

Project Description

The Site Preparation Project undertaking is required to ensure that the Milne Port and Mary River Mine Sites are prepared to accept equipment and supplies that will be arriving by sealift during the July to October 2013 period. The materials that will be arriving on the sealift are required for the execution of the work planned for 2013 and 2014 as approved under the existing Project Certificate (received December 28, 2012). Once the Type A Licence is issued, the activities described, herein, under the proposed Type B Licence will migrate to the Type A.

Specifically, starting on May 1, 2013, Baffinland plans to undertake the following spring-summer construction program. Descriptions of the key elements of this Project undertaking (described in the Executive Summary at Appendix 2 of this Type B Water Licence Application), cross referenced to applicable plans and reports, are provided under the headings below.

With respect to required plans, It is anticipated that the following management/monitoring plans (with current status) will be required under this licence to support the proposed facilities:

1. Borrow Pit and Quarry Management Plan – Refer to Attachment 8.e to this application.
 2. Quarry Management Plan - Milne Inlet Quarry (Q1) – Refer to Attachment 8.f to this application
 3. Spill Response Plan and Surface Water and Aquatic Ecosystems Management Plan – Updates of these plans, originally provided with the FEIS, Volume 3b, Attachment 5 will be updated by March 31, 2013 to include the proposed works.
1. Begin development of Quarry Q1 1+100 at Milne Port to generate crushed and screened aggregate for the development of the Milne Port site, and Quarry QMR2 located at the Mary River Mine Site

Refer to the following list of documents and drawings:

- 8.a - Drawing H349000-2100-10-015-0001 Milne Port Site Layout and Drainage Plan
- 8.b - Drawing H349000-2100-10-015-0001 Milne Port Preliminary Earthworks Quantities

- 8.d - Drawing H349000-4134-10-015-0001 Mine Site – Camp Infrastructure Drainage Plan
- 8.e – Updated Borrow Pit and Quarry Management Plan
- 8.f - Quarry Management Plan - Milne Inlet Quarry (Q1)

Baffinland's policies, commitments and guidance requirements for the development of borrow pits and quarries for the Mary Project are captured in the Borrow Pits and Quarry Management Plan (Attachment 8.e). This management plan provides guidelines and guidance for siting, operation, closure, monitoring and reporting obligations for all quarry developments associated with the Mary River Project. This management plan also includes a ARD/ML screening protocol for quarry sites, and, a blasting management framework for the use of explosives in quarries. All Baffinland's contractors involved in the development of borrow pits and quarries are required to comply with this management plan.

The development of quarry Q1 at Milne Port is required to generate crushed and screened aggregate for the development of the Milne Port site. The development of Q1 rock quarry will commence in early May 2013. The current planned quarry development area is estimated to produce an aggregate volume of approximately 600,000 m³ from an estimated area of 6.42 hectares. During the May to August 2013 period, approximately 200,000 m³ of aggregate will be produced for the construction of camp pads, laydowns, and fuel containment berms, Tote Road and general site maintenance, and the development of aggregate stockpiles for future use. The quarry will be accessed by the existing Tote Road, which runs adjacent to the southwest corner of the proposed quarry site. The Milne Quarry site will share the portable crushing equipment currently located at the Mary River Camp Mine Site. A heavy lift aircraft will deliver to the site approximately 200,000 kg of prepackaged emulsion explosives and two drills to be used for quarry development. The plan is to have a small storage area in magazine(s) adjacent to the Tote Road, 13 km from Milne Port camp, with the bulk of the explosives being stored at explosive magazines located at the Mine Site. This plan awaits the final approval of the Nunavut Mines Inspector. These same locations were used for the storage of explosives used for the bulk sample program in 2007 and 2008.

Equipment to be used for the quarry operation will include:

- A portable crushing, screening and cleaning plant (delivered via the Milne Inlet Tote Road from the Mine Site)
- Three (3) blasthole drills with blasting gear
- Two (2) Rock loading trucks

- Four (4) Haul trucks
- Two (2) Front end loaders
- One (1) Excavator

A quarry specific management plan (Q1 Quarry Management Plan, Appendix 8.f) has been developed for the Milne Inlet Quarry Q1. The Milne Inlet Quarry Q1 Management Plan demonstrates how the commitments captured in the “Borrow Pits and Quarry Management Plan” will be implemented for the development of Q1 quarry. The plan includes a consultant’s assessment report on the potential for acid rock drainage of the quarry material, the quarry contractors Blasting Operational Management Plan, and a quarry drainage plan.

The development of Quarry QMR2 is required to generate crushed and screened aggregate for the development of the Mary River Mine Site. The development of QMR2 rock quarry will commence in August 2013. A site specific Quarry Management Plan, originally provided in the FEIS (Volume 3, Appendix 3B, Attachment 6: Operation and Management Plan Mary River Mine Site Quarry) will be updated and submitted prior to quarry operations. The surface area of the quarry is 252,700 m² and the total volume of material to be extracted is approximately 538,000 m³. During August 2013, it is expected that approximately 20,000 m³ of aggregate will be produced. The equipment list will be very similar to the Milne Inlet Q1 Quarry.

2. Construct camp facility pads at both the Mary River Mine Site and at the Milne Port site, as well as begin installation of construction camps and associated camp facilities
3. Begin development of two laydown areas (laydowns A and B) at Milne Port for the storage of equipment and supplies being delivered via the summer sealifts

Refer to the following list of drawings:

- 8.a Drawing H349000-2100-10-015-0001 Milne Port Site Layout and Drainage Plan
- 8.b Drawing H349000-2100-10-015-0001 Milne Port Preliminary Earthworks Quantities.
- 8.c Drawing H349000-2735-10-035-0001 Milne Port – Off Spec Effluent Pond (PWSP)
- 8.d Drawing H349000-4134-10-015-0001 Mine Site – Camp Infrastructure Drainage Plan

At Milne Port, the following laydown areas and camp pads will be developed, using approximately 200,000 m³ of quarried rock fill from Milne Inlet Q1 Quarry. In addition, there will also be a requirement for approximately 16,000 m³ of borrowed material (sand and gravel) to be obtained from existing nearby borrow pits that are presently permitted under an existing QIA Quarry Concession Agreement.

- Laydown A1 – Earthworks contractor yard.
- Laydown B1 – Mixed usage.
- Camp Infrastructure Pad B2 – For site facilities including Accommodations complex, Emergency Response office and garage, Sewage treatment plant, Potable water treatment facility, waste management facility.
- Site Facilities Pad B3 – For Maintenance/Warehouse building, Welding shop, Offices.

A drainage plan has been developed for Milne Port site to accommodate the construction to be undertaken during the May to August period.

At the Mary River Mine Site the accommodations camp pad, access driveway, and parking lot is to be constructed. A preliminary drainage plan has been developed showing the approximate location of the pad and QMR2 quarries which is a likely candidate source of aggregate material. When the final location of the accommodations camp pad and access roads are finalized, an updated site drainage plan will be provided along with estimated quantity of quarried/borrowed material that will be required. The current preliminary estimate for aggregate requirements is approximately 26,000 m³.

Equipment that will be required for the camp pad and laydown construction will include:

- One (1) D8 track-type dozer
- One (1) rubber tired motor grader
- One (1) D4 track-type tractor-dozzer
- Four (4) x 20 Ton Tri Axles Dump Truck
- One (1) x 10 Ton Drive on Packer.

4. Expand existing camp sewage facilities (additional PWSP pond) at Milne Port that will provide additional capacity with respect to the sewage treatment system.

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- 8.c - Drawing H349000-2735-10-035-0001 Milne Port – Off Spec Effluent Pond (PWSP)

A second polishing waste stabilization pond (PWSP) for off-spec treated sewage will be constructed at Milne Port in preparation for larger off-specification sewage treatment capacity during construction ramp up. The PWSP has a capacity of approximately 1080 m³ which will expand on the capacity of the existing 600 m³ of off-spec pond storage. Approximately 4000 m³ Borrow sand and gravel from nearby permitted pits will be used for the construction of this facility.

Equipment that will be required for the PWSP construction includes the following:

- One (1) D4 track-type tractor-dozer
- One (1) 320 Excavator
- One (1) Bob Cat
- Four (4) x 20 Ton Tri Axle Dump Trucks
- One (1) x 10 Ton Drive on Packer.

5. Expand existing fuel tank secondary containment area at Milne Port and construct one additional 5ML diesel fuel storage tank at Milne Port within the existing secondary containment constructed in 2011 (same construction as the existing 5 ML tank)

Refer to the following list of drawings:

- 8.a - Drawing H349000-2100-10-015-0001 Milne Port Site Layout and Drainage Plan
- 8.b - Drawing H349000-2100-10-015-0001 Milne Port Preliminary Earthworks Quantities.
- 8.i - Drawing H349000-2613-10-014-0002 Milne Port Bulk Fuel Storage - Site Grading Plan
- 8.j - Drawing H349000-2613-10-035-0001 Milne Port Bulk Fuel Storage - Dyke Sections
- 8.k - Drawing H349000-2613-10-035-0002 Milne Port Bulk Fuel Storage - Sections Through Truck Loading Area
- 8.l - Drawing H349000-2613-10-035-0003 Milne Port Bulk Fuel Storage – Tank Pad Details

- 8.m - Drawing H349000-2613-10-035-0004 Milne Port Bulk Fuel Storage – Dyke Sections and Details

An additional fuel containment berm will be constructed north of the existing berm where a 5 ML fuel tank was constructed in 2011. A second five (5) ML fuel tank will be constructed within the existing containment and adjacent to the existing five (5) ML tank for storage of P-50 diesel. The additional fuel containment berm will eventually accommodate 4 x ten (10) ML tanks (for P-50 diesel) and four additional pre-fabricated 750,000 L tanks that will be used to store Jet-A fuel. The scope of this project involves the construction of a single additional fuel tank (five (5) ML) within existing constructed fuel berm and the construction of the additional fuel berm. Please note that the four (4) additional ten (10) ML tanks will be constructed later in 2013 after the issuance of the Type A licence. In addition, the proposed tanks will receive fuel later in the summer after the Type A Licence for the Project has been issued. Total aggregate required for this project is approximately 40,000 m³ of combined quarried rock from Milne Inlet Q1 quarry and borrow material obtained from nearby sand and gravel borrows that are already permitted.

Equipment that will be required for the fuel tank and fuel containment berm expansion:

- One (1) D8 track-type tractor dozer
- One (1) D4 track-type tractor dozer
- Four (4)x 20 Ton Tri Axles Dump Truck
- One (1) x 10 Ton Drive on Packer.