Appendix 31-8: 2022 Ore Storage Management Plan

MELIADINE GOLD MINE

Ore Storage Management Plan

MARCH 2023
VERSION 5
6513-MPS-08

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ᕿᑦᑎᒃᑐᒥᑦ ᐊᒻᒪᓗ ᕿᑎᐊᓃᖕᖓᔪᖅ ᐱᑦᑕᐅᓂᖓ ᐅᔭᕋᒃᑕᖅᑕᐅᔪᖅ ᓄᓇᐅᑉ ᐃᓗᐊᓂᑦ ᐊᒻᒪᓗ ᓄᓇᒥᑦ ᐅᒃᑯᐃᖕᖓᔪᓂᑦ ᓄᓇᒃᑰᕈᑎᒃᑯᑦ ᓯᖃᓪᓕᑎᓇᕝᕕᖕᒧᑦ ᐊᒃᔭᐅᖃᑦᑕᕐᓂᐊᖅᑐᑦ ᓂᒋᐊᓂᑦ ᐃᓯᐊᓂᑦ ᐱᓕᐅᕆᕙᓪᓕᐊᕝᕕᐅᑉ. ᓯᖃᓪᓕᑎᖅᓯᒪᔪᖅ ᐅᔭᕋᒃᑕᖅᑕᐅᔪᖅ ᐊᒃᔭᖅᑕᐅᓗᓂ ᐅᔭᕋᒃᑕᖅᑕᐅᔪᑦ ᑑᖏᓐᓄᑦ ᐱᓕᐅᕆᕙᓪᓕᐊᕝᕕᖕᒧᐊᖅᑕᐅᓗᓂ ᖃᓪᓕᖅᓯᒪᔪᒥᒃ ᐊᒃᔭᖅᑐᐃᔾᔪᑎᒃᑯᑦ. ᐊᑦᑎᒃᑐᒦᖕᖓᔪᑦ ᐱᑦᑕᐅᓂᖏᑦ ᐊᒻᒪᓗ ᓈᒻᒪᒃᑐᑦ ᐅᔭᕋᒃᑕᖅᑕᐅᔪᑦ ᑐᖅᑯᖅᑕᐅᓂᐊᖅᑐᑦ ᐅᔭᕋᒃᑕᖅᑕᐅᔪᓄᑦ ᑲᑎᓯᒪᔪᓄᑦ, ᓯᖃᓪᓕᑎᖅᑕᐅᓂᐊᕐᓗᑎᒃ ᑭᖑᓪᓕᖅᐹᖕᖓᓂᑦ ᐅᑭᐅᕐᒥᑦ ᐅᔭᕋᒃᑕᕆᐊᖅ ᐊᐅᓛᕐᓂᕆᔭᖕᖓᓂᑦ. ᐅᔭᕋᒃᑕᖅᑕᐅᔪᓂᑦ ᐊᒥᐊᒃᑯᑕᖃᕐᔫᖕᖏᑦᑐᖅ ᑲᑎᓯᒪᔪᓂᑦ ᐅᔭᕋᒃᑕᕆᐊᖅ ᐅᒃᑯᐊᖅᑎᓪᓗᒍ.

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AGNICO EAGLE

EXECUTIVE SUMMARY

Agnico Eagle Mines Limited (Agnico Eagle) is operating the Meliadine Gold Mine (Meliadine), located approximately 25 km north of Rankin Inlet, and 80 km southwest of Chesterfield Inlet in the Kivalliq Region of Nunavut. The mine plan includes open pit and underground mining methods for the development of the Tiriganiaq gold deposit, with two open pits (Tiriganiaq Pit 1 and Tiriganiaq Pit 2) and one underground mine.

There are four phases to the development of Tiriganiaq: 3.5 years construction (Q4 2015 to Q2 2019), 8.5 years mine operation (Q3 2019 to 2027), 3 years closure (2028 to 2030), and post-closure (Year 2030 forward). Approximately 14.6 million tonnes (Mt) of ore will be produced. The produced ore will be milled over approximately 8 years of mine life at a rate of approximately 4,550 tonnes per day (tpd) in Year 1 to Year 4 and ramp up to 6,000 tpd in end of Year 5 until year 7. In Year 8, the stockpile and remaining ore production will be milled.

High and mid-grade ore produced from underground and the open pits will be trucked directly to the crusher located at the south end of the process plant. The crushed ore will be transported to the ore bin and then to the process plant via a covered conveyor system. Low grade ore will be stored in stockpiles and milled when needed, and marginal grade will be milled during the last year of operations. There will be no ore stockpiles remaining at mine closure.

Surface runoff and seepage water from the ore stockpiles will flow to the adjacent Containment Pond 1 (CP1) via Channel 1 and Culvert 3, where it will be treated to meet discharge criteria as per the Nunavut Water Board (NWB) Type A Water Licence 2AM-MEL1631 requirement, prior to being discharged to the receiving environment.

TABLE OF CONTENTS

Tables in Text

APPENDIX A • FIGURES

DOCUMENT CONTROL

Version	Date	Section	Page	Revision	Author
1	April 2015			First version of Ore Storage Management Plan as Supporting Document for Type A Water Licence Application, submitted to Nunavut Water Board for review and approval	Tetra Tech EBA Inc.
2	April 2020			General review throughout the document	Engineering Department
3	March 2021			Update Quantities according to latest mine plan	Engineering Department
4	April 2022			Update Quantities according to latest mine plan	Engineering Department
5	March 2023			Update Quantities according to latest mine plan	Engineering Department

ACRONYMS

Agnico Eagle	Agnico Eagle Mines Limited
CP	Collection Pond (or Control Pond or Containment Pond)
EWTP	Effluent Water Treatment Plant
NIRB	Nunavut Impact Review Board
NWB	Nunavut Water Board
OP	Ore Storage Pad
OSMP	Ore Storage Management Plan
Project	Meliadine Gold Mine Project
TSF	Tailings Storage Facility
WRSF	Waste Rock Storage Facility

UNITS

%	percent
°C	degrees Celsius
°C/m	degrees Celsius per meter
cm/s	centimetre per second
ha	hectare
kPa	kilopascal
km	kilometre(s)
L	liter(s)
m	metre
mg	milligram
m/s	metre per second
mm	millimetre
mm/h	millimetre per hour
m^2/year	square metre(s) per year
m^3	cubic metre(s)
Mm^3	million cubic metre(s)
t	tonne
t/m^3	tonne per cubic metre
Mt	million tonne(s)
µm	micrometre

SECTION 1 • INTRODUCTION

Agnico Eagle Mines Ltd. (Agnico Eagle) operates the Meliadine Gold Mine (the Mine) located approximately 25 kilometres (km) north of Rankin Inlet (Figure 1.1), Nunavut, and 80 km southwest of Chesterfield Inlet in the Kivalliq Region of Nunavut. The Mine is subject to the terms and conditions of both the amended Project Certificate issued by the Nunavut Impact Review Board (NIRB) on March 2nd, 2022 and the amended Type A Water Licence No. 2AM-MEL1631 (the Licence) issued by the Nunavut Water Board (NWB) on May 13th, 2021 and approved by the Minister of Northern Affairs on June 23rd, 2021. This report presents an updated version of the Ore Storage Management Plan (OSMP).

1.1 Ore Storage Management Objectives

The ore storage management objectives are to minimize potential impacts to the environment during the mining phase. The purpose of the OSMP is to provide information to applicable mine departments (Environment, Engineering, Mine, Energy and Infrastructure, etc.) for sound management practices, proposed and existing infrastructure, and provide strategies for water management (runoff), dust control and monitoring programs.

1.2 Management and Execution of the Ore Storage Management Plan

Revisions of the OSMP can be initiated by changes in the Mine Development Plan (Mine Plan), operational performance, personnel or organizational structure, regulatory or social considerations, and/ or design philosophy. The OSMP will be reviewed annually by Agnico Eagle and updated as necessary.

SECTION 2 • BACKGROUND

2.1 Site Conditions

The Mine is located in an area of poorly drained lowlands near the northwest coast of Hudson Bay. The dominant terrain in the area consists of glacial landforms such as drumlins (glacial till), eskers (gravel and sand), and many small lakes. The topography is gently rolling with a mean elevation of 65 meters above sea level (masl) and a maximum relief of 20 meters.

The local overburden consists of a thin layer of topsoil overlying silty gravelly sandy glacial till. Cobbles and boulders are present throughout the region at various depths. Bedrock at the Mine site area consists of a stratigraphic sequence of clastic sediments, oxide iron formation, siltstones, graphitic argillite, and mafic volcanic flows (Snowden, 2008; Golder, 2009).

The climate is extreme in the area, with long cold winters and short cool summers, and mean air temperatures of 12°C in July and -31°C in January. The mean annual air temperature at the Mine site is approximately -10.4 °C (Golder, 2012a). Strong winds blow from the north and north-northwest direction more than 30 percent of the time.

The mean annual precipitation in the area is approximately 412 mm and is typically equally split between rainfall and snowfall.

2.1.1 Local Hydrology

The Mine is located within the Meliadine Lake watershed. Meliadine Lake has a water surface area of approximately 107 square kilometres (km^2), a maximum length of 31 km, features a highly convoluted shoreline of 465 km, and has over 200 islands. Unlike most lakes, it has two outflows that drain into Hudson Bay through two separate river systems. It has a drainage area of 560 km^2 upstream of its two outflows. Most drainage occurs via the Meliadine River, which originates at the southwest end of the lake. The Meliadine River flows for a total stream distance of 39 km. The Meliadine River flows through a series of waterbodies, until it reaches Little Meliadine Lake and then continues into Hudson Bay. A second, smaller outflow from the west basin of Meliadine Lake drains into Peter Lake, which discharges into Hudson Bay through the Diana River system (a stream distance of 70 km). At its mouth, the Diana River has a drainage area of 1,460 km^2.

Watersheds in the Mine area are comprised of an extensive network of waterbodies, and interconnecting streams. The hydrology of these watersheds is dominated by lake storage and evaporation.

2.1.2 Ice and Winter Flows

Late-winter ice thicknesses on freshwater lakes in the Mine area range between 1.0 to 2.3 m with an average thickness of 1.7 m. Ice covers usually appear by the end of October and are completely formed in early November. The spring ice melt (freshet) typically begins in mid-June and is complete by early July (Golder, 2012b).

2.1.3 Spring Melt (Freshet) and Freeze-up Conditions

With the exception of the main outlet of Meliadine Lake, which has been observed to flow continuously throughout the year, outlets of waterbodies near the Mine typically start flowing late May or early June, followed by freshet flows in mid-to-late-June. Flows steadily decrease in July and low flows are ongoing from August to the end of October, prior to winter freeze.

2.1.4 Permafrost

The Mine is located in an area of continuous permafrost. The depth of permafrost is estimated to be in the order of 360 to 495 m. The depth of the active layer ranges from about 1 m in areas with shallow overburden, up to 3 m adjacent to the lakes. The typical permafrost ground temperatures at the depths of zero annual amplitude (typically at the depth of below 15 m) are in the range of -5.0 to -7.5 °C in the areas away from lakes and streams. The geothermal gradient ranges from 0.012 to 0.02°C/m (Golder, 2012b).

2.1.5 Local Hydrogeology

Groundwater characteristics at areas of continuous permafrost that are generally present in the Mine area include the following flow regimes:

- A shallow flow regime located in an active layer (seasonally thawed) near the ground surface and above permafrost; and,
- A deep groundwater flow regime beneath the base of the permafrost.

From late spring to early autumn, when temperatures are above 0˚C, the shallow active layer thaws. Within the active layer, the water table is projected to be a subdued replica of topography. Groundwater in the active layer flows to local depressions and ponds that drain to larger waterbodies. The talik beneath large waterbodies will be open. The open talik will connect to the deep groundwater flow regime beneath the permafrost.

Elongated waterbodies with terraces and a width of 340 to 460 m or greater are expected to have open taliks extending to the deep groundwater flow regime at the Mine. Meliadine Lake and Lake B7 are likely to have open taliks connected to the deep groundwater flow regime (Golder, 2012a). No impact is expected to Lake B7 by mine activities.

SECTION 3 • ORE STORAGE DEVELOPMENT

3.1 Mine Development Plan

The Mine Plan and key mine development activities, including water management, are currently used concurrently with the OSMP.

The Mine Plan includes one underground mine (Tiriganiaq Underground Mine) and two open pits (Tiriganiaq Open Pit 1 and Tiriganiaq Open Pit 2) for the development of the Tiriganiaq gold deposit.

The Mine is expected to produce approximately 14.6 million tonnes (Mt) of ore, 34.7 Mt of waste rock, 8.4 Mt of overburden waste, and 14.6 Mt of tailings. The following phased approach is proposed for the development of the Tiriganiaq gold deposit:

- Phase 1: 3.5 years for Mine Construction (Q4 2015 to Q2 2019);
- Phase 2: 8.5 years for Mine Operations, beginning in 2019 (Q2 2019 to 2027);
- Phase 3: 3 years Mine Closure (2028 to 2030); and;
- Phase 4: Post-Closure (2030 forward).

Mining facilities on surface include a plant site and accommodation buildings, ore stockpiles, a tailings storage facility (TSF), two waste rock storage facilities (WRSFs), a water management system that includes containment ponds, water diversion channels, retention dikes/berms, and water treatment plants. The general mine site layout plan is shown on Figure 3.1, while Table 3.1 provides the key mine development activities and sequence.

Table 3.1: Key Mine Development Activities and Sequence

Mine Year	Mine Development Activities and Sequence
Q4 of Yr -5 (2015)	• Started construction of industrial pad • Developed ramp to Tiriganiaq underground mine • Constructed portion of rock pad for stockpiles to store ore from Tiriganiaq underground ramp development
Yr -4 (2016)	• Continued construction of industrial pad • Constructed and operated the temporary landfill • Started temporary storage of waste rock in the future WRSF2 footprint for construction purposes
Yr -3 (2017)	• Constructed and utilized Type A landfarm • Constructed and began operation of Type A landfill • Erected and closed all main buildings except crusher, paste plant and crushed ore storage • Erected incinerator • Erected and operated effluent water treatment plant (EWTP) • Installed fuel tanks 3 ML and 250 kL at Portal1 • Erected fuel tank 13.5 ML in Rankin
Yr -2 (2018)	• Started construction of Ore Storage Pad 2 (OP2) • Erected and closed crusher, paste plant and crushed ore storage buildings • Erected fuel tank 20 ML in Rankin • Erected fuel tanks 6 ML and 250 kL at industrial pad • Started process commissioning at end of Q4

Mine Year	Mine Development Activities and Sequence
Yr -1 (2019)	• Completed industrial pad • Completed construction of OP2 stage 1 • Started to place filtered tailings in Cell 1 of tailings storage facility (TSF) at end of Q1 • Started full capacity ore processing early Q2 • Created temporary waste rock storage area within footprint of Tiriganiaq Pit 2 from construction of Saline Pond 2 (SP2) • Began placement of waste materials from Saline Pond 4 (SP4) in waste rock storage facility 1 (WRSF1)
Yr 1 (2020)	• Place waste rock from temporary storage within footprint of Tiriganiaq Pit 2 to construct haul roads for open pits and to WRSFs • Create temporary waste rock storage area between footprints of Tiriganiaq Pits 1 and 2 from construction of SP4 • Start to mine Tiriganiaq Pit 2 • Begin placement of waste rock and overburden from Tiriganiaq Pit 2 within WRSF3 • Place overburden from Tiriganiaq Pit 1 in WRSF1
Yr 2 (2021)	• Start to mine Tiriganiaq Pit 1 • Begin placement of waste rock and overburden from Tiriganiaq Pit 1 in WRSF1 • Continue placement of waste rock and overburden from Tiriganiaq Pit 2 in WRSF1 • Pause mining of Tiriganiaq Pit 2
Yr 3 (2022)	• Continue placement of waste rock and overburden from Tiriganiaq Pit 1 in WRSF1 • Begin placement of overburden from Tiriganiaq Pit 1 into WRSF3 • Start Construction of OP2 stage 2 • Start placement of marginal material on OP2 stage 2
Yr 4 (2023)	• Start to place filtered tailings in Cell 2 of TSF • Stop placement of waste rock in WRSF1 when design capacity reached
Yr 5 (2024)	• Place final closure cover on top of tailings surface in Cell 1 of TSF • Stockpile selected overburden for closure • Stop placement of overburden in WRSF3
Yr 6 (2025)	• Continue placement of waste rock in WRSF3
Yr 7 (2026)	• Stop mining of Tiriganiaq Pit 1 when the open pit reaches design elevation
Yr 8 (2027)	• Stop Tiriganiaq underground operation when underground mine reaches design elevation • Stop placing waste rock in WRSF3 when design capacity reached • Process the ore from OP2 until all stored ore is processed

* Restarting mining activities at Tiriganiaq Pit 2 in year 8 pends necessary approvals of the waterline discharge line to sea. These details are discussed in the Long-Term Management Strategy of the *Groundwater Management Plan*

3.2 Ore Development Plan

3.2.1 Tiriganiaq Development Schedule and Quantities

The Tiriganiaq gold deposit will be developed using traditional open-pit and underground mining methods. Two open pits (Tiriganiaq Pit 1 and Tiriganiaq Pit 2) and an underground mine (Tiriganiaq Underground) will be developed.

The following mining development sequence is planned:

- Tiriganiaq underground will be developed and operated from Year -5 to Year 8;
- Tiriganiaq Pit 2 will be mined from Year 1 to Year 2; and Year 8

Tiriganiaq Pit 1 will be mined from Year 2 to Year 7, approximately 14.6 Mt of Tiriganiaq ore will be mined over the mine life, comprised of approximately 4.7 Mt from the open pits and approximately 9.9 Mt from underground operations. Five grades of ore are identified: Underground high grade, Underground low grade, Open pit high grade, Open pit low grade, and marginal grade. The produced ore will be milled over approximately 8 years of mine life at a rate of approximately 4,550 tonnes per day (tpd) in Year 1 to Year 4 and ramp up to 6,000 tpd in end of Year 5 until year 7. In Year 8, the stockpile and remaining ore production will be milled.

Table 3.2 summarizes the schedule and quantities of ore to be mined from the open pit and underground mining operations.

Table 3.2: Summary of Ore Production Schedule and Bank Quantities (V15_LOM)

Year	Mine Year	Underground	Tiriganiaq Pit #1	Tiriganiaq Pit #2	Total
		Ore (t)	Ore (t)	Ore (t)	Ore (t)
2019*	Yr-1	1,108,666	--	--	1,108,666
2020*	Yr1	1,293,507	--	109,392	1,402,899
2021*	Yr2	1,445,614	404,569	110,361	1,960,544
2022*	Yr3	1,345,975	432,859	--	1,778,834
2023	Yr4	1,472,575	397,869	--	1,870,444
2024	Yr5	1,379,826	452,114	--	1,831,941
2025	Yr6	1,369,053	562,546	--	1,931,599
2026	Yr7	470,228	1,472,511	--	1,942,739
2027	Yr8	--	380,323	431,333	811,656
Total (t)		**9,885,443**	**4,102,791**	**651,086**	**14,639,321**

* End of year total mined values

SECTION 4 • ORE STORAGE MANAGEMENT

A portion of high grade ore produced from underground and open pit operations will be trucked directly to the crusher located at the south end of the process plant. The crushed ore will be transported to the ore bin and then to the process plant via a covered conveyor system. The rest will be stored in stockpiles and milled when needed, prioritising highest grade first. Marginal grade will be milled during the last year of operations. There will be no ore stockpiles remaining at mine closure.

4.1 Ore Storage Locations

4.1.2 OP2 Stage 2

As described in the original OP2 design report (Agnico Eagle 2018), the ore storage facilities are being constructed in two stages (Stage 1 and Stage 2) to mitigate high initial construction costs associated to infrastructure not required until later in the Life of Mine and to better adapt to potential future adjustments in estimated annual volumes, the ore storage facilities will be constructed in stages.

Stage 1 was previous constructed as described in the As-Built Report submitted to the NWB in July 2020.

The detailed design report and IFC construction drawings for OP2 Stage 2 (Agnico Eagle, 2022a) were approved by the NWB June 20th, 2022. Construction of OP2 Stage 2 occurred throughout 2022 as material became available. OP2 Stage 2 is located southeast from OP2 Stage 1 as shown in Figure 3.1.

4.1.3 Temporary Ore Storage

Currently, underground ore recovered from above Level 250 is brought to the surface through Portal 1 and temporarily stored within OP1. The ore is then loaded by surface equipment and moved to OP2 and/or the primary crusher.

4.2 Design Parameters

4.2.1 OP2 Stage 1

The as-built characteristics of OP2 Stage 1are presented in Table 4.1.

Table 4.1: As-Built Parameters of OP2 Stage 1

Parameter	As-Built Values
Pad thickness (m)	0.35
Maximum elevation (m)	71.7
Grade towards Channel 1 (%)	1.14
Average side slopes for pad (H:V)	2.3:1 (23.4º)
Surface area (m^2)	103,179
Volume of rockfill (m^3)	107,798

4.2.1 OP2 Stage 2

The as-built characteristics of OP2 Stage 2 are presented in Table 4.2.

Table 4.2: As-built Parameters for OP2 Stage 2

Design Parameter	As-built Value
Minimum Pad thickness (m)	2.3
Grade towards CP1 (%)	1.4
Average side slopes for pad (H:V)	1.8:1
Surface area (m^2)	69,400
Volume of rockfill (m^3)	198,000

4.2.2 Ore Stockpiles

The ore stockpiles are temporary structures and small compared to the WRSFs. Based on the stability and thermal analyses completed for the WRSFs during detailed design and experience with similar structures at other mine sites (i.e. Meadowbank Mine), the ore stockpiles will have an acceptable factor of safety against potential slope failure. A typical cross section of an ore stockpile is provided in Figure 4.1.

Key design parameters for the ore stockpiles are summarized in Table 4.3.

Table 4.3: Design Parameters for Ore Stockpiles

Parameter	Value
Bench width from the crest of the pad to the toe of the first lift of the ore (m)	5
Thickness of first lift of ore (m)	5
Bench width from the crest of the first lift to the toe of the second lift (m)	10
Approximate maximum thickness of the second lift of ore (m)	7
Assumed side slopes for ore (H:V)	1.3:1

Maximum elevation of any ore stockpile above sea level (m)	80
Assumed dry density of ore (t/m^3)	1.88

Dividing OP2 Stage 1 into four stockpiles and maintaining a 15 m distance between the stockpiles provides enough storage for approximately 1.26 M tonnes, or 672 800 m^3 of ore. OP2 Stage 2 provides enough storage for approximately 1.26 M tonnes, or 580,000 m^3 of ore.

4.3 Ore Stockpiling Procedure

Depending on the development schedule of the underground and open pit mining operations, the ore will either be transported directly to the mill and crusher for processing or will be temporally stockpiled at one of the designated ore stockpiles on OP2 (Stage 1 / Stage 2) for subsequent processing.

Table 4.3 presents the planned evolution of ore stockpiles at OP2 (Stage 1 / Stage 2), together with their maximum storage tonnages shown in bold text.

Table 4.3: Evolution of Ore Stockpiles at OP2 (Stage 1 / Stage 2)

Year	Mine Year	OP2 Stage 1				OP2-Stage 2	
		Underground (t)		Open Pit (t)		Underground (t)	Open Pit (t)
		High	Low	High	Low	Marginal	Marginal
2019*	Yr-1	117,237	24,757	0	0	0	0
2020*	Yr1	53,975	56,709	0	0	8,345	0
2021*	Yr2	24,156	137,859	27,480	175,186	0	0
2022*	Yr3	63,735	32,779	22,075	267,458	0	497
2023	Yr4	70,323	13,984	0	356,403	18,696	45,582
2024	Yr5	118,339	31,842	9,551	229,198	25,498	92,300
2025	Yr6	110,447	0	0	65,325	17,738	54,817
2026	Yr7	447	0	0	264	105	249
2027	Yr8	0	0	0	0	0	0
Maximum tonnes (t)		**118,339**	**137,859**	**27,480**	**356,403**	**25,498**	**92,300**
Maximum volume (m^3)		62,946	62,946	14,617	189,576	13,563	49,096

*Year end as-built quantities.

Table 4.3 demonstrates that under the current mine plan and with the distribution of ore into the stockpiles, enough storage is expected to exist on OP2.

SECTION 5 • WATER MANAGEMENT ASSOCIATED WITH ORE STORAGE

The water management objectives for the mine are to minimize potential impacts to the quantity and quality of surface water at the site.

OP2 is located within the catchment of CP1, as shown in Figure 3.1. The pad was sloped during construction to direct any contact water towards Channel 1 where it will be diverted into CP1 via the Culvert 3 system. The collected contact water is treated by the EWTP prior to discharge to Meliadine Lake.

Detailed information on the management of runoff water and seepage from the ore stockpiles and construction of infrastructure associated with ore management are described in the *Water Management Plan.*

SECTION 6 • DUST MANAGEMENT ASSOCIATED WITH ORE STORAGE

The potential sources of dust related to ore management during construction, operation and closure include:

- Site preparation prior to placement of waste materials i.e., stripping, excavation and/or placement of storage pad;
- Vehicle traffic dislodging fine particles from the surface of the storage pad and associated haul roads;
- Ore handling and transfer - loading, hauling, unloading and placement; and
- Ore sorting, screening and crushing.

Dust suppression measures, which are considered to be typical of the current mine practices (i.e. Meadowbank Complex) and consistent with best management practices, will be considered through design, operation and closure phases to control the dust.

Minimal site preparation was required for the storage pad during construction. Dust from this source was not observed to be problematic.

Dust generated from vehicles travelling on the surface of the associated access roads will be controlled principally by spraying water on the traffic area, and potentially by applying an approved chemical dust suppressant to the area which will be carried out regularly by mine services during dry periods in the summer. Watering the haul and access roads is only possible when temperatures are above freezing. When the temperature is below freezing, dust suppression using water or chemical will pose a safety hazard for travel; therefore, reducing the speed limit will be the principal way of controlling dust during these periods. More details on the dust management for traffic are described in the Roads Management Plan and Dust Management Plan).

Other control measures considered in design and operation related to dust generation by vehicles travelling include:

- Road will be designed as narrow and short as possible while maintaining safe construction and operation practices;
- Coarse size rock will be used as much as possible for road construction;
- Roads will be regularly graded to mix the fines found on the road surface with coarser material located deeper in the roadbed; and
- As required, roads and travel areas will be topped with additional aggregate.

Dust is expected to be a minor issue during construction of the ore stockpiles. The ore stockpiles will be located at suitable locations and with minimal heights and suitable side slopes to minimize the wind erosion effects. Water and/or approved chemical dust suppressions will be sprayed on ore stockpiles, if required.

The crusher plant has been designed to follow best management practices by having the dump station and rock hammer enclosed to minimize the dust generation. The conveyor from the crusher to the process plant is a covered belt system in which the dust can be easily controlled. The covered conveyor system will be equipped with dust collectors and will be maintained regularly during mine operation. The conveyor loads will be kept within designated load limits to minimize the dust generation during operation. Dust collected during operation will be recycled through the mill.

SECTION 7 • RECLAMATION AND CLOSURE OF THE ORE STOCKPILES

The detailed Mine closure and reclamation activities are provided in the Interim Closure and Reclamation Plan.

Key mine development activities during the closure process are summarized in Table 7.1.

Table 7.1: Key Mine Development Activities and Sequence during Closure

Mine Year	Mine Development Activities and Sequence
Yrs 9-11 (2028 to 2030)	• Place final closure cover on top of tailings surface in Cell 2 (Yr 9) • Decommission non-essential mine infrastructure and support buildings (Yrs 9 and 10) • Start monitoring and maintenance (Yr 9)
Post Closure	• Continue monitoring and maintenance until Yr 18 (2039)

Final closure activities of the ore management facilities will commence at the end of mining operations in 2027 (Year 8). Ore will not remain in the ore stockpiles following the cessation of operations; it will all be processed.

In the event of a short-term temporary closure, the water and dust management strategies for the ore stockpiles will be kept the same as used during active mine operation. In the event of a long-term temporary closure, water control structures will be maintained as required

SECTION 8 • MONITORING PROGRAM

This section presents a summary of the monitoring programs that will be carried out during construction and operation related to ore storage management. The monitoring program presented here includes; stability and deformation, ground temperature, and annual inspections per the Type A Water Licence 2AM-MEL1631. The detailed information on monitoring of runoff and seepage from the ores stockpiles is described in the *Water Management Plan*. General monitoring is subject to change as directed by an Inspector, or by the Licensee, subject to approval by the NWB.

Table 8.1 summarizes the monitoring activities for the ore management.

Table 8.1 Ore Stockpile Monitoring Activities

Monitoring Component		Monitoring Frequency	Reporting
Verification Monitoring	Quantities of ore processed	Continuously	Monitoring data will be used by Agnico Eagle internally.
	Routine visual inspections of ore stockpiles	Daily during active ore placement; monthly after placement	
	Elevation and geometry survey	Annually	
	Seepage collection and monitoring	Monthly over the open water season	
General Monitoring	Quantities of ore placed into stockpiles	Monthly	Monitoring data will be reported to the Regulators in the annual report or annual inspection report
	Dust monitoring related to ore storage	Governed by Air Quality Monitoring Plan	
	Geotechnical inspection by qualified Geotechnical Engineer	Annually or more frequent at the request of an Inspector	

8.1 Verification Monitoring Program

Verification monitoring results will be used by Agnico Eagle in the management of ore stockpiles and production. The following verification monitoring data will be collected, compiled and managed internally:

- The tonnage of ore processed through the mill is monitored and reported internally on a continuous basis. These results are crosschecked with the tailings production rate from the filter press.
- During active development of each stockpile, site staff will carry out daily visual inspections in relation to the performance and condition of each structure. When placement activity ceases on an interim or seasonal basis, the inspection frequency will shift to monthly.
- The maximum heights of the ore stockpiles are estimated to be approximately 15 m above the pad. During operations, an annual elevation survey of the stockpiles will be performed to estimate overall volume placed and provide input to the operation plan.
- Surface runoff and seepage from the ore stockpiles will be monitored during the

construction and operation phases monthly over the open water season. Additional inspections will be carried out after rainfall events and during freshet. The detailed information on the monitoring of surface runoff and seepage from the ore stockpiles is described in the *Water Management Plan*.

8.2 General Monitoring Program

The following general monitoring data will be reported to the NWB through either the Annual Report or an Annual Inspection Report:

- Monthly quantities of the ore placed into the stockpiles during mine operation.
- Dust related to ore management is not expected to be an issue by employing the dust suppression measures presented in Section 6.0. Air quality at the mine site will be monitored during construction, operation, and closure through air quality monitoring stations and reported annually.
- The performance of the ore stockpiles will be inspected and assessed during the annual geotechnical site inspection by a geotechnical or civil engineer registered in Nunavut. The visual assessment and recommended actions to be taken related to the stockpiles will be summarized in the Annual Inspection Report. Inspections may occur more frequently at the request of the Inspector. Records of all inspections will be maintained for the review of the Inspector upon request.

The results from general monitoring program related to tailings management will be reported to the Regulators in the Annual Report or in the Annual Geotechnical Inspection Report.

REFERENCES

Agnico Eagle Mines Limited (Agnico Eagle), 2018. *Ore Storage Pad 2 (OP2) Design Report and Drawings 6515-E-132-013-105-REP-033.* Submitted to Nunavut Water Board May 2018.

Agnico Eagle, 2020b. *Roads Management Plan, Version 8, Agnico Eagle Mines Ltd (6513-MPS-03)*

Agnico Eagle, 2020. *Ore Storage Pad 2 (Stage 1) Construction Summary (As-Built) Report, Agnico Eagle Mines Ltd (6513-687-230-REP-001)*

Agnico Eagle, 2022a. *Ore Storage Pad 2 (OP2) Stage 2 Design Report and Drawings 65-530-230-REP-001.* Submitted to Nunavut Water Board February 2022.

Agnico Eagle, 2022b. *Meliadine Mine Water Management Plan, Version 12, Agnico Eagle Mines Ltd (6513-MPS-11).*

Golder Associates Ltd (Golder), 2009. Assess of completeness of geotechnical data for feasibility design Tiriganiaq open pit. Submitted to Comaplex Minerals Corp., 26 May 2009, Doc. 008 Rev. 0

Golder, 2012a. SD 7-2 Aquatic Baseline Studies- Meliadine Gold Project, Nunavut, Canada. A Technical Report Submitted to Agnico Eagle Mines Ltd. by Golder Associates, September 19, 2012.

Golder, 2012b. SD 6-1 Permafrost Thermal Regime Baseline Studies- Meliadine Gold Project, Nunavut, Canada. A Technical Report Submitted to Agnico Eagle Mines Ltd. by Golder Associates, September 25, 2012.

INAC, 1992. Guidelines for Acid Rock Drainage Prediction in the North. Department of Indian Affairs and Northern Development, Northern Mine Environment Neutral Drainage Studies No.1, Prepared by Steffen, Robertson and Kirsten (B.C.) Inc.

MEND, 2009. Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials. MEND Report 1.20.1. Mining Environment Neutral Drainage Program, Natural Resources Canada. December 2009.

SNC-Lavalin Inc., 2019. *Meliadine Interim Closure and Reclamation Plan 2019, Final Report*.

Snowden. 2008. Tiriganiaq gold deposit, Nunavut – resource update. Submitted to Comaplex Minerals Corp. January 2008.

APPENDIX A • FIGURES

Figure 1.1 General Mine Site Location Plan

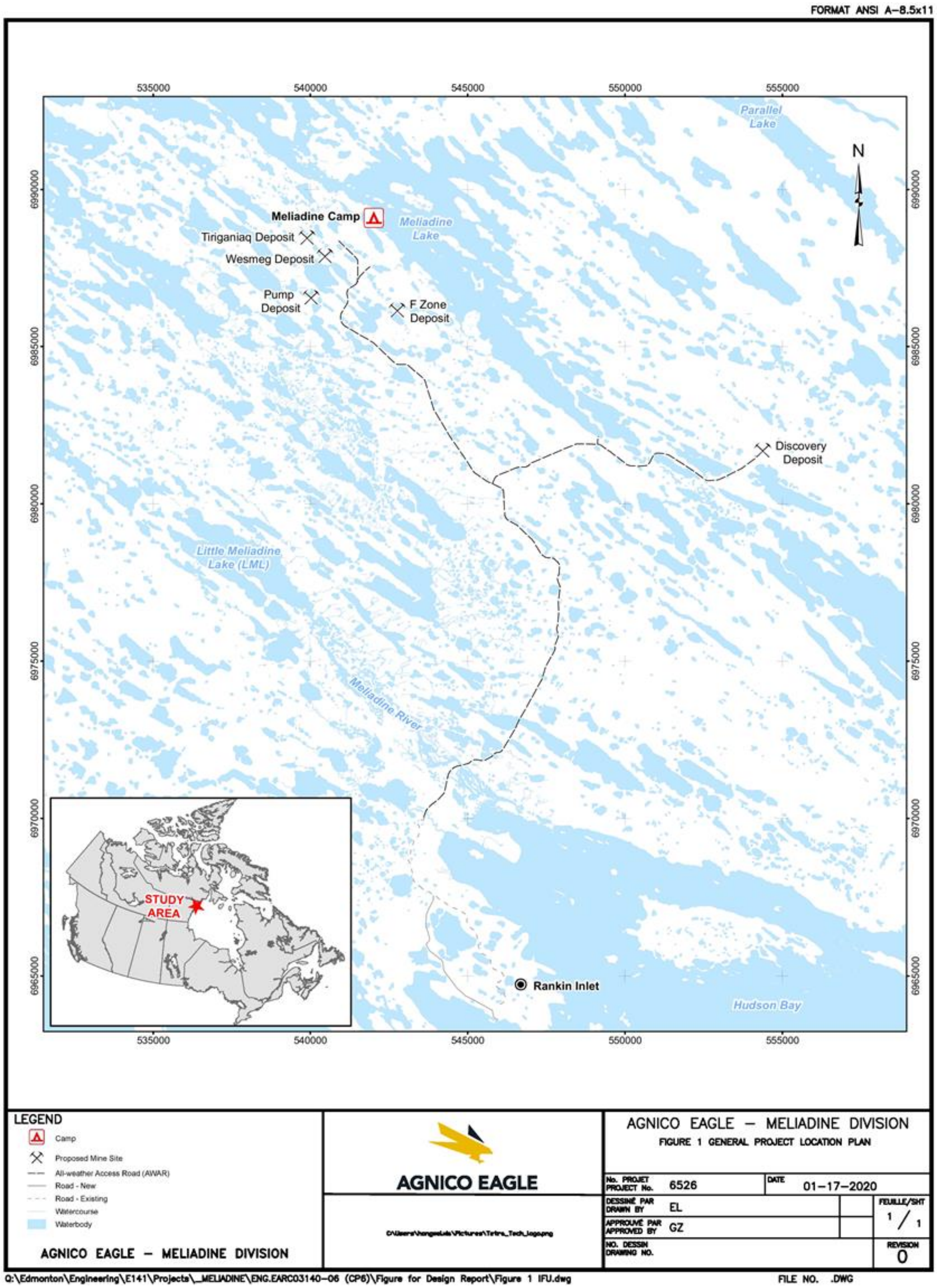


Figure 3.1 General Mine Site Location Plan

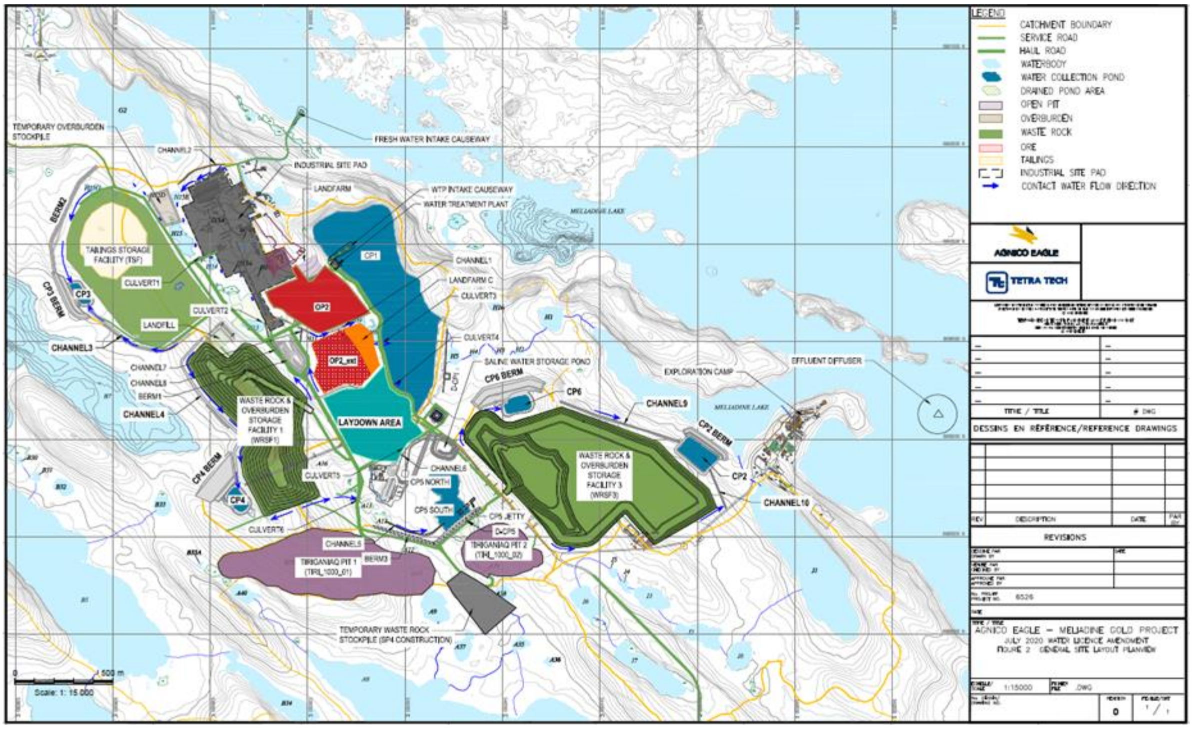
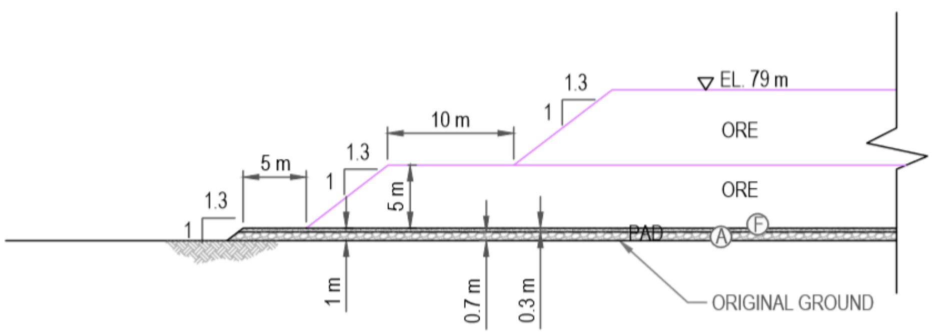


Figure 4.1 Ore Stockpile Typical Section



TYPICAL DESIGN SECTION FOR OP2

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Figure 4.2 OP2 Stage 1 As-Built

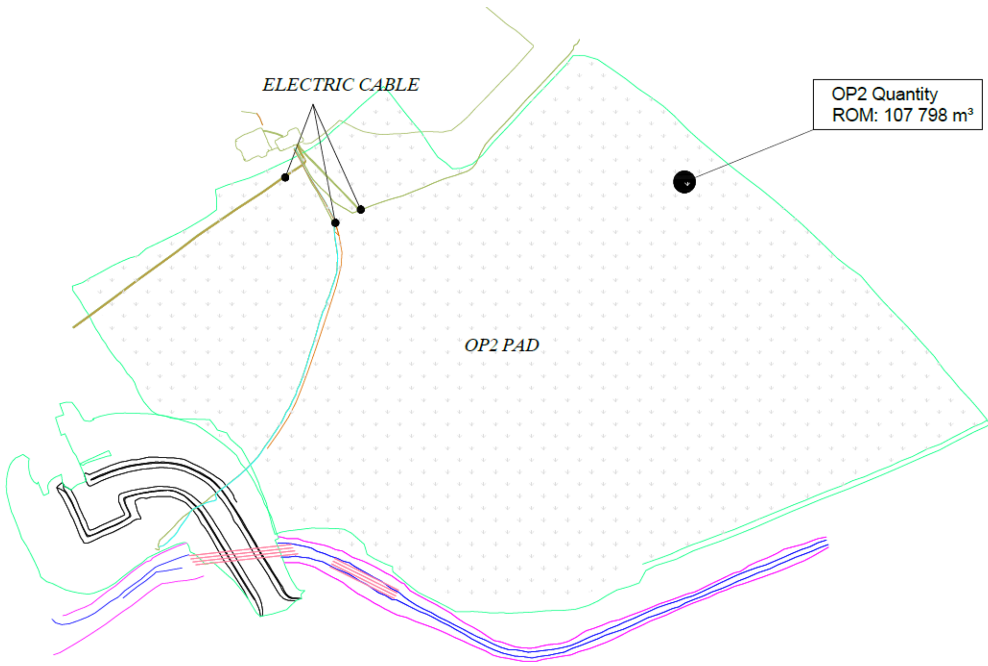
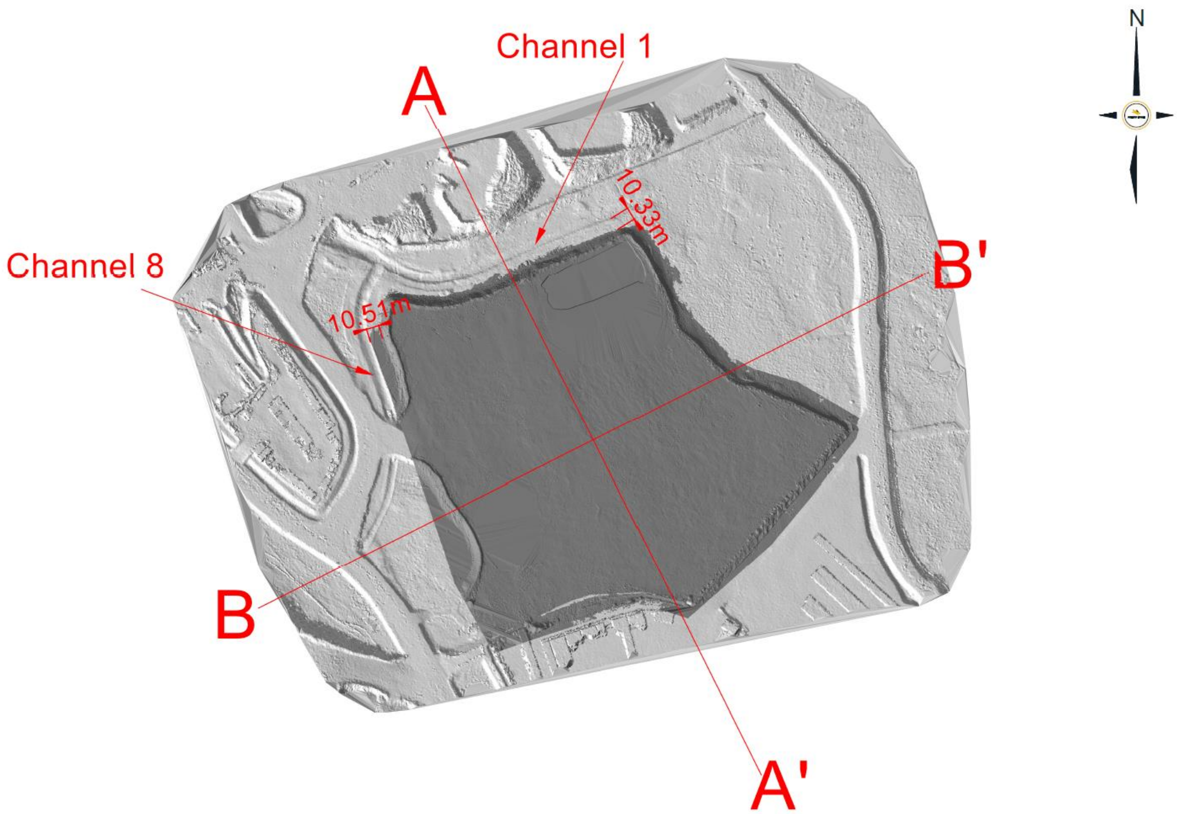
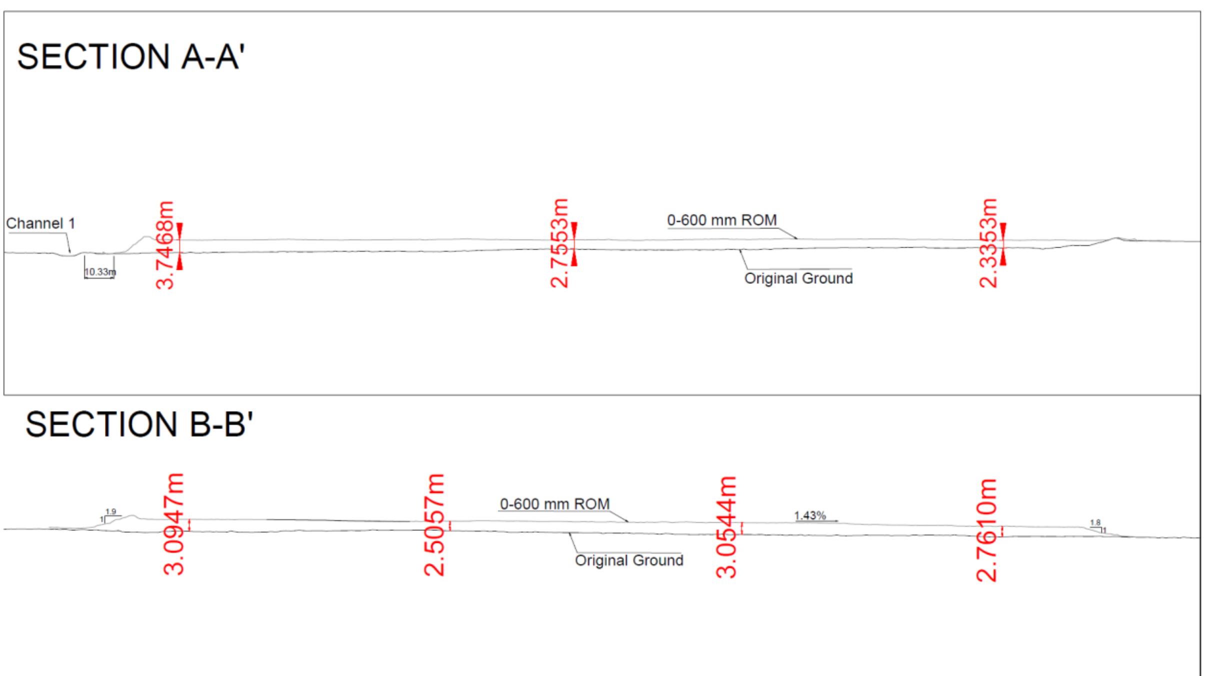


Figure 4.3 OP2 Stage 2 Preliminary As-Built





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