AGNICO EAGLE

WHALE TAIL PIT - EXPANSION PROJECT

Conceptual Fish Habitat Offsetting Plan

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1. INTRODUCTION

Agnico Eagle Mines Limited (Agnico Eagle) operates the Meadowbank Gold Mine, located on Inuit-owned lands approximately 70 km north of the hamlet of Baker Lake in the Kivalliq Region of Nunavut (Figure 1-1). Agnico Eagle is constructing and preparing to mine a satellite mineral property (the Amaruq property) located approximately 50 km northwest of the Meadowbank Mine and 150 km north of Baker Lake. The development of the Amaruq property has commenced with the Whale Tail Pit Project, approved in 2018. Construction of the Whale Tail Pit Project began in 2018, and mining is scheduled to begin in 2019.

The Whale Tail Pit - Expansion Project (the Project) will extend mining operations at the Whale Tail Pit mine site. A Final Environmental Impact Statement (FEIS) Addendum was prepared for the Nunavut Impact Review Board (NIRB) in November 2018. The Whale Tail Pit Expansion Project will result in loss of fish habitat through mine infrastructure, expansion of approved facilities, additional operations (IVR pit and underground mining), as well as through the deposition of mine waste and associated management of contact water.

The objective of this conceptual plan is to demonstrate that feasible offsetting options exists to counterbalance fish habitat loss from the Whale Tail Pit Expansion Project. This conceptual fish habitat offsetting plan will be updated with further detail during the regulatory phase of the Project, including with additional community and regulatory engagement that may inform the final offsetting measures.

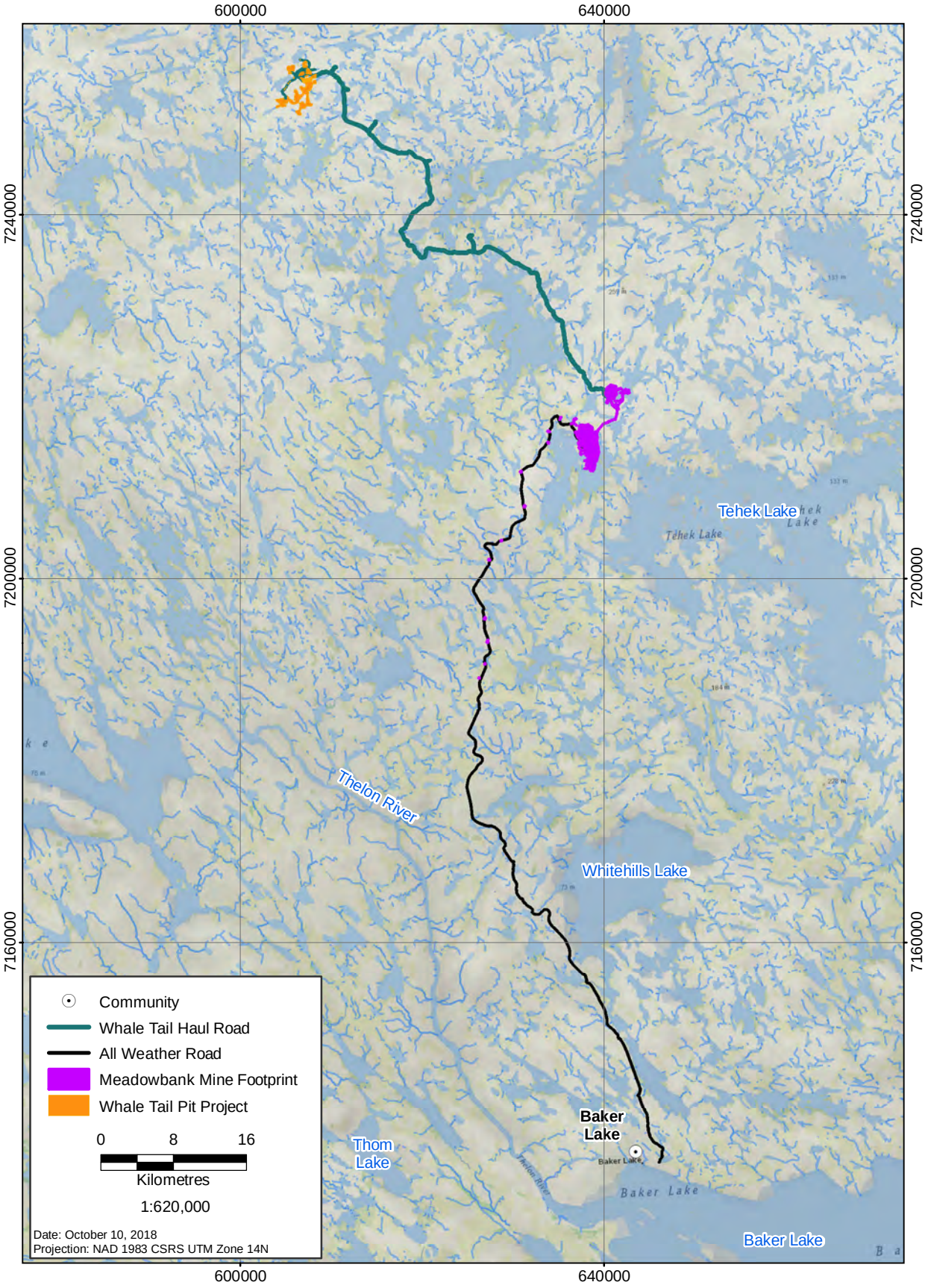
1.1 REGULATORY CONTEXT

There are two provisions of the *Fisheries Act* that are relevant to the Whale Tail Pit Expansion Project.

Subsection 35(1) of the *Fisheries Act* prohibits serious harm to fish, defined as "the death of fish or any permanent alteration to, or destruction of, fish habitat". Where proponents are unable to avoid or mitigate serious harm to fish, projects will require authorization under Subsection 35(2) of the *Fisheries Act* in order for the project to proceed without contravening the Act. As part of an Application for Authorization under Paragraph 35(2)(b), proponents should develop an offsetting plan that counterbalances the unavoidable serious harm to fish. The habitat protection provisions of the *Fisheries Act* are administered by Fisheries and Oceans Canada (DFO).

Subsection 36(3) of the *Fisheries Act* prohibits the deposit of deleterious substances of any type in water frequented by fish, unless the waterbody is designated as a tailings impoundment area (TIA) through an amendment to Schedule 2 of the Metal and Diamond Mining Effluent Regulations (MDMER). The MDMER regulate the deposit of mine waste (including mine effluent, mine contact water, waste rock, tailings, low-grade ore and/or overburden) into natural waters frequented by fish. Proponents that seek to use a natural waterbody frequented by fish to store mine waste must conduct an assessment of alternatives. The pollution prevention provisions of the *Fisheries Act* are administered by Environment and Climate Change Canada (ECCC).

Figure 1-1
Location of Meadowbank Gold Mine and Whale Tail Pit Project



Agnico Eagle has prepared an alternatives assessment to demonstrate that the use of a water body as an attenuation pond is the most appropriate option based on environmental, technical and socio-economic considerations (ERM, 2018). This assessment has followed the transparent and standardized process described in Environment and Climate Change Canada's *Guidelines for the Assessment of Alternatives for Mine Waste Disposal* (ECCC 2016). Based on this assessment process, Lake A53 was selected as the preferred alternative for a new attenuation pond for the Whale Tail Pit Expansion Project. As Lake A53 is a fish-bearing waterbody, in accordance with Section 27.1 of the MDMER, under Section 36 of the *Fisheries Act*, a fish habitat compensation plan is required to offset the loss of fish habitat resulting from the deposit of any deleterious substance.

1.2 ORGANISATION OF THE CONCEPTUAL OFFSETTING PLAN

This report outlines the conceptual offsetting plan for the Whale Tail Pit Expansion Project, that will ultimately form a key component of a future application for authorization under Paragraph 35(2)(b), as well as a future application to amend Schedule 2 of the MDMER, under the streamlined approvals process. Although two different regulatory agencies administer Section 35 and Section 36 of the *Fisheries Act*, offsetting[1] plans to support each application will ultimately require DFO approval. One conceptual fish habitat offsetting plan has been prepared to facilitate indigenous, public and regulatory review during the NIRB review process for the FEIS for the Whale Tail Pit Expansion Project.

It is recognized that separate accounting is required for each of the *Fisheries Act* provisions, and the conceptual fish habitat offsetting plan has therefore been organised to clearly differentiate between habitat losses and gains under each of the Section 35 (direct habitat impacts) and Section 36 (loss of habitat due to deleterious substances). During the regulatory phase of the Project, two separate offsetting/compensation plans will be developed to clearly distinguish and support the final applications to meet both the requirements of Section 35(2) of the *Fisheries Act* and Section 27.1 of the MDMER.

The outline of the conceptual fish habitat offsetting plan follows the recommended key steps (Fisheries Productivity Investment Policy: A Proponent's Guide to Offsetting; and S.27.1 of the MDMER): quantify project impacts; description of offsetting measure, following the guiding principles; quantify offset benefits, and balance offset benefits with project impacts; establish monitoring and reporting conditions.

[1] Section 27.1 of the MMDER refers to fish habitat compensation rather than offsetting. The different terminology does not alter the intent of the plans, and the term 'offsetting' is used throughout this document in relation to both Section 35 and Section 36 requirements.

2. PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

Agnico Eagle operates the Meadowbank Gold Mine, located on Inuit-owned lands approximately 70 km north of the hamlet of Baker Lake in the Kivalliq Region of Nunavut. The Meadowbank mine began commercial production in 2010 and has been producing gold from open pits at the Meadowbank site, and will begin producing from its' approved Whale Tail Pit satellite deposit in 2019. The approved Whale Tail Pit Project has a *Fisheries Act* Authorization under Paragraph 35(2)(b) for the Whale Tail Pit Project for the loss of 74.33 ha of fish habitat (PATH No.:16-HCAA-00370; July 2018). Associated offsetting is outlined in the approved Whale Tail Pit Fish Habitat Offsetting Plan (C. Portt and Associates, and Agnico Eagle Mines Limited, 2018).

The Whale Tail Pit Expansion Project includes plans to expand mining operations at the Whale Tail Pit mine site by:

- expanding the Whale Tail Pit;
- expanding the Whale Tail Waste Rock Storage Facilities (WRSF);
- developing an additional pit (the IVR Pit);
- developing an underground mine;
- developing an additional WRSF (the IVR WRSF);
- developing an additional water attenuation pond (the IVR Attenuation Pond).

The above infrastructure will expand and extend mining at the Whale Tail Pit mine site by four to five years. As in the approved project, ore from the Whale Tail Pit Expansion Project will be transported to the Meadowbank mine site for processing.

2.2 DESCRIPTION OF PROPOSED PROJECT WORKS AND EFFECTS ON FISH HABITAT

The Whale Tail Pit Expansion Project will result in unavoidable fish habitat losses through direct habitat loss from the Project infrastructure footprint, change in flows, or through the deposit of mine waste. These habitat losses will require offsetting. The location of the losses attributable to either Section 35 and Section 36 of the *Fisheries Act* are shown in Figure 2-1 and described below.

Habitat Type	Criteria	
	Depth Zone	Substrate
1	<2 m	Fines
2	<2 m	Mixed
3	<2 m	Coarse
4	2-4 m	Fines
5	2-4 m	Mixed
6	2-4 m	Coarse
7	> 4 m	Fines
8	> 4 m	Mixed
9	> 4 m	Coarse
10	mixolimnion	Coarse
11	Connecting Channel	
12	Stream	Fines
13	Stream	Coarse

Nemo Lake
A113
A47
A-P47
C41
A-P18
C42
A0
A0 - A48
A48
A-P38
A-P51
A-P33
A-P37
C40
To A47
A-P49
C-P1
A49
A47 - A46
A46
A-P68
A-P67
IVR Pit
A46 - A17
A50 - A17
A50
A-P21
A51
A52
A-P10
A-P5
Whale Tail Lake
Whale Tail Pit
A53
A53
IVR Attenuation Pond
A53 Berm
A53 - A17

0 100 200 400
Metres

Legend

- Freshwater Jetty
- Fresh Water Jetty above the water surface
- Constructed Shoal (1 m high)
- Lake or Pond - No Fish Habitat
- Stream
- Study Lake
- Predicted Section 35 losses
- Predicted Section 36 losses

Mine Plan (received July 12, 2018

- Pit
- IVR Pit Cap
- IVR Pit Road
- IVR Attenuation Pond
- A53 Berm

Habitat Type

1 2 3 4 5 6 7 8 9 10

Phase 2: Lakes Existing Condition
Habitat losses attributed to Fisheries Act Sections 35 & 36

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PROJECT: DA14-053-11

CLIENT: Agnico-Eagle Mines Ltd., Meadowbank Div.

N W E S
UTM Zone 14 NAD83

DATE: October 19, 2018
SCALE: 1:8,000
DRAWN BY: Lindsey Carter
CHECKED BY: Cam Portt

FIGURE:
2-1

2.2.1 Habitat Losses That Will Require Offsetting under Section 35 of the *Fisheries Act*

The project footprint of the IVR Pit will affect the north end of Whale Tail Lake and small lakes and ponds and connecting watercourses north of Whale Tail Lake. The proposed Project will result in 'serious harm' to fish, as defined under Section 35 of the *Fisheries Act*, due to loss of habitat that is overprinted by the IVR pit and pit cap, drains as a result of the IVR pit, or a reduction in flow. The habitat losses include:

- the north end of Whale Tail Lake;
- Lake A46;
- Lake A47;
- Lake A48;
- Lake A49;
- Lake A0;
- Pond A-P38;
- Watercourse A46-A17;
- Watercourse A46-A47;
- Watercourse A0-A48; and
- Watercourse A50-A17.

In addition, the use of Lake A53 as an attenuation pond will require the construction of a berm that eliminates flow and will result in the loss of the watercourse A53-17 downstream of the berm.

2.2.2 Habitat Losses That Will Require Compensation under Section 36 of the *Fisheries Act*

The Whale Tail Pit Expansion Project will increase the surface area (and therefore catchment area) of the mine site, and the expanded pits and underground works will increase the volume of groundwater infiltration. As a result, the expansion will require a greater volume of contact water[2]. The water management for the expanded Project will align with the approved water management on the site, in that contact water from across the site will be collected and pumped (or diverted) to an attenuation pond. Water from the attenuation pond will be reused for mine operations and treated at the contact water treatment plant. The water in the attenuation pond will mainly contain suspended solids and arsenic. Treated water will be pumped via pipeline for discharge into the approved receiving environment during the open water season.

[2] Water that has been in contact with mining, including components such as open pit, underground works, waste rock storage facilities, or other infrastructure.

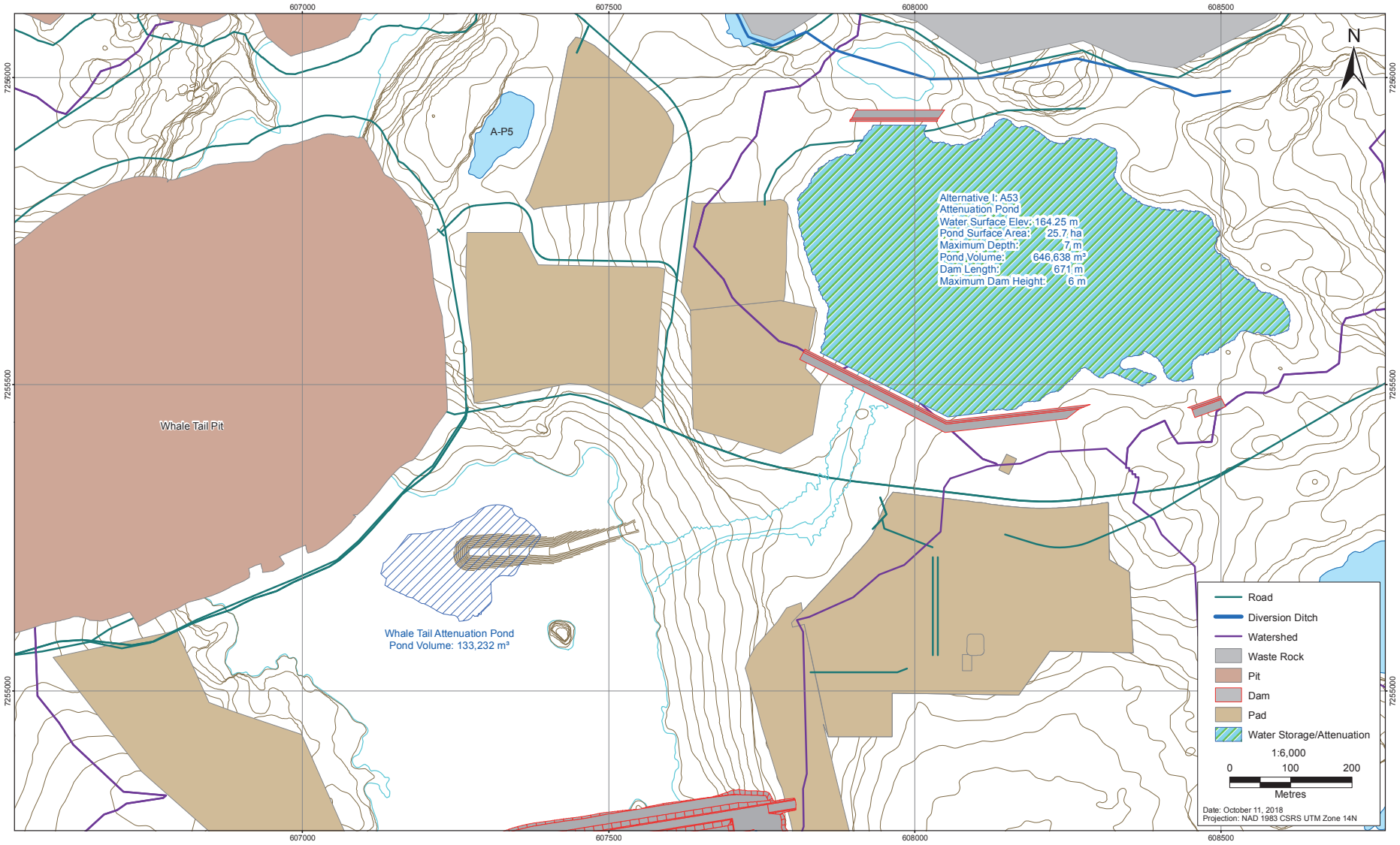
The expanded Whale Tail Pit perimeter will also constrain the Whale Tail Attenuation Pond, reducing its storage capacity from 455,000 m^3 to 133,000 m^3. Thus, an additional attenuation pond is required to accommodate at least 617,000 m^3 (providing a cumulative 750,000 m^3 storage capacity required for the Whale Tail Pit Expansion Project, for the purposes of the alternatives assessment).

The location and design of the attenuation pond for the Project expansion is the subject of an alternatives assessment, that was completed according to ECCC Guidelines (2016), and is submitted alongside this conceptual fish habitat offsetting plan as part of the package of information for the FEIS review. Based on the results of the assessment alternative, out of five feasible alternatives, including non-fish-bearing options, Lake A53 (Alternative I) has the highest merit rating (ERM, 2018). Lake A53 is therefore provisionally selected as the preferred option for the IVR attenuation pond.

The conversion of Lake A53 to an attenuation pond (Figure 2-2; and listing as a Tailings Impoundment Area under a Schedule 2 amendment of the MDMER), will result in the complete loss of fish habitat in the pond. This loss is quantified in this conceptual offsetting plan, and proposed habitat gains are outlined, as required under Section 36 of the *Fisheries Act*.

Figure 2-2
Conceptual Outline for Attenuation Pond at Lake A53

For the purposes of this report, this figure has not been reproduced to scale.



3. CONSULTATION

As part of the approved Whale Tail Pit Project, Agnico Eagle has conducted consultation with community and stakeholders on the project location, potential effects, and fish offsetting options. Examples of relevant fisheries community consultation has included:

- Site tours with the Baker Lake Hunters and Trappers Organization (HTO) in 2014 to introduce the Amaruq (Whale Tail) Exploration Area;
- Focus group discussions in Baker Lake throughout 2016 on traditional land use on the Whale Tail Project Area;
- Offsetting review meetings throughout 2017 including discussions on dewatering, offsetting fishout procedures, and a workshop held in June 2017 with the Kivalliq Inuit Association (KIA), Baker Lake HTO and Nunavut Tunngavik Inc. (NTI), on future fisheries offsetting.

Agnico Eagle has also worked closely with DFO throughout the review of the approved Whale Tail Pit Project, meeting with DFO Fisheries Protection Program and Science Departments on at least 9 occasions from 2016 – 2018 to discuss the Whale Tail Pit Project and the approved Whale Tail Pit Project offsetting plan. Key decisions from this series of consultation, such as agreement on the benchmark for lake elevation habitat mapping, application of the Habitat Evaluation Model, and contributions from complementary measures to the offsetting gains, have informed the direction of subsequent community consultation, as well as the conceptual offsetting plan for the Whale Tail Pit Expansion Project.

In addition to previous consultation with the community and regulators for the approved Whale Tail Pit Project, Agnico Eagle presented possible projects for fish habitat offsetting for the Whale Tail Pit Project Expansion to the communities of Baker Lake and Chesterfield Inlet in July 2018 (Table 3-1). The consultation program included the alternatives assessment process for the selection of the attenuation pond (Schedule 2 Amendment process), and how input from participants would be incorporated into the process.

During the July 2018 consultation, Agnico Eagle presented an overview of the Whale Tail Pit Expansion Project, and outlined that impacts to fish must be described and offsetting implemented that outweigh the predicted impacts. In order to help maintain sustainable fisheries in Nunavut and offset for future developments, Agnico Eagle communicated that they would like to receive ideas for new fish habitat offsetting projects. Ultimately, Agnico Eagle would like to create sustainable fisheries projects that are of value to communities and stakeholders. Some of the consultation materials presented are shown in Appendix A, along with photographs of some of the community meetings in Baker Lake.

Table 3-1. July 2018 Consultation Program

Community Meetings	• Presentation and open house at Baker Lake community hall	• Presentation and open house at Chesterfield Inlet Hamlet Chambers
Focus Groups	• Women • Youth • Elders	
Meetings	• Hamlet of Baker Lake • Baker Lake Hunters and Trappers Organization (HTO) • Kivalliq Inuit Association	• Hamlet of Chesterfield Inlet • Chesterfield Inlet HTO

Five examples of fish habitat offsetting options were presented, in order to solicit feedback and generate discussion on new ideas that groups may have.

1. Forage fish habitat creation or enhancement:

    - Excavate shallow ponds that would be connected to existing streams to create habitat for small fish (stickleback/sculpin);
    - Increase the number of forage fish that provide prey to other fish species, thereby improving general fisheries productivity;
    - An example of this would be converting a quarry into fish habitat.

The focus groups in general were not aware of the prevalence of the smaller forage fish in the area, and did not show enthusiasm for the potential importance of this compensation option to fisheries in general. The HTO focus group were interested whether this type of compensation had been successfully implemented before, especially in the north, and it was noted that there were no known examples of similar compensation options in the Arctic.

2. Hatchery:

    - Build an Arctic char hatchery in Rankin Inlet or other community;
    - Grow Arctic char from wild broodstock and stock into waterbodies:
    - Creation of a hatchery could help grown the population of Arctic char;
    - Local job creation to run and maintain the hatchery.

The focus groups had mixed opinions about a hatchery. There was interest in how the hatchery would work, and how this may enhance Arctic char populations. The Hamlet of Baker Lake and Baker Lake HTO in particular, could see the benefits for the community regarding employment and training, as well as potential opportunities to improve local Arctic char fisheries. However, some members of the Elder's focus group expressed concern that the fish produced would not be natural and may taste different. It was recognized in all Focus Groups that more work would be needed to confirm the viability of this option.

3. Access enhancement:

    - Increase productive capacity of char, or other fish, by improving access to overwintering areas or little-used lakes;
    - Remove boulders or create new connecting channels;
    - Could be low-impact and lead by community groups (may or may not need heavy equipment);
    - Could be hard to find locations where fish cannot pass easily and obstructions could be removed.

The Elder's Group expressed concerns that moving fish from one location to another would change the habitat, which could change the nature of the fish themselves. Only one location with a physical obstruction (the falls at Prince River) was identified during discussions, and there was little interest in community-led groups to remove obstructions without machinery (per an example described by ERM). However, the importance of over-wintering habitat was recognized during focus groups, as well as in conversation as part of the Baker Lake Open House.

4. Enhancement of juvenile rearing habitat:

    - Develop a standardized approach to improving juvenile fish rearing habitat that could be applied in various locations, by industry and communities.

Focus group participants did not recognize juvenile rearing habitat as being particularly important for fisheries productivity, although there was some interest in previous habitat enhancements (including channel realignment) that had been done in the Arctic (examples provided by ERM).

5. Sewage treatment upgrades in other Kivalliq communities:

    - In many communities, sewage treatment issues are the same as Baker Lake;
    - Improve water quality in lakes and therefore productive capacity of fish habitat;
    - Use the planned project in Baker Lake as a case study to lay out a framework for sewage treatment projects in other communities.

There was support from all groups for this option, specifically concerning the Airplane Lake/Baker Lake sewage treatment upgrades. However, few people made the link between sewage treatment and fisheries, except for a comment that fishing for char was better further away from the hamlet of Baker Lake. No other communities were identified as potential locations for future sewage treatment upgrades.

The fish species of most interest across the groups were Arctic char, followed by Lake trout. Char were a favourite species to catch, and it was noted that the sea-run individuals tasted different, but that locals (Baker Lake) had to buy Arctic char mainly from the Kitikmeot region, which was expensive. Offsetting options that supported an increase in Arctic char in the region generated the most discussion and interest. It was noted in the consultation that fish species from outside the Project area could also be the focus for offsetting options (e.g., Arctic grayling), but there was no support or mention of other species, aside from Arctic char and lake trout.

In summary, no new ideas for fish habitat offsetting options were generated from the group. Most interest lay with projects that would help enhance local Arctic char fisheries, but these projects were deemed to be on a larger-scale or longer-term than the options need to offset impacts from the Whale Tail Pit Expansion Project. Such options are therefore explored further in the Complementary Measures section of the offsetting plan (Appendix C).

4. FISH AND FISH HABITAT DESCRIPTION

The fish community is described in the approved Whale Tail Pit Offsetting Plan (C. Portt and Associates and Agnico Eagle Mines, 2018). Baseline fisheries investigations conducted in Mammoth Lake, Whale Tail Lake, and tributary streams and lakes in 2014, 2015 and 2016 are described in C. Portt and Associates (2018) and are summarized here. Representative photos of existing fish habitat are shown in Appendix B.

A total of six fish species are present in the study area, comprised of four large-bodied species (lake trout, *Salvelinus namaycush;* Arctic char, *Salvelinus alpinus*; round hhitefish, *Prosopium cylindraceum*; and burbot, *Lota lota*) and two small-bodied species (slimy sculpin, *Cottus cognatus*; and ninespine stickleback, *Pungitius pungitius*).

Additional fish sampling was conducted in the expanded Project area in 2018, to support the offsetting plan. The 2018 field investigations generally corroborated the earlier findings. No new fish species were captured in the study area and no fish were captured in a number of shallow isolated lakes and ponds where none had been captured during the previous field investigations. Burbot and slimy sculpin were captured in Lake A53, and slimy sculpin were captured in Lake A49 for the first time in 2018. The fish species that have been captured in individual waterbodies and watercourses affected by the Whale Tail Pit Expansion Project are presented in Table 4-1.

Table 4-1. Fish Species Found in Waterbodies and Watercourses That Will be Affected by the Whale Tail Pit Expansion Project

Waterbody/ Watercourse	Lake Trout	Arctic Char	Round Whitefish	Burbot	Ninespine Stickleback	Slimy Sculpin
Section 35						
Whale Tail Lake	X	X	X	X	X	X
A47		X			X	
A49	X					X
A46					X	X
A48					X	
A0					X	
A113					X	
A46-A17		X		X	X	X
A-P38					X	
A47-A46						X
A0-A48					X	
A50-A17	X	X		X	X	X
A53-A17	X	X			X	X
Section 36						
A53	**X**	**X**		**X**	**X**	**X**

4.1 DESCRIPTION OF FISH HABITAT THAT WILL BE LOST THROUGH PROJECT INFRASTRUCTURE (SECTION 35)

4.1.1 Whale Tail Lake

IVR Pit will overprint a portion of the north end of Whale Tail Lake that is north of Whale Tail Pit. The elevation of Whale Tail Lake will increase by one metre as part of the authorized offsetting for Whale Tail Pit. Even with this increase, most of the area that will be overprinted is less than 4 metres deep. It includes areas of fine, mixed, and coarse substrate. It is assumed that all of the fish species present in the study area utilize this portion of Whale Tail Lake.

4.1.2 Lakes A0 to Whale Tail Lake

A series of shallow lakes and ponds and small watercourses north of Whale Tail Lake will either be overprinted, drain, or will cease to receive water as a result of IVR Pit. Moving upstream from Whale Tail Lake, these are watercourse A46-A17, Lake A46, watercourse A47-A46, Lake A47, Lake A48, Watercourse A0-A48 and Lake A0. There is no defined watercourse, but there is diffuse flow between Lake A47 and Lake A48 during the open-water season. There are no defined watercourses between Lake A113 and Lake A48 or between Pond A-P38 and Lake A47 but there is diffuse flow during the spring freshet. It is expected that, given its proximity to IVR Pit, Pond A-P38 will drain. Lake A113, which is further from the IVR Pit and not connected to it by a defined channel is expected to remain post-closure.

With the exception of Lake A47, the waterbodies are less than 2 m deep and are thought to freeze to the bottom and therefore not to support fish through winter. Sampling through the ice at the deepest point in Lake A47 on May 21, 2018, prior to the spring freshet, found that there was slightly less than a metre of water beneath 1.8 m of ice with a minimum dissolved oxygen concentration of 6.7 mg/l, indicating that Lake A47 could support fish through the winter. The watercourses are shallow and freeze during the winter. Substrate in the lakes is either fine or mixed, except for one small area of coarse substrate in Lake A46.

In addition to the small-bodied species, Arctic char have been captured as far upstream in this series as Lake A47 and a juvenile burbot was captured in Watercourse A46-A17. Only ninespine stickleback have been captured upstream from Lake A47, including Lake A113 and Pond A-P38.

4.1.3 Lake A49

Lake A49 is isolated, with no surface connection to any other waterbody. The east and south shorelines are primarily exposed bedrock. There are two basins that exceed 4 metres in depth and coarse, mixed and fine substrates are present. Lake trout and slimy sculpin have been captured in Lake A49.

4.1.4 Watercourse A53-A17

Watercourse A53-A17, which flows from Lake A53 to Whale Tail Lake, will cease to exist once flow is isolated by the berm at the outlet of Lake A53. The existing watercourse is a multi-thread watercourse along most of its length, with up to 8 channels present. The average total wetted width (sum of all channels) is 7.6 m and it is shallow, with a mean depth of 7 cm and a maximum depth of 27 cm. It is 62% flats, 35% riffles and 3% pools. The substrate is 90% peat, 6% gravel and 4% cobble. The watercourse freezes during the winter.

Slimy sculpin, ninespine stickleback, and juvenile Arctic char have been captured in Watercourse A53-A17 during the open-water season.

4.2 DESCRIPTION OF FISH HABITAT THAT WILL BE LOST BY DEPOSIT OF MINE WASTE (SECTION 36)

4.2.1 Lake A53

Lake A53 is situated within close proximity to the approved Whale Tail Pit Project (Figure 4-1), and within the site layout of the Whale Tail Pit Expansion Project, with the IVR WRSF located to the north; the haul road, mine camp and industrial area to the south; and the Whale Tail and IVR open pits to the west. Thus, the lake is surrounded on three sides by mine infrastructure.

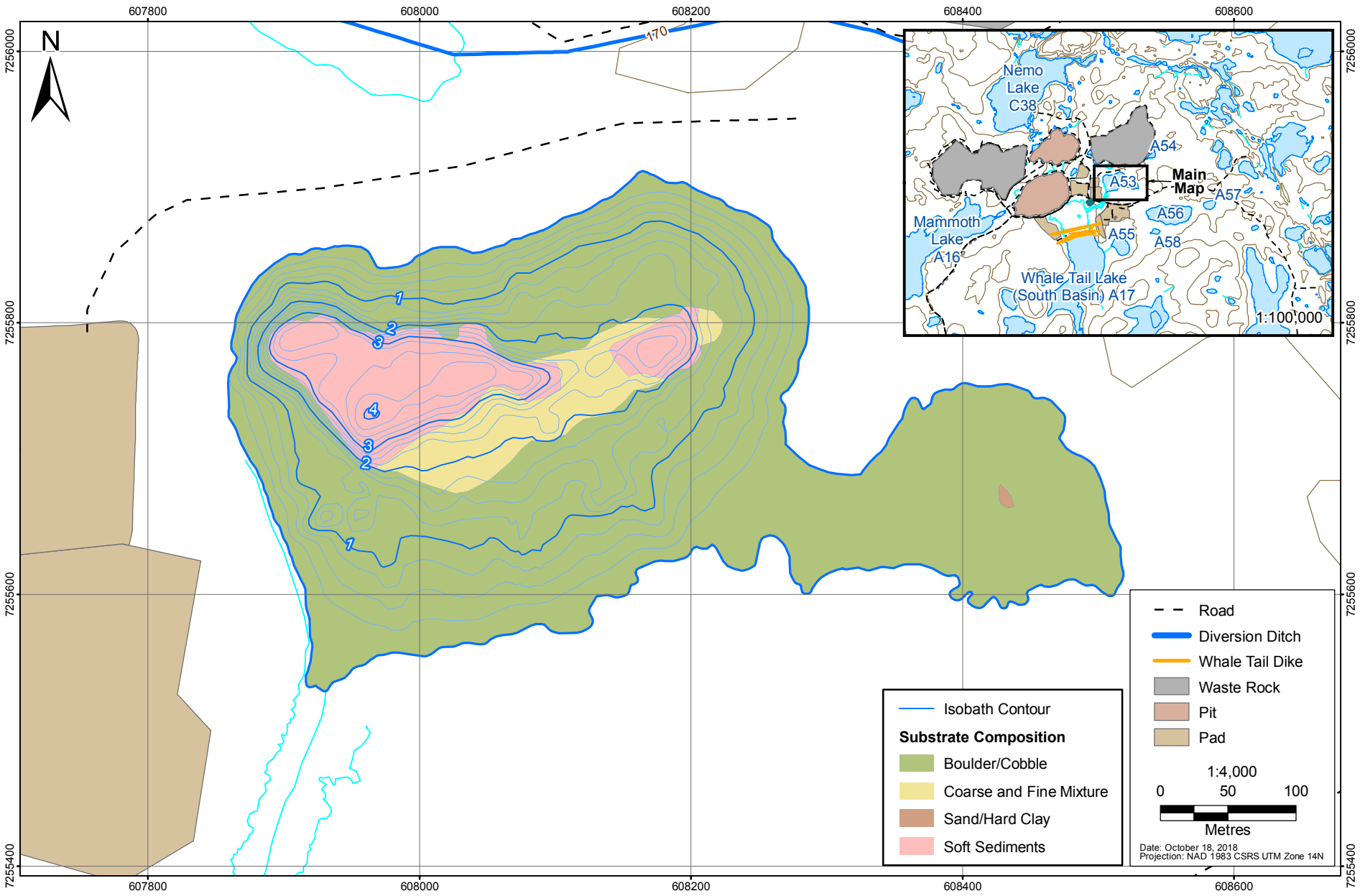
Lake A53 is connected to two other waterbodies: upstream to Lake A54 and downstream to Whale Tail Lake (Lake A17). The stream connecting Whale Tail Lake and Lake A53 (Stream A53-A17) is 577 m long, and has surface flow (i.e., is passable by fish) during the open water season. The stream connecting Lake A54 and Lake A53 (Stream A54-A53) is of similar length but there is no surface flow, only interstitial flow through boulder and cobbles. It is not passable by fish.

Baseline bathymetry and substrate conditions are shown in Figure 4-1, and baseline fish surveys are described in C. Portt and Associates (2018) and summarized here. Lake A53 was sampled for fish in 2015. One short-set (2.3 hr) gillnet was set in August, resulting in the capture of one lake trout and two arctic char. Shoreline electrofishing was done twice in August. The first attempt (930 seconds (s), 150 m) captured no fish. The second attempt (404 s, 69 m) resulted in the capture of two ninespine stickleback.

Stream A53-A17, connecting Lake A53 to Whale Tail Lake, was sampled in both 2015 and 2016. A large minnow trap was set for 17 days in late June/ early July 2015, at the confluence of Stream A53-A17 and Whale Tail Lake. The trap was checked periodically throughout this time period, with a total of two slimy sculpin captured. Stream gillnetting occurred at the same location over a six-day stretch in June 2016, and again over seven-day stretch in July 2016. One Arctic char was captured during the June sampling period. No fish were captured in July. Electrofishing occurred in June, July and August of both 2015 and 2016. The total distance electrofished was approximately 1100 mover the course of each summer. Total effort in 2015 was 4,324 seconds, with five Arctic char, four lake trout, 103 slimy sculpin, and 85 ninespine stickleback captured. Total effort in 2016 was 5,413 seconds, with four Arctic char, 70 slimy sculpin, and 37 ninespine stickleback captured.

A small-mesh fyke net deployed facing downstream in A53-A17 from June 26 to July 1, 2018, captured five slimy sculpin, 40 ninespine stickleback and five juvenile Arctic char. Two drift nets set facing upstream in A53-A17 for three approximately 24-hour periods in the latter part of August 2018, captured a total of 1,141 ninespine stickleback and 448 slimy sculpin. Most of those fish, based on their length, were young-of-the-year.

Figure 4-1
Existing Bathymetry and Substrate of Lake A53



5. MEASURES AND STANDARDS TO AVOID OR MITIGATE IMPACTS TO FISH

All measures to avoid impacts are outlined in the FEIS (Agnico Eagle, 2018b), including Agnico Eagle's commitment to conduct its operations in an environmentally and socially responsible manner, and to avoid adverse effects on the environment and people who use the land and resources. As part of this commitment, Agnico Eagle have located waste rock stock piles away from fish-bearing waterbodies. Agnico Eagle's commitment to minimize the footprint of the Whale Tail Pit Expansion Project is further demonstrated in the Alternatives Assessment Report (ERM, 2018). One of the four threshold criteria for attenuation pond alternatives is the location of the pond to be within the sub-watersheds that will contain the approved and planned mine infrastructures. This threshold criteria to the selection of viable alternatives avoids extending potential environmental impacts to areas otherwise undisturbed by physical infrastructure.

Project-specific measures and standards to avoid and mitigate serious harm to fish will be provided in the final offsetting/compensation plan, but will include the following measures:

- Erosion and sediment control measures will be in place before commencing any works that have the potential to release sediment into waters frequented by fish;
- Site-specific sediment and erosion control plans will be in place, and monitored, for all near and in-water works;
- A project-specific fish-out plan will be developed that will adhere to the General Fish-Out Protocol for Lakes and Impoundments in the Northwest Territories and Nunavut (Tyson et al., 2011);
- As with the Whale Tail lake (North Basin) Fish-out Work Plan, Agnico Eagle will consult with DFO, Kivalliq Inuit Association and Baker Lake Hunters and Trappers Organization on the fish out plan. A fish-out workplan will be provided for DFO to review prior to the fish-out;
- All water intakes within waterbodies that support fish shall adhere to the Freshwater Intake End-of-Pipe Fish Screen Guideline (Fisheries and Oceans Canada, 1995);
- Water withdrawal will adhere to the Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut (Fisheries and Oceans Canada, 2010);
- Detailed engineering plans will be provided to DFO for review and approval, for construction works that have the potential to impact fish and fish habitat, prior to the commencement of the works.

6. APPROACH TO CALCULATION OF HABITAT LOSSES AND GAINS

The Habitat Evaluation Procedure (HEP) model used to quantify habitat losses and gains for the Whale Tail Pit Expansion Project is the same as was used in the approved Whale Tail Pit Offsetting Plan (C. Portt and Associates and Agnico Eagle Mines, 2018).

Much of the area affected by Whale Tail Pit Expansion Project, was previously quantified and presented in the approved Whale Tail Pit offsetting plan, using the same HEP model. The detailed HEP methodology used in previous approved offsetting plans, and applied here, is provided in Appendix D and a summary of the accounting procedure is outlined below.

6.1 HABITAT EVALUATION PROCEDURE

The HEP model applied in this conceptual offsetting plan is based on the procedure used for the approved 2012 No Net Loss Plan for the Meadowbank Mine (Agnico Eagle Mines, 2012). The HEP incorporates refinements that have been introduced during subsequent work between 2014 and 2016 to develop offsetting measures for Vault and Phaser Lake, and changes incorporated as a result of DFO review of the conceptual and final offsetting plans for the approved Whale Tail Pit Project.

The HEP model assigns the existing habitat to one of 13 habitat types, which are shown in Table 6-1. Lake habitats are assigned to one of nine habitat types, based on depth and substrate. The boulder-filled connecting channels that are between some of the lakes are considered a distinct habitat type and the shallow seasonal watercourses in the study area are divided into two distinct habitat types based on their substrate. The pit and pit cap are considered a distinct habitat type that, at the request of DFO, are assumed to have no habitat value. The area of each habitat type is based on field observations and calculated using GIS.

The suitability of each habitat type is ranked between 0 and 1 for each of four life functions (spawning, nursery, foraging, overwintering) for each fish species that is (or is predicted to be) present. The suitabilities used in this conceptual offsetting plan are the same as those used in the approved Whale Tail Pit Offsetting Plan and are presented in Appendix D.

Using the equation below, the area of each habitat type (in hectares) is multiplied by the habitat suitability index (HSI) and a series of weights (a species weight, a life-function weight and an access weight) and a habitat cofactor, and summed to derive a value in habitat units (HUs) for an individual species. The habitat units are summed across all species to arrive at the total number of habitat units, which describes both the quality and quantity of habitat for the fish community. In the approved Whale Tail Pit Offsetting Plan all species and life stages are given equal weight. The access weight for all species for all affected habitat was one, which conservatively assumes that all six species present in the study area can access all of the affected habitats. No habitat cofactor was applied for the expansion project.

Table 6-1. Characteristics of the Habitat Types Used in the Approved and Expanded Whale Tail Pit Project Habitat Evaluation Procedure

Habitat Type	Feature: Depth	Substrate
1	Lake: 0-2 m	Fine
2	Lake: 0-2 m	Mixed
3	Lake: 0-2 m	Coarse
4	Lake: 2-4 m	Fine
5	Lake: 2-4 m	Mixed
6	Lake: 2-4 m	Coarse
7	Lake: >4 m	Fine
8	Lake: >4 m	Mixed
9	Lake: >4 m	Coarse
10	pit and pit cap*	Pit and pit cap*
11	connecting channels	Coarse
12	small streams	Fine
13	small streams	Coarse

** Depth and substrate in pit and pit cap areas are not relevant to suitability, which is assigned 0 value.*

For each fish species (spp 1-n) as:

HUspp 1-n=
∑HT 1-13 (∑sp,nu,fo,ow(**HT**1-13 x **HSI** sp,nu,fo,ow x **life function weight** x **species weight**)]) x **access factor x habitat co-factor**

Where HT1-13 = area (ha) of habitat types 1 through 13
HSI sp,nu,fo,ow = habitat suitability index for each life function:
sp = spawning use
nu = nursery use
fo = foraging use
ow = overwintering use

7. HABITAT LOSSES

7.1 DIRECT HABITAT LOSSES (SECTION 35)

To determine the habitat losses that will result from the Whale Tail Pit Expansion Project, the conditions during the post-closure phase with IVR Pit is compared to the post-closure condition for Whale Tail Pit with offsetting measures implemented, as described in the Whale Tail Pit Offsetting Plan (C. Portt and Associates and Agnico Eagle Mines, 2018). The approved offsetting included a 1-metre increase in the water elevation in Whale Tail Lake that has been taken into account in the calculations. The sections below describe habitat losses occurring as a result of the Whale Tail Pit Expansion Project.

The habitat changes attributed to Section 35 are summarized in Table 7-1. The changes in habitat area and habitat units are provided by habitat type in Appendix D. Section 35 losses total 12.25 ha and account for 46% of the total reduction in habitat area from the Project. Section 35 losses total 4.30 HUs and account for 42% of the total reduction in habitat units from the Project.

7.1.1 Description of Effects

The IVR Pit, pit cap and perimeter road are superimposed on a map of habitat type that would be present post-closure of Whale Tail Pit with offsetting measures implemented in Figure 7-1. The same area as it would appear post-closure with IVR Pit and associated infrastructure is shown in Figure 7-2. Maps showing the depth zones and substrate classes that were used to derive the habitat types are provided in Appendix E.

Post-closure, the area occupied by the IVR pit and pit cap (Habitat type 10) is 40.95 ha. This consists of 9.75 ha that was aquatic habitat and 31.20 ha that was terrestrial habitat prior to the pit excavation. The pit and pit cap will occupy what, in the absence of IVR Pit, would be a portion of the north basin of Whale Tail Lake, all of Lake A46, parts of Lakes A47 and A49, and all of watercourses A46-A17, A47-A46, and A50-A17.

The post-closure surface elevation of Whale Tail Lake with the authorized offsetting measures implemented is 154 metres above sea level (masl), which is lower than the pre-IVR pit elevations of Lake A47 and Lake A49. Therefore, it is expected that the portions of Lake A47 and Lake A49 that are not overprinted by the IVR Pit will be dry post-closure and will not be fish habitat. It is also expected that Pond A-P38 and Lake A48 will drain to the flooded IVR pit and will not provide fish habitat post-closure. It is further assumed that Lake A0 and Watercourse A0-A48 will not provide fish habitat post-closure. It is assumed that Lake A113, which has no defined channel connecting it to Lake A48, will provide fish habitat post-closure.

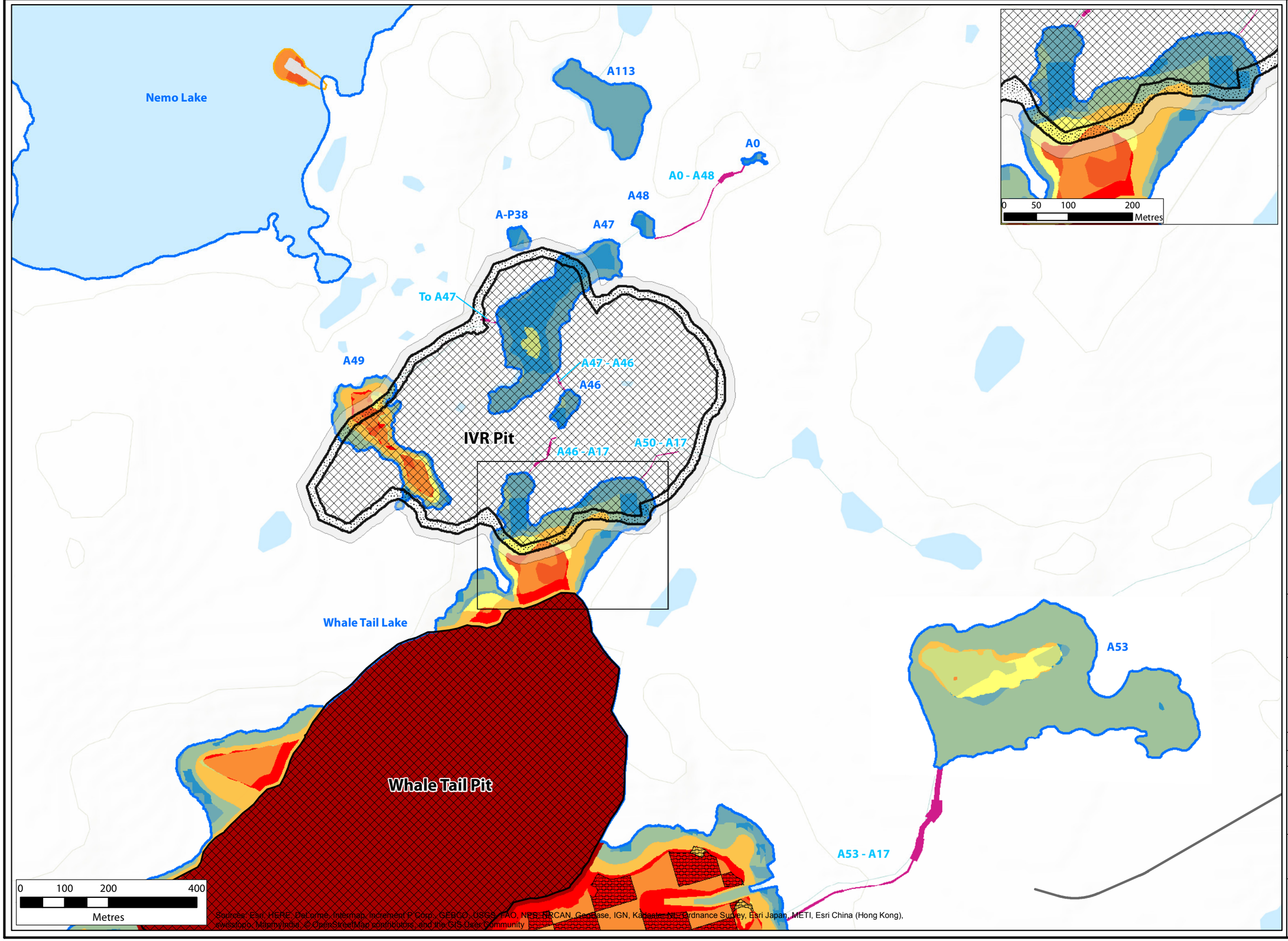
In addition, the construction of a berm at the outlet of Lake A53 (see Section 7.2) will eliminate flow in the watercourse A53-A17, resulting in it no longer being fish habitat.

Therefore, including the aquatic habitat that becomes part of the IVR pit and pit cap, and thus Habitat Type 10, the habitat 'losses' due to IVR pit consist of:

- the portion of Whale Tail Lake that is overprinted by the IVR pit and pit cap;
- Lake A46;
- Lake A47;
- Lake A48;
- Lake A49;
- Lake A0;
- Pond A-P38;
- Watercourse A46-A17;
- Watercourse A46-A47;
- Watercourse A0-A48;
- Watercourse A50-A17;
- Watercourse A53-A17.

The substrate in the portion of the north basin of Whale Tail Lake that is occupied by the road around IVR pit during operations is assigned "mixed" substrate post-closure, as was done in the approved Whale Tail Pit Project offsetting plan.

The Section 35 changes, in total, result in a reduction of 12.25 ha and 4.302 HUs.



Legend

- Freshwater Jetty
- Fresh Water Jetty above the water surface
- Constructed Shoal (1 m high)
- Study Lake

Mine Plan (received July 12, 2018

- Pit
- IVR Pit Cap
- IVR Pit Road

Habitat Type

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12 / 13

Habitat Type	Criteria	
	Depth Zone	Substrate
1	<2 m	Fines
2	<2 m	Mixed
3	<2 m	Coarse
4	2-4 m	Fines
5	2-4 m	Mixed
6	2-4 m	Coarse
7	> 4 m	Fines
8	> 4 m	Mixed
9	> 4 m	Coarse
10	mixolimnion	Coarse
11	Connecting Channel	
12	Stream	Fines
13	Stream	Coarse

Phase 2: Lakes Existing Condition
Habitat Types

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PROJECT: DA14-053-11

CLIENT: Agnico-Eagle Mines Ltd., Meadowbank Div.

N W E S
UTM Zone 14 NAD83

DATE: October 02, 2018

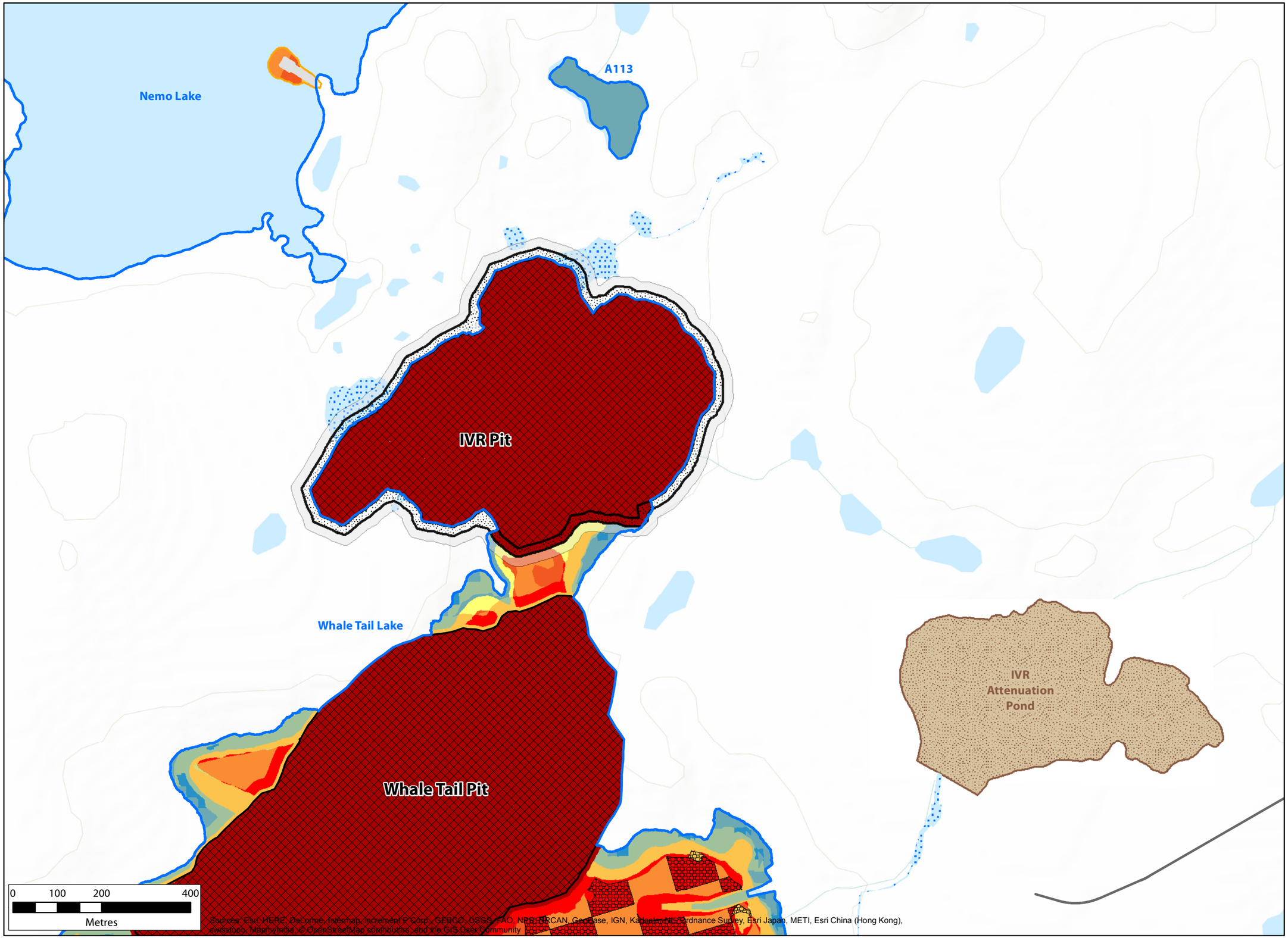
SCALE: 1:8,000

DRAWN BY: Lindsey Carter

CHECKED BY: Cam Portt

FIGURE:

7-1



Freshwater Jetty

Fresh Water Jetty above the water surface

Constructed Shoal (1 m high)

Dewatered Lake or Stream

Lake Shoreline or Connecting Channel

Mine Plan (received July 12, 2018

Pit

IVR Pit Cap

IVR Pit Road

IVR Attenuation Pond - Filled & Capped

Habitat Type

1 2 3 4 5 6 7 8 9 10

Habitat Type	Criteria	
	Depth Zone	Substrate
1	<2 m	Fines
2	<2 m	Mixed
3	<2 m	Coarse
4	2-4 m	Fines
5	2-4 m	Mixed
6	2-4 m	Coarse
7	> 4 m	Fines
8	> 4 m	Mixed
9	> 4 m	Coarse
10	mixolimnion	Coarse
11	Connecting Channel	
12	Stream	Fines
13	Stream	Coarse

Phase 2: Lakes Post-Closure
Habitat Types

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N W E S
UTM Zone 14 NAD83

DATE: October 09, 2018

SCALE: 1:8,000

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CHECKED BY: Cam Portt

FIGURE:

7-2

7.2 HABITAT LOSSES THROUGH DEPOSIT OF MINE WASTE (SECTION 36)

Lake A53 will be converted to an attenuation pond that will be operational no later than Spring 2022, with a proposed fish out and dewatering in 2021. The loss of habitat will be permanent from this point on.

The habitat changes attributed to Section 36 are summarized in Table 7-1. The changes in habitat area and habitat units are provided by habitat type in Appendix D. Section 36 losses total 14.39 ha and account for 54% of the total reduction in habitat area from the Project. Section 36 losses total 5.9 HUs and account for 58% of the total reduction in habitat units from the Project.

Table 7-1. Changes in Habitat Areas and Habitat Units from the Whale Tail Pit Expansion Project

	Section 35				Section 36	
Units	Losses due to IVR Pit and Pit Cap	Changes due to IVR Road	Losses due to Attenuation Pond (A53-A17)	Sub-total	Lake A53	Total
Hectares	-11.88	0.00	-0.37	-12.25	-14.39	-26.65
Habitat Units	-4.20	-0.02	-0.08	-4.30	-5.90	-10.20

7.2.1 Description of Effects

The proposed Whale Tail Pit Expansion Project will increase the surface area (and therefore catchment area) of the mine site, and the expanded pits and underground works will increase the volume of groundwater infiltration. As a result, the expansion will require a greater volume of contact water to be stored over winter. Based on the results of the Alternatives Assessment (ERM 2018), Agnico Eagle proposes to use Lake A53 as an attenuation pond, referred to as the IVR Attenuation Pond. Following the proposed fish-out and dewatering of Lake A53 in 2021, and dike construction thereafter, the IVR Attenuation Pond is planned to be operational by no later than spring of 2022.

8. HABITAT GAINS THROUGH OFFSETTING

Following closure of the Whale Tail Pit Expansion Project, there will be a net decrease of 10.20 Habitat Units, compared to the approved Whale Tail Pit Project, post-closure. Fish offsetting is required to counterbalance this loss.

The offsetting objective was to achieve an overall ratio of offsetting gains:losses of 1.67:1, which is the ratio that was achieved for the Meadowbank Authorization (NU03-0191) and the Whale Tail Pit Project Authorization (16-HCAA-00370). Given the combined Section 35 and Section 36 losses of 10.20 habitat units, a total of 17.03 HUs of offsetting are required (losses of 10.20 multiplied by 1.67).

Offsetting measures may be grouped into the following general categories (Fisheries and Oceans Canada, 2013):

- Habitat restoration and enhancement, which includes physical manipulation of existing habitat to improve habitat function and productivity;
- Habitat creation which is the development or expansion of aquatic habitat into a terrestrial area;
- Chemical or biological manipulation, which includes chemical manipulation of water bodies, and stocking of fish or shellfish, management or control of aquatic invasive species;
- Complementary measures, which are investments in data collection and scientific research related to maintaining or enhancing the productivity of commercial, recreational or Aboriginal fisheries.

Additional community and stakeholder engagement was conducted in 2018, along with field programs, to inform potential offsetting options. Community engagement is summarized in Section 3. Field surveys conducted in summer 2018 investigated areas with the highest potential to provide areas of habitat creation (e.g., disused quarries) or isolated waterbodies that could be connected to larger waterbodies. The results of the field surveys did not find any suitable areas that could generate sufficient habitat gains to offset the habitat losses from the Project. This finding was supported by community and stakeholder engagement, which did not result in the identification of any new areas for habitat creation or new ideas for offsetting options, other than the example projects presented in the focus groups.

Considering that fish habitat losses are from the same watershed and fish community as the approved Whale Tail Pit Project, a similar approach to offsetting is proposed for the Whale Tail Pit Expansion Project. This includes a combination of physical habitat creation, habitat enhancement, and complementary measures.

8.1 HABITAT CREATION AND ENHANCEMENT

Physical offsetting will be achieved by installing a sill between Lake A18 and Whale Tail Lake, and by scarifying the road that crosses Whale Tail Lake south of IVR pit so that it provides coarse (instead of mixed) substrate during post-closure conditions.

The principal offsetting measure will be to construct a sill between Whale Tail Lake and Lake A18 that will increase the upstream water level by one metre. Post-closure, this will maintain flooding in a portion of the area that is flooded during the operations phase of the project, in effect creating new, permanent fish habitat. This fish habitat will be suitable for the existing fish community, and will provide a 'like for like' habitat offset for the lost habitat. Based on the suggestion of leaving the water level in the Whale Tail Lake south basin raised, the proposed offsetting approach is consistent with feedback received from DFO during the approved Whale Tail Pit Project. The offsetting concept is therefore a feasible approach to offset all Habitat Units lost under both Section 35 and Section 36 impacts, while providing a net benefit to the overall fish community within the watershed.

As described in C.Portt and Associates and Agnico Eagle Mines (2018), during operations, the Whale Tail Lake water level will rise to 156 masl following the construction of the Whale Tail Dike and then fall to 154.02 masl post-closure. Under the current (approved) Whale Tail Pit Project post-closure scenario, upstream from the connecting channel between Lake A18 and Whale Tail Lake water elevations will return to their baseline elevations. The proposed offsetting sill would maintain the water level immediately upstream at 155 masl, thus maintaining some of the flooding of terrestrial areas that occurs during operations. The proposed offsetting sill could be constructed in the winter, during operation of the Whale Tail Pit Expansion Project, resulting in minimal time lag between habitat losses and offsetting gains.

The habitat types for the area that will be affected by the sill between Lake A18 and Whale Tail Lake are shown without- and with- the sill in Figures 8-1 and 8-2, respectively. Maps showing the depth zones and substrate classes that were used to derive the habitat types without and with the sill between Lake A18 and Whale Tail Lake in place are presented in Appendix E.

The water level increase due to the sill between Lake A18 and Whale Tail Lake, results in increase of 20.96 ha and 11.606 HUs (Table 8-1). Scarification of the road that crosses Whale Tail Lake south of IVR pit increases the HUs by 0.127, for a total increase due to offsetting of 11.733 Hus (Table 8-1). This results in an offsetting gains:losses ratio of 1.15:1 for the physical offsetting (gains of 11.733 HU:losses of 10.197 HU).

Table 8-1. Changes in Habitat Area and Habitat Units resulting from physical offsetting

	Offsetting Measure		
Units	1 m sill between Lake A18 and Whale Tail Lake	Scarification of Road across Whale Tail Lake	Total
Habitat Area (Hectares)	20.96	n/a	20.96
Habitat Units	11.606	0.127	11.733

8.1.1 Timeline, Design, and Construction of the Offsetting Measures

The timeline for the offsetting measures will be determined during the regulatory phase. The design of the sill between Lake A18 and Whale Tail Lake will be consistent with the conceptual design for the Mammoth Sill as presented in the approved Whale Tail Pit offsetting plan (Figure 8-3).

8.1.2 Monitoring

Monitoring to confirm that Whale Tail Pit Expansion Project offsetting measures have been properly implemented, and are effectively counterbalancing the loss of fish habitat, will be similar to that described in Agnico Eagle's approved Whale Tail Pit Fish Habitat Offset Monitoring Plan (Agnico Eagle, 2018a). Any changes that may be required to the monitoring plan due to the Project expansion will be addressed during the regulatory phase.

8.2 COMPLEMENTARY MEASURES

As defined by DFO (2013), "*complementary measures are investments in data collection and scientific research related to maintaining or enhancing the productivity of commercial, recreational or Aboriginal fisheries.*" Consistent with the Whale Tail Pit Project *Fisheries Act* Authorization, in addition to habitat creation and enhancement. Agnico Eagle will fund research as a complementary measure to offset habitat losses resulting from the Whale Tail Pit Expansion Project. The options for complementary measures will be discussed further with DFO, and Agnico Eagle can either divert funds to the existing research programs that are ongoing, or create new research based on stakeholder feedback received to date. The new options for complementary measures are outlined in Appendix C, and will be presented in further detail during the regulatory phase.

As stated previously, in order to achieve an overall offsetting gains:losses ratio of 1.67:1, a total of 17.03 HUs of offsetting is required. As indicated in Section 8.1, physical offsetting will create 11.73 HUs. Therefore, to achieve the desired overall ratio, complementary measures must provide an additional 5.30 HUs of offsetting (11.73 + 5.3 = 17.03). This is equal to 45% of the physical offsets (5. ÷ 11.73 = 0.45). Therefore, consistent with the approved Whale Tail Pit authorization, the complementary measures will be valued at 45% of the cost of the physical offsets.

8.3 FINAL HABITAT GAINS TO LOSSES RATIOS

The habitat losses and offsetting gains are summarized in Table 8-2. For future accounting purposes, the proportions of the total physical offsetting attributed to Section 35 and Section 36 are based on the proportion of their respective proportion of the habitat losses (42% and 58%). The offsetting due to road scarification is attributed to Section 35 because it will occur adjacent to the Section 35 losses associated with the IVR pit. The remainder of the physical offsetting gains for Section 35 losses arises from the sill construction. All of the offsetting gains for Section 36 losses are the result of the sill construction.

Elevation of Shorelines

Whale Tail Lake: 154.02 m

Habitat Type	Criteria	
	Depth Zone	Substrate
1	<2 m	Fines
2	<2 m	Mixed
3	<2 m	Coarse
4	2-4 m	Fines
5	2-4 m	Mixed
6	2-4 m	Coarse
7	> 4 m	Fines
8	> 4 m	Mixed
9	> 4 m	Coarse
10	mixolimnion	Coarse
11	Connecting Channel	
12	Stream	Fines
13	Stream	Coarse

Nemo Lake
A113
IVR Pit
IVR Attenuation Pond
Whale Tail Pit
Mammoth Lake
Mammoth Sill
Whale Tail Lake
Whale Tail Dike
A55
A62
A63
A59
A45
A18
A20
A19
A65
A22
A21
A23

0 250 500 1,000
Metres

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Legend

- Dike
- Pit
- IVR Pit Cap
- IVR Pit Road
- IVR Attenuation Pond - Filled & Capped
- Freshwater Jetty
- Fresh Water Jetty above the water surface
- Constructed Shoal (1 m high)
- Dewatered Lake or Stream
- Lake Shoreline or Connecting Channel

Habitat Type

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12/13 Stream

Whale Tail Lake Post Closure
No Offsetting

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PROJECT: DA14-053-11

CLIENT: Agnico-Eagle Mines Ltd., Meadowbank Div.

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UTM Zone 14 NAD83

DATE: October 09, 2018

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CHECKED BY: Cam Portt

FIGURE:

8-1

Elevation of Shorelines

Whale Tail Lake: 154.02 m

Upstream of A18 - A17: 155.02 m

Habitat Type	Criteria	
	Depth Zone	Substrate
1	<2 m	Fines
2	<2 m	Mixed
3	<2 m	Coarse
4	2-4 m	Fines
5	2-4 m	Mixed
6	2-4 m	Coarse
7	> 4 m	Fines
8	> 4 m	Mixed
9	> 4 m	Coarse
10	mixolimnion	Coarse
11	Connecting Channel	
12	Stream	Fines
13	Stream	Coarse

Nemo Lake
A113
IVR Pit
IVR Attenuation Pond
Whale Tail Pit
Mammoth Lake
Mammoth Sill
Whale Tail Lake
Whale Tail Dike
A55
A62
A63
A59
A45
A18
Sill A18 - A17
A20
A19
A65
A22
A21
A23

0 250 500 1,000
Metres

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Legend

- Dike
- Sill
- Pit
- IVR Pit Cap
- IVR Pit Road
- IVR Attenuation Pond - Filled & Capped
- Freshwater Jetty
- Fresh Water Jetty above the water surface
- Constructed Shoal (1 m high)
- Dewatered Lake or Stream
- Lake Shoreline or Connecting Channel

Habitat Type

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12/13 Stream

Whale Tail Lake Post Closure
Potential Offsetting Scenarios

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CHECKED BY: Cam Portt

FIGURE:

8-2

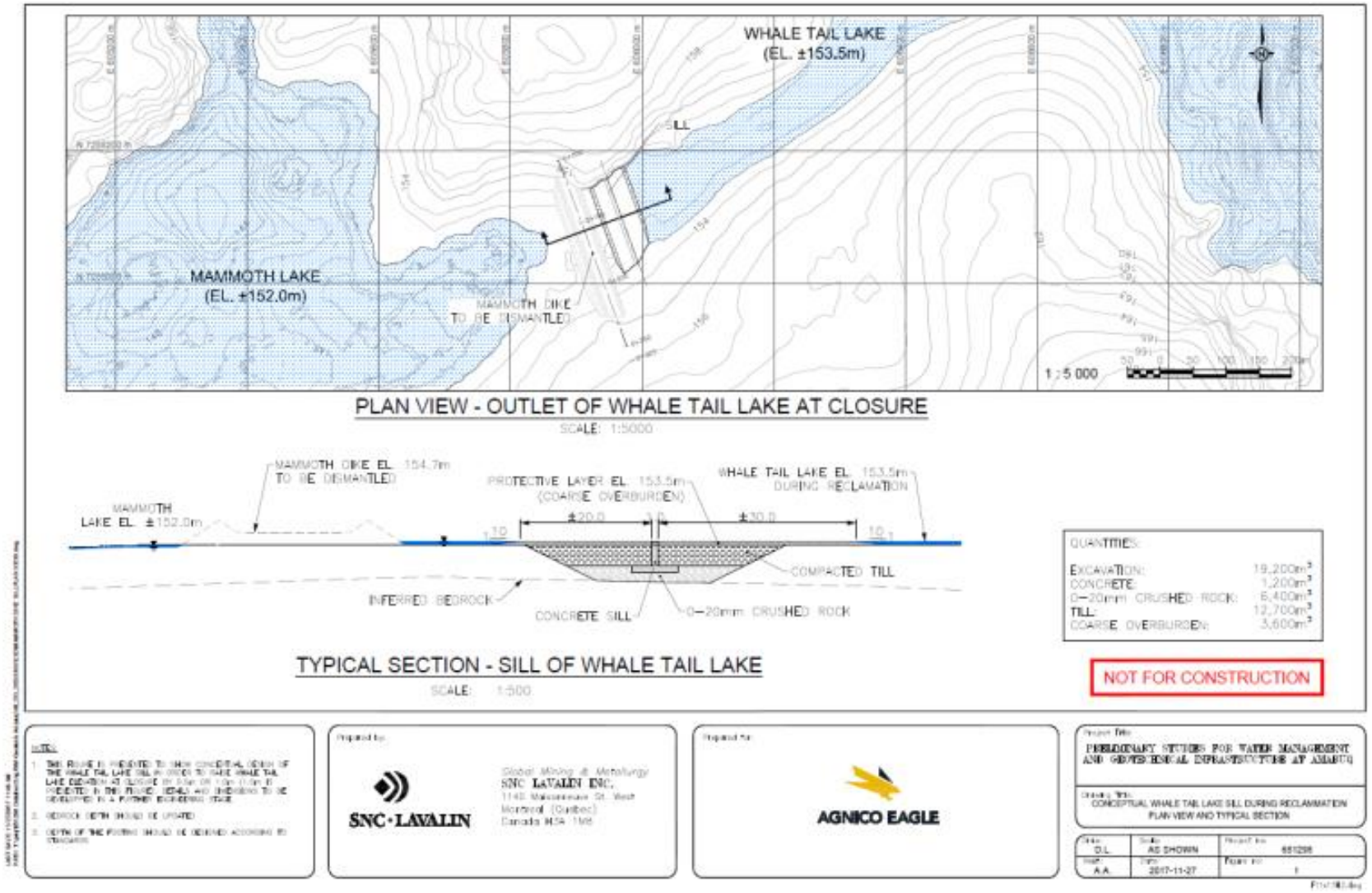

Figure 8-3. Preliminary Engineering Design for Sill to Raise Water Level of Whale Tail Lake under the Approved Whale Tail Pit Project (a similar design is proposed for the sill between A18 and Whale Tail Lake for the Whale Tail Pit Expansion Project)

Table 8-2. Summary of Habitat Losses and Offsetting Gains, in Habitat Units (HU's)

		Section 35	Section 36	Total
Habitat Losses		-4.3	-5.9	-10.2
Habitat Gains	Road scarification	0.13		0.127
	Sill between Lake A18 and Whale Tail	4.8	6.783	11.606
	Sub-total	4.95	6.783	11.733
	Complementary measures	2.2	3.061	5.297
	Total	**7.21**	**9.844**	**17.029**
Net change	-	*2.9*	*3.944*	*6.832*
Ratio of gains:losses	-	**1.67:1**	**1.67:1**	**1.67:1**

9. CONTINGENCY OPTIONS

Agnico Eagle is confident that the outlined offsetting measures are feasible; however, during the review of the FEIS and the regulatory phase, Agnico Eagle will consult with stakeholders including the KIA, Baker Lake HTO and DFO to address contingency options. These contingency options will be included in the final offsetting plans along with a commitment to implement additional measures, should the proposed offsetting measures not achieve the desired gains in the time predicted.

10. SUMMARY

The Whale Tail Pit Expansion Project will cause a loss of fish habitat through direct overprinting and loss of flow due to project infrastructure, and through the deposit of mine waste in a fish-bearing waterbody. Loss of fish habitat from the mine infrastructure will require offsetting pursuant to Section 35 of the *Fisheries Act*; Loss of fish habitat from the deposit of mine waste (contact water) will require compensation pursuant to Section 36 of the *Fisheries Act*.

Although two separate fish offsetting/compensation plans will be required to support an application for a Section 35 Authorization and an application to amend to Schedule 2 of the MDMER, considering the similarity of habitat losses and gains, one conceptual offsetting plan for the overall Project has been prepared to facilitate stakeholder review during the FEIS process. Habitat accounting according to the previously-approved Habitat Evaluation Procedure, is presented separately for Sections 35 and 36 to facilitate regulator review in preparation for final offsetting plans as part of permit applications.

Based on the multi-year and seasonal data set for the Project area, the baseline fish conditions are well-known, providing confidence in the assessment of the habitat quality (Habitat Units) of the affected fish habitat. The method of habitat accounting has also gone through technical reviews by DFO and others, providing confidence in the approach. Offsetting measures are proposed that include physical habitat creation and enhancement, as well as complementary measures that reflect the unique Arctic environment where research may contribute real benefits to the knowledge base and local fisheries management objectives.

A sill constructed between Lake A18 and Whale Tail Lake results in total offsetting gains of 20.96 ha and 11.606 Hus. Scarification of the road that crosses Whale Tail Lake south of IVR pit increases the HUs by 0.127. These gains are divided between Section 35 and Section 36 habitat losses to demonstrate no net loss to the local fish communities from both mine infrastructure, and the deposit of mine waste.

In line with the approved Whale Tail Pit Project, Agnico will fund research as a complementary measure to further offset habitat losses. These complementary measures will be valued at 45% of the cost of constructed offsets. This provides a final offsetting gains: loss ratio of 1.67:1 for each of the Section 35 and Section 36 habitat losses, which is in line with previous approved offsetting plans at the site.

Two detailed fish offsetting/compensation plans will be developed during the regulatory stage in accordance with the *Fisheries Act* and MDMER requirements. The plans will support an application for an Authorization under Paragraph 35(2)(b), and an Application to Amend Schedule 2 of the MDMER to list Lake A53 as a Tailings Impoundment Area. Both plans will include an overview of the proposed works; description of fish and fish habitat; anticipated effects; mitigation measures; assessment of impacts and gains; monitoring approach and letter of credits to cover costs of offsetting.

During the review of the FEIS and the development of the permit applications, Agnico Eagle remains committed to working with the KIA, the HTO, local community groups, and regulators, to align offsetting goals with local and regional fisheries objectives.

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Appendix A. Community Consultation Materials and Photos