APPENDIX 6 2023 ANNUAL GEOTECHNICAL INSPECTION REPORT

2023 Annual Geotechnical Inspection
Meliadine Gold Mine, Nunavut, Canada

PRESENTED TO

Agnico Eagle Mines Limited

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EXECUTIVE SUMMARY

Agnico Eagle Mines Limited (Agnico Eagle) retained Tetra Tech Canada Inc. (Tetra Tech) to conduct the 2023 annual geotechnical inspection for the Meliadine Gold Mine, located approximately 25 km north of Rankin Inlet, in the Kivalliq Region of Nunavut. The Meliadine Gold Mine consists of underground development and open pits to extract gold ore.

The geotechnical inspection is pursuant to the requirements of the Type A Water Licence Permit No.2AM-MEL1631 (Nunavut Water Board 2020). Under Part I, Item 14 (Page 23) and Schedule I, Item 1 (Page 40) of the Water Licence, Agnico Eagle is required to undertake an annual geotechnical inspection of its facilities between the months of July and September each year. The inspection occurred from September 7, 2023 to September 12, 2023 and was conducted by Hongwei Xia of Tetra Tech, a Geotechnical Engineer, holding professional registration in Nunavut, and Fai Ndofor of Tetra Tech, an Engineering Geologist, holding professional registration in Nunavut. A summary of the findings was presented to Agnico Eagle in a close out meeting on September 26, 2023.

The inspection included water collection ponds (CP), dikes (D-CP), saline water collection ponds, roads, landfills, landfarms, and other geotechnical structures. The following is a summary of the general observations made during the site inspection.

CP1 and Dike D-CP1

CP1, Dike D-CP1, downstream seepage collection ditches, sump, and Jetty1 are performing adequately. Some erosion was observed on the upstream shell of Dike D-CP1 and occurred during a high-water event between 2019 and 2020. No noticeable change on the upstream shell erosion has been observed since 2021. Ongoing surveying of the erosion should be performed to determine if remedial measures are required. Ponding water was observed at various locations along the downstream collection ditches. Consideration should be given to regrade the channel base to maintain a positive gradient and promote water flow at the observed ponding areas.

Additional rockfill should be placed to cover the east shoulder of the collection ditches to reduce permafrost degradation. It is recommended to closely monitor the ground temperatures at the HGTC-5 location to assess the impact of the pipeline crossing at Station 1+125 on the thermal performance of Dike D-CP1.

CP2 and its Associated Infrastructure

CP2 and its associated infrastructure (Channel 9, Channel 10, and CP2 Thermal Berm) were constructed in Q1 of 2022 and is performing adequately. Minor ponding was observed against the thermal berm. Additional rockfill cover should be placed to prevent ponding in the area. It is recommended that a thermal cover be placed in the areas between CP2, Channel 9, and Channel 10 to prevent disturbance and permafrost degradation of the native ground.

CP3 and its Associated Infrastructure

CP3 and its associated infrastructure (CP3 Thermal Berm, Berm 2, and the reconstructed Channel 3) are performing adequately. The geotechnical performance should continue to be monitored.

CP4 and its Associated Infrastructure

CP4 and its associated infrastructure (CP4 Thermal Berm and Channel 4) are performing adequately. The original ground along the east and north sides of CP4 and the area between CP4 and WRSF1 has been covered with additional rockfill for thermal protection. The pond slopes appear to be stable.

There is some surface erosion at the end of Channel 4 Berm. It is likely that there was deep drifted snow, and the erosion was caused by the runoff from the snow melting. Overall, Channel 4 is performing adequately as designed. No geotechnical concern was noted on the CP4 Thermal Berm and the original ground below the CP4 Thermal Berm is in a frozen condition.

CP5 and Dike D-CP5

CP5 and Dike D-CP5 are performing adequately. A water diversion ditch was excavated around the jetty to divert water from localized areas towards the jetty. Minor slope erosion was observed at various locations along the ditch due to the excavation. The performance of the jetty is not expected to be impacted by the ditch.

CP6 and its Associated Infrastructure

CP6 and its associated infrastructure (CP6 Thermal Berm) are performing adequately. The run-of-mine cover placed in previous years between WRSF3 and Pond CP6 to provide thermal and erosion protection appeared to be performing adequately. It is recommended that the small ponding area between the CP6 access ramp and CP6 Thermal Berm be filled with coarse rockfill to avoid ponding in the area. It is recommended to further extend the CP6 access ramp to the base of CP6 as per design to provide operations with safe access for dewatering.

Saline Ponds

Saline Ponds (SP) 1 and 3 are performing adequately. The settlement and cracking observed around SP 1 should continue to be monitored. The safety berms located at the bottom of the access ramp into SP1 and the arrangement of the pipelines along the ramp should be improved for safety and easy access. SP4 was drained and incorporated into the Tiriganiaq 01 Open Pit in 2023, thus, it no longer exists as a saline storage pond.

Diversion Channels and Berms

The diversion channels and berms are performing adequately. The recommendations are outlined below:

- It is recommended to continue to monitor subsidence at the base of Channels 1, 2, and 7 to determine if they impact the channels' performance.
- It is recommended that the northern half of Channel 5 be reconstructed to the design grade and elevation. If practical, the base of the channel should be over excavated and backfilled with rockfill material to accommodate potential thaw subsidence after the reconstruction. The base of the southern half of the channel should be regraded to promote water flow and reduce further subsidence due to the water ponding.
- Minor erosion was observed during the inspection of Berm 3 as its cover materials are susceptible to erosion. Erosion of the slopes should be monitored, and consideration should be given to placing coarser material on Berm 3 to reduce the potential for erosion if it becomes substantial.

Tailings Storage Facility

The Tailings Storage Facility (TSF) appeared to be functioning well at the time of the inspection. Ground temperatures should continue to be monitored in the TSF and its foundation using the ground temperature cables presently installed. The TSF perimeter rockfill berm appears to be functioning well from a geotechnical perspective with no signs of distress. Cracking and erosion of the tailings along the toe of the exposed north slope was observed. A rockfill berm was constructed to reduce the erosion. The performance of the rockfill berm along the north slope of Cell 1 should be monitored to access the performance of this mitigation measure.

Some localised erosion was observed at some locations on the top of Cell 1 between the tailings and the perimeter rockfill cover zone following an intense rainfall event during the June 2023 Meliadine Independent Review Board

visit. To avoid further erosion and the potential for tailings to be transported into the perimeter rockfill cover zone, it was recommended by MIRB and Tetra Tech that tailings should be placed higher than the perimeter rockfill to avoid the formation of depression zones, and the top surface of each perimeter rockfill layer be sloped gently (2%) to the outside to promote runoff flow away from the tailings and rockfill interface. It is understood that Agnico Eagle has already implemented the recommendations in the current lift. Tetra Tech encourages that this construction protocol be followed during the construction of subsequent lifts.

WRSF1

Material placement on the pile is generally executed according to the WRSF1 design. No significant geotechnical issues were observed. Till and rock mixed free dumps were observed on the 97 m bench. It is recommended that the free dumps be spread and compacted to avoid settlement and cracking. New waste material should be placed as per the construction protocol established in the Operation Management and Surveillance (OMS) manual. The performance of the facility should continue to be monitored on an ongoing basis as outlined in the OMS Manual.

WRSF3

In general, WRSF3 is performing well with no significant geotechnical issues noted during the inspection. The following recommendation was made for improvement.

- The area of depression and cracks observed on Bench 72 m be filled with waste rock and traffic compaction applied.
- The ponded water observed at the southwest corner of WRSF3 should be pumped out regularly during the mine operation or consideration be given to construct a channel and sump if possible within the lease boundary to divert/collect runoff water and prevent any potential for permafrost degradation at the WRSF3 toe.
- Waste material placement should continue to follow the construction protocol established in the OMS manual.
- The performance of WRSF3 should continue to be monitored on an ongoing basis as outlined in the OMS Manual.

Site Roads

The site mine roads and culverts were generally well-maintained and in good geotechnical condition at the time of the inspection. No specific recommendations for geotechnical improvements are provided.

Landfill

It is recommended that the landfill be covered in stages with intermediate cover to avoid blowing debris.

All-weather Access Road

In general, the All-weather Access Road appeared to be in good geotechnical condition at the time of the inspection. It was reported by site personnel that the road performed well during the 2023 freshet, although ponded water was observed in several locations on the side slope of the road. Additional culverts and raising some sections of the road surface would reduce the risk of the road overtopping during significant freshet events. It was noticed that most of the culverts do not have signs for their easy identification and some culverts were mis-labeled, it is recommended that appropriate signs be installed for each culvert.

Itivia Bypass Road

The Itivia Bypass Road was in good condition at the time of the site inspection. A low area of the road northwest of Culvert C10 flooded during the 2019 freshet. The area was raised in late 2019, but the road was overtopped again in the 2020 freshet. This section of road performed better during the 2022 and 2023 freshets, but it is recommended that additional culverts or other measures be implemented to prevent this from occurring in the future. It was noticed that most of the culverts do not have a sign for their easy identification and some culverts were mis-labeled, it is recommended that appropriate signs be installed for each culvert.

Ponded water was noticed in the Itivia fuel farm. Water in the facility should be emptied as soon as practical to reduce the risk of erosion.

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ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
Agnico Eagle	Agnico Eagle Mines Limited
ATV	All-terrain Vehicle
AWAR	All-weather Access Road
CDA	Canadian Dam Association
CP	Collection Pond
EWTP	Effluent Water Treatment Plant
GTC	Ground Temperature Cable
HPDE	High Density Polyethlyene
IDF	Inflow Design Flood
km	Kilometers
masl	Metres Above Sea Level
mbgs	Metres below ground surface
MIRB	Meliadine Independent Review Board
OMS	Operation Management and Surveillance
ppt	Parts Per Thousand
SP	Saline Pond
SEPT	Saline Effluent Treatment Plant
SWTP	Saline Water Treatment Plant
Tetra Tech	Tetra Tech Canada Inc.
TSF	Tailings Storage Facility
TSS	Total Suspended Solids
WRSF	Waste Rock Storage Facility

CONFIDENTIALITY STATEMENT

1.0 INTRODUCTION

1.1 General

Tetra Tech Canada Inc. (Tetra Tech) was retained by Agnico Eagle Mines Limited (Agnico Eagle) to conduct the 2023 annual geotechnical inspection for the Meliadine Gold Mine (the Mine), located approximately 25 km north of Rankin Inlet, in the Kivalliq Region of Nunavut. The Meliadine Gold Mine involves one underground development (Tiriganiaq underground (TIRI)) and two open pits (TIRI#1 and TIRI#2) to extract gold ore.

The geotechnical inspection is pursuant to the requirements of the Type A Water Licence Permit No.2AM-MEL1631 (Nunavut Water Board 2020). Under Part I, Item 14 (Page 23) and Schedule I, Item 1 (Page 40) of the Water Licence, Agnico Eagle is required to undertake an annual geotechnical inspection of its facilities between the months of July and September each year. The inspection occurred from September 7, 2023 to September 12, 2023 and was conducted by Hongwei Xia of Tetra Tech, a Geotechnical Engineer, holding professional registration in Nunavut, and Fai Ndofor of Tetra Tech, an Engineering Geologist, holding professional registration in Nunavut. Prempeh Owusu, an on-site geotechnical engineer at the Mine accompanied and guided the Tetra Tech staff throughout the inspection and provided invaluable information which aided in determining the performance of the structures.

The following structures were inspected:

Main Site Including:

- Water collection ponds CP1, CP2, CP3, CP4, CP5, and CP6 and their associated dikes (D-CP1 and D-CP5), berms, channels, and jetties.
- Waste Rock Storage Facilities WRSF1 and WRSF3.
- Tailings Storage Facility (TSF).
- Saline Pond 1 (SP1) and Saline Pond 3 (SP3).

Site Roads:

- Main site pad area roads, including culverts.
- Tiriganiaq Esker access road.
- Wesmeg access road, Wesmeg Borrow, and vent raise.
- Magazine storage access road.
- Main site water intake access road.
- Emulsion plant pad access road.
- Access roads to water collection ponds.

Pads:

- Main camp pad.
- Industrial pad.
- East ventilation raise pad.
- Cyanide storage pad.
- Effluent water treatment plant (EWTP) pad.
- Explosives (ANFO plant) pad and magazine storage.
- Emulsion plant pad.
- Crusher ramp and MSE walls.
- Paste plant ramp.
- Ore and waste rock storage areas.
- Landfarm.
- Operations landfills.
- Underground Portals No. 1 and No. 2.
- Industrial fuel storage and mine site fuel storage.

Exploration camp site including:

- Site pad and diffuser access road.
- Genset storage area.
- Freshwater intake.
- Access road.
- Fuel storage.

All-weather Access Road (AWAR) and culverts.

Itivia Site:

- Fuel storage.
- Bypass road and culverts.

The facilities at the main mine site and exploration camp areas are shown in Figure 1. The planned final layout of the main site, including water management structures is shown on Figure 2.

The AWAR connecting Rankin Inlet to the Project provides one-way traffic access (with pull-outs to allow vehicles to pass). The Itivia bypass road provides a bypass around Rankin Inlet from the shipping and fuel storage area in Rankin Inlet.

This report describes the geotechnical aspects of the areas inspected and presents general observations and recommendations. In addition, a description of the geophysical and permafrost conditions for the site is provided.

1.2 Scope Limitations

The scope of the inspection is limited to the observation of geotechnical aspects of each of the facilities listed above and a review of the associated instrumentation data. The inspection did not include other assessments such as structural, mechanical, or environmental.

2.0 INSPECTION METHODOLOGY

Each structure and the surrounding area were visually inspected for signs of settlement, seepage, cracking, or other signs of distress or permafrost degradation. Noteworthy observations were photographed and recorded. Available ground temperature cable (GTC) data, water levels, settlement monitoring data, routine monthly reports, and other relevant files and reports (listed in the reference section of this report) were reviewed. Where applicable, the inspection was performed consistent with the principles set out in the Canadian Dam Safety Review Guidelines by the Canadian Dam Association (CDA 2013). A description of each structure follows in the subsequent sections. Drawings of the structures and photographs are in the attached appendices.

The inspection occurred when there was no snow or ice on the lakes or land, and when surface water flows were generally low. Peak surface water flows typically occur during the freshet (May and June). During the inspection, the weather was generally clear. Daily temperatures varied between 1°C and 12°C. Water levels were normal for this period of the year.

3.0 GENERAL SITE CONDITIONS

The Mine is in the Kivalliq Region of Nunavut, near the northern border of the southern Arctic terrestrial eco-zone, and within the Arctic tundra climate region. It is located within the Churchill geological province, which forms part of the northern Canadian Shield.

The landscape is dominated by features characteristic of glaciated terrain and exposed bedrock. Primarily underlain by Precambrian granitic bedrock, the terrain consists of broadly rolling uplands and lowlands. The Mine is located at an approximate elevation of 60 metres above sea level (masl) with a maximum topographic relief of 20 m. There are numerous small lakes, wetlands, and creeks, indicating poorly drained conditions. The upland areas are generally well drained. A series of low relief ridges composed of glacial deposits, oriented northwest—southeast control the regional surface drainage pattern. Periodic ice blockages at outlets of small lakes and wetlands occur during the freshet, these can temporarily increase the downstream flood peak discharges and affect the flood characteristics. High flows are observed during the freshet, while low flows and dry stream channels are typical in late summer.

Glacial moraine deposits are predominant, ranging in thickness from veneers (less than 2 m) to blankets (2 m to 5 m) to hummocky deposits (5 m to 15 m). Glaciofluvial deposits are also present, with the most prominent being a network of sinuous eskers. Lacustrine deposits occur in association with the numerous lakes. Near the coast of Hudson Bay, finer textured marine sediments cover the ground surface.

The Mine is in a zone of continuous permafrost and has an annual average air temperature of -10.4°C, based on climate data from Rankin Inlet. Within the permafrost there are intervening taliks (areas of unfrozen ground) and

thaw bulbs induced by lakes. The permafrost in the region is "cold" (i.e., has an average annual surface temperature and zero amplitude temperature of less than -4°C). The depth of permafrost and of the active layer varies based on the proximity to lakes, soil thickness, vegetation, climate conditions, and slope direction. Based on thermal studies and measurements of ground temperatures, the depth of permafrost is generally between 285 to 430 metres below ground surface (mbgs) (Agnico Eagle 2022). The depth of the active layer ranges from about 1 mbgs in areas with shallow surficial soils, up to about 3 mbgs adjacent to the lakes (Agnico Eagle 2014b). Typical permafrost ground temperatures at the depths of zero annual amplitude are in the range of -5.9°C to -7.0°C in areas away from lakes and streams and are generally reached at a depth of 18 mbgs to 40 mbgs. The geothermal gradient ranges from 0.016°C/m to 0.02°C/m (Agnico Eagle 2022). The ground ice content in the region is expected to be between 0% and 10% (dry permafrost) based on the regional scale compilation data and the Canada Permafrost Map published by Natural Resources Canada (NRC 1993). However, areas of local higher ground ice content occur and are generally associated with low lying areas of poor drainage.

The formation of an open-talik, which penetrates through the permafrost, would be expected for lakes that exceed a critical depth and size. The presence and extent of each talik is influenced by the geometry (size and shape) of the lake. As the depth and size of lakes increase, the extent of the talik increase. Thermal modelling was conducted by Golder to assess the extend of lake taliks. It is anticipated that open-taliks exist below portions of Lake B4, Lake B5, Lake B7, Lake A6, Lake A8, Lake CH6, and Lake D4 (Agnico Eagle 2022).

The salinity of groundwater also influences the temperature at which the groundwater freezes. Testing has indicated that the salinity of the groundwater in the Mine area generally increases with depth. Test results on two deep groundwater samples collected below the base of the permafrost as part of the baseline study indicated salinity level leads to a freezing point depression of about 3.2°C (Agnico Eagle 2014a, Volume 7, Appendix 7.2-A).

4.0 OVERALL WATER AND MINE WASTE MANAGEMENT STRATEGY

The water management objectives are to minimize potential impacts to the quantity and quality of surface water at the Mine and surrounding waterbodies. Water management structures (culverts, sumps, pipelines, water diversion channels and water retention dikes/berms) are utilized to contain and manage contact water from areas affected by mining activities.

Contact water originating from the mine development areas on the surface is intercepted and diverted to various containment ponds for temporary storage. All contact water is eventually conveyed to CP1, from where the water is treated for total suspended solids (TSS) at the EWTP and discharged through the diffuser located in Meliadine Lake.

Contact water from the Underground Mine is collected in underground sumps, transported to a clarification system, and subsequently recirculated for use in various underground operations. Excess underground contact water is stored in temporarily inactive underground developments, and on surface in Saline Pond 1 (SP1) and TIR Open Pit 2. Underground contact water that is not used for operations is treated at the Saline Water Treatment Plant (SWTP) or Saline Effluent Treatment Plant (SETP) for discharge.

Waste rock and overburden is trucked to the Waste Rock Storage Facilities (WRSFs) with distribution according to the operation schedule. Two WRSFs (i.e., WRSF1 and WRSF3) are constructed to accommodate the waste rock and overburden from the mine development. Closure of the WRSFs will begin when practical as part of the progressive reclamation program. The WRSFs will not be covered and vegetated, and no additional re-grading activity will be required under the closure plan.

The tailings produced from the ore process are placed in the TSF as dry stack tailings and a portion of it used underground as cemented paste backfill. The TSF consists of two cells, which will be operated one after the other to facilitate progressive closure during mine operation. A layer of overburden and waste rock will be used for the TSF closure.

The water, waste rock, overburden, and dry stack tailings were managed in the operation year 2023 as per Agnico Eagle's established management protocols.

5.0 WATER COLLECTION PONDS, DIKES, AND ASSOCIATED INFRASTRUCTURE

5.1 Introduction

This section presents a summary of the water collection ponds and associated dikes, berms, and channels constructed prior to the 2023 inspection, including:

- Collection Pond CP1 and its associated Dike (D-CP1) and Jetty 1;
- Collection Pond CP2 and its associated Berm CP2, Channel 9, and Channel 10;
- Collection Pond CP3 and its associated Berm CP3, Berm 2, and Channel 3;
- Collection Pond CP4 and its associated Berm CP4 and Channel 4;
- Collection Pond CP5 and its associated Dike D-CP5, Berm 3, Jetty 5, and Channel 5;
- Collection Pond CP6 and its associated Berm CP6; and
- SP1 and SP3.

The following subsections provide a description of the structures, visual observations, a summary of geotechnical instrumentation (if any exists), followed by recommendations.

5.2 Pond CP1 and Dike D-CP1

5.2.1 Background

Dike D-CP1 was constructed across the outlets of former Lakes H6 and H17, which combine to form Collection Pond 1 (CP1). Dike D-CP1 was constructed between October 2016 and July 2017. The location is shown in Figure 1. Site water around the industrial facility and various collection ponds is directed to CP1. Water is retained in CP1 prior to treatment of TSS and discharge to Meliadine Lake.

Dike D-CP1 is approximately 600 m long with a maximum height of 6.6 m (Tetra Tech 2017g). The CDA (2013) dam consequence classification for Dike D-CP1 is Significant (Tetra Tech 2016a). A downstream collection sump and two channels were constructed approximately 5 m downstream of the D-CP1 toe to collect surface run-off and any possible dike seepage for pump back to CP1. A thermal toe berm was constructed downstream side of D-CP1 in the Fall of 2021 to facilitate cooling the dike foundation and prevent surrounding permafrost from degradation.

Selected as-built drawings are included in Appendix B. The as-built typical section of the thermal toe berm is presented in Appendix B.

A jetty was constructed into CP1 to pump water to the EWTP in 2017.

5.2.2 Visual Observations

The inspection of CP1, D-CP1, and associated structures was conducted on September 8, 2023, and involved walking along the crests and toes of the dike and examining the condition of the slopes of the dike for visual signs of thaw deformation and instability, cracking, and permafrost degradation. A photographic record of the inspection, with annotations added where appropriate, is included in Appendix B. The photo locations are presented in Figure 3.

At the time of the inspection of D-CP1, the following general observations were made:

- Overall, the dike appeared stable, with no significant geotechnical concerns identified, similar conditions have been observed since 2019.
- Erosion that primarily occurred during a high-water event between 2019 and 2020 on the upstream slope of the dike is still present, and no noticeable change since then as shown in Photos 1 and 2, Appendix B. The erosion has removed the finer fraction of the rockfill, leaving the larger particles. The erosion scarp is approximately 1.2 m high.
- Minor cracking and small settlement were observed along portions of the upstream and downstream crest (e.g., Photos 6, Appendix B). The largest cracks were up to 3 cm wide. The cracking was first observed during the 2018 geotechnical inspection and has not shown significant change since then.
- A toe berm was constructed with run-of-mine rockfill material along the downstream side of D-CP1 in the Fall of 2021/2022 to facilitate cooling the dike foundation and prevent surrounding permafrost from degradation (Photo 7, Appendix B). The rockfill toe berm was placed between Stations 1+220 and 1+540 at an elevation of approximately 64.5 m. The rockfill toe berm is approximately 7 m wide. No deformation and cracking were observed on the rockfill toe berm during the 2023 geotechnical inspection.
- Additional rockfill was placed along the east and north perimeter of the seepage collection pond downstream of the dike in the Fall of 2021. The rockfill berm appears to be performing well (Photos 9 and 10, Appendix B) with no deformation and cracking observed during the 2023 geotechnical inspection.
- The water level in the downstream collection pond was low (Photos 9 and10, Appendix B) at the time of the site visit. It is understood that water from the collection pond was being pumped into CP1 during the freshet period and will be pumped out as required.
- Ponding water was observed at some locations along the downstream collection channels (Photos 8 and 11) The ponding water was in localized depressions resulting from thaw settlement at the base of the channels.
- The native ground between Dike D-CP1 and the downstream collection channels was covered with rockfill to prevent permafrost degradation. Thaw subsidence and cracking has occurred in the native ground along the east shoulder of the collection channels downstream of Dike D-CP1 as shown in Photos 11, 12, and 13 (Appendix B). It is understood that Agnico Eagle is planning to cover the east shoulder of the collection channels with rockfill in the winter 2023/2024 to reduce permafrost degradation in this area. Tetra Tech supports this execution plan.
- No seepage was observed from the downstream toe.

- Jetty 1 was in good condition except for erosion on the southeast corner of the slope. The erosion coincides with historic high-water levels, as show in Photo 18. The erosion is like that observed in previous years. The fines are being washed out leaving the coarse material. The erosion is under cutting the fill up to 0.3 m in the southeast corner and may result in a slump of the surface fill in the area. The pump house is well back from the area; however, the cables in the area should be pulled back from the slope crest. Except for slope erosion, no other permafrost degradation was observed during the 2023 annual geotechnical inspection.

Agnico Eagle's engineering and environment team conduct weekly visual geotechnical inspections of the dike, pond, and channel. Monthly inspection reports include an assessment of ground temperatures, observations of cracking and settlement, pond elevation, pumping activities, and photographs. No seepage was observed by Agnico Eagle's engineering and environmental team at Dike D-CP1 throughout the year. The observations made by Agnico Eagle's staff were consistent with the observations during the 2023 annual inspection.

5.2.3 Instrumentation and Monitoring

Horizontal and vertical GTCs were installed in D-CP1 between March and July 2017, as shown in Appendix B. Five horizontal GTCs (HGTC-1 to 5) were installed in D-CP1 above the liner parallel to the key trench and five vertical GTCs (VGTC-1 to 5) installed upstream and downstream of the key trench.

The key trench temperatures are warmest in late fall (October and November) and coldest in late spring (May and June). Average key trench temperatures are summarized in Table 5-1.

The following observations were made regarding the instrumentation readings collected for D-CP1:

- Overall, there has been a warming trend of approximately 0.5°C/year observed from 2019 to 2023, except the cooling trend (average -0.3°C) observed between 2021 and 2022. The average temperature increased by 0.58 °C between May 25, 2022 and June 25, 2023. The decrease in temperature between 2021 and 2022 could be attributed to colder than average air temperatures with a below average snowpack observed at the site during the 2021/2022 winter season. The temperatures within the key trench have remained below -2°C throughout the year.

- GTC data was plotted against the Thermal Performance Evaluation Model of D-CP1. The model was created in the summer of 2020 and takes a section of the dike where VGTC-03, VGTC-04, and HGTC-04 are located. The actual temperature readings from these GTCs show a slight decrease in temperatures at the key trench of Dike D-CP1 between 2021 to 2023 compared to the predicted warming trend in the foundation. The plots illustrating actual versus modelled temperatures of D-CP1 are in Appendix B.

- Bead 11 of HGTC-1 warmed to 1.7°C in October 2020. The temperature dropped to -1.6°C in November 2020, but still warmer than expected. It recovered the expected temperature range in December 2020. The temperature rise was investigated by Agnico Eagle at the time of occurrence. There was no ponded water near the location and no sign of infiltration. A manual reading was taken in November 27, 2023, it was concluded that there might be an issue with the extension cable. Agnico Eagle is planning to replace the extension cable in the summer of 2024.

- Six settlement survey monuments were installed over the liner crest in the central area of the dike as shown in Appendix B. Survey monitoring points M-1 to M-6 indicate a range of total vertical downward displacement between 33 mm and 92 mm since they were installed on September 19, 2017. Most of the movement was in the first year after construction. Settlement recorded at point M-6 (Station 1+510) indicated a settlement of 49 mm between September 2021 and January 2022, with the other monitoring points showing less settlement between 9 mm to 15 mm. There were no visible signs of deformation during the inspection around point M-6. Average settlement between October 2021 and October 2022 is 14 mm. The unusual readings at M-6 were likely caused by system errors. Agnico Eagle installed a new survey control point and updated survey procedures late 2022. There is “noise” in the readings which is likely due to the limitations of the equipment. The dike operating water levels were based on a settlement of 120 mm; the measured settlement has been less than this to date.

- A drone survey was carried out on September 5, 2023 to evaluate the deformation of the dike, as well as the erosion on the upstream slope. The results of the drone survey are shown in Appendix B, including a plan and cross sections that illustrate the difference in elevations between the original 2017 as-built survey and drone survey elevations. The difference in the cross sections show the biggest variations in the sharp edges of the dike (crest and slope breaks). This may be partially due to the sampling rate, limitation of survey equipment, and modelling of the drone survey. The cross sections indicate that there is a sufficient cover of Run-of-Mine rockfill over top of the Esker Sand and Gravel. The horizontal width of the Run-of-Mine Rockfill is greater than 2 m. The cross sections show approximately 0.10 m to 0.15 m of settlement in the crush material above the liner crest location near Station 1+510 (Settlement Point M-6) where the significant liner crest settlement was measured.

Table 5-1: D-CP1 Ground Temperature Summary

Cable	Average June 5, 2019 (°C)	Average June 13, 2020 (°C)	Average June 1, 2021 (°C)	Average June 25, 2022 (°C)	Average June 25, 2023 (°C)	Difference June 2022 to June 2023 (C°)	Average Oct 31, 2019 (°C)	Average Oct 29, 2020 (°C)	Average Oct 27, 2021 (°C)	Average Oct. 29, 2022 (°C)	Average Oct. 27, 2023 (°C)	Difference Oct. 2022 to Oct. 2023 (C°)
HGTC-1	-8.4	-7.9	-8.2	-7.6	-7.4	0.2	-4.5	-3.6	-4.2	-3.7	-3.3	0.4
HGTC-2	-9.2	-8.0	-7.8	-7.2	-7.1	0.1	-5.1	-4.8	-4.4	-4.2	-4.1	0.1
HGTC-3	-8.6	-7.5	-7.6	-7.5	-7.2	0.3	-5.6	-5.2	-5.1	-4.9	-4.9	0
HGTC-4	-8.9	-8.1	-7.9	-7.8	-7.5	0.5	-6.0	-5.6	-5.3	-5.0	-5.0	0
HGTC-5	-8.7	-8.2	-6.6	-7.2	-7.2	0	-3.4	-3.7	-3.9	-3.7	-3.5	0.2
VGTC-1	-7.2	-6.3	-5.8	-7.1	-6.9	0.2	-6.4	-5.4	-5.1	-5.0	-4.8	0.2
VGTC-2	-6.2	-5.6	-5.1	-5.5	-5.4	0.1	-6.1	-5.5	-4.8	-4.7	-4.7	0
VGTC-3	-7.3	-6.3	-6.2	-7.3	-7.0	0.3	-7.0	-6.0	-5.5	-5.5	-5.7	-0.2
VGTC-4	-6.6	-8.1	-5.8	-6.0	-6.0	0	-6.7	-6.3	-5.4	-5.4	-5.5	-0.1
VGTC-5	-10.3	-9.7	-9.7	-7.0	-6.9	0.1	-2.1	-2.1	-2.3	-2.1	-2.1	0

5.2.4 Water Management

CP1 receives inputs from the surrounding area as well as water pumped from other areas of the site (e.g., CP3, CP4, CP5, CP6, and other sources). The design operating levels are specified in the Operation Management and Surveillance (OMS) manual (Agnico Eagle 2023) as listed in Table 5-2.

Table 5-2: Design Water Elevations for D-CP1 Operation

Situation	Maximum Operating Water Level (m)	Requirement
End of October each year	63.7	This level is required to provide sufficient storage for: ▪ 661,500 m^3 for the runoff water from an Inflow Design Flood (IDF) event for the entire site (a total maximum catchment area of 3.675 km^2 during the design life of D-CP1); ▪ 38,800 m^3 for the treated sewage from late October to early June (8 months); and ▪ 31,000 m^3 for the treated water pumped from the SWTP to CP1 from late October to early June (8 months).
Before each spring freshet	64.1	This level is required to provide sufficient storage for: ▪ 661,500 m^3 for the runoff water from an IDF event for the entire site.
During non-IDF spring freshet or short-term after each spring freshet	66.2	This water elevation is to allow CP1 to have a storage capacity of 119,000 m^3 to store the runoff water from a 1/1,000 24-hour extreme rainfall event (77 mm precipitation) for the CP1 maximum catchment area of 1.545 km^2, without exceeding the design D-CP1 maximum water elevation of 66.6 m (under the IDF).
Short-term water elevation under the IDF	66.6	This is the design maximum water elevation for D-CP1 for a short period. The water elevation should be drawn down by pumping from CP1 to the EWTP and then discharging the treated water to Meliadine Lake.

The water level in CP1 was high over the 2019/2020 winter and drawn down during and following the 2020 freshet. The water level was within the normal operating range since the summer of 2020. The maximum water level in 2023 was 64.76 m on June 10, 2023. The water level had been drawn down below the freeze up water level target of 63.5 m at the time of inspection. The measured water levels in CP1 are presented in Appendix B.

5.2.5 Summary and Recommendations

CP1, Dike D-CP1, downstream seepage collection ditches and sump, and Jetty 1 were generally performing well at the time of the inspection. The following recommendations are provided:

- The upstream slope of Dike D-CP1 experienced erosion in 2020 during a period of high-water levels. Surveys indicate there is 2 m of Run-of-Mine protecting the Esker Sand and Gravel in the upstream shell of the dike. As recommended in the previous years, the performance of the upstream slope should continue to be monitored.
- Consideration could be given to regrade the channel base to maintain a positive gradient to promote the water flow at observed ponding areas. Repair the ground subsidence along the crest of the seepage collection channel to maintain functionality of the channel.
- Additional rockfill should be placed to cover the east shoulder of the collection channels to reduce the permafrost degradation in this area.

- It is recommended to closely monitor the ground temperatures at HGTC-5 location to assess the impact of the pipeline crossing at Station 1+125 on the thermal performance of Dike D-CP1.

5.3 Pond CP2, Associated Channels, and Berms

5.3.1 Background

Collection Pond CP2 and its associated infrastructure (i.e., CP2 Thermal Berm, Channel 9, Channel 10, Channel 9 Berm, and Channel 10 Berm), collects and temporarily stores runoff water from the WRSF3 catchment area. CP2 was created by excavating a large depression approximately 13 m deep into overburden and bedrock. CP2 Thermal Berm, located downstream of CP2, provides a thermal protection to maintain the underlying permafrost downstream of CP2. Channel 9, Channel 10, and their associated berms collect and divert the runoff water from the WRSF3 catchment area. Channel 9 Berm is intended to provide sufficient freeboard to Channel 9 in a localized depression along the channel alignment. Channel 10 Berm provides diversion of runoff into Channel 10 that could otherwise potentially bypass the invert location of Channel 10.

The design of the collection pond, channels, and berms is based on the following criteria and key considerations:

- CP2 was designed to store 3/7 days of 1 in 100 wet precipitation year freshet (171 mm and assume that freshet occurs in seven days and pumping from the facility begins three days after freshet begins).
- The maximum operating water elevation in CP2 under IDF is set at Elevation 52.0 m which is 2.0 m lower than the original outlet elevation of the collection pond area.
- CP2 Thermal Berm, is designed to preserve permafrost in the original ground below the centre of the berms, which will minimize the potential seepage through its foundation into the downstream receiving environment (i.e., Meliadine Lake).
- The water collected in CP2 will be actively pumped into CP1 during the open water season. The intent is that CP2 will be nearly empty most of the time, except for several early days during the annual spring freshet for preparing the pump system or during an extreme rainfall event.
- Channel 9 was designed to pass the design inflow during an extreme intensity flow under a 5-minute 1 in 100 return rainfall of 5 mm. Channel 9 Berm designed along Channel 9 to provide sufficient freeboard and to prevent the water overflowing the channel under the design IDF or other unexpected extreme conditions.
- Channel 10 was designed to pass the design inflow during an extreme intensity flow under a 5-minute 1 in 100 return rainfall of 5 mm. Channel 10 Berm positioned near the beginning of Channel 10 to divert runoff from bypassing the end of Channel 10 under the design IDF or other unexpected extreme conditions. The channel was constructed approximately 25 m shorter than design to prevent relocating a partially buried water pipeline and electrical cable in the area. A diversion berm was constructed to ensure runoff does not flow around the end of the modified channel.

CP2 and its associated infrastructure was constructed from February 2022 to May 2022. The as-built drawings for CP2 and its associated infrastructure are included in Appendix C.

5.3.2 Visual Observations

The inspection involved walking along the crests of CP2, CP2 Thermal Berm, Channel 9, Channel 10, and associated berms to examine the structures for visual signs of deformation and instability, cracking, and permafrost degradation. Photos can be found in Appendix C. The photo locations are presented in Figure 4.

5.3.2.1 CP2 and CP2 Thermal Berm

At the time of the inspection the water level in CP2 was within the bedrock zone. The slopes of the pond are a combination of overburden and bedrock. The overburden is covered with a layer of rockfill for erosion and thermal protection. The bedrock slopes are blocky with some fractured rock (Photo 1, Appendix C). No obvious signs of instability were observed in the bedrock or overburden slopes. Minor water flow was observed entering CP2 from the channel outlets as per its normal operational condition (Photos 2 and 3, Appendix C).

CP2 Thermal Berm was constructed of overburden till and rockfill obtained from the excavation of CP2 and the open pit from mine operations. The till was partially frozen when it was placed in the berm. The till was covered with a layer of rockfill also obtained from the excavation. The crest of CP2 Thermal Berm appeared to be in good conditions with signs of minor settlement and cracking observed at a few locations at the time of the inspection (Photos 4 and 5, Appendix C). The minor settlement observed appeared not to impact the function of the berm which is aimed to preserve the permafrost underneath the original ground surface.

The slopes of CP2 Thermal Berm were in good condition with some deformations observed at the east end of the berm's downstream side (Photos 6 and 7, Appendix C). The deformation appeared to have been caused by the disturbance of the original ground during construction. The deformed area appeared not to be impacting the slope performance and overall design intent of the thermal berm.

Surface ponding was observed against the upstream toe of CP2 Thermal Berm where the protective layer of rockfill was not placed as shown in Photo 8 in Appendix C. Tetra Tech did not observe noticeable sign of permafrost degradation around CP2 Thermal Berm.

There are several areas of minor settlement at the top of the pond slopes where the rockfill cover has been placed. The settlement resulted from the initial ground disturbance during the construction of CP2. The settlement areas appear not to be impacting the slope's performance.

5.3.2.2 Channel 9, Channel 10, and Associated Berms

Channel 9 and Associated Berm

Channel 9 and its associated berm were inspected by walking along portions of its length. Overall, Channel 9 and its associated berm are performing well with no noticeable geotechnical concerns identified along the channel at the time of the inspection (Photo 9 and Photo 10, Appendix C). Several cracks and thaw subsidence areas were observed along the southern shoulder of Channel 9 (Photos 11 and 12, Appendix C). The cracks and thaw subsidence are an indication of thermal degradation and were likely caused by construction disturbance and surface runoff flow over the area between WRSF3 and Channel 9.

Channel 10 and Associated Berm

Channel 10 was inspected by walking along portions of its length. Overall, Channel 10 and its associated berm are performing well with no noticeable geotechnical concerns identified along the channel at the time of the inspection (Photo 13, Appendix C). Several minor areas of thaw subsidence were observed along the upstream slope of the new channel and the native ground above the upstream crest. Rutting from traffic and an area of depression caused by construction disturbance on the native ground were observed between the channel and WRSF3. Water was trapped in these areas (Photos 14, 15, and 16, Appendix C).

5.3.3 Instrumentation and Monitoring

Three GTCs (GTC-01, GTC-02, and GTC-03) were installed in CP2 Thermal Berm to measure the active layer depth in the berm and subgrade ground temperatures (Photo 17, Appendix C). The ground temperatures are shown in Appendix C. The measured thaw depth in August 2023 is about 1.7 m at all three GTC locations. The measured ground temperatures at the original ground surface ranges from -7.9°C to -8.3°C on August 25, 2023.

5.3.4 Water Management

Water in CP2 was pumped out sporadically throughout the open water season through a dedicated pumping system. The water levels in CP2 between late-May 2023 and mid-September 2023 varied between Elevations 44.8 m and 47.3 m, which are well below the designed maximum operating water elevation in CP2 under IDF (Elevation 52.0 m). The measured water levels in CP2 are presented in Appendix C.

CP2 was near “dry” condition (Photos 1, 2, and 3, Appendix C) with the level at about 44.8 m at the time of inspection. At this level the depth of water in CP2 is approximately 0.5 m with a volume of approximately 1,400 m^3. The remaining capacity in the pond to the maximum operating level of 52.0 m is 46,760 m^3.

The inflow for the pond was based on 3/7 of the 1:100 wet precipitation year freshet over the catchment area of 0.43 km^2 which equates to 42,000 m^3 of water. It is understood that the pond will be empty prior to freeze up.

5.3.5 Summary and Recommendations

CP2 and its associated infrastructure are performing adequately based on the 2023 annual inspection and measured data. There are several minor items noted and Tetra Tech recommends:

- The geotechnical performance of CP2 and its associated infrastructure should continue to be monitored as a part of regular inspections.
- The area against the upstream side of CP2 Thermal Berm with ponded water observed should be covered with rockfill to prevent future ponding and thermal degradation of the native ground between the thermal berm and crest of CP2.
- The area between CP2, Channel 9, Channel 10, and WRSF3 should be covered with rockfill as thermal cover to prevent permafrost degradation of the native ground.

5.4 Pond CP3, Associated Channels, and Berms

5.4.1 Background

Collection Pond CP3 and its associated infrastructure (i.e., CP3 Thermal Berm, Channel 3, and Berm 2), collects and temporarily stores runoff water from the dry stack TSF. CP3 was created by excavating a large depression approximately 11 m deep in overburden and bedrock. CP3 Thermal Berm provides a thermal protection to maintain the underlying permafrost downstream of CP3. Channel 3 collects and diverts the runoff water from the TSF catchment areas. Berm 2 prevents non-contact water from flowing through the TSF into CP3.

The design of the collection pond, channels, and berms is based on the following criteria and key considerations:

- CP3 was designed to store 3/7 days of 1 in 100 wet precipitation year freshet (171 mm and assume that freshet occurs in seven days and pumping from the facility begins three days after freshet begins).

- The maximum operating water elevation in CP3 under IDF is set at Elevation 63.0 m which is 2.0 m lower than the original outlet elevation of the collection pond area.
- CP3 Thermal Berm is designed to preserve permafrost in the original ground below the centre of the berms, which will minimize the potential seepage through its foundation into the downstream receiving environment (i.e., Lake B7).
- The water collected in CP3 will be actively pumped to former Lake H13, which flows into CP1 during the open water season via various culverts and Channel 1. The intent is that CP3 will be nearly empty most of the time, except for several early days during the annual spring freshet for preparing the pump system or during an extreme rainfall event.
- Channel 3 was designed to pass the design inflow during an extreme intensity flow under a 5-minute 1 in 100 return rainfall of 5 mm. A berm incorporated into the CP3 access road was designed along Channel 3 to provide sufficient freeboard and to prevent the water overflowing the channels under the design IDF or other unexpected extreme conditions.
- Channel 3 directs seepage and run-off water from the TSF into CP3. Channel 3 is located along the southwestern boundary of the TSF. Channel 3 is approximately 620 m long with a designed base width of 1 m to 2 m.

CP3 and its associated infrastructure was constructed from August 2018 to January 2019. The as-built drawings for CP3 and its associated infrastructure are included in Appendix D.

5.4.2 Visual Observations

The inspection involved walking along the crests of CP3, Berm 2, Channel 3, and CP3 Thermal Berm to examine the structures for visual signs of deformation and instability, cracking, and permafrost degradation. Photos can be found in Appendix D. The photo locations are presented in Figure 5.

5.4.2.1 CP3 and CP3 Thermal Berm

Some water was observed in CP3 at the time of the inspection. The slopes of the pond are a combination of overburden and bedrock. The bedrock slopes are blocky with some fractured rock. The overburden slope is covered with a layer of waste rock placed. No obvious signs of instability were observed in the bedrock or overburden slopes. Like the conditions observed in 2022, portions of the slope were covered with sediment eroded from an area of disturbed ground east of CP3 (Photo 1, Appendix D). A layer of waste rock was placed between the toe of the TSF and CP3 in the summer of 2023 to serve as thermal protection (Photo 2, Appendix D). A snow stockpile was observed between the toe of the TSF and CP3 Thermal Berm with the water from the snow melt observed to be flowing into CP3 at the north side of the pond crest, (Photos 3 and 4, Appendix D).

CP3 Thermal Berm was constructed of overburden till and rockfill obtained from the excavation of CP3 in 2019. The till was partially frozen when it was placed in the berm. The till was covered with a layer of rockfill also obtained from the excavation. The slopes of the thermal berm were in good condition at the time of the inspection. The crest of CP3 Thermal Berm is undulating due to settlement that occurred as shown in Photo 5, Appendix D. The settlement appears not to impact the berm's function which is to preserve the permafrost below the original ground. Signs of permafrost degradation were not observed around CP3 Thermal Berm at the time of the inspection.

5.4.2.2 Channel 3 and Berm 2

Channel 3 was designed to divert runoff from the catchment area from the TSF towards CP3, and initially constructed in 2019. Agnico Eagle reconstructed Channel 3 to its design grade in the winter of 2022/2023 following

performance concerns raised and recommendations provided in previous annual geotechnical inspections. The channel was inspected by walking along its entire length. Overall, the reconstructed Channel 3 is performing well, no water flow was observed, and no geotechnical concerns were identified along the channel at the time of the inspection. It was noticed that the original ground between the TSF and Channel 3 was covered by rockfill material during the reconstruction of Channel 3. This additional rockfill placed will provide additional thermal protection and reduce the potential of permafrost degradation. The newly constructed Channel 3 is shown in Photos 6 to 9, Appendix D.

Berm 2 was constructed to reduce the amount of non-contact water entering the TSF and CP3 catchment areas as shown in Photos 10 to 14, Appendix D. Berm 2 was predominately constructed of 50 mm minus screened esker material with a till zone approximately 2 m wide. At the time of the inspection Berm 2 was retaining water in a low area along the berm. The water was up to approximately 0.5 m deep. Minor surface erosion was observed along the lower slope of the berm with indications that the water may have been 0.5 m higher sometime prior to the inspection. There was minimal water on the downslope side of the berm indicating that the berm is functioning as intended. Cracking up to 150 mm wide was observed along the crest and slope of the berm. Minor erosion was observed on the slope in along the zone where water was ponded. The ponded water, surface cracking and erosion on the slopes were observed in the previous year's inspection. The overall performance of Berm 2 is adequate as designed.

5.4.3 Instrumentation and Monitoring

Three GTCs (GTC-01, GTC-02, and GTC-03) were installed in CP3 Thermal Berm to measure the active layer depth in the berm and subgrade ground temperatures. The ground temperatures are shown in Appendix D. Based on the collected ground temperatures in the past years, the active layer depth varied from 2.5 m to 3.5 m. The ground temperature below the original ground (Elevation 63 m) is approximately at -4.0°C at the end of each fall season.

5.4.4 Water Management

Water was pumped out sporadically throughout the open water season through a dedicated pumping system. The water levels in CP3 between mid-August 2022 and late-August 2023 varied between Elevations 55.5 m and 60.7 m. The measured water levels in CP3 are presented in Appendix D.

The level on September 10, 2023 was 55.8 m at the time of the inspection. At this level the depth of water in CP3 is approximately 3 m with a volume of approximately 2,173 m^3. The remaining capacity in the pond to the maximum operating level of 63.0 m is 42,675 m^3.

The inflow for the pond was based on 3/7 of the 1:100 wet year precipitation freshet (171 mm) over the catchment area of 0.383 km^2 which equates to 28,000 m^3 of water. It is understood that the pond will be pumped prior to freeze up.

5.4.5 Summary and Recommendations

CP3 and its associated infrastructure is performing adequately.

The operation of the pond requires that it be completely drained prior to freeze up. The base of the pond is irregular making it difficult to completely drain. The minimum elevation of the pond is 54.0 m. Agnico Eagle specified that operations targeted a minimum drawdown level of 57.47 m prior to freeze up. This would leave approximately 10,300 m^3 in the pond at this elevation. The as-built volume of CP3 provides 14,675 m^3 of contingency storage at the maximum operating level of 63.0 m, therefore the drawdown target is not expected to impact the design intent

of the pond. CP3 Thermal Berm, Berm 2, and the reconstructed Channel 3 are functioning as designed. The geotechnical performance should continue to be monitored.

5.5 Collection Pond CP4, Associated Channels, and Berms

5.5.1 Background

Collection Pond CP4, and its associated infrastructure; CP4 Thermal Berm, and Channel 4, collects and temporarily stores runoff water from the catchment of Waste Rock Storage Facility No.1 (WRSF1). CP4 was created by excavating a large depression approximately 15 m deep in overburden and bedrock. CP4 Thermal Berm, downstream of CP4, provides thermal protection to maintain the underlying permafrost downstream of CP4. Channel 4 collects and diverts the runoff water from the WRSF1 catchment area.

The design of the collection pond, channels, and berm is based on the following criteria and key considerations:

- CP4 was designed to store 3/7 days of 1 in 100 wet precipitation year freshet (171 mm and assumes that freshet occurs in seven days and pumping from the pond occurs after day three). The excess freshet water will be pumped out to partially drained Lake H13 during freshet period, from where the water will flow to CP1 through culverts and Channel 1.
- The maximum operating water elevation in CP4 under IDF is set at Elevation 63.0 m which is 2.0 m lower than the original outlet elevation of the collection pond area.
- The downstream berm, CP4 Thermal Berm, is designed to preserve permafrost in the original ground below the centre of the berm, which will minimize the potential seepage through its foundation into the downstream receiving environment (i.e., Lake B7).
- The water collected in CP4 will be actively pumped to former Lake H13, which flows into CP1 during the open water season. The intent is that CP4 will be nearly empty most of the time, except for several early days during the annual spring freshet for preparing the pump system or during an extreme rainfall event.

CP4 and its associated infrastructure was constructed from October 2018 to May 2019. The as-built drawings for CP4 are included in Appendix E.

5.5.2 Visual Observations

The inspection involved walking along the crests of CP4, Channel 4, Channel 4 Berm, and CP4 Thermal Berm to examine the structures for visual signs of deformation and instability, cracking, and uneven surfaces. Photographs of CP4 and the associated infrastructure are in Appendix E. The photo locations are presented in Figure 6.

5.5.2.1 CP4

At the time of inspection CP4 was filled with water to approximately Elevation 53.5 m (measured September 10, 2023). The slopes of the pond are a combination of overburden and bedrock. The overburden is covered with a layer of rockfill obtained from the pond excavation. During the 2021 inspection, thaw settlement up to 0.75 m deep was observed in the native ground above the overburden slope protection rockfill along the west and south sides of CP4. The native ground above the overburden slope had been covered with a protective layer of rockfill along the west and south sides of CP4 prior to the 2022 inspection to prevent additional thaw settlement. Additional rockfill was placed along the east and north sides of CP4 and the area between CP4 and WRSF1 prior

to the 2023 inspection to serve as additional thermal protection (Photo 5, Appendix E). No obvious signs of instability were observed in the bedrock or overburden slopes (Photos 1 to 4, Appendix E).

5.5.2.2 CP4 Thermal Berm

CP4 Thermal Berm was constructed of overburden till obtained from the excavation of CP4. The till was a combination of frozen and unfrozen material when it was placed in the berm. The till was covered with a layer of rockfill also obtained from the excavation. The slopes of the berm were in good condition (Photo 8, Appendix E) at the time of the inspection. The crest of the berm had undulating settlement up to 0.3 m deep throughout the surface as shown in Photo 7, Appendix E. The settlement does not impact the berm's function which is to preserve the permafrost underneath the original ground. No noticeable cracking or signs of instability were observed during the inspection.

5.5.2.3 Channel 4

Channel 4 was constructed to divert runoff from the catchment area from WRSF1 into CP4. The as-built side slopes range from 3.5H:1.0V to 1.8H:1.0V with the base of the channel varying from 0.8 m to 3.3 m wide. Channel 4 is shown in Photos 9 to 14, Appendix E. No water was flowing in the channel at the time of the inspection; however, there were localized areas of shallow ponded water due to an uneven base of the channel. It appears there has been some thaw subsidence in the base of the channel. The subsidence areas observed in 2022 where the channel ties into the native subgrade east of the channel has been covered with a protective layer of rockfill to reduce further thaw subsidence and erosion between the channel and WRSF1.

There is some surface erosion at the end of Channel 4 Berm at Station 0+620 as shown in Photo 12, Appendix E. It is likely that there was deep drifted snow, and the erosion was caused by the runoff from the snow melting. Overall, Channel 4 is performing adequately as designed.

5.5.3 Instrumentation and Monitoring

Two GTCs (GTC-01 and GTC-02 Berm CP4) were installed in CP4 Thermal Berm to measure the active layer depth in the berm and subgrade ground temperatures (Photo 6, Appendix E). The ground temperature profiles from these GTCs are shown in Appendix D. The thawed zone varied from 2.3 m to 2.8 m on August 25, 2023. The ground temperature at the original ground surface (Elevation 63.0 m) ranged from -6.5°C to -6.9°C on August 25, 2023.

5.5.4 Water Management

Water levels in CP4 from mid September 2022 to mid September 2023 varied between Elevation 57.2 m and 53.0 m. The water level in CP4 was 53.5 m at the time of inspection on September 10, 2023, resulting in an approximately 1 m depth of water in the pond. Water was pumped out sporadically throughout the open water season. The measured water levels in CP4 are presented in Appendix E.

As of September 10, 2023, the remaining capacity (to the maximum operating level of 63.0 m) was 47,675 m^3. The inflow for the pond was based on 3/7 of the 1:100 freshet (171 mm) over the catchment area of 0.441 km^2 which equates to 32,300 m^3 of water.

5.5.5 Summary and Recommendations

CP4 and its associated infrastructure is performing adequately. Thaw settlement of the native ground above the rockfill protected overburden slope of CP4 observed during the 2021 inspection has been covered with a protective layer of rockfill along the west and south sides of CP4 to reduce future thaw subsidence in the area. The till berm

between CP4 and the upstream slope of CP4 Berm has also been covered with a minimum of 1.5 m Run-of-Mine layer to reduce future settlement and ponding on the surface of the till berm. Additional rockfill was placed along the east and north sides of CP4 and the area between CP4 and WRSF1 prior to the 2023 inspection to serve as additional thermal protection. These areas should continue to be monitored for settlement to confirm adequate protection is provided by the rockfill cover.

The operation of the pond specifies that it be completely drained prior to freeze up. The base of the pond is irregular making it difficult to completely drain. The minimum elevation of the pond is 52 m. Agnico Eagle specified that operations targeted a minimum drawdown level of 55.28 m prior to freeze up. This would leave approximately 8,300 m^3 in the pond at this elevation which is not expected to impact the design intent of the pond. The as-built volume of the CP4 provides 15,375 m^3 of contingency storage at the maximum operating level of 63.0 m, therefore the drawdown target is not expected to impact the design intent of the pond.

Undulating settlement has been observed at various areas on the crest of CP4 Thermal Berm. The settlement does not appear to be impacting the berm's function. The measured ground temperature data indicate that the original ground below CP4 Thermal Berm is in a frozen condition. No cracking or signs of instability were observed during the inspection. It is understood that Agnico Eagle is planning to place additional rockfill material and regrade the crest along the areas where settlement was observed. No signs of significant permafrost degradation were observed around the CP4 area at the time of the inspection.

Channel 4 is performing adequately as designed. There is some surface erosion at the end of Channel 4 Berm It is likely that there was deep drifted snow, and the erosion was likely caused by the runoff from the snow melting not overflowing. It is recommended to continue to monitor the performance of Channel 4 Berm and evaluate the requirement of improvement or mitigation.

5.6 Pond CP5 and Dike D-CP5

5.6.1 Background

Dike D-CP5 was constructed across the south portion of former Lake A54, to form CP5 from October 2016 to July 2017. The intent of D-CP5 is to create a contact water collection pond in the north portion of former Lake A54.

D-CP5 is approximately 300 m long with a maximum height of 3.3 m (Tetra Tech 2017f) and is located north of the Tiriganiaq 02 Open Pit as shown in Figure 1. The CDA (2013) dam consequence classification for D-CP5 is Significant (Tetra Tech 2016b). CP5 is used seasonally for temporary water storage with active pumping to CP1 to transfer the water out of CP5.

The access road to the Tiriganiaq 02 Open Pit has been constructed downstream of the dike. The area between the dike and road has been graded with crushed rock covering the seepage collection pond that was located downstream of the dike. The road constructed downstream of the dike could provide some benefits to help maintain the frozen condition of the foundation below the dike key trench.

5.6.2 Visual Observations

The inspection involved walking along the crests and toes of the dike and examining the condition of the slopes of the dike for visual signs of deformation and instability, cracking, and uneven surfaces on September 8 , 2023. Water in CP5 at the time of the site visit precluded observing upstream toes of the dike. A photographic record of the inspection is included in Appendix F. The photo locations are presented in Figure 7.

At the time of the inspection of D-CP5, the following general observations were made:

- Overall, the dike appeared stable, with no significant geotechnical concerns identified.
- Minor cracking was observed in a few locations on the upstream and downstream sides of the dike crest. The cracking appeared consistent with that observed in 2021 and did not appear to be progressing. The dike crest is shown in Photos 1, 2, 3, and 5, Appendix F.
- There were no signs of seepage from the downstream toe.

Jetty 5 is the causeway for the pump back station for CP5. A water diversion ditch was excavated around the jetty to divert water from localized areas to the jetty. Minor slope erosion was observed at various locations along the ditch due to the excavation (Photos 6 and 8, Appendix F). Given the distance between the ditch and jetty, it is not expected that the performance of the jetty will be impacted by the ditch. A trash pump was used to pump the water out of CP5 at the time of the inspection.

Agnico Eagle's environment team conduct weekly visual geotechnical inspections of the dike. Monthly inspection reports included an assessment of ground temperatures, observations of cracking and settlement, pond elevation, pumping activities, and photographs. The observations made by Agnico Eagle staff were consistent with the observations during the 2023 annual inspection. Cracks and locations of settlement were marked with spray paint in the field to monitor changes. No permafrost degradation was observed at Dike D-CP5 and CP5 areas.

5.6.3 Instrumentation and Monitoring

Horizontal and vertical GTCs were installed in D-CP5 between March and July 2017. Plots of the thermistor data are provided in Appendix F. Two horizontal GTCs (HGTC-1 and HGTC-2) installed in D-CP5 above the liner parallel to the key trench and three vertical GTCs (VGTC-1 to 3) installed upstream and downstream of the key trench.

Key trench temperatures are warmest in late fall (October and November) and coldest in late spring (May and June). The average temperatures over the length of the portion of the cable in the key trench parallel to the dike axis are summarized in Table 5-3 at specific dates.

The horizontal GTCs indicate a slight warming trend with an average change of 0.2 C° in the base of the key trench from May 25, 2022 to May 25, 2023. The vertical GTCs indicate a slight cooling trend average change of -0.5 C° in the foundation of the dike from May 25, 2022 to May 25, 2023.

Three settlement survey monuments were installed over the liner crest in the dike. CP5 survey monitoring points indicate a settlement between 24 mm and 61 mm since installation. Agnico Eagle installed new survey control point and updated survey procedure in late 2022. There is “noise” in the readings but improvements have been made to stabilize the settlement readings. The settlement data is provided in Appendix F. The dike operating water levels were based on a settlement of 100 mm; the measured settlement has been less than this to date.

Table 5-3: D-CP5 Ground Temperature Summary

Cable	Average June 4, 2019 (°C)	Average May 31, 2020 (°C)	Average May 31, 2021 (°C)	Average May 25, 2022 (°C)	Average May 25, 2023 (°C)	Difference May 2022 to May 2023 (C°)	Average Oct 31, 2019 (°C)	Average Oct 29, 2020 (°C)	Average Oct 27, 2021 (°C)	Average Sept 28, 2022 (°C)	Average Sept. 25, 2023 (°C)	Difference Sept. 2022 to Sept. 2023 (C°)
HGTC-1	-7.8	-7.7	-7.0	-8.2	-8.0	0.2	-2.2	-2.3	-2.3	-2.8	-3.1	-0.3
HGTC-2	-8.0	-8.0	-7.3	-8.4	-8.2	0.2	-2.9	-2.8	-2.9	-3.3	-3.1	0.2
VGTC-01	-4.3	-4.7	-4.6	-5.8	-6.0	-0.2	-3.6	-3.8	-3.3	-4.0	-4.1	-0.1
VGTC-02	-4.6	-5.2	-5.0	-5.6	-6.8	-1.2	-3.8	-3.9	-3.5	-4.0	-4.2	-0.2
VGTC-03	-3.3	-3.5	-3.3	-6.0	-5.9	-0.1	-3.3	-3.6	-3.4	-4.1	-4.8	-0.7

5.6.4 Water Management

CP5 receives inputs from the surrounding area. Water from CP5 is pumped to CP1 throughout the open water season. The design operating levels are specified in the OMS manual (Agnico Eagle 2021) as listed in Table 5-4.

Table 5-4: Design Water Elevations for D-CP5 Operation

Situation	Maximum Operating Level (m)	Requirement
Before and after each spring freshet	65.5	This water elevation was determined to allow CP5 to have a sufficient storage capacity to store the estimated maximum volume of 49,500 m^3 of the runoff water from an IDF event for a total maximum CP5 catchment area of 0.643 km^2 during the design life of D-CP5, which includes the catchment areas of the P1/P2/P3 and Portal No. 1 areas.
During mean spring freshet (assumed to store 3 of 7 days of spring freshet)	66.03	This water elevation was determined to store 3/7 of the runoff water from a mean spring freshet for the total maximum CP5 catchment area of 0.643 km^2.
Under the IDF	66.32	▪ This is the design maximum water elevation for D-CP5 for a short period. The water elevation should be drawn down to 64.8 m by pumping water to CP1 after each spring freshet or rainfall event; and ▪ This water elevation is also constrained by the risk of flooding Portal No. 1, the nearby ventilation shaft, and the saline water storage pond.

The water level in CP5 varied from 63.2 m to 64.8 m from mid-August 2022 to mid-September 2023 which is within the operating levels of the pond. On September 9, 2023 water level was at Elevation 63.5 m which is below the target water elevation prior to freeze up. The measured water levels in CP5 are presented in Appendix F.

5.6.5 Summary and Recommendations

Dike D-CP5 and the associated infrastructure is in good condition. The following recommendation is provided regarding D-CP5:

- Operation of CP5 should continue to follow the procedures developed in the OMS Manual and the GTCs and survey monitoring points should continue to be monitored following the schedule specified in the OMS Manual.

5.7 Collection Pond CP6 and Associated Berm

5.7.1 Background

CP6, and its associated berm, CP6 Thermal Berm, collects and temporarily stores runoff water from the waste rock storage area (WRSF3). CP6 was created by excavating a large depression approximately 7 m to 11 m deep in overburden and bedrock. CP6 Thermal Berm, downstream of CP6, provides thermal protection to maintain the underlying permafrost downstream of CP6.

The design of CP6 and CP6 Thermal Berm is based on the following criteria and key considerations:

- CP6 was designed to store 3/7 days of 1 in 100 wet precipitation year freshet (171 mm and assumes that freshet occurs in seven days and pumping from the pond occurs after day three). The excess freshet water will be pumped to CP1.
- The maximum operating water elevation in CP6 under IDF is set at Elevation 60.0 m which is 2.0 m lower than the original outlet elevation of the collection pond area.
- CP6 Thermal Berm, is designed to preserve permafrost in the original ground below the centre of the berm, which will minimize the potential seepage through its foundation into the downstream receiving environment.
- The water collected in CP6 will be actively pumped to CP1. The intent is that CP6 will be nearly empty most of the time, except for several early days during the annual spring freshet for preparing the pump system or during an extreme rainfall event.

CP6 and CP6 Thermal Berm were constructed from March 2020 to April 2020. The as-built drawings for CP6 are included in Appendix G.

5.7.2 Visual Observations

The inspection involved walking along the perimeter of CP6 and the crest and slopes of CP6 Thermal Berm to examine the structures for visual signs of deformation and instability, cracking, permafrost degradation, and uneven surfaces. Photographs of CP6 and CP6 Thermal Berm are in Appendix G. The photo locations are presented in Figure 8. Observations are summarized below:

- At the time of inspection, the volume of water stored in CP6 was far below the top of the bedrock. The slopes of the pond are a combination of overburden and bedrock. The overburden is covered with a layer of rockfill obtained from the pond excavation. No obvious signs of instability were observed in the bedrock or overburden slopes (Photos 1 to 5, Appendix G). Thaw settlement was observed in a few locations along the east side of the CP6 perimeter (Photo 10, Appendix G). It is speculated that the settlement is due to the erosion to the original lakebed or potential thawing of the original tundra covered by the rockfill. The east slope of CP6 appears stable with the observed thaw settlement not expected to have significant impact on the stability of the side slope.
- CP6 Thermal Berm was constructed of overburden till obtained from the excavation of CP6. The till was a combination of frozen and unfrozen material when it was placed in the berm. The till was covered with a layer of rockfill also obtained from the excavation. The slopes of the berm were in relatively good condition (Photos 6 and 8, Appendix G). The crest of the berm had minor cracks throughout the surface and settlement areas in some locations (Photo 7, Appendix G). The cracks and settlement do not appear to be impacting the berm's function which is to preserve the permafrost below the original ground surface.
- The access ramp into CP6 does not extend to the base of the pond at the time of the inspection (Photo 3, Appendix G).
- An area of depression was observed between CP6 (south perimeter) and WRSF3. Surface erosion was observed due to snow drift and water flow from melting snow during freshet (Photo 11, Appendix G).
- An area of ponded water was observed between the CP6 access ramp and CP6 Thermal Berm (Photo 12, Appendix G). No other permafrost degradation was observed other than ponded water noticed.

5.7.3 Instrumentation and Monitoring

Three GTCs were installed in CP6 Thermal Berm to measure the active layer depth in the berm and subgrade ground temperatures. The GTCs are shown in Appendix G. The estimated thawed depth on August 25, 2023 was approximately 2.4 m to 2.6 m. The ground temperature at original ground surface (i.e., Elevation 60.0 m) ranged from -7.2°C to -7.7°C on August 25, 2023. GTC-02 has stopped reading since the last measurement was taken on May 25, 2022.

5.7.4 Water Management

Water levels in CP6 from mid-September 2022 to mid-September 2023 varied between Elevation 53.2 m and 57.1 m. The water level was at approximately 53.5 m during the inspection resulting in approximately 2 m depth of water in the pond. This equates to approximately 3,200 m^3 of water within CP6. Water was pumped out sporadically throughout the open water season. The measured water levels in CP6 are presented in Appendix G.

As of September 10, 2023, the remaining capacity (to the maximum operating level of 60.0 m) was 42,745 m^3. The inflow for the pond was based on 3/7 of the 1:100 freshet (171 mm) over the catchment area of 0.448 km^2 which equates to 32,696 m^3 of water.

5.7.5 Summary and Recommendations

Generally, CP6 and CP6 Thermal Berm are performing well.

The Run-of-Mine cap placed in 2021 and 2022 between WRSF3 and CP6 is controlling erosion in the area. A small amount of subsurface erosion is persistent at the east side of the cover. It is not currently impacting the operation of CP6. It is understood that Agnico Eagle had placed rockfill cover at most of the area to reduce the surface erosion. Monitoring is recommended to further evaluate the performance of the rockfill cover.

It is recommended that the small area of water ponding between the CP6 access ramp and CP6 Thermal Berm be filled and graded with coarse rockfill to prevent further ponding in the area.

It is recommended to further extend the CP6 access ramp to the base of CP6 as per design to provide operations with safe access for dewatering.

6.0 SALINE PONDS

6.1 Saline Pond 1

Saline Pond 1, SP1, which is located north of CP5 was constructed during the third quarter of 2016 to manage underground saline water.

The saline pond was constructed by excavation within permafrost overburden and bedrock. A small berm approximately 1 m to 2 m high was constructed around the excavation with a till core and rockfill cover to promote permafrost development in the original ground below the berm and keep surface water from the surrounding area from draining into the pond. The pond is designed to maintain the maximum pond elevation under the IDF (1-in-100-year wet precipitation event) below original ground and below the level of CP5 to minimize the potential for seepage out of the saline pond.

The inspection involved walking along the crest of the saline pond perimeter berm, examining the condition of the berm for visual signs of deformation and instability, cracking, uneven surfaces, and seepage. A selection of photographs from the inspection are included in Appendix H. The photo locations are presented in Figure 9.

At the time of the inspection of the saline pond, the following general observations were made:

- Overall, the conditions of the pond and perimeter berm appeared stable as observed during the 2022 inspection.
- There was no observed seepage from the adjacent Ponds CP5 or DP3-A.
- There was water in the pond at the time of the site visit that was below the top of the bedrock excavation (Photo 1, Appendix H). The pond has been nearly drained in preparation for the freeze up.
- The thermal berm appeared to be in good condition with minimal cracking (Photos 2 and 3, Appendix H).
- No seepage into the saline pond was observed during the inspection.
- The southwest corner of the pond crest had significant cracks up to 100 mm wide at the crest (Photo 4, Appendix H). The slopes below the cracking may be deformed. The cracks could be due to thaw subsidence or movement of the overburden slope. The cracks have been observed since 2020 and no significant changes were noticed. No other permafrost degradation was observed other than the cracks noted here.

The following recommendations are provided regarding the saline pond:

- In general, the pond is performing adequately. The slopes around the pond should continue to be monitored and remediated as required.
- The berms located at the bottom of the access ramp into SP1 and the arrangement of the pipelines along the ramp should be improved for safety and ease access.

6.2 Saline Pond 3

SP3 was constructed during the 2018/2019 winter in the south portion of the P3 area. It is a High Density Polyethlyene (HPDE) Lined pond with a storage capacity of 5,000 m^3. It was constructed for the temporary storage of saline water from the underground.

The pond is surrounded by perimeter berms constructed with mine rockfill. A layer of bedding material was placed over the native ground and rockfill berms. A geomembrane liner was placed over the base of the perimeter berms.

The inspection involved walking along the crest of the saline pond perimeter berm, examining the condition of the berm for visual signs of deformation and instability, cracking, uneven surfaces, and seepage. A selection of photographs, Photos 6 to 9 from the inspection are included in Appendix H. The photo locations are presented in Figure 9.

At the time of the inspection of the saline pond, the following general observations were made:

- The pond was near empty at the time of the inspection.
- The perimeter berms were in good condition with no significant signs of cracking or settlement.
- A small amount of erosion has occurred along the crest of the berms; but does not impact the performance of the pond.

- The HPDE liner above the water level appeared to be in good condition. It is understood a liner inspection was done yearly by mine personnel with the pond drained.
- No seepage out of the pond was observed; however, the ground in the former P3 pond was covered with water making it difficult to assess seepage.

Overall, the pond appears to be performing adequately.

7.0 DIVERSION CHANNELS AND BERMS

7.1 Background

This section covers the inspection of diversion channels 1, 2, 5, 7, 8, Berm 1, Berm 3, and the recently constructed berm at the end of Channel 2 (Channel 2 Berm). The inspection of diversion channels 3, 4, 9, 10, and Berm 2 was covered in Section 6.0. The selected photos from the inspection are included in Appendix I. The photo locations are presented in Figure 10.

The channels were constructed by excavating a trench, placing non-woven geotextile to line the excavation, and then placement of riprap (coarser rocks) over the fabric to line the channels. The berms were constructed by using a combination of esker material and till.

Channel 1 is designed to move water from former Pond H13 to CP1 and extends from Culvert 2 to Pond H9 along the north and east sides of Portal No. 2. Channel 1 is approximately 493 m long with a base width of approximately 3 m.

Channel 2 is located along the northern end of the main mine site industrial pad and is approximately 270 m long with a base width of 1 m. During construction and operation, contact water from the area is expected to flow into Channel 2, which in turn eventually flows into CP1.

Channel 5 and Berm 3 are located west of CP5 and are designed to divert water from the Pond A12 catchment area into CP5 so that this water does not flow into the future Tiriganiaq 01 Open Pit. Channel 5 is the main water diversion structure; Berm 3 is only required to temporarily retain water under an extreme rainfall event when the water level in CP5 is temporarily high (Tetra Tech 2016d). Channel 5 is approximately 429 m long with a base width of approximately 3 m. Berm 3 is approximately 315 m long with a maximum height of about 2.8 m. Berm 3 consists of a till core, a foundation key trench backfilled with till, and a cover layer constructed out of 600 mm minus esker material.

Channel 7 is a water collection channel that collects flow from Culvert 11 and part of the runoff from the laydown area and directs the water to Channel 1.

Channel 8 is a water collection channel located on the west side of Portal No. 2 to collect part of the surface flow of WRSF1 and facilitates flow of site drainage through Culvert 2 and Channel 1.

Berm 1 is required to protect Portal No. 2 from flooding under extreme rainfall events when potential ponding in the area occurs.

Berm 3 was constructed to divert runoff from flowing into Saline Pond 4 and Tiriganiaq Open Pit 01 and direct it to CP5. Berm 3 was predominately constructed of screened esker material with a till zone approximately 2 m wide.

Channel 2 Berm was constructed in 2023 to prevent Channel 2 potential outflow from flowing into the Lake G2. Channel 2 Berm was predominately constructed of esker material with rockfill material covered.

7.2 Visual Observations

Channel 1

The inspection of Channel 1 involved walking along the channel from Culvert 2, around the crusher ramp. The water level in the eastern portion of the channel is controlled by the water level in Pond H9. Channel 1 is shown in Photos 1 through 4, Appendix I.

Cracking and settlement were observed along the edges of the channel. This was also reported in previous years but does not affect the channel performance.

Channel 2

Channel 2 was inspected by walking from the channel outlet culvert, towards the top of the channel behind the accommodations complex. As noted in previous years the slope of the channel base is not consistent and some pooling of water and deposition of sediment in lower areas. No geotechnical concerns associated with Channel 2 were identified. Channel 2 is shown Photos 5 through 8, Appendix I.

Channel 2 is intended to drain into a low wet area that drains through Culvert 13, which eventually drains south towards Channel 1 and CP1. The conditions of Channel 2 are like that observed in 2022.

Channel 5

Channel 5 was inspected by walking along its length. Channel 5 is shown in Photos 9 to 14, Appendix I. Overall Channel 5 appeared stable, with no geotechnical concerns identified along most of the channel except for some significant subsidence observed adjacent to a former pond at the north end of the channel, with slumping channel slopes similar to those observed in the 2022 inspection (Photos 12 to 14, Appendix I). The slumping area is restricting flow in the channel. The riprap placed along the channel slopes in the region of the former pond has subsided below the elevation of the ponded water within the channel. Water was ponded within the portions of the channel. The upper reach of the channel was filled with sediments from the erosion.

Channel 7

Channel 7 was inspected by walking along its length. The channel is shown in Photos 15 and 16, Appendix I. There is ponded water in portions of the channel, due to some subsidence in the channel base. No geotechnical concerns were identified along the channel. The conditions of Channel 7 are like those observed in 2022.

Channel 8

Channel 8 was inspected by walking along portions of its length. No significant geotechnical concerns were identified along the channel. The conditions of Channel 8 are like those observed in 2022.

Berm 1

Berm 1 was inspected by walking along its length. A 350 mm diameter culvert has been placed in the channel for an access to the laydown area adjacent to Portal No. 1. No geotechnical concerns were identified along the Berm.

Berm 3

Berm 3 adjacent to Channel 5 was inspected by walking along the crest and slopes and examining the condition of the berm for visual signs of deformation and instability, cracking, or uneven surfaces. A selection of photographs from the inspection are included in Appendix I (Photos 17, 18, and 19). Minor cracking was observed in a location where ponded water was observed against the berm. Localized settlement was observed at the west abutment of Berm 3 that was approximately 0.25 m deep on the berm top surface. The settlement does not impact the functionality of the Berm. Overall, Berm 3 appeared stable with no geotechnical concerns identified.

Channel 2 Berm

The recently constructed Channel 2 Berm was inspected by walking along the crest and slopes and examining the conditions of the berm for visual signs of deformation and instability, cracking, or uneven surfaces. No geotechnical concerns were identified along the berm (Photo 20, Appendix I).

7.3 Summary and Recommendations

The following recommendations are provided regarding the diversion channels and berms:

- Continue to monitor subsidence at the base of Channels 1, 2, and 7 to determine if they impact the channels' performance.
- It is recommended that the northern half of Channel 5 be reconstructed to the design grade and elevation. If practical, the base of the channel should be over excavated and backfilled with rockfill material to accommodate future thaw subsidence following the reconstruction. The base of the southern half of the channel should be regraded to promote the flow of water and reduce further subsidence due to water ponding.
- Berm 3 cover materials are susceptible to erosion and some minor erosion was observed during the inspection. Erosion of the slopes should be monitored, and consideration should be given to placing coarser material on Berm 3 to reduce the potential for erosion if it becomes substantial.

8.0 TAILINGS STORAGE FACILITY

8.1 Background

A dry stack TSF is being used at the mine. Water is pressed out of the tailings in the process plant. The tailings are temporarily stored in the Tailings Dewatering Building next to the process plant known as the "Church"; where they are loaded in trucks and hauled to the TSF.

The tailings are dumped in the TSF, spread with a dozer in 0.3 m lifts with survey control, and compacted. The tailings are progressively reclaimed by placement of rockfill cover on the exterior slopes as the tailings stack rises. During the time of inspection, Both Cell 1 and Cell 2 of the facility were in use for active tailings deposition as per the tailings deposition plan.

8.2 Visual Observations

In general, the TSF is operated following the TSF OMS manual, the tailings are dumped in the TSF, spread in 0.3 m lifts and compacted (Photos 6 to 10, Appendix J). At the time of the inspection, Cell 1 of the TSF was constructed

to approximately the Elevation 90 m lift and Cell 2 to approximately the Elevation 72 m lift. Selected photos from the inspection are included in Appendix J. The photo locations are presented in Figure 11.

Surface erosion was noticed in various locations on the north slope of Cell 1 and Cell 2 due some rainfall events a few days prior to the inspection (Photo 3, Appendix J). A rockfill berm was constructed along the Cell 1 and Cell 2 tie-in location to reduce the surface erosion (Photo 2, Appendix J).

The rockfill slope cover around the tailings appeared stable, with no signs of settlement and cracking observed.

8.3 Instrumentation and Monitoring

Agnico Eagle's geotechnical engineers prepare weekly inspection and monthly analytical reports describing the tailings placement and design verification updates. The tailings have an optimum moisture content of 15.9% and are typically placed at a moisture content ranging from 12.8% to 20.9% with an average of 16.5%. The measured porewater salinity of the tailings between September 2022 and September 2023 ranges from 11.7 parts per thousand (ppt) to 17.4 ppt with an average of 14.2 ppt, which is lower than the assumed 15 ppt for the design. Additional testing includes: ARD/ML sampling and testing, process water analysis including salinity testing, and quarterly off-site geotechnical verification (moisture-density testing and particle size analyses).

GTCs are installed at eight locations in the placed tailings. The measured ground temperatures are presented in Appendix J. GTC-01A and GTC-02 are now located within the rockfill covered embankment of the TSF and will no longer have active tailings placement above the cable profiles.

Measurements taken between September 2022 and September 2023 indicate that the foundation in Cell 1 had an average ground temperature of -3.5°C and was relatively stable compared to the measurements taken prior to September 2022. The upper tailings (the top 3 m thick of tailings) had an average ground temperature of 1.9°C, freeze back is expected with time as more tailings are placed over top. Measurements taken between September 2022 and September 2023 indicate that the temperature of the lower tailings (deeper than 3.0 m from the top of the tailings surface) ranges from -1.7°C to -2.5°C.

Measurements taken in September 2023 indicate that the ground temperature of the foundation in Cell 2 ranges from -5.0°C to -7.5°C. The first 2 m thick layer of tailings placed above the original ground is in a frozen condition while the remaining tailings above this layer are in an unfrozen condition. Freezing back is expected with time as more tailings placed in Cell 2.

Nuclear density tests on the in situ placed and compacted tailings performed in July and September 2023 indicate, for the most part, that the filter cake is achieving the maximum dry density obtained from Standard Proctor tests (i.e., 1,785 kg/m^3). The placed tailings material shows very little signs of bleed water and are easily trafficable after placement and compaction.

8.4 Water Management

Water from the TSF is directed to CP3. Some runoff naturally drains to the pond, and other runoff is directed to CP3 via Channel 3. Berm 2, north of the facility was constructed to divert water away from the TSF and CP3.

8.5 Summary and Recommendations

The TSF appeared to be functioning well at the time of the inspection. No geotechnical concerns were identified, and no signs of permafrost degradation were observed in the TSF area.

The TSF perimeter rockfill cover material appears to be functioning well from a geotechnical perspective with no signs of distress.

Erosion monitoring along the toe of the exposed north slope of Cell 1 should continue.

Tailings placement should continue to follow the procedures established in the OMS Manual.

Ground temperature monitoring should continue in the TSF and its foundation using the GTCs presently installed.

Some localized erosion was observed on the surface of Cell 1 between the tailings and the perimeter rockfill cover zone during the June 2023 Meliadine Independent Review Board (MIRB) site visit. The localized erosion was likely caused by ponding water in some depressions following an intense rainfall event prior to the site visit. To avoid further erosion and the potential for tailings to be transported into the perimeter rockfill cover zone, it was recommended by MIRB and Tetra Tech that tailings should be placed higher than the perimeter rockfill to avoid the formation of depression zones, and the top surface of each perimeter rockfill layer be sloped gently (2%) to the outside to promote runoff flow away from the tailings and rockfill interface. It is understood that Agnico Eagle has already implemented the recommendations in the current lift. Tetra Tech encourages that this construction protocol be followed during the construction of subsequent lifts.

9.0 WASTE ROCK STORAGE FACILITIES

Waste Rock Storage Facilities WRSF1 and WRSF3 are used to dispose of waste rock and overburden from the Tiriganiaq open pits and the underground operations. The waste rock and till are stored in separate areas of the facilities. The design drawings for WRSF1 and WRSF3 and photos are included in Appendix K and Appendix L, respectively. The photo locations are presented in Figure 12 and Figure 13, respectively. Observations of each facility are noted below.

9.1 WRSF1

Disposal in WRSF1 began in 2019; with most of the material being placed since December 2020. Benches 77, 82, 87, 92, 94.5, and a portion of the 97 m and 102 m bench had been placed at the time of the 2023 inspection. As per the design, till is placed in the centre of the facility with a 40 m perimeter of waste rock around the till. Most of the till was placed in the winter.

The till placed in WRSF1 is a combination of material placed prior to the summer of 2019, and that placed during the winter of 2019/2020 and 2020/2021. The winter placed till was wet; it is speculated that it contained some ice rich material and is thawing and consolidating over the summer. As of September 2023, approximately 2.4 Mm^3 of till and 2.7 Mm^3 of waste rock have been placed to WRSF1.

Ground temperatures at the base of the WRSF1 facility are being monitored with vertical and horizontal GTCs. The cable locations are shown on the design drawings. The measured ground temperatures are presented in Appendix K. Based on the measured ground temperatures the foundation of the waste rock pile is frozen. Horizontal beads roughly 70 m inside from the toe of the pile have cooled by about 0.5°C to 0.7°C between August 25, 2022

and August 25, 2023. The temperatures within the foundation appear to have stabilized over the past year and remain well below zero (-7.0°C).

At the time of the inspection the following was noted:

- Till placed on the 97 m bench appears to be within the till design perimeter and contained with Run-of-Mine around the perimeter.
- Till and rock mixed free dumps were observed on the 97 m bench. These free dumps can result in settlement and cracking when the upper bench is placed.

The material is generally being placed in the pile according to the WRSF1 design. No significant geotechnical issues were observed. Tetra Tech recommends that free dumps be spread and compacted to avoid settlement and cracking. New waste material should be placed as per the construction protocol established in the OMS manual. The performance of the facility should continue to be monitored on an ongoing basis as outlined in the OMS Manual.

9.2 WRSF3

Disposal in WRSF3 began in 2020. The overburden was placed on the 77 m bench and waste rock was constructed to Bench 72 m at the time of the annual inspection. The till placed in WRSF3 appeared to be well compacted due to dozer compaction. Settlement and cracking were observed on the east side of the 72 m bench of the waste rock (adjacent to CP2 area). The settlement and cracking were likely caused by free dumping and snow trap at the lower Bench 67 m.

Ponded water was observed at the southwest corner of WRSF3. The ponded water could cause permafrost degradation in that area if no mitigation measures are taken. Pumping water out of this area was observed during the 2023 annual inspection.

Ground temperatures at the base of the WRSF3 facility are being monitored with vertical and horizontal GTCs. The cable locations are shown on the design drawings. The measured ground temperatures are presented in Appendix L. HGTC-02 within the WRSF3 foundation stopped taking measurements since July 26, 2022. It was determined that the GTC was damaged and cannot be repaired. Based on the measured ground temperatures at other GTC location, the foundation of the waste rock pile is frozen. The average temperatures within the foundation at GTC01 cooled from -1.55°C in August 2022 to -3.22°C in August 2023. The average temperatures within the foundations at GTC03 have cooled by 2°C between August 2022 and August 2023. No permafrost degradation was observed around WRSF3 at the time of the inspection.

In general, WRSF3 is performing well with no significant geotechnical issues noted during the inspection. The following recommendations for improvement were made based on the inspection:

- Tetra Tech recommends the depression area and cracks observed on Bench 72 m be filled with waste rock and traffic compaction applied.
- The ponded water at the southwest corner of WRSF3 should be pumped out regularly during operations or consideration should be given to construct a channel and sump if sufficient space is available. The channel and sump will help to divert/collect runoff water from WRSF3 and prevent the potential permafrost degradation at the WRSF3 toe.
- Waste material placement should continue follow the construction protocol established in the OMS manual.
- The performance of WRSF3 should continue to be monitored on an ongoing basis as outlined in the OMS Manual.

10.0 SITE ROADS

10.1 Background

The site has numerous roads, including haul roads, service roads, as well as roads to borrow areas and other facilities. The following is a list of roads inspected. Photographs of the site roads are included in Appendix M. The photo locations are presented in Figure 14.

- TSF and landfill access road;
- Main site pad area roads;
- Main site water intake access road;
- Emulsion plant pad access road;
- Tiriganiaq Esker access road;
- Magazine storage area and access road;
- Wesmeg access road, Wesmeg esker area, and vent raise;
- CP3 access road; and
- CP4 access road.

10.2 Visual Observations

At the time of the site visit, the site roads were generally in good condition. Select photos of the roads are included in Appendix M. The roads appeared to generally be of adequate width with pull outs where required to allow vehicles to safely pass. The heights of the road fills were such that berms were not required. Many of the roads appeared to have been constructed using a combination of sand and gravel obtained from esker borrow areas, rockfill, and crushed aggregate.

The roads surface gets muddy when wet. The roads are graded on a regular basis.

Normal maintenance of the roads should be anticipated. No geotechnical concerns were identified during the inspection. No permafrost degradation was observed along the road at the time of the inspection.

Permanent water management culverts are in place through road fills. Culverts observed were: Culverts 1, 2, 3, 4, 7, 8, 10, 11, 13, 15, 16, 18, and 20. The culverts were generally in good condition with the exception of Culvert 18, through the TSF road, which has been crushed to half its original height.

10.3 Summary and Recommendations

The site mine roads and culverts were generally well maintained and in good geotechnical condition at the time of the inspection. No specific recommendations for geotechnical improvements are provided.

11.0 BORROW SOURCES

11.1 Background

Numerous borrow sources have been developed during the construction of the mine. Many of the borrow sources were reclaimed in 2019. The following borrow areas were observed:

- Meliadine North Esker;
- Meliadine Esker; and
- Wesmeg Esker.

Photographs of the borrow areas are in Appendix N. The photo locations are presented in Figure 15.

11.2 Visual Observations

In general, the borrow areas were in good condition and had been reclaimed by grading to knock down various piles and ruts.

Additional material is being extracted out of the Meliadine Borrow Area.

A drainage channel is present through the reclaimed portion of the Meliadine Borrow Area. The channel is within the native sand. It is anticipated that the channel will naturally erode. Some remediation may be required to stabilize portions of the channel in future years but was performing adequately at the time of the inspection. No permafrost degradation was observed around the borrow sources at the time of the inspection.

11.3 Summary and Recommendations

The borrow areas should be monitored for future erosion and thaw settlement; however, they appear to be performing well since they were reclaimed two years ago.

12.0 ORE STOCKPILES

12.1 Background

The ore and waste rock storage areas are located east of the crusher area. Photos of the ore stockpiles are included in Appendix O. The photo locations are presented in Figure 15.

The pile heights should be constructed such that they are less than 2 m above the reach height of the loader removing material from the pile. The dig face should be carried out in a manner such that the slope angles are flatter than the angle of repose of the material (1.3H:1V to 1.4H:1V).

It is Meliadine policy that a maximum 7 m high bench face is to be used. A second bench can be constructed to a maximum total height of 12 m, with a 5 m offset from the first bench. In general, most of the piles in the ore and

waste rock storage area are less than 7 m. The main ore pile was placed in two benches which appeared to meet the site specifications.

The piles appeared to be stable and well managed with no signs of instability.

No geotechnical concerns related to the stability of the stockpiles were identified.

13.0 OTHER MELIADINE FACILITIES

13.1 Crusher Ramp

The crusher ramp is an earth fill structure consisting of a ramp, turn around area, and loading area adjacent to the crusher. It was constructed in 2018. It was mainly constructed of Run-of-Mine rock with an MSE wall surrounding the crusher. The crusher pad is shown in Photos 1 through 7, Appendix P. The photo locations are presented in Figure 16.

The area was visually inspected. The gabion wall appears to be performing well with no visual signs of distress. It is leaning in towards the fill materials as intended.

The fill slopes were relatively smooth with no obvious cracking, erosion, or signs of instability. There was also no cracking on the surface of the ramp, turn around area, or the loading area adjacent to the crusher.

It appears to be performing well from a geotechnical perspective.

13.2 Saline Water Treatment Plant

The SWTP was constructed to treat water from underground operations. It was constructed in an existing storage warehouse/shop that was extended on one end. The structure is a fabric building founded on a concrete slab.

The SWTP generates considerable heat, making the interior of the building warm. The concrete slab of both the original building and the extension has undergone a considerable amount of settlement. It is speculated the settlement is due to thawing of ice rich permafrost underneath the building. The settlement was reported to be up to 0.4 m in 2019.

The facility has not been used since March 2020, and there are no plans to operate in the future. Inside of the facility was not inspected in 2021 or 2022. If the facility is operated again, it is recommended that an assessment of the geotechnical and structural condition be carried out.

13.3 Landfill

The main landfill for the mine is located at the northeast corner of WRSF1. The landfill has perimeter berms constructed of esker material. The landfill is used for dry waste only. Kitchen and other burnable wastes are burned in the onsite incinerator. The landfill is shown in Photos 8 through 13, Appendix P. The photo locations are presented in Figure 12.

The perimeter berms are performing well from a geotechnical perspective with no signs of instability. It is understood that the berms were raised approximately 2.0 m in 2023 to provide additional capacity in the landfill.

At the time of the site inspection the landfill debris was predominately uncovered. The landfill appeared to contain construction waste and wood not suitable for burning (painted, treated etc.) among other things.

It is recommended that the landfill be covered in stages with intermediate cover to avoid blowing debris.

13.4 Emulsion Plant Pad

The emulsion plant is located at the north end of the mine. The plant was constructed on a pad constructed of esker material. The emulsion plant pad is shown in Photos 14 through 18, Appendix P. The photo locations are presented in Figure 16.

It is understood that the pad had some settlement after it was constructed but there were no reports of recent settlement issues. The north edge of the pad is experiencing erosion, the erosion channels are similar to those observed in 2019, 2020, and 2021 and are not currently impacting the use of the pad. No permafrost degradation was observed around the emulsion plant pad at the time of the inspection.

It is recommended that the pad settlement and erosion continue to be monitored. Remedial action was not required at the time of the inspection.

The storage pad next to the emulsion pad is filled with shipping containers. Several shipping containers located on the south corner of the pad are at the edge of the pad. It is recommended to position the shipping containers back from the crest of the pad.

13.5 Landfarm

A lined landfarm was constructed southeast of the process plant. Windrows of soil 1.0 m to 1.2 m have been placed in the landfarm as shown in Photos 19 to 22, Appendix P. The photo locations are presented in Figure 16.

The landfarm berms appear to be in a stable condition with minor cracks on the berm crest. A small amount of geomembrane liner and geotextile was exposed on the perimeter of the berm. The exposed liner will not impact the landfarm performance.

The landfarm sump contained a small volume of water at the time of the inspection. It is understood that this water is tested prior to pumping it out.

No geotechnical issues were noted at the time of the inspection.

13.6 Industrial Fuel Storage Tanks

The Industrial Fuel Storage Tanks are located east of the process plant as shown in Photos 23 to 27, Appendix P. The photo locations are presented in Figure 16.

Two tanks are in the facility. The facility is lined with a geomembrane liner for secondary containment.

The crest of the berm has several cracks up to 40 mm wide. A small amount of erosion has occurred on the tank pedestals; however, the erosion does not appear to generally extend under the tank bases. A grounding cable is exposed in the top of the berm. There was a small amount of water in the tank base. The cover fill over the geotextile is missing in a small area (<0.5 diameter).

Crush material underneath the pipeline cribbing going over the containment berm has been eroded away. Crush material should be placed back around the pipeline supports to remove stress on the pipeline.

The tankfarm is performing adequately from a geotechnical perspective. No permafrost degradation was observed around the facility at the time of the inspection. Its condition should continue to be monitored.

13.7 Other Facilities

The following other facilities were inspected during the site visit:

- New Cyanide Storage Pad, constructed in 2019;
- Emulsion Plant Storage;
- Freshwater Intake;
- Incinerator Pad;
- Mine Site Fuel Farm;
- Paste Plant Ramp;
- Industrial Pad; and
- Portal No. 1 and Portal No. 2.

Erosion was observed underneath the strip footings that support the corrugated steel portal entry of Portal No. 2. It is recommended that the voids underneath the footing foundations are backfilled, and erosion protection measures are put in place to prevent additional erosion along the base of the footing.

No other geotechnical issues were noted in these facilities. No permafrost degradation was observed around these facilities at the time of the inspection.

14.0 EXPLORATION CAMP AND ACCESS ROAD

Portions of the exploration camp were being dismantled at the time of the annual geotechnical inspection. Some of the dorms had been removed out of the area, although other portions of the camp were still in use. Appendix Q contains photographs taken during the inspection. The photo locations are presented in Figure 17.

The freshwater inlet for the exploration camp appears not to be in use. The station support beams appear to be eroded away at one corner. The beam should be repositioned for stability.

The landfarm at the exploration camp access road is in the process of decommissioning.

The access road to the exploration camp was in good condition. There are several depressions in the road down to the diffuser at the east end of exploration camp area.

There are diesel generators at the east end of the camp. They were not being used at the time of inspection. The generators, and associated fuel storage are in a lined secondary containment area. There was water in the base of the containment area indicating there is some containment in the area. There are numerous tears in the crest of the liner and top of the containment slope, as shown in Photo 3, Appendix Q.

15.0 ALL-WEATHER ACCESS ROAD AND ASSOCIATED WATER MANAGEMENT STRUCTURES

The AWAR construction activities began during the winter of 2012, and construction was completed by the end of October 2013 to connect the hamlet of Rankin Inlet to the Project. Appendix R contains photographs taken during the inspection. The road is approximately 23.8 km long, with three bridge crossings and culverts installed at a total of 19 locations. The road has two-way traffic and is approximately 6.5 m wide with pull outs approximately every 400 m ±50 m to facilitate vehicles passing.

The AWAR is used by Agnico Eagle and provides unrestricted all-terrain vehicle (ATV) access for the public, if it is safe to do so. The AWAR is used to transport building materials, construction/mining equipment, fuel, reagents, supplies, workers, and contractors to the mine.

The road design is based on a general sub-base composed of rockfill or sand and gravel from esker sources and crushed granular surfacing with a combined minimum thickness of 500 mm. The road design varied based on the relative susceptibility to freeze and thaw induced settlement of the foundation soils. The thickness of the road fill material was generally increased, to a minimum of 1.3 m, in areas where potentially thaw-sensitive soils were identified. Along portions of the road where thaw-sensitive soils were identified, a geotextile material was incorporated into the road design to limit damage to the road should the foundation material thaw.

15.1 Observations and Recommendations

The road and culverts were generally observed to be in good condition, at the time of the inspection with the exceptions noted below. Most culverts were unobstructed with no signs of substantial damage to the culverts. All bridges and their embankments were in good geotechnical condition at the time of the inspection. A structural and/or mechanical assessment of the bridges was not conducted and is beyond the scope of this geotechnical inspection.

The locations and a photographic record of the inspected culverts and bridges is provided in Appendix R. The photo locations are presented in Figure 22 to Figure 28.

Table 15-1 lists the locations of water management structures: culverts and bridges that have been installed along the AWAR. The location of the culverts and bridges are listed, based on distance from the Healing Centre in Rankin Inlet, with the gate house at Meliadine being 29 km (the distances can be several metres off the distance marker distances on the road). Size and number of culverts is provided in Table 15-1, along with specific observations and photos at the time of the inspection, and any recommendations.

It is understood that Agnico Eagle has implemented a watercourse crossing inspection and maintenance program, which includes:

- A regular inspection program to identify issues relating to watercourse crossings, such as structural integrity and hydraulic function;
- An event-based inspection program to track the impacts of larger storm events on watercourse crossings; and
- Observations to confirm water is flowing through the culverts and no sediment is being transported in the water to determine if any mitigation is required.

Road maintenance and snow management are carried out, as deemed necessary. Steaming of culverts is included as a maintenance activity. Agnico Eagle places additional crush on the AWAR annually and applies calcium chloride for dust control through the summer.

The construction of a waterline along the AWAR between the Mine and the ocean near Rankin Inlet was ongoing at the time of the inspection. The construction of the waterline resulted in the damage or burial of some culverts along the AWAR.

In general, the road appeared to be in good geotechnical condition at the time of the inspection. No obvious permafrost degradation was observed along the road during the inspection. Recommendations for improvements to the water management structures are presented in Table 15-1. There are numerous locations where there are no culverts or where the culverts are under sized. Water ponding against the AWAR or poor drainage was observed at these locations. Several additional culverts received damage to the inlets and outlets likely during snow clearing activities or the waterline construction and are summarized in Table 15-1 with associated photos.

One location on the AWAR (KM 8.8 from Friendship Centre) was identified by Agnico Eagle to improve the drainage. This location will require a change in the road grade to accommodate culverts or larger culverts. Tetra Tech has provided Agnico Eagle with a detailed design for the culvert modifications that is currently under review. It was determined that four other locations on the AWAR (KM 22.3, 22.7, 22.9, and 28.7 from Friendship Centre) require drainage improvements. However, the waterline has been constructed at these locations, which may render the future installation of culverts not feasible. Tetra Tech recommends that the drainage conditions at these locations be monitored especially during the freshet period and after heavy rainfall events. If monitoring indicates that a culvert is required to improve the drainage, a mitigation plan should be developed and implemented.

Table 15-1: AWAR Road – Water Management Structures Summary

Station (distance from Friendship Centre)	Water Management Structure Description	Conditions, Observations, and Recommendations (at time of inspection)	Photo Page
KM 5.5	1 x 600 mm CSP	Good condition – located in the community portion of the road. Minor flow at time of inspection. Damage to culvert at the inlet and an erosion pit at the outlet.	AWAR Road Culvert – Photos 1 and 2
KM 6.0	Char River Bridge	Good condition, stable embankments, and abutments are armoured. Small amount of textile exposed on the east abutment.	AWAR Road Culvert – Photos 3 to 5
KM 6.2	3 CSP culverts: 2 x 1,300 mm 1 x 700 mm	The culverts are vertically offset with the 700 mm culvert elevated above the 1,300 mm culverts. Some minor erosion observed between the culverts on the downstream side. All clear and in good condition. Small flow in the lower 1,300 mm culvert. Armouring appears to be adequate. Small Crack in 700 mm outlet. East side 1,300 mm culvert has deflection under the road. There is little change to the cross-sectional area.	AWAR Road Culvert – Photos 6 to 8
KM 7.0	3 CSP culverts: 2 x 1,000 mm 1 x 700 mm	The culverts are vertically offset with the 700 mm culvert elevated above the 1,000 mm culverts. The 700 mm culvert had a dent inside. West 1,000 mm culvert contains dent at the bottom inlet. East 1,000 mm culvert has minor erosion at outlet with no armouring. Ponded water observed in the lower culvert. Small amount of water ponded upstream. Low flow at time of inspection. Sandy soil around culverts, potential for erosion, but none noted during inspection.	AWAR Road Culvert – Photos 9 to 11
KM 7.1	3 CSP culverts: 2 x 1,000 mm 1 x 700 mm	Vertically offset. 700 mm culvert is elevated. Water ponded in the lower two culverts downstream, minor deformation of culverts under the road, no substantial reduction of cross-sectional area. The culverts and riprap appear in good condition. Low flow at time of inspection.	AWAR Road Culvert – Photos 12 to 14
KM 7.4	3 CSP culverts: 1 x 900 mm 1 x 700 mm 1 x 1,000 mm	Vertically offset. 700 mm culvert is elevated. Damage to the inlet of the 900 mm culvert. Erosion potential due to finer grained soils around 700 mm culvert at the inlet and outlet, but no significant erosion noted. 1,000 mm clear, low flow/ponding water. Agnico Eagle indicates culverts performed well during 2021/2022 freshet. All culvert outlets are damaged. **Recommendation: Repair culvert damage.**	AWAR Road Culvert – Photos 15 and 16
KM 8.0	Meliadine River Bridge	Right abutment, slopes upstream and downstream of bridge have exposed sand and gravel; no erosion noted. No geotechnical concern at the time of the inspection.	AWAR Road Culvert – Photos 17 to 20
KM 8.8	No Culvert	Agnico Eagle reported that there was water overflow in the past freshet. It is observed that the road in this location has low profile. **Recommendation: Install culverts and raise the road to facilitate culverts.**	AWAR Road Culvert – Photo 21
KM 9.1	2 x 1,000 mm CSP culverts	Minor deformation of both culverts under the road. No flow, water ponded below the inlets. Armoured, no obvious signs of erosion. The road has been raised since 2020 inspection.	AWAR Road Culvert – Photos 22 to 24
KM 9.5	1 x 1,300 mm CSP culvert	Water ponded on upstream side of culvert/road with very low flow due to elevated inlet of CSP. Minimal flow during inspection. CSP in good condition. Erosion pits at the outlet with no armouring present.	AWAR Road Culvert – Photos 25 and 26

Table 15-1: AWAR Road – Water Management Structures Summary

Station (distance from Friendship Centre)	Water Management Structure Description	Conditions, Observations, and Recommendations (at time of inspection)	Photo Page
KM 10.5	M-5 Bridge	Good condition, stable embankment, and abutments of the bridge. Exposed geotextile at base of downstream end of left abutment that could be due to erosion. Gabion damaged on downstream of left (north) abutment was repaired in 2023 prior to the inspection. No obvious signs of erosion. The southeast side abutment has minor sloughing and cracking, erosion pathways, and signs of settlement. **Recommendation: Monitor the abutment slope for additional movement.**	AWAR Road Culvert – Photos 27 to 30
KM 12.1	4 CSP culverts: 2 x 1,300 mm 1 x 900 mm 1 x 700 mm	Vertically offset. 700 mm and 900 mm culverts are elevated. Minor small dents and bending of haunches in 700 mm and one of the 1,300 mm culverts. Minor flow through the lowest of the 1,300 mm culverts. Minimal armour; however, no obvious erosion. Some crushing (oval shape) of culvert. Embankment slope is generally in good condition. **Recommendation: Armour inlet to prevent sediment from flowing into culvert, clear sediment at inlet and place geotextile.**	AWAR Road Culvert – Photos 31 and 32
KM 12.6	No culverts	Area of poor drainage. In good condition, no signs of water flow at time of inspection. **Recommendation: Monitor the performance during freshet or after intense rainfall event to determine the requirement of a culvert.**	AWAR Road Culvert – Photos 33 and 34
KM 13.5	5 CSP culverts: 3 x 1,300 mm 2 x 900 mm	Vertically offset, 900 mm culverts are elevated above 1,300 mm culverts. Good condition, no flow, minor dents, and deflection in haunch, otherwise in good condition.	AWAR Road Culvert – Photos 35 to 37
KM 14.7	Access road to B12 quarry, 500 mm HDPE corrugated culvert	Minor flow, small amount of water ponded against AWAR and quarry access road, below inlet of culvert. Minor dents observed in culvert. Small erosion at outlet. Culvert and embankments are generally in good condition. Minor damage to the culvert inlet.	AWAR Road Culvert – Photos 38 and 39
KM 16.3	3 CSP culverts: 1 x 1,300 mm 1 x 700 mm 1 x 1,000 mm	Vertically offset, 1,300 mm culvert is the lowest, then the 1,000 mm culvert, and the 700 mm culvert is the highest. Small flow in 1,300 mm and 1,000 mm culverts. Culverts in good condition. Small erosion and geotextile visible at outlet of 1,300 mm culvert. Outlets are all elevated increasing erosion potential. No signs of overflow, area armoured. Agnico Eagle indicates culverts performed well during 2021 freshet.	AWAR Road Culvert – Photos 40 to 42
KM 18.1	2 CSP culverts: 1 x 900 mm, 1 x 1,000 mm	Vertically offset culverts. The 900 mm culvert is elevated above 1,000 mm culvert. Lower culvert has some flow, minor dent on upstream end. Upper culvert is in good condition. Upper culvert is high on the embankment and has thin cover on the upstream side. Trench exists along upstream toe of road connecting the culverts at KM 18.1 to KM 18.15. Culvert appears to replace KM 18.15 culvert. No erosion noted, appears to be performing adequately.	AWAR Road Culvert – Photos 43 to 45

Table 15-1: AWAR Road – Water Management Structures Summary

Station (distance from Friendship Centre)	Water Management Structure Description	Conditions, Observations, and Recommendations (at time of inspection)	Photo Page
KM 18.15	1 x 600 mm CSP culvert	The culvert no longer appears to be useful as ponding is controlled by the KM 18.1 culvert.	AWAR Road Culvert – Photos 46 and 47
KM 19	No culverts	Ponding on west side of road, reportedly the water ponds here year-round and can reach as high as halfway up the embankment. Water 1 m below road at time of the 2019 and 2020 Inspections. 2018 Inspection reports by Agnico Eagle note straw logs were placed at KM 19, so there may have been some flow over the road in this area in 2018. No overflow reported in 2019. Agnico Eagle reported that there was overflow in 2020 freshet but no pumping was required during 2021 freshet.	AWAR Road Culvert – Photos 48 and 49
KM 21.0 to 21.5	No culverts	Low ponded water on west side of road near KM 20.0 and KM 21.2. Water reportedly flowed over the road near KM 21.5 during the 2017 freshet. Straw logs were placed on east side of road embankment to control suspended solids in the flow in 2018. No reports of overflow in 2019. Inspection in 2019 had a “wash zone” of road embankment indicating likely high water in 2019. Pumping required in 2020.	AWAR Road Culvert – Photo 50
KM 21.7	2 x 160 mm steel pipes, used as culverts	Vertically offset steel pipes, clear, no flow. Water ponded upstream in 2018, erosion mark from higher water level evident in road embankment. Water reportedly flowed over the road at this location during freshet. Agnico Eagle personnel reported that the road was excavated in 2018 to allow the water to drain. Capacity of pipes may be inadequate, or pipes could have been frozen (blocked) causing water to backup. Straw logs were observed on west side of road. No reports of overflow in 2019 or 2020 or 2021. Pumping was required in 2021. High water marks in 2022 does not indicate overflow occurred.	AWAR Road Culvert – Photo 51
KM 22.3	2 x 160 mm steel pipes, used as culverts	Ponded water observed in 2019, no armour around inlets. Culverts, vertically offset, clear, no flow. Inlets are elevated above ponded water at time of inspection. No indication of overflow. Agnico Eagle reported there was overflow at the location in 2020 and no overflow in 2021 and 2022 freshet. The outlet of the culvert was buried during the waterline project construction. **Recommendation: The drainage conditions at this location be monitored especially during the freshet period and after the heavy rainfall event. If the monitoring indicates that the placement of the culverts is required to improve the drainage, a mitigation plan should be developed and implemented.**	AWAR Road Culvert – Photos 52 and 53
KM 22.7 to 23.0	No culverts	Water ponded on the east side of the road. Distressed vegetation indication of some ponding. Required pumping to prevent the road from breaching in 2021. **Recommendation: The drainage conditions at this location be monitored especially during the freshet period and after the heavy rainfall event. If the monitoring indicates that the installation of the culverts is required to improve the drainage, a mitigation plan should be developed and implemented.**	AWAR Road Culvert – Photo 54

Table 15-1: AWAR Road – Water Management Structures Summary

Station (distance from Friendship Centre)	Water Management Structure Description	Conditions, Observations, and Recommendations (at time of inspection)	Photo Page
KM 25.8	1 x 600 mm HDPE corrugated culvert	No flow, minor amount of gravel in base of culvert, some dents on upstream inlet to culvert. Sandy soil around inlet and outlet, no armor. Minor erosion on slope of road. 2018 inspection reports noted ponding of water at or over the road in this area during the freshet. The culvert inlet does not extend past the toe of the road embankment. Some gravel was built up in the culvert base. Deformation was observed inside the HDPE pipe, indicates that the HDPE culvert is not strong enough to carry the current traffic load. **Recommendation: The performance of the HDPE culvert at this location be monitored. If the monitoring indicates that the placement of the HDPE culvert is required, a mitigation plan should be developed and implemented.**	AWAR Road Culvert – Photos 55 to 57
KM 26.2	2 x 160 mm steel pipes, used as culverts	Vertically offset, lower pipe bent upward. The inlets are elevated close to the road surface. Some sediment deposition downstream is evident. 2018 Agnico Eagle inspection reports noted ponding of water at or over the road in this area during the freshet. No reports of overflow in 2019. Ponding and overflow were reported during 2021/2022 freshet. Standing water, clear flow in lower culvert.	AWAR Road Culvert – Photos 58 and 59
KM 26.5	3 x 700 mm CSP culverts	Equal elevation, minor sediment buildup, low flow, small dents, well armoured and covered with gravel. No signs of erosion. Outlet has exposed geotextile.	AWAR Road Culvert – Photos 60 to 62
KM 26.8	2 x 160 mm steel pipes, used as culverts	Vertically offset, no flow. Inlet of the lower culvert was completely covered by road fill. Some erosion evident at downstream ends. Evidence of ponding about 0.5 m below road crest. Agnico Eagle reports no overflow during 2021 freshet. The inlet of the lower culvert has been cleared of road fill. The outlet of the culvert was buried during the waterline project construction.	AWAR Road Culvert – Photos 63 and 64
KM 27.1	3 CSP culverts: 1 x 900 mm 1 x 700 mm 1 x 1,000 mm (southernmost)	Vertically offset, middle culvert (700 mm) elevated above adjacent culverts. Clear, minor flow in lowest culvert, some small dents in 900 mm and 1,000 mm culverts. All clear and in good condition.	AWAR Road Culvert – Photos 65 to 67
KM 28.7	No culverts	Ponded water on east side of road. 2018 water flowed over the road at this location during freshet. No reports of water flowing over the road in 2019 or 2020. Agnico Eagle reports pumping was required during 2021/2022. **Recommendation: The drainage conditions at this location be monitored especially during the freshet period and after the heavy rainfall event. If the monitoring indicates that the installation of the culverts is required to improve the drainage, a mitigation plan should be developed and implemented.**	AWAR Road Culvert – Photos 68 and 69

Table 15-1: AWAR Road – Water Management Structures Summary

Station (distance from Friendship Centre)	Water Management Structure Description	Conditions, Observations, and Recommendations (at time of inspection)	Photo Page
KM 29.6	1 x 500 mm HDPE corrugated culvert	Culvert Removed, water managed by pumping from a small sump. Water in the sump is pumped to CP5 for storage.	N/A

16.0 ITIVIA FUEL STORAGE SITE AND BYPASS ROAD

The Itivia bypass road is a 6.3 km gravel road that was constructed to divert traffic from the Itivia fuel storage and laydown area to the Project site around Rankin Inlet as shown in Appendix S. The Itivia fuel farm is used to store fuel for Meliadine Mine. The photo locations are presented in Figures 18 to 21.

The road is designed to be 6.5 m wide for most of its length with pull outs to allow two-way traffic. Two sections are designed to be 8 m to allow two-way traffic without pullouts. The road was constructed in 2017 and 2018. The eastern portion of the road was constructed using blast rock from the Itivia Quarry, but most of the road was constructed using esker materials.

The road and culvert locations were observed. The culvert locations are referenced from the southeast corner of the Itivia fuel storage facility. The observations are summarized in Table 16-1. The culvert names are referenced from the construction drawings and the 2018 inspection. Some of the culverts now have the names attached to the culverts, and do not correlate to the previous names as noted in Table 16-1.

In general, the road was in good condition. Minimal signs of cracking or settlement were noted. Some sections of the road were high enough that they required safety berms, which were constructed using large boulders along the eastern section and with esker materials along the remainder of the road. Riprap was generally placed at the inlet and outlets of culverts, per the design. Table 16-1 presents a summary of the culvert inspections completed.

Based on discussions with Agnico Eagle personnel, it is understood that two areas had issues during the 2019 and 2020 freshets; the area northwest of Culvert C10 flooded, and the road at km 2 had significant flows in the upstream ditch running along the road, and across the road. The bypass road did not have any significant issues during the 2021 and 2022 freshets because of a combination of snow removal and culvert steaming by Agnico Eagle personnel.

Culvert C10 handles the flow of the water from a small lake (Signet Lake) north of the road. In 2019 it appeared that most of the runoff ran along the road as opposed to flowing through the culverts. This is evidenced by the high-water mark on the shoulder of the road. The water ran to a low area of the road east of the culverts, and then across the road. This may have been partially because of icings around the culvert area in the spring. The road 200 m east of Culvert C10 was raised in 2019 to address this problem; however, the problem persisted in the spring of 2020. The Agnico Eagle Surface Water Superintendent reported in 2020 that the water partially came from a discharge out of Signet Lake and the southeast side. The problem could also have been partially caused by an ice/snow blockage in the C10 culverts. The culverts should be cleared prior to freshet. The issue could be rectified by placing culverts in the low area of the road east of Culvert C10. It is understood that the culverts were steamed in 2021 and 2022, and the flow came through the C10 culverts as intended. Although the area functioned well in 2021 and 2022, culverts in the low area of C10 would reduce future problems with this area.

The road along km 2.2 has been constructed as a cross slope fill. Water runs from the up-gradient slope into a ditch upslope of the road. The ditch is relatively shallow (0.5 m). The water spills out of the ditch and runs across the road and down the road slope. It is recommended that the area be rectified to control the freshet water. This could be a combination of a culvert and improving the performance of the ditch. The solution must consider the steep up-gradient slope, steep downstream erodible road fill, and shallow road fill at this location making installation of culvert difficult. The ditch should be cleared of snow and ice prior to the freshet. This section of road did not experience any issues during the 2023 freshet according to Agnico Eagle personnel, but further development of the area should be done if future problems persist. No sign of permafrost degradation was observed along the road during the inspection.

It was observed that most of the culverts do not have identification signs and some culverts were mis-labeled. Tetra Tech recommends that an appropriate sign be installed for each culvert. Recommendations for the identification of culverts are listed in Table 16-1.

Table 16-1: Summary on Culverts on Itivia Bypass Road

Approximate Distance from SE Corner of Fuel Farm	Culvert Identification (Culvert Design Identification)	Water Management Structure Description	Observations	Photographs (Appendix P)
0.35 km	C01 (Design identification C01)	2 x 1,000 CSP culverts	No water flowing through culverts. Road constructed out of blast rock. Large boulders placed on south crest of road as safety berm.	Itivia Bypass Road Culvert – Photos 1 and 2
0.6 km	C02 (Design identification C02)	2 x 700 mm CSP culverts	No water flowing through culverts. Road constructed out of blast rock. Large boulders placed on south crest of road as safety berm.	Itivia Bypass Road Culvert – Photos 3 to 5
0.8 km	C03 (Design identification C03)	2 x 1,000 mm 1 x 700 mm	No water flowing through culverts. Minor erosion in tundra observed upstream of culverts. Road constructed out of blast rock. Large boulders placed on south crest of road as safety berm.	Itivia Bypass Road Culvert – Photos 6 to 8
1.0 km	C04 (Design identification C04)	2 x 1,000 mm	No flow in culverts. Minor amount of riprap upstream of culvert. Road constructed out of blast rock. Large boulders placed on south crest of road as safety berm.	Itivia Bypass Road Culvert – Photos 9 to 11
1.2 km	C05 (Design identification C05)	2 x 1,000 mm	No water flowing through culverts. Road and safety berm on south crest of road constructed out of esker materials.	Itivia Bypass Road Culvert – Photos 12 to 14
1.5 km	C06 (Design identification C06)	2 x 800 mm	Culvert inlets installed above surrounding natural ground. Ponded water against toe upstream side of road north of the culvert inlets, a small berm has been constructed between the ponded water and the culvert inlet location. No water flowing through the culverts. Some rockfill in front of inlets could erode into the culverts. Road constructed out of esker materials.	Itivia Bypass Road Culvert – Photos 15 to 17
1.6 km	C07 (Design identification C06-1)	1 x 800 mm	No water flow in culverts, road constructed out of esker materials, inlet and outlet covered with riprap.	Itivia Bypass Road Culvert – Photos 18 to 20
1.8 km	C08 (Design identification C07a)	2 x 800 mm	Ponded water observed at the inlets around the culverts and against the toe of the road embankment. Small flow through the east culvert. Culvert inlets installed over rockfill base raised above surrounding natural ground. Road constructed out of esker materials.	Itivia Bypass Road Culvert – Photos 21 to 23
1.9 km	C09 (Design identification C07B)	2 x 1,000 mm	No water flowing through the culverts, inlets and outlets are clear. Road constructed out of esker materials. Safety berm constructed on south crest of road. Outlet discharges on coarse (cobbly) esker. Road crush has washed onto outlet culverts. Minor damage to inlet.	Itivia Bypass Road Culvert – Photos 24 to 26
2.4 km	C10 (Design identification C09)	2 x 1,000 mm	No water flowing through culverts. Ponded water observed around the inlets and against the toe of the road embankment to the south. Road constructed out of esker material. Small amount of erosion in armouring at inlet.	Itivia Bypass Road Culvert – Photos 27 to 29
3.1 km	C11 (Design identification C10)	5 x 1,200 mm 1 x 1,000 mm	Some damage to culvert inlets and deformation under road observed. Some water flow observed flowing into lowest culvert. Ponded water observed along the toe of the road embankment to the north of the culvert inlets. Culverts were steamed during freshet which prevented issues this year. Road constructed out of esker material. Road raised in fall 2019 north of culverts. Water raised to crest elevation of low area in the road to the northwest. Minor cracking in the road fill slopes on the south side of the road. Erosion booms placed on downstream slope of the road low point to the northwest. Armour aprons settled and silted over. Water flowing in lowest culvert. **Recommendation: The culverts should be cleared of snow and ice prior to and during freshet. Additional culverts could be installed in low road area to the northwest; alternatively, the low area in the road could be raised, but would result in a large, flooded area.**	Itivia Bypass Road Culvert – Photos 30 to 32
4.0 km	C12 (Design identification C11a)	2 x 1,200 mm	Culverts are constructed over riprap and inverts are raised above surrounding tundra. No flow observed through both culverts. Shallow ponding of water over tundra upstream of the inlets and against the toe of the road embankment. Water mark visible along toe of road embankment, approximately 0.2 m above toe of road at culverts, higher along road to northeast. Road constructed out of esker material; minor erosion at toe of road.	Itivia Bypass Road Culvert – Photos 33 to 35
4.3 km	C13 (Design identification C11b)	2 x 1,000 mm	Culverts are constructed over riprap and inverts are raised above surrounding tundra. No flow through the north culvert. Small amount of water ponded over tundra on both sides of culverts. Road constructed out of esker material, performing adequately, no signs of erosion.	Itivia Bypass Road Culvert – Photos 36 and 37
4.8 km	C14 (Design identification C11b-1)	1 x 1,000 mm	Culvert is constructed over riprap and invert is raised above surrounding tundra. Small natural drainage path observed upstream and downstream of culvert. Water observed within drainage downstream of outlets. No flow in culvert. Road constructed out of esker material performing adequately.	Itivia Bypass Road Culvert – Photos 38 to 40
4.9 km	C15 (Design identification C11c)	2 x 1,200 mm	Culverts are constructed over riprap and inverts are raised above surrounding tundra. No flow through culverts. Shallow ponded water observed upstream and downstream of the culverts. Road constructed out of esker materials. Road fill performing adequately.	Itivia Bypass Road Culvert – Photos 41 to 43

Table 16-1: Summary on Culverts on Itivia Bypass Road

Approximate Distance from SE Corner of Fuel Farm	Culvert Identification (Culvert Design Identification)	Water Management Structure Description	Observations	Photographs (Appendix P)
5.0 km	C16 (Design identification C12a)	2 x 1,200 mm	Culverts are constructed over riprap and upstream inverts raised above surrounding tundra. Ponded water observed over tundra upstream and downstream of the culverts. No flow through culverts. Road constructed out of esker materials. Road slopes performing adequately.	Itivia Bypass Road Culvert – Photos 44 to 46
5.1 km	C17 (Design identification C12b)	2 x 1,000 mm	Culverts are constructed over riprap and inverts are raised above surrounding tundra. Water ponded upstream and downstream of the culverts and along the toe of the embankment. Road constructed out of esker materials. Riprap placed in local area of culvert. No signs of erosion on roadside slopes indicating previous higher water levels.	Itivia Bypass Road Culvert – Photos 47 to 49
6.2 km	C18 (Design identification C13)	2 x 800 mm	Culverts are constructed over riprap and inverts are raised above surrounding tundra. Relatively large pond of water upstream and downstream of the culverts; road constructed through natural pond. Road constructed out of esker materials. Minor dents at east outlet. West inlet is damaged. The Culvert is bent with ¼ of the area. Low water flow at time of inspection.	Itivia Bypass Road Culvert – Photos 50 to 52
6.3 km	C19 (Design identification C14)	3 x 800 mm	Culverts are constructed over riprap and inverts are raised above surrounding tundra. Water ponded upstream and downstream of the culverts. No signs of subsidence due to ponded water. Road constructed out of esker materials. Left inlet culvert has a dent in the middle, underneath the road fill.	Itivia Bypass Road Culvert – Photos 53 to 55

The Itivia fuel farm consists of a 20,000,000 L and a 13,500,000 L fuel storage tanks as shown in Photos 56 through 60, Appendix S. The fuel is hauled to the mine site on an as needed basis. The tanks are contained within a geomembrane lined containment facility. The geomembrane liner is covered with a layer of geotextile and 20 mm crushed rock. The following observations were made during the inspection.

- Some small areas on the east berm had exposed geotextile on the crest of the berm; however, these will not affect the performance of the facility.
- There was some ponded water in a portion of the facility.
- The width of the granular fill tank pedestal base beyond the tank is relatively narrow at the centre points, as the pedestals have been constructed with a square footprint.
- The edge of one tank pedestal has minor surface erosion of the granular crush.

In general, the facility appears to be in good condition from a geotechnical perspective. Minor erosion of the granular fill pedestals should be built up to prevent further development of erosion channels and monitored. Water in the facility should be emptied as soon as practical to reduce the risk of erosion. Coarser rockfill could be placed adjacent to the narrow point of the pedestals to reduce the risk of erosion. It is recommended that the small amount of work in the facility be done by hand, to avoid the need for heavy equipment to work in area.

17.0 SUMMARY OF RECOMMENDATIONS

A total of 23 recommendations were made during the 2022 annual inspection. Fifteen of the 2022 recommendations were executed in 2023 and eight noted as in progress and carried over to 2024. A total of 22 recommendations were made based on the 2023 annual inspection, which include 14 new recommendations and 8 carry-overs from 2022. Table 17-1 presents a summary of recommendations based on the observations made during the 2023 annual inspection and review of the status of the recommendations made during the 2022 annual inspection. As noted in Table 17-1, five recommendations had been implemented by Agnico Eagle at the time of issuing this report, Tetra Tech will confirm the implementation in the 2024 annual inspection.

Table 17-1: Summary of Recommendations

Section	Structure/Facility	Recommendations	Status
5.2.5	Dike D-CP1 and associated infrastructure	Consideration could be given to regrade the channel base to maintain a positive gradient to promote the water flow at observed ponding areas.	New from the 2023 inspection
		Additional rockfill should be placed to cover the east shoulder of the collection channels to reduce the permafrost degradation in this area.	
		Closely monitor the ground temperatures at the HGTC-5 location to assess the impact of the pipeline crossing at Station 1+125 on the thermal performance of Dike D-CP1.	
5.3.5	CP2	The area against the upstream side of CP2 Thermal Berm with the observed ponded water should be covered with rockfill to prevent future ponding and potential thermal degradation of the native ground between the thermal berm and crest of CP2.	Carried over from the 2022 inspection. Tetra Tech was informed that Agnico Eagle had completed this recommendation after the 2023 annual inspection. Tetra Tech will confirm this activity in the 2024 annual inspection.
		The area between CP2, Channel 9, Channel 10, and WRSF3 should be covered with rockfill as thermal cover to prevent any potential permafrost degradation of the native ground.	New from the 2023 inspection
5.5.5	CP4	Ccontinue monitoring the area between CP4 and the upstream slope of CP4 Berm for settlement to confirm adequate protection is provided to the till berm.	Carried over from the 2022 inspection
		It is recommended to monitor the surface erosion and performance of the Channel 4 Berm during freshet to determine the requirement of mitigation.	Revised the 2022 inspection based on the observation in the 2023 inspection.
5.7.5	CP6	It is recommended that the small water ponding area between the CP6 access ramp and CP6 Thermal Berm be filled with coarse rockfill to avoid future water ponding in the area.	New from the 2023 inspection
		It is recommended to further extend the CP6 access ramp to the base of CP6 as per design to provide operations with safe access for dewatering.	Carried over from the 2022 inspection. Tetra Tech was informed that Agnico Eagle had completed this recommendation after the 2023 annual inspection. Tetra Tech will confirm this activity in the 2024 annual inspection.
6.1	Saline Pond 1	The berms located at the bottom of the access ramp into Saline Pond 1 should be improved for safety. The arrangement of the pipelines along the ramp should be improved for safety and to ease access.	Carried over from the 2022 inspection
7.3	Channel 1, 2, and 7	Continue to monitor subsidence at the base of Channels 1, 2, and 7 to determine if they impact the channels' performance.	New from the 2023 inspection
	Channel 5	It is recommended that the northern half of Channel 5 be reconstructed to the design grade and elevation. If practical, the base of the channel should be over excavated and backfilled with rockfill material to accommodate any future thaw subsidence after the reconstruction. The base of the southern half of the channel should be regraded to promote water flow and reduce further subsidence due to the water ponding.	New from the 2023 inspection. Tetra Tech was informed by Agnico Eagle that the reconstruction is in progress at the time of issue this report. Tetra Tech will confirm this activity in the 2024 annual inspection.
	Berm 3	Berm 3 cover materials are susceptible to erosion and some minor erosion was observed during the inspection. Erosion of the slopes should be monitored, and consideration should be given to placing coarser material on Berm 3 to reduce the potential for erosion if it becomes substantial.	New from the 2023 inspection
	TSF	Tailings erosion was observed at various locations on the top of Cell 1 between the tailings and the perimeter rockfill cover zone after an intense rainfall event. The tailings erosion is likely caused by the ponding water at the local depression area. It is recommended that the tailings be higher than the perimeter rockfill to avoid the formation of the depression zone and the top surface of each perimeter rockfill layer has a slight slope (2%) to the outside to create a shed effect and promote the runoff flow away from the tailings and rockfill interface.	New from the 2023 inspection. Tetra Tech was informed that Agnico Eagle has completed this recommendation after the 2023 annual inspection. Tetra Tech will confirm this activity in the 2024 annual inspection.
9.1	WRSF1	The free dumps placed on 97 m bench be spread and compacted to avoid settlement and cracking. New waste material should be placed as per the construction protocol established in the OMS manual. The performance of the facility should continue to be monitored on an ongoing basis as outlined in the OMS Manual.	New from the 2023 inspection
9.2	WRSF3	The depression area and cracks observed on Bench 72 m be filled with waste rock and apply traffic compaction prior to the next lift placement	New from the 2023 inspection. Tetra Tech was informed that some repair work has been completed after the 2023 annual inspection. Tetra Tech will confirm this activity in the 2024 annual inspection.
		The ponded water at southwest corner of WRSF3 be pumped out regularly or consider a channel and sump if possible within the lease boundary to divert/collect runoff water to prevent permafrost degradation at WRSF3 toe.	New from the 2023 inspection
13.3	Landfill	It is recommended that the landfill be covered in stages with intermediate cover to avoid blowing debris.	Carried over from the 2022 inspection
13.7	Other Facilities	It is recommended that the voids underneath the footing foundations that support the corrugated steel entry of Portal No. 2 are backfilled, and erosion protection measures are put in place to prevent additional erosion along the base of the footing.	Carried over from the 2022 inspection
14.0	AWAR	It is recommended that the locations along the AWAR selected for culvert installations be completed as per the detailed design Issued for Review by Tetra Tech. Continue monitoring the water ponding area along the AWAR road where a culvert was not installed and evaluate the performance and determine the requirement of a culvert. It is recommended that an appropriate identification sign be installed for each culvert.	Carried over from the 2022 inspection
15.1	Itivia Bypass Road and Fuel Storage Site	Water in the facility should be emptied as soon as practical to reduce the risk of erosion.	New from the 2023 inspection
		It is recommended that an appropriate identification sign be installed for each culvert.	New from the 2023 inspection

18.0 CLOSURE

We trust this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech Canada Inc.

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PERMIT TO PRACTICE
TETRA TECH CANADA INC.

Signature _____

Date _____

PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

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FIGURES

NO. DESSIN
DRAWING NO.

FORMAT ANSI B–11x17

NOTE

1. PHOTO FROM AUGUST 2023
2. CONTOURS PRIOR TO SITE DEVELOPMENT

0 500 m

Scale: 1: 15 000

AGNICO EAGLE

TETRA TECH

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TITRE / TITLE	# DWG

DESSINS EN RÉFÉRENCE/REFERENCE DRAWINGS

REV	DESCRIPTION	DATE	PAR BY
A	ISSUED FOR USE	2024–01–30	HX

REVISIONS

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APPROUVÉ PAR / APPROVED BY		
No. PROJET / PROJECT NO.	6515	
DATE		

TITRE / TITLE

AGNICO EAGLE – MELIADINE GOLD MINE

FIGURE 1 – MELIADINE MINE
2023 GENERAL SITE LAYOUT

ÉCHELLE/ SCALE	1:15000	FICHIER FILE	General Site Layout Plan .DWG
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NOTE

1. CONTOURS PRIOR TO SITE DEVELOPMENT

LEGEND

- CATCHMENT BOUNDARY
- SERVICE ROAD
- HAUL ROAD
- WATERBODY
- WATER COLLECTION POND
- DRAINED POND AREA
- OPEN PIT
- OVERBURDEN
- WASTE ROCK
- ORE
- TAILINGS
- INDUSTRIAL SITE PAD
- CONTACT WATER FLOW DIRECTION

FRESH WATER INTAKE CAUSEWAY
CHANNEL2
INDUSTRIAL SITE PAD
LANDFARM
WTP INTAKE CAUSEWAY
WATER TREATMENT PLANT
ORE STOCKPILE PAD
MELIADINE LAKE
BERM2
TAILINGS STORAGE FACILITY (TSF)
CP1
CHANNEL1
CULVERT1
CRUSHER RAMP
CULVERT3
CP3
CP3 BERM
CULVERT2
LANDFILL
CHANNEL3
CULVERT4
CULVERT5
CHANNEL6
BERM CP6
D-CP1
CHANNEL7
CHANNEL8
BERM1
CHANNEL4
ORE STOCKPILE PAD AND LAYDOWN
WASTE ROCK & OVERBURDEN STORAGE FACILITY 1 (WRSF1)
P-AREA
EXPLORATION CAMP
EFFLUENT DIFFUSER
CHANNEL9
MELIADINE LAKE
POND CP6
SALINE WATER STORAGE POND
BERM CP2
WASTE ROCK & OVERBURDEN STORAGE FACILITY 3 (WRSF3)
POND CP2
CP4 BERM
CP4
CP5 NORTH
CP5 JETTY
CP5 SOUTH
CHANNEL10
CULVERT6
CHANNEL5
BERM3
D-CP5
TIRIGANIAQ PIT 1 (TIRI_1000_01)
TIRIGANIAQ PIT 2 (TIRI_1000_02)
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AGNICO EAGLE

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REVISIONS

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APPROUVÉ PAR / APPROVED BY		
No. PROJET / PROJECT NO.	6515	
DATE		

TITRE / TITLE
AGNICO EAGLE – MELIADINE GOLD PROJECT

FIGURE 2
GENERAL SITE LAYOUT – YEAR 7

ÉCHELLE/ SCALE	1:15000	FICHIER / FILE	General Site Layout Plan .DWG
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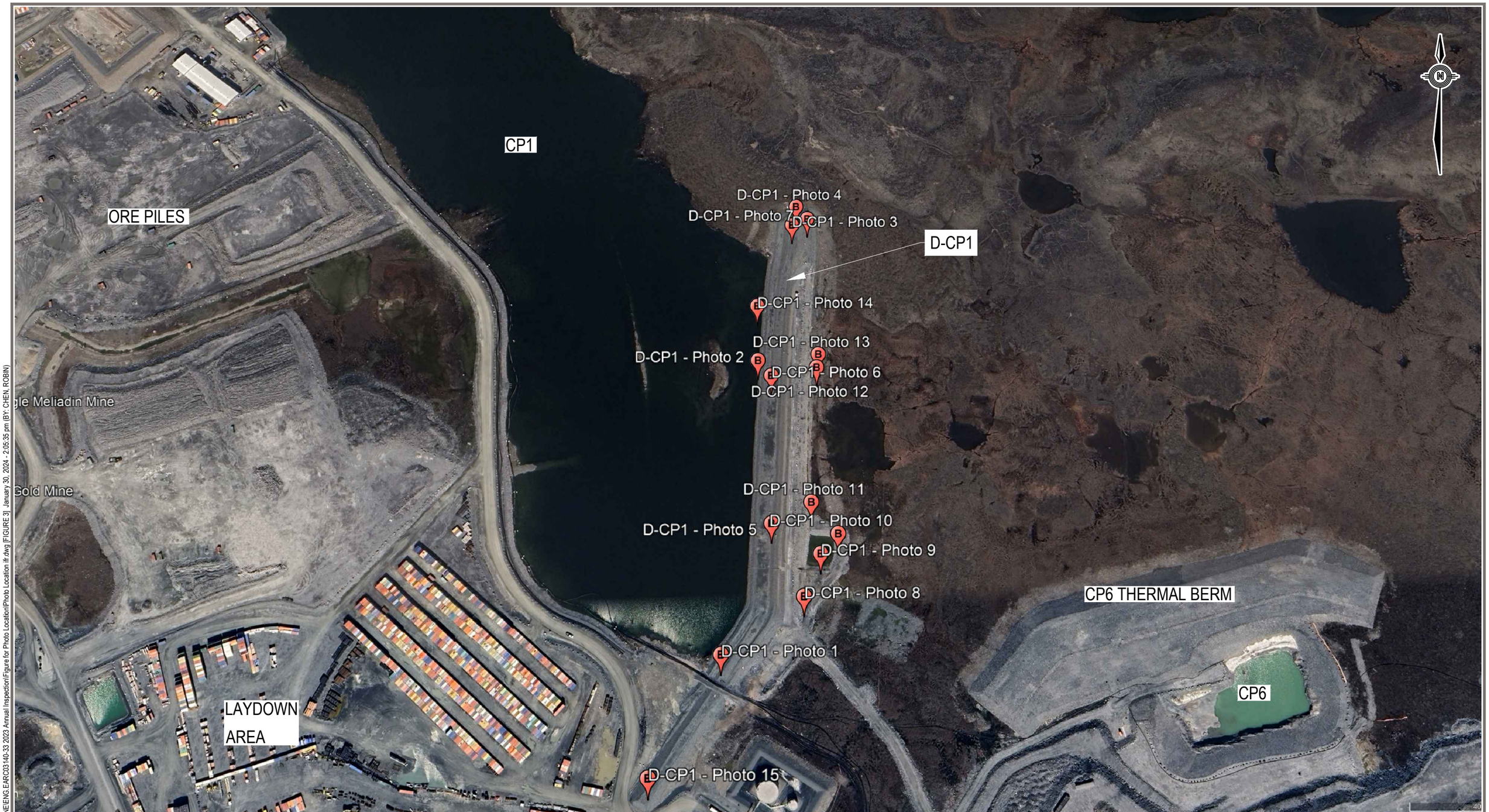

LEGEND:

- PHOTO LOCATION

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MELIADINE GOLD MINE 2023 ANNUAL INSPECTION

D - CP1 PHOTO LOCATIONS

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FIGURE 3

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- PHOTO LOCATION

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MELIADINE GOLD MINE 2023 ANNUAL INSPECTION

CP2, CHANNELS 9 AND 10 PHOTO LOCATIONS

PROJECT NO.	DWN	CKD	REV
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FIGURE 4

LEGEND:

1 - PHOTO LOCATION

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MELIADINE GOLD MINE 2023 ANNUAL INSPECTION

CP3 AND CHANNEL 3 PHOTO LOCATIONS

PROJECT NO.	DWN	CKD	REV
ENG. EARC03140-33	RC	HX	0

OFFICE	DATE
EDM	January 05, 2024

FIGURE 5

Q:\Edmonton\Engineering\E141\Projects_MELIADINE\ENG.EARC03140-33 2023 Annual Inspection\Figure for Photo Location\Photo Location fr.dwg [FIGURE 5] January 30, 2024 - 2:05:42 pm (BY: CHEN, ROBIN)

LEGEND:

- PHOTO LOCATION

ISSUED FOR USE

CLIENT

AGNICO EAGLE

TETRA TECH

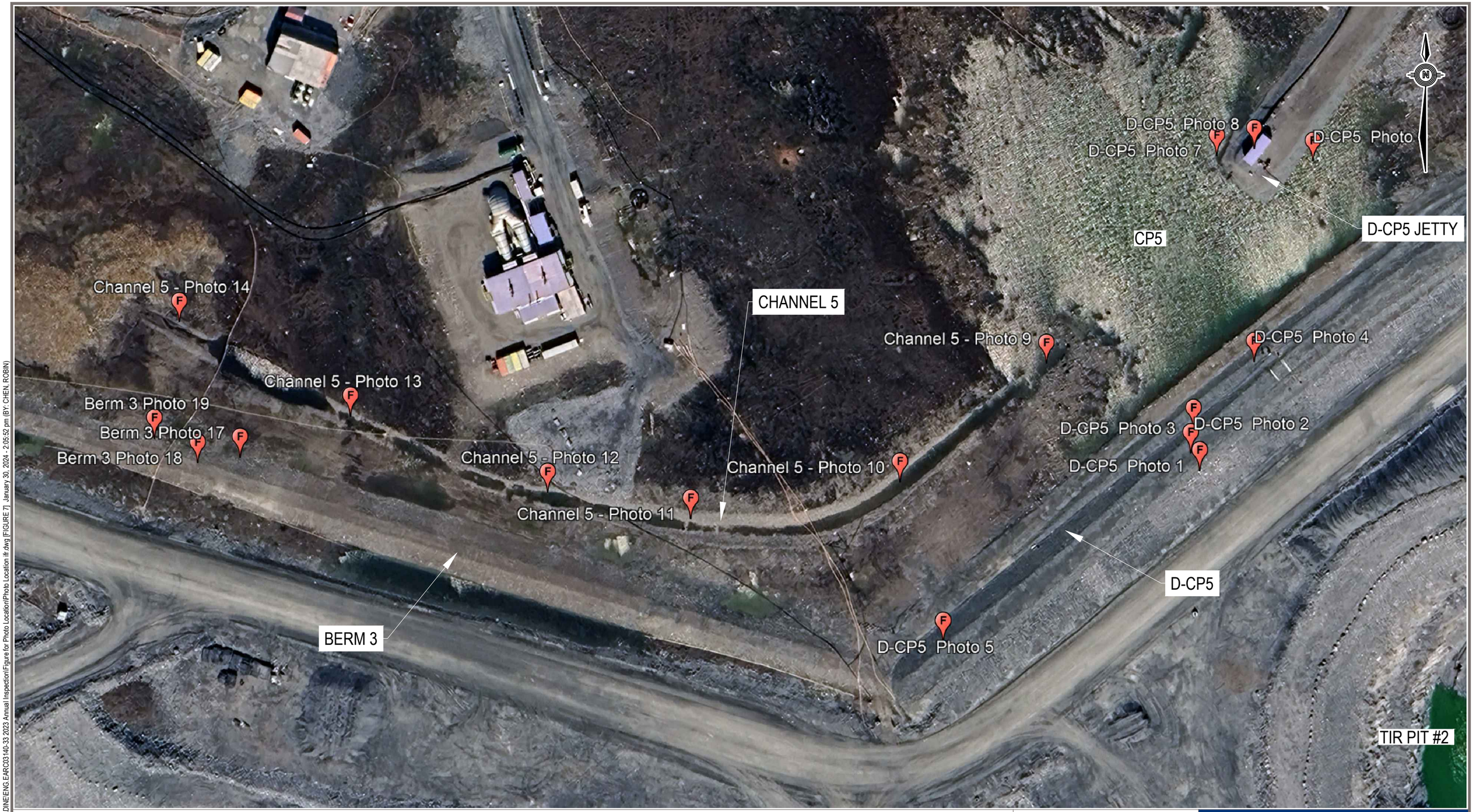
MELIADINE GOLD MINE 2023 ANNUAL INSPECTION

CP4 AND CHANNEL 4 PHOTO LOCATIONS

PROJECT NO.	DWN	CKD	REV
ENG. EARC03140-33	RC	HX	0
OFFICE: EDM	DATE: January 05, 2024		

FIGURE 6

Q:\Edmonton\Engineering\E1411\Projects_MELIADINE\ENG.EARC03140-33 2023 Annual Inspection\Figure for Photo Location\Photo Location fr.dwg [FIGURE 6] January 30, 2024 - 2:05:47 pm (BY: CHEN, ROBIN)



LEGEND:

- PHOTO LOCATION

ISSUED FOR USE

CLIENT

AGNICO EAGLE

TETRA TECH

MELIADINE GOLD MINE 2023 ANNUAL INSPECTION

D - CP5 AND CP5 PHOTO LOCATIONS

PROJECT NO.	DWN	CKD	REV
ENG. EARC03140-33	RC	HX	0

OFFICE	DATE
EDM	January 05, 2024

FIGURE 7

Q:\Edmonton\Engineering\E141\Projects_MELIADINE\ENG.EARC03140-33.2023 Annual Inspection\Figure for Photo Location\Photo Location fr.dwg [FIGURE 7], January 30, 2024 - 2:05:52 pm (BY: CHEN, ROBIN)

LEGEND:

- PHOTO LOCATION

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CLIENT

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TETRA TECH

MELIADINE GOLD MINE 2023 ANNUAL INSPECTION

CP6 AND THERMAL BERM PHOTO LOCATIONS

PROJECT NO.	DWN	CKD	REV
ENG. EARC03140-33	RC	HX	0

OFFICE	DATE
EDM	January 05, 2024

FIGURE 8

SALINE POND 1

SP1- Photo 3

SP1- Photo 2

SP1- Photo 4

SP1- Photo 1

SP1- Photo 5

SP3 - Photo 4

SP PERIMETER BERM

SP3 - Photo 3

SP3 - Photo 2

SALINE POND 3

SP3 - Photo 1

CP5

PORTAL 1

N

100 ft

LEGEND:

- PHOTO LOCATION

ISSUED FOR USE

CLIENT

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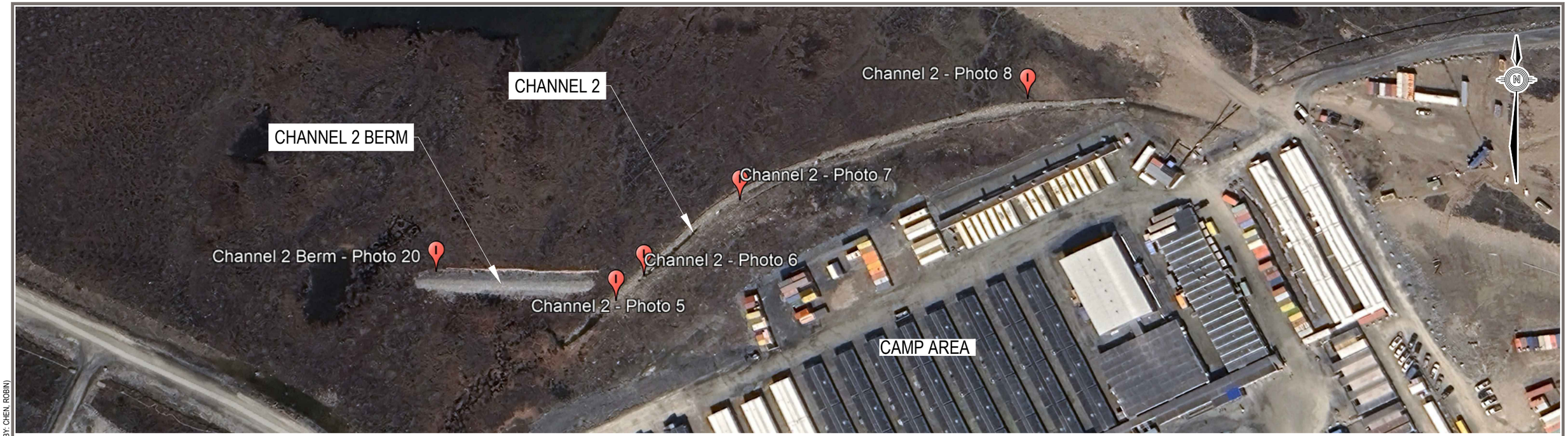
MELIADINE GOLD MINE 2023 ANNUAL INSPECTION

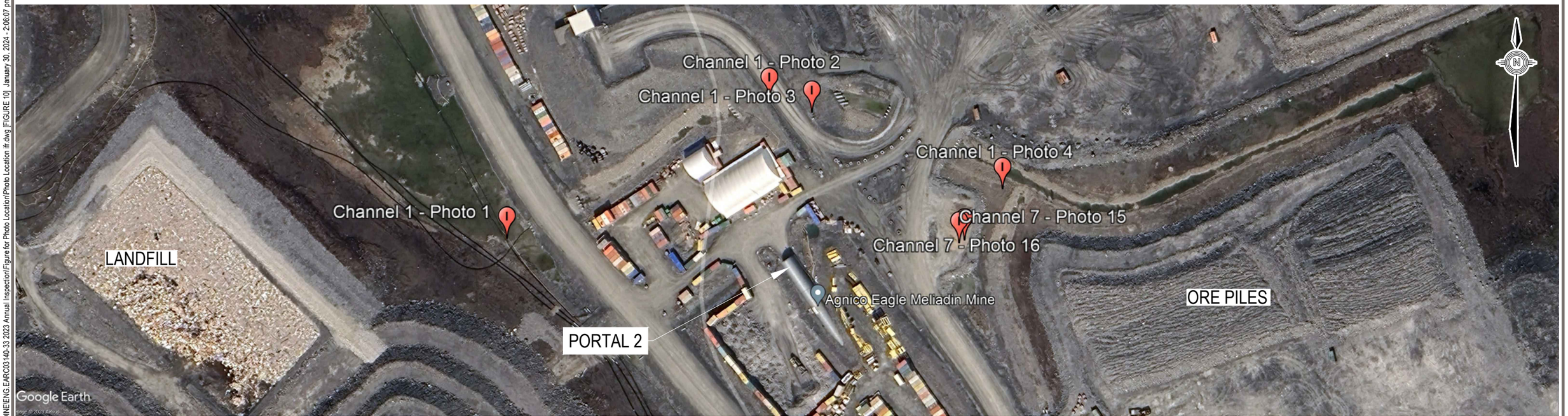
SALINE PONDS PHOTO LOCATIONS

PROJECT NO.	DWN	CKD	REV
ENG. EARC03140-33	RC	HX	0
OFFICE: EDM	DATE: January 05, 2024		

FIGURE 9

Q:\Edmonton\Engineering\E1411\Projects_MELIADINE\ENG.EARC03140-33 2023 Annual Inspection\Figure for Photo Location\Photo Location ifr.dwg [FIGURE 9], January 30, 2024 - 2:06:02 pm (BY: CHEN, ROBIN)





LEGEND:

- PHOTO LOCATION

ISSUED FOR USE

CLIENT

AGNICO EAGLE

TETRA TECH

MELIADINE GOLD MINE 2023 ANNUAL INSPECTION

CHANNELS AND BERMS PHOTO LOCATIONS

PROJECT NO.	DWN	CKD	REV
ENG. EARC03140-33	RC	HX	0

OFFICE	DATE
EDM	January 05, 2024

FIGURE 10

Q:\Edmonton\Engineering\E141\Projects_MELIADINE\ENG.EARC03140.33.2023 Annual Inspection\Figure for Photo Location\Photo Location.fr.dwg [FIGURE 10], January 30, 2024 - 2:06:07 pm (BY: CHEN, ROBIN)

LEGEND:

- PHOTO LOCATION

ISSUED FOR USE

CLIENT

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TETRA TECH

MELIADINE GOLD MINE 2023 ANNUAL INSPECTION

TSF PHOTO LOCATIONS

PROJECT NO.	DWN	CKD	REV
ENG. EARC03140-33	RC	HX	0
OFFICE: EDM	DATE: January 05, 2024		

FIGURE 11

Q:\Edmonton\Engineering\E141\Projects_MELIADINE\ENG.EARC03140-33.2023 Annual Inspection\Figure for Photo Location\Photo Location fr.dwg [FIGURE 11], January 30, 2024 - 2:06:11 pm (BY: CHEN, ROBIN)

LEGEND:

- **PHOTO LOCATION**

ISSUED FOR USE

CLIENT

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TETRA TECH

MELIADINE GOLD MINE 2023 ANNUAL INSPECTION

WRSF1 PHOTO LOCATIONS

PROJECT NO.	DWN	CKD	REV
ENG. EARC03140-33	RC	HX	0

OFFICE	DATE
EDM	January 05, 2024

FIGURE 12

Q:\Edmonton\Engineering\E1411\Projects_MELIADINE\ENG.EARC03140-33 2023 Annual Inspection\Figure for Photo Location\Photo Location ifr.dwg [FIGURE 12] January 30, 2024 - 2:06:16 pm (BY: CHEN, ROBIN)

LEGEND:

- PHOTO LOCATION

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CLIENT

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MELIADINE GOLD MINE 2023 ANNUAL INSPECTION

WRSF3 PHOTO LOCATIONS

PROJECT NO.	DWN	CKD	REV
ENG. EARC03140-33	RC	HX	0

OFFICE	DATE
EDM	January 05, 2024

FIGURE 13

Q:\Edmonton\Engineering\E141\Projects_MELIADINE\ENG.EARC03140-33 2023 Annual Inspection\Figure for Photo Location\Photo Location ifr.dwg [FIGURE 13] January 30, 2024 - 2:06:21 pm (BY: CHEN, ROBIN)

Site Road - Photo 1

Site Road - Photo 4

Site Road - Photo 10

BERM 2

TSF (CELL2)

TSF (CELL1)

LAKE B7

MALIADINE LAKE

CP1

Site Road - Photo 6

Site Road - Photo 3

Site Road - Photo 2

Site Road - Photo 7

Agnico Eagle Meliadin Mine

WRSF1

Site Road - Photo 5

WRSF3

N

1000 ft

LEGEND:

- PHOTO LOCATION

ISSUED FOR USE

CLIENT

AGNICO EAGLE

TETRA TECH

MELIADINE GOLD MINE 2023 ANNUAL INSPECTION

SITE ROAD PHOTO LOCATIONS

PROJECT NO.	DWN	CKD	REV
ENG. EARC03140-33	RC	HX	0
OFFICE: EDM	DATE: January 05, 2024		

FIGURE 14

Q:\Edmonton\Engineering\E1411\Projects_MELIADINE\ENG.EARC03140-33 2023 Annual Inspection\Figure for Photo Location\Photo Location fr.dwg [FIGURE 14] January 30, 2024 - 2:06:26 pm (BY: CHEN, ROBIN)

LEGEND:

- PHOTO LOCATION

ISSUED FOR USE

CLIENT

AGNICO EAGLE

TETRA TECH

MELIADINE GOLD MINE 2023 ANNUAL INSPECTION

BORROW SOURCES AND ORE PILES PHOTO LOCATIONS

PROJECT NO.	DWN	CKD	REV
ENG. EARC03140-33	RC	HX	0
OFFICE: EDM	DATE: January 05, 2024		

FIGURE 15

Q:\Edmonton\Engineering\E141\Projects_MELIADINE\ENG.EARC03140-33 2023 Annual Inspection\Figure for Photo Location\Photo Location.ifr.dwg [FIGURE 15] January 30, 2024 - 2:06:31 pm (BY: CHEN, ROBIN)

LEGEND:

- PHOTO LOCATION

ISSUED FOR USE

CLIENT

AGNICO EAGLE

TETRA TECH

MELIADINE GOLD MINE 2023 ANNUAL INSPECTION

EXPLORATION CAMP PHOTO LOCATIONS

PROJECT NO.	DWN	CKD	REV
ENG. EARC03140-33	RC	HX	0
OFFICE: EDM	DATE: January 05, 2024		

FIGURE 16

Q:\Edmonton\Engineering\E1411Projects_MELIADINE\ENG.EARC03140-33 2023 Annual Inspection\Figure for Photo Location\Photo Location ifr.dwg [FIGURE 16], January 30, 2024 - 2:06:37 pm (BY: CHEN, ROBIN)

LEGEND:

- PHOTO LOCATION

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CLIENT

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TETRA TECH

MELIADINE GOLD MINE 2023 ANNUAL INSPECTION

OTHER FACILITIES PHOTO LOCATIONS

PROJECT NO.	DWN	CKD	REV
ENG. EARC03140-33	RC	HX	0

OFFICE	DATE
EDM	January 05, 2024

FIGURE 17

Q:\Edmonton\Engineering\E141\Projects_MELIADINE\ENG.EARC03140-33 2023 Annual Inspection\Figure for Photo Location\Photo Location.ifr.dwg [FIGURE 17] January 30, 2024 - 2:06:42 pm (BY: CHEN, ROBIN)

LEGEND:

- PHOTO LOCATION

ISSUED FOR USE

CLIENT

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TETRA TECH

MELIADINE GOLD MINE 2023 ANNUAL INSPECTION

ITIVIA BYPASS ROAD AND CULVERT PHOTO LOCATIONS

PROJECT NO.	DWN	CKD	REV
ENG. EARC03140-33	RC	HX	0

OFFICE	DATE
EDM	January 05, 2024

FIGURE 18

Q:\Edmonton\Engineering\E1411\Projects_MELIADINE\ENG.EARC03140-33 2023 Annual Inspection\Figure for Photo Location\Photo Location ifr 2.dwg [FIGURE 18], January 30, 2024 - 4:20:43 pm (BY: CHEN, ROBIN)