June 2017

AGNICO EAGLE

WHALE TAIL PIT PRE-DEVELOPMENT TYPE B WATER LICENCE

Main Application Supporting Document

Submitted to:
Nunavut Water Board
P.O. Box 119
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EXECUTIVE SUMMARY

On June 30th, 2016 Agnico Eagle filed amendment applications to the Nunavut Impact Review Board (NIRB) and Nunavut Water Board (NWB) for development of the Whale Tail Pit and Haul Road Project (the Project). A joint coordinated review of the Final Environmental Impact Statement (FEIS) and Type A Water Licence Application are ongoing pending final ministerial approval. Project development scheduling and implementation in Nunavut is dependent upon and restricted by the seasonal sea lift to support mobilization of supplies and equipment. Proponents may have to wait up to a year to receive a Type A Water Licence before starting construction of a Project under review by NIRB and NWB; this additional time can have a significant impact on the overall project schedule.

The regulatory framework provided in the Nunavut Land Claims Agreement (NLCA) and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSRTA or Act) allows for interim, short-term approvals for water uses related to exploration or development work for a proposal under development impact review. The NWB is not restricted from issuing an interim, short-term period water license for development work related to the Project provided the scope of works being considered for development works are being considered by the NIRB as part of the review of the Project.

Agnico Eagle has identified the following specific pre-development (site preparation) activities that may be beneficial in accelerating the overall Project schedule:

- construction of a pad for the permanent camp;
- installation of pilings for the permanent camp and infrastructure;
- start of work on concrete foundations;
- construction of necessary service roads to undertake the other pre-development activities;
  - road between Quarry 2 and Waste Rock Storage Facility (WRSF)
  - a road and one culvert between exploration camp and proposed Nemo freshwater intake
  - a road between exploration area and new road between Quarry 2 and the WRSF
  - upgrade/widen Whale Tail Pit haul road from 6.5m wide to 9.5m plus bypasses.
- stripping of open pit(s) (overburden and waste rock), use of quarry material for construction and ore/waste rock stockpiling;
  - quarrying at Quarry 2
  - dike construction material stockpiling and preparation (i.e., WRSF Dike construction material preparation (crushing, stock piling on West and East side of the dike);
- construction of waste rock berms;
- construction of the Whale Tail Bulk Fuel Storage Facility;
- piping and pump preparation for dewatering (i.e., roads, pads, water treatment plant);

- turbidity curtain installation;
- construct Mammoth Channel crossing in March 2018 ; and
- pre-delivery of material (i.e., equipment, material, and fuel).

By implementing a pre-development permitting approach Agnico Eagle, and the Project, could yield substantial scheduling gains considering the short construction season in the Arctic. The securing of a Type B Pre-development Water Licence would allow construction, site preparation, and mobilization work to be initiated, while awaiting the Type A Water Licence. Of utmost importance to the Project, it would allow for the Whale Tail Dike material preparation, approval of the Whale Tail Dike Design, and allow the opportunity to have a full open water season of construction, allowing for production in 2019 and reducing the gap between the closure of Meadowbank and start of Whale Tail Pit operations. This is a similar approach to pre-development work previously approved at the Meadowbank and the Meliadine mines.

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ᔫᓂ 2016-ᒥᑦ ᐊᒃᓃᑯᒃᑯᑦ ᑐᓂᓯᓚᐅᖅᑐᑦ ᐋᖅᑭᒋᐊᖅᓯᓂᕐᒧᑦ ᑐᒃᓯᕋᐅᑎᒥᒃ ᐊᕙᑎᓕᕆᔨᒃᑯᓐᓄᑦ ᐊᒻᒪᓗ ᓄᓇᕗᒻᒥ ᐃᒪᓕᕆᔨᒃᑯᓐᓄᑦ Whale Tail ᓄᓇᒥᑦ ᐃᓗᑦᑐᖅᓯᒪᔪᕐᒥᑦ ᐱᕙᓪᓕᐊᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐅᓯᑲᑦᑕᖕᓂᕐᒧᑦ ᐊᑉᕐᑯᑎᒧᑦ ᐱᓕᕆᐊᕐᒥᑦ (ᐱᓕᕆᐊᖅ). ᐱᓕᕆᖃᑎᖃᕐᓂᒃᑯᑦ ᕿᒥᕐᕈᓂᖅ ᑭᖑᓪᓕᖅᐹᖅ ᐊᕙᑎᒥᒃ ᐊᒃᑐᖅᓯᓂᕐᒧᑦ ᑎᑎᖅᑲᒥᒃ ᐊᒻᒪᓗ Type A ᐃᒪᕐᒧᑦ ᓚᐃᓴᓐᓯᒧᑦ ᑐᒃᓯᕋᐅᑎᒥᒃ ᑲᔪᓯᔪᑦ ᐅᑕᖅᑭᑉᓗᑎᒃ ᑭᖑᓪᓕᖅᐹᒃᑯᑦ ᒥᓂᔅᑕᒧᑦ ᓈᒻᒪᒋᔭᐅᓂᕐᒧᑦ ᐱᓕᕆᐊᖅ. ᐱᓕᕆᐊᕐᒥᑦ ᐱᕙᓪᓕᐊᓂᖅ ᖃᖓᒃᑰᓕᕆᓂᖅ ᐊᒻᒪᓗ ᐊᑐᓕᖅᑎᑕᐅᓂᖓ ᓄᓇᕗᒻᒥᑦ ᐊᑐᖅᑐᖅ ᐊᒻᒪᓗ ᑭᓪᓕᖅᑲᖅᓱᓂ ᓯᑲᐅᒃᑯᖅᑐᓂᒃ ᐊᐅᓚᓐᓂᕐᒧᑦ ᐱᕐᑯᑏᑦ. ᐱᓕᕆᐊᓖᑦ ᐅᑕᖅᑭᑐᐃᓐᓇᕆᐊᖃᖅᑐᑦ ᐅᑭᐅᒥᑦ ᐊᑕᐅᓯᕐᒥᑦ Type A ᐃᒪᕐᒧᑦ ᓚᐃᓴᓐᓯᒥᒃ ᓴᓇᕙᓪᓕᐊᓂᐊᕌᖅᑎᓪᓗᒋᑦ ᐱᓕᕆᐊᕐᒥᑦ ᕿᒥᕐᕈᔭᐅᔪᒥᒃ ᐊᕙᑎᓕᕆᔨᒃᑯᓐᓄᑦ ᐊᒻᒪᓗ ᓄᓇᕗᒻᒥ ᐃᒪᓕᕆᔨᒃᑯᓐᓄᑦ: ᑖᓐᓇ ᐱᕕᒃᑲᓐᓂᕐᒥᒃ ᐃᓚᓯᓂᐅᔪᖅ ᐊᖏᔪᒥᒃ ᐊᒃᑐᖅᓯᓂᖃᖅᑐᖅ ᑕᒪᐃᓐᓅᖓᔪᒥᒃ ᐱᓕᕆᐊᑉ ᖃᖓᒃᑰᕋᔭᕐᓂᖓᓂᒃ.

ᒪᓕᒐᓕᕆᓂᐅᔪᑦ ᑐᓂᔭᐅᔪᑦ ᓄᓇᕗᑖᕐᓂᕐᒧᑦ ᐊᖏᖃᑎᒌᒍᑎᒥᑦ ᐊᒻᒪᓗ *ᓄᓇᕗᒻᒥ ᐃᒪᐃᑦ ᐊᒻᒪᓗ ᖄᖓᓂᑦ ᐱᔪᓐᓇᐅᑎᓕᕆᓂᕐᒧᑦ ᐱᕐᑯᓯᖅ*–ᒥᑦ ᐱᔪᓐᓇᖅᑎᑦᑎᓚᐅᑲᒃᑐᑦ, ᓇᐃᑦᑐᒥᒃ ᓈᒻᒪᒋᔭᐅᔪᓂᒃ ᐃᒪᕐᒥᒃ ᐊᑐᕐᓂᕐᒧᑦ ᕿᓂᖅᓴᐃᓂᕐᒨᖓᔪᓄᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐱᕙᓪᓕᐊᓂᕐᒧᑦ ᑐᒃᓯᕋᐅᑕᐅᔪᒧᑦ ᒪᓕᒃᓱᒍ ᐱᕙᓪᓕᐊᓂᕐᒥᑦ ᐊᒃᑐᖅᓯᓂᕐᒧᑦ ᕿᒥᕐᕈᓂᖅ. ᓄᓇᕗᒻᒥ ᐃᒪᓕᕆᔨᒃᑯᑦ ᑭᒡᓕᖃᙱᑦᑐᑦ ᑐᓂᓯᓂᕐᒧᑦ ᐱᔪᓐᓇᖅᑎᑦᑎᓚᐅᒃᑲᓐᓂᕐᒥᒃ, ᓇᐃᑦᑐᒥᒃ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᒥᒃ ᐃᒪᕐᒧᑦ ᓚᐃᓴᓐᓯᒥᒃ ᐱᓕᕆᕙᓪᓕᐊᓂᕐᒧᑦ ᐱᔾᔪᑎᖃᖅᑐᒥᒃ ᐱᓕᕆᐊᕐᒧᑦ ᖃᓄᐃᓕᐅᕐᓂᐊᕐᓂᐅᔪᓄᑦ ᑐᕌᖓᔪᑦ ᐱᓕᕆᕙᓪᓕᐊᓂᕐᒧᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᓕᔭᐅᔪᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᓐᓄᑦ ᐃᓚᒋᔭᐅᑉᓗᓂ ᐱᓕᕆᐊᕐᒥᒃ ᕿᒥᕐᕈᓂᕐᒧᑦ.

ᐊᒃᓃᑯᒃᑯᑦ ᐃᓕᑕᖅᓯᓚᐅᖅᑐᑦ ᐅᑯᓂᙵᑦ ᐱᔾᔪᑎᖃᖅᑐᓂᒃ ᐱᓕᕆᕙᓪᓕᐊᓂᐊᕌᖅᑎᓪᓗᒋᑦ (ᐃᓂᐅᔪᒥᒃ ᐸᕐᓇᐃᓂᖅ) ᐃᑲᔪᐃᓂᖃᕈᓐᓇᖅᑐᑦ ᐱᒋᐊᖅᑎᑦᑎᓂᕐᒧᑦ ᖃᖓᒃᑰᖓᓂᐊᕐᓂᕆᔭᐅᔪᒥᒃ.

- ᓴᓇᔭᐅᓂᖓ ᑐᙵᕕᒃ ᓄᓇᓕᐊᕌᕆᔭᐅᖏᓐᓇᖅᓂᐊᖅᑐᒥᑦ;
- ᐃᓕᐅᖅᑲᖅᑕᐅᓗᑎᒃ ᖃᓕᓈᓖᑦ ᓄᓇᓕᐊᕌᙳᐃᓐᓇᖅᓂᐊᖅᑐᒧᑦ ᐊᒻᒪᓗ ᐱᕐᑯᑎᓄᑦ;
- ᕿᕐᑯᓕᖅᑐᐃᕙᓪᓕᐊᓗᓂ ᑐᙵᕕᒃᓴᓂᒃ;
- ᓴᓇᔭᐅᓗᑎᒃ ᐊᑉᕐᑯᑏᑦ ᐊᓯᖏᓐᓂᒃ ᐱᕙᓪᓕᐊᒋᐊᕌᕐᓂᕐᒧᑦ ᖃᓄᐃᓕᐅᕐᓂᐅᔪᓄᑦ;
  - ᐊᑉᕐᑯᑎᒥᒃ ᐊᑯᓐᓂᖏᓐᓂᑦ ᓄᓇᒥᑦ ᐃᓗᑦᑐᖅᓯᒪᔫᑉ 2 ᐊᒻᒪᓗ ᐊᒃᑕᑰᖅᑕᐅᔪᑦ ᐅᔭᖅᑲᓄᑦ ᑐᖅᑯᖅᓯᓯᒪᕝᕕᐅᑉ
  - ᐊᑉᕐᑯᑎᒥᒃ ᐊᒻᒪᓗ ᐊᑕᐅᓯᕐᒥᒃ ᓱᑉᓗᓕᖕᒥᑦ ᐊᑯᓐᓂᖏᓐᓂᑦ ᕿᓂᖅᓴᐃᓂᕐᒧᑦ ᓄᓇᓕᐊᕌᑉ ᐊᒻᒪᓗ ᓃᒨ ᐃᒪᑦᑎᐊᕙᖕᒥᑦ ᐱᕝᕕᐅᓂᐊᖅᑐᖅ ᑕᓯᐅᑉ
  - ᐊᑉᕐᑯᑎ ᐊᑯᓐᓂᖏᓐᓂᑦ ᕿᓂᖅᓴᐅᕝᕕᐅᔫᑉ ᐃᓂᖓᓂᑦ ᐊᒻᒪᓗ ᓄᑖᖅ ᐊᑉᕐᑯᑎ ᐊᑯᓐᓂᖏᓐᓂᑦ ᐃᓗᑦᑐᖅᓯᒪᔫᑉ 2 ᐊᒻᒪᓗ ᐊᒃᑕᑰᖅᑕᐅᔪᑦ ᐅᔭᖅᑲᓄᑦ ᑐᖅᑯᖅᓯᓯᒪᕝᕕᐅᑉ
  - ᓄᑖᙳᖅᑎᕐᓗᒍ/ᓯᓚᒃᓯᒋᐊᕐᓗᒍ Whale Tail ᓄᓇᒥᑦ ᐃᓗᑦᑐᖅᓯᒪᔪᕐᒥᑦ ᐅᓯᑲᑦᑕᖕᓂᕐᒧᑦ ᐊᑉᕐᑯᑎ 6.5–ᒦᑕᒥᑦ 9.5-ᒦᑕᒧᑦ ᐃᓚᐅᓗᑎᒃ ᐊᓯᖏᑦ ᐊᑉᕐᑯᑏᑦ.
- ᐲᔭᐃᓗᓂ ᐅᒃᑯᐃᖓᔪᓂᑦ ᓄᓇᒥᑦ ᐃᓗᑦᑐᖅᓯᒪᔪᕐᒥᑦ(ᓂᑦ) (ᐅᖓᑕᐅᑦᑎᔪᑦ ᐊᒻᒪᓗ ᐊᒃᑕᑰᖅᑕᐅᔪᑦ ᐅᔭᖅᑲᐃᑦ), ᐊᑐᕐᓗᒋᑦ ᐃᓗᑦᑐᖅᓯᒪᔪᓂᙶᖅᑐᑦ ᓴᓇᔭᐅᕙᓪᓕᐊᑎᓪᓗᒋᑦ ᐊᒻᒪᓗ ᐅᔭᖅᑲᐃᑦ ᐅᔭᕋᖕᓂᐊᖅᑕᐅᔪᑦ/ᐊᒃᑕᑰᖅᑕᐅᔪᑦ ᐅᔭᖅᑲᐃᑦ ᑲᑎᑕᐅᔪᑦ;
  - ᐲᔭᐃᓂᖅ ᓄᓇᒥᑦ ᐃᓗᑦᑐᖅᓯᒪᔪᖅ 2–ᒥᑦ
  - ᑰᒡᕕᓕᐅᕐᓗᓂ ᐊᒻᒪᓗ (ᐱᓕᕆᐊᕆᓗᒋᑦ (ᐅᔭᖅᑲᓂᒃ ᐊᒃᑕᑰᖅᑕᐅᔪᓂᑦ ᑐᖅᑯᖅᓯᓯᒪᕝᕕᖕᒥᑦ ᑰᒡᕕᓕᐅᕐᓗᓂ, ᓯᖅᑲᓪᓕᑎᓇᓗᓂ, ᐊᑕᐅᓯᕐᒧᑦ ᑲᑎᓪᓗᒋᑦ ᐱᖓᖕᓇᖓᓂᑦ ᐊᒻᒪᓗ ᑲᓇᖕᓇᖓᓂᑦ ᑰᒡᕕᐅᑉ);
- ᓴᓇᔭᐅᓂᖓ ᐊᒃᑕᑰᖅᑕᐅᔪᓄᑦ ᐅᔭᖅᑲᐃᑦ ᓴᓂᕋᖕᒥᑦ;
- ᓴᓇᔭᐅᓂᖓ Whale Tail–ᒥᑦ ᐅᖅᓱᐊᓘᓯᕝᕕᒃ;

- ᓄᓇᓕᓐᓂᒃ ᐊᒻᒪᓗ ᑯᐃᖅᑕᐃᔨᐸᑎᓕᐅᖏᓕᓗ (ᓄᓇᖃᓗ ᐊᐢᖏᑎᑦ, ᑐᖓᒐᐃᑦ, ᐃᒪᓕᕆᓂᖅᐳ);
- ᒪᕐᖃᓗᐊᖅᑕᐃᓕᓴᐸᑎᓂᐳ ᑕᓗᓂᐳ ᐃᓕᐅᖅᑲᐃᓗᓂ;
- Mammoth–ᒥᑦ ᓄᓇᓗᒥᑦ ᐃᐱᑭᑎᓕᐅᖏᓕᓗ ᒧᑦᓯ 2018–ᒥᑦ; ᐊᒻᒪᓗ
- ᐱᕐᑯᑎᓂᐳ ᐊᒃᓴᖅᑕᐅᓂᐊᖅᑐᓕᐅᖏᓕᓗ (ᓄᓇᖃᓗ ᐱᕐᑯᑎᑦ, ᐊᑐᖅᑕᐅᓂᐊᖅᑐᑦ, ᐊᒻᒪᓗ ᐅᖅᓄᓇᓗᓴᐳ).

ᐊᑐᓕᐢᓗᓂ ᐱᓂᓕᓕᓂᐊᓵᖅᑎᓕᓗᒋᑦ ᐱᓇᖅᓇᖅᑎᑕᐅᓂᕆᖓᓚᐅᒋᑦ ᐊᒃᓄᓂᑯᓂᓴᓂ, ᐊᒻᒪᓗ ᐱᓕᕆᐊᖅ, ᐱᓇᖅᓇᖅᑐᑦ ᐊᖏᕐᐸᒥᐳ ᖃᖅᖏᑲᑯᖅᖏᓂᐳ ᐱᐅᐳᖅᓇᖅᑐᓂᐳ ᓇᐃᑦᑐᓂᓕᐊᖅᑎᓕᓗᒍ ᐱᓇᓂᕕᖅᓇᖅᓂᖅ ᐅᑭᐅᖅᑕᖅᑐᒥᑦ ᐊᑐᓂ ᐅᑭᐅᖅᓯᒪᓕᖅᓂ. ᓇᓗᓇᑭᖅᓂᕐᓗᓂ ᐱᓂᐊᐢᓗᒍ Type B ᐱᓕᕆᓂᐊᒋᐊᕐᓂᐊᓴᖅᑎᓕᓗᒋᑦ ᐃᒪᐢᒧᑦ ᓪᓚᐱᖅᓯᒪᔪᖅ ᓴᓇᓕᕆᓂᐊᒋᐊᖅᑎᑎᕐᓂᔪᖅᓇᖅᑐᖅ, ᐃᓂᐅᔪᒥᑦ ᐸᐢᖏᓂᑦ ᐊᐅᓂᐊᖅᑐᒥᑦ, ᐊᒻᒪᓗ ᐊᐅᓪᓚᕆᐳᑎᑎᓗᒍ Type A ᐃᒪᐢᒧᑦ ᓪᓚᐱᖅᓯᒪᔪᐳ. ᐱᓕᒪᓐᐅᓂᖅᓯᖓᔪᖅ ᐱᓂᓐᐊᐢᒧᑦ, ᐱᒋᐊᖅᐸᓪᓕᐊᑎᑎᓐᓇᔭᖅᑐᖅ Whale Tail-ᒥᑦ ᓄᓇᓕᐅᕐᓂᐢᒧᑦ ᐊᑐᐢᓂᐊᖅᑐᓂᐳ ᐱᓂᓐᐊᖃᖅᓂᕆᐳ ᐊᒻᒪᓗ ᐊᐅᔭᐳᑯᑦ ᓴᓇᓕᓪᓕᐊᓂᕆᐳ, ᐱᓕᕆᓂᐊᒋᐊᖅᑎᑎᓂᑎᓗᓂ 2019–ᒥᑦ ᐊᒻᒪᓗ ᒥᐳᓪᒋᐊᕐᓂᑦ ᐱᑕᖃᖅᑭᓚᓂᐅᔪᑦ ᐊᑯᓚᓂᖅᑭᓚᓂᑦ ᐅᐳᑯᐊᕐᓂᖅᓱᑕ ᐊᐅᖅᑎᓚᓇᖅᑑᐸ ᐊᒻᒪᓗ ᐱᒋᐊᕐᓗᒍ Whale Tail ᓄᓇᒥᑦ ᐃᓗᓪᑐᐃᖅᑎᑎᓂᒋᑦ ᐊᐅᓇᖅᑎᑎᓂᐅᓂᑦ. ᑕᒪᓇ ᐊᐳᕆᔨᖅᓚ ᐊᑐᖅᑕᐅᔪᖅ ᐱᓕᕆᓂᐊᓵᖅᑎᓕᓗᒋᑦ ᓇᓚᒪᕆᐅᔪᓯᒪᓂᐳᑐᑦ ᐊᐅᖅᑎᓚᓇᖅᑑᐸᑦ ᐊᒻᒪᓗ ᑕᓯᕐᔪᐊᖏᑦ ᐅᓴᖅᓂᓕᐊᕐᐃᓐᓇᓂ.

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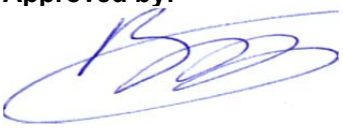
APPENDICES

DOCUMENT CONTROL

Version	Date	Section	Page	Revision
1	Feb/2017	All	All	Comprehensive Type B Pre-development Application

Prepared by:
Agnico Eagle Mine Limited and Golder Associates Ltd.

Approved by:



Ryan Vanengen, MSc. – Amaruq Permitting Lead

Agnico Eagle Mines: Meadowbank Division

ABBREVIATIONS, ACRONYMS, AND UNITS

Agnico Eagle	Agnico Eagle Mines Limited
AEAR	Amaruq Exploration Access Road
AER	Alberta Energy Regulator
AESRD	Alberta Environment and Sustainable Resource Development
ARD	Acid Rock Drainage
AWAR	All-weather Access Road
CAC	Criteria Air Contaminant
CDWQC	Canadian Drinking Water Quality Guidelines
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CRP	Closure and Reclamation Plan
Cumberland	Cumberland Resources Limited
CWQC	Canadian Water Quality Guidelines
dBA	Decibel
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment
EPMP	Environmental Protection and Monitoring Plan
FEIS	Final Environmental Impact Statement
GDP	Gross Domestic Product
HTO	Hunter and Trapper Organization
IDS	Interdisciplinary System
IIBA	Inuit Impact Benefit Agreement
IOL	Inuit Owned Land
KIA	Kivalliq Inuit Association
Km	Kilometre
km^2	square kilometre
LSA	Local Study Area
M	Metre
m^3	cubic metre
m^3/day	cubic metre per day
ML	Metal Leaching
MOE	Ministry of Environment
MSDS	Material Safety Data Sheet
Mt	million tonne
NBS	Nunavut Bureau of Statistics
NIRB	Nunavut Impact Review Board
NLCA	Nunavut Land Claims Agreement
NNLP	No Net Loss Plan
NPC	Nunavut Planning Commission

ABBREVIATIONS, ACRONYMS, AND UNITS

NTI	Nunavut Tunngavik Inc.
NWB	Nunavut Water Board
NWNSRTA	*Nunavut Waters and Nunavut Surface Rights Tribunal Act*
Project	Whale Tail Pit and Haul Road Project
RSA	Regional Study Area
TSF	Tailings Storage Facility
TSS	Total Suspended Solids
WRSF	Waste Rock Storage Facility
WWTS	Wastewater Treatment System

1.0 INTRODUCTION

Agnico Eagle Mines Limited – Meadowbank Division (Agnico Eagle) is proposing to develop Whale Tail Pit, a satellite deposit located on the Amaruq property, to continue mine operations and milling at Meadowbank Mine. The Amaruq property is a 408 square kilometre (km^2) site located on Inuit Owned Land (IOL) approximately 150 kilometres (km) north of the hamlet of Baker Lake and approximately 50 km northwest of Meadowbank Mine in the Kivalliq Region of Nunavut (Figure 1.1). The right to explore and extract minerals from the property was acquired by Agnico Eagle in April 2013 subject to a mineral exploration agreement with Nunavut Tunngavik Incorporated (NTI). The deposit will be mined as an open pit (i.e., Whale Tail Pit), and ore will be hauled by truck to the approved infrastructure at Meadowbank Mine for milling.

The Whale Tail Pit Project (the Project) facilities will consist of a personnel camp (i.e., Main Camp), power plant, heli-pad, maintenance shop, tank farm, a waste rock storage facility (WRSF), an ore stockpiling facility, an attenuation pond, a water and sewage collection and treatment system, haul roads, access roads, water management infrastructure (e.g., collection ponds, channels, dikes, dams, and culverts), and the Whale Tail Pit (Figure 1.2). As a result of development, Agnico Eagle is also proposing to expand the width of the existing exploration access road to a haul road to accommodate increased traffic rates and haul trucks. No new infrastructure is required at the existing Meadowbank Mine to support the development of the Project.

An initial amount of approximately 8.3 million tonnes (Mt) of ore will be mined from one open pit (i.e., Whale Tail Pit) and processed over a three to four year mine life. Ore from Whale Tail Pit will be segregated by grade then crushed on-site after which it will be transported to Meadowbank Mine for milling. The mill rate will be approximately 9,000 to 12,000 tonnes per day.

Agnico Eagle proposes to process the Whale Tail ore and dispose of the tailings slurry at the existing Meadowbank Mine tailing storage facility (TSF), which is authorized under the current Project Certificate and Type A Water Licence. The mine operation will generate approximately 8.3 Mt of tailings, 46.7 Mt of mine waste rock, and 5.8 Mt of overburden soil, with very limited organic material. Tailings produced from processing of Whale Tail ore will be accommodated within the existing footprint of the TSF. More specifically, tailings will be stored within the current footprint of the south cell TSF and by building an internal structure in the north cell TSF. Neither the footprint of the facility nor the chemical nature of the tailings and process water are expected to significantly change from current operations. Whale Tail tailings will require the same long-term environmental control mechanisms as are currently approved for Meadowbank.

Approximately 2.5 Mt of waste rock will be used for construction activities such as roads, pads, and water management facilities (i.e., dike, berm, rip rap, etc.). The remaining waste rock and overburden material will be hauled to the Whale Tail WRSF, which is located northwest of the Whale Tail Pit. A second, temporary overburden storage pad for staging purposes is located west of the Whale Tail Lake. Waste rock and overburden will be co-disposed together in one of the two piles constituting the storage facility.

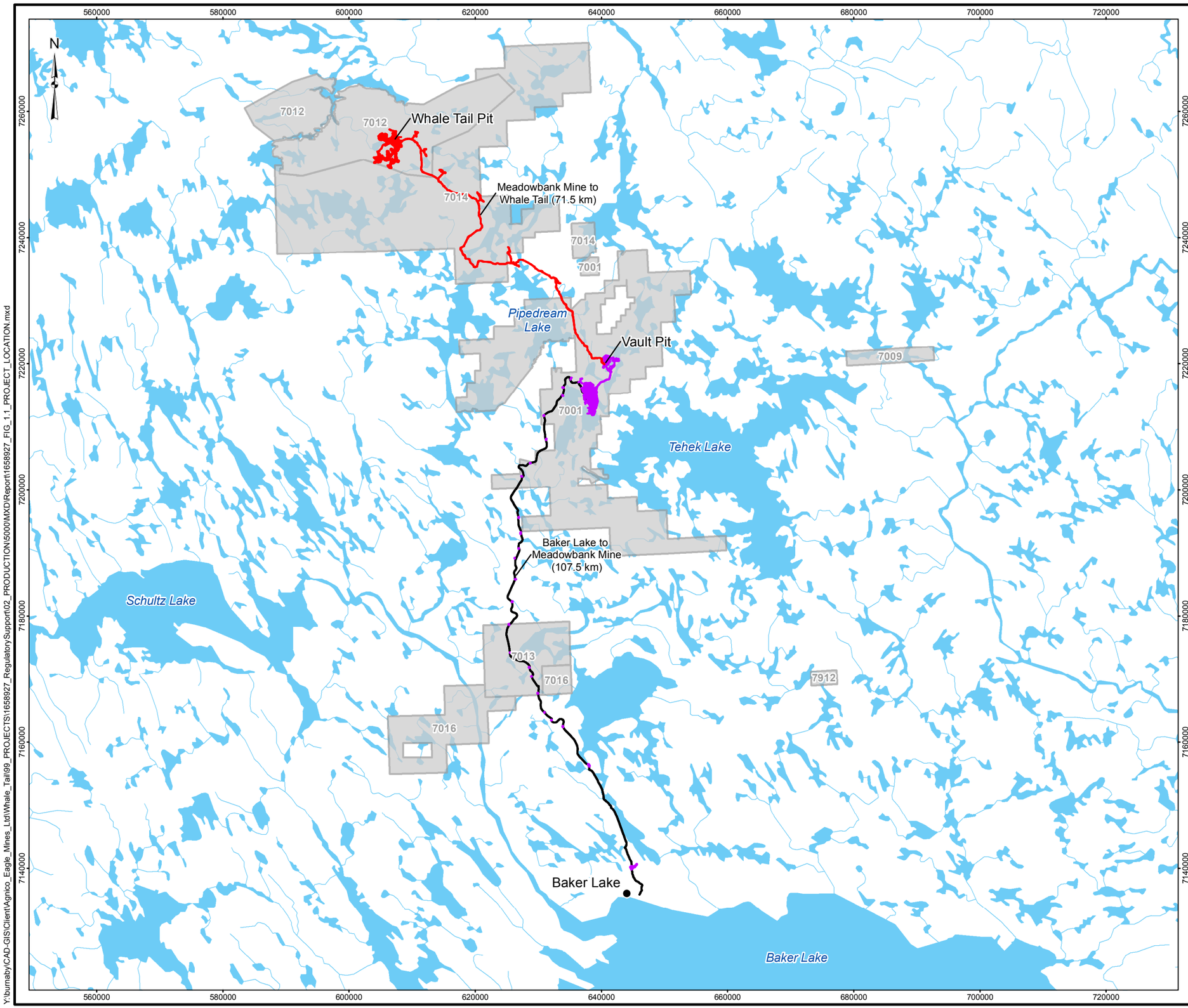
The Project will be supported using the existing transportation requirements, relying on marine transportation for most supplies, aircraft for supplies and transportation of employees, and the gold ore produced at the Meadowbank Mill. The Meadowbank All Weather Access Road (AWAR) will continue to provide supplies transported from the existing Baker Lake marshalling facilities to the Meadowbank Mine. The current operational components include marshalling facilities in Baker Lake and the 110 km AWAR between Baker Lake and Meadowbank Mine. Agnico Eagle is proposing to upgrade the previously permitted 64.1km Amaruq Exploration

Access Road (AEAR) to a haul road to support the development of Whale Tail Pit and to enable hauling needed between the Whale Tail Pit and the Meadowbank Mill. No changes are proposed for the Meadowbank AWAR to Baker Lake.

Construction of the Whale Tail Pit site will begin as soon as approval and permits are received (anticipated for early 2018) and ultimately have full production in 2019. The operational phase will span three to four years, from Year 1 (2019) to Year 4 (2022). Mining activities are currently expected to end in Year 3 (2021) and ore processing is expected to end during Year 4 (2022). Closure will occur from Year 4 (2022) to Year 11 (2029) after the completion of mining and will include removal of the non-essential site infrastructure and flooding of the mined-out open pit, as well as reestablishment of the natural Whale Tail Lake water level. By extending the life of mine at Meadowbank, Agnico Eagle will progressively close portions of Meadowbank Mine while operating.

In June 2016 Agnico Eagle filed applications to the Nunavut Impact Review Board (NIRB) and Nunavut Water Board (NWB) for development of the Project. A joint coordinated review of the Final Environmental Impact Statement (FEIS) and Type A Water Licence Application are ongoing pending final ministerial approval. Project development scheduling and implementation in Nunavut is dependent upon and restricted by the seasonal sea lift to support mobilization of supplies and equipment. Proponents may have to wait up to a year to receive a Type A Water Licence before starting construction of a Project under review by NIRB and NWB; this additional time can have a significant impact on the overall project schedule.

The regulatory framework provided in the Nunavut Land Claims Agreement (NLCA) and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSRTA or Act) allows for interim, short-term approvals for water uses related to exploration or development work for a proposal under development impact review. Provided the scope of works being considered for development works are being considered by the NIRB as part of the review of the Project, the NWB is not restricted from issuing an interim, short-term period water license for development work related to the Project. As such Agnico Eagle is submitting a Type B application (the Application) for pre-development activities for Whale Tail Pit and Haul Road. For a full description of proposed pre-development works refer to Section 1.5.



LEGEND

- COMMUNITY
- PROPOSED HAUL ROAD
- ALL WEATHER ROAD
- WHALE TAIL PIT
- MEADOWBANK OPERATION AND INFRASTRUCTURE
- CLAIM BOUNDARY
- WATERCOURSE
- WATERBODY

REFERENCE

1. HAUL ROAD OBTAINED FROM AGNICO EAGLE MINES LIMITED. 2015-10-14 FROM 6103-117-230-200_R0.dwg
2. CLAIM BOUNDARIES OBTAINED FROM AGNICO EAGLE MINES LIMITED.
3. WATERCOURSE AND WATERBODY DATA OBTAINED FROM CANVEC © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED.
4. INSET MAP DATA OBTAINED FROM ESRI.

DATUM: NAD 83 CSRS PROJECTION: UTM ZONE 14

12 0 12
KILOMETRES

PROJECT

AGNICO EAGLE MINES LIMITED:
MEADOWBANK DIVISION
WHALE TAIL PIT PROJECT

TITLE

PROJECT LOCATION AND CLAIM BOUNDARIES

Golder Associates

PROJECT		1658927	FILE No.	
DESIGN	JR	24 Mar. 2016	SCALE AS SHOWN	REV. 0
GIS	CDB	24 Mar. 2016		
CHECK	JR	09 May 2016		
REVIEW	LY	09 May 2016		

FIGURE 1.1

Y:\burnaby\CAD-GIS\Client\Agnico_Eagle_Mines_Ltd\Whale_Tail\99_PROJECTS\1658927_RegulatorySupport\02_PRODUCTION\5000\MXD\Report\1658927_FIG_1.1_PROJECT_LOCATION.mxd

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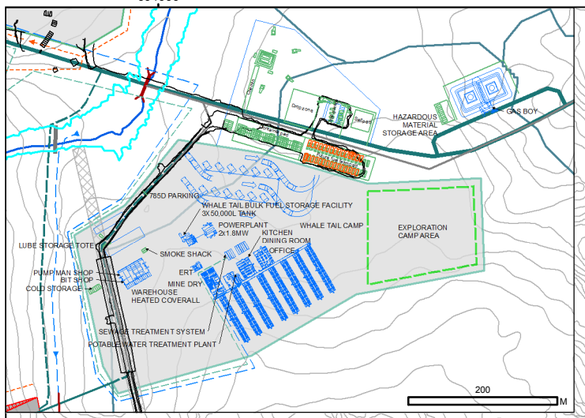

NEMO FRESHWATER INTAKE
NEMO LAKE
C38
ROAD AROUND WRSF
SADDLE / COFFER DAM #1
WHALE TAIL WASTE ROCK STORAGE FACILITY
WHALE TAIL LANDFILL
WRSF POND
WRSF DIKE
NORTH CHANNEL
MAMMOTH CHANNEL CULVERT
MAMMOTH DIKE
MAMMOTH CHANNEL CULVERT
MAMMOTH LAKE DIFFUSER
MAMMOTH LAKE
A16
NORTHEAST POND
NORTHEAST LAKE
STORM WATER STORAGE POND
WASTE ROCK EXPLORATION PAD
BERM
EXPLORATION RAMP PORTAL
EXPLORATION LAYDOWN AREA
COMMUNICATION TOWER
CRUSHING AREA (2X CRUSHER)
6508-WHL-001-001
ORE STOCKPILE 1
ORE STOCKPILE 2
WHALE TAIL BULK FUEL STORAGE FACILITY
HAUL ROAD
EXPLORATION RAMP VENT RAISE
WATER TREATMENT PLANT
WHALE TAIL ATTENUATION POND
ORE STOCKPILE 3
SADDLE / COFFER DAM
WHALE TAIL CAMP
OVERBURDEN STORAGE
WHALE TAIL DIKE
WHALE TAIL EAST CHANNEL
WHALE TAIL LAKE (SOUTH BASIN)
A17
ELEVATION ZONE EL. 156m
ARCHAEOLOGICAL SITE 2015-14
WHALE TAIL DIVERSION CHANNEL
EXPLOSIVE MAGAZINE 35,000kg
CAP MAGAZINE
EXPLOSIVE MAGAZINE 35 000kg
EXPLOSIVE MAGAZINE 35 000kg
EXPLOSIVE MAGAZINE 35 000kg
184
183
182
185
186
181

LEGEND

- FINAL WHALE TAIL WASTE ROCK STORAGE FACILITY
- WHALE TAIL LAKE (SOUTH BASIN) FLOODED LIMIT (WATER LEVEL 156.0m)
- NATURAL WATERSHED
- DIKE
- POND/SUMP
- ARCHAEOLOGICAL SITE
- ROAD
- TEMPORARY ROAD
- DIVERSION CHANNEL
- COLLECTION CHANNEL
- CULVERT
- INTAKE WATER PIPE
- CONTACT WATER PIPE
- FRESHWATER PIPE
- WATERCOURSE
- WATERBODY

REFERENCE

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED FROM 6108-600-210-002_R2(2019)s.dwg.
2. WATERCOURSE AND WATERBODY DATA OBTAINED FROM PHOTOSAT
DATUM: NAD 83 CSRS PROJECTION: UTM ZONE 14

400 0 400
METRES

PROJECT
AGNICO EAGLE MINES LIMITED:
MEADOWBANK DIVISION
WHALE TAIL PIT PROJECT

TITLE
SITE LAYOUT FOR TYPE A WATER LICENSE APPLICATION

Golder Associates

PROJECT		1658927	FILE No.	
DESIGN	JR	24 Mar. 2016	SCALE AS SHOWN	REV. 0
GIS	CDB	05 May 2016		
CHECK	JR	09 May 2016		
REVIEW	LY	09 May 2016		

FIGURE 1.2

Y:\burnaby\CAD-GIS\Client\Agnico_Eagle_Mines_Ltd\Whale_Tail\99_PROJECTS\1658927_RegulatorySupport\02_PRODUCTION\5000\MXD\Report\1658927_FIG_1.2_SITE_LAYOUT.mxd

1.1 Applicant Information

Agnico Eagle Mines Limited (NYSE:AEM, TSX:AEM) ("Agnico Eagle" or the "Company"), is a Canadian publicly traded mining company listed on the Toronto and New York Stock Exchange, trading symbol AEM, with head offices in Toronto, Ontario.

Agnico Eagle is a senior Canadian gold mining company that has produced precious metals since 1957. Its nine mines are located in Canada, Finland, and Mexico, with exploration and development activities in each of these regions as well as in the United States. Agnico Eagle began exploring for minerals in Canada in 1953 and has been active in the Kivalliq Region since 1990. Agnico Eagle owns and operates the Meadowbank Mine, which is located 70 km directly north of Baker Lake and approximately 50 km southeast of the Amaruq property. In addition, Agnico Eagle owns mineral exploration and production rights to the Meliadine Gold Project, which is located approximately 25 km north of Rankin Inlet, and 80 km southwest of Chesterfield Inlet.

Agnico Eagle is a senior mining company with a proven reputation for sustainability and economic success in Nunavut. Its' success is based on grass roots exploration and recognizing the potential in the areas it explores like the North. Agnico Eagle holds 100 % interest in the Amaruq (formerly IVR project) property located approximately 63 km northwest of the existing Meadowbank Mine. Agnico Eagle Mines Limited is the sole owner of the Project. A copy of the Certificate of Incorporation/Corporate Registration is included in Appendix A.

A link to Agnico Eagle's audited financial statements are provided in Appendix B, and are available on-line at: https://s21.q4cdn.com/374334112/files/doc_downloads/agnico_downloads/financial_information/2016March-AACFS.pdf

The people who work for and with Agnico Eagle in advancing the Project are listed below:

Agnico Eagle – Meadowbank Division:	Agnico Eagle Mines Limited CP 87, 765 Chemin de la mine Goldex Val-d'Or (Qc) J9P 4N9 Ph. 819 -874-5980
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Director- Regulatory Affairs:	Stephane Robert Baker Lake, Nunavut, Canada, X0C 0A0 Ph : 819-759-3555 (ext.5188) M : 819-763-0229 Email: stephane.robert@agnicoeagle.com
Amaruq Permitting Lead	Ryan Vanengen, Amaruq Permitting Lead Baker Lake, Nunavut, Canada, X0C 0A0 M: 819-651-2974 Email: ryan.vanengen@agnicoeagle.com

Environmental Superintendent	Jamie Quesnel, Environment Superintendent – Nunavut Operations Baker Lake, Nunavut, Canada, X0C 0A0 Ph : 819-759-3555 (ext.6838) Email: Jamie.quesnel@agnicoeagle.com

1.2 Whale Tail Pit Project Summary

Provided below is a summary of the overall Project. Refer to Section 3.0 for specific information related to pre-development works and for Project components.

Location

- Amaruq property is located approximately 50 km northwest of the Meadowbank Mine site.
- Meadowbank Mine site located in the Kivalliq Region of Nunavut at approximately 70 km north of the community of Baker Lake.

Life of Mine

- Whale Tail Pit is a satellite deposit located on the Amaruq property to be mined over a three to four year period. It will take 2 years to construct the facilities necessary to support mining and once mining has concluded, Agnico Eagle proposes to actively reclaim the facilities over a 3 year period. Post-closure monitoring is planned until 2038.
- Meadowbank Mine began construction in 2008 and has been in commercial operation since 2009.

Mineral Claims

- The proposed Whale Tail Pit and associated infrastructure is to be constructed on Inuit Owned Land leased by Agnico Eagle from the Kivalliq Inuit Association.

Production

- Open pit mining will occur in only one pit, Whale Tail Pit.
- 8,279,144 Mt of ore will be mined.
- The total gold resource for the Whale Tail Pit will extend the Life of Mine of the Meadowbank Mine.

Waste Rock

- A total of 46.1 Mt of waste rock and 5.6 Mt of overburden will come from mining Whale Tail Pit. The waste rock and overburden will be trucked to the Waste Rock Storage Facility. Non-potentially acid generating and non-metal leaching waste rock and overburden will also be used as construction material.

Processing

- Ore processing, handling, treatment, and disposal will continue at the Meadowbank Mill.
- Tailings will be stored in the existing approved tailings storage facility at Meadowbank Mine.

Transport

- Transportation to site (marine barging, airstrip, and transportation along the All Weather Access Road), housing, and handling will remain the same as authorized under the current Project Certificate for Meadowbank Mine.
- There will not be an airstrip at the site.

Roads

- The Project is designed to operate as a satellite of the main Meadowbank facilities, and will be accessed by the approved 64.1 km exploration access road, which will be upgraded to accommodate haul trucks and increased traffic.
- Upgrade of the exploration access road will include widening from the current 6.5 m width to 9.5 m width.
- The 110 km All Weather Access Road between Baker Lake and the Meadowbank Mine will continue to be used.

Re-Supply
■ Marine supply via open water seasonal shipping to Baker Lake and transported via Meadowbank All Weather Access Road and exploration access road to site.
Water Intake
■ Freshwater is currently taken from Whale Tail Lake (under licence 2BB-MEA1318) but is to be taken from Nemo Lake upon issuance of the Type A Licence.
Wastewater Discharge Location
■ A discharge diffuser will be located in Mammoth Lake.
Quantity of Water Required
■ In total, 118,625 m^3/year will be required during operations from Nemo Lake, with 241 m^3/day required for freshwater use and 84 m^3/day required for potable water use. ■ Approximately 48 m^3/day of freshwater will be required during construction. ■ Approximately 17,520 m^3/year will be required during closure from Whale Tail Lake, based on a requirement of 48 m^3/day of freshwater.
Environment
■ Baseline studies completed including terrestrial, atmospheric, freshwater, and cultural environments.
Socio-Economics
■ Construction employment up to 500 person per year, during dewatering. Agnico Eagle capital investment estimated at approximately 233 M dollars. ■ Operational employment on average up to 931 persons per year over three to four year period (rotational work basis with approximately 50% on site at any given point in time).
Traditional Use
■ Inuit Qaujimajatuqangit information collected through series of workshops conducted in 2005, 2014, and 2016. ■ Inuit Qaujimajatuqangit integrated into the environmental impact statement and provided input on development of mitigation and monitoring plans.
Closure and Reclamation
■ Objective of closure is a physically and chemically stable project footprint for the long-term protection of the environment and people of Nunavut. ■ Most closure activities will occur over a 3 year period with passive closure to be maintained until all water management infrastructure is breached/removed after which a period of post-closure will be observed to confirm physical and chemical stability.

Proposed Whale Tail Pit Project (overall Project) Facilities:

- personnel camp
- power plant
- heli-pad
- maintenance shop
- tank farm
- waste rock storage facility (WRSF)
- ore stockpiling facility
- attenuation pond
- water and sewage collection and treatment system
- site access/service roads
- water management infrastructure
- Whale Tail Pit waste rock storage facilities

1.3 Whale Tail Pit and Haul Road Mine Plan Schedule

Mine development activities will occur in four phases: pre-development, construction, operations, and closure, with additional monitoring and mitigation continuing into post-closure.

Pre-development is defined as any construction activities as defined in Section 1.5 but specific to activities allowed under the provision of the NLCA Article 13, Section 13.5.5 or the NWNSRTA. This phase will commence after receipt of the NIRB Final Hearing Report on the new Type A Application (2AM WTP ----) or earlier (if possible), through a Type B Predevelopment Water Licence from the NWB, and the land use permit from the Kivalliq Inuit Association (KIA).

Construction is defined as any activities undertaken for the purposes of establishing or constructing components, infrastructure, and facilities required for development of a mine. Full mine site construction will commence following receipt of a Type A Water Licence from the NWB and Land Use Permit from the KIA. Construction is proposed to take approximately one year.

Operations is defined as the period that the Process Plant is operating and producing a commodity (i.e., gold). The mine is expected to reach full production in 2019 and be complete by 2021.

Closure (Abandonment, Reclamation, and Closure) **and Post-Closure** is defined as an Operator ceasing operations at a facility without the intent of resuming mining activities. The expectation will be that the site will be reclaimed and post-closure monitoring will continue until it can be demonstrated that the mine site is both chemically and physically stable.

1.4 Existing Site Infrastructure to Support Pre-Development Work

Existing site infrastructure is regulated by the NWB under water licenses:

- Water Licence 8BC-AEA1525 Amaruq Exploration Access Road (expires December 31, 2025);
- Water Licence 2BB-MEA1318 Meadowbank Advanced Exploration Project (previously 2BE-MEA1318) (expires March 06, 2018); and
- Water Licence 2AM-MEA1525 Meadowbank Mine Renewed Type A licence (expires July 22, 2025).

For additional information on existing water licenses held by Agnico Eagle refer to Section 2.3.1.

To improve economics for the Project, Agnico Eagle has minimized Project footprint, reduced potential impacts to the environment, and reduced infrastructure requiring reclamation by using as much as possible, the existing Meadowbank Mine infrastructure and current infrastructure on site at Amaruq to support exploration and bulk sampling. Ongoing exploration is an essential component to supporting a long-term mining operation through the identification of potential future reserves. Current infrastructure on-site that is pre-existing or approved is as follows:

- Treatment and disposal of grey water and sewage via two Kodiak Bionest Wastewater Treatment Systems (WWTS) at Amaruq;
- Power generation via three Gensets (85% capacity = 510kW);
- Fuel Storage in double walled envirotanks totalling 1,760,000 L (diesel, Jet B, and gasoline);

- All weather roads;
- Freshwater pumped from Whale Lake (12-35 m^3/day);
- 1 Esker Borrow Pit and Quarry 1;
- Amaruq on-site incinerators; and
- Amaruq exploration camp.

The current Amaruq exploration camp can accommodate 140 people and is located 50 km northwest of Meadowbank Mine. On November 9, 2015, Agnico Eagle obtained approval to construct the 64.1 km-long AEAR containing 11 bridges, and 28 corrugated round culverts linking the Amaruq site to the Meadowbank Mine. Widening of this road is requested as a component of pre-development activities, recognizing that this road will be an integral part of the transportation infrastructure for the proposed mine.

1.5 Pre-Development Works Summary

Agnico Eagle is requesting a Type B Water Licence to allow for the construction of infrastructure and/or to undertake the following site preparation activities (Figure 1.3) in support of future development of the Project:

- construction of a pad for the permanent camp;
- installation of pilings for the permanent camp and infrastructure;
- start of work on concrete foundations;
- construction of necessary service roads to undertake the other pre-development activities;
  - road between Quarry 2 and Waste Rock Storage Facility (WRSF)
  - a road and one culvert between exploration camp and proposed Nemo freshwater intake
  - a road between exploration area and new road between Quarry 2 and the WRSF
  - upgrade/widen Whale Tail Pit haul road from 6.5m wide to 9.5m plus bypasses
- stripping of open pit(s) (overburden and waste rock), use of quarry material for construction and ore/waste rock stockpiling;
  - quarrying at Quarry 2
  - dike construction material stockpiling and preparation (i.e., WRSF Dike construction material preparation (crushing, stock piling on West and East side of the dike)
- construction of waste rock berms;
- construction of the Whale Tail Bulk Fuel Storage Facility;
- piping and pump preparation for dewatering (i.e., roads, pads, water treatment plant);
- turbidity curtain installation;
- construct Mammoth Channel crossing in March 2018 (pending confirmation of fisheries authorization); and
- pre-delivery of material (i.e., equipment, material, and fuel).

Y:\burnaby\CAD-GIS\Client\Agnico_Eagle_Mines_Ltd\Whale_Tail\99_PROJECTS\1658927_5000_5010_FIG_1.3_PRE_DEVELOPMENT_GENERAL_SITE_LAYOUT.mxd

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A10 A39 A41 A42 A11 A12 A-P52 A13 A14 A15 A16 A-P31 A-P57 A-P3 A-P39 A-P17 A-P16 A43 A-P45 A45 A64 A63 A18 A62 A17 A59 A60 A61 A58 A55 A54 A53 A52 A51 A50 A49 A48 A47 A46 A-P67 A-P68 A-P10 A-P5 A-P21 A-P47 A-P59 C-P37 C-P2 C-P1 C38 C39 C40 C41 C42 C43 C44 C46 C48 C49 C50 A40 A-P18 A-P51 A-P33 A-P37 A-P38 A-P49 A113

NEMO FRESHWATER INTAKE

NEMO LAKE

MAMMOTH LAKE

WHALE TAIL LAKE (NORTH BASIN)

WHALE TAIL LAKE (SOUTH BASIN)

WASTE ROCK BERM

OVERBURDEN

WRSF PILE DURING CONSTRUCTION (2018)

WRSF POND

WRSF DIKE

MAMMOTH CHANNEL TEMPORARY BRIDGE

MAMMOTH DIKE

MAMMOTH LAKE DIFFUSER

CONSTRUCTION WATER TREATMENT PLANT

QUARRY 1

QUARRY 2

CONSTRUCTION MATERIAL AND ORE STOCKPILE

OVERBURDEN STORAGE

WHALE TAIL DIKE

WHALE TAIL EAST CHANNEL

TURBIDITY CURTAIN

WATER TREATMENT PLANT

EXPLORATION CAMP

COMMUNICATION TOWER

WHALE TAIL BULK FUEL STORAGE FACILITY

HAUL ROAD

HAZARDOUS MATERIAL STORAGE AREA

MAINTENANCE FACILITY AND WAREHOUSE

WHALE TAIL CAMP

WHALE TAIL DIKE MATERIAL STORAGE

ARCHAEOLOGICAL SITE 2015 - 14

181 182 183 184

LEGEND

- BRIDGE
- ROAD
- TEMPORARY ROAD
- COLLECTION CHANNEL
- CULVERT
- FRESHWATER PIPE
- TURBIDITY CURTAIN
- DIKE
- OVERBURDEN
- FINAL WASTE ROCK STORAGE FACILITY FOOTPRINT
- QUARRY
- STORM WATER STORAGE POND
- NATURAL WATERSHED
- POND/SUMP
- ARCHAEOLOGICAL SITE
- WATERBODY
- WATERCOURSE

DRAFT

REFERENCE

1. INFRASTRUCTURE OBTAINED FROM AGNICO EAGLE MINES LIMITED FROM 6108-600-210-001_R2(2018)s.dwg.
2. WATERCOURSE AND WATERBODY DATA OBTAINED FROM PHOTOSAT
DATUM: NAD 83 CSRS PROJECTION: UTM ZONE 14

400 0 400
METRES

PROJECT
AGNICO EAGLE

AGNICO EAGLE MINES LIMITED:
MEADOWBANK DIVISION
WHALE TAIL PIT PROJECT

TITLE

PRE-DEVELOPMENT GENERAL SITE LAYOUT FOR TYPE B WATER LICENSE APPLICATION

Golder Associates

PROJECT		1658927	FILE No.	
DESIGN	JR	29 May 2017	SCALE AS SHOWN	REV. A
GIS	CDB	29 May 2017		
CHECK				
REVIEW				

FIGURE 1.3

1.6 Pre-Development Works Schedule

Agnico Eagle estimates that pre-development work could be initiated as early as December 2017. By implementing a pre-development permitting approach Agnico Eagle, and the Project, could yield substantial scheduling gains considering the very small construction season in the Arctic each year. The securing of a Type B Pre-development Water Licence would allow construction, site preparation, and mobilization work to begin at the end of 2017 and ramp up in Q1 of 2018, following of issuance of the NIRB final hearing decision report, and Project Certificate while awaiting the Type A Water Licence.

2.0 LEGISLATIVE AND REGULATORY REQUIREMENTS

In accordance with the NWNSRTA and Nunavut Water Regulations, Agnico Eagle is permitted to submit a Type B Water Licence Application to the NWB to undertake pre-development works in support of eventual mining of the Project under a Type A Water Licence (currently under review by the NWB). Note: pre-development works as authorized under the NLCA (s. 13.5.5) or the NWNSRTA (s. 39(2)) for the purpose of this Application includes: site preparation, pre-development works, and development works in advance of a Type A Water Licence.

The FEIS and Type A Water Licence are currently under consideration by the NIRB and NWB, respectively. The Project is subject to the land and resource management processes established by the NLCA and more recently clarified in the *Nunavut Planning and Project Assessment Act.* Additional provisions of the NLCA apply with regard to the nature and interests in the land with respect to IOL (surface and subsurface) and Inuit Water Rights, and GN Commissioner's land use.

This Type B Water Licence Application has been prepared in accordance with the NLCA, the NWNSRTA, and the Nunavut Water Regulations, but also takes into account the detailed guidance provided by the Board in *Guide 4 – Completing and Submitting a Water Licence Application for a New Licence* (NWB 2010a) and the *Supplemental Information Guide for Mineral Exploration/Remote Camp* (SIG-MM1 Guide) (NWB 2010b) modified to accommodate pre-development works (i.e., addition of monitoring section). A copy of the concordance assessment is provided in Attachment D.

In preparing the Type B Water Licence Application, Agnico Eagle is required to satisfy the NWB minimum information requirements as follows:

Table 2.1: Nunavut Water Board Application Checklist

	Requirement	Concordance
✓	General Water Licence Application	Type A General Application Form refer to Attachment A
✓	Supplemental Information Guidelines	Type A Concordance Assessment Attachment D
✓	Executive Summary	Main Application Document
✓	Translated Executive Summary	Main Application Document
✓	Application Fee	The application fee required by Regulation (s.11) will be paid by credit card upon confirmation of receipt of the application.
✓	Water Use Fee	No water use requested by this Application. Water Use fees paid to the RIA.

For a full listing of regulatory permits, authorization, or licences for the Project development refer to Appendix C.

2.1 Nunavut Planning Commission

The Project is entirely within the Kivalliq (Keewatin) Region of Nunavut and therefore is subject to confirmation of conformity determination to the Keewatin Regional Land Use Plan. The authority of the NPC is provided under Article 11 of the NLCA and more recently clarified by the *Nunavut Planning and Project Assessment Act*.

Project related positive conformity determination include:

- NPC File #148297 Whale Tail Pit Project – Meadowbank Division on June 17, 2016 (Refer to FEIS, Volume 0, Attachment C);
- winter road determination (NIRB 11 EN010) on March 9, 2011;
- exploration camp and associated activities (i.e., drilling) renewal on multiple permits on October 21, 2015; and
- exploration access road for multiple permits on July 17, 2015.

The NPC on June 17, 2016 referred the Project to the NIRB for screening.

2.2 Nunavut Impact Review Board

The Project is subject to environmental and socio-economic impact assessment determination by the NIRB under Article 12 of the NLCA and more recently subject to the *Nunavut Planning and Project Assessment Act* legislative requirements. The Project is currently under joint review by the NIRB and NWB. The screening, scoping and guideline phases of review have been completed. The screening determination issued by NIRB and subsequent ministerial direction response, as well as timelines and processes proposed by the NIRB and NWB in review of the Project, are available from the NIRB registry. Please refer to the following link: http://www.nirb.ca/portal/pdash/pdash.php?lang=en&appid=124683.

2.3 Nunavut Water Board

Agnico Eagle has operated within Nunavut since early 2008, and has accumulated eight years of operating experience under the Nunavut regulatory environment, primarily at its Meadowbank Mine near Baker Lake and Meliadine Mine currently under construction outside Rankin Inlet. From this experience, Agnico Eagle has developed the personnel and management systems required to understand, track, monitor, and report on its environmental performance against the regulatory requirements contained within its operating authorizations, permits, licenses, leases, as well as in the applicable Acts and Regulations in Nunavut. Agnico Eagle believes that it has demonstrated openness, transparency, and a history of being able to adaptively manage its operations to meet its regulatory obligations and requirements in Nunavut. Agnico Eagle further believes that it has demonstrated good faith in meeting all of its regulatory requirements at Meadowbank, Meliadine, and other various exploration sites.

This section focuses on current active water licenses issued to Agnico Eagle, Agnico Eagle's future needs, and the recent regulatory history related to this Application. Refer to Table 2.2 which summarizes the Project's regulatory history.

2.3.1 Existing Water Licences

Agnico Eagle currently holds a Type A Licence 2AM-MEA1525 for the mining and milling for Meadowbank Mine, as well as a Type B Licence 2BB-MEA1318 for advanced exploration activities on the Amaruq property and Type B Licence 8BC-AEA1525 for construction, operations, and decommissioning of the AEAR to support surface and underground advanced exploration.

For the purpose of the Type A application currently before the NWB, Agnico Eagle is requesting an Type A Water Licence to include mining of the Whale Tail Pit (2AM WTP ----) and supporting infrastructure and requests

that the 8BC-AEA1525 water licence requirements be incorporated into Type A water licence upon issuance. Agnico Eagle will retain the 2BB-MEA1318 water licence for ongoing exploration activities.

Based on the progress of the construction of the Amaruq Exploration Access Road, for this application, Agnico Eagle has assumed that the exploration access road will be completed upon issuance of this Type B water licence and thus requests that the same terms, conditions and mitigation measures of licence 8BC-AEA1525 applicable to the haul road upgrade be incorporated into this Type B water licence upon issuance.

All current licences are in good standing with no compliance issues identified.

Table 2.2: Historical Water Licensing Activity for Project Operations

Licence Number	WL Type	Date of Issuance	Licensee (Company)	Effective Date	Expiry Date	Version	Location
NWB2MEA0507	Type B (Exploration)	22 June 1998	Cumberland Resources Ltd.	-	Renewed several times until 31 October 2007	Original	
		27 July 2007	Agnico Eagle Mines Limited	27 July 2007	31 October 2007	July 27, 2007 amalgamation of companies Cumberland into Agnico Eagle Mines Limited.	
2BE-MEA0813	Type B (Exploration)	13 February 2008	Agnico Eagle Mines Limited		28 February 2013	Renewal (2012)	
2BE-MEA1318	Type B (Exploration)	7 March 2013	Agnico Eagle Mines Limited		6 March 2018	Renewal (2013)	
			Agnico Eagle Mines Limited	31 July 2014	6 March 2018	Amendment 1	Exploration area expanded to include IVR (now referred to as Amaruq)
			Agnico Eagle Mines Limited	27 February 2015	6 March 2018	Amendment 2	Increase water use for drilling; installation WWTS at IVR (Amaruq); Develop and operate quarries, construction road to quarries; extension exploration boundaries
			Agnico Eagle Mines Limited	27 January 2016	6 March 2018	Amendment 3	Diamond drilling on lakes based on barge; water use; additional WWTS; modification monitoring stations, installation full tanks; increase camp capacity
2BB-MEA-1318 (previously 2BE-MEA1318)	Type B (Advanced Exploration)		Agnico Eagle Mines Limited	1 December 2016	6 March 2018	Amendment 4	Underground Development and Underground Exploration Drilling and associated advanced exploration infrastructure (i.e. waste rock/ore storage)
8BC-AEA1525	Type B (Misc. Construction)	9 November 2015	Agnico Eagle Mines Limited	9 November 2015	31 December 2025	Original	Construction, operation, decommissioning of Amaruq Exploration Access Road (AEAR)

Table 2.3: Existing Agnico Eagle Water Licenses for the Project

Licence No.:	**2BB-MEA1318**
Project Name:	Meadowbank Advanced Exploration Project
Purpose:	Direct water use and deposit of waste
Date Expiry:	March 6, 2018
Location	approximately 70-125 km north of the Hamlet of Baker Lake within the Kivalliq Region, Nunavut
Scope:	prospecting geological mapping geophysical surveys diamond and reverse circulation drilling trenching and quarrying bulk sampling water crossings installation during road construction operation of Storm-water Management Pond development/construction of portal/ramp services and operations pads storage of waste rock and ore on pads fuel storage laydown/garage/office/warehouse area for the rump at Amaruq (IVR) Camp
Licence No.:	**8BC-AEA1525**
Project Name:	Amaruq Exploration Access Road
Purpose:	Direct water use and deposit of waste
Date Expiry:	December 31, 2025
Location:	64.1 km long access road between the Amaruq exploration project site and the Meadowbank Mine site.
Scope:	Use of water and disposal of waste during construction, operation and decommissioning of a 64.1 km long by 6.5 m wide all-weather road between Meadowbank site and Amaruq Exploration site, including installation of water crossings (bridges, and corrugated and localized drainage culverts).

2.4 Nature of Interest in the Land and Water

Under the NLCA enacted in 1993, the mineral rights for about 2% of the territory have been transferred from Canada to the Inuit. The Designated Inuit Organization under the NLCA is NTI; it negotiates terms and conditions for those blocks that are not under federal jurisdiction. The Whale Tail deposit is located on IOL with the surface rights managed by the KIA and the sub-surface mineral rights managed by NTI. Surface rights for IOL are vested in the KIA, which administers the access and management of the lands for the benefit of the Inuit of the region. Access to and use of surface lands requires an Inuit Land Use permit, licence, or commercial lease issued by the KIA.

The exploration and mineral development rights for the Amaruq property are 100% owned by Agnico Eagle under an agreement from NTI, and are currently in good standing.

2.4.1 Inuit Owned Land and Inuit Water Rights

The 408 km^2 Amaruq property is located on IOL, and the rights to explore and develop mineral resources were acquired by Agnico Eagle in 2013 subject to a mineral exploration agreement with NTI. The surface ownership of the land is held by the KIA. Land and environmental management in this area are generally governed by the provisions of the NLCA.

The proposed Whale Tail Pit and associated infrastructure is to be constructed on IOL leased by Agnico Eagle from the KIA. In addition, quarry permits will be sought from the KIA as needed. A list of current quarry permits held by Agnico Eagle are provided in Appendix C.

The Project will require the authorization and consent of the KIA for development, construction, operations, and closure of the Mine and its related facilities. For the Type A Application (Agnico Eagle 2016f), Agnico Eagle will require approvals in the form of land use leases, production lease, an Inuit Impact and Benefit Agreement, a Water Compensation Agreement, and other forms of approvals, permits, and authorizations for construction, development, operations, and closure of the Project.

2.4.2 Crown Land

Nunavut mining and exploration activities are regulated by Indigenous and Northern Affairs Canada (INAC). This federal department ensures compliance with the Canada Mining Regulations across the territory. There are three main types of mineral interests under the Canada Mining Regulations: a mineral claim, a prospecting permit, and a mineral lease (also referred to as mining lease). Surface rights on Crown Land are vested in the federal government and administered/managed by INAC. Access to and use of these surface lands requires a land use permit, licence, or commercial lease issued by the INAC. A summary of land tenure which may be associate with the Project is provided in Table 2.4.

Table 2.4: Land Tenure Summary

Property	Land[a]			Total (km^2)
	IOL (km^2)	Crown (km^2)	Commissioner (km^2)	
Meadowbank	231.26	73.95	-	305.21
Amaruq property	408	-	-	408
Baker Lake marshalling area	-	-	5.79	
Haul road (between Meadowbank and Whale Tail site)	0.13	0.28	-	0.41
All Weather Access Road (Baker Lake to Meadowbank)	1.40	1.98	0.21	3.59

[a] Numbers have been rounded to two decimal places.
km^2 = square kilometres.

2.4.3 Existing or Other User Water Rights

Presently, there are no properties adjacent to the proposed Mine that have any influence on the Project. No trap lines have been identified within or directly adjacent to the proposed Mine footprint. No third party or individuals have been identified, or have come forward as existing or other water users with rights that might be impacted by the Project. Agnico Eagle knows of no other water rights that must be secured for the Project.

2.4.4 Other Authorizations

2.4.4.1 Fisheries and Oceans Canada

The *Fisheries Act* requires that projects avoid causing serious harm to fish unless authorized by the Minister of Fisheries and Oceans Canada (DFO). This applies to work being conducted in or near waterbodies that support fish that are part of or that support a commercial, recreational, or Aboriginal fishery. To protect fish and fish habitat, efforts should be made to avoid, mitigate, and/or offset harm.

For the AEAR, Agnico Eagle submitted a proponent self-assessment and request for review to DFO. Through a Letter of Advice, Fisheries and Oceans Canada approved construction of the road as designed, without the need for issuing an Authorization under the *Fisheries Act*.

Agnico Eagle has included a proponent self-assessment of the proposed Mammoth channel crossing (i.e., temporary bridge across the watercourse between Whale Tail Lake and Mammoth Lake which outlines existing conditions and predicted effects. Refer to Appendix H.

Fisheries protection and pollution prevention measures for the Project are subject to the requirements of the *Fisheries Act* s.35, which states that no person shall carry on any work, undertaking, or activity that results in serious harm to fish that are part of a commercial, recreational, or Aboriginal fishery, or to fish species that support such a fishery.

Agnico Eagle has conducted three years' of aquatic baseline studies for the Project, and will work together with DFO to seek a *Fisheries Act* Authorization during the review/regulatory phase of this Project.

No serious harm is expected during pre-development, however there will be serious harm to fish habitat as a result of the Whale Tail Pit Project during both the operations and post-closure phases. Accepted methods of habitat enhancement and habitat creation will be utilized, to offset the serious harm that will occur. The final offsetting plan has been prepared with input from local stakeholders and Fisheries and Oceans Canada. Pre-

development activities is not expected to cause serious harm to fish that are part of commercial, recreational, or Aboriginal fisheries, or to fish that support the commercial, recreational, or Aboriginal fisheries. Therefore, it is not anticipated that an authorization will be required under the *Fisheries Act* for the proposed pre-development activities undertakings, works, or activities.

Agnico Eagle will follow DFO measures to avoid causing harm to fish and fish habitat (formerly "operational statements") with respect to project planning, erosion and sediment control and shoreline stabilization for proposed water works for pre-development activities.

2.4.4.2 Transport Canada

The Project may be subject to the *Navigation Protection Act*. Agnico Eagle met with Transport Canada to explore the implications of applying the *Navigation Protection Act* to the Project. The *Navigation Protection Act* which came into force on 1 April 2014, is the result of the 2012 amendments made to the *Navigable Waters Protection Act*.

Along the current alignment of the haul road, none of the water crossings are located on Transport Canada's schedule of navigable waters. Eleven watercourses are considered to be potential migration routes and/or potentially provide spawning or nursery habitat for large-bodied or small-bodied fish.

At this time, Agnico Eagle does not believe that the small lakes, ponds, and streams within the Project's footprint on the Whale Tail site are navigable waterbodies. Agnico Eagle will work with Transport Canada to confirm this to ensure compliance with the *Navigation Protection Act*.

2.5 Consultation

Public consultation and engagement is a legal requirement in Nunavut, an industry best practice, and an important corporate commitment. Effective public consultation and engagement helps ensure that community members are informed and knowledgeable about proposed projects, that community support for those projects is more readily obtained, and sustainable development goals are achieved. A key goal of Agnico Eagle's public consultation and engagement program has been to ensure the Company obtains a "social licence to operate", by securing the support of a majority of residents from potentially impacted local communities.

To obtain this goal, a number of process goals have been followed:

- identification and prioritization of communities and community stakeholder groups;
- developing an understanding of key community and stakeholder views regarding the Project;
- addressing community and stakeholder issues and expectations;
- identifying current and historical patterns of land- and resource-use;
- identifying valued components (VCs) ;
- determining criteria for evaluating the significance of potential impacts;
- deciding upon mitigating measures;
- formulating compensation packages;

- identifying and implementing monitoring measures, including post-project audits; and
- continuous improvement.

Since operation of the Meadowbank Mine began, Agnico Eagle has continued public consultation by meeting with employees local employees that live throughout the Kivalliq, meeting in the community and local stakeholders, and regulatory agencies routinely which has allowed a better general understanding of the rights, interests, values, aspirations, and concerns of the potentially affected stakeholders, with particular reference to the local population. Through this continued consultation Agnico Eagle has developed an operational culture that recognizes and respects these relevant interests in the planning and executing processes. A record of consultation including government engagement is provided in the FEIS Volume 2, Table 2-H (Agnico Eagle 2016f). Agnico Eagle has and will continue to engage with the KIA and other stakeholders.

3.0 PRE-DEVELOPMENT WORKS

Agnico Eagle confirms they will submit to the Board for review prior to construction, construction drawings stamped by an Engineer for any engineered facilities proposed for pre-development. Although Agnico Eagle understands that approval of the construction and operation of the Whale Tail Dike will be permitted under the pending Type A water license (2AM WTP----) and required authorizations. To avoid administrative delays, under the Type B Predevelopment License Agnico Eagle, respectfully requests that the NWB approve the final design of the Whale Tail Dike (which does not constitute approval to construction), rather than delaying construction by up to 30 days after receipt of the pending Type A 2AM WTP ---- . In addition, within 90 days of completion of any structure designed to contain, divert, and retain waters and/or waste, or at least thirty days prior to the expiry of the Licence, whichever date comes first, a Construction Summary Report prepared by an Engineer that includes as-built plans and drawings, documentation of field decisions that deviated from the original plans and any data used to support the decisions will be submitted to the Board for review.

Proposed mining activities for pre-development will include:

- construction of a pad for the permanent camp;
- installation of pilings for the permanent camp and infrastructure;
- start of work on concrete foundations;
- construction of necessary service roads to undertake the other pre-development activities;
  - road between Quarry 2 and Waste Rock Storage Facility (WRSF)
  - a road and one culvert between exploration camp and proposed Nemo freshwater intake
  - a road between exploration area and new road between Quarry 2 and the WRSF
  - upgrade/widen Whale Tail Pit haul road from 6.5m wide to 9.5m plus bypasses
- stripping of open pit(s) (overburden and waste rock), use of quarry material for construction and ore/waste rock stockpiling;
  - quarrying at Quarry 2
  - dike construction material stockpiling and preparation (i.e., WRSF Dike construction material preparation (crushing, stock piling on West and East side of the dike)
- construction of waste rock berms;
- construction of the Whale Tail Bulk Fuel Storage Facility;
- piping and pump preparation for dewatering (i.e., roads, pads, water treatment plant);
- turbidity curtain installation;
- construct Mammoth Channel crossing in March 2018; and
- pre-delivery of material (i.e., equipment, material, and fuel).

Refer to Figure 1.3 for general site location of all proposed pre-development infrastructure.

3.1 Quarrying

3.1.1 Quarrying at Quarry 2

The south western portion Whale Tail Pit is overlain by quarry material defined as Quarry 2 (see Figure 1.3). During pre-development activities, approximately 2.90 Mt of material will be excavated from Quarry 2, 1.32 Mt of which will be used as construction material for pads, roads, and water management structures (see Table 3.1 [Agnico Eagle 2016f]). During pre-development, pit design and geotechnical stability for Quarry 2 will be monitored using the same best practices currently applied at Meadowbank Mine under license 2BB-MEA1318. An addendum to the Quarry Management Plan is attached in Appendix E for approval under this Type B Licence. Agnico Eagle will use the same equipment already on-site that is currently in use for the Meadowbank operations, with the addition of specialized long-distance haul trucks (Agnico Eagle 2016f). Explosives management and blasting practices will be consistent with practices in place for Meadowbank Mine (Agnico Eagle 2016f). For additional information on explosives production and storage, refer to Section 3.3.5.1.

Table 3.1: Projected Waste Rock Tonnages Used for Construction (2018)

Year	Period	Waste Rock and Overburden Excavated (t)	Waste Rock Used for Pad Construction (t)	Waste Rock Used for Road Construction (t)	Waste Rock Used for Water Management Structures (t)	Waste Rock and Overburden Stored in Whale Tail WRSF (t)
2018	January to September	1 011 755	356 435	103 658	512 900	38 762
	October to December	1 887 917	150 949	1 364	192 082	1 543 522
	Sub-total	**2 899 672**	**507 384**	**105 022**	**704 982**	**1 582 284**

3.1.2 Borrow Pits and Quarry Sites for Road Development

Construction of the AEAR utilized a series of quarry sites from which road construction material is sourced (the 6.5 m wide exploration road is currently under construction). The approved and leased quarries will be expanded (first by depth, and if needed in width) to obtain material for haul road construction. Quarry material on the Whale Tail site will also be used for industrial site pad, access roads, and dikes. The sequence of steps follows that for waste rock from the Amaruq Road Management Plan (Agnico Eagle 2017) and Meadowbank Mine Vault Pit (Agnico Eagle 2016f).

While ARD/ML testing has been conducted as a measure to avoid using reactive road building materials; if sufficient water volume accumulates in the borrow sources, water quality monitoring of seeps from borrow pits will be conducted to provide information on possible impacts on the environment should the water reach any nearby waterbodies. A buffer of at least 31 m of undisturbed land will be maintained between borrow pits and waterbodies, and best management practices will prevent direct drainage away from the quarry sites. However, any significant seeps originating from the borrow pits that are likely to reach receiving waters will be sampled and analyzed for a full suite of water quality parameters. Any problematic water will be directed away from waterbodies, or held if possible. If necessary, silt curtains will be used to control suspended sediments in water seeping from the borrow pits. Although erosion is not expected to originate from water flow from borrow pits, any

evidence of erosion will be repaired by placing rip rap over the affected area, and measures will be taken to reduce the velocity of the water with, for example, silt curtains (Agnico Eagle 2016f).

3.2 Mine Infrastructure

For the location of mine-site infrastructure proposed to be constructed during the pre-development phase, please refer to Figure 1.3.

3.2.1 Processed Ore Containment (and Tailings Storage Facility)

During the pre-development stage, 0.16 Mt of Ore from Quarry 2 will be segregated by grade and temporarily stored in the construction material and ore stockpile area located adjacent to the Quarry 2 site until issuance of the Type A Licence.

3.2.2 Overburden and Waste Rock Disposal

Approximately 1.32 Mt of waste rock will be used for construction activities such as roads, pads, and water management facilities (i.e., dike, berm, rip rap, etc.). The remaining waste rock and overburden material will be hauled to the Whale Tail WRSF, which is located northwest of the pit area as shown on Figure 1.3. A second, temporary construction material and overburden storage area for staging purposes is located west of Whale Tail Lake (see Figure 1.3).

Most of the waste rock that will be excavated during pre-development activities from Quarry 2 will be used for the construction of the water management structures, the infrastructures pads, and the access roads (Agnico Eagle 2016f). A summary of the geochemical properties of the overburden and waste rock including a summary of waste rock for use as construction material is provided in the Whale Tail Pit Waste Rock Storage Facility Management Plan (Agnico Eagle 2017b) and detailed geochemical properties are presented in Volume 5, Appendix 5-E of the FEIS (Agnico Eagle 2016f).

Overburden will mainly be produced during the construction phase of the Project. Waste rock will be produced during both construction and operations (refer to Table 3.1). Waste rock and overburden will be co-disposed together in one of the two piles constituting the storage facility. These piles have the potential to merge into one at the end of the LOM (Agnico Eagle 2016f).

3.2.3 Construction Material Stockpiling and Preparation

During the first year of operations, Agnico Eagle plans on developing Quarry 2 from which they will obtain suitable construction rock (i.e., non PAG and non-leachable). This quarry is located within the west side of the deposit and is part of the ultimate open pit outline. Lithologies anticipated to be used for construction include southern greywacke (S3S or 3bS), mafic volcanic (V3 or 1b) and intermediate intrusive (I2 or 8b).

The overburden from the quarry will be removed and stockpiled in the Whale Tail WRSF. During construction, berms and sumps will be built inside the footprint of the Whale Tail WRSF area if required to limit seepage and runoff from overburden and waste rock. As soon as waste rock material is available from the open pit, the overburden will be surrounded with run of mine material to control the stability of the pile (Agnico Eagle 2016f). Material will be stockpiled at the West and East side of the WRSF dike in preparation for dike construction upon issuance of the Type A Water Licence.

The ore stockpile pad will be constructed during pre-development; it will have an approximate footprint of 6.5 ha (Figure 1.3) and once constructed, will be used to store any ore obtained as a result of quarrying during pre-development activities.

Crushing on site is an approved activity under the current Type B advanced exploration water licence 2BB-MEA1518 and will continue. Agnico Eagle proposed to complete air quality monitoring, refer to Appendix F for additional details.

3.3 Access, Mobilization, and Accommodation

3.3.1 Haul Roads, All-Weather Roads, Site Access/Service Roads, and Winter Roads

The current operational components include marshalling facilities in Baker Lake and the 110 km AWAR between Baker Lake and the Meadowbank Mine. In 2015, Agnico Eagle received approval to construct a 64.1 km long exploration access road from Vault to the Amaruq exploration camp site in support of exploration activities (8BC-AEA1525). Agnico Eagle is proposing to upgrade this exploration road to a haul road to support the development of Whale Tail. No changes are proposed for the Meadowbank Mine haul roads, Meadowbank AWAR to Baker Lake (Agnico Eagle 2016f).

The proposed upgrade of the exploration road entails widening from the current 6.5 m width to 9.5 m width, plus haul road bypasses. Road surfacing will be constructed using waste rock or aggregates from the quarry sites and esker material already permitted and leased under 8BC-AEA1525. Typical cross-sections of the upgraded road based on underlying ground conditions are provided in Appendix D. The bridges were designed at the exploration stage to accommodate potential for use of the exploration road as a haul road. Culverts will be extended to allow for adequate drainage. The bridges and culverts for the access road have been screened by NIRB and approved by the NWB and DFO for construction (Agnico Eagle 2016f). Agnico Eagle submitted the Whale Tail Pit Haul Road Management Plan with the Type A Application (June 2016) and this plan has been included without modifications in support of this Type B Application for consideration.

Site access/service roads to be constructed during pre-development activities are identified in Figure 1.3. These roads will be constructed from non ARD/ML waste rock from quarry 2 and will provide access to various locations within the Amaruq site.

3.3.2 Culverts

For the purposes this pre-development application, no new culverts, will be constructed along site access/service roads (all other culverts will be installed as needed during operations or as per existing Type B exploration camp trail approvals). Culverts 182 and 183 were previously approved for construction under the 2BB – MEA1318. During culvert construction, Agnico Eagle will conform with all of the applicable DFO Operational Statements (i.e., bridge maintenance, clear span bridges, culvert maintenance, and ice bridge) for protecting fish and fish habitat in constructing and operating the proposed crossings. Agnico Eagle will construct in accordance with DFO and Environment Canada guidance and will put in place sediment and erosion control measures that are implemented prior to the start of work and maintained during the work phase to prevent entry of sediment into the water or the movement of re-suspended sediment into the stream crossings. Note: culvert installation at culvert 182 and 183 are already authorized under water licence 2BB-MEA1318.

On-site standard culverts will be installed similar to haul roads within the Meadowbank Mine site. Typical cross-section and profile for culverts is provided in Appendix D.

3.3.3 Mammoth Channel Crossing

Agnico Eagle is proposing the construction of a crossing between Mammoth and Whale Tail lakes as shown on Figure 1.3 to facilitate ongoing exploration activities and connect the pre-development quarry and associated activities to the WRSF during the pre-construction phase. Within the Type A Water Licence Application (June 2016) Agnico Eagle proposed installation of a culvert at the Mammoth channel crossing. Since then, Agnico Eagle has evaluated alternative options for this crossing and determined that a temporary bridge crossing is a preferred mitigation measure to minimize effects to the fisheries and ensure long term stability at the crossing for construction and operations. Agnico Eagle has included a proponent self-assessment of the proposed temporary bridge across the watercourse between Whale Tail Lake and Mammoth Lake which outlines existing conditions and predicted effects. Refer to Appendix H.

The temporary bridge is planned to be constructed in April 2018 prior to freshet and is expected to be used for pre-development activities during the open water season from June to October 2018. Its use may depend on the receipt of permits and the completion of the proposed dewatering and fishout of the North Basin of Whale Tail Lake and may extend for use by exploration. An ice road crossing is proposed to be used in the winter of 2018 and 2019 (Appendix H).

The following description of the proposed bridge is based on drawings prepared by WSG provided in Appendix D. The bridge will consist of two spans of 28 m, supported by abutments on each bank and a centre pier. The centre pier will be constructed of gabions filled with 100 to 200 mm rip rap which enclose an area filled with 300 to 500 mm crushed stone. The central pier will occupy an area of approximately 71 m^2 (Appendix H).

During construction, Agnico Eagle will conform with all of the applicable DFO Operational Statements (i.e., bridge maintenance, clear span bridges, culvert maintenance, and ice bridge) for protecting fish and fish habitat in constructing and operating the proposed crossing.

3.3.4 Marine Area

Meadowbank Mine relies on marine transportation for most of its supplies including fuel, construction and operation equipment, materials and consumables, including dangerous goods, food, household goods, and other non-perishable supplies. Consistent with existing Meadowbank operation materials will be transported to Baker Lake via barge and will either be directly transported to Meadowbank Mine and/or the Whale Tail Pit site or held for a short period of time in the Baker Lake marshalling area (Agnico Eagle 2016f).

Agnico Eagle does not forecast changes to the existing transportation requirements related to the marine environment; in other words no additional ship trips are expected to be added for pre-development activities or by this Project as compared to the level of shipping currently required to re-supply the Meadowbank Mine on an annual basis.

3.3.5 Explosives Production and Storage Sites

The existing emulsion plant located near the Meadowbank Mine will be maintained with deliveries on an as need basis during operations. The exploration access road will be used to truck explosives between Meadowbank Mine and the Whale Tail site, with minimal amounts of explosives to be stored at the Whale Tail Pit site. Explosives truck(s) will be based at the emulsion plant at Meadowbank Mine. The location of general

infrastructure for the management of explosives at the Whale Tail site are shown on Figure 1.2-1 of the FEIS (Agnico Eagle 2016f).

For the purposes of this Type B Application, any use, production and storage of explosives, will be undertaken in conjunction with the existing Type B water license 2BB-MEA1318; please refer to the Temporary Powder Magazine and Temporary Detonator Magazine shown on Figure 1.3 as the proposed temporary location for explosives under the Type B pre-development license

The Whale Tail site will primarily use emulsion based explosives during construction and operations to minimize the use of ammonium nitrate/fuel oil (ANFO).

The explosives storage facilities will be safely located away from vulnerable facilities, as stipulated by the federal and territorial *Explosives Use Act* and *Regulations*. The minimum setback distances between the proposed explosives storage facilities and the other mine site facilities will be governed by the *Quantity-Distance Principles User's Manual,* as published by the Explosives Branch of Natural Resources Canada. Use of these setback distances will ensure that the location of these proposed facilities meet all federal and territorial regulations regarding safe siting of such facilities. Agnico Eagle has also taken into account for stoppage of exploration road closures due to caribou migration and weather by appropriately sizing the on-site ore storage stockpile both at the Whale Tail Pit site and at Meadowbank Mine (Agnico Eagle 2016f).

Fuel and raw materials for manufacturing explosives will continue to be supplied to Meadowbank Mine using the approved shipping routes (Agnico Eagle 2016f).

3.3.6 Fuel Storage Facility

The construction and operations of the Whale Tail site will require the use of fuel (P-50 Fuel Diesel ULSD-43). The approved fuel storage facilities at Meadowbank Mine and Baker Lake marshalling area remain unchanged as a result of the proposed development of Whale Tail Pit and associated infrastructure. No additional marine shipping beyond current annual requirements will be needed. The exploration access road will be used to truck fuel between Meadowbank Mine and the Whale Tail site.

During pre-development, fuel at Amaruq will be stored at the existing double-walled envirotanks permitted under license 2BB-MEA1318, which have a total capacity of 1,960,000 litres (Agnico Eagle 2016g).

A bulk fuel storage facility has been proposed for Whale Tail Site under in the Type A Whale Tail Pit and Haul Road Project Application submitted in June 2016 (currently under joint NIRB/NWB review). The facility will hold 500,000 litres in 2- 250,000 litres tanks in a tank farm, which is expected to be approved in 2018 (Agnico Eagle 2016f).

Agnico Eagle does not anticipate construction the fuel storage facility; however, would request that the Type B licence allows for flexibility and inclusion of construction of the fuel storage facility as contingency. Agnico Eagle is committed to providing the NWB with detailed engineering drawings related to the fuel storage facility at least 60 days prior to proposed construction and revising the spill contingency plan and monitoring plans to account for the change in operation, if implemented prior to issuance of a possible Type A Water Licence.

3.3.7 Maintenance, Warehouse, and Laydown

Primary maintenance during pre-development will occur using existing infrastructure at Meadowbank Mine. For light maintenance, the industrial site adjacent to the Whale Tail Pit will include one maintenance shop for mine

equipment and one for haul trucks. Agnico Eagle may also include a wash bay, a machine shop, and a welding shop. The concrete foundation will be designed according to the type of bay (Agnico Eagle 2016f). Construction of the laydown area, maintenance shop and warehouse will proceed immediately upon Type B Predevelopment License approval.

3.4 Water Use

3.4.1 Direct Use

During pre-development activities, Agnico Eagle does not propose any direct use of water for domestic or other purposes. Under the 2BB-MEA1318 advanced exploration water licence, water for domestic or other purpose is sourced from Whale Tail Lake is authorized to a maximum of 299m^3 per day. Personnel required for pre-development works during construction will be housed in the existing exploration camp, where freshwater use for potable domestic use is projected at a maximum of 84 cubic metres per day (m^3/day), based on a 350 people camp capacity, using both the existing Exploration Camp and additional 210 units and a nominal consumption of 240 litres per day per person (L/day/person). (Agnico Eagle 2017a). The current Type B advanced exploration water licence 2BB-MEA1518 also authorizes 5-7 m^3 per day for portal and decline development. Any increased water use can be met within the 299m3/day allowed under 2BB-MEA1318. Agnico Eagle proposed during construction to manage operations on site to limit drilling as needed in order to remain within the allotted maximum of 299 m^3 per day. Water usages during pre-development activities include: potable use, drilling water, and industrial use for concrete production.

Freshwater will be sourced from Whale Tail Lake for pre-development activities; the freshwater intake location is shown in Figure 1.3. Agnico Eagle will endeavor to minimize the amount of freshwater required for the Project, where possible.

If needed, water for dust suppression will be sourced from and within quantities currently authorized under licence 8BC-AEA1525.

3.4.2 Indirect Use

As stated in the above sections, water management structures (water retention dikes/berms and diversion channels) will be constructed as needed to contain and manage the contact water from the areas potentially affected by the predevelopment, and construction. The water management infrastructure construction associated with pre-development activities includes the following:

- piping and pump preparation for dewatering (i.e., roads, pads, water treatment plant); and
- turbidity curtain installation.

Piping and pump preparation is proposed from the shoreline of the intake locations from both Mammoth and Nemo Lake to their respective water treatment plants. Proposed piping and pump locations can be seen in Figure 1.3.

During construction, to the extent practical, turbid water originating from the quarry will be temporary stored in the Whale Tail WRSF Pond or in an approved storage facility in the Type BB (i.e., A-P5) (Agnico Eagle 2016f).

Actiflo Clarifier, having an approximate hydraulic capacity of 2,000 m^3/h, will eventually be used to remove the suspended solids during the proposed dewatering of Whale Tail Lake following issuance of Type A Licence.

Water will be treated to meet the discharge criteria and pumped to the receiving environment (Mammoth Lake) via the discharge pipeline and the submerged diffuser (Agnico Eagle 2016f). Although water treatment is not proposed for this Type B Licence Application, the transportation/mobilization and pad development for the water treatment facility (along with required pumps and piping) is considered.

As part of pre-development activities, Agnico Eagle is proposing the installation of four turbidity curtains (illustrated in Figure 1.3) that will be used during construction of Whale Tail Dike. Two layers of turbidity curtains will be installed across Whale Tail Lake, on both sides of the eventual Whale Tail Dike location.

3.5 Waste Disposal

3.5.1 Waste (Domestic and Hazardous) Management

All hazardous waste will be properly shipped to approved disposal facilities in the south. All organic material from the Whale Tail site will similarly be disposed of using the existing Meadowbank incinerator. Waste oil will be collected and used on-site in waste oil burners (Agnico Eagle 2016f).

All wastes that could attract wildlife, used spill response supplies, and other appropriate wastes will be incinerated in the Amaruq Exploration on-site incinerators. Wastes that cannot be incinerated but that can be landfilled will be disposed of in Meadowbank's approved landfill. Wastes that cannot be incinerated or landfilled will be prepared for shipment to a certified waste management company outside of Nunavut for treatment, recycling and/or disposal (Agnico Eagle 2016g).

3.5.2 Sewage

Agnico Eagle is presently using three Kodiak Bionest Wastewater Treatment Systems (WWTS) designed to handle both black and grey water and produce effluent in compliance with NWB water license 2BB-MEA1318. During the predevelopment license the Bionnest system will continue to be used to meet license limits or will be upgraded to a membrane bioreactor system, to ensure water license discharge limits are met and to ensure a smooth transition from pre-development, to construction and into operations.

3.5.3 Solid Waste

Similar to sewage waste, no solid waste disposal is proposed under this Application. Any wastes generated will be back hauled to an approved waste disposal facility (i.e., stored in seacans or shipped back to the Meadowbank landfill).

All wastes that could attract wildlife, and other appropriate wastes will be incinerated in the Amaruq Exploration on-site incinerators or shipped to the Meadowbank Incinerator. Wastes that cannot be incinerated but that can be landfilled will be disposed of in Meadowbank's approved landfill. Wastes that cannot be incinerated or landfilled will be prepared for shipment to a certified waste management company outside of Nunavut for treatment, recycling and/or disposal.

Reduce, reuse, and recycle initiatives will be developed at the Project to minimize the quantity of waste incinerated or directed to the landfill. To support this initiative, operating procedures will be developed to maximize the volume of materials that are recycled and/or reused. This will include eliminating the use of disposable materials where possible, and segregating waste destined for reuse and recycle alternatives.

The number of people working on-site, and the activities occurring at the time, has a direct bearing on the volume of waste destined for the proposed landfill and the amount of materials removed from the waste stream

for reuse and recycling. Also, purchasing policies that focus on reduced packaging will have a bearing on the volume of waste. Agnico Eagle will report in the Annual Reports to the 2BB-MEA1318 and 2AM-MEA1525, wherever applicable, on the volumes of waste received of as a result of pre-development activities.

4.0 ENVIRONMENTAL SETTING (BASELINE AND EFFECTS)

The Meadowbank Mine FEIS (Cumberland 2005a) and the Whale Tail Pit FEIS (Agnico Eagle 2016f) applies an ecosystem-based approach by describing the ecological function of each ecosystem component or VC, indicating the ecological and cultural pathways of the potential impacts that are predicted, and designing mitigation and monitoring plans to address those impacts. In design of the Project, Agnico Eagle considered the potential impacts and assessed trade-offs during planning to minimize impacts early in design. Examples include, but are not limited to: using existing Meadowbank Mine facilities; increasing the road length to avoid sensitive cultural and wildlife sites; containing the Whale Tail Pit operations within a single upper watershed; designing larger saddledams to divert non-contact water or contain contact water; and backflooding and channelling that leverages natural topographic features to create a passive diversion channel, while directing flow within the same small watershed. While these design considerations minimize impacts, they do have trade-offs, such as less water for dilution of effluent and delay in final closure for infrastructure at the Meadowbank Mine.

Baseline programs have been completed for the Meadowbank Mine site, AWAR, Whale Tail Pit Haul Road, and Whale Tail Pit study areas and Agnico Eagle have included data collection for the physical environment (e.g., terrain and soils, permafrost, geochemistry, noise, and surface water quantity and quality), biological environment (e.g., vegetation, terrestrial wildlife and birds, and fish and other aquatic organisms), and the cultural environment (e.g., Inuit Qaujimajatuqangit [IQ], archaeology, and socio-economics) specific for the extension of the Meadowbank Mine through the development, operations, and closure of the Whale Tail Pit. Data collection for the physical, biological and cultural data has been ongoing since prior to construction of the Meadowbank Mine. Baseline data are summarized in a series of baseline reports that are included as supporting documents to the FEIS (Agnico Eagle 2016f) and/or are provided on the NIRB website (NIRB 2015a). It is anticipated that should the Project not go ahead, baseline conditions would remain relatively constant with the existing conditions today; other than those affected by climate change, which is discussed where appropriate in the FEIS.

The methods used in the FEIS are fully described in Volume 3 of the FEIS (Agnico Eagle 2016f). A summary of the physical, biological, and cultural environments and their potential impacts are provided below, while the detailed impact assessments are provided in Volume 4 (Atmospheric Environment), Volume 5 (Terrestrial Environment), Volume 6 (Freshwater Environment), and Volume 7 (Human Environment) of the FEIS (Agnico Eagle 2016f).

In general the approach and methods for analysing, assessing, and determining the significance of environmental impacts included defining and describing these key elements:

- VCs;
- special and temporal boundaries;
- existing conditions;
- pathway analysis;
- residual effects analysis (includes project specific and cumulative effects);
- prediction confidence and uncertainty;

- residual impact classification and determination of significance; and
- monitoring and follow-up (including steps to be taken to fill gaps where applicable).

Effects attributed to Project activities were assessed in conjunction with the full Environmental Assessment (EA) for the Project (Agnico Eagle 2016f). Mitigation that applies to the scope of activities in pre-development are provided in Section 5 and stand along the Mitigation and Monitoring Management Plans in the following categories:

- Mine Infrastructure (Section 5.1)
- Water, Domestic Waste, and Operational Infrastructure (Section 5.2)
- Construction and Transportation Infrastructure (Section 5.3)
- Materials Management and Emergency Response (Section 5.4)
- Environmental Protection and Monitoring Plans (Section 5.4 and Appendix F)
- Closure, Reclamation, and Security (Section 5.5 and Appendix G)

A summary of the environmental impacts of the Project relating specifically to the use of water or disposal of waste is provided below. Contextually, the summary below is provided for mining and full development of the Project, and would encompass baseline conditions in areas where pre-development activities would occur and impacts from pre-development activities.

4.1 Description of Physical Environment and Summary of Impacts

4.1.1 Terrain, Permafrost, and Soils

The surficial geology of the Local Study Area (LSA) shows strong evidence of glacial activity. The area is dominated by veneers and blankets of till overlying undulating bedrock. Bedrock frequently outcrops in isolated exposures, elevated plateaus and elongated ridges. The southern part of the Whale Tail Pit Haul Road is controlled more by the underlying bedrock than the Whale Tail Pit where thicker till deposits are more common. A large glaciofluvial esker and terrace complex is found in the northeast part of the Whale Tail Pit and extends towards the southeast intersecting at or close to the haul road in several areas. Lakes and ponds are abundant throughout the LSA, occupying approximately 16 percent (%) of the area.

The Project is found within the zone of continuous permafrost, meaning that permafrost is found underlying 90 to 100% of the landscape. The depth of permafrost in the Project study area is estimated to be 450 to 550 m depending on proximity to lakes, similar to that estimated for the Meadowbank Mine.

Soils within the LSA are dominated by Cryosols (in particular Turbic Cryosols), which is consistent with the dominant soil type identified for the Meadowbank Mine. Saturated soil layers overlying frozen layers were observed in Turbic and Static Cryosols during the 2015 field survey and were also noted in previous baseline studies. Field results suggest that the mineral soils in the LSA are predominantly acidic to neutral, ranging from pH 5.14 to 6.96, with pH tending to increase with soil depth. Due to their mineralogy, the mineral soils in the Project area are increasingly sensitive to adverse effects due to acid deposition with decreasing baseline pH.

Impact Summary

The existing terrain conditions found within the Project footprint will to some extent dictate the overall Project footprint. For example, the routing of the haul road has been selected to minimize the number of water crossings and the availability of borrow material along the route. Where possible, the haul road has been located in areas of higher elevation, which tend to have better drainage, minimize the potential for snow drifting and the haul road avoids low lying areas with poorer ground conditions.

The potential for permafrost degradation associated with proposed infrastructure will have an effect on Project design. For example, thaw-stable fill materials (with a minimum fill thickness) will be placed overlying the existing terrain to maintain existing permafrost conditions along the haul road route and minimize the creation of thaw instabilities.

Climate change predictions suggest that for the Arctic air temperatures are expected to increase by 2050. Permafrost is sensitive to climate change and an increase in air temperature will likely cause natural permafrost degradation. The foundations of the waste rock pile are expected to remain frozen under a long-term warming trend; however, the potential deepening of the active layer will be considered in the design of the waste rock pile and mine infrastructure.

A full summary of potential effects related to terrain, permafrost, and soils is provided in Volume 5, Section 5.3 of the FEIS (Agnico Eagle 2016f).

4.1.2 Air Quality

Background criteria air contaminant (CAC) concentrations are used in the assessment to predict potential changes to regional air quality as a result of Project-related air emissions. The Project will result in emissions to air that could change local or regional air quality. To determine whether Project-related emissions lead to air quality conditions that are consistent with existing Territorial and Federal air quality criteria, maximum predicted concentrations of CACs emitted from the Project must be added to the background concentrations of the CACs in the region. Background concentrations can be established through baseline measurements (Ontario MOE 2009; AESRD 2013), or prescribed by regulators based on regional airsheds (Saskatchewan MOE 2012). The CACs considered for the FEIS (2016f) include the following:

- carbon monoxide;
- oxides of nitrogen;
- sulfur dioxide; and
- particulate matter, including:
  - particulate smaller than 2.5 micrometres in aerodynamic diameter;
  - particulate smaller than 10.0 micrometres in aerodynamic diameter; and
  - total suspended particulate matter.

In Nunavut, there are no prescribed background concentrations for CACs when performing air quality predictions for proposed developments. A statistical analysis of publicly available air quality monitoring data in the Western

Arctic and background CAC values that were used to predict the changes to regional air quality that may arise from Project-related air emissions was completed to support the assessment.

Impact Summary

Traffic along the proposed haul road from the Whale Tail Pit to the existing Meadowbank Mine, mining operations at Whale Tail Pit, and the extension of Meadowbank Mill and Camp operations all have the potential to generate combustion emissions and fugitive dust that can affect air quality and were assessed as primary pathways.

The effects of fugitive dust emissions on air quality adjacent to the haul road are limited in spatial extent and occur primarily on dry windy days in the summer. These effects are reversible in that fugitive dust will no longer affect air quality once the Whale Tail Pit is decommissioned and the haul road becomes inactive.

Similarly, the effects of mining activities at the Whale Tail Pit on regional air quality are limited in spatial extent and occur primarily on dry windy days in summer. These effects are reversible in that emissions will no longer affect air quality once the Whale Tail Pit is decommissioned and the haul road become inactive.

Based on monitoring results and the short operations phase of the Project, the spatial and temporal effects of an extension to the operations of the Meadowbank Mill and Camp on regional air quality are considered low and reversible.

Although primary pathways have been identified for air quality, no residual impact classification are made because air quality does not have an assessment endpoint, only measurement endpoints (i.e., comparison to relevant ambient air quality guidelines or standards). Any potential effects associated with the primary pathways are captured in the assessment of potential effects to, and residual impact classifications for, other VCs (e.g., soil quality, water quality, and human health).

A full summary of potential effects related to air quality is provided in Volume 4, Section 4.3.3 of the FEIS (Agnico Eagle 2016f).

4.1.3 Noise

Alberta Energy Regulator (AER) Directive 038 specifies that noise impact should be assessed at the most impacted residences (including seasonally or permanently occupied dwellings) located within 1.5 kilometre (km) from the project boundary.

In the absence of residences located within 1.5 km of the Project, four unoccupied locations were chosen at the distance of about 1.5 km from the proposed Project to be representative of the baseline noise conditions in the area (R6 to R9). The baseline noise monitoring program for the Project is the continuation of the annual noise surveys for Meadowbank Mine, which have been completed since 2009 at five representative locations surrounding the Meadowbank Mine in support of the Noise Monitoring and Abatement Plan.

The results of the baseline program indicate that the baseline noise levels in the area of the Project are primarily influenced by natural noise sources, such as wind. The noise levels measured at the four noise monitoring sites varied between 29 A-weighted decibels (dBA) and 39 dBA for daytime, and between 29 dBA and 41 dBA for nighttime.

Impact Summary

Noise and vibration levels associated with construction activities (e.g., haul road construction) are anticipated to decay to below existing ambient noise levels, be less than AER Directive 038 permissible sound level limits, and decay to levels below NPC-119 limits at the boundary of the LSA.

For activities associated with the Project operations, noise levels are anticipated to be below existing ambient noise levels at the boundary of the Regional Study Area (RSA) and be compliant with AER Directive 038 permissible sound level limits at the boundary of the LSA. Noise and vibration levels associated with blasting during Whale Tail Pit operations will decay to levels below NPC-119 limits at the boundary of the LSA. Noise and vibration associated with blasting during Whale Tail Pit operations will not affect fish spawning or fish habitat.

A full summary of potential effects related to noise and vibration is provided in Volume 4, Section 4.4.3 of the FEIS (Agnico Eagle 2016f).

4.1.4 Surface Water Quantity

The proposed Whale Tail Pit is located in the A watershed (i.e., where Lake A17 [Whale Tail Lake] and Lake A16 [Mammoth Lake] are located), and water management activities are planned in the A watershed, and the C watershed (i.e., where Lake C38 [Nemo Lake] is located); these two watersheds drain into Lake DS1, which drains north to the Meadowbank River. These watersheds comprise an extensive network of lakes, ponds, and interconnecting streams, and have lake water surface fractions (i.e., the ratio of lake surface area to watershed area) of 16% (A watershed) and 23% (C watershed).

Discharges of watercourses in the LSA typically peak in late-May to mid-June from snowmelt, rapidly decline in July, and low discharges prevail until frozen conditions in October to November, with a secondary peak in September from rainfall events. Watercourses in the LSA are frozen over the winter.

Derived long-term mean annual water yield for selected lakes in the LSA vary between 86 millimetres [mm] at Lake C38 (Nemo Lake) to 230 mm at Lake A69. These water yields are similar to regional water yields reported at the Meadowbank Mine (Cumberland 2005b) and that have been found at Meadowbank since operations began in 2010.

Impact Summary

Infrastructure development, dewatering, and diversion activities will result in effects on discharges, water levels, and channel/bank stability in watersheds of the surface water quantity LSA only, including watersheds A, and C, which will vary over the construction, dewatering, operations, and closure phases. The effects are projected to be negligible following the closure phase and are projected to be negligible beyond the LSA at all times.

Effects will result in change of state from baseline conditions, and were assigned magnitude of high. The effects are expected to remain confined to the LSA, and were classified as local. The effects are expected to be reversible following the closure phase and classified as medium-term. The effects will continue over the assessment period and were classified as continuous. The effects are probable and were classified as highly likely.

A full summary of potential effects related to surface water quantity is provided in Volume 6, Section 6.3.3 of the FEIS (Agnico Eagle 2016f).

4.1.5 Surface Water Quality

The majority of water chemistry constituent concentrations were below the analytical detection limit for samples collected in 2014 and 2015. Constituents that were below the detection limit across all samples included carbonate, hydroxide, nitrite, total cyanide, four total metals (boron, lithium, selenium, and silver), and eight dissolved metals (antimony, bismuth, boron, selenium, silver, thallium, vanadium, and zirconium).

Lakewater pH was circum-neutral (6.4 to 7.6) in all lakes. Nutrient concentrations were low in the lakes with results less than the detection limit in most samples. Metals were below the analytical detection limit in most samples, and when they were detected, concentrations were below the Canadian drinking water quality guidelines (CDWQG) and Canadian water quality guidelines (CWQG).

Samples were also collected at tributary stations in the Whale Tail Pit study area and haul road study area. Nutrient concentrations were low in the tributaries with results less than the detection limit in most samples. Metals were below the analytical detection limit in most samples, and when they were detected, concentrations were below the CDWQG and CWQG, with two exceptions. Aluminum was above the CWQG at two stations (A55-A17 and A5-A4) in August; all other detectable metal concentrations were less than the CWQG and the CDWQG.

Sediments were collected from lakes in the Whale Tail Pit study area and from the reference lakes. Concentrations were generally similar between lakes and concentrations were less than the interim sediment quality and probable effect level guidelines for cadmium, copper, lead, and mercury in all samples

Impact Summary

Project related air emissions have the potential to affect local terrestrial and aquatic ecosystems. The Inuit are concerned about the effects of dust from the Project and how it can change the colour and quality of water as a drinking source and to support the aquatic ecosystem. To address this concern, the potential effects of dust and air emissions deposition were evaluated. The duration of these effects are predicted to be short to medium-term in length, primarily restricted to operations, with some pathways in construction and closure. Based on the results of the air quality predictions for the Project, the use of mitigation the effects of deposition of dust and acidifying air emissions is predicted to have a negligible effect on water quality, and thus a negligible effect on aquatic ecosystems and traditional and non-traditional uses.

The planned diversion of Whale Tail Lake (South Basin) to the Mammoth Lake watershed will increase the surface water elevation of Whale Tail Lake (South Basin), resulting in flooding of tributary lakes and the potential for erosion along new shorelines, with mobilization of total suspended solids, and increased concentrations of mercury in the water and biota, from decomposition of newly flooded vegetation. Based on Project timeframe and literature review, the duration of effects was rated as medium-term and the geographical extent of effects was considered local because effects will be limited to Whale Tail Lake. The potential magnitude of the effect was rated as moderate because some parameters may increase above guidelines, but not to a level that could affect the sustainability of the ecosystem or the continued traditional and non-traditional uses.

Management of water in the Whale Tail Pit area and the discharge of effluent to the downstream environment has the potential to change water quality through disturbance of lakes and release of toxic substances. There is the potential to change Mammoth Lake and the downstream receiving environment from the Project activities related to this pathway. Discharge of effluent will be limited to the operations phase, but the potential effects may extend through to early post-closure. Without treatment (i.e. using conservative assumptions), it is predicted that

there will be a change in downstream water quality due to the Project but that changes will be limited to one constituent: phosphorus. Wtihout treatment, the duration of the effect was rated as long-term but not permanent because the model predicts a return to baseline conditions in post-closure. The geographic extent was rated as regional as there is the potential for changes in nutrients as far as Downstream Node 2. Finally, the magnitude was rated as moderate to high because there is a high degree of conservatism in the predictions, increased phosphorus could affect sustainability of the ecosystem, in a select system of lakes, but may not affect aquatic health.

A full summary of potential effects related to surface water quality is provided in Volume 6, Section 6.4.3 of the FEIS (Agnico Eagle 2016f).

4.2 Description of Biological Environment and Summary of Impacts

4.2.1 Vegetation

Vegetation surveys identified 138 vascular plants in the Project area, of which 107 were identified to species level and 31 were identified to genus level. A total of 61 non-vascular plants (20 bryophytes and 41 lichens) were identified from samples collected during 2015 field surveys. The most common and widespread vascular species found were the northern Labrador-tea (*Rhododendron tomentosum*) and mountain cranberry (*Vaccinium vitis-idea*), which were both observed in 99 of the 128 plots surveyed and present in all ecological land classification types. The overall findings indicate that the majority of the areas surveyed consist of low-diversity vascular plant communities dominated by fewer than 10 species.

A total of 15 ecological land classification units were mapped within the RSA and 13 ecological land classification units in LSA. Existing disturbance accounts for 0.2% of the RSA and is associated with the approved Meadowbank Mine footprint.

Impact Summary

Physical loss of vegetation populations and communities as a result of construction period will remain during the life of the mine. Arctic plant growth rates are limited by short harsh growing conditions; therefore, it is anticipated that once vegetation is removed the loss is considered long-term and continuous until functional habitat is reclaimed during the closure and post-closure phases. The post-closure vegetation communities will differ from the existing vegetation communities due to the effects of disturbance and recolonization, but revegetated areas of the Project footprint are expected to be productive and function as wildlife habitat, thus the loss is expected to be reversible. Within the LSA and RSA, these changes to vegetation (wildlife habitat) are small enough that there will be no measureable ecological change.

It is unlikely that there will be permanent changes in vegetation community composition due to the Project. The effects on vegetation habitat communities due to changes in hydrology would be localized and limited to the Project LSA. At post-closure, it is expected that hydrology conditions would return to baseline. Therefore, changes in vegetation communities composition due changes in hydrology are expected to be reversible.

The post-closure vegetation communities will differ from the existing vegetation communities due to the effects of disturbance and recolonization, but revegetated areas of the Project footprint are expected to be productive and function as wildlife habitat, thus the loss is expected to be reversible. Within the LSA and RSA, these changes to vegetation (wildlife habitat) are small enough that there will be no measureable ecological change.

The combined evidence concerning vegetation quantity and quality in the LSA and RSA indicates that vegetation would remain self-sustaining and ecologically effective during construction and operations and would continue to function as wildlife habitat. Graminoid and lichen-dominated ecological land classification units that function as high-quality caribou and muskox habitat will continue to be present and well distributed across the landscape. Consequently, incremental effects from the Project on vegetation are not considered to be significant on a local and regional scale.

A full summary of potential effects related to vegetation (wildlife habitat) is provided in Volume 5, Section 5.4 of the FEIS (Agnico Eagle 2016f).

4.2.2 Terrestrial Wildlife and Wildlife Habitat

Caribou

There are five migratory barren-ground caribou herds identified in the Kivalliq including the Beverly, Ahiak, Wager Bay, Lorillard, and Qamanirjuaq herds. Elders have stated that there are no caribou calving grounds identified near the Project area (Volume 7, Appendix 7-A of the FEIS [Agnico Eagle 2016f]). The nearest calving ground to the Project is over 100 km away (Nagy et al. 2011).

Collared caribou from all five herds have used the RSA, although at different frequencies and seasons, depending on their herd ranges. The locations of collared caribou from the Ahiak (2002 to 2015), Beverly (1996 to 2015), Lorillard (1998 to 2015), Qamanirjuaq (1993 to 2015), and Wager Bay (1999 to 2015) herds were obtained from Government of the Northwest Territories and Government of Nunavut to describe seasonal presence of these herds within the Project RSA.

Collard caribou from all five herds spent 0.37% of their total time in the RSA (i.e., the ratio of collar time within the RSA versus outside the RSA). The collar data indicates that the Ahiak, Lorillard, and Wager Bay herds have the greatest likelihood of interacting with the Project, as they were the most frequently recorded herds within the RSA. Collared caribou were most commonly recorded in the Project RSA during the late winter and fall rut.

The RSA appears to be located within a transit corridor during spring and fall migration, predominantly for the Ahiak and Lorillard herds moving between calving and wintering grounds. For spring migration (April to June), areas of high use by collared caribou are more contained (i.e., less spread out), and these corridors are delineated on the way to, and in proximity of, calving grounds outside the RSA. For fall migration (September to November), as animals are migrating to wintering grounds, areas of high use by collared caribou are more widely distributed. None of the herds were recorded crossing the proposed Project haul road route during the calving season, and only one caribou was recorded during the post-calving season.

Local Elders report that caribou were hunted throughout the Project RSA during both present and historic times (Volume 7, Section 7.3 of the FEIS [Agnico Eagle 2016f]). August, September, and October have traditionally been the most active harvesting months, likely reflecting higher populations of caribou travelling through the region. Most reported hunting trips have not gone beyond the northern extent of the AWAR, and are focused around Baker Lake and in the Whitehills Lake area.

Muskox

Current muskox populations in Canada are stable to increasing, representing a rebound from overhunting in the early 1900s (Ferguson and Gauthier 1992). During Project baseline studies, 30 muskox were observed and muskox sign was observed in the form of scat and bones.

Predatory Mammals

Arctic Wolf

The Project LSA encompasses several important areas for wolves (Volume 7, Section 7.3 of the FEIS [Agnico Eagle 2016f]). During IQ workshops, participants noted that traditional denning habitat and two movement corridors are known within the study areas; one crosses north of Uiguklik and Tasirjuaraajuk lakes (east/west) and another trends southeast/northwest and passes just south of the Meadowbank Mine (Volume 7, Section 7.3 of the FEIS [Agnico Eagle 2016f]). The presence of wolves and denning sites were confirmed by biologists, as three former den sites and one active den site were found in the RSA during baseline surveys (Volume 5, Appendix 5-C of the FEIS [Agnico Eagle 2016f]).

Grizzly Bear

Grizzly bears are a species of special concern in Canada (COSEWIC 2016). The primary cause of grizzly bear decline has been the fragmentation and destruction of their habitat, as these animals require territories of up to 1,000 square kilometres (km^2) (McLoughlin et al. 2002). Within approximately the last 12 years, local Inuit Elders have noted an increase in the numbers of grizzly bears seen between Baker Lake and the Back River.

Wolverine

Wolverine are a species of special concern in Canada (COSEWIC 2016). Elders indicated that wolverine population appears to be increasing, and they are viewed both as a nuisance animal, due to their ability to access and destroy food caches, and as a greatly respected animal due to their intelligence and strength. In recent years, local Elders have observed wolverine becoming more common within the RSA (Volume 7, Section 7.3 of the FEIS [Agnico Eagle 2016f]).

Raptors

Of the 10 raptor species known to breed in the Kivalliq, five species are expected to occur within the RSA, including: short-eared owl, snowy owl, rough-legged hawk, peregrine falcon, and gyrfalcon. Of these species, peregrine falcon and short-eared owl are listed as special concern in Canada (COSEWIC 2016). Elders have noted that there are more raptors in the vicinity of the RSA as compared with 20 years ago; however, owls are believed to be less common (Volume 5, Section 5.5 of the FEIS [Agnico Eagle 2016f]).

Water Birds

Water birds encompass waterfowl (ducks, geese, and swans) and loons. Baseline studies indicate that there are few water birds in the RSA. Canada goose, snow goose, long-tailed duck, and loons were found to be the most abundant water bird species.

Upland Breeding Birds

Various upland breeding bird species, including horned lark, American pipit, white-crowned sparrow, savannah sparrow, lapland longspur, snow bunting, willow ptarmigan, rock ptarmigan, semi-palmated sandpiper, and American golden-plover, are present within the study areas. None of the upland birds occurring within the study

area are listed federally (COSEWIC 2016). The red-necked phalarope is listed federally as a species of special concern (COSEWIC 2016), but has not been observed in the RSA.

Small Mammals

In the Arctic, small mammals are a significant food resource for a variety of predatory mammals and birds. Several species, including Arctic hare, Arctic ground squirrel, and northern collared lemming, were observed during 2014 baseline studies. None of the small mammals within the RSA are considered species at risk (COSEWIC 2016).

Impact Summary

Direct loss and fragmentation of wildlife habitat due to the Project footprint are expected to have a measurable effect on caribou and upland birds. Overall, the habitat loss is anticipated to have a moderate effect on wildlife populations in the study area. Specifically for caribou, approximately 2% of the preferred habitat in the LSA will be directly disturbed by the Project, considering both the growing and winter seasons. As this habitat loss is confined to the LSA, it is local in geographic extent.

Indirect habitat loss due to sensory disturbance (such as noise and movement) will extend beyond the footprint and have negative effects at the regional level. The impact of indirect habitat loss from sensory disturbance to caribou and upland birds is considered moderate as it is assumed that some degradation of habitat quality or reduced wildlife activity at the LSA scale will occur. Noise created by the Project is anticipated to be similar to that caused by the Meadowbank Mine, indicating that sensory disturbance from the Project will be similar to that of the Meadowbank Mine. Impacts from sensory disturbance will be continuous throughout the life of the Project but are anticipated to be reversed following closure (i.e., medium-term) when dust, noise and activity are no longer present.

Despite short residency time within the RSA, the Project is likely to have a negative effect on caribou, by presenting barriers to their migration at a regional scale. The effect of the Project and haul road on caribou migration is expected to be moderate, as some caribou may change their routing to select a crossing point. Upon closure, there will be no remaining traffic and the Project haul road will be scarified. It is anticipated that caribou will cross the road freely following closure (i.e., medium-term) and that the impact will be reversed at this time.

Flooding at the Project, due to the construction of dikes will have a negative effect on upland and water birds due to the loss of breeding habitat and the possible destruction of nests. Flooding will be isolated and will only take place in the first three years of construction and operations. Following the construction of the dikes there will no longer be a risk of nest destruction. The impact of any nests that are destroyed during construction is reversible as these impacts are not anticipated to have a long-term effect on the LSA population.

A full summary of potential effects related to terrestrial wildlife and wildlife habitat is provided in Volume 5, Section 5.5.3 of the FEIS (Agnico Eagle 2016f).

4.2.3 Fish and Other Aquatic Organisms

Haul Road

Three watercourses (at crossing km 16.0, km 23.9, and km 32.3) were classified as rivers (large, flowing open channels) with potential habitat for VCs, such as Arctic Char, and Arctic Grayling. These large rivers provide spawning, rearing, and foraging habitat for small-bodied fish, and provide migratory corridors and various habitat

functions for large-bodied fish (e.g., Arctic Char, Arctic Grayling). Watercourse descriptions are provided in Appendix 6-J; Section 3.5 of the FEIS (Agnico Eagle 2016f).

A total of 52 fish were captured using 186 mins of fishing efforts at 11 watercourse crossing locations along the haul road alignment. Arctic Char were captured at three watercourses upstream of Pipedream Lake (Tasirjuaraajuk Lake), a lake that supports Arctic char based on IQ (Volume 7, Appendix 7-A of the FEIS [Agnico Eagle 2016f]).

Whale Tail Pit

Most streams assessed (*n* = 17) had interstitial flow (i.e., water flowing through the interstitial spaces among boulders and cobbles) at some time during the year. Eight streams had surface flow (i.e., water present above the substrate) year-round. Five streams had ephemeral flows and would likely be dry in late summer. Potential Arctic Grayling spawning habitat (i.e. gravel substrate) was observed at two locations in Stream A63-A18, however, no Arctic Grayling eggs or adults were observed nor collected.

A total of 1,223 fish were captured in lakes and streams in the RSA near the Whale Tail Pit. Six species were captured in total: Lake Trout, Arctic Char, Round Whitefish, Burbot, Slimy Sculpin, and Ninespine Stickleback. In Lake A17 (Whale Tail Lake) and Lake A16 (Mammoth Lake) combined, Ninespine Stickleback was the most abundant species captured, followed by Lake Trout. Arctic Char were captured in Whale Tail Lake, but not in Mammoth Lake. In small lakes overall, Ninespine Stickleback were the most abundant species in the catches.

In streams, Ninespine Stickleback were the most abundant species, followed by Slimy Sculpin. Stream A55-A17, a tributary to Whale Tail Lake, had the highest diversity of fish species (Lake Trout, Arctic Char, Round Whitefish, Slimy Sculpin, and Ninespine Stickleback).

Six major groups of phytoplankton were present in the lakes, which included Cyanophyta (blue-green algae), Chlorophyta (green algae), Chrysophyta (golden-brown algae), Bacillariophyceae (diatoms), Cryptophyta (cryptomonads), and Dinoflagellata. Chrysophytes were observed to be the dominant taxonomic group in terms of density and biomass during both years of sampling.

Overall, rotifers were the most abundant major taxonomic group of zooplankton at most locations in 2015 with the exception of Nemo Lake where Copepods were the most abundant taxa. Cladocerans made up a relatively small proportion of the zooplankton community during the summer months.

Benthic invertebrate abundance and richness were low at most locations sampled in 2014 and 2015. Dominant taxa were primarily chironomids in the subfamilies Chironominae and Tanypodinae and fingernail clams (Sphaeriidae). The highest abundances were observed for Mammoth Lake, which also had the highest within lake spatial variability in abundance.

Qualitative periphyton surveys were done in July and September in the same general locations in each lake. A different area was surveyed in August. Periphyton growth in July was generally considered sparse to moderate with periphyton cover more noticeable at deeper depths. In August, periphyton growth was generally considered low to moderate with green filamentous algae observed at most locations.

Impact Summary

Primary pathway effects will result largely from direct habitat losses from the construction of the Mammoth and Whale Tail dikes, the Whale Tail Pit, the dewatering and fish out of the diked area in Lake A16 (Mammoth Lake)

and Lake A17 (Whale Tail Lake), and the flooding of Lake A17 (Whale Tail Lake). Indirect effects to fish and fish habitat will include those related to changes in surface water quantity and water quality.

The construction of the Northeast, Mammoth, and Whale Tail dikes and the subsequent dewatering of the diked area is expected to have a moderate impact on the local fishery (Arctic Char, Lake Trout, and Round Whitefish), occurring on a regional scale (as the project lakes are land-locked). Most of the residual effects from direct changes in habitat will be long-term in duration and reversible following back-flooding, breach of dikes, and reconnection of habitats. Residual effects from the fish-out are expected to be short-term in duration. Residual effects from direct losses of lake habitat from the dike (sections remaining at post-closure) and the open pit development are expected to be permanent, but are expected to be low in magnitude and occur at the local scale.

The construction and operations of the Northeast Dike and Whale Tail Dike and their associated diversions will result in the flooding of tributary streams, affecting the abundance and distribution of VC fish species. The effects of flooding from the Project dikes and diversions are possible, and effects, if any, are expected to be low in magnitude, medium-term in duration, and occur at the local scale. It is important to note that flooding will result in an overall increase in fish habitat with the increase in elevation (and area) for the affected lakes (i.e., lakes above the Northeast and Whale Tail dikes)

Construction and operations of the Mammoth, Whale Tail, and Northeast dikes and diversions will also result in effects to habitat connectivity. Fragmentation effects related to the Project dikes are expected to be low in magnitude, long-term in duration, and occur at the regional scale. Any effects would be reversible when the dikes are breached at closure.

The amount of direct changes to fish habitat and biomass from the Project is expected to result in moderate residual effects to Arctic Char, Lake Trout, and Lake Round Whitefish, and the forage species that support the fishery. The effects to the fishery are expected to be moderate.

The geographic extent of all direct effects combined are regional (i.e., measurable at the scale of the assessment area). Although some habitat losses will be permanent (e.g., as recently determined by Fisheries and Oceans Canada, the open pit in Whale Tail Lake (North Basin) is presently assumed to provide zero habitat value during closure), most, if not all residual effects to the fishery will be reversible.

The main effects of reduced water depths and volumes of Mammoth Lake and downstream lakes include a reduction in available foraging and rearing habitat. A similar effect is expected for streams below Mammoth Lake where the timing window for fish use of affected streams may be limited to periods of high flow, such as the spring freshet period in June. Project activities resulting in downstream reductions in flows during construction and closure phases are expected to have a moderate impact on Arctic Char, Lake Trout, and Round Whitefish, occurring on a regional scale. Residual effects will be short-term in duration for the construction pathway and medium-term in duration for the back-flooding pathway.

The effect of increased nutrient concentrations to Mammoth Lake, and downstream lakes during operations and closure may result in a general increase in productivity at lower trophic levels. Biomass of phytoplankton, zooplankton, and benthic invertebrates will likely increase during this period. In addition, possible shifts in overall community structure and dominant taxonomic groups may result due to the change in trophic status from oligotrophic to eutrophic. Due to the increased food base (lower trophic levels and forage fish), there may also

be a minor increase in growth and reproduction rates in VC fish species, and the forage fish that support the fishery. However, an increase in nutrient levels in Mammoth Lake and downstream lakes may also result in a moderate increase in algae or sediment on lake habitats, including spawning shoals, leading to possible reductions in oxygen levels. Reductions in oxygen levels are expected during closure after conservative estimates of multiple years of accumulation of organic debris and when lake water levels are reduced during back-flooding of Whale Tail Lake. Reductions in oxygen levels may affect egg survival and the availability of suitable habitat for spawning and rearing Arctic Char, Lake Trout, and Round Whitefish. Thus, an increase in nutrient levels is expected to result in negative residual effects to the fishery in response to any changes in trophic status during closure and operations. Residual effects from changes in nutrient levels are expected to have a moderate effect on fish and fish habitat, occur at the regional scale, and be long-term in duration with effects being reversible during post-closure.

A full summary of potential effects related to fish and fish habitat is provided in Volume 6, Section 6.5.3 of the FEIS (Agnico Eagle 2016f).

4.3 Description of Human Environment and Summary of Impacts

4.3.1 Archaeology

The results of the archaeological baseline studies indicate there are 19 archaeological sites in the vicinity of the LSA. Of these 19 archaeological sites, 15 are located outside the LSA and will not be affected by the Project. Two sites are located greater than 500 m from proposed Project components associated with the Whale Tail Pit. Six sites are located greater than 200 m from haul road/borrow source boundaries. Seven sites are located within 100 m of the haul road/borrow source boundaries.

Impact Summary

Four sites are located within the haul road or borrow source boundaries and potential Project effects are adverse. These sites have been considered in Project planning, and appropriate mitigation measures will be implemented prior to construction of the proposed haul road and Whale Tail Pit. With the implementation of appropriate mitigation measures, it is anticipated that there will be no or minimal Project effects to archaeological sites relative to baseline conditions.

A full summary of potential effects related to heritage resources is provided in Volume 7, Section 7.2 of the FEIS (Agnico Eagle 2016f).

4.3.2 Traditional Land and Resource Use

Regional Land Use and Cultural Activities

The Elders of Baker Lake indicated that the Project area was used by local people in the past, including many of their own families, primarily as a travel corridor between Baker Lake and the Back River to access traditional land use sites (Agnico Eagle 2014; 2016a,b,c). The region between Baker Lake and the Meadowbank Mine has been described by Baker Lake Elders as an important transportation corridor leading towards the Back River, and most commonly used to access traditional winter hunting and fishing areas in the past (Cumberland 2005c, Agnico Eagle 2014, 2016a). During these trips, the Inuit relied on a variety of traditional plants for multiple purposes, including for fuel used for fires, bedding, food, and medicine (Mannik 1998; Cumberland 2005c; Bennet and Rowley 2004). To access the Back River, two main travel routes were identified that overlap with the

Project area, specifically sections of the Whale Tail haul road. Travelling typically occurred during the winter as the frozen lakes facilitated easier access than the rocky uplands.

Traditional land use areas were identified in the region and potentially located near many of the lakes in the Project area, and along the eskers adjacent to the Project footprint, including trails, few camps, cabins, caching sites, gravesites and other culturally important sites (Volume 7, Appendix 7-A, Figure 3-2 of the FEIS [Agnico Eagle 2016f]). The Elders also explained how sites in the region between Baker Lake and the Back River are spiritual, with several gravesites scattered throughout the region (Cumberland 2005c).

Today, hunting and fishing activities continue to be practiced opportunistically while enroute to other important traditional land use sites (Cumberland 2005c; Agnico Eagle 2014). The subsistence wildlife harvesting of caribou, fox, wolf, and lake trout plays an important role in the contemporary well-being of the Inuit of Baker Lake (Makimowski 2014; Bernauer 2011).

Wildlife and Birds

The Elders and land users of Baker Lake have consistently identified caribou as the most important traditional resource to the community. Fresh caribou meat continues to be cached today during the fall when the temperature is below zero, and the caches are marked with caribou antlers for later retrieval. However, caching has become less successful over the last 10 years due to the increased frequency with which grizzly bears and wolverines are locating and destroying them; therefore, people do not rely on them as frequently (Agnico Eagle 2014, 2016c).

Traditional land use mapped in Interdisciplinary Systems Ltd. (IDS) (1978) indicated that the most frequently used area to hunt caribou was within 10 km of Baker Lake and decreasing further north, with the Meadowbank Mine area considered low usage (between 1 to 32% of hunters reported use of the area). In 2008 Baker Lake hunters reported that they no longer travel as far as they used to hunt caribou, preferring to stay within approximately 40 miles (approx. 64 km) of the community because of caribou availability there (AREVA 2011).

Elders indicated that both cows and calves are frequently seen in the area, and that caribou in general are more abundant now than during the famine times of the 1950s; however, they are less abundant than they were 20 years ago (Agnico eagle 2014). Baker Lake hunters also noted that they did not observe as many caribou around Baker Lake in 2011 than in previous years, (AREVA 2011). Similarly, youth of Baker Lake noted that there are fewer caribou today as a result of the mine site (Agnico Eagle 2016d). Baker Lake community members in Maksimowski (2014) also reported less caribou availability in recent years, and this observation was reiterated by several Elders in 2016, noting that in the past 5 years there appears to be fewer caribou closer to town and east of the community, with greater numbers north of the Meadowbank Mine area (Agnico Eagle 2016a).

In the past, muskox were hunted only when caribou meat was not available, especially during the winter. Elders did not identify muskox as an important source of food during the Kiggavik study (AREVA 2011). Several fur-bearing species were traditionally harvested by the Inuit and provided an important source of fur for clothing and for use in trades (Dana and Anderson 2014). Although trapping activity in the Baker Lake area has decreased in intensity over the years, furbearing animals continue to play an important role in Inuit culture and way of life (Cumberland 2005c). In 2006, 44% of Inuit adults in Baker Lake reported trapping in the previous 12 months (Statistics Canada 2011). Arctic fox are the primary species targeted for trapping, and Arctic wolf and wolverine

are taken incidentally during caribou hunting or fox trapping excursions. Trapping activity in the Meadowbank Mine area and Project area was limited in the past, and mostly occurred in areas closer to Baker Lake; however, wolf harvesting has increased in recent years in the Meadowbank Mine area. Elders noted that Arctic foxes are common in the Project area and their numbers fluctuate according to the population cycles of lemming and voles. They also indicated that red foxes are occasionally observed but are not as common in the Baker Lake area as the Arctic fox; however, their population is believed to be increasing (Agnico eagle 2014; Agnico eagle 2015a). Baker Lake land users have repeatedly identified the Project area as an important denning area for Arctic fox, wolves and potentially wolverines (Cumberland 2005c; Riewe 1992; Agnico Eagle 2014, 2015b, 2016a). The Elders identified an area just north of the Project area that had potential Arctic fox dens. Several areas adjacent to the Project area were identified as providing important habitat for wolves. Wolverines were also noted as a species that was not specifically targeted for harvesting and only taken incidentally while hunting other species (Cumberland 2005c). Baker Lake Elders interviewed in 2008 noted that some people do hunt wolverines, and the best time is during the summer because they are more conspicuous than during the winter when they can disappear in the snow (AREVA 2011). The Elders also indicated that their population appears to be increasing.

Birds are recognized by the Inuit for the important role they play in the ecosystem, and as critical indicators of environmental health (Agnico eagle 2014). Waterfowl provided, and still provide, an important alternate food source for the local people, and are harvested near lakes and rivers close to Baker Lake during spring break-up when large numbers of birds are migrating northward through the area and caribou have moved north to their calving grounds (Agnico eagle 2014; Cumberland 2005c; Mannik 1998). Snow goose, Canada goose, and greater-white fronted goose are the most commonly harvested species. Earlier studies indicated that goose harvesting was not a preferred activity by Baker Lake residents, due to their low populations in the region (Freeman 1976; IDS 1978). Goose hunting coincided with fishing activities (IDS 1978; Riewe 1992; AREVA 2011).

Fish

Fish provide an important secondary source of food after caribou, to the residents of Baker Lake, and fishing is a year round activity that occurs throughout the area (Agnico eagle 2014, 2016d; IDS 1978; NIRB 2015b). In 2006, 77% of Inuit adults in Baker Lake reported fishing in the 12 months prior to the administration of the survey (Statistics Canada 2011), and in 2016, many of youth participating in a focus group for the Project indicated that they fish (Agnico Eagle 2016d).

During the 2014 TK workshop, Baker Lake Elders indicated that fishing occurs in both lakes and rivers, depending on the season and the availability of fish (Agnico eagle 2014). Preferred fishing areas used today include several lakes and rivers close to Baker Lake, and good fishing sites identified near the Project area and used in the past are located to the east of the footprint, including at Nutipilik Lake, Qugiilik Lake and Tahinajuk Lake (Agnico eagle 2014). One Elder noted that although trout are found throughout the region, the lakes near Whale Tail Pit are not commonly fished as there are other preferred lakes (Agnico eagle 2014). Lake trout and Arctic char were identified as preferred fish species harvested for food and Elders commented that these species can be found in several of the lakes located in the Project area.

Vegetation

The results of a survey administered in 2006 showed that 87% of Inuit adults in Baker Lake reported gathering wild plants in the previous 12 months (Statistics Canada 2011). While the Elders indicated that plants were no longer used for traditional medicines during interviews in 2009, they did report that berries continued to be harvested for food or to make jam, including crowberry, blueberry, blackberry, and red berry (AREVA 2011, Agnico eagle 2014). Cloudberries were also used for making tea.

Impact Summary

The Project's residual incremental effects on traditional wildlife harvesting, traditional fishing, traditional plant harvesting and use of culturally important sites are considered to be a combination of effects on the direct disturbance to preferred traditional land and resource use areas or culturally important sites, the availability of resources, and IQ values related to Traditional Land and Resource Use.

The community's ability to continue to hunt and rely on waterfowl and geese as an alternate source of food will not be significantly affected due to the Project, because preferred harvesting sites are not documented in the Project study areas, and waterfowl and geese will continue to be available for harvesting close to Baker Lake.

It is anticipated that the residual effects of the Project on continued opportunities for traditional wildlife harvesting of caribou will be moderate in magnitude and regional in extent, since caribou availability may decrease in certain preferred harvesting areas. However this effect is expected to be limited since the regional area contains high proportions of undisturbed caribou habitat and caribou survival is not expected to be affected due to the Project. Furthermore, IQ suggests that the movement of caribou appear to be dependent on numerous factors, and their distribution is variable in different areas and years. Preferred harvesting areas will still be available, the AWAR (up to km 85) will continue to facilitate access to harvesting locations, and the Project will not present barriers to accessing areas further north of the Mine site. Potential adverse effects resulting from barriers to participation in traditional hunting activities will be minimised with rotational employment. The community's ability to continue to practice subsistence activities, and to hunt and rely on caribou as a primary food source will not be significantly affected.

It is anticipated that the residual effects of the Project on traditional fishing opportunities will be low to moderate in magnitude, local to regional in geographic extent, short- to long-term in duration, and reversible. The community's ability to continue to practice traditional fishing will not be significantly affected, since use of the Project area is documented to be limited today and was not identified as a preferred fishing area. Arctic char and lake trout will remain locally and regionally abundant and therefore will still be available for fishing in preferred harvesting sites.

It is anticipated that the residual effects of the Project on traditional plant harvesting will be low in magnitude, local in geographic extent, medium- to long-term in duration, and reversible. The community's ability to continue to harvest traditional plants will not be significantly affected. Preferred traditional plant harvesting areas were not identified in the Project area, and traditional use plants are associated with a range of plant community types that are locally and regionally abundant and will therefore still be available for harvesting.

It is anticipated that the residual effects of the Project on the use of culturally important sites will be low in magnitude, local in geographic extent, and permanent in duration. Direct impacts to cultural sites will be addressed with site-specific mitigation measures that will be developed and implemented for each individual

cultural site in consultation with Department of Culture and Heritage (Government of Nunavut), and with the community of Baker Lake (specifically elders and the Hunter and Trapper Organization [HTO] members). Indirect effects to cultural sites will be managed through dust control measures and monitoring, and cultural awareness training of Project staff and contractors. Access to traditional travel routes that intersect the Project will be maintained through the installation of crossing areas and signage. Through Agnico Eagle's commitment to providing ongoing consultation with the community, and with their direct participation in the implementation of mitigation measures, the community's ability to continue to use culturally important sites in the Project area will be not be significantly affected.

A full summary of potential effects related to traditional land and resource use / IQ is provided in Volume 7, Section 7.3.2 of the FEIS (Agnico Eagle 2016f).

4.3.3 Socio-Economic

Population

Annual population growth of between 2% and 3% per year has seen the population of both the Kivalliq Region and Baker Lake increase. During this same period, the composition of the population changed. The male and non-Inuit populations in Baker Lake grew quicker than the female and Inuit populations, as did the proportional representation of the working-age population. An influx of working age population to the Kivalliq Region and Baker Lake coincides with an increase in the representation of Kivalliq workers at Meadowbank Mine.

Economic Activity and Business Development

The relative proportion of Meadowbank Mine contract expenditures in Nunavut has remained around the 50% mark since the beginning of operations. In 2014, contract expenditures with businesses registered in Baker Lake amounted to $38 million (16% of total contract expenditures), while contract expenditures with businesses registered in other parts of Nunavut totalled $67 million (29% of total contract expenditures). As the only operating mine in the territory, Meadowbank Mine has been a driver of Nunavut Gross Domestic Product (GDP) growth. Meadowbank Mine employment taxes provide an average $30 million per year to the federal government, and $3 million per year to the Government of Nunavut. Property taxes paid to the Government of Nunavut by Agnico Eagle are on average $1.1 million per year. Since 2007, Agnico Eagle has provided $11.8 million to NTI and the KIA.

Employment

The Kivalliq labour force grew by 360 people (11.1%) between 2006 and 2011. Over a third of this growth (130 people active in the labour force) occurred in Baker Lake. Employment growth during this period did not keep up with growth of the labour force, with 155 additional people employed of the 360. Most of this employment was associated with the construction of Meadowbank Mine, and most of the employed (105 people) were from Baker Lake. Since the beginning of operations, Nunavummiut representation at Meadowbank Mine has remained at around one third of the total operational workforce. Of the Nunavummiut employed at the Mine, over half reside in Baker Lake. The representation of Inuit in the overall Meadowbank operational workforce has remained similarly steady at between 31% and 34% since 2012. Hamlet residents have noted that, for many, new income from employment at the Meadowbank Mine has enhanced their quality of life by improving access to food, hunting equipment, and consumer goods (e.g., vehicles and entertainment systems), and allowing for the assistance of extended families (Agnico eagle 2015a; Agnico Eagle 2016d).

Education and Training

While the majority of the Kivalliq Region population 15 years and over have no certificate, diploma, or degree, the proportion decreased from 65% in 2006 to 61% in 2011, suggesting that educational attainment is improving (Statistics Canada 2011). From 2006 to 2011, educational attainment in the Kivalliq Region improved in every measured category. Agnico Eagle has made total contributions of approximately $284,000/year to a variety of school-based initiatives. Agnico Eagle's financial investments in externally-delivered training programs have been steady at just under $4 million per year for the past three years, with the Kivalliq Mine Training Society being the largest recipient. The scope of, and participation in, in-house training and apprenticeship programs have been relatively consistent throughout Meadowbank's operations.

Individual and Community Wellness

Baker Lake residents maintain a balance between wage employment to pay for commercial goods and services, and practicing traditional harvesting activities to feed their families and reinforce social relations (Peterson 2012). Community representatives have reported to Agnico Eagle an increase in the number of trips on the land by those with income from the mine who have an increased ability to purchase harvesting supplies. Further, it has been noted that access to harvesting areas has been improved by the AWAR (Peterson 2012). Others, however, have suggested that stress associated with work and school schedules limit the time that people have available to spend on the land. Incomes associated with employment at Meadowbank Mine has enhanced the quality of life of employees by offering a reliable means to afford food as well as hunting equipment. While some employees reported enjoying time off for camping and harvesting, others reported decreased harvesting activities due to a lack of time and resources, and decreased caribou availability and accessibility (Maksimowski 2014).

Population growth and an increase in consumer goods, drugs, alcohol, and gambling are perceived by residents of Baker Lake to be affecting crime rates, particularly thefts and home break-ins (Agnico eagle 2015a). Concern has also been expressed that increased incomes due to employment at the Meadowbank Mine has increased access to and consumption of alcohol and associated binge drinking, with bootleggers of alcohol finding success (Agnico Eagle 2016d). In Baker Lake, rates of mischief, disturbing the peace, harassment, and theft more than doubled between 2010 and 2012. The rates of more serious crimes including assault and sexual assault also increased substantially (49 to 82%) during this period. Most violations decreased in 2013 (except assault, impaired driving, and drug violations), coinciding with the Hamlet's overall crime rate decrease that year (NBS 2014; Statistics Canada 2014).

Impact Summary

The Project will extend employment opportunities at Meadowbank Mine, which currently has around 700 staff. Current projections for the Project will require a workforce of around 900, and so will create around 200 new direct employment opportunities. Many of these opportunities will be targeted to the local population in Baker Lake and other Kivalliq communities. Other opportunities will be filled by workers on rotation, housed in the on-site camp. Most indirect employment opportunities occurring in Nunavut are expected to be filled by the existing labour force working in industries currently supplying Meadowbank Mine. The Project will maintain current pick-up points in Kivalliq communities, and any incidental employment that arises via attrition will be filled with priority given to residents of the Kivalliq Region, and, secondarily, Nunavut. Given the approach to recruitment, the Project is not expected to induce intra- or inter-territorial migration, population increase, or demographic change.

The Project's positive GDP effect is substantial at over 10% of the current GDP of Nunavut. This effect will persist through Project operations to 2022, extending the GDP contribution of Meadowbank Mine beyond planned closure, and bridging the gap in territorial GDP that would otherwise occur in 2019 between the closure of Meadowbank Mine (2018) and the anticipated operations of Meliadine Project (2020). This effect is, therefore, considered to be of high magnitude, regional extent, and medium-term duration. Overall, the Project's positive effect on the GDP of Nunavut is assessed as significant.

Project-related tax generation and royalties paid will amount to a sizable contribution to government revenue in Nunavut equivalent to about 4% of the territory's total annual budgeted revenue. When transfer payments are deducted, Project-related revenues to government are predicted to be roughly equivalent to a quarter of Nunavut's total own-source budgeted revenue. This effect will occur through Project operations to closure, and, as with the Project's effect on territorial GDP, would serve to bridge the gap between the closure of Meadowbank Mine and the anticipated operations of the Meliadine Project. This effect is, therefore, assessed to be of high magnitude, regional extent, and medium-term duration. Overall, the Project's positive effect on government revenue in Nunavut is assessed as significant.

Project procurement of goods and services will be substantial during both construction and operations. The cumulative impact of construction is expected to result in approximately $58 million in spending with Nunavut-registered businesses, with 80% of this spending concentrated in businesses registered in Baker Lake. Once operational, the Project's demand for goods and services is expected to be slightly higher than the current Meadowbank Mine operations, with about $118 million procured from Nunavut-registered companies. Of this, roughly $27 million will be through Baker Lake-registered businesses. Closure will result in a drop off of procurement of this scale. This effect is, therefore, assessed to be of high magnitude, local to regional in extent, and medium-term duration. Overall, the Project's positive effect on local business development and contracting is assessed as significant.

As noted, the Project serves to extend employment opportunities for the existing Meadowbank Mine workforce, and to create additional employment opportunities for Nunavummiut. While the production is anticipated to be in full production in 2020, then receiving the outgoing Meadowbank Mine workforce, without the Project there may be a gap in employment at the end of 2018 and in 2019. In addition to the additional jobs it will create, the extension of Meadowbank Mine's most pronounced employment effect is this stabilizing role. As the Meadowbank Mine is expecting to ramp down in 2018, select staff will begin transitioning over to the Whale Tail Pit construction activities. At final closure of Meadowbank Mine, the remainder of the workforce will transition to Whale Tail Pit and Meadowbank Mill operations positions that will last until closure. This effect is, therefore, assessed to be of high magnitude, local to regional in extent, and medium-term duration. Overall, the Project's positive effect on employment in Nunavut, Kivalliq Region and, especially, Baker Lake, is assessed as significant.

As with employment, the Project's primary income effect will be the continuation of high paying wage employment from Meadowbank Mine. Employment incomes for current employees are not expected to change significantly, but will be extended by the Project beyond Meadowbank Mine's closure in 2018, and bridging the gap that would otherwise occur in 2019 prior to anticipated operations at the Meliadine Project in 2020. The Project will also generate new incomes associated with a limited amount of new employment, and will sustain indirect and induced incomes, through to closure. This effect is, therefore, assessed to be of high magnitude, local to regional in extent, and medium-term duration. Overall, the Project's positive effect on incomes in Nunavut, Kivalliq Region and, especially, Baker Lake, is assessed as significant.

The Project is expected to continue to provide the education and training opportunities currently supported by Meadowbank Mine to both its workforce, and Kivalliq Region communities. While this does not represent a change in programs offered or funding for educational initiatives, uptake of educational opportunities during operations is expected to continue to build capacity in the labour force, and promote educational attainment for youth and the broader community. Capacity building and education does not end with Project closure, instead persisting into the future. This effect is assessed to be of moderate magnitude, local to regional in extent, and long-term duration. Overall, the Project's positive effect on education and training is assessed as significant.

Project health and safety training is expected to improve health and safety awareness amongst employees, their families, and other members of their communities, as are community-based health and safety-related programming and policies. The effect of improved health and safety awareness, like education, does not end with the closure of a project, but instead continues to influence people's behavior into the future. This effect is, therefore, assessed to be of moderate magnitude, local to regional in extent, and long-term duration. Overall, the Project's positive effect on worker and public health and safety is assessed as significant.

Attempting to assess the magnitude of a risk of accidents and emergencies is problematic. Should neither occur, there will be no associated effect. However, it can also not be assumed that either or both will occur definitely, or to what extent. Mitigations measures, emergency response planning, and training can all play a role in reducing risk or the severity of the outcome of an accident or emergency, but the effectiveness of each is unknown. For these reasons, residual effects criteria are not assessed for accidents and emergencies. To do so would require further risk analysis beyond the scope of this application. However, in the event that an accident or emergency does manifest, it can be conservatively assumed that there is the potential for the effect on an individual or community to be adverse, potentially catastrophic, and, therefore, significant.

While incomes can have a positive effect on the fiscal wellbeing of some, they can also have a negative effect if income earners and their families use their incomes unwisely. Property theft, increased substance abuse, family violence, and debt are all often associated with new money or wealth. Incomes for some and not others results in social disparity between families and communities, and can further highlight existing vulnerability of those unable to access employment opportunities, or alternatively change social dynamics in the community as formerly vulnerable community members or families are brought out of poverty. The existing Meadowbank Mine workforce transitioning to the Project has experience in managing their finances, and it is unlikely that they would change their current behavior or lifestyle as a result of the Project. The limited number of new Nunavummiut employees required for Project operations may, however, struggle.

Mitigation measures offered to new employees are expected to alleviate some of the social ills associated with increased incomes in the local population, however it is not known to what extent, or how individuals will react. Continued monitoring (e.g., Baker Lake Wellness program) and evaluation of the uptake and outcome of programs is required to determine with greater certainty the Project's residual effect on family and community cohesion. If the adverse effects noted above do materialize in already vulnerable communities, despite mitigation, the residual effect could be pronounced.

Rotational employment can be a positive approach to wage employment, giving people long periods of time off and resources for traditional pursuits and other activities. It can also, however, have negative effects on cohesion, taking workers away from their communities and families for extended periods of time, and can erode traditional values. As with other effects to individual and community wellbeing, it is difficult to assess both the extent of these effects, the effectiveness of mitigation and benefit enhancement measures, and the response of

individuals, families and communities to both. The positive effects of rotational employment end with Project closure, however changes in family and community cohesion would persist into the future.

The Project's residual effect on family and community cohesion is, therefore, considered to be of moderate magnitude, local to regional in extent, and long-term duration. Overall, the potential adverse social impacts associated with Project incomes and rotation on family and community cohesion are assessed as significant.

As the Project will not bring about a change in population, it is not expected that additional demand on housing, infrastructure, or services will occur in Kivalliq communities. Further, the Project will operate at a time when Meadowbank Mine is in the closure phase, and so is not expected to increase demand on physical transportation infrastructure (e.g., airport) beyond current levels.

The Project's overall effect of continued incomes, community contributions and the Meadowbank Inuit Impact Benefit Agreement (IIBA) is expected to have a positive effect on the wellbeing of individuals and communities. Regular incomes can help lift or keep people out of poverty; provide access to nutritious food, education, and recreation; and allow for savings. Community and IIBA contributions are substantial, and support community development and wellbeing initiatives. Both will occur throughout the Kivalliq Region, but will be concentrated in Baker Lake over the operational life of the extension of the Meadowbank Mine through the development of the Whale Tail Pit. This effect is, therefore, assessed to be of high magnitude, local to regional in extent, and medium-term duration. Overall, the Project's positive effect on wellbeing related to disposable incomes, community contributions, and the continuation of the IIBA is assessed as significant.

A full summary of potential effects related to socio-economics is provided in Volume 7, Section 7.4.3 of the FEIS (Agnico Eagle 2016f).

4.3.4 Cumulative Effects

Broad cumulative effects categories were identified, grouping effects that operate through similar pathways and at similar spatial scales. These effects categories include the following:

- Effects to Caribou;
- Effects to Terrestrial Environment;
- Effects to Marine Wildlife;
- Effects to Aquatic Resources (Water and Fish);
- Effects to Traditional Land Use; and
- Effects to Socio-Economics.

As the pathways and spatial scales may differ for each of the cumulative effects categories, several unique cumulative effect study areas were established.

Past and Present Developments

Active and inactive development was identified in each of the three caribou ranges that overlap the Project. Mineral exploration was the most common type of development, followed by camps and miscellaneous activities. Communities likely have the largest effect on caribou (as a source of harvesters), followed by roads providing

access from communities. There are three communities within the Lorrilard caribou range, and one each within the Ahiak and Wager Bay herd ranges.

The Project straddles the Meadowbank, Thelon, and Quioch watersheds. The Baker Lake water management area was also considered, as it is crossed by the Meadowbank AWAR. To assess potential for cumulative effects to aquatic ecosystems, active and inactive developments were identified in these water management areas. None of the four water management areas contained more than two active developments.

To assess potential for cumulative effects to traditional land use and socio-economics, the number of past and present developments in the Kivalliq Region were quantified. According to this data, there are currently nine active and 26 inactive mineral exploration operations in the Kivalliq Region, the most numerous type of development. Mineral exploration camps likely have little effect to traditional land use as they are remote and seasonal, but may affect regional socio-economics through employment and work rotations away from the community.

Reasonably Foreseeable Future Developments

Cumulative effects from the Reasonably Foreseeable Future Developments may occur if most or all of the future projects proceed simultaneously. However, the likelihood of this occurring is low. This conclusion notwithstanding, there may soon be three operating mines in the Kivalliq, two of which are in the Baker Lake water management area, and environmental monitoring should be diligently continued to minimize the cumulative effects between them. Cumulative effects for each VC are also considered in the residual effects assessment for each VC, in the relevant chapters of Volumes 5, 6, and 7 of the FEIS (Agnico Eagle 2016f).

5.0 ENVIRONMENTAL MANAGEMENT (MITIGATION AND MONITORING)

Agnico Eagle will continue to implement a project environmental management system consistent with operations at the Meadowbank Mine. The system consists of three key elements: an integrated environmental management plan, a formal environmental awareness program, on-going environmental monitoring programs, and the communication of monitoring results through thorough annual reporting.

A number of mitigation measures will be implemented to avoid or minimize any impact on the environment. Where applicable to pre-development activities, key mitigation measures consistent with the Type A Water Licence application will include the following:

- using existing facilities, including processing facilities and the tailings facility to minimize the Project footprint and waste disposal areas;
- managing water to reduce the volume of water in contact with WRSF, and quarry / future pit areas;
- are proposing proven and accepted management and monitoring methods at Whale Tail Pit consistent with the methods utilized at the approved Meadowbank Mine;
- avoidance or mitigation of key archaeological features on the landscape (i.e., avoiding grave sites);
- routing the exploration and haul road to minimize impacts to watercourse crossings, to avoid denning and cultural sites;
- continued dust mitigation around mining activities as it is completed at the Meadowbank Mine;
- continued direct and in-kind support of regional research programs (i.e., Government of Nunavut caribou collaring, raptor research, fisheries research, etc.);
- continued research on closure and progressive closure of portions of the Meadowbank Mine as the Whale Tail Pit is mined;
- consultation on an on-going basis; and
- extending the current Meadowbank Mine employees to the Whale Tail Pit to maintain employment.

Specific concerns (dust, noise, traffic, erosion, transportation of dangerous goods, waste management, sociological, wildlife protection, etc.) have been addressed through the management plans Agnico Eagle has prepared for the Project. The purpose of the management plans is to outline the framework or structure where monitoring and follow-up programs are implemented to verify impact predictions and determine effectiveness of mitigation measures. The management plans will also help identify unanticipated effects, if any, which will be handled though adaptive management. These plans will be updated, as needed, for various planning and regulatory requirements, should the Project proceed. In addition, best management practices will be used for all phases of the Project and adaptive management will be a priority for environmental indicators.

A list of mitigations for impacts from the development of the Whale Tail Pit Project that have been submitted as part of the Type A Water Licence Application are provided in Appendix A of Attachment D–Concordance Assessment of the Cover Letter. Agnico Eagle proposes to use the following plans to support the pre-development activities of this Type B Application:

- the approved Spill Contingency Plan (Version 6, March 2016), which exists for current Meadowbank operations under license 2AM MEA1525;
- the Whale Tail Pit Haul Road Management Plan (Version WT, June 2016), which has been submitted with the Type A Application (Agnico Eagle 2016f) and is included here as a supplemental document without change for approval;
- an addendum to the Quarry Management Plan (KVCA15Q01), which exists for current Amaruq Exploration activities under license 2BB-MEA1318 is presented in Appendix E to include pre-development activities at Quarry 2;
- an addendum to the Environmental Protection and Monitoring Plans, which have been submitted with the Type A Application (Agnico Eagle 2016f) is presented in Appendix F to reflect the pre-development activities of this Type B Application; and
- a Closure and Reclamation Strategy and Security Estimate specific to pre-development activities is presented in Appendix G.

The following sections summarize the key water management strategies in the management plans **(bold, Sections 5.3 and 5.4)** in support of this Type B Application.

5.1 Mine Infrastructure

The Mine Infrastructure Management Plan activities for the entire project in support of the Type A Application are approved through the following Management Plans:

- Dewatering Dikes OMS Manual (Version 5, March 2016);
- Whale Tail Pit Waste Rock Management Plan (Agnico Eagle 2017b); and
- Whale Tail Pit Water Quality Monitoring and Management Plan for Dike Construction Dewatering (Version 1, 2017) (Agnico Eagle 2017c).

A summary of these Type A monitoring, management and mitigation plans can be found in Volume 8, Section 8.3.1 of the FEIS (Agnico Eagle 2016f).

The pre-development activities proposed in this Application do not require the implementation of the aforementioned mine infrastructure management plans that were submitted in support of the Type A Application.

5.2 Water, Domestic Waste, and Operational Infrastructure

The Water, Domestic Waste, and Operational Infrastructure activities for the entire Project are approved through the following Management Plans:

- Incinerator Waste Management Plan (Version 6, March 2016);
- Landfarm Design and Management Plan (Version 3, February 2013);
- Landfill Design and Management Plan (FEIS, Volume 8, Appendix 8-B.1 [Agnico Eagle 2016f]);
- Whale Tail Pit Landfill Management Plan (Version 1, January 2017) (Agnico Eagle 2017d);

- Operation and Maintenance Manual - Sewage Treatment Plant (Version 5, September 2015) or Waste Water Treatment System Operation and Maintenance Plan (Version 1, December 2015);
- Water Management Plan (FEIS, Volume 8, Appendix 8-B.2 [Agnico Eagle 2016f]);
- Whale Tail Pit Water Management Plan (Version 1, January 2017) (Agnico Eagle 2017a); and
- Whale Tail Pit Water Quality and Flow Monitoring Plan (Version 1, 2017) (Agnico Eagle 2017e).

A summary of these Type A monitoring, management and mitigation plans can be found in Volume 8, Section 8.3.2 of the FEIS (Agnico Eagle 2016f).

Incinerator Waste Management Plan – All solid waste from the accommodation camp, kitchen, shops, and offices that require incineration from the Whale Tail Camp will be incinerated at the Exploration Camp or backhauled to the Meadowbank Mine incinerator. As a result, there are no changes to the incineration plan and the associated and approved activities at Meadowbank Mine as a result of the Whale Tail operations.

Landfarm Design and Management Plan – No changes will be made to the landfarm facility and associated approved activities at Meadowbank Mine. All petroleum hydrocarbon contaminated soil generated as a result of the Project will be backhauled and treated at the existing and approved Meadowbank Mine landfarm facility. There are no changes to the Landfarm Design and Management Plan.

Landfill Design and Management Plan and revised site specific *Whale Tail Pit Landfill Management Plan (Version 1, January 2017)* – not required as waste from pre-development activities destined for landfill will be hauled to the Meadowbank Mine to an approved facility.

Operation and Maintenance Manual – Sewage Treatment Plant or Waste Water Treatment System Operation and Maintenance Plan – No changes will be made to the plan as it applies to the Meadowbank Mine Camp.

During pre-development, the existing exploration camp sewage treatment plant authorized under licence 2BB-MEA1318 will be used.

5.2.1 Water Management Plan

The revised site specific *Whale Tail Pit Water Management Plan* (Version 1, January 2017), identifies the following four types of water were identified for the Project:

- Contact water: Water that has been in contact with any infrastructure and facilities on-site; may contain total suspended solids (TSS).
- Non-contact water: Runoff water that has not been in contact with mining infrastructure and facilities on-site.
- Freshwater: Water pumped from Whale Tail Lake during predevelopment and then during construction and operation from Nemo Lake for consumption as potable water.

The water management objectives for the Project are to minimize potential impacts to the quantity and quality of surface water at the Project site. This will be done by diverting non-contact water away from the Project site infrastructure to minimize the amount of contact water generated, and by limiting freshwater make-up quantities to the extent practical.

In developing the water management strategy at the Project, the following principles were followed:

- keep the different water types separated as much as possible;
- minimize freshwater consumption; and
- reduce water discharge to the environment.

Keeping the types of water segregated allows for water quality control in the different areas of the site, reduces costs, and isolates uncertainties.

Contact Water

Pre-development activities may require water treatment for surface contact water. Water management structures (water retention dikes/berms and diversion channels) will be constructed as needed to contain and manage the contact water from the areas affected by the mine or mining activities. The water management infrastructure for pre-development works includes the following:

- four turbidity curtains;
- construction portable water treatment plant;
- ditches and sumps; and
- exploration stormwater storage pond A-P5 (approved under 2BB-MEA1318).

During mine construction and operations, contact water originating from affected areas on surface will be intercepted, diverted and collected within collection ponds. The collected water on the mine site will be eventually pumped and stored in the Whale Tail Attenuation Pond, where the contact water will be treated by the WTP prior to discharge to the receiving environment or reused in the operations. During pre-development activities, runoff and especially water originating from thawed ice-rich soils will be intercepted by berms, ditches, local sumps and pumped to A-P5, as deemed necessary. A-P5 will be constructed in early 2018 for the purposes of pre-development water management and future underground saline water management (Golder 2016).

A network of site access/service roads will connect site infrastructures. The approach to water management for site access/service roads will involve the implementation of local best management practices during construction, operations, and closure. The road will be constructed of non-potentially acid generating and non-metal leaching waste rock. Other best management practices will be implemented to minimize the amount of runoff originating from the roadways and to prevent the migration of surfacing material from the roadway and crossings. Any areas identified as point sources for runoff originating from the roadway or crossings can be managed locally with silt fences, turbidity curtains, interceptor channels, rock check dams, and/or small sedimentation ponds.

Acid rock drainage (ARD)-Metal Leaching (ML) testing is a measure to ensure road and pad building materials, water quality monitoring of seeps from quarries, borrow pits and stockpiles reduce possible impacts on the environment (e.g., water and sediment quality) should the water reach any nearby waterbodies. A buffer of at least 31 m of undisturbed land will be maintained between quarries/borrow pits/stockpiles and waterbodies, and best management practices will prevent direct drainage. However, any significant seeps originating from the borrow pits, rock quarries or stockpiles with the potential to reach receiving waters will be sampled and analysed

for a full suite of water quality parameters[1]. Any problematic water will be directed away from waterbodies, pumped or directed to A-P5 during pre-development, or held if possible. If necessary, silt curtains will be used to control suspended sediments in water seeping from the quarries, borrow pits or stockpiles.

Although erosion is not expected to originate from water flow from the quarries/borrow pits, any evidence of erosion will be repaired by placing rip-rap over the affected area, and measures will be taken to reduce the velocity of the water with, for example, silt curtains and/or small check dams.

Process Water

No process water will be generated during the pre-development activities.

Underground Mine Water

No mine water is expected to result from pre-development activities. Any underground exploration ramp development water associated with the site is authorized for the purpose of ramp development and bulk sampling and is authorized under 2BB-MEA1318. Between 2017 and Q2 2019, Agnico Eagle will be advancing the ramp within the zone of permafrost. Agnico Eagle does not expect to encounter and therefore will not require management of salt water within A-P5 (Golder 2016).

Freshwater

Agnico Eagle is not requesting a quantity of water for domestic or other purpose be authorized under this licence. All direct water uses are authorized under existing water licences issued to Agnico Eagle (section 3.4.1 for additional information).

5.2.2 Water Quality and Flow Monitoring Plan

Agnico Eagle as recently submitted a revised site specific Whale Tail Pit Water Quality and Flow Monitoring Plan (Version 1, January 2017), the plan provides an overview of the monitoring programs and mine development schedule for the Project. It also provides specific details (including sample locations and parameters to be measured) for the compliance monitoring program, along with general guidance for the event monitoring program. An adaptive management program is described for both regulated discharge and non-regulated discharge. The plan also describes the requirements of the flow monitoring program and provides an overview of the reporting requirements.

The monitoring programs as they apply to the pre-development activities of this Type B water license application have been summarized in the environmental protection and monitoring plans addendum provided in Appendix F.

5.3 Construction and Transportation Infrastructure

The Construction and Transportation Infrastructure and activities for the full Whale Tail Project are approved through the following Management Plans:

- Air Traffic Management Plan (now replaced by the Transportation Management Plan) (October 2005); and
- Whale Tail Pit Haul Road Management Plan (FEIS, Volume 8, Appendix 8-C.1 [Agnico Eagle 2016f]).

[1] pH, turbidity, alkalinity, ammonia, ammonium, nitrogen, sulphate, hardness, total metals (Al, As, Ba, Cd, Cl, Cr, Cu, F, Fe, Pb, Mn, Hg, Mo, Ni, NO_3, NO_2, Se, Ag, Tl, U, V, Zn), total dissolved solids, total suspended solids, total cyanide

Air Traffic Management Plan (Transportation Management Plan) - The transportation management plan for the Type A is not appropriate to the scale of activities proposed under pre-development. To ensure sufficient mitigation measures are applied during the pre-development phase, Agnico Eagle believes the Whale Tail Pit Haul Road Management Plan is more appropriate (see below).

Whale Tail Pit Haul Road Management Plan

The exploration access road is a 64.1 km long and 6.5 m wide surface with 11 bridges and 28 embedded corrugated round culverts to pass watercourse crossings and many other localized drainage culverts to prevent erosion, reduce thaw susceptibility and washout of the road during freshet. The exploration road has seven borrow areas with short spur roads, and uses the Vault Pit as a quarry. The information related to Quarry Management is included as part of the Whale Tail Pit Haul Road Management Plan. Existing quarry permits from the KIA and INAC will be maintained for the borrow pits proximal to the right of way for obtaining material to build and upgrade the access road to a haul road. The Whale Tail Pit Haul Road Management Plan provides summary of construction, operations, and closure of the exploration access road. The road was initially screened by the NIRB and approved by the NWB in November of 2015, followed by DFO approval of bridge and culvert construction and road operation in March 2016.

Agnico Eagle has submitted, in support of the Type A Application, a new plan entitled the Whale Tail Pit Haul Road Management Plan and Agnico Eagle requests that the NWB consider this management plan for pre-development activities pertaining to the upgrade and widening of Whale Tail Pit Haul Road. The plan submitted with the Type A Application has been attached to this Type B application with no modifications. Blasting may occur as needed in borrow sources and quarries along the haul road under this Type B Water Licence.

Dust Suppression using Water

The amount of dust generated along a road is dependent on the material source used to surface the road, dryness of the road surface, the number of vehicles, weight and speed, and maintenance of the driving surface. Regular grading of the road combined with the addition of granular material from the eskers to the driving surface will be needed. This will improve road safety and also reduce the amount of dust. Dust will also be mitigated by maintaining posted speed limits.

In sections of the road or times identified by the Agnico Eagle road supervisor as being prone to high dust levels, where safe road visibility is impaired, or in areas where dust deposition is potentially impacting traditional land use, fish habitat and/or water quality, the road supervisor will arrange mitigation measures as appropriate. This could involve actions such as grading of the road surface, placement of new coarser topping from eskers, and/or watering/ dust suppressant application of the road surface. Based on the modelling of the dust emissions on the road, and the experience and monitoring data of the Meadowbank AWAR from Baker Lake to the mine site, use of chemical dust suppressants is not expected for the Whale Tail Pit Haul Road. However, if there are safety concerns or areas of particular interest, chemical dust suppressants may be only used as a last resort and only in accordance with the Environmental Guidance for Dust Suppression published by the Government of Nunavut Department of Environment (GN 2002).

For additional information, refer to the Whale Tail Pit Haul Road Management Plan (Appendix 8-C.1 of the FEIS [Agnico Eagle 2016f]), which has been included without modification for approval in this Application in as a supplemental document. For information related to quarry management refer to Appendix E.

Agnico Eagle assumes that the haul road will be completed upon issuance of this Type B water licence and thus requests that the same terms, conditions and mitigation measures of licence 8BC-AEA1525 be incorporated into this Application upon issuance.

5.4 Materials Management and Emergency Response

The Materials Management and Emergency Response Management Plans and activities for the entire Whale Tail Project are approved through the following Management Plans:

- Ammonia Management Plan (FEIS, Volume 8, Appendix 8-D.1 [Agnico Eagle 2016f]);
- Meadowbank Bulk Fuel Storage Facility Environmental Performance and Monitoring Plan (FEIS, Volume 8, Appendix 8-D.2 [Agnico Eagle 2016f]);
- Baker Lake Bulk Fuel Storage Facility Environmental Performance and Monitoring Plan (Version 3, June 2014);
- Emergency Response Plan (FEIS, Volume 8, Appendix 8-D.3 [Agnico Eagle 2016f]);
- Hazardous Material Management Plan (FEIS, Volume 8, Appendix 8-D.4 [Agnico Eagle 2016f]);
- Oil Pollution Emergency Plan (Version 7, May 2016);
- Shipping Management Plan (FEIS, Volume 8, Appendix 8-D.5 [Agnico Eagle 2016f]); and
- **Spill Contingency Plan (FEIS, Volume 8, Appendix 8-D.6 [Agnico Eagle 2016f]).**

Ammonia Management Plan - No changes are planned for the Ammonia Management Plan or associated procedures in relation to pre-development activities at Amaruq. Blasting where applicable to quarry development is authorized and approved in the current Type B water licences and associated quarry permits and leases.

Meadowbank Bulk Fuel Storage Facility Environmental Performance and Monitoring Plan - No changes are planned for the Meadowbank Bulk Fuel Storage Facility due to pre-development activities at Amaruq. Should Agnico Eagle construct a Bulk Fuel Storage Facility at Whale Tail Pit as proposed in Section 3.3.6 of this Application. Agnico Eagle will provide detailed engineering drawings related to the fuel storage facility at least 60 days prior to proposed construction and revising the spill contingency plan and monitoring plans to account for the change in operation, if implemented prior to issuance of a possible Type A Water Licence.

Baker Lake Bulk Fuel Storage Facility Environmental Performance and Monitoring Plan - No changes are planned for the Baker Lake Bulk Fuel Storage Facility due to pre-development activities at Amaruq.

Emergency Response Plan - Agnico Eagle will ensure that all employees, contractors, and site visitors fully understand and comply with all legislated safety standards, and the policies and procedures outlined in the emergency response plans currently in place under licence 2AM-MEA1525.

Hazardous Material Management, Meadowbank Mine Site and Baker Lake Facilities - All hazardous materials generated as a result of the Project will be backhauled to the Meadowbank Mine for proper disposal according to plans currently in place under 2AM-MEA1525

Oil Pollution Emergency Plan - No changes are planned for the Oil Pollution Emergency Plan or associated procedures in relation to pre-development activities at Amaruq.

Shipping Management Plan – The Shipping Management Plan for the Project was developed in accordance with federal legislation, notably the *Canada Shipping Act* and the *Arctic Waters Pollution Prevention Act,* and associated regulations. It also recognizes the international conventions and protocols signed by Canada. The plan outlines measures, monitoring, and reporting as it relates to interactions marine wildlife (mammals and birds). The plan also addresses mitigation measures where interactions may occur between small boats and bard tugs and/or ships or vessels.

Agnico Eagle has developed a new plan entitled the Shipping Management Plan that has been submitted in support of the Type A Application (Appendix 8-D.5 of the FEIS [Agnico Eagle 2016f]). It has been included as a supplemental document to this application without modifications for consideration to manage the pre-delivery of materials proposed in this Type B Application, as no changes are anticipated to current shipping volumes and practices for pre-development activities.

Spill Contingency Plan

In the unlikely event of a spill, Agnico has prepared a plan to facilitate effective communication and efficient cleanup of spills of potentially hazardous materials. The objectives of the plan are to comply with federal and territorial laws, regulations, and guidelines; identify roles, responsibilities, and reporting procedures; detail plans of action to be followed in the event of a spill; provide readily accessible emergency information to the cleanup crews, management, and government agencies; promote the safe and effective recovery of spilled materials; and minimize the environmental impacts of spills to land, water, and/or ice and snow.

During pre-development, site-preparation, and early construction phases, the Project is supported by the existing exploration facilities. Agnico Eagle has in place a Spill Contingency Plan for current activities for the Project in compliance with water licences 2AM-MEA1525 (Meadowbank Mine Renewed Type A licence), 2BB-MEA1318 (Meadowbank Advanced Exploration) and 8BC-AEA1525 (AEAR). Agnico Eagle proposes to use the approved Spill Contingency Plan (Version 10, March 2016) which exists for current Amaruq operation under license 2BB-MEA1318, to minimize duplication and streamline emergency response in facilitation of effective communication in the event of a spill. This plan has been provided with this application as information only. A separate Spill Contingency Plan addendum for full construction, operation and closure of Whale Tail Pit and associated activities has been submitted with the Type A Application (Appendix 8-D.6 of the FEIS [Agnico Eagle 2016f]).

Prevention and inspections are proactive components of the spill plan. During orientation, all staff, employees, and contractors will be presented the plan, and will be made aware of the locations of spill kits, and trained in using spill equipment and responding to spills.

Regular worksite inspections will be conducted to identify measures to minimize or prevent the risk of spills. As part of on-site orientation sessions, all staff is to understand the steps to be undertaken in the event of a spill. This includes that all spills are to be reported, and that containment and clean-up is necessary, be they minor or major spills. Following the clean-up of a spill, the Environmental Department will inspect the spill site and, if necessary, collect samples to verify that the clean-up is complete.

All personnel will be trained to be aware of the potential hazards associated with the fuel/chemicals with which they will be assigned to work. In addition to work site inspections conducted by area specific employees, the Environmental Department will conduct weekly inspections to audit facilities where hazardous materials are handled and stored.

The spill plan also includes an action plan in the event of a spill. Specific procedures will vary depending on the season and hazardous materials spilled, as well as on location of the spill (on land, water, ice, or snow). The material safety data sheets (MSDS) for the material spilled will be consulted to ensure that safety procedures are followed.

Freshet Action and Incident Response Plan - No changes are planned for the Freshet Action and Incident Response Plan in relation to pre-development activities at Amaruq. If an incident occurs during pre-development activities, the currently approved Freshet Action and Incident Response Plan will be updated.

5.5 Environmental Protection and Monitoring Plans

The Environmental Protection and Monitoring Plans are approved through the following Plans:

- Air Quality Monitoring Plan (FEIS, Volume 8, Appendix 8-E.1 [Agnico Eagle 2016f]);
- Aquatic Effects Management Program (Version 3, November 2015);
- Core Receiving Environment Monitoring Program (FEIS, Volume 8, Appendix 8-E.2 [Agnico Eagle 2016f]);
- Groundwater Monitoring Plan (FEIS, Volume 8, Appendix 8-E.3 [Agnico Eagle 2016f]);
- Habitat Compensation Monitoring Plan (Version 4, March 2016);
- Meteorological Monitoring Plan (Version 1, May 2013);
- Conceptual Whale Tail Pit Offsetting Plan (FEIS, Volume 8, Appendix 8-E.4 [Agnico Eagle 2016f]);
- Noise Monitoring and Abatement Plan (Version 2, January 2014);
- Operational ARD/ML Sampling and Testing Plan (FEIS, Volume 8, Appendix 8-E.5 [Agnico Eagle 2016f]);
- Quality Assurance/Quality Control Plan (Version 2, July 2014);
- Socio-economics Management and Monitoring Plan (FEIS, Volume 8, Appendix 8-E.6 [Agnico Eagle 2016f]);
- Terrestrial Ecosystem Management Plan (FEIS, Volume 8, Appendix 8-E.7 [Agnico Eagle 2016f]); and
- Archaeology and Heritage Protection Plan (FEIS, Volume 8, Appendix 8-E.8 [Agnico Eagle 2016f]).

Air Quality Monitoring Plan – No change to currently approved Air Quality Monitoring Plan is expected as a result of pre-development activities.

Aquatic Effects Management Program - No change is planned for the Aquatic Effects Management Program as a result of pre-development activities.

Core Receiving Environment Monitoring Program - No change to the Core Receiving Environment Monitoring Program is expected to support pre-development activities

Groundwater Monitoring Plan – No change to the Groundwater Monitoring Plan is expected to support pre-development activities

Habitat Compensation Monitoring Plan - As the Habitat Compensation Monitoring Plan is a regulatory requirement of DFO, Agnico Eagle will continue to work with the DFO during the Authorization Phase of Whale Tail Pit to finalize a revised Habitat Compensation Monitoring Plan. As a result, no addendum will be submitted at this time.

Meteorological Monitoring Plan – No change to the currently approved Meteorological Monitoring plan is expected as a result of pre-development activities.

Conceptual Whale Tail Pit Offsetting Plan – Not required for pre-development activities.

Noise Monitoring and Abatement Plan – No change to the currently approved plans is expected as a result of pre-development activities.

Operational ARD/ML Testing and Sampling Plan – Not required as an addendum to the Quarry Management Plan is being submitted with this Type B Application (Appendix E) which will cover Mitigation and Monitoring of Quarry materials for ARD/ML.

Quality Assurance/Quality Control Plan - No change to the currently approved plans is expected as a result of pre-development activities.

Socio-economics Management and Monitoring Plan - No change to the currently approved plans is expected as a result of pre-development activities.

Terrestrial Ecosystem Management Plan - No change to the currently approved plans is expected as a result of pre-development activities.

Archaeology Management Plan - No change to the currently approved plans is expected as a result of pre-development activities.

The Environmental Protection and Monitoring Plans (EPMP) that have been submitted in support of the Type A Application (refer to Appendix 8, section E of the FEIS [Agnico Eagle 2016f]) describe the overarching direction for environmental and socio-economic management for the Project. A cyclical feedback loop will be employed where operations are planned and implemented, monitoring data are collected and analyzed, and practices are adjusted to promptly reduce or eliminate any observed negative impacts throughout the life of the Project. Continual use of this feedback loop will allow adaptive management decisions to be made on an ongoing basis, and will lead to improvements to the environmental and socio-economic management system as necessary over time.

The plans will offer flexibility to respond to changes, for example, in the mining development plan, the regulatory regime, the biophysical and socio-economic environments, technology, research results, and the understanding of traditional knowledge. Threshold and indicators to trigger management actions will be provided, where applicable, in the plans embedded in the EPMP, along with a system of accountability.

The addendum provided in Appendix F seeks to clarify the specific monitoring and inspections to be conducted by Agnico Eagle in relation to the pre-development activities proposed in the Application.

5.6 Closure, Reclamation, and Security

The overall goal of closure and reclamation is to return the mine site and affected areas to viable and, wherever practicable, self-sustaining ecosystems that are compatible with a healthy environment and with human activities. The overall closure goal is supported by the four closure principles of physical stability, chemical stability, no long-term active care requirements, and compatibility with future land uses for each component of the Project.

Mine closure is integral to the mine design, thus the Closure and Reclamation Plan (CRP) will be modified in a series of conceptual plans as the Project progresses. Planning for permanent closure is an active and iterative process, the intent of which is to develop a final plan using adaptive management. Adaptive management will enable closure planning and design to evolve as site specific information and monitoring data become available through analyses, testing, monitoring, and progressive reclamation.

Monitoring programs will be initiated during pre-development, construction and operations to provide additional baseline information on which to base updates to the closure plan. The adaptive management plans to be used in closure will follow the actions completed during operations, and will be co-ordinated with the existing operational monitoring programs to set appropriate trigger levels, and mitigation plans and actions.

While a complete preliminary conceptual mine Closure Plan and cost estimate were provided in the Type A Application (Volume 8, Appendix 8-F.1 [Agnico Eagle 2016f]), Agnico Eagle has prepared a Closure and Reclamation Strategy and Security Estimate in Appendix G for the pre-development works proposed under this Type B Water Licence Application.

6.0 WATER LICENCE CONSIDERATIONS

6.1 Term of Licence

Agnico Eagle requests a term of one year to allow for construction of some basic infrastructure site preparation, during mobilization and pre-development phase of the Project, beginning as early as December 2017. Agnico Eagle would request that should a Type A Water Licence be issued for the Project in the future, that the Board incorporate the scope of this Type B Application/Licence into the Type A Water Licence.

6.2 Statement of Financial Responsibility

Statement of Financial Responsibility: Agnico Eagle confirms to the NWB that it has the financial ability to adequately implement mitigation measures and apply costs associated with the closing or abandonment of the undertaking if needed.

The Amaruq property (formerly the IVR project) is 100% owned by Agnico Eagle. All rights, title, interests, liabilities, and obligations for the Project rest with Agnico Eagle. The 408 km^2 Amaruq property is located on IOL and was acquired by Agnico Eagle in 2013 subject to a mineral exploration agreement with NTI.

Taking into account Agnico Eagle's past performance, Agnico Eagle confirms:

- they have the adequate financial responsibility to satisfy section 57 of the NWNSRTA - to complete the undertaking from construction to closure;
- measures are in place, or will be put in place, to mitigate any adverse impacts; and
- its commitment to the ongoing maintenance and restoration of the Meadowbank Mine and its satellite operation in the event of future closing or abandonment of the undertaking. Agnico Eagle is confident in assuming its position, taking into account their current, ongoing, and past performance in the Kivalliq Region, Nunavut, and Canada.

Agnico Eagle strongly believes that taking into account its past performance and the current feasibility assessment for the Project, the company is financially able to complete the undertaking as presented in this Application, to mitigate any adverse impact, and to satisfactorily maintain and restore the proposed site in the event of closure or abandonment of the Project.

A copy of Agnico Eagle's financial statements is provided in Appendix B.

For further information on Agnico Eagle's past performance and financial responsibility refer to the Type A Application Volume 2, Appendix 2-A.1 and Appendix 2-K.1 (Agnico Eagle 2016f).

6.3 Security

Agnico Eagle acknowledges that the NWB may require the company to furnish and maintain security with the Minister, in a form determined by the Regulations or satisfactory to the Minister. As such, Agnico Eagle has provided a Closure and Reclamation Strategy and Security Estimate with the Application (Refer to Appendix G). The plan includes an estimate of financial liability for pre-development works and site preparation. Additional financial liability for pre-development works is estimated to be $1,042,997.

In general, Agnico Eagle funds its reclamation and water licence financial security liability for its Meadowbank operations through guaranteed letters of credit issued by one of the five major Canadian based banks (currently issued by Scotia Bank). These are irrevocable letters of credit issued as follows:

- interest of the Government of Canada (for water related financial security against reclamation or major accident causing environmental damage as outlined under the Type A Water Licence);
- Government of Nunavut (for accidents or incidents such as a fuel oil spill from the Baker Lake tank farm that could cause major damage to the environment);
- KIA (for land and water related financial security against reclamation or major accident causing environmental damage, as outlined under the Commercial and Production land use leases for IOL); and
- Fisheries and Oceans Canada (for financial security against successful implementation of fish compensation and offsetting measures as authorized by Fisheries and Oceans Canada under Section 36 and 35 of the *Fisheries Act*).

These financial security requirements (posted bonds or other forms of financial security) are intended to ensure that money is available to address cleanup, including payment of compensation in the event of accidents that directly or indirectly result in major damage by the Project to the environment, as well as to cover the cost of planned or premature closure, whether temporary or permanent should Agnico Eagle not be able to meet such obligations at such time.

The total value of these letters of credit are in the range of $100 Million pledged for reclamation liability, fish habitat compensation initiatives and various other forms of security (third party liability for the Baker Lake fuel tank farm, land use lease security, etc.). These letters of credit are deducted from Agnico Eagle's credit lines held by the banks, and are irrevocable letters of credit. Agnico Eagle currently reports available lines of credit of approximately $1 Billion.

Currently under the Type A Water Licence, the estimated reclamation liability for the Meadowbank Mine is $86.5 Million. This estimate was reviewed and agreed to by Agnico Eagle, Indigenous and Northern Affairs Canada, and KIA through the Type A Water Licence renewal process completed in 2015. Currently under the Meadowbank Type A Water Licence, Agnico Eagle has posted security for water related reclamation in the amount of $71.7 Million. Agnico Eagle has also posted an additional $86.5 Million in security for land reclamation with the KIA under the Meadowbank KIA production land use lease. Consequently Agnico Eagle has posted security of $158.2 Million for reclamation of the Meadowbank Mine site.

In addition to the security posted for Meadowbank operations, Agnico Eagle also posts security for the AEAR and advanced exploration activities at Amaruq under the Type B water licence as follows:

- $1.7 Million posted under 8BC-AEA1525 for the AEAR; and
- $3.8 Million posted under water licence 2BB-MEA1318 for advanced exploration activities at Amaruq.

For the purpose of the determination of security for this Application, Agnico Eagle would propose the NWB defer full consideration of security of project liability to the review of the Type A Water Application submitted to the NWB in June 2016 to avoid potential "double bonding".

6.4 Annual Reporting

Agnico Eagle confirms that it will file an annual report with the Board on March 31 of the year following the calendar year being reported as required by the Regulations. The annual report will contain the information as directed by the Board in the water licence.

6.5 Renewal or Amendments

Agnico Eagle does not foresee renewal of a licence related to this Application for pre-development works, but rather the incorporation of the licence into a Type A Water Licence if issued by the NWB for full development of the Project.

Agnico Eagle assumes that the Amaruq exploration road will be completed upon issuance of this pre-development Type B Water Licence and thus requests that the same terms, conditions and mitigation measures of licence 8BC-AEA1525 be incorporated into this Type B water licence upon issuance.

Table 6.1: Existing Water Licenses Requested Modifications

Licence No.:	**2BB-MEA1318**
Project Name:	Meadowbank Advanced Exploration Project
Purpose:	Direct water use and deposit of waste
Date Expiry:	March 6, 2018
Location	approximately 70-125 km north of the Hamlet of Baker Lake within the Kivalliq Region, Nunavut
Scope:	prospecting geological mapping geophysical surveys diamond and reverse circulation drilling trenching and quarrying bulk sampling water crossings installation during road construction operation of Storm-water Management Pond development/construction of portal/ramp services and operations pads storage of waste rock and ore on pads fuel storage laydown/garage/office/warehouse area for the rump at Amaruq (IVR) Camp
Modification/ Clarification Requested:	1) NWB may decide to revise wording associated with Water Use to be more specific.
Licence No.:	**8BC-AEA1525**
Project Name:	Amaruq Exploration Access Road
Purpose:	Direct water use and deposit of waste
Date Expiry:	December 31, 2025
Location:	64.1 km long access road between the Amaruq exploration project site and the Meadowbank Mine site.
Scope:	Use of water and disposal of waste during construction, operation and decommissioning of a 62.5 km long by 6.5 m wide all-weather road between Meadowbank site and Amaruq Exploration site, including installation of water crossings (bridges, open bottomed arch culverts, and corrugated and localized drainage culverts).
Errata Clarification Requested:	2) None requested subject to NWB discretion as needed.

7.0 REFERENCES

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APPENDIX A

Certificate of Incorporation/Corporate Registration

APPENDIX B

Audited Financial Statements

Agnico Eagle's audited financial statements are available on-line at:
https://s21.q4cdn.com/374334112/files/doc_downloads/agnico_downloads/financial_information/2016March-AACFS.pdf

APPENDIX C

Project Licenses, Permits, Authorizations, and Agreements

List of Permits and Licenses for the Project

Permit/License	Type	Licensor	Approved Ops	Status	Begin of Term	End of Term	Comments
66A/8-71-2	Land Lease	INAC	All Weather Private Access Road construction, operation, maintenance and reclamation	Active	01-Jan-07	31-Dec-21	
66A/8-72-2	Land Lease	INAC	Quarrying for the AWPAR	Active	01-Jan-07	31-Dec-16	
08-HCAA-CA7-00039	Freshwater Intake Pipe Screen Approval	DFO	Freshwater Intake Pipe at Exploration Camp	Active	06-Jan-09		No obligations or renewal deadlines. Approval does not have expiry date.
08-HCAA-CA7-00040 (NU-08-0040)	Freshwater Intake Pipe Screen Approval	DFO	Freshwater Intake Pipe at Meadowbank Camp	Active	06-Jan-09		No obligations or renewal deadlines. Approval does not have expiry date.
NU 03-191 s30	Freshwater Intake	DFO	Freshwater Intake at Emulsion plant	Active	16-Nov-09		No obligations or renewal deadlines. Approval does not have expiry date.
FWISL-ACC-07-08-056	Animal Use Protocol	DFO		Expired		31-Mar-08	
FWI-ACC-2009-027	Animal Use Protocol	DFO		Expired	04-Jun-09	31-Dec-09	
FWI-ACC-2008-2009-054	Animal Use Protocol	DFO		Expired	07-Jul-08	31-Mar-09	
FWI-ACC-2008-2009-064	Animal Use Protocol	DFO		Expired	31-Jul-08	31-Mar-09	
FWI-ACC-2010-022	Animal Use Protocol	DFO		Expired	09-Jun-10	31-Dec-10	
FWI-ACC-2011-025	Animal Use Protocol	DFO		Expired	17-Jun-11	31-Dec-11	
FWI-ACC-2012-038	Animal Use Protocol	DFO		Expired	13-Jun-12	01-Oct-12	
FWI-ACC-2013-033	Animal Use Protocol	DFO		Expired	11-Jun-13	01-Nov-13	
FWI-ACC-2015-021	Animal Use Protocol	DFO		Expired	11-Jun-15	01-Dec-15	
S-08/09-1042-NU	Licence to fish for scientific purposes	DFO		Expired	11-Aug-08	31-Oct-08	
S-08/09-1040	Licence to fish for scientific purposes	DFO		Expired	14-Jul-08	30-Sep-08	
S-09/10-1027-NU	Licence to fish for scientific purposes	DFO		Expired	24-Jun-09	30-Sep-09	
S-10/10-1011-NU	Licence to fish for scientific purposes	DFO		Expired	17-Jun-10	15-Oct-10	

List of Permits and Licenses for the Project

Permit/License	Type	Licensor	Approved Ops	Status	Begin of Term	End of Term	Comments
S-11/12-1015-NU	Licence to fish for scientific purposes	DFO		Expired	15-Jun-11	15-Oct-11	
S-11/12-1042-NU	Licence to fish for scientific purposes	DFO		Expired	10-Aug-11	31-Aug-11	
S-12/13-1023-NU	Licence to fish for scientific purposes	DFO		Expired	15-Jun-12	30-Sep-12	
S-13/14-1010-NU	Licence to fish for scientific purposes	DFO	AWPAR and on-site fisheries monitoring including CREMP	Expired	15-Jun-13	15-Oct-13	
S-13/14 3018-YK	Licence to fish for scientific purposes	DFO	Vault Fishout	Expired	15-Jul-13	31-Mar-13	
S-15/16-1012-NU	Licence to fish for scientific purposes	DFO	AWAR and habitat compensation work	Expired	30-Jun-15	31-Jan-16	
NU-03-0190	HADD Authorization - AWPAR (amendment #1 and #2)	DFO	AWPAR - Infilling of fish habitat as a result of water crossing construction affecting a total of 0.53 HU / 2,793 m^3 of fish habitat	Expired	02-May-07	31-Dec-08	
NU-03-0191	HADD Authorization - Mine Site. *Fisheries Act* Authorization	DFO	Infilling of fish habitat as a result of infilling and dewatering of Second and Third Portage Lakes - dikes and pits + airstrip extension	Expired	30-Jul-08	15-Dec-15	
NU-03-0191.02	s.32 *Fisheries Act* Authorization - Meadowbank Dewatering Bay Goose	DFO	Authorization for the fish destruction by means other than fishing during the dewatering of Bay Goose impoundment area in Third Portage Lake	Expired	22-Feb-11	31-Jul-12	
NU-03-0191.03	Portage Pit and Bay Goose *Fisheries Act* Authorization	DFO	Second Portage Lake: Dewatering, excavation, dike and road footprint (east and central dikes) and in water placement of coarse material Third Portage Lake : Dewatering, excavation, road footprint, Bay	Active	05-Mar-13	31-Dec-17	

List of Permits and Licenses for the Project

Permit/License	Type	Licensor	Approved Ops	Status	Begin of Term	End of Term	Comments
			Goose and South Camp Dike footprints and in water placement of coarse material				
NU-03-0191.04	Vault *Fisheries Act* Authorization	DFO	Dewatering, excavation, dike construction and placement of course material in Vault Lake basin	Active	02-Apr-13	31-Dec-17	
NU-08-0013	HADD Authorization - Western Channel	DFO	Infilling of fish habitat as a result of a temporary culvert installation affecting 1.01 HU on the westernmost channel connecting 2PL and 3PL	Expired	28-May-08	13-Jun-08	
NU-08-0052	Authorization for destruction of fish	DFO	*Fisheries Act* Sec.32 - destruction of fish arising from dewatering of NW arm of 2PL	Expired	02-Mar-09	31-Dec-10	
NU-10-0049	Vault Culvert Crossing	DFO	Vault Culvert Crossing	Active	25-Jan-11		No end term
MMER Sec 27.1 Approval TIA (08-HCAA-CA7-00191)	Letter of Approval	DFO	Authorization for deposition of tailings in TIA. Approval of Compensation Plan.	Active	14-Jan-10		TIA Habitat Compensation Plan
DvlptPA	Development Partnership Agreement	GN	700,000 m^3/annually - mining, milling & associated activities, operation of Baker Lake Facilities, operation of AWPAR	Active	17-Feb-07	17-Feb-22	As per article 11.1, Agreement remains in force until completion of Closure and Reclamation
L-51260	Baker Lake Marshalling Area	GN	Marshalling Facility; tank farm, explosive area, access road.	Active	01-Mar-10	01-Mar-13	Permit renewal on going
L-51261	Baker Lake Marshalling Area, Land Lease	GN	Baker Lake Spud Barge	Active	01-Mar-10	01-Mar-20	
L-51262	Baker Lake All Weather Private Access Road Section	GN	Municipal Lands portion of Tahek Lake AWPAR, Baker Lake, Nunavut	Active	01-Mar-10	01-Mar-20	
LUP-06-603-001 (a)	Land use permit	GN	AWPAR construction	Expired			
QP-06-603-001 (a)	Quarry Permit	GN	AWPAR Quarry 1 : authorization to take 85,388m3 of quarries bedrock	Expired			

List of Permits and Licenses for the Project

Permit/License	Type	Licensor	Approved Ops	Status	Begin of Term	End of Term	Comments
			- granite				
603-0-LUP-07-001	Land use permit	GN	Baker Lake Marshalling Area	Expired	01-May-07	01-May-08	
WL-2012-050	Wildlife Research Permit	GN	Ground survey of birds, nest, raptors, other animals, and wildlife signs. Must submit report at end of study	Expired	01-Jun-12	31-May-12	
WL-2014-055	Wildlife Research Permit	GN	Ground survey of birds, nest, raptors, other animals, and wildlife signs. Must submit report at end of study	Expired	1-Aug-14	31-Jul-15	
WL-2015-058	Wildlife Research Permit	GN	Ground survey of birds, nest, raptors, other animals, and wildlife signs. Must submit report at end of study	Active	1-Jun-15	1-Jun-16	
Memorandum of Understanding	Wildlife Research	GN	GN has requested that the Proponent participate in the Kivalliq Ungulate Monitoring Program and the Proponent desires to work collaboratively and in good faith to increase the common knowledge of caribou and muskoxen for mutual benefit.	Active	11-Sep-13	11-Sep-16	
IIBA	Inuit Impact Benefit Agreement	KIA	Inuit Impact Benefit Agreement	Expired	25-Mar-06	23-Jun-11	Reviewed every third year for material change and automatically renewed for a subsequent 3 year term
IIBA	Inuit Impact Benefit Agreement	KIA	Inuit Impact Benefit Agreement	Expired	23-Jun-11	23-Jun-14	Reviewed every third year for material change and automatically renewed for a subsequent 3 year term
IIBA	Inuit Impact Benefit Agreement	KIA	Inuit Impact Benefit Agreement	Active	23-June-14	23-June-17	Reviewed every third year for material change and automatically renewed for

List of Permits and Licenses for the Project

Permit/License	Type	Licensor	Approved Ops	Status	Begin of Term	End of Term	Comments
							a subsequent 3 year term
KVCA06Q11	Quarry Permit - AWPAR	KIA	Quarrying for All Weather Private Access Road, 254,546 m^3 of material	Active	02-Feb-07	31-Dec-21	Permit expires in 2022 or when the specified amount of material has been quarried
KVCA09Q09	Quarry Permit	KIA	Removal of 50,000 m^3 of gravel material - sand quarry for concrete production	Expired	03-Mar-09	03-Mar-11	Expires within 24 months or when material has been quarried
KVCA08Q10	Quarry Permit	KIA	Removal of 250,000 m^3 of gravel, sand, loam, mining backfill or shot rock from the land	Expired	15-May-08	15-May-12	Expires 12 months from the date hereof or when material has been quarried
KVPL08D280	Surface Production Lease (Amendment #1 and #2)	KIA	Surface Production Lease: Construction, operation and closure of the mine on Inuit owned land	Active	24-Jul-08	31-Dec-27	Production Lease Amended #1 Feb. 9th, 2009 ; Production Lease Amended #2 May 2, 2013
KVRW06F04	Right of Way Agreement - AWPAR (amendment #1)	KIA	All Weather Private Access Road (and Quarry - KVCA06Q11)	Active	01-Jan-07	31-Dec-21	
KVRW09F05	Right of Way Authorization	KIA	Winter Access Road for sand quarry	Expired	03-Mar-09	31-May-11	ROW expires one year before the sand quarry
Mine Water Comp Agrmt	Water Compensation Agreement - Mine	KIA	Compensation for water consumption at Meadowbank site and any changes in water quality, quantity or flow due to project activities	Active	14-Apr-08		Agreement terminates with C&R when KIA provides a letter of clearance
Road Water Comp Agrmt	Water Compensation Agreement - Road (amendment #1)	KIA	Compensation where development and operation of AWPAR has substantial effect on water quality, quantity or flow	Active	29-Jan-08		Agreement terminates following C&R of the road and all IOL affected by road
PC_NIRB-004	Project Certificate + modification condition 32	NIRB	Approval for the Meadowbank Project to proceed subject to its Terms & Conditions	Active	30-Dec-06	31-Dec-21	change in Condition 32 in September 15, 2010 (ATV access on AWPAR)

List of Permits and Licenses for the Project

Permit/License	Type	Licensor	Approved Ops	Status	Begin of Term	End of Term	Comments
							Removal of condition 48 and changes to condition 49 and 53 related to Phaser Lake (NIRB decision on April 18, 2016)
03-023-10N-M	Scientific Research License	NRI	Wind Data Collection	Expired	01-Jan-10	31-Dec-10	Multi-year license for January 1, 2010 - October 29, 2011 but needs to renewed each year
BL14-001-PL Vault	Subsurface Production Lease	NTI	Vault	Active	01-Jul-12	01-Jul-17	
2AM-MEA0815	Water License + Modification East Dike + Modification Airstrip + Amendment Fuel Tank Baker Lake	NWB	700,000 m^3 annually - Milling, mining and associated activities at the Meadowbank Project site Amendment freshwater use permit – 1,870,000 m^3 in 2013 and 1,150,000 m^3 thereafter	Expired	10-Jul-08	31-May-15	Approved by the Minister on July 10, 2008 Modification East Dike approve on July 3, 2013 Modification Airstrip approved in 2012 Amendment Fuel Tank Baker Lake on May 5, 2010
2AM-MEA0815	Short Term Water Licence	NWB	Same conditions as the approved 2008 water licence and amendment	Expired	20-April-15	27-Nov-15	Short term licence while waiting for the water licence renewal
2AM-MEA1525	Renewed Water Licence	NWB	2,350,000 m^3 annually up to December 31 2017 and 4,935,000 m^3 annually starting in 2018 through to the Expiry of the License- Milling, mining and associated activities at the	Active	23-Jul-15	22-Jul-25	

List of Permits and Licenses for the Project

Permit/License	Type	Licensor	Approved Ops	Status	Begin of Term	End of Term	Comments
			Meadowbank Project site				
2BB-MEA1318	Renewed Water License + Amendments 1-4	NWB	299 m^3/day for overall activities	Active	07-Mar-13	06-Mar-18	(previously 2BE-MEA1525)
8BC-AEA1525	Type B Water License	NWB	299 m^3/day for dust suppression of the Amaruq Exploration Access Road	Active	09-Nov-15	31-Dec-25	requesting that the same terms, conditions and mitigation measures be incorporated into this Type B water licence upon issuance

INAC = Indigenous and Northern Affairs Canada (formally Aboriginal Affairs and Northern Development Canada); DFO = Fisheries and Oceans Canada; GN = Government on Nunavut; KIA = Kivalliq Inuit Association; NRI = Nunavut Research Institute; NTI = Nunavut Tunngavik Incorporated; NWB = Nunavut Water Board; m^3 = cubic metres.

List of Authorizations

Authorization	Authority	Basis
Conformity determination with Keewatin Regional Land Use Plan	Nunavut Planning Commission	Allows Project to proceed to screening
Article 12, Environmental Screening/ Assessment	Nunavut Impact Review Board	Allows Project to proceed to authorizations to build and operate the road
Type B Water License	Nunavut Water Board	Allows for use of water and disposal of waste in constructing, operating and closing the road
Water Compensation Agreement	Kivalliq Inuit Association	Compensation for Inuit Water Rights under NLCA Section 20
Land Use Permit	Kivalliq Inuit Association	Allows construction of the road on IOL
Right-of-way Lease	Kivalliq Inuit Association	Allows lease right-of-way for completed and surveyed road across IOL
Quarry Permit	Kivalliq Inuit Association	Borrow pits proximal to the right-of-way for obtaining material to build the road.
Land Use Permit	Formerly, Aboriginal Affairs and Northern Development Canada, now INAC	Allows construction of the road across crown land
Right-of-way Lease	Aboriginal Affairs and Northern Development Canada	Allows lease right-of-way for completed and surveyed road across Crown Land.
Quarry Permit	Aboriginal Affairs and Northern Development Canada	Various borrow pit sites proximal to the right-of-way for obtaining material to build the road.
Fisheries Authorization	Department of Fisheries and Oceans	A Project Authorization will not be required as there is no harm to fish or fish habitat. Agnico Eagle intends to follow DFO operational statements for the installation of clear span bridges and culverts.
Navigable Waters Determinations	Transport Canada	The determination by Agnico Eagle if streams and rivers crossed by the Road are navigable. The report on navigability will be sent to Transport Canada.
Explosive Magazine Permit Renewal	Workers' Safety and Compensation Commission	Permits an explosive magazine on-site and at other approved locations
Class 2 Permit for Heritage Sites (obtained by qualified professional archaeologist)	Department of Culture and Heritage, Government of Nunavut	Unavoidable impacts of the road on heritage sites have been mitigated

Primary Project Approval Requirements

Permit/Approval Legislation	Administering Agency	Project Activity
Project Certificate NLCA (Article 12)	NIRB	Project approval
Inuit Impact and Benefit Agreement NLCA (Article 26)	KIA	Project commencement
Mineral Production Lease	Nunavut Tunngavik Inc.	Required for mineral production
Inuit Water Rights Compensation Agreement NLCA (Article 20)	KIA	May be required
Water Licence *Nunavut Waters and Nunavut Surface Rights Tribunal Act*	NWB	Required for water use and waste disposal
Class 1/Class 2 Archaeology Permit *Nunavut Archaeological and Paleontological Sites Regulations*	Government of Nunavut Department of Culture, Language, Elders and Youth (CLEY)	Required to conduct archaeology research and to mitigate archaeological sites to allow development to occur
IOL – Commercial Land Use Lease or Right of Way NLCA	KIA	Long-term land tenure required for land use on Inuit Owned Lands; land required for infrastructure, roads and activities associated with construction, operations, and closure phases
IOL – Quarry Lease/Permit NLCA	KIA	Required for quarrying of material on Inuit Owned Lands during construction, operation and closure
Crown Land – Lease/Land Use Permit *Territorial Lands Act* *Territorial Land Use Regulations*	INAC	Required for quarrying of material on Crown land during construction, operation and closure
Approval and/or Exemption *Navigable Waters Protection Act* (sections 5, 22 and 23)	Transport Canada	Construction of works in navigable waters. Prescriptions of Sections 22 and 23 of the Navigable Waters Protection Act will be followed as necessary.
Fisheries Authorization for Harmful Alteration Disruption or Destruction (HADD) of Fish or Fish Habitat *Fisheries Act* (section 35)	Fisheries and Oceans Canada (DFO)	Required if HADD cannot be avoided; if HADD can be avoided, DFO may provide a letter of advice outlining best management practices
Licence for a Factory and Magazine *Explosives Act and Regulations*	Natural Resources Canada	Required for construction of explosives factories and magazine(s) and storage of explosives

Primary Project Approval Requirements

Permit/Approval Legislation	Administering Agency	Project Activity
Permit to Store Detonators *Explosives Use Act* *Mine Health and Safety Act and Regulations*	Nunavut Mine Health and Safety Nunavut Workers Compensation Board	Required to store detonators in a magazine
Explosive Use Permit *Explosives Use Act* *Mine Health and Safety Act* and *Regulations*	Nunavut Mine Health and Safety Nunavut Workers Compensation Board	A permit is required to use explosives unless used in accordance with the regulations
Spill Contingency Plan Approval *Environmental Protection Act* *Spill Contingency Planning and Reporting Regulations*	Nunavut Department of Environment (DoE)	A Spill Contingency Plan must be filed with the Chief Environmental Protection Officer to store fuel in an above-ground facility with a 20,000 L capacity or greater
Assorted Scientific Research Permits *Scientist Act* *Wildlife Act*	Nunavut Research Institute	Required to conduct some of the environmental monitoring activities

APPENDIX D

Typical Drawings

APPENDIX E

Quarry Management Plan Addendum

APPENDIX F

Environmental Protection and Monitoring Plans Addendum

Agnico Eagle Mines Limited – Meadowbank Division (Agnico Eagle) is proposing to develop Whale Tail Pit and Haul Road, a satellite deposit located on the Amaruq property, to continue mine operations and milling at the Meadowbank Mine. The Amaruq Exploration property is a 408 square kilometre (km^2) site located on Inuit Owned Land (IOL) approximately 150 kilometres (km) north of the hamlet of Baker Lake and approximately 50 km northwest of the Meadowbank Mine in the Kivalliq region of Nunavut (Volume 1, Figure 1.1-1). The property was acquired by Agnico Eagle in April 2013 subject to a mineral exploration agreement with Nunavut Tunngavik Incorporated.

In June 2016, Addendums to Environmental Protection and Monitoring Plans (EPMPs or Plans) were prepared and submitted to the NWB with Agnico Eagle's Type A Application (refer to Appendices 8-E.1 to 8-E.8 of the FEIS [Agnico Eagle 2016]) to include mining of Whale Tail Pit and construction and operations of associated infrastructure.

The EPMPs provide the overarching direction to environmental and socio-economic management for the Project and describes the systematic means by which Agnico Eagle will consistently manage and control potentially adverse impacts, and enhance potential project benefits, identified through the Environmental Assessment process. The Plan is supported by a suite of Project-specific mitigation, monitoring, and/or management plans that set out the Project's standards and requirements for particular areas of environmental and socio-economic management.

This EPMP addendum in support of the Type B Water Licence application summarizes the specific monitoring and inspections to be conducted by Agnico Eagle in relation to the pre-development activities proposed in the Application; these pre-development activities include:

- construction of a pad for the permanent camp;
- installation of pilings for the permanent camp and infrastructure;
- start of work on concrete foundations;
- construction of necessary service roads to undertake the other pre-development activities;
  - road between Quarry 2 and Waste Rock Storage Facility (WRSF)
  - a road and one culvert between exploration camp and proposed Nemo freshwater intake
  - a road between exploration area and new road between Quarry 2 and the WRSF
  - upgrade/widen Whale Tail Pit haul road from 6.5m wide to 9.5m plus bypasses.
- stripping of open pit(s) (overburden and waste rock), use of quarry material for construction and ore/waste rock stockpiling;
  - quarrying at Quarry 2
  - dike construction material stockpiling and preparation (i.e., WRSF Dike construction material preparation (crushing, stock piling on West and East side of the dike);
- construction of waste rock berms;
- construction of the Whale Tail Bulk Fuel Storage Facility;

- piping and pump preparation for dewatering (i.e., roads, pads, water treatment plant);
- turbidity curtain installation;
- construct Mammoth Channel crossing in March 2018 (pending confirmation of fisheries authorization); and
- pre-delivery of material (i.e., equipment, material, and fuel).

A listing of the individual mitigation, monitoring, and/or management plans specific to various aspects, components, activities, and phases of the pre-development activities is included in Table F.1. Monitoring and adaptive management are essential tools for ensuring that a project is implemented as planned, that mitigation measures are successful, that the procedures and practices are effective, that potential adverse impacts are avoided or minimized, and that enhancement measures are effective.

Table F.1 Environmental Monitoring, Mitigation, and Management Plans

		Application and Project Phase				
		Type B	Type A Application			
Plan	**Purpose**	**Pre-development**	**Construction**	**Operation**	**Closure**	**Post-Closure**
Whale Tail Pit Haul Road Management Plan	To manage the Whale Tail Haul Road and associated quarries proposed in the Project, covering construction (widening of the road), operations, and final closure (the Plan also covers temporary closure).	√	√	√	√	
Quarry Management Plan	To cover all environmental aspects associated with quarrying activities within Esker 7 and Quarry 2.	√	√	√	√	
Spill Contingency Plan	The Plan describes lines of authority, responsibility, proper reporting requirements and detailed plans of action in the event of a spill.	√	√	√	√	
Environmental Protection and Monitoring Plans	To provide overarching direction for environmental and socio-economic management for the Project.	√	√	√	√	√

The performance of the management plans will be monitored periodically. Independent researchers or consultants may be engaged to review performance. The accuracy of the environmental impact predictions and the effectiveness of the mitigation measures will be verified through that process. If unusual or unforeseen adverse environmental impacts are noticed, corrective action will be put in place. Through the adaptive management process, the existing mitigation measures will be adjusted or new mitigation measures implemented if necessary.

Environmental protection and monitoring plans have been submitted in support of the Type A Application which will provide sufficiently robust data to support decisions in mine management. The monitoring activities specific to the pre-development activities proposed in the Type B Application are identified in Table F.2 and F.3; these

tables were modified from Table 3-1 and Table 3-2 in the Water Quality and Flow Monitoring Plan (Appendix 8-B.3 [Agnico Eagle 2016f]).

Table F.2: Proposed Monitoring for the Project during Pre-Development Activities

Station	Description	Phase	Monitoring parameters/group	Frequency
ST-DC-1 to TBD	50 to 100 m from the turbidity curtains	Pre-development	Turbidity and TSS	Once daily during activities
ST-DD-1 to TBD	50 to 100 from Mammoth temporary bridge	Pre-development	Turbidity and TSS	Once daily during activities
ST-S-1 to TBD	Seeps (to be determined)	Pre-development	1	Monthly or as found
ST-WT-6	Lake A47	Pre-development	2	Monthly during open-water
ST-WT-TBD	Waste rock and overburden stockpile areas	Pre-development	total sulphur, total inorganic carbon and total arsenic	As required
Air Quality	Communications tower	DF5	TSP, PM_{10}, $PM_{2.5}$, passive NO_2, dustfall	As required

Table F.3: Monitoring Parameters

Group	Parameters
1	pH, turbidity, hardness, alkalinity, ammonia nitrogen, total metals (aluminum, arsenic, barium, cadmium, chloride, chromium, copper, fluoride, iron, lead, manganese, mercury, molybdenum, nickel, nitrite, nitrate, selenium, silver, thallium, zinc), sulphate, total dissolved solids (TDS), TSS, total cyanide. If CN total is detect in an analysis result; further analysis of CN Free and CN WAD will be trigger.
2	**Total and Dissolved metals:** aluminum, antimony, arsenic, boron, barium, beryllium, cadmium, copper, chromium, iron, lithium, manganese, mercury, molybdenum, nickel, lead, selenium, tin, strontium, titanium, thallium, uranium, vanadium and zinc **Nutrients:** Ammonia-nitrogen, total kjeldahl nitrogen, nitrate nitrogen, nitrite-nitrogen, ortho-phosphate, total phosphorous, total organic carbon, total dissolved organic carbon and reactive silica; **Conventional Parameters:** bicarbonate alkalinity, chloride, carbonate alkalinity, conductivity, hardness, calcium, potassium, magnesium, sodium, sulphate, pH, total alkalinity, TDS, and TSS, turbidity; Total cyanide and free cyanide. If CN total is detect above 0.05 mg/L in an analysis result for monitoring station in receiving environment; further analysis of CN WAD will be trigger.

Operationally, under a Type A Water Licence (if issued), Agnico Eagle would have sole responsibility for inspection and maintenance of all mine components, and the inspection and monitoring of mine activities. This includes, but is not limited to, mine components such as open pits, quarries, borrow pits, roads, storage pads, waste rock storage facilities, diversion channels, dikes, sumps, berms, tailings storage facility, landfill, incinerator, landfarm, explosives plant, and pipelines. It also includes such activities as the pumping of water and waste, discharge of waste to the receiving environment, spill clean-up, and fuel transport on Agnico Eagle's

roads. Mine components subject to pre-development may include open pits, quarries, borrow pits, roads, storage pads, diversion channels, dikes, sumps, and berms.

Agnico Eagle proposes to implement an inspection program for the Project for the early identification of areas where improvements are needed. The early resolution of any deficiencies will result in less ongoing maintenance and repair of mine components, and a reduction in the risk of adverse environmental effects. The inspection activities specific to the pre-development activities proposed in the application are identified in Table F.4 below.

Table F.4 Summary of Proposed Inspections

Mine Components / Activities Inspected	Inspection Methods & Procedures	Qualitative Risk Level - High, Medium, or Low	Department Responsible	Frequency
Culverts	Visual inspection for snow and/or debris blockage of culverts.	Medium. Snow can be removed from the front and back of the culverts before freshet.	Road Superintendent	Just prior to freshet and daily during the first days of freshet; also following major rain events. Monthly in the open water season after freshet is over.
Roads	Visual inspection for evidence of seasonal freeze and thaw adjacent to the toe of the road embankment.	Low. Affected area will be repaired using granular material and/or crushed rock.	Road Superintendent	Weekly over the summer (approximately mid-May, from the start of the freshet period to October, prior to the fall freeze-up).
Water ponding against roads	Visual inspection of roads after freshet and major rain events.	Low. Ponding can be dealt with by pumping the water or by installing a culvert in the road where water is ponding.	Road Superintendent	Weekly over the open water season and following freshet and major rain events.
Bridges	Visual inspection for snow dams prior to freshet.	High. Snow dams could lead to the bridge being overwhelmed at freshet with resultant damage.	Road Superintendent	Prior to freshet to allow time for any snow dams to be removed and weekly during freshet to confirm that snow dams were breeched.
Snow removal from roads	Visual inspections to ensure skidoo trails are not being blocked by snow removed from the roads.	Low. Pushing snow onto skidoos trails that cross Agnico Eagle's roads will make it difficult for trail users to cross the roads.	Road Superintendent	Following each major winter storm and clearing of snow off the roads.
Road dust	Visual inspection of the road for excessive dust generation.	High. Dust can impact on the environment along the roads, and be a safety risk due to limited visibility in using the roads.	Road Superintendent	Weekly when roads are very dry and/or when road traffic is heavy. Inspections will be suspended during rainy days and over the winter.
Caribou near or on roads	Visual inspection of hunting activities along the road when large numbers of caribou are near-by.	High. Hunters should observe the 1 km no shooting zone along the road.	Environment	Weekly year round and more frequently when large numbers of caribou are near or on the roads.
Watercourses and watercourse crossing	Visual inspection of infrastructure to identify defects, cracks or any other risks to structural integrity, sediment or other debris accumulation, or bed erosion or scour.	Low. Infrastructure will be repaired after deficiencies are noted, when it is safe to do so.	Road Superintendent	Weekly during the open water, during the freshet period, and unscheduled inspections following a major rain event.
Diversion Channels	Visual inspection of the channel for permafrost degradation.	Medium. Diversion channels need to be clear of snow prior to freshet	Engineering	(1) Prior to and at freshet; (2) Immediately after a major rain event; and

Table F.4: Summary of Proposed Inspections (continued)

Mine Components / Activities Inspected	Inspection Methods & Procedures	Qualitative Risk Level - High, Medium, or Low	Department Responsible	Frequency
		to allow for water flow.		(3) Weekly for the remainder of the ice-free season.
Quarries / Borrow Pits	Visual inspection for slumping and seepage from the quarries/borrow pits.	Low. Loose rock will be pulled down from the quarry face. Seepage will be sampled.	Environment	Weekly at freshet and monthly thereafter over the open water period. Also, after major rain events.
Spills	Document the recovery of spilled material and clean-up of any remaining residuals.	This could range from low to high risk depending on what was spilled, where it occurred, and success of spill recovery efforts.	All departments; Environment to follow-up	Inspections begin when a spill is reported and continues on a regular basis until the spill is cleaned up. The frequency of inspections will be dependent on what was spilled, where it occurred, and success of spill recovery efforts.
Spill Kits	Inventory of spills response equipment and materials in each spill kit.	Low. Spills kits will be restocked after use.	Environment	Monthly by Environment Technician.
Archaeological Sites	Inspect archaeological sites and report annually.	Low	Environment	The location of archaeological sites has been identified and Agnico Eagle will take photos of the sites inspected and include these in the annual report.

APPENDIX G

Closure and Reclamation Strategy and Security Estimate for the Pre-development works

APPENDIX H

Fisheries Assessment of the Proposed Mammoth Channel Crossing