA has not approved the current version of the ICRP submitted as part of the Amendment 2 package.	Baffinland is committed to working with QIA to reach agreement on the ICRP prior to the Public Hearing on the Phase 2 Proposal Water Licence Amendment, as described in the Inuit Certainty Agreement. Changes to the ICRP made through the NWB process will be subject to QIA review and approval.		ICRP - continue working with the QIA.	Path forward identified	QIA and Baffinland have agreed to ongoing technical discussions related to the ICRP and reclamation security.		Path forward identified	
64	QIA	QIA 2.1	190502-2AM-MRY1325-Amend2-Applic-Att-29-ICRP	ICRP	QIA will work with Baffinland through the Commercial Lease on all matters related to security for Inuit Owned Land. QIA can provide an update on this approval process as requested by the NWB.	Baffinland will continue to engage QIA on the updates to security held for the Project, to meet the conditions of both the Commercial Lease and the Type 'A' Water Licence.	QIA is satisfied with Baffinland's August 23, 2019 response.				Resolved			Resolved	
65	QIA	QIA 3.1	190502-2AM-MRY1325-Amend2-Applic-Att-2-Applic	WCA	Baffinland should be required to come to a new agreement with QIA prior to the amendment being issued as per Article 20.3.1 of the Nunavut Agreement.	Baffinland believes that an amended Water Compensation Agreement is required, and has provided QIA with draft revisions to the Water Compensation Agreement to reflect the Phase 2 Project.	QIA and Baffinland have agreed to work together to develop a revised Water Compensation Agreement for the Phase 2 Project. An agreement has not been established at this time.	Baffinland is committed to working with QIA to draft a new Water Compensation Agreement, with the goal of having a signed Water Compensation Agreement prior to the Public Hearing on the Phase 2 Proposal Water Licence Amendment.			Path forward identified	QIA and Baffinland have agreed to continue Phase 2 WCA negotiations		Path forward identified	

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66	QIA	QIA 4.1	08MN053_BAF-PH1-830-P16-0022_railway-ops-maint-DRAFT-PHASE-2 08MN053_BAF-PH1-830-P16-0008_Environment-Protection-Plan-DRAFT-PHASE-2 190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE 190502 2AM-MRY1325 Amend2 Applic-Att-27-AEMP-ILAE	IQ	4.1 - Provide the specifics of how Inuit Qaujimajatuqangit was and will be used and considered in the development of the North Railway, its location, the crossings, and the relevant management and monitoring plans.	The proposed alignment of the North Railway follows the existing Milne Inlet Tote Road for the majority of the distance between the Mine Site and Milne Port, which limits the footprint of the Project and the need for additional access road construction. The section of the North Railway alignment that deviates from the Milne Inlet Tote Road was subject to an exhaustive technical feasibility study, which determined the preferred alignment was the most technically and economically feasible, as well as the safest in terms of operations (grade and distance from water) and Inuit and wildlife crossings (least steep cuts). Based on these considerations Baffinland advanced the preferred alignment for public reviews to be administered by the Nunavut Planning Commission (NPC), Nunavut Impact Review Board (NIRB), and the Nunavut Water Board (NWB). The proposed alignment of the North Railway, as with the Tote Road, does overlap with a primary travel route. The proposed railway deviation does additionally overlap with the travel route to Igloolik. No other important values were identified in the IQ work that resulted in the map book presented as TSD 5. The proposed alignment of the North Railway occurs entirely within the Mary River Transportation Corridor as defined in Appendix P of the North Baffin Regional Land Use Plan. The	This Technical Comment is now addressed by TC 26-33.				Resolved			Resolved	
67	QIA	QIA 4.2	08MN053_BAF-PH1-830-P16-0022_railway-ops-maint-DRAFT-PHASE-2 08MN053_BAF-PH1-830-P16-0008_Environment-Protection-Plan-DRAFT-PHASE-2 190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE 190502 2AM-MRY1325 Amend2 Applic-Att-27-AEMP-ILAE	IQ	4.2 - Provide monitoring locations along the proposed North Railway that align with Inuit use.	Road and rail dust is not expected to affect the quality of water in nearby streams and lakes in regard to a potential source of drinking water. Baffinland's IQ study did not identify waters important to Inuit in the vicinity of the Tote Road and Railway (KP Letter dated November 30, 2018; Ref. No. NB18-00785; Appendix A of Attachment 2 of Baffinland's January 2019 response to NIRB advanced technical review comment HC 02 in January 2019). It was acknowledged in that report that it is reasonable to assume that watercourses close to areas used by Inuit may be used as sources of drinking water, including Phillips Creek and the lakes within the Phillips Creek catchment. On June 14, 2019, Baffinland received a copy of the QIA's Tusaqtavut Study for Pond Inlet, which identified approximately 14 values within the Project areas that are used for subsistence (either fishing and/or fresh water) within the Project footprint including a 250 m buffer. Baffinland requests the coordinates and interviewer-assigned description of each value, so that the nature of these subsistence values can be understood. Baffinland is willing to consider modifications to its Tote Road Monitoring Program to monitor water quality at Inuit water use areas, if the appropriate IQ information can be made available.	This Technical Comment is now addressed by TC 26-33.				Resolved			Resolved	
68	QIA	QIA 5.1	Fish Passage Risk Assessment Update (KP Ref VA19-00838)	FAA Application	When will the monitoring and adaptive management plan related to flow diversion be shared for review and comment?	Monitoring and adaptive management at stream diversions are outlined in Attachment 05 (Proposed North Rail Monitoring Programs).	This Technical Comment will remain unresolved until QIA has approved the relevant water quality thresholds and actions.	The nature of this issue is such that adaptive management will be subject to review by a trained professional, and concrete thresholds and pre-defined responses cannot be developed. Section 5.9 of the SWAEMP states: The triggers for taking action such as flooding and/or changes to stream morphology, are subjective and will require an exercise of professional judgement regarding action response, as there are no definitive action level triggers.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	
69	QIA	QIA 6.1	08MN053_BAF-PH1-830-P16-0022_railway-ops-maint-DRAFT-PHASE-2	Rail O&M Mgnt Plan	This plan or another should be resubmitted with the monitoring and mitigation measures to be taken for the construction and operations of the North Railway. This should include adaptive management.	Section 5.2 of the Railway Operation and Maintenance Plan (under the heading Component Inspections) describes the inspections and maintenance work to be undertaken at bridges and culverts. Section 1.3 identifies the relevant management plans for issues related to water quality and fish habitat, notably the EPP and the SWAEMP. These plans will be relied upon for addressing water quality and fish habitat issues that are identified as part of the Component Inspections of bridges and culverts.	This Technical Comment will remain unresolved until QIA has approved the relevant water quality thresholds and actions.	The Railway Operation and Maintenance Plan was created in the environmental assessment led by the Nunavut Impact Review Board, and is not part of the Water Licence Application. As noted in Baffinland's original response, water quality issues during construction will be managed by applying the Environmental Guidelines for Water Crossing Repairs, Modifications and/or Installations (Appendix F of the Surface Water and Aquatic Ecosystems Management Plan [SWAEMP]), with monitoring and adaptive management described in the trigger action response plan (TARP) presented in the Surface Water and Aquatic Ecosystems Management Plan. Similarly, ongoing water quality monitoring during rail operations is covered by the Northern Corridor Monitoring Program (SWAEMP Appendix H), adapted from the Tote Road Monitoring Program to account for rail monitoring. Both these monitoring programs were developed jointly with the QIA.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	
70	QIA	QIA 7.1	Multiple, for example: 08MN053_BAF-PH1-830-P16-0022_railway-ops-maint-DRAFT-PHASE-2 190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE	Adaptive Mgnt	Baffinland should be required to update all DRAFT management plans so that all references are clear and easy to access. At a minimum, references should include the section headers or section numbers.	Baffinland proposes to update the Water Licence related management plans in advance of the NWB Technical Meetings. Attachment 07 presents a table that identifies where each management plan references another plan. The references to other plans will be checked and updated the next update to these management plans.	QIA and Baffinland are continuing to jointly review and edit several management plans and Water Licence amendment documents through a separate regulatory process.	The management plans presented in the updated Water Licence Application have had varying levels of review by the QIA. Baffinland continues to implement its work plan to update the management plans as agreed to with the QIA.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	
71	QIA	QIA 8.1	190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE	FAA Application	Resubmit the SWAEMP and include the frequency of the assessment of monitoring activities listed in Section 10 and how this will inform and prioritize maintenance activities.	A detailed outline of rail monitoring is provided as Attachment 05 (Proposed North Rail Monitoring Programs).	This concern remains outstanding until thresholds are developed for Fish Passage.	Fish passage will be relevant to the Fisheries Act Authorization (FAA) Application that will follow the water licensing process. Baffinland has initiated discussions with DFO regarding fish passage through the FAA process.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	

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72	QIA	QIA 9.1	Multiple, including: 190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE	Adaptive Mgnt	Resubmit DRAFT plans and use language for what Baffinland will do should the Project be approved rather than delaying detail or recommending actions be taken.	Baffinland proposes to update the Water Licence related management plans in advance of the NWB Technical Meetings. Attachment 08 presents a table that identifies where each management plan forward-references an action and provides more detail or clarification on each of these commitments. These forward-referenced commitments will be addressed according to the proposed actions in the next update to these management plans in advance of the NWB technical meetings.	QIA and Baffinland are continuing to jointly review and edit several management plans and Water Licence amendment documents through a separate regulatory process.	The management plans presented in the updated Water Licence Application have had varying levels of review by the QIA. Baffinland continues to implement its work plan to update the management plans as agreed to with the QIA.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	
73	QIA	QIA 10.1	190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE 08MN053_BAF-PH1-830-P16-0023_Roads_Management_Plan-DRAFT-PHASE-2	SWAEMP	Present the how, where and to what frequency is calcium chloride monitored to remain in accordance with applicable guidelines to minimize runoff into local watercourses.	As noted in the Roads Management Plan, calcium chloride is mixed with water for application to roads for dust suppression in accordance with its Dust Management Protocol, which is Attachment 6 of the Air Quality and Noise Abatement Management Plan, presented as Attachment 09 of this response. The Dust Management Protocol is consistent with Section 2.3 of the Nunavut Environmental Guideline for Dust Suppression (Government of Nunavut, 2002). This includes using dust suppressants approved by the GN (CaCl is an approved dust suppressant); following manufacturer application instructions; applying the dust suppressant to the roadway; monitoring the application rate to ensure adequate coverage without pooling or runoff of product; not using more dust suppressant than needed to effectively suppress dust; and ensuring the material does not migrate or run off the traveled portion of the roadway. Monitoring to determine if calcium chloride can be detected in local watercourses is not identified in the GN dust suppression guideline. Baffinland notes that in 2018 an alternate dust suppressant called Dust Stop was used on a trial basis, and an expanded trial application is being implemented in 2019. Dust Stop is non-toxic to aquatic life, and is being considered to partially or fully replace the use of CaCl as a dust suppressant at site.	Monitoring of calcium outlined in Appendix G and H of the SWAEMP is sufficient assuming no evidence of unexpected effects associated with calcium are identified. If unexpected effects are identified, monitoring will need to be adequately modified through the adaptive management process.				Resolved			Resolved	
74	QIA	QIA 10.2		SWAEMP	Provide the applicable guideline used to minimize runoff into local watercourses.	The Dust Management Protocol presented as Attachment 6 of the Air Quality and Noise Abatement Management Plan provides the guidance Baffinland staff use to minimize runoff into watercourses. The Dust Management Protocol has been provided as Attachment 09 to this response.	QIA is satisfied by the response provided by Baffinland on August 23, 2019.				Resolved			Resolved	
75	QIA	QIA 11.1	190502-2AM-MRY1325-Amend2-Applic-Att-8.5-Rail-Geotech-Recomm	Rail O&M Mgnt Plan	The Water Licence should require Baffinland to monitor the construction, operations and closure of the North Railway.	Part D, Item 18 of the existing Water Licence requires geotechnical inspections of earthworks. Schedule B, Item 1e.ii of the existing Water Licence requires reporting of results of thermal modelling and/or research carried out in relation to permafrost integrity along the railway alignment.	This concern remains outstanding until TARPs are provided for geotechnical criteria of the railway.	As noted in Baffinland's original response, the Water Licence contemplates the construction and operation of a railway (the South Railway) already, and further conditions are not required. Attachment 8.15 of the Updated Application is the North Railway Instrumentation Monitoring Program. Section 5.3 identifies alert levels (thresholds) for changes in ground temperature and settlement in the embankment, as well as response procedures and actions. Baffinland will develop a TARP based on this monitoring plan, to be presented in the appropriate management plan. As previously stated, this will be completed during the first year of rail operation. The commitment to develop a TARP applying the geotechnical criteria in the railway monitoring program should be sufficient to resolve this recommendation.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	Develop and incorporate a TARP based on the thresholds identified in the North Railway Instrumentation Monitoring Program into the Railway Operation and Maintenance Plan during the first year of operations.
76	QIA	QIA 11.2	190502-2AM-MRY1325-Amend2-Applic-Att-8.5-Rail-Geotech-Recomm	Rail O&M Mgnt Plan	The Water Licence should require Baffinland to provide the monitoring program prior to any construction approvals for the North Railway is provided.	Baffinland will provide details on the construction geotechnical monitoring program as part of the Water Licence review process in advance of the technical meeting. The outcome of the construction geotechnical monitoring program will inform the operations phase geotechnical monitoring, to be incorporated into the updated Railway Operation and Maintenance Plan.	This concern remains outstanding until appropriate geotechnical monitoring data is included as reporting criteria within the amended Water Licence.	The previously forward-referenced construction geotechnical monitoring program was presented as Attachment 8.15 of the Updated Application. Part D, Item 18 of the Water Licence requires annual geotechnical inspections. As per the response to QIA-11.1, the geotechnical monitoring program including thresholds will be presented in a management plan that will be approved under the Water Licence.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related to the proposed terms and conditions of the Phase 2 Water Licence.		Path forward identified	
77	QIA	QIA 12.1	08MN053_BAF-PH1-830-P16-0022_railway-ops-maint-DRAFT-PHASE-2	Rail O&M Mgnt Plan	These records should be provided to reviewers as part of Baffinland's reporting requirements under the Water Licence.	Part D, Item 18 of the existing Water Licence requires geotechnical inspections of earthworks. Schedule B, Item 1e.ii of the existing Water Licence requires reporting of results of thermal modelling and/or research carried out in relation to permafrost integrity along the railway alignment.	This concern remains outstanding until appropriate geotechnical monitoring data is included as reporting criteria within the amended Water Licence.	The QIA's recommendation was in relation to the following: "Records of inspections and corrective actions will be kept by the Railroad Infrastructure Department." This statement refers to standard internal record-keeping. Baffinland's initial response governs how external reporting will be conducted.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related to the proposed terms and conditions of the Phase 2 Water Licence.		Path forward identified	
78	QIA	QIA 12.2	08MN053_BAF-PH1-830-P16-0022_railway-ops-maint-DRAFT-PHASE-2	Rail O&M Mgnt Plan	Baffinland should be required to disclose the triggers that result in corrective actions being taken.	Thresholds and triggers will be established as appropriate in the future operations geotechnical monitoring program that will form part of the Railway Operation and Maintenance Plan. Triggers that will result in corrective actions will be defined after the completion of the construction monitoring phase, as no detailed site-specific information is currently available to make an accurate assessment of the potential triggers. These triggers will be disclosed once they have been developed.	This concern remains outstanding until TARPs are provided for geotechnical criteria of the railway.	See Baffinland's response to QIA-11.1.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	
79	QIA	QIA 12.3	08MN053_BAF-PH1-830-P16-0022_railway-ops-maint-DRAFT-PHASE-2	Rail O&M Mgnt Plan	Baffinland should be required to update the NWB and reviewers on the effectiveness of the corrective actions.	Comments on the effectiveness of corrective actions can be provided as part of Baffinland's QIA and NWB Annual Report for Operations.	QIA is satisfied by the response provided by Baffinland on August 23, 2019.				Resolved			Resolved	

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80	QIA	QIA 13.1	190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE	SWAEMP	Provide figures that detail the field monitoring proposed to be completed as part of the construction, operation and closure of the North Railway.	Sections 10.2.3.1 and 10.2.3.2 describe the proposed monitoring along the North Railway during the construction and post-construction phases, respectively. For example, Section 10.2.3.1 states, "Monitoring will occur at active work areas along the North Railway during construction, as prescribed in a future Fisheries Authorization for crossings. This is expected to include turbidity monitoring downstream of active work areas, including crossing locations as well as downstream of quarries and soil spoils disposal areas (mainly former borrow pits and quarries)." The location of the embankment and water crossings are presented on the detailed railway figures presented as Attachment 10 of the Water Licence amendment Application. A map of proposed monitoring locations for operations will be provided prior to the technical meeting. Monitoring locations associated with quarries will be identified within each quarry management plan.	QIA believes that Table 5.1 should include monitoring activities during closure of the north railway.	The operation phase monitoring locations are presented in the updated Northern Corridor Monitoring Program presented as Appendix H of the SWAEMP (Attachment 22 of the Updated Application). Some monitoring programs listed in Table 5.1 and depicted in the figure will need to continue during the active closure phase (and possibly for a period post-closure). However, this is articulated in the Interim Closure and Reclamation Plan. Section 2.3.1.4 of the ICRP states that a Final Closure and Reclamation Plan will be developed and submitted no later than one year or earlier if possible before scheduled permanent closure, or immediately after notification of an unplanned closure. At this time, figures would be updated to reflect closure phase monitoring of the North Railway.			Unresolved	QIA believes that Table 5.1 should include monitoring activities during closure of the north railway.		Unresolved	
81	QIA	QIA 13.2	190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE	SWAEMP	Provide additional details based on Baffinland's current experience from developing a mine with a linear transportation corridor (over 5 years) that would inform the selection of effective sedimentation and erosion controls along the North Railway.	Section 6.4.3 of the SWAEMP presents generic sediment and erosion control measures, with Baffinland's evaluation of performance based on its experience implementing each control measure.	Erosion control measures are detailed with installation locations noted, which may be applied to either road or rail water crossings.				Resolved			Resolved	
82	QIA	QIA 14.1	08MN053_BAF-PH1-830-P16-0023_Roads_Management_Plan-DRAFT-PHASE-2	SWAEMP	Provide the severity of the concern that requires immediate action be taken by Baffinland.	The response action framework for post-construction monitoring is outlined in Appendix C of the Roads Management Plan.	Appendix C was not provided by Baffinland to verify if any changes were made to address this comment.	The referenced text is from the Roads Management Plan, which is not a plan regulated by the NWB under the Water Licence. The referenced response action framework for post-construction monitoring is now presented in Appendix F of the Surface Water and Aquatic Ecosystem Management Plan. Response times cannot be provided on a scale as being requested by the QIA, as they are site-specific and depend upon the available resources and urgency relative to other issues at the time.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	
83	QIA	QIA 14.2	08MN053_BAF-PH1-830-P16-0023_Roads_Management_Plan-DRAFT-PHASE-2	SWAEMP	Provide the frequency at which Baffinland would determine and prioritize any corrective actions to the Project road network.	Water quality monitoring is conducted per the schedule outlined in Appendix C of the Roads Management Plan, including a response action framework to address issues of sedimentation. Geotechnical inspections of the project are completed bi-annually as required by the Type A Water Licence, and recommendations are provided in the resulting report and are actioned on Site. Fish passage is assessed annually, and generally any identified issues are addressed in the calendar year. The exception is fisheries crossings where QIA has not granted approval for Baffinland to conduct adjustments to the Tote Road under the Commercial Lease.	Appendix C was not provided by Baffinland to verify if any changes were made to address this comment.	As noted in the response to QIA-14.1, Appendix C of the Roads Management Plan now appears as Appendix F of the SWAEMP. The QIA Environmental Monitors are integrated into Baffinland's environmental department, in terms of understanding how issues are prioritized day to day.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	
84	QIA	QIA 14.3	08MN053_BAF-PH1-830-P16-0023_Roads_Management_Plan-DRAFT-PHASE-2	Roads Mgnt Plan	Provide what would trigger Baffinland to construct the approved Tote Road to the 2014 Hatch design.	Baffinland continues to upgrade the Tote Road through ongoing operation and maintenance, implementation of the Tote Road Earthworks Execution Program (TREEP) and implementing or restoring sections of the road to the Hatch design.	Baffinland has indicated that a response to this concern is contingent on the NIRB's review of TRC 22 as part of the "Phase 2 Proposal" assessment.	Baffinland reviewed TRC 22 from the NIRB process and it is not related to this topic. Baffinland maintains that effective monitoring and mitigation that utilizes adaptive management, such as the framework outlined in the Roads Management Plan, is key to quantifying and minimizing any project related effects on the Tote Road. The Hatch 2013 design of the Tote Road, in combination with subsequent design work such as the Tote Road Earthworks Execution Plan (TREEP), continue to inform upgrades to problematic areas of the Tote Road in consideration of safety, traffic management and environmental impacts. The design of the Tote Road will continue to adapt to meet the demands of the Project, and will be informed by ongoing monitoring of the water crossings (Tote Road Monitoring Program), geotechnical stability (geotechnical inspections), and permafrost degradation (Milne Inlet Tote Road and Associated Borrow Source investigations). Additionally, design of the Tote Road will take into account feedback received from land users, such as the location of snowmobile crossings.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	
85	QIA	QIA 15.1	08MN053_BAF-PH1-830-P16-0022_railway-ops-maint-DRAFT-PHASE-2	Rail O&M Mgnt Plan	Provide the target areas identified as higher risk and validation for this assessment.	The complete list of target areas have not been identified. A study is currently underway to develop a geotechnical monitoring plan for use during the construction phase. The outcome of the construction geotechnical monitoring program will inform the operations phase geotechnical monitoring, to be incorporated into the updated Railway Operation and Maintenance Plan. Examples of high risk areas may include the four rail bridges over rivers, plate arch culverts, high embankments and deep excavations in both ice-rich and ice-poor soil areas.	Baffinland has provided the requisite information in the Northern Railway Instrumentation Monitoring Plan.				Resolved			Resolved	
86	QIA	QIA 15.2	08MN053_BAF-PH1-830-P16-0022_railway-ops-maint-DRAFT-PHASE-2	Rail O&M Mgnt Plan	Provide what additional information will be gathered prior to construction of the North Railway and how that information will be used to inform the construction of the North Railway.	Thermistors for sub-surface temperature profiling, as well as topographical survey markers and settlement plates will be installed at various locations to validate design assumptions and to monitor potential creep and thaw settlement.	Baffinland has provided the requisite information in the Northern Railway Instrumentation Monitoring Plan.				Resolved			Resolved	

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87	QIA	QIA 15.3	08MN053_BAF-PH1-830-P16-0022_railway-ops-maint-DRAFT-PHASE-2	Rail O&M Mgnt Plan	Provide how the information gathered during the construction of the North Railway will be used to finalize the operational condition monitoring plan.	Data collected during the construction phase will be used to validate the design assumptions used for design analysis and modelling of thermal behaviour and changes to the permafrost regime. This will assist in identifying operations phase monitoring at representative and high risk locations, for example at deep excavations, high embankments, or plate arch culverts. The operations phase monitoring program will evolve over time should results show a specific need for additional monitoring.	Triggers, Actions and Thresholds have yet to be established for geotechnical monitoring criteria.	See Baffinland's response to QIA-11.1.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	
88	QIA	QIA 15.4	08MN053_BAF-PH1-830-P16-0022_railway-ops-maint-DRAFT-PHASE-2	Rail O&M Mgnt Plan	Provide the inventory of rail condition monitoring equipment and locations.	The construction geotechnical monitoring program for the North Railway is currently being prepared and will be submitted for review in advance of the technical meeting. A draft list of monitoring equipment and locations are provided in a table presented as Attachment 10 of this response, however this list is subject to change as the monitoring program is finalized. The final monitoring plan for the operations phase of the railway will be finalized following completion of the construction monitoring phase, when data collected has ben analyzed and final recommendations can be provided.	Baffinland has provided the requisite information in the Northern Railway Instrumentation Monitoring Plan.				Resolved			Resolved	
89	QIA	QIA 16.1	190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE	SWAEMP	Present the triggers based on monitoring data listed in Attachment 1, that will be implemented to mitigate against an exceedance of a water quality criteria, relevant thresholds, and potential impacts to the receiving environment. As committed to by Baffinland in the NIRB process, QIA is willing to work with Baffinland through updating its adaptive management included in monitoring and management plans.	A detailed outline of construction monitoring is provided as Attachment 05 (Proposed North Rail Monitoring Program). This includes a description of proposed monitoring of watercourses downstream of active construction areas in accordance with the Environmental Guidelines for Project Water Crossing Repairs, Modifications and/or Installations presented in Appendix C of the Roads Management Plan, which will be adapted for implementation during rail construction. The final monitoring program will be presented in an updated SWAEMP, to be made available in advance of the NWB technical meetings.	This concern remains outstanding until thresholds and responses are developed to include all analytical water quality monitoring parameters.	Baffinland has received from the QIA more than one round of comments on the SWAEMP including the indicators and thresholds in the Trigger Action Response Plan (TARP). The QIA's comments have been addressed in the latest version. Baffinland will continue to work cooperatively with the QIA to finalize these plans under the Water Licence, and will continue to report progress where we can. It is not clear what remains outstanding in regard to incorporating all analytical water quality monitoring parameters.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	
90	QIA	QIA 16.2	190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE	SWAEMP	Update all applicable water quality monitoring plans to include triggers, based on monitoring data, and to implement the mitigation measures to avoid exceedance of water quality criteria, relevant thresholds, and potential impacts to the receiving environment.	The reference to Attachment 1 is not clear as there is no Attachment 1 in the referenced SWAEMP. Baffinland will update the applicable water quality monitoring plans to be consistent with the Adaptive Management Plan currently under development in consultation with the QIA. This includes incorporating the concepts of triggers, thresholds and actions presented in the Environmental Guidelines for Project Water Crossing Repairs, Modifications and/or Installations presented in Appendix C of the Roads Management Plan. This is articulated further in the detailed outline of construction monitoring presented in Attachment 05 (Proposed North Rail Monitoring Programs).	This information has not yet been incorporated into the relevant management plans.	It is not clear what remains outstanding in regard to incorporating all analytical water quality monitoring parameters. Baffinland included a recent draft update of the SWAEMP in the Updated Water Licence Application (Attachment 22) which identifies agreed upon water quality thresholds related to surface runoff.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	
91	QIA	QIA 16.3	190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE	SWAEMP	Describe how the proposed measures will mitigate the occurrence of an exceedance to water quality criteria.	See the detailed outline of construction monitoring provided as Attachment 05 (Proposed North Rail Monitoring Programs).	This information has not yet been incorporated into the relevant management plans.	Since this original comment was received, Baffinland incorporated the referenced construction monitoring details previously presented as Attachment 05 of the 2019 Water Licence Application into Section 5 of the SWAEMP (Attachment 22).			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	
92	QIA	QIA 17.1	Fish Passage Risk Assessment Update (KP Ref VA19-00838)	FAA Application	Is Baffinland committed to completing these recommendations? If yes, when will the assessment and detailed design be shared for review and comment?	Yes, Baffinland is committed to completing these recommendations. An assessment of the single high risk diversion will be undertaken in late August 2019, and site-specific modifications to the culvert design will be undertaken if appropriate following this assessment (i.e., through the fall of 2019). The resultant information will be presented in the application for an authorization under the Fisheries Act, to be prepared in late 2019 through early 2020. Baffinland can provide the QIA with this information once it has been developed. This is articulated in more detail on the construction monitoring outline provided as Attachment 05 (Proposed North Rail Monitoring Program).	Refer to TC 24 1.4.				Resolved			Resolved	
93	QIA	QIA 18.1	Fish Passage Risk Assessment Update (KP Ref VA19-00838) 190502 2AM-MRY1325 Amend2 Applic-Att-27-AEMP-ILAE	FAA Application	Is Baffinland committed to completing these recommendations? If yes, when will the monitoring program be shared for review and comment?	Yes, Baffinland is committed to completing these recommendations. An outline of the proposed fish passage monitoring program is presented in Attachment 05 Proposed North Rail Monitoring Programs). The resultant information will be presented in the application for an authorization under the Fisheries Act, to be prepared in late 2019 through early 2020. Baffinland can provide the QIA with this information once it has been developed.	Refer to TC 24 1.4				Resolved			Resolved	
94	QIA	QIA 18.2	Fish Passage Risk Assessment Update (KP Ref VA19-00838) 190502 2AM-MRY1325 Amend2 Applic-Att-27-AEMP-ILAE	FAA Application	Given this statement can Baffinland explain why the North Railway did not cause greater changes to the AEMP? Please also consider the North Railway involved almost 400 stream crossing and 30 new quarries.	The AEMP focuses on the assessment of long-term aquatic effects from multiple stressors within the Potential Development Area of the Mary River Mine. The Mary River Mine site is considered to be the worst case scenario for impacts to the aquatic environment, including fish passage and habitat quality, due to multiple sources including surface runoff, discharges and dust,. Baffinland suggests the SWAEMP is more appropriate as the project effects in the Northern Transportation Corridor are associated with construction and the monitoring program will be short-term focusing on validating that fish passage has been maintained.	This concern remains outstanding until triggers from the SWAEMP regarding the North Railway are captured in the AEMP.	Baffinland stands by its original response. The Northern Corridor Monitoring Program (now forming part of the SWAEMP) was developed jointly with the QIA. Baffinland's Commitment #201 in the NIRB review is as follows: *Baffinland collects and reports data on fish presence, catch per unit effort, and fork length from 30-60 crossing sites along the Tote Road annually. Baffinland commits to adding observations regarding physical condition of fish (e.g., lesions, injuries, activity level). Baffinland and QIA will determine an appropriate approach to analysis and development of a metric for monitoring fish health for the 2022 reporting period. The program will be evaluated every three (3) years to determine if monitoring locations may be reduced due to no observations of project related-impacts.* This commitment will be incorporated into the Phase 2 version of the SWAEMP.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	

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95	QIA	QIA 19.1	190502-2AM-MRY1325-Amend2-Applic-Att-8.5-Rail-Geotech-Recomm	SWAEMP	These reports should be included in Baffinland's reporting to NWB.	Observations of erosion and sedimentation may be identified during General or Component Inspections described in Section 5.2 of the Railway Operation and Maintenance Plan. As noted in Section 1.3 of the same Plan, water quality issues will be dealt with in accordance with the relevant plans including the EPP and SWAEMP, as with any other erosion and sedimentation issue on the Project.	This concern remains outstanding until reporting criteria inclusive of sedimentation monitoring is provided in the amended Water Licence.	The SWAEMP (Attachment 22 of the Updated Application) presents the thresholds, actions and reporting requirements related to erosion and sedimentation project-wide including the railway.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	
96	QIA	QIA 19.2	190502-2AM-MRY1325-Amend2-Applic-Att-8.5-Rail-Geotech-Recomm	SWAEMP	Provide the measures and what are the specific triggers to action them.	Rail operations staff will report any erosional events that are or have the potential to cause the release of sediment into watercourses to the Environment Dept. This would be the triggering event. Any remedial measures will be implemented consistent with the SWAEMP. Aside from potentially elevated TSS above thresholds described in the Water Quality Monitoring outline for rail construction presented in Attachment 05 (Proposed North Rail Monitoring Programs). Monitoring and sampling of select water crossings in the Northern Transportation Corridor will also include a visual inspection of crossings to assess erosion and sedimentation events, consistent with the monitoring framework outlined in the Tote Road Monitoring Program in the Roads Management Plan.					Resolved			Resolved	
97	QIA	QIA 20.1	190502-2AM-MRY1325-Amend2-Applic-Att-8.5-Rail-Geotech-Recomm 2AM-MRY1325 Baffinland Iron Mines Revised Run of Mine Stockpile and Sedimentation Pond Issued For Construction	Rail O&M Mgnt Plan	This work should be completed and provided by Baffinland prior to any construction approvals for the North Railway deviation is provided.	Further geotechnical investigations to confirm permafrost conditions along the North Railway deviation are planned in advance of construction, during winter 2019/2020. Any required updates to the Geotechnical Recommendations for Northern Railway report will be filed with the NWB.	Refer to TC 24 1.4				Resolved			Resolved	
98	QIA	QIA 21.1	190502-2AM-MRY1325-Amend2-Applic-Att-8.5-Rail-Geotech-Recomm	Rail O&M Mgnt Plan	The Water Licence should require Baffinland to complete and report on embankment cut test sections. The reporting should describe how the results were included in final designs. This work should be completed and provided by Baffinland prior to any construction approvals for the North Railway is provided.	A report on embankment cut sections cannot be produced unless actual cuts have been constructed and condition monitoring has taken place during construction. Following the construction monitoring phase, long-term monitoring will be proposed based on the findings from the construction monitoring program. Embankment cut sections have been studied in the thermal analysis reports and these have been presented as part of the FEIS Addendum.	This concern remains outstanding until further detail is provided in either the North Railway Monitoring Program or the mentioned drone-based monitoring program.	What is included in the amended Water Licence is the decision of the NWB. However, Baffinland suggests that a test embankment would inform engineering design, and that it is not relevant to regulatory reporting.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related to the proposed terms and conditions of the Phase 2 Water Licence.		Path forward identified	
99	QIA	QIA 22.1	190502-2AM-MRY1325-Amend2-Applic-Att-8.5-Rail-Geotech-Recomm	Rail O&M Mgnt Plan	Additional details regarding the frequency, and extent of the aerial assessments is requested.	Aerial Photosat imagery is already collected on an annual basis as agreed to with QIA. Aerial images from previous years will be compared with new images to identify areas of standing water which may indicate localized settlement has occurred.	This concern is outstanding until reporting criteria inclusive of a satellite imagery assessment is provided in the amended Water Licence.	Aerial assessments or similar will form part of the Railway Monitoring Program, which will be incorporated into the relevant management plan.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related to the proposed terms and conditions of the Phase 2 Water Licence.		Path forward identified	
100	QIA	QIA 22.2	190502-2AM-MRY1325-Amend2-Applic-Att-8.5-Rail-Geotech-Recomm	Rail O&M Mgnt Plan	A specific trigger for when additional insulation is required should be considered in the Water Licence.	Triggers for when additional insulation or soil cover may be required will be determined after the completion of the construction monitoring phase, as no detailed site-specific information is currently available to make an accurate assessment of the potential triggers. Some triggers may relate to the safe operation of the rail line, such as excessive settlement (beyond what can be accommodated in the rail design) or cut slope failure as a result of freeze/thaw action within the active zone and changes to the local permafrost regime.	This concern is outstanding until reporting criteria inclusive of a satellite imagery assessment is provided in the amended Water Licence.	This will form part of the Railway Monitoring Program, which will be incorporated into the relevant management plan. Baffinland suggests that the incorporation of geotechnical criteria is appropriate in the relevant management plan and not the licence.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related to the proposed terms and conditions of the Phase 2 Water Licence.		Path forward identified	
101	QIA	QIA 22.3	190502-2AM-MRY1325-Amend2-Applic-Att-8.5-Rail-Geotech-Recomm	Rail O&M Mgnt Plan	The Water Licence should require Baffinland complete the aerial assessments committed to and report upon them.	Aerial assessments will continue to be undertaken annually with a report provided to the QIA as part of the Commercial Lease.	This concern is outstanding until reporting criteria inclusive of a satellite imagery assessment is provided in the amended Water Licence.	Schedule D already lists conditions applying to construction and reporting, which includes the issue of settlement. This will form part of the Railway Monitoring Program, which will be incorporated into the relevant management plan. Baffinland suggests that the incorporation of geotechnical criteria is appropriate in the relevant management plan and not the licence.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related to the proposed terms and conditions of the Phase 2 Water Licence.		Path forward identified	
102	QIA	QIA 23.1	190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE	SWAEMP	Provide what monitoring would be conducted that could lead to mitigation measures.	Further to the QIA's comment on the hydrological modelling completed in 2017 as presented in the FEIS Addendum (Appendix C of TSD 13), the railway design was updated. Ten diversions will now occur, and these were assessed with updated hydrological modelling, presented as Attachment 04 to this response (Fish Passage Risk Assessment of Water Crossings and Stream Diversions). Nine of the 10 stream diversions were assessed as low risk and the tenth stream diversion was assessed as medium risk. An outline of a proposed monitoring program is provided in Attachment 05 (Proposed North Rail Monitoring Programs).	Refer to 8.1 and 10.1.	Baffinland has responded to QIA-8.1 and QIA-10.1.			Resolved			Resolved	
103	QIA	QIA 23.2	190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE	SWAEMP	Provide the monitoring values that would trigger mitigation measures.	Monitoring will consist of visual inspection, survey transects and possibly TSS/turbidity monitoring if elevated TSS is observed as the result of erosion of the stream channel. The only numerical value that would trigger mitigation would be TSS above the thresholds identified in the Rail Monitoring memo provided in Attachment 05 (Proposed North Rail Monitoring Programs). Effects to stream morphology will be based on professional judgement with consideration of potential alteration of fish habitat.	Refer to 8.1 and 10.1.	Baffinland has responded to QIA-8.1 and QIA-10.1.			Resolved			Resolved	
104	QIA	QIA 23.3	190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE	SWAEMP	Provide reasoning when monitoring and adaptive management would not be needed during and post construction.	Monitoring will not be required following a full open water season (plus a preceding partial season, if applicable) indicates that the channel capacity is not being exceeded, subsidence or slope instability is not occurring, and if channel bed scour or sediment deposition is not occurring within what is judged to be normal limits. Proposed monitoring is described further in Attachment 05 (Proposed North Rail Monitoring Programs).	QIA is engaged with Baffinland in improving current adaptive management processes as part of a separate regulatory process. QIA will provide an update on this TC when available.	Baffinland is prepared to continue to discuss this issue outside of the NWB process as indicated by the QIA.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related adaptive management components of management plans via the mechanisms established in the Inuit Certainty Agreement.		Path forward identified	

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105	QIA	QIA 24.1	190502 2AM-MRY1325 Amend2 Applic-Main-Rpt-ILAE	Water Licence	The NWB should develop a new Part of the amended Water Licence devoted to stream crossings, the construction of the North Railway, and subsequent reporting requirements. At a minimum this should consider the following: 24.1.1 - Environmental monitoring for construction 24.1.2 - Construction QAQC programs for the North Railway 24.1.3 - Infield design change reporting 24.1.3 - North Railway As-Built reporting on time frequency basis 24.1.4 - A construction sequence	Baffinland suggests that this can be dealt with in Part D of the current licence, through the process of the NWB approving design drawings and reports, requiring the submission of as-builts with construction summary reports, and the implementation of mitigation measures and monitoring as described in the management plans approved under the Water Licence. Baffinland would be amenable to inclusion of water quality criteria for water crossings that consider the influence of background or upstream concentrations (i.e. natural conditions).	24.1 Unresolved. This TC remains unresolved until applicable reporting criteria are included. 24.1.1 Unresolved. This concern remains outstanding until reporting criteria for monitoring during construction of the North Railway is included. 24.1.2 Unresolved. This concern remains outstanding until quality control considerations of the North Railway are included in Part D, with inclusion of reporting criteria. 24.1.3 Unresolved. This concern remains outstanding until reporting of in field design changes for construction of crossings along the North Railway are included in Part D. 24.1.4 Unresolved. In addition to recommendation 24.1, it is requested that as-builts for sections of the North Railway are provided on a more frequent basis (e.g., quarterly).	Baffinland stands by its August 2019 response to this technical comment. The current Type A Water Licence was issued for construction of the south railway with similar features. Hence, the current licence already contains the appropriate reporting criteria for construction of a railway.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related to the proposed terms and conditions of the Phase 2 Water Licence.		Path forward identified	
106	QIA	QIA 24.2	190502 2AM-MRY1325 Amend2 Applic-Main-Rpt-ILAE	Water Licence	This new Part should also provide requirements for construction reporting.	Construction reporting requirements are outlined in Part D, Item 17 of the current Water Licence.	Refer to 24.1.4.	Baffinland has responded to Recommendation 24.1.4.			Path forward identified	QIA and Baffinland have agreed to ongoing discussions related to the proposed terms and conditions of the Phase 2 Water Licence.		Path forward identified	
107	QIA	QIA 24.3	190502 2AM-MRY1325 Amend2 Applic-Main-Rpt-ILAE	Water Licence	QIA is willing to work through the NWB process and review to support the development of draft terms and conditions.	Baffinland is also open to discussing this further with the parties.	QIA is in agreement with Baffinland August 23, 2019 response.				Resolved			Resolved	
108	QIA	QIA 25.1	190502-2AM-MRY1325-Amend2-Applic-Att-8.5-Rail-Geotech-Recomm 190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE 08MN053_BAF-PH1-830-P16-0022_railway-ops-maint-DRAFT-PHASE-2	Water Licence	Provide a timeline for the completion of modelling; additional testing; final design; and final approval of the North Railway.	Thermal modelling have been completed and is provided in Attachments 8.4, 8.5, 8.9, 8.10 and 8.11 of the updated Application. Hydrological modelling is provided in Attachment 04 of this submission. Additional geotechnical testing will occur along the North Railway deviation in winter 2019/2020, and testing will continue through the construction phase. The final design has been completed and is shown on the plan and profile drawings in Attachments 11.1 to 11.3 of the updated Application. While this design is final and approved for construction, it is recognized that there may be local changes due to site conditions.	QIA is of the understanding that Baffinland is now solely seeking approval for the construction of Route 3.				Resolved			Resolved	
109	QIA	QIA 25.2	190502-2AM-MRY1325-Amend2-Applic-Att-8.5-Rail-Geotech-Recomm 190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE 08MN053_BAF-PH1-830-P16-0022_railway-ops-maint-DRAFT-PHASE-2	Water Licence	Baffinland should be required to provide bi-weekly reports during the construction of the North Railway that outline any deviations from the approved construction drawings.	Information on as-built deviations from the approved construction drawings will be provided in Construction Summary Reports to be prepared as required under Baffinland's Type 'A' Water Licence.	Refer to 24.1.4	Baffinland has responded to Recommendation 24.1.4.			Path forward identified	Refer to 24.1.4 (which states, "QIA and Baffinland have agreed to ongoing discussions related to the proposed terms and conditions of the Phase 2 Water Licence.")		Path forward identified	
110	QIA	QIA 25.3	190502-2AM-MRY1325-Amend2-Applic-Att-8.5-Rail-Geotech-Recomm 190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE 08MN053_BAF-PH1-830-P16-0022_railway-ops-maint-DRAFT-PHASE-2	Rail O&M Mgnt Plan	Provide a timeline for delivering the North Railway long term monitoring and maintenance plan for review, comment, and approval.	The long-term monitoring and maintenance plan for the North Railway will be finalized during the first year of railway operations. The development of this plan will take into account information and observations from the construction geotechnical monitoring program.	QIA has not yet received a copy of the draft long term monitoring plan.	As noted in Baffinland's August 2019 response, the long-term monitoring and maintenance plan will be finalized in the first year of railway operations. The short and long-term geotechnical monitoring plan is described in Attachment 8.15 of the updated Water Licence Amendment application (Northern Railway - Instrumentation Monitoring Program).			Unresolved	QIA has not yet received a copy of the draft long term monitoring plan.		Unresolved	
111	QIA	QIA-26.1	• 190502 2AM-MRY1325 Amend2 Applic Att-2-Applic-ILAE • 190502 2AM-MRY1325 Amend2 Applic-Main-Rpt-ILAE • Nunavut Water Board SIGs • 190502 2AM-MRY1325 Amend2 Applic-Att-3.2-SIG-Concord-ILAE • Nunavut Water Board. 2004. "Draft Guide for Community Consultation and Public Participation". [NWB FTP Site] • 190823-2AM-MRY1325-mrp2-BIM-Tech-Comment-Responses • FEIS Addendum TSD 04 Public Consultation	IQ	Please describe all community and other meetings where water and or the water licence amendment were a central topic of discussion. Please also include copies of any plain language materials on the Water Licence Amendment provided at those meetings.		Relevant activities related to this topic that have occurred in the interim include: • QIA has been working with Pond Inlet on an IQ study on Inuit water values in relation to the Mary River Project. This work is being funded by Baffinland. An update on the status of this work and its implications for the water licensing process can be provided at the technical meeting on November 12, 2021. • QIA has also initiated work to develop Inuit OITR's and a Culture, Resources and Land Use Monitoring Program. QIA notes that Baffinland is now committed to Route 3 for the North Railway and provides more information on this in its updated Water Licence filings. In the Main Report, at pg. 7 of 65, Baffinland states that the shift to Route 3 was "in response to community feedback". It is not clear what community feedback this was or the status of Inuit parties' support for Route 3. Nor is it clear from the updated filings what IQ has informed this choice and what remaining Inuit concerns there are related to the routing of the North Railway.	The scope of the water licence amendment is included within the NIRB review, which has involved substantial community engagement. Baffinland has also conducted additional community engagement outside of the formal NIRB process. Water-related feedback is presented in Appendix 1.			Resolved	Baffinland has provided in Attachment 1 to its November 2021 TC Comments Response a list of issues and questions (and some responses) to water-related issues flagged by Inuit in engagement meetings with Baffinland, as well as a list of what Baffinland considers to be its water-related commitments in relation to the Phase 2 Project.		Resolved	

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112	QIA	QIA-26.2	• 190502 2AM-MRY1325 Amend2 Applic Att-2-Applic-ILAE • 190502 2AM-MRY1325 Amend2 Applic-Main-Rpt-ILAE • Nunavut Water Board SIGs • 190502 2AM-MRY1325 Amend2 Applic-Att-3.2-SIG-Concord-ILAE • Nunavut Water Board. 2004. "Draft Guide for Community Consultation and Public Participation". [NWB FTP Site] • 190823-2AM-MRY1325-mrp2-BIM-Tech-Comment-Responses • FEIS Addendum TSD 04 Public Consultation	Inuit engagement	As required by the SIGs, please list all Inuit concerns to date associated with water and how BIMC intends to mitigate those concerns.			A summary of Inuit concerns expressed to date and Baffinland's commitments regarding water from the NIRB review process is presented as Appendix 1.			Path forward identified	- It is not clear what commitments Baffinland has made apply to which water-related issues it identifies in Appendix 1, Attachment 1, nor is it clear whether Baffinland has engaged Inuit on the adequacy of its commitments as against their stated concerns. Responsiveness to Inuit concerns means conducting verification exercises where the solution is compared to the problem by the Proponent in consultation with the affected parties. It is not clear whether this has occurred or not. - At the technical meeting, QIA requested that Baffinland: 1. Identify which commitments it has made apply to which issue raised by Inuit; 2. Identify its plans to re-engage Inuit for the purposes of verifying the "fit" of committed to measures to address their concerns; 3. Update the NWB prior to the public hearing on the status of these engagement efforts. - Baffinland has committed to prepare materials in advance of freshwater focused meetings with communities that address the requested information by the QIA, and report back to the NWB on the results of		Path forward identified	
113	QIA	QIA-26.2a	Same as above	Inuit engagement	Baffinland to provide an updated list of all Inuit concerns to date associated with water, including from the Tusaqtavut reports for the five impacted communities, Inuit submissions on the public record for the NIRB Phase 2 process, and from the NIRB hearing transcripts.			A summary of Inuit concerns expressed to date and Baffinland's commitments regarding water from the NIRB review process is presented as Appendix 1. The concerns raised in the Tusaqtavut studies were consistent with those documented during the NIRB review.			Path forward identified	- Baffinland in November 2021 provided an Attachment 1 to Appendix 1 listing a number of Inuit concerns related to water. Baffinland has also included in this list issues raised during Tusaqtavut with Pond Inlet, Hall Beach and Igloolik, but has not updated this to include issues flagged in the Arctic Bay or Clyde River Tusaqtavut reports. It is unclear why not, given that this information has been on the public record since August 2021. - Baffinland has now committed to update its record of Inuit concerns related to water to include all impact pathways identified by Inuit in the Tusaqtavut and any other studies conducted with all five communities, prior to the public hearing.		Path forward identified	
114	QIA	QIA-26.3	Same as above	Inuit engagement	Please describe any forthcoming opportunities provided by BIMC for Inuit communities to provide comment and raise their concerns on Water License Amendment changes.			The NIRB review has and continues to provide Inuit communities with the opportunity to comment on the Phase 2 Proposal including water. The NWB has invited Inuit community representatives to attend the November 12, 2021 technical meetings. If additional focused engagement is requested at that time Baffinland will work with the community representatives to schedule additional meetings related to water. Baffinland notes that ongoing work to collect IQ from the communities to develop programs agreed to under the Inuit Certainty Agreement is ongoing. QIA is generally leading engagement, however, there are opportunities for Baffinland to attend in person IQ sessions if participants are comfortable. Baffinland is open to additional engagement opportunities with Inuit communities but the volume of already planned and relevant engagement activities related to water is substantial, and will look directly to communities to gauge their desire for additional engagement.			Path forward identified	- Baffinland is now committed to engaging Pond Inlet and Igloolik in supplemental meetings on freshwater and fishing issues, as discussed above. - QIA encourages Baffinland to engage all impacted communities in such discussions.		Path forward identified	
115	QIA	QIA-26.4	Same as above	Inuit engagement	Baffinland commit to expedite work with QIA and Inuit communities to identify additional water-related values data collection, monitoring, thresholds of acceptable change, and adaptive management mechanisms.			Baffinland agrees to this commitment. Baffinland has funded the QIA-led freshwater IQ studies currently underway. Additionally, the QIA will be working with the communities to develop Inuit Objectives, Indicators, Thresholds and Responses (OITRs) that Baffinland has committed to incorporating into its water-related management plans. Commitment: Baffinland commits to incorporating Inuit Objectives, Indicators, Thresholds and Responses (OITRs) into its water-related management plans.			Path forward identified	- In its November 2021 submission, Baffinland committed to "incorporating Inuit Objectives, Indicators, Thresholds and Responses (OITRs) into its water-related management plans." - Ongoing work with communities, including QIA's forthcoming IQ Water Values Study with Pond Inlet (funded by Baffinland) and other steps, is required to develop these Inuit OITRs and confirm that Baffinland will incorporate all of them into its water-related management plans.		Path forward identified	
116	QIA	QIA-26.5	Same as above	Inuit engagement	Baffinland to provide more information on remaining Inuit concerns with the proposed Route 3 for the Northern Railway, how IQ informed Baffinland's move to prefer Route 3, and what form of verification of Route 3 as a preferred route for Inuit has been completed by Baffinland.			Baffinland maintains that questions on the routing of the North Railway are outside the scope of the NWB review. This question has already been discussed in detail and is being addressed in the NIRB review.			Path forward identified	- Baffinland is planning to carry out a targeted discussion with Pond Inlet and Igloolik to discuss Phase 2 water related mitigation and monitoring plans, and has committed to including a specific question about Inuit perspectives on Route 3 impacts on water, fish, and water related rights including magnitude and manageability on the agenda for those meetings, and report the results back to the NWB prior to the Public Hearing. - QIA encourages Baffinland to engage all impacted communities in such		Path forward identified	

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117	QIA	QIA-27.1	• 190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE • 190502 2AM-MRY1325 Amend2 Applic-Main-Rpt-ILAE • 190502 2AM-MRY1325 Amend2 Applic-Att-23-FWSWMP-Part1-ILAE • 190502 2AM-MRY1325 Amend2 Applic-Att-27-AEMP-Part1-ILAE • Knight Piésold. November 2018. "Mary River Project – Fresh Waterbodies with Unique Value and/or Cultural Significance to Inuit". [filed on the NIRB Mary River Project Phase 2 EA public record by Baffinland in response to Health Canada Technical Comments, as HC 02 Attachment 2 from the Advance Technical Comment Submission (Jan 2019)]. • 190823-2AM-MRY1325-mrp2-BIM-Tech-Comment-Responses • Appendix C Water Take Assessment IN FEIS Addendum TSD 13 Surface Water Assessment, Pages 113 to 124 of 173.	IQ	The Proponent is requested to commit to expedite work with affected communities to develop and implement baseline data collection including on the ground studies for Inuit Water Values, Water Use, and identification of Waterbodies of heightened importance.		Relevant activities related to this topic that have occurred in the interim include: • QIA has completed an additional Tusaqtavut IQ study with the communities of Arctic Bay and Clyde River, and filed this work on the public record with NIRB in the summer of 2021. This work was funded by Baffinland. • QIA is working with the community of Pond Inlet to complete a study on IQ on and use of freshwater resources in the area impacted by the Mary River Project. This work has been funded by Baffinland. QIA will be available to provide an update on the status of this work and its implications for the water licensing process at the technical meeting on November 12, 2021. Baffinland provides information in its updated Water Licence filings for each proposed water withdrawal location. However, it is not clear what IQ and Inuit perspectives has informed this work. It is important to determine whether any of the proposed water withdrawal sources and amounts are an issue from an Inuit water use and values perspective. For example, at pg. 22 of 25 of Part 1 of the Water Withdrawal Plan, Baffinland notes "Regarding the extraction of water from lakes during the open water season, the FEIS identified the reduction in lake outflow of 10% as a commonly applied threshold value (FEIS Volume 7, Page 19; Baffinland, 2012)." It is not clear that IQ would agree with this	Baffinland is not aware of any Inuit concerns regarding the proposed water withdrawal stations. Baffinland has funded a QIA-led study that is currently underway to collect this information. Impacts to Inuit water use that are identified can be addressed by the new Water Compensation Agreement.			Path forward identified	- Work is ongoing to identify additional baseline data collection requirements for IQ for freshwater and fish values, including through the forthcoming IQ Water Values Study with Pond Inlet, funded by Baffinland. - QIA's disagreement on the value of "on the land" data collection with Inuit at key infrastructure locations prior to construction is taken up further in relation to TC #27.4. - QIA is also not ready to agree that "Impacts to Inuit water use that are identified can be addressed by the new Water Compensation Agreement", as asserted by Baffinland in its November 2021 submission. The new WCA has yet to be finalized so such assertions remain speculative.		Path forward identified	
118	QIA	QIA-27.2	Same as above	IQ	The Proponent is requested to provide further detail on: a. How IQ related to water use and water values was recorded from Inuit community members during any IQ data collection for the Project. b. How IQ related to water use and water values will be integrated into the Project management systems prior to conclusion of the Water Licensing process. c. How IQ related to water use and water values will be integrated into the Project management systems if the Phase 2 amendment is approved.		See QIA's updated comment above, relevant to both QIA-27.1 and QIA-27.2.	Response to a. Appendix 2 of this response is a report that Baffinland provided previously to the QIA in support of Water Compensation Agreement negotiations for Phase 2. This report summarized the information collected during Baffinland's earlier IQ studies and identifies the 20 questions used to collect this information. An important distinction of Baffinland's earlier IQ study was that information was sought on Inuit knowledge and land use within each community's entire land use area. This helped Baffinland understand the relative importance of different areas to Inuit land use, a perspective not gained by studies that focus on a specific area. Response to b and c. Baffinland has provided the QIA with funding to support the QIA's supplemental IQ studies, described in other responses. This information will be used to inform a new Water Compensation Agreement, and will also be used to develop Inuit Objectives, Indicators, Thresholds and Responses (OITRs) that will be integrated into Baffinland's management plans. For almost two years, Baffinland has been revising and incorporating the QIA's feedback on its draft Phase 2 management plans. Most of the management plans attached to the Application have incorporated at least one round of QIA comments. The AEMP and SWAEMP have received multiple rounds of review by the			Path forward identified	- Work to improve the role of IQ in water monitoring and management is ongoing through ICA Implementation and WCA negotiation activities. QIA and Baffinland will update the NWB on progress prior to or at the Public Hearing.		Path forward identified	
119	QIA	QIA-27.3	Same as above	IQ	Baffinland is requested to update whether it has identified any waterbodies of heightened importance to Inuit in the Regional Study Area for the Mary River Project, and if so: i. provide details about those waterbodies and why they are considered of heightened importance to Inuit, and ii. identify what additional monitoring and mitigation measures Baffinland commits to put in place around waterbodies of heighted importance. Data sources that are available to Baffinland include its engagement with Inuit parties, the results of the Tusaqtavut studies with all five impacted communities, through oral submissions at the technical meetings and hearings for the Mary River Phase 2 Project, and submissions on the public record by Inuit parties.			Baffinland has identified waterbodies of heightened importance within the Regional Study Area is described by KP (2018) in Appendix 2. This includes the Robertson River / Qurluktuk located northwest of Milne Port, the Tugaat River located east of Milne Port, and the Ikaluit River at the head of Tay Sound. Each of these waterbodies are used to harvest sea-run arctic char. Each of these waterbodies are removed from the Project. Aquatic studies were planned at each of these three waterbodies in 2021 in fulfillment of Project Certificate condition 48a. The 2021 field programs were successfully completed in Qurluktuk and Tugaat systems, but the studies in Ikaluit River were not completed as proposed due to inclement weather preventing access. Results from these studies will be shared with the MHTO. The results of these studies and the QIA's Culture, Resources and Land Use (CRLU) studies currently underway could yield additional waterbodies of heightened importance and will help to identify potential impacts and mitigation measures. The CRLU studies are the assumed responsibility of QIA, with funding provided by Baffinland.			Path forward identified	- Baffinland and QIA commit to include a term that relates to supplemental IQ collection relating to Waterbodies of Heightened Importance in the Water Compensation Agreement, in a manner consistent with the Inuit Certainty Agreement. - Baffinland and QIA commit to establishing a process for identifying Waterbodies of Heighted Importance, including verification, monitoring and adaptive management to be applied at each such water body under the Water Compensation Agreement, in a manner consistent with the Inuit Certainty Agreement. - The new WCA has yet to be completed. The QIA-led IQ Water Values Study with Pond Inlet will identify preliminary Waterbodies of Heightened Importance and this information will be placed on the NWB public record prior to the Public Hearing.		Path forward identified	

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120	QIA	QIA-27.4	Same as above	IQ	Baffinland to identify whether and how IQ and Inuit perspectives were integrated into the siting of quarries, laydown areas, water withdrawal points and amounts, and water crossings associated with the Phase 2 construction and operations, including provision of evidence that Inuit were asked about their concerns and values related to each location currently proposed for each of the above infrastructure-related physical works and activities noted in this Technical Comment. a. In relation to water withdrawals as identified in Baffinland's updated filings, including dust suppression water sources, Baffinland is requested to identify what role Inuit and IQ played in site characterization, what have Inuit said about where it is appropriate to withdraw water from and how much, where, when and under what conditions it is acceptable to do so, and how this has been included in the updated filings.			The siting of the railway is first and foremost influenced by its proximity to the Tote Road (to minimize the overall footprint), also considering geotechnical conditions, Inuit feedback on overall routing, and the absence of archaeological sites of high cultural significance. Bridge and other crossing locations are dictated in large part by permafrost conditions and the rail routing, and repositioning crossings to avoid areas results in a cascade of changes in the alignment in either direction. Because of grade limitations and turning radius constraints, the routing of a railway is much more complicated and constrained than a road. The construction of crossings for wildlife and snowmobiles, for example, has resulted in a wider embankment with a larger footprint and longer culverts that can present an issue for fish passage. There are a number of trade-offs that need to be balanced in siting the railway. Baffinland has spoken to these constraints in both the Phase 2 EIS documentation and at technical meetings and hearings. Routing alternatives including Inuit feedback on routing have been covered extensively in the NIRB review, and such alternatives are considered at the environmental assessment stage, not during licensing. More minor features such as quarries and laydown areas were sited based on the availability of suitable rock or ground, proximity to the railway			Unresolved	- At the technical meeting, QIA asked Baffinland if it was committed to conduct further on-territory IQ data collection/ground truthing work for all locations with physical works and activities required by the Phase 2 Project, and reporting on any changes to site-specific monitoring and management, prior to beginning construction, should the Project proceed. - Baffinland is not currently committed to conduct additional on the land data collection with Inuit at proposed laydown, water crossings, water withdrawal, or quarry sites prior to construction, suggesting it is "not practical" in its November 2021 submission. - The absence of the ability for Inuit to observe these locations while discussing Baffinland's proposed usage and alterations to the sites is problematic. IQ is most valuable through direct observation on the land, and the absence of this limits the effectiveness of site location, routing, management and monitoring plan development. - QIA and Baffinland are engaging in		Unresolved	
121	QIA	QIA-27.5	Same as above	IQ	Baffinland to identify any evidence it has of Inuit verification of fish bearing vs. non fish-bearing waterbodies, and marginal vs. important habitat, as presented by Baffinland in its updated Water Licence filings. a. Baffinland to identify what role IQ and Inuit played in the North Railway Freshwater Habitat Survey: 2018.			IQ collected by Baffinland identified the Phillips Creek watershed, mine site area lakes and the upper part of the Ravn River as containing only land-locked populations of arctic char. Important sea-run lakes that are outside of the immediate Project footprint (i.e., Qurluktuk, Tugaat and Ikaluit) were also identified. Our understanding of what Inuit consider important vs. unimportant fish habitat mainly relates to waterbodies containing sea-run char (important) vs. land-locked char (less important but not unimportant). Inuit were not involved in the 2018 fisheries surveys unfortunately. However, Inuit participated in the 2019 and 2021 field program. Baffinland is pleased to say that one of the Inuit field assistants involved in the 2021 field program is now working fulltime based in Winnipeg for the consultancy that completed the fisheries work.			Path forward identified	- At the technical meeting, QIA asked Baffinland if it was willing to commit to update its baseline characterization of fish habitat with Inuit Qaujimajatuqangit, vetted with Inuit parties. Baffinland indicated it was not willing to make that commitment. - Since then, Baffinland has indicated that it will at its proposed meetings with Pond Inlet and Igloolik, request feedback from Inuit participants in the meetings on its baseline characterization, and specifically ask whether any participants have further relevant IQ to share on this topic, and it will consider any additional evidence filed by QIA on this topic as a result of ongoing studies related to ICA implementation. - QIA requests that further discussion occurs between Baffinland, QIA, and all impacted communities, on the role of IQ in baseline characterization of fish habitat, and what needs to be done moving forward to fill gaps in the data available on this topic, prior to the Public Hearing.		Path forward identified	
122	QIA	QIA-28.1	Same as above	IQ	The Proponent, in consultation with QIA and the affected Inuit communities, to work with Inuit and provide funding to develop additions to the current water management and monitoring system that include Inuit identified indicators or thresholds for use, water quality, quantity or flow, including any experiential indicators identified by Inuit as important.		Relevant activities related to this topic that have occurred in the interim include: • The completion of a Tusaqtavut study with two additional communities, Clyde River and Arctic Bay, with identification of additional values related to and impacts on freshwater and fishing from the perspectives of these two communities. • Data collection and identification of initial impact pathways on freshwater and fishing by QIA for the ongoing Culture, Resources and Land Use (CRLU) Assessment, using data from the five communities' Tusaqtavut reports, Baffinland's FEIS Addendum, NIRB transcripts, and Inuit parties' submissions on the public record. Notwithstanding that it is primarily the developer's responsibility to do this work, QIA will be prepared to provide an update to the NWB on impact pathways associated with freshwater and fishing at the forthcoming technical meeting. • QIA worked with Pond Inlet community members in an ongoing IQ Water Values Study. This work, funded by Baffinland, will be an important contribution to TC 28.1 above. QIA will be prepared to provide an update on the implications of and timing for completion of this work at the forthcoming technical meeting. QIA notes that while Tusaqtavut studies for each of the five impacted communities have been filed, there is no reference to them in the SIG	Baffinland reviewed and considered the Tusaqtavut studies during the NIRB review process. Baffinland has provided funding to the QIA to complete freshwater-specific IQ studies. The intent of the study was to gather information from Inuit about where and how to monitor water, and what actions should be taken to protect the freshwater environment. It is Baffinland's understanding this work has since been completed by the QIA with the community of Pond Inlet in October 2021. A verification workshop on this study will be held in late November 2021. It is expected that a final report will be completed in December 2021. Study findings will be integrated into the CRLU assessment. Findings from this Study may be used to further inform mitigation, monitoring, and compensation, and adaptive management measures in Baffinland's management plans.			Path forward identified	- Baffinland has provided funding to QIA for ICA implementation tasks associated with developing additions to the current water management and monitoring system that include Inuit Objectives, Indicators, Thresholds and Responses. - This work is ongoing and yet to be adopted into the Project monitoring and management system.		Path forward identified	

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123	QIA	QIA-28.2	Same as above	IQ	The Proponent, in consultation with QIA and the affected Inuit communities, to identify ways in which the ongoing assessment of Project Effects on Inuit Water Use and water quality, quantity, and flow on Inuit Owned Lands can be conducted through an Inuit/IQ enriched lens.		Same as above	To date, Baffinland has undertaken extensive work to collect IQ on freshwater resource. These efforts, and the outcomes of IQ studies is documented in TSD-05. The QIA's own Tusaqtavut studies were reviewed and considered during the course of the NIRB review. Additionally, as the QIA is aware, Baffinland has provided funding to the QIA to complete freshwater-specific IQ studies. The intent of the study was to gather information from Inuit about where and how to monitor water, and what actions should be taken to protect the freshwater environment. It is Baffinland's understanding this work has since been completed by the QIA with the community of Pond Inlet in October 2021. A verification workshop on this study will be held in late November 2021. It is expected that a final report will be completed in December 2021. Study findings will be integrated into the CRLU assessment. Findings from this Study may be used to inform mitigation, monitoring, and compensation, and adaptive management measures. Any modifications made to the Project as a result of this Study will be reflected in the Adaptive Management Plan and sub-plans.			Path forward identified	- Baffinland has provided funding to QIA for ICA Implementation tasks associated with developing additions to the current water management and monitoring system that include Inuit Objectives, Indicators, Thresholds and Responses. - This work is ongoing and yet to be adopted into the Project monitoring and management system.		Path forward identified	
124	QIA	QIA#28.3	Same as above	IQ	Baffinland to provide a supplemental filing prior to the technical meeting, identifying all existing and potential Phase 2 impact pathways from the Mary River Project on Inuit water values and associated Inuit rights, and what Baffinland mitigation and monitoring commitments should be applied to those impact pathways. All of the data sources on the NIRB process public record, including those referred to above, should be considered by Baffinland in developing this list of impact pathways. a. In addition, Baffinland should provide any evidence it has of Inuit verification of Baffinland's findings regarding likely Phase 2 impacts on water.			Baffinland has provided impact pathway breakdowns for all valued components identified in the Tusaqtavut Study, which includes fish and freshwater (refer to Appendix 3). These breakdowns have been considered with the development of the impact pathway database. Additionally, as the QIA is aware, Baffinland has provided funding to the QIA to complete freshwater-specific IQ studies. As QIA outlined, the intent of the study was to gather information from Inuit about where and how to monitor water, and what actions should be taken to protect the freshwater environment. It is Baffinland's understanding this work has since been completed by the QIA with the community of Pond Inlet in October 2021. A verification workshop on this study will be held in late November 2021. It is expected that a final report will be completed in December 2021.			Path forward identified	In post-technical meeting conversations with Baffinland, QIA requested that Baffinland identify in a follow-up submission what verification it has conducted with Inuit and the results re: the accuracy of Baffinland's estimated impacts on water, fish and associated Inuit rights; and the adequacy of mitigation identified in its "effects assessment summary table [fish and freshwater]" to reduce impacts on water, fish and associated Inuit rights. - Baffinland has committed to present a summary of its estimated impacts on water, fish and associated Inuit rights and mitigations to Pond Inlet and Igloolik as an agenda item during the meetings described above. Baffinland will report back to the NWB on the outcomes of these meetings prior to the Public Hearing. - QIA encourages Baffinland to engage all impacted communities in such discussions. - Baffinland has also committed to update its record of Inuit concerns related to water to include all impact pathways identified by Inuit in the Tusaqtavut and any other studies		Path forward identified	
125	QIA	QIA-29.1	• 190502 2AM-MRY1325 Amend2 Applic-Main-Rpt-ILAE • 190506 2AM-MRY1325 Amend2 Applic Att-22-SWAEMP-ILAE • 190823-2AM-MRY1325-mrp2-BIM-Tech-Comment-Responses • 190513-08MN053-BIMC Draft Mgmt Plans-Snow Mgmt Plan	IQ	Describe what IQ was collected during these workshops related to Snow Management and how it informed and or changed the Snow Management Plan.			Snow stockpiles were visited by participants during the 2019 Community Risk Workshops. Snow management was identified as a concern. Specifically, runoff from snow stockpiles during melt periods, and concern about impacts of dust (e.g., along the side of the road; when snow melts, there is a lot of sediment accumulation) were among the issues recorded as concerns. Recommended mitigation included: - Clear snow - Keep culverts functional - Monitor streams Each of these mitigation measures form part of the Snow Management Plan.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
126	QIA	QIA-29.2	Same as above	IQ	Describe any future opportunities for IQ to inform revisions to the Snow Management Plan, and how consultation with QIA and the affected Inuit communities has informed these revisions.			The Snow Management Plan is not currently required under the Water Licence, and was developed at the QIA's request, to address acknowledged runoff quality issues associated with snow stockpiles. The Snow Management Plan in its current form (with adaptive management and a trigger action response plan) was first provided to the QIA for review in mid-2020, and one round of comments have been incorporated in the latest version provided to the QIA in October 2021. Baffinland will continue to work with the QIA to refine this plan over time, as part of the Commercial Lease. This includes incorporating any IQ identified as relevant to snow management collected by the QIA.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
127	QIA	QIA-30.1	• 190502 2AM-MRY1325 Amend2 Applic-Main-Rpt-ILAE • 190502 2AM-MRY1325 Amend2 Applic-Att-27-AEMP • 190502 2AM-MRY1325 Amend2 Applic-Att-28-EPP • 190823-2AM-MRY1325-mrp2-BIM-Tech-Comment-Responses	IQ	Describe how IQ has informed aquatic monitoring programs and recent revisions to relevant monitoring and management plans.		Relevant activities related to this topic that have occurred in the interim include: • QIA worked with Pond Inlet community members in an ongoing IQ Water Values Study. This work, funded by Baffinland, will be an important contribution to TC 30.2 above. QIA will be prepared to provide an update on the implications of and timing for completion of this work at the forthcoming technical meeting. QIA notes that Section 6.0 through 6.3 of the Main Report ("General and Aquatic Effects Monitoring – Part 1") does not refer at all to the Inuit Stewardship Plan, Inuit-led water quality monitoring, or the Inuit-led Culture, Resources and Land Use Monitoring Program. This seems like a major gap in the description of the committed-to monitoring program, given the almost total absence of Inuit-led monitoring under the current Mary River Project monitoring system.	Baffinland has agreed to incorporate Inuit Objectives, Indicators, Thresholds and Responses (OITRs) into its management plans including the AEMP as per the QIA's request. This process is still ongoing, and Baffinland awaits additional Inuit input into these plans. Baffinland shared a draft copy of the amendment application on April 14, 2021. QIA did not provide any comments before the draft was finalized and submitted on September 17, 2021. Baffinland suggests that QIA is best positioned to describe how Inuit led monitoring programs to be led by QIA should be considered by the NWB. Baffinland will work with the QIA to ensure these monitoring programs are understood and represented in an amended Water License prior to the Public Hearing.			Path forward identified	- Baffinland has agreed to incorporate Inuit Objectives, Indicators, Thresholds and Responses (OITRs) into its management plans including the AEMP as per the QIA's request. This process is still ongoing. - Baffinland has also committed to fund an Inuit-led CRLU Monitoring Program and take direction on incorporation of IQ and Inuit perspectives into Project monitoring and management from an independent Inuit Committee. Should these commitments be implemented, this will substantially improve the role of Inuit and IQ in Project monitoring and management. - QIA will provide NWB with specific recommendations for integration of IQ and Inuit-led monitoring conditions that capture Baffinland's commitments into revisions to the Water Licence, should Phase 2 proceed.		Path forward identified	

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128	QIA	QIA-30.2	Same as above	IQ	Commit to working with QIA and the affected Inuit communities to identify opportunities for Water-specific IQ studies and monitoring programs including how Inuit monitors and Inuit observational criteria will be used in Project-related monitoring activities.			This is a comment provided on October 25, 2019 that wasn't responded to previously. Baffinland has made this commitment through the ICA, and the QIA is actively working to engage the communities on water-specific IQ studies and monitoring programs.			Path forward identified	Baffinland has committed through the ICA to support additional IQ studies and ongoing data collection through an Inuit-led CRLU Monitoring Program for the Mary River Project. QIA is working to engage Inuit on these studies and on how these programs will look.		Path forward identified	
129	QIA	QIA-30.3	Same as above	IQ	Provide further information on what role the Proponent is committed to having Inuit play in developing priority SNP site locations and related monitoring activities.			Baffinland believes the Inuit Stewardship Plan under the ICA provides the mechanism to engage Inuit on monitoring. The SNP program, however, is dictated by the NWB.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
130	QIA	QIA-30.4	Same as above	IQ	Provide further information on how data collected by Inuit and through water monitoring overall will be integrated into the Proponent's committed to Culture, Resources, and Land Use (CRLU) Monitoring Program for the Project, and what role is envisioned for the Proponent's committed to Inuit Committee/Inuit Panel for the Project, in relation to water planning, effects assessment, monitoring and adaptive management.			Baffinland believes the process for accomplishing this has been outlined in the Inuit Certainty Agreement that has been negotiated with the QIA. Baffinland is aware that the QIA has made good progress on the CRLU study and monitoring program.			Resolved	- Post technical meeting, QIA met with Baffinland and asked if Baffinland commits to provide an annual report to the NWB, verified by the Inuit Committee and shared with Inuit communities, identifying its level of logistical and financial support for Inuit-led, IQ-enriched monitoring activities, and how it reacted to or is planning to react to issues flagged by these Inuit-led monitoring activities, including community-based monitoring and monitoring under the Inuit Stewardship Plan. - Baffinland has since committed to "submit a standalone annual adaptive management monitoring report, which will include a description of what steps Baffinland took to incorporate IQ in all monitoring, mitigation and adaptive management measures for the reporting year. Baffinland commits to sharing this report with communities of Pond Inlet, Arctic Bay, Igloolik, Clyde River and Sanirajak at the time of submission to the NWB. This report will be verified by the Inuit Committee in the manner determined by its terms of reference which will be		Resolved	
131	QIA	QIA-30.5	Same as above	IQ	Baffinland to identify whether it is formally committed to support the development of an Inuit-led water quality monitoring program in relation to the Mary River Project. a. If so, Baffinland is asked to provide more information on how it envisions the Inuit-led water quality monitoring program will work alongside Baffinland's current water quality monitoring program, what level of financial commitment Baffinland has on an annual basis for this program, and what discussions Baffinland has initiated with Inuit about development and implementation of this Inuit-led water quality monitoring program.			Under Phase 2, an Inuit-led water quality monitoring program is covered in Section 17.1.3 of Schedule 17 of the ICA. Baffinland's understanding is that it will be part of the CRLU monitoring program administered under the Inuit Stewardship Plan, which QIA has sole responsibility for developing and implementing. Baffinland will be making fixed annual IIBA implementation payments to QIA to cover the cost of the CRLU monitoring program, among other things. Baffinland understands the QIA has been actively engaging Inuit in freshwater IQ studies, and Baffinland anticipates that the outcomes of that work to contribute to the Inuit led water quality monitoring program for Phase 2. Further discussions around alignment with Baffinland-led programs will occur as QIA is prepared to engage.			Resolved	- Post technical meeting, Baffinland has committed to "work with the QIA to develop an IQ-led water quality monitoring plan, which will be implemented through the QIA's CRLU Monitoring Program. Once finalized the program will be submitted to the NWB for reference".		Resolved	
132	QIA	QIA-31.1	NIRB document 210203-08MN053-QIA Inuit Certainty Agreement-IA1E	IQ	Baffinland to provide for its existing monitoring programs in place, either the average annual costs of its overall monitoring program and the proportion of that which goes to Inuit-led, IQ-driven monitoring, at present; or, if Baffinland deems this financial data to be proprietary; the proportion of average annual monitoring expenditures that go to technical, scientific monitoring works and activities, and Inuit-led, IQ-driven monitoring works and activities, respectively, at present.			Baffinland's position is that there is already a path forward for resolution of this item through the ICA for Phase 2. This information is not required to evaluate the Updated Water Licence Application.			Resolved	QIA will work with Baffinland to ensure that the Inuit Stewardship Plan is adequately resourced.		Resolved	
133	QIA	QIA-31.2	Same as above	IQ	Baffinland to provide its expectations for what proportion of its monitoring expenditures will be for technical, scientific monitoring works and activities, and Inuit-led, IQ-driven monitoring works and activities, respectively, should Phase 2 proceed, given new committed-to programs.			As described in Section 1 of the Inuit Certainty Agreement, Inuit-led monitoring of the Phase 2 Project will be managed under the Inuit Stewardship Plan (ISP), to be authored by QIA. The proportion of technical/scientific monitoring to Inuit-led monitoring initiatives in the future will depend on the scope of activities put forth in the ISP, and while Baffinland will provide input into the development of this plan, and has committed to fund the ISP for the life of the Mary River Project. it would not be appropriate for Baffinland to prescribe the scope of monitoring to be undertaken under the ISP. Baffinland is committed to implementing both technical/scientific monitoring works and activities, as well as Inuit-led, IQ-driven monitoring works for the Mary River Project and will continue to work with QIA on these initiatives, however Baffinland considers this to be outside the scope of the NWB process.			Resolved	QIA will work with Baffinland to ensure that the Inuit Stewardship Plan is adequately resourced.		Resolved	
134	QIA	QIA-32.1	210917-2AM-MRY1325-Amend2-Applic-Att-3.2-SIG-Concord-IAAE	IQ	Baffinland provide an update or supplemental filing to TSD-01 that provides its current comparison of all technically and economically feasible alternative means to transport ore to Milne Port, including alternative rail routes, which should be altered from the 2018 TSD given that additional information has come forward in the interim.			Alternatives assessment is a key focus of the NIRB review, not water licensing. It should be noted that everything in the public record in the NIRB review process relating to alternatives builds on TSD-01; it is not necessary to update the document.			Path forward identified	- Baffinland will request meetings with Pond Inlet and Igloolik to discuss Phase 2 water related mitigation and monitoring plans. Baffinland commits to include an agenda item requesting feedback on Inuit perspectives on Route 3 re impacts on water, fish and water-related rights, and report the results back to the NWB prior to the Public Hearing. - QIA encourages Baffinland to engage all impacted communities in such discussions.		Path forward identified	

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135	QIA	QIA-32.2	Same as above	IQ	Baffinland provide an update on the position of Inuit parties in relation to Route 3 to the NWB, and results of all engagement meetings on this topic to date.			Alternatives assessment, including rail routing, has been a subject area discussed at length in the NIRB review, and is available on NIRB's public registry.			Path forward identified	- Baffinland will request meetings with Pond Inlet and Igloolik to discuss Phase 2 water related mitigation and monitoring plans. Baffinland commits to include an agenda item requesting feedback on Inuit perspectives on Route 3 re impacts on water, fish and water-related rights, and report the results back to the NWB prior to the Public Hearing. - QIA encourages Baffinland to engage all impacted communities in such discussions.		Path forward identified	
136	QIA	QIA-33.1	• 210923-2AM-MRY1325-Amend2-Applic-Att-30-ICRP-Pt1of3-IAAE • 210923-2AM-MRY1325-Amend2-Applic-Att-30-ICRP-Pt3of3-IAAE	ICRP	Baffinland to provide a supplemental filing indicating where it has integrated prior input from QIA and any other Inuit party into revisions to the Interim Closure and Reclamation Plan.			Baffinland will provide a supplemental filing (concordance table) with the next revision of the ICRP that identifies how and where the QIA's previous comments on the ICRP have been considered. The next revision of the ICRP and the supplemental filing will be provided before the NWB public hearing. Commitment: A supplemental filing will be provided with the next revision of the ICRP that identifies how and where the QIA's previous comments on the ICRP have been considered.			Resolved with commitment	- Baffinland Commitment (November 2021): A supplemental filing will be provided with the next revision of the ICRP that identifies how and where the QIA's previous comments on the ICRP have been considered.		Resolved with commitment	A supplemental filing will be provided with the next revision of the ICRP that identifies how and where the QIA's previous comments on the ICRP have been considered.
137	QIA	QIA-33.2	Same as above	ICRP	Baffinland to identify whether Inuit parties and IQ have played any role in the development of the residual effects characterization methodology used in Appendix G, and/or have verified the findings in Appendix G.			Appendix G includes excerpts from the FEIS, which incorporated IQ and the results of Inuit engagement. The methodology for community-based research undertaken for the FEIS is presented as Appendix 2B, and the public consultation report is Appendix 2C. Collected IQ was presented throughout the various FEIS volumes. This question is not relevant to water licensing.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
138	QIA	QIA-33.3	Same as above	ICRP	Baffinland to identify any plans it has to engage Inuit parties moving forward in the steps outlined in #2 above.			The Nunavut Impact Review Board process for the review of the Phase 2 Proposal has provided, and continues to provide opportunities for Inuit to share input on the residual effects characterization methodology and the findings of the environmental assessment.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
139	QIA	QIA-34.1	Mary River Project Phase 2 Proposal Updated Application for Amendment No. 2 of Type A Water Licence 2AM-MRY1325 Section 2.5.3 North Railway Stream Diversion page 26 of 66	FAA Application	QIA requests involvement in developing habitat features and selecting appropriate habitat compensation both in kind and otherwise as necessary.			Commitment: Baffinland will consult with QIA concerning plans for fish habitat offsetting.			Resolved with commitment	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved with commitment	BIM will consult with QIA concerning plans for fish habitat offsetting.
140	QIA	QIA-35.1	• Attachment 22 • Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G • Section 2.1 Objectives • Table 2.1 Objectives and Performance Indicators page 11 of 109	SWAEMP	It is recommended that Baffinland include discharge in the list of performance indicators for the mitigation of potential impacts to water, the protection of aquatic ecosystems and maintaining receiving environment water quality.			Discharge volumes from surface water management ponds are recorded in accordance with Water Licence requirements and this allows for Baffinland or reviewers to determine mass loadings as referenced. Baffinland does not consider discharge volume to be a useful performance indicator as the volumes of effluent discharged from surface water management ponds are a function of the amount of runoff reporting to these facilities, which is largely dependent on precipitation levels which are out of Baffinland's control. The effluent is discharged in accordance with Baffinland's management plans governed under the Water Licence.	The QIA is requesting a volume threshold be established for each pond, and that measures to address the inadequacy of the pond be identified.	The required pumping capacity to draw down a given pond in a reasonable time will be specified by the design engineer in the construction notification / modification request for that structure.	Unresolved	To resolve these concerns, QIA requests the following: It is recommended that Baffinland include discharge in the list of performance indicators for the mitigation of potential impacts to water, the protection of aquatic ecosystems and maintaining receiving environment water quality.		Unresolved	
141	QIA	QIA-36.1	• Attachment 22 • Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G • Section 2.4.4 Preventative Design Measures for Ground Disturbances. • Table 2.4 Comparison of Soil Spoils Volumes with Available Capacities at Borrow Pits and Quarries Page 19 of 109	SWAEMP	Indicate where additional storage will be provided and the volume of extra storage available in the event that estimates of spoils generated are greater than anticipated or volume of available storage is underestimated.			The priority is to place soil spoils in borrow pits along the Tote Road and exhausted quarries adjacent the railway. Section 4.9 of the Updated Application discusses the volumes of soil spoils requiring disposal in relation to the available space in quarries. It is expected that all the soil spoils generated along the railway (estimated to be 1.8 Mm3) can be placed in borrow pits and quarries (available capacity ~5.5 Mm3). Therefore, there is more than enough capacity available with contingencies. This approach will reduce the use of dedicated disposal sites that would occupy additional land.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
142	QIA	QIA-36.2	Same as above	SWAEMP	Clarify if spoils will be stored in such a way as to permit access to promote revegetation at closure.			Soil spoils disposal areas will be constructed for closure and will naturally revegetate. Future access will not be required.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
143	QIA	QIA-37.1	• Attachment 22 • Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G • Section 3.3.2 Working Near Waters page 30 of 109 and • Section 3.3.4 Quarries page 44 of 109 • Section 5.1 Monitoring During Construction page	SWAEMP	Baffinland develop and implement a monitoring program for all stages of the project including background, construction and operational monitoring and provide a parameter list that is indicative of all potential parameters of concern.			Reference to contractors developing general construction monitoring procedures in no way relinquishes Baffinland's responsibility for environmental compliance. Contractors will be required to develop their own procedures and processes to meet the requirements of the Water Licence, legislation, and Baffinland's own management plans (which are approved under the Water Licence). The QIA stated, "all components of the aquatic environment monitoring program and Surveillance Network Program (SNP) must be presented for each stage of the project." Not all components of the Project at all stages will form part of the SNP. Temporary construction fronts are an example of this, and why the terminology is included in the management plans. The QIA requested, "Baffinland develop and implement a monitoring program for all stages of the project including background, construction and operational monitoring and provide a parameter list that is indicative of all potential parameters of concern." This monitoring program exists in the form of the Water Licence which includes the SNP, the AEMP and other monitoring programs. These programs and management plans have been in place since 2013, and thus do not require development.	It is recommended that Baffinland commit to submitting the monitoring plans for these temporary construction fronts 90 days prior to the start of construction for review and approval inclusive of QIA.		Resolved with commitment	Baffinland has committed to weekly information sharing regarding construction plans and ad hoc water quality monitoring with QIA environmental monitors. BIM further commits to provide all ad hoc water quality monitoring locations to QIA to support the QIA's environmental monitor biweekly reporting.		Resolved with commitment	Once Phase 2 construction begins, BIM commits to a weekly information sharing regarding construction plans and ad hoc water quality monitoring with QIA environmental monitors. BIM further commits to provide all ad hoc water quality monitoring locations to QIA to support the QIA's environmental monitor biweekly reporting.

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144	QIA	QIA-38.1	• Attachment 22 • Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G • Section 3.3.3.2 Fish Protection page 33 of 109	Borrow Pit and Quarry Mgnt Plan	Baffinland clarify the criteria they will use to determine if quarries have the "potential" for acid rock drainage or metal leaching.			Thresholds for acid rock drainage and metal leaching are presented in Table 3.1 of the Borrow Pit and Quarry Management Plan (Attachment 26).			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
145	QIA	QIA-38.2	Same as above	Borrow Pit and Quarry Mgnt Plan	Baffinland should also describe what measures will be used to prevent and manage ARD/ML at source so that the integrity of vegetation in the 100m buffer is not damaged.			The first preventative measure is regular testing of rock in quarries against the ARD/ML testing thresholds in Table 3.1 of the Borrow Pit and Quarry Management Plan (Attachment 26). Based on testing of quarry rock along the railway to date, the likelihood of ARD or ML is low. However, small pockets of potentially acid generating or metal leaching rock could still be encountered. This material will be handled in accordance with Section 3.4 of the Borrow Pit and Quarry Management Plan (Attachment 26).	In Section 3.4 of the Borrow Pit and Quarry Management Plan, page 20 of 62 Baffinland states, "Uncertain or confirmed PAG material that is present in small quantities (i.e., less than 2,000 BCM of a 10,000 BCM blast) will be tracked as to the location of its final placement." This management strategy does not indicate how ARD/ML at the source will be managed to ensure the integrity of vegetation in the 100m buffer is not damaged. We reiterate the request for Baffinland to describe what measures will be used to prevent and manage ARD/ML at source so that the integrity of vegetation in the 100m buffer is not damaged.		Resolved with commitment	Baffinland has committed to removal of uncertain or confirmed PAG material as per Section 3.4 of the Borrow Pit and Quarry management Plan within 30 days of receipt of third-party analytical results. BIM to update Section 3.4 of the Plan accordingly prior to the PH.		Resolved with commitment	BIM commits removal of PAG material as per Section 3.4 of the Borrow Pit and Quarry management Plan within 30 days of receipt of third party analytical results. BIM to update Section 3.4 of the Plan accordingly prior to the NWB hearing.
146	QIA	QIA-39.1	• Attachment 22 • Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G • Section 5.0 Monitoring • Table 5.1 Monitoring Programs page 56 of 109	SWAEMP	It is recommended that the table and monitoring programs be updated to include: A defined period of record that will be used as baseline data to compare with for monitoring programs for Phase 2.			Baseline data for monitoring is presented in the FEIS as well as the AEMP. Baffinland has accumulated baseline (pre-rail construction) water quality through implementation of the Tote Road Monitoring Program.	Use of the Tote Road Monitoring program is not considered appropriate for baseline data use as impacts to water quality as a result of Tote Road would already exist. Therefore it is recommended that Baffinland define a reference station for comparison purposes.	BIM confirmed monitoring will be US of both tote road and rail in comparison to project related effects DS.	Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
147	QIA	QIA-39.2	Same as above	SWAEMP	Dates or timelines to determine when each phase is expected to take place to understand how much data will be collected for each phase of the mine. A definition of the "post-construction verification phase" and how it differentiates from the operations phase			Baffinland is in Year 7 of operations, and the management plans reflect this. It is not clear what the QIA is requesting in terms of dates or timelines when each phase is expected to take place. The mine is currently operating, and will temporarily enter a combined construction phase (Phase 2 construction) while the mine continues to operate. Baseline water quality monitoring began at the site in 2004 and has been ongoing through implementation of the existing Water Licence SNP program and the various other monitoring programs since 2013. Post-construction verification specifically refers to the period immediately following completion of construction of a given project component (i.e., water crossing).			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
148	QIA	QIA-39.3	Same as above	SWAEMP	Collection of data for the SNP, NCMP, snow management monitoring, groundwater monitoring, Type B Water Licence Monitoring and AEMP during all four phases of the mine (baseline, construction, post-construction verification and operation)			Each of the referenced monitoring programs (SNP, NCMP, snow management monitoring, groundwater monitoring, Type B Water Licence Monitoring and AEMP) are already established and will continue through construction of Phase 2 components of the Project and the Project's entire operation phase, in accordance with Water Licence and Commercial Lease requirements.	It is recommended that Baffinland update Table 5.1 in the next iteration to reflect when data collection for each of the monitoring programs takes place including the construction phase and baseline.		Resolved with commitment	Baffinland has committed to revising the AEMP to address QIA's concerns.		Resolved with commitment	BIM confirmed AEMP includes when baseline was collected. Other monitoring programs will not be compared to baseline and will be US/DS comparison to determine project related effects. BIM to update Table 5.1 to indicate mechanisms of comparison.
149	QIA	QIA-40.1	• Attachment 22 • Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G • Section 5.0 Monitoring • Table 5.2 Surface Water and Aquatic Ecosystems Trigger Action Response Plan pages 57 through 60 of 109	SWAEMP	Propose more conservative thresholds for their low, moderate and high-risk thresholds. Add fish health measures including fish length, fork length, lesions and injuries into their response-action framework for road operation activities. Add iron and chloride to the response-action framework for road operation activities and add total ammonia nitrogen, nitrate and total nitrogen to the response-action framework for quarry and borrow pit operations activities.			With respect to more conservative thresholds for low, moderate and high risk thresholds, Baffinland will continue to adhere to Water Licence discharge limits as the moderate risk threshold, an approach requested by the QIA during refinement of these management plans over the past two years. More conservative thresholds are not necessarily constrain construction activities without necessarily providing additional environmental protection. With respect to adding fish health measures to the response-action framework, Baffinland refers the QIA to Commitment No. 201, which was developed jointly and was agreed upon by both parties: Baffinland collects and reports data on fish presence, catch per unit effort, and fork length from 30-60 crossing sites along the Tote Road annually. Baffinland commits to adding observations regarding physical condition of fish (e.g., lesions, injuries, activity level). Baffinland and QIA will determine an appropriate approach to analysis and development of a metric for monitoring fish health for the 2022 reporting period. The program will be evaluated every three (3) years to determine if monitoring locations may be reduced due to no observations of project related-impacts. Regarding the QIA's request to have iron and chloride added to the response-action framework	With respect to fish health and its inclusion in the response framework, fish amalgamate the effects of varied water chemistry and their aquatic habitat. A response framework that relies on the amalgamating power of fish is important and provides the mine with another line of evidence to help inform their management mitigation options that may be required as a result of dynamic mine conditions. We will address this with Baffinland in 2022. With regards to the inclusion of iron and chloride response-action framework for road operation it is noted that Baffinland has under predicted the distance mine related dust travels. The dust produced by the mine contains concentrations of iron that alters the quality of atmospheric deposition and can impact water quality further from the mine. Therefore, we reiterate the recommendation that Baffinland include iron in the response-action framework for road operation. As noted earlier chloride is a conservative ion that does not break down and even if it is applied as a dust suppressant intermittently it may still build up in the aquatic environment. While we applaud Baffinland in their attempts to find an alternate road suppressant calcium chloride is still being used intermittently, therefore the recommendation to include chloride in the response-action framework	Regarding the application of chronic toxicity guidelines for nitrogen-containing compounds in runoff from quarries, BIM believes acute toxicity-based guidelines are more appropriate. Quarries are operated for short periods of time. If runoff contains elevated concentrations of nitrogen-containing compounds, it will be a short-term occurrence.	Unresolved	To resolve these concerns, QIA requests the following: Propose more conservative thresholds for their low, moderate and high-risk thresholds. Add fish health measures including fish length, fork length, lesions and injuries into their response-action framework for road operation activities. Add iron and chloride to the response-action framework for road operation activities and add total ammonia nitrogen, nitrate and total nitrogen to the response-action framework for quarry and borrow pit operations activities.		Unresolved	Incorporate NIRB Commitment #201 (fish health monitoring along tote road) into the SWAEMP
150	QIA	QIA-41.1	• Attachment 22 • Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G • Section 5.2 Routine Inspections • Table 5.3 Routine Inspections and Monitoring Requirements page 61 of 109	SWAEMP	QIA requests the aforementioned items be included in the inspection routine or an explanation be provided for their absence.			With respect to adding flow meter readings to monitoring under the SWAEMP, effluent discharge volumes are recorded as required by the Water Licence but under the Fresh Water Supply, Sewage and Wastewater Management Plan (not the SWAEMP). Land disturbance and spill kit inspections are covered under the Environmental Protection Plan (Attachment 29).	BIM provided an explanation for the lack of flow meter readings however did not explain why land disturbance and spill kits were missing from routine inspections. It is recommended that BIM provide an explanation for the absence of land disturbance and spill kits from routine inspections.	Routine inspections are covered under the EPP	Resolved	Baffinland has confirmed that the inspection of land disturbance and spill kit is included in the EPP.		Resolved	
151	QIA	QIA-42.1	• Attachment 22 • Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G • Section 5.4 Monitoring at Project Quarries and Borrow Sources page 64 of 109	SWAEMP	Provide the criteria Baffinland utilizes to determine when a berm or other drainage control measure is considered necessary.			Selection of the appropriate erosion and sediment control measure is site-specific and is based on professional judgement. The TARP provides the triggers that prompt a response to take action.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	

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152	QIA	QIA-43.1	• Attachment 22 • Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G • Section 5.6 Northern Corridor Monitoring Program • Figure 5.1 Northern Corridor Monitoring Program Adaptive Management Framework page 66 of 109 • Appendix H Northern Corridor Monitoring Program • Section 5. TSS Water Quality Criteria and Response-Action Framework page 48 of 52 • Figure H.4 TSS Response-Action Framework page 49 of 52	SWAEMP	Baffinland propose a more conservative threshold for action with regard to the Northern Corridor Monitoring Program.			The existing thresholds in the Northern Corridor Monitoring Program were agreed upon jointly by Baffinland and the QIA.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
153	QIA	QIA-44.1	• Attachment 22 • Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G • Section 5.7 Fish Passage Monitoring page 67 of 109	SWAEMP	Baffinland include fish health data including fish presence, catch per unit effort, fish length, fork length, lesions and injuries in their adaptive management plan.			Baffinland made this commitment to the QIA in the NIRB review process. Commitment No. 201 was developed jointly and was agreed upon by both parties: Baffinland collects and reports data on fish presence, catch per unit effort, and fork length from 30-60 crossing sites along the Tote Road annually. Baffinland commits to adding observations regarding physical condition of fish (e.g., lesions, injuries, activity level). Baffinland and QIA will determine an appropriate approach to analysis and development of a metric for monitoring fish health for the 2022 reporting period. The program will be evaluated every three (3) years to determine if monitoring locations may be reduced due to no observations of project related-impacts.	Responses observed in fish represent the amalgamation of water chemistry and exposure to varied stressors throughout their lives. A response framework that incorporates fish is important and provides the mine with another line of evidence to help inform their management mitigation options that may be required as a result of dynamic mine conditions. It is important for this to be presented as part of the current application for review.		Resolved with commitment	See NIRB Commitment 201. Baffinland has committed to address this concern in 2022 and include the metric in the next iteration of the plan.		Resolved with commitment	See commitment for QIA-40.1.
154	QIA	QIA-45.1	• Attachment 22 • Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G • Section 5.7 Fish Passage Monitoring page 69 of 109	FAA Application	Request commitment to annual inspections for life of mine.			Annual inspections will be conducted by a Professional Fisheries Biologist for five years following installation of the culverts at high risk locations on the North Railway. The need for further monitoring will be determined following the 5-year program based on the monitoring results. This commitment will be incorporated to the draft Fisheries Act Authorization (FAA) scheduled for completion in May 2022 and shared for review and comment.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
155	QIA	QIA-46.1	• Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G • Appendix C Site Drainage and Monitoring Figures 6.1 and 6.2 pages 108 and 109 of 109 • Appendix G Surveillance Network Program Schedule • Schedule G.1 – Construction Phase SNP Stations – Milne Port page 23 of 52	SWAEMP	Clarify what is considered a significant precipitation event and update maps to ensure all sites are included and have been labelled for evaluation of the SNP monitoring program.			The term "significant precipitation event" is specified in the Water Licence but it is not defined. Baffinland interprets this to mean heavy rainfall. With respect to SNP stations MS-C-C and MS-C-D, these SNP stations will disappear once the SDLT-1 Pond shown on the figure and approved under Modification Request No. 13 is constructed. These stations will continue to be monitored until the pond is constructed. With respect to stations MQ-C-A through MQ-C-E, these are identified in the Quarry Management Plans and are not official SNP stations, as they do not appear in Table 14 of the Water Licence (including updates).			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
156	QIA	QIA-47.1	• Attachment 22 • Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G • Appendix F Environmental Guidelines for Project Water Crossing Repairs and/or Installations • Section 4. Water Sampling and Monitoring Frequency • Table C-1 – Summary of Water Quality Monitoring Frequency page 9 of 52	SWAEMP	Baffinland commit to sampling for three years after water crossing construction or disturbance with monitoring during operations considered acceptable.			Baffinland will conduct post-construction monitoring as described in the Environmental Guidelines for Water crossing Repairs, Installations and Modifications (Appendix F in the SWAEMP), which was developed jointly with and approved by the QIA. The Northern Corridor Monitoring Program will also be ongoing at select crossings. Routine inspections both during construction and operation are specified in the TARP in the SWAEMP, and if visual evidence of erosion or sedimentation is observed, this triggers notification of the Environmental Department, which will undertake sampling, as well as action by the relevant department to mitigate the issue.			Unresolved	To resolve these concerns, QIA requests the following: Baffinland commit to sampling for three years after water crossing construction or disturbance with monitoring during operations considered acceptable.		Unresolved	
157	QIA	QIA-48.1	• Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G • Appendix F Environmental Guidelines for Project Water Crossing Repairs and/or Installations • Section 5. Water Quality Action Levels • Table C-1 – Water Quality Action Levels page 11 of 52 • Section 7. Action Response Framework During Construction	SWAEMP	Identify a single exceedance as a trigger to investigate mitigative actions (i.e., sediment control fencing or rip rap placement).			The QIA is incorrectly interpreting Section 7 of the Construction Monitoring section in the Environmental Guidelines for Water crossing Repairs, Installations and Modifications. The trigger is 75% of the threshold (i.e., 75% of a maximum increase of 100 mg/L TSS, which is a maximum increase of 75 mg/L). This is articulated a different way in Table 5.2 in the SWAEMP: the low risk condition is when downstream turbidity and/or TSS are between 75% and 100% of the applicable water quality action level (+25 NTU turbidity and/or +100 mg/L TSS over background).			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
158	QIA	QIA-49.1	Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G Appendix G Surveillance Network Program Schedule Schedule G.3 – Operation Phase SNP Stations – Milne Port page 26 through 30 of 52 Schedule G.4 – Operation Phase SNP Stations – Mine Site pages 31 through 38 of 52	FWSSWMP	Weekly monitoring of water discharge volume from the Mine and Milne Port contaminated snow dumps during freshet and monthly during the remainder of the open water season.			Water collected in the landfarm (including snow dump) are controlled discharges. This water is only discharged after testing has shown the effluent is below applicable discharge limits. Due to the intermittent nature of the discharge and pre-discharge testing, weekly testing is not required.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
159	QIA	QIA-49.2	Same as above	FWSSWMP	Iron be added to the parameter list for contaminated snow dumps.			Hydrocarbon-impacted snow is disposed of in this facility, and not snow containing ore. Therefore, Baffinland proposes the monitoring requirements outlined in Schedule I remain for the landfarm.		BIM does not agree with the addition of iron as a parameter of concern in the snow dumps. This is not what the NWB prescribes in its water licences.	Unresolved	To resolve these concerns, QIA requests: Iron be added to the parameter list for contaminated snow dumps.		Unresolved	

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160	QIA	QIA-49.3	Same as above	FWSSWMP	Confirm water being transferred between water control ponds is being measured.			Discharge volumes are monitored only during final discharge to the receiving environment. There is no regulatory basis for monitoring and reporting effluent volumes transferred between ponds prior to final discharge, and the QIA's concern is in regard to final discharges to the receiving environment. Baffinland may record the volumes of water being transferred between ponds for its own information.			Unresolved	To resolve these concerns, QIA requests: Confirm water being transferred between water control ponds is being measured.		Unresolved	
161	QIA	QIA-49.4	Same as above	FWSSWMP	Increase monitoring of stockpile surface runoff to weekly to confirm compliance.			Regarding SNP stations MS-07 (ROM ore stockpile) and MS-10 (future SDLT-1 pond), these ponds are sampled prior to discharge, as well as during discharge, as described in Section 3.5 and on Figure 3.3 of the Fresh Water Supply, Sewage and Wastewater Management Plan (Attachment 23). Weekly sampling would be appropriate if these were flow-through ponds that continuously discharged, but they are controlled discharge ponds. Baffinland's practice of sampling prior to and during discharge, and pausing discharge if sampling detects parameters above Internal Discharge Limits (less than the Water Licence Discharge Limits) is highly protective of the environment.		Sampling frequency for SNP stations are indicated in Appendix L. MDMER monitoring frequency is described in Table 5.3.	Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
162	QIA	QIA-50.1	• Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G • Appendix H Northern Corridor Monitoring Program • Section 4. Monitoring Frequency page 46 of 52	SWAEMP	Group 3 parameters be collected at the same frequency as Group 4 and allow a lab technician who is trained in the detection of oil and grease to determine its presence.			In the preamble of this technical comment, the QIA states the following: "While water quality is not considered a VEC, Article 20 of the Nunavut Land Claims Agreement (the Nunavut Agreement) states that Inuit are entitled to unaltered water quality, quantity and flow." This is not accurate. Section 20.3.1 of Article 20 states: "No project or activity within the Nunavut Settlement Area which may substantially affect the quality of water flowing through Inuit Owned Lands, or the quantity of such water, or its flow, shall be approved by the NWB unless the applicant for a licence has entered into a compensation agreement with the DIO for any loss or damage which may be caused by the change in quality, quantity or flow of the water or the NWB has made a determination in accordance with Section 20.3.2." The Northern Corridor Monitoring Program has been adapted from the Tote Road Monitoring Program developed jointly between the QIA and Baffinland. The QIA approved this sampling program. The focus was on managing erosion and sedimentation, and monitoring of oil and grease when visual evidence warrants is appropriate adaptive management.			Unresolved	To resolve this concern, QIA requests: Group 3 parameters be collected at the same frequency as Group 4 and allow a lab technician who is trained in the detection of oil and grease to determine its presence.		Unresolved	
163	QIA	QIA-51.1	• Attachment 22 • Surface Water, Aquatic Ecosystem Management Plan BAF-PH1-830-P16-0026 Phase 2 Proposal Revisions for Review Purposes Only Rev G • Section 5.6 Northern Corridor Monitoring Program page 65 of 109 • Appendix H Northern Corridor Monitoring Program • Section 5. TSS Water Quality Criteria and Response-Action Framework page 48 of 52 • Figure H.4 TSS Response-Action Framework page 49 of 52	SWAEMP	Include iron and chloride in addition to TSS in the adaptive management framework and response-action framework for the Northern Corridor Monitoring Program.			Baffinland agrees to establish thresholds for iron and chloride as part of the Northern Corridor Monitoring Program. This will be reflected in the next update of the SWAEMP.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission. Baffinland has further committed to updating the NCMP prior to a public hearing.		Resolved	BIM will consider incorporating thresholds for iron and chloride into the Northern Corridor Monitoring Program (Appendix H of the SWAEMP) as part of its discussions regarding management plans with the QIA.
164	QIA	QIA-52.1	• Attachment 13.2 • North Railway Freshwater Habitat Survey: 2018 – Part 1 • Section 2.1.1.1 North Rail Crossings – page 11 of 62	FAA Application	Provide a reference to the specific protocols that were developed.			The reference (Baffinland, 2012a) is provided in the references section of the report: Baffinland. 2012a. Mary River Project - Final Environmental Impact Statement. Volume 7: Freshwater Environment. February 2012. Volume 7 references Appendix 7C for the [illegible]			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
165	QIA	QIA-53.1	• Attachment 13.2 • North Railway Freshwater Habitat Survey: 2018 – Part 1 • Section 1.0 Introduction – page 8 of 62	FAA Application	Provide site specific data for each crossing			Site-specific data for each crossing are provided in Appendix 4 of the North Railway Freshwater Habitat Survey: 2018. More recent study results are provided in Appendix 4 of this response.	It was stated in the North Railway Freshwater Habitat Survey Report 'there have been changes in the specific design of Project-related infrastructure at many of the crossings and some new locations have been added, the fish and fish habitat information acquired during the 2018 field survey still provides a useful description of fish habitat at or near the majority of sites identified in the final design' The comment provided wanted to ensure that habitat assessments were completed at all crossings even where changes were made to the design and that new crossings were also properly assessed and did not rely on data from 2018 that may have been collected upstream or downstream. If this was the case where data was relied on from 2018 at a new crossing what distance was considered 'near' to not have to complete a new habitat assessment.	BIM conducted spring and fall surveys in both 2019 and 2021 at the latest railway crossings, so the 2018 dataset is only part of the body of information that BIM will use. Site-specific data will be provided in the FAA Application for all permanent and temporary crossings.	Resolved with commitment	Baffinland has committed to complete habitat evaluations for each water crossing remaining prior construction. This includes temporary crossings.		Resolved with commitment	BIM will provide site-specific data for all fish-bearing permanent and temporary crossings in its FAA Application
166	QIA	QIA-54.1	• Attachment 13.2 • North Railway Freshwater Habitat Survey: 2018 – Part 1 • Section 2.1.2 North Rail Bridges – page 12 of 62	FAA Application	Provide rationale for this change in methodology.			Electrofishing was not undertaken at the North Railway bridges in 2018 as flow conditions were too high for the river to be sampled effectively. Previous field studies have established the presence of fish in each river and that all are important, fish-bearing waterbodies. The habitat survey transect length was 120 m (60 m upstream and downstream). This survey length was considered adequate to assess local habitat conditions.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
167	QIA	QIA-55.1	• Attachment 13.2 • North Railway Freshwater Habitat Survey: 2018 – Part 1 • Section 2.1.1.1 North Railway – page 12 of 62	FAA Application	Provide explanation on how barriers greater than 15° were classified, such as how the gradient measured (i.e. clinometer, visual observation, surveyor, using desktop analysis such as digital elevation model)			Potential stream barriers were assessed in the field using a clinometer.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	

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168	QIA	QIA-55.2	Same as above	FAA Application	Provide references that indicate that a stream gradient of 15° is difficult or impassable for Arctic Char.			The 15° gradient threshold was derived from past field experience from working in the region since 2008. There are no published references that support this value.	Based on past field experiences - can you expand on what that means? i.e. for all sites that had a stream gradient of 15° or greater that no fish were observed upstream? Please provide rationale.	BIM needs to correct its response in addition to further substantiating it. Its consultant has adopted a gradient of 10 degrees, or 18%, for impassable gradients. This is based on over a decade of fisheries surveys in the study area. Char have not been observed upstream of a gradient of 10 degrees (accepting where there is overwintering habitat upstream in which case fish can access the area upstream of the barrier). These are juvenile landlocked arctic char that are mostly <100 mm. Smaller juveniles are unable to pass at even lower gradients. The other aspect is that high gradients also present high velocities or low water (depending on flow conditions) which combined contribute to fish passage barriers.	Unresolved	QIA requests: Provide references that indicate that a stream gradient of 15° is difficult or impassable for Arctic Char.		Unresolved	
169	QIA	QIA-56.1	• Attachment 13.2 • North Railway Freshwater Habitat Survey: 2018 – Part 1 • 2.1.3 North Rail Lake/Pond Encroachments/Infilling – page 13 of 62	FAA Application	Was the waterbody classified as non-fish bearing if fish were not captured after completing the 100 m long section using the backpack electrofisher? Were other capture methods utilized?			No fish captured after sampling a 100 m long section was combined with other field data before designating a stream section as non fish bearing. This work was conducted by a Professional Biologist. In general we are confident that non fish bearing stream sections were classified correctly.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
170	QIA	QIA-57.1	• Attachment 13.2 • North Railway Freshwater Habitat Survey: 2018 – Part 1 • 2.1.4 North Rail Stream Diversions – page 14 of 62	FAA Application	What additional studies were completed to address the reduction in flow to the unnamed lake downstream of CV-90-4?			The unnamed lake downstream of CV-90-4 was assessed with a sidescan echosounder to determine bathymetry and substrate distribution. The lake is assumed to include seasonal use by Arctic char but may include overwintering. The railway design has changed and there currently is no expected flow reduction downstream of CV-90-4.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
171	QIA	QIA-57.2	Same as above	FAA Application	How will water levels in the unnamed lake be mitigated from the diversion at CV-90-4?			The railway design has changed and there currently is no expected flow reduction downstream of CV-90-4. The affected tributary includes a barrier at its mouth and the crossing location is non fish bearing.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
172	QIA	QIA-57.3	Same as above	FAA Application	Have studies been completed to understand the contribution of water from this upper reach to the lake?			No. There is no diversion currently planned at CV-90-4.	Please ensure that if plans change and a diversion of water is required at this location that the appropriate studies are completed to ensure there are no impacts to downstream waterbodies and fish habitat.		Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
173	QIA	QIA-57.4	Same as above	FAA Application	Will the diverted water ultimately flow back into the unnamed lake or a different receiving waterbody?			The railway design has changed and there currently is no expected flow reduction downstream of CV-90-4.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
174	QIA	QIA-58.1	• Attachment 13.2 • North Railway Freshwater Habitat Survey: 2018 – Part 1 • 3.2.1 North Rail Crossings – page 19 of 62	FAA Application	Confirm if fish sampling surveys were completed at these sites.			Fish sampling surveys were completed at all stream crossings along the North Railway. More recent study results are provided in Appendix 4 of this response.	It is not clear which sites are the 48 sites that may potentially support char under higher flow conditions as these are not identified as such in Appendix 1 of the North Railway Freshwater Habitat Survey: 2018 – Part 1. These sites should be afforded the same protection and mitigation measures as sites that are confirmed Arctic Char habitat, unless the proponent can prove otherwise.	The 2018 report presents data from only that survey; some streams were surveyed prior to that work and were subsequently surveyed in 2019 and 2021. Additionally, the railway alignment changed since that report. As such, it is no longer an accurate representation. The updated fisheries baseline report that will be presented with the FAA Application will provide updated fisheries information for the current rail crossings. To answer the question in a generic sense, if upstream habitat supported fish at high flows, it would be considered low quality habitat. Several years of surveys during freshet should provide sufficient evidence as to whether these areas are fish habitat under high flows.	Path forward identified	QIA and Baffinland are actively engaged on addressing this concern.		Path forward identified	
175	QIA	QIA-59.1	• Attachment 13.2 • North Railway Freshwater Habitat Survey: 2018 – Part 1 • 3.5 North Rail Stream Diversions – page 21 of 62	Water Licence	Confirm if all engineered drawings have been provided for the stream diversions.			Diversions are shown on the detailed plan and profile drawings in Attachment 11.3. Engineered drawings have not been developed for the diversions themselves.	It is critical that engineered drawings are provided for each of the diversion channels and that they are reviewed by QIA.		Path forward identified	NWB has confirmed that Baffinland must provide the requested engineering documents. QIA has not yet received confirmation from Baffinland of their intention to distribute the documents.		Path forward identified	BIM will comply with Water Licence requirements to provide drawings of stream diversions 60-days prior to their construction
176	QIA	QIA-59.2	Same as above	Water Licence	Confirm if the drawings show the reconstruction channel and tie in to the downstream waterbody.			The engineered drawings for the diversions have not been developed.	It is critical that engineered drawings are provided for each of the diversion channels and that they are reviewed by QIA.		Path forward identified	NWB has confirmed that Baffinland must provide the requested engineering documents. QIA has not yet received confirmation from Baffinland of their intention to distribute the documents.		Path forward identified	See commitment for QIA-59.1.
177	QIA	QIA-60.1	• Attachment 16 • Detailed Water Withdrawal Plan Part 1 of 4– page 17 of 25	FWSSWMP	What monitoring will be completed to ensure there is no impact to fish and fish habitat?			No monitoring of the water withdrawal streams is proposed. This is not normal practice, and nor is it required because the pumping rates and other mitigation measures identified in the Detailed Water Withdrawal Plan will be adhered to. Baffinland's Environment Department periodically audits water withdrawal operations to ensure appropriate procedures and mitigation measures are being employed.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
178	QIA	QIA-60.2	Same as above	FWSSWMP	How will stream flow be measured during the time of any withdrawals to establish what the 10% flow rate is?			It is not practical to measure flow in streams during water withdrawals. The approach of applying flow duration curves for the 12-year period of record is a practical way of checking that the 10% threshold will not be exceeded.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
179	QIA	QIA-60.3	Same as above	FWSSWMP	What is the monitoring and mitigation plan if the maximum pumping rate was over estimated for a waterbody?			There is no monitoring and mitigation plan if the maximum pumping rate was overestimated for a waterbody. The only way that this would occur is if a larger catchment boundary incorrectly delineated. Catchment boundaries for each stream location was subject to review, and major errors are unlikely. Additionally, the water withdrawals are short-term events (~20-40 minutes). In practical terms, if the flow was meaningfully overestimated, it is likely that the operator will have difficulties submerging the	There should always be a mitigation plan for any mining activity that has the potential to harm the natural environment.	Mitigation measures for water withdrawals are presented in Section 3.3 of the FWSSWMP.	Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
180	QIA	QIA-61.1	• Attachment 16 • Detailed Water Withdrawal Plan Part 2 of 4– pages 1& 2 of 30	FWSSWMP	Confirm if a monitoring program has been developed to monitor the pump intakes/screen for sediment, debris and impinged fish on a routine schedule (i.e. inspection frequency should be increased during periods when the maximum pumping rate is used)?			Baffinland adheres to DFO's Code of Practice for fish screens, as specified in Part D, Item 6 of the Water Licence. Baffinland notes that the referenced 1995 guideline has been replaced with a 2020 code of practice. This assessment is completed upon deployment of a pump, and the operator monitors the intake during pumping activities.	BIM did not provide a response if monitoring of the pump intakes/screen for sediment, debris and impinged fish will be completed on a routine schedule		Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	

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181	QIA	QIA-61.2	Same as above	FWSSWMP	If it is determined that a site is not appropriate for pumping (i.e. sediment uptake, fish impingement) what steps will be taken to identify a new pumping location?			If a site is determined to be inappropriate for use, it will no longer be used. Other nearby approved stations will be used. If a viable alternate can be identified nearby, Baffinland will submit a notification to the NWB accompanied by a hydrology assessment, in accordance with Part E, Item 14 of the Water Licence.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
182	QIA	QIA-62.1	• Attachment 16 • Detailed Water Withdrawal Plan Part 2 of 4– pages 8 of 30	FWSSWMP	A detailed fish habitat assessment be completed and submitted for review prior to this location being used for water taking.			Agreed. A fish habitat assessment will be conducted at the alternate WS27.1c station if Baffinland seeks to use it during summer. Winter water withdrawals came be made offshore and depth measurements can be taken to ensure an environmentally protective water withdrawal during winter.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
183	QIA	QIA-63.1	• Environmental Protection Plan • Baf-Ph1-830-P16-0008 • Phase 2 Proposal Revisions - For Review Purposes Only >Rev B • Section 4.4.3 Environmental Protection Measures – page 40 of 85	EPP	Integration of a monitoring threshold for turbidity such as CCME guidelines for the Protection of Aquatic Life. Turbidity clear flow - Maximum increase of 8 NTUs from background levels for a short-term exposure (e.g., 24-h period). Maximum average increase of 2 NTUs from background levels for a longer term exposure (e.g., 30-d period). High flow or turbid waters - Maximum increase of 8 NTUs from background levels at any one time when background levels are between 8 and 80 NTUs. Should not increase more than 10% of background levels when background is >80 NTUs.			The referenced text in the EPP is dated and is superseded by the Environmental Guidelines for Water crossing Repairs, Installations and Modifications in Appendix F of the SWAEMP. This guideline was developed jointly with the QIA. Baffinland will update the EPP to be consistent with the above-mentioned guideline.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	Update the turbidity thresholds in the EPP to be consistent with the Environmental Guidelines for Water Crossing Repairs, Installations and Modifications (SWAEMP Appendix F).
184	QIA	QIA-64.1	• Environmental Protection Plan • Baf-Ph1-830-P16-0008 • Phase 2 Proposal Revisions - For Review Purposes Only >Rev B • Section 4.7.3.1 Environmental Protection Measures – page 44 of 85	FAA Application	Confirm if culverts that contain baffles will be monitored to ensure rock movement/accumulation or winter ice build up in the culverts do not create fish barriers during low flow periods or freshet.			Confirmed. These will be monitored to ensure fish passage during freshet and summer low flows.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
185	QIA	QIA-65.1	Same as above	FAA Application	Provide further details on mitigation measures to ensure that culverts >50 m do not become fish barriers.			Monitoring plans will include detailed sampling to confirm fish passage. Crossings that are not passable by fish may form part of the Fisheries Act Authorization (FAA) Application. The draft FAA Application will be shared for review and comment.	Crossings that are not passable by fish '**will**' form part of the Fisheries Act Authorization Application. Please ensure the QIA has adequate time to review the draft FAA Application.		Resolved with commitment	Baffinland has committed to provide the requested information in the FAA with a draft provided to QIA at least 30 days prior to formal submission.		Resolved with commitment	Further details on mitigation measures so that culverts >50 m do not become fish barriers will be provided with the FAA Application, which will be provided to the QIA in draft for comment 30-days before formal submission
186	QIA	QIA-65.2	Same as above	FAA Application	Confirm if a monitoring program will be developed to ensure that fish are using and able to pass through these extended culverts.			Confirmed. A fish passage monitoring program will be developed. These details will be included in the Fisheries Act Authorization (FAA) Application. The draft FAA Application will be shared for review and comment.	Please ensure the QIA has adequate time to review the draft FAA Application.		Resolved with commitment	Baffinland has committed to provide the requested information in the FAA with a draft provided to QIA at least 30 days prior to formal submission.		Resolved with commitment	A fish passage monitoring program will be presented in the FAA Application, which will be provided to the QIA in draft for comment 30-days before formal submission
187	QIA	QIA-65.3	Same as above	FAA Application	Please describe means by which longer culverts can be illuminated			The illumination of culverts is a potential mitigation if culverts are determined to be impassable. The feasibility of this option is being further investigated.			Resolved with commitment	Baffinland has committed to provide the requested information in the FAA with a draft provided to QIA at least 30 days prior to formal submission.		Resolved with commitment	See commitment for QIA-65.1.
188	QIA	QIA-66.1	Same as above	FAA Application	Provide the results of the fish passage potential for each culvert.			These details will be included in the Fisheries Act Authorization (FAA) Application. The draft FAA Application will be shared for review and comment.			Resolved with commitment	Baffinland has committed to provide the requested information in the FAA with a draft provided to QIA at least 30 days prior to formal submission.		Resolved with commitment	An updated fish passage assessment will be presented in the FAA Application, which will be provided to the QIA in draft for comment 30-days before formal submission
189	QIA	QIA-67.1	• Environmental Protection Plan • Baf-Ph1-830-P16-0008 • Phase 2 Proposal Revisions - For Review Purposes Only >Rev B • Section 4.7.3.3 Environmental Protection Measures – page 45 of 85	EPP	What is Baffinland's course of action if spawning sites are identified within 20 m upstream and/or 20 m downstream of the work area?			The identification of spawning sites in proximity to construction work areas is not anticipated. No spawning sites have been identified during baseline studies. Arctic char are assumed to spawn in lakes or potentially in deep pools in rivers. The small lakes affected by the North Railway may require special construction work windows to avoid potential spawning areas.	A statement from BIM should be provided and included in the report that explains what the mine will do in the event that spawning areas are identified prior to the start of works. This will provide reassurance to QIA that these areas will be protected and works delayed until safe to do so.		Resolved with commitment	Baffinland has committed that if spawning sites are identified, the company will default to DFO timing windows to avoid impacts to those spawning areas.		Resolved with commitment	BIM will clarify in its EPP and SWAEMP that if spawning sites are identified at proposed crossings, that the company will default to the DFO's timing window for in-water work.
190	QIA	QIA-68.1	• Attachment 31 - Surface Water Sampling Program - QA/QC Plan • 5.2.2 River and Grab Sampling – page 17 of 139	Sampling Program QA/QC Plan	Please clarify the exact procedure for sediment sampling.			The procedures for sediment sampling in streams are provided in Section 5.2 of the Sampling Program - QA/QC Plan.	It should be clearly stated in your sediment sampling procedure as the second step how the sediment sample will be obtained from the river/stream bed.		Resolved with commitment	Baffinland has committed to investigate the wording and update the text to clarify the sampling approach in the next iteration of the plan prior to a Public Hearing.		Resolved with commitment	BIM will provide its Standard Operating Procedure (SOP) for sediment sampling for QIA's review.
191	QIA	QIA-69.1	• Attachment 13 • Watercourse Crossings – Attachment 13.1 Phase 2 Proposed Infrastructure Interactions with Watercourses	FAA Application	Clarify which Table is the most up to date with the project interaction and corresponding watercourse, pond/lake.			An updated list of watercourse crossings and project interactions is provided in Appendix 4 of this response document.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
192	QIA	QIA-69.2	Same as above	FAA Application	Update both tables to ensure fish habitat is correctly defined and include 'potential' habitat for Arctic Char and Ninespine Stickleback.			See response to QIA-69.1.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
193	QIA	QIA-70.1	• Aquatic Effects Monitoring Plan • Section 3.3.5 Benthic Invertebrates – pages 58-59	AEMP	Provide the full comments referenced above in the AEMP.			The QIA may be referring to the Minnow Recommendations presented in Appendix C (Appendix A are Baffinland's corporate policies). Appendix C is the Part 2 file (210917-2AM-MRY1325-Amend2-Applic-Att-28-AEMP-Part 2).			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
194	QIA	QIA-71.1	• Attachment 28 Aquatic Effects Monitoring Plan BAF-PH1-830-P16-0039 Phase 2 Proposal Revisions for Review Purposes Only Rev 2 • Section 3.1.2 Nutrient/Eutrophication Indicators and Benchmarks page 47 of 105	AEMP	Baffinland commit to continuing to use TP as an indicator of changes in trophic status.			Baffinland has consistently included the analysis of total phosphorus (TP) in water samples collected at all lotic and lentic waterbodies under the AEMP. Total phosphorus will continue to be assessed as part of the AEMP Rev 2 water quality monitoring program to support the evaluation of changes in trophic status.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	

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195	QIA	QIA-72.1	• Attachment 28 Aquatic Effects Monitoring Plan BAF-PH1-830-P16-0039 Phase 2 Proposal Revisions for Review Purposes Only Rev 2 • Section 3.1.2 Nutrient/Eutrophication Indicators and Benchmarks page 47 of 105	AEMP	Baffinland continue to monitor nutrients and add sampling of primary producers, in the form of periphyton, in lotic systems (such as the Mary River) receiving discharge of treated sewage effluent.			Baffinland will continue to monitor concentrations of nutrients including total ammonia, nitrate, nitrite, Total Kjeldahl Nitrogen (TKN), dissolved organic carbon (DOC), total organic carbon (TOC), and total phosphorus in surface waters at all lotic and lentic water quality monitoring stations under the AEMP Rev 2. In addition to monitoring nutrient concentrations in water at all AEMP lotic water quality monitoring stations, Baffinland monitors chlorophyll a concentrations at these stations as a surrogate for the assessment of phytoplankton abundance and as a basis for evaluating changes in trophic status. Furthermore, because benthic invertebrate communities are sensitive to nutrient enrichment, benthic invertebrate community monitoring conducted annually at all AEMP lotic systems (including Mary River at three areas upstream, and two areas downstream, of the primary mine camp STP discharge) provides an additional tool for assessing potential nutrient enrichment influences of the project on biota of lotic environments. The collective monitoring of nutrients, chlorophyll a as a proxy for phytoplankton abundance, and benthic invertebrate communities at AEMP lotic environments provides sufficient information (through weight-of-evidence analysis) for assessing nutrient enrichment effects and the tracking of potential changes in trophic status at lotic systems adjacent to the project. Therefore, based on the	Periphyton are the main scavengers of limiting nutrients in water. They actively assimilate phosphorus and once phosphorus is cycling within periphyton it is highly unlikely to be exported to open waters (Wetzel, 2001). Therefore, to fully understand the impacts of the discharge sewage effluent on the Mary River it is recommended that BIM add sampling of periphyton, in lotic systems to their monitoring program. As stated in Wetzel (2001), "The phosphorus of the littoral water is very actively assimilated by the loosely attached epiphytic periphyton, incorporated into the periphyton, and intensively recycled (e.g., Riber and Wetzel, 1987, Wetzel, 1993a). The periphyton, rather than the submersed macrophytes, function as the primary scavenger for limiting nutrients such as phosphorus from the water." Once phosphorus is cycling within the submersed macrophyte- periphyton community, however, it is improbable that much of it will be exported to the open waters. Attached microbial communities are well adapted to water movements (Wetzel, 2001).		Resolved with commitment	Baffinland has committed to arrange an AEMP working group in Q1 2022 to address these concerns.		Resolved with commitment	BIM will complete phosphorus mass balance modeling for the Mary River system as a means of assessing whether incorporating periphyton monitoring as a tool for assessing STP effluent-related influences on primary productivity is warranted.
196	QIA	QIA-73.1	• Attachment 28 Aquatic Effects Monitoring Plan BAF-PH1-830-P16-0039 Phase 2 Proposal Revisions for Review Purposes Only Rev 2 • Section 3.1.2 Nutrient/Eutrophication Indicators and Benchmarks • Table 3.8 Reference Areas for the Mary Lake System page 48 of 105	AEMP	In Table 3.8 it is indicated that phytoplankton are not sampled at the Mary River Reference sites G0-09-A, G0-09, G0-09-B. Given that Mary River is the primary receiver of treated sewage effluent and Baffinland wants to evaluate nutrient enrichment primarily by chlorophyll-α, it is recommended that Baffinland collect samples of phytoplankton and periphyton at the reference sites G0-09-A, G0-09 and G0-09-B.			Baffinland regrets that the information presented in Table 3.8 related to the sampling of phytoplankton at Mary River G0-09-A, G0-09, and G0-09-B reference stations was misrepresented. Phytoplankton sampling (based on using chlorophyll a as a proxy for phytoplankton abundance) will be included as a monitoring component of the AEMP at Mary River G0-09-A, G0-09, and G0-09-B stations. Table 3.8 will be updated accordingly. As outlined in the response to QIA comment #72.1, the sampling of nutrients, phytoplankton (chlorophyll a), and benthic invertebrates at the G0-09 series stations is deemed by Baffinland to be sufficient for evaluation of project-related enrichment and trophic status effects. Therefore, no additional measures of phytoplankton or periphyton are required at lotic stations under AEMP Rev 2.			Resolved with commitment	Baffinland has committed to arrange an AEMP working group in Q1 2022 to address these concerns.		Resolved with commitment	Table 3.8 of AEMP Revision 2 will be updated to indicate on-going evaluation of nutrients at the Mary River upstream reference area (G0-09 series stations). In addition, the approach described in the response to QIA 72.1 will be applied to assess whether periphyton monitoring as a tool for evaluating STP effluent-related influences on primary productivity is warranted.
197	QIA	QIA-74.1	Attachment 28 Aquatic Effects Monitoring Plan BAF-PH1-830-P16-0039 Phase 2 Proposal Revisions for Review Purposes Only Rev 2 Section 3.3.3 Sediment Quality Study Design page 53 of 105 Table 3.12 Profundal Sediment Quality Stations page 55 of 105 Figure 3.3 page 57 of 105	AEMP	Clarify if the number of profundal sediment stations in Sheardown Lake SE is being reduced to two or if profundal sediment stations are being eliminated entirely.			The maximum depth attained in Sheardown Lake SE is approximately 14 metres (m). The depth throughout the majority of this basin of Sheardown Lake (i.e., >95%) is estimated to be less than 12 m deep, which was the cut-off depth assigned to distinguish 'littoral' from 'profundal' lake stations under the CREMP. Therefore, a minimal amount of profundal habitat occurs in Sheardown Lake SE, and that which is present is at the threshold between classification as littoral or profundal. Hence, no 'profundal' stations are proposed for sampling in Sheardown Lake SE. Figure 3.3 provided in the AEMP Rev 2 will be updated to reflect no profundal stations sampled in Sheardown Lake SE. It is noteworthy that the five stations proposed for sediment sampling in Sheardown Lake SE under the AEMP Rev 2 have been evenly distributed throughout the lake and reflect depths ranging from approximately 6.8 to 13.2 m, the later of which is within the deepest portion of the lake. Therefore, although no profundal stations are included at Sheardown Lake SE for sediment sampling, the proposed design considers proper spatial coverage and variable water depths to ensure that sediment sampling conducted at Sheardown Lake SE meets the AEMP objectives.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
198	QIA	QIA-75.1	• Attachment 28 Aquatic Effects Monitoring Plan BAF-PH1-830-P16-0039 Phase 2 Proposal Revisions for Review Purposes Only Rev 2 • Section 2.4.5.3 Tote Road and Northern Railway (Water Management Area 48) page 32 of 105	AEMP	Provide further details on the anticipated discharge location, the monitoring site label, the parameters to be sampled and the frequency of sampling.			The temporary ore stockpiling area at KM57 was removed from the Project. References to this component were removed from the Updated Water Licence (Main Report). That reference to this project component was not removed from the AEMP is an oversight. It will be removed from the next revision of this plan.			Resolved with commitment	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved with commitment	Remove reference to the temporary ore stockpiling area at KM57 in the next update of the AEMP.
199	QIA	QIA-76.1	• Attachment 28 Aquatic Effects Monitoring Plan BAF-PH1-830-P16-0039 Phase 2 Proposal Revisions for Review Purposes Only Rev 2 • Section 3.5.3 Fish page 65 of 105	AEMP	Confirm that fish ageing structures will also be aged by an accredited laboratory with expertise in processing fish ageing structures to confirm technician results.			Baffinland confirms that fish ageing will be conducted at a qualified analytical laboratory by personnel specialized in processing and ageing of fish using scientifically accepted approaches. As part of the quality control process, Baffinland confirms that a second qualified fish ageing specialist will be used to independently evaluate ages provided by the initial specialist. The age confirmation samples will be selected at random, with a total of 10% of the number of samples submitted undergoing a second, independent analysis. Results within one year of the original age estimate will be considered acceptable. In the event of discrepancies, additional (secondary) age structures will be assessed by each ageing specialist to arrive at an assigned age for the sample(s) in question.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
200	QIA	QIA-77.1	• ICRP – 1. Plain Language Summary • PROJECT AND CLOSURE SUMMARY, p. 13	ICRP	How will feasibility of restoring natural drainage be assessed as reasonably possible or not and how will the decisions be documented?			The feasibility of restoring natural drainage will be determined by a Professional Engineer based on the level of disturbance that is required to re-establish natural drainage, and which drainage (project or natural) will be most physically stable in the long-term. The proposed approach will appear in design drawings supporting closure.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	

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201	QIA	QIA-77.2	• ICRP Section Plain Language Summary • PROJECT AND CLOSURE SUMMARY, p. 14	ICRP	What factors will be considered and what would prevent re-establishment of natural drainage at closure?			See response to QIA-77.1.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
202	QIA	QIA-78.1	Same as above	Borrow Pit and Quarry Mgnt Plan	Please clarify the number of quarries in the Phase 2 project.			Thirty aggregate sources (29 rock quarries and one borrow pit) are proposed to support Phase 2 construction (Section 2.7 of the Updated Application Main Report). An additional 79 quarries were previously identified to support construction of the South Railway and Steensby Port			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
203	QIA	QIA-78.2	Same as above	Borrow Pit and Quarry Mgnt Plan	How many are anticipated to remain as visible landforms following closure?			It is likely that some evidence of each quarry will be apparent at closure. How visible a landform each will be at closure will depend on quarry designs, to be presented in the quarry-specific management plans, and whether and the degree of use for disposal of soil spoils during construction			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
204	QIA	QIA-79.1	• ICRP • Plain Language Summary • PROJECT AND CLOSURE SUMMARY, p. 18 and Table 1.1 • Section 5 – Permanent Closure and Reclamation, Table 5.1 • Sect. 5.2.1.2 p.102	ICRP	In the event that refinements do not reduce risk to acceptable levels, what mitigation options are available and when could they implemented?			Section 5.2.1.5 of the ICRP (Attachment 30) states "It is currently anticipated that the discharge from the open pit will not require treatment (AMEC 2010). However, if treatment is required several effective technologies are currently available to manage metal leaching and/or acid rock drainage (ML/ARD). If ML/ARD were to develop, batch treatments will be carried out to adjust the pH and/or metal concentrations of the water in the pit so that it meets discharge requirements before overflow into the environment." Section 5.2.1.9 further states: "Although indications to-date demonstrate a low probability of ML/ARD, in the event that ongoing water quality modelling or field monitoring shows a trend toward exceedance of discharge requirements, then water treatment options will be determined and implemented. Details regarding theoretical treatment options are provided in the Life-of-Mine Waste Rock Management Plan (Section, 3.6.4, BAF-PH1830-P16 0031) and were considered for both metal and ammonia/nitrate removal. Theoretical treatment options for metals removal included: • Resins • Polymer Addition • Sodium Hydrosulfite Treatment • Ozonation • Biofilters-Sulphide Precipitation • Activated Carbon • Ozone			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
205	QIA	QIA-80.1	ICRP Sect 5.2 p. 100 Permanent Closure and Reclamation Requirements	ICRP	If docks are left in place but not maintained, are they likely to deteriorate over time?			Geotechnical analyses and monitoring of the docks at Milne Port will be undertaken prior to closure to confirm long-term stability and maintenance requirements (if any).	Please commit to a) long term maintenance of dock structures to maintain their physical stability over time or b) removal of dock structures at closure.		Unresolved	QIA requests the following: If docks are left in place but not maintained, are they likely to deteriorate over time?		Unresolved	
206	QIA	QIA-80.2	Same as above	ICRP	How does this fit the Closure Objective of physical stability?			Undertaking geotechnical analyses and monitoring to confirm the long-term stability of docks at Milne Port is consistent with the Closure Objective of physical stability. It is incorrect to suggest that an absence of active maintenance will necessarily result in long-term physical stability issues for the docks at closure.	What is the demonstrated need for dock structures to remain after closure? The QIA should not be left with the potential need for long term maintenance and any associated liability. Monitoring does not assure long term stability unless there is also a commitment to maintenance. Please commit to long term maintenance of dock structures to maintain their physical stability over time or b) removal of dock		Unresolved	QIA requests the following: How does this fit the Closure Objective of physical stability?		Unresolved	
207	QIA	QIA-81.1	• Sect. 5.2.1.4 CONSIDERATION OF CLOSURE OPTIONS AND SELECTION OF CLOSURE ACTIVITIES. Enhanced Pit Filling Alternative Table 5.2 p.103-104 • Sect. 5.2.1.7 p. 106	ICRP	Please provide a schedule and source of water for pit refilling that Baffinland considers to be feasible and which can be used to predict pit water quality at closure.			Research and studies on potential pit filling scenarios are ongoing. Baffinland maintains that as active mining at Deposit 1 remains a hilltop outcrop, no Open Pit has formed, and development of an Open Pit is still several years away, this should not preclude approval of the ICRP. As noted in Section 1 of the ICRP, "The Project's Interim Mine Closure and Reclamation Plan (ICRP) is considered to be a "living" document, which is refined regularly throughout the life of mine until a Final Closure and Reclamation Plan is achieved." Further refinements to potential pit filling scenarios will be provided as information becomes available.	BIM has provided four scenarios for pit refilling but has not indicated that any are a) feasible or b) acceptable to them due to concerns with available volumes, seasonality of flow or distances. Rate of filling has implications to geochemistry and water quality. No open pit development should proceed without demonstration that it is feasible to refill them and documentation of potential impacts and mitigation.		Resolved with commitment	Baffinland has committed to provide a schedule as to when these considerations will be addressed in the next iteration of the ICRP to be submitted prior to a Public Hearing.		Resolved with commitment	BIM commits to presenting work plans and a schedule in the next update to the ICRP to address the following: •Uncertainties regarding the future pit lake, including pit water quality, pit filling methodology and timeline, and potential for meromictic conditions in the future pit lake •Effluent discharge criteria from ponds at closure •Recent climate change modelling •Revised return periods for design of conveyance structures •Refined runoff estimates from the waste rock stockpile based on additional geochemical testing
208	QIA	QIA-82.1	p. 10-6 Sect. 5.2.17 Uncertainties	ICRP	Provide feasible mitigation and closure options for the open pit that address the need for chemical stability and acceptable water quality.			Theoretical treatment options to mitigate potential pit water quality issues at closure are presented in Section 5.2.1.9 of the ICRP. If a treatment option is deemed necessary, criteria for the selection of the treatment process will include feasibility, and its ability to address the need for chemical stability and acceptable water quality.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
209	QIA	QIA-83.1	ICRP Sect 5.2.1.9 Contingencies p. 107	ICRP	Are the options provided feasible for batch treatment of the pit or for ongoing treatment of pit discharge at closure?			As noted, the treatment options provided in Section 5.2.1.9 of the ICRP are theoretical, and are intended to provide a high-level summary of treatment technologies and approaches that could be implemented if required. In the absence of a clearly defined water quality issue that would require treatment, it is premature to determine details such as whether batch treatment or ongoing treatment would be feasible. Section 5.2.1.9 of the ICRP provides information on the timeline for future work on open pit water quality: "ML/ARD will be periodically reassessed as a potential issue in the future ICRP revisions and in the Final CRP. Reclamation Research to address the uncertainty of what closure and post closure activities are required to ensure open pit runoff water quality meets closure objectives and criteria, including ML/ARD issues, is expected to commence at approximately Year 10 of Operations (when an Open Pit is expected to exist associated with the Project). Based results of this research, the ICRP will be updated to present a time frame for the potential development of ML/ARD conditions, if any, and discuss the impact of ML/ARD release on final closure identifying the need for ongoing monitoring, treatment, and potential mitigations." The cited Year 10 was based on the full production rate. Development of the open pit is currently still			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	

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210	QIA	QIA-83.2	Same as above	ICRP	Does Baffinland foresee a scenario in which ongoing treatment of pit discharge is required over the long term at closure?			Baffinland does not anticipate that ongoing treatment of pit discharge will be required over the long term at closure. However, as discussed in Section 5.2.1.7 of the ICRP, there is uncertainty as to the long-term water quality in the open pit. Baffinland has committed to addressing this uncertainty within the Reclamation Research Plan and adaptive management during operations. The ICRP addresses the potential that treatment of open pit discharge could be required, such as in Section 5.2.1.9 where theoretical treatment options are presented.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
211	QIA	QIA-84.1	ICRP Sect. 5.2.2.1 p. 108 Waste Rock and Overburden Piles	ICRP	Confirmation if the overburden be isolated and used to promote revegetation of disturbed sites at mine closure.			Overburden generated during stripping of the open pit will be stockpiled for use in the construction of a closure cover over the Waste Rock Facility. Natural revegetation will be promoted by scarification.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
212	QIA	QIA-85.1	• ICRP Section 5.2.2. Waste Rock and Overburden Piles • D.3 Reclamation Research Program - Waste Rock Stockpile Seepage/Runoff Water Quality, p. 303	ICRP	What climate change scenarios have been considered in the modelling?			Climate change criteria used for modelling are from IPCC (2007). Baffinland has committed to account for climate change in the development of the thermal model for the waste rock stockpile (Appendix D.4 of the ICRP).	QIA requesting commitment to update ICRP with more recent climate change predictions		Resolved with commitment	Baffinland has committed to updating the ICRP prior to a Public Hearing to include the following information: o Current climate change modelling o Revised return periods for design and conveyance structures		Resolved with commitment	See commitment for QIA-81.1.
213	QIA	QIA-85.2	Same as above	ICRP	What sensitivity assessments have been made on rate and magnitude of permafrost and runoff?			Sensitivity assessments have not been conducted in regard to cover thickness to account for climate change, but it is not required given the conservatism in a 50 m thick cover. The proposed 50 m cover is an order of magnitude greater than approved cover thicknesses at other Nunavut mines based on the latest climate change predictions.	The response addresses permafrost. What sensitivity assessments have been used for runoff in light of increased precipitation in a warming climate? Zhang, X., Flato, G., Kirchmeier-Young, M., Vincent, L., Wan, H., Wang, X., Rong, R., Fyfe, J., Li, G., Kharin, V.V. (2019): Changes in Temperature and Precipitation Across Canada; Chapter 4 in Bush, E. and Lemmen, D.S. (Eds.) Canada's Changing Climate Report. Government of Canada, Ottawa, Ontario, pp 112-193		Resolved with commitment	Baffinland has committed to updating the ICRP prior to a Public Hearing to include the following information: o Current climate change modelling o Revised return periods for design and conveyance structures		Resolved with commitment	See commitment for QIA-81.1.
214	QIA	QIA-85.3	Same as above	ICRP	Compare the climate change predictions from 2007 that were used in the closure plan development with the most recent modelling completed in 2019 and comment on the implications to permafrost development and runoff management at closure.			Refer to Baffinland's response to QIA-85.2 regarding the level of conservatism in the currently proposed final cover thickness.	The response addresses permafrost. What sensitivity assessments have been used for runoff in light of increased precipitation in a warming climate? Zhang, X., Flato, G., Kirchmeier-Young, M., Vincent, L., Wan, H., Wang, X., Rong, R., Fyfe, J., Li, G., Kharin, V.V. (2019): Changes in Temperature and Precipitation Across Canada; Chapter 4 in Bush, E. and Lemmen, D.S. (Eds.) Canada's Changing Climate Report. Government of Canada, Ottawa, Ontario, pp 112-193		Resolved with commitment	Baffinland has committed to updating the ICRP prior to a Public Hearing to include the following information: o Current climate change modelling o Revised return periods for design and conveyance structures		Resolved with commitment	See commitment for QIA-81.1.
215	QIA	QIA-86.1	ICRP 5.2.2.2 PRE-DISTURBANCE, EXISTING, AND FINAL SITE CONDITIONS p. 116	Ph1 WRMP	Was this predicted from geochemical modelling and testing?			The potential for acid rock drainage was identified in the initial testing as part of the waste rock management plan (Baffinland 2014). This initial testing indicated a longer lead time to realization of acidic drainage than was observed in the field. Further geochemical testing was completed in 2019 (Golder 2019 in the Phase 1 WRMP, which is Attachment 32 of the Updated Application) that identified the presence of soluble sulphate materials and recommended modifications to the waste rock management plan that account for the observed conditions and additional geochemical considerations. The latest WRMP presents an updated summary of the geochemical characteristics of the waste rock.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
216	QIA	QIA-86.2	Same as above	Ph1 WRMP	How has this development been considered in the closure planning?			Additional work has been completed to further characterize the geochemical characteristics of the materials including evaluation of soluble sulfate minerals and a review of waste deposition practices (Golder 2019). Thermal modelling was completed and the Phase 1 Waste Rock Management Plan was subsequently updated (issued as Rev 3 in 2020 and issued as Rev B incorporating adaptive management in Attachment 32 of the Updated Application) to evaluate for the presence of soluble sulfate minerals, and the depositional strategy was reviewed and updated such that potentially acid generation materials are placed in thin lifts, away from the edges of the pile, to promote freeze-back such that acidic conditions do not develop in the pile or in seepage or runoff from the pile, both during operations, and in closure and post closure. Details of the measures taken are provided in Attachment 32.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
217	QIA	QIA-87.1	ICRP 5.2.2.6 PREDICTED RESIDUAL EFFECTS p. 119	ICRP	Please describe the mitigation options available to control Hg, Se and Ag in seepage and runoff from the site and whether these are suitable for long term deployment or batch/short term mitigation.			As noted in ICRP Appendix H (page 368), the mercury, selenium and silver concentrations adopted as source terms in water quality modelling were based upon laboratory method detection limits (only 2% of the data were above MDLs). Thus the modelling is highly conservative. Baffinland's response to QIA-79.1 discusses available theoretical treatment options that could be employed for metals removal, if that was required.			Resolved with commitment	Baffinland has committed to provide in its update to the ICRP prior to the PHC, a schedule as to when the ICRP will be further updated to include refined runoff estimates from the waste rock stockpile based on additional geochemical testing.		Resolved with commitment	See commitment for QIA-81.1.
218	QIA	QIA-87.2	Same as above	ICRP	Please include a Response Framework, Triggers and Action Levels for implementing enhanced mitigation for site runoff and seepage in the closure and post closure environment.			The Fresh Water, Sewage and Wastewater Management Plan includes a TARP for contact water that can be applied to closure and post-closure. However, at planned closure, Baffinland will have the benefit of significant experience mitigating adverse runoff from the Waste Rock Facility. This will provide guidance as to whether seepage concerns may occur at closure, and appropriate thresholds and responses.	This issue will need to be addressed and updated as the mine progresses.		Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
219	QIA	QIA-88.1	ICRP Sect. 5.2.5.2 PRE-DISTURBANCE, EXISTING, AND FINAL SITE CONDITION ICRP 5.2.8.5 p. 152 Issue / Concern "Dock infrastructure	ICRP	Will infrastructure be removed from the site or disposed on site (i.e. in waste rock piles or open pits)?			Selection of the final disposal option(s) will be made after receiving input from the Mine Closure Working Group, the QIA, and other regulatory agencies and stakeholders. The selected options will be described in the Final Closure and Reclamation Plan.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	

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220	QIA	QIA-88.2	Same as above	ICRP	What criteria will be used to determine fate and disposal?			Criteria used to determine whether non-hazardous materials are disposed of on-site or off-site will include: - space required/available in on-site landfills or other approved waste disposal locations - logistical constraints/level of effort required for on-site vs. off-site disposal options - cost of on-site vs. off-site disposal options - input from the Mine Closure Working Group	Has the QIA expressed any preferences and how will their preferences be addressed in the discussions of disposal options?		Resolved with commitment	Baffinland has committed to update the ICRP with the criteria that will be used to determine whether non-hazardous materials are disposed of on-site or off-site.		Resolved with commitment	BIM commits to presenting the following in the next update to the ICRP: •the criteria that will be used to determine whether non-hazardous materials are disposed of on-site or off-site •indicate that rails and ties will be removed and either recycled, shipped offsite to an appropriate facility for disposal, or deposited within an onsite landfill, the open pit or other approved repositories.
221	QIA	QIA-89.1	ICRP 5.2.6.2 PRE-DISTURBANCE, EXISTING, AND FINAL SITE CONDITIONS p. 135 ICRP 5.2.6.5 p. 136	ICRP	What community uses have been identified for structures that are >100km from any existing communities?			Specific community uses for remaining structures at closure have not yet been identified. As indicated in Section 2.4 of the ICRP, Baffinland has proposed to establish a Mine Closure Working Group (MCWG) to best incorporate considerations for post-closure land use of the Project site. Future discussions with the MCWG will include potential future uses for remaining structures at closure.	Feasibility of leaving the docks in place for "community use" is dependent on the community identifying a use for the docks. This feasibility should be established at the approvals stage, in the event that Baffinland needs to plan for removal of docks and associated costs.		Resolved with commitment	Baffinland has committed to continue dialogue with QIA on the ultimate fate of the Tote Road and docks at closure.		Resolved with commitment	Continue dialog with the QIA on the fate of the Tote Road and project docks at closure.
222	QIA	QIA-89.2	Same as above	ICRP	Has Baffinland documented whether a community has specifically identified a need for the dock post closure?			Baffinland does not recall this being mentioned up to now. This will be a key point of discussion with the future Mine Closure Working Group.	BIM identified the potential of leaving the docks in place for community use in the ICRP and so it is not clear what is meant by "BIM does not recall this being mentioned up to now."		Resolved with commitment	Baffinland has committed to continue dialogue with QIA on the ultimate fate of the Tote Road and docks at closure.		Resolved with commitment	See commitment for QIA-89.1
223	QIA	QIA-89.3	Same as above	ICRP	Have CIRNAC or the communities indicated any agreement to assume liability for the ore docks?			Section 5.2.6.2 of the ICRP states "Ongoing engagement with communities and discussions with QIA will occur to confirm an approach for the Tote Road and water crossings such that an acceptable level of liability exists for transfer of these remaining structures." Similar engagement and discussions will be held with communities and CIRNAC for the Milne Port docks prior to closure.	Feasibility of leaving the docks in place for "community use" is dependent on the community identifying a use for the docks. The willingness of CIRNAC or QIA to assume liability should be established at the approvals stage in order to establish if this closure option is feasible. If not, then Baffinland needs to plan for removal of docks and associated costs.		Resolved with commitment	Baffinland has committed to continue dialogue with QIA on the ultimate fate of the Tote Road and docks at closure.		Resolved with commitment	See commitment for QIA-89.1
224	QIA	QIA-90.1	ICRP 5.2.7.2 p. 144 and 5.2.7.5 p.146 Landfills	Landfill	Confirm if the proposed depth of overburden cover incorporate predictions for a warmer climate to accommodate a deeper active layer over time?			Commitment: Baffinland will review whether or not climate change has adequately been incorporated into the landfill cover thickness, particularly in reference to the latest climate change models.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	BIM will review whether climate change has adequately been incorporated into the landfill cover thickness, particularly in reference to the latest climate change models.
225	QIA	QIA-91.1	ICRP 5.2.8.5. p. 152 ENGINEERING WORK ASSOCIATED WITH CLOSURE ACTIVITY	ICRP	What are the proposed effluent criteria for closure and what is the predicted timeline to meet the criteria?			Closure water quality will need to meet Type A Water Licence effluent criteria, territorial/federal guidelines, MDMER, and/or site-specific risk-based criteria, as relevant to the specific project areas and components (Table 5.1, Closure Objectives, Criteria and Actions by Major Project Components). As indicated in Section 9.5 of the ICRP, an important detail of the post-closure monitoring program will be the clear distinction of what closure criteria will apply to which areas, such that an appropriate monitoring schedule is developed.	Mitigation has been identified - Criteria can be developed in the Water Licence as the project proceeds		Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	See commitment for QIA-81.1.
226	QIA	QIA-92.1	ICRP 6.2.1.1. Land Farm Operation, p. 155	ICRP	Explain why the CCME (2008) risk-based methodology may be preferable to guidelines that are specific to Nunavut?			Section 2.4: Application of Remediation Criteria at Contaminated Sites in the Government of Nunavut Guideline for Contaminated Site Remediation (Government of Nunavut, 2019) is based heavily on the Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil (CCME, 2008). The three tiers of approaches provided in the two documents (Tier 1: Criteria-Based Approach, Tier 2: Modified-Criteria Approach, and Tier 3: Risk-Based Approach) are essentially identical. The guidelines provided in the Nunavut Guideline are not specific to Nunavut, and in fact the Tier 1 Guidelines in both documents are exactly the same. Both the Government of Nunavut and CCME guidelines provide information on when a modified-criteria or risk-based approach may be suitable. Per the Government of Nunavut guideline: - "In general, this modified-criteria approach is utilized in situations where site conditions, land use, receptors or exposure pathways differ only slightly from those assumed in the development of Tier 1 criteria." - "In certain circumstances, neither the criteria-based or modified-criteria approach may be suitable for a site because pathways of exposure, target chemicals, receptors or other site characteristics differ significantly from those used to develop these more generic approaches."			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
227	QIA	QIA-92.2	Same as above	ICRP	What criteria would influence a decision to use the CCME protocol?			As noted in the response to QIA 92.1, the Tier 1, Tier 2 and Tier 3 approaches in the Government of Nunavut guideline are identical to those in the CCME guideline. Using a Tier 2 modified-criteria or Tier 3 risk-based approach would be considered if there were significant issues managing hydrocarbon-impacted soil in the landfarm using the Tier 1 criteria-based approach, such as if soil treated in the landfarm was not able to consistently meet the Tier 1 guidelines. The Tier 1 guidelines were developed based on generalized assumptions for site conditions, receptors, and exposure pathways, and some of these assumptions may differ slightly or significantly from the site conditions, receptors and exposure pathways at the Mary River Project sites. Using a Tier 2 or Tier 3 approach would utilize site-specific information rather than generalized assumptions, and would generate site-specific soil quality guidelines for the Project that are protective of human health and the environment.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
228	QIA	QIA-93.1	ICRP 7.1 SHORT-TERM TEMPORARY MINE CLOSURE – CARE AND MAINTENANCE p. 159	ICRP	Confirm if Baffinland has developed a list of all necessary temporary closure activities in order of importance to guide execution of temporary closure and inform the level of effort required.			Section 7.1 describes the activities that would be undertaken in a short-term temporary closure scenario. All of the specified activities are the minimum requirements in this scenario and will be executed.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	

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229	QIA	QIA-94.1	ICRP Figure 8.1 Final Closure Schedule	ICRP	Confirm where and how will rails and ties be disposed. Will they be disposed of on-site or off-site?			Rails and ties are inert, non-hazardous materials and would be suitable for either on-site or off-site disposal. Final determination of the disposal location will be determined closer to closure in consultation with the Mine Closure Working Group. Baffinland will update the ICRP to indicate that rails and ties will be removed and either recycled, shipped offsite to an appropriate facility for disposal, or deposited within an onsite landfill, the open pit or other approved repositories.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	See commitment for QIA-88.2.
230	QIA	QIA-95.1	• ICRP Pit Flooding • Also See QIA TC "Enhanced Pit Filling"	ICRP	Which enhanced flooding scenario does the 10 year timeline assume and what are the associated sources and water withdrawal rates?			It is clearly stated in Section 9.2.4 of the ICRP that the 10 year timeline for enhanced pit filling was assumed solely for the purposes of devising a monitoring program. The 10-year timeline that is tentatively assumed in Section 9.5 was also assumed for the purposes of determining aquatic monitoring requirements at closure. No enhanced flooding scenario associated with the 10-year timeline has been developed. Further work will be undertaken on potential enhanced pit filling timelines. When further refinements of these potential timelines are available, sections of the ICRP where pit filling timelines had been assumed will be updated.	See QIA 81 Baffinland has provided four scenarios for pit refilling but has not indicated that any are a) feasible or b) acceptable to them due to concerns with available volumes, seasonality of flow or distances. Rate of filling has implications to geochemistry and water quality. No open pit development should proceed without demonstration that it is feasible to refill them and documentation of potential impacts and mitigation.		Resolved	Baffinland committed to provide a firm schedule as to when these considerations will be addressed in the next iteration of the ICRP.		Resolved	See commitment for QIA-81.1.
231	QIA	QIA-96.1	ICRP Section 9.6 Environmental Site Assessment p. 190	ICRP	Confirm which guidelines will be used in the ESA process and that the guidelines chosen are protective of the environment.			Tier 1 Guidelines provided in the Environmental Guideline for Contaminated Site Remediation will be used, however site-specific guidelines will be used if they have been developed during the life of the mine. Tier 1 Guidelines or site-specific guidelines (if available) are protective of human health and the environment.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
232	QIA	QIA-97.1	ICRP Appendix D1 Reclamation Research Program – Open Pit Water Quality p. 293	ICRP	Describe what elements of conservatism in the pit water quality model result in the predicted water quality at closure.			Further details on the mass balance modelling are provided in Appendix H of the ICRP (FEIS Freshwater Quality Predictions). Factors that support the modelled water quality being highly conservative include: - The model assumes near-instantaneous mixing in riverine environments due to the discharge to receiving flow ratio, and no modification of indicators due to precipitation, speciation, attenuation or degradation. (page 366) - For a number of parameters sampled in the humidity cell tests, metals were measured at or below the analytical method detection limit (MDL) for a large proportion of samples. Generally the MDLs are high relative to the selected water quality objectives (CCME PAL or SSWQOs). For these parameters, the values assigned were set at one-half the MDL (AMEC, 2012a). The 90th percentile calculated source term was influenced by predicted water quality results based largely on the non-detect results in the humidity cells for the following metals: mercury (Hg), selenium (Se), copper (Cu), arsenic (As), cadmium (Cd), chromium (Cr), silver (Ag) and thallium (Tl). Consequently, the modelled water quality for these parameters is highly conservative. (page 368) - A similar issue with detection limits was identified in the baseline water quality dataset. The majority of sample results for several metals were reported as non-detect (measured below the			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
233	QIA	QIA-97.2	Same as above	ICRP	Describe the origin of the conservative model inputs and compare with realistic measured values.			As noted in the response to QIA 97.1, metals were measured at or below the analytical method detection limit (MDL) for a large proportion of samples in both humidity cell tests (used to generate source terms) and baseline water quality samples in the receiving environments. In these cases, values assigned were set at one-half the MDL for the humidity cell tests, and were set at the MDL for the baseline dataset. These are conservative assumptions as they are based on realistic measured values which were in many cases below the MDL. Estimates for pit water quality assume that during the latter portion of the mine life, pH may decrease below the lower limit of the MDMER (pH 6.0). It is therefore assumed that pH adjustment of the pit water will be required in the second half of mine life and into post-Closure. However, the source terms applied in the water quality modelling assume no treatment as a conservative measure.	Please describe how "realistic measured values" can be "below the MDL". Values below the MDL cannot be measured		Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
234	QIA	QIA-97.3	Same as above	ICRP	Provide a range of modelling outcomes based on a realistic range of pit conditions (or varying conservatism) at closure and explain which scenarios are most likely			Further modelling of pit water quality conditions will be completed as part of additional research as described in Appendix D of the ICRP (Reclamation Research Plans)			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
235	QIA	QIA-97.4	Same as above	ICRP	Provide a comparison of the short term and long term water quality in the pit lake at closure and describe how the chemistry of the lake may change once the pit is flooded			See response to QIA-97.3.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
236	QIA	QIA-98.1	ICRP Research Task – Pit Lake Meromixis p. 297	ICRP	Provide an update on the status of the meromixis research program, any findings to date and comment on whether meromixis is proposed as a closure option for the pit lake.			Baffinland continues to include a meromixis research program in future plans for closure research. Discussions with experts has identified a need to collect meteorologic data from the top of Deposit 1 to inform future modelling on meromixis of the Pit Lake. Baffinland will be investigating strategies to collect this data given the harsh conditions atop Deposit 1 that can impact instrumentation in this location.	Appendix C1 states that "Research into meromictic pit lakes has not yet been completed. This work is scheduled to start in 2019." and "In support to this evaluation, a focused review of scientific literature relating to meromictic pit lakes in cold regions should be carried out." Has the research or the scientific review begun? Is meromixis being proposed as a closure option ?		Resolved with commitment	Baffinland committed to provide a firm schedule as to when these considerations will be addressed in the next iteration of the ICRP.		Resolved with commitment	See commitment for QIA-81.1.
237	QIA	QIA-99.1	ICRP Research Task Open Pit Water Quality Research Results p. 297	Ph1 WRMP	What geochemical tests have been completed on the ore body to date?			Geochemical testing completed to date is summarized in Section 2.4.2 of the Phase 1 Waste Rock Management Plan (Attachment 32). A more detailed discussion is provided in Appendix B of the Phase 1 Waste Rock Management Plan, specifically in Appendix A1 of the Appendix B			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	

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238	QIA	QIA-99.2	Same as above	Ph1 WRMP	Provide the status of any humidity cell tests on ore characteristics.			Humidity cell tests have not been conducted on the ore. The focus of geochemical testing including humidity cell tests is the waste rock that will be left behind. This is standard practice in characterizing mine wastes. A summary of humidity cell testing of waste rock is provided in Section 2.4.2 of the Phase 1 Waste Rock Management Plan (Attachment 32).			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
239	QIA	QIA-99.3	Same as above	ICRP	Compare the above results to the inputs to the pit lake model and comment on the conservatism of the pit water quality model.			The historical geochemical testing and humidity cell tests were used to generate source inputs for the pit lake water quality model. As described in detail in the response to QIA 97.1, the use of these results contributes to the conservatism of the water lake water quality model.			Resolved	QIA is satisfied by Baffinland's response included in their November 4, 2021 submission.		Resolved	
240	QIA	QIA-99.4	Same as above	ICRP	What existing results could be used to test the conservatism of the water quality model?			As no pit lake currently exists, there are no existing results that can be directly correlated to future pit water quality. Existing results are available for water quality in runoff from the Waste Rock Facility, and it is instructive to look at how these results relate to the pit water quality model. Elevated concentrations of some metals have been observed in runoff from the Waste Rock Facility that were not in agreement with observations from historical humidity cell test. As a result, an additional geochemistry program was undertaken in 2019 as described in Appendix A1 of Appendix B to the Phase 1 Waste Rock Management Plan (Attachment 32). Section 5.0 of Appendix A1 provides a comparison of the results from the 2019 geochemistry program to historical geochemical data (that has informed the development of the pit lake water quality model). This section concludes that "All the historical dataset is from areas outside the current Deposit 1 mining area with some samples from within the planned 2021 expansion. The differences in the geochemical results between the 2019 blasthole data and the historical suggests that Non-AG material with stored acidity may be limited to the current area of Deposit 1." This suggests that existing water quality data for runoff from the Waste Rock Facility is not indicative of what will occur when the pit lake is developed.	Pending ongoing review as more data are obtained and the model is refined. Baffinland has identified treatment and mitigation options that can be applied to manage water quality in the pit.		Resolved with commitment	Baffinland committed to provide a firm schedule as to when these considerations will be addressed in the next iteration of the ICRP.		Resolved with commitment	See commitment for QIA-81.1.