

Appendix 6 : 2020 Annual Geotechnical Inspection Report

2020 Annual Geotechnical Inspection Meliadine Gold Project, Rankin Inlet, Nunavut



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Agnico Eagle Mines Limited

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EXECUTIVE SUMMARY

Agnico Eagle Mines Limited (AEM) retained Tetra Tech Canada Inc. (Tetra Tech) to conduct the 2020 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 2016). Under Part I, Item 14 (page 21) and Schedule I, Item 1 (page 39) of the Water Licence, AEM is required to undertake an annual geotechnical inspection of its facilities between the months of July and September. The inspection is to be carried out by a geotechnical engineer, and to be in accordance with the Canadian Dam Association (CDA) Dam Safety Guidelines (CDA 2013), where applicable. The inspection occurred from August 15, 2020 to August 23, 2020 and was conducted by Bill Horne of Tetra Tech, a geotechnical engineer, holding professional registration in Nunavut.

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 recommendations made based on the inspection.

CP1

CP1, Dike D-CP1, and Jetty1 are performing well. Some erosion has occurred on the upstream shell of Dike D-CP1. The erosion should be surveyed to determine if remedial measures are required.

CP3

Collection Pond CP3 and its associated infrastructure is performing adequately. Some settlement and slumping was observed on the CP3 road. This area should be clearly marked and traffic on the slump avoided. It should be monitored to determine if remediation is required.

CP4

Collection Pond CP4 and its associated infrastructure is performing adequately. Significant thaw settlement has occurred in the original ground above the pond rockfill slope protection; however, the slopes appear to be stable.

CP5

CP5 and Dike D-CP5 are performing adequately.

CP6

Collection Pond CP6 and its associated infrastructure is performing adequately. There is some settlement and erosion between WRSF3 and Pond CP6, but it is not impacting the performance of CP6.

Saline Ponds

Saline Ponds 1, 3, and 4 are performing well. The settlement and cracking around Saline Ponds 1 and 4 should continue to be monitored.

Diversion Channels and Berms

The diversion channels and berms are performing well. It is recommended to continue to monitor the slumping and cracking adjacent to Channel 5 to determine if sediment from the area is blocking the channel. Cracking and subsidence in the native ground above Channels 3 and 4 should be monitored to determine if they are impacting the channels' performance. Berm 2 cover materials are susceptible to erosion and some minor erosion was observed during the inspection. Erosion of the slopes should be monitored.

Tailings Storage Facility

The 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 GTCs presently installed. It is recommended that the tailings be tested to determine their unfrozen content curve below 0°C to determine how much of the tailings remain unfrozen. The TSF perimeter rockfill berm appears to be functioning well from a geotechnical perspective with no signs of distress. Some dusting from the TSF is evident in the adjacent WRSF1 area. Measures to reduce dusting should be implemented.

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. A program to separate burnable debris could reduce the landfill requirements.

The landfill is nearing its current design capacity. It is understood a plan has been developed to raise the landfill berms to provide additional capacity.

WRSF1 and WRSF3

The initial lifts of till and waste rock had been placed in the WRSF1 and WRSF3 areas at the time of the inspection. The winter placed till in the WRSF1 has thawed over the summer and is wet and soft, as anticipated. The waste rock in WRSF3 appeared to be going in a well compacted manner. No specific recommendations for geotechnical improvements are provided.

AWAR Road

In general, the AWAR 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 2020 freshet; although several areas have ponded water near the crest elevation of the road. Additional culverts would reduce the risk of the road overtopping.

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. It is recommended that additional culverts or other measures be implemented to prevent this from occurring in the future. It is also understood that significant flows and some overflow occurred around km 2 in the portion of the road that was constructed as a cross slope fill. Drainage at this area should be improved, or the area maintained to direct the flow in the upslope ditch.

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ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
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 Polyethylene
IDF	Inflow Design Flood
km	Kilometers
masl	Metres Above Sea Level
mbgs	Metres below ground surface
MMER	Metal Mining Effluent Regulations
OMS	Operation Management and Surveillance
ppt	Parts Per Thousand
SP	Saline Pond
SWTP	Saline Water Treatment Plant
TSF	Tailings Storage Facility
WRSF	Waste Rock Storage Facility

LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of Agnico Eagle Mines Limited and their agents. Tetra Tech Canada Inc. (Tetra Tech) does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than Agnico Eagle Mines Limited, or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this document is subject to the Limitations on Use of this Document attached in Appendix A or Contractual Terms and Conditions executed by both parties.

1.0 INTRODUCTION

Agnico Eagle Mines Limited (AEM) retained Tetra Tech Canada Inc. (Tetra Tech) to conduct the 2020 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 2016). Under Part I, Item 14 (Page 21) and Schedule I, Item 1 (Page 39) of the Water Licence, AEM is required to undertake an annual geotechnical inspection of its facilities between the months of July and September each year. The inspection is to be carried out by a geotechnical engineer, and to be in accordance with the Canadian Dam Association (CDA) Dam Safety Guidelines (CDA 2013), where applicable. The inspection occurred from August 15, 2020 to August 23, 2020 and was conducted by Bill Horne of Tetra Tech, a geotechnical engineer, holding professional registration in Nunavut.

The following structures were inspected:

Main Site Including:

- Water collection ponds CP1, CP3, CP4, CP5, and CP6 and their associated dikes (D-CP1 and D-CP5), berms, channels, and jetties
- Saline Pond 1 (SP1), Saline Pond 2 (SP2), Saline Pond 3 (SP3), and Saline Pond 4 (SP4)

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, including Culvert 13
- CP4 access road
- Landfill access road, Tailings Storage Facility (TSF) area, including Culvert 1

Pads:

- Main camp pad
- Industrial pad
- East ventilation raise pad
- Temporary cyanide storage 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
- Exploration and 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

Waste Rock Storage Facilities WRSF1 and WRSF3

All-weather Access Road (AWAR)

Itivia Site:

- Fuel storage
- Bypass road

The facilities at the main mine site and exploration camp areas are shown in Figure 1.

Some development for the project had not been constructed at the time of the visit including: Channel 6 and WRSF2. The planned final layout of the main site, including water management structures is shown on Figure 2.

The P-Area temporary collection ponds P1, P2, and P3 have been decommissioned and are therefore, not included in the 2020 inspection.

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.

Where applicable, the inspection was performed consistent with the principles set out by the CDA (2013). The inspection consisted of visually observing each of the facilities listed above; taking photographs to document the

conditions at the time of the inspection, reviewing instrumentation data, inspection reports, and other relevant files and reports (listed in the reference section of this report); and communication with AEM on-site staff, Alexandre Boissonneault.

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 with some periods of rain. Daily temperatures varied between 8°C and 16°C. Water levels were somewhat higher than normal for this period of the year.

The site water management plan (AEM 2018) provides a summary of the water management infrastructure and the overall water management approach.

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.

1.1 Scope Limitations

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

2.0 GENERAL SITE CONDITIONS

The Project 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 Project 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 Project 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 360 to 495 metres below ground surface (mbgs). 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 (AEM 2014b). Typical permafrost ground temperatures at the depths of zero annual amplitude are in the range of -5.0°C to -7.5°C in areas away from lakes and streams and are generally reached at a depth of 15 mbgs to 35 mbgs. The geothermal gradient ranges from 0.012°C/m to 0.02°C/m (Golder 2014). 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.

Taliks may occur where lake depths are greater than about 1 m to 2.3 m. 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 increases. Formation of an open-talik, which penetrates through the permafrost, would be expected for lakes that exceed a critical depth and size. It is anticipated that open-taliks exist below Meliadine Lake, Lake B7, and Lake D7 based on their depth and geometry (Golder 2013).

The salinity of groundwater also influences the temperature at which the groundwater freezes. Testing has indicated that the salinity of the groundwater in the Project 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 (AEM 2014a, Volume 7, Appendix 7.2-A).

3.0 WATER COLLECTION PONDS, DIKES, JETTIES, BERMS, AND CHANNELS

3.1 Introduction

This section presents a summary of the water collection ponds and associated dikes, berms, and channels constructed prior to the 2020 inspection, including:

- Collection Pond CP1 and its associated Dike (D-CP1) and Jetty 1,
- Collection Pond CP3 and its associated Berm CP3, Berm 2, and Channel 3,
- Collection Pond CP4 and its associated Berm CP4, Berm 4, and Channel 4,
- Collection Pond CP5 and its associated Dike D-CP5, Jetty 5, and Channel 5
- Collection Pond CP6 and its associated Berm CP6, and
- SP1, SP3, and SP4.

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

3.2 Pond CP1 and Dike D-CP1

3.2.1 Background

Dike D-CP1 was constructed across the outlets of former Lakes H6 and H17, which combine to form Pond CP1. Dike D-CP-1 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 Pond CP1. Water is retained in Pond CP1 prior to treatment 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. Selected as-Built drawings are included in Appendix B.

A jetty is constructed into CP1 to pump water to the EWTP.

3.2.2 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. A photographic record of the inspection, with annotations added where appropriate, is included in Appendix B.

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.
- Minor cracking and small settlement were observed along portions of the upstream and downstream crest (e.g., Photos 5 and 7, Appendix B). The largest cracks were up to 3 cm wide. The cracking was less prevalent than observed in August 2019.
- Erosion has occurred on the upstream slope of the dike, as shown in Photos 1 and 3, 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.
- Settlement and thaw subsidence has occurred in the downstream collection sump and channels as shown in Photos 8, 13, 15, and 16, Appendix B.
- Settlement and subsidence has occurred between the downstream dike toe and the water collection channel (as shown in Photos 12 and 14, Appendix B). Some of the settlement is in the disturbed original ground in the area, other settlement is in areas that were covered with fill for construction access. The settlement and subsidence does not appear to be impacting the dike's performance.
- No seepage was observed from the downstream toe.
- The water levels in the downstream collection channel pond and channels was relatively low (Photos 9, 11, and 14, Appendix B) at the time of the site visit. It is understood the sump was pumped out following freshet.
- Jetty 1 was in good condition. Minor erosion marks on the slope due to wave erosion from historic high water levels. The erosion is somewhat greater than was observed in 2019. 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 heat tracing cables should be pulled back from the area.

AEM's engineering and environment team conducted weekly visual geotechnical inspections of the dike throughout 2019. Monthly inspection reports included an assessment of ground temperatures, observations of cracking and settlement, pond elevation, pumping activities, and photographs. No seepage was observed by AEM's engineering and environmental team at Dike D-CP1 throughout the year. The observations made by AEM staff were consistent with the observations during the 2020 annual inspection.

3.2.3 Instrumentation and Monitoring

Horizontal and vertical ground temperature cables (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 Table 3-1.

Table 3-1: Summary of D-CP1 Key Trench Ground Temperatures

Cable	Average June 5, 2019 (°C)	Average June 13, 2020 (°C)	Difference (C°)	Average Oct 31, 2019 (°C)	Average Oct 29, 2020 (°C)	Difference (C°)
HGTC-1	-8.4	-7.9	-0.5	-4.5	-3.6	-0.9
HGTC-2	-9.2	-8.0	-1.2	-5.1	-4.8	-0.3
HGTC-3	-8.6	-7.5	-1.1	-5.6	-5.2	-0.4
HGTC-4	-8.9	-8.1	-0.8	-6.0	-5.6	-0.4
HGTC-5	-8.7	-8.2	-0.5	-3.4	-3.7	0.3
VGTC-1	-7.2	-6.3	-0.9	-6.4	-5.4	-1.0
VGTC-2	-6.2	-5.6	-0.6	-6.1	-5.5	-0.6
VGTC-3	-7.3	-6.3	-1.0	-7.0	-6.0	-1.0
VGTC-4	-6.6	-8.1	1.5	-6.7	-6.3	-0.4
VGTC-5	-10.3	-9.7	-0.6	-2.1	-2.1	0

Note: HGTC temperatures in base of the key trench, VGTC temperature deepest temperature of cable.

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

Overall, there has been a warming (average 0.5 C°) over the past year. This is greater than the average warming trend of 0.2 C° observed from 2018 to 2019. The temperatures within the key trench have remained below -2°C throughout the year. The greater warming trend is attributed to the higher water level against the dike over 2019/2020 period.

Bead 11 of HGTC-1 warmed to 1.7°C in the October 2020. The temperature dropped to -1.6°C in November, but still warmer than expected. It recovered the expected temperature range in December. The temperature rise was investigated by Agnico at the time of occurrence. There was no ponded water near the location and sign of infiltration.

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 32 mm and 73 mm since they were installed on September 19, 2017. Most of the movement was in the first year after construction. There is “noise” in the readings as the readings fluctuate slightly; it appears to be a systematic error that may be due to a benchmark issue. The dike operating water levels were based on a settlement of 120 mm; the measured settlement has been less than this to date.

3.2.4 Water Management

CP1 receives inputs from the surrounding area as well as water pumped from other areas of the site (CP3, CP4, CP5, CP6, and other sources). The design operating levels are specified in the Operation Management and Surveillance (OMS) manual (Agnico 2020) as listed in Table 3-2.

Table 3-2: Design Water Elevations for D-CP1 Operation

Situation	Maximum Operating Level (m)	Requirement
End of October each year	63.7	This level is required to provide sufficient storage for: <ul style="list-style-type: none"> 661,500 m³ for the runoff water from an IDF event for the entire site (a total maximum catchment area of 3.675 km² during the design life of D-CP1); 38,800 m³ for the treated sewage from late October to early June (8 months); and 31,000 m³ 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: <ul style="list-style-type: none"> 661,500 m³ 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 during and following the 2020 freshet. As of August 18, 2020, the water level in CP1 was 64.29 m. This level is close to the level required to hold an IDF flood event; the water level continues to be drawn down.

3.2.5 Summary and Recommendations

CP1, Dike D-CP1, 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 should be surveyed to determine the amount of Run of Mine Rockfill remaining in the eroded area above the esker sand and gravel dike zone. It may be required to fill the eroded area with Run of Mine material.

3.3 Pond CP3, Associated Channels, and Berms

3.3.1 Background

Collection Pond CP3 and its associated infrastructure; Berm CP3, 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. Berm CP3 downstream of Pond CP3, 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 the Collection Pond 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 of 1 in 100 wet precipitation year freshet (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.
- The downstream berm, Berm CP3, is designed to preserve permafrost in the original ground below the center 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. 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. 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.

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

3.3.2 Visual Observations

The inspection involved walking along the crests of CP3, Berm 2, Channel 3, and Berm CP3 to examine the structures for visual signs of deformation and instability, cracking, and uneven surfaces.

At the time of inspection CP3 was filled with water to Elevation 59.06 m. The slopes of the pond are a combination of overburden and bedrock. The overburden is covered with a layer of waste rock. The bedrock slopes are blocky with some fractured rock. No obvious signs of instability were observed in the bedrock or overburden slopes. Portions of the slope were covered with sediment eroded from an area of disturbed ground east of CP3.

Berm CP3 was constructed of overburden till and rockfill obtained from the excavation of CP3. 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 Berm CP3 is undulating due to settlement that occurred as shown in Photos 10, 11, and 12, Appendix C. The settlement does not impact the berms function which is to insulate the original ground.

3.3.3 Instrumentation and Monitoring

Three GTCs (GTC-01, GTC-02, and GTC-03 Berm CP3) were installed in Berm CP3 to measure the active layer depth in the berm and subgrade ground temperatures. The ground temperatures are shown in Appendix C. The maximum active layer depth in 2020 varied from 2.1 m to 2.6 m. The ground temperature at Elevation 63.0 m ranged from -5.4°C to -6.8°C on November 30, 2020.

3.3.4 Water Management

Water was pumped out sporadically throughout the open water season through a dedicated pumping system. The water levels in Collection Pond CP3 between mid-August 2019 and late-August 2020 varied between Elevations 57.7 m and 62.44 m.

The level on August 16, 2020 was 59.04 m at the time of the inspection. At this level the depth of water in CP3 is approximately 6 m with a volume of approximately 18,000 m³. The remaining capacity in the pond to the maximum operating level of 63.0 m is 26,800 m³.

The inflow for the pond was based on 3/7 of the 1:100 freshet (171 mm) over the catchment area of 0.383 km² which equates to 28,000 m³ of water. It is understood that the pond will be pumped prior to freeze up.

3.3.5 Summary and Recommendations

Collection Pond CP3 and its associated infrastructure is performing adequately. It is recommended that an OMS Manual be developed for the collection pond.

Pond CP3 and Berm CP3 are functioning as attended. The geotechnical performance should continue to be monitored.

3.4 Collection Pond CP4, Associated Channels, and Berms

3.4.1 Background

Collection Pond CP4, and its associated infrastructure; Berm CP4, and Channel 4, collects and temporarily stores runoff water from the waste rock storage area (WRSF1). CP4 was created by excavating a large depression approximately 15 m deep in overburden and bedrock. Berm CP4 downstream of Collection Pond CP4, provides thermal protection to maintain the underlying permafrost downstream of CP4. Channel 4 collects and diverts the runoff water from the proposed 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 of 1 in 100 wet precipitation year freshet (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.
- The maximum operating water elevation in Collection Pond 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, Berm CP4, is designed to preserve permafrost in the original ground below the center 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 CP4 will be actively pumped to former Lake H13, which flows into CP1 during the open water season. The intent is that Collection Pond 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 D.

3.4.2 Visual Observations

The inspection involved walking along the crests of CP4, Channel 4, and the CP4 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 D.

At the time of inspection CP4 was filled with water to Elevation 55.7 m. 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. Thaw settlement has occurred in the native ground above the overburden slope protection rockfill as shown in Photos 5, 6, 7, and 8, Appendix D. The settlement is up to 0.5 m deep. The settlement is like that observed in 2019. Thaw settlement has also occurred between the CP4 Berm and the overburden protection rockfill as shown in Photos 10, 11, and 12, Appendix D. It is visually estimated that the settlement is up to 0.6 m. The settlement is more continuous than observed in 2019.

Berm CP4 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. The crest of the berm had minor cracks throughout the surface; however, it was much less than observed in 2019. The cracks do not impact the berms function which is to insulate the original ground.

3.4.3 Instrumentation and Monitoring

Two GTCs (GTC-01, GTC-02 Berm CP4) were installed in Berm CP4 to measure the active layer depth in the berm and subgrade ground temperatures. The GTCs are shown in Appendix D. The maximum active layer depth in 2020 ranged from 2.0 m to 2.2 m. The ground temperature at Elevation 63.0 m ranged from -6.8°C to 7.9°C on November 30, 2020.

3.4.4 Water Management

Water levels in Pond CP4 from mid May 2020 to mid August 2020 varied between Elevation 61.6 m and 55.1 m. The level on August 16, 2020 was 55.7 m at the time of the inspection resulting in a 3 m to 4 m depth of water in the pond. Water was pumped out sporadically throughout the open water season. It is understood that pumps are being shared between Collection Ponds CP3 and CP4.

As of August 16, 2020, the remaining capacity (to the maximum operating level of 63.0 m) was 39,000 m³. The inflow for the pond was based on 3/7 of the 1:100 freshet (171 mm) over the catchment area of 0.441 km² which equates to 32,300 m³ of water.

3.4.5 Summary and Recommendations

Collection Pond CP4 and its associated infrastructure is performing adequately. Thaw settlement has occurred in the original ground above the pond rockfill slope protection, but the slopes appear to be stable. The thaw settlement is like that observed in 2019. The settlement and the impact on the pond should continue to be monitored to determine if any remedial action is required.

It is recommended that an OMS Manual be developed for the pond and associated infrastructure.

3.5 Pond CP5 and Dike D-CP5

3.5.1 Background

Dike D-CP5 was constructed across the south portion of former Lake A54, to form CP5 between October 2016 and 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 will be 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 dyke. 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.

3.5.2 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. Water in CP5 at the time of the site visit precluded not observing upstream toes of the dike. A photographic record of the inspection is included in Appendix E.

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 (e.g., Photo 4, Appendix E). The cracking appeared to be like that observed in August 2019 and described in previous inspection reports (Golder 2018).
- There were no signs of seepage from the downstream toe.

Jetty 5 is the causeway for the pump back station for CP5. Jetty 5 appeared stable with no significant geotechnical concerns.

AEM's engineering 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 AEM staff were consistent with the observations during the 2020 annual inspection. Cracks and locations of settlement were marked with spray paint in the field to monitor changes.

3.5.3 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 E. Two horizontal GTCs (HGTC-1 and HGTC-2) installed in D-CP1 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 the late fall (October and November) and coldest in late spring (May and June). Average key trench temperatures are summarized Table 3-3.

Table 3-3: Summary of D-CP5 Ground Temperatures

Cable	Average June 4, 2019 (°C)	Average May 31, 2020 (°C)	Difference (C°)	Average Oct 31, 2019 (°C)	Average Oct 29, 2020 (°C)	Difference (C°)
HGTC-1	-7.8	-7.7	-0.1	-2.2	-2.3	0.1
HGTC-2	-8.0	-8.0	0	-2.9	-2.8	-0.1
VGTC-01	-4.3	-4.7	0.4	-3.6	-3.8	0.2
VGTC-02	-4.6	-5.2	0.6	-3.8	-3.9	0.1
VGTC-03	-3.3	-3.5	0.2	-3.3	-3.6	0.3

The horizontal GTCs indicate a slight cooling trend of average of 0.2 C° in the base of the key trench from 2019 to 2020.

Three settlement survey monuments were installed over the liner crest in the dike. CP5 survey monitoring points indicate a settlement between 19 and 54 mm since installation. There is “noise” in the readings as the readings fluctuate slightly. The dike operating water levels were based on a settlement of 100 mm; the measured settlement has been less than this to date.

3.5.4 Water Management

CP5 receives inputs from the surrounding area. Water from CP-5 is pumped to CP1 throughout the open water season. The design operating levels are specified in the OMS manual (Agnico 2020) as listed in Table 3-4.

Table 3-4: 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	<ul style="list-style-type: none"> 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 65.03 m to 65.9 m from May 2020 to mid-August 2020 which is within the operating levels of the pond. At the time of the site inspection on August 18, 2020 the water level was at Elevation 65.3 m which provides sufficient capacity to store the IDF. It is understood the facility will continue to be drawn down over the summer and fall as it collects water.

3.5.5 Summary and Recommendations

Dyke D-CP5 and the associated infrastructure is in good condition. The following recommendations are provided regarding D-CP5:

- The GTCs and survey monitoring points should continue to be monitored following the schedule and procedures developed in the OMS Manual.

3.6 Collection Pond CP6, Associated Berm

3.6.1 Background

Collection Pond CP6, and its associated Berm CP6 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. Berm CP6 downstream of Collection Pond CP6, provides thermal protection to maintain the underlying permafrost downstream of CP6.

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

- CP6 was designed to store 3/7 of 1 in 100 wet precipitation year freshet (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 Collection Pond 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.
- The downstream berm, Berm CP6, is designed to preserve permafrost in the original ground below the center of the berms, which will minimize the potential seepage through its foundation into the downstream receiving environment.
- The water collected in CP6 will be actively pumped to former CP1. The intent is that Collection Pond 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 its associated infrastructure was constructed from March 2020 to April 2020. The as-built drawings for CP6 are included in Appendix F.

3.6.2 Visual Observations

The inspection involved walking along the crests of CP6, the CP6 Berm to examine the structures for visual signs of deformation and instability, cracking, and uneven surfaces. Photographs of CP6 and the associated infrastructure are in Appendix F.

At the time of inspection CP6 was only had a small amount of water in it. 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.

Thaw settlement and erosion has occurred in the native ground between WRSF3 and CP6. Photos 7, 8, 9, 10, and 11, Appendix F. The settlement and erosion channels are up to 1.0 m deep.

Berm CP6 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 relatively good condition. The crest of the berm had minor cracks throughout the surface. Typical cracks and settlement areas are shown in Photos 16, 17, and 18, Appendix F. The cracks do not impact the berms function which is to insulate the original ground.

3.6.3 Instrumentation and Monitoring

Three GTCs were installed in Berm CP6 to measure the active layer depth in the berm and subgrade ground temperatures. The GTCs are shown in Appendix F. The maximum active layer depth in 2020 was approximately 2.5 m. The ground temperature at Elevation 60.0 m ranged from -8.0°C to -8.7°C on October 30, 2020.

3.6.4 Water Management

Water levels in Pond CP6 from mid May 2020 to mid August 2020 varied between Elevation 51.7 m and 55.9 m. Water was pumped to CP1 in late July. The water level was at approximately 52.1 m during the inspection.

3.6.5 Summary and Recommendations

Collection Pond CP6 and Berm CP6 are performing adequately. Thaw settlement and erosion between WRSF3 and CP6 does not impact the performance of the facility except that a small amount of sediment will reduce the pond capacity. It is anticipated that the amount of erosion will reduce in subsequent years. The erosion could be mitigated by covering the area coarse rock.

It is recommended that an OMS Manual be developed for the pond and associated infrastructure.

4.0 SALINE PONDS

4.1 Saline Pond 1

SP1 which is located north of CP-5 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 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 G.

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

- Overall, the pond and perimeter berm appeared stable, with no significant geotechnical concerns identified.
- 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 (Photos 1 and 2, Appendix G).
- Minor cracking and settlement were observed in the perimeter berm in several locations on the upstream and downstream crest. The cracks appeared to be smaller than observed in previous years.
- No seepage into the saline pond was observed during the inspection.

The following recommendations are provided regarding the saline pond:

- The pond appears to be performing well.

4.2 Saline Pond 2

SP2 was located south of D-CP-5 and was constructed during the winter of 2018 to 2019. It was drained and incorporated into the Tiriganiaq 02 Open Pit in 2020; thus, it no longer exists.

4.3 Saline Pond 3

SP3 was constructed during the 2018/2019 winter in the south portion of the P3 area. It is a HPDE Lined pond with a storage capacity of 5,000 m³. 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 pond was filled to approximately 1.5 m below the top of the berm at the time of the inspection.

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 G.

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

- 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.
- 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.

The following recommendations are provided regarding the saline pond:

- Overall, the pond appears to be performing adequately.
- The pond should continue to be monitored for signs of settlement etc.

4.4 Saline Pond 4

SP4 which is located within the Tiriganiaq 01 Open Pit was constructed during the first quarter of 2020 to manage underground saline water.

The pond was constructed by excavation within permafrost overburden and bedrock.

The inspection involved walking along the crest of the pond, examining the conditions for visual signs of deformation and instability, cracking, uneven surfaces, and seepage. A selection of photographs from the inspection are included in Appendix G.

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

- Overall, the pond rockfill covered overburden slopes and bedrock appeared stable, with no significant geotechnical concerns identified.
- There was water in the pond at the time of the site visit that was below the top of the bedrock excavation (Photos 1 and 2, Appendix G).
- Minor cracking and settlement were observed in the original ground above the rockfill covered overburden slopes (Photos 15, 16, 17, and 18, Appendix G).
- No seepage into the saline pond was observed during the inspection.

SP4 is performing well. The settlement and cracking above the overburden slopes should be monitored.

5.0 DIVERSION CHANNELS AND BERMS

5.1 Background

Diversion Channels 1, 2, 3, 4, 5, 7, and 8, and associated Berms 1, 2, and 3 were inspected. The channels were constructed by excavating a trench, placing 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 will flow into Channel 2, which in turn eventually flows into CP1.

Channel 3 directs seepage and run-off water from the TSF into Pond 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.

Channel 4 directs seepage and run-off water from the WRSF1 into Pond CP4. It is located along the northwestern boundary of WRSF1. Channel 4 has a designed base width of 1 m to 2 m. Channel 4 Berm was constructed downstream of Channel 4 to raise the active layer downstream of the channel.

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 WRSF2 area and directs the water to Channel 1.

Channel 8 is a water collection channel located on the west side of Portal #2 to collect part of the surface flow of WRSF2 and facilitate flow of site drainage through Culvert 2 and Channel 1.

Berm 1 is required to protect Portal #2 from flooding under extreme rainfall events when potential ponding in the area occurs.

Berm 2 was constructed in the fall of 2018 to reduce the amount of non-contact water entering the TSF and Collection Pond CP3 catchment areas. Berm 2 was predominately constructed of 50 mm minus screened esker material with a till zone of approximately 2 m wide.

5.2 Visual Observations

Channel 1

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

Cracking and settlement were observed along the edges of the channel. This was also reported in 2018 and 2019 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 3

Channel 3 was constructed to divert runoff from the catchment area from the TSF towards Collection Pond CP3. The 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. Channel 3 is shown in Photos 9 to 18, Appendix H. No water was flowing in the channel at the time of the inspection; however, there were areas of shallow ponded water due to an uneven base of the channel. It is speculated that the subgrade has thawed and settled over the summer resulting in low areas within the channel. There is some subsidence in areas where the channel ties into the native subgrade. The road adjacent to the channel has some cracking and slumping on the side slopes adjacent to the channel. There was also settlement and slumping on the east side of the channel in the native ground. Both the settlement on the road slope and in the native ground is attributed to the thawing of permafrost due to ground disturbance.

Channel 4

Channel 4 was constructed to divert runoff from the catchment area from WRSF1 into Pond 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 1 to 8, Appendix H. No water was flowing in the channel at the time of the inspection; however, there were areas of shallow ponded water due to an uneven base of the channel. It is speculated that the subgrade had thawed and settled over the summer resulting in low areas within the channel. There are some settlement subsidence areas where the channel ties into the native subgrade, east of the channel.

Channel 5

Channel 5 was inspected by walking along its length. Channel 5 is shown in Photos 19 to 22, Appendix H. Overall Channel 5 appeared stable, with no significant geotechnical concerns identified along most of the channel. There was some deep cracking and subsidence observed adjacent to former Pond. Water was ponded within the portions of the channel.

Channel 7

Channel 7 was inspected by walking along its length. No significant geotechnical concerns were identified along the channel.

Channel 8

Channel 8 was inspected by walking along its length. No significant geotechnical concerns were identified along the channel.

Berm 1

Berm 1 was inspected by walking along its length. No significant geotechnical concerns were identified along the Berm.

Berm 2

Berm 2 was constructed to reduce the amount of non-contact water entering the TSF and Collection Pond CP3 catchment areas. 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 0.3 m deep as shown in Photo 24, Appendix H. Surface erosion was observed along the lower slope of the berm indicating that the water may have been 1 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. Minor cracking was observed along the toe of the berm, and minor erosion on the slope where water impounded against as shown in Photos 24, 25, and 26, Appendix H. There was also minor cracking on the crest of the berm.

Berm 3

Berm 3 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 H (Photos 27 to 29). Minor cracking was observed in a location where there was a small amount of ponded water. Overall, Berm 3 appeared stable with no significant geotechnical concerns identified.

5.3 Summary and Recommendations

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

- Monitor the cracking and subsidence in the native ground above Channels 3 and 4 to determine if they impact the channels' performance.
- Berms 2 and 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.
- The CP3 road slumping adjacent to Channel 3 should be monitored.

6.0 TAILINGS STORAGE FACILITY

6.1 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 in 0.3 m lifts, and compacted.

The tailings are progressively reclaimed by placement of rockfill cover on the exterior slopes as the tailings stack rises.

Presently Cell 1 of the facility is in use, as per the tailings deposition plan.

6.2 Visual Observations

In general, the tailings appear to be well compacted. Trucks can easily traffic on the compacted tailings as shown in Appendix I.

6.3 Instrumentation and Monitoring

AEM's geotechnical engineer prepares weekly inspection reports and monthly analytical reports describing the tailings placement and design verification updates. The tailings have an optimum moisture content of 15.5% to 17.5% and are typically placed at a moisture content ranging from 13.5% to 18.3%. The salinity of the tailings has ranged from 10 parts per thousand (ppt) to 30 ppt, with an average of 19 ppt. It is understood that the salinity in recent months has been less due to the mill no longer drawing water from CP1. This is somewhat higher than the salinity assumed during design of 15 ppt. 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).

Four GTCs have been installed in the placed tailings. The measured ground temperatures are presented in Appendix I. The GTCs indicate that 2020 unfrozen summer placed tailings were froze back to a depth of greater than 3 m by February 2021. Thicker 2020 tailings at GTC-01 were partially frozen back between depths of 4.5 m and 5.5 m by February 2021. The thicker placed 2019 tailings at GTC-02 are frozen back as of February 2021.

Nuclear density tests on the in situ placed and compacted tailings indicate, for the most part, that the filter cake is achieving dry densities more than the maximum dry density from the Standard Proctor test. The placed tailings material shows very little signs of bleed water and are easily trafficable after placement and compaction.

6.4 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.

6.5 Summary and Recommendations

The TSF appeared to be functioning well at the time of the inspection. The ground temperatures should continue to be monitored in the TSF and the foundation using the GTCs presently installed. It is recommended that the tailings be tested to determine their unfrozen content curve below 0°C to determine how much of the tailings remain unfrozen.

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

Some dusting was observed in the WRSF1 area from the TSF. Measures to reduce dusting from the facility should be put in place.

7.0 SITE ROADS

7.1 Background

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

- TSF and landfill access road including Culvert 1;
- Main site pad area roads, including Culverts 2, 3, and 4;
- Main site water intake access road;
- Emulsion plant pad access road and Culvert 13;
- 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.

7.2 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 J. 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 were relatively wet at the time of the site inspection due to recent rains. The access road to the TSF was relatively muddy. The majority of the roads only had had shallow ruts and are graded on a regular basis.

Normal maintenance of the roads should be anticipated. No geotechnical concerns were identified during the inspection.

Permanent water management culverts are in place through road fills. Culverts observed were: Culverts 1, 2, 3, 4, 8, 10, 11, 13, 15, and 16.

7.3 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.

8.0 BORROW SOURCES

8.1 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
- Tiriganiaq Esker
- Wesmeg Esker

Photographs of the borrow areas are in Appendix K.

8.2 Visual Observations

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

A drainage channel is present through the center 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.

8.3 Summary and Recommendations

The borrow areas should be monitored for future erosion and thaw settlement. The need for further reclamation can be assessed in future years.

9.0 ORE STOCKPILES

9.1 Background

The ore and waste rock storage area are located east of the crusher area. The rock and ore (high grade and low grade) piles were relatively small (most less than 6 m high) during the time of the inspection. Photos of the ore stockpiles are included in Appendix L.

Ore and waste materials removed from the underground development are transported to surface and placed in stockpiles. Most of the waste rock is crushed into various sizes for use in construction. Berms were in place around the top benches of the piles.

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.

10.0 OTHER MELIADINE FACILITIES

10.1 Crusher Ramp

The crusher ramp is an earthfill 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 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.

10.2 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. If the facility is operated again it is recommended that an assessment of the geotechnical and structural condition be carried out.

10.3 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. Photos of the landfill are included in Appendix N.

The perimeter berms are performing well from a geotechnical perspective with no signs of instability.

At the time of the site inspection the landfill debris was predominately uncovered. The landfill appeared to contain construction waste among other things. A significant amount of burnable waste (wood etc.) was present in the landfill.

It is recommended that the landfill be covered in stages with intermediate cover to avoid blowing debris. A program to separate burnable debris could reduce the landfill requirements.

The landfill is nearing its current design capacity. It is understood a plan is being developed to raise the landfill berms.

10.4 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.

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, with channels up to 0.4 m deep. The erosion channels are like that observed in 2019 and are not currently impacting the use of the pad.

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

10.5 Landfarm

A lined landfarm was constructed south east of the process plant. Windrows of soil 1.0 m to 1.2 m have been placed in the landfarm.

The landfarm berms appear to be in a stable condition with no geotechnical issues. 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 minimal water at the time of the inspection.

10.6 Other Facilities

The following other facilities were inspected during the site visit:

- New Cyanide Storage Pad, constructed in 2019
- Former Cyanide Storage Pad, now being used as burn area
- Emulsion Plant Storage
- Freshwater Intake
- Industrial Fuel Storage
- Incinerator Pad
- Mine Site Fuel Farm
- Paste Plant Ramp
- Industrial Pad
- Portal No. 1 and Portal No. 2

No significant geotechnical issues were noted in these facilities.

11.0 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 M contains photographs taken during the inspection.

The landfarm at the exploration camp access road was also being dismantled with portions of liner no longer providing containment.

The access road to the exploration camp was in good condition.

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

12.0 ALL-WEATHER ACCESS ROAD (AWAR) 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 O 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 \pm 50 m to facilitate vehicles passing.

The AWAR is used by AEM 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.

12.1 Observations and Recommendations

The culverts were generally observed to be in good condition, at the time of the inspection. 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 O.

Table 13-1 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. Size and number of culverts is provided in Table 13-1, along with specific observations and photos at the time of the inspection, and any recommendations.

It is understood that AEM 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
- A culvert location inspection program to ensure that culverts are installed in the correct location with respect to watercourses and that the culvert capacity is adequate, for hydraulic conditions.

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

In general, the road appeared to be in good geotechnical condition at the time of the inspection. Recommendations for improvements to the water management structures are presented in Table 13-1.

Table 13-1: AWAR Road – Water Management Structures Summary

Station (distance from Friendship Centre)	Water Management Structure Description	Conditions, Observations, and Recommendations (at time of inspection)
KM 5.5	1 x 600 mm CSP	Good condition – located in the community portion of the road. AEM SW local roads downstream of culvert result in some flow restrictions.
KM 6.0	Char River Bridge	Good condition, stable embankments, and abutments. Armouring appears to have been added to the abutment (as recommended in 2018).
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.
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. Pondered water observed in the lower culvert. Small amount of water ponded upstream. No flow at time of inspection. Sandy soil around culverts, potential for erosion, but none noted during inspection.
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 culvert on the right side when looking downstream, minor deformation of culverts under the road, no substantial reduction of cross-sectional area. Minor flow in lower 1,000 mm culvert. The culverts and riprap appear in good condition. No flow at time of inspection.
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. Recommendation: Repair culvert damage.
KM 8.0	Meliadine River Bridge	Right abutment, slopes upstream and downstream of bridge have exposed sand and gravel; no erosion noted.
KM 8.8	No Culvert	AEM SW indicates that water overflows the road. Low road profile in area. Recommendation: Install culverts and/or raise the road.
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.
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.
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. Damaged gabion above water line. No obvious signs of erosion. Recommendation: Replace or repair damaged gabion. Place additional riprap on exposed geotextile.

Table 13-1: AWAR Road – Water Management Structures Summary

Station (distance from Friendship Centre)	Water Management Structure Description	Conditions, Observations, and Recommendations (at time of inspection)
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 armouring; however, no obvious erosion. Some crushing (oval shape) of culvert. Embankment slope is generally in good condition.
KM 12.6	no culverts	Area of poor drainage. In good condition, no signs of water flow at time of inspection.
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, small flow, minor dents, and deflection in haunch, otherwise in good condition.
KM 14.7	Access road to B12 quarry, 500 mm HDPE corrugated culvert	No 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.
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. No flow in the 700 mm and 1,000 mm culverts, good condition. Small erosion visible at outlet. Outlets are all elevated increasing erosion potential. No signs of overflow, area armoured.
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. Appears culvert installed to replace KM 18.15 culvert. No erosion noted, appears to be performing adequately.
KM 18.15	1 x 600 mm CSP culvert.	Ponding on the upstream side. Additional ponding adjacent to road required before reaching the culvert inlet. Appears that KM 18.1 culvert installed to replace/supplement this culvert. Culvert outlet elevated, potential for erosion of toe of road embankment. Flow may initially occur through the road fill beneath the culvert. Trench exists along upstream toe of road connecting the culverts at KM 18.1 to KM 18.15.
KM 19.5	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 AEM 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. AEM SW reports overflow in 2020 freshet. Recommendation: Install a culvert at this location to reduce the risk of overtopping.

Table 13-1: AWAR Road – Water Management Structures Summary

Station (distance from Friendship Centre)	Water Management Structure Description	Conditions, Observations, and Recommendations (at time of inspection)
KM 21.2 to 21.5	No culverts	Low ponded water on west side of road near 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. No sign of overflow in 2020. Recommendation: Consider installation of a culvert in this area to reduce the risk of overtopping.
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. AEM 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. High water marks in 2020 does not indicate overflow. Recommendation: Consider installation of larger diameter culvert(s) to reduce the risk of overflow.
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. AEM SW reports overflow at the location. Recommendation: Install larger culvert.
KM 22.7	No culverts	Water ponded on the east side of the road. Distressed vegetation indication of some ponding. Recommendation: Consider installation of a culvert in this area to reduce the risk of overtopping.
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. Recommendation: Clear culvert inlet of road fill material. Consider extending culvert to prevent road fill from entering culvert.
KM 26.2	2 x 160 mm steel pipes, used as culverts	Vertically offset, lower pipe bent upward. Both pipes blocked with road fill. The inlets are elevated close to the road surface. Some sediment deposition downstream is evident. 2018 AEM inspection reports noted ponding of water at or over the road in this area during the freshet. No reports of overflow in 2019. Recommendation: Culverts should be replaced at a lower elevation.
KM 26.5	3 x 700 mm CSP culverts	Equal elevation, minor sediment buildup, no flow, small dents, well armoured.

Table 13-1: AWAR Road – Water Management Structures Summary

Station (distance from Friendship Centre)	Water Management Structure Description	Conditions, Observations, and Recommendations (at time of inspection)
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 0.3 m below road crest. Recommendation: Inlet of the lower culvert should be cleared and possibly extended.
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. Some sloughing of riprap near culvert inlets. Recommendation: Monitor riprap and add more protection if more erosion occurs.
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. Recommendation: A culvert could be installed to reduce the risk of overflow.
KM 29.6	1 x 500 mm HDPE corrugated culvert	Inlet is clear; however, the culvert is partially crushed just beyond the inlet. The top culvert is crushed by approximately 100 mm. AEM SW indicates pumps required to keep water off the road at this location. Recommendation: Install additional culverts in the area.

13.0 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 P. The Itivia fuel farm is used to store fuel for Meliadine Mine.

The Itivia 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 14-1. 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 14-1.

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 14-1 presents a summary of the culvert inspections completed.

Based on discussions with AEM personal, 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.

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 AEM Surface Water Superintendent reported that the water partially came from a discharge out of Signet Lake and the south east 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.

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 spilled out of the ditch and ran 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

Table 14-1: Summary on Culverts on Itivia Bypass Road

Approximate Distance from SE Corner of Fuel Farm	Culvert Design Identification	Water Management Structure Description	Observations	Photographs (Appendix P)
0.35 km	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.	1
0.6 km	C02	2 x 700 mm CSP culverts	No water flowing through culverts. Road constructed out of blast rock. Some riprap at the outlet of the lower culvert. Large boulders placed on south crest of road as safety berm.	2
0.8 km	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.	3
1.0 km	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.	4
1.2 km	C05	2 x 1,000 mm	No water flowing through culverts. Minor amount of rockfill in front of inlets could erode into the culverts. Road and safety berm on south crest of road constructed out of esker materials.	5
1.5 km	C06	2 x 800 mm	Culvert inlets installed above surrounding natural ground. Pondered water against toe upstream side of road north of the culvert inlets, a small berm has been constructed between the pondered 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.	6
1.6 km	C06-1 (marked C07 on sign)	1 x 800 mm	No water flow in culverts, road constructed out of esker materials, inlet and outlet covered with riprap.	7
1.8 km	C07a C07b (marked C08 on sign)	2 x 800 mm	Pondered 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. Recommendation: Monitor ponding of water upstream of inlets and consider lowering culverts to reduce ponding.	8
1.9 km	C07b (marked C09 on sign)	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.	9
2.4 km	C09 (marked C10 on sign)	2 x 1,000 mm	No water flowing through culverts. Pondered water observed around the inlets and against the toe of the road embankment to the south. Road constructed out of esker material.	10

Table 14-1: Summary on Culverts on Itivia Bypass Road

Approximate Distance from SE Corner of Fuel Farm	Culvert Design Identification	Water Management Structure Description	Observations	Photographs (Appendix P)
3.1 km	C10 (marked C11 on sign)	5 x 1,200 mm 1 x 1,000	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. Based on wave wash mark on road fill, water did not reach the higher culverts. 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. Recommendation: The culverts should be cleared of snow and ice prior to 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.	11, 20, 21, 22, 23
4.0 km	C11a (marked C12 on sign)	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.	12
4.3 km	C11b (marked C13 on sign)	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.	13
4.8 km	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.	14
4.9 km	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.	15

Table 14-1: Summary on Culverts on Itivia Bypass Road

Approximate Distance from SE Corner of Fuel Farm	Culvert Design Identification	Water Management Structure Description	Observations	Photographs (Appendix P)
5.0 km	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.	16
5.1 km	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.	17
6.2 km	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.	18
6.3 km	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.	19

The Itivia fuel farm consists of a 20,000,000 L and a 13,500,000 L fuel storage tanks as shown in Photos 24 through 28, Appendix P. 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. 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. In general, the facility appears to be in good condition from a geotechnical perspective.

14.0 WASTE ROCK STORAGE FACILITIES

Waste rock storage facilities WRSF1 and WRSF3 had been started at the time of the site inspection. The waste rock storage facilities are used to dispose of waste rock from the Tiriganiaq open pits and the underground operations. Till will also be placed from the Tiriganiaq open pit. The waste rock and till are stored in separate areas of the facilities. The design drawings for WRSF1 and WRSF 3 are included in Appendix Q. Photos of WRSF1 and WRSF3 are in Appendix Q. Visual observations are noted below.

In general, the waste rock and till in the facilities was approximately 5 m to 10 m thick at the time of the inspection. 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. The winter placed till was wet; it is speculated that it contained some ice rich material and is thawing and consolidating over the summer.

The till and waste rock being placed in WRSF3 appeared to be well compacted due to dozer compaction.

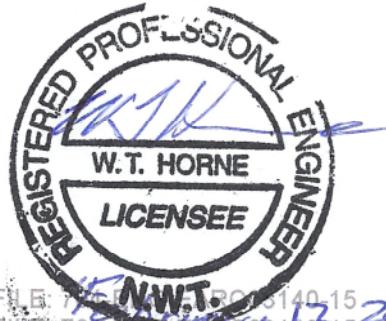
The ground temperatures in the base of the WRSF facilities is being monitored with vertical and horizontal ground temperature cables. The cable locations are shown on the design drawings. The measured ground temperatures are presented in Appendix Q. Based on the measured ground temperatures the foundation of the waste rock piles is frozen back. A portion of WRSF3 is relatively warm (-0.5°C) as of February 3, 2020. The temperature is expected to get colder through the remainder of the winter.

In general, the material is being placed in the piles according to the WRSF1 and WRSF3 designs. No significant geotechnical issues were noted.

15.0 CLOSURE

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

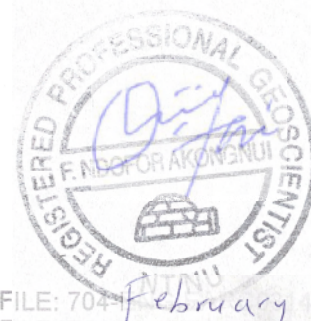
Respectfully submitted,
Tetra Tech Canada Inc.



FILE: 704-ENG.EARC03140-15
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FILE: 704-ENG.EARC03140-15

Prepared by:
Bill Horne, M.Sc., P.Eng.
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/jf



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FILE: 704-ENG.EARC03140-15

Reviewed by:
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PERMIT TO PRACTICE TETRA TECH CANADA INC.

Signature

Date

PERMIT NUMBER: P 018

NT/NU Association of Professional
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REFERENCES

- AEM (Agnico Eagle Mines Limited). 2014a. Meliadine Gold Project, Nunavut. Final Environmental Impact Statement. Submitted to the Nunavut Impact Review Board. April 2014.
- AEM. 2014b. Volume 6, Supporting Document 6-1 - Permafrost Thermal Regime Baseline Studies. Final Environmental Impact Statement (FEIS) - Meliadine Gold Project, Nunavut. Submitted to Nunavut Impact Review Board. April 2014.
- AEM. 2015a. Risk Management and Emergency Response Plan. Version 4. April 2015. Document No. 6513-RMMM-01.
- AEM. 2015b. Roads Management Plan. Version 4. April 2015. Document No. 6513-MPS-03.
- AEM. 2016a. Letter regarding: Meliadine - 2BB-MEL1424, Meliadine Portal Area - Water Quality Monitoring in Lake A54, Adverse Trends Noted - Mitigation Measures being implemented. Submitted to Nunavut Water Board and Kivalliq Inuit Association. March 17, 2016.
- AEM. 2018. Water Management Plan. Version 2. March 2018. Document No. 6513-MPS-11.
- AEM. 2019. Construction Summary Report (As-built) Report for Berm2, Channel 3, Pond CP3, and Berm CP-3. October 2019. Document Number 6515-695-230-REP-001.
- AEM. 2019. Construction Summary Report (As-built) Report for Channel 4, Pond CP4, and Berm CP-4. December 2019. Document Number 6515-695-230-REP-002.
- CDA (Canadian Dam Association). 2013. Dam safety guidelines. Original 2007, revised 2013.
- Golder (Golder Associates Ltd.). 2013. SD 2-3 Tailings Storage Facility preliminary design - Meliadine Gold Project, Nunavut. Final Report submitted to Agnico Eagle Mines Limited. Golder Doc. No. 255-1114280011/3000. 7 January 2013.
- Golder. 2014. SD 6-1 Permafrost Thermal Regime Baseline Studies - Meliadine Gold Project, Nunavut. Report submitted to Agnico Eagle Mines Limited. Golder Doc. No. 255-1314280007 Ver. 0. April 2014.
- Golder. 2017. Meliadine Gold Project, Rankin Inlet, Nunavut. 2016 Annual Geotechnical Inspection. Report submitted to Agnico Eagle Mines Limited. Golder Doc. No. 1660296-006-R-Rev0-2000. February 2017.
- Golder. 2018. 2019 Annual Geotechnical Inspection, Meliadine Gold Project, Rankin Inlet, Nunavut. Submitted to: Agnico Eagle Mines Limited. November 2018.
- NRC (National Research Council Canada). 1993. The Atlas of Canada Permafrost.
<http://atlas.nrcan.gc.ca/auth/english/maps/environment/land/permafrost>.
- Nunavut Water Board. 2016. Water Licence No. 2AM-MEL1631. Issued 1 April 2016.
- Tetra Tech EBA (Tetra Tech EBA Inc.). 2016a. Design Report for D-CP1 Meliadine Gold Project, NU. Prepared for Agnico Eagle Mines Limited. August 15, 2016. Document No. 6515-E-132-007-132-REP-003.
- Tetra Tech EBA. 2016b. Design Report for D-CP5 Meliadine Gold Project, NU. Prepared for Agnico Eagle Mines Limited. August 15, 2016. Document No. 6515-E-132-007-132-REP-004.
- Tetra Tech EBA. 2016c. Meliadine - P-Area Containment Construction Record Report. Prepared for Agnico Eagle Mines Limited. September 2016. Document No. 6515-C-230-002.
- Tetra Tech EBA. 2016d. Design Report for Berm 3 and Channel 5, Meliadine Gold Project, NU. Prepared for Agnico Eagle Mines Limited. September 2016. Document No. 6515-E-132-007-132-REP-005.
- Tetra Tech EBA. 2016e. Design Report for Wesmeg Road Culverts Meliadine Project, Nunavut. Prepared for Agnico Eagle Mines Limited. October 2016. Document No. 6515-E-132-005-132-REP-003.
- Tetra Tech. 2016f. Construction Summary Report for Culvert 3 and Culvert 4, Meliadine Project, Nunavut. Prepared for Agnico Eagle Mines Ltd. December 9, 2016. Document No. 6515-E-132-005-132-REP-005.

- Tetra Tech. 2017a. Construction Summary (As-Built) Report for Saline Water Storage/Transfer Pond and Berm, Meliadine Gold Project. Prepared for Agnico Eagle Mines Limited. February 3, 2017. Document No. 6515-E-132-007-132-REP-006.
- Tetra Tech. 2017b. Design Report and Drawings for Rankin Inlet Bypass Road, Culverts and Bridge, Meliadine Gold Project. Prepared for Agnico Eagle Mines Limited. March 2017. Document No. 6515-E-132-005-132-REP-006.
- Tetra Tech. 2017c. Design Report for Operation Landfill (Stage 1), Meliadine Gold Project. Prepared for Agnico Eagle Mines Limited. July 13, 2017. Document No. 6515-E-132-007-132-REP-010.
- Tetra Tech. 2017d. Amendment#1 To 6515-E-132-005-132-REP-006: Design report for Crossing C10 on Rankin Inlet Bypass Road Meliadine Project, Nunavut. Prepared for Agnico Eagle Mines Limited. July 28, 2017. Document No. Amendment#1 To 6515-E-132-005-132-REP-006.
- Tetra Tech. 2017e. Construction Summary (As-built) Report for Channel 2, Meliadine Project, Nunavut. Prepared for Agnico Eagle Mines Ltd. July 28, 2017. Document No. 6515-C-230-005-230-REP-003.
- Tetra Tech. 2017f. Amendment#2 To 6515-E-132-005-132-REP-006: Design Report for Rankin Inlet Bypass Road Culverts C13 and C14 Meliadine Project, Nunavut. Prepared for Agnico Eagle Mines Limited. September 27, 2017. Document No. Amendment#2 To 6515-E-132-005-132-REP-006.
- Tetra Tech. 2017g. Construction Summary (As-Built) Report for Dike D-CP5, Meliadine Gold Project Nunavut. Prepared for Agnico Eagle Mines Limited. October 6, 2017. Document No. 6515-E-132-007-132-REP-013.
- Tetra Tech. 2017h. Construction Summary (As-Built) Report for Dike D-CP1, Meliadine Gold Project Nunavut. Prepared for Agnico Eagle Mines Limited. October 19, 2017. Document No. 6515-E-132-007-132-REP-012.
- Tetra Tech. 2017i. Construction Summary (As-Built) Report for Jetty-CP1 and Jetty-CP5, Meliadine Project, Nunavut. Prepared for Agnico Eagle Mines Ltd. November 13, 2017. Document No. 6515-E-132-005-132-REP-012.
- Tetra Tech. 2018a. Construction Summary (As-built) Report for Landfarm, Meliadine Project, Nunavut. Prepared for Agnico Eagle Mines Ltd. February 8, 2018. Document No. 6515-E-132-007-132-REP-016.
- Tetra Tech. 2018b. Construction Summary (As-built) Report for Mine Site Fuel Storage and Containment Facilities, Meliadine Project, Nunavut. Prepared for Agnico Eagle Mines Ltd. April 17, 2018. Document No. 6515-E-132-005-132-REP-016.
- Tetra Tech. 2019. Email from J. Alaire (Tetra Tech) to M. Long (Agnico). August 29, 2019.
- Tetra Tech and WSP Canada Inc. 2017. Meliadine Project Design Report and Drawings for the Fuel Storage and Containment Facilities. Prepared for Agnico Eagle Mines Limited. April 2017. Document No. 6515-E-132-004-132-REP-006.

FIGURES

- Figure 1 General Site Layout
Figure 2 Location Plan – Year 7



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

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TITRE / TITLE	# DWG

DESSINS EN RÉFÉRENCE/REFERENCE DRAWINGS

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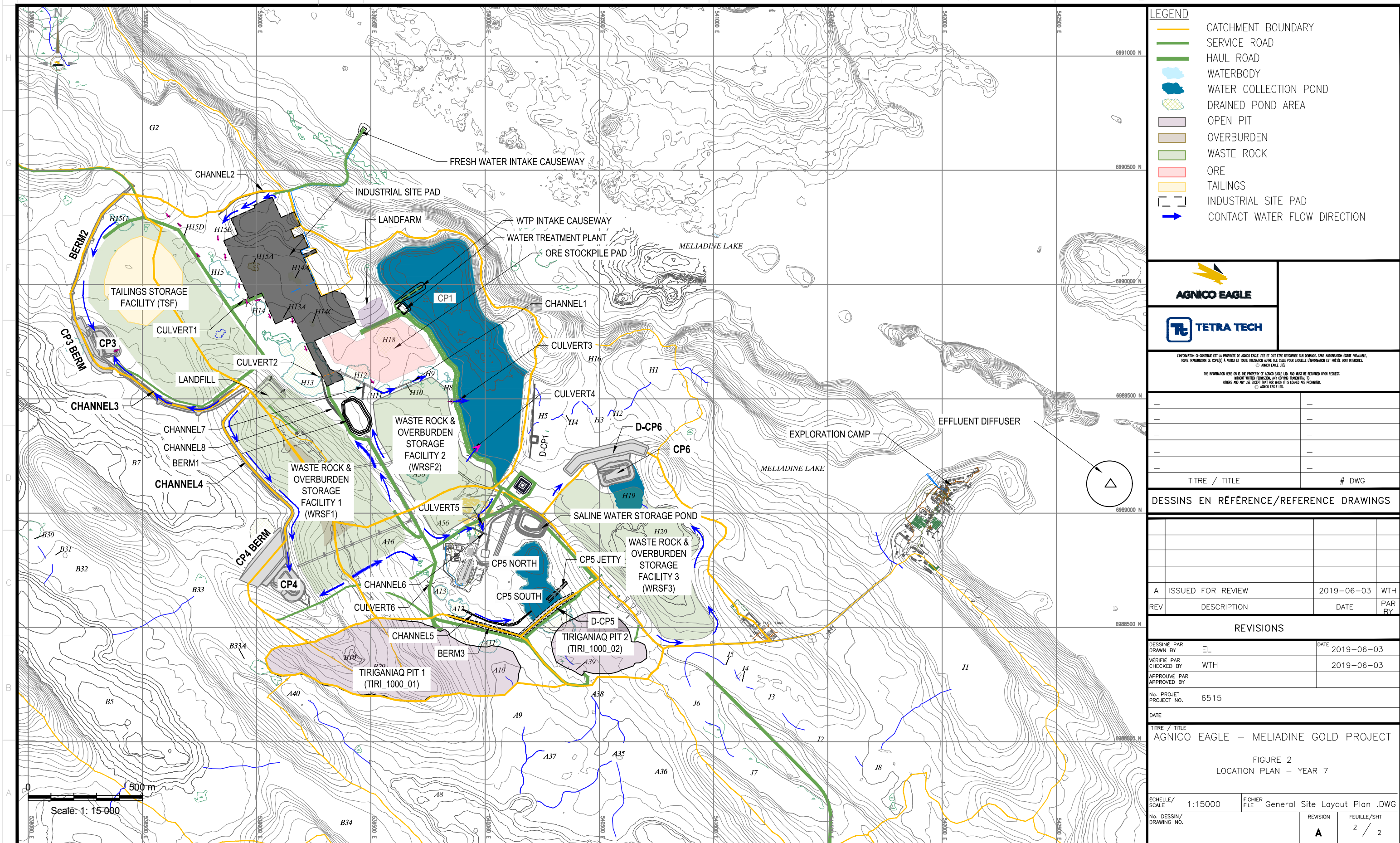
REVISIONS

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VÉRIFIÉ PAR CHECKED BY	WTH		2019-06-03
APPROUVÉ PAR APPROVED BY			
No. PROJET PROJECT NO.	6515		
DATE			

TITRE / TITLE
AGNICO EAGLE — MELIADINE GOLD PROJECT

FIGURE 1
GENERAL SITE LAYOUT

ECHELLE/ SCALE	1:15000	FICHIER FILE	General Site Layout Plan .DWG
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APPENDIX A

TETRA TECH'S LIMITATIONS ON USE OF THIS DOCUMENT

LIMITATIONS ON USE OF THIS DOCUMENT

GEOTECHNICAL

1.1 USE OF DOCUMENT AND OWNERSHIP

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1.4 DISCLOSURE OF INFORMATION BY CLIENT

The Client acknowledges that it has fully cooperated with TETRA TECH with respect to the provision of all available information on the past, present, and proposed conditions on the site, including historical information respecting the use of the site. The Client further acknowledges that in order for TETRA TECH to properly provide the services contracted for in the Contract, TETRA TECH has relied upon the Client with respect to both the full disclosure and accuracy of any such information.

1.5 INFORMATION PROVIDED TO TETRA TECH BY OTHERS

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This Professional Document is based solely on the conditions presented and the data available to TETRA TECH at the time the data were collected in the field or gathered from available databases.

The Client, and any Authorized Party, acknowledges that the Professional Document is based on limited data and that the conclusions, opinions, and recommendations contained in the Professional Document are the result of the application of professional judgment to such limited data.

The Professional Document is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site conditions present, or variation in assumed conditions which might form the basis of design or recommendations as outlined in this report, at or on the development proposed as of the date of the Professional Document requires a supplementary investigation and assessment.

TETRA TECH is neither qualified to, nor is it making, any recommendations with respect to the purchase, sale, investment or development of the property, the decisions on which are the sole responsibility of the Client.

1.7 ENVIRONMENTAL AND REGULATORY ISSUES

Unless stipulated in the report, TETRA TECH has not been retained to investigate, address or consider and has not investigated, addressed or considered any environmental or regulatory issues associated with development on the subject site.

1.8 NATURE AND EXACTNESS OF SOIL AND ROCK DESCRIPTIONS

Classification and identification of soils and rocks are based upon commonly accepted systems and methods employed in professional geotechnical practice. This report contains descriptions of the systems and methods used. Where deviations from the system or method prevail, they are specifically mentioned.

Classification and identification of geological units are judgmental in nature as to both type and condition. TETRA TECH does not warrant conditions represented herein as exact, but infers accuracy only to the extent that is common in practice.

Where subsurface conditions encountered during development are different from those described in this report, qualified geotechnical personnel should revisit the site and review recommendations in light of the actual conditions encountered.

1.9 LOGS OF TESTHOLES

The testhole logs are a compilation of conditions and classification of soils and rocks as obtained from field observations and laboratory testing of selected samples. Soil and rock zones have been interpreted. Change from one geological zone to the other, indicated on the logs as a distinct line, can be, in fact, transitional. The extent of transition is interpretive. Any circumstance which requires precise definition of soil or rock zone transition elevations may require further investigation and review.

1.10 STRATIGRAPHIC AND GEOLOGICAL INFORMATION

The stratigraphic and geological information indicated on drawings contained in this report are inferred from logs of test holes and/or soil/rock exposures. Stratigraphy is known only at the locations of the test hole or exposure. Actual geology and stratigraphy between test holes and/or exposures may vary from that shown on these drawings. Natural variations in geological conditions are inherent and are a function of the historic environment. TETRA TECH does not represent the conditions illustrated as exact but recognizes that variations will exist. Where knowledge of more precise locations of geological units is necessary, additional investigation and review may be necessary.

1.11 PROTECTION OF EXPOSED GROUND

Excavation and construction operations expose geological materials to climatic elements (freeze/thaw, wet/dry) and/or mechanical disturbance which can cause severe deterioration. Unless otherwise specifically indicated in this report, the walls and floors of excavations must be protected from the elements, particularly moisture, desiccation, frost action and construction traffic.

1.12 SUPPORT OF ADJACENT GROUND AND STRUCTURES

Unless otherwise specifically advised, support of ground and structures adjacent to the anticipated construction and preservation of adjacent ground and structures from the adverse impact of construction activity is required.

1.13 INFLUENCE OF CONSTRUCTION ACTIVITY

There is a direct correlation between construction activity and structural performance of adjacent buildings and other installations. The influence of all anticipated construction activities should be considered by the contractor, owner, architect and prime engineer in consultation with a geotechnical engineer when the final design and construction techniques are known.

1.14 OBSERVATIONS DURING CONSTRUCTION

Because of the nature of geological deposits, the judgmental nature of geotechnical engineering, as well as the potential of adverse circumstances arising from construction activity, observations during site preparation, excavation and construction should be carried out by a geotechnical engineer. These observations may then serve as the basis for confirmation and/or alteration of geotechnical recommendations or design guidelines presented herein.

1.15 DRAINAGE SYSTEMS

Where temporary or permanent drainage systems are installed within or around a structure, the systems which will be installed must protect the structure from loss of ground due to internal erosion and must be designed so as to assure continued performance of the drains. Specific design detail of such systems should be developed or reviewed by the geotechnical engineer. Unless otherwise specified, it is a condition of this report that effective temporary and permanent drainage systems are required and that they must be considered in relation to project purpose and function.

1.16 BEARING CAPACITY

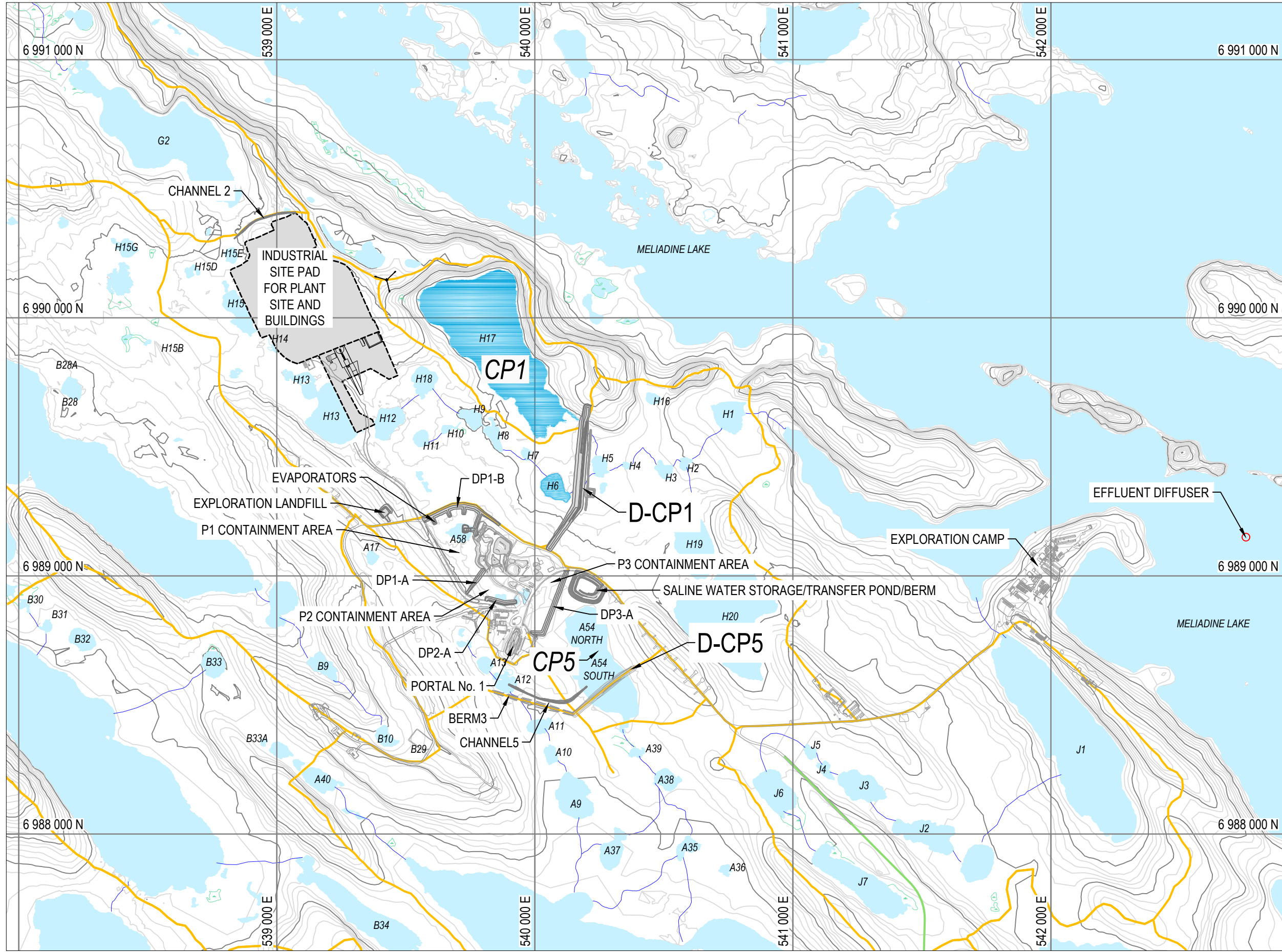
Design bearing capacities, loads and allowable stresses quoted in this report relate to a specific soil or rock type and condition. Construction activity and environmental circumstances can materially change the condition of soil or rock. The elevation at which a soil or rock type occurs is variable. It is a requirement of this report that structural elements be founded in and/or upon geological materials of the type and in the condition assumed. Sufficient observations should be made by qualified geotechnical personnel during construction to assure that the soil and/or rock conditions assumed in this report in fact exist at the site.

1.17 SAMPLES

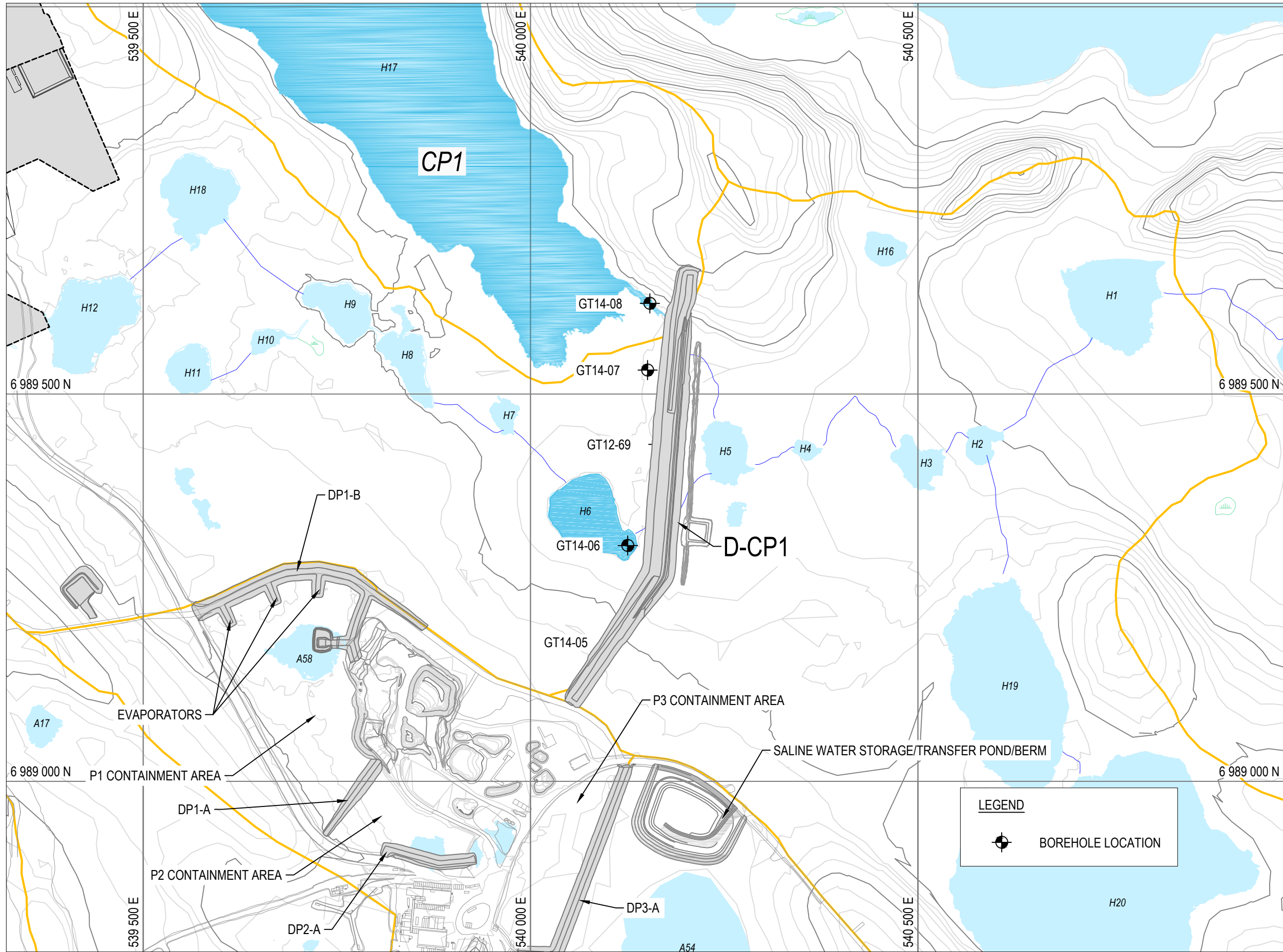
TETRA TECH will retain all soil and rock samples for 30 days after this report is issued. Further storage or transfer of samples can be made at the Client's expense upon written request, otherwise samples will be discarded.

APPENDIX B

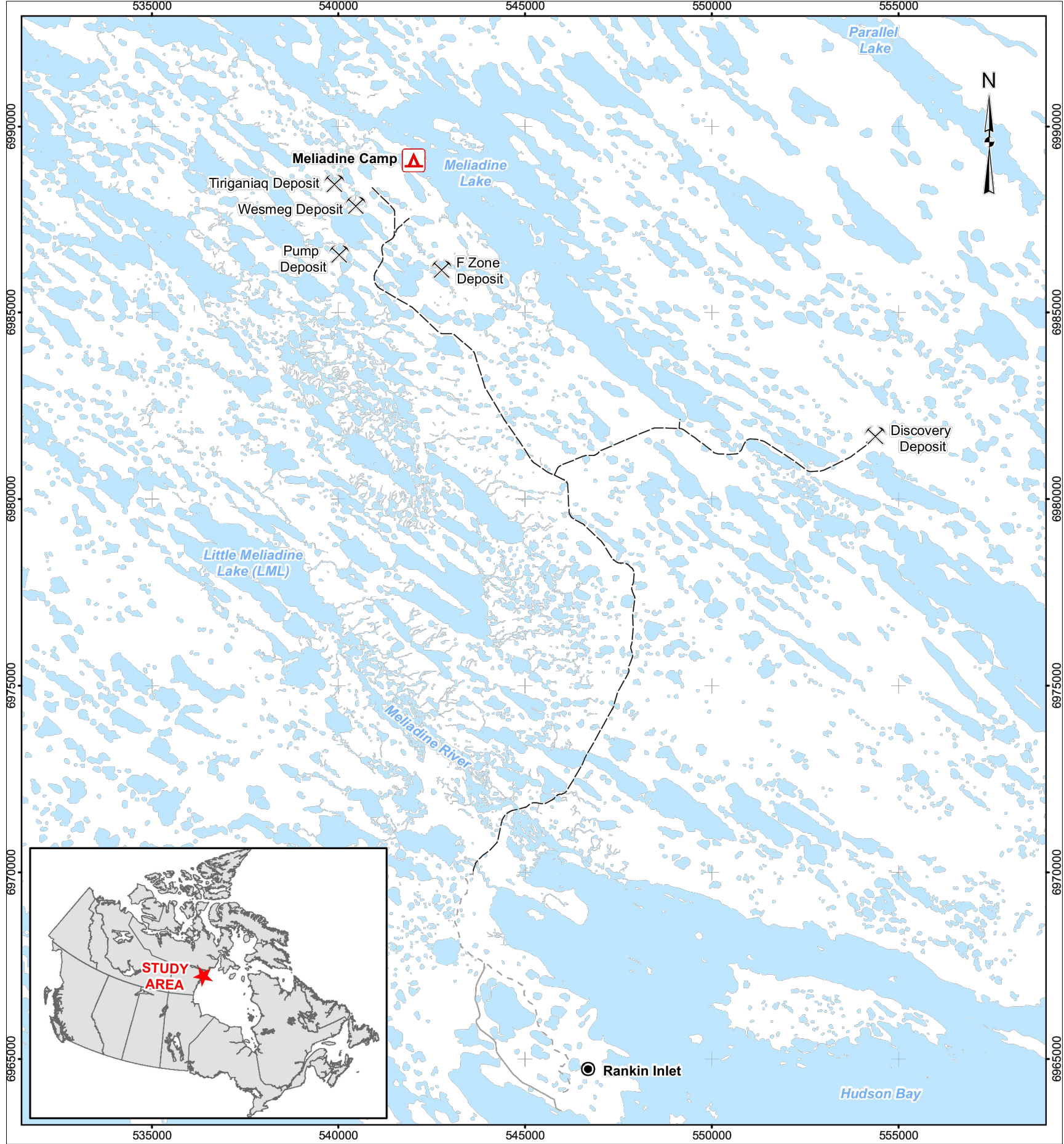
POND CP1 AND DIKE D-CP1



GENERAL SITE LOCATION
SCALE: 1:15,000



D-CP1 SITE LOCATION
SCALE: 1:5,000



LOCATION MAP
SCALE: N.T.S.

D-CP1 CONSTRUCTION DRAWING INDEX

DRAWING NUMBER	REV.	DRAWING TITLE
65-685-230-204	2	D-CP1 AS-BUILT GENERAL LOCATION PLAN
65-685-230-205	2	D-CP1 AS-BUILT KEY TRENCH AND DIKE LAYOUT PLAN
65-685-230-206	2	D-CP1 AS-BUILT PROFILES
65-685-230-207	2	D-CP1 AS-BUILT THERMAL COVER LAYOUT PLAN AND PROFILES
65-685-230-208	2	D-CP1 AS-BUILT TYPICAL SECTIONS AND QUANTITIES
65-685-230-209-001	2	D-CP1 AS-BUILT SECTIONS STATION 0+025 TO 0+200
65-685-230-209-002	2	D-CP1 AS-BUILT SECTIONS STATION 0+225 TO 0+400
65-685-230-209-003	2	D-CP1 AS-BUILT SECTIONS STATION 0+425 TO 0+575
65-685-230-210	2	D-CP1 AS-BUILT DOWNSTREAM WATER COLLECTION CHANNEL AND SUMP LAYOUT PLAN AND PROFILES
65-685-230-211	2	D-CP1 AS-BUILT INSTRUMENTATION PLAN AND DETAILS FOR GROUND TEMPERATURE CABLES
65-685-230-212	2	D-CP1 AS-BUILT INSTRUMENTATION PLAN AND DETAILS FOR GROUND TEMPERATURE CABLES AND SETTLEMENT SURVEY MONUMENT POINTS
65-685-230-213	2	D-CP1 AS-BUILT DOWNSTREAM WATER COLLECTION CHANNEL AND SUMP PROFILES AND INSTRUMENTATION DETAILS



NOTES GÉNÉRALES / GENERAL NOTES

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature: [Signature]
Date: Oct 17, 2017
PERMIT NUMBER: P 018
NT/NU Association of Professional
Engineers and Geoscientists

TEL QUE CONSTRUIT
AS BUILT
DATE : 2017-10-19
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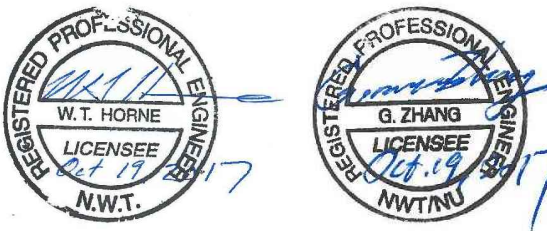
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1	2016-09-24	ISSUED FOR CONSTRUCTION	GZ	KJ	
0	2016-08-15	ISSUED FOR CONSTRUCTION	GZ	KJ	
B	2016-08-11	ISSUED FOR REVIEW	GZ	KJ	
A	2016-08-05	ISSUED FOR REVIEW	GZ	KJ	

REVISIONS

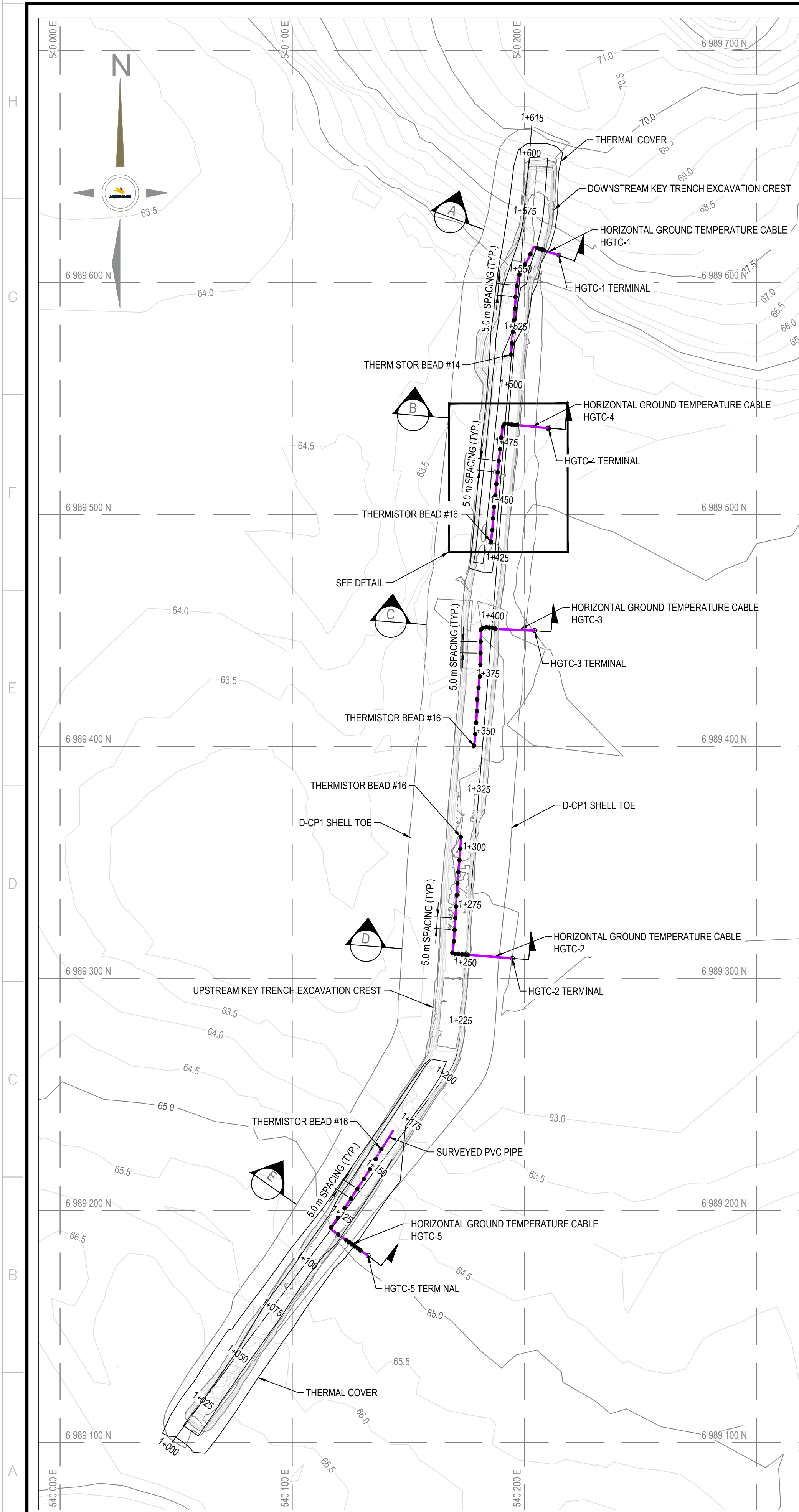


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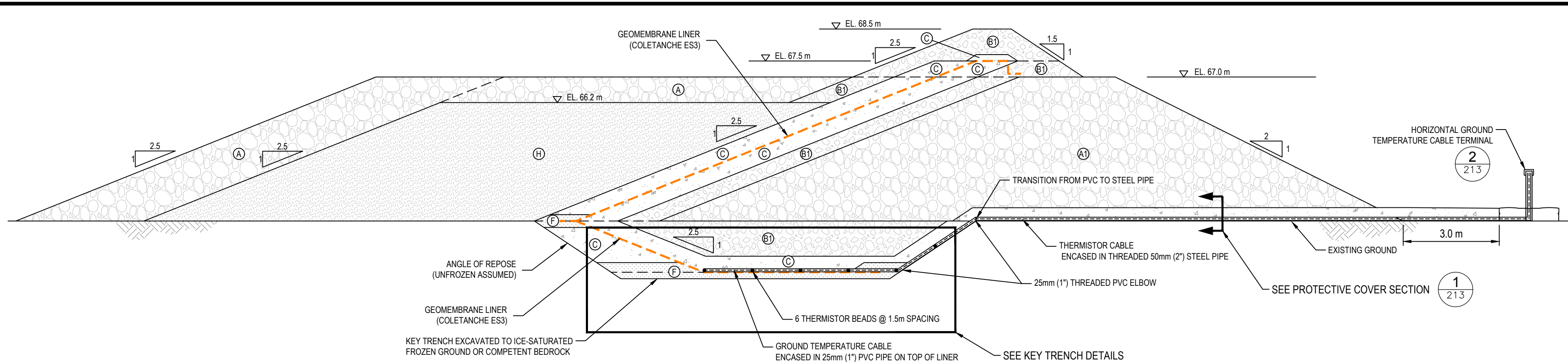
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APPROUVÉ PAR APPROVED BY	NG	2017-10-06
ÉCHELLE SCALE	AS SHOWN	DATE 2017-10-06

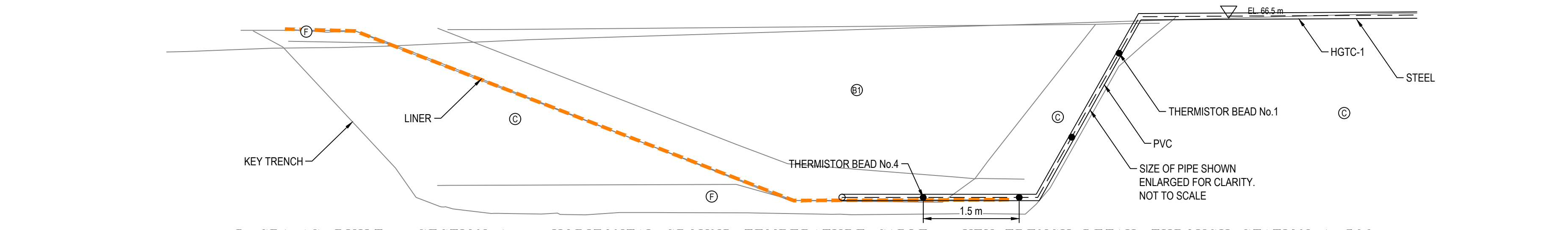
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NO. PROJET PROJECT NO.	6515
REVISION	2
FEUILLE / SHEET	1 / 12



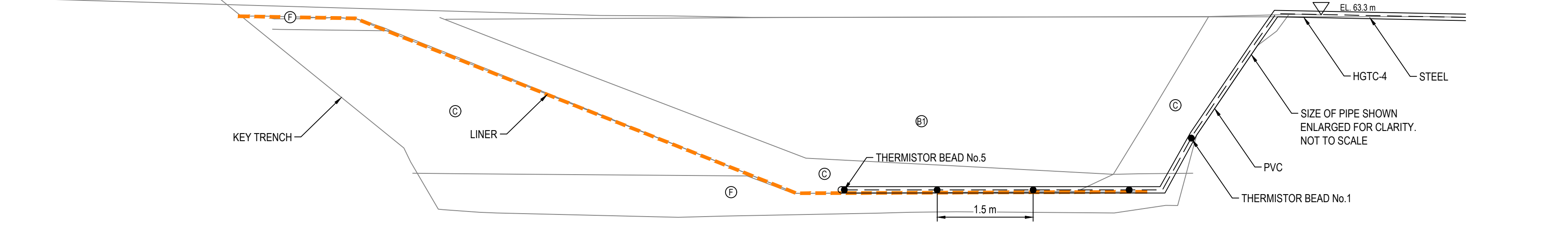
D-CP1 AS-BUILT HORIZONTAL GROUND TEMPERATURE CABLE LAYOUT
SCALE: 1:1250



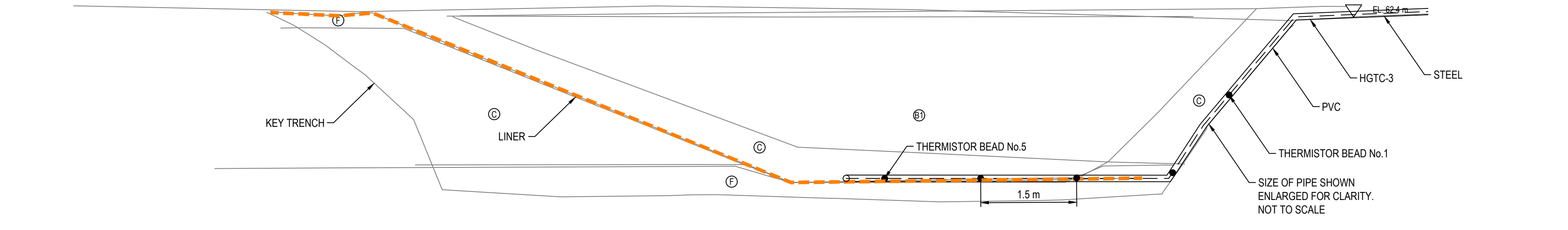
D-CP1 HORIZONTAL GROUND TEMPERATURE CABLE - DESIGN TYPICAL SECTION
SCALE: 1:100



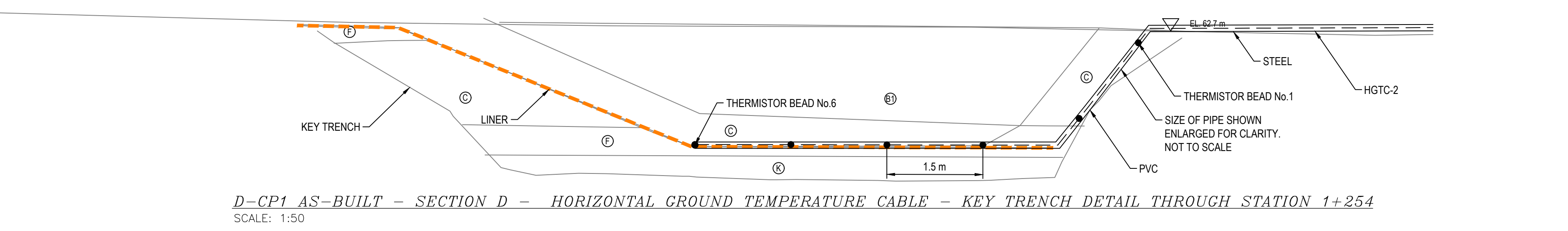
D-CP1 AS-BUILT - SECTION A - HORIZONTAL GROUND TEMPERATURE CABLE - KEY TRENCH DETAIL THROUGH STATION 1+562
SCALE: 1:50



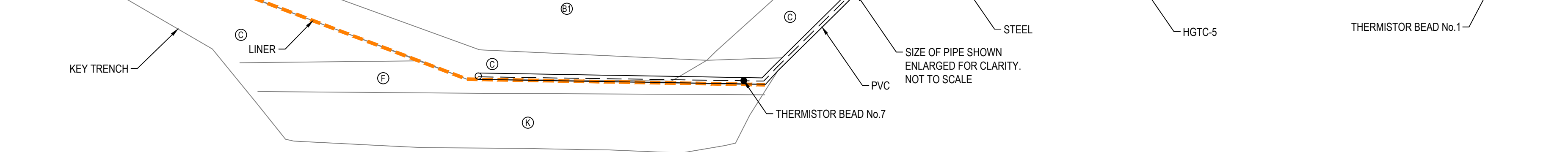
D-CP1 AS-BUILT - SECTION B - HORIZONTAL GROUND TEMPERATURE CABLE - KEY TRENCH DETAIL THROUGH STATION 1+482
SCALE: 1:50



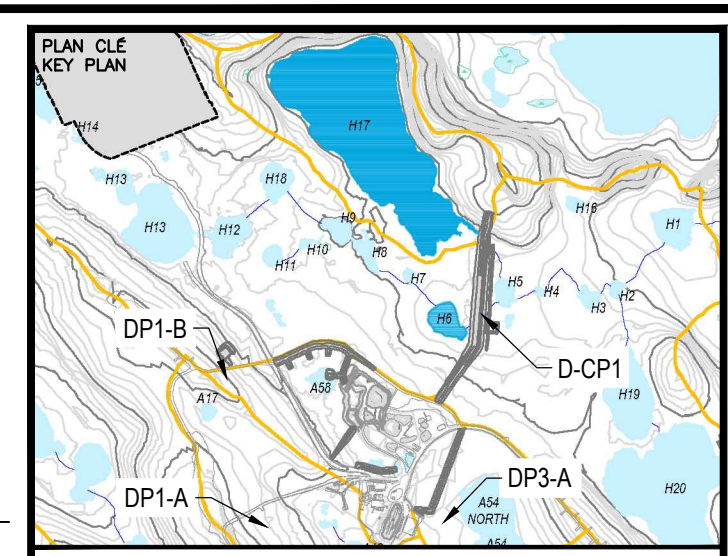
D-CP1 AS-BUILT - SECTION C - HORIZONTAL GROUND TEMPERATURE CABLE - KEY TRENCH DETAIL THROUGH STATION 1+394
SCALE: 1:50



D-CP1 AS-BUILT - SECTION D - HORIZONTAL GROUND TEMPERATURE CABLE - KEY TRENCH DETAIL THROUGH STATION 1+254
SCALE: 1:50



D-CP1 AS-BUILT - SECTION E - HORIZONTAL GROUND TEMPERATURE CABLE - KEY TRENCH DETAIL THROUGH STATION 1+117
SCALE: 1:50



NOTES GÉNÉRALES / GENERAL NOTES

LEGEND

- (A) RUN-OF-MINE ROCKFILL (600 mm MINUS) IN DIKE UPSTREAM AND FOR THERMAL COVER
- (A1) RUN-OF-MINE ROCKFILL (600 mm MINUS) IN DIKE DOWNSTREAM
- (B) TRANSITION ROCKFILL (150 mm MINUS)
- (B1) TRANSITION ROCKFILL (150 mm MINUS)
- (C) GRANULAR FILL OR ESKER SAND (20 mm MINUS)
- (F) BENTONITE-AUGMENTED MATERIAL (MIXTURE OF BENTONITE AND TYPE C MATERIAL)
- (H) ESKER SAND AND GRAVEL (75 mm MINUS)
- (K) NEARLY-SATURATED BACKFILL (20 mm MINUS)

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature: [Signature]
Date: 04/11/2017
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TEL QUE CONSTRUIT
AS BUILT
AGNICO EAGLE
DATE: 2017-10-19

INFORMATION CONTENUE EST LA PROPRIÉTÉ DE AGNICO EAGLE LTD. ET DOIT ÊTRE RETOURNÉE, SUR DEMANDE, SANS AUTORIZATION ÉCRITE, À AGNICO EAGLE LTD. S'IL Y A DES MODIFICATIONS À FAIRE, IL FAUT EN AVISER AGNICO EAGLE LTD. S'IL Y A DES MODIFICATIONS À FAIRE, IL FAUT EN AVISER AGNICO EAGLE LTD. S'IL Y A DES MODIFICATIONS À FAIRE, IL FAUT EN AVISER AGNICO EAGLE LTD.

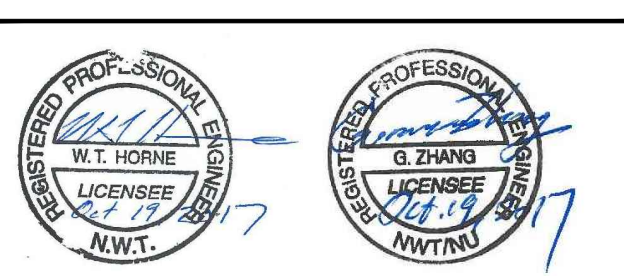
DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG



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0	2016-08-15	ISSUED FOR CONSTRUCTION	GZ	KJ	
B	2016-08-11	ISSUED FOR REVIEW	GZ	KJ	
A	2016-08-05	ISSUED FOR REVIEW	GZ	KJ	

REVISIONS



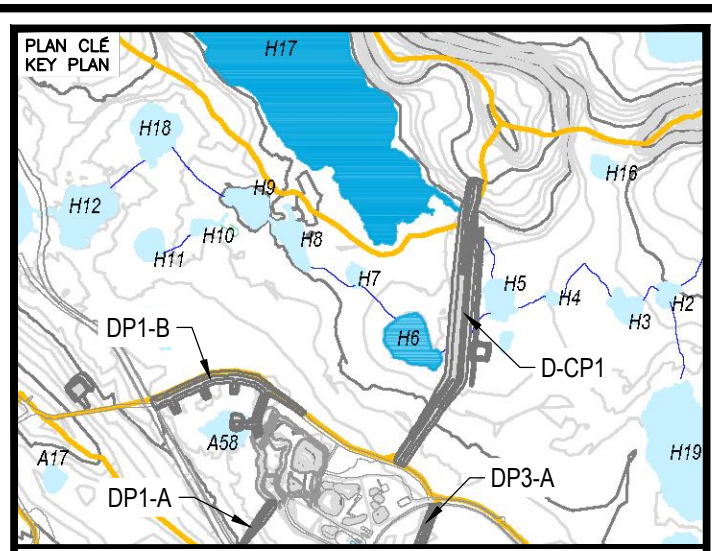
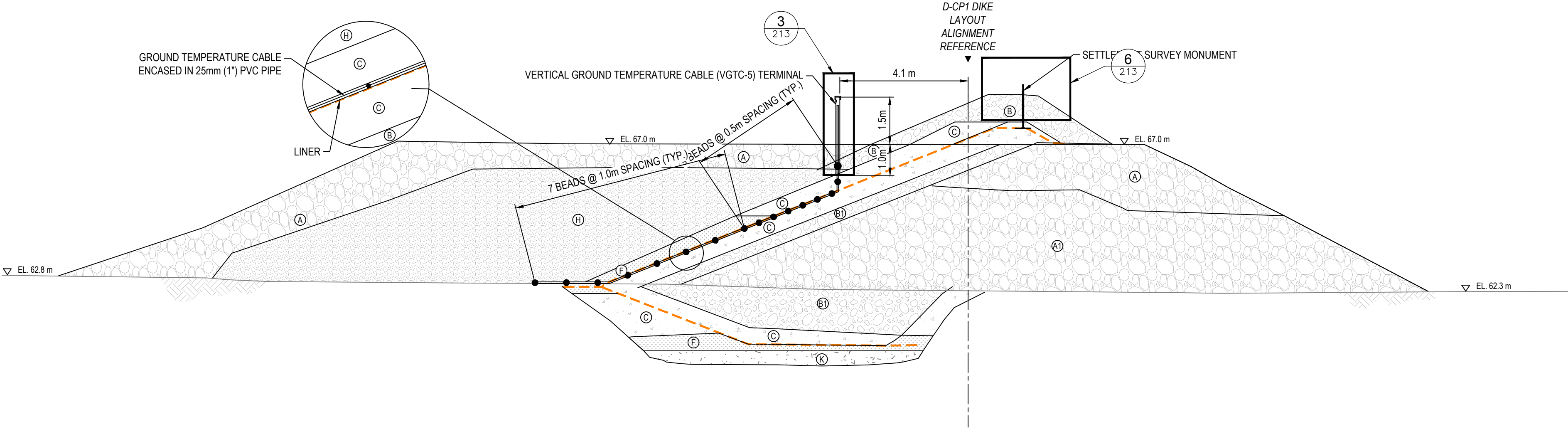
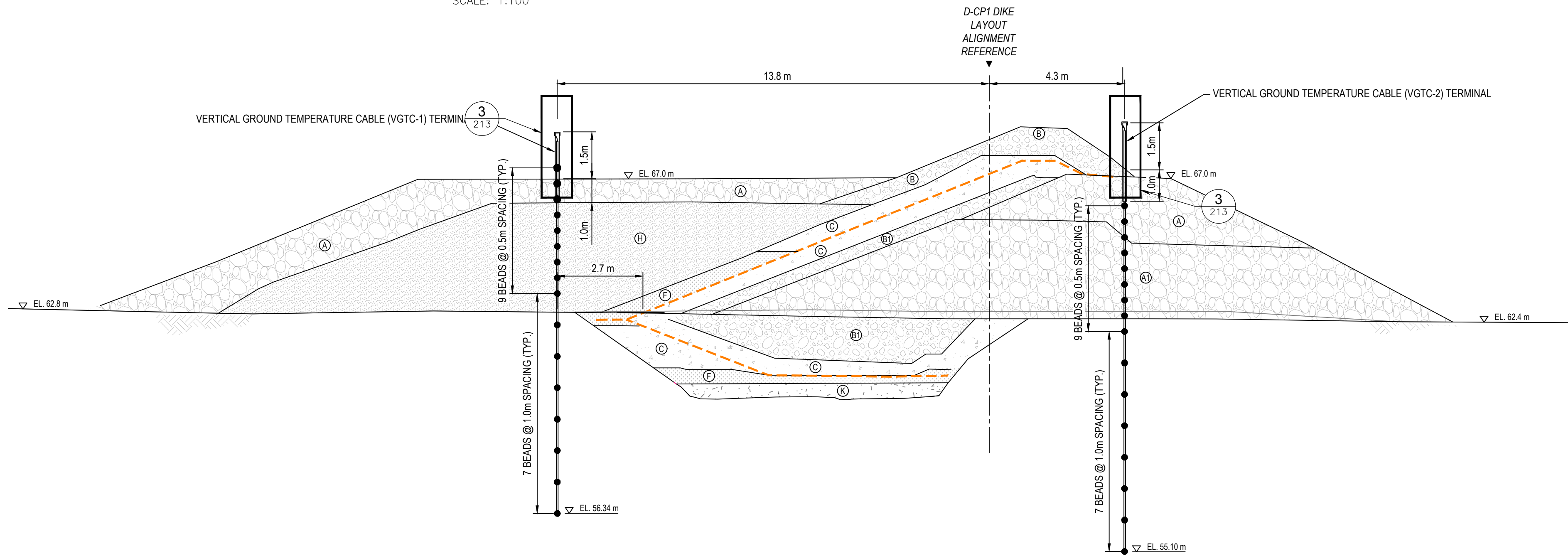
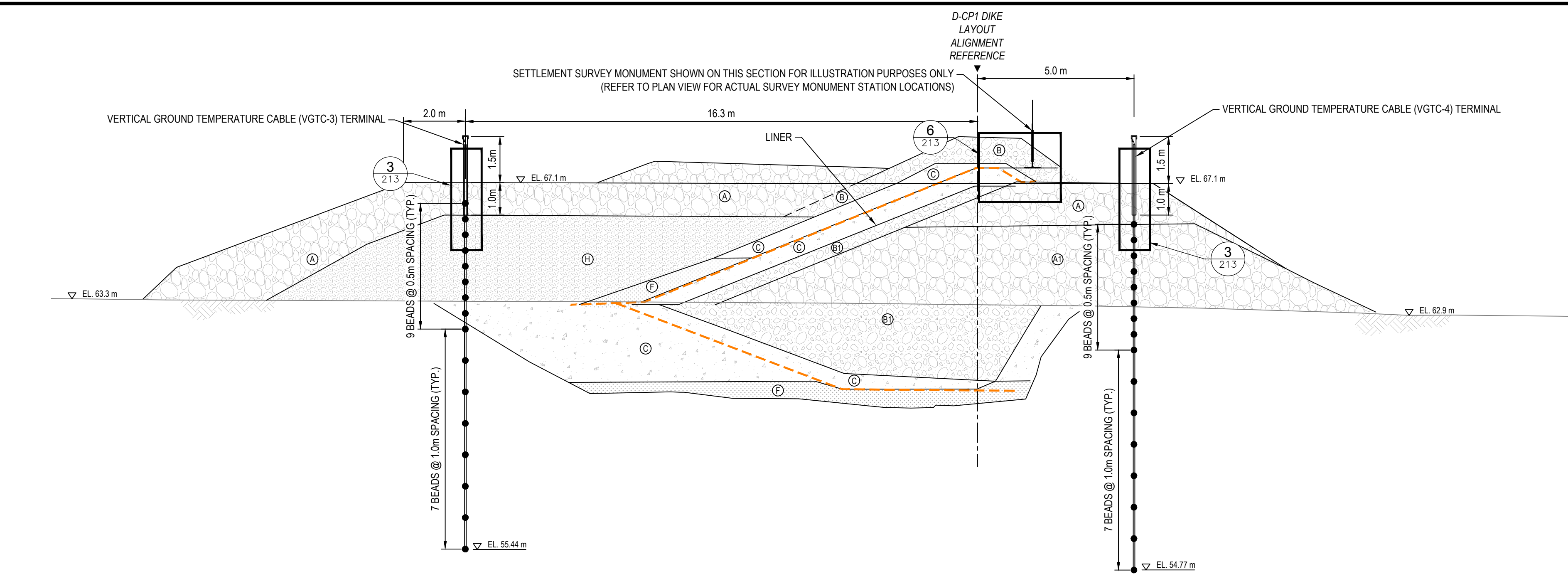
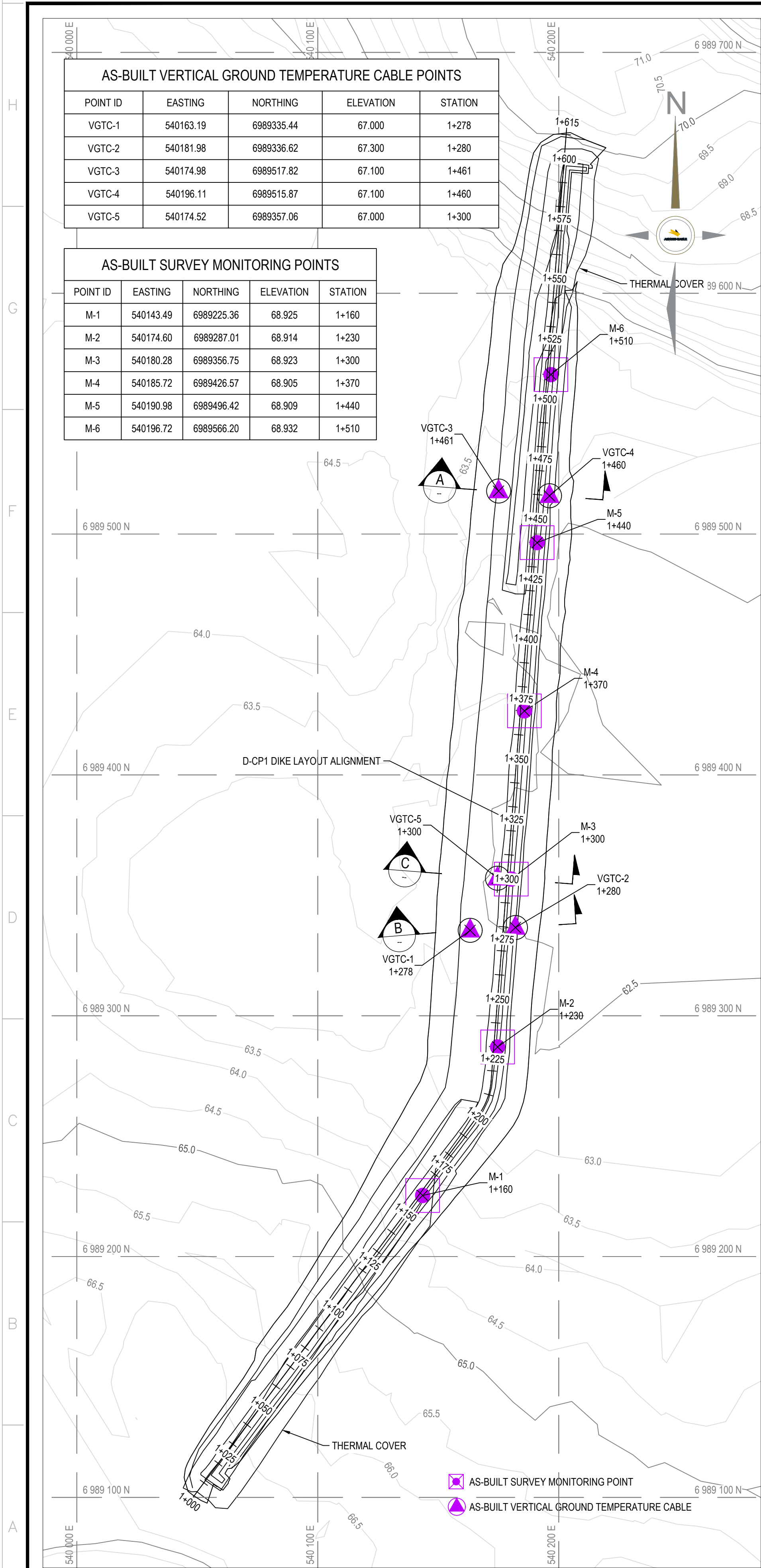
TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT

D-CP1 AS-BUILT
INSTRUMENTATION PLAN AND DETAILS
FOR GROUND TEMPERATURE CABLES

DESSIN PAR DRAWN BY	DRG	DATE 2017-10-06
VÉRIFIÉ PAR CHECKED BY	GZ	2017-10-06
APPROUVÉ PAR APPROVED BY	KJ	2017-10-06
ÉCHELLE SCALE	AS SHOWN	DATE 2017-10-06

NO. DESSIN
DRAWING NO. 65-685-230-211

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHEET
6515	2	10 / 12



NOTES GÉNÉRALES / GENERAL NOTES

LEGEND

- (A) RUN-OF-MINE ROCKFILL (600 mm MINUS) IN DIKE UPSTREAM AND FOR THERMAL COVER
- (A1) RUN-OF-MINE ROCKFILL (600 mm MINUS) IN DIKE DOWNSTREAM
- (B) TRANSITION ROCKFILL (150 mm MINUS)
- (B1) TRANSITION ROCKFILL (150 mm MINUS)
- (C) GRANULAR FILL OR ESKER SAND (20 mm MINUS)
- (F) BENTONITE-AUGMENTED MATERIAL (MIXTURE OF BENTONITE AND TYPE C MATERIAL)
- (H) ESKER SAND AND GRAVEL (75 mm MINUS)
- (K) NEARLY-SATURATED BACKFILL (20 mm MINUS)

PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature: [Signature]
Date: 07/11/2017
PERMIT NUMBER: P 018
NT/NU Association of Professional Engineers and Geoscientists

TEL QUE CONSTRUIT AS BUILT
AGNICO EAGLE
DATE: 2017-10-19

L'INFORMATION D-CONSTRUIT EST LA PROPRIÉTÉ DE AGNICO EAGLE LTD. ET DOIT ÊTRE RETENUE SANS AUTORISATION ÉCRITE. NOUS ASSUMONS LA RESPONSABILITÉ DE LA PRÉCISION DE L'INFORMATION D-CONSTRUIT. AGNICO EAGLE LTD. ASSUME LA RESPONSABILITÉ DE LA PRÉCISION DE L'INFORMATION D-CONSTRUIT. AGNICO EAGLE LTD. ASSUME LA RESPONSABILITÉ DE LA PRÉCISION DE L'INFORMATION D-CONSTRUIT.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
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REV.	DATE	DESCRIPTION	PAR/ET	APP.	CLIENT
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0	2016-08-15	ISSUED FOR CONSTRUCTION	GZ	KJ	
B	2016-08-11	ISSUED FOR REVIEW	GZ	KJ	
A	2016-08-05	ISSUED FOR REVIEW	GZ	KJ	

REV.	DATE	DESCRIPTION	PAR/ET	APP.	CLIENT
2	2017-10-19	ISSUED FOR RECORD	WTH	NG	
1	2016-08-24	ISSUED FOR CONSTRUCTION	GZ	KJ	
0	2016-08-15	ISSUED FOR CONSTRUCTION	GZ	KJ	
B	2016-08-11	ISSUED FOR REVIEW	GZ	KJ	
A	2016-08-05	ISSUED FOR REVIEW	GZ	KJ	

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT

D-CP1 AS-BUILT INSTRUMENTATION PLAN AND DETAILS FOR GROUND TEMPERATURE CABLES AND SETTLEMENT SURVEY MONUMENT POINTS

DESSINÉ PAR DRAWN BY	DRG	DATE 2017-10-06
VÉRIFIÉ PAR CHECKED BY	GZ	2017-10-06
APPROUVÉ PAR APPROVED BY	GZ	2017-10-06
ÉCHELLE SCALE	AS SHOWN	DATE 2017-10-06

NO. DESIGN
DRAWING NO. 65-685-230-212

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHEET
6515	2	11 / 12



Photo 1: Dike D-CP1 - Upstream face—some wave and ice erosion evident



Photo 2: Dike D-CP1—Downstream face, looking south



Photo 3: Dike D-CP1 - Upstream face—some wave erosion evident, scarp approximately 1 m high.



Photo 4: Dike D-CP1 - Upstream crest.



Photo 5: Dike D-CP1 - Upstream crest—some settlement is evident



Photo 6: Dike D-CP1 - Upstream crest, looking south.



Photo 7: Dike D-CP1 - Upstream crest—similar condition to 2019.



Photo 8: Dike D-CP1 - Downstream water collection pond, some cracking and subsidence at the upstream crest of the pond .



Photo 9: Dike D-CP1 - water collection channel at downstream toe of Dike (south end.)



Photo 10: Dike D-CP1 - Dike crest, data acquisition terminal for GTCs



Photo 11: Dike D-CP1 - Water collection channel downstream of the Dike.



Photo 12: Dike D-CP1 - ground between the dike toe and water collection channel, settlement and subsidence



Photo 13: Dike D-CP1 - Subsidence in water collection channel, possibly caused by thaw of ice wedge below channel.



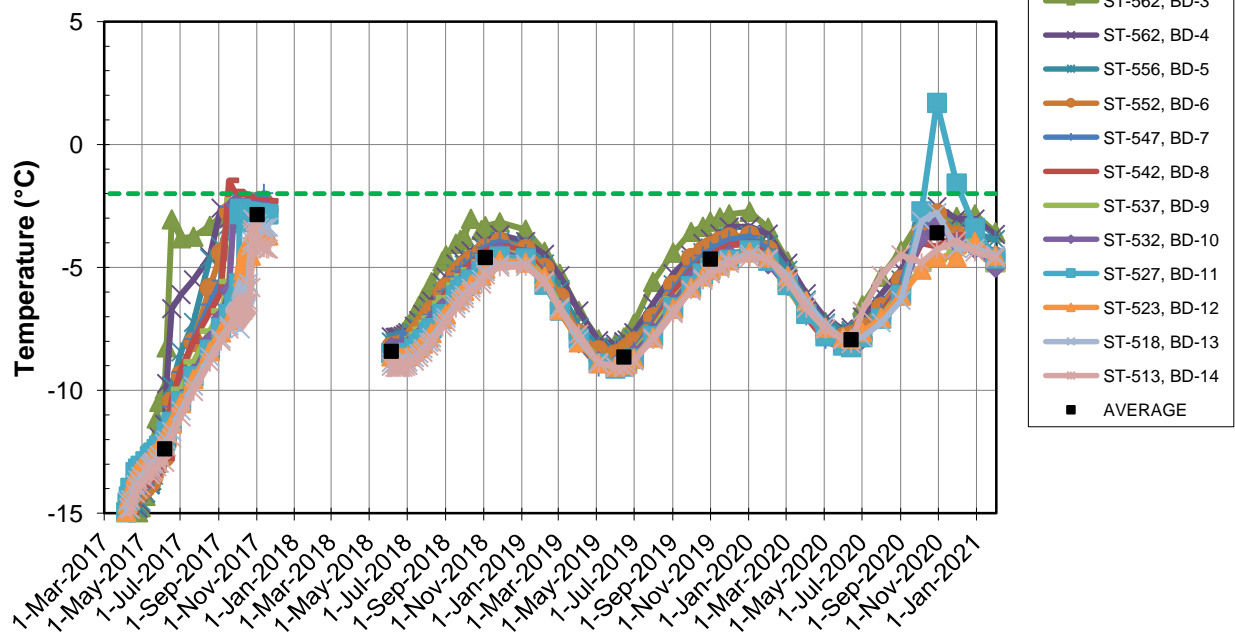
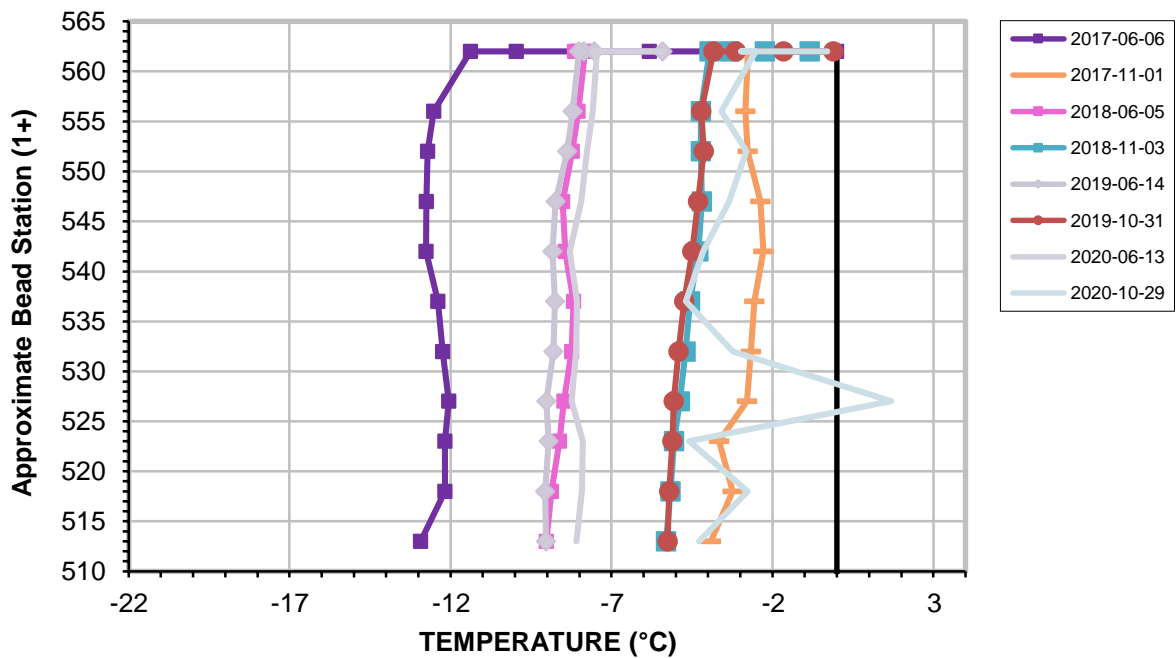
Photo 14: Dike D-CP1 - Subsidence and cracking between dike toe and water collection channel.



Photo 15: Dike D-CP1 - Subsidence and cracking at water collection pond downstream of the dike.



Photo 16: Dike D-CP1 - Subsidence at southeast corner of water collection pond downstream of the dike.

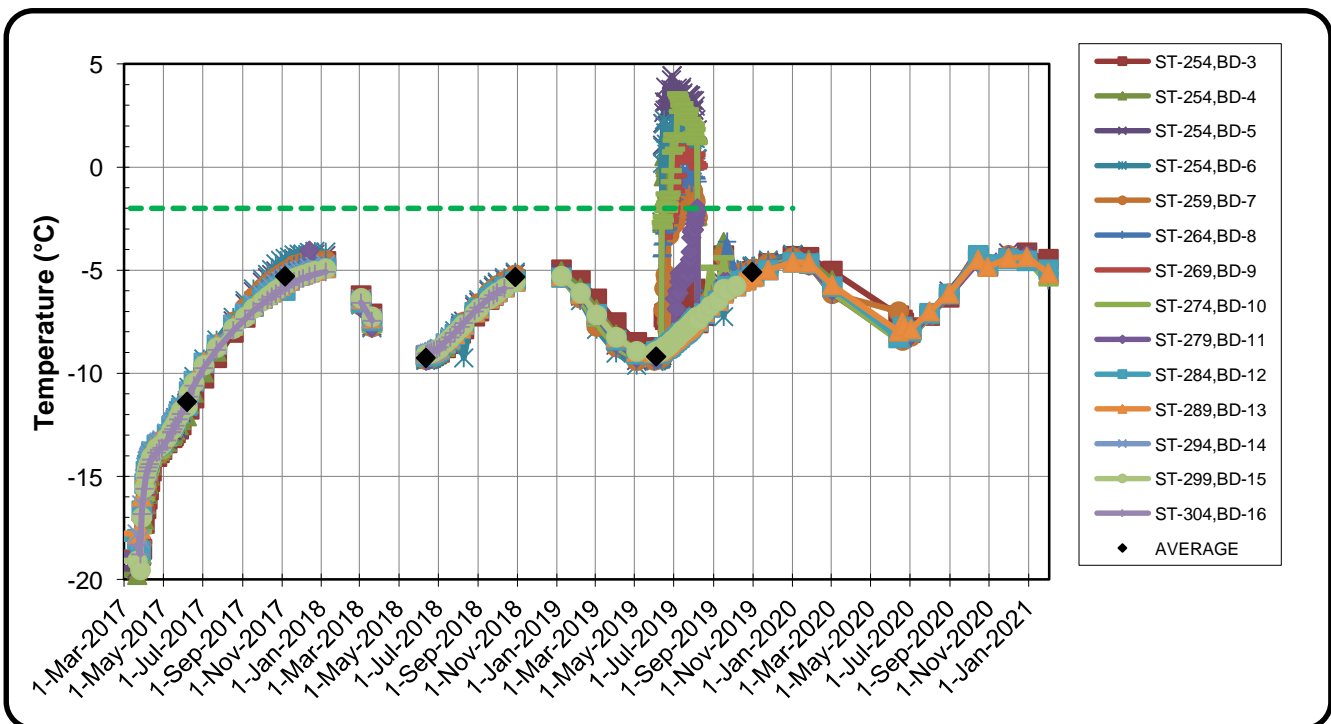
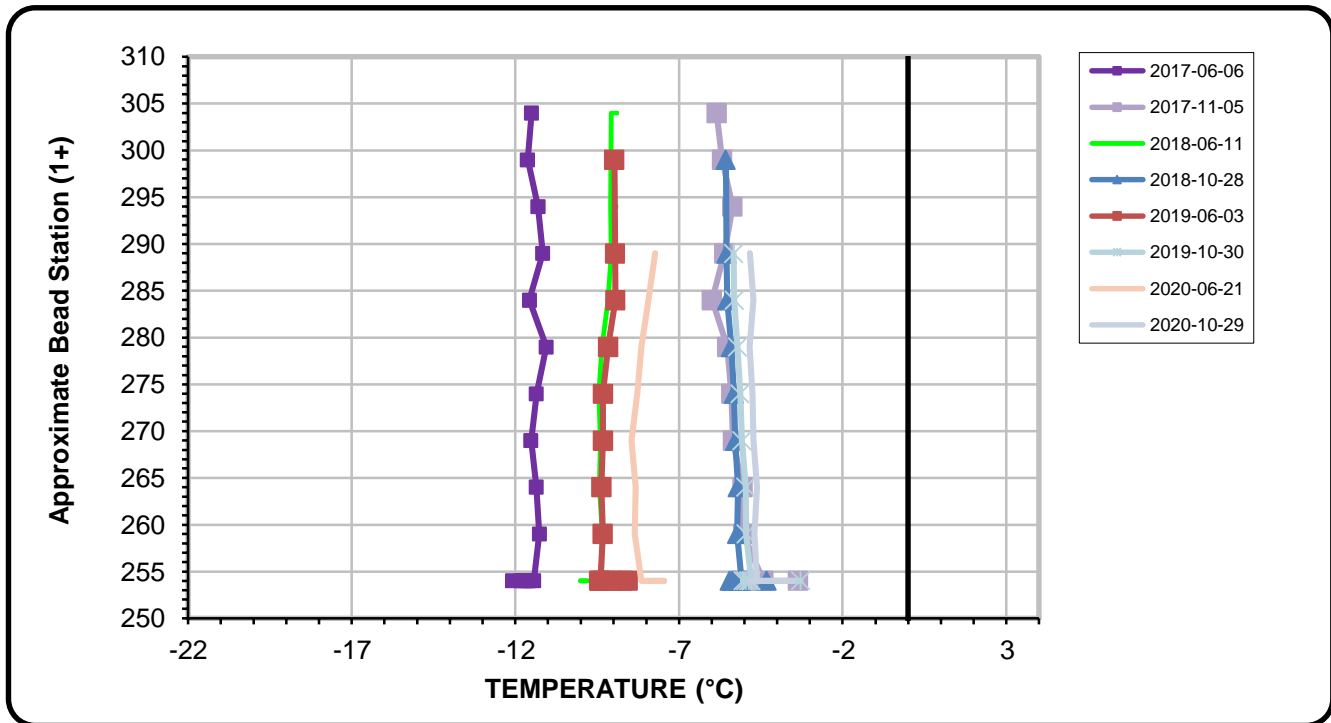


Serial No.: 2595
Date Installed: March 24, 2017

EBA File No: E14103230.01-023

Horizontal Ground Temperature Profile for Cable HGTC-01
Dike D-CP1



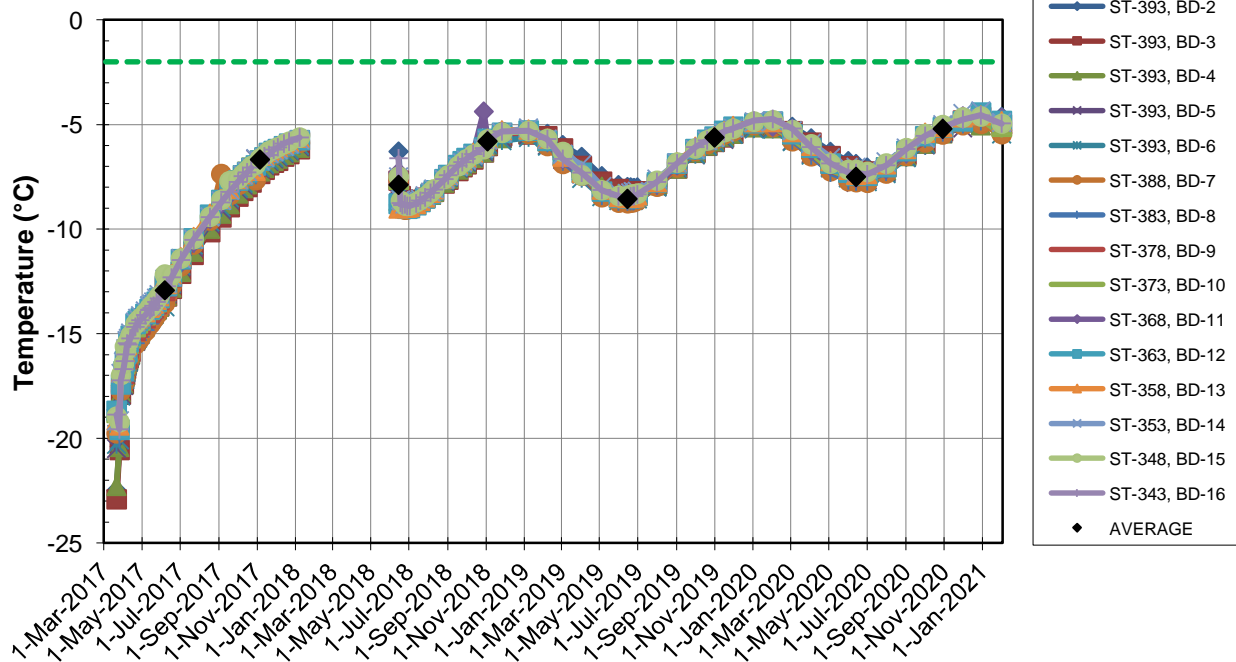
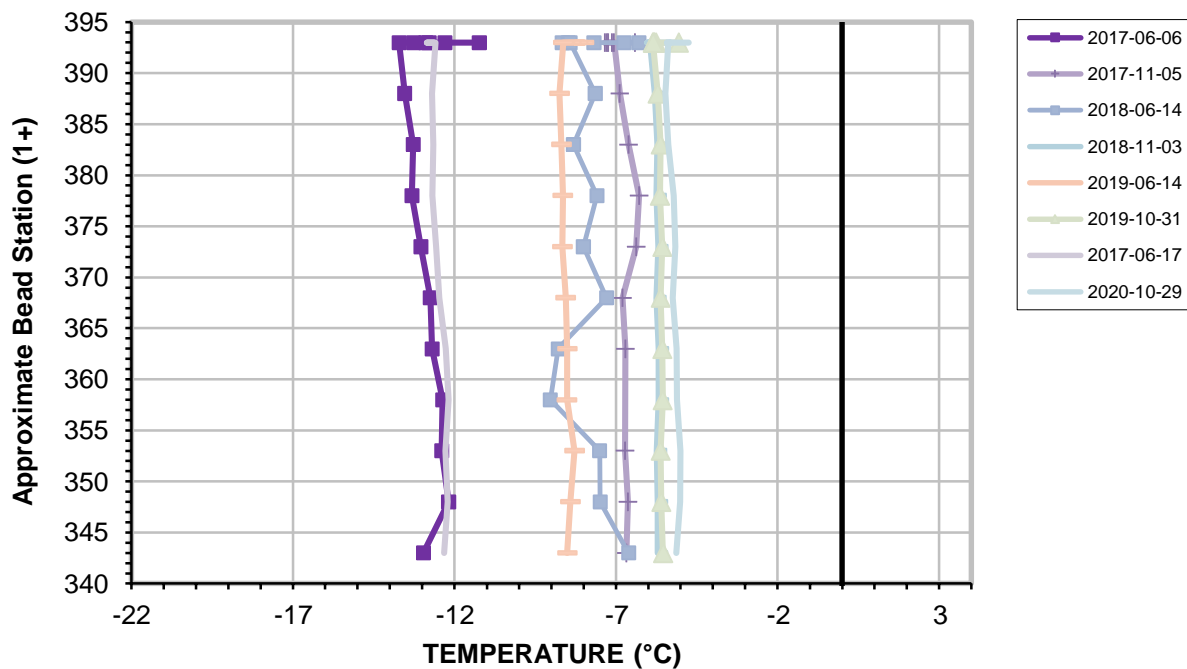


Serial No.: 2596
Date Installed: March 3, 2017

EBA File No: E14103230.01-023

Horizontal Ground Temperature Profile for Cable HGTC-02 Dike D-CP1



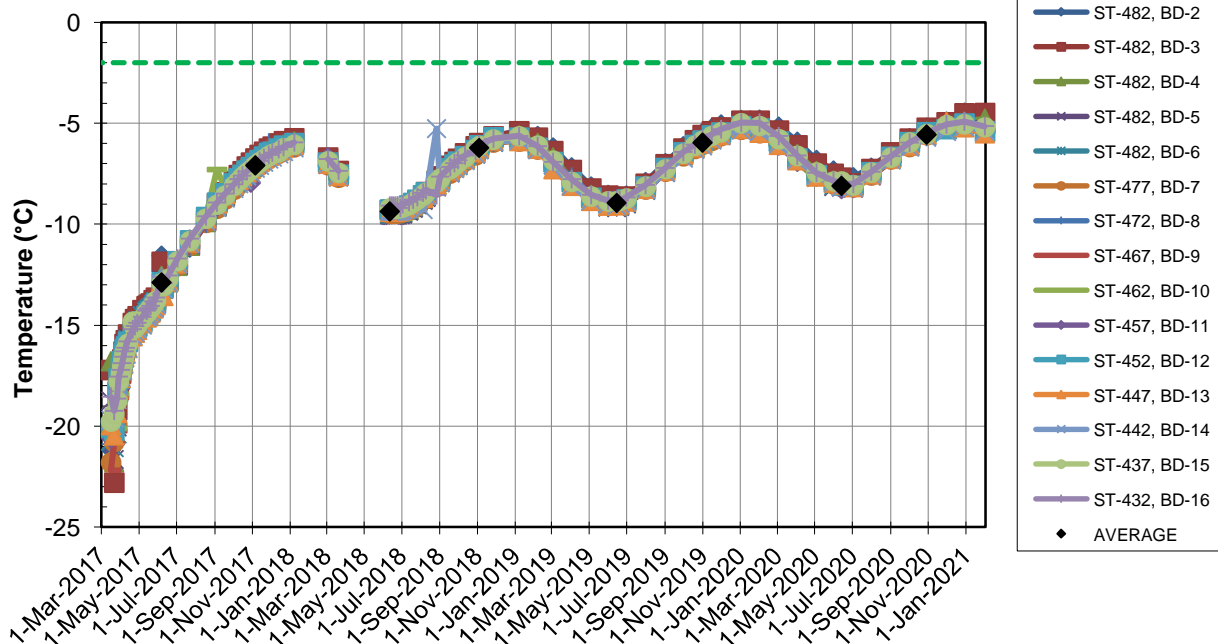
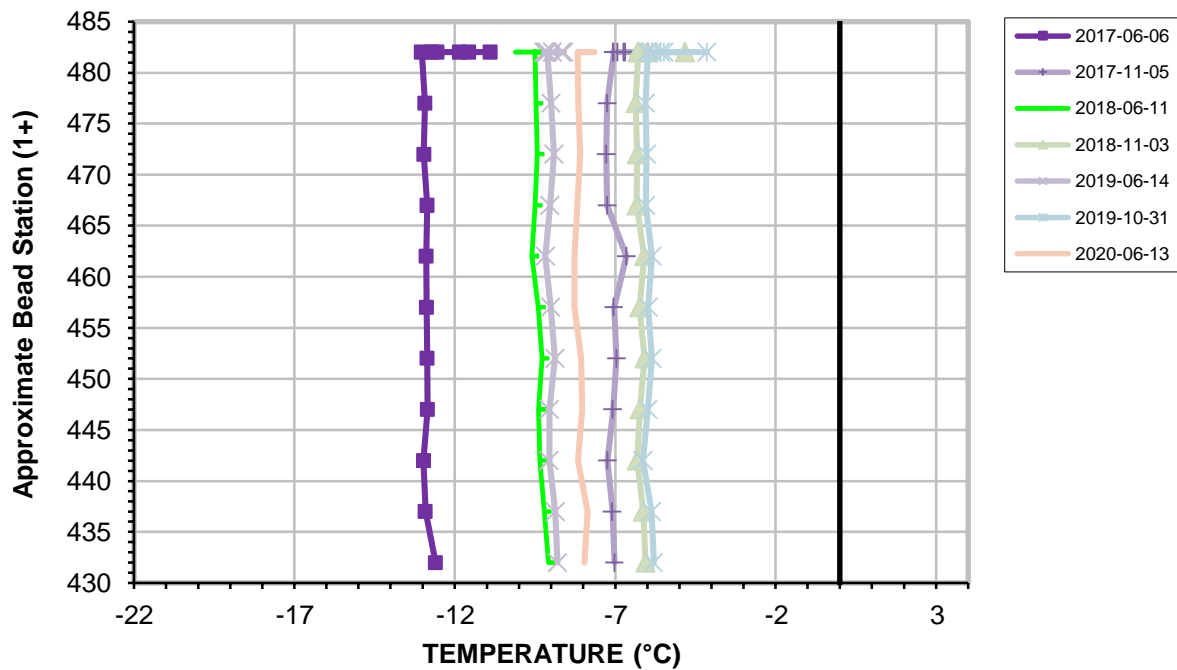


Serial No.: 2597
Date Installed: March 14, 2017

EBA File No: E14103230.01-023

Horizontal Ground Temperature Profile for Cable HGTC-03 Dike D-CP1



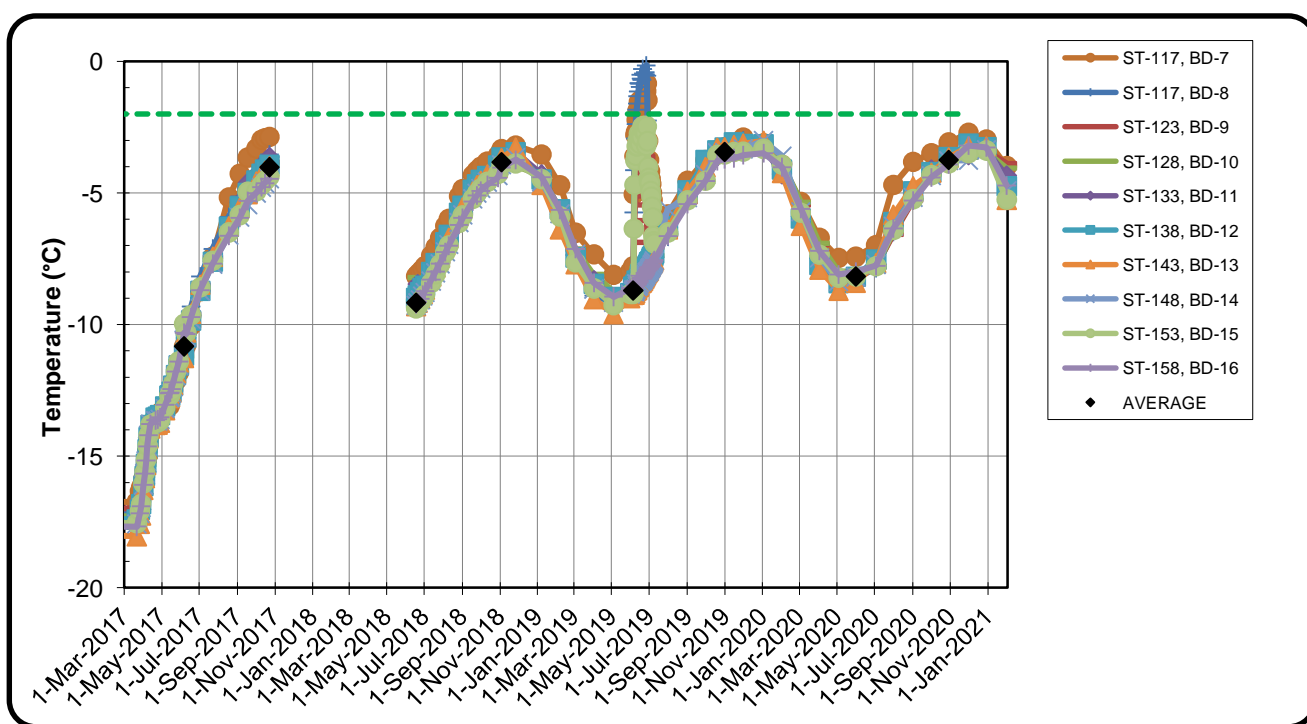
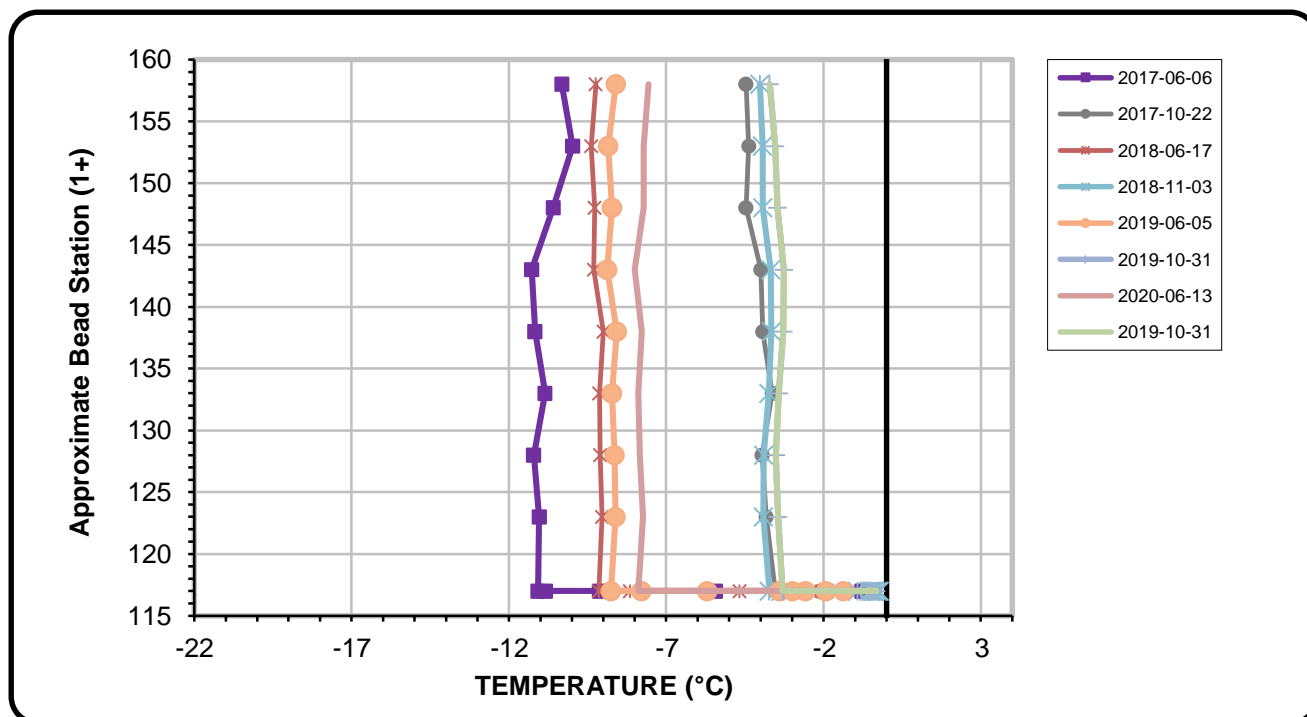


Serial No.: 2598
Date Installed: March 16, 2017

EBA File No: E14103230.01-023

Horizontal Ground Temperature Profile for Cable HGTC-04 Dike D-CP1



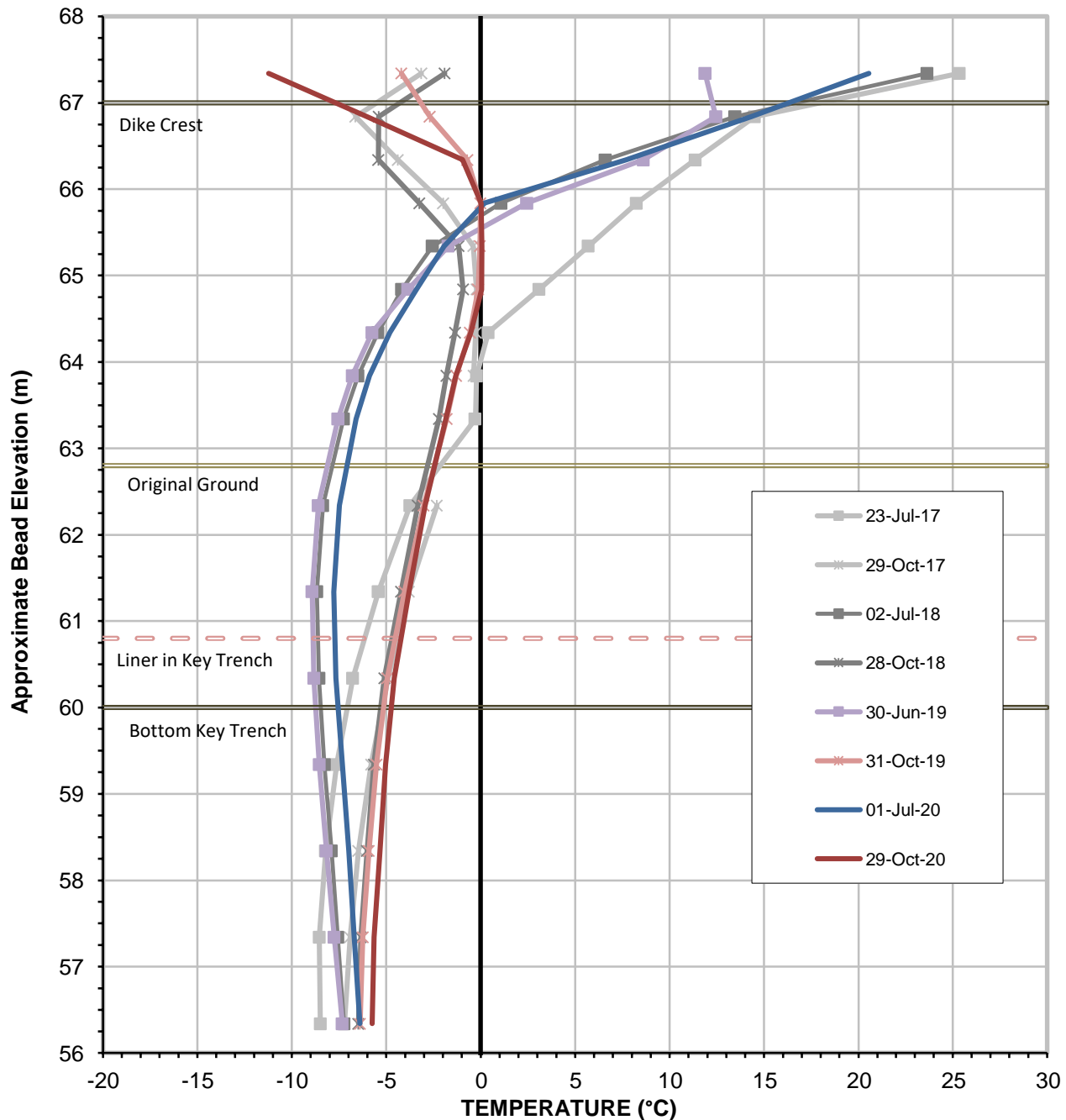


Serial No.: 2599
Date Installed: March 2, 2017

EBA File No: E14103230.01-023

Horizontal Ground Temperature Profile for Cable HGTC-05
Dike D-CP1





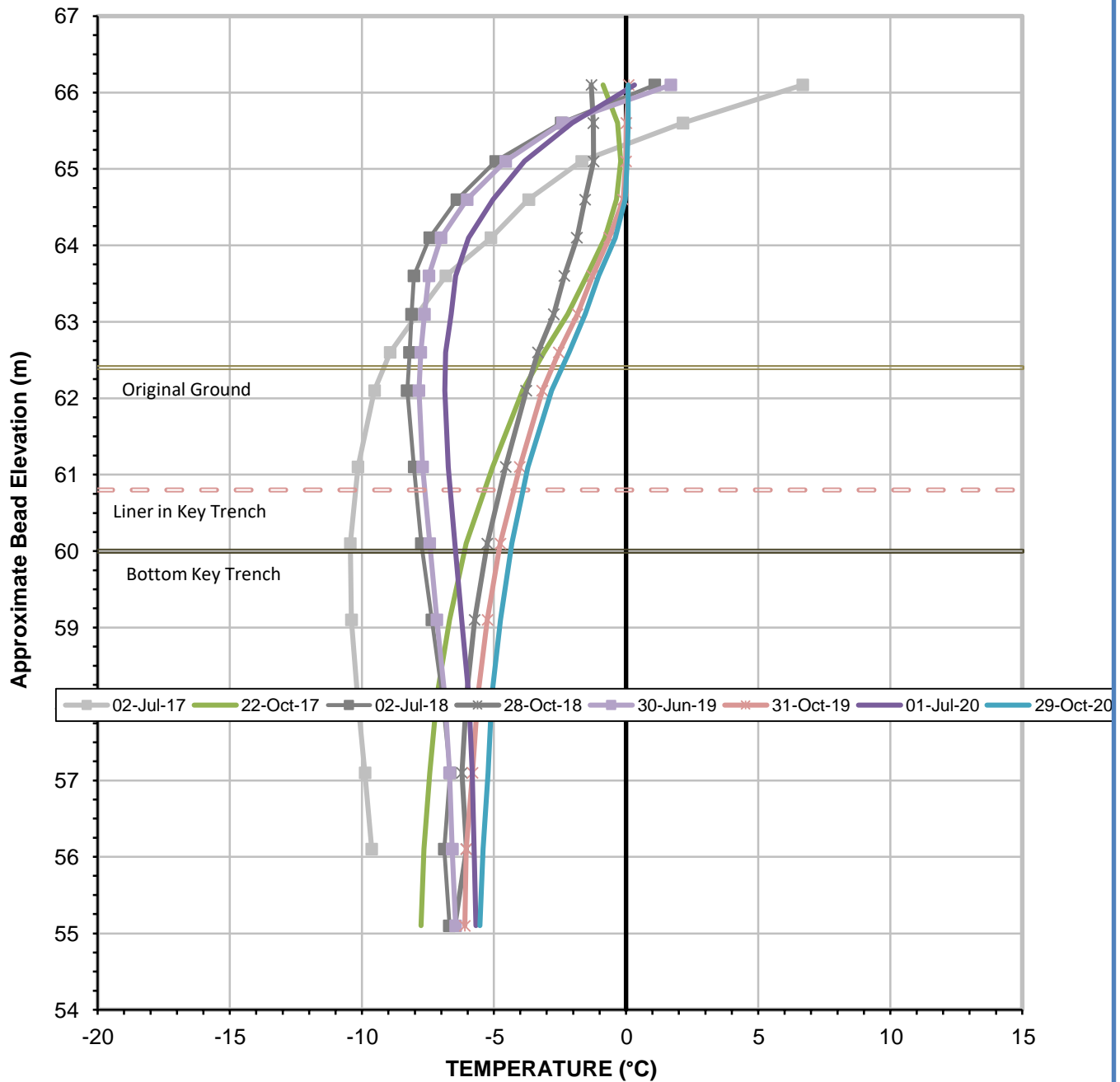
Serial No.: 2626
Date Installed: July 22, 2017

**Vertical Ground Temperature Profile for Cable VGTC-01
Dike D-CP1**



Average Annual Temperature at Various Elevations

	November 2017 - November 2018	November 2018 - November 2019	November 2019 - November 2020
Bottom of Cable	-7.0	-6.8	-6.0
Liner Base Elevation	-6.8	-7.5	-6.1



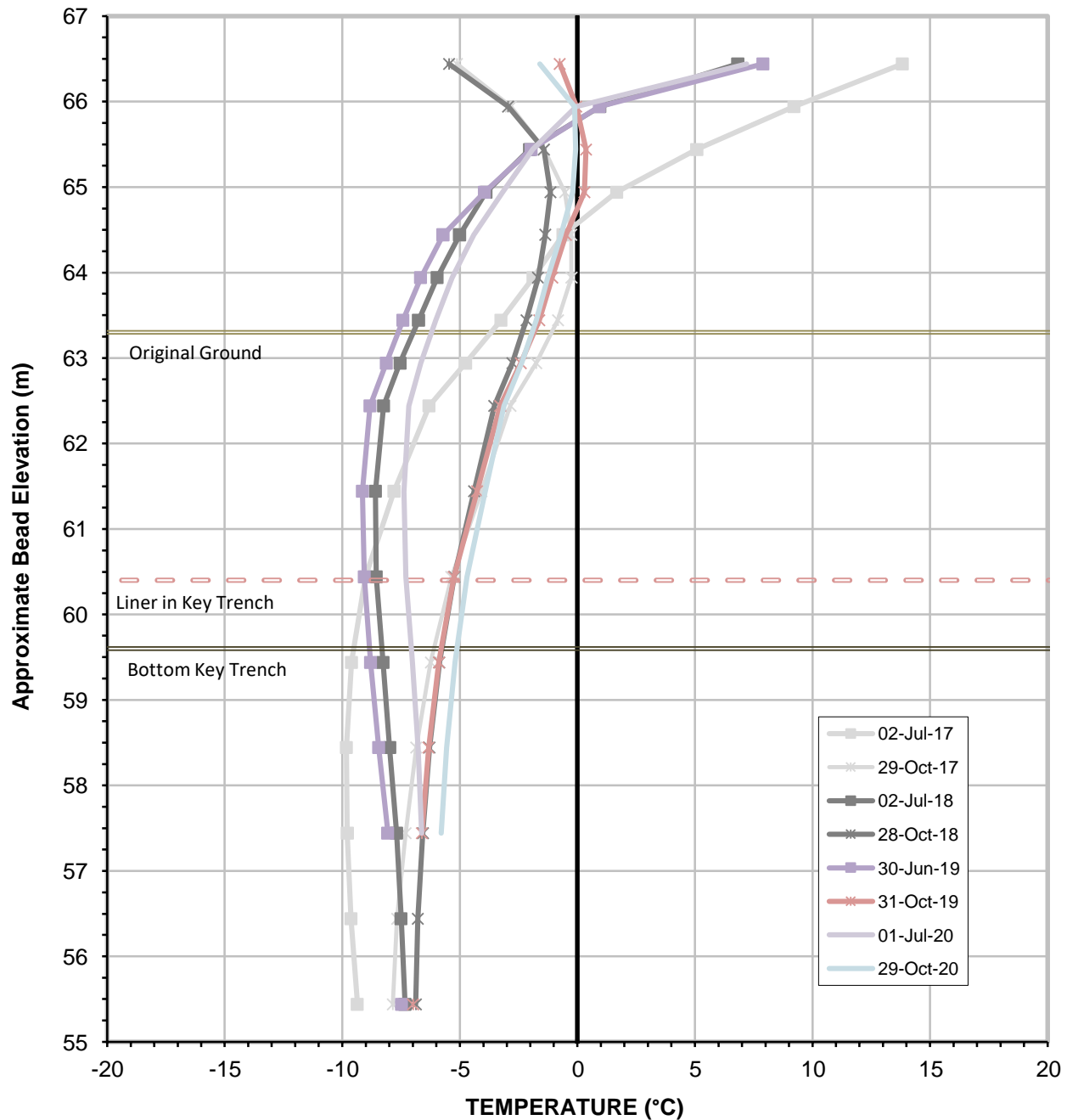
**Vertical Ground Temperature Profile for Cable VGTC-02
Dike D-CP1**

Serial No.: 2627
Date Installed: June 16, 2017



Average Annual Temperature at Various Elevations

	November 2017 - November 2018	November 2018 - November 2019	November 2019 - November 2020
Bottom of Cable	-6.9	-6.2	-5.6
Liner Base Elevation	-6.9	-6.3	-5.3



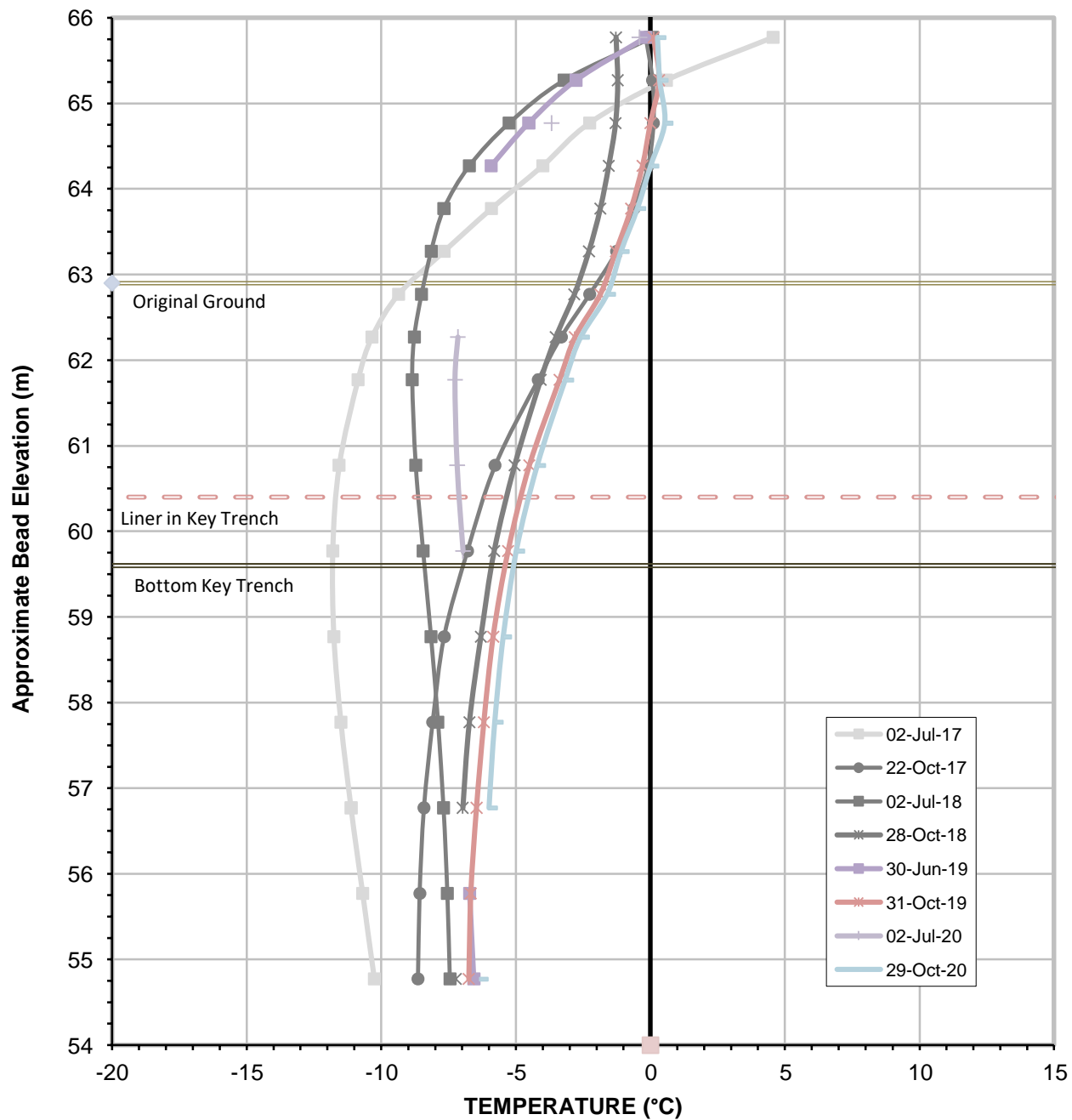
Serial No.: 2628
Date Installed: June 15, 2017

Vertical Ground Temperature Profile for Cable VGTC-03
Dike D-CP1



Average Annual Temperature at Various Elevations

	November 2017 - November 2018	November 2018 - November 2019	November 2019 - November 2020
Bottom of Cable	-7.2	-7.0	-6.3
Liner Base Elevation	-6.9	-7.2	-5.9



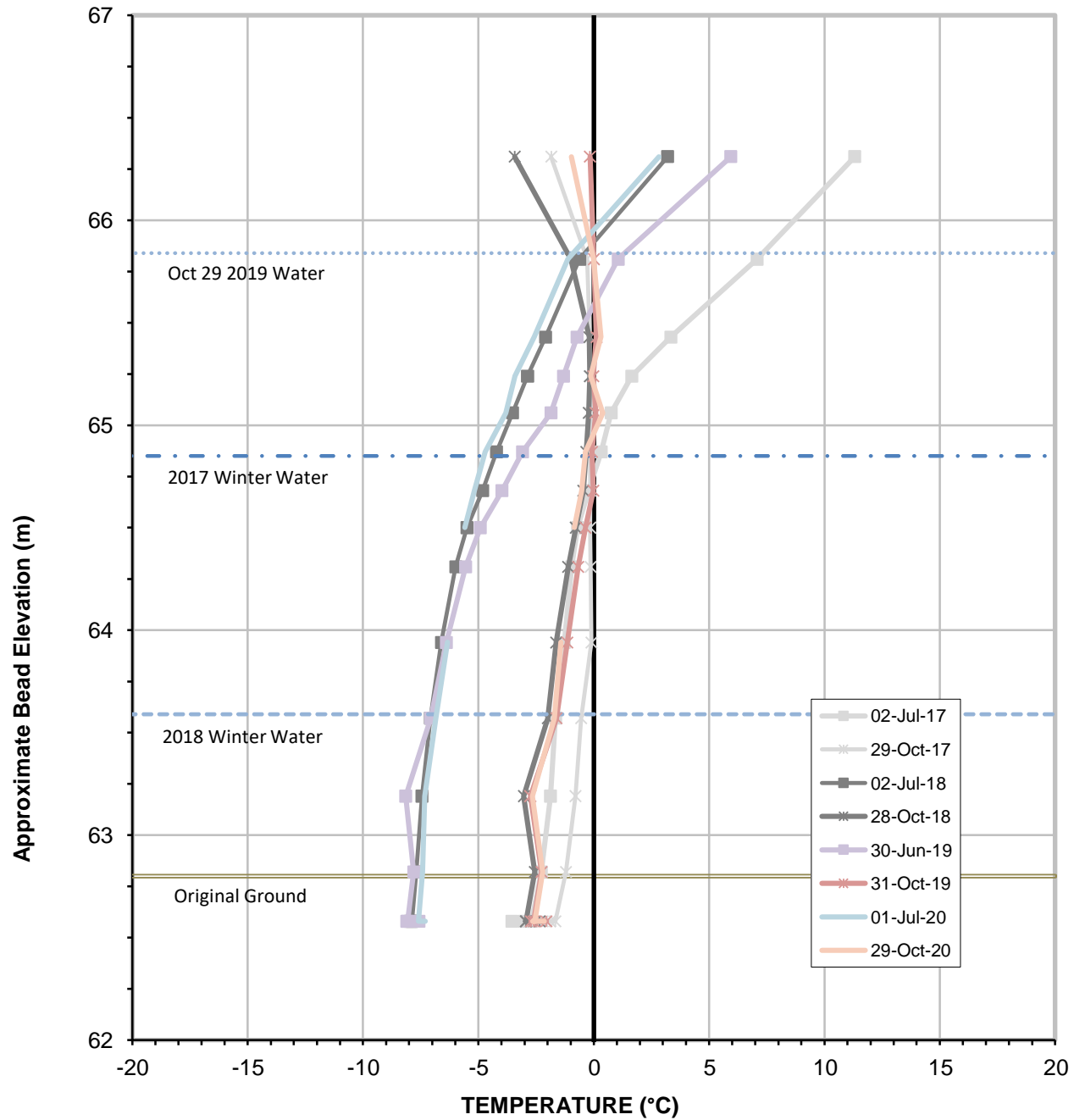
Serial No.: 2629
Date Installed: June 15, 2017

**Vertical Ground Temperature Profile for Cable VGTC-04
Dike D-CP1**



Average Annual Temperature at Various Elevations

	November 2017 - November 2018	November 2018 - November 2019	November 2019 - November 2020
Bottom of Cable	-7.3	-6.7	-6.4
Liner Base Elevation	-7.0	-6.3	-5.7



Serial No.: 2630
Date Installed: May 16, 2017

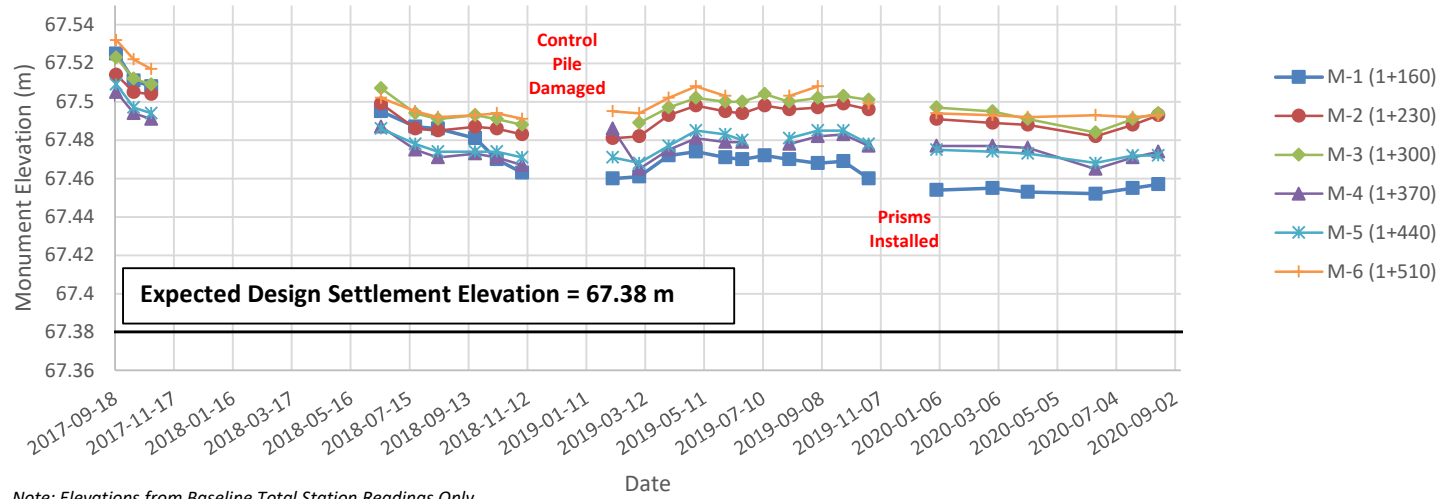
**Vertical Ground Temperature Profile for Cable VGTC-05
Dike D-CP1**



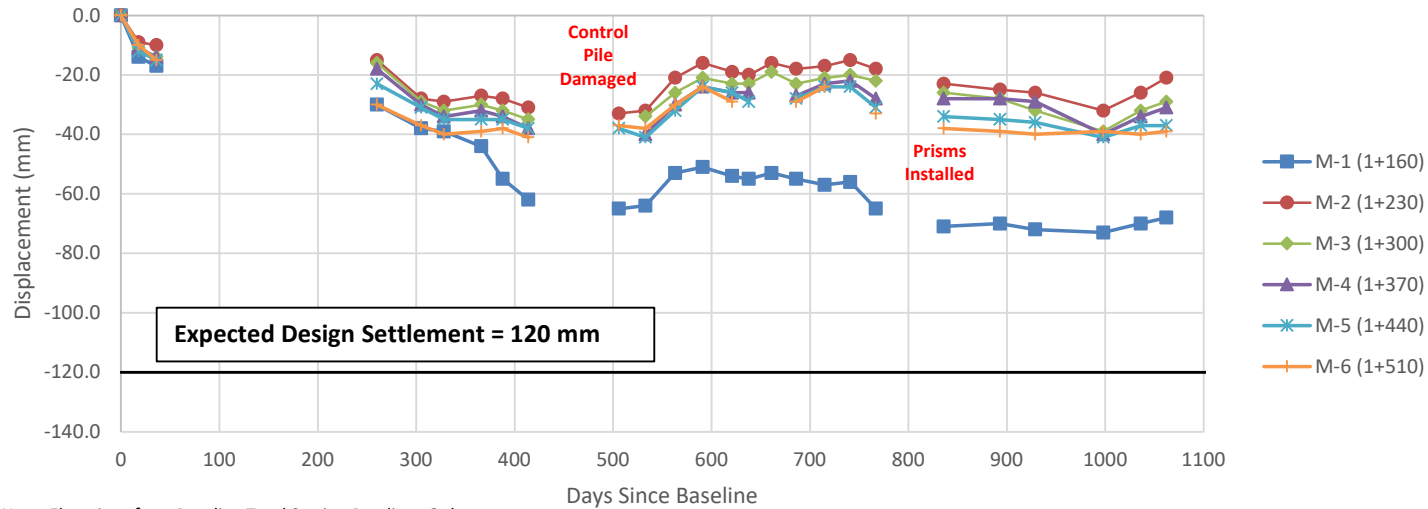
Average Annual Temperature at Bottom of Cable

	November 2017 - November 2018	November 2018 - November 2019	November 2019 - November 2020
Temperature (°C)	-5.7	-7.0	-5.5

D-CP1 Liner Elevation

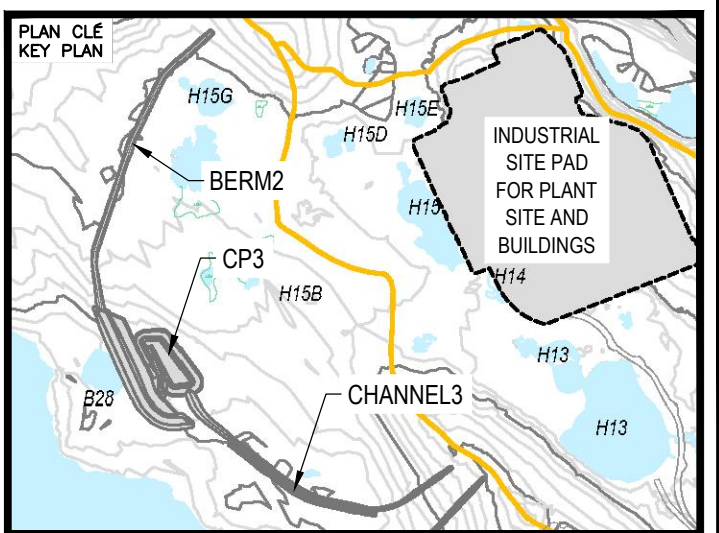
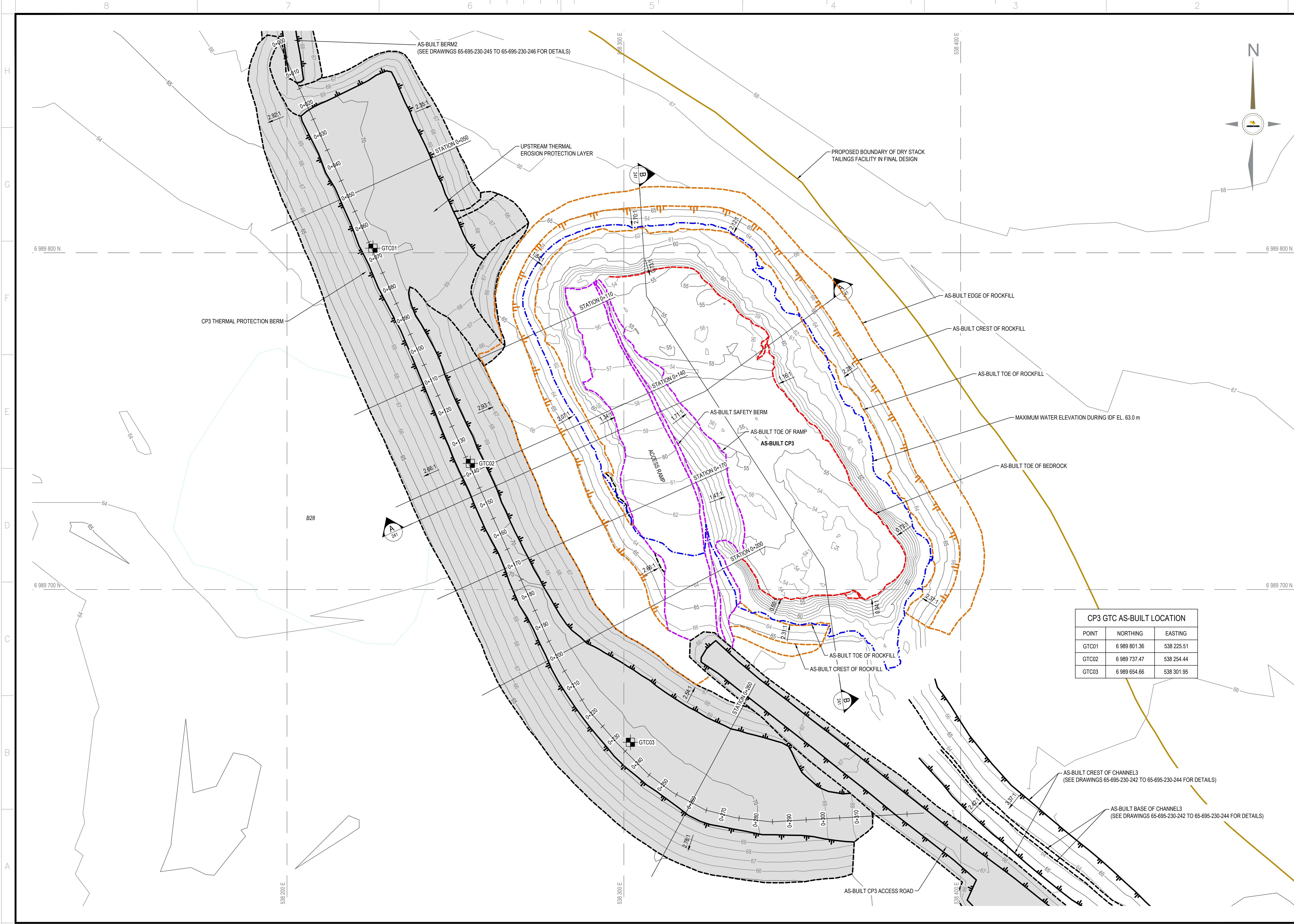


D-CP1 Total Vertical Displacement over Time



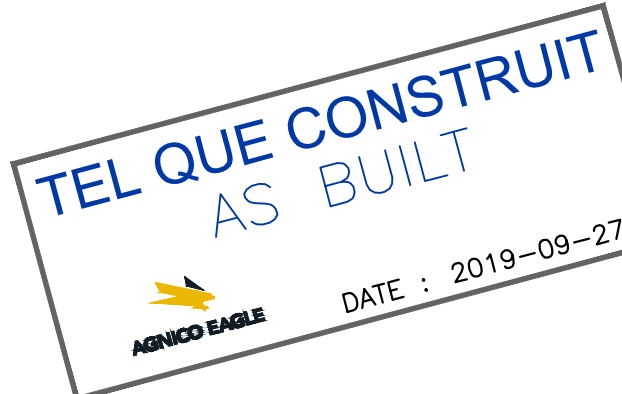
APPENDIX C

POND CP3, CHANNELS, AND BERMS



NOTES GÉNÉRALES / GENERAL NOTES

1. ASSUMED CONSTRUCTION SCHEDULE WINTER 2018 / 2019
2. ASSUMED OPERATION SCHEDULE STARTING TO STORE WATER FROM FRESHET OF 2019.
3. POND DESIGN CAPACITY IS BASED ON STORING 3 OUT OF 7 FRESHET WATER UNDER 1:100 WET YEAR CONDITION.
4. THE MAXIMUM ALLOWABLE OPERATING WATER LEVEL IS AT ELEVATION 63.0 m UNDER THE DESIGN IDF CONDITION. MATERIAL PLACEMENT AND FOUNDATION PREPARATION SHOULD BE IN ACCORDANCE WITH THE REQUIREMENTS OF GEOTECHNICAL CONSTRUCTION / MATERIAL SPECIFICATIONS (TETRA TECH 2018).



L'INFORMATION CONTENUE EST LA PROPRIÉTÉ DE AGNICO EAGLE LTD. ET DOIT ÊTRE RETENUE SANS RÉVÉLATION À D'autres. AGNICO EAGLE LTD. ASSUME LA RESPONSABILITÉ DE L'INFORMATION CONTENUE. AGNICO EAGLE LTD. ASSUME LA RESPONSABILITÉ DE L'INFORMATION CONTENUE. AGNICO EAGLE LTD. ASSUME LA RESPONSABILITÉ DE L'INFORMATION CONTENUE.

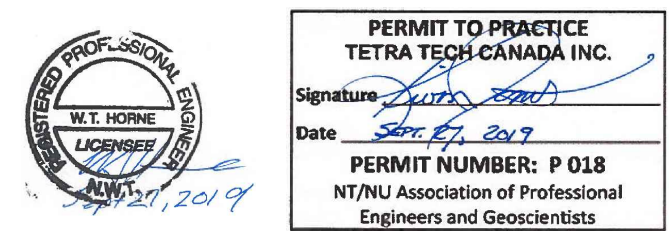
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0	2018-06-21	ISSUED FOR CONSTRUCTION	HX	WITH	
A	2018-05-29	ISSUED FOR REVIEW	HX	WITH	

REVISIONS



PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature: *[Signature]*
Date: *2019-09-27*
PERMIT NUMBER: P-018
NTNU Association of Professional Engineers and Geoscientists

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT

CP3 AND CP3 THERMAL PROTECTION BERM
LAYOUT PLAN

DESSINÉ PAR DRAWN BY	EL	DATE 2019-06-12
VÉRIFIÉ PAR CHECKED BY	HX	2019-06-12
APPROUVÉ PAR APPROVED BY	WITH	2019-06-12
ÉCHELLE SCALE	1:500	DATE 2019-06-12

NO. DESSIN
DRAWING NO. 65-695-230-238

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHEET
6515	1	1 / 13

H

G

F

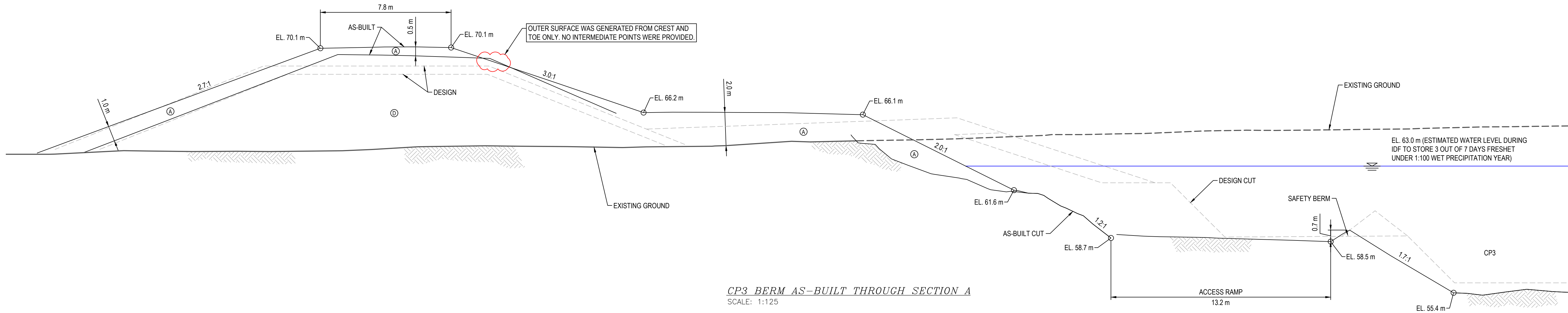
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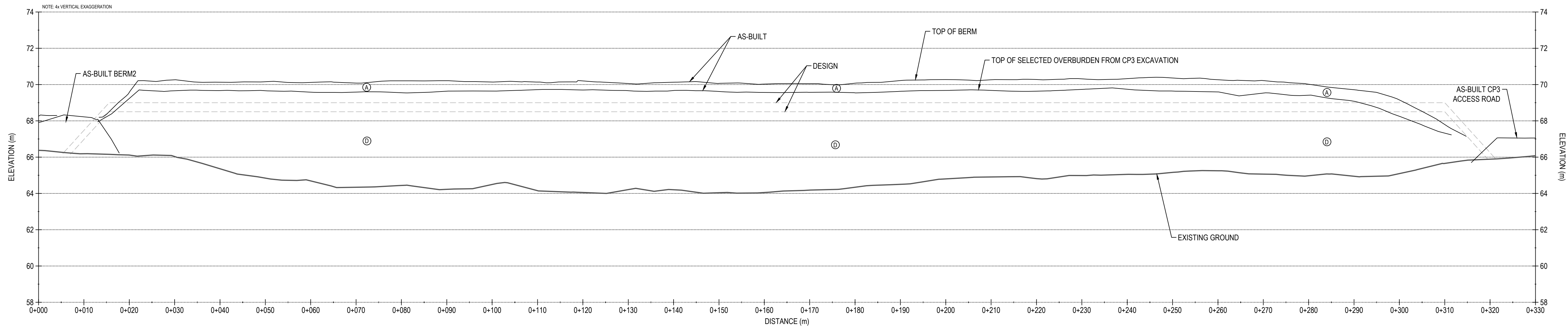
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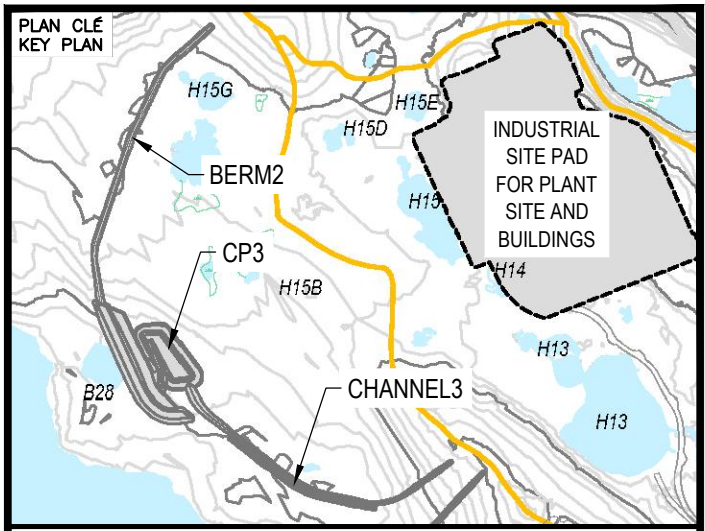
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CP3 BERM AS-BUILT THROUGH SECTION A
SCALE: 1:125



CP3 - BERM PROFILE
SCALE: H-1:500 V-1:125

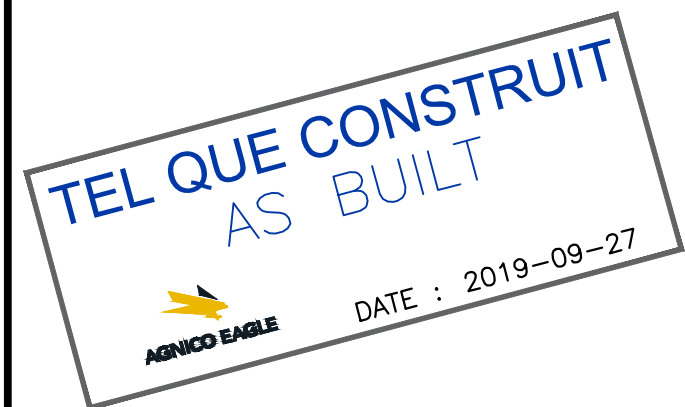


NOTES GÉNÉRALES / GENERAL NOTES

1. ASSUMED CONSTRUCTION SCHEDULE WINTER 2018 / 2019
2. ASSUMED OPERATION SCHEDULE STARTING TO STORE WATER FROM FRESHET OF 2019.
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4. THE MAXIMUM ALLOWABLE OPERATING WATER LEVEL IS AT ELEVATION 63.0 m UNDER THE DESIGN IDF CONDITION. MATERIAL PLACEMENT AND FOUNDATION PREPARATION SHOULD BE IN ACCORDANCE WITH THE REQUIREMENTS OF GEOTECHNICAL CONSTRUCTION / MATERIAL SPECIFICATIONS (TETRA TECH 2018).

LEGEND

- (A) CLEAN ROCKFILL FROM EXCAVATION (600 mm MINUS)
(D) OVERBURDEN FROM EXCAVATION (300 mm MINUS)



L'INFORMATION CONTENUE EST LA PROPRIÉTÉ DE AGNICO EAGLE LTD. ET NE DOIT ÊTRE RETENUE, NI COMMUNIQUÉE, NI REPRODUE, NI UTILISÉE À D'AUTRES FINS QUE CELLES POUR LESQUELLES L'INFORMATION EST FOURNIE. TOUTES LES DROITS RÉSERVÉS. AGNICO EAGLE LTD. ALL RIGHTS RESERVED. THIS INFORMATION IS THE PROPERTY OF AGNICO EAGLE LTD. AND MUST BE RETURNED UPON REQUEST. WITHOUT WRITTEN PERMISSION, NO COPYING, TRANSMISSION, TO OTHERS AND ANY USE EXCEPT THAT FOR WHICH IT IS ISSUED ARE PROHIBITED. © AGNICO EAGLE LTD.

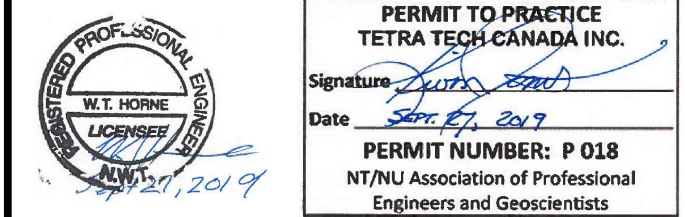
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A	2018-05-29	ISSUED FOR REVIEW	HX	WITH	

REVISIONS



PERMIT TO PRACTICE
TETRA TECH CANADA INC.
Signature: [Signature]
Date: 2019-09-27
PERMIT NUMBER: P 018
NTNU Association of Professional
Engineers and Geoscientists

TITRE / TITLE
AGNICO EAGLE MELIADINE GOLD PROJECT

CP3 TYPICAL SECTION AND
CP3 THERMAL PROTECTION BERM PROFILE

DESSINÉ PAR
DRAWN BY EL

DATE
2019-06-12

VÉRIFIÉ PAR
CHECKED BY HX

2019-06-12

APPROUVÉ PAR
APPROVED BY WITH

2019-06-12

ÉCHELLE
SCALE AS SHOWN

DATE
2019-06-12

NO. DESSIN
DRAWING NO. 65-695-230-239

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHEET
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