Type 'A' Water Licence Amendment

Attachment 3: Supplementary Technical Information for changes at the Mine Site subject to this Amendment

1. Introduction

This attachment includes details of any changes based on the approved Early Revenue Phase (ERP) at the Mine Site as they relate to the Type 'A' Water Licence 2AM-MRY1325 amendment application. These changes include:

1.1 Fuel Storage

The Project Certificate No.005, as amended by the Nunavut Impact Review Board (NIRB) on May 28, 2014, and the existing Type 'A' water licence 2AM-MRY1325 authorizes Baffinland to proceed with additional activities as outlined in the 'Early Revenue Phase' (ERP) of the Mary River Project. These authorizations includes the full development of the Mine Site. However, by proceeding with a phased development approach for the Mary River Project, the life span of some of the temporary facilities (transitional construction camp, buildings, and fuel storage) will be longer than originally intended. Baffinland wishes to recognize the longer use of these facilities in the application to amend the Type 'A' Water Licence 2AM-MRY1325.

There are currently four five hundred thousand (500,000) Litre fuel tanks located at the Mine site which are considered to be transitional facilities used to support construction activities. Baffinland is now requesting that these transitional facilities be carried over and be used during Operations. These existing fuel tanks were built in accordance with the the Fuel Storage and Distribution System Design Criteria H337697-000-50-122-0002 and Technical Specification Fuel Systems Field Erected Tanks, Piping and Equipment H337697-CM138-011000 approved under the existing Type 'A' Water Licence 2AM-MRY1325**.** Refer to **Mary River Mine Site Spill Contingency Layout H349000-4000-00-015-0015** for fuel tank locations and refer to the list of IFC drawings submitted to the NWB on 26 July 2013.

- H349000-4613-10-014-0001 Mine Site – Site General Arrangement Rev 1
- H349000-4613-50-035-0001 Mine Site – 500,000 L Diesel Storage Tank – TK-001 Rev 1
- H349000-4613-50-035-0002 Mine Site – 500,000 L Diesel Storage Tank – TK-002 Rev 1
- H349000-4613-50-035-0003 Mine Site – 500,000 L Diesel Storage Tank – TK-003 Rev 1
- H349000-4613-50-035-0004 Mine Site – 500,000 L Diesel Storage Tank – TK-004 Rev 1
- H349000-4613-60-012-0001 Mine Site – Piping Plan and Sections Rev 1
- H349000-4613-60-012-0002 Mine Site – Piping Plan and Sections Rev 1
- H349000-4613-60-035-0001 Piping Details Rev 1
- H349000-4613-60-035-0002 Pipe and Cable Tray Support Details Rev 1
- H349000-4613-60-035-0003 Mine Site – Pipe and Cable Tray Support – Plan, Sections and Details Rev 0
- H349000-4613-60-042-0001 Mine Site – Piping General Arrangement Rev1

1.2 Treated Sewage Effluent Discharge Location to Mary River

Once sampling/analyses indicates that sewage effluent meets discharge criteria, the following operations will be conducted. During the winter, treated effluent from the STP that meets discharge requirements is discharged by pipeline or trucked to one of two designated winter discharge locations. The discharged effluent will freeze in a side depression to the main Mary River channel and then drain by gravity directly into Mary River. During the summer the treated effluent from the STP will be discharged directly from the treated effluent pond into a natural drainage (non fish-bearing habitat) that discharges directly into Mary River. Rip rap will be placed at discharge locations as required to dissipate energy and reduce erosion at the discharge location or along the drainages upstream of Mary River. The discharge strategy will be reviewed annually and optimized as necessary. Refer to **Mine Site Layout H349000-4000-00-015-0002** for discharge location**.**

Additional details for the on land discharge locations please refer to Section 5.4.2 and Table 5.3 (coordinates) of the Freshwater Supply Sewage and Wastewater Management Plan (BAF-PH1-830-P16-0010) submitted in with the Annual Report in March 2014.

These on land discharge locations (summer and winter) that drain into Mary River have also been assessed in the Aquatic Affects Monitoring Plan (AMEP) BAF-PH1-830-P16-0039 submitted to the NWB on June 27th 2014. Refer to figures 3.1 and 3.2 in the recently submitted AEMP for locations of both hydrological and surveillance monitoring locations at the Mine Site.

1.3 Revised Site Drainage

The Mine Site Drainage has been updated to reflect any changes as a result of the approved ERP. The updated site drainage plans were included in the project Surface Water and Aquatic Ecosystem Management Plan (BAF-PH1-830-P16-0026) submitted to the board with the Annual Report in March 2014. Refer to Mine Site West Sheet Drainage Plan H349000-4138-10-015-0006 and Mine Site East Sheet Drainage Plan H349000-4100-10-015-0001.

2. Document List

The drawings which provide details to support the changes identified above are listed in the table below:

Document Title	Document Number	Description
Site Layouts and Engineering Drawings		
Mine Site Layout	Fig 3-2.7	Site Layout submitted in the ERP Addendum to the Final Environmental Impact Assessment. Layout shows camp location, ancillary buildings and all other approved ERP facilities.
Mary River Mine Site Spill	H349000-4000-00-015-0015	Mary River Mine Site Layout showing location of the 4*500,000L fuel tanks built during 2013. This layout was presented in the Spill

Document Title	Document Number	Description
Site Layouts and Engineering Drawings		
Contingency Layout		Contingency Plan BAF-PH1-830-P16 -00 36 submitted with the Annual Report in 2014
Mine Site Layout	H349000-4000-00-015-0002	Site Layout provided in the project Freshwater Supply Sewage and Waste Water Management Plan BAF-PH1-830-P16-0010. Layout shows the location of the camp**,** sewage treatment, ancillary facilities and the summer and winter sewage effluent discharge locations on land near Mary River at the Mine Site.
Mine Site West Sheet Drainage Plan	H349000-4138-10-015-0006	As a result of the ERP infrastructure the updated Mine Site Drainage drawings were provided to the NWB in the updated Surface Water and Aquatic Ecosystem Management Plan (BAF-PH1-830-P16-0026) submitted with the Annual Report in March 2014.
Mine Site East Sheet Drainage Plan	H349000-4100-10-015-0001	As a result of the ERP infrastructure the updated Mine Site Drainage drawings were provided to the NWB in the updated Surface Water and Aquatic Ecosystem Management Plan (BAF-PH1-830-P16-0026) submitted with the Annual Report in March 2014.

2.1 Management Plan

The management plans submitted to the Board for approval on March 31, 2014 already take into account the above installations. No revisions to the management plans are required.

For additional details on the Sewage Treatment Plants at Mine Site, along with the sewage effluent discharge locations please refer to the Freshwater Supply Sewage and Wastewater Management Plan (BAF-PH1-830-P16-0010) Section 5.4.2 and Table 5.3 submitted in with the Annual Report in March 2014.

For additional details on surface water management and drainage please refer to the updated Surface Water and Aquatic Ecosystem Management Plan (BAF-PH1-830-P16-0026) submitted with the Annual Report in March 2014.