

March 21, 2011

Phyllis Beaulieu, Manager of Licencing Richard Dwyer, Licencing Administrator Nunavut Water Board P.O. Box 119 Gjoa Haven, NU X0B 1J0 Email: licensing@nunavutwaterboard.org

Dear Ms. Beaulieu / Mr. Dwyer:

Re: Mary River Project Renewal of NWB License 2BB-MRY0710 Response to Reviewers Comments

Baffinland Iron Mines Corporation (Baffinland or BIM) is pleased to respond to comments received from reviewers in response to submission of the above referenced application for the Mary River Project (the Project). Comments were requested by the Nunavut Water Board (NWB) on January 11, 2011, and subsequently received in the form of letters from the Qikiqtani Inuit Association (QIA)¹ and Indian and Northern Affairs Canada (INAC)², and Nunavut Department of Culture, Language, Elders and Youth (CLEY)³.

In an e-mail and letter provided to Baffinland on March 9, 2011, the NWB requested that Baffinland respond to reviewers' comments. Baffinland is appreciative of comments provided by QIA, INAC, and CLEY, and provides our responses and comments to the various points identified in the review letters. In the sections below, reviewers' comments (italicized) are numbered and directly excerpted from the letters provided. Responses from Baffinland are provided immediately after each comment.

1.0 Comments from the Qikiqtani Inuit Association (QIA)

<u>QIA Comment 1:</u> Additionally, QIA reviewed the contents of the NWB public registry for specific information to aid in the development of the comments and the understanding of historical operations and site infrastructure. This included design reports, as-built reports and drawings, inspection reports, annual reports, and various management plans.

<u>BIM comment:</u> Baffinland suggests that despite best efforts by the NWB, the public registry may not be complete or reflective of all documents submitted for the project. For example, in the past, because of large file size, some stamped and signed copies of drawings and plans were sent as hard copies, rather than in electronic format.

¹ Letter from OIA to the NWB, dated March 7, 2011.

² Letter from INAC to the NWB, dated January 21, 2011.

³ Letter from CLEY to the NWB, dated January 21, 2011.



Section 1.0 - General Comments:

QIA Comment 2: QIA also notes concurrent to this water licence renewal application, a formal Part 5 review process is being coordinated by Nunavut's Institutions of Public Government related to the proponent's desire to develop a full scale mine at the Mary River site. Included in the larger Coordinated Review Process for the proposed Mary River project is the opportunity for the proponent to seek approvals or licences for exploration and development activities. QIA understands that at this time no applications are being made by the proponent specific to 12.10.2, or, 13.5.5 of the Nunavut Land Claims Agreement (NLCA).

<u>BIM response</u>: At the present time BIM confirms that there is no intention to make additional applications under the existing renewal application. This does not, however, preclude the probability that BIM will seek additional approvals in the future based on the need to enhance environmental and safety performance, reduce risk, and to accommodate changing project conditions and requirements. In those cases, approvals will be sought under existing administrative mechanisms such as revisions to management plans, water licence modification, or water licence amendment. Such approvals will be sought only after the necessary studies have been undertaken, plans formulated, and details available to support such approval applications.

QIA Comment 3: Furthermore, although the current renewal application is seeking a five year extension to the licence period it is unclear to what degree this extension may or may not constitute the proponent's desire to also seek pre-project approvals. For instance the renewal application speaks in general terms reading the types of activities that may occur within a five year term. The renewal application does not clearly specify the types of activities, materials, storage of closure methods that may be associated with the request for a 5 year extension.

<u>BIM response:</u> The renewal term being sought spans the period between the present time, the release of the EIS, and the approval of a new Type 'A' Water Licence. As stated above, the renewed water licence would allow Baffinland to undertake currently approved activities only.

Section 2.0: Technical Comments

<u>QIA Comment 4:</u> In reviewing the water licence renewal application QIA was cognizant of the following factors...:

- Changes to the current water licence terms and conditions are necessary to better reflect proposed operations and site activities
- There is uncertainty in whether select licence terms and conditions have been fulfilled. Part of this uncertainty is related to BIMC's application and public registry materials available to complete this technical review, apparent missing authorizations by the NWB to complete construction/modifications, apparent missing approvals from the NWB to clearly state if submitted reports, plans, and drawings have been accepted by the Board.

<u>BIM response</u>: In response to bullet no. 1, we are not seeking changes to site operations and activities by means of this renewal process. In response to bullet no. 2, we have no comment, as the NWB public registry and approval process that is being referred is not under Baffinland's control. That being said, Baffinland applies best efforts to work with the



NWB proactively and to comply in a timely fashion to any request for information that they have.

Section 2.1: General Technical Review Comments

<u>QIA Comment 5:</u> With regards to BIMC's application, the following three conditions are in question as to whether they satisfy a renewal classification:

1a. Condition - A change to the volume of water authorized for use.

• The current allowable water use is 515 m³/day. BIMC preference is to maintain this limit; however, if NWB decided to lower the allowable water use, BIMC would agree to a water use of 385 m³/day. In the spirit of the renewal application condition, BIMC is contemplating a change to the volume of water authorized for use. As such, if this change is accepted by the NWB, than BIMC should be applying for an amendment, not a renewal.

<u>BIM Response:</u> Our application requests 515 m³/day for allowable water use and that is still our preferred option. In the event the NWB wishes to lower this water usage, Baffinland, provided a lower threshold volume for consideration that was selected based on a review of historical water use and the potential risk of exceedance in the future assuming hypothetical, but realistic work programs. Regardless, the fact remains that the water licence renewal application request was for the original 515 m³/day and this is what Baffinland would prefer to maintain for the project moving forward.

<u>QIA Comment No. 5 (cont...):</u> 1b. Condition - A change in predicted environmental impacts.

• Section 13 of the Renewal Application form denotes that the quantity of water to be used from each source will NOT be the same as that considered in the existing licence. Limited information was provided in the BIMC application materials to describe the change in water quantity use from each source and the potential environmental impacts of this change, if any. QIA recommends the NWB request additional Information in order to understand if a change in predicted environmental impacts will result from the change in water use from each source.

BIM Response: If the NWB wishes to implement a lower water use for the site, this will result in reduced withdrawals and therefore reduced environmental risks. BIM cannot contemplate a real or hypothetical scenario where a reduction in water withdrawal could lead to increased environmental risk. The licence already provides abundant prohibition against practices that might cause harm. For example under Part C of the Water Licence (Conditions applying to Water Use), streams cannot be used (Section 3), nor can water bodies be used where there is a potential to draw down the water level (Section 4) without NWB approval. Sections 3 to 8 (Part C), prohibit the disturbance of stream banks or erosion that can be caused by water withdrawal or discharge. The overall potential for environmental impacts of water sources from drilling is low in any event due the use of multiple sources during the drilling programs. Section 1 (Part C) allows for the strategic use of water sources and allows use of water bodies (that have suitable characteristics and capacities) adjacent to drill holes to be used. This acts to reduce the reliance on one or two sources and risk due to drawdown or erosion. A reduced water usage would only help to further reduce potential risk to water sources and potential erosion/sedimentation.

<u>QIA Comment No. 5 (cont...)</u> 1c. Condition - A change to any term or condition to the original licence.



• Section 1.2 of this QIA's Review provides recommendations to terms and conditions to the original licence. As such, if these changes are accepted by the NWB, than BIMC should be applying for an amendment, not a renewal.

<u>BIM Response:</u> As discussed above, Baffinland has not applied for a reduction in water use. It will be the NWB's prerogative to deal with the administration of any change in terms and conditions that they wish to implement.

QIA Comment No. 6: Section 9 of the NWB Application for Water Licence Renewal Form provides a description of the undertaking to be "similar activities as under the existing water licence. These include exploration drilling, geotechnical drilling, ongoing collection of scientific and engineering data, and reclamation activities associated with the completion of the Bulk Sample Program. The BIMC October 15, 2010 cover letter that accompanies the NWB Application for Water Licence Renewal Form provides additional detail of proposed activities to be completed during the term of the new water licence. The following activity was noted, and is considered by QIA as being a new activity for the proposed new water licence that may not have been considered in the previous water licence. "Execution of annual sealifts at Milne Inlet and possibly Steensby Inlet ... [to mobilizeJ to site equipment and supplies that are to be stored on site for future use after EIS release and the receipt of a project certificate". BIMC's proposed intent to use the ports to store equipment and supplies that are to be used for purposes after EIS release clearly demonstrates that this water licence application renewal is simply not to compete drilling, collection of data, and complete reclamation associate with the Bulk Sample Program.

BIM Response: Baffinland has conducted annual sealift(s) at Milne Inlet and two sealifts at Steensby Inlet since 2008. The project is largely resupplied by annual sealift, including fuel, and these activities were screened by NIRB4. At the present time it is Baffinland's intention to continue annual sealift at both Milne and Steensby Inlets using similar methods adopted previously and commonly used throughout the north for resupply of communities and similar projects. It is true we will be interested in mobilizing site equipment and supplies to both ports using existing laydown areas (areas that are undisturbed will remain undisturbed). The storage of equipment and supplies to support future construction work after the release of the EIS will not increase risk to the surrounding land and water, since for the most part materials stored will be nonhazardous, and existing controls and practices will continue to used for the storage of materials (hazardous or otherwise) and equipment. Baffinland feels that this matter primarily involves land use concerns. For Milne Inlet, land use matters are dealt with under the existing commercial lease (Commercial Lease No.: QI0C3001), the Annual Work Plan, and site management plans⁵, as well as the Environmental Protection Plan (EPP) and the Comprehensive Environmental Management Plan (CEMP). At Steensby, land use issues are dealt with under the existing Type 'A' Land Use Permit. Notwithstanding the above comments, the NWB may decide that the issues surrounding equipment and material storage are indeed a NWB matter and if this is the case

⁴ NIRB Screening Decision Reports Nos. (dates): 07EN012 (May 4, 2007), 07EN004 (March 26, 2007), and 07CA070 (August 22, 2007).

⁵ Environmental Management Plans for the Mary River Project include the following:

[•] Site Water Management Plan;

Wastewater Management Plan;

[•] Spill Contingency Management Plan; and

[•] Abandonment and Reclamation Plan.



Baffinland is prepared to seek modification or an amendment under the renewed Water Licence at an appropriate time in the future when plans are better developed.

QIA Comment No. 6 (cont...): 2a. This new proposed activity could change the nature of the land interest local to the ports, require additional land area to support storage and marshalling of materials and supply, increase potential environmental impacts due to the nature of materials stored and containment requirements, and, require additional operations and/or infrastructure to protect waters from the release (uncontrolled) of waste. Limited detail was provided by BIMC as to the types, quantities, and potential environmental impacts resulting from this proposed activity. This results in uncertainty in the adequacy of the current water licence to capture this new proposed activity. QIA recommends that additional detail is provided to detail the types, quantities, and potential environmental impacts resulting from the storage of equipment and supplies for the purpose to support future use after EIS release and the receipt of the project certificate".

BIM Response: See above response. No new undisturbed or unauthorized land areas will be used for storage of materials received from sea lift without seeking additional authorization as required from the landowners/regulators (QIA at Milne and INAC at Steensby). The quantities and general types of materials/equipment to be stored will be in accordance with previous NIRB screening decisions⁴ for the Project. As such. it is Baffinland's opinion that the current water licence, land use permits, and commercial land lease have more than sufficient scope to provide adequate environmental protection to mitigate risk arising from the storage of equipment and materials at existing laydown and containment areas. (e.g., refer to Parts D and E of Water Licence 2BB MRY0710). Note that at the time of submission of the water licence renewal application (as well as at the present), a general inventory of quantities and types expected materials to be delivered via sealift to Milne and Steensby Inlets was/is not available. In the event of the requirement for the construction of additional hazardous materials containment areas, it is Baffinland's understanding that any such activity would require at a minimum, water licence modification (refer to Part J: Conditions Applying To Construction and Modifications. Water Licence 2BB MRY0710) and Baffinland is prepared to seek a modification (or amendment) at the appropriate time.

QIA Comment No. 6 (cont....): 2b. Further, it is understood that the ports did receive materials and supplies for the bulk sample program. This was an activity that was required to support and allow for the execution of the bulk sample program, and therefore an activity that was defined in water licence amendments #1 (July 16, 2007). The most recent version of the water licence does not include storage of equipment and supplies for the purpose to support "future use after EIS release and the receipt of the project certificate". It is QIA's opinion that this is a new activity that should not be lumped into a water licence renewal application. QIA recommends that this new activity should be considered by the NWB as an activity that is not considered In the most recent water licence, and therefore, change(s) or new terms and conditions may be required to the water licence to capture the proposed new activities. QIA notes that any changes to the existing water licence would violate the NWB conditions to accept this application as a renewal instead of an amendment.

<u>BIM Response</u>: As discussed in above responses, no new undisturbed or unauthorized land areas will be used for storage of materials received from sea lift without seeking additional authorization from the landowners/regulators (QIA at Milne and INAC at Steensby). The quantities and general types of materials/equipment to be stored will be in accordance with previous NIRB screening decisions⁴ for the Project. Existing terms



and conditions in the water licence, QIA commercial lease, INAC land permits, and related documents are sufficient to provide adequate environmental protection to mitigate against potential risk from storage of materials and equipment. Therefore, it is Baffinland's opinion that no changes to the existing terms and conditions of the water licence will be required.

QIA Comment No. 7: 3 On February 23, 2011 NIRB confirmed with the NWB that BIMC's water licence renewal application does not require additional screening. QIA understands the NIRB process as follows: since this application was presented as a renewal, not an amendment, no screening is required. Within Section 20 of the NWB Application for Water Licence Renewal Form, BIMC states consultations were completed in early October 2010 and that no concerns were raised in regards to the renewal application. It is QIA's belief that the focus of these meetings was primarily associated with BIMC's Environmental Impact Statement, not the renewal application. As such, there may be limited input gained from public as a result. Furthermore, neither NIRB nor NWB appears to have received details of the consultation work completed with regards to the renewal water licence. Therefore, public concern may not be adequately captured in BIMC's renewal application due to insufficient information presented regarding consultation work; any public concern has not been assessed by NIRB for recommendations to changes or new water licence terms and conditions because a screening was not completed; and, interested parties cannot assess if current terms and conditions of the water licence are acceptable to address concerns raised in the consultation work. The following bullet points may assist in addressing these uncertainties and the potential implications on a renewal application.

<u>BIM Response:</u> It is Baffinland's practice when touring the communities to provide overall Project updates in the form of a "Community Engagement Presentation" which includes updates on multiple aspects of the Project. This allows for an inclusive consultative approach that is cost effective, workable, and seems to be acceptable for most community members. For the purpose of the September and October 2010 community tours, the meeting presentations were organized along the following lines:

- Mary River Project (both current and proposed project components)
- Update on EIS
- Employment (past, present, and future)
- Water Licence Renewal
- Questions and Answers

A copy of the presentation (English and Inuktuit) given at each of the communities during September and October 2010 is provided in Attachment A.

<u>QIA Comment No. 7 (cont....):</u> 3a. There was no information provided within the renewal application with regards to the consultation meetings. More specifically, it is uncertain from the information presented: the purpose of the meetings completed; a summary of any concerns regarding site activities, operations, and infrastructure; and attendance record. QIA recommends that the input gained from consultation to be provided for review to allow for interpretation of the consultation information collected, not simply BIMC opinion of the consultations outcome without supporting evidence.

<u>BIM Response</u>: Our opinion on the overall outcome of the consultations was based on our available records regarding these meetings and we are pleased to provide this



detailed information. A summary of meetings and dates are provided in Table B.1, Attachment B. Community meetings were held in Pond Inlet, Igloolik, and Clyde River. A meeting at Hall Beach was scheduled but was cancelled due to construction activities at the community centre. The community engagement presentation (Attachment A) which includes a section on the water licence renewal was given at these meetings and there was the opportunity for questions and comments from community members. A presentation of the water licence renewal was also given at the thematic workshops that were held jointly by Baffinland and QIA at the Mary River Camp on September 13 to 17, 2011. Attendance sheets for the community meetings are provided in Attachment B. Our records indicated that there were no concerns or questions at the community meetings regarding the water licence renewal. There were some questions at the meeting at Mary River Camp on September 15, and the summary notes for this meeting including a list of attendees are provided in Attachment B. Inuktuit translation was provided at the above meetings for the community and Mary River Camp presentations. Also note that a review of the attendee lists indicated there were local QIA representatives present for the community meetings at Pond Inlet and Igloolik.

QIA Comment No. 7 (cont...): 3b. QIA is concerned that since the details of the consultation have not been provided, this may have limited the determination of significant public concern regarding the proposed activities, operations, and infrastructure on site. As stated above, since NIRB does not require a screening for a renewal application, any public concerns would not be reviewed by NIRB, and therefore there are no recommendations from NIRB to the NWB to address any public concerns in the water licence (through the environmental screening process). QIA recommends further understanding the concerns of the public and that appropriate water licence terms and conditions be developed to address concerns raised. QIA notes that any changes to the existing water licence would violate the NWB conditions to accept this application as a renewal instead of an amendment.

<u>BIM Response:</u> The details of the consultation have been provided in Attachments A and B. Our records indicate a lack of public concern regarding the renewal. QIA representatives were present during the consultations that were held in Pond Inlet, Igloolik, and at the Mary River Camp.

QIA Comment No. 8: Through experience gained during site investigations completed in 2009 and 2010 to the Mary River site, QIA understands that the hydrocarbon contaminated water from the fuel containment structures has been attempted to be treated and released to the environment. The description of the "approved receiver" for the discharge of oily water is unclear in the application materials. The Site Water Management Plan does not provide description of the treatment methods for oily water, the capabilities/design of the treatment system, or the location for discharge of treated water. QIA recommends additional detail is provided to address these uncertainties. Without this additional information, it is not possible to evaluate if the current water licence conditions are acceptable or require change/amendment.

<u>BIM Response</u>: The approved receiver for effluent originating from the sewage treatment plant and oily water treatment facility is Milne Inlet. Effluent from both locations is discharged to a small seasonal drainage (non-fish habitat) that discharges to Milne Inlet. Approval was originally based on documentation provided to NIRB during the initial screening process and reflected in the NIRB screening decision⁴. Concurrence for the effluent discharge location was provided to Baffinland by INAC and QIA Inspectors during their periodic tours of Milne Inlet since 2007. These locations are clearly marked in the field and on plans associated with recent NIRB and NWB annual reports. The



recent NIRB annual report for 2010 (issued January 31, 2011) provides details regarding treatment of oily water and recent enhancements to the oily water treatment system. Oily water effluent results for MRY-7 (Water collected within the Bulk Fuel Storage Facility at Milne Inlet prior to release) are provided to the NWB via monthly water licence reports as well as NWB annual reports that are due March 31 of each year. The results from the 2010 oily water treatment at Milne Inlet indicated that all results were well below water licence criteria and near or below analytical detection limits. A letter submitted to the INAC Water Resources Officer on June 19, 2010, and copied to QIA as well as the NWB, provided details regarding the enhancements made to the oily water treatment system and monitoring regime that were adopted in 2010 to make the treatment system more robust and effective (see Attachment C). It is Baffinland's intention to provide the information in Attachment C regarding the oily water treatment system in future updates to the Site Water Management Plan and/or the Waste Water Management Plan. In consideration of the aforementioned, it is Baffinland's opinion that current water licence terms and conditions as related to oily water treatment and monitoring are acceptable in regards to the discharge of treated effluent from the Milne Inlet Camp.

QIA Comment No. 9: 5. The most recent water licence requires BIMC to submit various plans, design, drawings, and reports. The following is a summary of the documentation that was required for submission to the NWB and QIA's noted deficiencies.

a. Part B, Item 6 requires submission of a Site Water Management Plan. No information was identified on the NWB public registry to confirm if this plan has been approved by the Board and therefore fulfill licence conditions. Additional information is requested to address this uncertainty.

<u>BIM Response</u>: Updates to the Wastewater Management Plan (WWMP) have been submitted annually to the NWB and QIA since 2007. It is Baffinland's understanding that the WWMP submitted on March 31, 2009, has received NWB approval.

QIA Comment No. 9 (cont...) b. Part D, Item 13 requires submission of a Waste Water Management Plan which includes provision for Operation and Maintenance. No information was identified on the NWB public registry to confirm if this plan has been approved by the Board and therefore fulfill licence conditions. Additional information Is requested to address this uncertainty.

<u>BIM Response:</u> The March 31, 2009, Wastewater Management Plan includes a comprehensive section on operations and maintenance. It is Baffinland's understanding that the WWMP submitted on March 31, 2009, has received NWB approval.

QIA Comment No. 9 (cont...) c. Part G, Item 1 requires submission of a Spill Contingency Plan. No information was identified on the NWB public registry to confirm if this plan has been approved by the Board and therefore fulfill licence conditions. Additional information is requested to address this uncertainty.

<u>BIM Response:</u> Updates to the Spill Contingency Plan have been submitted annually to the NWB and QIA since 2007. Baffinland is uncertain of status with regard to NWB approval for this plan. The latest version submitted to the NWB is March 31, 2010.

QIA Comment No. 9 (cont...): d. Part H, Item 2 requires approval of an Abandonment and Restoration Plan. No information was identified on the NWB public registry to confirm if this plan has been approved by the Board and therefore fulfill licence conditions. Additional information is requested to address this uncertainty.



<u>BIM Response:</u> Updates to the Abandonment and Restoration Plan have been submitted annually to the NWB and QIA since 2008. Baffinland is uncertain of the status with regard to NWB approval for this plan. The latest version submitted to the NWB is March 31, 2010.

QIA Comment No. 9 (cont...): e. Part I, Item 1 requires submission and approval of an Environmental Monitoring Plan. No information was identified on the NWB public registry to confirm if this plan has been approved by the Board and therefore fulfill licence conditions. Additional information is requested to address this uncertainty.

<u>BIM Response</u>: Updates to the Environmental Monitoring Plan are included as part of revisions made annually to the Site Water Management Plan and Comprehensive Environmental Monitoring Plan. Baffinland is uncertain of the status with regard to NWB approval for this plan.

QIA Comment No. 9 (cont...): f. Part I, Item 9 requires submission and approval of QA/QC Plan. No information was identified on the NWB public registry to confirm if this plan has been approved by the Board and therefore fulfill licence conditions. Additional information is requested to address this uncertainty.

g. Part I, Item 12 requires approval of the QA/QC Plan by the Analyst. No information was identified on the NWB public registry to confirm If this plan has been approved by the Analyst and therefore fulfill licence conditions. Additional information is requested to address this uncertainty.

<u>BIM Response:</u> Updates to the QA/QC Plan are included as part of revisions made annually to the Site Water Management Plan. Baffinland is uncertain of the status with regard to NWB and Analyst approval for this plan.

QIA Comment No. 10: h. Part J, Item 1 requires BIMC to notify the Board in writing of proposed modification prior to their initiation. QIA understands that BIMC has completed modifications/changes to the method of treating oily water from the fuel containment facility at Milne Inlet. Additionally, QIA understands BIMC has completed modifications/changes to the method of treating wastewater at the Mary River camp. Both of these changes/modifications were observed during the fall 2010 site visit to Mary River site. No information was identified on the NWB public registry that notifies NWB of these modifications prior to initiation of the work. As such it is uncertain if this licence conditions has been fulfilled. Additional information is requested to address this uncertainty and to understand if BIMC is in compliance with the water licence terms and conditions.

BIM Response: The process change in 2010 involved the addition of two non-chemical physical processes to the existing treatment train: dissolved air floatation and an additional filtration step (nanofiltration). Both of these processes are physical and no chemical reagent is added as part of these processes. It was Baffinland's opinion that the enhancements completed on its oily water treatment system did not constitute a modification. This opinion was developed in consort with the INAC Water Resources Officer and the NWB technical staff. Documentation regarding process and monitoring was provided to INAC, NWB, and QIA in advance of treatment system operations (refer to Attachment C). A key point to understand concerning the treatment system is that it consists of portable, non permanent equipment and piping which is disassembled and stored at the end of each year. Minor enhancements to the system are made annually in



an effort to continuously improve environmental performance and to reduce risk. Since the treatment system is mobile, as constructed plans are not provided. As stated previously, it is Baffinland's intention to provide the information in Attachment C regarding the oily water treatment system in future updates to the Site Water Management Plan and/or the Waste Water Management Plan.

<u>QIA Comment No. 11:</u> i. Part J, Item 4 requires BIMC to submit as-built plans and drawings, stamped and sealed by an Engineer post construction. Provided below is a summary of deficiencies that suggests that licence conditions are not being achieved. Additional information is requested to address this non-compliance with the water licence terms and conditions.

BIM Response: First of all, it must be noted that all designs and plans for the Project have been developed by experienced Engineers registered with NAPPEG. Baffinland acknowledges that there have been some minor administrative errors and misunderstanding related to the stamping and signing of as-built plans and drawings that have been submitted to the NWB. For example, in some cases, letters were stamped and signed but plans and drawings were not. Our design engineering firms have sometimes worked on the basis that NAPPEG accepts that a signed and stamped document is sufficient to cover drawings included in the document. In other cases, hard copy and CD plans and drawings were provided to the NWB via mail and it is possible that some of these documents were not posted on the electronic public registry. In other cases unsigned and unstamped drawings and plans may have been inadvertently submitted with annual reports. In any event, Baffinland acknowledges the existence of these administrative errors. All plans and drawings noted as deficiencies by QIA have been located and have been uploaded to an ftp site (due to file size).

The link to the ftp site is: ftp://10200181-30d:ix10ffty@ftp.knightpiesold.com
Baffinland feels that this adequately addresses the concerns that have been identified.

<u>QIA Comment No. 11 (cont...):</u> • The 2007 Annual Report provided select as built reports and drawings. QIA identified the following deficiencies:

- 1. Milne Inlet Bulk Fuel Storage Facility did not have civil/structural drawings signed and stamped by an Engineer. Mechanical drawings were signed and stamped by an Engineer.
- 2. Milne Inlet Wastewater Treatment Facility did not have drawings signed and stamped by an Engineer.
- 3. Landfill Design and Operations did not have drawing signed and stamped by an Engineer. The drawing provided was a design drawing, not post-construction drawing. Signed and stamped design drawings were also not identified in subsequent Annual Reports. QIA understands the landfill is constructed and accepting waste. No asconstructed drawings, signed and stamped by and Engineer, were identified on the NWB public registry.
- The 2008 Annual Report provided select as built reports and drawings. QIA has identified the following deficiencies:
 - 1. Polishing/Waste Stabilization Pond #3 report not stamped by an Engineer. Drawings not signed and stamped by an Engineer.
 - 2. Bulk Fuel Storage Facility at Mary River Camp report not stamped by an Engineer. Drawings not signed and stamped by an Engineer.
 - 3. Milne Inlet Tote Road drawings not signed and stamped by an Engineer.
- The 2009 Annual Report provided select as built reports and drawings. QIA identifies the following deficiencies:
 - 1. Milne Inlet Tote Road drawings not signed and stamped by an Engineer.



<u>BIM Response:</u> Signed and stamped documents referenced above have been uploaded to the following ftp link: ftp://10200181-30d:ix10ffty@ftp.knightpiesold.com

QIA Comment No. 11 (cont...): QIA notes, it is standard engineering practice and required by Northwest Territories and Nunavut Association of Professional Engineers and Geoscientsits to have both engineering reports, and any associated drawings, signed and stamped by an Engineer.

<u>BIM Comment</u>: Our design engineering firms have sometimes worked on the basis that NAPPEG accepts that a signed and stamped document is sufficient to cover drawings included in the document. Apparently there is a difference of professional opinion between firms with regard to standard engineering practice in this regard. Notwithstanding the above comment, it is Baffinland's intention to provide in future all engineering drawings and plans with stamps and signature, both electronically and in hard copy, and to work proactively with the NWB to achieve this.

<u>QIA Comment No. 12:</u> 6. A failure of a fuel bladder occurred at the Milne Inlet fuel containment facility. This failure heightened concern about the long term integrity of the bladders.....

-It is QIA's understanding that the tanks have been in service since about 2007, as such, the service life may expire as early as 2012. It is therefore important to recognize that the tanks are not a permanent storage facility for fuel. Also, it may be important for BIMC to clean the tanks to limit degradation (e.g., dirt) as part of regular operations.
- a. QIA notes that no alternative plan to manage bulk fuel storage on site has been presented in the NWB Application for Water Licence Renewal Form.
- QIA notes that an alternative fuel storage method may be required as early as 2012. Any alternative fuel storage method is a significant infrastructure change and will likely require amendments to the water licence.
- b. Additional detail regarding the longer term plan to store fuel at site is requested.

<u>BIM Response</u>: Baffinland understands the need to implement an action plan to replace the bladders by 2012 at Milne Inlet. At the present time, a conceptual plan is being developed to replace the existing fuel bladder capacity with steel tanks. (Note that this activity was included in the annual work plan submitted to QIA on March 1, 2011, a requirement of the QIA commercial lease). Baffinland recognizes that modifications and other approvals will be required prior to the commencement of construction of new containment structures and fuel storage/distribution facilities. Baffinland will submit the required documentation, applications, and notifications to the NWB and QIA for review to support our action plan once finalized.

Section 2.2: Technical Review Comments Organized According to the Layout of the Water Licence

PART B: GENERAL CONDITIONS

QIA Comment No. 13: 7. The service life and integrity of the fuel bladders is of paramount concern and has potential to impact the environment. QIA recommends a licence condition to complete fuel bladder tank integrity assessment by a qualified professional Engineer, registered in Nunavut, at a frequency of once a year and that the results be presented to the NWB within the Annual Report. The assessment report is recommended to be sign and stamped by the Engineer.



<u>BIM Response</u>: Baffinland has engaged the fuel bladder manufacturer (SEI Industries) to conduct annual inspections and to execute a preventive maintenance program to ensure the bulk fuel storage and delivery system achieves its designed service life. Baffinland will submit the manufacturer's report as part of the annual NWB geotechnical inspection report. Baffinland has previously indicated that it intends to decommission the Milne Inlet bladders by 2012.

QIA Comment No. 14: 8. Sediment and erosion control plans are a typical licence condition that Proponents submit to the NWB to demonstrate adequate operations and activities to limit potential impacts to the environment and ensure compliance with the Fisheries Act. Select elements of sediment and erosion control are highlighted in the existing water licence. Part of QIA's concern regarding this topic stems from the numerous failures and evidence of erosion and sediment concerns related to the Tote Road over recent years. Given the importance of this issue, QIA recommends inclusion of a licence term and condition that requires completion of a Sediment and Erosion Plan to be submitted to the NWB for approval.

BIM Response: The current Site Water Management Plan provides a comprehensive presentation of sediment and erosion control methods that are suited to the project. This plan has been very effective over the duration of the project and has resulted in ongoing improvements and reduced incidents overall of erosion and sedimentation. Tote Road water crossings are authorized and regulated under existing DFO HADD authorizations and approved No Net Loss habitat compensation plans. Baffinland works proactively with DFO and other regulators regarding Tote Road management and our responses to minimize erosion and sediment concerns on the road. DFO personnel conduct annual inspections of the road to ensure compliance. Baffinland retains fisheries biologists annually to assess any changes to fish habitat as a result of potential erosion and sedimentation events. The results of our work on the Tote Road are reported in our annual reports submitted to DFO (and copied to QIA). It is Baffinland's opinion that the existing Site Water Management Plan is an adequate and effect document for the control of potential erosion and sedimentation, and furthermore, no changes would therefore be required to the water licence terms and conditions.

PART D; CONDITIONS APPLYING TO WASTE DISPOSAL

QIA Comment No. 14:. QIA notes that incineration of waste occurs on site; however, incineration of waste is not described in Section 1S of the Renewal Application form as a waste treatment/disposal method. Additional detail regarding incinerator waste and fly ash residual management is requested. QIA recommends that the incinerator meet or exceed Canada Wide Standards for Dioxins and Furans and Mercury Emissions. It is recommended that a water licence condition is developed to address this standard, of which Nunavut is a signatory for its application.

BIM Response: The above recommendation currently forms a term within the NIRB Screening Report: 07EN004 (March 26, 2007). Baffinland has been working to improve incinerator operations and emissions since 2007. Results are summarized in annual NIRB reports issued at the end of January of each year. During 2011 and beyond, Baffinland will be working proactively to reduce dioxin, furan, and mercury emissions by means of improved incinerator operations, waste segregation, and ongoing monitoring. That being said, it must be acknowledged that achieving Canada Wide Standards for



these compounds for batch incinerators located at small camps in the north is a challenging goal that is technically difficult to achieve. It is Baffinland's opinion that the inclusion of a condition pertaining the Canada Wide Standards is not appropriate for a Type 'B' water licence and that the current NIRB requirement to meet the standard is adequate.

QIA Comment No. 15: 10. QIA notes that wastewater discharge effluent limits in the existing licence are typical "blue-book" values. In February 2009, CCME released "Canada-wide Strategy for the Management of Municipal Wastewater Effluent" that aims to harmonize the effluent quality from wastewater treatment facilities across Canada. In Nunavut, a five year period has been recommended for Territorial and Federal governments to work together to undertake research into factors that affect performance of wastewater facilities, in part to develop northern performance standards. Interim measures within this CCME Canada-wide strategy are that effluent quality requirements in existing authorizations will continue to apply and current authorizations will be retained. QIA notes that the NWB should be proactive in establishing wastewater discharge quality limits to achieve this proposed Canada wide strategy. If the Canada wide standard is being used for municipal water licences in Nunavut, it should also be applied to water licences in the resource sector.

<u>BIM Response</u>: It is Baffinland's opinion that current waste water effluent criteria coupled with site specific target levels provided in the approved Wastewater Management Plan and ongoing aquatic effects studies for fresh water receivers are adequate to protect aquatic receiving environments from adverse effects.

PART H; CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

QIA Comment No. 15: 11. Addendum #2 of the water licence (issued Feb 13, 2008) removed select terms and conditions pertaining to Abandonment and Restoration. Limited reasons for decision for removal of select terms were provided in the Reasons for Decision. As such the rational for their removal is uncertain. QIA recommends reinstating the following Abandonment and Restoration terms and conditions:

a. All roads and airstrip, if any, shall be re-graded to match natural contour to reduce erosion. b. All disturbed areas shall be contoured and stabilized upon completion of work and restored to a pre-disturbed state.

<u>BIM Response:</u> Baffinland notes that reclamation criteria and objectives are more appropriately presented in the Abandonment and Restoration (A&R) Plan for the project. It is Baffinland's opinion that the two items referenced above are adequately dealt with within the latest revision of the A&R Plan which was submitted to QIA on March 1, 2011. The same plan will be submitted to the NWB as part of the 2010 annual report submission by March 31, 2011.

PART J; CONDITIONS APPLYING TO CONSTRUCTION AND MODIFICATIONS

<u>QIA Comment No. 16:</u> 12. QIA notes that the current water licence requires submission of asbuilt plans and drawings signed and stamped by an Engineer; however, there is no requirement to submit final engineering design reports and for-construction drawings that are signed and sealed by an Engineer

In general,

• Final engineering design reports and for-construction drawings typically provide the rational for the design, expected performance, and construction details (i.e., construction QA/QC). This



information is necessary to understand if the proposed design and construction will be adequate to protect waters and contain waste.

• As-built reports and drawings typically report changes made to the engineering design from the planning state to the execution/construction stage. Additionally, the as-built report and drawings provide information regarding the final construction physical layout and properties. It is important to recognize that the intent and purposes of the above listed bullets are distinct and are both critical to ensure water protection/use and waste containment is achieved.

It is typical of other water licences issued by the NWB to require submission of both: engineering design reports and associated drawings, as well as, as-built reports and associated drawings. It is unclear to QIA why this isn't the case for the water licence under review. QIA recommends a water licence condition that requires all infrastructure at the Mary River site that requires Engineering authority for design and construction, to have final engineering design report and for construction drawings submitted to the Board for approval. The report and drawings are recommended to be signed and sealed by an Engineer.

<u>BIM Response</u>: It is Baffinland's opinion that the level of engineering design and as constructed documentation meets all the requirements of the existing Type 'B' water licence. Changes to future terms and conditions regarding as constructed reports shall be a decision for the NWB.

Comments from Indian and Northern Affairs Canada (INAC)

Consultations:

<u>INAC Comment No. 1:</u> The application states that consultations concerning a renewal of the expired water licence were discussed 'during a community meeting tour of the North Baffin Region in October 2010'. For purposes of providing an accurate and detailed record of consultations, the proponent should specify which communities and organizations were consulted with and the outcomes of the consultation sessions.

<u>BIM Response:</u> The details of consultations are provided in Attachments A and B to this letter. Further details are provided in our response to QIA Comment no. 7 (page 6 and 7 of this letter).

Licence Term:

<u>INAC Comment No. 2</u>: The Applicant has asked for a renewal of up to 5 years. Given that the Applicant anticipates an imminent submission of their Draft Environmental Impact Statement, INAC would like to suggest that a licence term of 2-3 years should suffice for the purposes of fulfilling interim measures during the environmental assessment process.

<u>BIM Response</u>: Baffinland feels that it is important that the term of the licence should span the period between the present time and the anticipated receipt of a Type 'A' Water Licence. A period of three years is thought to be a minimum. A five year term was requested to eliminate the administrative risk of the licence expiring prior to the release of the EIS and the receipt of a Type 'A' water licence.



Abandonment and Restoration:

<u>INAC Comment No. 3</u>: Temporary Closure: The Applicant has identified that should temporary closure measures be necessary, the site would be left unmanned with 2 trips a year undertaken by the proponent to carry out site inspections and any necessary maintenance.

As the site will be left unmanned, the A & R Plan should be amended to reflect that prior to the temporary closure of the site, the proponent will conduct an assessment of all contaminants on site (i.e. fuel storage, waste storage, or any other potential contaminants that have the potential to impact the environment) and provide the assessment to an Inspector. Measures taken to mitigate potential impacts should also be detailed, and should include, but not be limited to the installation of remote leak detection systems in drip pans at valves and connectors and in sumps to provide notification of any hydrocarbon leaks.

<u>BIM Response:</u> Baffinland agrees with most of the above recommendations. It is our intention to decommission bulk fuel storage facilities prior to temporary closure of the facility. Therefore, remote leak detection systems, which would be difficult to effectively implement in practice, would not be necessary.

Security:

<u>INAC Comment No. 4</u>: Following a review of the application, it was noted that the Applicant has provided a remediation cost estimate of \$742,078.76 for water related reclamation activities associated with their exploration program. INAC would like to respectfully request that the NWB consider the remediation cost estimate provided by the Applicant.

BIM Response: Baffinland welcomes and supports this recommendation.

Comments from the Nunavut Department of Culture, Language, Elders, and Youth (CLEY)

CLEY Comments and Recommendations: The department does not object to the application. However, and for the proponent's knowledge, our records indicate for Mary River Camp: three (3) archaeological sites within a 5km radius of the camp; Steensby Inlet camp: 56 sites within a 5km radius; Milne Inlet Camp: 16 sites within a 5km radius; and, Mid-Rail camp with one (1) site within a 5km radius. The proponent must appreciate that it is their responsibility to ensure that no palaeontological or archaeological sites are disturbed in the course of their activities. All archaeological and palaeontological sites in Nunavut are protected by law. Should any additional sites or artifacts be encountered, the proponent must contact the Department co Culture, Language, Elders and Youth.

<u>BIM Response:</u> Baffinland agrees with the comments and recommendations provided by CLEY. The recommendations they have provided have and will continue to be routinely implemented.



Thank you for the opportunity to respond to reviewers' comments on our water licence renewal application. Please do not hesitate to contact the undersigned at 902-403-1337 should you require additional information or clarification regarding this document and attachments.

Yours sincerely,

Baffinland Iron Mines Corporation

James Millard, M.Sc., P.Geo.

(EMelen

Senior Environmental Superintendent

Attachments: A: Mary River Community Engagement Presentations

B: Community Consultations – Table B.1, Attendance Sheets, and Comments

C: 2010 Oily Water Treatment System - Correspondence.

cc., Salamonie Shoo, QIA,

Tanya Trenholm, INAC, Edward Atkinson, CLEY. David Hohnstein, NWB Sean Joseph, NWB

	ATTACHMENT A		
Mary River Community Engage		(English and Inuktuit Ve	rsions)



Mary River Project

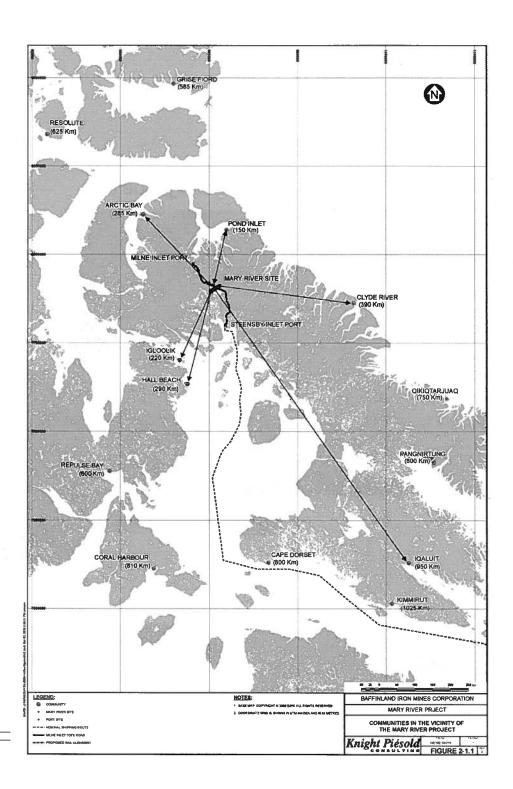
Community Engagement Presentation September 27th to October 7th, 2010





Meeting Objectives

- Mary River Project
- Update on EIS
- Employment
- Water License Renewal
- Questions & Answers

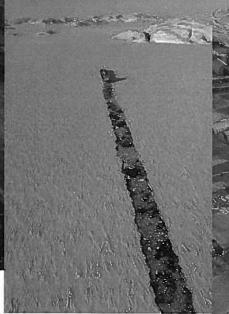






The Project





3. Ship

2. Land Transport



4. Infrastructure

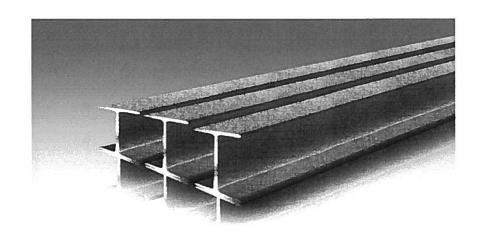


Iron Ore to Iron Products

What is Iron used for:

- Steel
- Automotive parts
- Cookware
- Nuts and bolts
- Fences

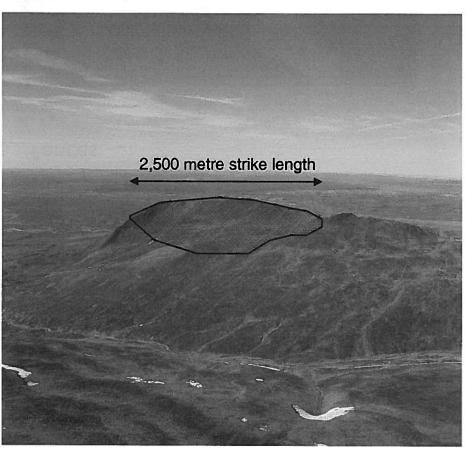








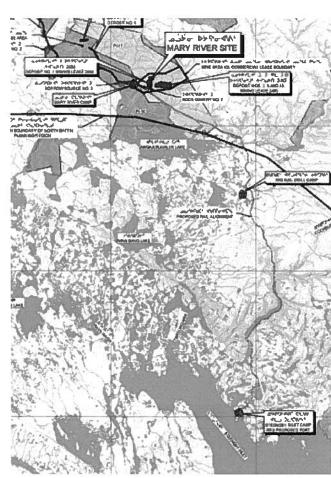
The Mine



- Deposit No. 1 open pit mine
- 75% Lump, 25% Fines
- Drill, Blast, Crush, Rail, Ship proven technology
- No advanced ore processing (no tailings)
- Primary Market Europe
- Proposed 18 MT/annum ore production rate
- 21 year mine life (approximate)

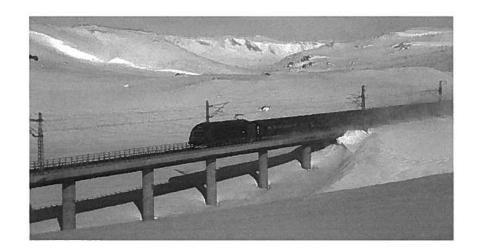


Rail Corridor



Proposed Mary River to Steensby Inlet

- Over 140 kilometers long
- 2 trains, 2 trips each per day
- Used to transport ore, people & supplies
- Over 200 river crossings required
- Three alternative routes were evaluated







Milne Inlet Shipping Corridor



Proposed Milne Inlet Activity

- Open water shipment of supplies during construction
- Open water shipment of bulk equipment during operations
- Increased fuel storage and temporary lay down areas

Milne Inlet

- Currently can accommodate 60 persons,
 will be expanded to hold 100 persons
- Currently capacity approximately 8 M L of fuel, effluent treatment plant, airstrip, incinerator, lay down areas, mechanical shop





Proposed Steensby Port Shipping Corridor



Steensby Inlet

 Currently a 40 person capacity camp with incinerator, effluent treatment, barreled fuel storage, and lay down area

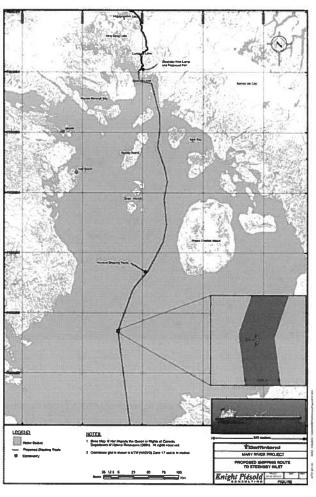
Proposed Steensby Inlet Activity

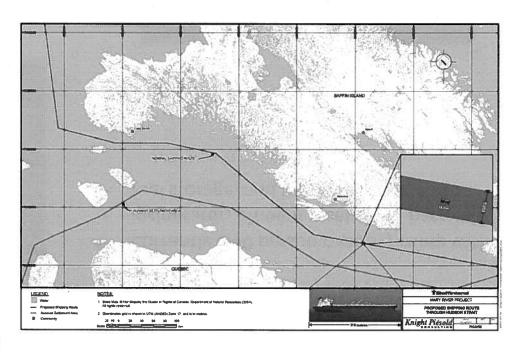
- Port infrastructure including train shop, accommodations, mechanical shop, airstrip, bulk fuel storage, ore storage, lay down areas, effluent treatment, incinerator, ship loading and unloading
- Year round shipping 1 ship crossing each 2 days





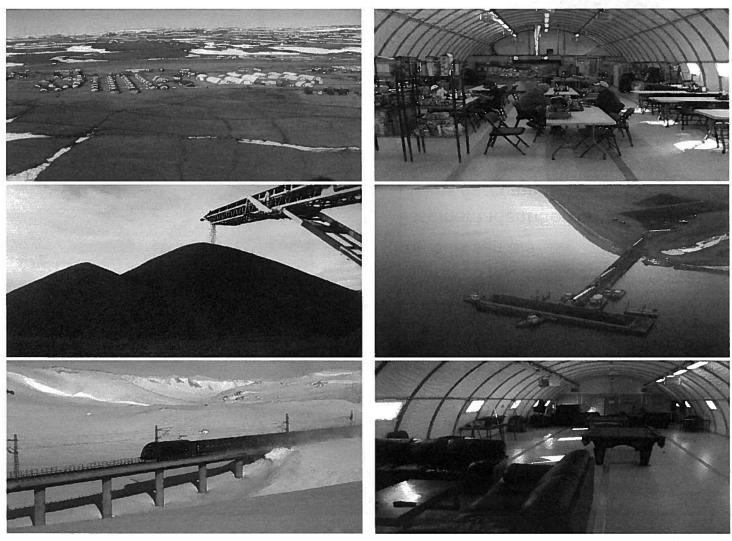
Proposed Steensby Port Shipping Corridor







Infrastructure



†Baffinland



Road Corridor - Trucking Alternative



Future Uses: Mary River to Milne Inlet

- Used to transport equipment during construction
- Used to transport bulky supplies during operations

Mary River to Milne Inlet

- 100 km three season road
- Constructed in the 1960s for exploration
- Upgraded in 2008 to transport ore during the bulk sample
- Easement identified in the Nunavut Land Claims Agreement





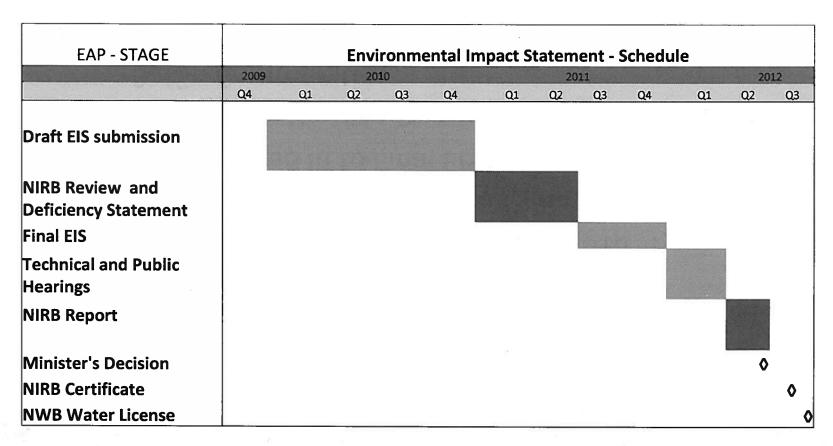
Environmental Assessment Process

- Work continuing on Draft Environmental Impact Statement
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 - NIRB Public Hearing Process will take place in North Baffin Communities.
- Water Licensing Process Follows NIRB Process and produces operational permits.
- Projected completion of process in late 2012.





The Environmental Assessment Process

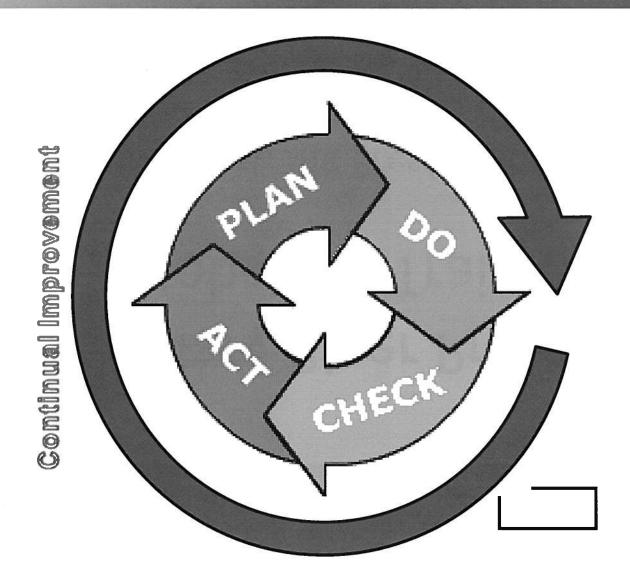


Note – assumes completion of Draft EIS in 2010





Environmental Management





Mary River Project Jobs and Training

The Past, the Present and the Future

September 2010





Introduction

Baffinland Iron Mines, in conjunction with it's partners, has delivered various training programs designed to build capacity in the different communities in the North Baffin Region. Some of the training that was delivered follows:





Simulator Training

Fall 2007

- Training was held over a two week period
- Twenty one employees trained on 773 Haul Trucks and D-8 Dozers in a state-of-the-art simulator
- This training also included classroom training on the proper care of the engine and walk around safety checks for the safe operation and maintenance of the equipment
- Many of the candidates have returned over the years to operate equipment at the Baffinland Project



Diamond Drill Helper Certification Training

Spring 2009

- Six week training course held in Springdale, Newfoundland
- Ten candidates were selected from Igloolik
- An Elder from the Community accompanied the candidates.
- Candidates were certified as Diamond Drill Helpers
- All candidates have worked on diamond drills at Mary River
- Eight of the Drill Helpers returned to work on the drill program in 2010





Diamond Drill





Heavy Equipment Operator Mentorship Program

Summer 2009

- The HEO training was delivered by Baffinland & NUNA Logistics.
- Seven candidates were chosen from Pond Inlet
- 28 days of training occurred.
- Candidates worked 10 hour shifts
- 2 hours of classroom/instruction per day
- 8 hours of cab training per day where the candidates where able to hone their skills with the assistance of an experienced instructor.
- Training covered safe operation of Heavy Equipment
- Proper Maintenance and circle checks
- Four of the seven candidates are back working at Baffinland for the summer, the other three have jobs elsewhere using the skills they learned from this training





Looking Forward-Summer of 2011

30 Candidates for Heavy Equipment Training

- Road upgrades to Milne Inlet haul road
- Civil works for fuel storage and lay down areas
- Potential Camp expansion at Mary River and Milne Inlet
- Potential Infrastructure expansions and improvements
- Production of aggregate for haulage roads and airstrips
- Development of port loading facility and product lay down area



Summer of 2011

Training Equipment being considered:

- Kenworth tri-axle dump truck
- Packers
- Excavators
- Rotary Drill







• 773 Haul truck





Dozer





• Loaders





Graders





• Crushing and Screening



Camp Operation Support

When operations commence, there will be a need for trained and skilled employees to ensure the camps and supporting infrastructure operate in a smooth and efficient manner. These employees will be proficient and multi-skilled in the operation of the following;

- Operation of skid steers and forklifts
- Small fleet vehicle operation
- Water and waste water treatment
- Off loading cargo planes
- Maintenance of camp infrastructure
- Fuel Management
- Meal preparation /food services- Kitchen Staff
- Custodial/cleaning- Janitorial Staff





Office Administration

- Site Administrator
- Logistics/Travel Coordinator
- Warehouse Shipper/Receiver
- Payroll
- Benefits Administrator
- Accounts Payable/Receivable
- Purchasing/Buyer
- Site Security



Environmental Health and Safety

- Nursing/First Aid
- Environmental Sample/Monitor
- Safety Supervisor
- Safety Trainer





The Future, what will in bring?

As the project advances, the workforce will continue to grow. The need for a skilled and trained workforce will be vital to the success of Baffinland Iron Mines and the communities of North Baffin.

The reason we are at the schools in the Baffin region is to talk to future potential operators, supervisors, technical and managerial employees.





Questions



2010 Exploration Program



Environmental

- Archeology surveys of Steensby Inlet and surrounding project activities
- Initiate harvest studies for marine & terrestrial in Pond Inlet, Igloolik, Hall Beach, Cape Dorset & Kimmirut*
- Additional marine IQ studies in Cape Dorset
 & Kimmirut*

Geology

- 3 drill rigs working on Deposits 3, 4, 5
- A total of 6,000m to be drilled
- Regional geological surface mapping
- Continued specific reclamation work
- Construction of landfill and road
- Move equipment offsite



^{*} Pending QIA approval



Water License Renewal

- Current Water License was issued
 2007 and expires end of 2010
- Submitting a renewal application to extend the license for 2 years.
- No changes to terms of license being requested.





What is a Water Licence?

- Allows for Use of water
 - Potable water to camps
 - Water for drilling
- Allows for Management of Wastes
 - Treatment of sewage and oily water
 - Clean water discharged to Sheardown Lake and Milne Inlet
 - Hazardous Wastes shipped south
 - Non-hazardous wastes landfilled or incinerated



What is a Water License?

- Provides monitoring locations for water quality and quantity
- Results reported monthly
- Comprehensive report is submitted annually
- INAC Inspectors come to visit and inspect the project to ensure compliance.
- Our compliance record has been excellent





Term of License

- Two years (2011 to 2013)
- To span the period between submission of EIS and start of construction for the project
- No change to any other terms or conditions of the license.



Activities Allowed

- Similar to last three years since 2007
- Exploration drilling
- Geotechnical drilling
- Reclamation of site
- Ongoing engineering and scientific studies
- Maintenance and minor upgrades of current infrastructure



IIBA Update

- Baffinland and QIA working towards an IIBA agreement
- In 2009 a memorandum of understanding was signed by Baffinland and QIA
 - Employment
 - Training
 - Business opportunities
 - Workplace conditions
- 2010 goal to reach agreement in principal



Qujannamiik Thank You

Question and Answer time









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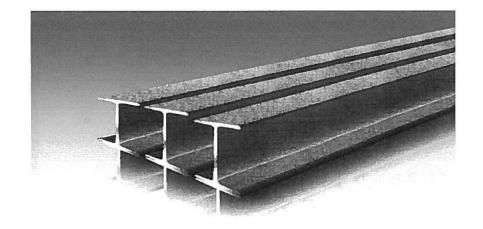


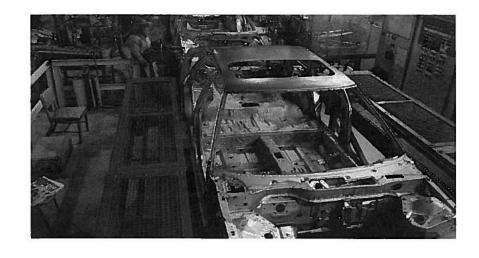
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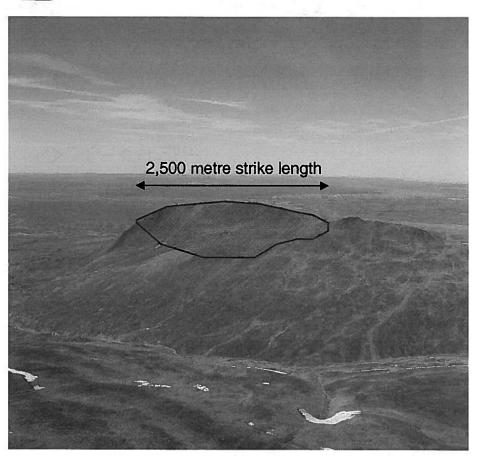








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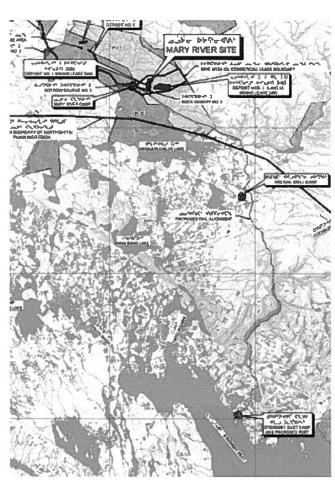
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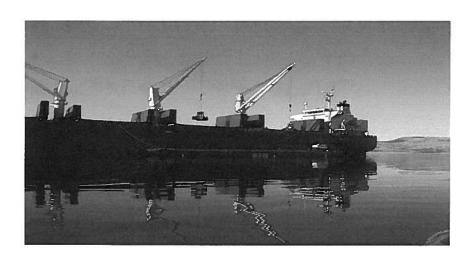


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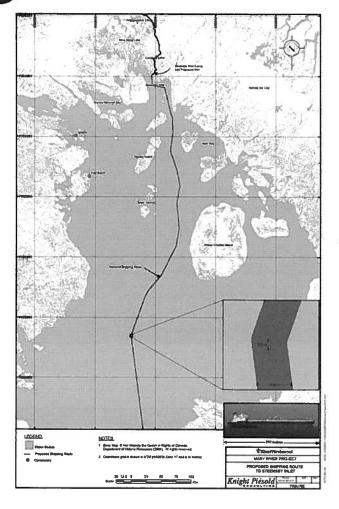
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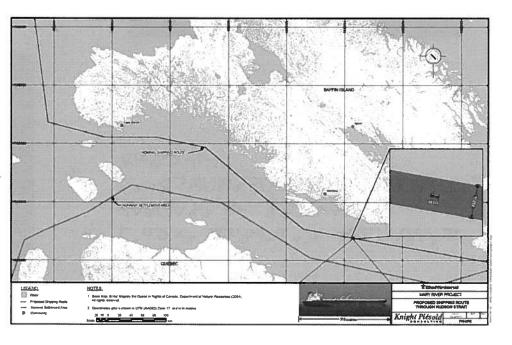


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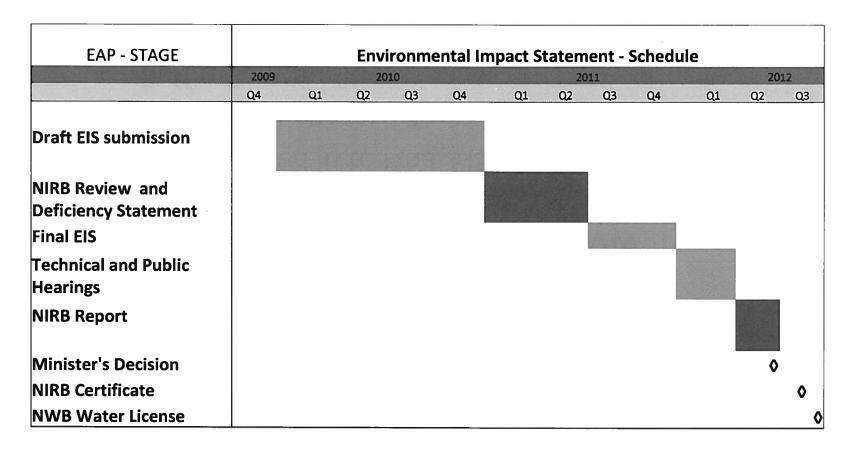
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The Environmental Assessment Process

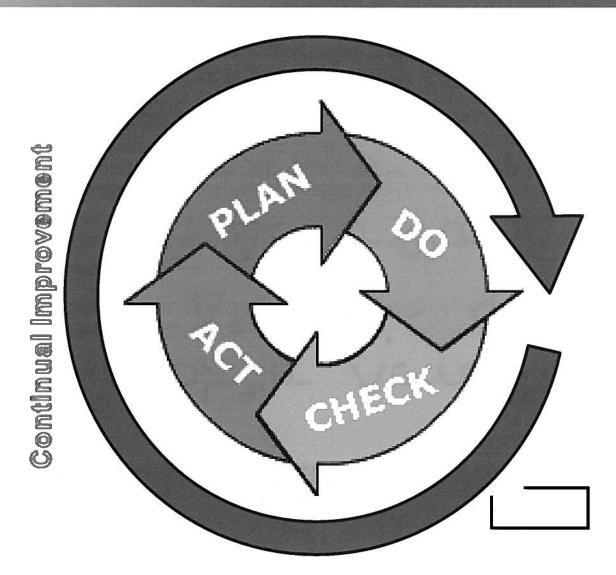


Note – assumes completion of Draft EIS in 2010





Environmental Management





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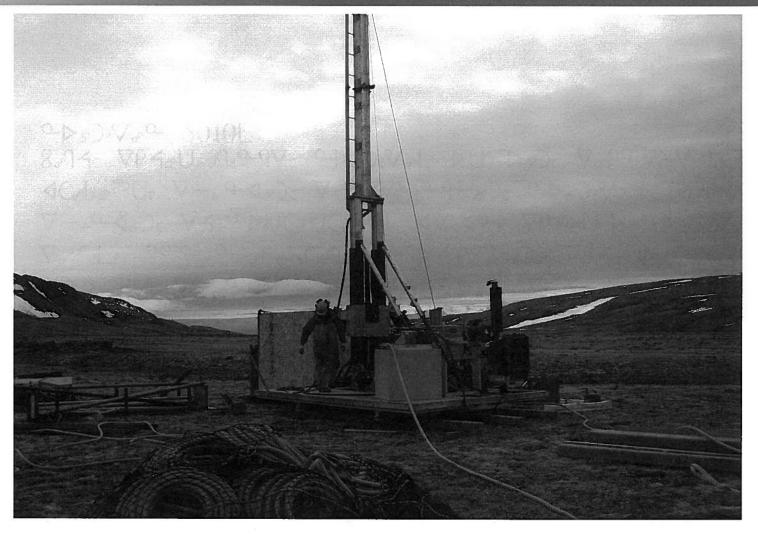
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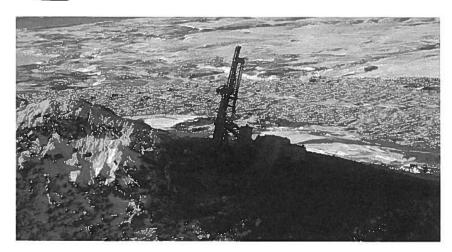
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ATTACHMENT B Community Consultations – Table B.1, Attendance Sheets, and Comments

Table B.1: Consultation - Community Engagement Presentations (includes water licence renewal)

Community	Date	Description	Meeting Location
Mary River	15-Sep-10	Workshop held at Mary River Camp, co-hosted with QIA. QIA invited participants from Arctic Bay, Clyde River, Igloolik, Pond Inlet.	Mary River
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Clyde River	30-Sep-10	Public meeting - project update.	Communtiy Hall
Igloolik	28-Sep-10	Hamlet and Public meeting - project update.	Council and Community Hall
	27.2		
Pond Inlet	05-Oct-10	Community groups - project update.	Community Hall
	05-Oct-10	Mitimatillik - HTO/Hamlet - project update.	Community Hall

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Workshop Meeting Minutes

Date: September 13, 2010 thru September 15, 2010

Group/Organization: Thematic Workshops – Baffinland/QIA – Terrestrial Environment

Meeting Location: Mary River Camp, Nunavut

PRESENT:

QIKIQTANI INUIT ASSOCIATION:

Nigel Qaumariaq - Environmental and Regulatory Affairs Advisor

Stephen Bathory - Director of Lands Mathew Akavak - Lands Officer

Kim Poole - Consultant (Scientific Advisor to QIA), Aurora Wildlife

Research

BAFFINLAND:

Matthew Pickard (MTP) - Manager, Sustainable Development
Qavavauq Issuqangituq - Community Liaison Officer, Pond Inlet
Nick Arnatsiaq - Community Liaison Officer, Igloolik

Linda Chepyha - Administrative Assistant

Bill Napier - VP Sustainable Development

Jason Prno - Consultant (Facilitator/IQ), Knight Piesold Ltd.

Mike Setterington - Consultant (Terrestrial Biologist), EDI Environmental

Dynamics Inc.

POND INLET:

Cornelius Nutarak James Atagootak Paniloo Sangoya Ikey Milton

ARCTIC BAY:

Levi Barnabas Olayuk Naqitarvik Koonoo Oyukuluk

CLYDE RIVER:

James Qillaq Sam Palituq Joanasie Apak

IGLOOLIK:

George Qulaut David Irngaut Louis Uttak Sidonie Ungalaq

HALL BEACH:

Abraham Qammaniq Jaypeetee Audlakiak Solomon Qanatsaiq Lizzie P. Qanatsiaq Interpreter

All guests were given Safety training and an introduction to the Camp upon arrival. Guests were given a bag of gifts and shown to their rooms.

All guests were given a hand out of the workshop agenda for the week and a booklet entitled 'Mary River Project, Thematic Workshop, Terrestrial Environment'.

Opening Remarks:

The meeting opened at 8:00 a.m. with a prayer, after which introductions took place.

The meeting translators were introduced: Qavavauq Issuqangituq, Nick Arnatsiaq and Abraham Qamaniq. Notes for the workshop were taken by Linda Chepyha, Administrative Assistant for Baffinland.

Compensation was discussed at \$250 per day. Both link cards and cheque options were discussed, including that cheques could take 2 weeks to arrive.

Mr. Matthew Pickard opened the meeting by indicating what would be covered in the next few days. A Project overview presentation was then delivered. Attendees were encouraged to refer to the maps in their handouts.

Question: Paniloo Sangoya/Pond Inlet - How long will Milne be used and is it too small for the big ships to come into?

Jim Millard (Baffinland Environmental Superintendent) - [Delivered a presentation on the Mary River Project's water license].

Question: Cornelius/Pond Inlet - When you are picking up debris to be shipped out from the camp, can you swing by Pond Inlet to pick up our garbage over there? Things like metal or anything else that needs to be shipped out for disposal?

Jim: - My responsibilities are for here at camp. That would increase the cost of our activities. Are the materials related to our work here?

Cornelius – No, this originated from Pond Inlet.

Jim: – I am not in a position to say yes or no, but I don't think so.

MTP: Not at this time, no.

Cornelius – Once we agree to the water license renewal we will be continuing this process of continuing thoughts in Mary River of when we are taking care of garbage. We would want to be part of this [meaning unclear].

Question: Louis/Igloolik – This is a small operation currently. In the future would the license include the railway or the drilling? Will_the iron ore be washed or rinsed? Would a proper license be required when operations become bigger?

Jim – The license is for the current operations only. Once the EIS is submitted and we have approval for the Project, a project certificate will be issued and a Type A license will be applied for. This_will allow for a lot more water to be used and will be more comprehensive. This will be a separate process that follows the EIS. Our current license is for activities related to drilling, reclamation, site clean up, scientific and engineering studies, ongoing maintenance and minor upgrades.

Louis: – Will there will be any influence on char or [unrecorded comments].

Jim - We have a study every year on fish. North/South Consultants are our consultants who work on the study. They have a biologist that studies the fish in the streams that cross the road. If we see a problem with fish passing through the culverts, we identify that problem and solve it by installing a new culvert or changing the configuration of it. For Sheardown Lake, we do water sampling every year to make sure that the treated sewage is clean when it goes into the lake and does not affect the water quality. If the water quality is not affected the fish will not be affected. So far, we haven't seen any change to the water quality so we assume the fish have not changed either.

Louis: – Are you going to do a proper study of the fish? You will determine the condition of all the fish you study?

Jim: – We look at the fish up and downstream of the road to make sure the numbers are the same or similar and we are not preventing the fish from getting through the culverts and passages on the road. Prior to starting operations here at Mary River we did baseline studies on Sheardown Lake and Camp Lake and studied different aspects of the fish similar to what you are talking about.

Question: Levi//Arctic Bay – Can you explain why Sheardown Lake is not being used for water? I understand there are fish in there and sewage will be treated and dumped into that lake. I'm not sure if that is true or not. Is there water testing being done? Are there fish in there?

Jim: – We use Camp Lake for our water as it is closer to the Camp here. Sheardown Lake is several kilometers farther away.

Question: Levi – Do you continue to sample it?

Jim: - Yes.

MTP: The next topic we are going to discuss is fish. We did not have a session solely on fish in the agenda, but Arctic char is very important to consider. We have surveyed every water crossing we currently have and plan to have, which totals over 400 crossings. We have done studies on where we want to take water from and where we want to discharge effluent. This work is conducted under two government agencies, the Nunavut Water Board and the Department of Fisheries and Oceans. Fish are a highly regulated species, so a lot of time and money was spent to understand the fish. We can tell you everything about those fish. Under federal law we have to compensate for every area we have impacted. This isn't financial compensation, but habitat compensation. In the EIS we describe the various compensation options. There are three:

- Compensation lake Construction of a small dam to raise the water level in a lake to increase fish habitat located mid-point on the rail line.
- Smaller projects Associated with smaller lakes and rivers. This may include open up a barricade to the fish, or restocking a lake.
- Community projects Opportunities to compensate may include restocking where there are no fish, removing barricades, creating fish ladders to allow fish up a water fall, or other water-related projects.

What I want to ask the group is, do you know of any areas that we might be able to look at as compensation areas in the communities?

Bill: - We don't need to talk of specific projects right now, but this is an invitation to begin the discussion on compensation. This can occur either through the CLOs or QIA representatives and can continue after today's conversation. If we have enough information before the submission date, we could include those options in the EIS or state our intention to continue the discussion to look at the most ideal options.

ATTACHMENT C

2010 Oily Water Treatment System - Correspondence.

Jim Millard

From: Jim Millard [Jim.Millard@Baffinland.com]

Sent: June 19, 2010 1:27 AM **To:** 'bryan.rayner@inac.gc.ca'

Cc: Stephen Bathory; 'Richard Dwyer'; 'Baffinland Iron Mines - Trevor Myers'

Subject: Summer 2010 Oily Storm Water Treatment Strategy for Milne Inlet Bulk Fuel Storage Area

Attachments: AS SENT 10 06 18 INAC Letter Oily Water Treatment.pdf

Bryan,

I have attached the above referenced document for your review and comment. The attached letter fulfills the requirement for notification of effluent discharge from the Milne bulk fuel storage facility as stated in Part D, Section 7 of our Water Licence 2BB-MRY0710. It also describes the enhancements to the existing oily water treatment system that are being completed to make the system more robust and effective. The enhanced treatment system In consort with the proposed comprehensive compliance and operational process monitoring regime support the direct discharge scenario that is planned.

Let us know if you have any comments, questions, or recommendations regarding the enhanced treatment system and proposed monitoring/sampling schedule. Our intention is to commence treatment and discharge to our authorized discharge point (MRY-7) as early as June 28, 2010.

Kind regards,

Jim Millard, M.Sc., P.Geo.
Senior Environmental Superintendent
Mary River Project
Baffinland Iron Mines Corporation
work site tel 403-450-8843
cell 902-403-1337



June 18, 2010
Bryan Rayner
Water Resource Officer
Indian & Northern Affairs Canada NRO
PO Box 100, Igaluit, NU X0A 0H0

Transmitted via e-mail.

Dear Mr. Rayner:

RE: Summer 2010 Oily Storm Water Treatment Strategy for Milne Bulk Fuel Storage Facility, Baffinland Iron Mines Corporation (BIM) – Mary River Project

The attached documents developed by AMEC Earth and Environmental (AMEC) provide the design basis overview for the upgrades to the oily water treatment system for the Milne Inlet bulk fuel storage facility.

The treatment process utilized in 2008 and 2009 involved oil water separation and treatment using adsorbent clay and granular activated carbon media. As you are aware, during 2009, the existing treatment system was overloaded by the degree of contamination in the stormwater, inefficient oil water separation and insufficient media capacity.

In response to this situation, AMEC was retained late last year to study and improve the existing system so that that it would provide sufficient pretreatment upstream of the treatment system. The overall goal was to improve the pre-treatment aspect of the system so that the final treated effluent would be suitable for direct discharge to the environment. The enhanced treatment system incorporates two additional pretreatment steps after the oil water separation step, and prior to the contact media step. The new steps include dissolved air floatation (DAF) and filtration utilizing fine-pore membranes (nanofiltration). The DAF and nanofiltration steps are physical in nature and do not involve the addition of any chemical reagents.

The enhanced system for 2010 consists of portable components and does not include any permanent infrastructure. A small temporary lined area has been constructed to ensure that any overflow from the process ends up back in the contained area of the facility. This liner and other components can be removed at the conclusion of the program.

To treat the large volume of oily water contained in the facility (estimated 3.5 million litres), a direct discharge configuration to Milne Inlet is necessary. A robust field and laboratory monitoring and sampling system will be implemented that will provide early warning of a potential upset condition that could lead to an environmental non-compliance. Two field screening processes (field infrared (IR) instrument and chemical oxygen demand (COD)) have been established and tested in the laboratory, determined to be effective, and will therefore be utilized for ongoing process monitoring.

In consideration of the anticipated actual flow rate (average of 60-70 L/min) and total volume to be pumped of around 3.5 million litres, a regulatory effluent discharge sampling frequency of one representative sample per 200,000 L of released effluent is proposed. The regulatory effluent discharge samples will be submitted to an external laboratory (Exova Accutest in Ottawa) for analyses of parameters as outlined in the water licence for MRY-7 including benzene, toluene, ethylbenzenes, lead, and oil & grease. QA/QC samples will be collected in accordance with our QA/QC water sampling plan.



In addition to the above, operating process control samples will be collected and analyzed on-site utilizing our IR and COD field instrumentation system. The samples will be collected at the following locations and scheduled intervals (refer to attached PDF):

- four hours NF effluent tank and final discharge,
- 12 hours O/W Exit Equalization Tank, NF feed tank, clay exit, DAF effluent),
- three days Clay trains 1 through 4, drum 1 outlet
- weekly GAC trains 1 through 4, drum 1 outlet

The monitoring frequency has been established based on conservative estimates of breakthrough times developed by means of bench scale testing, scale up tests, and on-site experience from 2008 and 2009. The monitoring strategy will minimize the risk of non-compliant water from being discharged. The schedule is subject to minor revision based on ongoing system process performance. The field monitoring schedule may be reduced somewhat based on consistent and acceptable process control results.

During system startup, an increased number of samples will be collected and analyzed to confirm correlation between the field and laboratory analytical results prior to starting continuous discharge. Samples would be collected every four hours for the first two or three days. Once the system has stabilized and consistently meets regulatory requirements for water licence parameters, notification would be provided, and direct discharge would commence. An AMEC EIT will be on site during the treatment program to ensure that the system is operating properly and that compliance of final effluent is met.

Start-up of the treatment system is anticipated as early as June 28. This letter fulfills the requirement for notification of effluent discharge from the Milne bulk fuel storage facility as stated in Part D, Section 7 of our Water Licence 2BB-MRY0710.

We trust that the information provided herewith is sufficient to support our intention to direct discharge treated stormwater effluent from the Milne bulk fuel storage area. Please do not hesitate to contact the undersigned by e-mail at jim.millard@baffinland.com should you have any questions or require any additional information.

Yours truly.

Baffinland Iron Mines Corporation

James Millard, M.Sc., P.Geo.

Senior Environmental Superintendent

Attach: Design Basis Overview of oily water treatment system, by AMEC, dated May 2010. Process Flow Diagram for oily water treatment system by AMEC, dated May 2010.

cc: Richard Dwyer, NWB Stephen Bathory, QIA

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Project Records

TITLE:	DESIGN BASIS - OVERVIEW	DOC. NO.:	PJM-FOR-000003	REV.	0
PROJECT NAME:	Baffinland Oily Water 2010	PROJECT NO.	: TR1643		
CLIENT:	Baffinland Iron Mines	AREA NO.:	Milne Inlet		

DESIGN BASIS

1.0 INTRODUCTION

This document summarizes the design basis for the upgrades to the oily water treatment system at Baffinland Iron Mines Milne Inlet facility.

2.0 OBJECTIVES OF THE PROJECT DESIGN BASIS

This project design basis describes the criteria by which the oily water treatment system will be designed and constructed, including:

- Process description
- Necessary basic material and chemical data
- Necessary environmental and site conditions to be met
- · Major unit operations
- System infrastructure
- Operational Philosophy

3.0 PROJECT DESCRIPTION

Milne Inlet has a fuel dump for Jet A aviation fuel and P50 diesel fuel which are stored in flexible polymeric bladders. The bladders are arranged inside an earthen bermed area with a synthetic liner. The bermed area has collected seasonal stormwater and meltwater.

This stormwater is contaminated with some small amount of spilled fuels, and minor seepage from the bladders themselves. The contaminated stormwater must be treated prior to discharge to the natural environment.

In previous years, the existing treatment system was overloaded by the degree of contamination in the stormwater. This project is to provide sufficient pretreatment upstream of the existing treatment system so that the final treated water is suitable for discharge to the environment.

4.0 PROJECT OBJECTIVES

The successful design will satisfy the following requirements

- Total treatable volume 3,500,000 L
- Design flow of 30 USGPM / 114 L/min with 75% actual capacity
- 24/7 operation with 75% uptime
- Treated water must satisfy the following criteria:



Project Records

TITLE: DESIGN BASIS - OVERVIEW	DOC. NO.:	PJM-FOR-000003	REV.	0	Ī
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Parameter	units	Regulatory Limit	Design Influent Concentration
Benzene	ug/L	370	Influent below regulatory limit
Toluene	ug/L	2	15 to 225
Ethylbenzene	ug/L	90	10 to 160
Lead	ug/L	1	influent not tested
Oil & Grease	mg/L	15	200

5.0 PROCESS DESCRIPTION

The treatment process will consist of the following general unit operations:

- Oil/Water Separator
- Dissolved Air Flotation
- Nano-filtration
- Clay adsorption
- Granular activated carbon adsorption

The overall treatment process is shown in the attached drawing, *PFD-01 Process Flow Diagram*, *Oily Water System*, and briefly described in the following sections.

Oil/Water Separator

Feed water will be from one of two sources: a) remaining untreated water from the 2009 season which is contained in bladders, and b) 2010 melt water from the berm area.

Feed water will be pumped to an oil/water separator to effect the first separation of the hydrocarbon and water phases. The separator will operate under gravity with a manual overflow weir. Any free-floating will accumulate at the top of the separator tank and removed to a small tank. The decanted fuel will be pumped from the intermediate tank to a storage bladder. The water phase will flow under baffles to a small tank before being pumped to the dissolved air flotation (DAF) system.

Dissolved Air Flotation (DAF)

The existing DAF at the Mary River site, that was used for PWSP polishing during the 2009 season will be redeployed to Milne Inlet to further affect free oil and grease removal from the contaminated stormwater. At Mary River, the DAF performance was improved through the use of aluminum sulphate ("alum") as a coagulant and a polymer flocculant. The use of chemical coagulants and flocculants at Milne Inlet is not expected, although the system will have provision for chemical addition if needed.

The skimmed DAF float sludge will consist of a low-density, oil-rich foam phase that will be manually skimmed off the DAF surface to a small holding tank. The accumulated float material will be pumped to a storage bladder.

The DAF treated water will flow by gravity to the nano-filtration (NF) feed tank.

Nanofiltration (NF) Treatment

Three modular nano-filtration skids are being provided to removed emulsified oil and grease from the DAF treated water. These NF units are being provided by Techsolutions Environnement of Québec. The NF treatment is achieved through the use of a fine-pore membrane filtration process within each NF skid.



Project Records

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The NF units are fed at a high flow rate of approximately 40 usgpm each, producing a treated permeate of 10 usgpm each. The remaining 30 usgpm from each unit is returned to the NF feed tank. This recirculation causes the concentration of oil and grease in the NF feed tank to increase, and this tank must be constantly blown-down to avoid over-concentrating the oil and grease in the feed tank and risk compromising the membranes. This controlled blow-down is achieved using a "reject" pump and flowmeter.

The NF reject is pumped to a small tank before being pumped to a storage bladder.

The NF treated permeate water is discharged to the NF Effluent Tank. The tank's principal function is to act as a break tank prior to the adsorption treatment train, which are fed by a submersible pump in the tank.

Adsorbent Clay Media Bank

The existing adsorbent clay hydrocarbon treatment system will be upgraded and expanded to accommodate the volume of stormwater to be treated during the 2010 operating season. The option exists to utilize a combination of Organite and PM100 clay media. The clay media is effective at adsorbing heavy hydrocarbons such as oils and greases.

Granular Activated Carbon (GAC) Media Bank

The existing granular activated carbon (GAC) adsorption system will be upgraded and expanded to accommodate the volume of stormwater to be treated during the 2010 operating season. The GAC media is effective at adsorbing light hydrocarbons such as benzene and toluene.

Final Effluent Tank

The discharge from the GAC treatment will be directed to a final effluent tank prior to being pumped to the discharge point near Milne Inlet. This will be the sampling point for compliance purposes.

