Photograph B2-7 Saddle Dam 1

Date: July 29, 2022 **Photo Number**: 255

Description: From the south abutment looking east at the upstream slope and the North Cell.

Photograph B2-8 Saddle Dam 1

Date: July 29, 2022 **Photo Number**: 251

Description: From approximately Sta. 0+050 upstream, looking east at the North Cell.

Photograph B2-9 Saddle Dam 1

Date: July 29, 2022 **Photo Number**: 258

Description: From approximately Sta. 0+175 downstream, looking west at the crest and downstream slope.

APPENDIX B-3

Saddle Dam 2

Client:	AEM	**By:**	Marion Habersetzer
Project:	Meadowbank	**Date:**	July 29, 2022
Location:	Saddle Dam 2	**Reviewed:**	Yves Boulianne

GENERAL INFORMATION			
Dam Type:	Rockfill embankment with inverted filter on base, upstream filters, a geomembrane liner tied in a toe till plug and upstream till blanket.		
Weather Conditions:	Cloudy	**Temperature:**	15°C

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
1. DAM CREST		260, 266, 267, 265, 264	
1.1 Crest elevation	150 m		Design 150 m
1.2 Reservoir level	149.5 m - tailings		
Current freeboard	0.5 m - tailings		Design 2 m water, 0.5 m tailings
1.3 Distance to tailings pond (if applicable)	>200 m		Adequate tailings beach
1.4 Surface cracking	None at time of inspection		
1.5 Unexpected settlement	None observed		
1.6 Lateral movement	Not apparent		
1.7 Other unusual conditions	None		
2. UPSTREAM SLOPE		260, 261, 263, 264	
2.1 Slope angle	Approx. 3H:1V		Rockfill
2.2 Signs of erosion	None observed		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
2.3 Signs of movement (deformation)	None observed		
2.4 Cracks	None observed		
2.5 Face liner condition (if applicable)	Good		Wooden pallet on liner at 20+475 to remove.
2.6 Other unusual conditions	None		
3. DOWNSTREAM SLOPE		265	
3.1 Slope angle	Approx.1.2H or 1.3H:1V variable		Rockfill
3.2 Signs of erosion	None observed		
3.3 Signs of movement (deformation)	None observed		
3.4 Cracks	None observed		
3.5 Seepage or wet areas	None observed on slope		
3.6 Vegetation growth	None observed		
3.7 Other unusual conditions	None		
4. DOWNSTREAM TOE AREA		265	
4.1 Seepage from dam	No		
4.2 Signs of erosion	None observed		
4.3 Signs of turbidity in seepage water	Not applicable		
4.4 Discoloration/staining	No		
4.5 Outlet operating problem (if applicable)	Not applicable		
4.6 Other unusual conditions	Yes		Limited water is still ponding within the rockfill embankment between 20+275 to 20+475 approximately.

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
5. ABUTMENTS			
5.1 Seepage at contact zone (abutment/embankment)	None observed		
5.2 Signs of erosion	None observed		
5.3 Excessive vegetation	No		
5.4 Presence of rodent burrows	None observed		
5.5 Other unusual conditions	None		
6. RESERVOIR		261	
6.1 Stability of slopes	Stable		
6.2 Distance to nearest slide (if applicable)	None observed		
6.3 Estimate of slide volume (if applicable)	Not applicable		
6.4 Floating debris	None observed		
6.5 Other unusual conditions	No		
7. EMERGENCY SPILLWAY/ OUTLET STRUCTURE			
7.1 Surface condition	No spillway or outlet structure exists, only dewatering pump.		
7.2 Signs of erosion			
7.3 Signs of movement (deformation)			
7.4 Cracks			
7.5 Settlement			
7.6 Presence of debris or blockage			

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
7.7 Closure mechanism operational			
7.8 Slope protection			
7.9 Instability of side slopes			
7.10 Other unusual conditions			
8. INSTRUMENTATION			
8.1 Piezometers	No		
8.2 Settlement cells	No		
8.3 Thermistors	Yes		See Section 5.3.2 of the report.
8.4 Settlement monuments	No		Construction drawings show displacement monitoring on Stage 2 crest.
8.5 Seismograph	No		
8.6 Inclinometer	No		
8.7 Weirs and flow monitors	No		
8.8 Data logger(s)	Yes		
8.9 Other			
9. DOCUMENTATION			
9.1 Operation, Maintenance and Surveillance (OMS) Plan			
9.1.1 OMS Plan exists	Yes		
9.1.2 OMS Plan reflects current dam conditions	Yes		
9.1.3 Date of last revision	July 2021		
9.2 Emergency Preparedness Plan (EPP)			
9.2.1 EPP exists	Yes		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
9.2.2 EPP reflects current conditions	Yes		
9.2.3 Date of last revision	September 2021		
10. NOTES :			
Inspector's Signature	Marion Habersetzer	**Date:**	July 29, 2022

Photograph B3-1 Saddle Dam 2

Date: July 29, 2022 **Photo Number**: 260
Description: From Saddle Dam 2 (approximately Sta. 20+110) looking southeast at the crest and upstream slope.

Photograph B3-2 Saddle Dam 2

Date: July 29, 2022 **Photo Number**: 261
Description: From Saddle Dam 2 (approximately Sta. 20+110) upstream, looking southeast at the North Cell. The tailings beach against SD2 is adequate.

Photograph B3-3 Saddle Dam 2

Date: July 29, 2022 **Photo Number**: 266
Description: From approximately Sta. 20+370 looking southeast at the crest.

Photograph B3-4 Saddle Dam 2

Date: July 29, 2022 **Photo Number**: 267
Description: From approximately Sta. 20+370 looking northwest at the crest.

Photograph B3-5 Saddle Dam 2

Date: July 29, 2022 **Photo Number**: 262
Description: From approximately Sta. 20+525, looking northwest at the crest and upstream slope.

Photograph B3-6 Saddle Dam 2

Date: July 29, 2022 **Photo Number**: 263
Description: From approximately Sta. 20+475, looking northeast at the upstream slope.

Photograph B3-7 Saddle Dam 2

Date: July 29, 2022 **Photo Number:** 265
Description: From Saddle Dam 2 (approximately Sta. 20+500) downstream, looking northwest at the downstream toe and slope of Saddle Dam 2.

Photograph B3-8 Saddle Dam 2

Date: July 29, 2022 **Photo Number**: 264
Description: From Saddle Dam 2 (approximately Sta. 20+520) upstream, looking northwest at the upstream slope of Saddle Dam 2.

Appendix B-4

Stormwater Dike

Client:	AEM	**By:**	Marion Habersetzer
Project:	Meadowbank	**Date:**	July 28, 2022
Location:	Stormwater Dike	**Reviewed:**	Yves Boulianne

GENERAL INFORMATION			
Dam Type:	Rockfill embankment, upstream filters and a bituminous geomembrane liner. Compacted till placed above liner at toe, prior to tailings deposition.		
Weather Conditions:	Rainy	**Temperature:**	10°C

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
1. DAM CREST		124, 125, 126, 127, 128, 129, 130	
1.1 Crest elevation	150 m		Design 150 m
1.2 Reservoir level	138.8 – water 143.9 m (max) – tailings (South Cell) 149.5 m - tailings (North Cell)		
Current freeboard	11.2 m – water 6.1 m - tailings (South Cell) 0.5 m – tailings (North Cell)		Design 2 m in operation and 1 m at closure for water and 0.5 m for tailings.
1.3 Distance to tailings pond (if applicable)	Adequate (North Cell)		Adequate beach in place all along the dike on North Cell. Some shallow water ponding against dike in some places. Water and tailings have reached the toe of the structure in the South Cell.

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
1.4 Surface cracking	No		Old tension cracks (mostly around 10+300) are inactive and are disappearing. They have since been filled with bentonite.
1.5 Unexpected settlement	No		
1.6 Lateral movement	No		
1.7 Other unusual conditions			
2. UPSTREAM SLOPE		125, 126, 127, 130	
2.1 Slope angle	Approx. 3H:1V		Rockfill
2.2 Signs of erosion	None observed		
2.3 Signs of movement (deformation)	None observed		
2.4 Cracks	None observed		
2.5 Face liner condition (if applicable)	Good conditions.		
2.6 Other unusual conditions	None		
3. DOWNSTREAM SLOPE		124, 131	
3.1 Slope angle	Approx.1.2H or 1.5 H:1V variable		Rockfill
3.2 Signs of erosion	None observed		
3.3 Signs of movement (deformation)	None observed		
3.4 Cracks	None observed		
3.5 Seepage or wet areas	None observed on slope		
3.6 Vegetation growth	None observed		
3.7 Other unusual conditions	None		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
4. DOWNSTREAM TOE AREA	Not visible		Downstream toe and berm is submerged by the South Cell pond. The berm was constructed at the downstream toe to stabilize the movement and cracks observed in 2016.
4.1 Seepage from dam	Not visible		
4.2 Signs of erosion	Not visible		
4.3 Signs of turbidity in seepage water	Not visible		
4.4 Discoloration/staining	Not visible		
4.5 Outlet operating problem (if applicable)	Not applicable		
4.6 Other unusual conditions	Not visible		
5. ABUTMENTS			
5.1 Seepage at contact zone (abutment/embankment)	None observed		
5.2 Signs of erosion	None observed		
5.3 Excessive vegetation	No		
5.4 Presence of rodent burrows	None observed		
5.5 Other unusual conditions	None		
6. RESERVOIR			
6.1 Stability of slopes	Stable		
6.2 Distance to nearest slide (if applicable)	None observed		
6.3 Estimate of slide volume (if applicable)	Not applicable		
6.4 Floating debris	None observed		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
6.5 Other unusual conditions	No		
7. EMERGENCY SPILLWAY/ OUTLET STRUCTURE	No spillway or outlet structure exists, only dewatering pump		
7.1 Surface condition			
7.2 Signs of erosion			
7.3 Signs of movement (deformation)			
7.4 Cracks			
7.5 Settlement			
7.6 Presence of debris or blockage			
7.7 Closure mechanism operational			
7.8 Slope protection			
7.9 Instability of side slopes			
7.10 Other unusual conditions			
8. INSTRUMENTATION			
8.1 Piezometers	Yes		See Section 5.5.2
8.2 Settlement cells	No		
8.3 Thermistors	Yes		See Section 5.5.2
8.4 Settlement monuments	Yes		See Section 5.5.2
8.5 Seismograph	No		
8.6 Inclinometer	No		
8.7 Weirs and flow monitors	No		
8.8 Data logger(s)	No		
8.9 Other	None		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
9. DOCUMENTATION			
9.1 Operation, Maintenance and Surveillance (OMS) Plan			
9.1.1 OMS Plan exists	Yes		
9.1.2 OMS Plan reflects current dam conditions	Yes		
9.1.3 Date of last revision	July 2021		
9.2 Emergency Preparedness Plan (EPP)			
9.2.1 EPP exists	Yes		
9.2.2 EPP reflects current conditions	Yes		
9.2.3 Date of last revision	September 2021		
10. NOTES :			

Inspector's Signature	Marion Habersetzer	**Date:**	July 28, 2022

Photograph B4-1 Stormwater Dike

Date: July 28, 2022 **Photo Number**: 154
Description: From the east abutment (11+100 approximately), looking west at the upstream face and the rockfill cover of the North Cell. Shallow water ponding against portion of the dike (less than 30 cm deep). Large rocks are present near the liner.

Photograph B4-2 Stormwater Dike

Date: July 28, 2022 **Photo Number**: 357
Description: From the east abutment (11+100 approximately), looking northwest at the upstream tailings in the North Cell. Presence of small sandboil-looking features under the water.

Photograph B4-3 Stormwater Dike

Date: July 28, 2022 **Photo Number**: 153
Description: From the east abutment (11+100 approximately), looking west at the downstream slope.

Photograph B4-4 Stormwater Dike

Date: July 28, 2022 **Photo Number**: 155
Description: From the crest (10+950 approximately), looking east at the downstream slope. Presence of a pipe with a metallic connector on the liner.

Photograph B4-5 Stormwater Dike

Date: July 28, 2022 **Photo Number**: 156
Description: From Sta. 10+650 looking east at the crest and upstream slope.

Photograph B4-6 Stormwater Dike

Date: July 28, 2022 **Photo Number**: 157
Description: From Sta. 10+650 looking west at the crest and upstream slope. Shallow water against portion of Stormwater Dike.

Photograph B4-7 Stormwater Dike

Date: July 28, 2022 **Photo Number**: 161
Description: From approximately Sta. 10+650 looking west at the crest.

Photograph B4-8 Stormwater Dike

Date: July 28, 2022 **Photo Number**: 162
Description: From approximately Sta. 10+650 looking east at the crest.

Photograph B4-9 Stormwater Dike

Date: July 28, 2022 **Photo Number**: 158

Description: From Sta.10+175, looking east at the upstream slope. The tailings beach is adequate.

Photograph B4-10 Stormwater Dike

Date: July 28, 2022 **Photo Number**: 159

Description: From Sta.10+250, looking east at the downstream slope and the South Cell. The downstream toe is covered with water in this section.

Photograph B4-11 Stormwater Dike

Date: July 28, 2022 **Photo Number**: 160

Description: From Sta.10+300, looking southeast at the downstream slope and the South Cell. The downstream toe is no longer covered with water in this section.

Appendix B-5

Saddle Dam 3

Client:	AEM	**By:**	Marion Habersetzer
Project:	Meadowbank	**Date:**	July 29, 2022
Location:	Saddle Dam 3	**Reviewed:**	Yves Boulianne

GENERAL INFORMATION			
Dam Type:	Rockfill embankment with inverted filter on base, upstream filters, a geomembrane liner tied in a toe till plug and upstream till blanket.		
Weather Conditions:	Overcast	**Temperature:**	10°C

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
1. DAM CREST		271, 270, 268	
1.1 Crest elevation	145 m		Designed to be able to be raised up to El. 150 m
1.2 Reservoir Level	138.8 m - water 131.03 m – tailings (West extremity of the South Cell)		Visually 0.7 m of settlement in tailings since 2022
Current Freeboard	6.2 (water)		Water is in contact with the structure (against erosion protection cover).
1.3 Distance To Tailings Pond (if applicable)	NA		Water is close to the structure but no tailings are planned to be in contact with the structure.
1.4 Surface Cracking	None at time of inspection		
1.5 Unexpected Settlement	None observed		
1.6 Lateral Movement	Not apparent		
1.7 Other Unusual Conditions	None		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
2. UPSTREAM SLOPE		270	
2.1 Slope angle	3H:1V		
2.2 Signs of Erosion	None observed		
2.3 Signs of Movement (Deformation)	None observed		
2.4 Cracks	None observed		
2.5 Face liner condition (if applicable)	Good		
2.6 Other Unusual Conditions	None		
3. DOWNSTREAM SLOPE		268	
3.1 Slope angle	1.5H:1V		
3.2 Signs of Erosion	None observed		
3.3 Signs of Movement (Deformation)	None observed		
3.4 Cracks	None observed		
3.5 Seepage or Wet Areas	None observed on slope		
3.6 Vegetation Growth	None observed		
3.7 Other Unusual Conditions	None		
4. DOWNSTREAM TOE AREA		268	
4.1 Seepage from Dam	No		
4.2 Signs of Erosion	None observed		
4.3 Signs of Turbidity in Seepage Water	Not applicable		
4.4 Discoloration/staining	No		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
4.5 Outlet operating problem (if applicable)	Not applicable		
4.6 Other Conditions	Yes		A sump was constructed on the downstream side to collect the ponding water, so its level does not exceed the elevation of the granular layer of the upstream toe liner tie-in.
5. ABUTMENTS			
5.1 Seepage at contact zone (abutment/embankment)	None observed		
5.2 Signs of Erosion	None observed		
5.3 Excessive Vegetation	No		
5.4 Presence of Rodent Burrows	None observed		
5.5 Other Unusual Conditions	None		
6. RESERVOIR			
6.1 Stability of Slopes	Stable		
6.2 Distance to Nearest Slide (if applicable)	None observed		
6.3 Estimate of Slide Volume (if applicable)	Not applicable		
6.4 Floating debris	None observed		
6.5 Other Unusual Conditions	No		
7. EMERGENCY SPILLWAY/ OUTLET STRUCTURE	No spillway or outlet structure exists, only dewatering pump.		
7.1 Surface Condition	.		
7.2 Signs of Erosion			

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
7.3 Signs of Movement (Deformation)			
7.4 Cracks			
7.5 Settlement			
7.6 Presence of Debris or Blockage			
7.7 Closure mechanism operational			
7.8 Slope Protection			
7.9 Instability of Side Slopes			
7.10 Other Unusual Conditions			
8. INSTRUMENTATION			
8.1 Piezometers	No		
8.2 Settlement Cells	No		
8.3 Thermistors	Yes		See Section 5.6.2 of the report.
8.4 Settlement Monuments	No		
8.5 Seismograph	No		
8.6 Inclinometer	No		
8.7 Weirs and Flow Monitors	No		
8.8 Data logger(s)	Yes		
8.9 Other			
9. DOCUMENTATION			
9.1 Operation, Maintenance and Surveillance (OMS) Plan			
9.1.1 OMS Plan exists	Yes		
9.1.2 OMS Plan reflects current dam conditions	Yes		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
9.1.3 Date of last revision	July 2021		
9.2 Emergency Preparedness Plan (EPP)			
9.2.1 EPP exists	Yes		
9.2.2 EPP reflects current conditions	Yes		
9.2.3 Date of last revision	September 2021		
10. NOTES :			

Inspector's Signature	Marion Habersetzer	**Date:**	July 29, 2022

Photograph B5-1 Saddle Dam 3

Date: July 29, 2022 **Photo Number**: 268

Description: From Sta. 20+750, looking northwest at the downstream slope and toe.

Photograph B5-2 Saddle Dam 3

Date: July 29, 2022 **Photo Number**: 272

Description: From Sta. 20+700, looking southeast at the crest.

Photograph B5-3 Saddle Dam 3

Date: July 29, 2022 **Photo Number**: 271

Description: From Sta. 20+700, looking northwest at the crest.

Photograph B5-4 Saddle Dam 3

Date: July 29, 2022 **Photo Number**: 270

Description: From Sta. 20+610, looking south at the upstream slope.

Photograph B5-5 Saddle Dam 3

Date: July 29, 2022 **Photo Number**: 269

Description: From Sta. 20+610, looking west at the downstream slope and sump.

Appendix B-6

Saddle Dam 4

Client:	AEM	**By:**	Marion Habersetzer
Project:	Meadowbank	**Date:**	July 31, 2022
Location:	Saddle Dam 4	**Reviewed:**	Yves Boulianne

GENERAL INFORMATION			
Dam Type:	Rockfill embankment with inverted filter on base, upstream filters, a geomembrane liner tied in a toe till plug and upstream till blanket.		
Weather Conditions:	Rainy	**Temperature:**	10°C

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
1. DAM CREST		323, 326, 324, 322, 321, 320	
1.1 Crest elevation	145 m		Designed to be able to be raised to El. 150 m
1.2 Reservoir Level	138.8 m - water 143.9 m - tailings		Visually 0.7 m of settlement in tailings since 2022
Current Freeboard	6.2 m - water 1.1 m - tailings		
1.3 Distance to Tailings Pond (if applicable)	Approx. 100 m		
1.4 Surface Cracking	None at time of inspection		
1.5 Unexpected Settlement	None observed		
1.6 Lateral Movement	Not apparent		
1.7 Other Unusual Conditions	None		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
2. UPSTREAM SLOPE		323, 326, 325, 324, 327	
2.1 Slope angle	3H:1V		
2.2 Signs of Erosion	None observed		
2.3 Signs of Movement (Deformation)	None observed		
2.4 Cracks	None observed		
2.5 Face liner condition (if applicable)	Good		
2.6 Other Unusual Conditions	None		
3. DOWNSTREAM SLOPE		322, 321, 320	
3.1 Slope angle	1.5H:1V		
3.2 Signs of Erosion	None observed		
3.3 Signs of Movement (Deformation)	None observed		
3.4 Cracks	None observed		
3.5 Seepage or Wet Areas	None observed on slope		
3.6 Vegetation Growth	None observed		
3.7 Other Unusual Conditions	None		
4. DOWNSTREAM TOE AREA		322, 321, 320	
4.1 Seepage from Dam	No		
4.2 Signs of Erosion	None observed		
4.3 Signs of Turbidity in Seepage Water	Not applicable		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
4.4 Discoloration/staining	No		
4.5 Outlet operating problem (if applicable)	Not applicable		
4.6 Other Conditions	Yes		Runoff water accumulate at the downstream side of the structure. It is pumped out so that the water level does not exceed the elevation of the granular layer of the upstream toe liner tie-in.
5. ABUTMENTS			
5.1 Seepage at contact zone (abutment/embankment)	None observed		Highly fractured bedrock observed at the western abutment.
5.2 Signs of Erosion	None observed		
5.3 Excessive Vegetation	No		
5.4 Presence of Rodent Burrows	None observed		
5.5 Other Unusual Conditions	None		
6. RESERVOIR		325	
6.1 Stability of Slopes	Stable		
6.2 Distance to Nearest Slide (if applicable)	None observed		
6.3 Estimate of Slide Volume (if applicable)	Not applicable		
6.4 Floating debris	None observed		
6.5 Other Unusual Conditions	None		
7. EMERGENCY SPILLWAY/ OUTLET STRUCTURE	No spillway or outlet structure exists, only dewatering pump.		
7.1 Surface Condition			
7.2 Signs of Erosion			

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
7.3 Signs of Movement (Deformation)			
7.4 Cracks			
7.5 Settlement			
7.6 Presence of Debris or Blockage			
7.7 Closure mechanism operational			
7.8 Slope Protection			
7.9 Instability of Side Slopes			
7.10 Other Unusual Conditions			
8. INSTRUMENTATION			
8.1 Piezometers	No		
8.2 Settlement Cells	No		
8.3 Thermistors	Yes		See Section 5.6.2 of the report
8.4 Settlement Monuments	No		
8.5 Seismograph	No		
8.6 Inclinometer	No		
8.7 Weirs and Flow Monitors	No		Construction drawings indicate a seepage collection system is to be constructed.
8.8 Data logger(s)	Yes		
8.9 Other			

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
9. DOCUMENTATION			
9.1 Operation, Maintenance and Surveillance (OMS) Plan			
9.1.1 OMS Plan exists	Yes		
9.1.2 OMS Plan reflects current dam conditions	Yes		
9.1.3 Date of last revision	July 2021		
9.2 Emergency Preparedness Plan (EPP)			
9.2.1 EPP exists	Yes		
9.2.2 EPP reflects current conditions	Yes		
9.2.3 Date of last revision	September 2021		
10. NOTES :			

Inspector's Signature	Marion Habersetzer	**Date:**	July 31, 2022

Photograph B6-1 Saddle Dam 4

Date: July 31, 2022 **Photo Number**: 322

Description: From 40+200 approximately, looking southeast at the crest and the downstream slope and toe.

Photograph B6-2 Saddle Dam 4

Date: July 31, 2022 **Photo Number**: 325

Description: From 40+150 approximately, looking northeast at the upstream slope and the South Cell.

Photograph B6-3 Saddle Dam 4

Date: July 31, 2022 **Photo Number**: 324

Description: From 40+150 approximately, looking southeast at the crest and the upstream slope.

Photograph B6-4 Saddle Dam 4

Date: July 31, 2022 **Photo Number**: 323

Description: From 40+250 approximately, looking northwest at the crest and the upstream slope.

Photograph B6-5 Saddle Dam 4

Date: July 31, 2022 **Photo Number**: 326

Description: From 40+250 approximately, looking southeast at the crest and the upstream slope.

Photograph B6-6 Saddle Dam 4

Date: July 31, 2022 **Photo Number**: 327

Description: From 40+300 approximately, looking southeast at the crest and the upstream slope. Presence of a pipe on the liner.

Photograph B6-7 Saddle Dam 4

Date: July 31, 2022 **Photo Number**: 321

Description: From 40+400 approximately, looking southeast at the crest and the downstream slope and toe.

Photograph B6-8 Saddle Dam 4

Date: July 31, 2022 **Photo Number**: 320

Description: From 40+450 approximately, looking southeast at the crest and the downstream slope and toe. A large amount of water is ponding at the toe.

Photograph B6-9 Saddle Dam 4

Date: July 31, 2022 **Photo Number**: 328

Description: From the eastern abutment, looking northeast at the upstream toe area. Water discharged on the liner tie-in are eroding the tailings but the granular materials of the tie-in cover are in good condition.

Appendix B-7

Central Dike - Saddle Dam 5

Client:	AEM	**By:**	Marion Habersetzer
Project:	Meadowbank	**Date:**	July 31, 2022
Location:	Central Dike and Saddle Dam 5	**Reviewed:**	Yves Boulianne

GENERAL INFORMATION			
Dam Type:	Rockfill embankment with inverted filter on base, key trench, upstream filters, a geomembrane liner tied in a toe till plug and protective cover.		
Weather Conditions:	Rainy	**Temperature:**	10°C

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
1. DAM CREST		330, 331, 344, 334, 337, 339, 337, 338, 343	
1.1 Crest Elevation	Cofferdam Crest = 110 m Rockfill crest = 145 m		
1.2 Reservoir Level	138.8 m - water 143.9 m - tailings		
Current Freeboard	6.2 m - water 1.1 m - tailings		
1.3 Distance To Tailings Pond (if applicable)	Variable		Adequate tailings beach against Central Dike. No more water ponding south of Sta. 0+850 against the Central Dike and Saddle Dam 5.
1.4 Surface Cracking	None at time of inspection		
1.5 Unexpected Settlement	None observed		
1.6 Lateral Movement	Not apparent		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
1.7 Other Unusual Conditions			
2. UPSTREAM SLOPE		330, 331, 332, 337, 339, 343, 342	
2.1 Slope angle	3:1V up to El. 130 m and 2H:1V above		
2.2 Signs of Erosion	None observed		
2.3 Signs of Movement (Deformation)	None observed		
2.4 Cracks	None observed		
2.5 Face liner condition (if applicable)			Liner covered by a granular protection layer up to El. 128 m and well protected underneath deposition fingers. Presence of gravel on the liner at Sta. 0+750 m and of a cable with a metallic plug at Sta. 0+900 m.
2.6 Other Unusual Conditions	None		
3. DOWNSTREAM SLOPE		329, 344, 334	
3.1 Slope angle	1.5H		
3.2 Signs of Erosion	None observed		
3.3 Signs of Movement (Deformation)	None observed		
3.4 Cracks	None observed		
3.5 Seepage or Wet Areas			
3.6 Vegetation Growth	None observed		
3.7 Other Unusual Conditions	None		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
4. DOWNSTREAM TOE AREA		329, 344	
4.1 Seepage from Dam	Yes	344	Presence of a water pond formed by seepage on the downstream side between the downstream toe and West Road (0+300 to 0+830 approximately). The pond is pumped back to the South Cell and maintained at El. 115 m. The pumping rate was 150 m^3/hr at the time of the inspection.
4.2 Signs of Erosion	None observed		
4.3 Signs of Turbidity in Seepage Water	Yes		High turbidity events observed in the pond and an orange coloration was observed periodically.
4.4 Discoloration/staining	No		
4.5 Outlet operating problem (if applicable)	Not applicable		
4.6 Other Unusual Conditions			
5. ABUTMENTS			
5.1 Seepage at contact zone (abutment/embankment)	None observed		
5.2 Signs of Erosion	None observed		
5.3 Excessive Vegetation	No		
5.4 Presence of Rodent Burrows	None observed		
5.5 Other Unusual Conditions	None		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
6. RESERVOIR			
6.1 Stability of Slopes	Stable		
6.2 Distance to Nearest Slide	None observed		
6.3 Estimate of Slide Volume (if applicable)	Not applicable		
6.4 Floating debris	None observed		
6.5 Other Unusual Conditions	None		
7. EMERGENCY SPILLWAY/ OUTLET STRUCTURE	No spillway or outlet structure exists, only dewatering pump.		
7.1 Surface Condition			
7.2 Signs of Erosion			
7.3 Signs of Movement (Deformation)			
7.4 Cracks			
7.5 Settlement			
7.6 Presence of Debris or Blockage			
7.7 Closure mechanism operational			
7.8 Slope Protection			
7.9 Instability of Side Slopes			
7.10 Other Unusual Conditions			

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
8. INSTRUMENTATION			
8.1 Piezometers	Yes		See Sections 5.6.2 and 5.7.2 of the report.
8.2 Settlement Cells	No		
8.3 Thermistors	Yes		See Section 5.7.2 of the report.
8.4 Settlement Monuments	No		
8.5 Seismograph	No		
8.6 Inclinometer	No		
8.7 Weirs and Flow Monitors	No		
8.8 Data logger(s)	Yes		
8.9 Other			
9. DOCUMENTATION			
9.1 Operation, Maintenance and Surveillance (OMS) Plan			
9.1.1 OMS Plan exists	Yes		
9.1.2 OMS Plan reflects current dam conditions	Yes		
9.1.3 Date of last revision	July 2021		
9.2 Emergency Preparedness Plan (EPP)			
9.2.1 EPP exists	Yes		
9.2.2 EPP reflects current conditions	Yes		
9.2.3 Date of last revision	September 2021		

INSPECTION ITEM	OBSERVATIONS DATA	PHOTO	COMMENTS & OTHER DATA
10. NOTES :			
Inspector's Signature	Marion Habersetzer	**Date:**	July 31, 2022

Photograph B7-1 Central Dike and Saddle Dam 5

Date: July 31, 2022 **Photo Number**: 341
Description: From the north abutment, looking south. Rips in the liner at the top of the upstream slope.

Photograph B7-2 Central Dike and Saddle Dam 5

Date: July 31, 2022 **Photo Number**: 342
Description: From approximately Sta. 0+400 (deposition point) looking west at the South Cell. Adequate tailings beach against the south section of the structure.

Photograph B7-3 Central Dike and Saddle Dam 5

Date: July 31, 2022 **Photo Number**: 343
Description: From approximately Sta. 0+400 (deposition point) looking south at the upstream slope. Adequate tailings beach against the south section of the structure.

Photograph B7-4 Central Dike and Saddle Dam 5

Date: July 31, 2022 **Photo Number**: 337
Description: From approximately Sta. 0+720 looking south at the crest.

Photograph B7-5 Central Dike and Saddle Dam 5

Date: July 31, 2022 **Photo Number**: 338
Description: From approximately Sta. 0+720 looking north at the crest.

Photograph B7-6 Central Dike and Saddle Dam 5

Date: July 31, 2022 **Photo Number**: 340
Description: From approximately Sta. 0+720 looking south at the crest and the upstream slope.

Photograph B7-7 Central Dike and Saddle Dam 5

Date: July 31, 2022 **Photo Number**: 339
Description: From approximately Sta. 0+720 looking north at the crest and the upstream slope.

Photograph B7-8 Central Dike and Saddle Dam 5

Date: July 31, 2022 **Photo Number**: 334
Description: From approximately Sta. 0+875, looking north at the downstream slope and toe.

Photograph B7-9 Central Dike and Saddle Dam 5

Date: July 31, 2022 **Photo Number**: 336
Description: From approximately Sta. 0+800, looking north at the crest.

Photograph B7-10 Central Dike and Saddle Dam 5

Date: July 31, 2022 **Photo Number**: 335
Description: From approximately Sta. 0+800, looking north at the crest, downstream slope and toe.

Photograph B7-11 Central Dike and Saddle Dam 5

Date: July 31, 2022 **Photo Number**: 344
Description: From approximately Sta. 0+900 downstream, looking north at the downstream pond.

Photograph B7-12 Central Dike and Saddle Dam 5

Date: July 31, 2022 **Photo Number**: 332
Description: From approximately Sta. 0+950, looking west at the upstream slope. Presence of gravel on the liner.

Photograph B7-13 Central Dike and Saddle Dam 5

Date: July 31, 2022 **Photo Number**: 333
Description: From approximately Sta. 0+950, looking south at the upstream slope. Presence of rips in the liner.

Photograph B7-14 Central Dike and Saddle Dam 5

Date: July 31, 2022 **Photo Number**: 330
Description: From approximately Sta. 1+050 looking west at the upstream slope of SD5.

Photograph B7-15 Central Dike and Saddle Dam 5

Date: July 31, 2022 **Photo Number**: 331
Description: From approximately Sta. 1+000 looking east at the upstream slope of SD5 and Central Dike. Water is ponding against the liner.

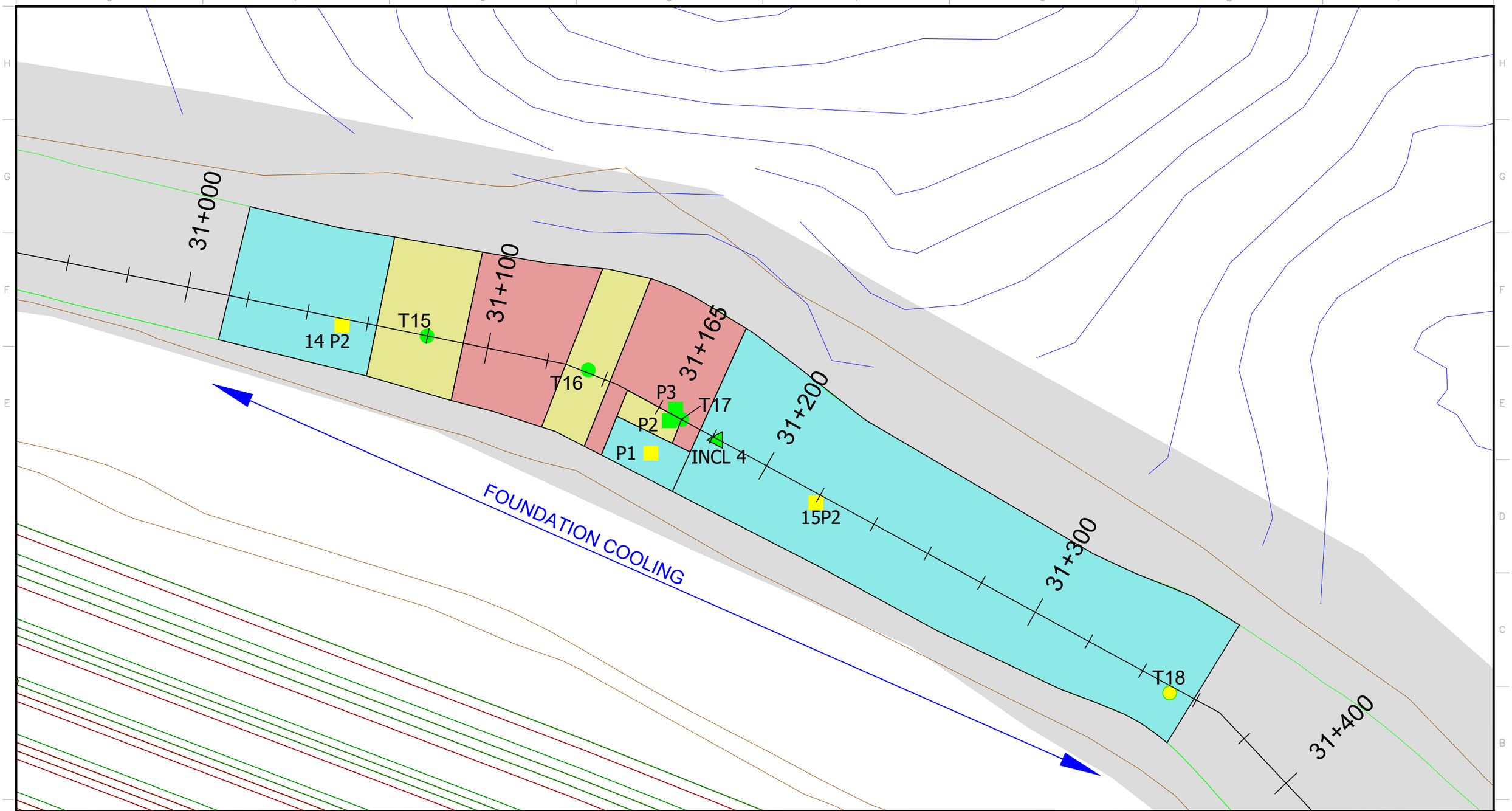
Photograph B7-16 Central Dike and Saddle Dam 5

Date: July 31, 2022 **Photo Number**: 329
Description: From approximately Sta. 1+100 looking southeast at the downstream slope and toe of SD5. Water is ponding at the toe.

APPENDIX C

INSTRUMENTATION HERMAL MAPS

FORMAT ANSI B – LANDSCAPE



AGNICO EAGLE
MEADOWBANK

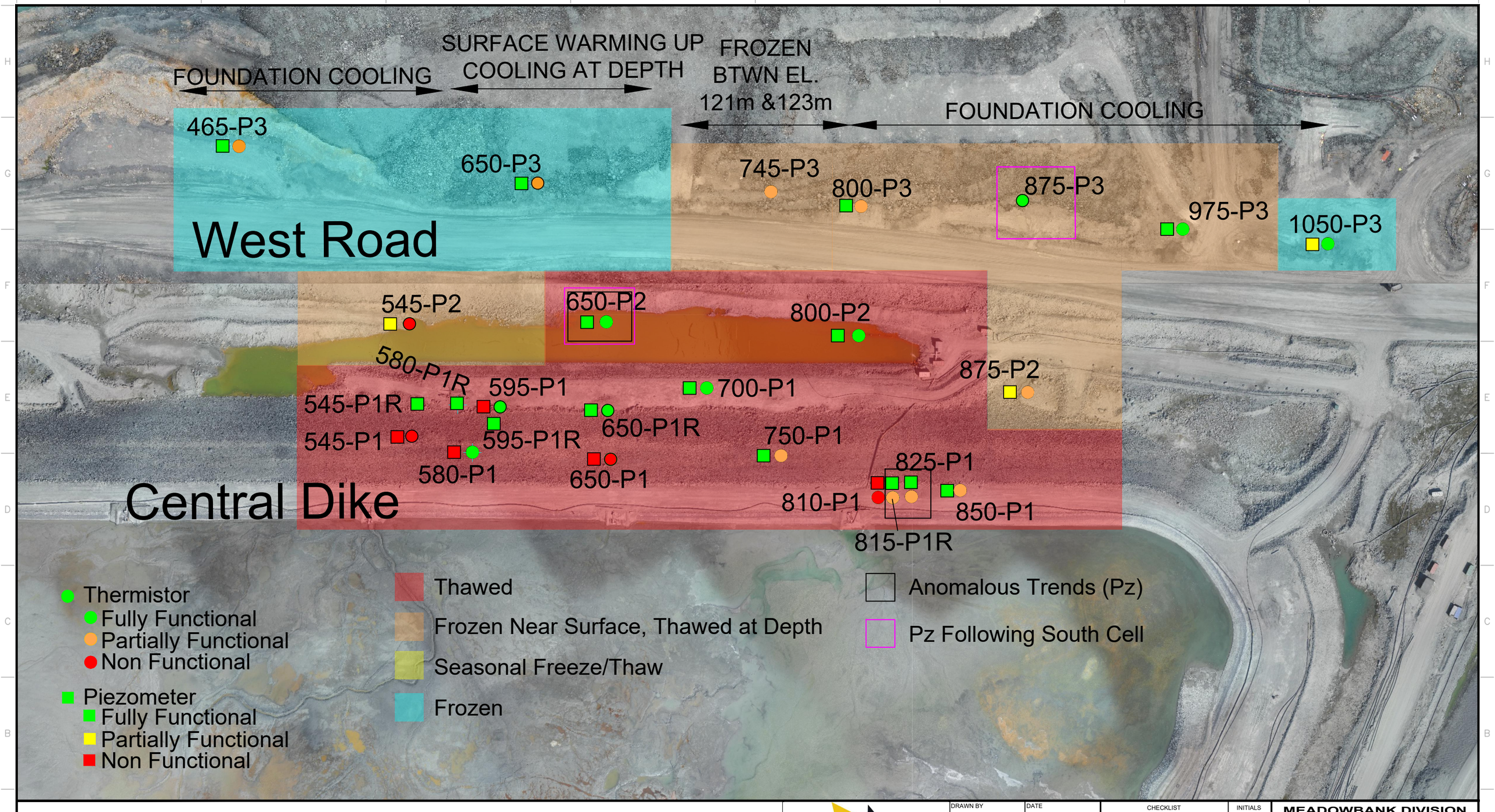
DRAWN BY G.BARIL/TDAHM	DATE AUG_2022
SURVEY CHECK	DATE
GEOLOGY CHECK	DATE
ENGINEERING CHECK ENGINEERING	DATE ENG_DATE

MEADOWBANK_COMPLEX

ENGINEERING

BAY_GOOSE_INSTRUMENTATION
31+020_TO_31+220
CENTRAL_CHANNEL

SCALE	DATE	FILE
		CAD

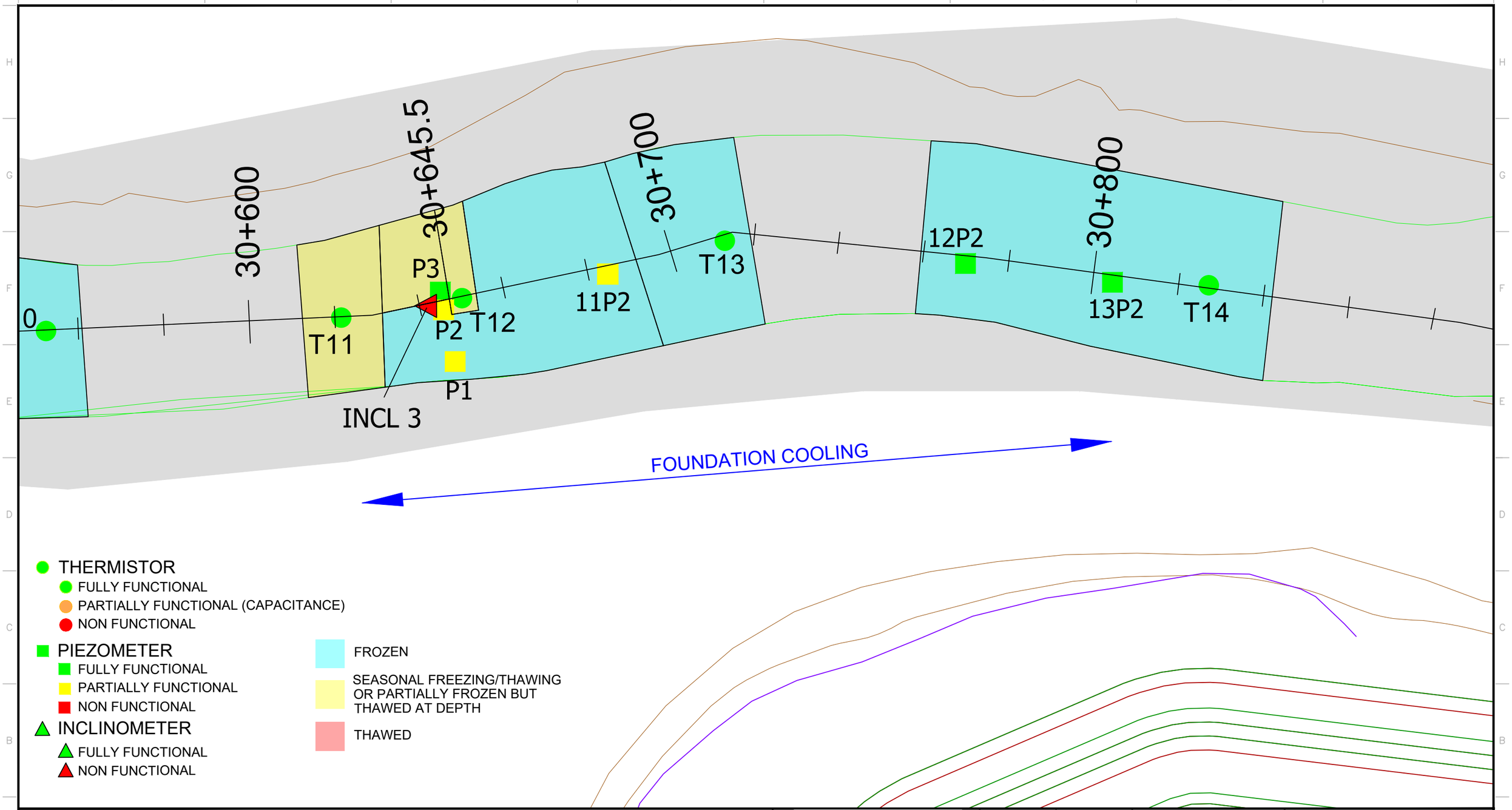


AGNICO EAGLE
MEADOWBANK

DRAWN BY	DATE	CHECKLIST	INITIALS
SURVEY CHECK	DATE		
GEOLOGY CHECK	DATE		
ENGINEERING CHECK	DATE		

MEADOWBANK DIVISION
ENGINEERING
CENTRAL DIKE
0+400 TO 1+100

SCALE	DATE	FILE
N.T.S.		.DWG



- THERMISTOR
  - FULLY FUNCTIONAL
  - PARTIALLY FUNCTIONAL (CAPACITANCE)
  - NON FUNCTIONAL
- PIEZOMETER
  - FULLY FUNCTIONAL
  - PARTIALLY FUNCTIONAL
  - NON FUNCTIONAL
- INCLINOMETER
  - FULLY FUNCTIONAL
  - NON FUNCTIONAL

- FROZEN
- SEASONAL FREEZING/THAWING OR PARTIALLY FROZEN BUT THAWED AT DEPTH
- THAWED

AGNICO EAGLE
MEADOWBANK

DRAWN BY	G.BARIL\T.DAHM	DATE	AUG_2022
SURVEY CHECK		DATE	
GEOLOGY CHECK		DATE	
ENGINEERING CHECK	ENGINEERING	DATE	ENG_DATE

MEADOWBANK_COMPLEX

ENGINEERING

BAY_GOOSE_INSTRUMENTATION
30+645_TO_30+804
CENTRAL_SHALLOWS

SCALE	DATE	FILE
		CAD

FORMAT ANSI B – LANDSCAPE

THERMISTOR
- FULLY FUNCTIONAL
- PARTIALLY FUNCTIONAL (CAPACITANCE)
- NON FUNCTIONAL

PIEZOMETER
- FULLY FUNCTIONAL
- PARTIALLY FUNCTIONAL
- NON FUNCTIONAL

INCLINOMETER
- FULLY FUNCTIONAL
- NON FUNCTIONAL

FROZEN

SEASONAL FREEZING/THAWING OR PARTIALLY FROZEN BUT THAWED AT DEPTH

THAWED

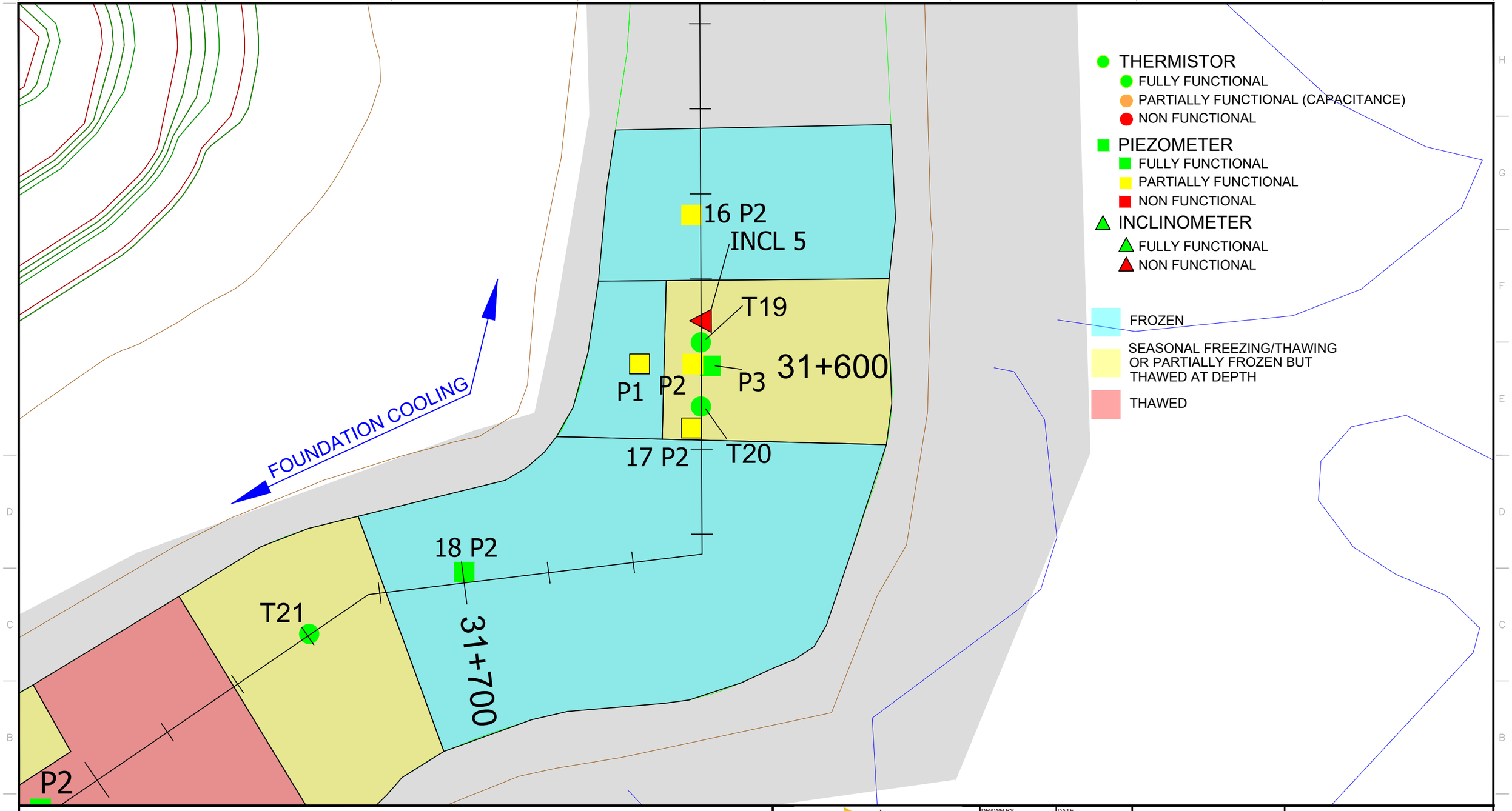
T21
31+700
P1
P2
P3
INCL 6
22P2
T22
T23
31+800
31+815
INCL 7
P1
P2
P3
T24
19 P2
31+885
31+900
T25
FOUNDATION COOLING
P1
P2
20 P2
T26
21P2
P3
T27
32+000
INCL 8
T28
P1
P2
P3
32+065
T29
P1
P2
P3
32+100
32+105
T30
FOUNDATION COOLING

AGNICO EAGLE
MEADOWBANK

DRAWN BY G.BARIL/T.DAHM	DATE AUG_2002
SURVEY CHECK	DATE
GEOLOGY CHECK	DATE
ENGINEERING CHECK ENGINEERING	DATE ENG_DATE

MEADOWBANK_COMPLEX
ENGINEERING
BAY_GOOSE_INSTRUMENTATION
31+815_TO_32+105
CHANNEL_1_&_2

SCALE	DATE	FILE CAD



AGNICO EAGLE
MEADOWBANK

DRAWN BY: G.BARIL/T.DAHM	DATE: AUG_2022
SURVEY CHECK	DATE
GEOLOGY CHECK	DATE
ENGINEERING CHECK: ENGINEERING	DATE: ENG_DATE

MEADOWBANK_COMPLEX

ENGINEERING

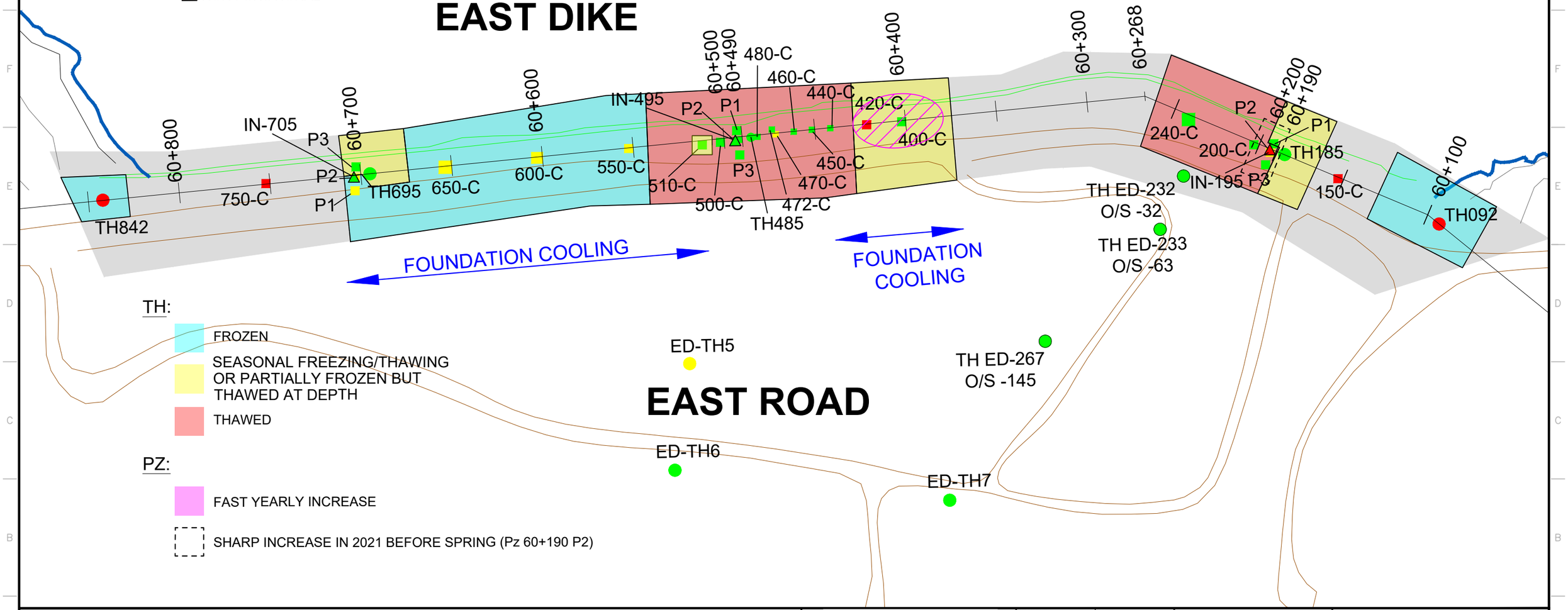
BAY_GOOSE_INSTRUMENTATION
31+565_TO_31+700
CHANNEL_3

SCALE	DATE	FILE
		CAD

SECOND PORTAGE LAKE

EAST DIKE

- THERMISTOR
  - FULLY FUNCTIONAL
  - NON FUNCTIONAL
- PIEZOMETER
  - FULLY FUNCTIONAL
  - PARTIALLY FUNCTIONAL
  - NON FUNCTIONAL
- INCLINOMETER
  - FULLY FUNCTIONAL
  - NON FUNCTIONAL



TH:

- FROZEN
- SEASONAL FREEZING/THAWING OR PARTIALLY FROZEN BUT THAWED AT DEPTH
- THAWED

PZ:

- FAST YEARLY INCREASE
- SHARP INCREASE IN 2021 BEFORE SPRING (Pz 60+190 P2)

AGNICO EAGLE
MEADOWBANK

DRAWN BY: T.DAHM	DATE: AUG_2022
SURVEY CHECK	DATE
GEOLOGY CHECK	DATE
ENGINEERING CHECK: ENGINEERING	DATE: ENG_DATE

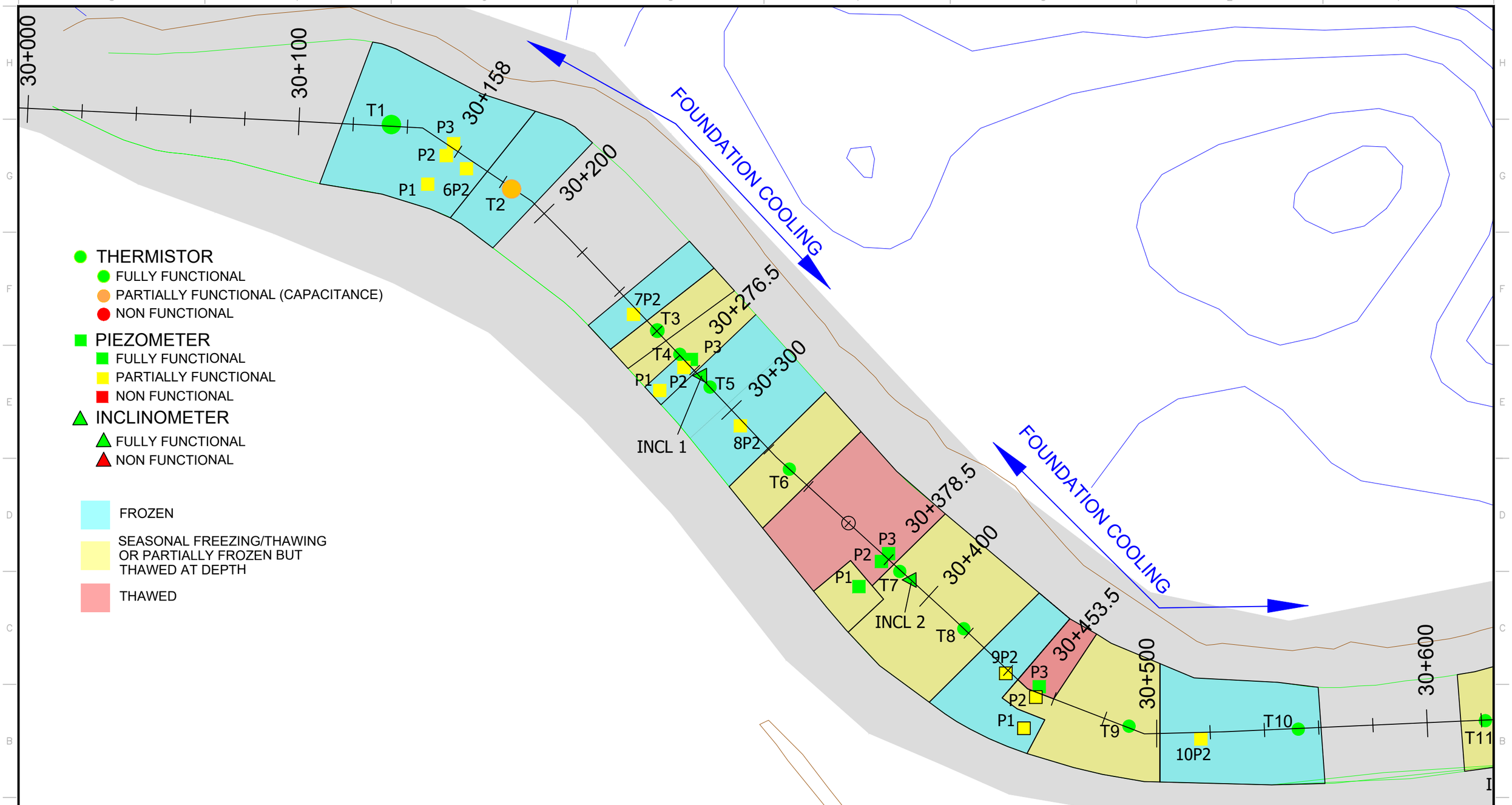
MEADOWBANK_COMPLEX
ENGINEERING

EAST_DIKE_INSTRUMENTATION

SCALE	DATE	FILE: CAD

\\CAMBFS01\Groups\Engineering\05-Geotechnic\04-DewateringDikes\1- East Dike\6- Instruments\1- Instruments Summary\1- Instrumentation Map\East Dike Updated Cad_GB2020.dwg, 10 Aug 2022

FORMAT ANSI B – LANDSCAPE



AGNICO EAGLE
MEADOWBANK

DRAWN BY: G.BARIL/T.DAHM	DATE: AUG_2022
SURVEY CHECK	DATE
GEOLOGY CHECK	DATE
ENGINEERING CHECK: ENGINEERING	DATE: ENG_DATE

MEADOWBANK_COMPLEX

ENGINEERING

BAY_GOOSE_INSTRUMENTATION
30+158_TO_30+517
NORTH_CHANNEL

SCALE	DATE	FILE
		CAD

APPENDIX D

ALL-WEATHER PRIVATE ROAD

Appendix D-1

All-Weather Access Road Observations

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS
0+430	PRC1	1x600 mm CSP	Culvert owned by the town and not AEM. Minor damage to outlet. Minor obstruction of the outlet. Still in good condition. No action required
0+470	PRC2	2x600 mm CSP	Culvert owned by the town and not AEM. Good condition
1+380	PRC3	1x600 mm CSP	Culvert owned by the town and not AEM. Good condition
2+550	R-00A	1x600 mm CSP	No sign of any flow. Inlet partially collapsed, outlet entirely collapsed with signs of obstruction from road material.
4+260	PC-14	2x600 mm CSP	These 2 culverts are too damaged to function any longer. If needed, new culvert should be installed further north.
5+200	Quarry 1		Rocks walls are generally clean and stable.
~5+700	unnamed	1x600 mm CSP	The inlet is buried in gravel. The outlet is in good condition.
8+750	R02 Centre Bridge	30m Acrow Panel Bridge	In general good condition. The two corrugated steel bins at both abutments show deformation under the weight of the bridge.
8+830	PC-17A	2X1800 mm CSP	Sign of erosion beneath the inlet and flow of water occuring beneath the culvert. The 1800 CSP were installed too high. While conditions are not perfect, they have proven stable over the past years. No sign of degradation from last year on both the inlet and outlet sides. Flow was observed beneath the culvert in the past, but in 2019 the flow moved further south (5-10 m from culvert). Stable, to keep monitoring for evolution.
8+850	PC-17	2x1200 mm CSP	In good condition

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS
9+952	PC-1	1x600 mm CSP	In good condition
10+580	R-03	1x600 mm CSP	In good condition
12+050	R-04	1x1200 mm CSP	In good condition
12+745	PC-13	1x600 mm CSP	In good condition but inlet slightly bent.
13+250	Quarry 2		The wall is mostly clean. One steep area is unstable and would require cleaning if operations resume.
13+405	PC-2	1x600 mm CSP	In good condition
13+685	PC-3	1x600 mm CSP	In good condition
13+950	unnamed	1x600 mm CSP	In good condition
14+910	PC-4	1x600 mm CSP	In good condition
15+745	R-05A	1x1200 mm CSP	In good condition
17+600	R05 Center Bridge	30m Acrow Panel Bridge	In good condition. Minor damage to the bin wall of both abutments as a result of past snow removal activites. No reparation required yet.
18+280	PC-5	1x600 mm CSP	In good general condition, but inlet slighlty damaged.
18+900	PC-6	1x600 mm CSP	In good condition
20+240	PC-7A	2x600 mm CSP	In general good condition. The outlet of the northern culvert is damaged.
20+250	PC-7	1x600 mm CSP	The outlet of the culvert is partly buried and to be cleaned.
23+100	R06 Center Bridge	30 m Acrow Panel Bridge	In good condition. Limited surficial erosion of granular material on North abutment.

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS
23+700	Quarry 3		A crusher is installed in this quarry. The west wall is in good and stable condition, but would need additional cleaning locally.
25+900	R-07	1x1200 mm CSP	In good condition
29+420	PC-8	1x600 mm CSP	In good condition
31+300	Quarry 4		Quarry flooded. In good condition.
34+650	Quarry 5		Rock walls are in good and stable condition, except for a small portion on the east side.
35+690	PC-9	1x600 mm CSP	In good condition.
36+470	Quarry 6		The remaining rock walls are clean and stable.
36+865	PC-10	1x600 mm CSP	Not observed in 2021.
39+552	PC-11	1x600 mm CSP	In good condition. The inlet is too high and water is flowing underneath it. Not much flow observed, outlet was not visible, possibly buried.
39+800	Quarry 7		The quarry walls are in unstable condition with loose rocks. Scaling is recommended before resuming activities.
41+300	PC-12	1x600 mm CSP	In good condition, almost submerged.
42+950	Quarry 8		Walls are generally stabilized with rockfill berm but some others are in loose unstable condition (South wall).
44+600	Quarry 9		Presence of unstable loose rocks and boulders along the steepest and highest wall section. Some walls are in unstable condition with loose rocks.
48+500	R09 Center Bridge	12m Rapid Span Bridge	In good general condition. A series of cracks is present on top of the South abutment (seems inactive). Some water flowing under the Northeast abutment, but no sign of erosion. To monitor.
48+900	Quarry 10		The steep west rock wall is unstable.
53+500	Quarry 11		Rock walls are clean and stable.
54+950	PC-16	1x600 mm CSP	Not observed in 2021.

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS
58+300	Quarry 12		In general good, stable condition.
62+060	R13 Center Bridge	12 m Rapid Span Bridge	In general good condition. Surficial erosion of the granular material on the Northeast Abutment.
62+350	Quarry 13		Loose blocks were observed in some portions the the rock wall, but the quarry is in general good condition. Some water ponding.
65+700	Quarry 14		Quarry flooded. Loose blocks were observed in some portions the the rock wall, but in general good condition.
67+600	Quarry 15		Steep rock wall in relatively stable condition. Some water ponding.
67+840	R-14	3x1200 mm CSP	Middle and northern culverts show small sign of erosion at the outlet and have been damaged (collapsed) inside, below the road, but it is anticipated that they will continue to perform well. The South outlet is partly buried in gravel. All of them were installed too high but function well. Water is flowing under the road between the culverts, but no sign of erosion. No action required.
69+200	R15 Centre Bridge	30 m Acrow Panel Bridge	Bin wall of both abutments were observed to be damaged but they are still holding well. Limited surficial erosion of the granular material on the South abutment The bridge is dipping toward the west side on both north and south abutments. The foundation does not show signs of failure but is slowly settling. Its condition should be monitored.
70+400	Quarry 16		Presence of unstable loose rocks and boulders but in general good condition.
72+800	Quarry 17		Steep rock wall in stable conditions.
73+800	R16 Centre Bridge	12m Rapid Span Bridge	In good condition. Flow observed under the North abutment, but no sign of erosion.
77+440	R-17	1x1200 mm CSP	In good condition
79+500	R18 Centre Bridge	12 m Rapid Span Bridge	In good condition. Limited surficial erosion of granular material on the abutments.
80+200	Quarry 18		In general good condition, south wall is high (about 8 m) with some loose blocks.

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS
80+950	R-18A	3x1200 mm CSP	In good condition.
	R-18B	1X600 mm CSP	In good condition, installed above ground surface (water can flow below culvert).
83-150	R19 Centre	12m Rapid Span Bridge	Some damage to the steel containment plates and to one pile was observed, which may be associated with snow removal activity. The damage is minor and does not affect the geotechnical integrity of the bridge. Old tension cracks in the top surface on the North abutment have disappeared. Northwest railing is bent.
84+300	Quarry 19		Rock walls are in good condition.
85+490	R-20	1x1200 mm CSP	Outlet of the culvert is slighly twisted. The middle of the culvert is slightly collapsed. The inlet is installed above the ground surface and water is able to flow beneath the culvert. No follow-up required, in stable conditions.
87+300	R-21	2x1200 mm CSP	Both culverts are slightly collapsed in the middle. Should have been installed lower to avoid erosion issue. In stable condition.
89+550	Quarry 20		Quarry walls are in good condition. Active at the time of the inspection with material loading.
93+400	Quarry 21		Quarry walls are in good condition.
93+600	R-23	1x1200 mm CSP	Minor damage near the top, but still in good condition. The culvert is installed too high and as a result there is a low flow of water through the road rockfill. The situation has been under control over the past years.
98+100	R-24	2x1200 mm CSP	Both outlet are installed too high. The outlet of the southern culvert still shows small signs of erosion, but this has been under control over the past years. Both culvert show deformation in the upper part.
99+200	Quarry 22		In relative stable condition.

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS
101+950	R-25	2x600 mm CSP	One culvert is angling up toward the downstream end and natural drainage by gravity does not occur. A second culvert alongside is well installed and should drain water for the remainder of the season. No sign of erosion observed during the inspection.
	Western diversion ditch	2x1200 mm CSP	Outlet in good condition and inlet slightly bent but still in good condition.
104+400	R-26	3x1200 mm CSP	In good condition
	Quarry 23		This is an active quarry used to store rock cores and other things. Because of the presence of loose rocks on top of steep wall, the workers who need access to the quarry should be aware of rockfall potential and stay at a minimum of 20 m away from the wall. Most of the unstable wall areas are bermed off. Areas of the quarry are flooded.

Appendix D-2

Culverts Photographic log

Photograph D2-1: PC-17A km 8+830

Date: July 30, 2022 **Photo Number**: 298

Description: View of the culvert outlets. No sign of degradation and the flow is stable south of the culverts (5-10 m away).

Photograph D2-2: PC-11 km 39+552

Date: July 30, 2022 **Photo Number**: 303

Description: View of the culvert inlet. Installed high but in good condition.

Photograph D2-3: R-14 km 67+840

Date: July 30, 2022 **Photo Number**: 310

Description: View of the culvert outlets. Water is flowing beneath the road between the culverts.

Appendix D-3

Bridges Photographic Log

Photograph D3-1 Bridges 1 – R02 km 8+750

Date: July 30, 2022 **Photo Number**: 296
Description: Looking at the north abutment. The corrugated steel bin shows deformation under the weight of the bridge.

Photograph D3-2 Bridges 1 – R02 km 8+750

Date: July 30, 2022 **Photo Number**: 297
Description: Looking at the south abutment. The corrugated steel bin shows deformation under the weight of the bridge.

Photograph D3-3 Bridges 2 – R05 km 17+600

Date: July 30, 2022 **Photo Number**: 299
Description: Looking at the north abutment.

Photograph D3-4 Bridges 2 – R05 km 17+600

Date: July 30, 2022 **Photo Number**: 300
Description: Looking at the south abutment. Minor damage to the bin wall.

Photograph D3-5 Bridges 3 – R06 km 23+100

Date: July 30, 2022 **Photo Number**: 301
Description: Looking at the north abutment.

Photograph D3-6 Bridges 3 – R06 km 23+100

Date: July 30, 2022 **Photo Number**: 302
Description: Looking at the south abutment.

Photograph D3-7 Bridges 4 – R09 km 48+500

Date: July 30, 2022 **Photo Number**: 197
Description: Looking at the north abutment.

Photograph D3-8 Bridges 4 – R09 km 48+500

Date: July 30, 2022 **Photo Number**: 199
Description: Looking from the northeast abutment. Water is flowing under the abutment, no erosion.

Photograph D3-9 Bridges 4 – R09 km 48+500

Date: July 30, 2022 **Photo Number**: 305
Description: Looking at the south abutment.

Photograph D3-10 Bridges 5 – R13 km 62+060

Date: July 30, 2022 **Photo Number**: 307
Description: Looking at the north abutment.

Photograph D3-11 Bridges 5 – R13 km 62+060

Date: July 30, 2022 **Photo Number**: 308
Description: Looking at the south abutment.

Photograph D3-12 Bridges 6 – R15 km 69+200

Date: July 30, 2022 **Photo Number**: 311
Description: Looking at the north abutment. Damage to the bin wall likely caused during snow removal activities. Bridge is tipping toward the west side on the abutment.

Photograph D3-13 Bridges 6 – R15 km 69+200

Date: July 30, 2022 **Photo Number**: 312
Description: Looking at the south abutment. Damage to the bin wall likely caused during snow removal activities. Bridge is tipping toward the west side on the abutment.

Photograph D3-14 Bridges 7 – R16 km 73+800

Date: July 30, 2022 **Photo Number**: 313
Description: Looking at the north abutment. In good condition.

Photograph D3-15 Bridges 7 – R16 km 73+800

Date: July 30, 2022 **Photo Number**: 314
Description: Looking at the south abutment. In good condition.

Photograph D3-16 Bridges 8 – R18 km 79+500

Date: July 30, 2022 **Photo Number**: 315
Description: Looking at the north abutment. In good condition.

Photograph D3-17 Bridges 8 – R18 km 79+500

Date: July 30, 2022 **Photo Number**: 316
Description: Looking at the south abutment. In good condition.

Photograph D3-18 Bridges 9 – R19 km 83+150

Date: July 30, 2022 **Photo Number**: 317
Description: Looking at the north abutment. Minor damage to steel plate due to snow removal activity.

Photograph D3-19 Bridges 9 – R19 km 83+150

Date: July 30, 2022 **Photo Number**: 318
Description: Looking at the south abutment. Minor damage to steel plate due to snow removal activity. Minor tension cracks, seem inactive.

APPENDIX E

WHALE-TAIL PROJECT ROAD

Appendix E-1

Whale-Tail Project Road Observations

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS	Photo
116+449	#1	450 mm	Not observed, seems to be under Vault Pad.	-
116+675	#2	300 mm		-
117+133	#3	900 mm	In good condition.	-
117+137	#3-2	900 mm		
117+325	#4	800 mm	In good condition.	-
117+525	#5	600 mm	In good condition but inlet buried.	-
117+799	#6	600 mm	Not observed.	-
118+013	#7	900 mm	Inlet in good condition, outlet totally buried.	-
118+016	#7-2	900 mm		
118+125	#8	900 mm	In good condition.	-
118+127	#8-2	900 mm		
118+659	#9	600 mm	Inlet in good condition, outlet damaged and pinched.	-
119+400	Bridge 3.4		In good condition.	140: south 139: north
119+264	#10	600 mm	Inlet in good condition, outlet damaged and pinched.	-
119+850	#11	300 mm	In good condition.	-
120+183	#12	900 mm	Inlets in good condition. 3 outlets are buried.	-
120+181	#12-2	900 mm		
120+179	#12-3	900 mm		
120+184	#12-4	900 mm		
120+186	#12-5	900 mm		
120+615	#13	300 mm	Inlet in good condition, outlet not observed as it is buried.	-
120+756	#14	600 mm	In good condition.	-
120+850	#15	900 mm	In good condition.	-
121+050	#16	300 mm	Not observed.	-

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS	Photo
121+161	#17	800 mm	In good condition, outlet damaged.	-
121+330	#18	700 mm	In good condition.	-
121+574	#19	900 mm	In good condition.	-
121+931	#20	900 mm	In good condition.	-
121+929	#20-2	900 mm		
122+310	#21	300 mm	Not observed.	-
122+423	#22	600 mm	In good condition.	-
122+442	#23	600 mm	In good condition.	-
122+493	#24	600 mm	Not observed.	-
122+530	#25	600 mm	In good condition.	-
123+216	#26	800 mm	In good condition.	-
123+218	#26-2	800 mm		
123+275	#27	600 mm	In good condition.	-
123+300	#27-2	600 mm	Outlet is buried.	
123+325	#27-3	600 mm	In good condition.	-
123+349	#28	600 mm	In good condition.	-
123+375	#28-2	600 mm	In good condition.	-
123+779	#29	900 mm	Not observed.	-
123+781	#29-2	900 mm	Not observed.	-
123+968	#30	900 mm	In good condition.	-
123+970	#30-2	900 mm		
124+005	#31	900 mm	Not observed.	-
124+383	#32	900 mm	Not observed.	-
124+405	#33	900 mm	In good condition.	-
124+426	#34	900 mm	In good condition.	-

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS	Photo
124+428	#34-2	900 mm		
124+581	#35	700 mm	In good condition.	-
125+000	#36	700 mm	In good condition.	-
125+035	#37	900 mm	In good condition, outlet buried.	-
125+049	#38	900 mm	Inlet in good condition, outlet buried.	-
125+193	#39	900 mm	In good condition.	-
125+195	#39-2	900 mm		
125+291	#40	900 mm	In good condition.	-
125+388	#41	600 mm	In good condition.	-
125+416	#42	600 mm	In good condition, outlet buried.	-
125+460	#43	600 mm	Not observed.	-
125+490	#44	300 mm	Not observed.	-
125+710	#45	600 mm	In good condition, inlet buried.	-
126+500	Quarry 10.5		Unstable wall, loose rocks. Workers should stay away from the wall.	-
126+700	Bridge 10.7	600 mm	In good condition.	138: south 137: north
127+020	#46	900 mm	In good condition.	-
127+101	#47	900 mm	In good condition.	-
127+103	#47-2	900 mm		
127+104	unnamed	1000 mm		
127+105	#47-3	900 mm		
127+107	#47-4	900 mm		
127+203	#48	900 mm	The inlet is 3/4 buried.	-
127+411	#49	450 mm	Not observed.	-
127+748	#50	600 mm	In good condition.	-

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS	Photo
127+905	#51	300 mm	Not observed.	-
128+195	#52	700 mm	Inlet in good condition, outlet buried.	-
128+240	#53	700 mm	In good condition.	-
128+388	#54	600 mm	Inlet is buried.	-
128+440	#55	600 mm	Inlet is buried.	-
128+485	#56	600 mm	In good condition.	-
128+635	#57	450 mm	In good condition.	-
128+740	#58	900 mm	In good condition.	-
128+760	#59	900 mm	In good condition.	-
128+775	#60	900 mm	In good condition.	-
129+050	#61	600 mm	Inlet in good condition, outlet buried.	-
129+265	#62	600 mm	In good condition.	-
129+390	#63	300 mm	Inlet in good condition, outlet buried.	-
129+920	#64	600 mm	Not observed.	-
130+924	#65	800 mm	In good condition but inlet is buried.	-
132+000	Bridge 16		The southwest abutment bin seems to be deforming under the weight of the bridge, but the bridge is still horizontal. No sign of instability, likely settling foundation.	135: southwest 136: southeast 134: north
132+324	#66	600 mm	In good condition but inlet is buried.	-
132+689	#67	600 mm	In good condition.	-
132+750	#68	600 mm	In good condition.	-
133+000	Esker #1		Active (gravel and rock). Presence of loose rock on the steep wall, risk of sloughing.	-
133+250	#68-A	600 mm	In good condition. Above water.	-
133+500	#68-B	600 mm	In good condition.	-
133+784	#69	600 mm	Not observed.	-

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS	Photo
133+837	#70	600 mm	In good condition, inlet damaged.	-
134+580	#73	1200 mm	In good condition.	-
134+559	#74	900 mm	In good condition.	-
134+610	#74-2	900 mm		
134+861	#75	600 mm	Not observed.	-
134+916	#76	450 mm	In good condition.	-
134+998	#77	450 mm	In good condition.	-
135+092	#78	300 mm	Not observed.	-
135+092	#78-2	300 mm		
135+495	#79	700 mm	In good condition.	-
135+659	#80	450 mm	In good condition.	-
135+841	#81	600 mm	In good condition.	-
136+000	Bridge 20		In good condition.	133: south 132: north
136+143	#82	300 mm	Inlet in good condition, outlet buried.	-
136+300	#83	600 mm	Inlet is bent, still working.	-
136+527	#84	700 mm	In good condition.	-
136+671	#85	600 mm	Inlet in good condition, outlet is buried.	-
136+740	#86	600 mm	In good condition but outlet buried.	-
136+810	#87	600 mm	In good condition.	-
136+881	#88	300 mm	In good condition, the outlet is almost completely blocked.	-
	Quarry 21 (Q141)		Not inspected.	-
137+180	#89	450 mm	In good condition, the outlet is high above ground.	-
137+295	#90	800 mm	In good condition.	-
137+297	#90-2	800 mm		

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS	Photo
137+770	#91	600 mm	In good condition.	-
137+040	#92	600 mm	In good condition.	-
138+100	#93	450 mm	Inlet in good condition, outlet totally buried.	-
138+147	#94	900 mm	In good condition.	-
138+149	#94-2	900 mm	In good condition.	-
138+150	#94-3	900 mm	In good condition.	-
138+161	#95	900 mm	In good condition.	-
138+162	#95-2	900 mm	In good condition.	-
138+353	#96	600 mm	In good condition.	-
138+436	#97	600 mm	In good condition.	-
138+482	#98	600 mm	In good condition.	-
138+830	#99	600 mm	In good condition.	-
138+936	#100	600 mm	In good condition.	-
139+025	#101	600 mm	Outlet in good condtiion, inlet totally buried.	-
139+265	#102	600 mm	In good condition.	-
139+562	#103	600 mm	In good condition.	-
139+595	#104	600 mm	In good condition.	-
139+900	Bridge 23.9		In good condition.	131: south 130: north
140+555	#105	600 mm	In good condition but outlet buried.	-
140+700	#106	600 mm	In good condition.	-
140+961	#107	900 mm	In good condition.	-
140+982	#107-2	900 mm		
140+984	#107-3	900 mm		
141+000	Esker #2		In general good condition, but the small walls are steep and in loose conditions. Risk of rockfalls near the walls.	-

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS	Photo
141+551	#108	600 mm	In good condition.	-
141+905	#109	800 mm	In good condition.	-
142+100	Bridge 26.1		In good condition. Southwest abutment bin wall appears tilted toward the West. No sign of instability, likely settling foundation.	128: north 129: south
142+350	#110	450 mm	Not observed.	-
142+461	#111	300 mm	In good condition but inlet buried.	-
142+630	#112	300 mm	Outlet collapsed and inlet totally buried.	-
142+736	#113	450 mm	In good condition but inlet is buried.	-
142+810	#114	450 mm	In good condition.	-
142+865	#115	300 mm	In good condition but outlet is buried.	-
142+940	#116	450 mm	In good condition but outlet is buried.	-
143+173	#117	700 mm	In good condition.	-
143+433	#118	450 mm	In good condition but inlet is half blocked.	-
143+777	#119	300 mm	Not observed.	-
144+125	#120	300 mm	Not observed.	-
144+300	#121	900 mm	In good condition.	-
144+302	#121-2	900 mm		
144+304	#121-3	900 mm		
144+414	#122	900 mm	In good condition.	-
144+416	#122-2	900 mm		
144+418	#122-3	900 mm		
144+575	#123	800 mm	Not observed.	-
144+710	#124	300 mm	In good condition.	-
145+040	#125	800 mm	In good condition.	-
145+240	#126	800 mm	Installed oblique to the road, but in good condition.	-

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS	Photo
146+409	#129	1200 mm	In good condition.	-
146+180	Quarry 30.5		The quarry was cleaned and is in good condition. Some walls still show some loose blocks.	
	30+540	600 mm	Not observed.	-
146+812	#130	600 mm	Not observed.	-
147+041	#131	600 mm	Not observed.	-
147+540	#132	600 mm	In good condition.	-
148+141	#133	300 mm	In good condition but inlet is buried.	-
148+300	Bridge 32.3		In good condition. Some erosion of the granular material behind the concrete wall at the Southwest abutment, no stability issue.	127: south 126: north
148+389	#134	300 mm	Not observed.	-
148+567	#135	300 mm	In good condition.	-
148+905	#136	300 mm	Not observed.	-
148+940	#137	300 mm	In good condition but inlet buried.	-
149+000	#138	300 mm	In good condition but inlet is buried.	-
149+214	#139	900 mm	In good condition.	-
149+216	#139-2	900 mm		
149+218	#139-3	900 mm		
149+256	#140	900 mm	In good condition.	-
149+258	#140-2	900 mm		
149+260	#140-3	900 mm		
149+727	#141	900 mm	In good condition.	-
149+728	#141-2	900 mm		
149+730	#141-3	900 mm		
149+732	#141-4	900 mm		

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS	Photo
149+734	#141-5	900 mm		
150+160	#142	450 mm	In good condition.	-
150+291	#143	600 mm	In good condition.	-
150+319	#144	1000 mm	In good condition.	-
150+395	#145	300 mm	Not observed.	-
150+660	#146	1200 mm	In good condition.	-
150+855	#147	600 mm	In good condition.	-
151+173	#148	600 mm	Not observed.	-
151+000	Rock quarry 35 (Q150)		Active quarry. In general good condition but the western wall (4-5 m high) is in unstable condition.	-
151+670	#149	900 mm	In good condition.	-
152+171	#150	900 mm	In good condition but 1 outlet is buried and the rest is half buried.	-
152+173	#150-2	900 mm		
152+175	#150-3	900 mm		
152+177	#150-4	900 mm		
152+179	#150-5	900 mm		
152+562	#151	600 mm	Not observed.	-
152+933	#152	900 mm	In good condition.	-
153+027	#153	600 mm	In good condition. Blocks on top of the culverts.	-
153+028	#153-2	600 mm		-
153+030	#153-3	600 mm		-
153+032	#153-4	600 mm		-
153+033	#153-5	600 mm		-
153+261	#154	450 mm	Not observed.	-
153+470	#155	600 mm	In good condition.	-

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS	Photo
153+506	#156	450 mm	Not observed.	-
154+028	#157	600 mm	In good condition.	-
154+490	#158	900 mm	In good condition.	-
154+491	#158-2	900 mm		
154+493	#158-3	900 mm		
155+768	#159	700 mm	In good condition.	-
155+966	#160	600 mm	Not observed.	-
156+051	#161	600 mm	Not observed.	-
156+238	#162	600 mm	In good condition.	-
156+474	#163	300 mm	Not observed.	-
156+790	#164	300 mm	In good condition.	-
156+964	#165	600 mm	In good condition.	-
157+610	#166	900 mm	In good condition.	-
157+843	#167	900 mm	Not observed.	-
158+342	#168	600 mm	In good condition.	-
158+765	#169	300 mm	In good condition.	-
159+340	#170	800 mm	In good condition.	-
159+500	Bridge 43.5		In good condition.	124: south 125: north
159+568	#170-A	900 mm	In good condition.	-
159+577	#170-B	900 mm		
159+587	#170-C	900 mm		
159+815	#171	600 mm	In good condition.	-
160+431	#173	1000 mm	In good condition. The 2 southern culverts are installed below ground surface and water is flowing.	-

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS	Photo
160+433	#173-2	1000 mm		
160+435	#173-3	1000 mm		
160+470	#174	600 mm	In good condition.	-
160+640	#175	450 mm	In good condition.	-
160+800	Bridge 44.8		In good condition.	123: south 122: north
161+055	#176	600 mm	In good condition.	-
161+065	#177	600 mm	In good condition.	-
161+170	#178	600 mm	In good condition but inlet half buried.	-
161+485	#179	700 mm	In good condition.	-
161+803	#180	600 mm	In good condition.	-
161+935	#181	600 mm	In good condition.	-
162+000	Esker #3		Not active. The slopes appear stable.	-
162+126	#182	800 mm	In good condition.	-
162+185	#183	800 mm	In good condition.	-
162+187	#183-2	800 mm	In good condition.	-
162+230	#184	600 mm	In good condition.	-
162+404	#185	300 mm	In good condition.	-
162+541	#186	450 mm	In good condition.	-
162+570	#187	600 mm	In good condition.	-
162+595	#188	600 mm	In good condition.	-
162+870	#189	700 mm	In good condition.	-
162+985	#190	900 mm	In good condition.	-
163+046	#191	300 mm	Not observed.	-

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS	Photo
163+190	#192	600 mm	In good condition but outlet is buried.	-
163+360	#193	600 mm	In good condition.	-
163+660	#194	600 mm	In good condition.	-
163+808	#195	700 mm	Inlet extremity is torn off, but culvert is still in good condition. Culvert exposed on top on inlet side.	-
163+961	#196	300 mm	In good condition.	-
164+120	#197	600 mm	In good condition.	-
164+222	#198	450 mm	In good condition.	-
164+383	#199	900 mm	In good condition. Water is flowing below the culverts. No sign of erosion.	-
164+385	#199-2	900 mm		
164+387	#199-3	900 mm		
164+389	#199-4	900 mm		
164+457	#201	900 mm	Installed below the ground level.	-
164+800	#203	600 mm	In good condition.	-
164+840	#204	600 mm	In good condition.	-
165+108	#206	450 mm	In good condition.	-
165+310	#207	600 mm	In good condition.	-
165+431	#208	900 mm	In good condition.	-
165+433	#209	900 mm	In good condition.	
165+435	#210	900 mm	In good condition.	
165+550	#211	450 mm	In good condition.	-
165+640	#212	600 mm	In good condition.	-
165+795	#213	300 mm	Not observed.	-
165+915	#214	800 mm	In good condition.	-

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS	Photo
166+135	#215	300 mm	In good condition.	-
166+510	#216	600 mm	Not observed.	-
166+600	Quarry Q165		In good condition. Dry but concave: probably flooded at freshet.	-
166+790	#217	450 mm	In good condition but outlet buried.	-
167+233	#218	900 mm	In good condition.	-
167+235	#218-2	900 mm		
167+237	#218-3	900 mm		
167+239	#218-4	900 mm		
167+460	#219	300 mm	In good condition.	-
167+883	#221	900 mm	In good condition.	-
167+885	#221-2	900 mm		
167+887	#221-3	900 mm		
168+000	Rock quarry 52		Active. In good and clean condition, partially flooded. The northern wall may pose a rockfall hazard (loose blocks and cobbles) which workers need to be aware of.	-
168+315	#222	600 mm	In good condition.	-
168+650	#223	600 mm	In good condition.	-
168+705	#224	600 mm	In good condition.	-
168+715	#225	450 mm	In good condition.	-
168+935	#226	700 mm	In good condition, outlet half buried.	-
168+937	#226-2	450 mm		
168+970	#227	600 mm	In good condition.	-
168+995	#228	700 mm	In good condition.	-
169+245	#229	300 mm	Not observed.	-
169+363	#230	700 mm	In good condition.	-

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS	Photo
169+659	#231	300 mm	Not observed.	-
169+928	#232	300 mm	Not observed.	-
170+240	#233	450 mm	In good condition.	-
170+385	#234	450 mm	In good condition but outlet is buried.	-
170+500	#235	600 mm	In good condition.	-
170+625	#236	450 mm	In good condition.	-
170+655	#237	600 mm	In good condition.	-
170+850	#238	600 mm	In good condition.	-
171+060	#239	600 mm	In good condition.	-
171+164	#240	600 mm	In good condition.	-
171+235	#241	600 mm	In good condition.	-
171+329	#242	600 mm	In good condition.	-
171+593	#243	600 mm	Outlet in good condition but inlet is damaged and obstructed.	-
171+625	#244	450 mm	In good condition.	-
171+735	#245	600 mm	Not observed.	-
172+005	#246	600 mm	In good condition.	-
172+065	#247	700 mm	In good condition.	-
172+220	#248	700 mm	In good condition.	-
172+435	#249	600 mm	In good condition.	-
172+610	#250	800 mm	In good condition.	-
172+745	#251	300 mm	In good condition.	-
172+900	#252	900 mm	In good condition.	-
172+965	#253	900 mm	In good condition.	-
172+967	#253-2	900 mm	In good condition.	-

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS	Photo
172+969	#253-3	900 mm	In good condition.	-
173+125	#254	600 mm	In good condition.	-
173+195	#255	600 mm	In good condition.	-
173+350	#256	600 mm	In good condition but outlet buried.	-
173+525	#257	600 mm	Not observed.	-
173+875	#258	600 mm	Not observed.	-
173+985	#259	900 mm	In good condition.	-
174+185	#260	300 mm	In good condition.	-
174+350	#261	450 mm	In good condition.	-
174+410	#262	450 mm	In good condition.	-
174+885	#263	450 mm	In good condition.	-
174+922	#264	600 mm	In good condition.	-
174+967	#265	450 mm	In good condition.	-
175+024	#266	300 mm	In good condition.	-
175+720	Esker #5		Active (gravel). In good condition. Partially flooded.	-
175+720	#267	900 mm	In good condition.	-
175+774	#268	600 mm	In good condition but inlet is half buried.	-
175+860	#269	600 mm	In good condition.	-
176+000	#270	600 mm	In good condition.	-
176+050	#271	600 mm	In good condition.	
176+087	#272	600 mm	In good condition.	
176+649	#273	300 mm	In good condition.	-
176+815	#274	600 mm	In good condition.	-
177+022	#275	600 mm	In good condition.	-

STATION	NAME	STRUCTURE DESCRIPTION	COMMENTS	Photo
177+170			Added pipe to drain area of accumulated water. This is a good practice.	-
177+282	#276	600 mm	In good condition.	
177+622	#277	450 mm	In good condition.	-
177+870	#278	1200 mm	In good condition.	-
178+307	#279	300 mm	Not observed.	-
178+416	#280	900 mm	In good condition.	-
178+350	#281	600 mm	In good condition but outlet buried.	-
178+500	Esker #6		In good condition. Storage of broken pieces.	-
	Esker #7		Not observed. Possible not yet developed.	-
178+965	#283	450 mm	Not observed.	-
179+070	#284	900 mm	In good condition.	-
179+072	#284-2	900 mm		
179+074	#284-3	900 mm		
179+429	#287	600 mm	Not observed.	-
179+530	#288	600 mm	In good condition.	-
179+733	#289	600 mm	Deformed but still in good condition.	-
179+900	unnamed		Set of 3 culverts installed below ground level for fish. Pipes present in some of the culverts.	-
179+975	#290	600 mm	Not observed.	-

Appendix E-2

Bridges Photographic Log

Photograph E2-1 Bridges 1 – km 119+400

Date: July 28, 2022 **Photo Number**: 139

Description: Looking at the north abutment.

Photograph E2-2 Bridges 1 – km 119+400

Date: July 28, 2022 **Photo Number**: 140

Description: Looking at the south abutment.

Photograph E2-3 Bridges 2 – km 126+700

Date: July 28, 2022 **Photo Number**: 137

Description: Looking at the north abutment.

Photograph E2-4 Bridges 2 – km 126+700

Date: July 28, 2022 **Photo Number**: 138

Description: Looking at the south abutment.

Photograph E2-5 Bridges 3 – km 132+000

Date: July 28, 2022 **Photo Number**: 134

Description: Looking at the north abutment.

Photograph E2-6 Bridges 3 – km 132+000

Date: July 28, 2022 **Photo Number**: 136

Description: Looking at the southeast abutment.

Photograph E2-7 Bridges 3 – km 132+000

Date: July 28, 2022 **Photo Number**: 135

Description: Looking at the southwest abutment.

Photograph E2-8 Bridges 4 – km 136+000

Date: July 28, 2022 **Photo Number**: 133

Description: Looking at the south abutment.

Photograph E2-9 Bridges 4 – km 136+000

Date: July 28, 2022 **Photo Number**: 132

Description: Looking at the north abutment.

Photograph E2-10 Bridges 5 – km 139+900

Date: July 28, 2022 **Photo Number**: 130

Description: Looking at the north abutment.

Photograph E2-11 Bridges 5 – km 139+900

Date: July 28, 2022 **Photo Number**: 131

Description: Looking at the south abutment.

Photograph E2-12 Bridges 6 – km 142+100

Date: July 28, 2022 **Photo Number**: 128

Description: Looking at the north abutment.

Photograph E2-13 Bridges 6 – km 142+100

Date: July 28, 2022 **Photo Number**: 129

Description: Looking at the south abutment.

Photograph E2-14 Bridges 7 – km 148+300

Date: July 28, 2022 **Photo Number**: 126

Description: Looking at the north abutment.