APPENDIX 1: FILL MATERIAL LAB TEST RESULTS EXAMPLES 2025

PRAIRIES AND NORTH LABORATORIES

ATTN: Ricardo Recinos
Civil Engineer - Engineering/Operations
B2Gold Back River Corp.

Received: 10-Apr-25
Report Date: 27-May-25
Version: Final

GEOTECHNICAL LABORATORY TEST REPORT

Client: B2Gold Back River Corp.
Project Title: CA-B2Gold - Goose Lake Mine Shear Strength Testing
Project No.: CA0050804.4558 Task 6.0
LWO No.: G017

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GENERAL LAB TESTING SUMMARY

Project No.:	CA0050804.4558	Task:	6.0
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing	LWO No.:	G017
Tested By:	JG	Date:	27-May-25

Sample Identification					Laboratory Test Results				
Source / Location	Sample No.	Depth (m)		Lab No.	As Received Water Content (%)	Target Compaction		Friction Envelope Review	
		from	to			Dry Density (kg/m^3)	Water Content (%)	Phi' (°)	c' (kPa)
Goose Lake Mine / MSE Wall Lift 18	SMP#25-R	-	-	G017-006	0.0	n/a	n/a	41	0

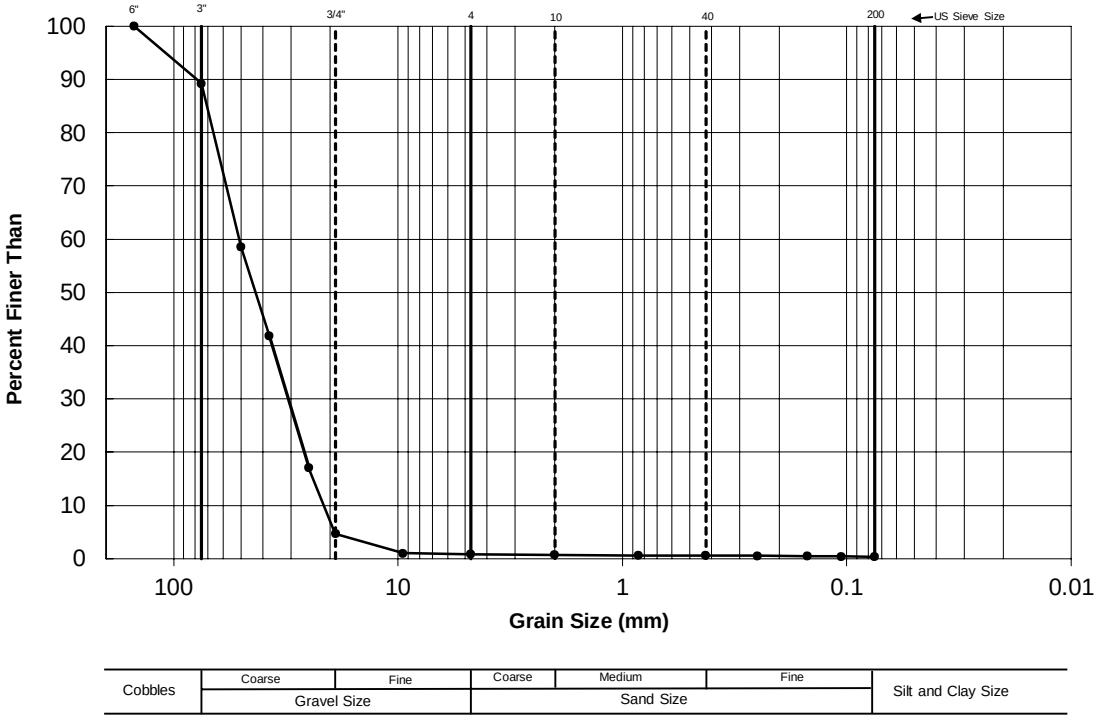
PARTICLE SIZE DISTRIBUTION OF SOILS USING SIEVE ANALYSIS

(ASTM D6913)

Project No.:	CA0050804.4558	Task:	5.0	Date:	17-Apr-25
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing				
Sub Sampled By:	AD	Washed By:	DS	Sieved By:	AD & BU

Field Tag No.:	-	Source:	Goose Lake Mine	Location:	MSE Wall Lift 18
Lab No.:	G017-006	Northing:	-	Sample No.:	SMP#25-R
Sampled By:	Client	Easting:	-	Depth From:	- m
Sample Date:	16-Mar-25	Elevation:	- m	Depth To:	- m

Test Method:	A	Drying Method:	Moist
Composite Sieve:	Yes	if Yes, Split on:	4.75 mm
Material Excluded from Sieve:	No	Describe:	
Prior Testing on Sample:	No	Describe:	



Sieve Size (mm)	Passing %
150.0	100
75.0	89
50.0	59
37.5	42
25.0	17
19.0	5
9.50	1
4.75	1
2.00	1
0.850	1
0.425	1
0.250	1
0.150	0
0.106	0
0.075	0

Received Water Content (%)	Cobbles (%)	Gravel (%)	Sand (%)	Fines (%)	D60 (mm)	D30 (mm)	D10 (mm)	Cu	Cc
0.0	11	88	1	0	51.2	31.5	21.6	2.4	0.9

Sample Description: (GP) Poorly graded GRAVEL, mostly sub-angular to angular gravel, trace sand; grey, with cobbles; non-cohesive, dry

USCS Classification: GP

Remarks: Sieve analysis of the "as received" sample

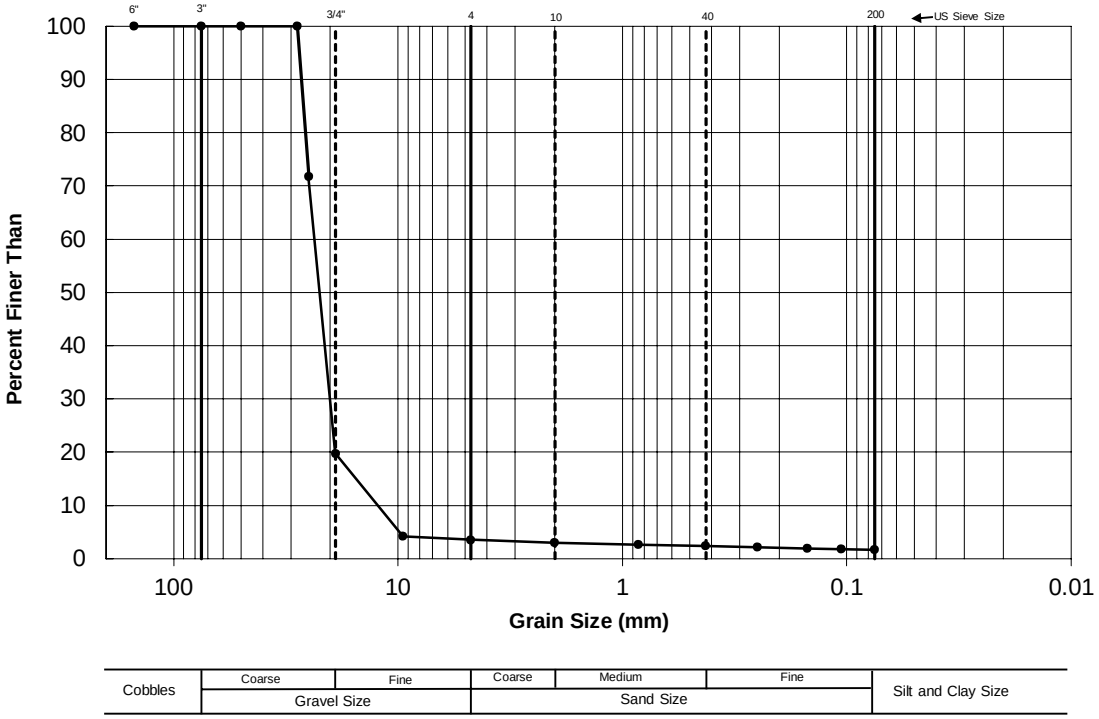
PARTICLE SIZE DISTRIBUTION OF SOILS USING SIEVE ANALYSIS

(ASTM D6913)

Project No.:	CA0050804.4558	Task:	5.0	Date:	17-Apr-25
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing				
Sub Sampled By:	AD	Washed By:	DS	Sieved By:	AD & BU

Field Tag No.:	-	Source:	Goose Lake Mine	Location:	MSE Wall Lift 18
Lab No.:	G017-006	Northing:	-	Sample No.:	SMP#25-R
Sampled By:	Client	Easting:	-	Depth From:	- m
Sample Date:	16-Mar-25	Elevation:	- m	Depth To:	- m

Test Method:	A	Drying Method:	Moist
Composite Sieve:	Yes	if Yes, Split on:	4.75 mm
Material Excluded from Sieve:	Yes	Describe:	Retained on 28 mm sieve was removed prior to sieve test
Prior Testing on Sample:	No	Describe:	



Sieve Size (mm)	Passing %
150.0	100
75.0	100
50.0	100
28.0	100
25.0	72
19.0	20
9.50	4
4.75	4
2.00	3
0.850	3
0.425	2
0.250	2
0.150	2
0.106	2
0.075	2

Received Water Content (%)	Cobbles (%)	Gravel (%)	Sand (%)	Fines (%)	D60 (mm)	D30 (mm)	D10 (mm)	Cu	Cc
0.0	0	96	2	2	23.6	20.2	13.1	1.8	1.3

Sample Description: (GP) Poorly graded GRAVEL, mostly sub-angular to angular gravel, trace sand; grey; non-cohesive, dry

USCS Classification: GP

Remarks: Sieve analysis of the "trimmed" sample i.e retained on 28 mm sieve were not included

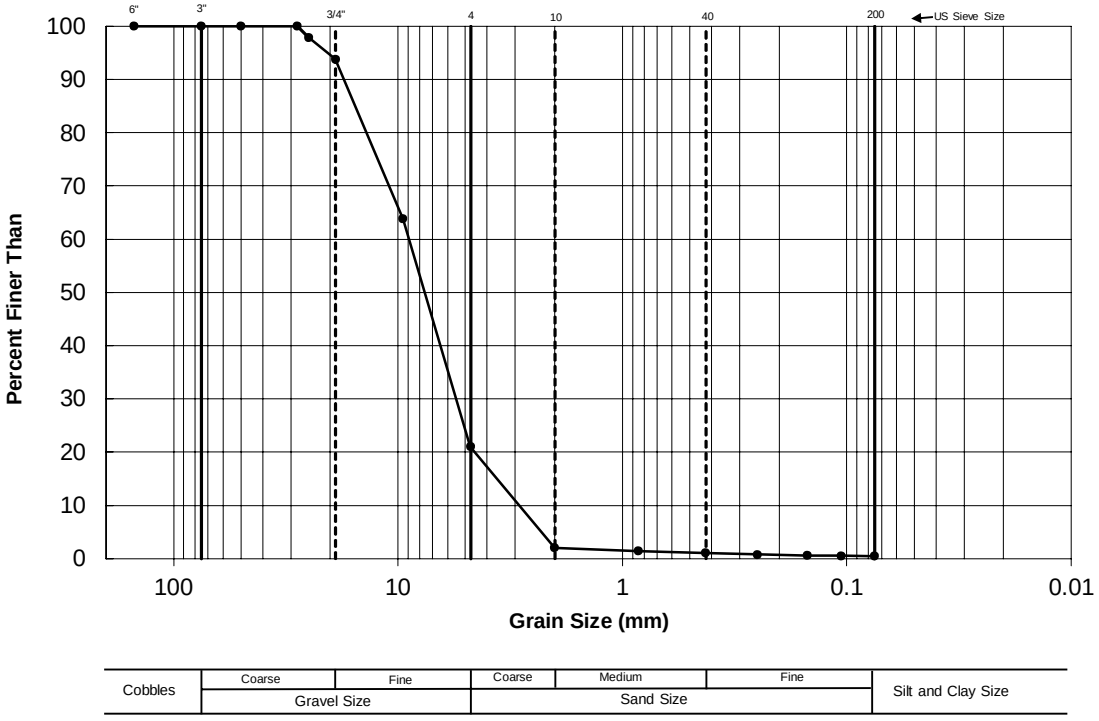
PARTICLE SIZE DISTRIBUTION OF SOILS USING SIEVE ANALYSIS

(ASTM D6913)

Project No.:	CA0050804.4558	Task:	5.0	Date:	16-May-25
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing				
Sub Sampled By:	JG	Washed By:	JG	Sieved By:	MA

Field Tag No.:	-	Source:	Goose Lake Mine	Location:	MSE Wall Lift 18
Lab No.:	G017-006	Northing:	-	Sample No.:	SMP#25-R
Sampled By:	Client	Easting:	-	Depth From:	- m
Sample Date:	16-Mar-25	Elevation:	- m	Depth To:	- m

Test Method:	A	Drying Method:	Moist
Composite Sieve:	Yes	if Yes, Split on:	2 mm
Material Excluded from Sieve:	No	Describe:	
Prior Testing on Sample:	Yes	Describe:	material above 28 mm sieve was crushed to finer gravel



Sieve Size (mm)	Passing %
150.0	100
75.0	100
50.0	100
28.0	100
25.0	98
19.0	94
9.50	64
4.75	21
2.00	2
0.850	1
0.425	1
0.250	1
0.150	1
0.106	1
0.075	0

Received Water Content (%)	Cobbles (%)	Gravel (%)	Sand (%)	Fines (%)	D60 (mm)	D30 (mm)	D10 (mm)	Cu	Cc
0.0	0	79	21	0	9.1	5.7	3.2	2.9	1.2

Sample Description: (GP) Poorly-graded GRAVEL with sand, mostly sub-angular to angular gravel, little coarse sand; grey; non-cohesive, dry

USCS Classification: GP

Remarks: Manufactured Scaled-Down Version of PSD Curve defined by SRK

DIRECT SHEAR TEST OF SOILS UNDER CONSOLIDATED DRAINED CONDITIONS

Modified ASTM D3080/D3080M

Project No:	CA0050804.4558	Task:	6.0
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing		
Tested By:	J.G	Date:	May 21, 2025
Sample:	SMP#25-R (manufactured scaled-down version of PSD curve)		
Lab No:	G017-006		

Initial Target Conditions: see remarks

Initial Sample Parameters:

Test No.:	1	2	3
Applied normal stress (kPa):	100	200	400
Sample type:	Reconstituted	Reconstituted	Reconstituted
Shear box geometry:	Square	Square	Square
Length (mm):	302	302	302
Width (mm):	302	302	302
Height (mm):	245	245	250
Area (cm^2):	912	912	912
Volume (cm^3):	22345	22345	22801

Mass - Volume Relationships:

Initial wet mass (kg):	36.55	36.30	37.44
Initial dry mass (kg):	36.53	36.28	37.42
Initial water content (%):	0.1	0.1	0.1
Final water content (%):	8.4	8.4	6.3
Initial wet density (kg/m^3):	1636	1625	1642
Initial dry density (kg/m^3):	1635	1624	1641
Initial void ratio:	0.62	0.63	0.61
Specific gravity (assumed)	2.65	2.65	2.65

After Consolidation:

Wet density (kg/m^3):	1652	1650	1683
Dry density (kg/m^3):	1651	1649	1682

Sample description: (GP) Poorly-graded GRAVEL with sand, mostly sub-angular to angular gravel, little coarse sand; grey; non-cohesive, dry

Equipment Description - LDS_30S

Axial LDT	Serial #: BBD09874	Vertical LDT	Serial #: BBD100405
Axial Load Cell	Serial #: 1084597	Vertical Load Cell	Serial #: 978593

Comments:

- material passing 28 mm sieve used
- each test specimen was built in 3 lifts and each lift was rodded 50 times using a 16.0 mm diameter rod then lightly tamped to level
- three test specimens were built in the manner stated above and sheared in a consolidated-drained manner at 100, 200 and 400 kPa normal pressures
- test specimens were inundated with water during the test
- area correction was applied in normal and shear stress calculations

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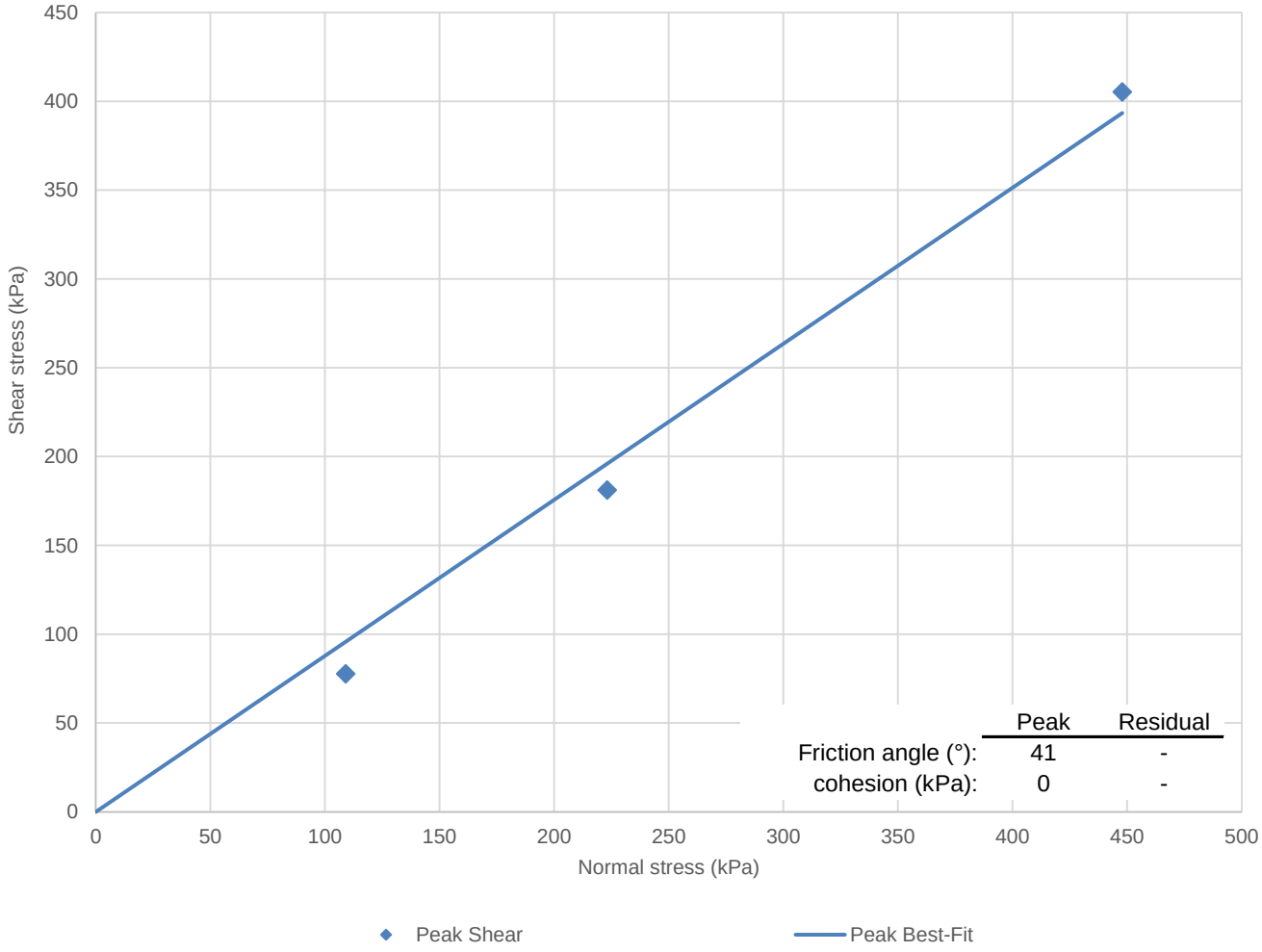
DIRECT SHEAR TEST OF SOILS UNDER CONSOLIDATED DRAINED CONDITIONS

Modified ASTM D3080/D3080M

Project No:	CA0050804.4558	Task:	6.0
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing		
Tested By:	J.G	Date:	May 21, 2025
Sample:	SMP#25-R (manufactured scaled-down version of PSD curve)		
Lab No:	G017-006		

Shear versus Normal Stresses



	Peak			Residual		
Test No:	1	2	3	1	2	3
Normal Stress (kPa):	109	223	448	-	-	-
Shear Stress (kPa):	78	181	405	-	-	-

(stresses shown above include area correction)

Comments:

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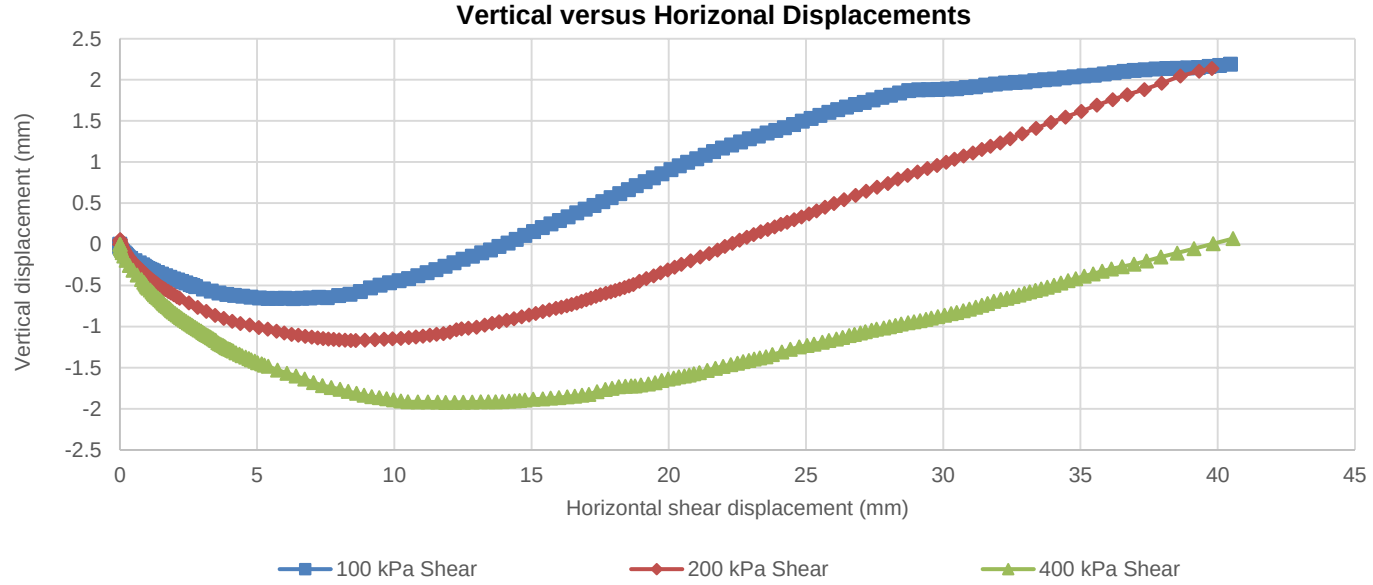
DIRECT SHEAR TEST OF SOILS UNDER CONSOLIDATED DRAINED CONDITIONS

Modified ASTM D3080/D3080M

Project No:	CA0050804.4558	Task:	6.0
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing		
Tested By:	J.G	Date:	May 21, 2025
Sample:	SMP#25-R (manufactured scaled-down version of PSD curve)		
Lab No:	G017-006		



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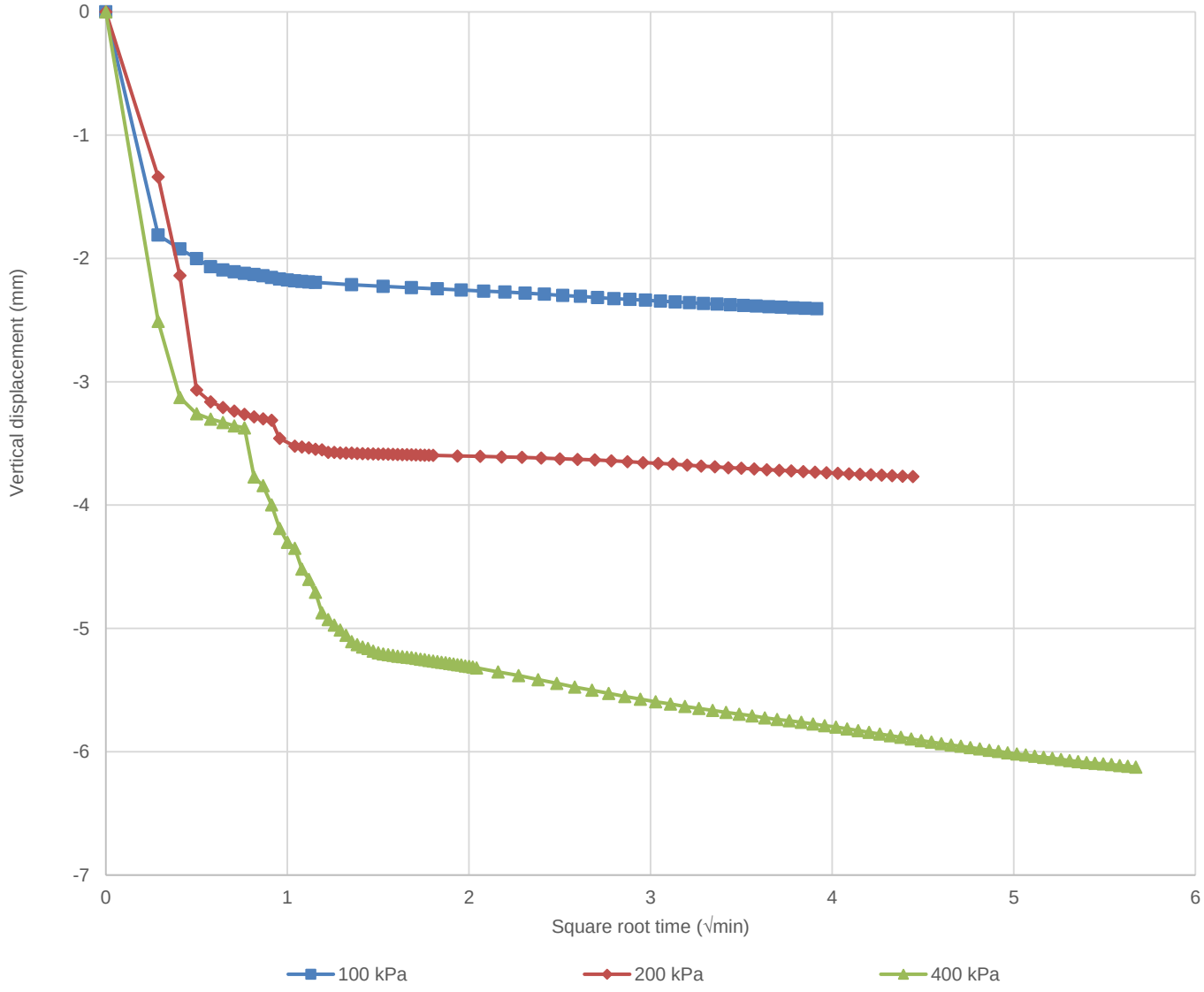
DIRECT SHEAR TEST OF SOILS UNDER CONSOLIDATED DRAINED CONDITIONS

Modified ASTM D3080/D3080M

Project No:	CA0050804.4558	Task:	6.0
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing		
Tested By:	J.G	Date:	May 21, 2025
Sample:	SMP#25-R (manufactured scaled-down version of PSD curve)		
Lab No:	G017-006		

Initial Consolidation: Vertical Displacement versus Root Time



Consolidation summary:

Test No.:	1	2	3
Applied normal stress (kPa):	100	200	400
t_{90}, Taylor method (min):	0.13	0.49	1.21
Calculated t_{50} (min):	0.03	0.11	0.28
Change in height (mm):	-2.4	-3.8	-6.1

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DIRECT SHEAR TEST OF SOILS UNDER CONSOLIDATED DRAINED CONDITIONS

Modified ASTM D3080/D3080M

Project No:	CA0050804.4558	Task:	6.0
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing		
Tested By:	J.G	Date:	May 21, 2025
Sample:	SMP#25-R (manufactured scaled-down version of PSD curve)		
Lab No:	G017-006		

Post-test Photo - 400 kPa

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PRAIRIES AND NORTH LABORATORIES

ATTN: Ricardo Recinos
Civil Engineer - Engineering/Operations
B2Gold Back River Corp.

Received: 10-Apr-25
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GEOTECHNICAL LABORATORY TEST REPORT

Client: B2Gold Back River Corp.
Project Title: CA-B2Gold - Goose Lake Mine Shear Strength Testing
Project No.: CA0050804.4558 Task 7.0
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GENERAL LAB TESTING SUMMARY

Project No.:	CA0050804.4558	Task:	7.0
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing	LWO No.:	G017
Tested By:	JG	Date:	27-May-25

Sample Identification					Laboratory Test Results				
Source / Location	Sample No.	Depth (m)		Lab No.	As Received Water Content (%)	Target Compaction		Friction Envelope Review	
		from	to			Dry Density (kg/m^3)	Water Content (%)	Phi' (°)	c' (kPa)
Goose Lake Mine	SMP#32-R	-	-	G017-007	0.0	n/a	n/a	40	0

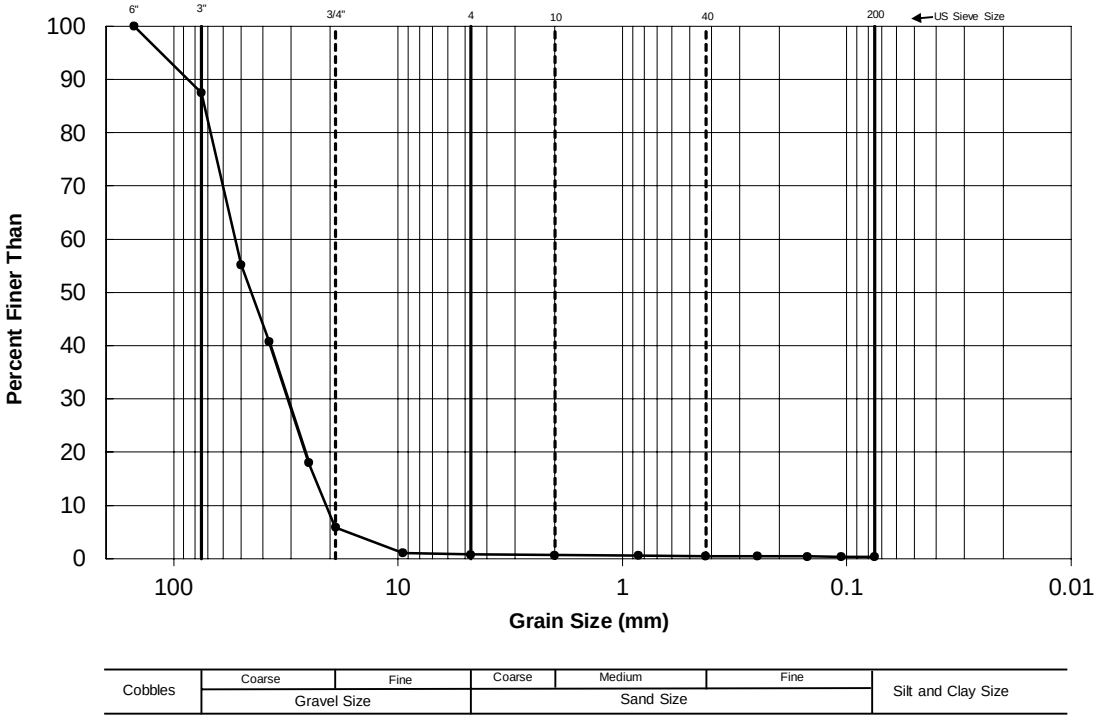
PARTICLE SIZE DISTRIBUTION OF SOILS USING SIEVE ANALYSIS

(ASTM D6913)

Project No.:	CA0050804.4558	Task:	5.0	Date:	21-Apr-25
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing				
Sub Sampled By:	AD	Washed By:	DS	Sieved By:	AD & BU

Field Tag No.:	-	Source:	Goose Lake Mine	Location:	-
Lab No.:	G017-007	Northing:	-	Sample No.:	SMP#32-R
Sampled By:	Client	Easting:	-	Depth From:	- m
Sample Date:	24-Mar-25	Elevation:	- m	Depth To:	- m

Test Method:	A	Drying Method:	Moist	
Composite Sieve:	Yes	if Yes, Split on:	4.75	mm
Material Excluded from Sieve:	No	Describe:		
Prior Testing on Sample:	No	Describe:		



Sieve Size (mm)	Passing %
150.0	100
75.0	88
50.0	55
37.5	41
25.0	18
19.0	6
9.50	1
4.75	1
2.00	1
0.850	1
0.425	0
0.250	0
0.150	0
0.106	0
0.075	0

Received Water Content (%)	Cobbles (%)	Gravel (%)	Sand (%)	Fines (%)	D60 (mm)	D30 (mm)	D10 (mm)	Cu	Cc
0.0	12	87	1	0	53.7	31.6	21.0	2.6	0.9

Sample Description: (GP) Poorly graded GRAVEL, mostly sub-angular to angular gravel, trace sand; grey, with cobbles; non-cohesive, dry

USCS Classification: GP

Remarks: Sieve analysis of the "as received" sample

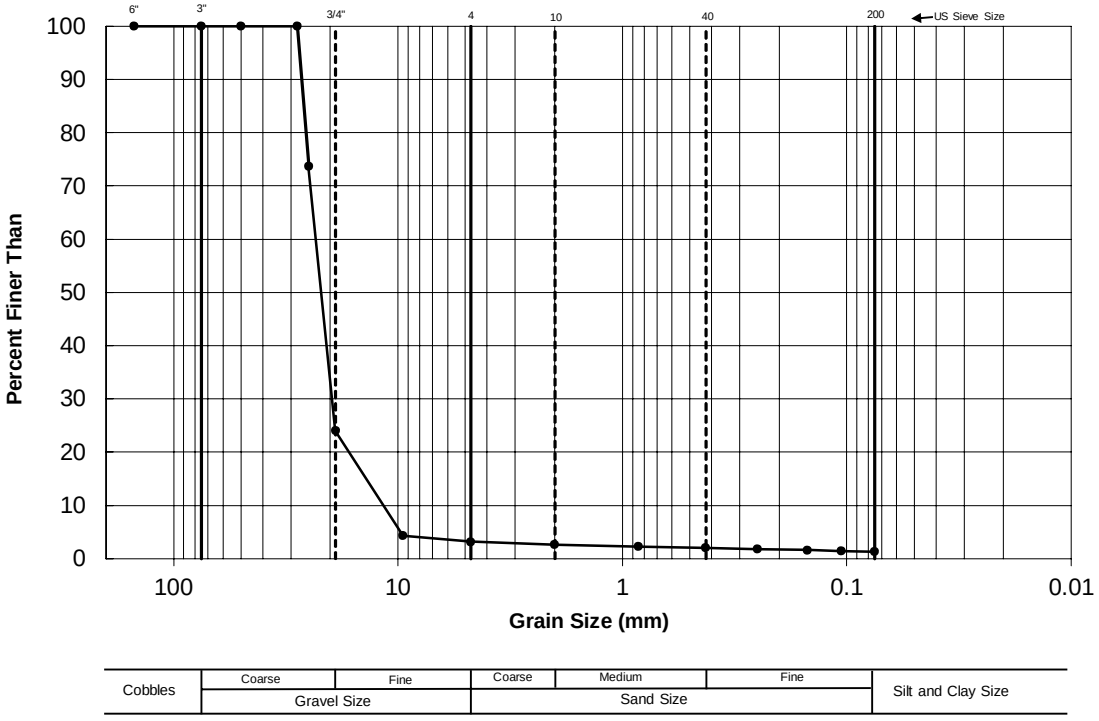
PARTICLE SIZE DISTRIBUTION OF SOILS USING SIEVE ANALYSIS

(ASTM D6913)

Project No.:	CA0050804.4558	Task:	5.0	Date:	21-Apr-25
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing				
Sub Sampled By:	AD	Washed By:	DS	Sieved By:	AD & BU

Field Tag No.:	-	Source:	Goose Lake Mine	Location:	-
Lab No.:	G017-007	Northing:	-	Sample No.:	SMP#32-R
Sampled By:	Client	Easting:	-	Depth From:	- m
Sample Date:	24-Mar-25	Elevation:	- m	Depth To:	- m

Test Method:	A	Drying Method:	Moist
Composite Sieve:	Yes	if Yes, Split on:	4.75 mm
Material Excluded from Sieve:	Yes	Describe:	Retained on 28 mm sieve was removed prior to sieve test
Prior Testing on Sample:	No	Describe:	



Sieve Size (mm)	Passing %
150.0	100
75.0	100
50.0	100
28.0	100
25.0	74
19.0	24
9.50	4
4.75	3
2.00	3
0.850	2
0.425	2
0.250	2
0.150	2
0.106	1
0.075	1

Received Water Content (%)	Cobbles (%)	Gravel (%)	Sand (%)	Fines (%)	D60 (mm)	D30 (mm)	D10 (mm)	Cu	Cc
0.0	0	97	2	1	23.3	19.7	12.2	1.9	1.4

Sample Description: (GP) Poorly graded GRAVEL, mostly sub-angular to angular gravel, trace sand; grey; non-cohesive, dry

USCS Classification: GP

Remarks: Sieve analysis of the "trimmed" sample i.e retained 28 mm sieve were not included

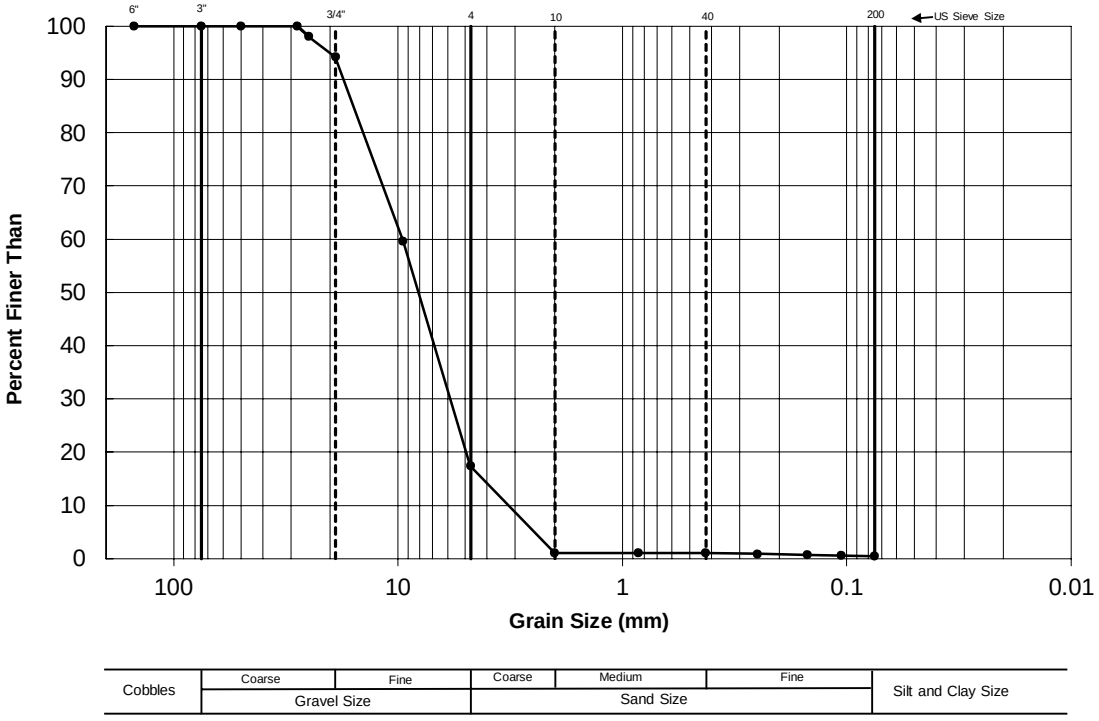
PARTICLE SIZE DISTRIBUTION OF SOILS USING SIEVE ANALYSIS

(ASTM D6913)

Project No.:	CA0050804.4558	Task:	5.0	Date:	16-May-25
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing				
Sub Sampled By:	JG	Washed By:	JG	Sieved By:	MA

Field Tag No.:	-	Source:	Goose Lake Mine	Location:	-
Lab No.:	G017-007	Northing:	-	Sample No.:	SMP#32-R
Sampled By:	Client	Easting:	-	Depth From:	- m
Sample Date:	24-May-25	Elevation:	- m	Depth To:	- m

Test Method:	A	Drying Method:	Moist
Composite Sieve:	Yes	if Yes, Split on:	2 mm
Material Excluded from Sieve:	No	Describe:	
Prior Testing on Sample:	Yes	Describe:	material above 28 mm sieve was crushed to finer gravel



Sieve Size (mm)	Passing %
150.0	100
75.0	100
50.0	100
28.0	100
25.0	98
19.0	94
9.50	60
4.75	17
2.00	1
0.850	1
0.425	1
0.250	1
0.150	1
0.106	1
0.075	1

Received Water Content (%)	Cobbles (%)	Gravel (%)	Sand (%)	Fines (%)	D60 (mm)	D30 (mm)	D10 (mm)	Cu	Cc
0.0	0	83	16	1	9.6	6.2	3.5	2.7	1.1

Sample Description: (GP) Poorly-graded GRAVEL with sand, mostly sub-angular to angular gravel, little coarse sand; grey; non-cohesive, dry

USCS Classification: GP

Remarks: Manufactured Scaled-Down Version of PSD Curve defined by SRK

DIRECT SHEAR TEST OF SOILS UNDER CONSOLIDATED DRAINED CONDITIONS

Modified ASTM D3080/D3080M

Project No:	CA0050804.4558	Task: 7.0
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing	
Tested By:	J.G	Date: May 21, 2025
Sample:	SMP#32-R (manufactured scaled-down version of PSD curve)	
Lab No:	G017-007	

Initial Target Conditions: see remarks

Initial Sample Parameters:

Test No.:	1	2	3
Applied normal stress (kPa):	100	200	400
Sample type:	Reconstituted	Reconstituted	Reconstituted
Shear box geometry:	Square	Square	Square
Length (mm):	302	302	302
Width (mm):	302	302	302
Height (mm):	240	255	245
Area (cm^2):	912	912	912
Volume (cm^3):	21889	23257	22345

Mass - Volume Relationships:

Initial wet mass (kg):	34.51	36.81	35.68
Initial dry mass (kg):	34.48	36.78	35.65
Initial water content (%):	0.1	0.1	0.1
Final water content (%):	9.3	5.7	8.1
Initial wet density (kg/m^3):	1577	1583	1597
Initial dry density (kg/m^3):	1575	1582	1596
Initial void ratio:	0.68	0.68	0.66
Specific gravity (assumed)	2.65	2.65	2.65

After Consolidation:

Wet density (kg/m^3):	1591	1600	1646
Dry density (kg/m^3):	1590	1598	1644

Sample description: (GP) Poorly-graded GRAVEL with sand, mostly sub-angular to angular gravel, little coarse sand; grey; non-cohesive, dry

Equipment Description - LDS_30S

Axial LDT	Serial #: BBD09874	Vertical LDT	Serial #: BBD100405
Axial Load Cell	Serial #: 1084597	Vertical Load Cell	Serial #: 978593

Comments:
- material passing 28 mm sieve used
- each test specimen was built in 3 lifts and each lift was rodded 50 times using a 16.0 mm diameter rod then lightly tamped to level
- three test specimens were built in the manner stated above and sheared in a consolidated-drained manner at 100, 200 and 400 kPa normal pressures
- test specimens were inundated with water during the test
- area correction was applied in normal and shear stress calculations

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DIRECT SHEAR TEST OF SOILS UNDER CONSOLIDATED DRAINED CONDITIONS

Modified ASTM D3080/D3080M

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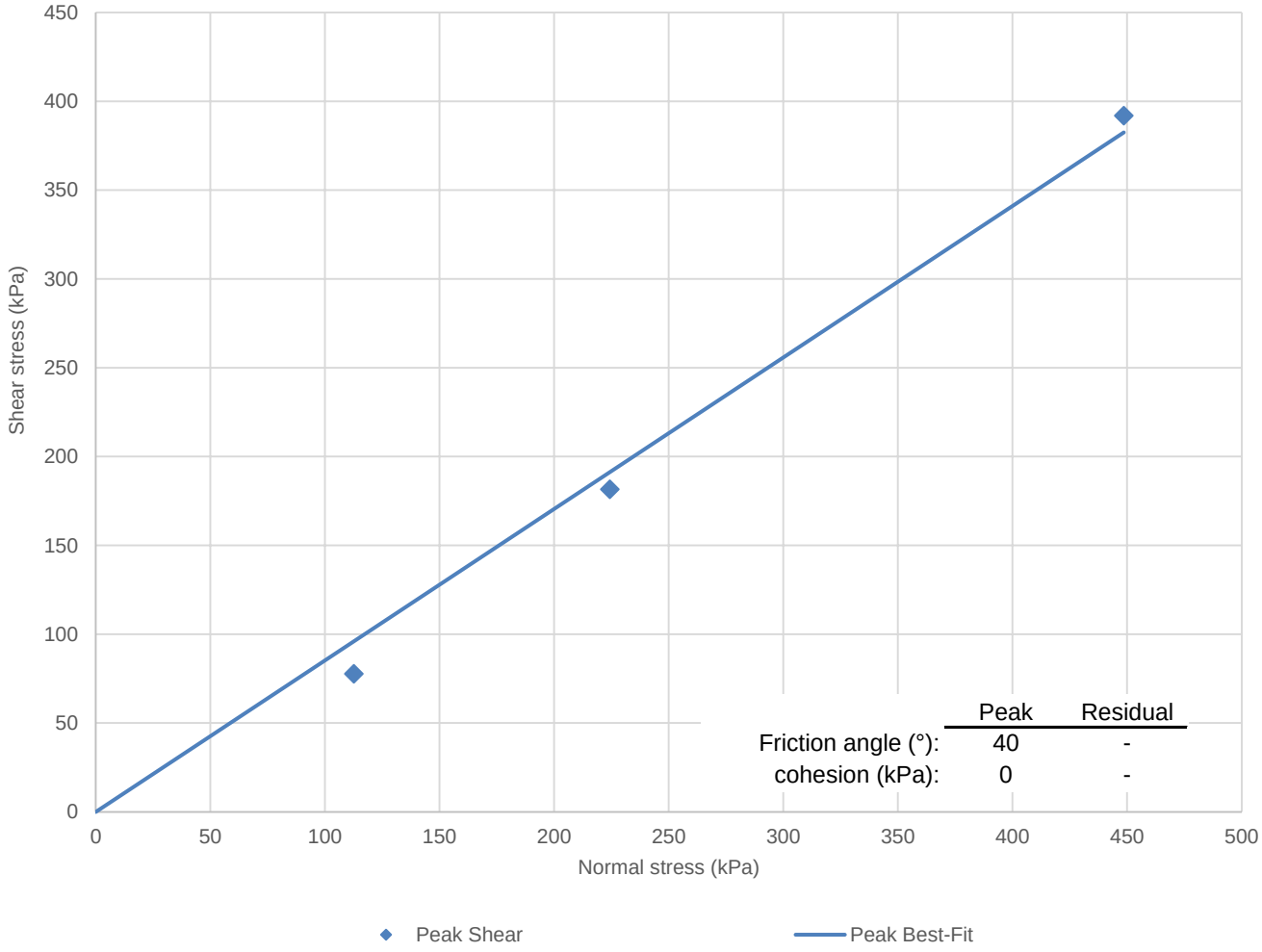
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing		
Tested By:	J.G	Date:	May 21, 2025
Sample:	SMP#32-R (manufactured scaled-down version of PSD curve)		
Lab No:	G017-007		

Shear versus Normal Stresses



	Peak			Residual		
Test No:	1	2	3	1	2	3
Normal Stress (kPa):	113	224	449	-	-	-
Shear Stress (kPa):	78	182	392	-	-	-

(stresses shown above include area correction)

Comments:

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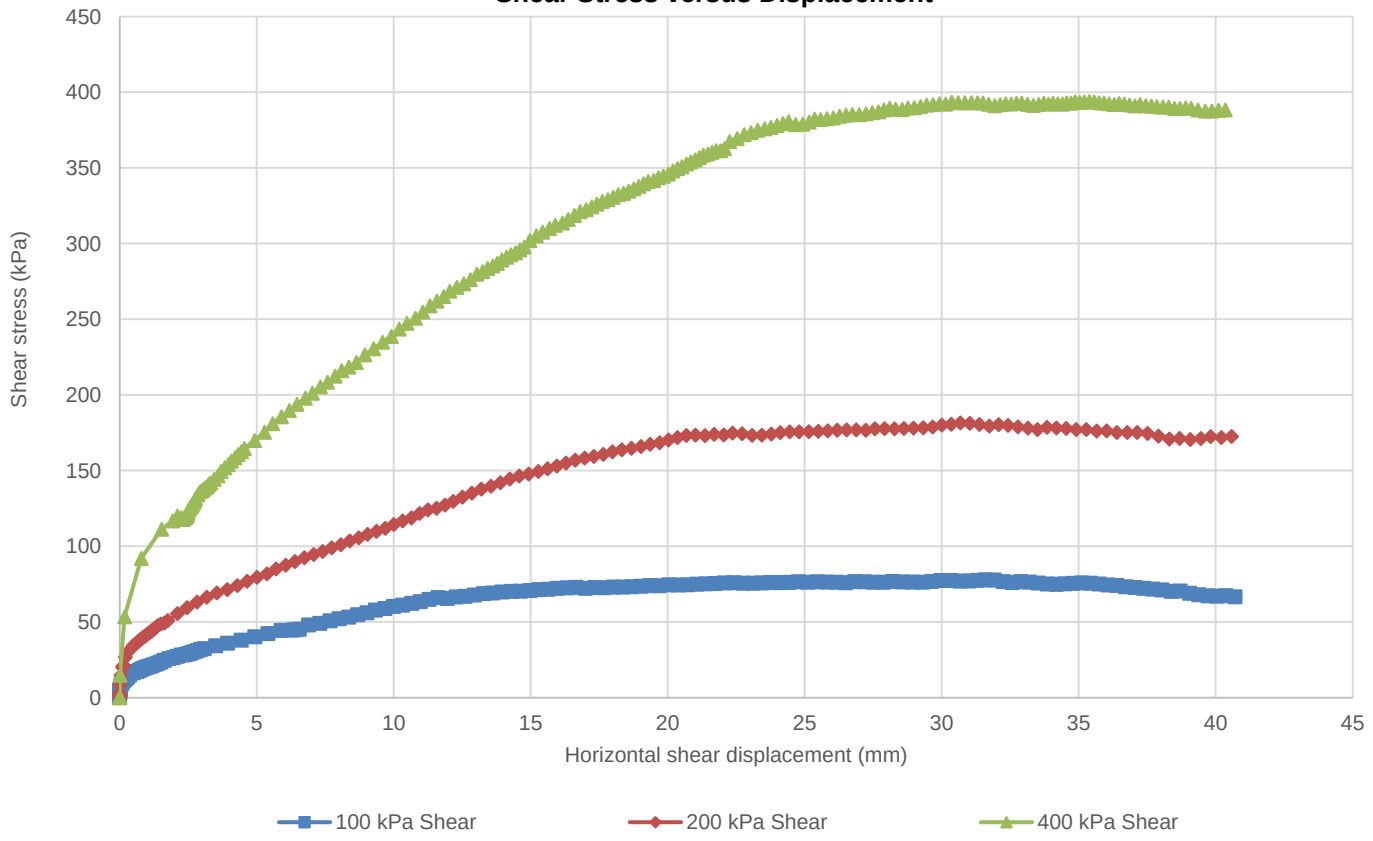
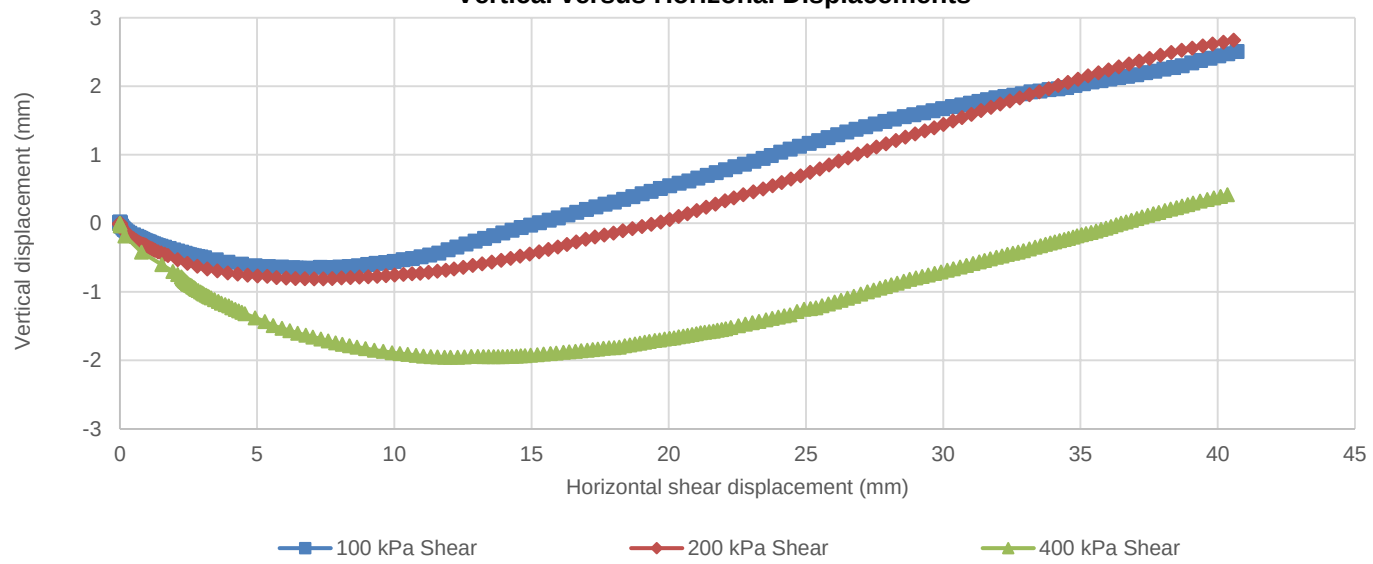
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing		
Tested By:	J.G	Date:	May 21, 2025
Sample:	SMP#32-R (manufactured scaled-down version of PSD curve)		
Lab No:	G017-007		

Shear Stress versus Displacement



Vertical versus Horizonal Displacements



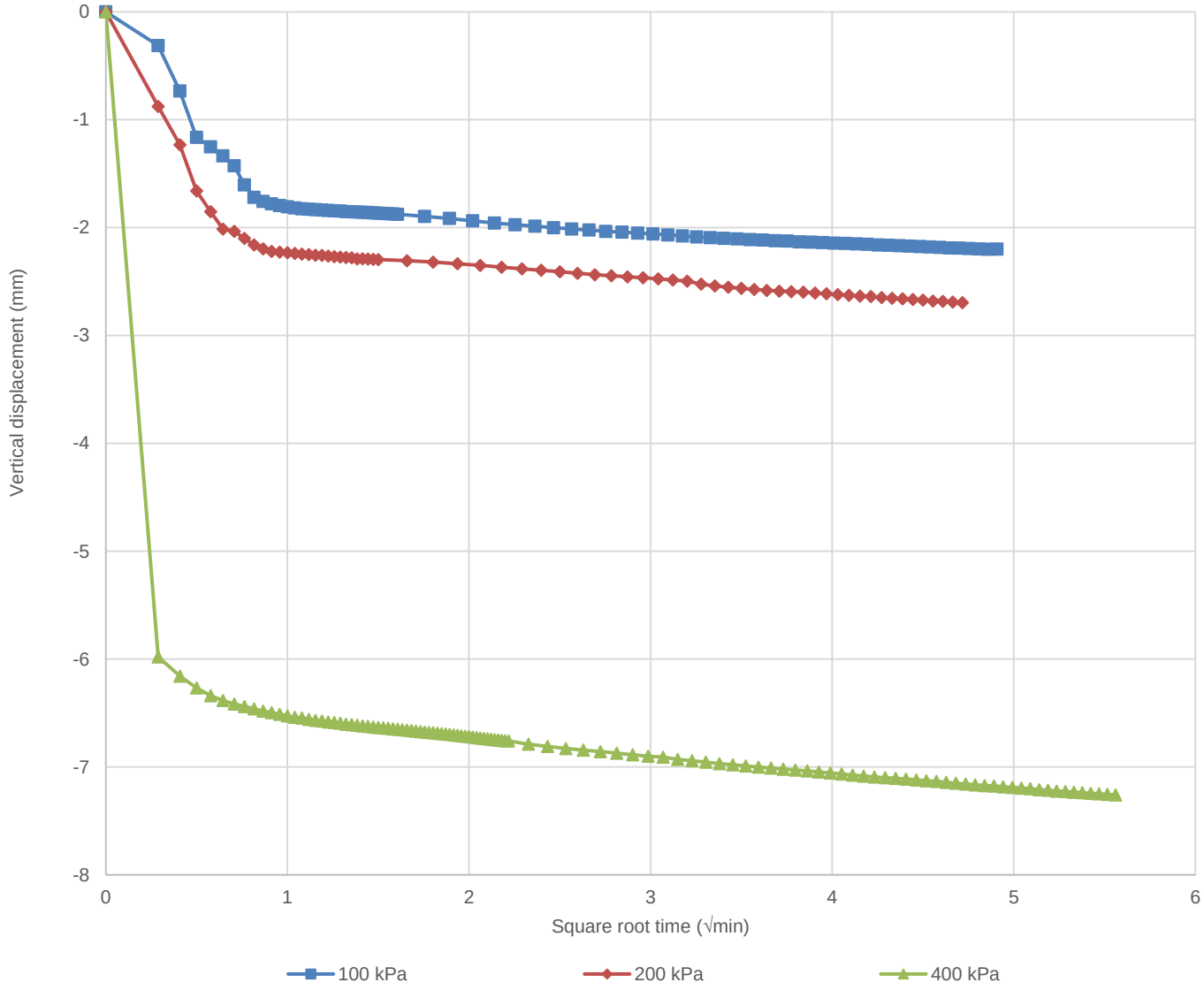
#120, 8610 - 36 Street NE
Calgary, AB

DIRECT SHEAR TEST OF SOILS UNDER CONSOLIDATED DRAINED CONDITIONS

Modified ASTM D3080/D3080M

Project No:	CA0050804.4558	Task:	7.0
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing		
Tested By:	J.G	Date:	May 21, 2025
Sample:	SMP#32-R (manufactured scaled-down version of PSD curve)		
Lab No:	G017-007		

Initial Consolidation: Vertical Displacement versus Root Time



Consolidation summary:

Test No.:	1	2	3
Applied normal stress (kPa):	100	200	400
t_{90}, Taylor method (min):	0.90	0.56	0.12
Calculated t_{50} (min):	0.21	0.13	0.03
Change in height (mm):	-2.2	-2.7	-7.3

#120, 8610 - 36 Street NE
Calgary, AB

DIRECT SHEAR TEST OF SOILS UNDER CONSOLIDATED DRAINED CONDITIONS

Modified ASTM D3080/D3080M

Project No:	CA0050804.4558	Task:	7.0
Short Title:	CA-B2Gold - Goose Lake Mine Shear Strength Testing		
Tested By:	J.G	Date:	May 21, 2025
Sample:	SMP#32-R (manufactured scaled-down version of PSD curve)		
Lab No:	G017-007		

Post-test Photo - 400 kPa

#120, 8610 - 36 Street NE
Calgary, AB

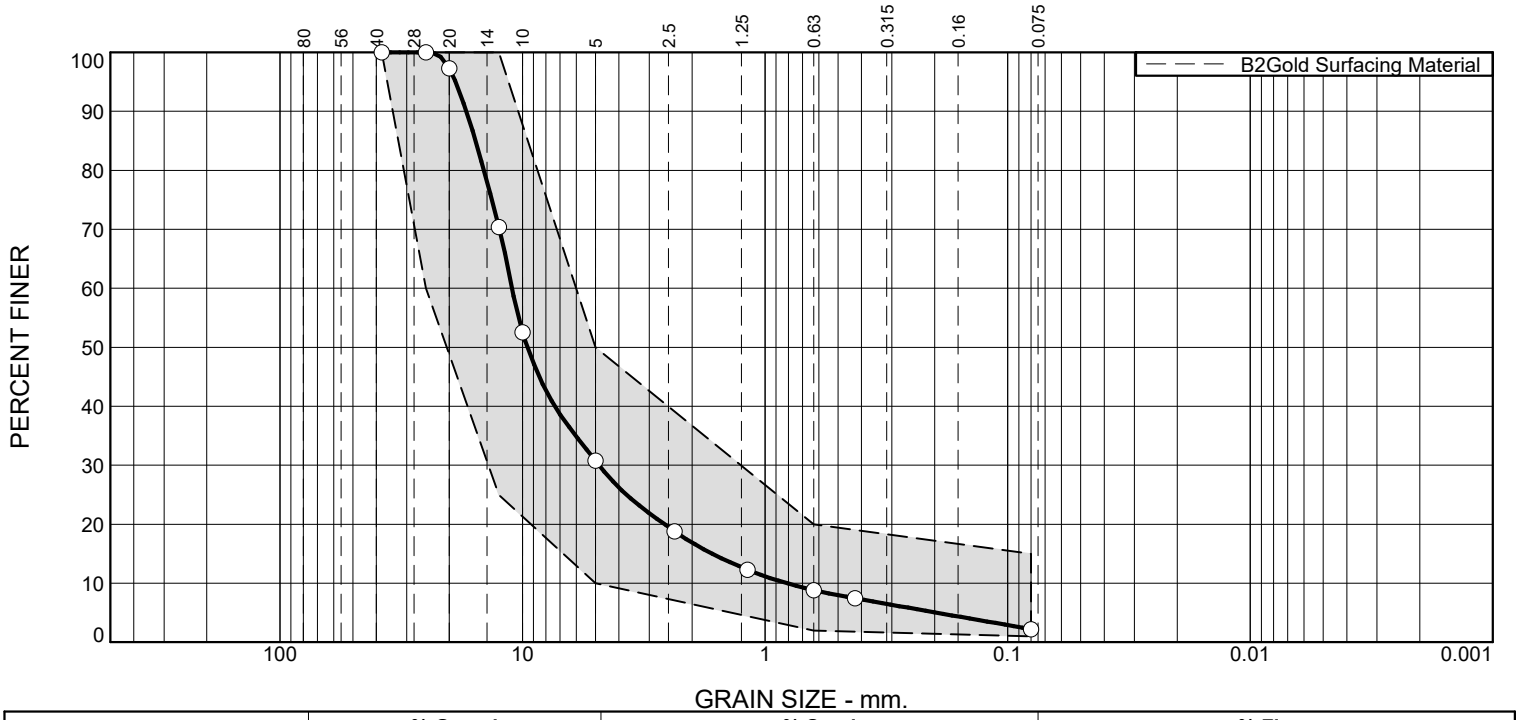
TEST DATA **2025-07-23**

Location: New Crusher Stockpile - Umwelt Pit
Sample Number: SMP-353
Description: 3/4"Minus

Natural Moisture

Wet + tare (grams): 5482.00
Dry + tare (grams): 5409.00
Tare (grams): 972.00
Moisture (%): 1.6

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.6	65.8	12.7	9.4	7.5		

Test Results (ASTM C136)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
38	100.0	100	
25	100.0	60-100	
20	97.3		
12.5	70.4	25-100	
10	52.6		
5	30.8	10-50	
2.36	18.8		
1.18	12.3		
0.630	8.8	2-20	
0.425	7.5		
0.08	2.2	1-15	

· B2Gold Surfacing Material

Material Description

3/4"Minus

Atterberg (ASTM D4318)

PL= LL= PI=

Coefficients

D_{90}= 17.0135 D_{85}= 15.5992

D_{60}= 11.0404 D_{50}= 9.5278

D_{30}= 4.8328 D_{15}= 1.6507

D_{10}= 0.8093

C_u= 13.64 C_c= 2.61

Sieve Test (ASTM C136)

Test Date: 2025-07-23 **Technician:** Akhilash

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

USCS (ASTM D2487)

Date Sampled: 2025-07-23

Date Received: 2025-07-23

Checked By: Josh MacKay

Title: MT Manager

Location: New Crusher Stockpile - Umwelt Pit

Sample Number: SMP-353

INLINEGROUPINC.

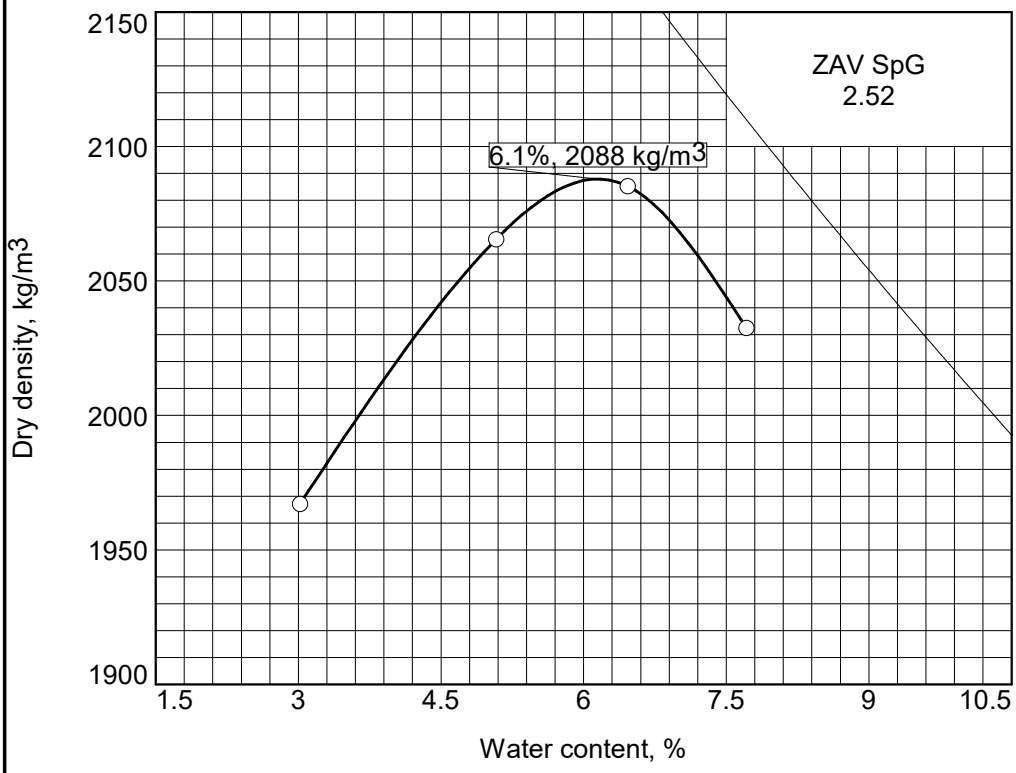
Client: B2Gold

Project: B2Gold Goose Lake Mine

Project No: 23067

Figure

COMPACTION TEST REPORT



Curve No.
SMP-353

Test Specification:
ASTM D 698-12 Method C Standard

Preparation Method Dry
Hammer Wt. 5.5 lb.
Hammer Drop 12 in.
Hammer Type: manual
Layers three **Blows/Layer** 56
Mold Size 2.124 liters
Test Performed on Material Passing 3/4 in. **Sieve**

NM 1.6 **LL** NV **PI** NP
Sp.G. (assumed): 2.52
%>3/4 in. 4.6 **%<No.200**
USCS **AASHTO**
Date Sampled 2025-07-23
Date Received 2025-07-23
Date Tested 2025-07-24
Tested By Akhilash Varghese

TESTING DATA	1	2	3	4	5	6
WM + WS	11266.0	11570.0	11675.0	11610.0		
WM	6984.0	6984.0	6984.0	6984.0		
WW + T #1	519.0	607.0	666.0	468.0		
WD + T #1	504.0	578.0	626.0	435.0		
TARE #1	7.0	7.0	7.0	7.0		
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	3.0	5.1	6.5	7.7		
DRY DENSITY	1967	2065	2085	2033		

TEST RESULTS

Maximum dry density = 2088 kg/m3

Optimum moisture = 6.1 %

Material Description

3/4"Minus

Remarks:

Project No.: 23067 **Client:** B2Gold
Project: B2Gold Goose Lake Mine

○ **Loc.:** New Crusher Stockpile - Umwelt Pit **Sample No.:** SMP-353

INLINEGROUPINC.

Checked by: Josh MacKay
Title: MT Manager

Figure

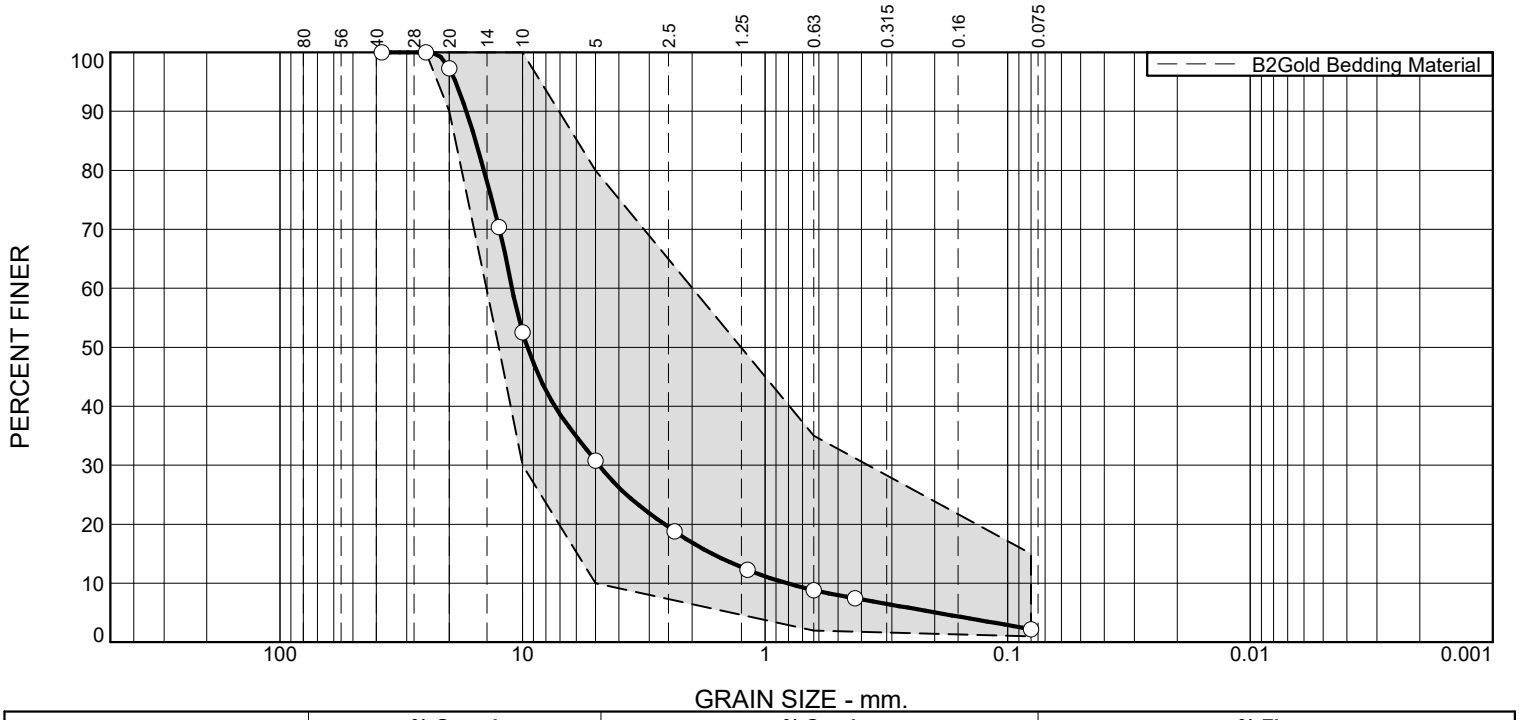
TEST DATA **2025-07-23**

Location: New Crusher Stockpile - Umwelt Pit
Sample Number: SMP-354
Description: 3/4"Minus

Natural Moisture

Wet + tare (grams): 5482.00
Dry + tare (grams): 5409.00
Tare (grams): 972.00
Moisture (%): 1.6

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.6	65.8	12.7	9.4		7.5	

Test Results (ASTM C136)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
38	100.0		
25	100.0	100	
20	97.3	90-100	
12.5	70.4	50-100	
10	52.6	30-100	
5	30.8	10-80	
2.36	18.8		
1.18	12.3		
0.630	8.8	2-35	
0.425	7.5		
0.08	2.2	1-15	

· B2Gold Bedding Material

Material Description

3/4"Minus

Sieve Test (ASTM C136)

Test Date: 2025-07-23 **Technician:** Akhilash

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 17.0135 D_{85}= 15.5992

D_{60}= 11.0404 D_{50}= 9.5278

D_{30}= 4.8328 D_{15}= 1.6507

D_{10}= 0.8093

C_u= 13.64 C_c= 2.61

USCS (ASTM D2487)

Date Sampled: 2025-07-23

Date Received: 2025-07-23

Checked By: Josh MacKay

Title: MT Manager

Location: New Crusher Stockpile - Umwelt Pit

Sample Number: SMP-354

INLINEGROUPINC.

Client: B2Gold

Project: B2Gold Goose Lake Mine

Project No: 23067

Figure

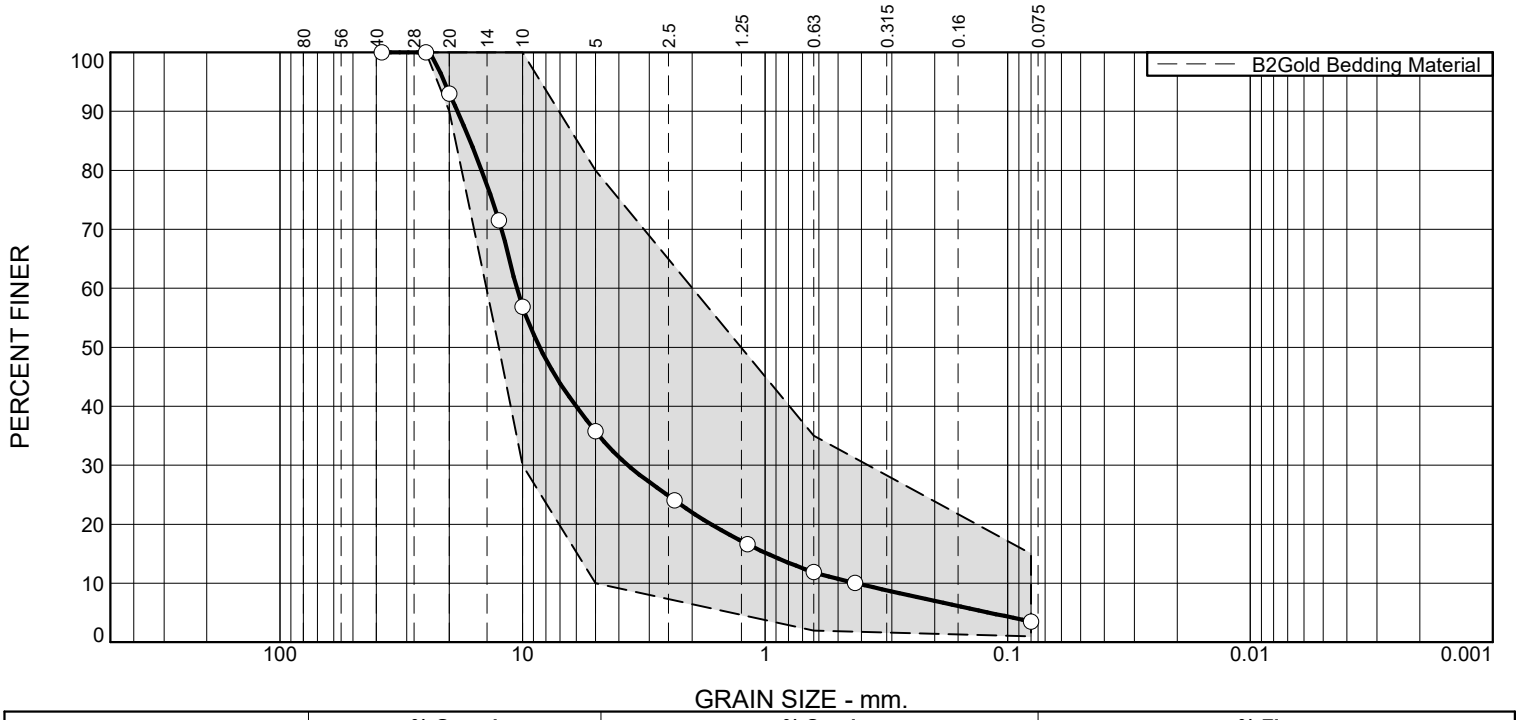
TEST DATA **2025-07-24**

Location: Batch Plant Stockpile
Sample Number: SMP-355
Description: 3/4"Minus- Concrete Aggregate

Natural Moisture

Wet + tare (grams): 3122.00
Dry + tare (grams): 3114.00
Tare (grams): 1028.00
Moisture (%): 0.4

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	8.9	56.4	12.7	12.0	10.0		

Test Results (ASTM C136)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
38	100.0		
25	100.0	100	
20	93.0	90-100	
12.5	71.5	50-100	
10	56.9	30-100	
5	35.8	10-80	
2.36	24.1		
1.18	16.6		
0.630	11.9	2-35	
0.425	10.0		
0.08	3.5	1-15	

· B2Gold Bedding Material

Material Description

3/4"Minus

Sieve Test (ASTM C136)

Test Date: 2025-08-16 **Technician:** Akhilash

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 18.5202 D_{85}= 16.4363

D_{60}= 10.5604 D_{50}= 8.4921

D_{30}= 3.6732 D_{15}= 0.9773

D_{10}= 0.4206

C_u= 25.11 C_c= 3.04

USCS (ASTM D2487)

Date Sampled: 2025-08-15

Date Received: 2025-08-15

Checked By: Marco Lung

Title: Geo EIT

Location: New Crusher Stockpile - Umwelt Pit
Sample Number: SMP-359

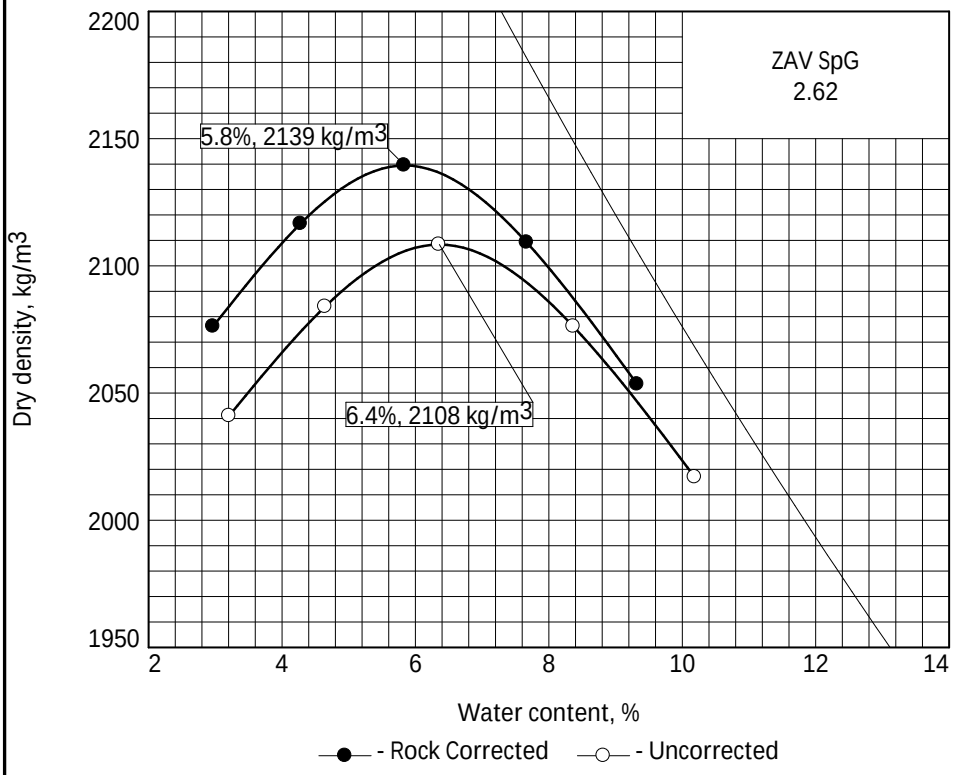
INLINEGROUPINC.

Client: B2Gold
Project: B2Gold Goose Lake Mine

Project No: 23067

Figure

COMPACTION TEST REPORT



Curve No.
SMP-359

Test Specification:
ASTM D 698-12 Method C Standard
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Preparation Method: Dry
Hammer Wt.: 5.5 lb.
Hammer Drop: 12 in.
Hammer Type: manual
Layers: three Blows/Layer: 56
Mold Size: 2.113 liters

Test Performed on Material Passing 3/4 in. Sieve

NM: 1.8 LL: PI:
Sp.G. (assumed): 2.52
%>3/4 in.: 8.9 %<No.200:
USCS: AASHTO:
Date Sampled: 2025-08-15
Date Received: 2025-08-15
Date Tested: 2025-08-16
Tested By: Akhilash Varghese

TESTING DATA	1	2	3	4	5	6
WM + WS	11435.0	11592.0	11722.0	11738.0	11680.0	
WM	6984.0	6984.0	6984.0	6984.0	6984.0	
WW + T #1	362.0	480.0	526.0	797.0	602.0	
WD + T #1	351.0	459.0	495.0	736.0	547.0	
TARE #1	8.0	7.0	7.0	7.0	7.0	
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	3.0	4.3	5.8	7.7	9.3	
DRY DENSITY	2076	2117	2139	2109	2053	

ROCK CORRECTED TEST RESULTS	UNCORRECTED
Maximum dry density = 2139 kg/m3	2108 kg/m3
Optimum moisture = 5.8 %	6.4 %

Material Description: 3/4"Minus

Remarks:

Project No.: 23067 Client: B2Gold
Project: B2Gold Goose Lake Mine

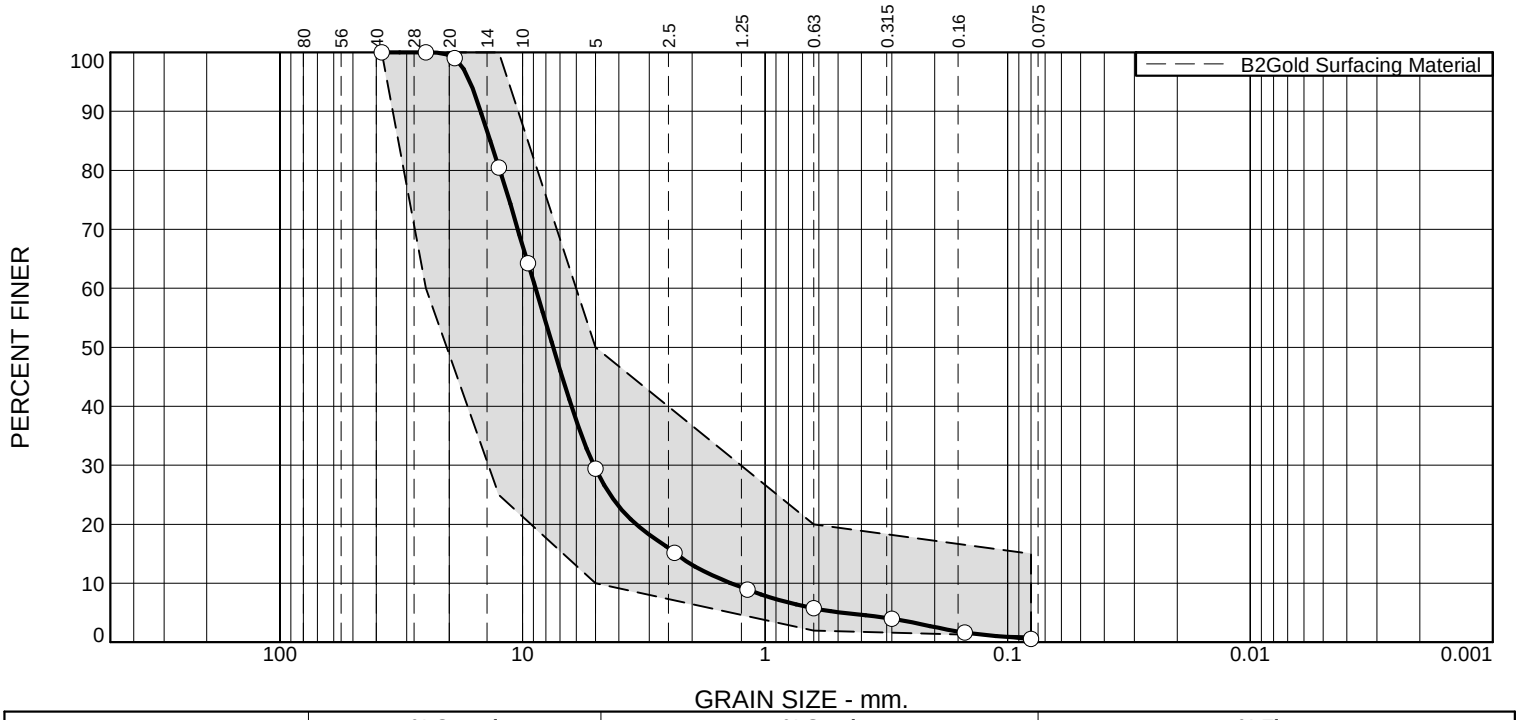
○ Location: New Crusher Stockpile - Umwelt Pit Sample Number: SMP-359

Checked by: Marco Lung
Title: Geo EIT

INLINEGROUPINC.

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.9	71.4	14.6	8.3		4.8	

Test Results (ASTM C136)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
38	100.0	100	
25	100.0	60-100	
19	99.0		
12.5	80.5	25-100	
9.5	64.3		
5	29.4	10-50	
2.36	15.2		
1.18	8.9		
0.630	5.8	2-20	
0.300	4.0		
0.150	1.6		
0.08	0.5	1-15	-0.5

· B2Gold Surfacing Material

Material Description

3/4" Minus

Sieve Test (ASTM C136)

Test Date: 2025-10-08 **Technician:** Akhilash

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= NP **LL=** NV **PI=** NP

Coefficients

D_{90}= 14.8594 D_{85}= 13.5839

D_{60}= 8.8274 D_{50}= 7.4708

D_{30}= 5.0762 D_{15}= 2.3317

D_{10}= 1.3772

C_u= 6.41 C_c= 2.12

USCS (ASTM D2487)

Date Sampled: 2025-10-08

Date Received: 2025-10-08

Checked By: Marco Lung

Title: Geo EIT

Location: New Crusher Stockpile- Umwelt Pit

Sample Number: SMP-395

INLINEGROUPINC.

Client: B2Gold

Project: B2Gold Goose Lake Mine

Project No: 23067

Figure

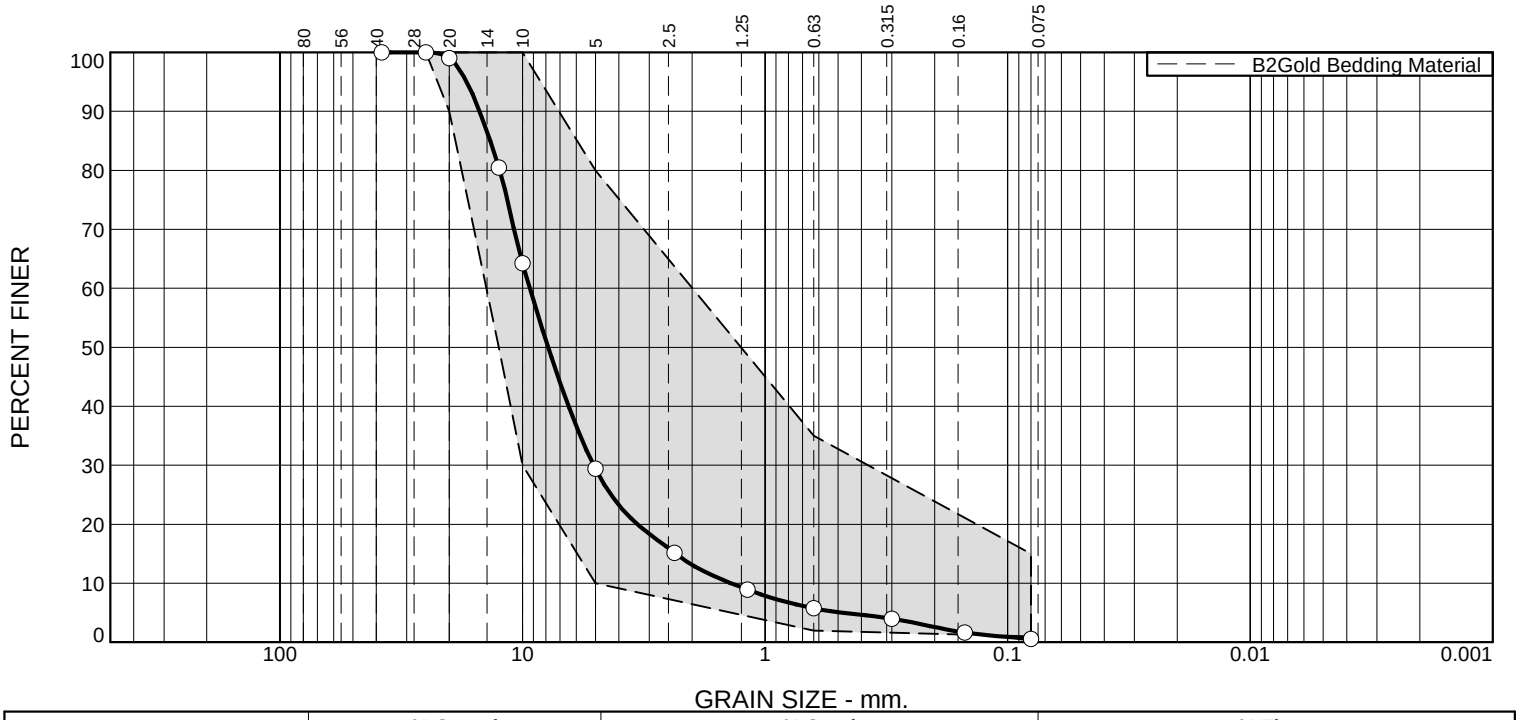
TEST DATA **2025-10-08**

Location: New Crusher Stockpile- Umwelt Pit
Sample Number: SMP-395
Description: 3/4" Minus

Natural Moisture

Wet + tare (grams): 3614.00
Dry + tare (grams): 3603.60
Tare (grams): 959.10
Moisture (%): 0.4

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	1.8	70.5	14.6	8.3		4.8	

Test Results (ASTM C136)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
38	100.0		
25	100.0	100	
20	99.0	90-100	
12.5	80.5	50-100	
10	64.3	30-100	
5	29.4	10-80	
2.36	15.2		
1.18	8.9		
0.630	5.8	2-35	
0.300	4.0		
0.150	1.6		
0.08	0.5	1-15	-0.5

· B2Gold Bedding Material

Material Description

3/4" Minus

Sieve Test (ASTM C136)

Test Date: 2025-10-08 **Technician:** Akhilash

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= NP **LL=** NV **PI=** NP

Coefficients

D_{90}= 15.0120 D_{85}= 13.5807

D_{60}= 9.3233 D_{50}= 7.8379

D_{30}= 5.0812 D_{15}= 2.3317

D_{10}= 1.3772

C_u= 6.77 C_c= 2.01

USCS (ASTM D2487)

Date Sampled: 2025-10-08

Date Received: 2025-10-08

Checked By: Marco Lung

Title: Geo EIT

Location: New Crusher Stockpile- Umwelt Pit

Sample Number: SMP-396

INLINEGROUPINC.

Client: B2Gold

Project: B2Gold Goose Lake Mine

Project No: 23067

Figure

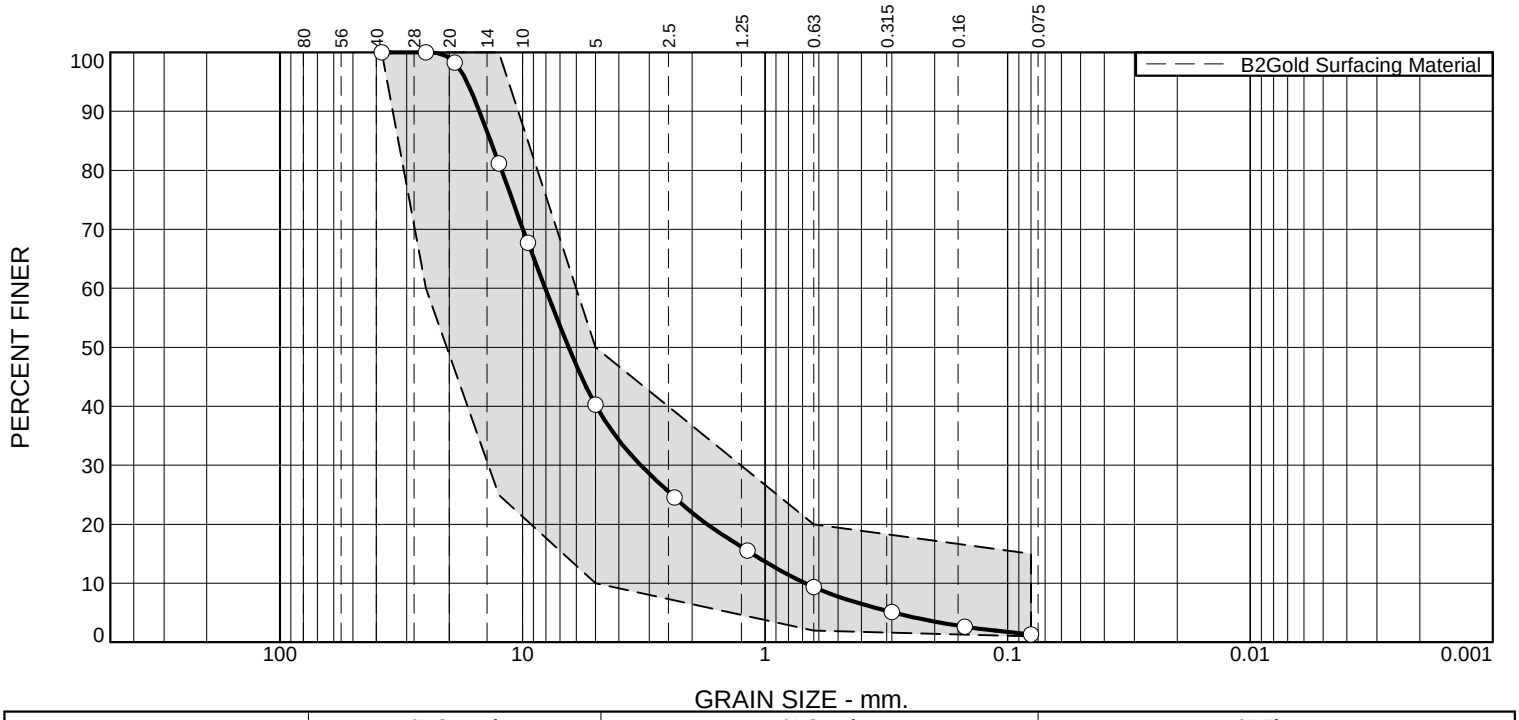
TEST DATA **2025-10-08**

Location: New Crusher Stockpile- Umwelt Pit
Sample Number: SMP-396
Description: 3/4" Minus

Natural Moisture

Wet + tare (grams): 3614.00
Dry + tare (grams): 3603.60
Tare (grams): 959.10
Moisture (%): 0.4

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	1.7	59.6	16.7	15.2		6.8	

Test Results (ASTM C136)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
38	100.0	100	
25	100.0	60-100	
19	98.3		
12.5	81.2	25-100	
9.5	67.7		
5	40.3	10-50	
2.36	24.5		
1.18	15.5		
0.630	9.4	2-20	
0.300	5.1		
0.150	2.6		
0.08	1.3	1-15	

· B2Gold Surfacing Material

Material Description

3/4" Minus

Sieve Test (ASTM C136)

Test Date: 2025-10-11 **Technician:** Akhilash

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 15.0370 D_{85}= 13.5514

D_{60}= 8.0500 D_{50}= 6.4539

D_{30}= 3.2511 D_{15}= 1.1271

D_{10}= 0.6817

C_u= 11.81 C_c= 1.93

USCS (ASTM D2487)

Date Sampled: 2025-10-10

Date Received: 2025-10-10

Checked By: Marco Lung

Title: Geo EIT

Location: New Crusher Stockpile- Umwelt Pit

Sample Number: SMP-397

INLINEGROUPINC.

Client: B2Gold

Project: B2Gold Goose Lake Mine

Project No: 23067

Figure

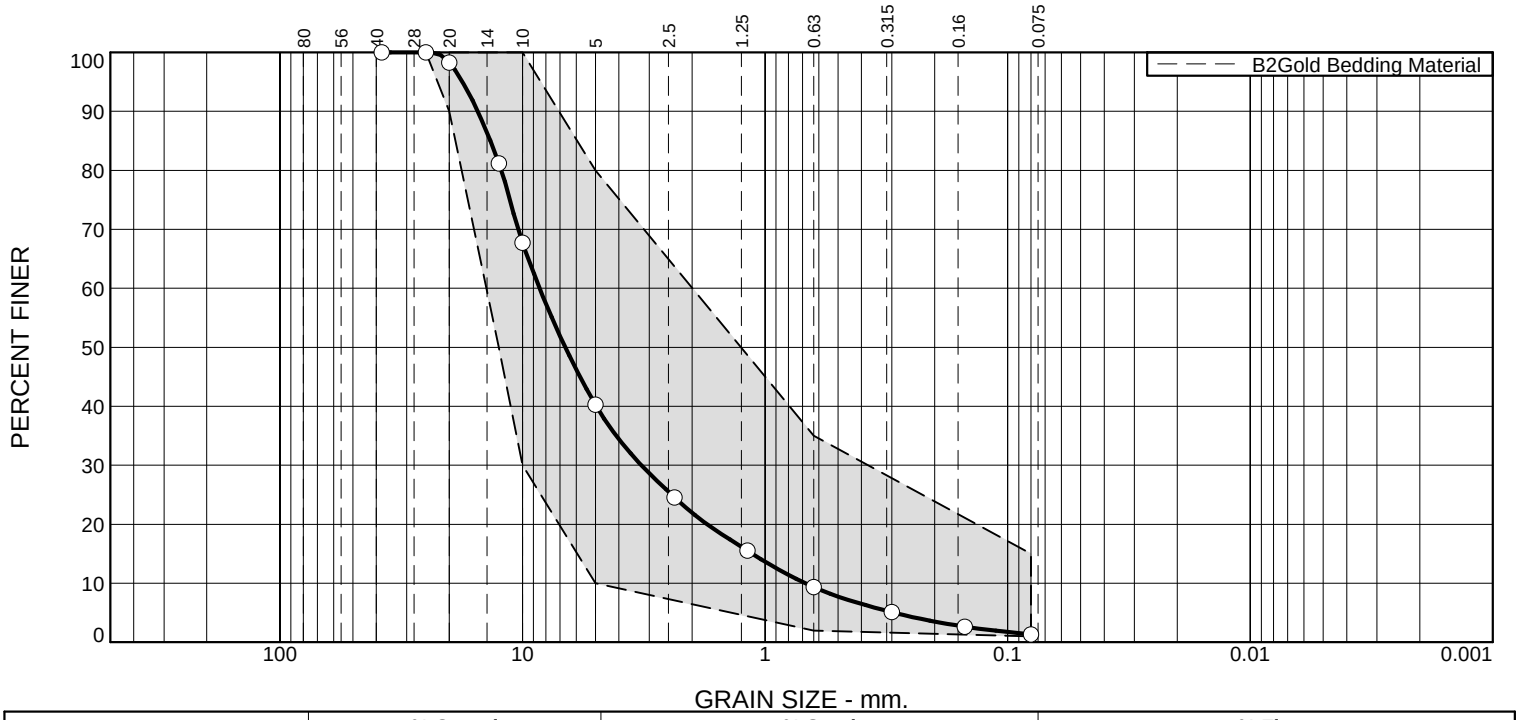
TEST DATA **2025-10-11**

Location: New Crusher Stockpile- Umwelt Pit
Sample Number: SMP-397
Description: 3/4" Minus

Natural Moisture

Wet + tare (grams): 6473.20
Dry + tare (grams): 6440.60
Tare (grams): 952.00
Moisture (%): 0.6

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.9	58.3	16.8	15.2	6.8		

Test Results (ASTM C136)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
38	100.0		
25	100.0	100	
20	98.3	90-100	
12.5	81.2	50-100	
10	67.7	30-100	
5	40.3	10-80	
2.36	24.5		
1.18	15.5		
0.630	9.4	2-35	
0.300	5.1		
0.150	2.6		
0.08	1.3	1-15	

· B2Gold Bedding Material

Material Description

3/4" Minus

Sieve Test (ASTM C136)

Test Date: 2025-10-11 **Technician:** Akhilash

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= **LL=** **PI=**

Coefficients

D_{90}= 15.2786 D_{85}= 13.5595

D_{60}= 8.4966 D_{50}= 6.6605

D_{30}= 3.2297 D_{15}= 1.1271

D_{10}= 0.6817

C_u= 12.46 C_c= 1.80

USCS (ASTM D2487)

Date Sampled: 2025-10-10

Date Received: 2025-10-10

Checked By: Marco Lung

Title: Geo EIT

Location: New Crusher Stockpile- Umwelt Pit

Sample Number: SMP-398

INLINEGROUPINC.

Client: B2Gold

Project: B2Gold Goose Lake Mine

Project No: 23067

Figure

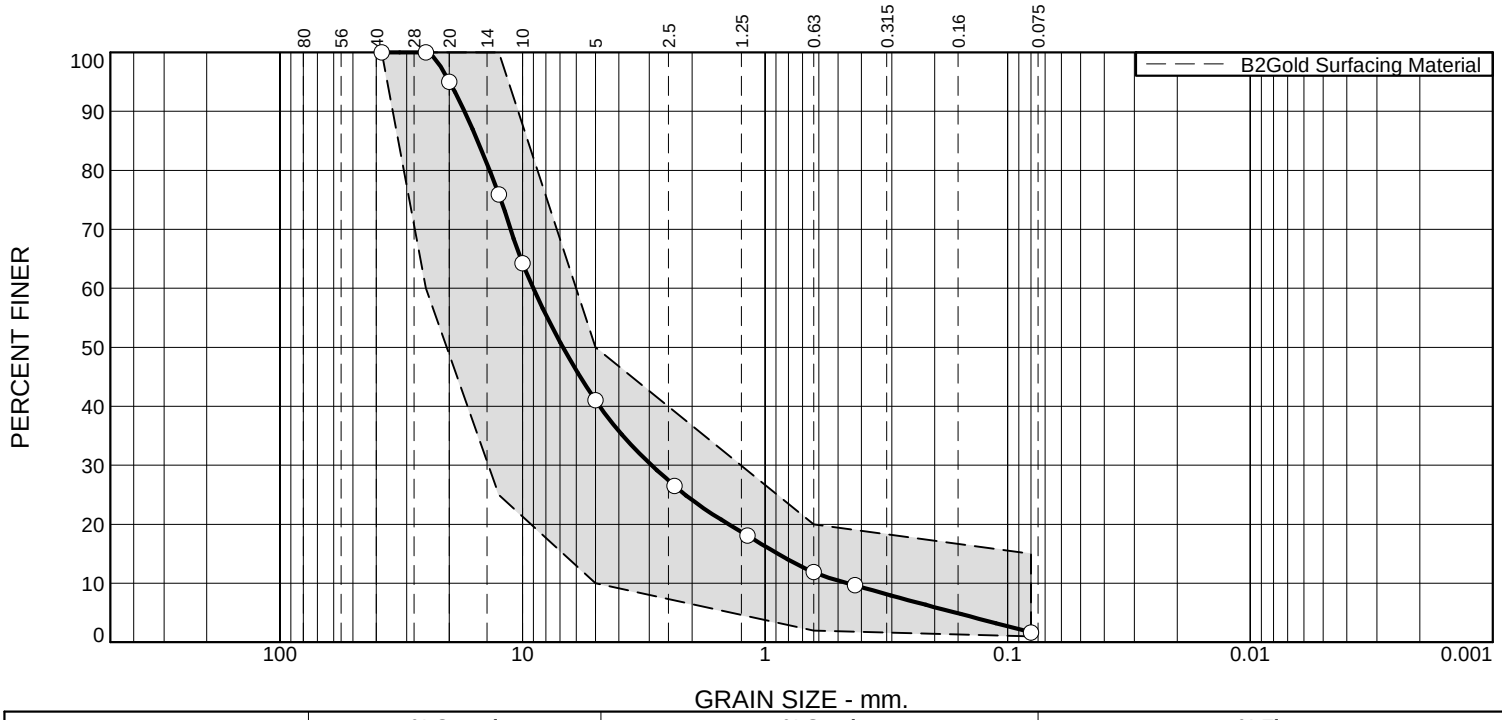
TEST DATA **2025-10-11**

Location: New Crusher Stockpile- Umwelt Pit
Sample Number: SMP-398
Description: 3/4" Minus

Natural Moisture

Wet + tare (grams): 6473.20
Dry + tare (grams): 6440.60
Tare (grams): 952.00
Moisture (%): 0.6

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.6	53.7	15.6	14.4		9.7	

Test Results (ASTM C136)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
38	100.0	100	
25	100.0	60-100	
20	95.0		
12.5	75.9	25-100	
10	64.3		
5	41.0	10-50	
2.36	26.5		
1.18	18.1		
0.630	11.9	2-20	
0.425	9.7		
0.08	1.7	1-15	

· B2Gold Surfacing Material

Material Description

3/4" Minus Crushed Gravel

Sieve Test (ASTM C136)

Test Date: 2025-06-03 **Technician:** Akhilash

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= NP **LL=** NV **PI=** NP

Coefficients

D_{90}= 17.3222 D_{85}= 15.3067

D_{60}= 9.0186 D_{50}= 6.8108

D_{30}= 2.9312 D_{15}= 0.8855

D_{10}= 0.4544

C_u= 19.85 C_c= 2.10

USCS (ASTM D2487)

Date Sampled: 2025-06-02

Date Received: 2025-06-02

Checked By: Josh MacKay

Title: MT Manager

Location: Gymnasium Stockpile
Sample Number: SMP-337

INLINEGROUPINC.

Client: B2Gold
Project: B2Gold Goose Lake Mine

Project No: 23067

Figure

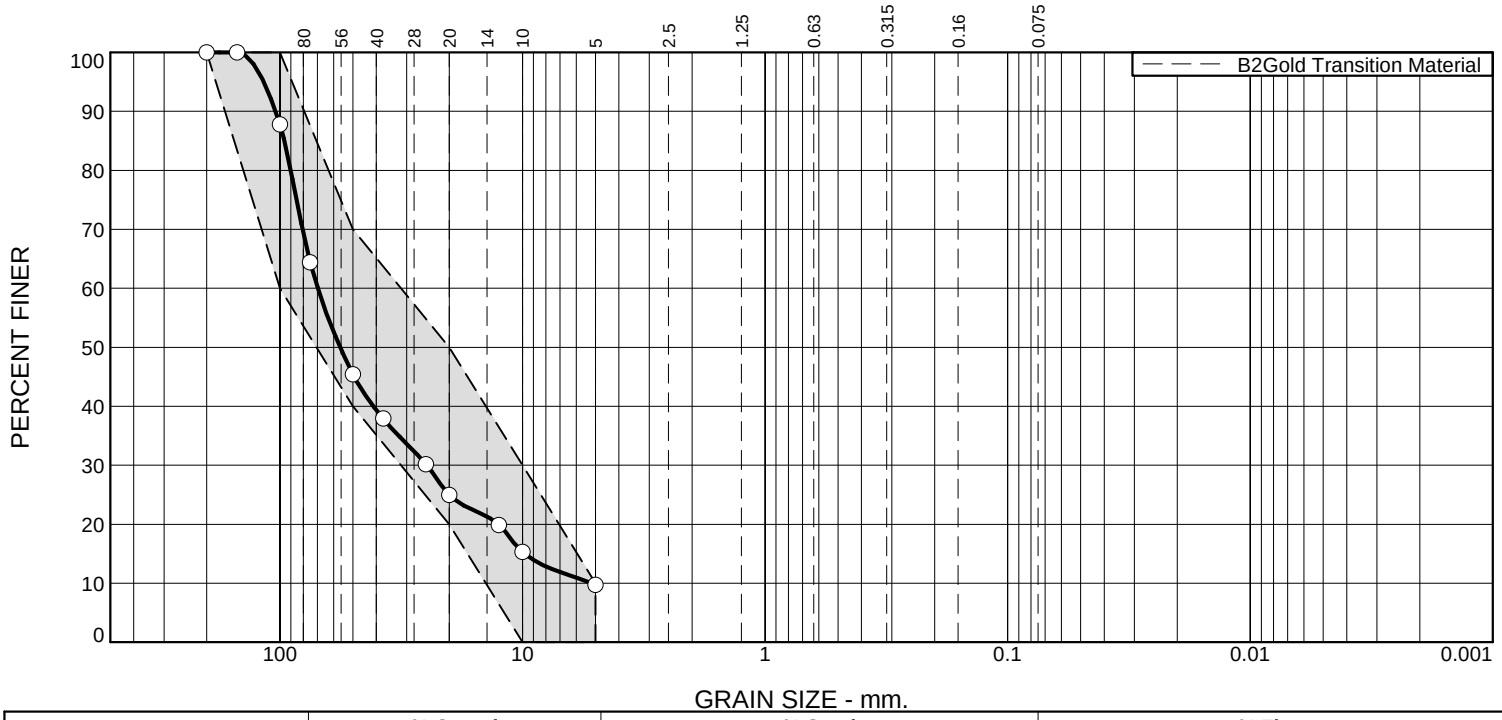
TEST DATA **2025-06-04**

Location: Gymnasium Stockpile
Sample Number: SMP-337
Description: 3/4" Minus Crushed Gravel

Natural Moisture

Wet + tare (grams):	495.00
Dry + tare (grams):	482.00
Tare (grams):	7.00
Moisture (%):	2.7

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
34.5	41.3	24.2					

Test Results (ASTM C136)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
200	100.0	100	
150	100.0		
100	87.8	60-100	
75	64.4		
50	45.4	40-70	
37.5	37.9		
25	30.2		
20	25.0	20-50	
12.5	19.9		
10	15.3	0-30	
5	9.7	0-10	

· B2Gold Transition Material

Material Description

4"Minus

Sieve Test (ASTM C136)

Test Date: 2025-06-10 **Technician:** Akhilash

Test Notes

Hydrometer Test

Test Date: _____ **Technician:** _____

Test Notes

Atterberg (ASTM D4318)

PL= NP **LL=** NV **PI=** NP

Coefficients

D_{90}= 104.1768 D_{85}= 95.7693

D_{60}= 69.6661 D_{50}= 56.3520

D_{30}= 24.7908 D_{15}= 9.7833

D_{10}= 5.1737

C_u= 13.47 C_c= 1.71

USCS (ASTM D2487)

Date Sampled: 2025-06-09

Date Received: 2025-06-09

Checked By: Josh MacKay

Title: MT Manager

Location: New Crusher Stockpile- Umwelt Pit

Sample Number: SMP-338

INLINEGROUPINC.

Client: B2Gold

Project: B2Gold Goose Lake Mine

Project No: 23067

Figure

TEST DATA **2025-06-10**

Location: New Crusher Stockpile- Umwelt Pit
Sample Number: SMP-338
Description: 4"Minus

Natural Moisture

Wet + tare (grams): 18446.00
Dry + tare (grams): 17954.00
Tare (grams): 950.00
Moisture (%): 2.9

APPENDIX 2: THERMAL MODELLING RESULTS

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REV 00

Memo

To	File	**Client**	B2Gold Back River Corp.
From	Christopher Stevens	**Project**	CAPR003105
Cc	John Kurylo	**Date**	December 22, 2025

Subject Umwelt Saline Water Pond Dam – Ground Thermal Modeling

File name: BackRiver_UmweltSalineWaterDam_ThermalModeling_CAPR003105_20251222.docx

1 Introduction

SRK Consulting (Canada) Inc. (SRK) was retained by B2Gold Back River Corp. (B2Gold) to develop the design for the first phase (Phase 1) of the Umwelt Saline Water Pond (SWP) Dam, Back River, Goose Mine, in Nunavut, Canada. The Umwelt Saline Water Pond is planned to be used to temporarily retain saline water from underground and brine from the future water treatment plant and in general to assist with and integrate into the overall site water management plans and systems.

The SWP is planned to be constructed in three phases to meet long-term water and load balance requirements (SRK 2025a). Phase 1 of the dam would be constructed to a crest elevation of 306.0 masl, with operational water levels to be maintained below 303.0 masl through at least 2026. Detailed design work for Phases 2 and 3 is underway and will be documented in separate designs. The thermal modeling presented herein considers Phase 1 dam geometry with a 15-year design life and current water balance model (BGC, 2025).

The Phase 1 dam includes a crest elevation of 306.0 masl with a maximum embankment height is 7 m, and the upstream and downstream slopes are set at 4H:1V and 2.5H:1V, respectively. The liner system provides primary retention of water, installed at 3H:1V slope to an elevation of 305.0 masl. Additional mitigation of water seepage is provided by the relatively lower hydraulic conductivity overburden soil placed along the upstream face of the dam.

It is imperative that the liner tie-in at the base of the key trench sustains a frozen connection with the permafrost foundation. B2Gold intends to install passive thermosyphons within the key trench to allow for additional heat loss at the liner tie-in, as discussed in Section 1.1. The frozen components of the dam also require winter construction when daily average air temperature is below -2°C.

This memorandum presents ground thermal modeling for the Phase 1 design. The modeling has been completed to predict thermal performance of the dam and foundation over the design life.

1.1 Passive Thermosyphons

Phase 1 construction of the dam will include installation of passive thermosyphons to increase heat loss from the key trench and maintain a frozen tie-in with the liner and foundation. The additional heat extraction from the key trench is also expected to maintain colder ground temperature within the immediately underlying foundation, which reduces the potential for localized seepage beneath the key trench and for localized frozen soil creep.

A total of four thermosyphon panels, each consisting of four individual thermosyphon evaporators and radiators, will be installed at Station 0+065 - 0+188, Station 0+188 - 0+311, Station 0+311 - 0+416, and Station 0+416 - 0+520. The sloped evaporator pipes will extend from the key trench to the downstream side of the dam. Each evaporator pipe will be connected to a double radiator with a surface area of 39 m^2.

Passive thermosyphons operate without external power, relying instead on natural temperature gradients and phase change of a working fluid to extract heat from the ground during cold periods. The main components of a passive thermosyphon include the evaporator section of pipe that is buried in the ground and the condenser section above the ground with a surface radiator. The radiator is constructed of horizontal or vertical metal fines that increase heat loss from the condenser pipe.

Heat is extracted from the ground when the air temperature at the radiator is colder than the ground temperature adjacent to the evaporator pipe. The pressurized working fluid lowers the pressure-boiling point within the pipe which causes the fluid to change phase to a gas under the temperature differential. The gas rises to the surface end of the pipe where it cools and condenses back to a liquid. The gas-liquid phase change releases the energy (heat) previously extracted from the ground at the evaporator. The condensed fluid flows under gravity back to the bottom of the evaporator pipe, and this phase change process repeats until the air temperature becomes warmer than the ground temperature.

2 Permafrost and Foundation Conditions

2.1 Permafrost

The mine is located in the continuous permafrost region of the Canadian Arctic. Permafrost temperatures below the point of zero amplitude range between -4.7°C and -7.0°C, with an average of -6.3°C (SRK 2015). The active layer thickness (ALT) has been measured to range from 1.3 m to 4.1 m, with an average of 2.1 m (SRK 2015). Permafrost physical properties have been characterized across the project area using diamond drilling with brine and shallow split spoon sampling, or through air rotary drilling with frequent cutting sample collection (with samples then tested for moisture content and salinity to get inferred properties of ice content). These drilling methods have allowed for visual description of frozen soil to characterize ground ice type and content. Ground ice within overburden soil has been found to be spatially and stratigraphically variable at the property, ranging from ice-poor to ice-rich soil.

The permafrost is very low permeability and acts as an impermeable layer. Water seasonally occurs within the unfrozen active layer above the top of permafrost (suprapermafrost ground water) and below the base of permafrost within bedrock rock (subpermafrost groundwater). Unfrozen lake taliks and creek thaw bulbs have been identified in the area which form potential pathways for groundwater movement.

2.2 SWP Dam Foundation

The SWP Dam foundation has been characterized using historical geotechnical investigation data and more recent percolation testing drillholes completed in April of 2025. The percolation drilling included completion of twenty-two drillholes using a Sandvik Ranger DX800 drill without the use of water (SRK 2025b). Drilholes were completed to bedrock and included soil field description, sampling, and laboratory testing, and ground temperature measurements from select drillholes. Percolation tests were also completed using a falling head method.

SWP Dam Phase 1 site consists of an overburden layer of ice-rich, well-graded sand with silt and gravel, underlain by bedrock composed of greywacke and massive mudstone, which is weathered at the contact with the overburden (SRK 2025b). Depth to bedrock has been confirmed with drillholes to range from 3 to 8 m below ground surface (m bgs). Overburden soil in the foundation is characterized by saline porewater with a measured salinity of 8 ppt or less (SRK 2025b). The freezing point depression based on a porewater salinity of 8 ppt is approximately -0.4°C. For conservatism, the site-wide freezing point depression of -1.4°C is considered with interpretation of the model results.

Ground temperature measured from select drillholes (DH-02, DH-20, and DH-26) in April of 2025. At drillhole sites DHP-20 and DHP-26, the ground temperature recorded by the deepest sensor, installed at 8.5 m below ground surface, was -5.9 °C and -5.2 °C, respectively (SRK 2025b). At DHP-02, the ground temperature measured at 6.4 m bgs was -7.4°C. The ground temperature profiles at these sites are consistent with comparable measurements previously collected at the mine site (SRK 2015).

3 Methods

3.1 Approach

Ground thermal modeling was used to evaluate thermal performance of the structure over the Phase 1 design life. A series of two-dimensional (2D) models were prepared in GeoStudio 2021.4, TEMP/W finite element program, developed by Geoslope International Ltd. The models consider two-dimension heat flow based on thermal conduction with phase change of pore water and ice. Non-conductive heat transfer was not considered in the model, such as the advection of heat from water seepage (see discussion on advection of heat and mitigating components of the design in Sections 3.5 and 5.0).

3.2 Model Section

The model sections were based on simplified geometry of the Phase 1 design (Figure 1). The two critical dam sections were considered:

- Station 0+360 - Maximum fill section with the widest key trench excavation (Approx. 10.5 m wide) and a depth to bedrock of approximately 6.3 m below original ground surface.
- Station 0+080 - Minimum fill section with a depth to bedrock of approximately 4.1 m below original ground surface.

Figure 1 shows the location and cross sections of the dam at stations 0+360 and 0+080. The maximum and minimum fill sections were selected to capture the range in thermal protection from the fill and water impounded on the upstream side of the dam. Thermal behavior of the dam and foundation can be expected to be different for these endmembers.

3.3 Model Inputs

Table 1 summarises the material thermal properties applied to the model. The material thermal properties were estimated in accordance with Cote and Konrad (2005). The fully saturated materials were applied to upstream regions that are below the input water level. The properties for bedrock were taken from previous work completed for the Umwelt Pit and Underground area (SRK 2025c). The thermal properties for Sand with Silt were based on average moisture content and porewater salinity determine from geotechnical investigations of the dam foundation (SRK 2025a).

Table 1: Material Thermal Properties

Material	Volumetric Water Content (m^3 / m^3)	Thermal Conductivity, (kJ/day/m/°C)		Volumetric Heat Capacity, (kJ/m^3/°C)	
		Frozen	Unfrozen	Frozen	Unfrozen
ROQ Rock[1]	0.09	147	144	1,961	2,136
ROQ Saturated Rock[1]	0.30	261	177	1,982	2,593
Transition Rock[1]	0.10	138	134	1,917	2,048
Transition Saturated Rock[1]	0.32	254	170	1,914	2,547
Sand with Silt[1]	0.21	147	144	1,706	2,136
Saturated Sand with Silt[1]	0.24	166	149	1,948	2,444
Bedrock	0.05	216	212	2,225	2,330

Notes:
1. Estimated unfrozen water content curve applied based on primary material type (Gravel, Sand, Silt, or Clay)
2. Latent heat of fusion for ice 334 kJ/kg

3.4 Climate Boundary Conditions

A surface energy balance (SEB) heat flux boundary was applied to the uppermost surface of the model, with exception of the upstream boundary that relied on a water temperature boundary (see

Section 3.5). The SEB flux boundary estimates the energy from the atmosphere that is available at the ground surface and utilized through several processes, such as evapotranspiration, sublimation, and measurable changes in air and ground surface temperature.

Energy received at the surface must be used to warm or cool the air above the ground surface (sensible heat flux), evaporate water (latent heat flux), or warm or cool the ground (ground heat flux):

$$(q_{ns} - q_{nl}) = q_h + q_l + q_g \quad \text{Equation 1}$$

where:
q_{ns} is the net solar shortwave radiation (MJ m^{-2} d^{-1})
q_{nl} is the net terrestrial longwave radiation (MJ m^{-2} d^{-1})
q_h is the sensible heat flux (MJ m^{-2} d^{-1})
q_l is the latent heat flux (MJ m^{-2} d^{-1})
q_g is the ground heat flux (MJ m^{-2} d^{-1})

The ground heat flux is expressed as:

$$q_g = (q_{ns} - q_{nl}) - q_h - q_l \quad \text{Equation 2}$$

The energy flux throughout the defined period of snow cover q_{snow} is expressed as:

$$q_{snow} = q_g = (q_{ns} - q_{nl}) - q_h - q_l \quad \text{Equation 3}$$

It is assumed in the model that snow does not have the capacity to store energy.

The average monthly climate parameters for the Goose Mine are summarized in Table 2. The SEB boundary applied to the model was based on daily average air temperature and windspeed and monthly average values for all other parameters. Climate change was considered for air temperature which is projected to increase by 0.75% for the period of 2011 - 2040 (SRK 2021). The percent increase above the baseline was applied to daily average air temperature. Energy transported by water (rainfall or snow meltwater) infiltration through the ground was not accounted for in the models.

The mean annual wind speed on site is approximately 6.6 m/s, with the wind direction exhibiting strong seasonality. Wind typically from southwest for the period of October through April, and in the east direction from May to September. Windspeed and direction are relevant to thermosyphon heat extraction and were considered for the placement of the above grade thermosyphon radiators.

Table 2: Monthly Average Climate Parameters for Goose Meteorological Station

Month	Air Temperature (°C)	Relative Humidity (%)	Windspeed (m/s)	Snow Depth (m)	Solar Radiation (W/m2)
January	-28.9	75.7	5.5	0.24	6
February	-28.9	73.5	6.9	0.27	38
March	-26.0	76.2	7.4	0.30	111
April	-16.4	80.7	6.6	0.34	211
May	-5.4	85.4	6.5	0.10	275
June	6.4	76.6	6.4	0.00	272
July	12.6	72.7	7.2	0.00	221
August	10.1	80.3	6.8	0.00	141
September	2.6	84.3	6.9	0.00	86
October	-6.6	90.0	6.8	0.07	40
November	-19.8	82.0	6	0.16	10
December	-25.8	79.4	6.2	0.20	2

Notes:
1. Climate parameters measured at Goose Station between August of 2004 and September 2020
2. Snow depth based on regional measurements confirmed to be reasonable with verification model

3.5 Water Boundary Condition

A water temperature boundary condition was applied along upstream face of the dam to the Phase 3 Full Supply Level (FSL) (304.3 m). This elevation is greater than the FSL for Phase 1 (301.4 m). The water boundary condition is applied for the entire design life as a step function based on average monthly water temperatures measured at Llama Lake, located at the Goose Property, for the months of April and August (Table 3). The water temperature is assumed to be at 0°C from December to the end of March beneath floating ice and estimated for the remaining months based on values from Arctic waterbodies. The average annual water temperature calculated from the monthly values is +5.5°C, which is consistent with measurements reported for water bodies located in the Canadian Arctic (Burn 2005). Figures 2 and 3 show the location of the water temperature boundary for each model section, applied to the upstream face of the dam. The relatively lower hydraulic permeability soil placed on the upstream face of the dam has been included in the design to reduce the potential for advection of heat from water flow in and out of the ROQ rock shell. A saturated material zone below the water level is applied to consider water related changes in thermal properties within this region of the dam up to the liner face (Figures 2 and 3).

Table 3: Water Temperature Values

Month	Average Water Temperature (°C)
Jan.	0
Feb.	0
Mar.	0
April	2.5
May	5.6
June	8.8
July	11.9
Aug.	15
Sept.	11.3
Oct.	7.5
Nov.	3.8
Dec.	0
Average	**5.5**

3.6 Thermosyphon Inputs

Thermosyphon performance is largely a function of radiator surface area, evaporator pipe size, length, and slope, composition of the working fluid, ground thermal properties, and exposure of the radiators to advective cooling from the wind. The thermosyphons have been included in 2D model using a custom add-in developed for Temp/W which applies the surface radiator size (surface area), evaporator pipe dimensions, with air temperature and windspeed function performance values established by Haynes and Zarling (1988).

The thermosyphons coefficients applied to the model are based on a flat loop thermosyphon system with 0-degree sloping evaporator. The actual bedding material grade for the thermosyphon evaporator pipes is specified in the design to have a minimum grade of 3% (1.7° slope) which would be expected to have greater heat extraction when compared to a flat loop with all else being equal.

A total of four thermosyphon evaporator pipes were included in the model for each panel. The buried evaporator pipes would be attached to double radiator with a surface area of 39 m^2. Each pipe is spaced 1.0 m on center within the key trench. The panel of evaporator pipes was assumed to be 0.3 m above the base of the key trench to allow for placement of bedding material. The evaporator pipe is specified to be 3-inch diameter (nominal pipe size) with a total length of 150 m. The evaporator pipe length is approximately 8 m longer than the maximum evaporator pipe length included in the design. Thermosyphon performance would be expected to be greater for units with a shorter length evaporator pipe.

3.7 Initial Conditions

Initial ground temperature for permafrost was set to -6.3°C which is representative of shallow permafrost temperatures at the Goose Property (SRK 2015). Model initialization was based on a spin-up model of the foundation over a 40-year period that cycled using the site climate data. The construction material zone were then introduced into the model with an initial material temperature of +1°C. This initial material temperature is conservatively warmer than the expect temperature. Based on our experience, ROQ rock placed in the winter will thermally adjust to the ambient air temperature at the time of placement. The design specifies that construction is to take place over one winter with material placement prior to the ambient daily average air temperature rising above -2°C (SRK 2025).

The sides of the model space were set to zero flux with the lower boundary set to a constant flux 4.84 kJ/day/m^2 which was calculated from the local geothermal gradient (0.014°C/m) and the thermal conductivity of the bedrock.

4 Results

4.1 Verification Model

A one-dimensional model was developed to verify that the model can reasonably predicted site ground temperature using the surface boundary and material properties. Figure 4 shows the annual minimum and maximum ground temperature measured at undisturbed sites with fine to coarse overburden sand. Figure 5 show the modeled versus measured ground temperature for monitoring site GAS-GT13-01. The modeled temperatures show good agreement with measured values, effectively capturing the annual minimum and maximum ground temperatures at the site, and indicating that the input parameters reasonably represent site conditions and provide adequate estimates of ground temperature.

4.2 Saline Water Pond Dam

The Saline Water Pond Dam thermal models were used to evaluate conditions that may impact water retention and foundation stability beneath and immediately surrounding the structure. Specifically, the model results are used to evaluate whether the liner remains frozen to the underlying foundation to maintain water containment and the required sizing of the thermosyphon system. The frozen or thawed state of the foundation beneath the dam foundation fill is also used to evaluate the potential for future seepage pathways beneath the dam.

Figures 6 shows the estimated heat extraction from the thermosyphon evaporator pipe and resulting pipe temperature for Stations 0+360 and 0+08. As expected, heat is extracted by the thermosyphon during periods of the year when ambient air temperature is colder than the soil temperature. During this period of the year, heat extracted at the evaporator pipe results in cooling of the ground. The thermosyphon unit functions until the air temperature is greater than the soil temperature at the pipe. During periods when the thermosyphon is inactive, the ground warms to a maximum annual

temperature at the pipe. For maximum fill section (0+360), the maximum annual evaporator pipe temperature is estimated to range from approximately -6.3°C to -7.3°C over the design life (Figure 6). For the minimum fill section (Station 0+080), the maximum annual evaporator pipe temperature is estimated to range from approximately -4.8°C to -5.3°C.

Figure 7 presents the estimated ground temperature profiles for the selected locations along the upstream key-trench slope. Greater annual heat transfer, and associated warming and cooling, is predicted for the minimum-fill section (0+080) compared to the maximum-fill section, which provides a larger thermal buffer between the ground surface and the foundation. For both model sections, the liner tie-in is estimated to remain frozen at the base of the key trench. The maximum annual temperature after the first full year at the key trench base is estimated to range from -5.4°C. to -5.8°C at Station 0+360 and -4.8°C. to -5.5°C at Station 0+80. (Figure 7).

Ground temperature contour plots for the maximum fill section (Station 0+360) is shown in Figures 8 through 10. Similar model sections for the minimum fill section (Station 0+080) is shown in Figures 11 through 13. Late summer ground temperature is reported for the end of September near the timing of maximum annual thaw and late winter defined by the end of April.

5 Conclusions

The Saline Water Pond Dam will be constructed over one winter as a water retention structure that extends across both bedrock and ice-rich overburden soil foundation. The upstream liner will be keyed into the frozen foundation to provide primary upstream element for water retention. It is therefore imperative that the liner remain frozen to the permafrost foundation to maintain the required water retention and stability of the dam.

The thermal modeling results indicate frozen conditions at the key trench base, with consideration of the site-wide freezing point depression of soil and water maintained to the Phase 3 FSL for the duration of the design life. Passive thermosyphons have been included in the design to increase seasonal heat extraction and maintain frozen conditions at the liner tie-in. The additional heat loss from the foundation is also expected to reduce the potential for thawing and development of a water seepage pathway. The locally colder foundation temperature immediately below the key trench has the potential to also reduce frozen soil creep.

Advection of heat into the rock shell from the upstream water is not considered in the thermal modeling. Heat transfer associated with water advection is reduced by placing relatively low–hydraulic conductivity overburden soils along the upstream dam face. In addition, the daily change in water level is expected to be minor and would result in a low hydraulic gradient between the upstream pond and liner which impedes downstream water flow to a lower elevation.

Additional heat extraction from the thermosyphons can be achieved through conversion of the passive thermosyphon to a hybrid system with active cooling systems. This option would allow for an extended period of cooling during the year when ambient air temperature is warmer than the ground temperature. The SWP Dam will incorporate thermal and physical monitoring, together with an

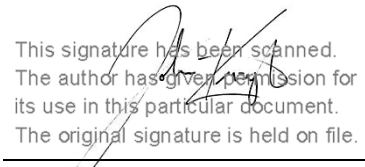
operational thermal model, to support evaluation of dam containment and stability and to inform potential mitigation measures during later stages of site development.

Closure

If you have any questions or concerns regarding the design summary or notice of construction, please contact SRK.

Regards,
SRK Consulting (Canada) Inc.

Christopher Stevens, PhD
Associate



John Kurylo, MSc, PEng
Principal Consultant

Attachments:

Attachment 1 Figures

References

BGC Engineering Inc. (2025). Back River Water and Load Balance Update. December 2025 updates. Presentation from January 7, 2025 (Preliminary – for discussion only).

Burn CR. 2005. Lake-bottom thermal regimes, western arctic coast, Canada. Permafrost and Periglacial Processes 16: 355-367.

Haynes, F.D., and Zarling, J.P. 1988. Thermosyphons and foundation design in cold regions. Cold Regions Science and Technology, 15(3), 251-259.

SRK Consulting (Canada) Inc. (2015). Thermal Modelling to Support Run-of-Quarry Pad Design. Memorandum prepared for Sabina Gold and Silver Corp. Project No. 1CS020.006. April 2015.

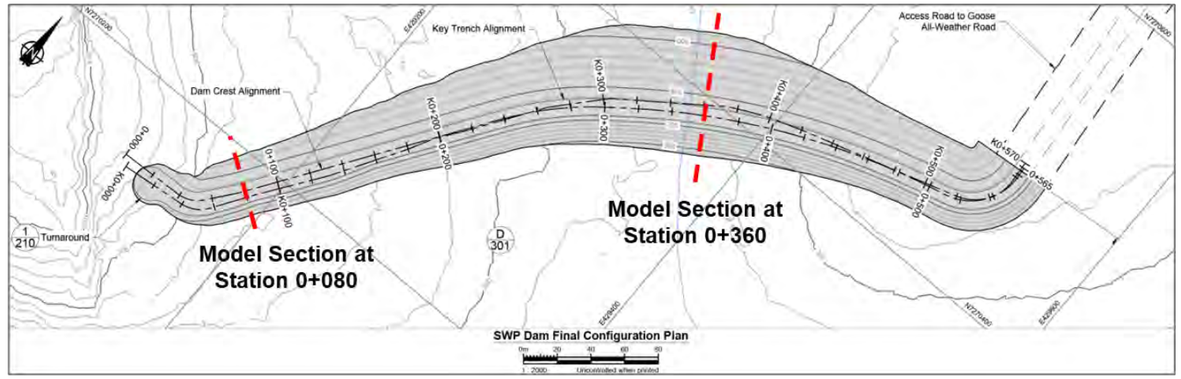
SRK Consulting (Canada) Inc. (2021) Back River: Updated Feasibility Study – Hydrology Update Memo. DRAFT. Prepared for Sabina Gold and Silver Corp. Project number 1CS020.020. July 16, 2021.

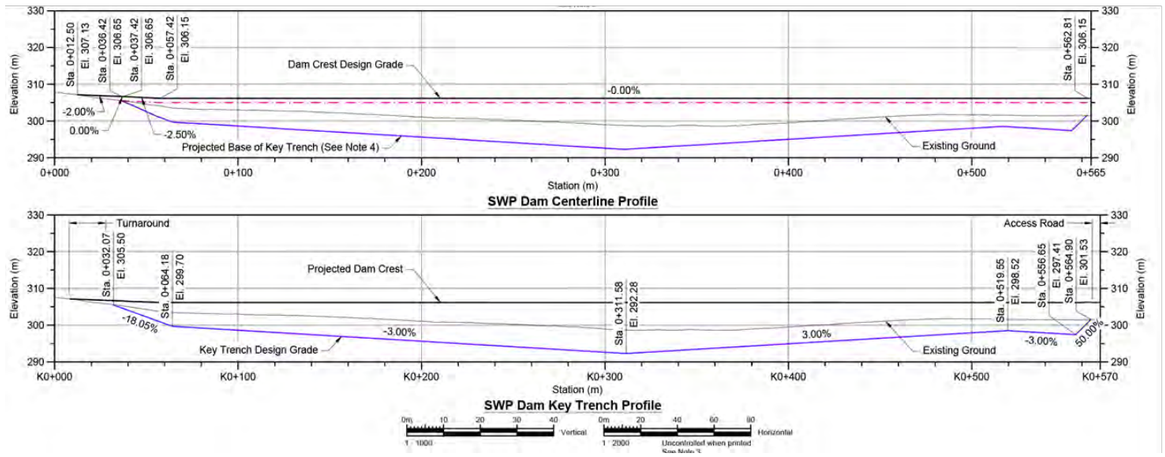
SRK Consulting (Canada) Inc. (2025a). Umwelt Saline Water Pond Dam - Design Overview and Notice of Construction. Prepared for B2Gold Corp. Project No. CAPR003105. November 2025.

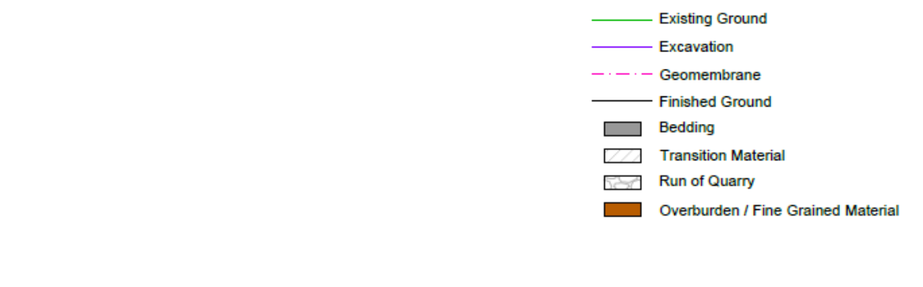
SRK Consulting (Canada) Inc. (2025b). Back River Umwelt SWP Dam Phase 1. Percolation Testing – Factual Memorandum. Prepared for B2Gold Corp. Project No. CAPR003105. September 2025.

SRK Consulting (Canada) Inc. (2025c) Back River Project: Umwelt Open Pit and Underground Thermal Modeling. Prepared for B2Gold Corp. Project No. CAPR003061. April 2025.

Attachment 1 Figures







LEGEND

- Waterbody
- Excavation
- Geomembrane
- Maximum Operating Water Level (MOWL)
- Design Infrastructure

LEGEND

- Existing Ground
- Excavation
- Geomembrane
- Finished Ground
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material

Notes:
1. Design sections shown for Stations 0+360 and 0+080 (stations referenced to the dam crest)
2. Sections taken from SRK (2025a)

srk consulting

B2GOLD

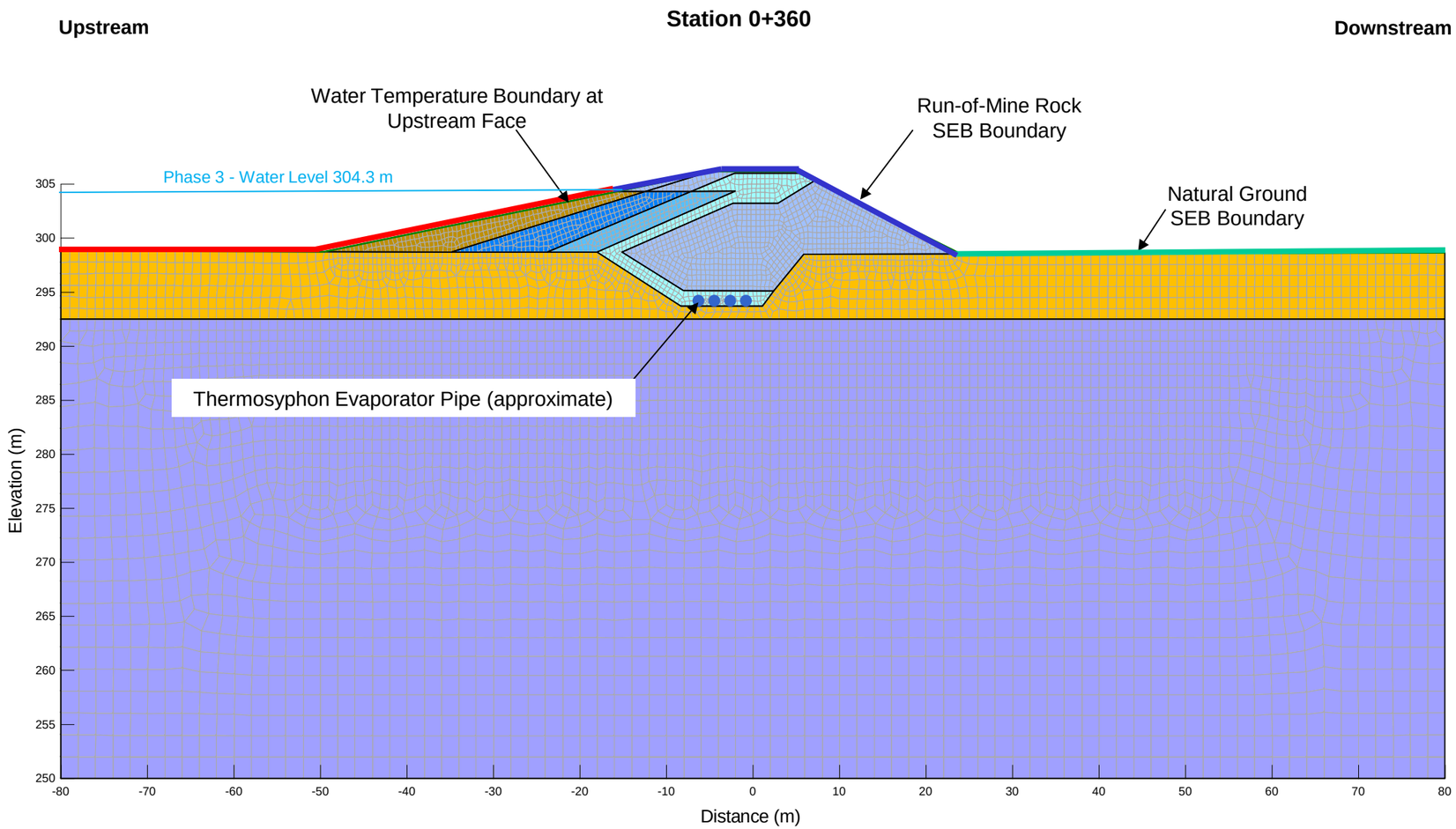
Saline Water Pond Dam Thermal Modeling

Design Sections for Thermal Modeling

Job No: CAPR003105
Filename: BackRiverSalineWaterPondDam.pptx

Back River

Date: Dec. 2025 | Approved: CWS | Figure: **1**



Notes:
1. Model domain Section 0+360
2. Thermosyphon evaporator pipe position is approximate on figure (solid blue circle)
3. Surface Energy Balance (SEB) bondary is shown to be the approximate extent
4. Water level set to 304.3 m representing the maximum Phase 3 water level

- Bedrock
- ROQ Rock
- ROQ Saturated Rock
- Sand with Silt
- Sand with Silt Saturated
- Transition Rock
- Transition Saturated Rock

srk consulting

Job No: CAPR003105
Filename: BackRiverSalineWaterPondDam.pptx

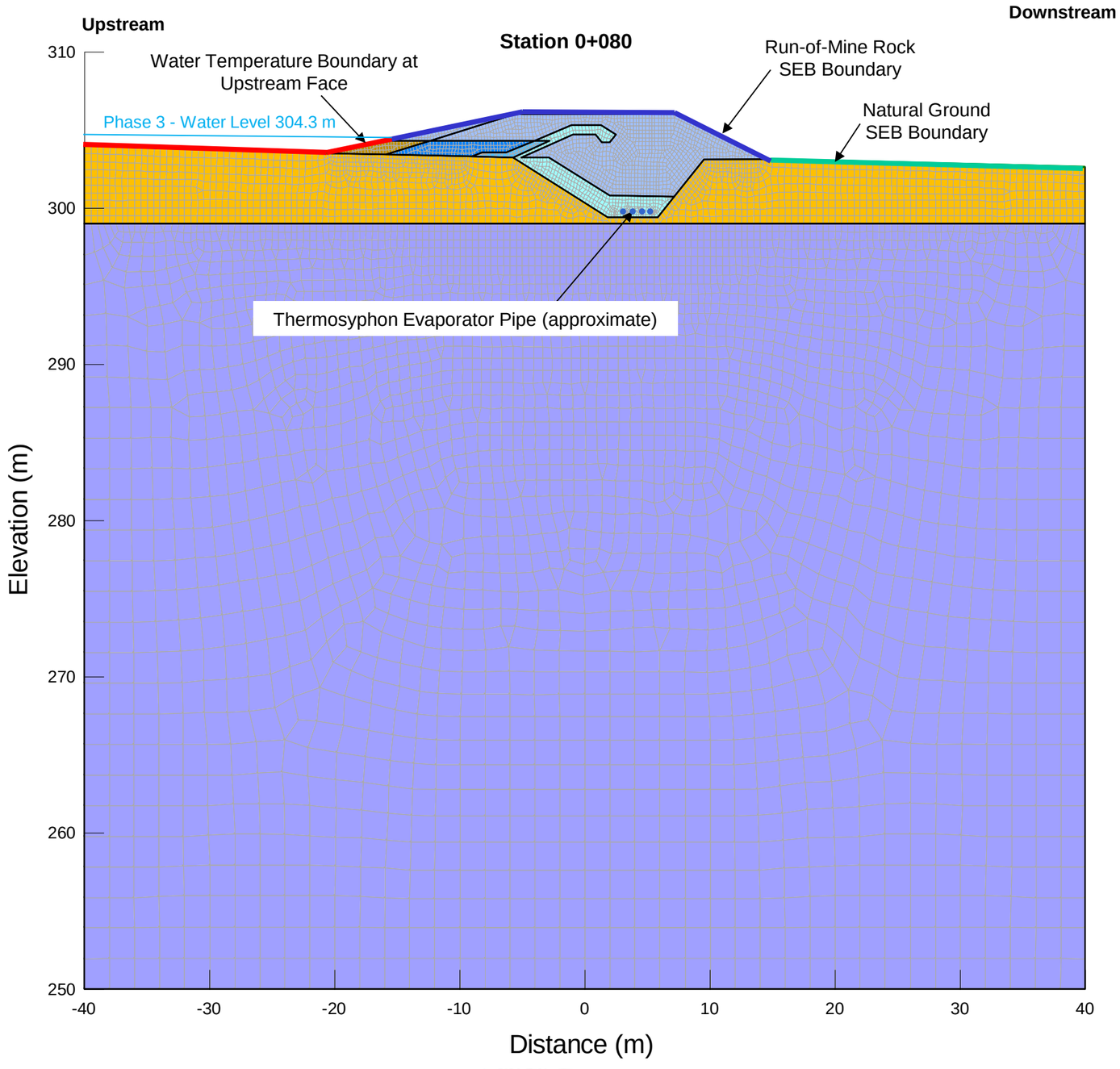
B2GOLD

Back River

Saline Water Pond Dam Thermal Modeling

Model Domain – Section 0+360

Date: Dec. 2025
Approved: CWS
Figure: **2**



Notes:
1. Model domain Section 0+080
2. Thermosyphon evaporator pipe position is approximate on figure (solid blue circle)
3. Surface Energy Balance (SEB) bondary is shown to be the approximate extent.
4. Water level set to 304.3 m representing the maximum Phase 3 water level

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Job No: CAPR003105
Filename: BackRiverSalineWaterPondDam.pptx

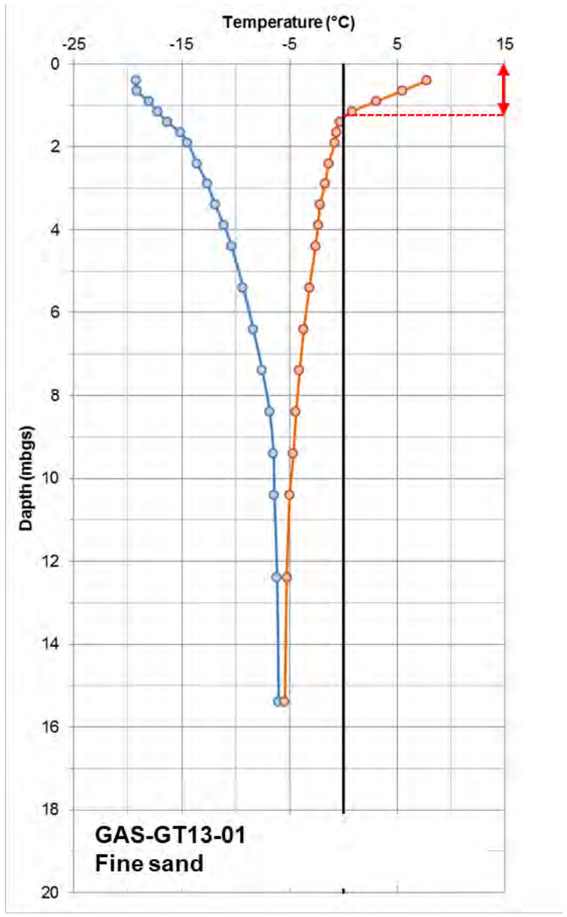
B2GOLD

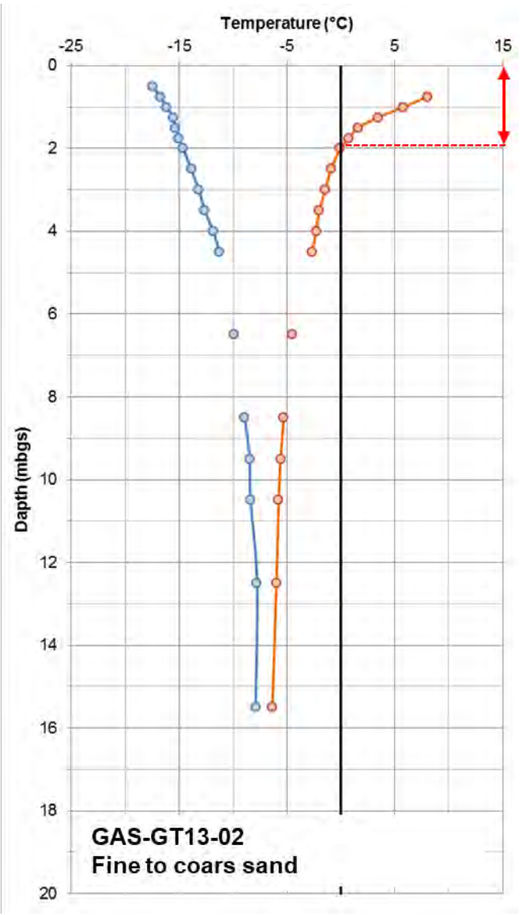
Back River

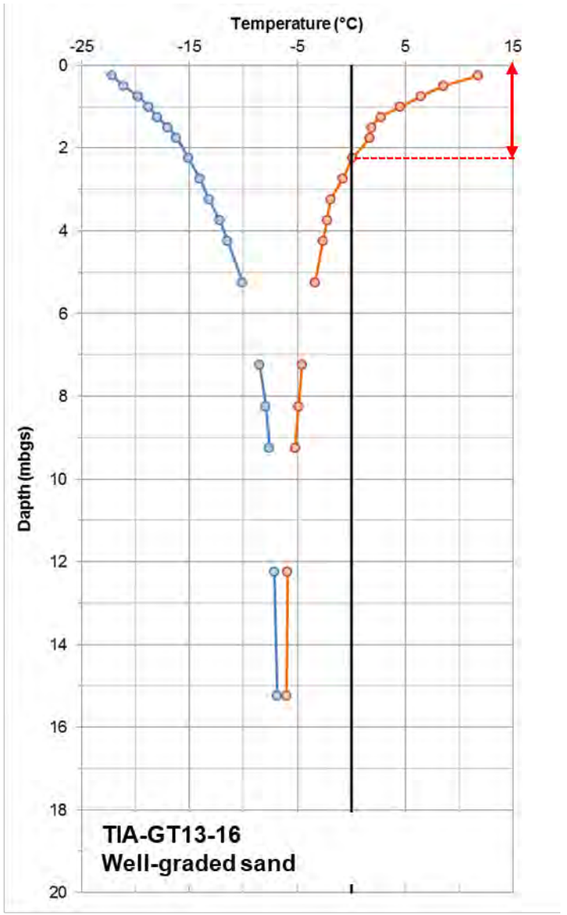
Saline Water Pond Dam Thermal Modeling

Model Domain – Section 0+080

Date:	Approved:	Figure:
Dec. 2025	CWS	**3**







Active layer
Minimum ground temperature
Maximum ground temperature

Notes:
1. Annual minimum and maximum ground temperature for sites with overburden sand
2. Depth indicated as meters below ground surface (mbgs)
3. Ground temperature measurements recorded in 2013

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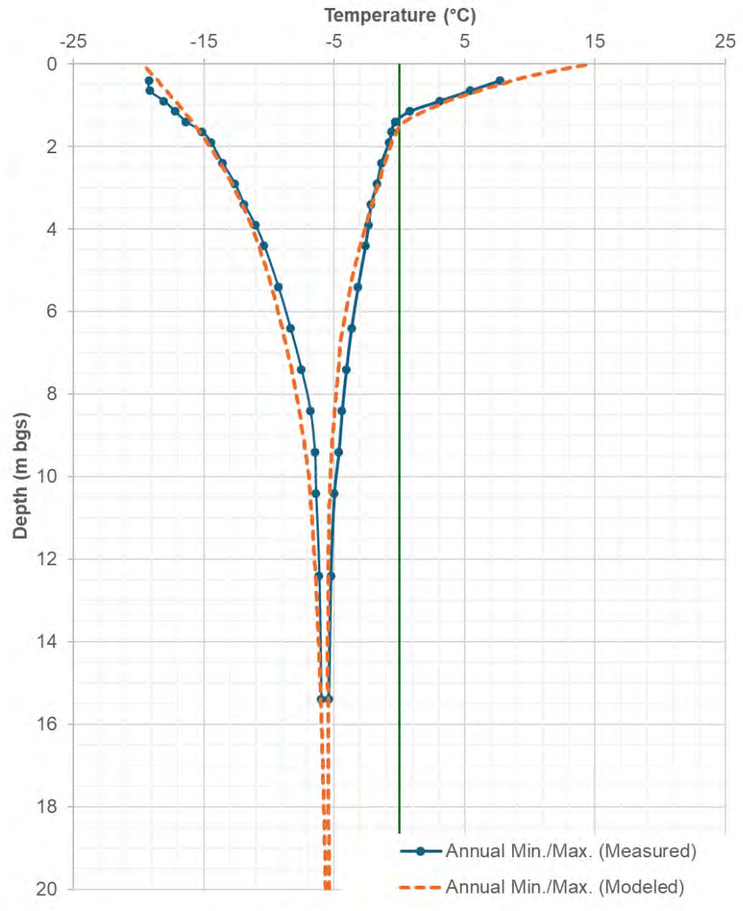
Job No: CAPR003105
Filename: BackRiverSalineWaterPondDam.pptx

Back River

Saline Water Pond Dam Thermal Modeling

Measured Ground Temperature for Sites with Sand Overburden Soil

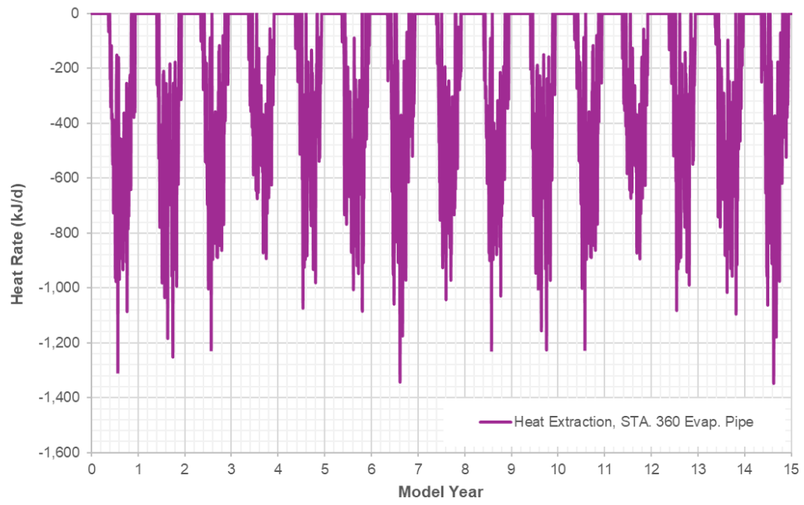
Date:	Approved:	Figure:
Dec. 2025	CWS	4

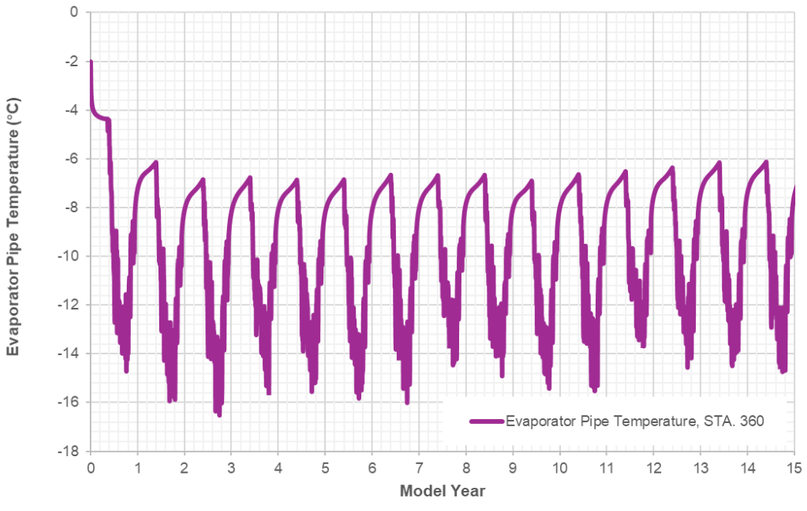


Notes:
1. Verification model showing annual minimum (Min.) and maximum (Max.) ground temperature compared to equivalent measurements made at site GAS-GT13-01.
2. Model results based on one-dimensional (1D) model.
3. Depth indicated as meters below ground surface (mbgs)

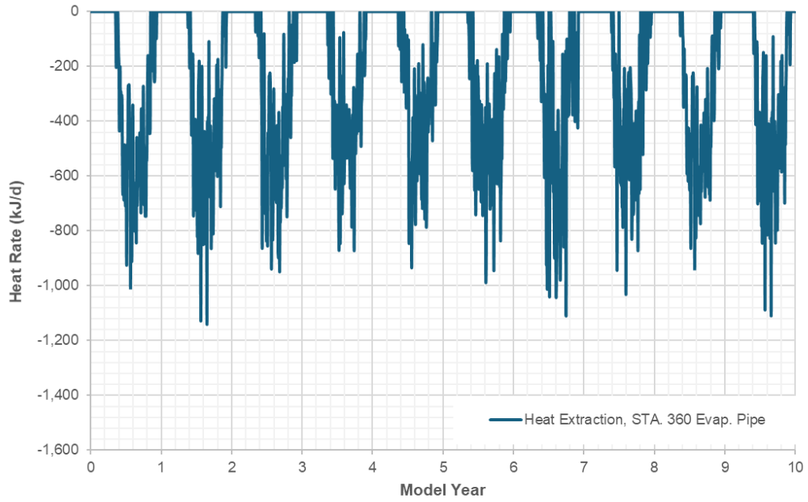
srk consulting	B2GOLD	Saline Water Pond Dam Thermal Modeling
		Verification Model Comparison with Measured Ground Temperature
Job No: CAPR003105 Filename: BackRiverSalineWaterPondDam.pptx	Back River	Date: Dec. 2025 / Approved: CWS / Figure: **5**

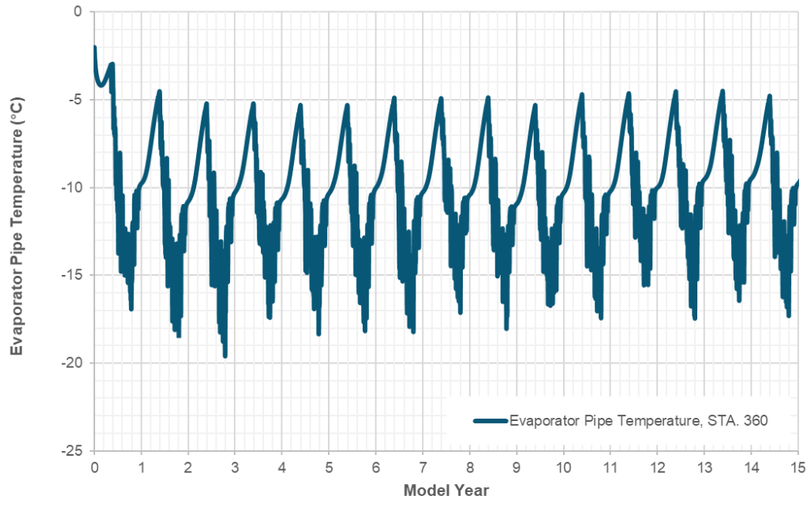
Station 0+360





Station 0+080

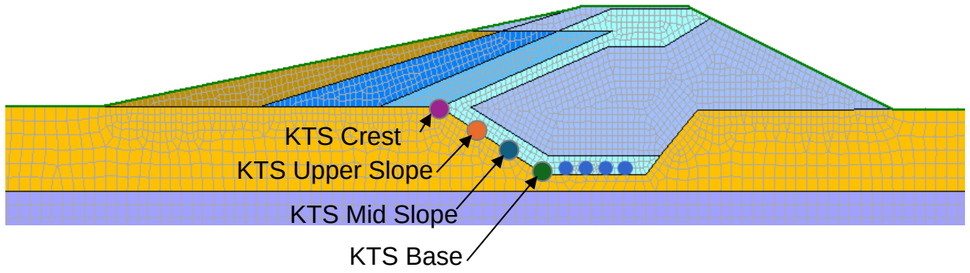


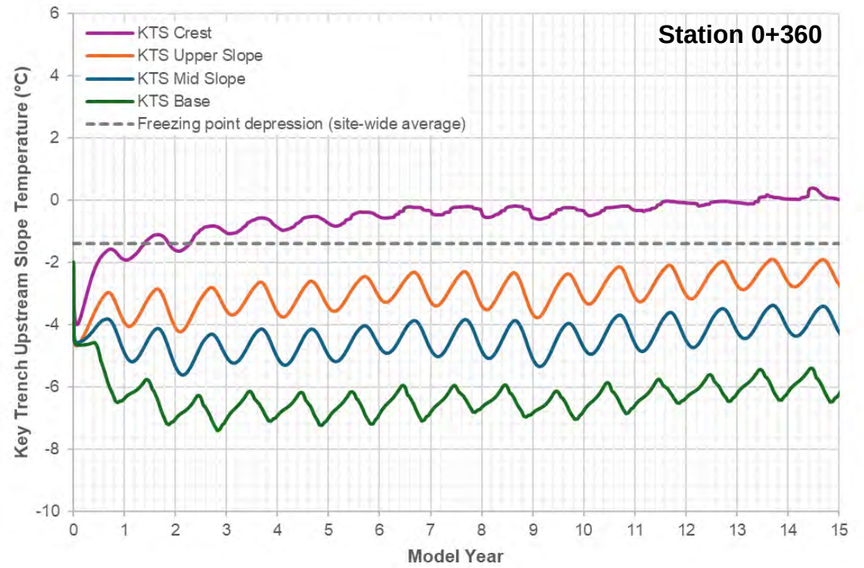


Notes:
1. Modeled heat extraction from thermosyphon unit for model section 0+360 and 0+080
2. Thermosyphon panel based on 4 evaporator pipes (3 inch NPS with a total length of 150 m)

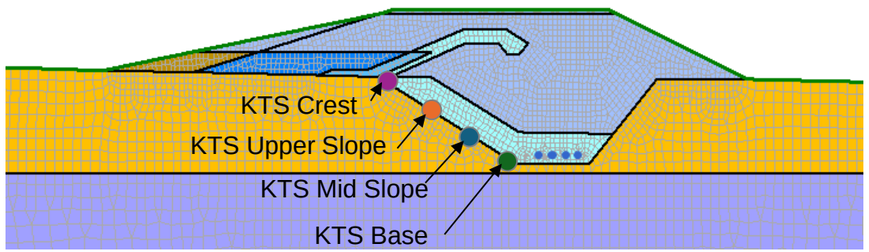
srk consulting	B2GOLD	Primary Pond Dam Thermal Modeling
		Estimated Heat Extraction and Temperature of Evaporator Pipe
Job No: CAPR003105 Filename: BackRiverSalineWaterPondDam.pptx	Back River	Date: Dec. 2025 | Approved: CWS | Figure: **6**

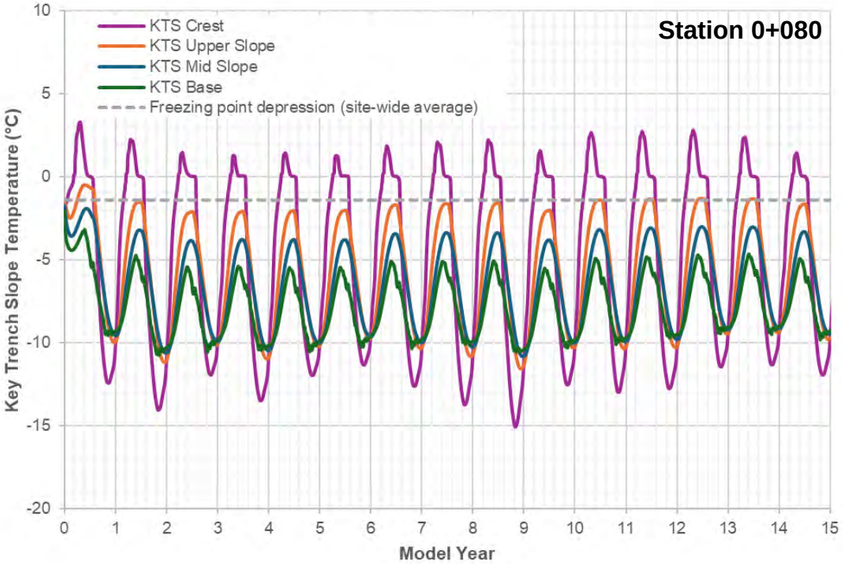
Station 0+360





Station 0+80

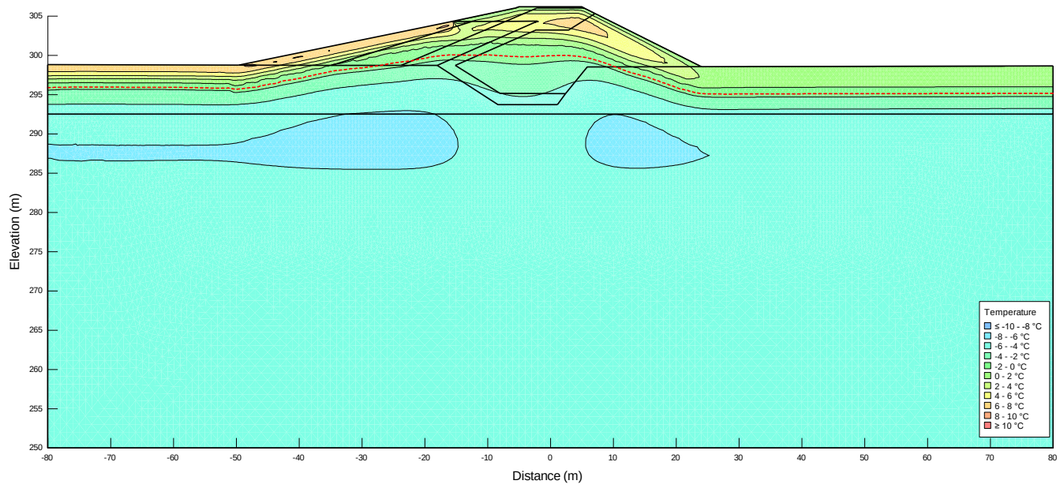




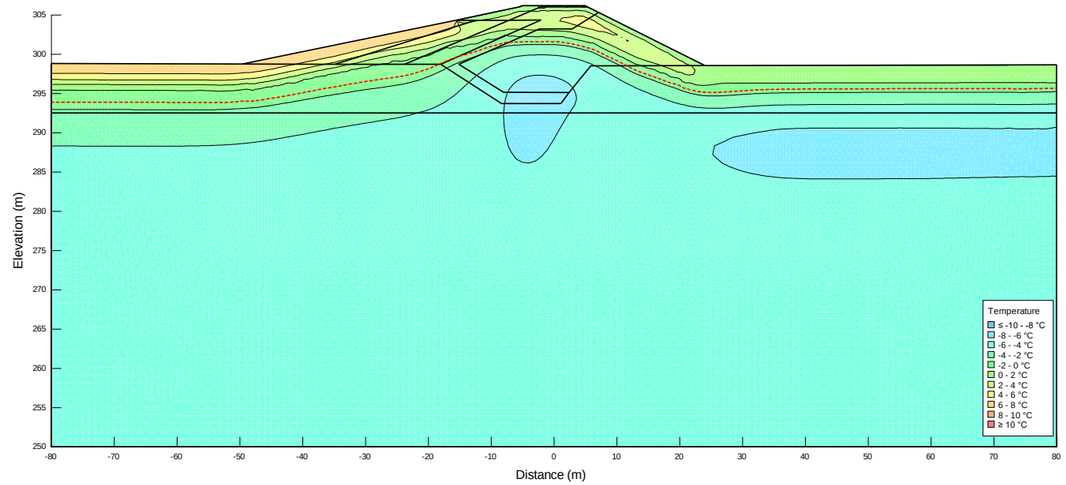
Notes:
1. Modeled ground temperature for reference positions located along the upstream slope of key trench.
2. Initial ROQ rock fill temperature -2°C.
3. Upstream water level set to an elevation of 304.3 m for the design life
4. Thermosyphon panel based on 4 evaporator pipes (3 inch NPS with a total length of 150 m) with 39 m^2 radiator
5. Dashed line indicated -1.4°C isotherm that accounts for site-wide soil porewater freezing point depression

srk consulting	B2GOLD	Primary Pond Dam Thermal Modeling
		Upstream Key Trench Slope Temperature
Job No: CAPR003105 Filename: BackRiverSalineWaterPondDam.pptx	Back River	Date: Dec. 2025 | Approved: CWS | Figure: **7**

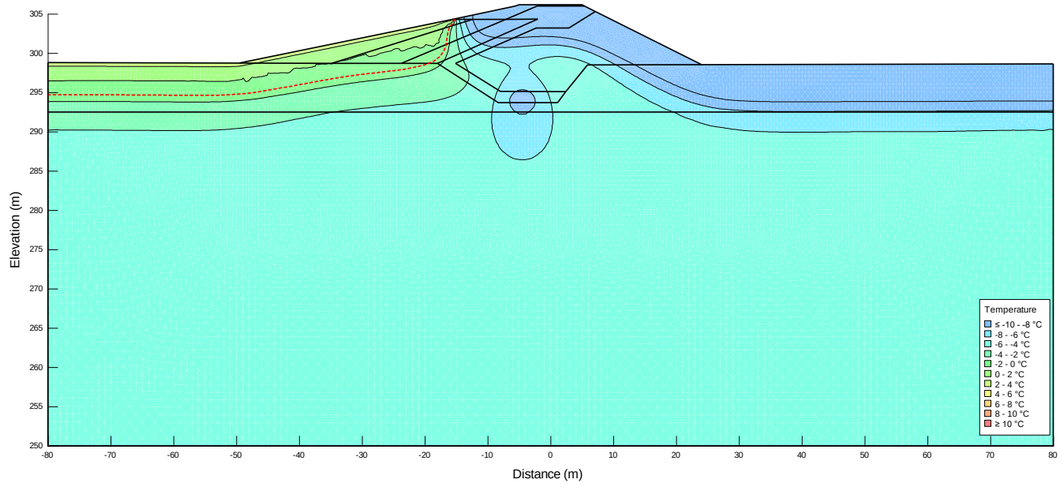
Station 0+360 – Late Summer 2026



Station 0+360 – Late Summer 2027



Station 0+360 – Late Winter 2027



Station 0+360 – Late Winter 2028

Notes:

1. Modeled ground temperature with initial ROQ rock fill temperature of -2°C
2. Upstream water level set to an elevation of 304.3 m for the design life
3. Thermosyphon panel based on 4 evaporator pipes (3 inch NPS, total length of 150 m) with 39 m^2 radiator
4. Dashed line indicated -1.4°C isotherm that accounts for site-wide soil porewater freezing point depression
5. Late summer defined by end of September and late winter defined by end of April

Temperature
- ≤ -10 - -8 °C
- -8 - -6 °C
- -6 - -4 °C
- -4 - -2 °C
- -2 - 0 °C
- 0 - 2 °C
- 2 - 4 °C
- 4 - 6 °C
- 6 - 8 °C
- 8 - 10 °C
- ≥ 10 °C

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Primary Pond Dam Thermal Modeling

Model Section 0+360 – 2026/2027 & 2027/2028

Job No: CAPR003105

Filename: BackRiverSalineWaterPondDam.pptx

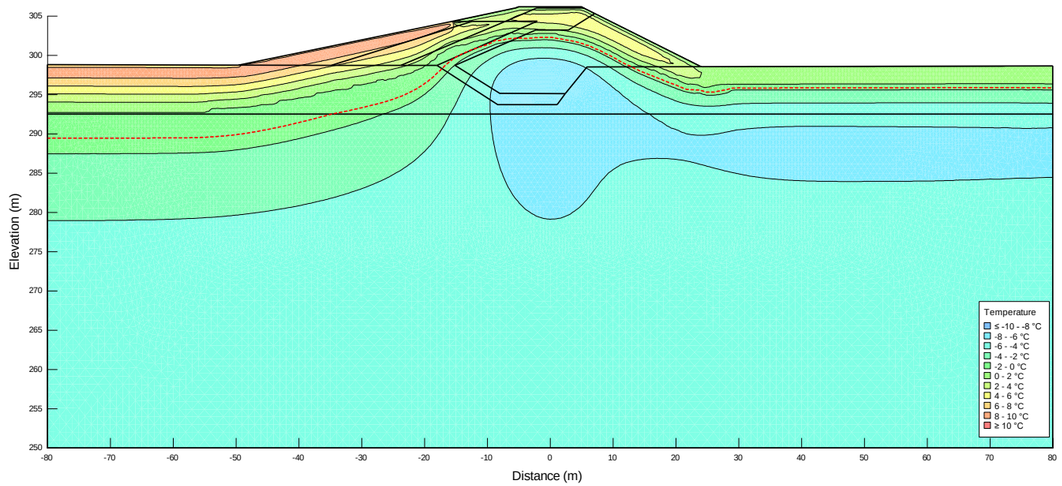
Back River

Date: Dec. 2025

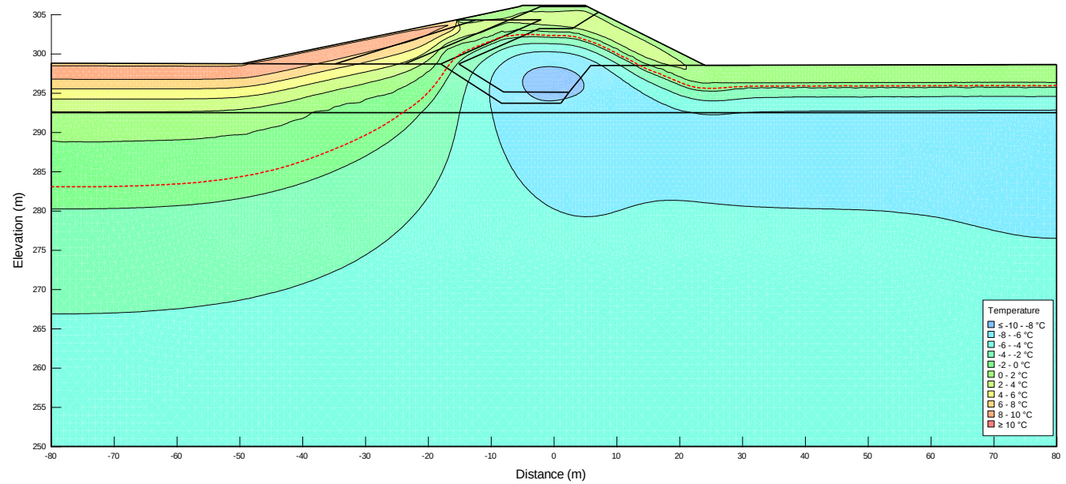
Approved: CWS

Figure: **8**

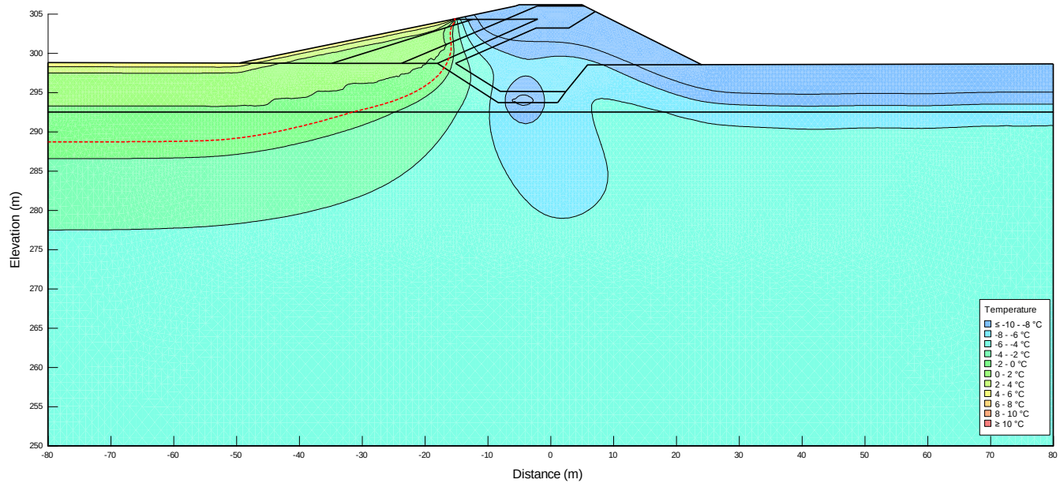
Station 0+360 – Late Summer 2030



Station 0+360 – Late Summer 2035



Station 0+360 – Late Winter 2031



Station 0+360 – Late Winter 2036

Notes:

1. Modeled ground temperature with initial ROQ rock fill temperature of -2°C
2. Upstream water level set to an elevation of 304.3 m for the design life
3. Thermosyphon panel based on 4 evaporator pipes (3 inch NPS, total length of 150 m) with 39 m^2 radiator
4. Dashed line indicated -1.4°C isotherm that accounts for site-wide soil porewater freezing point depression
5. Late summer defined by end of September and late winter defined by end of April

Temperature
- ≤ -10 - -8 °C
- -8 - -6 °C
- -6 - -4 °C
- -4 - -2 °C
- -2 - 0 °C
- 0 - 2 °C
- 2 - 4 °C
- 4 - 6 °C
- 6 - 8 °C
- 8 - 10 °C
- ≥ 10 °C

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Primary Pond Dam Thermal Modeling

Model Section 0+360 – 2030/2031 & 2035/2036

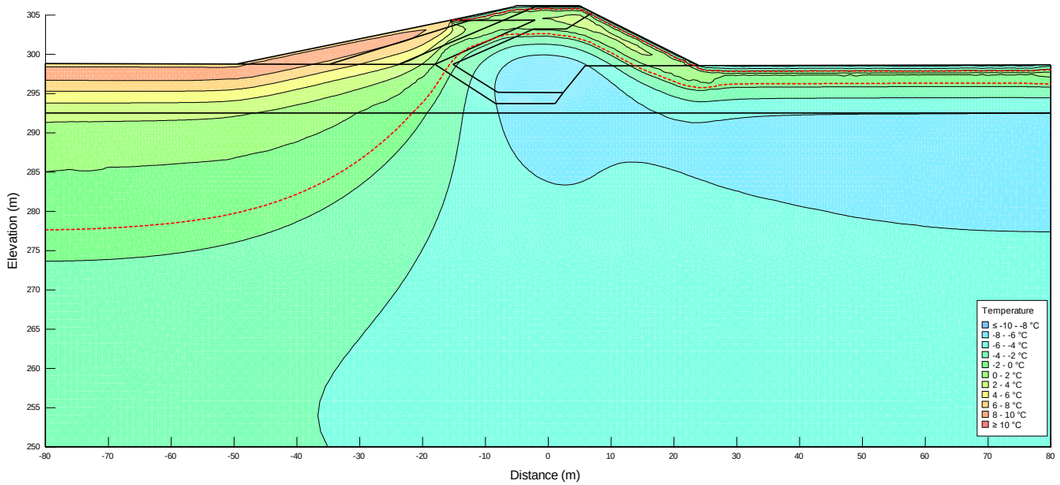
Job No: CAPR003105

Filename: BackRiverSalineWaterPondDam.pptx

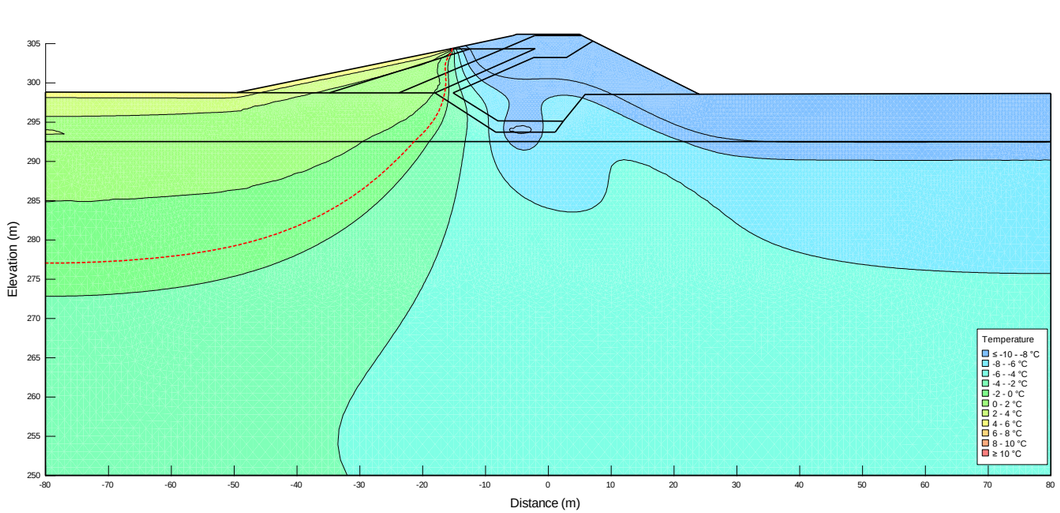
Back River

Date:	Approved:	Figure:
Dec. 2025	CWS	9

Station 0+360 – Late Summer 2040



Station 0+360 – Late Winter 2041



Notes:

1. Modeled ground temperature with initial ROQ rock fill temperature of -2°C
2. Upstream water level set to an elevation of 304.3 m for the design life
3. Thermosyphon panel based on 4 evaporator pipes (3 inch NPS, total length of 150 m) with 39 m^2 radiator
4. Dashed line indicated -1.4°C isotherm that accounts for site-wide soil porewater freezing point depression
5. Late summer defined by end of September and late winter defined by end of April

Temperature
- ≤ -10 - -8 °C
- -8 - -6 °C
- -6 - -4 °C
- -4 - -2 °C
- -2 - 0 °C
- 0 - 2 °C
- 2 - 4 °C
- 4 - 6 °C
- 6 - 8 °C
- 8 - 10 °C
- ≥ 10 °C

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Primary Pond Dam Thermal Modeling

Model Section 0+080 – 2040/2041

Job No: CAPR003105

Filename: BackRiverSalineWaterPondDam.pptx

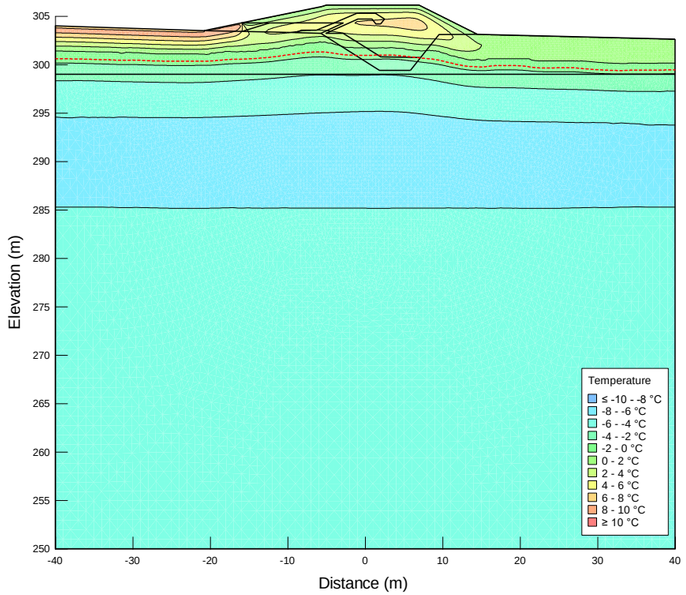
Back River

Date: Dec. 2025

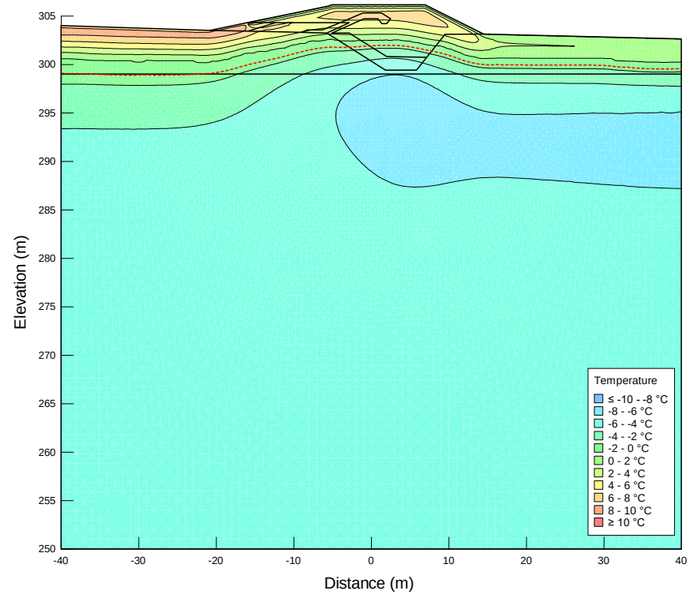
Approved: CWS

Figure: **10**

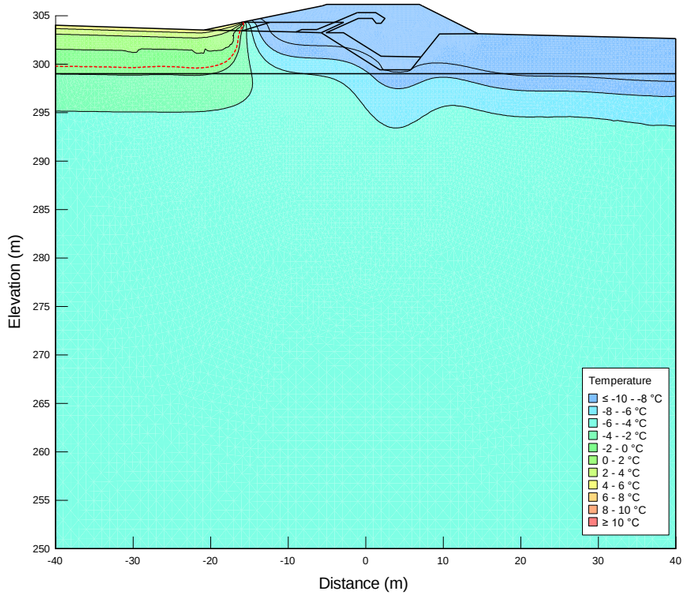
Station 0+080 – Late Summer 2026



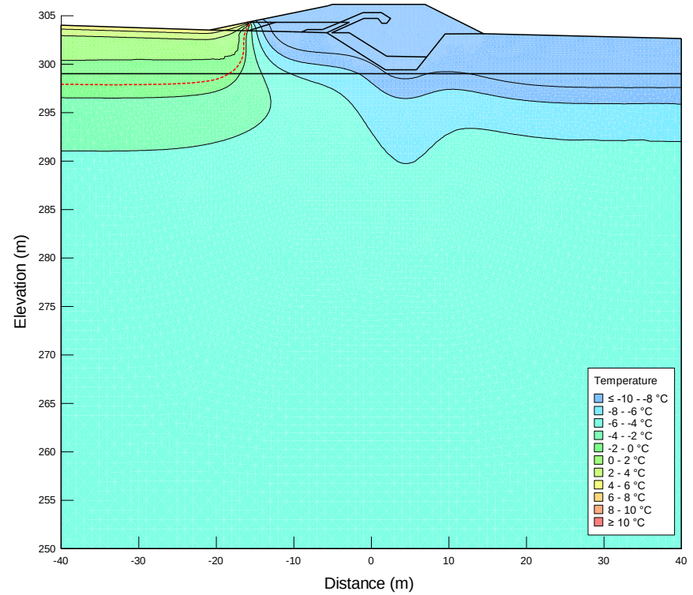
Station 0+080 – Late Summer 2027



Station 0+080 – Late Winter 2027



Station 0+080 – Late Winter 2028



Notes:

1. Modeled ground temperature with initial ROQ rock fill temperature of -2°C
2. Upstream water level set to an elevation of 304.3 m for the design life
3. Thermosyphon panel based on 4 evaporator pipes (3 inch NPS, total length of 150 m) with 39 m^2 radiator
4. Dashed line indicated -1.4°C isotherm that accounts for site-wide soil porewater freezing point depression
5. Late summer defined by end of September and late winter defined by end of April

Temperature
≤ -10 - -8 °C
-8 - -6 °C
-6 - -4 °C
-4 - -2 °C
-2 - 0 °C
0 - 2 °C
2 - 4 °C
4 - 6 °C
6 - 8 °C
8 - 10 °C
≥ 10 °C

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Primary Pond Dam Thermal Modeling

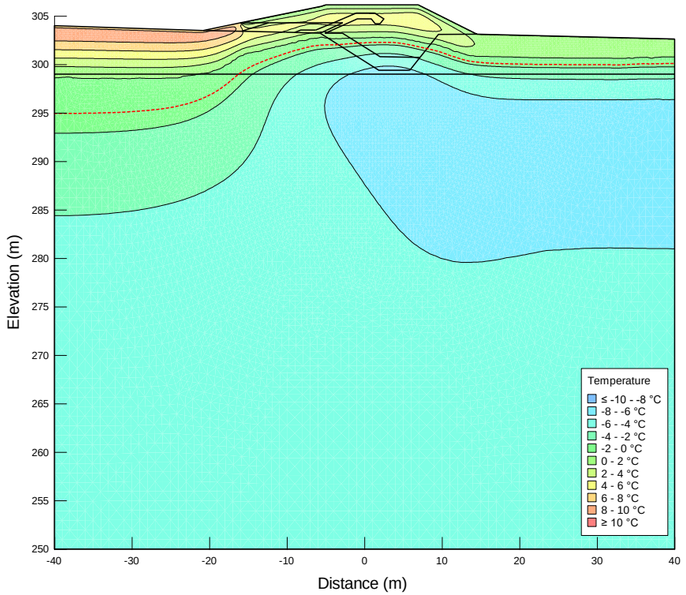
Model Section 0+080 – 2026/2027 & 2027/2028

Job No: CAPR003105
Filename: BackRiverSalineWaterPondDam.pptx

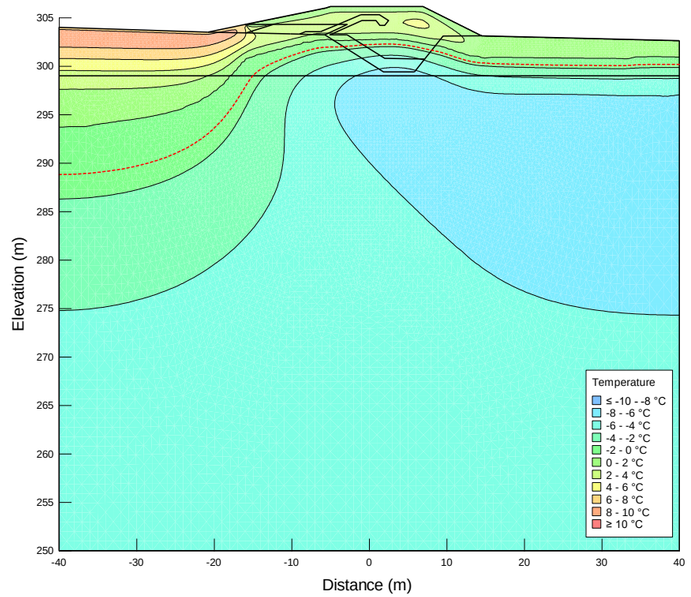
Back River

Date: Dec. 2025
Approved: CWS
Figure: **11**

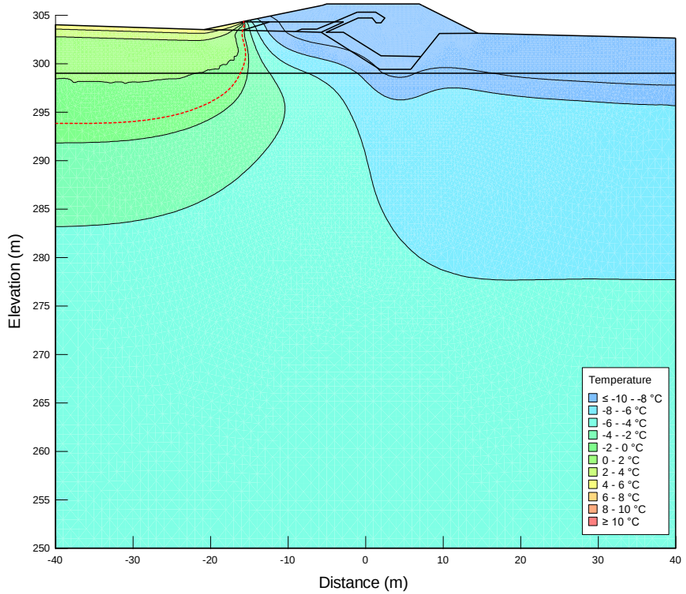
Station 0+080 – Late Summer 2030



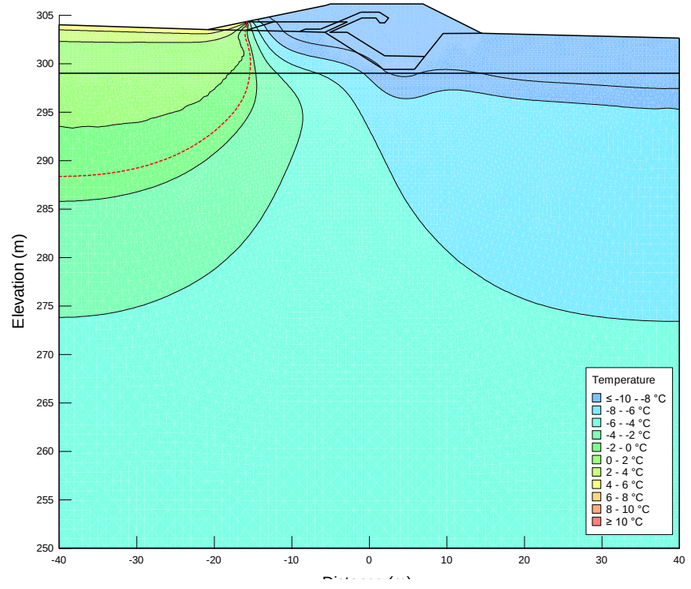
Station 0+080 – Late Summer 2035



Station 0+080 – Late Winter 2031



Station 0+080 – Late Winter 2036



Notes:

1. Modeled ground temperature with initial ROQ rock fill temperature of -2°C
2. Upstream water level set to an elevation of 304.3 m for the design life
3. Thermosyphon panel based on 4 evaporator pipes (3 inch NPS, total length of 150 m) with 39 m^2 radiator
4. Dashed line indicated -1.4°C isotherm that accounts for site-wide soil porewater freezing point depression
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Temperature
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-8 - -6 °C
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-2 - 0 °C
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2 - 4 °C
4 - 6 °C
6 - 8 °C
8 - 10 °C
≥ 10 °C

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Job No: CAPR003105
Filename: BackRiverSalineWaterPondDam.pptx

B2GOLD

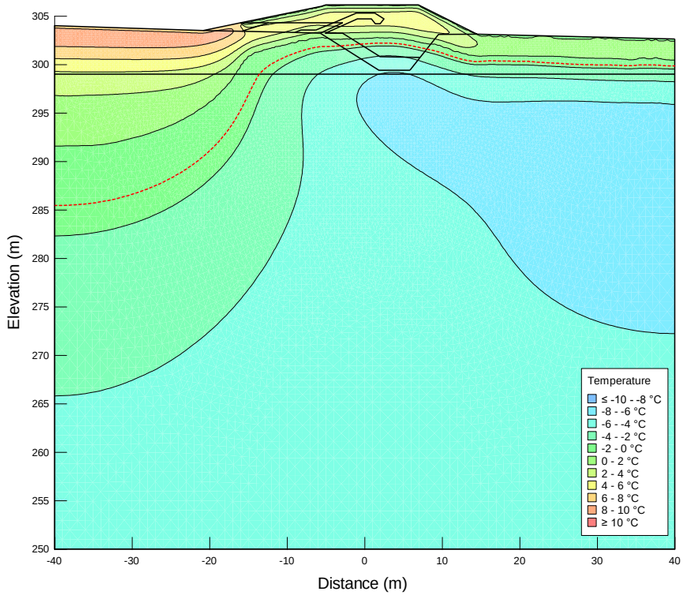
Back River

Primary Pond Dam Thermal Modeling

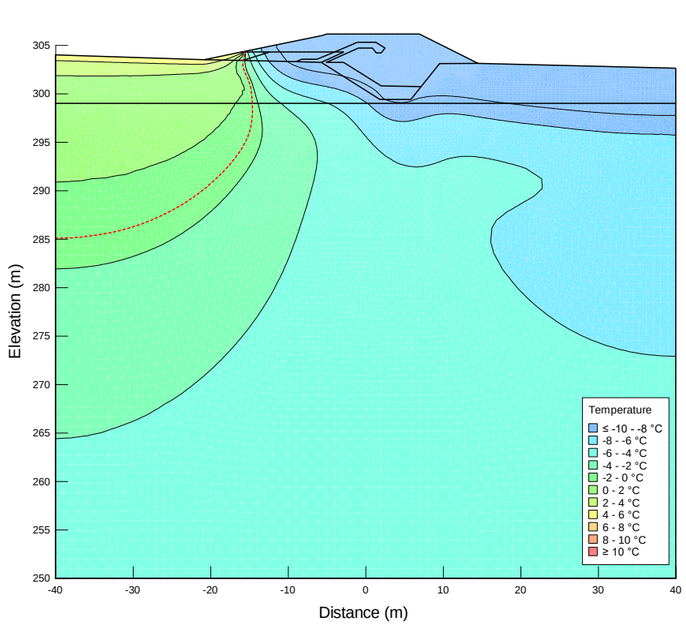
Model Section 0+080 – 2030/2031 & 2035/2036

Date: Dec. 2025
Approved: CWS
Figure: **12**

Station 0+080 – Late Summer 2040



Station 0+080 – Late Winter 2041



Notes:

1. Modeled ground temperature with initial ROQ rock fill temperature of -2°C
2. Upstream water level set to an elevation of 304.3 m for the design life
3. Thermosyphon panel based on 4 evaporator pipes (3 inch NPS, total length of 150 m) with 39 m^2 radiator
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- 2 - 4 °C
- 4 - 6 °C
- 6 - 8 °C
- 8 - 10 °C
- ≥ 10 °C

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Primary Pond Dam Thermal Modeling

Model Section 0+080 – 2040/2041

Job No: CAPR003105

Filename: BackRiverSalineWaterPondDam.pptx

Back River

Date: Dec. 2025

Approved: CWS

Figure: **13**

APPENDIX 3: ISSUED FOR CONSTRUCTION – REV 00

B2GOLD

Engineering Drawings for the Saline Water Pond (Umwelt) Dam, Back River Project, Nunavut, Canada

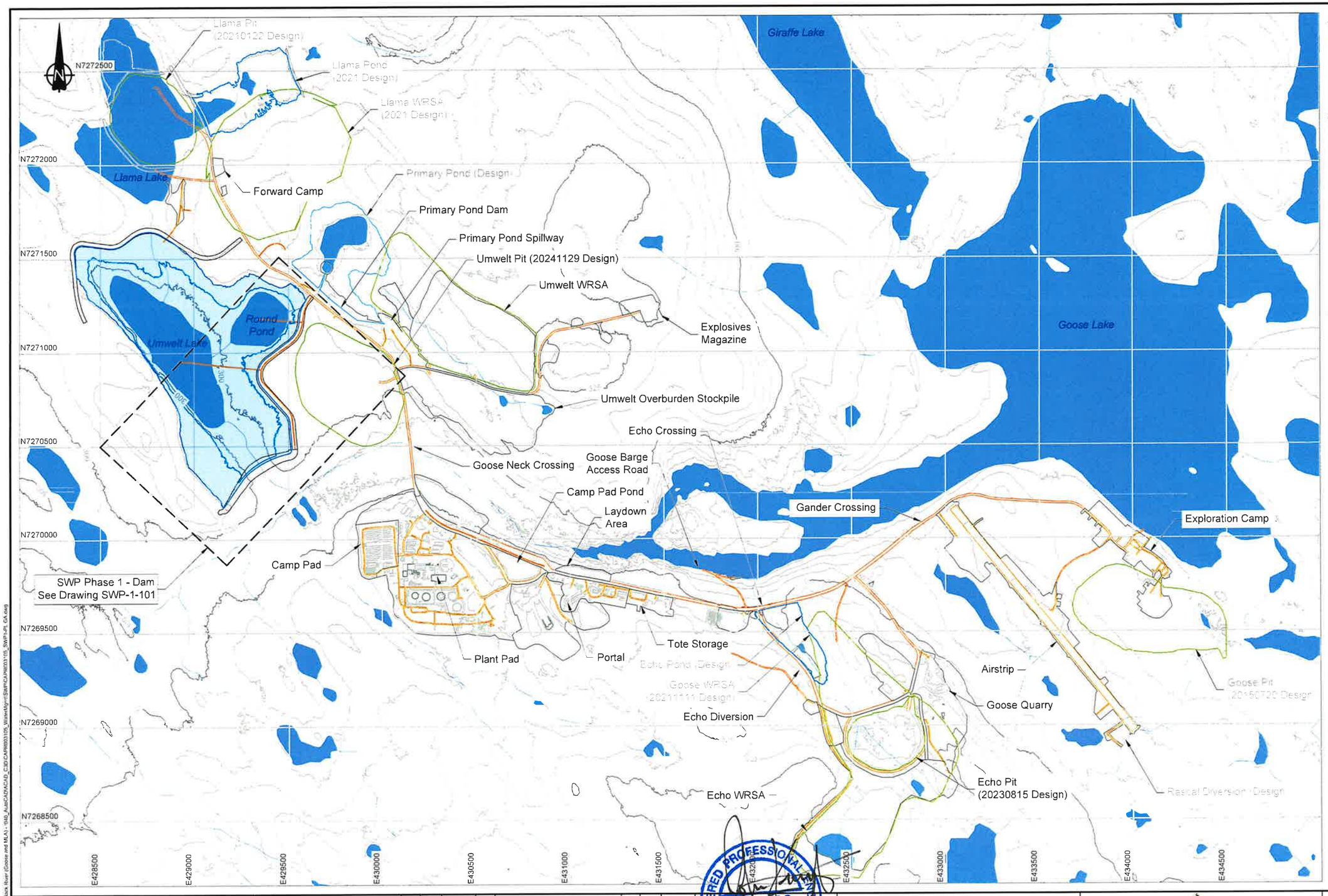
Drawing Number	Drawing Title	Issue	Date	Revision
SWP-1-100	Project Location General Arrangement	Issued for Construction	2025-12-19	0
SWP-1-101	SWP Phase 1 - General Arrangement (Orthophoto)	Issued for Construction	2025-12-19	0
SWP-1-102	SWP Phase 1 - General Arrangement	Issued for Construction	2025-12-19	0
SWP-1-103	Existing Foundation Investigation Plan and Profile	Issued for Construction	2025-12-19	0
SWP-1-200	SWP Phase 1 - Final Configuration Plan and Profile	Issued for Construction	2025-12-19	0
SWP-1-201	SWP Phase 1 - Key Trench Plan and Profile	Issued for Construction	2025-12-19	0
SWP-1-202	SWP Phase 1 - Key Trench Liner Plan and Sections	Issued for Construction	2025-12-19	0
SWP-1-203	SWP Phase 1 - Key Trench Bedding Plan and Sections	Issued for Construction	2025-12-19	0
SWP-1-204	SWP Phase 1 - Key Trench Transition Material Plan and Sections	Issued for Construction	2025-12-19	0
SWP-1-205	SWP Phase 1 - Downstream ROQ Plan and Sections	Issued for Construction	2025-12-19	0
SWP-1-206	SWP Phase 1 - Upstream Transition and Bedding Material Plan and Sections	Issued for Construction	2025-12-19	0
SWP-1-207	SWP Phase 1 - Upstream ROQ Plan and Sections	Issued for Construction	2025-12-19	0
SWP-1-208	SWP Phase 1 - Road Surfacing Plan and Sections	Issued for Construction	2025-12-19	0
SWP-1-209	SWP Phase 1 - Overburden / Fine Grained Material Plan and Sections	Issued for Construction	2025-12-19	0
SWP-1-210	SWP Phase 1 - Turnaround and Phase 2 - Access Road Plan and Profile	Issued for Construction	2025-12-19	0
SWP-1-211	SWP Phase 1 - Thermosyphon Plan and Profile	Issued for Construction	2025-12-19	0
SWP-1-300	SWP Phase 1 - Typical Sections 1 of 2	Issued for Construction	2025-12-19	0
SWP-1-301	SWP Phase 1 - Typical Sections 2 of 2	Issued for Construction	2025-12-19	0
SWP-1-308	SWP Phase 1 - Turnaround and Phase 2 - Access Road Cross-Sections	Issued for Construction	2025-12-19	0
SWP-1-309	SWP Phase 1 - Thermosyphon Section and Details	Issued for Construction	2025-12-19	0
SWP-1-350	SWP Phase 1 - Cross-Sections Sheet 1 of 7	Issued for Construction	2025-12-19	0
SWP-1-351	SWP Phase 1 - Cross-Sections Sheet 2 of 7	Issued for Construction	2025-12-19	0
SWP-1-352	SWP Phase 1 - Cross-Sections Sheet 3 of 7	Issued for Construction	2025-12-19	0
SWP-1-353	SWP Phase 1 - Cross-Sections Sheet 4 of 7	Issued for Construction	2025-12-19	0
SWP-1-354	SWP Phase 1 - Cross-Sections Sheet 5 of 7	Issued for Construction	2025-12-19	0
SWP-1-355	SWP Phase 1 - Cross-Sections Sheet 6 of 7	Issued for Construction	2025-12-19	0
SWP-1-356	SWP Phase 1 - Cross-Sections Sheet 7 of 7	Issued for Construction	2025-12-19	0
SWP-1-370	Thermosyphon Pipe Section 2 Plan and Profile	Issued for Construction	2025-12-19	0
SWP-1-371	Thermosyphon Pipe Section 3 Plan and Profile	Issued for Construction	2025-12-19	0
SWP-1-372	Thermosyphone Pipe Section 4 Plan and Profile	Issued for Construction	2025-12-19	0
SWP-1-373	Thermosyphon Pipe Section 5 Plan and Profile	Issued for Construction	2025-12-19	0
SWP-1-400	Details - Liner and Bedding Placement	Issued for Construction	2025-12-19	0
SWP-1-401	Details - Downstream Liner Tie-in and Safety Barriers	Issued for Construction	2025-12-19	0
SWP-1-500	SWP Phase 1 - Instrumentation Plan	Issued for Construction	2025-12-19	0
SWP-1-501	SWP Phase 1 - Horizontal and Vertical GTC Layout	Issued for Construction	2025-12-19	0
SWP-1-502	Instrumentation Sections	Issued for Construction	2025-12-19	0
SWP-1-504	Instrumentation Details	Issued for Construction	2025-12-19	0

REGISTERED PROFESSIONAL ENGINEER
J.B. KURYLO
LICENSEE
2025/12/19
NT/NU

PERMIT TO PRACTICE
SRK CONSULTING (CANADA) INC.
Signature
Date 2025/12/19
PERMIT NUMBER: P 255
NT/NU Association of Professional Engineers and Geoscientists

srk consulting

SRK Job No. CAPR003105



LEGEND

- Design Pit and Dump Infrastructure
- Design Infrastructure
- Road
- Facility Area (See Note 4)

NOTES

1. All units are in meters unless otherwise specified.
2. Contours are shown at 5.0 m intervals.
3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.
4. Area north of Camp/Plant is current to 2025-09, with Camp/Plant and areas to the east and south are current to 2025-02.

REFERENCES

NAD83 UTM Zone 13.

0m 200 400 600 800

1 20000 Uncontrolled when printed See Note 3

REFERENCE DRAWINGS			REVISIONS								
DRAWING NO.	DRAWING TITLE	NO.	DESCRIPTION	CHK'D	APP'D	DATE	NO.	DESCRIPTION	CHK'D	APP'D	DATE
							0	Issued for Construction	AT/TS	JBK	2025-12-19
							B	Issued for Permit	AT	TS	2025-05-22
							A	Issued for Review	-	-	2022-10

REGISTERED PROFESSIONAL ENGINEERS ASSOCIATION J.B. KURYLO LICENSEE 2025/12/19 NT/NU

PROFESSIONAL ENGINEERS STAMP

srk consulting

DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME: CAPR003105_SWP1-PL GA.dwg

B2GOLD

Back River

SRK JOB NO: CAPR003105

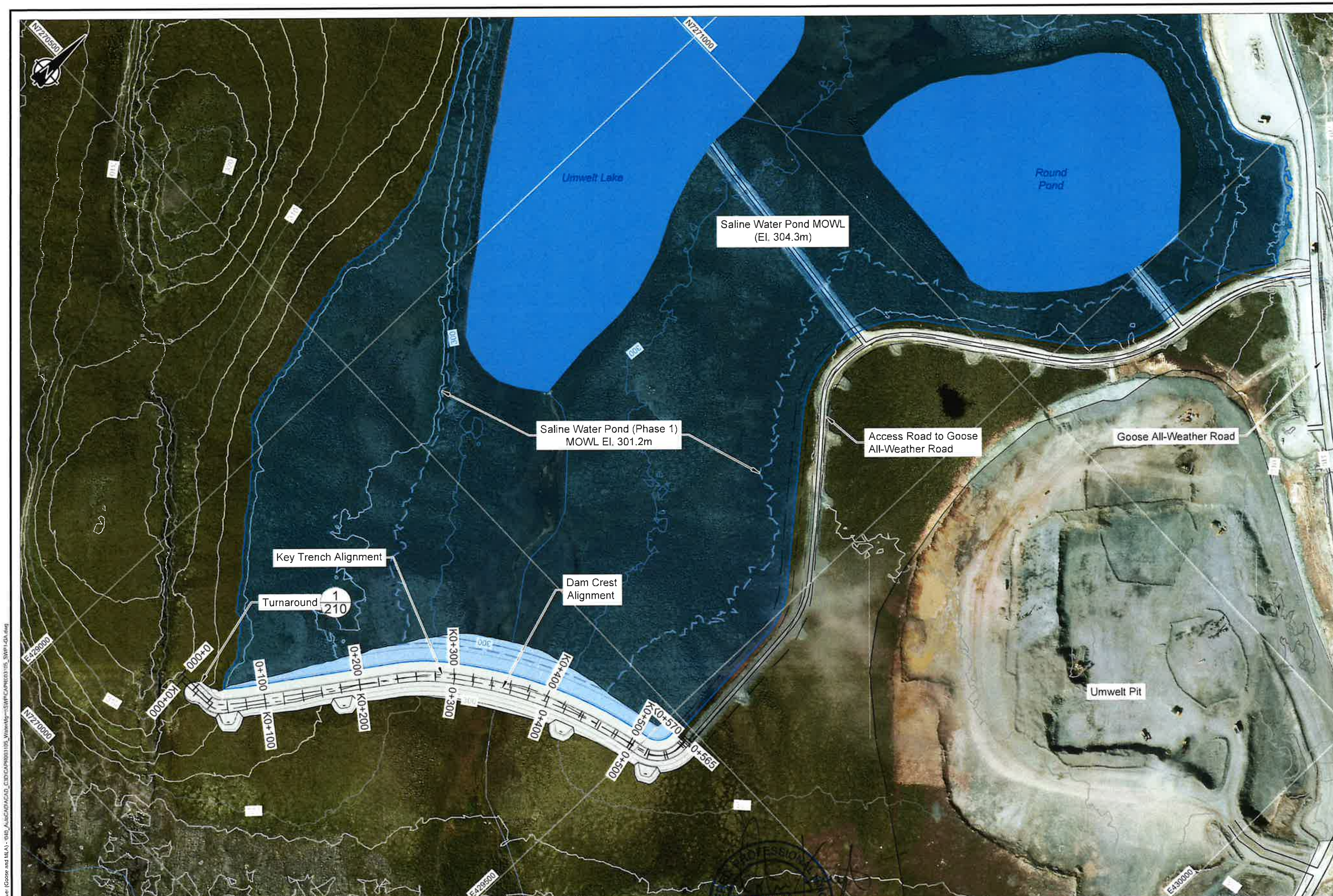
Saline Water Pond (Umwelt) Dam

Project Location General Arrangement

DRAWING NO: SWP-1-100

REVISION NO: 0

C:\Users\jbokr\SRK Consulting(F)\S203 Back River (Goose and MLA) - 1940_AutoCAD\ACAD_C3D\CAPR003105_WaterMgmt\SWP\CAPR003105_SWP1-PL GA.dwg



LEGEND

- Waterbody
- Maximum Operating Water Level (MOWL)
- Design Infrastructure

NOTES

1. All units are in meters unless otherwise specified.
2. Contours are shown at 2.0 m intervals.
3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey and 2025-06-15 Drone Survey.
Aerial Imagery is from 2025-08-16.

0m 40 80 120 160
1 : 4000

Uncontrolled when printed
See Note 3

NO	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

REVISIONS

DRAWING NO.	DRAWING TITLE
- -	- -

REFERENCE DRAWINGS

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LICENSEE
2025/12/19
NT/NU

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DESIGN JBK/AT	DRAWN JAB	REVIEWED AT/JBK
CHECKED AT/TS(B2Gold)	APPROVED JBK	DATE 2025-12-19

FILE NAME CAPR003105_SWP1-GA.dwg

B2GOLD

Back River

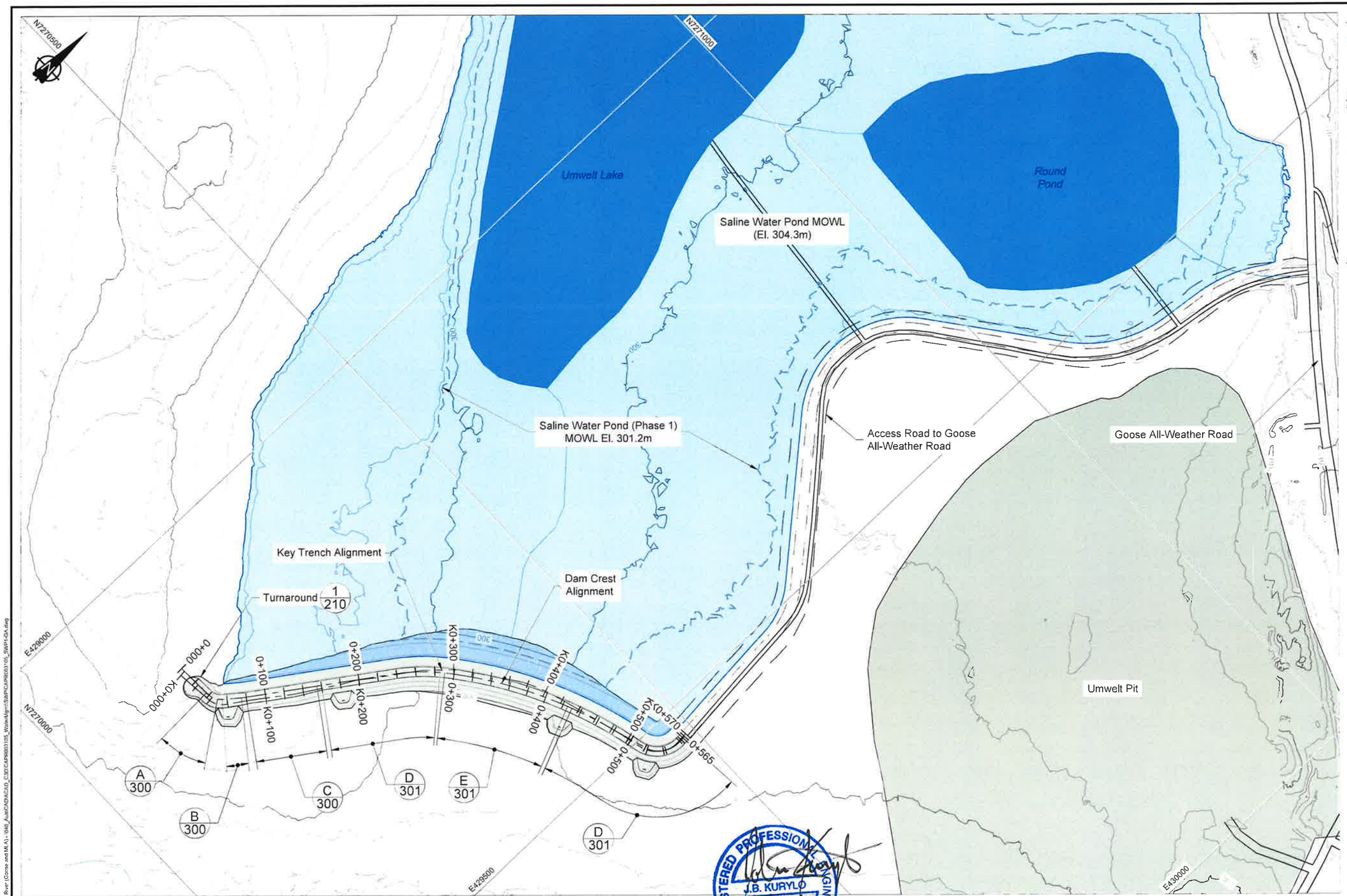
SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - General Arrangement (Orthophoto)

DRAWING NO SWP-1-101

REVISION NO 0



LEGEND

- Waterbody
- Maximum Operating Water Level (MOWL)
- Design Infrastructure

NOTES

1. All units are in meters unless otherwise specified.
2. Contours are shown at 2.0 m intervals.
3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey and 2025-06-15 Drone Survey.

0m 40 80 120 160
1 : 4000 Uncontrolled when printed See Note 3

REGISTERED PROFESSIONAL ENGINEER
J.B. KURYLO
LICENSEE
2025/12/19
NT/NU

REFERENCE DRAWINGS

DRAWING NO.	DRAWING TITLE
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REVISIONS

NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

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PROFESSIONAL ENGINEERS STAMP

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DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-GA.dwg

B2GOLD

Back River

SRK JOB NO. CAPR003105

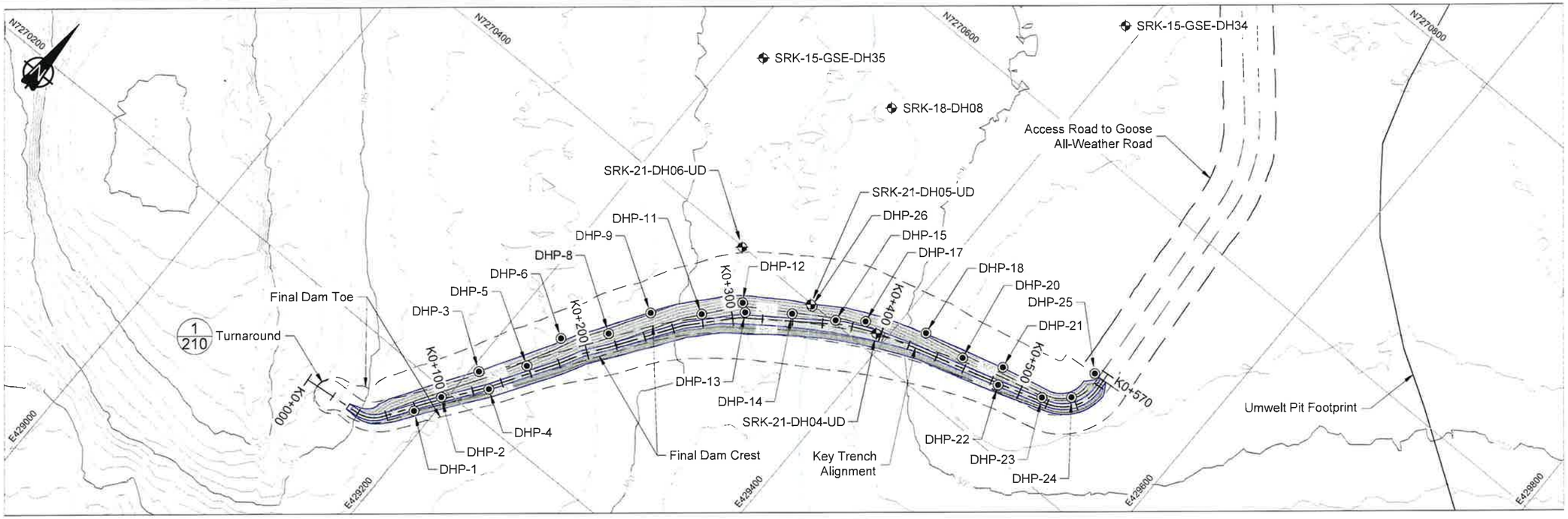
Saline Water Pond (Umwelt) Dam

SWP Phase 1 - General Arrangement

DRAWING NO. SWP-1-102

REVISION NO. 0

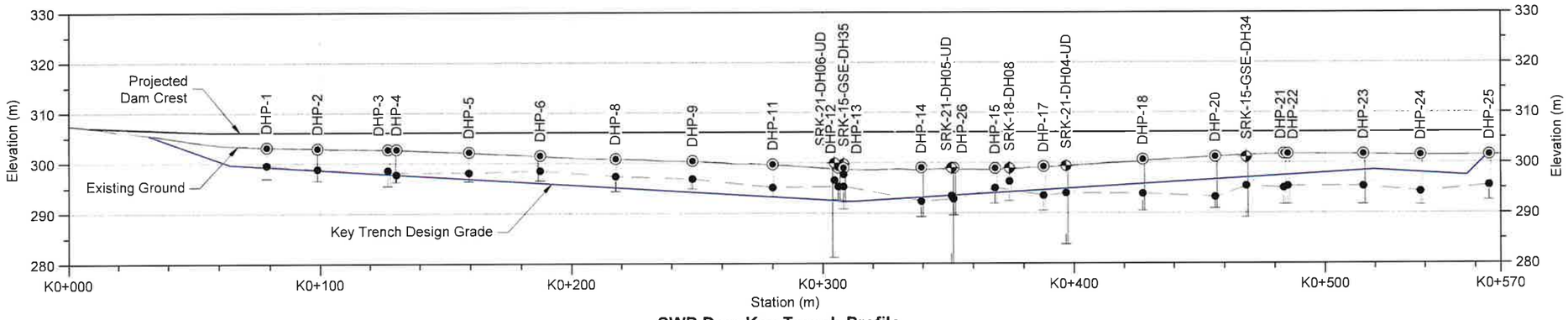
C:\Users\bsex\SRK Consulting\PS203 Back River (Goose and MLA) - 1940_AutoCAD\ACAD_C\3D\CAPR003105_WaterMgt\SWP\CAPR003105_SWP1-GA.dwg



SWP Dam Key Trench Plan

0m 30 60 90 120

1 : 3000 Uncontrolled when printed See Note 3



SWP Dam Key Trench Profile

0m 10 20 30 40 Vertical

1 : 1000

0m 20 40 60 80 Horizontal

1 : 2000 Uncontrolled when printed See Note 3

LEGEND

- Drillhole
- Percolation Hole
- Bedrock Contact in Profile
- End of Percolation Hole in Profile
- Waterbody
- Excavation
- Bedrock (Inferred)
- Design Infrastructure

NOTES

1. All units are in meters unless otherwise specified.
2. Contours are shown at 1.0 m intervals.
3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

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REFERENCE DRAWINGS

DRAWING NO.	DRAWING TITLE
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REVISIONS

NO	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

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DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME: CAPR003105_SWP1-KT Investigation.dwg

SRK JOB NO.: CAPR003105

B2GOLD

Back River

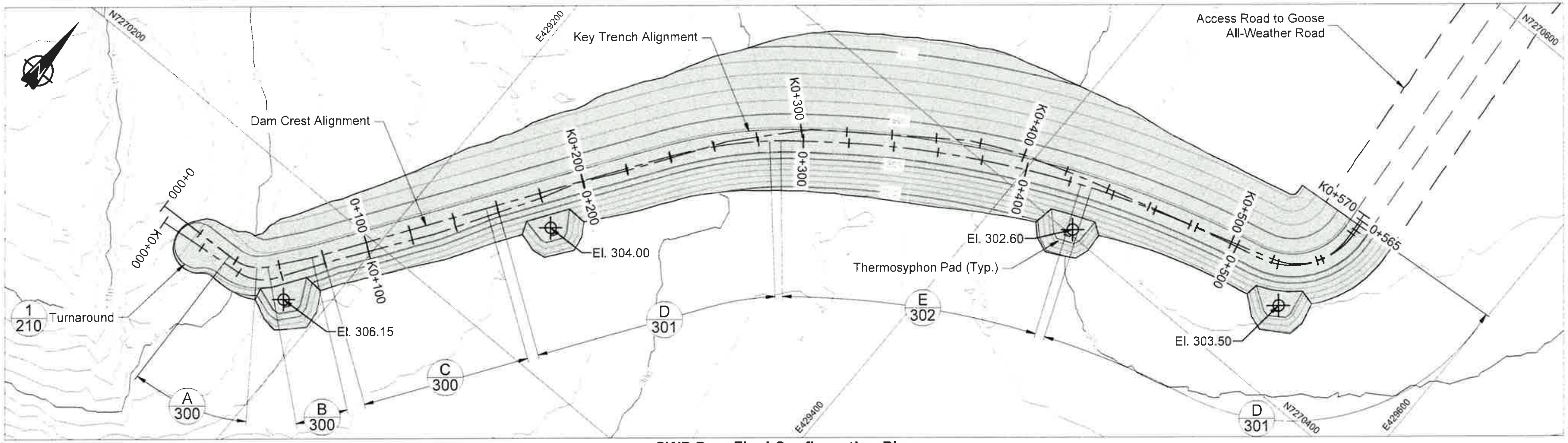
Saline Water Pond (Umwelt) Dam

Existing Foundation Investigation Plan and Profile

DRAWING NO.: SWP-1-103

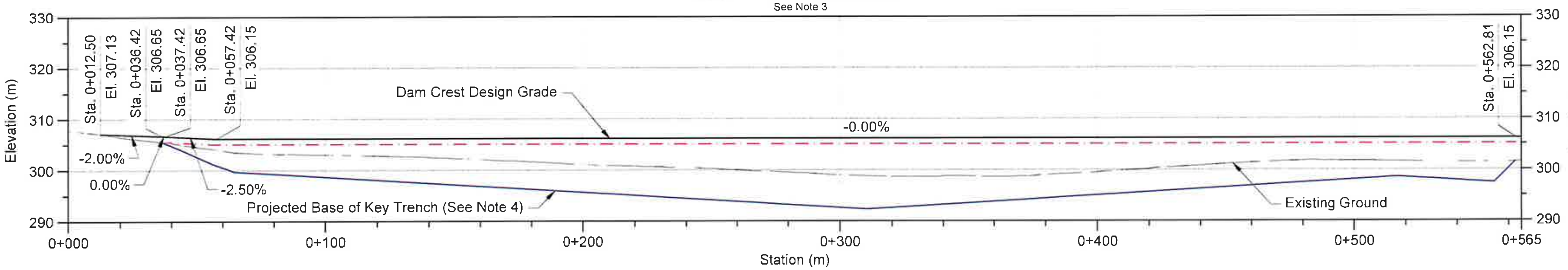
REVISION NO.: 0

C:\Users\jbaker\SRK Consulting\P3203 Back River (Goose and MLA) - 1043_AutoCAD\ACAD_C3D\CAPR003105_WaterMgmt\SWP\CAPR003105_SWP1-KT Investigation.dwg

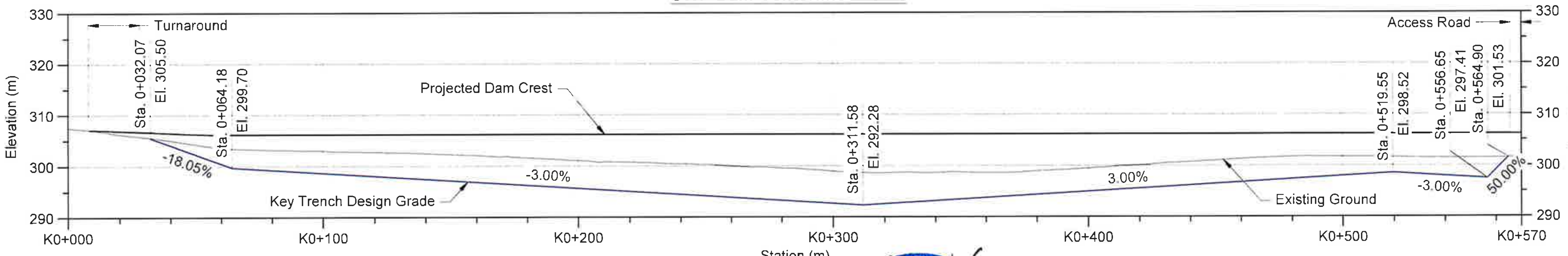


SWP Dam Final Configuration Plan

0m 20 40 60 80
1 : 2000 Uncontrolled when printed See Note 3



SWP Dam Centerline Profile



SWP Dam Key Trench Profile

0m 10 20 30 40 Vertical 1 : 1000
0m 20 40 60 80 Horizontal 1 : 2000 Uncontrolled when printed See Note 3

LEGEND

- Waterbody
- Excavation
- Geomembrane
- Design Infrastructure

NOTES

1. All units are in meters unless otherwise specified.
2. Contours are shown at 1.0 m intervals.
3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.
4. Base of key trench on this profile is based on a section down the centerline of the dam crest. Note that the key trench centerline and the dam crest centerline do not share the exact same alignment and overall the chainages vary in any given location (between the key trench and dam crest shown in these drawings) in the range of ±5m offset, ±50 chainage station.

REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

MATERIAL LIST AND NEAT LINE QUANTITY

Key Trench Excavation:	31,650m³
Flyash Leveling:	200m³
Bedding Leveling:	300m³
Sand:	650m³
ROQ Fill:	67,100m³
Transition Fill:	29,250m³
Bedding Fill:	11,100m³
Overburden Fill:	14,400m³
Road Surfacing:	1,100m³
Geotextile:	26,450m²
Liner:	17,750m²

All quantities presented are to neat-lines and do not allow / account for bulking, compaction, overlaps or material losses.

NO	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

REFERENCE DRAWINGS (DRAWING NO. / DRAWING TITLE) -- / --

REVISIONS

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DESIGN	JBK/AT	DRAWN	JAB	REVIEWED	AT/JBK
CHECKED	AT/TS(B2Gold)	APPROVED	JBK	DATE	2025-12-19

FILE NAME: CAPR003105_SWP1-Final.dwg

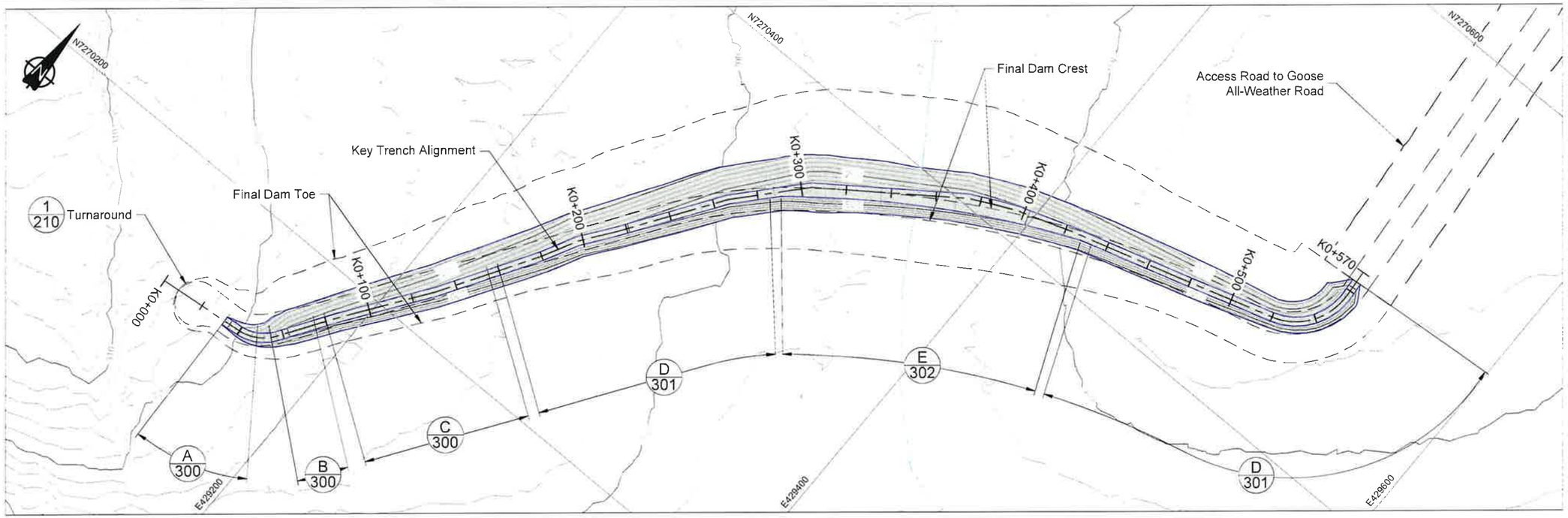
B2GOLD — Back River

SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Final Configuration Plan and Profile

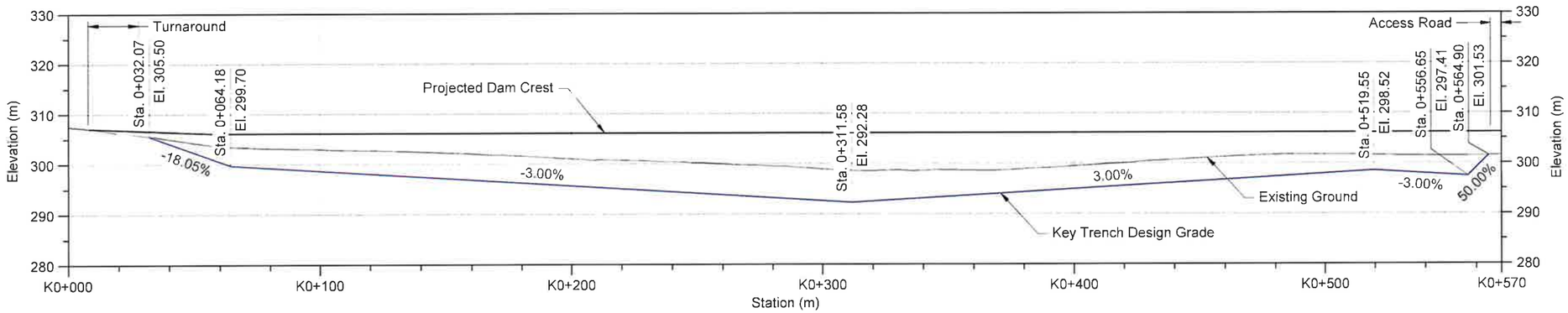
DRAWING NO: SWP-1-200 REVISION NO: 0



SWP Dam Key Trench Plan

0m 20 40 60 80

1 : 2000 Uncontrolled when printed See Note 3



SWP Dam Key Trench Profile

0m 10 20 30 40 Vertical

1 : 1000

0m 20 40 60 80

1 : 2000 Uncontrolled when printed See Note 3

LEGEND

- Waterbody
- Excavation
- Design Infrastructure

NOTES

1. All units are in meters unless otherwise specified.
2. Contours are shown at 1.0 m intervals.
3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

DRAWING NO.	DRAWING TITLE
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REFERENCE DRAWINGS

NO.	DESCRIPTION	CHKD	APP'D	DATE

REVISIONS

NO	DESCRIPTION	CHKD	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

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2025/12/19
NT/NU

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DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-KT.dwg

B2GOLD

Back River

SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Key Trench Plan and Profile

DRAWING NO	REVISION NO
SWP-1-201	0

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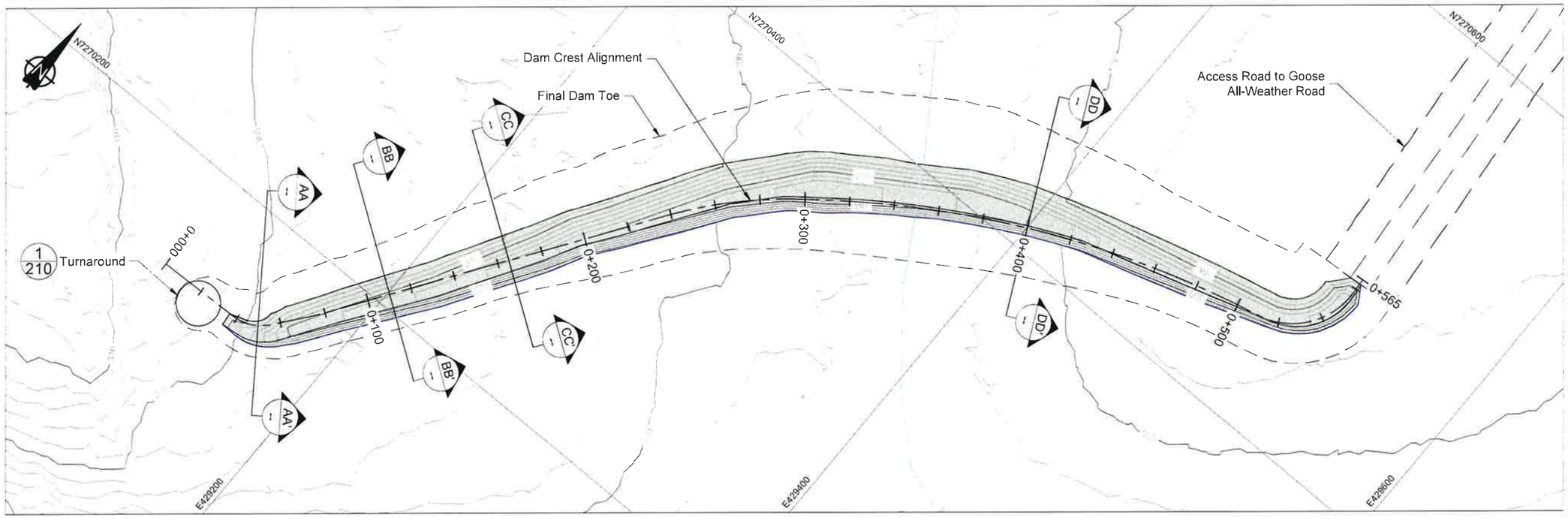
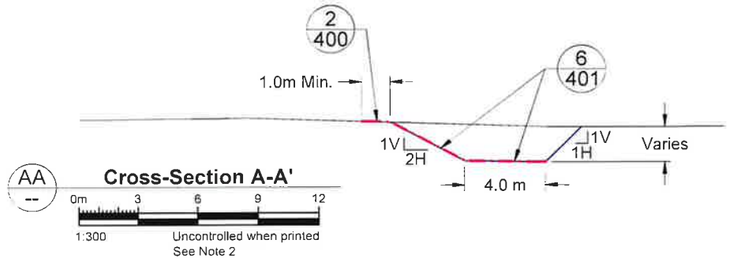


Key Trench Liner Plan

0m 20 40 60 80

1 : 2000 Uncontrolled when printed See Note 3



AA Cross-Section A-A'

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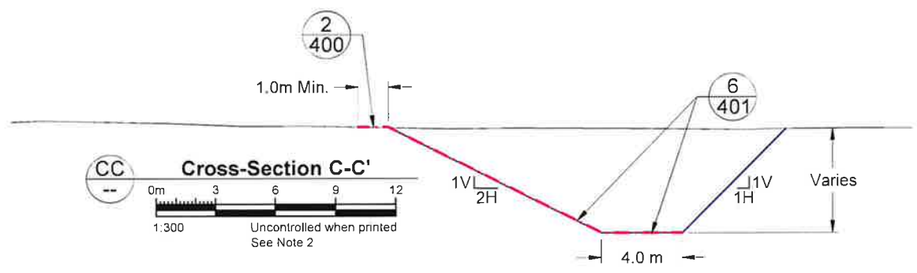
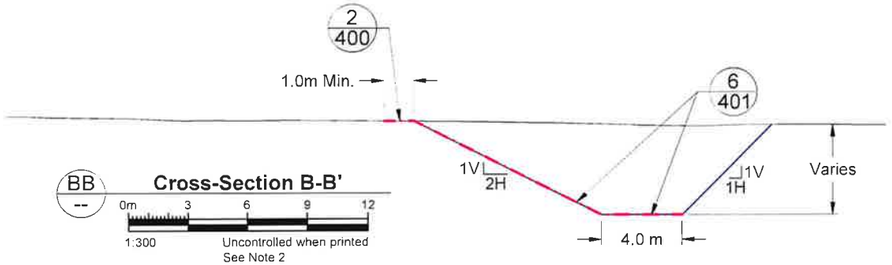
1:300 Uncontrolled when printed See Note 2



CC Cross-Section C-C'

0m 3 6 9 12

1:300 Uncontrolled when printed See Note 2



BB Cross-Section B-B'

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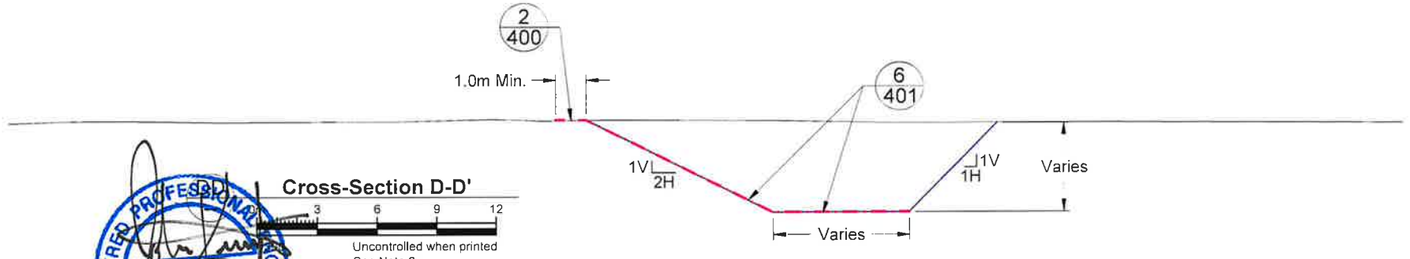
1:300 Uncontrolled when printed See Note 2



Cross-Section D-D'

3 6 9 12

Uncontrolled when printed See Note 2

LEGEND

- Waterbody
- Excavation
- Geomembrane
- Design Key Trench
- Design Infrastructure

NOTES

1. All units are in meters unless otherwise specified.
2. Contours are shown at 1.0 m intervals.
3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

REFERENCES

NAD83 UTM Zone 13.

Existing Ground is derived from 2023-09-08 Lidar Survey.

REGISTERED PROFESSIONAL ENGINEER J.B. KUHYLO LICENSEE 2025/12/19 NT/NU

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DRAWING NO.	DRAWING TITLE	NO	DESCRIPTION	CHK'D	APP'D	DATE	NO	DESCRIPTION	CHK'D	APP'D	DATE
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							B	Issued for Permit	AT	TS	2025-09-22
							A	Issued for Review	-	-	2022-10

srk consulting

DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19
FILE NAME		
CAPR003105_SWP1-Staging.dwg		

BeGOLD

Back River

SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Key Trench Liner Plan and Sections

DRAWING NO	REVISION NO
SWP-1-202	0

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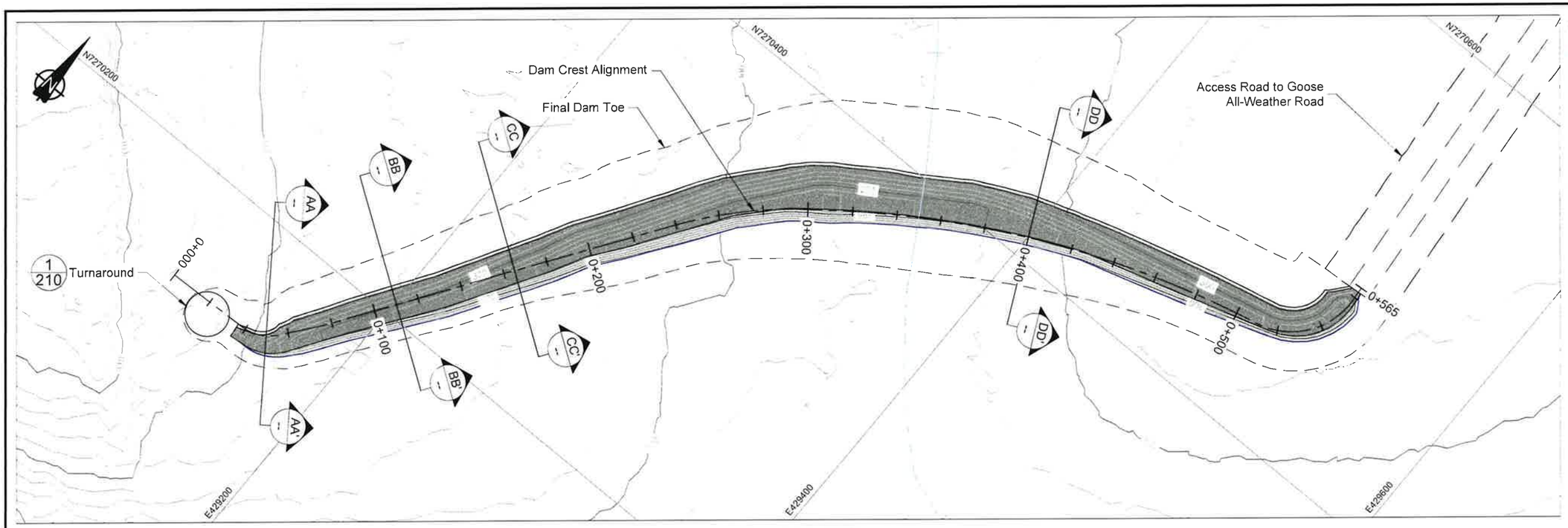


Key Trench Liner Plan

0m 20 40 60 80

1 : 2000 Uncontrolled when printed See Note 3

LEGEND

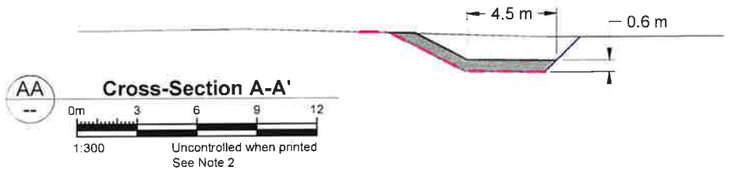
- Waterbody
- Excavation
- Geomembrane
- Design Key Trench
- Bedding
- Design Infrastructure

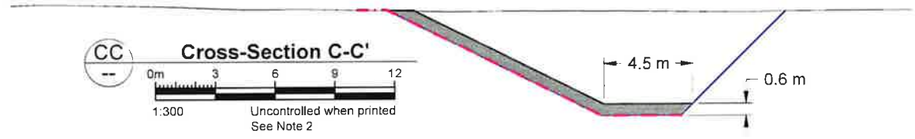
NOTES

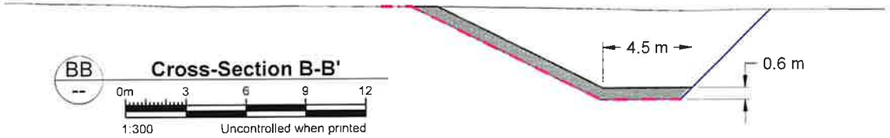
1. All units are in meters unless otherwise specified.
2. Contours are shown at 1.0 m intervals.
3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

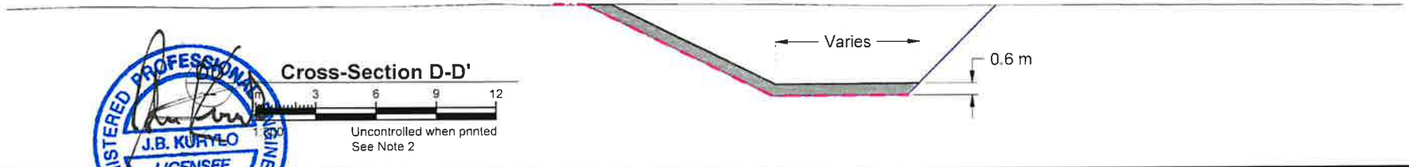
REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.









REGISTERED PROFESSIONAL ENGINEER
J.B. KURYLO
LICENSEE
2025/12/19
NT/NU

DRAWING NO.	DRAWING TITLE
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REFERENCE DRAWINGS

NO.	DESCRIPTION	CHK'D	APP'D	DATE

REVISIONS

NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

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srk consulting

DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME: CAPR003105_SWP1-Staging.dwg

B2GOLD

Back River

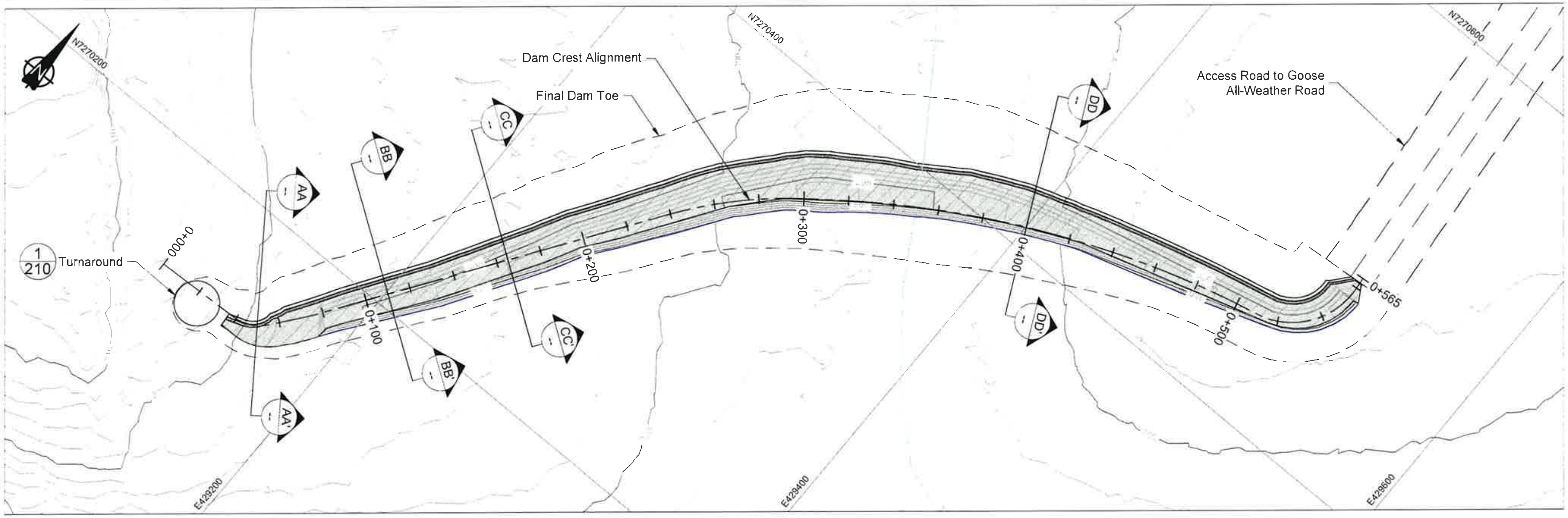
SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Key Trench Bedding Plan and Sections

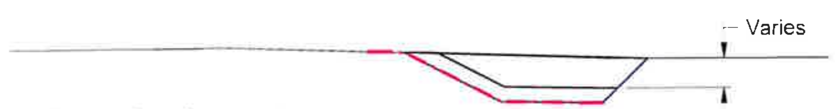
DRAWING NO. SWP-1-203

REVISION NO 0



Key Trench Liner Plan

0m 20 40 60 80
1 : 2000 Uncontrolled when printed
See Note 3



AA
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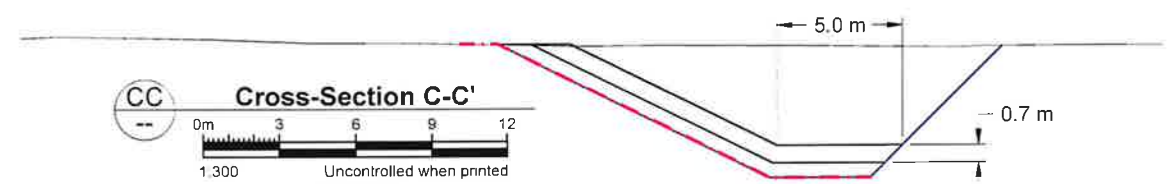
Cross-Section A-A'

0m 3 6 9 12
1:300 Uncontrolled when printed
See Note 2



CC
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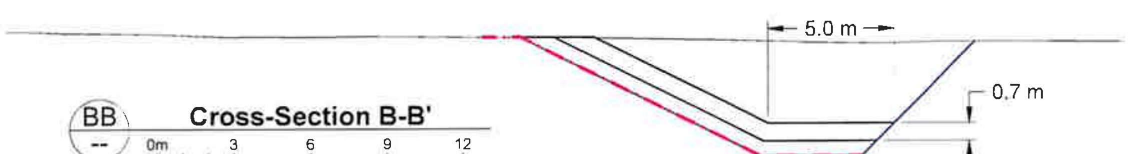
Cross-Section C-C'

0m 3 6 9 12
1:300 Uncontrolled when printed
See Note 2



BB
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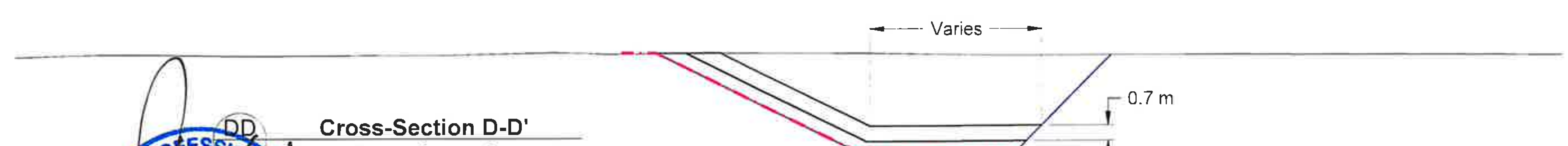
Cross-Section B-B'

0m 3 6 9 12
1:300 Uncontrolled when printed
See Note 2



DD

Cross-Section D-D'

0m 3 6 9 12
1:300 Uncontrolled when printed
See Note 2

LEGEND

- Waterbody
- Excavation
- Geomembrane
- Design Key Trench
- Bedding
- Transition Material
- Design Infrastructure

NOTES

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3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

DRAWING NO.	DRAWING TITLE
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REFERENCE DRAWINGS

NO	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

REVISIONS

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srk consulting

DESIGN JBK/AT	DRAWN JAB	REVIEWED AT/JBK
CHECKED AT/TS(B2Gold)	APPROVED JBK	DATE 2025-12-19
FILE NAME CAPR003105_SWP1-Staging.dwg		

B2GOLD

Back River

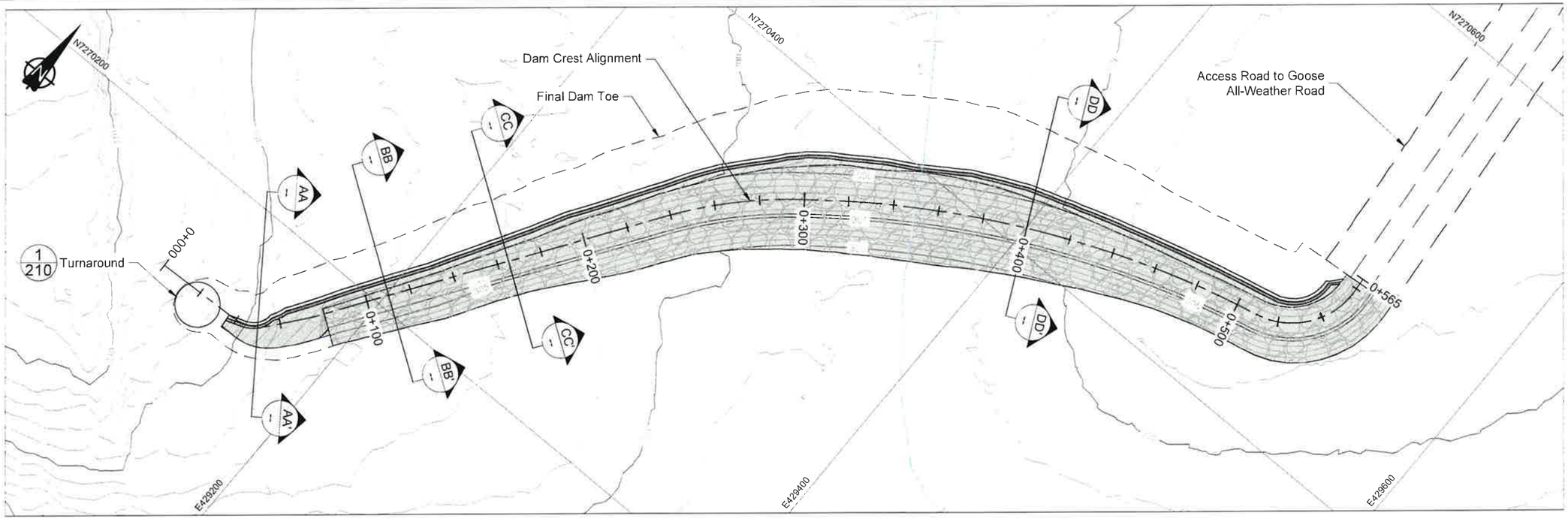
SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Key Trench Transition Material Plan and Sections

DRAWING NO. SWP-1-204

REVISION NO 0



Key Trench Liner Plan

0m 20 40 60 80

1 : 2000 Uncontrolled when printed
See Note 3

LEGEND

- Waterbody
- Excavation
- Geomembrane
- Design Key Trench
- Bedding
- Transition Material
- Run of Quarry
- Design Infrastructure

NOTES

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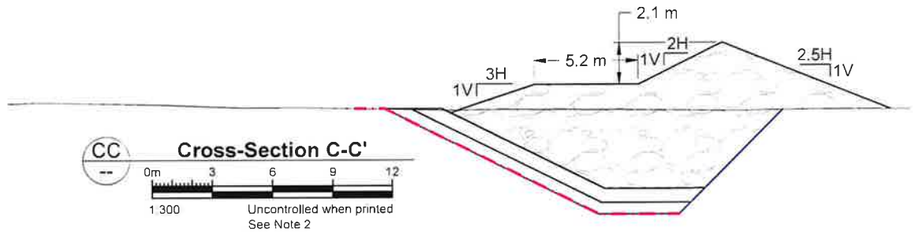
REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

AA -- **Cross-Section A-A'**

0m 3 6 9 12

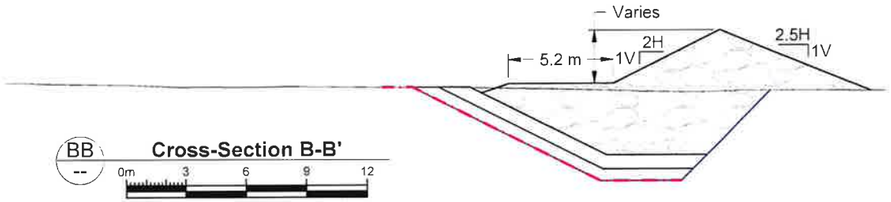
1:300 Uncontrolled when printed
See Note 2



CC -- **Cross-Section C-C'**

0m 3 6 9 12

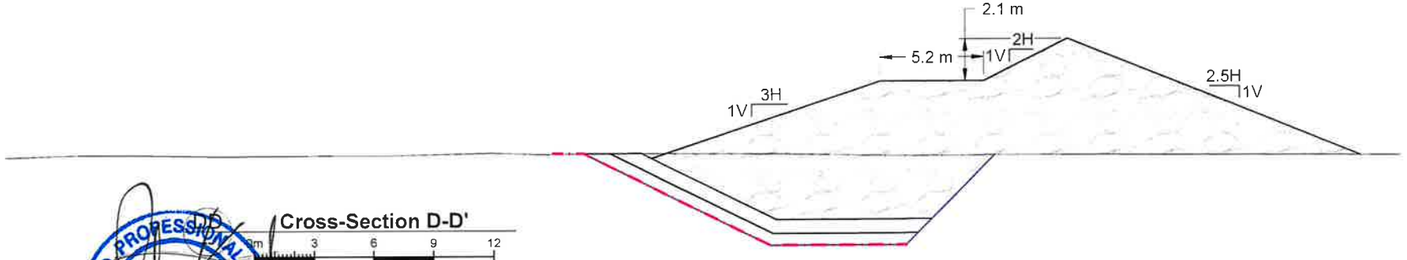
1:300 Uncontrolled when printed
See Note 2



BB -- **Cross-Section B-B'**

0m 3 6 9 12

1:300 Uncontrolled when printed
See Note 2



Cross-Section D-D'

0m 3 6 9 12

Uncontrolled when printed
See Note 2

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PROFESSIONAL ENGINEERS STAMP

DRAWING NO.	DRAWING TITLE
--	--

REFERENCE DRAWINGS

NO	DESCRIPTION	CHK'D	APP'D	DATE

NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

REVISIONS

srk consulting

DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-Staging.dwg

B2GOLD

Back River

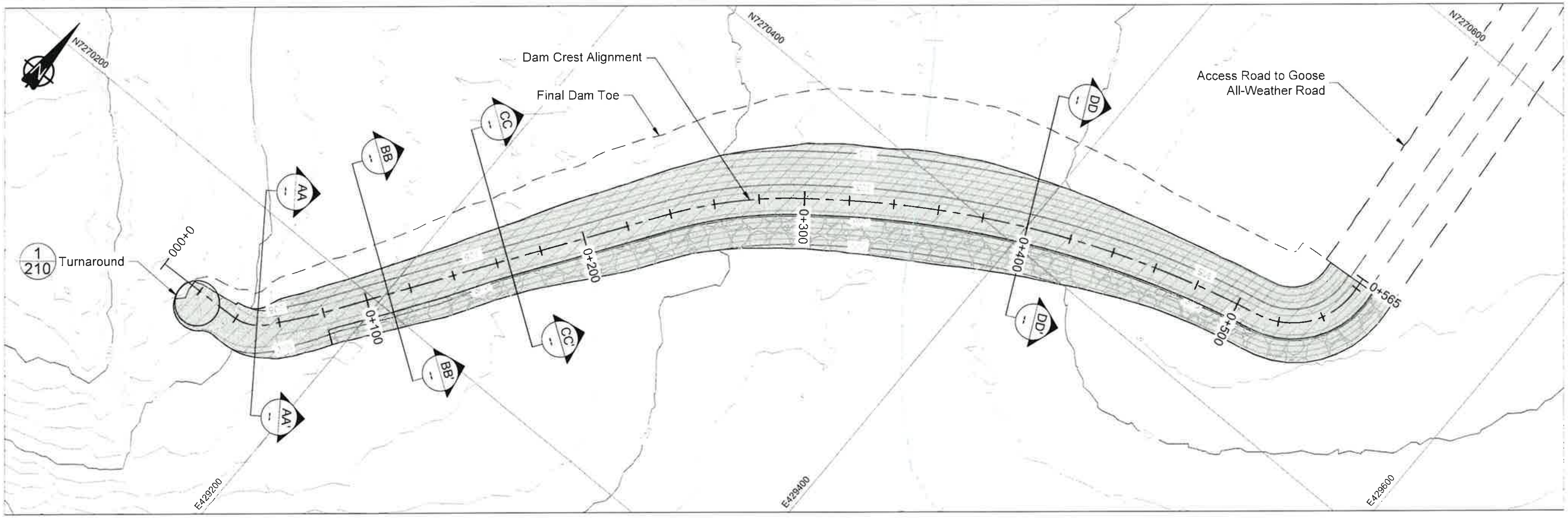
SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Downstream ROQ Plan and Sections

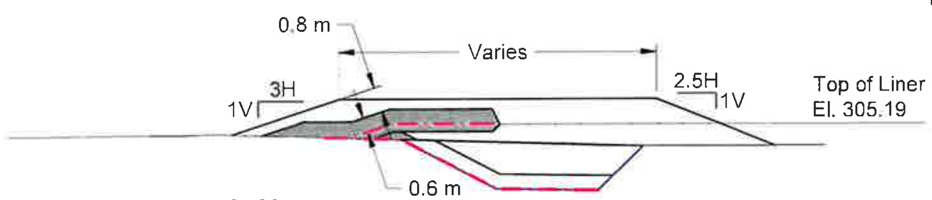
DRAWING NO. SWP-1-205

REVISION NO. 0



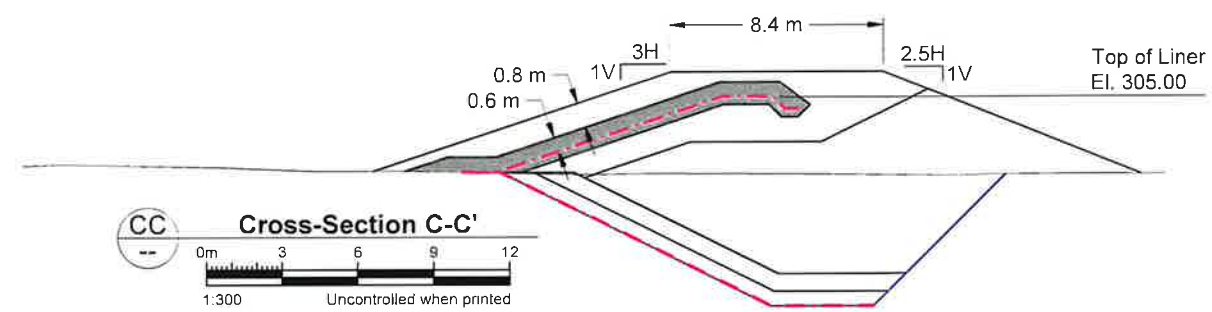
Key Trench Liner Plan

0m 20 40 60 80
1 : 2000 Uncontrolled when printed See Note 3



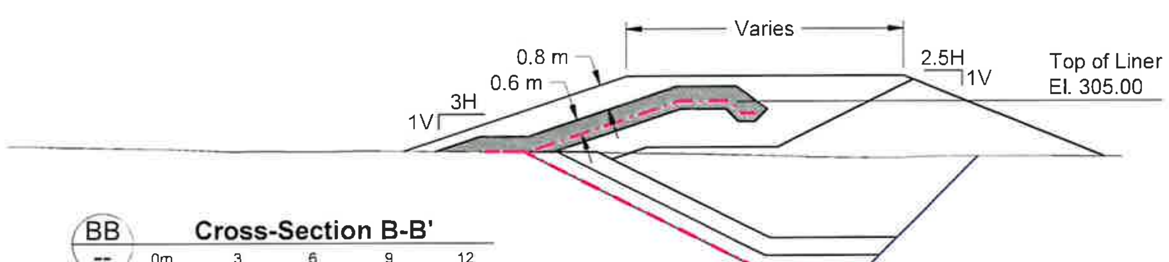
AA -- **Cross-Section A-A'**

0m 3 6 9 12
1:300 Uncontrolled when printed See Note 2



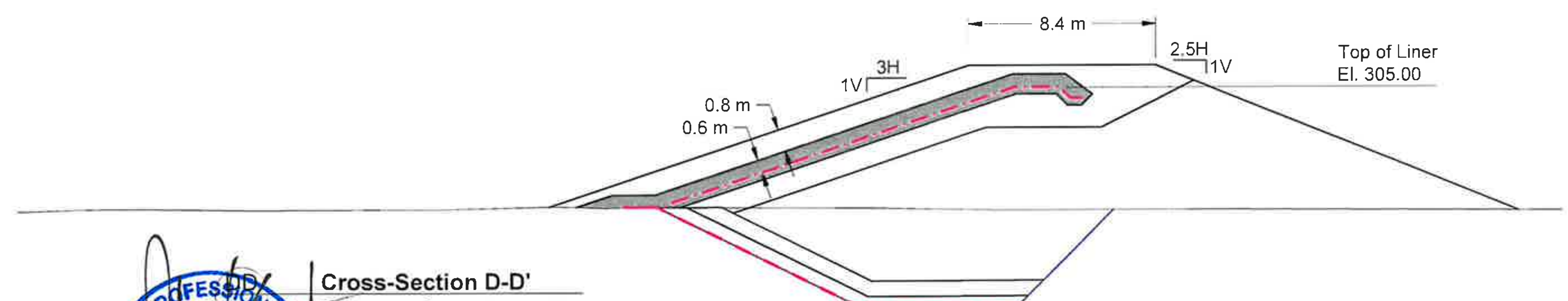
CC -- **Cross-Section C-C'**

0m 3 6 9 12
1:300 Uncontrolled when printed See Note 2



BB -- **Cross-Section B-B'**

0m 3 6 9 12
1:300 Uncontrolled when printed See Note 2



DD -- **Cross-Section D-D'**

0m 3 6 9 12
Uncontrolled when printed See Note 2

LEGEND

- Waterbody
- Excavation
- Geomembrane
- Design Key Trench
- Bedding
- Transition Material
- Run of Quarry
- Design Infrastructure

NOTES

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REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

PROFESSIONAL ENGINEERS STAMP: REGISTERED PROFESSIONAL ENGINEER — J.B. KURYLO — LICENSEE — NT/NU — 2025/12/19

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NO	DESCRIPTION	CHKD	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

REVISIONS

DRAWING NO.	DRAWING TITLE
--	--

REFERENCE DRAWINGS

srk consulting

DESIGN: JBK/AT	DRAWN: JAB	REVIEWED: AT/JBK
CHECKED: AT/TS(B2Gold)	APPROVED: JBK	DATE: 2025-12-19
FILE NAME: CAPR003105_SWP1-Staging.dwg		

B2GOLD

Back River

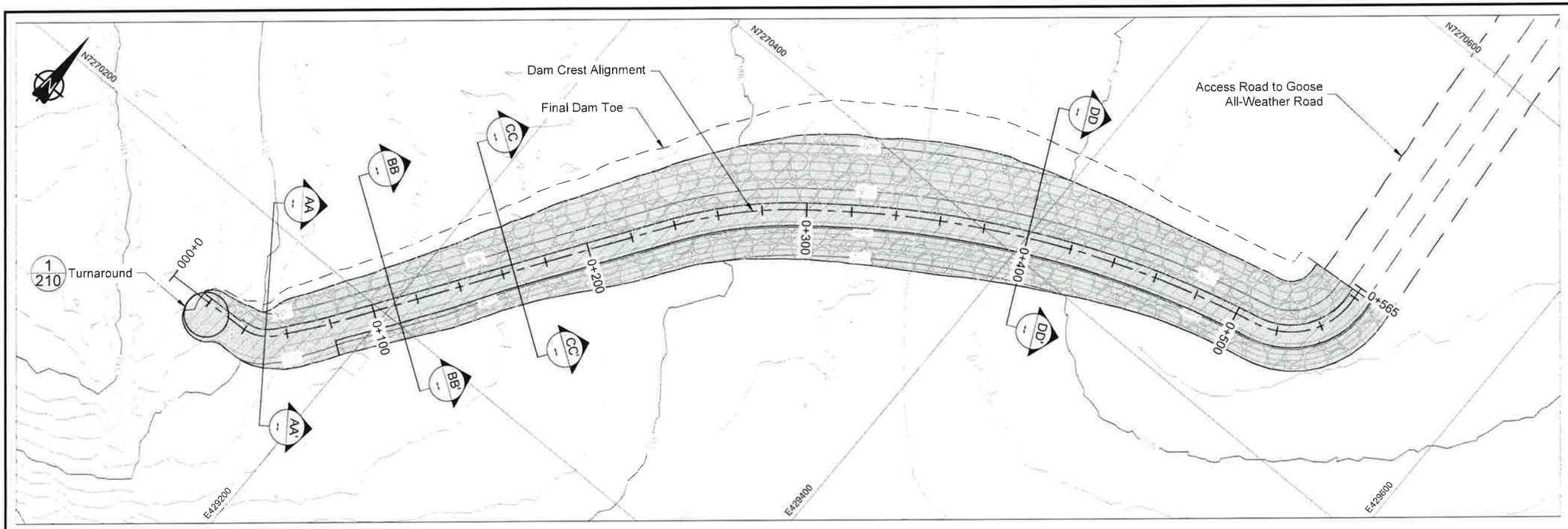
SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Upstream Transition and Bedding Material Plan and Sections

DRAWING NO. SWP-1-206

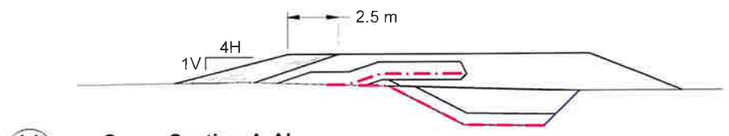
REVISION NO. 0



Key Trench Liner Plan

0m 20 40 60 80

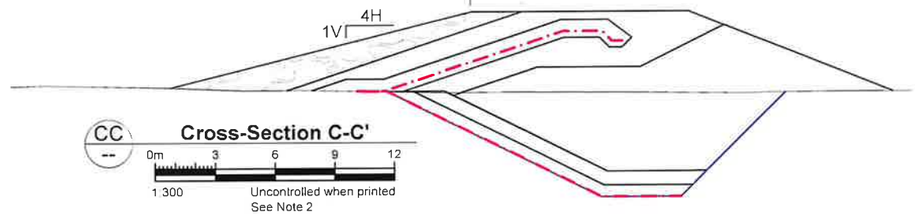
1 : 2000 Uncontrolled when printed See Note 3



AA — Cross-Section A-A'

0m 3 6 9 12

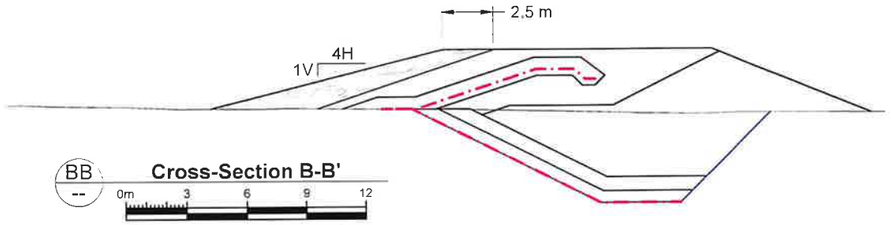
1:300 Uncontrolled when printed See Note 2



CC — Cross-Section C-C'

0m 3 6 9 12

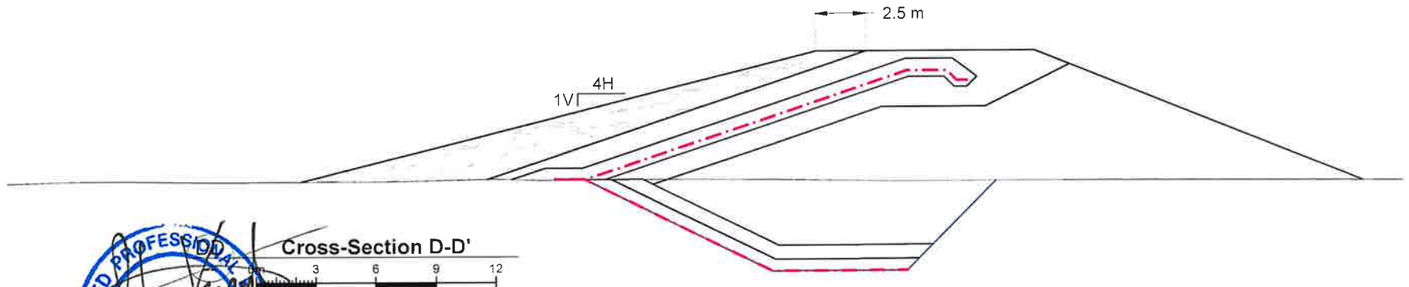
1:300 Uncontrolled when printed See Note 2



BB — Cross-Section B-B'

0m 3 6 9 12

1:300 Uncontrolled when printed See Note 2



Cross-Section D-D'

0m 3 6 9 12

1:300 Uncontrolled when printed See Note 2

LEGEND

- Waterbody
- Excavation
- Geomembrane
- Design Key Trench
- Bedding
- Transition Material
- Run of Quarry
- Design Infrastructure

NOTES

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REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

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2025/12/19
NT/NU

REFERENCE DRAWINGS		REVISIONS								
DRAWING NO.	DRAWING TITLE	NO.	DESCRIPTION	CHK'D	APP'D	DATE	NO.	DESCRIPTION	CHK'D	APP'D	DATE
--	--						0	Issued for Construction	AT/TS	JBK	2025-12-19
							B	Issued for Permit	AT	TS	2025-09-22
							A	Issued for Review	-	-	2022-10

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PROFESSIONAL ENGINEERS STAMP

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DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR03105_SWP1-Staging.dwg

B2GOLD

Back River

SRK JOB NO. CAPR03105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Upstream ROQ Plan and Sections

DRAWING NO. SWP-1-207

REVISION NO. 0

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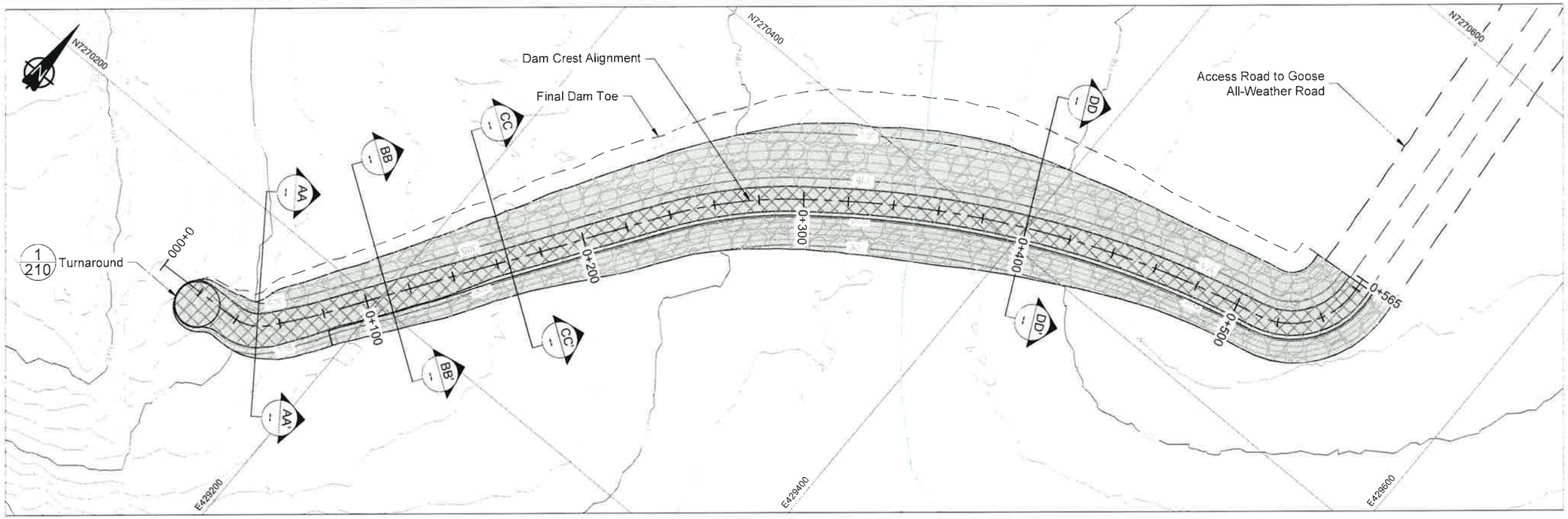

LEGEND

- Waterbody
- Excavation
- Geomembrane
- Design Key Trench
- Bedding
- Transition Material
- Run of Quarry
- Road Surfacing
- Design Infrastructure

NOTES

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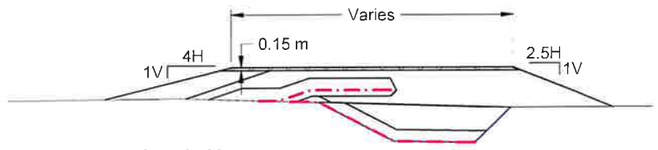
REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

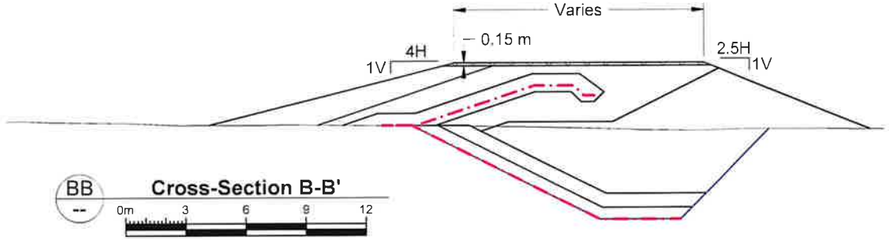
Key Trench Liner Plan

0m 20 40 60 80
1 : 2000 Uncontrolled when printed
See Note 3



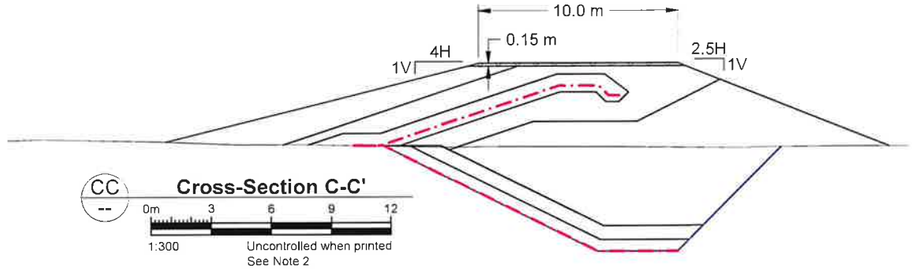
AA -- **Cross-Section A-A'**

0m 3 6 9 12
1:300 Uncontrolled when printed
See Note 2



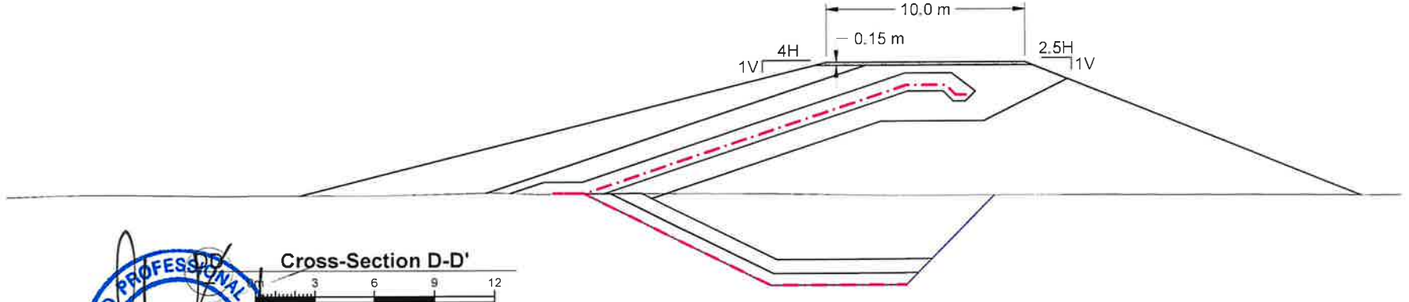
BB -- **Cross-Section B-B'**

0m 3 6 9 12
1:300 Uncontrolled when printed
See Note 2



CC -- **Cross-Section C-C'**

0m 3 6 9 12
1:300 Uncontrolled when printed
See Note 2



Cross-Section D-D'

3 6 9 12
Uncontrolled when printed
See Note 2

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NT/NU

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DRAWING NO.	DRAWING TITLE
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REFERENCE DRAWINGS

NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
A	Issued for Permit	AT	TS	2025-09-22

REVISIONS

srk consulting

DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-Staging.dwg

B2GOLD

Back River

SRK JOB NO. CAPR003105

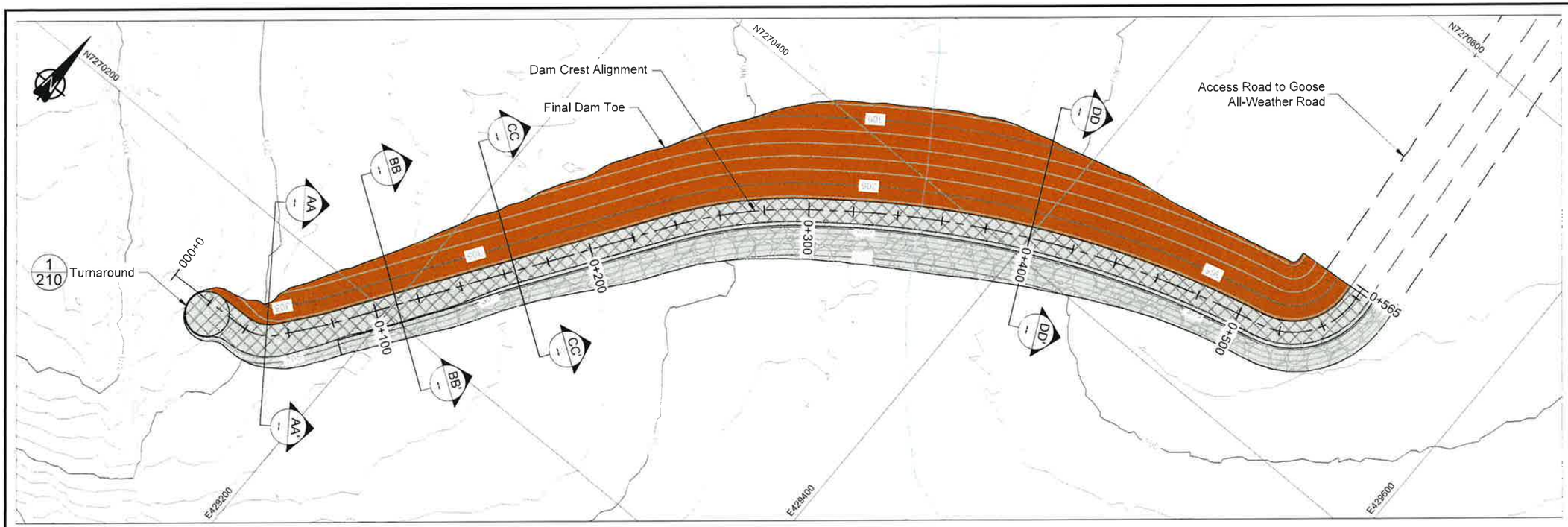
Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Road Surfacing Plan and Sections

DRAWING NO. SWP-1-208

REVISION NO. 0

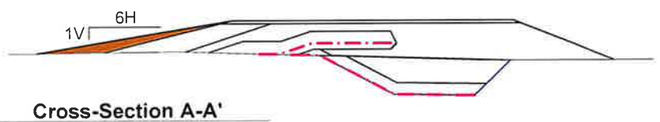
C:\Users\bosec\SRK Consulting\FS203 Back River (Goose and MLA) - 1040_AutoCAD\ACAD_C:\3D\CAPR003105_WorkMgmt\SWP\CAPR003105_SWP1-Staging.dwg



Key Trench Liner Plan

0m 20 40 60 80

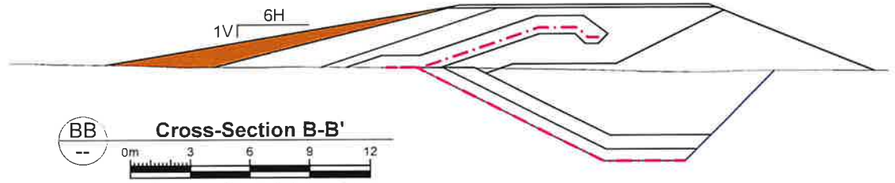
1 : 2000 Uncontrolled when printed See Note 3



AA **Cross-Section A-A'**

0m 3 6 9 12

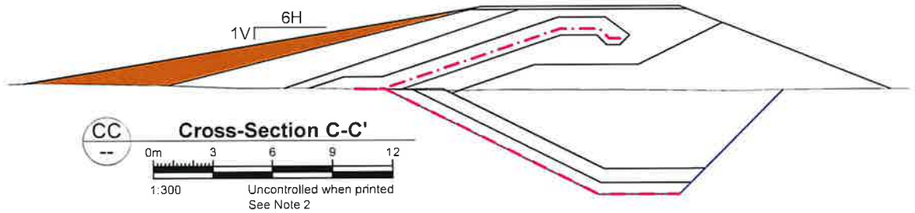
1:300 Uncontrolled when printed See Note 2



BB **Cross-Section B-B'**

0m 3 6 9 12

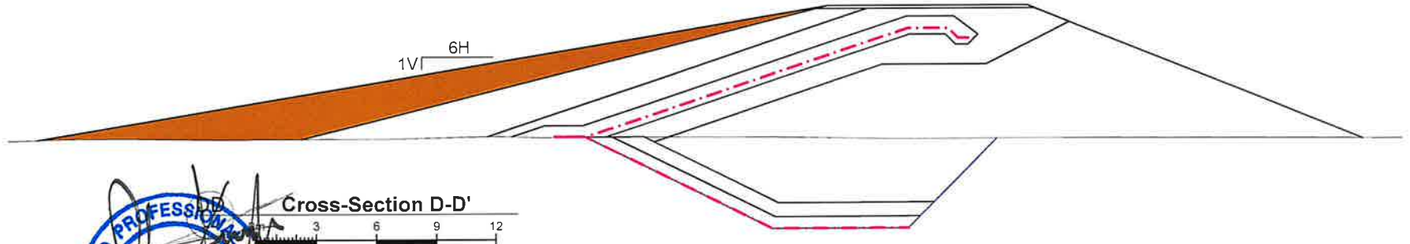
1:300 Uncontrolled when printed See Note 2



CC **Cross-Section C-C'**

0m 3 6 9 12

1:300 Uncontrolled when printed See Note 2



Cross-Section D-D'

3 6 9 12

300 Uncontrolled when printed See Note 2

LEGEND

- Waterbody
- Excavation
- Geomembrane
- Design Key Trench
- Bedding
- Transition Material
- Run of Quarry
- Road Surfacing
- Overburden / Fine Grained Material
- Design Infrastructure

NOTES

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REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

DRAWING NO.	DRAWING TITLE
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REFERENCE DRAWINGS

NO.	DESCRIPTION	CHK'D	APP'D	DATE

NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

REVISIONS

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DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-Staging.dwg

B2GOLD

Back River

SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Overburden / Fine Grained Material Plan and Sections

DRAWING NO.	REVISION NO.
SWP-1-209	0

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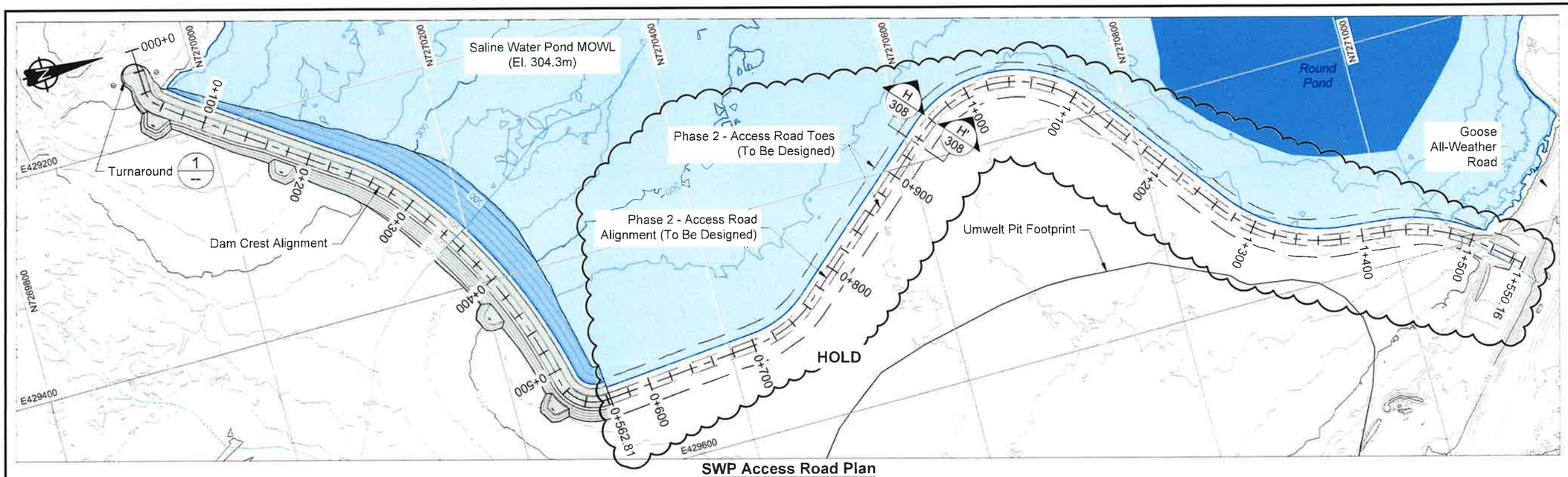

SWP Access Road Plan

0m 40 80 120 160
1 : 4000 Uncontrolled when printed
See Note 3

LEGEND

- Waterbody
- Maximum Operating Water Level (MOWL)
- Design Infrastructure

NOTES

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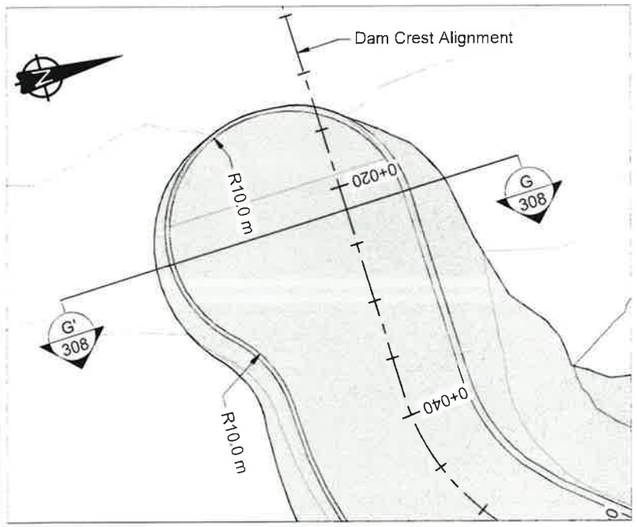
REFERENCES

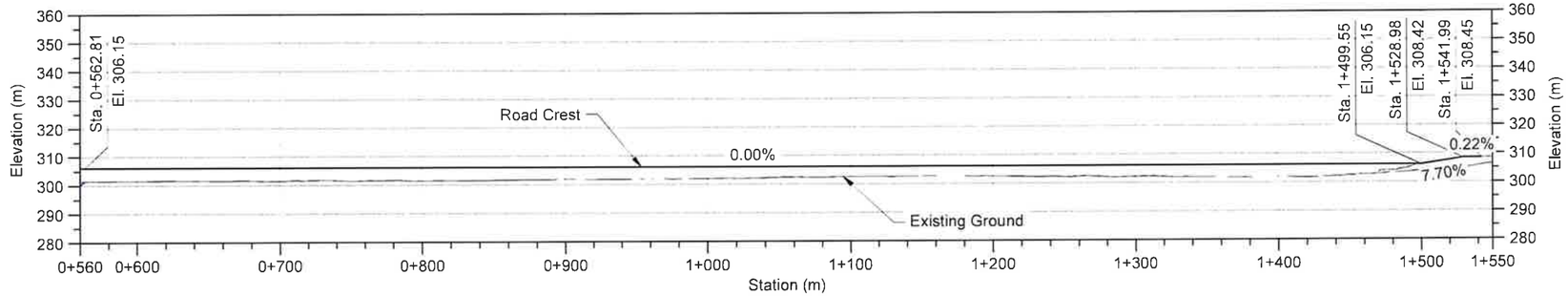
NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey and 20250615 Drone Survey.



1
101-103
200-210

Turnaround Plan

0m 5 10 15 20
1 : 500 Uncontrolled when printed
See Note 3



SWP Access Road Profile

0m 20 40 60 80
1 : 2000 Vertical

0m 40 80 120 160
1 : 4000 Uncontrolled when printed
See Note 3 Horizontal

REGISTERED PROFESSIONAL ENGINEER
J.B. KURYLO
LICENSEE
2025/12/19
NT/NU

NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

REVISIONS

DRAWING NO.	DRAWING TITLE
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REFERENCE DRAWINGS

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PROFESSIONAL ENGINEERS STAMP

srk consulting

DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-Turnaround and Access.dwg

B2GOLD

Back River

SRK JOB NO. CAPR003105

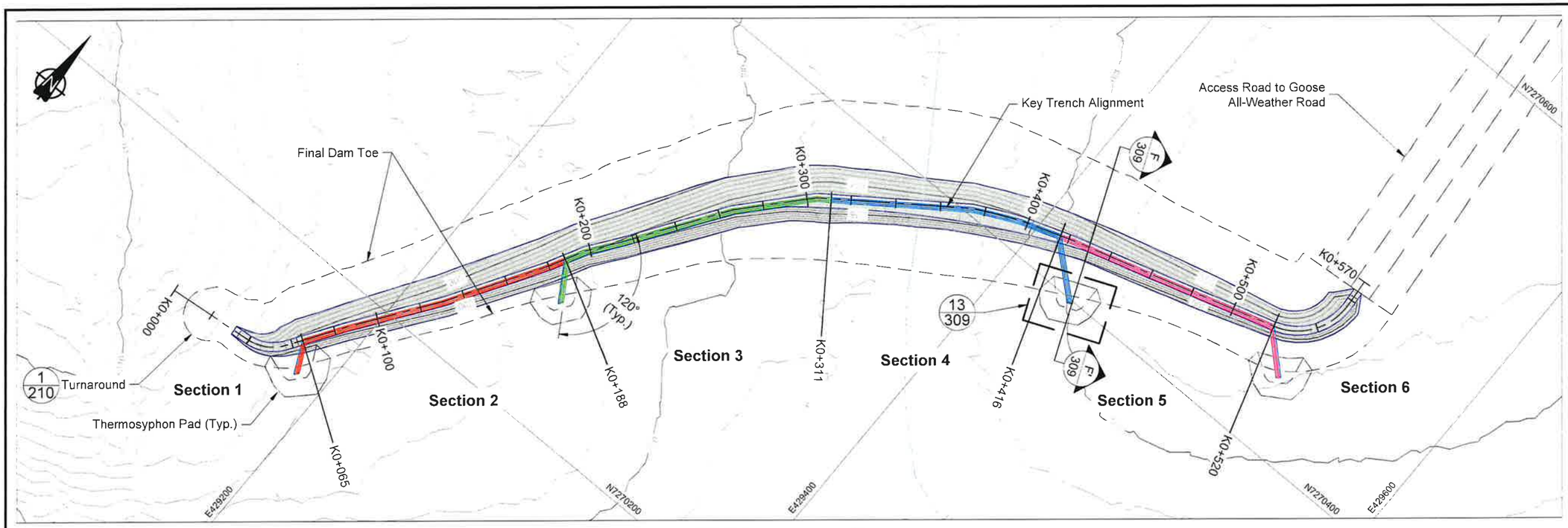
Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Turnaround and Phase 2 - Access Road Plan and Profile

DRAWING NO. SWP-1-210

REVISION NO. 0

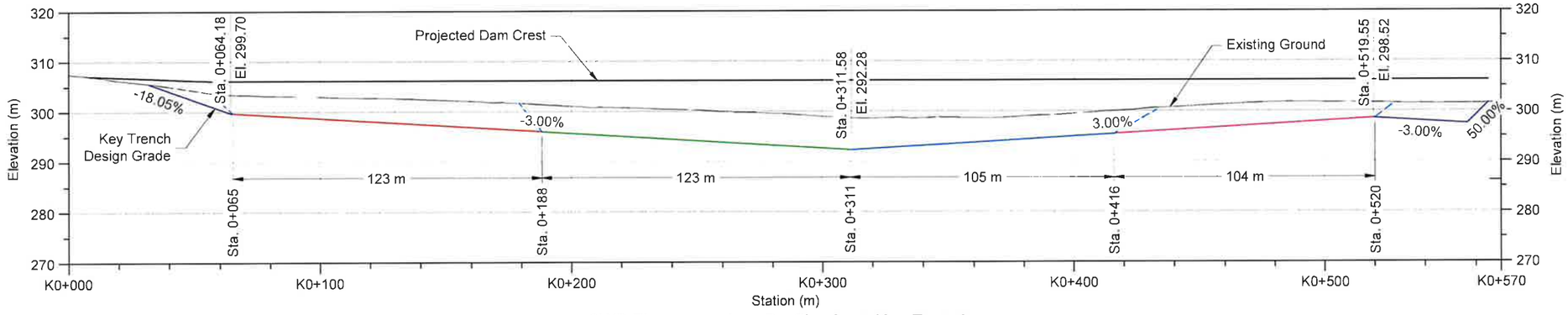
C:\Users\jbake\SRK Consulting\FS203 Back River (Goose and MLA) - 0\BR_Auto\CAD\ACAD_C3D\CAPR003105_WaterMgmt\SWP\CAPR003105_SWP1-Turnaround and Access.dwg



SWP Thermosyphon Plan

0m 20 40 60 80

1 : 2000 Uncontrolled when printed See Note 3



SWP Thermosyphon Profile along Key Trench

0m 10 20 30 40 Vertical

1 : 1000

0m 20 40 60

1 : 2000 Uncontrolled when printed See Note 3

LEGEND

- Waterbody
- Excavation
- Thermosyphon Pipe Section 2
- Thermosyphon Pipe Section 3
- Thermosyphon Pipe Section 4
- Thermosyphon Pipe Section 5
- Thermosyphon Pipe (Projected)
- Design Infrastructure

NOTES

1. All units are in meters unless otherwise specified.
2. Contours are shown at 1.0 m intervals.
3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.
4. Base of key trench on this profile is based on a section down the centerline of the dam crest. Note that the key trench centerline and the dam crest centerline do not share the exact same alignment and overall the chainages vary in any given location (between the key trench and dam crest shown in these drawings) in the range of ±5m offset, ±50 chainage station.

REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

DRAWING NO.	DRAWING TITLE
--	--

REFERENCE DRAWINGS

NO.	DESCRIPTION	CHK'D	APP'D	DATE

NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
A	Issued for Review	AT	TS	2025-10-24

REVISIONS

PROFESSIONAL ENGINEERS STAMP

REGISTERED PROFESSIONAL ENGINEER T.B. KURYLO LICENSEE NT/NU 2025/12/19

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srk consulting

DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-Thermosyphon.dwg

B2GOLD

Back River

SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Thermosyphon Plan and Profile

DRAWING NO.	REVISION NO.
SWP-1-211	0

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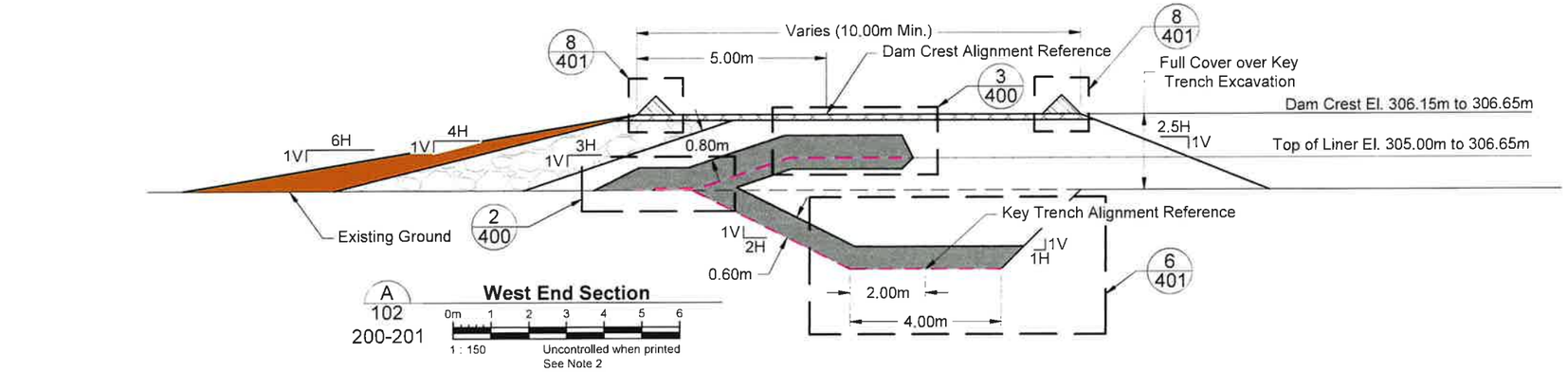

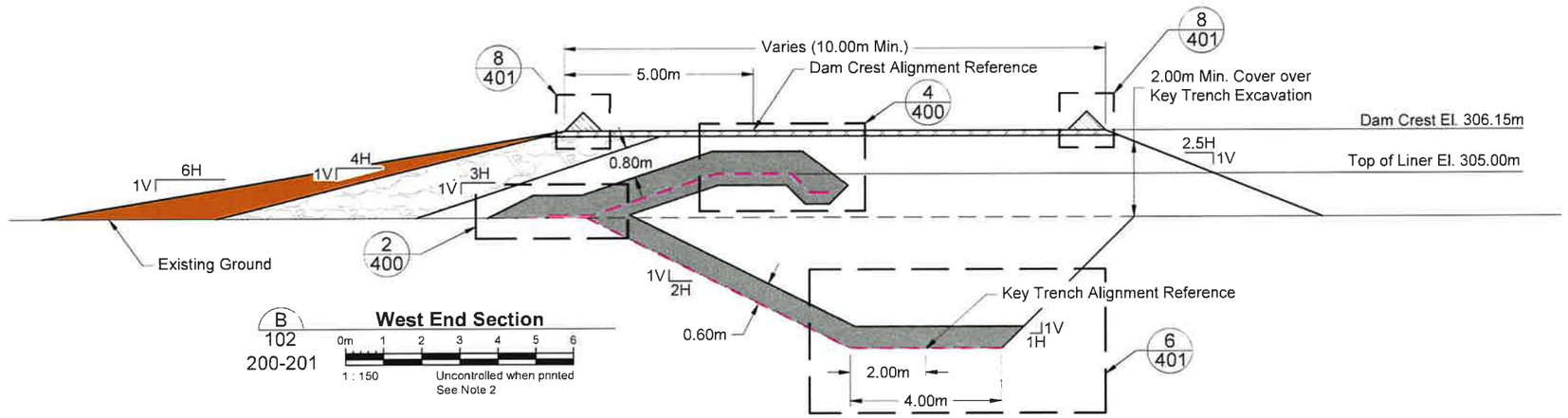

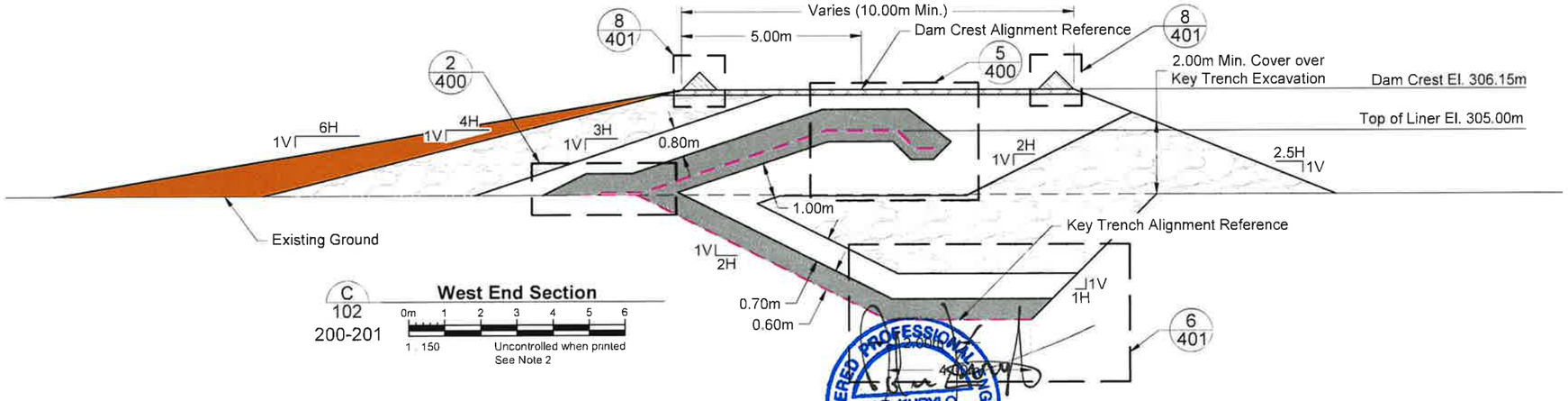

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2025/12/19
NT/NU

LEGEND

- Geomembrane
- Geotextile
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing

NOTES

1. All units are in meters unless otherwise specified.
2. All drawings are scaled appropriately for B-Size construction drawings (ll" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

SECTION LOCATION

Dam Crest Centerline Alignment Station (m)		Section
Start	End	
0+036.4	0+50.0	A-A'
0+055.0	0+075.0	B-B'
0+080.0	0+155.0	C-C'
0+160.0	0+285.0	D-D'
0+290.0	0+425.0	E-E'
0+430.0	0+562.8	D-D'

REFERENCE DRAWINGS

DRAWING NO.	DRAWING TITLE
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REVISIONS

NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

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DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-Typ Sec.dwg

B2GOLD

Back River

SRK JOB NO. CAPR003105

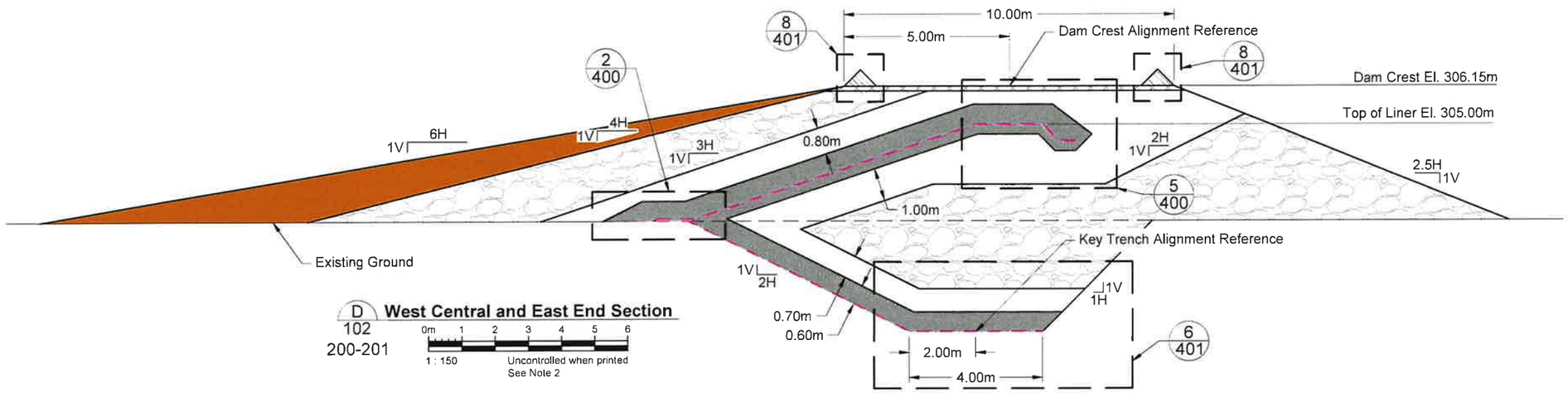
Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Typical Sections 1 of 2

DRAWING NO. SWP-1-300

REVISION NO 0

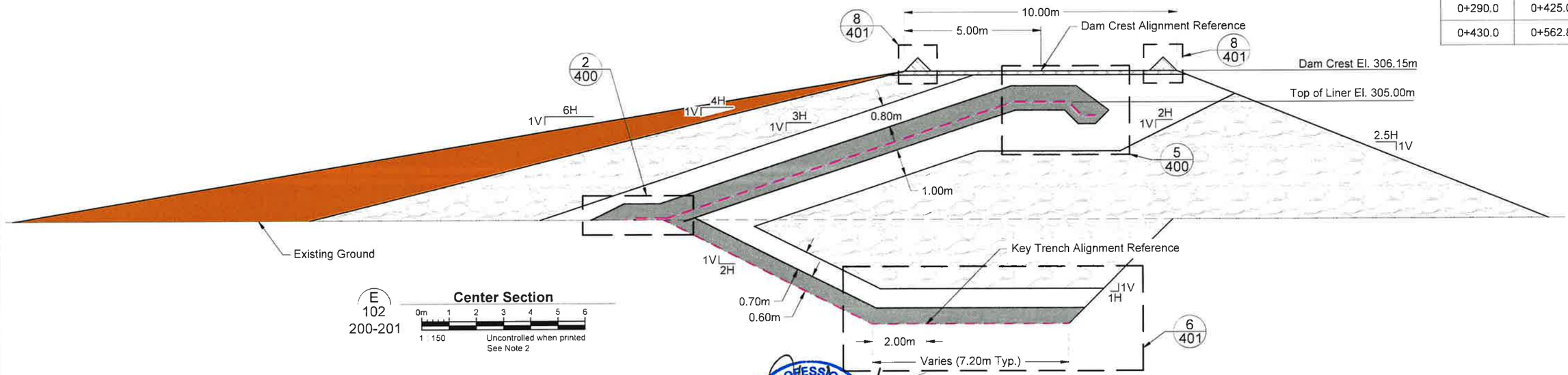
C:\Users\jbaker\SRK Consulting\FS303 Back River (Goose and MLA) - 046_Aut\CAD\ACAD_C3D\CAPR003105_WaterMgmt\SWP\CAPR003105_SWP1-Typ Sec.dwg



D 102 200-201 **West Central and East End Section**

0m 1 2 3 4 5 6

1 : 150 Uncontrolled when printed See Note 2



E 102 200-201 **Center Section**

0m 1 2 3 4 5 6

1 : 150 Uncontrolled when printed See Note 2

LEGEND

- Geomembrane
- Geotextile
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing

NOTES

1. All units are in meters unless otherwise specified.
2. All drawings are scaled appropriately for B-Size construction drawings (ll" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

SECTION LOCATION

Dam Crest Centerline Alignment Station (m)		Section
Start	End	
0+036.4	0+50.0	A-A'
0+055.0	0+075.0	B-B'
0+080.0	0+155.0	C-C'
0+160.0	0+285.0	D-D'
0+290.0	0+425.0	E-E'
0+430.0	0+562.8	D-D'

REFERENCE DRAWINGS

DRAWING NO.	DRAWING TITLE
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REVISIONS

NO	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-18
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

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DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-18

FILE NAME CAPR003105_SWP1-Typ Sec.dwg

B2GOLD

Back River

SRK JOB NO. CAPR003105

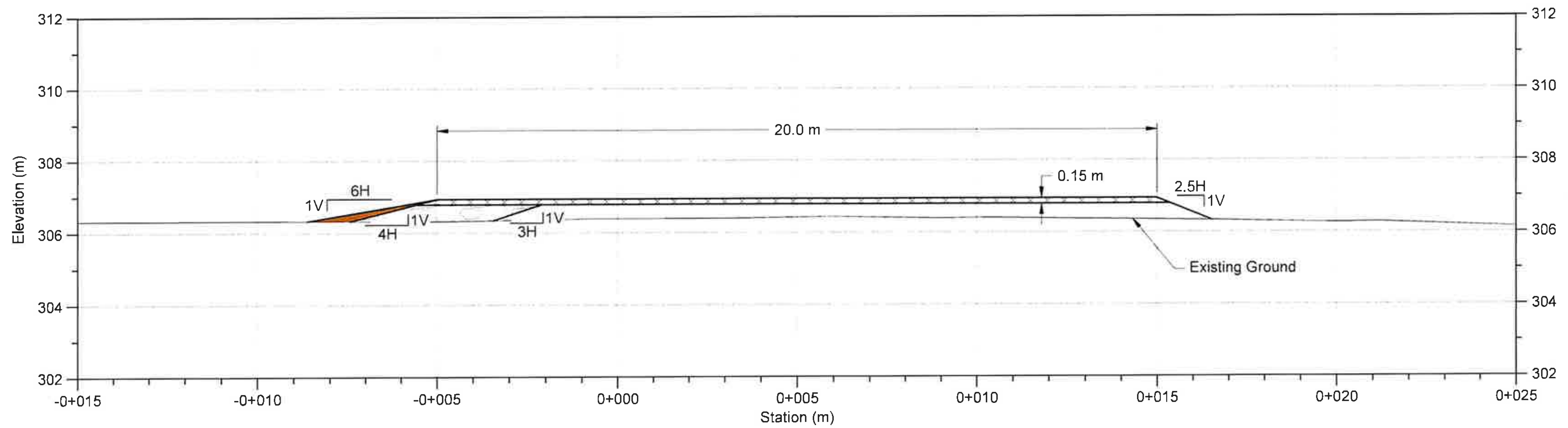
Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Typical Sections 2 of 2

DRAWING NO. SWP-1-301

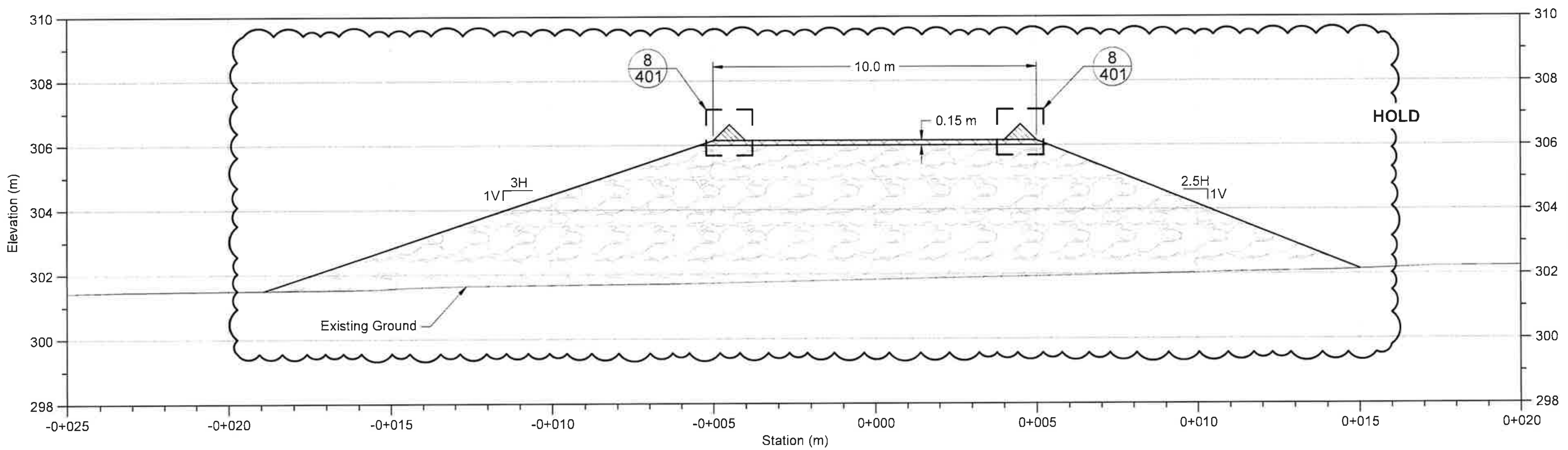
REVISION NO. 0

C:\Users\jtorkos\SRK Consulting\gf\52051 Back River (Goose and MLA) - 0140_AutoCAD\ACAD_C3D\CAPR003105_WaterMgmtSWP\CAPR003105_SWP1-Typ Sec.dwg



G / 210 **Turnaround Section**

1 : 250 — Uncontrolled when printed. See Note 3



H / 210 **Phase 2 - Access Road Section**

1 : 250 — Uncontrolled when printed. See Note 3

LEGEND

- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing

NOTES

1. All units are in meters unless otherwise specified.
2. All drawings are scaled appropriately for B-Size construction drawings (II" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

REFERENCES

Existing Ground is derived from 2023-09-08 Lidar Survey.

REFERENCE DRAWINGS

DRAWING NO.	DRAWING TITLE
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REVISIONS

NO	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

PROFESSIONAL ENGINEERS STAMP

REGISTERED PROFESSIONAL ENGINEER — J.B. KURYLO — LICENSEE — NT/NU — 2025/12/19

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DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	**APPROVED**	**DATE**
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME: CAPR003105_SWP1-Turnaround and Access.dwg

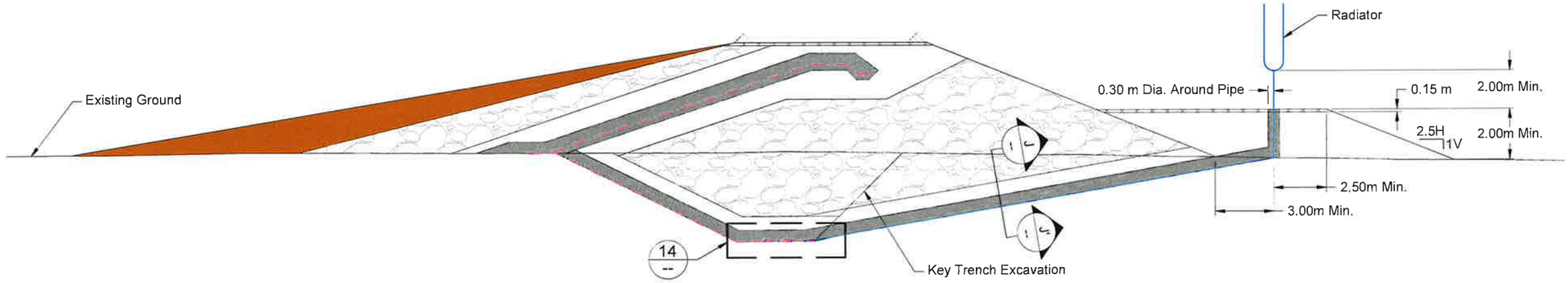
B2GOLD — Back River

SRK JOB NO: CAPR003105

Saline Water Pond (Umwelt) Dam

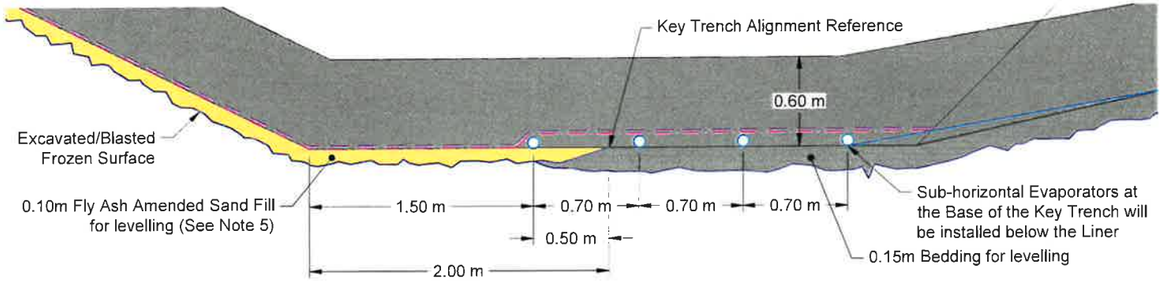
SWP Phase 1 - Turnaround and Phase 2 - Access Road Cross-Sections

DRAWING NO: SWP-1-308 — REVISION NO: 0



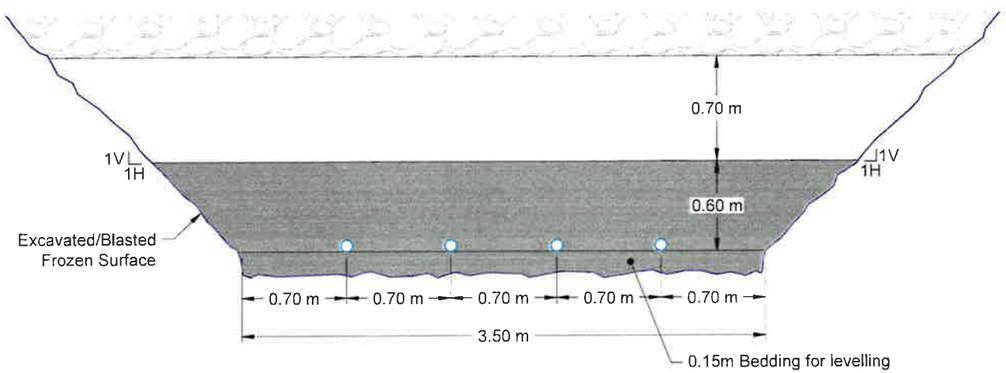
F 211 **Thermosyphon and Pad Typical Section**

0m 2 4 6 8 10
1 : 250 Uncontrolled when printed
See Note 2



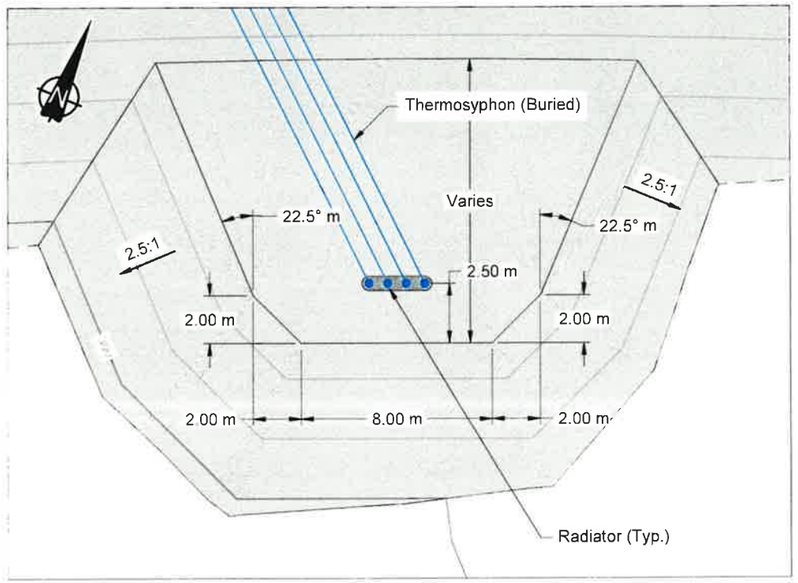
14 -- **Thermosyphon in Key Trench Detail**

0m 0.5 1.0 1.5
1:40 Uncontrolled when printed
See Note 2



J -- **Thermosyphon in Pad Trench Typical Detail**

0m 0.5 1.0 1.5
1:40 Uncontrolled when printed
See Note 2



13 211 **Thermosyphon Pad Detail**

0m 2 4 6 8 10
1 250 Uncontrolled when printed
See Note 2

LEGEND

- Waterbody
- Excavation
- Geomembrane
- Geotextile
- Thermosyphon Pipe (Projected)
- Fly Ash Amended Sand Fill
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing
- Design Infrastructure

NOTES

1. All units are in meters unless otherwise specified.
2. Contours are shown at 1.0 m intervals.
3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.
4. Base of key trench on this profile is based on a section down the centerline of the dam crest. Note that the key trench centerline and the dam crest centerline do not share the exact same alignment and overall the chainages vary in any given location (between the key trench and dam crest shown in these drawings) in the range of ±5m offset, ±50 chainage station.
5. Minimum 10% Fly Ash in Fly Ash Amended Sand Fill.
6. Bentonite can be substituted for Fly Ash.

REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

DRAWING NO.	DRAWING TITLE
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REFERENCE DRAWINGS

NO	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
A	Issued for Review	AT	TS	2025-10-24

REVISIONS

PROFESSIONAL ENGINEERS STAMP

REGISTERED PROFESSIONAL ENGINEER J.B. KURYLO LICENSEE NT/NU 25/11/19

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DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME: CAPR003105_SWP1-Thermosyphon Detail.dwg

B2GOLD

Back River

SRK JOB NO.: CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Thermosyphon Section and Details

DRAWING NO.: SWP-1-309

REVISION NO.: 0

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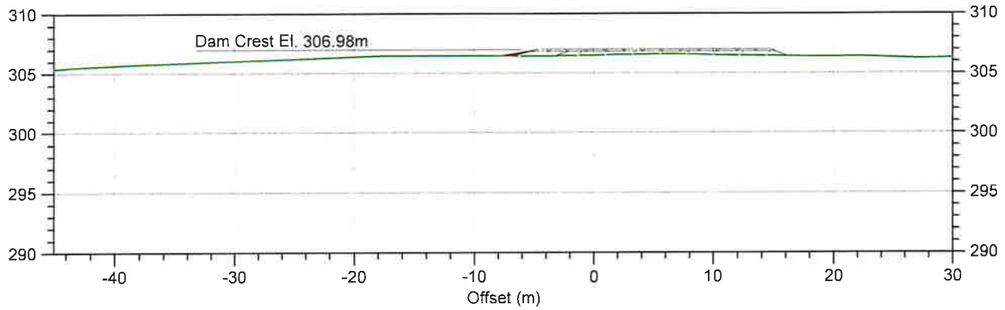

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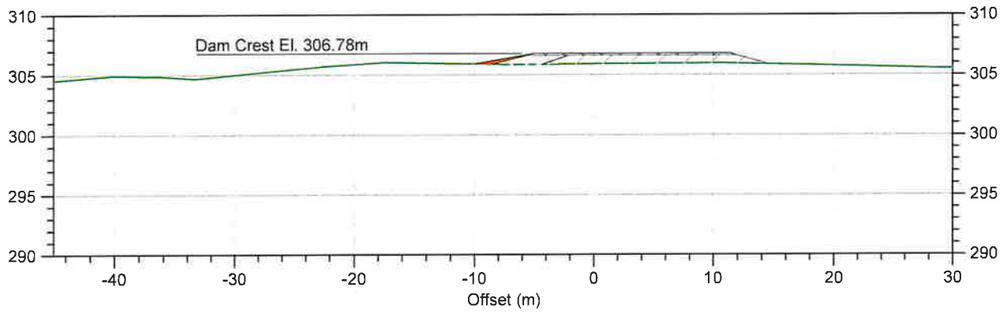

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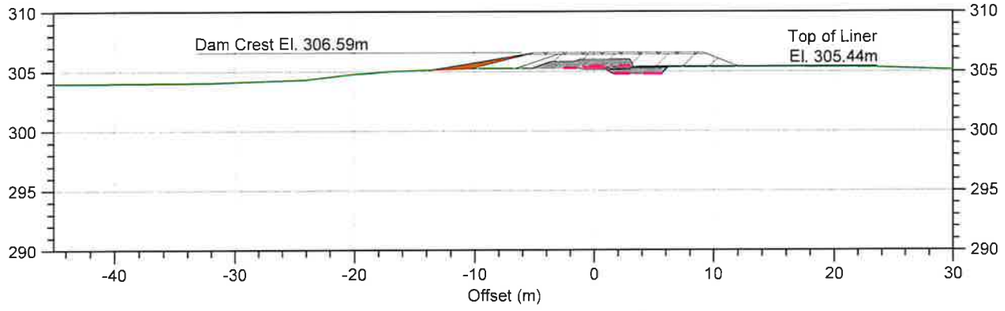

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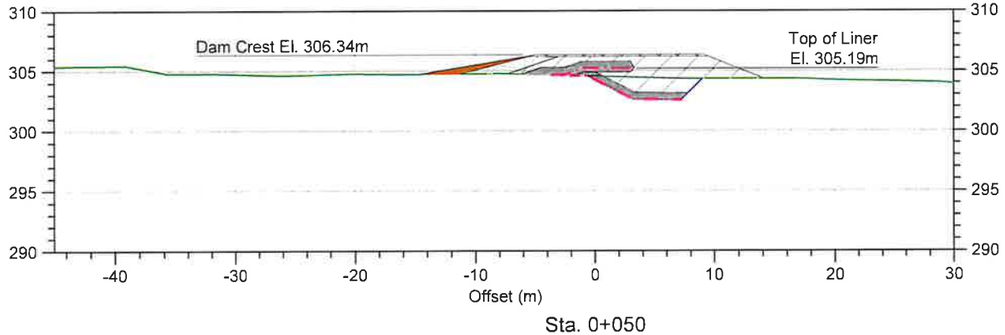

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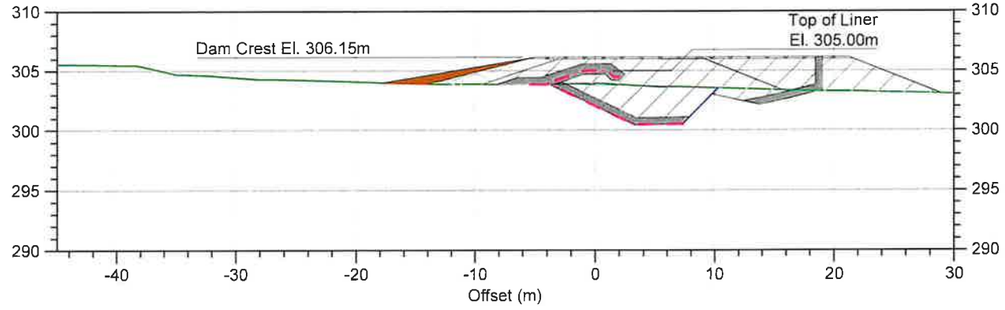

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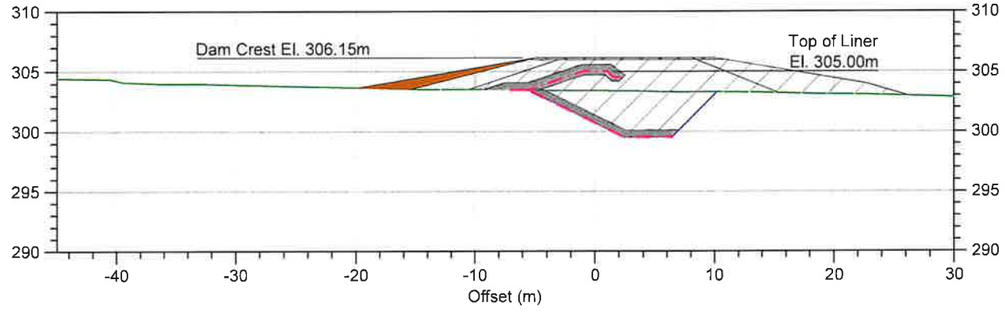

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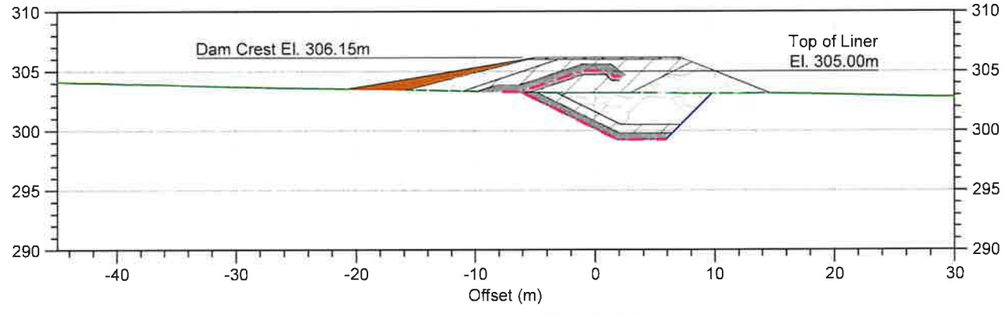

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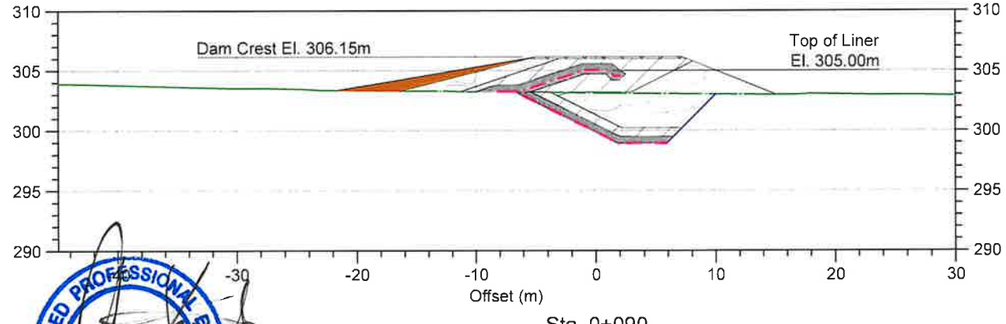

Sta. 0+090

LEGEND

- Existing Ground
- Excavation
- Geomembrane
- Finished Ground
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing

NOTES

1. All units are in meters unless otherwise specified.
2. All drawings are scaled appropriately for B-Size construction drawings (ll" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

0m 5 10 15 20

1 500 Uncontrolled when printed See Note 2

DRAWING NO.	DRAWING TITLE
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REFERENCE DRAWINGS

NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
A	Issued for Permit	AT	TS	2025-09-22

REVISIONS

REGISTERED PROFESSIONAL ENGINEER J.B. KURYLO LICENSEE 12-25/12 NT/NU

This drawing is uncontrolled when printed unless stamped / certified in accordance with the requirements of the applicable jurisdiction and recorded on a Distribution Register

PROFESSIONAL ENGINEERS STAMP

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DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-Sec.dwg

B2GOLD

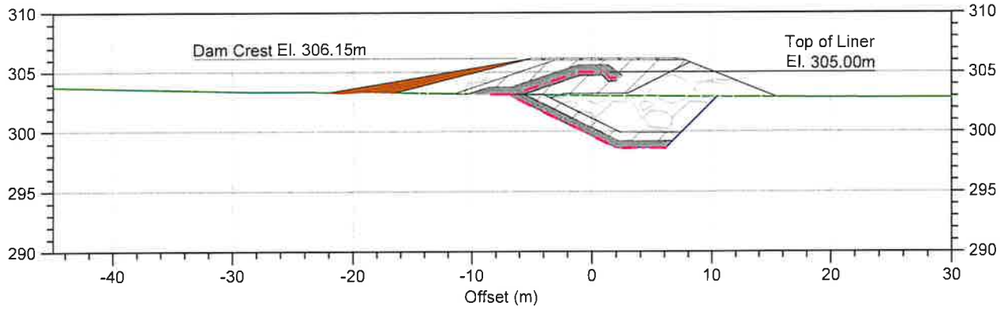
Back River

SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Cross-Sections
Sheet 1 of 7

DRAWING NO.	REVISION NO.
SWP-1-350	0



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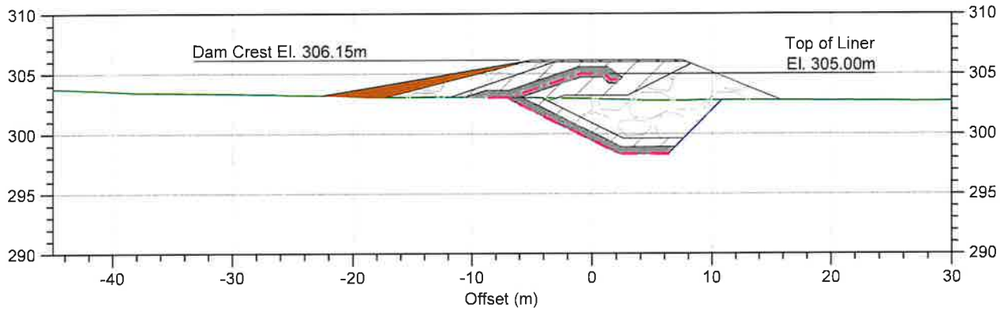

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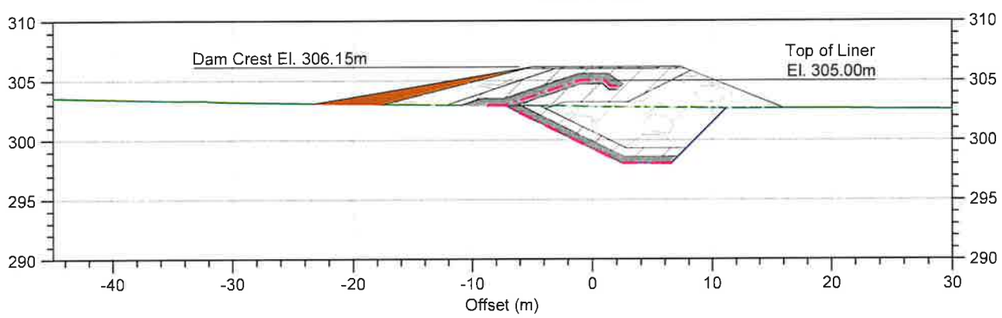

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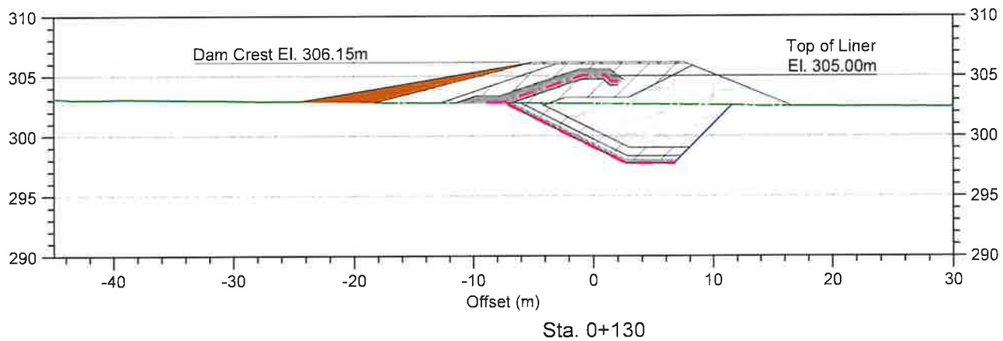

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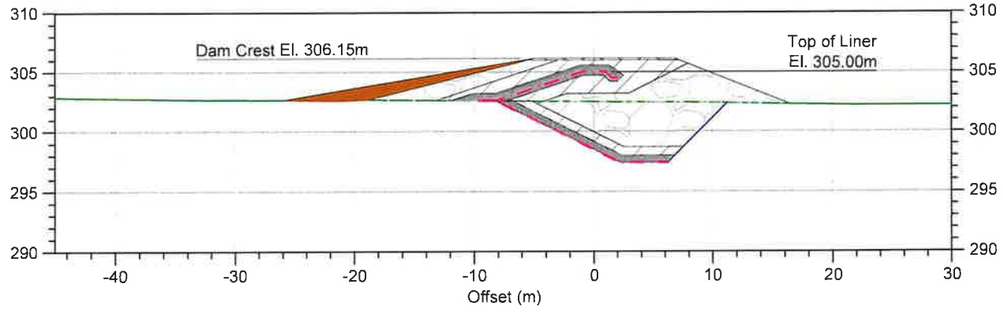

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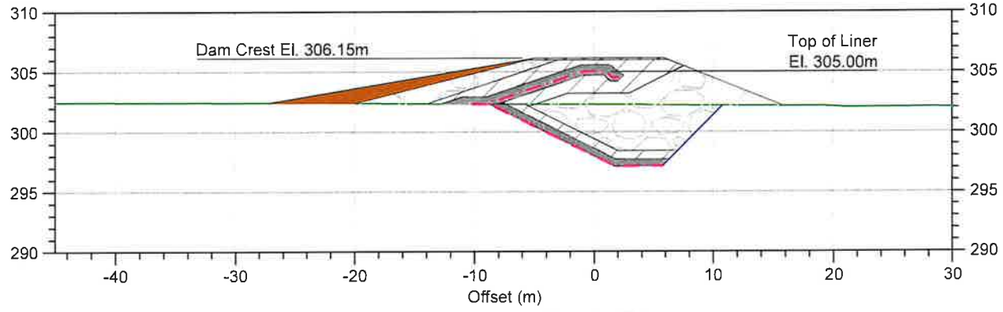

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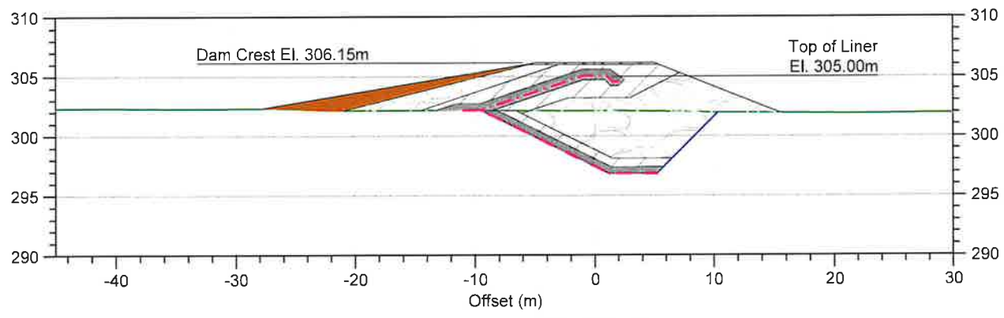

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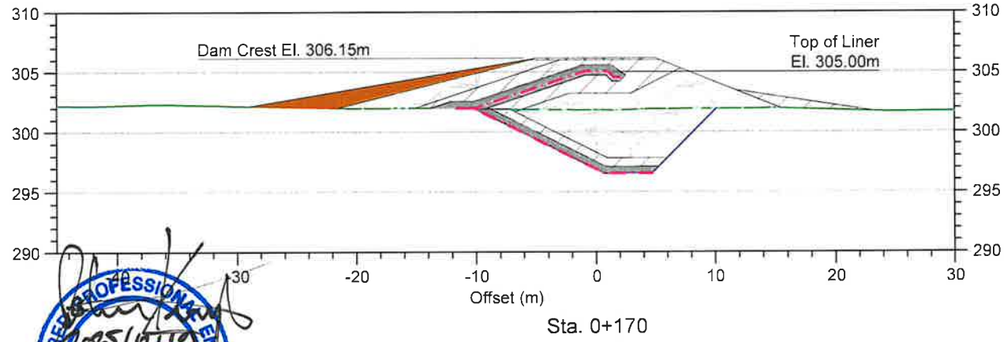

Sta. 0+170

LEGEND

- Existing Ground
- Excavation
- Geomembrane
- Finished Ground
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing

NOTES

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0m 5 10 15 20

1 : 500 Uncontrolled when printed See Note 2

REFERENCE DRAWINGS

DRAWING NO.	DRAWING TITLE
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REVISIONS

NO	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
A	Issued for Permit	AT	TS	2025-09-22

PROFESSIONAL ENGINEERS STAMP

REGISTERED PROFESSIONAL ENGINEER
J.B. KURYLO
LICENSEE
NT/NU
2025/12/19

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DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-Sec.dwg

B2GOLD

Back River

SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Cross-Sections
Sheet 2 of 7

DRAWING NO. SWP-1-351

REVISION NO 0

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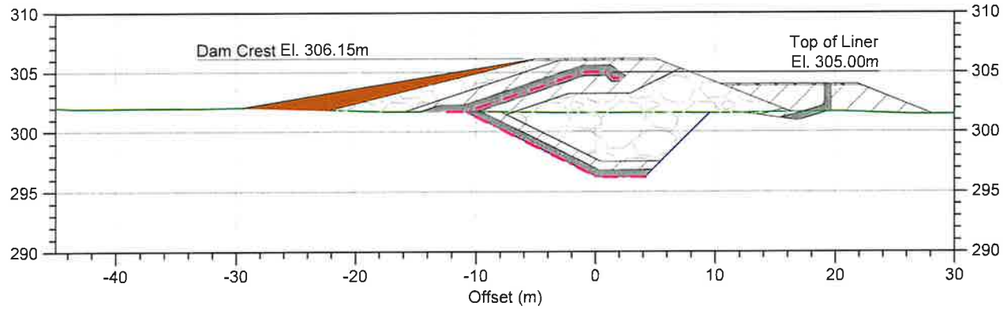

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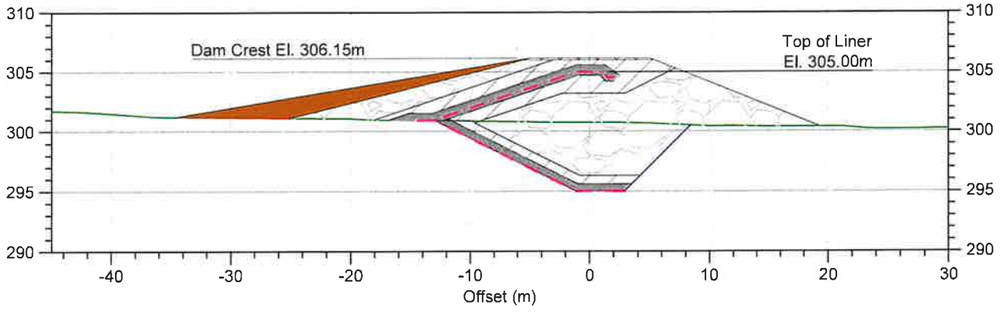

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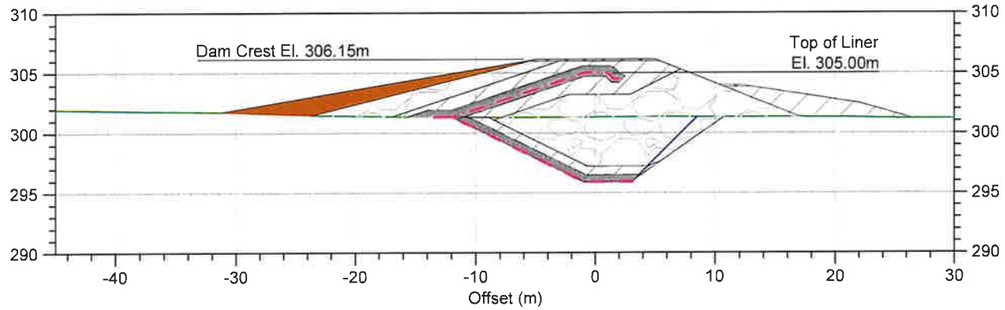

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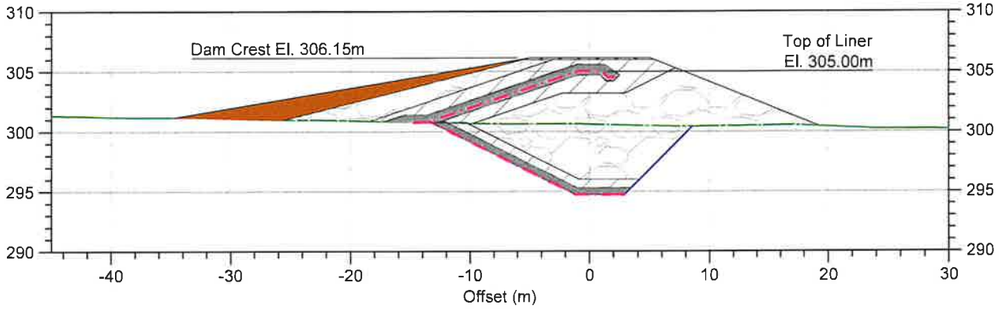

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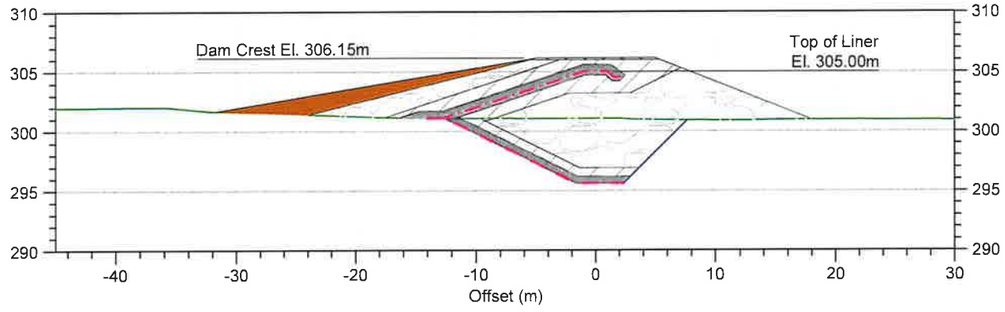

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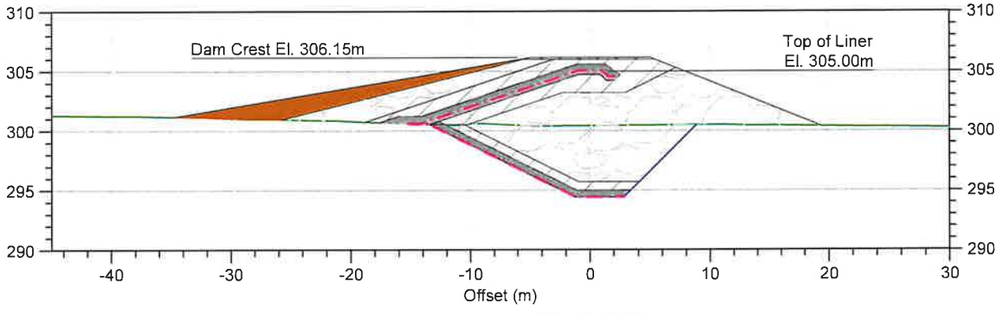

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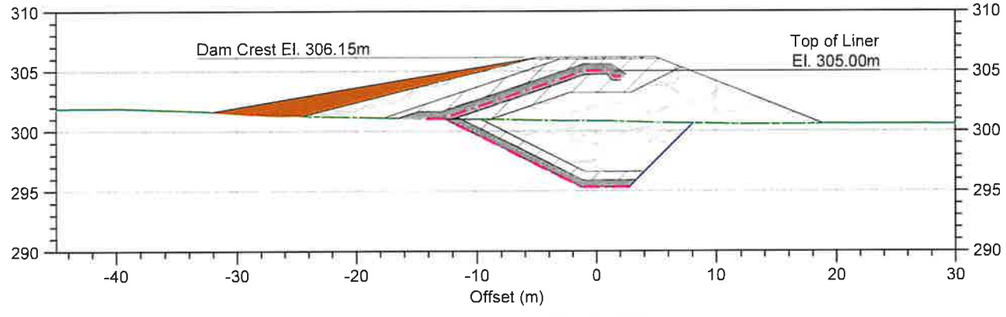

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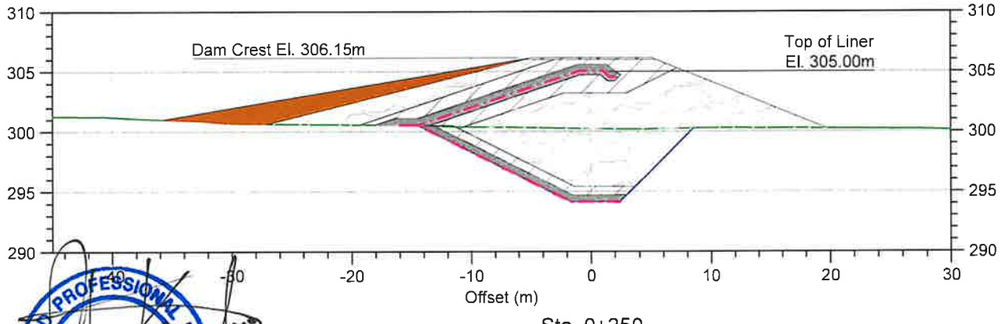

Sta. 0+250

LEGEND

- Existing Ground
- Excavation
- Geomembrane
- Finished Ground
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing

NOTES

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0m 5 10 15 20

1 : 500 Uncontrolled when printed
See Note 2

DRAWING NO.	DRAWING TITLE
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REFERENCE DRAWINGS

NO	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
A	Issued for Permit	AT	TS	2025-09-22

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
J.B. KURYLO
LICENSEE
NTNU

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DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-Sec.dwg

B2GOLD

Back River

SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Cross-Sections
Sheet 3 of 7

DRAWING NO. SWP-1-352

REVISION NO. 0

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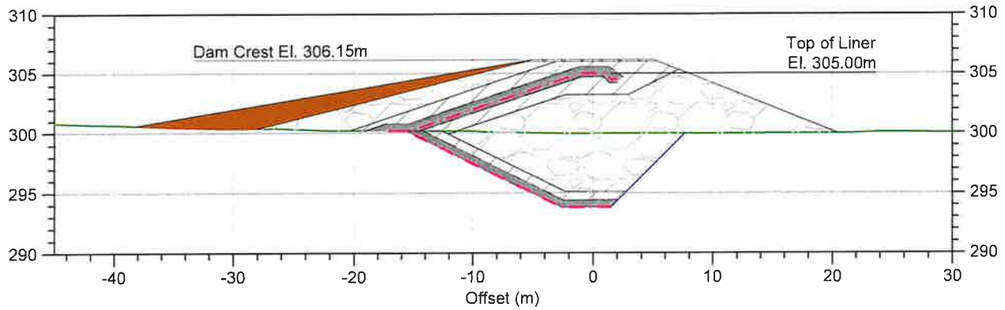

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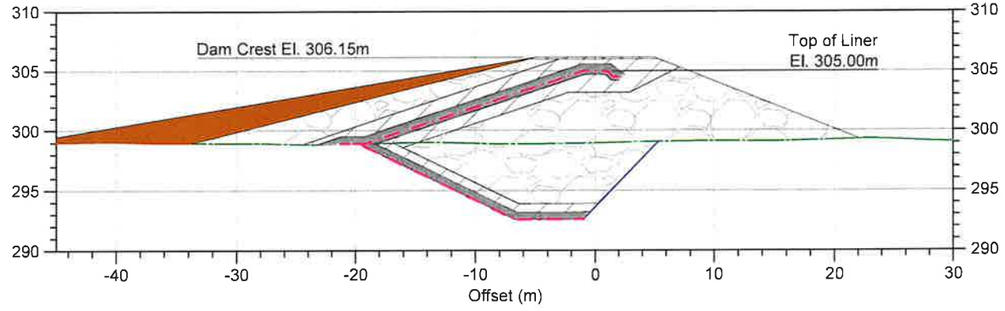

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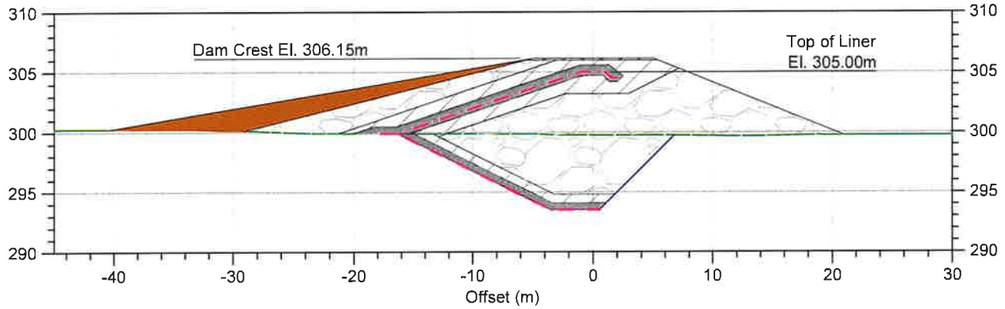

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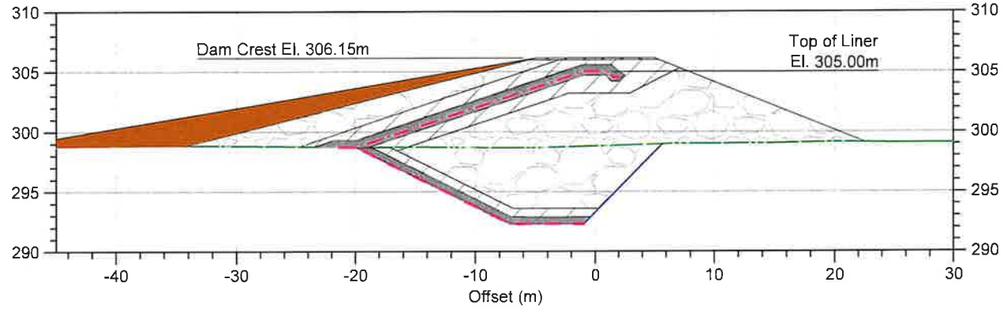

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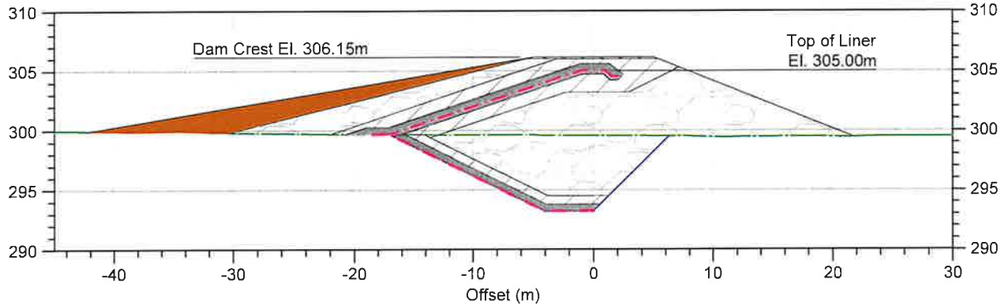

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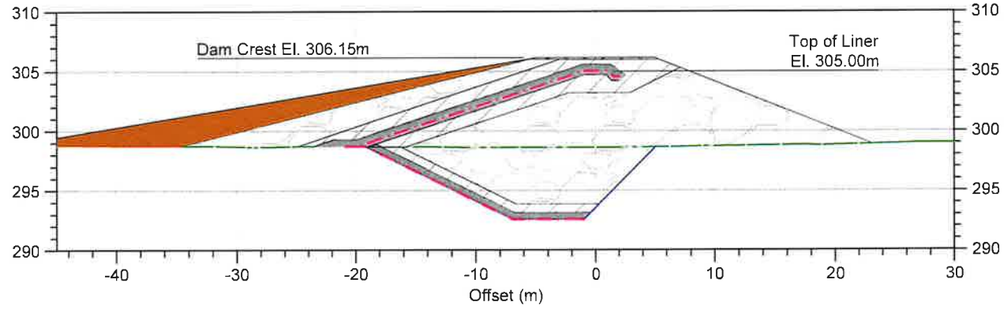

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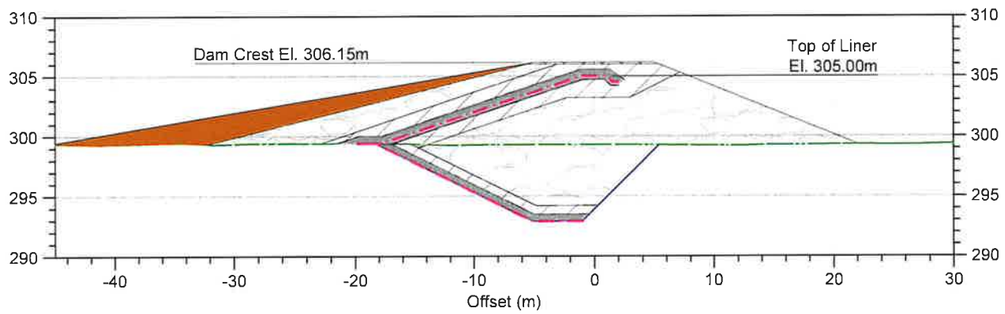

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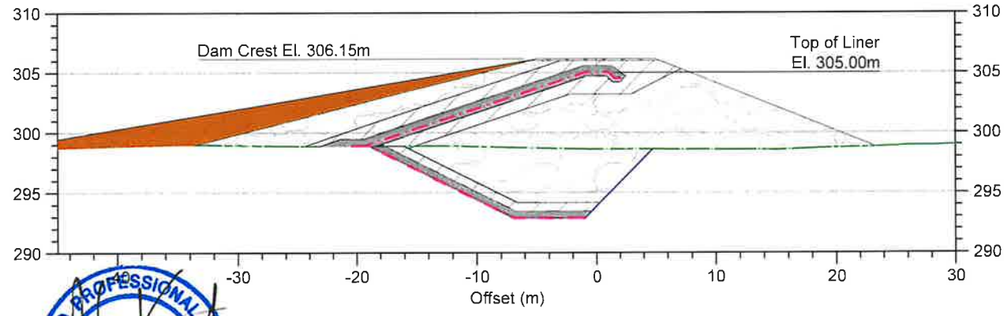

Sta. 0+330

LEGEND

- Existing Ground
- Excavation
- Geomembrane
- Finished Ground
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing

NOTES

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0m 5 10 15 20

1 : 500 Uncontrolled when printed See Note 2

REGISTERED PROFESSIONAL ENGINEER J.B. KURYLO LICENSEE 2025/12/19 NT/NU

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PROFESSIONAL ENGINEERS STAMP

DRAWING NO.	DRAWING TITLE
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REFERENCE DRAWINGS

NO	DESCRIPTION	CHK'D	APP'D	DATE
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A	Issued for Permit	AT	TS	2025-09-22

REVISIONS

srk consulting

DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME: CAPR003105_SWP1-Sec.dwg

B2GOLD

Back River

SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Cross-Sections
Sheet 4 of 7

DRAWING NO. SWP-1-353

REVISION NO. 0

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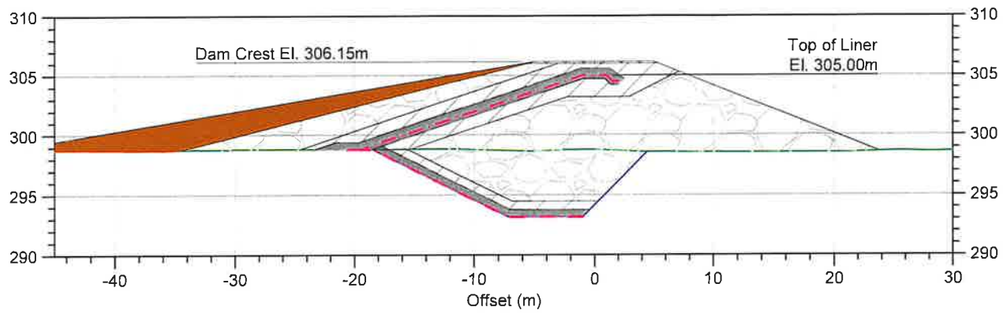

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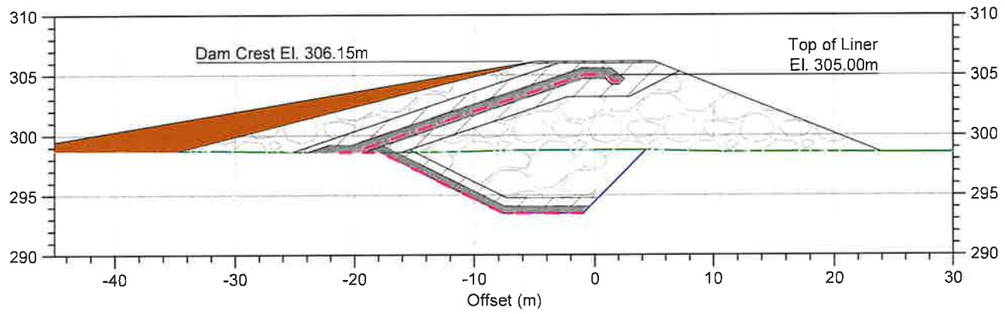

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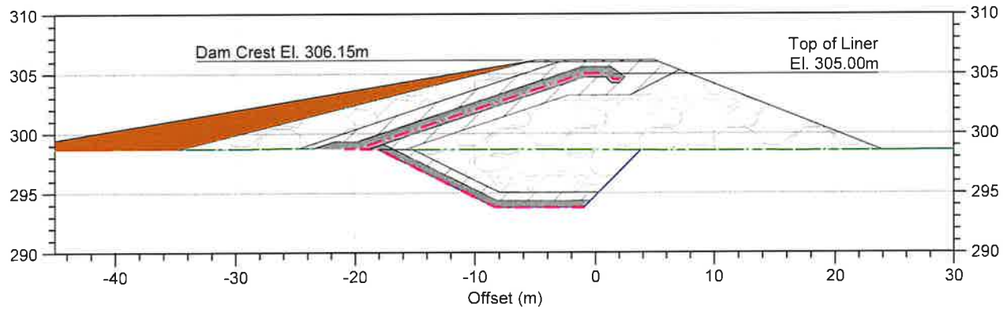

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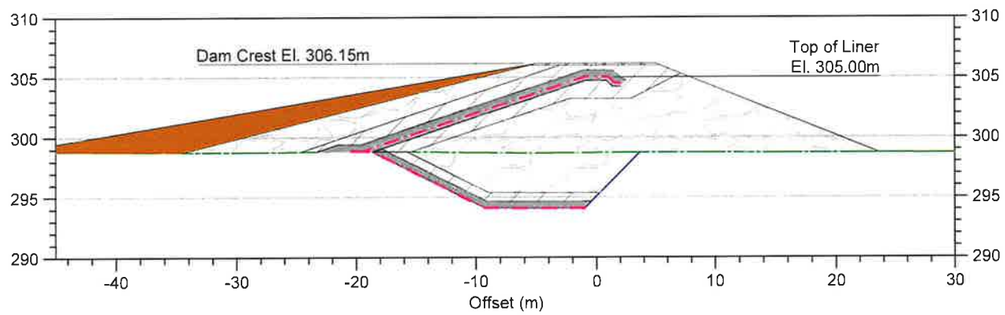

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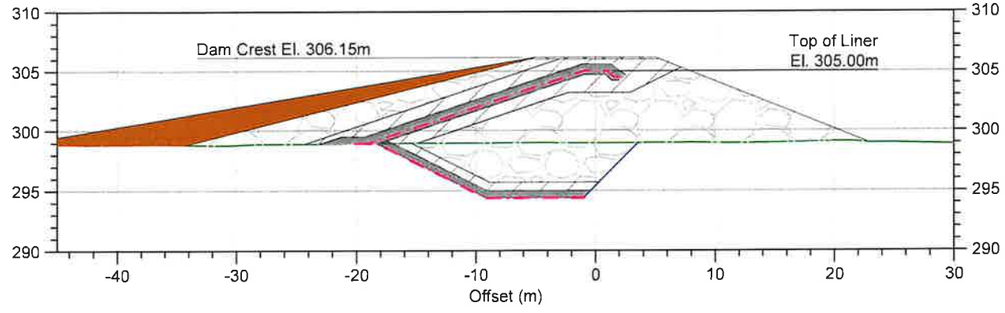

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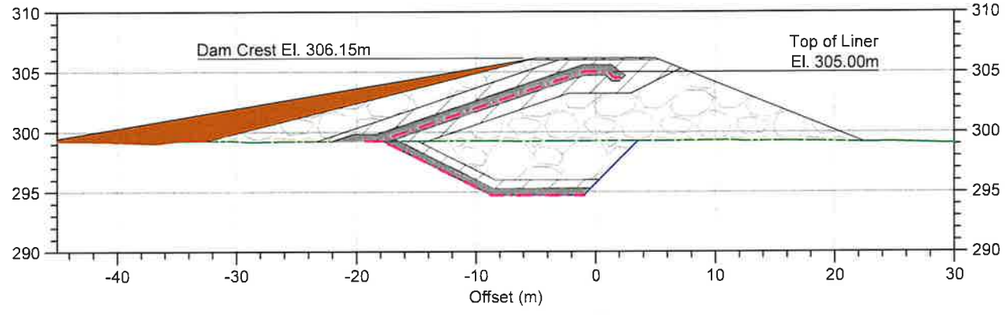

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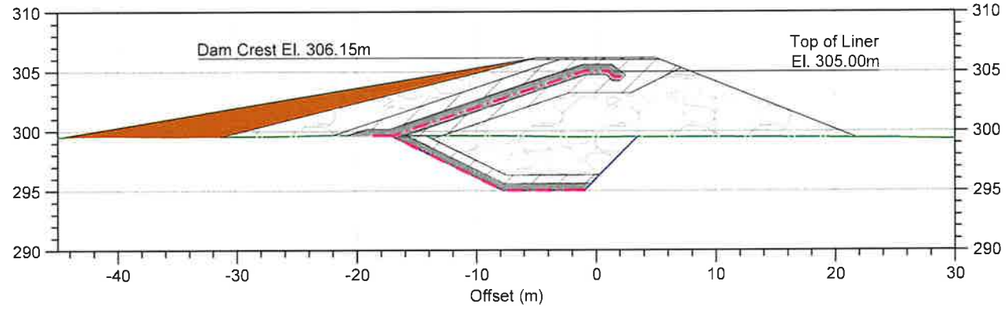

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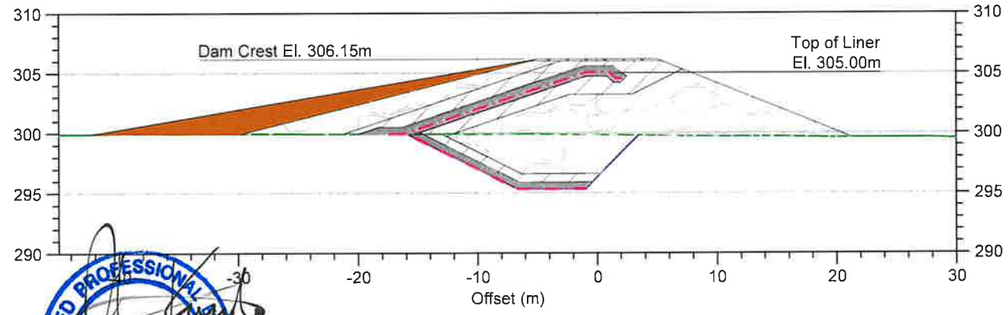

Sta. 0+410

LEGEND

- Existing Ground
- Excavation
- Geomembrane
- Finished Ground
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing

NOTES

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0m 5 10 15 20

1 : 500 Uncontrolled when printed See Note 2

REGISTERED PROFESSIONAL ENGINEER J.B. KURYLO LICENSEE 25/12/11 NT/NU

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DRAWING NO.	DRAWING TITLE
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REFERENCE DRAWINGS

NO	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
A	Issued for Permit	AT	TS	2025-09-22

REVISIONS

srk consulting

DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-Sec.dwg

B2GOLD

Back River

SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Cross-Sections
Sheet 5 of 7

DRAWING NO. SWP-1-354

REVISION NO 0

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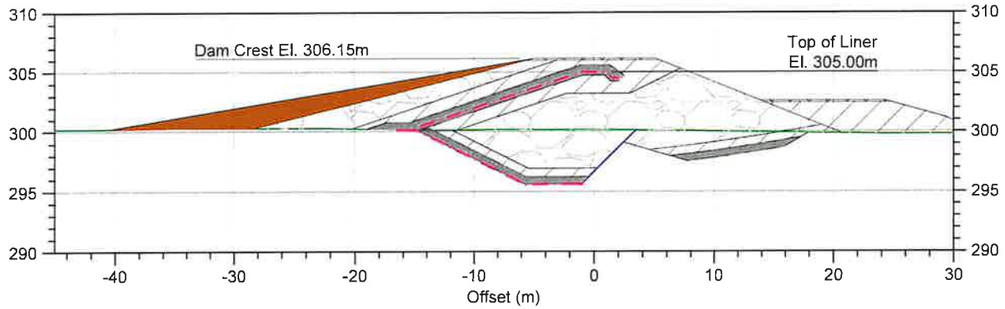

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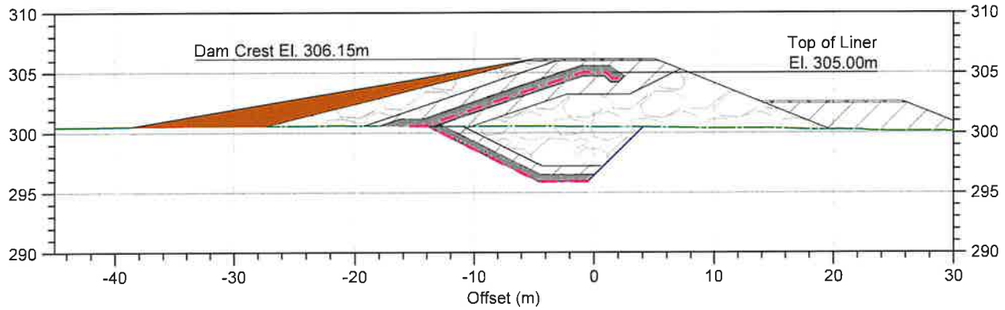

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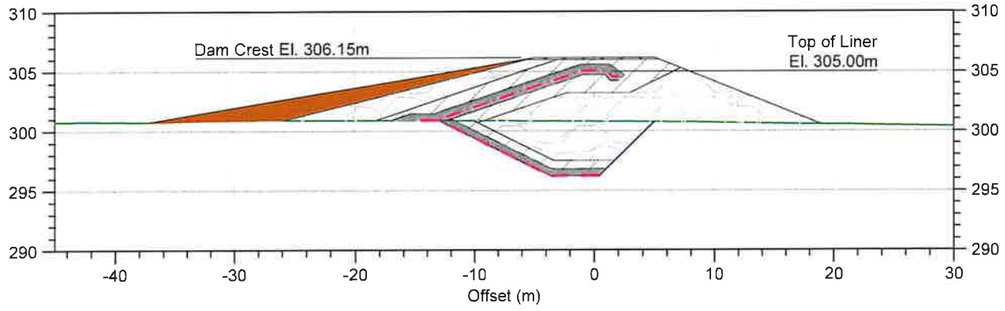

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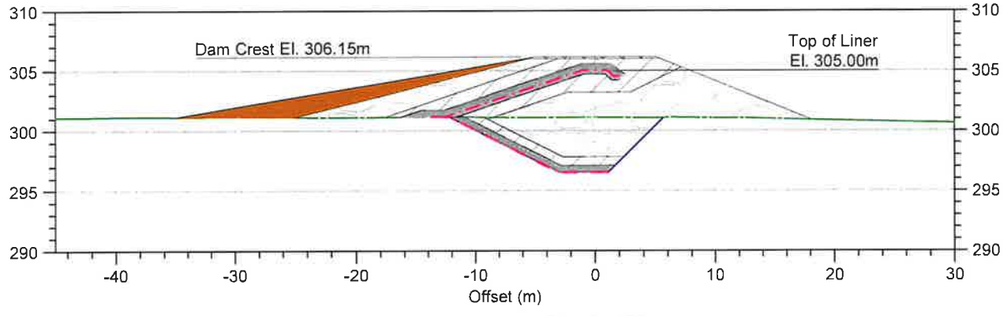

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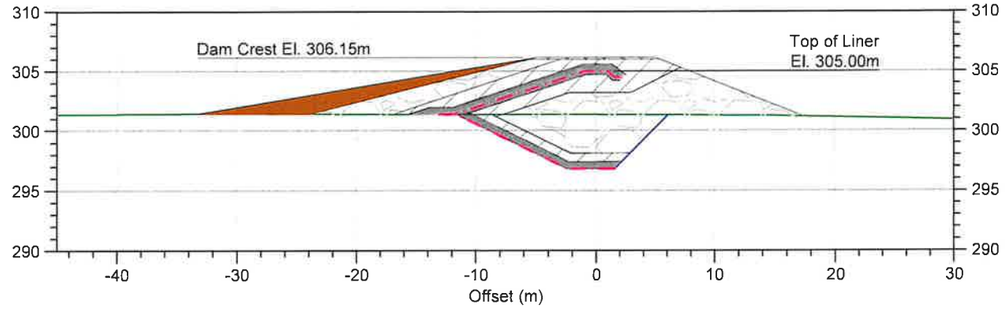

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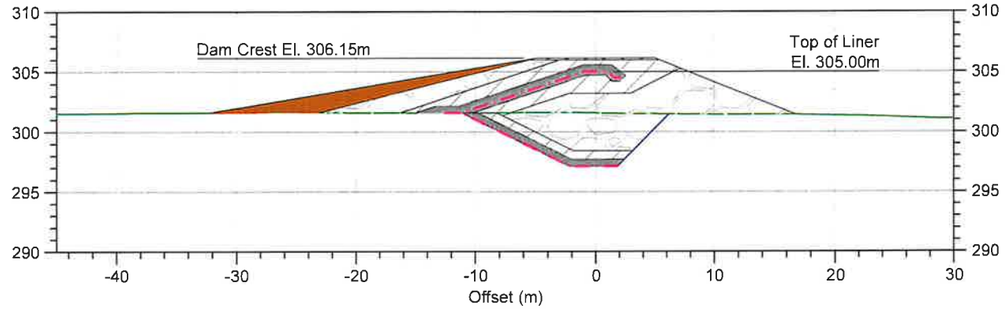

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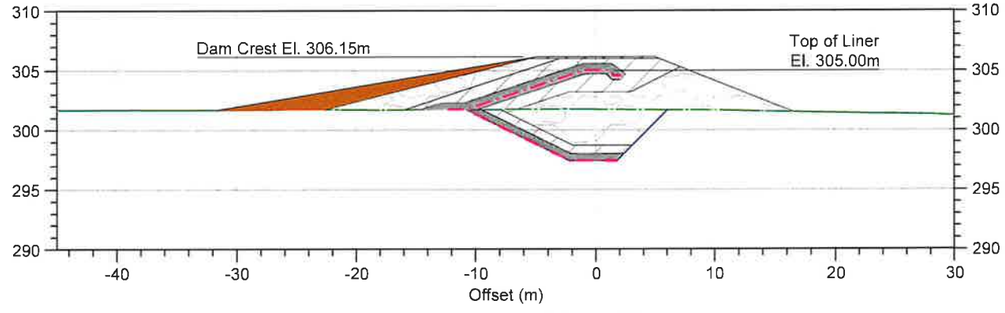

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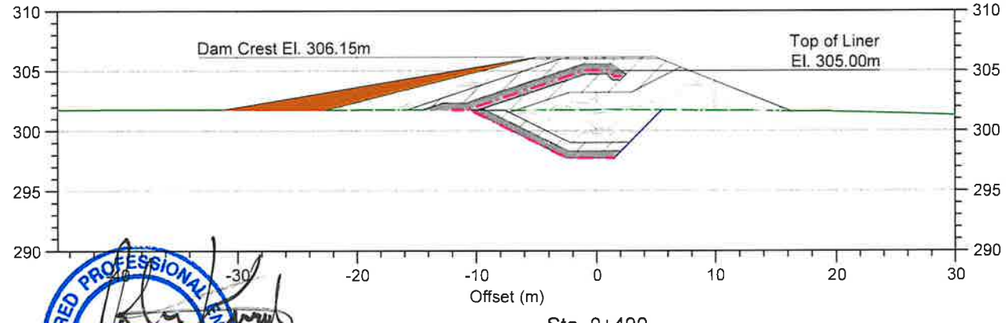

Sta. 0+490

LEGEND

- Existing Ground
- Excavation
- Geomembrane
- Finished Ground
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing

NOTES

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0m 5 10 15 20

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REVISIONS

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A	Issued for Permit	AT	TS	2025-09-22

srk consulting

DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-Sec.dwg

B2GOLD

Back River

SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Cross-Sections
Sheet 6 of 7

DRAWING NO SWP-1-355

REVISION NO 0

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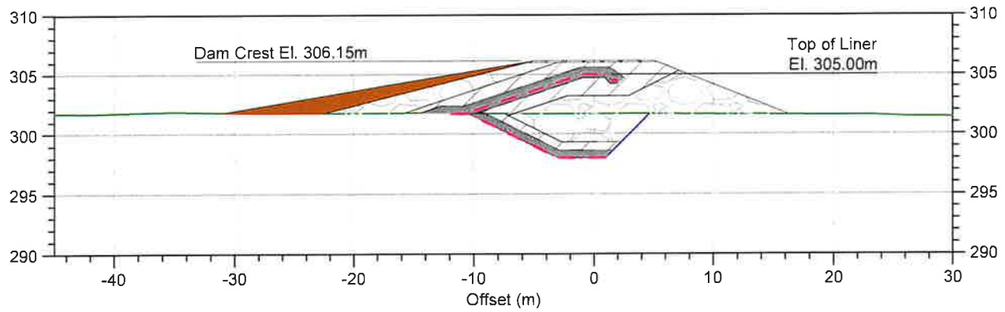

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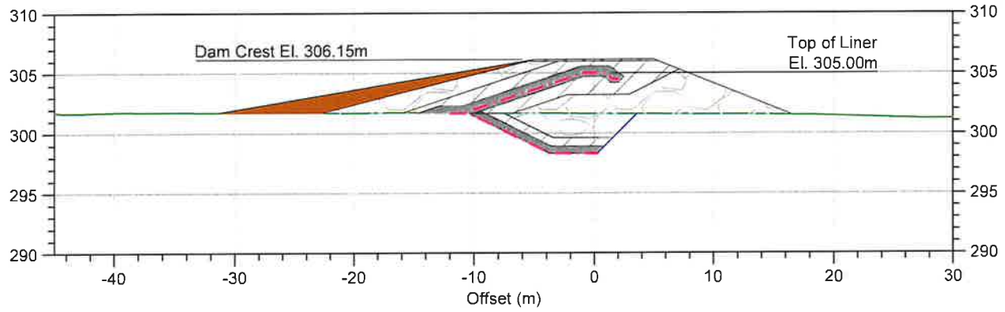

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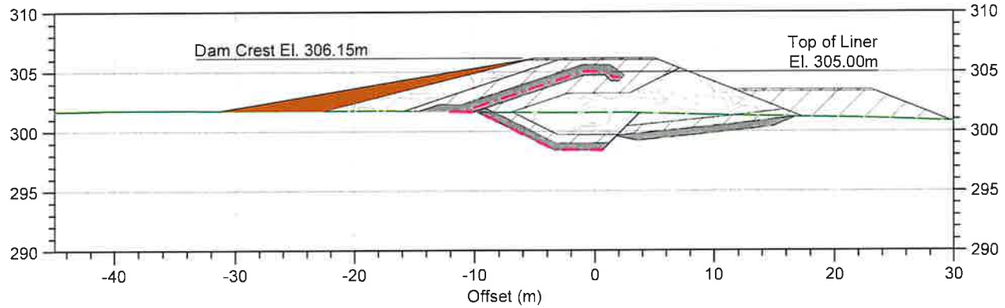

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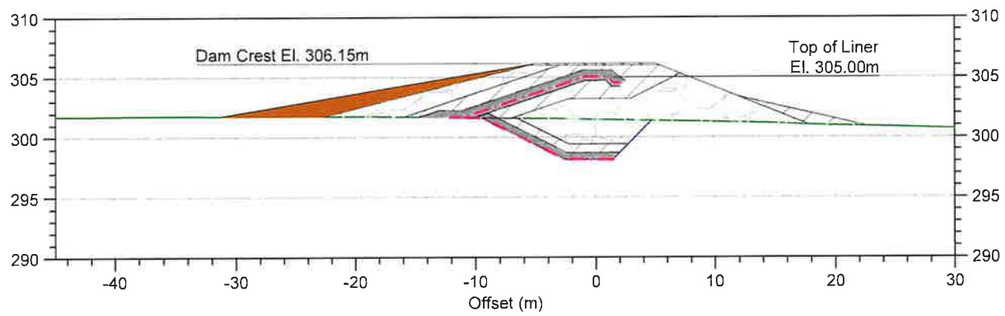
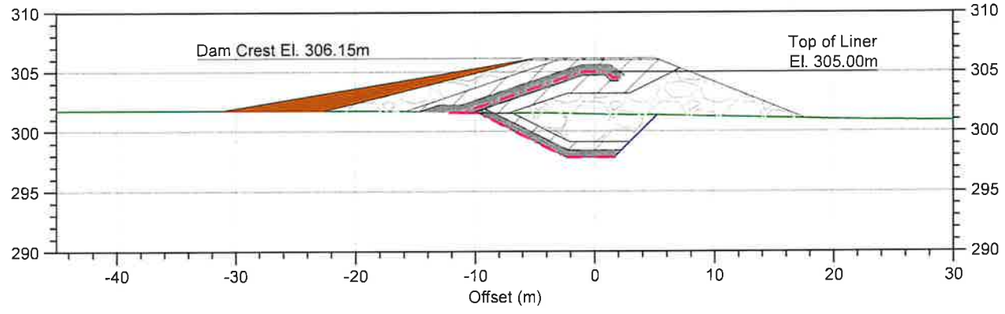
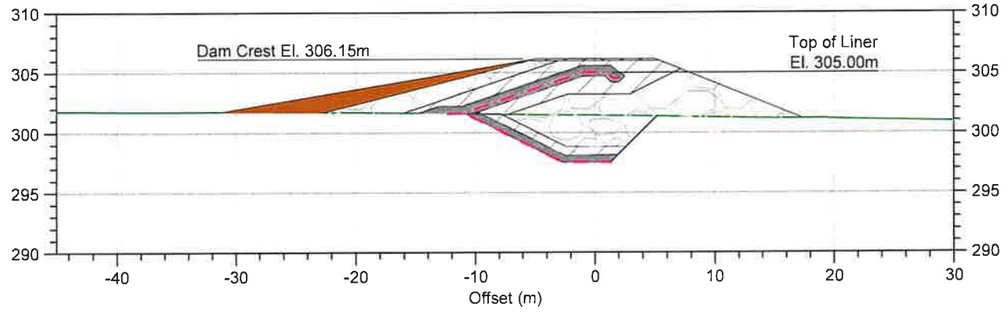


Sta. 0+530



Sta. 0+540



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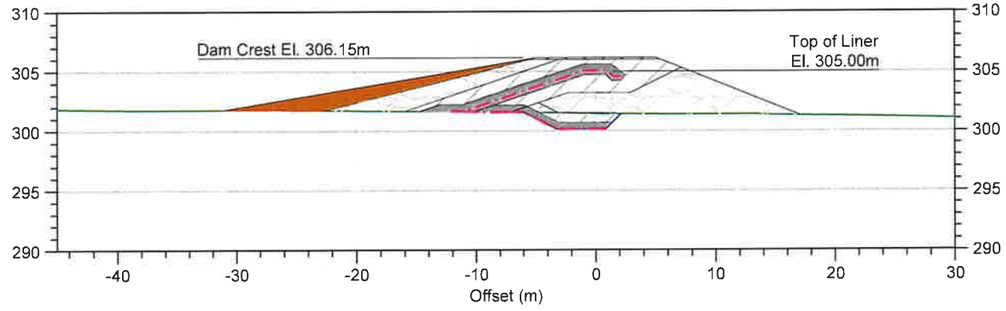

Sta. 0+560

LEGEND

- Existing Ground
- Excavation
- Geomembrane
- Finished Ground
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing

NOTES

1. All units are in meters unless otherwise specified.
2. All drawings are scaled appropriately for B-Size construction drawings (II" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

0m 5 10 15 20

1 : 500 Uncontrolled when printed See Note 2

DRAWING NO.	DRAWING TITLE	NO.	DESCRIPTION	CHK'D	APP'D	DATE
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REFERENCE DRAWINGS

NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
A	Issued for Permit	AT	TS	2025-09-22

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
J.B. KURYLO
LICENSEE
25/12/19
NT/NU

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DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME: CAPR003105_SWP1-Sec.dwg

B2GOLD

Back River

SRK JOB NO.: CAPR003105

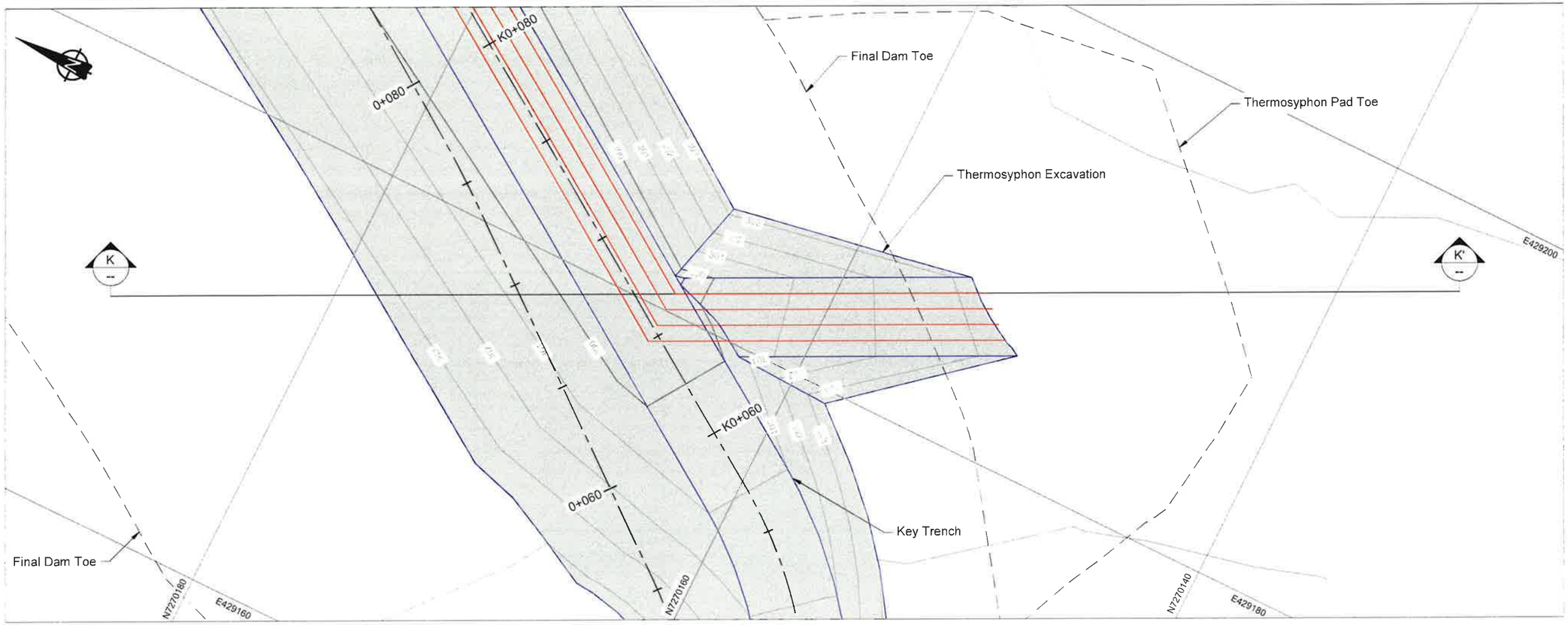
Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Cross-Sections
Sheet 7 of 7

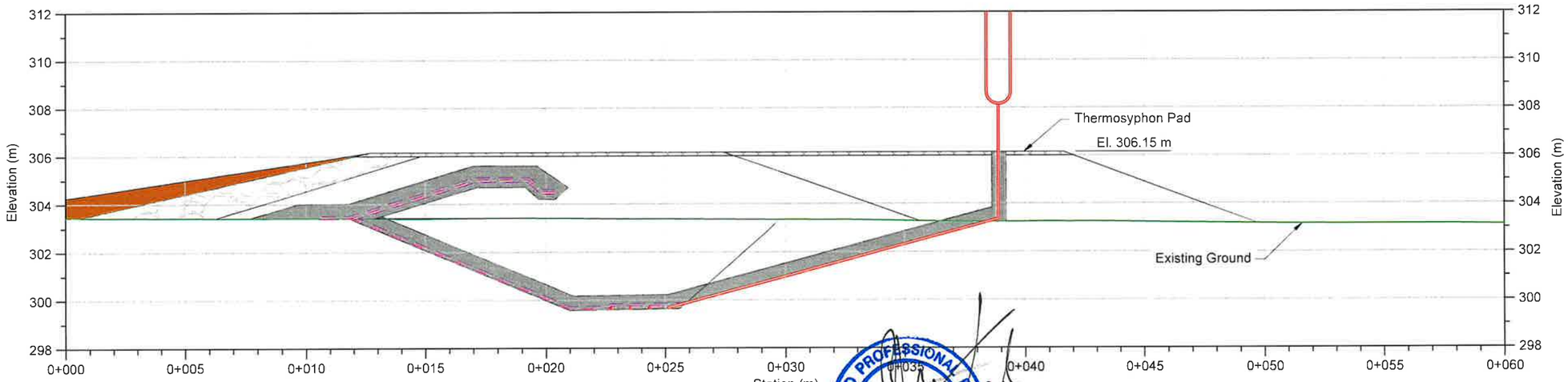
DRAWING NO.: SWP-1-356

REVISION NO.: 0

C:\Users\bcox\SRK Consulting\FS\263 Back River (Goose and MLA) - 1049_AutoCAD\ACAD_C3D\CAPR003105_WaterMgmt\SWP\CAPR003105_SWP1-Sec.dwg



Thermosyphon Pipe Section 2 Plan



M
Thermosyphon Pipe Section 2 Profile

LEGEND

- Thermosyphon Pipe Section 2
- Geomembrane
- Geotextile
- Design Key Trench
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing

NOTES

1. All units are in meters unless otherwise specified.
2. Contours are shown at 1.0 m intervals.
3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

0m 2 4 6 8
1 : 200 Uncontrolled when printed See Note 3

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REFERENCE DRAWINGS

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0	Issued for Constructino	AT/TS	JBK	2025-12-19

REVISIONS

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DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME: CAPR003105_SWP1-Thermosyphon Sections.dwg

B2GOLD

Back River

SRK JOB NO.: CAPR003105

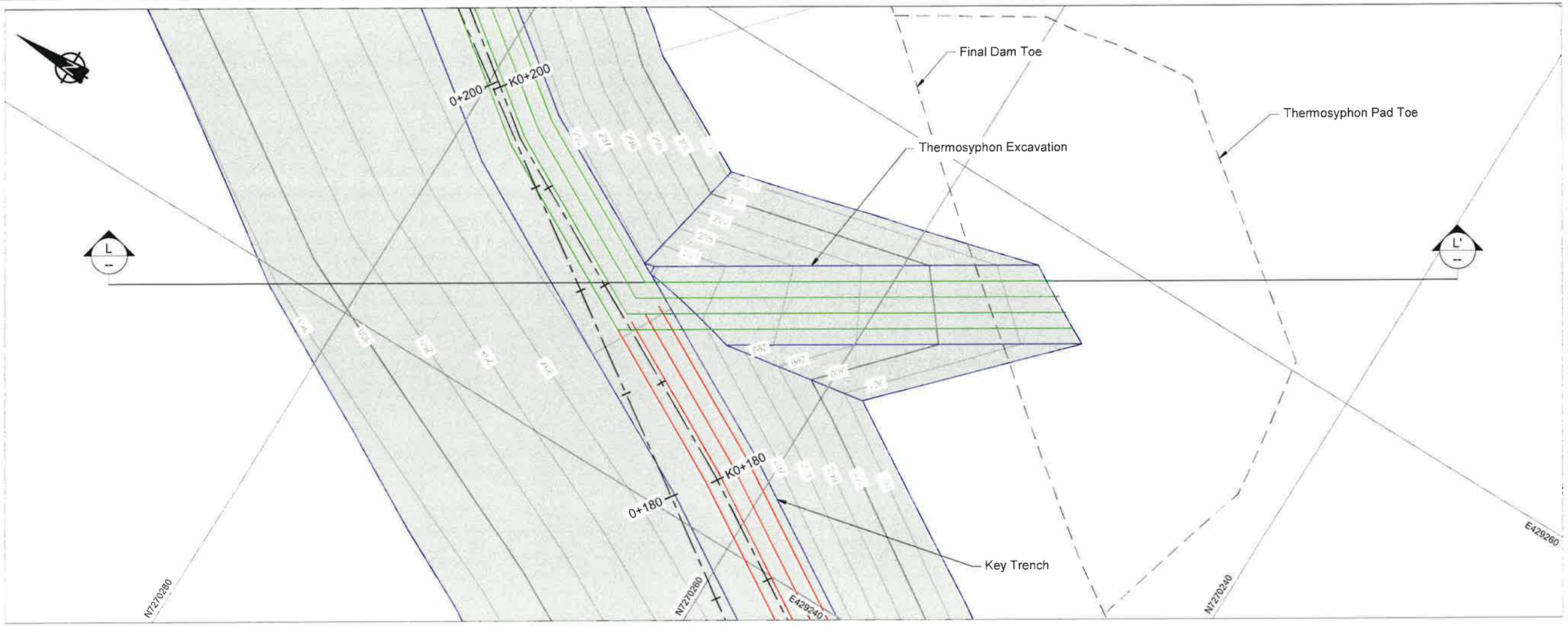
Saline Water Pond (Umwelt) Dam

Thermosyphon Pipe Section 2 Plan and Profile

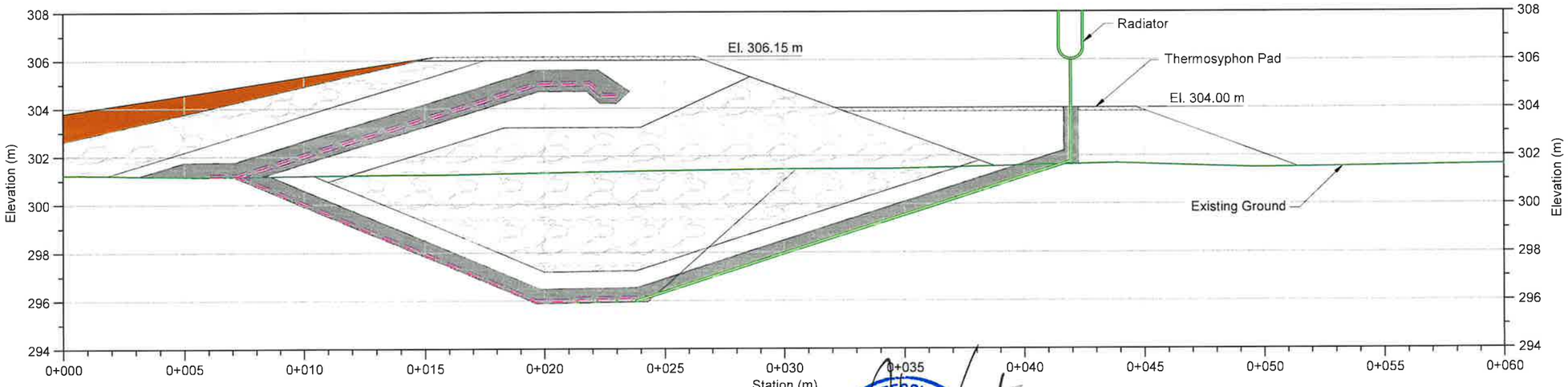
DRAWING NO.: SWP-1-370

REVISION NO.: 0

C:\Users\jbaker\SRK Consulting\FS233 Back River (Goose and MLA) - 1040_AutoCAD\ACAD_C3D\CAPR003105_WorkArea\---SWP\CAPR003105_SWP1-Thermosyphon Sections.dwg



Thermosyphon Pipe Section 3 Plan



M -- **Thermosyphon Pipe Section 3 Profile**

LEGEND

- Thermosyphon Pipe Section 2
- Thermosyphon Pipe Section 3
- Geomembrane
- Geotextile
- Design Key Trench
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing

NOTES

1. All units are in meters unless otherwise specified.
2. Contours are shown at 1.0 m intervals.
3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

0m 2 4 6 8
1 : 200 Uncontrolled when printed See Note 3

DRAWING NO.	DRAWING TITLE
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REFERENCE DRAWINGS

NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Constructino	AT/TS	JBK	2025-12-19

REVISIONS

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J.B. KURYLO LICENSEE NT/NU REGISTERED PROFESSIONAL ENGINEER

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JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-Thermosyphon Sections.dwg

B2GOLD

Back River

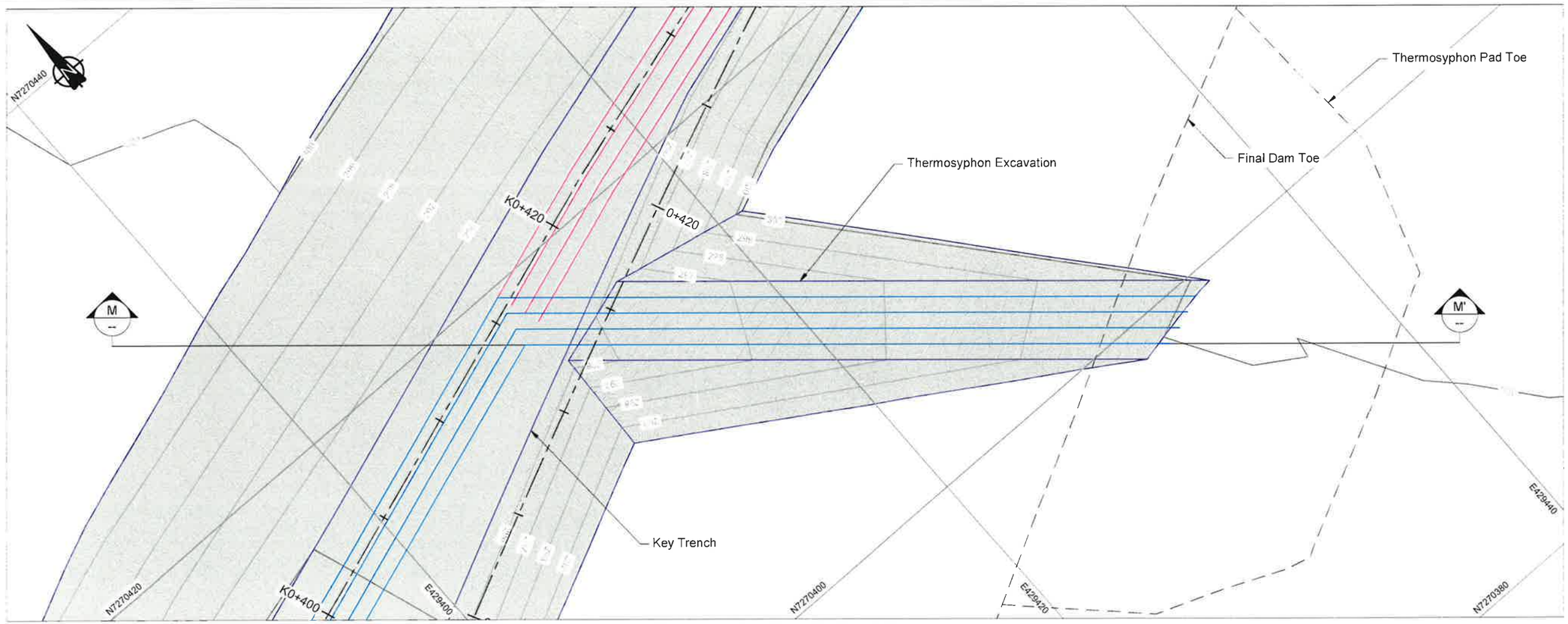
SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

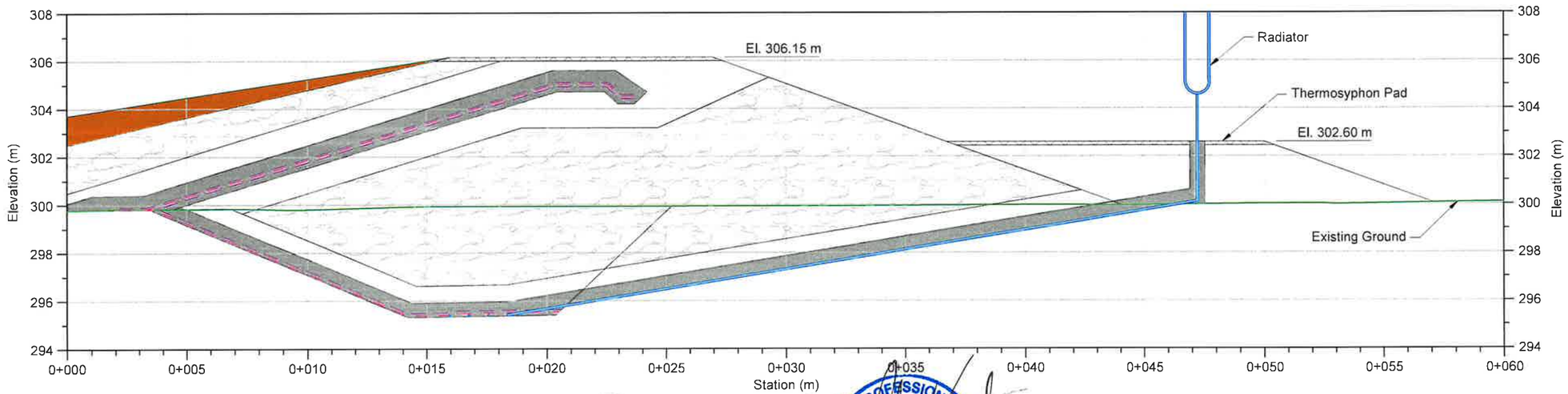
Thermosyphon Pipe Section 3 Plan and Profile

DRAWING NO.	REVISION NO.
SWP-1-371	0

C:\Users\bcke\Srkk Consulting\FS393 Back River (Goose and ML) - 1946_Auto\CAD\CAD_C3D\CAPR003105_WaterMgt\SWP\CAPR003105_SWP1-Thermosyphon Sections.dwg



Thermosyphon Pipe Section 4 Plan



M -- Thermosyphon Pipe Section 4 Profile

LEGEND

- Thermosyphon Pipe Section 4
- Thermosyphon Pipe Section 5
- Geomembrane
- Geotextile
- Design Key Trench
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing

NOTES

1. All units are in meters unless otherwise specified.
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3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

0m 2 4 6 8
1 : 200 Uncontrolled when printed See Note 3

DRAWING NO.	DRAWING TITLE
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REFERENCE DRAWINGS

NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19

REVISIONS

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JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME: CAPR003105_SWP1-Thermosyphon Sections.dwg

B2GOLD

Back River

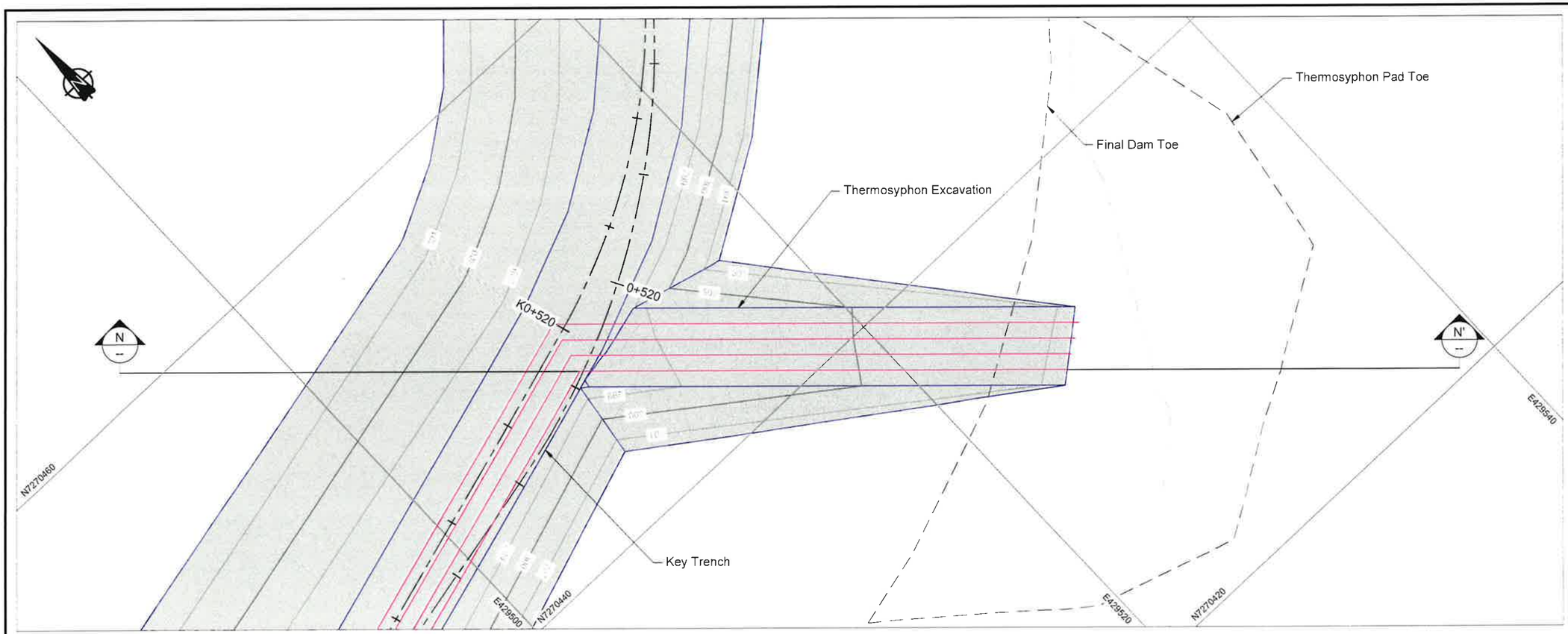
SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

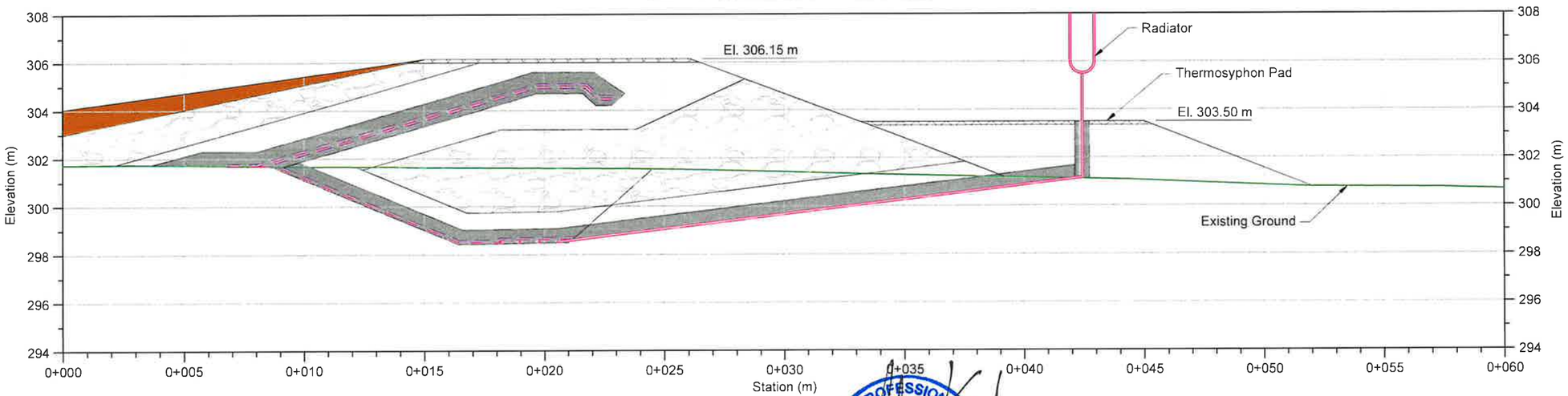
Thermosyphone Pipe Section 4 Plan and Profile

DRAWING NO. SWP-1-372

REVISION NO 0



Thermosyphon Pipe Section 5 Plan



M -- **Thermosyphon Pipe Section 5 Profile**

LEGEND

- Thermosyphon Pipe Section 5
- Geomembrane
- Geotextile
- Design Key Trench
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing

NOTES

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3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

0m 2 4 6 8
1 : 200 Uncontrolled when printed See Note 3

REGISTERED PROFESSIONAL ENGINEER J.B. KURYLO LICENSEE 2025/12/19 NTNU

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PROFESSIONAL ENGINEERS STAMP

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REFERENCE DRAWINGS

NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19

REVISIONS

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DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME: CAPR003105_SWP1-Thermosyphon Sections.dwg

B2GOLD

Back River

SRK JOB NO. CAPR003105

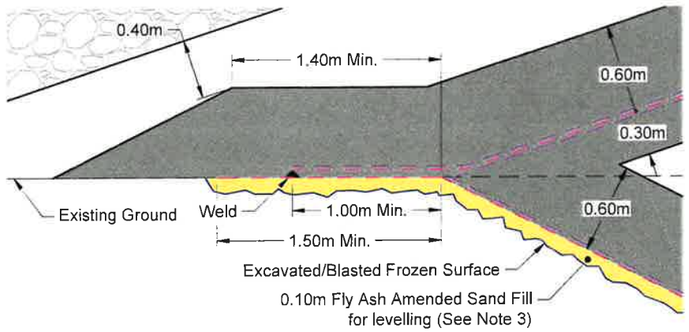
Saline Water Pond (Umwelt) Dam

Thermosyphon Pipe Section 5 Plan and Profile

DRAWING NO. SWP-1-373

REVISION NO. 0

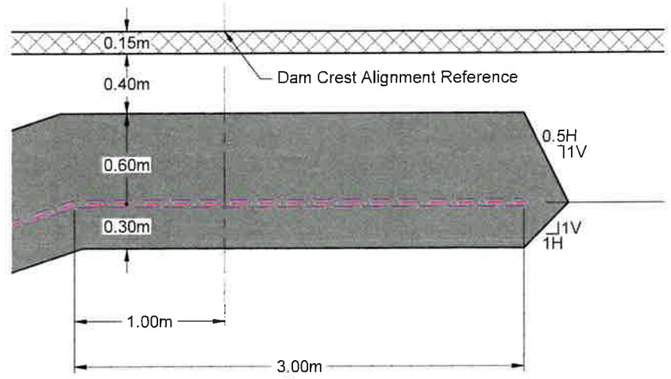
C:\Users\Jbake\SRK Consulting\FS203 Back River (Goose and ML) - 040_AutoCAD\ACAD_C3D\CAPR003105_WaterMgmt\SWP\CAPR003105_SWP1-Thermosyphon Sections.dwg



2 / 203 / 300-302 **Geomembrane Welding Detail**

0m 0.5 1.0 1.5

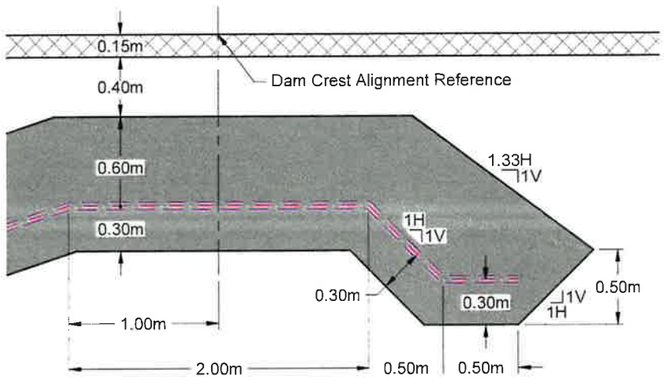
1:40 Uncontrolled when printed See Note 2



3 / 300 **Liner Detail for Typical Section A**

0m 0.5 1.0 1.5

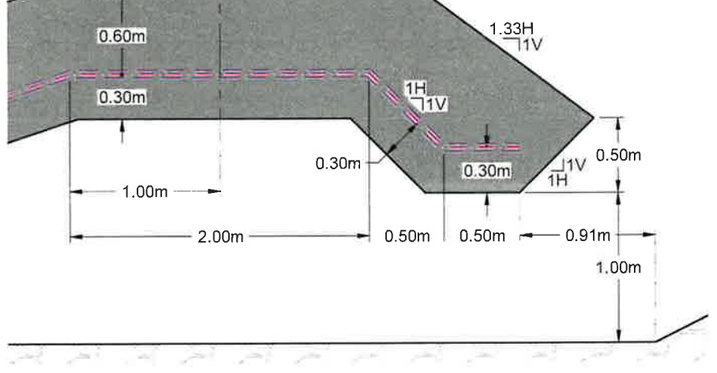
1:40 Uncontrolled when printed See Note 2



4 / 300 **Liner Detail for Typical Section B**

0m 0.5 1.0 1.5

1:40 Uncontrolled when printed See Note 2



5 / 300-302 **Liner Detail for Typical Section C & D & E**

0m 0.5 1.0 1.5

1:40 Uncontrolled when printed See Note 2

LEGEND

- Geomembrane
- Geotextile
- Fly Ash Amended Sand Fill
- Bedding
- Transition Material
- Run of Quarry
- Road Surfacing

NOTES

1. All units are in meters unless otherwise specified.
2. All drawings are scaled appropriately for B-Size construction drawings (II" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.
3. Minimum 10% Fly Ash in Fly Ash Amended Sand Fill.
4. Bentonite can be substituted for Fly Ash.

DRAWING NO.	DRAWING TITLE
--	--

REFERENCE DRAWINGS

NO.	DESCRIPTION	CHK'D	APP'D	DATE

NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

REVISIONS

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REGISTERED PROFESSIONAL ENGINEER J.B. KURYLO LICENSEE NT/NU

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DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-Typ Sec.dwg

B2GOLD

Back River

SRK JOB NO. CAPR003105

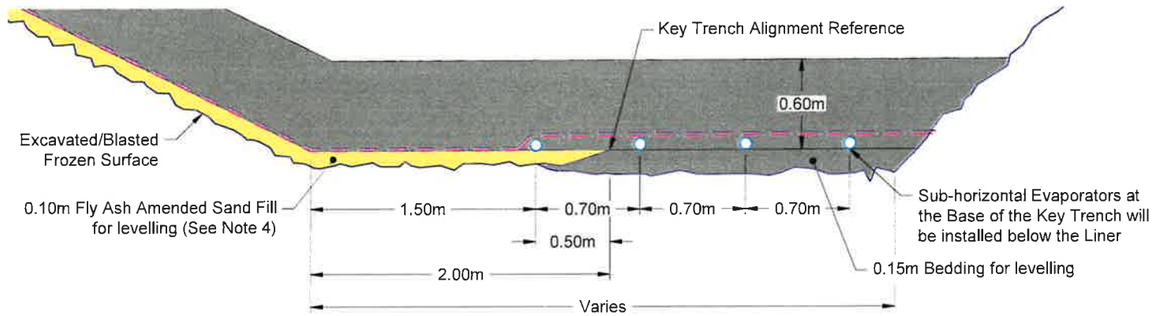
Saline Water Pond (Umwelt) Dam

Details - Liner and Bedding Placement

DRAWING NO. SWP-1-400

REVISION NO. 0

C:\Users\jbkuc\SRK Consulting\F3263 Back River (Goose and WLA) - 048_AutoCAD\ACAD_C3D\CAPR003105_Wsite\dg\~$SWPCAPR003105_SWP1-Typ Sec.dwg



6 **Downstream Liner to Overburden Tie-in Detail**

203
300-302

0m 0.5 1.0 1.5

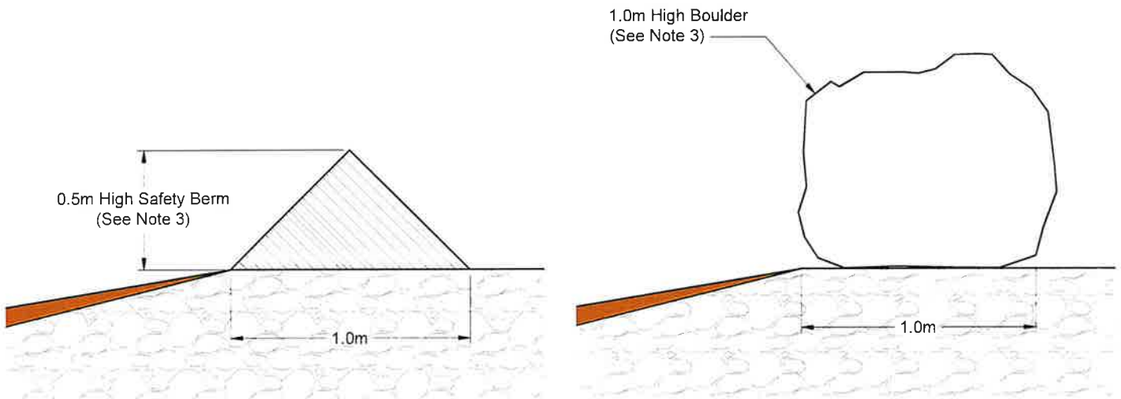
1:40 Uncontrolled when printed
See Note 2

LEGEND

- Excavation
- Geomembrane
- Geotextile
- Fly Ash Amended Sand Fill
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing

NOTES

1. All units are in meters unless otherwise specified.
2. All drawings are scaled appropriately for B-Size construction drawings (ll" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.
3. Barrier required when Saline Water Pond Dam height exceeds 3.0m.
4. Minimum 10% Fly Ash in Fly Ash Amended Sand Fill.
5. Bentonite can be substituted for Fly Ash.



8 **Typical Safety Berm or Barrier Options Detail**

300-302
308

0m 0.25 0.5 0.75 1.0

1 : 25 Uncontrolled when printed
See Note 2

REGISTERED PROFESSIONAL ENGINEER
J.B. KUNKLE
LICENSEE
2025/12/19
NT/NU

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REFERENCE DRAWINGS

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REVISIONS

NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

srk consulting

DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-Typ Sec.dwg

B2GOLD

Back River

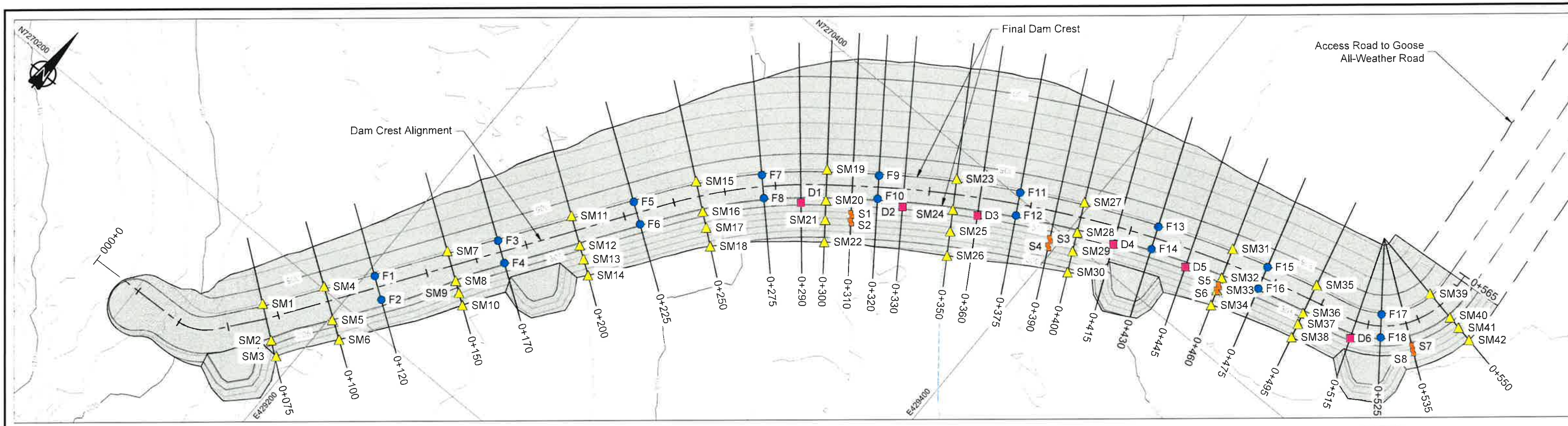
SRK JOB NO. CAPR003105

Saline Water Pond (Umwelt) Dam

Details - Downstream Liner Tie-in and Safety Barriers

DRAWING NO SWP-1-401

REVISION NO 0



Surficial Survey Monitoring Points		
ID	Northing	Easting
SM1	7270180.50	429176.38
SM2	7270171.69	429188.03
SM3	7270168.22	429193.51
SM4	7270200.85	429190.42
SM5	7270192.87	429201.19
SM6	7270188.68	429208.12
SM7	7270242.05	429218.74
SM8	7270235.26	429228.63
SM9	7270232.51	429232.62
SM10	7270229.69	429236.74
SM11	7270283.26	429247.07
SM12	7270276.46	429256.96
SM13	7270273.35	429261.48
SM14	7270269.67	429266.83
SM15	7270324.54	429275.92
SM16	7270317.14	429285.37
SM17	7270313.20	429290.40
SM18	7270308.65	429296.22

Surficial Survey Monitoring Points		
ID	Northing	Easting
SM19	7270360.73	429312.38
SM20	7270351.22	429319.70
SM21	7270345.23	429324.32
SM22	7270338.44	429329.55
SM23	7270390.05	429353.51
SM24	7270379.93	429359.96
SM25	7270372.78	429364.52
SM26	7270364.79	429369.61
SM27	7270414.85	429397.66
SM28	7270404.08	429402.95
SM29	7270397.43	429406.22
SM30	7270389.88	429409.92
SM31	7270437.93	429453.86
SM32	7270426.55	429457.67
SM33	7270421.63	429459.32
SM34	7270415.77	429461.28
SM35	7270447.87	429487.90
SM36	7270436.23	429490.81

Surficial Survey Monitoring Points		
ID	Northing	Easting
SM37	7270431.69	429491.95
SM38	7270426.18	429493.33
SM39	7270473.62	429524.36
SM40	7270471.43	429536.17
SM41	7270470.48	429541.29
SM42	7270469.35	429547.40

Deep Survey Monitoring Points		
ID	Northing	Easting
D1	7270344.35	429312.82
D2	7270368.14	429344.14
D3	7270384.28	429368.86
D4	7270409.47	429416.75
D5	7270420.68	429444.07
D6	7270440.32	429511[illegible]

Slope Inclinometers		
ID	Northing	Easting
S1	7270353.38	429330.57
S2	7270351.04	429332.34
S3	7270395.35	429396.36
S4	7270392.77	429397.70
S5	7270423.59	429458.66
S6	7270421.63	429459.32
S7	7270453.45	429531.91
S8	7270452.21	429533.62

Fixed Survey Monitoring Points		
ID	Northing	Easting
F1	7270216.48	429202.99
F2	7270211.09	429210.83
F3	7270257.69	429231.31
F4	7270252.59	429238.73
F5	7270303.01	429262.46
F6	7270297.91	429269.88
F7	7270342.71	429294.07
F8	7270336.32	429300.41
F9	7270371.66	429329.33
F10	7270364.41	429334.66
F11	7270401.75	429375.98
F12	7270393.91	429380.39
F13	7270425.94	429425.95
F14	7270417.61	429429.37
F15	7270441.08	429468.78
F16	7270432.45	429471.35
F17	7270455.27	429514.74
F18	7270448.12	429520.20

LEGEND

- Deep Monitoring Point
- Fixed Survey Monitoring Point
- Slope Inclinometer
- Surficial Survey Monitoring Point
- Waterbody
- Design Infrastructure

NOTES

1. All units are in meters unless otherwise specified.
2. Contours are shown at 1.0 m intervals.
3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

0m 10 20 30 40 50 60
1 : 1500
Uncontrolled when printed
See Note 3

NO	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

REVISIONS

DRAWING NO.	DRAWING TITLE
--	--

REFERENCE DRAWINGS

REGISTERED PROFESSIONAL ENGINEER J.B. KURYLO LICENSEE NT/NU 2025/12/19

This drawing is unofficial when printed unless stamped / certified in accordance with the requirements of the applicable jurisdiction and recorded on a Distribution Register.

PROFESSIONAL ENGINEERS STAMP

srk consulting

DESIGN: JBK/AT | DRAWN: JAB | REVIEWED: AT/JBK
CHECKED: AT/TS(B2Gold) | APPROVED: JBK | DATE: 2025-12-19
FILE NAME: CAPR003105_SWP1-Instrumentation.dwg

B2GOLD

Back River

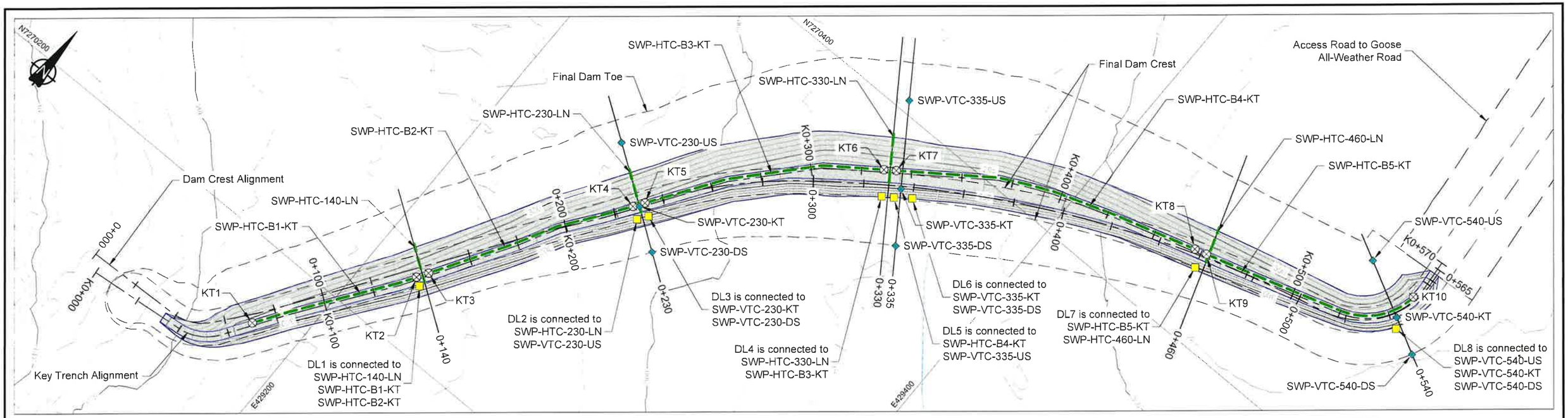
SRK JOB NO.: CAPR003105

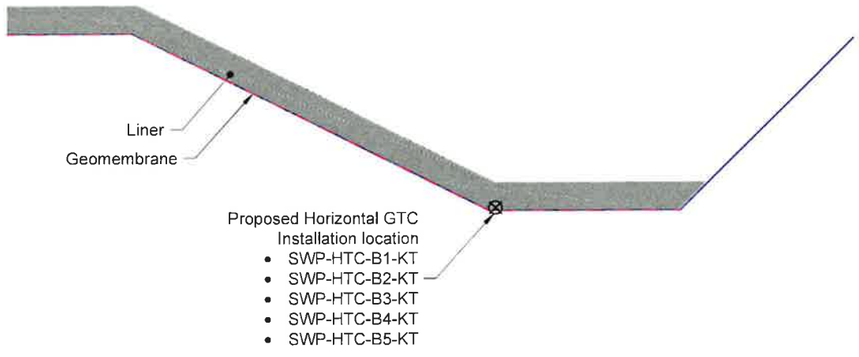
Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Instrumentation Plan

DRAWING NO: SWP-1-500
REVISION NO: 0

C:\Users\bokic\SRK Consulting\F3203 Back River (Goose and MLA)





Key Trench Horizontal Longitudinal GTC Installation Detail

Not To Scale

LEGEND

- Horizontal Longitudinal GTC Cable End Loactions
- Datalogger
- Vertical Ground Temperature Cable
- Horizontal Ground Temperature Cable
- Waterbody
- Excavation
- Design Infrastructure

NOTES

1. All units are in meters unless otherwise specified.
2. Contours are shown at 1.0 m intervals.
3. All drawings are scaled appropriately for B-Size construction drawings (11" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.

REFERENCES

NAD83 UTM Zone 13.
Existing Ground is derived from 2023-09-08 Lidar Survey.

0m 10 20 30 40 50 60
1 : 1500 Uncontrolled when printed See Note 3

Horizontal Longitudinal GTC End Locations

ID	Northing	Easting
KT1	7270171.08	429180.87
KT2	7270226.46	429219.37
KT3	7270230.72	429221.99
KT4	7270302.62	429267.45
KT5	7270306.74	429270.28
KT6	7270377.31	429334.73
KT7	7270380.23	429338.79
KT8	7270431.93	429449.64
KT9	7270433.35	429454.43
KT10	7270472.72	429528.60

Vertical GTC Locations

ID	Northing	Easting
SWP-VTC-230-DS	7270293.68	429284.87
SWP-VTC-230-KT	7270304.31	429269.40
SWP-VTC-230-US	7270319.11	429247.87
SWP-VTC-335-DS	7270357.25	429357.56
SWP-VTC-335-KT	7270375.85	429344.82
SWP-VTC-335-US	7270404.77	429325.00
SWP-VTC-540-DS	7270454.97	429542.75
SWP-VTC-540-KT	7270462.34	429528.51
SWP-VTC-540-US	7270473.51	429506.91

Datalogger Locations

ID	Northing	Easting
DL1	7270225	429222
DL2	7270300	429272
DL3	7270304	429275
DL4	7270369	429341
DL5	7270371	429345
DL6	7270376	429351
DL7	7270426	429454
DL8	7270459	429531

REGISTERED PROFESSIONAL ENGINEER J.B. KUFFLO LICENSEE 2025/12/19 NT/NU

This drawing is not to be printed unless stamped / certified in accordance with the requirements of the applicable jurisdiction and recorded on a Distribution Register

PROFESSIONAL ENGINEERS STAMP

REFERENCE DRAWINGS

DRAWING NO.	DRAWING TITLE
--	--

REVISIONS

NO.	DESCRIPTION	CHKD	APPD	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

srk consulting

DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-GTC.dwg

B2GOLD

Back River

SRK JOB NO. CAPR003105

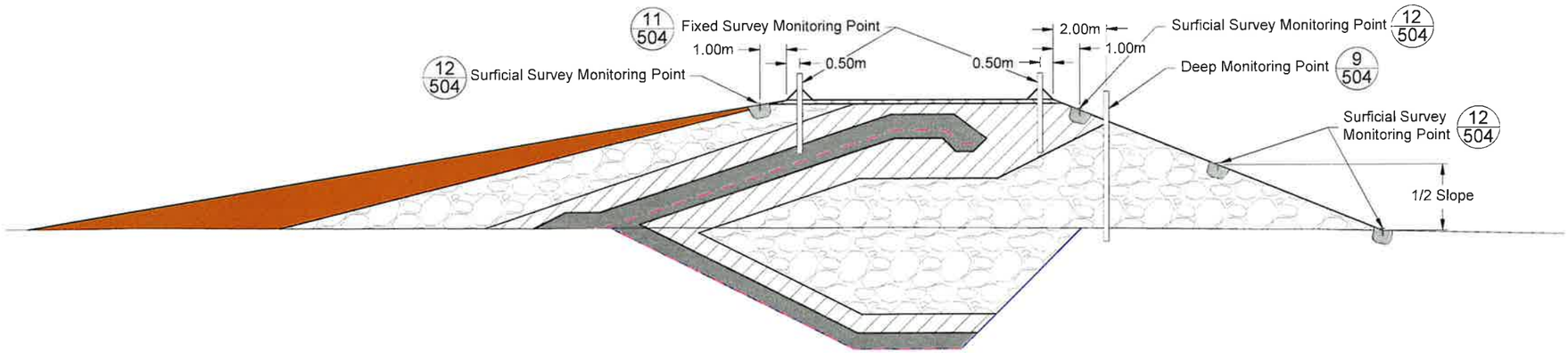
Saline Water Pond (Umwelt) Dam

SWP Phase 1 - Horizontal and Vertical GTC Layout

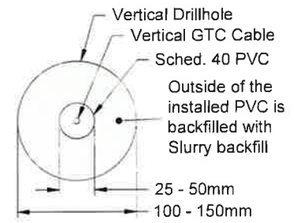
DRAWING NO. SWP-1-501

REVISION NO. 0

C:\Users\tbeak\OneDrive - SRK Consulting\gFS\203 Back River (Goose and WLA) - 1040_Aus\CAD\ACAD_C3D\CAPR003105_WaterMgt\SWP\CAPR003105_SWP1-GTC.dwg



Typical Section for Instrumentation



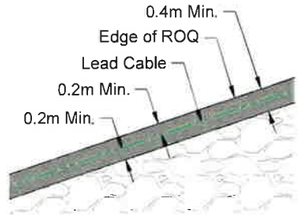
Typical Vertical GTC Installation Detail
13/-- Not To Scale

LEGEND

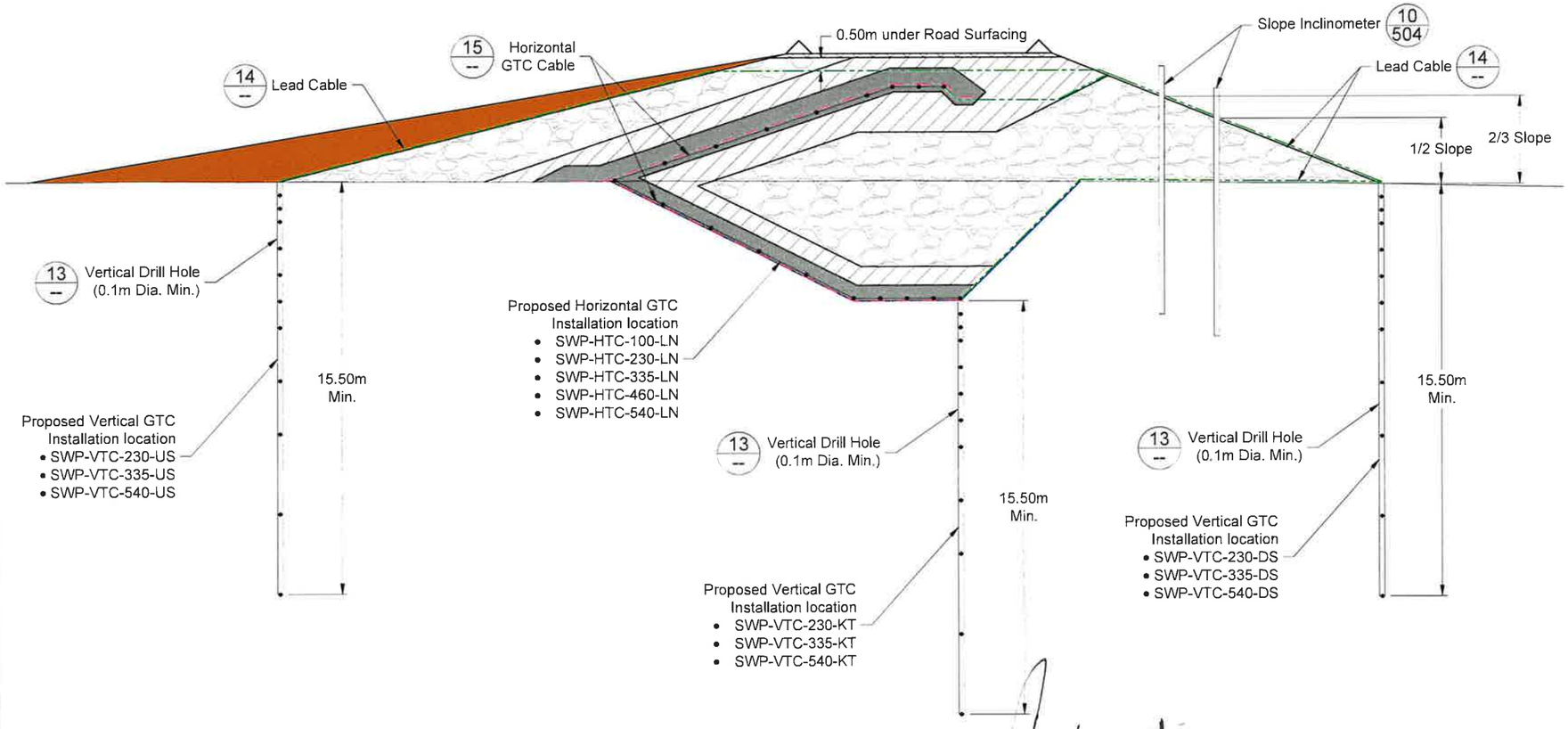
- Geomembrane
- Geotextile
- Lead Cable
- Bedding
- Transition Material
- Run of Quarry
- Overburden / Fine Grained Material
- Road Surfacing

NOTES

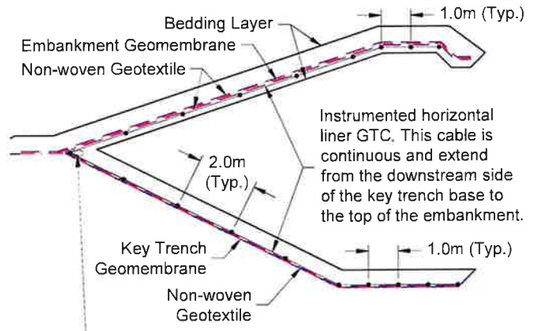
1. All units are in meters unless otherwise specified.
2. All drawings are scaled appropriately for B-Size construction drawings (II" x 17" or 279 mm x 432 mm). These drawings can therefore be plotted at double size to fit D-Size (22" x 34" or 559mm x 864mm). Please note that the scale may no longer be accurate if the drawings are printed in any other format or scaled differently.



Typical Lead Cable Installation Detail
14/-- Not To Scale



Typical Section for Inclinometers and Ground Temperature Cables (GTC)



Excess cable between the sensors shall be spooled at the key trench and embankment liner interface to ensure proper alignment and order of sensors. The sensor shall be aligned so that there is a sensor at the liner interface. As-built location of each sensor shall be surveyed.

Typical Horizontal GTC Cable Installation Detail
15/-- Not To Scale

0m 2 4 6 8
1 : 200 Uncontrolled when printed See Note 2

DRAWING NO.	DRAWING TITLE
--	--

REFERENCE DRAWINGS

NO.	DESCRIPTION	CHKD	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

REVISIONS

REGISTERED PROFESSIONAL ENGINEER J.B. KURYLO LICENSEE 2025/12/19 NT/NU

This drawing is not to be printed unless stamped / coded in accordance with the requirements of the applicable jurisdiction and recorded on a Distribution Register.

PROFESSIONAL ENGINEERS STAMP

srk consulting

DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME CAPR003105_SWP1-Typ Sec.dwg

SRK JOB NO. CAPR003105

B2GOLD

Back River

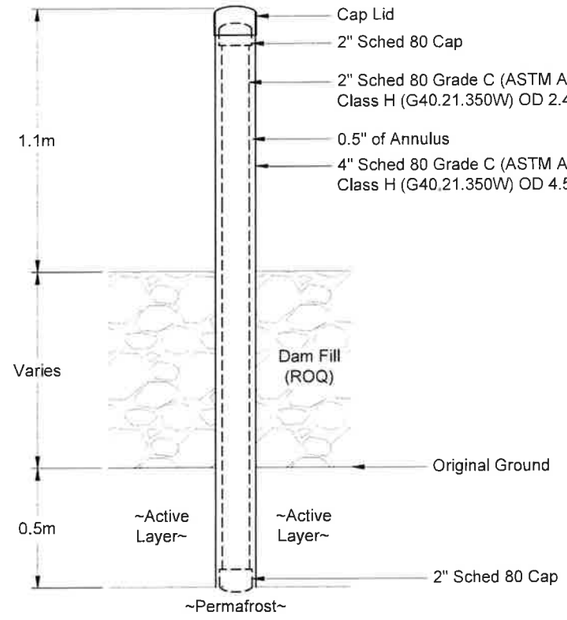
Saline Water Pond (Umwelt) Dam

Instrumentation Sections

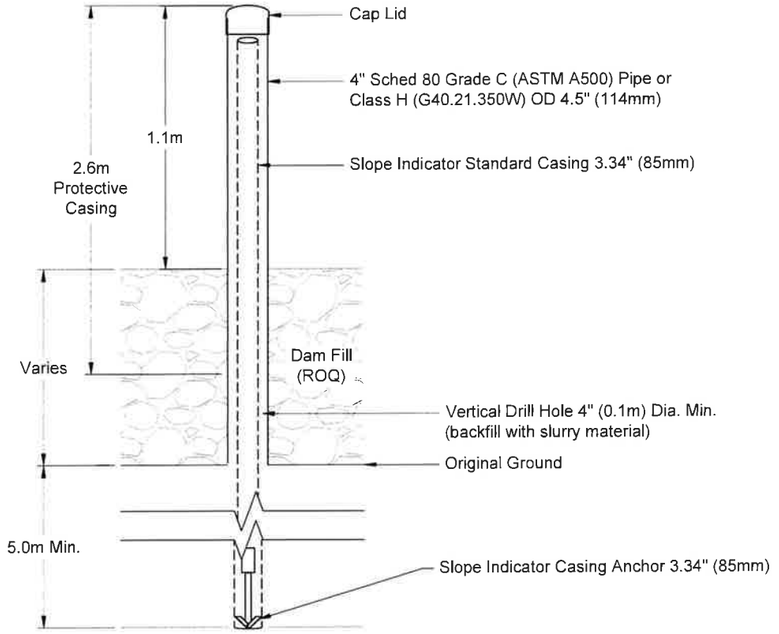
DRAWING NO. SWP-1-502

REVISION NO. 0

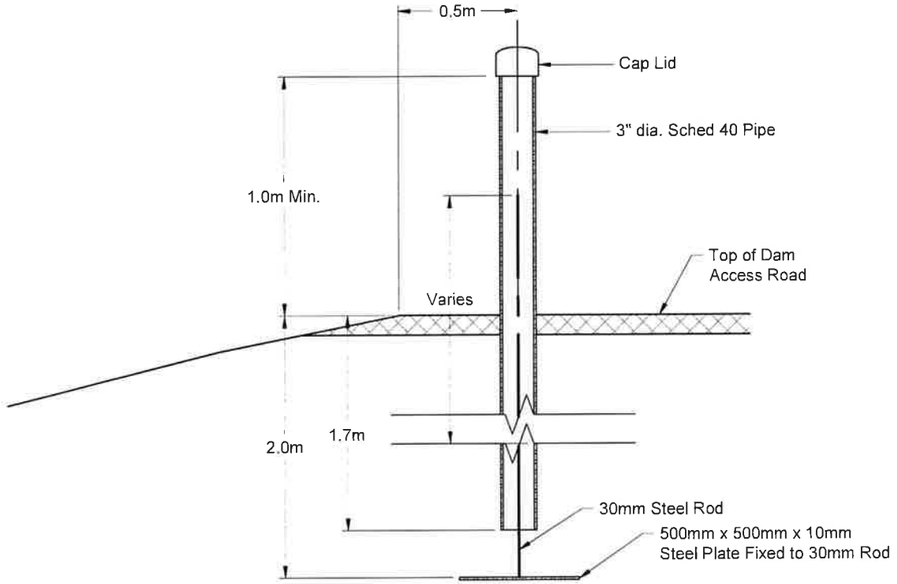
C:\Users\bdoric\SRK Consulting\FS301 Back River (Geo- and MLA) - 1040_AutoCAD\ACAD_CIDI\CAPR003105_WaterMgmt\SWP\CAPR003105_SWP1-Typ Sec.dwg



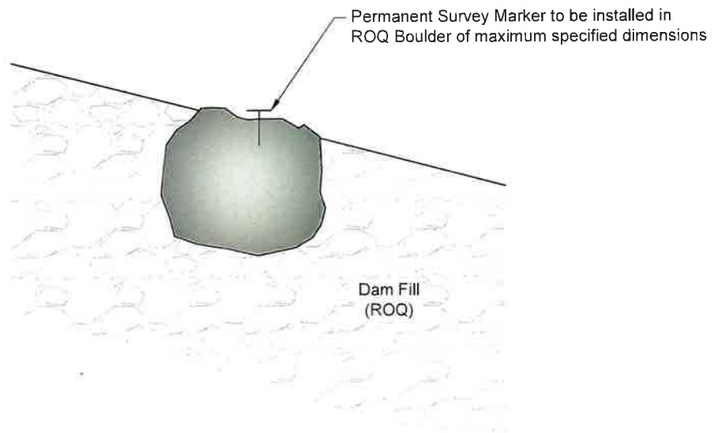
9/503 **Deep Settlement Monitoring Point Installation**
Not To Scale



10/503 **Slope Inclinometer Installation**
Not To Scale



11/503 **Fixed Survey Monitoring Point**
Not To Scale



503 **Surficial Survey Monitoring Point**
Not To Scale

LEGEND

- Run of Quarry
- Road Surfacing

NOTES

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DRAWING NO.	DRAWING TITLE
--	--

REFERENCE DRAWINGS

NO.	DESCRIPTION	CHK'D	APP'D	DATE
0	Issued for Construction	AT/TS	JBK	2025-12-19
B	Issued for Permit	AT	TS	2025-09-22
A	Issued for Review	-	-	2022-10

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — J.B. KUFFLO — LICENSEE — NT/NU — 10257 — 2025-12-19

This drawing is controlled when dated unless stamped / certified otherwise, and with the requirements of the applicable Professional and recorded on a Distribution Register.

PROFESSIONAL ENGINEERS STAMP

srk consulting

DESIGN	DRAWN	REVIEWED
JBK/AT	JAB	AT/JBK
CHECKED	APPROVED	DATE
AT/TS(B2Gold)	JBK	2025-12-19

FILE NAME: CAPR003105_SWP1-Typ Sec.dwg

B2GOLD

Back River

SRK JOB NO.: CAPR003105

Saline Water Pond (Umwelt) Dam

Instrumentation Details

DRAWING NO.: SWP-1-504

REVISION NO.: 0

C:\Users\jbeken\SRK Consulting\P\$003 Back River (Goose and MLA) - 9MB_AutoCAD\ACAD_C3D\CAPR003105_WaterMgmt\SWP\CAPR003105_SWP1-Typ Sec.dwg

APPENDIX 4: NPAG & NAG LAB DATA AND ACID-BASE ACCOUNTING SOP

AGAT Laboratories

Geotechnical Materials Division
3801 21 Street NE
Calgary, AB T2E 6T5

Determination of Minimum Laboratory Soil Resistivity
AASHTO T 288

Client: McElhanney
Project: B2 Gold/Back River
AGAT ID: 25-089 to 25-091
Location: BC
Client Sample ID: SMP-078
Work Order: 25UN00930
ATTN: Md Abu Sayed
Sampling Date: NA
Sampled by: Client
Testing Date: 12-Mar-25
Tested By: NM

Sample Description: Quarry Samples
Sample preparation: As receievd 4" minus samples were crushed and sieved through No.10 (2 mm). Processed material was air dry, intial water mix saturated for at least 12 hours, additional water increasesd saturated for more than 0.5 hour

Resistivity Box Size: 22.2 x 4 x 3.2 cm
Cross-sectional area (A): 4 x 3.2 cm = 12.8 cm^2
Volume: 270 cm^3

A/L= 1 cm

Method: 4-electrode method using M.C. Miller Soil Box

Test Results

Distilled Water Resistivity = 439407 Ω.cm

			Meter Reading (Ω)						
			Added distilled water (%)						Minimum Resistivity (Ω.cm)
AGAT ID	Sample Client ID	Sampling Date	10%	15%	20%	25%	30%	35%	
25-089	SMP-078(SA#1)	20-Jan-25	22700	11800	11200	12200			11200
25-090	SMP-078(SA#2)	20-Jan-25	26600	14200	14200	13000	13800		13000
25-091	SMP-078(SA#3)	20-Jan-25	21500	12100	10700	11300			10700

Note: **Resistivity (Ω.cm) = A/L factor of the resistivity box x The meter reading**
Crushed samples were at minimum resistivity at 300 mL added water to 1500g of sample and water was no longer absorbed by the material leaving free water

Ghareib H.
Reviewer

3/13/2025
Review Date

Ghareib Hamam
Signature

2620 21st Street NE
CALGARY, ALBERTA
CANADA T2E 7L3
TEL (403) 765-1200

http://www.agatlabs.com

CLIENT NAME: MCELHANNEY LIMITED
100, 402 -11TH AVE SE
CALGARY, AB T2G0Y4
(587) 774-9384
ATTENTION TO: Nikolas Minions
PROJECT: B2 Gold/Black River
AGAT WORK ORDER: 25C254349
ROCK ANALYSIS REVIEWED BY: Jewel Shibu, Lab Supervisor
DATE REPORTED: Mar 24, 2025
PAGES (INCLUDING COVER): 5
VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (403) 765-1200

*Notes

Disclaimer:

- *All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.*
- *All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.*
- *AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.*
- *This Certificate shall not be reproduced except in full, without the written approval of the laboratory.*
- *The test results reported herewith relate only to the samples as received by the laboratory.*
- *Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.*
- *All reportable information is available on request from AGAT Laboratories, in accordance with ISO/IEC 17025:2017, ISO/IEC 17025:2005 (Quebec), DR-12-PALA and/or NELAP Standards.*
- *This document is signed by an authorized signatory who meets the requirements of the MELCCFP, CALA, CCN and NELAP.*
- *For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.*

AGAT Laboratories

2620 21st Street NE
CALGARY, ALBERTA
CANADA T2E 7L3
TEL (403) 765-1200

http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 25C254349

PROJECT: B2 Gold/Black River

CLIENT NAME: MCELHANNEY LIMITED

ATTENTION TO: Nikolas Minions

(284-758) pH of Soil Used in Corrosion testing (AASHTO T289-91)

DATE SAMPLED: | DATE RECEIVED: Mar 03, 2025 | DATE REPORTED: Mar 24, 2025 | SAMPLE TYPE: Rock

Sample ID (AGAT ID)	Analyte:	Unit:	RDL:
	pH of soil - Corrosion Testing	pH units	0.2
25-089 - SMP-078(SA#1) (6556862)			9.55
25-090 - SMP-078(SA#2) (6556866)			9.48
25-091 - SMP-078(SA#3) (6556867)			9.46

Comments: RDL - Reported Detection Limit

Analysis performed at AGAT Calgary (unless marked by *)
Insufficient Sample : IS
Sample Not Received : SNR

Certified By: Jewel Shibu

AGAT Laboratories

2620 21st Street NE
CALGARY, ALBERTA
CANADA T2E 7L3
TEL (403) 765-1200

http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 25C254349

PROJECT: B2 Gold/Black River

CLIENT NAME: MCELHANNEY LIMITED

ATTENTION TO: Nikolas Minions

(284-759) Water-Soluble Chloride Ion Content in Soil (AASHTO T291-94)

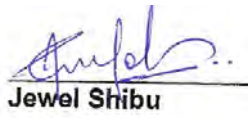
DATE SAMPLED: | DATE RECEIVED: Mar 03, 2025 | DATE REPORTED: Mar 24, 2025 | SAMPLE TYPE: Rock

Analyte:	Chloride Ion (Water Soluble)
Unit:	ppm
Sample ID (AGAT ID) RDL:	5
25-089 - SMP-078(SA#1) (6556862)	<5
25-090 - SMP-078(SA#2) (6556866)	<5
25-091 - SMP-078(SA#3) (6556867)	8.24

Comments: RDL - Reported Detection Limit

Analysis performed at AGAT Calgary (unless marked by *)
Insufficient Sample : IS
Sample Not Received : SNR

Certified By:



AGAT Laboratories

2620 21st Street NE
CALGARY, ALBERTA
CANADA T2E 7L3
TEL (403) 765-1200

http://www.agatlabs.com

Quality Assurance

AGAT WORK ORDER: 25C254349

PROJECT: B2 Gold/Black River

CLIENT NAME: MCELHANNEY LIMITED

ATTENTION TO: Nikolas Minions

Rock Analysis

Date Received: Mar 03, 2025

Date Reported: Mar 24, 2025

(284-758) pH of Soil Used in Corrosion testing (AASHTO T289-91)

6556862	pH of soil - Corrosion Testing
Original	8.71
Rep #1	8.71
RPD	0.0%
Method Blank	< 0.2
Result Value	
Reference Material	
Nominal	
Recovery	99%
Lower Limit	
Upper Limit	

(284-759) Water-Soluble Chloride Ion Content in Soil (AASHTO T291-94)

6556862	Chloride Ion (Water Soluble)
Original	< 5
Rep #1	< 5
RPD	0.0%
Method Blank	< 5
Result Value	
Reference Material	
Nominal	
Recovery	100%
Lower Limit	
Upper Limit	

Certified By: Jewel Shibu

2620 21st Street NE
CALGARY, ALBERTA
CANADA T2E 7L3
TEL (403) 765-1200

http://www.agatlabs.com

Method Summary

CLIENT NAME: MCELHANNEY LIMITED

AGAT WORK ORDER: 25C254349

PROJECT: B2 Gold/Black River

ATTENTION TO: Nikolas Minions

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Rock Analysis			
pH of soil - Corrosion Testing	ARD-284-18026	AASHTO T289-91 (2008)	POTENTIOMETER
Chloride Ion (Water Soluble)	ARD-284-12028	AASHTO T291-94	POTENTIOMETER

AGAT Laboratories

Geotechnical Materials Division
3801 21 Street NE,
Calgary, Alberta T2E 6T5

Client: McElhanney
Location: Back Water
ATTN: Md Abu Sayed

Work Order No.: 25UN00968
Sampling Date: NA
Testing Date: NA

Test Results

Parameter	Unit	G/S	RDL	Client ID: SMP#15
			AGAT ID	25-629
			Date Sampled	-
Soil Resistivity	ohms-cm	AASHTO T288	10^6	2320
Organic Matter Content	%			0.30
pH			0.2	8.89
Soluble Chloride	ppm		5	8
Saturation Percentage	%		1	25
Sulfate (SO4-S), Soluble	mg/L		2	778
Sulfur (as Sulfate), Soluble	meq/L		0.04	16.20
Sulfur (as Sulfate), Soluble	mg/kg		2	195

Nik Minions
Reviewer

6/20/25
Review Date

Signature

AGAT Laboratories

Geotechnical Materials Division
3801 21 Street NE,
Calgary, Alberta T2E 6T5

Client: McElhanney
Location: Back Water
ATTN: Md Abu Sayed

Work Order No.: 25UN00968
Sampling Date: NA
Testing Date: NA

Test Results

Parameter	Unit	G/S	RDL	Client ID: SMP#18
			AGAT ID	25-630
			Date Sampled	-
Soil Resistivity	ohms-cm	AASHTO T288	10^6	2580
Organic Matter Content	%			0.48
pH			0.2	8.90
Soluble Chloride	ppm		5	6
Saturation Percentage	%		1	28
Sulfate (SO4-S), Soluble	mg/L		2	794
Sulfur (as Sulfate), Soluble	meq/L		0.04	16.50
Sulfur (as Sulfate), Soluble	mg/kg		2	222

Nik Minions
Reviewer

6/20/25
Review Date

Signature

AGAT Laboratories

Geotechnical Materials Division
3801 21 Street NE,
Calgary, Alberta T2E 6T5

Client: McElhanney
Location: Back Water
ATTN: Md Abu Sayed

Work Order No.: 25UN00941
Sampling Date: NA
Testing Date: NA

Test Results

Parameter	Unit	G/S	RDL	Client ID: SMP #05 AGAT ID: 25-145 Date Sampled: 2/25/2025
Soil Resistivity	ohms-cm	AASHTO T288	10^6	5840
Organic Matter Content	%			0.61
pH			0.2	9.5
Soluble Chloride	ppm		5	6
Saturation Percentage	%		1	25
Sulfate (SO4-S), Soluble	mg/L		2	164
Sulfur (as Sulfate), Soluble	meq/L		0.04	3.41

Nik Minions
Reviewer

4/15/2025
Review Date

Signature

AGAT Laboratories

Geotechnical Materials Division
3801 21 Street NE,
Calgary, Alberta T2E 6T5

Client: McElhanney
Location: Back Water
ATTN: Md Abu Sayed

Work Order No.: 25UN00941
Sampling Date: NA
Testing Date: NA

Test Results

Parameter	Unit	G/S	RDL	Client ID: SMP #06
			AGAT ID	25-146
			Date Sampled	2/25/2025
Soil Resistivity	ohms-cm	AASHTO T288	10^6	5930
Organic Matter Content	%			0.87
pH			0.2	9.59
Soluble Chloride	ppm		5	<5
Saturation Percentage	%		1	26
Sulfate (SO4-S), Soluble	mg/L		2	167
Sulfur (as Sulfate), Soluble	meq/L		0.04	3.48

Nik Minions
Reviewer

4/15/2025
Review Date

Signature

AGAT Laboratories

Geotechnical Materials Division
3801 21 Street NE,
Calgary, Alberta T2E 6T5

Client: McElhanney
Location: Back Water
ATTN: Md Abu Sayed

Work Order No.: 25UN00941
Sampling Date: NA
Testing Date: NA

Test Results

Parameter	Unit	G/S	RDL	Client ID: SMP #07
			AGAT ID	25-147
			Date Sampled	2/28/2025
Soil Resistivity	ohms-cm	AASHTO T288	10^6	6450
Organic Matter Content	%			1.01
pH			0.2	9.73
Soluble Chloride	ppm		5	<5
Saturation Percentage	%		1	23
Sulfate (SO4-S), Soluble	mg/L		2	110
Sulfur (as Sulfate), Soluble	meq/L		0.04	2.29

Nik Minions
Reviewer

4/15/2025
Review Date

Signature

AGAT Laboratories

Geotechnical Materials Division
3801 21 Street NE,
Calgary, Alberta T2E 6T5

Client: McElhanney
Location: Back Water
ATTN: Md Abu Sayed

Work Order No.: 25UN00952
Sampling Date: NA
Testing Date: NA

Test Results

Parameter	Unit	G/S	RDL	Client ID: SMP#23-R AGAT ID: 25-205 Date Sampled: 3/16/2025
Soil Resistivity	ohms-cm	AASHTO T288	10^6	9360
Organic Matter Content	%			0.55
pH			0.2	9.57
Soluble Chloride	ppm		5	5
Saturation Percentage	%		1	25
Sulfate (SO4-S), Soluble	mg/L		2	144
Sulfur (as Sulfate), Soluble	meq/L		0.04	3.00
Sulfur (as Sulfate), Soluble	mg/kg		2	36

Nik Minions	5/7/2025	
Reviewer	**Review Date**	**Signature**

AGAT Laboratories

Geotechnical Materials Division
3801 21 Street NE,
Calgary, Alberta T2E 6T5

Client: McElhanney
Location: Back Water
ATTN: Md Abu Sayed

Work Order No.: 25UN00952
Sampling Date: NA
Testing Date: NA

Test Results

Parameter	Unit	G/S	RDL	Client ID: SMP#24-R AGAT ID: 25-206 Date Sampled: 3/16/2025
Soil Resistivity	ohms-cm	AASHTO T288	10^6	6450
Organic Matter Content	%			0.35
pH			0.2	9.37
Soluble Chloride	ppm		5	5
Saturation Percentage	%		1	20
Sulfate (SO4-S), Soluble	mg/L		2	58
Sulfur (as Sulfate), Soluble	meq/L		0.04	1.21
Sulfur (as Sulfate), Soluble	mg/kg		2	12

Nik Minions	5/7/2025	
Reviewer	**Review Date**	**Signature**

AGAT Laboratories

Geotechnical Materials Division
3801 21 Street NE,
Calgary, Alberta T2E 6T5

Client: McElhanney
Location: Back Water
ATTN: Md Abu Sayed

Work Order No.: 25UN00952
Sampling Date: NA
Testing Date: NA

Test Results

Parameter	Unit	G/S	RDL	Client ID: SMP#26-R AGAT ID: 25-207 Date Sampled: 3/18/2025
Soil Resistivity	ohms-cm	AASHTO T288	10^6	11300
Organic Matter Content	%			0.35
pH			0.2	9.56
Soluble Chloride	ppm		5	<5
Saturation Percentage	%		1	22
Sulfate (SO4-S), Soluble	mg/L		2	53
Sulfur (as Sulfate), Soluble	meq/L		0.04	1.10
Sulfur (as Sulfate), Soluble	mg/kg		2	12

Nik Minions
Reviewer

5/7/2025
Review Date

Signature

AGAT Laboratories

Geotechnical Materials Division
3801 21 Street NE,
Calgary, Alberta T2E 6T5

Client: McElhanney
Location: Back Water
ATTN: Md Abu Sayed

Work Order No.: 25UN00952
Sampling Date: NA
Testing Date: NA

Test Results

Parameter	Unit	G/S	RDL	Client ID: SMP#27-R AGAT ID: 25-208 Date Sampled: 3/20/2025
Soil Resistivity	ohms-cm	AASHTO T288	10^6	9080
Organic Matter Content	%			0.55
pH			0.2	9.41
Soluble Chloride	ppm		5	9
Saturation Percentage	%		1	22
Sulfate (SO4-S), Soluble	mg/L		2	44
Sulfur (as Sulfate), Soluble	meq/L		0.04	0.92
Sulfur (as Sulfate), Soluble	mg/kg		2	10

Nik Minions	5/7/2025	
Reviewer	**Review Date**	**Signature**

AGAT Laboratories

Geotechnical Materials Division
3801 21 Street NE,
Calgary, Alberta T2E 6T5

Client: McElhanney
Location: Back Water
ATTN: Md Abu Sayed

Work Order No.: 25UN00952
Sampling Date: NA
Testing Date: NA

Test Results

Parameter	Unit	G/S	RDL	Client ID: SMP#28-R AGAT ID: 25-209 Date Sampled: 3/20/2025
Soil Resistivity	ohms-cm	AASHTO T288	10^6	6670
Organic Matter Content	%			0.50
pH			0.2	9.44
Soluble Chloride	ppm		5	<5
Saturation Percentage	%		1	21
Sulfate (SO4-S), Soluble	mg/L		2	135
Sulfur (as Sulfate), Soluble	meq/L		0.04	2.81
Sulfur (as Sulfate), Soluble	mg/kg		2	28

Nik Minions
Reviewer

5/7/2025
Review Date

Signature

Acid-Base Accounting - Sampling Procedure

Version 1

DOCUMENT REVISION RECORD

Issue Date MM/DD/YY	Revision	Prepared By	Approved By	Issue Purpose
	0	NB		Initial Use
	1	NB		Corrected NPR classification

TABLE OF CONTENTS

1 PURPOSE

The purpose of this Standard Operating Procedure is to ensure that all acid-base accounting (ABA) sampling in the mine is done in a safe, productive, and consistent manner, and that all staff understand their roles and responsibilities when collecting ABA samples.

2 DEFINITIONS

Statement	Definition
Acid Base Accounting (ABA)	An analytical method to help determine the acid-producing and neutralizing potential of material.
Acid Potential (AP)	A laboratory measurement of the amount of acid that would be produced by the material being sampled.
Neutralization Potential (NP)	A laboratory measurement of the amount of acidity that would be neutralized by the material being sampled.
Neutralization Potential Ratio (NPR)	Represents a ratio of the neutralization potential of the sample material to its acid generating potential.
Non-Potentially Acid Generating Material (NAG)	Material that is considered non-acid producing, returning an NPR value > 3 or S < 0.15% (low sulfur).
Possibly Potentially Acid Generating Material (PPAG or Uncertain)	Possibly Potentially Acid Generating Material – Material that, when oxidized, may form acid that can leach metals, and falls outside of the NPAG and PAG classifications.
Potentially Acid Generating Material (PAG)	Material that, when oxidized, may form acid that can leach metals, and returns an NPR value < 1 and S > 0.15%.

3 RESPONSIBILITIES

3.1 DEPARTMENT MANAGERS

The department managers are responsible for:

- Ensuring that the contents of this document are accurate.
- Ensuring that this document is periodically reviewed.
- Ensuring that this document is amended when necessary.
- Ensuring that updates to this document are distributed to employees.

3.2 DEPARTMENT SUPERVISORS

The department supervisors are responsible for:

- Ensuring the health & safety of all employees while supervising and directing sampling programs.
- Periodically reviewing and assessing this document with employees.

- Ensuring that amendments are made when necessary.
- Ensuring all staff understand the content of this document and are trained in the current procedures.

3.3 EMPLOYEES

The employees are responsible for:

- Reviewing and understand the contents of this document.
- Suggesting amendments when necessary.
- Participating in periodic reviews and assessment of this document.
- Ensuring all hazards and risks are mitigated or eliminated before performing any task.
- Asking their supervisor for clarification if they are unsure about any aspect of this procedure.

4 PROTOCOL

4.1 SAFETY PROTOCOLS

Personal Protective Equipment (PPE) is essential and is always required to be worn in designated work areas on site. PPE should be inspected regularly for wear or damage and replaced as needed. Please refer to the Personal Protective Equipment SOP (SBR7SBB-02-00-SOP-9007) for all requirements and protocols for PPE. The following is a list of the minimum PPE required for sampling:

- Approved protective headwear;
- Approved safety glasses;
- Approved reflective vest, coveralls, or garment;
- Approved protective footwear;
- Approved traction aids;
- Approved hand protection;
- Headlamp (Underground);
- MSA W65 Self Rescuer (Underground).

All hazards and risks must be identified and mitigated or removed, documented in a Field Level Hazard Assessment (FLHA), and communicated to others in the work area prior to the commencement of any work. Any safety concerns need to be addressed with the supervisor prior to the commencement of any work. Any person witnessing any unsafe act or occurrence is obliged to report it to their supervisor.

4.2 ABA SAMPLE PLANNING

The total amount of waste material will be calculated for each drill pattern and bench within the pit, and a ratio of 8 samples to 100,000 tonnes of waste material (MEND, 2009) will be used to determine the total number of samples required to bring each drill pattern or bench into compliance for releasing the waste material.

The geology of each drill pattern will be reviewed to determine the optimal locations so that samples will avoid crossing lithological or geochemical domains where possible, with the locations being adjusted as needed upon visual assessment of the geology in the field.

The sampler will review the progress of the drill along the drill pattern to determine which holes are able to be sampled and to ensure safe collection of samples are possible. If conditions are found to be unsafe, the sampler is to contact their supervisor (or designate) for additional instruction and potential sampling locations.

4.3 ABA Sample Collection

The sampler will reference a map of the planned holes to determine the locations of the holes to be sampled. The sampler will identify the cuttings pile that belongs to the hole to be sampled and, using the approved blast hole sampling techniques, take a representative sample of the cuttings and place in a sample bag. The sample bag is to be marked with the approved sample number format, the appropriate sample tag is to be placed in the bag with the relevant information, and the bag is to be sealed with a zip-tie.

4.4 ABA Sample Submission

A sample dispatch sheet with the sampling and assay information should be completed and emailed to the on-site assay lab prior to sample submission. Sealed samples should be placed in rice bags and labelled as per standards prior to transportation to the on-site assay lab.

ABA samples should be assayed based on the Modified Sobek method with a siderite ($FeCO_3$) correction applied. The Modified Sobek method uses the sulphide sulfur rather than total sulfur to reduces the overestimation of the acid potential (AP) of the sample, while correcting for siderite reduces the overestimation of the neutralization potential (NP) of the sample. The following information is required from lab assays for calculating the neutralization potential ratio (NPR) of a sample:

- Total Sulfur (S)
- Total Inorganic Carbon (TIC)
- pH (For reference)

4.5 Calculating NPR and Classifying Samples

The NPR of a sample, once assayed, can be calculated using the following steps:

1. Calculate the AP of the sample using the following formula:
    a. AP = Total Sulfur * 31.35
2. Calculate the NP of the sample using the following formula:
    a. NP = Total Inorganic Carbon * (1000 / 12)
3. Calculate the NPR of the sample using the following formula:
    a. NPR = NP / AP

Once the NPR is calculated, the sample is to be classified as NAG, Uncertain, or PAG, using the following site-specific criteria (Sabina Gold & Silver Corp, 2022):

- An NPR > 3 or S < 0.15% is to be classified as NAG.
- An NPR > 1 and < 3 is to be classified as Uncertain.
- An NPR < 1 is to be classified as PAG.

ABA sample information and classification is to be stored in the appropriate tracking database for future reference, reporting, and modelling.

5 REFERENCES

MEND. (2009). *Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials.* Mine Environment Neutral Drainage Program.

Sabina Gold & Silver Corp. (2022). *Back River Project Waste Rock Management Plan - April 2022.*