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BOREHOLE: BGUA-03

Sheet 1 OF 14

Project:	Pioneer-Burdekin PHES	Coords:	657828.1 m E 7667677.5 m N MGA2020-55		
Location:	Netherdale/Dalrymple Heights	Surface RL:	854.29 m AHD	Date Started:	13/5/2024
Client:	Queensland Hydro	Contractor:	Twin Hills Drilling Drill Rig: Rig 25	Date Completed:	3/6/2024
Job No.:	PS138693	Inclination:	-79° Direction: 082°	Logged:	LH/MFR

Drilling

METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL
HQ3		17	0	0	854.29
		0	0	2.50	851.84
		40	0	3.00	851.35
		100	45	4.00	850.27
		100	40	4.30	850.07
		100	40	4.82	849.56
		100	77	7.00	847.42
				7.20	847.22
				8.00	846.44
				8.70	845.75
				10.00	

Field Material Description

GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa) ■ - UCS
	NO CORE 2.50m (0.00-2.50)		
	SM Silty SAND: fine to medium grained, orange and pale-brown, trace medium to high plasticity clay; trace fine grained gravel. medium dense; moist.	RS	
	NO CORE 1.00m (3.00-4.00)		
	METAGRANITE: coarse grained, white and grey, crystalline, massive.	HW	
	NO CORE 0.20m (4.10-4.30)	RS	
	SM Sandy SILT: fine, non plastic, brown, sand is fine to medium to coarse grained. stiff; moist.		
	METAGRANITE: coarse grained, white and grey, crystalline, massive.	HW	
		XW	
		HW	
	LAMPROPHYRE: fine to medium grained, black and dark green and orange brown, porphyritic, massive.	XW - HW	
	Red brown, healed microfractures.		
	Pale grey to dark grey, pale brown.	MW	
	Black and pale green.	SW	

Defect Information

DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)	AVERAGE DEFECT SPACING (mm)
0.05: Observed surface material: Silty SAND, fine to medium grained, orange and pale brown, trace medium to high plasticity clay, trace fine grained gravel.	
5.45: J, 55°, VN, PR, RF	
5.40-5.75: J, 60 - 80°, SN, UN, RF	
5.91: J, 25°, SN, UN, RF	
6.00-6.18: J, 65°, SN, UN, RF	
6.18-6.40: J, 65°, br, or SN, PR, RF	
6.35-6.60: J, 65°, SN, PR, RF	
6.50: J, SN, PR, RF	
6.83: J, 30°, SN, PR, RF	
7.05: J, 10°, or VN, PR, RF	
7.06: J, 65°, VN, PR, RF	
7.11: J, 65°, bk VN, PR, RF	
7.17: J, 35°, bk/wh SN, PR, RF	
7.15-7.32: J, 65°, bk/wh VN, PR, RF	
7.40-7.50: EW, 5°, clay and XW rock, 80 mm	
7.40-8.00: J, 10 - 20°, bk SN, PR, RF	
8.00-8.06: EW, 35°, recovered as gravel	
8.06-8.75: J x10, br SN, CU, RF, iron oxide	
8.92: J, 20°, br SN, PR, RF	
9.14: J, 10°, br SN, PR, RF	
9.28: J, 20°, br SN, PR, RF	
9.46: J, 25°, br SN, PR, RF	
9.50: J, 50°, br SN, PR, RF	
9.80: J, 35°, br SN, PR, RF	
9.85: J, 50°, br SN, PR, RF	

Comments

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Date 2/12/2024

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BOREHOLE: BGUA-03

Project:	Pioneer-Burdekin PHES	Coords:	657828.1 m E 7667677.5 m N MGA2020-55		
Location:	Netherdale/Dalrymple Heights	Surface RL:	854.29 m AHD	Date Started:	13/5/2024
Client:	Queensland Hydro	Contractor:	Twin Hills Drilling Drill Rig: Rig 25	Date Completed:	3/6/2024
Job No.:	PS138693	Inclination:	-79° Direction: 082°	Logged:	LH/MFR

Drilling

METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL
HQ3	11/6/2024 17:00, VWP1, VWP2	100	96	10–11–12	844.47
		100	100	12–13	
		100	100	13–14	13.86
		16	0	14	14.00 / 14.12 / 840.43
		100	100	14–15	14.60 / 839.96 / 14.90 / 839.66
		100	100	15–18	
		100	100	19–20	20.00

Field Material Description

ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa) ■ - UCS
MIX OF LAMPROPHYRE AND ALTERED GRANITE: fine to medium grained, dark grey and pale green, porphyritic, massive, with numerous healed joints.	SW / FR	
NO CORE 0.14m (13.86-14.00)		
LAMPROPHYRE: fine to fine grained, black and dark grey, porphyritic, massive, phenocrysts to 2 mm diameter, alteration predominantly around defects.		
NO CORE 0.48m (14.12-14.60)		
LAMPROPHYRE: fine to medium grained, black and dark grey, massive, with numerous healed joints, alteration around defects.		
MIX OF LAMPROPHYRE AND ALTERED GRANITE: black and dark grey with mottled white, lamprophyre is fine to medium grained, dark grey to grey, slightly altered green to yellow around healed defects, porphyritic, massive; altered granite is fine to medium grained, dark grey mottled grey to white, crystalline, massive.		

Defect Information

DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)
9.92-10.00: FZ, recovered as gravel
10.06: J, 55°, SN, PR, RF
10.10: J, 60°, br SN, PR, RF
10.17-10.22: J x2, 5 - 10°, wh SN, PR, RF
10.22: J, 5°, SN, PR, RF
10.59-10.65: AZ
10.82: J, 10°, VN, IR, RF
10.90-11.03: AZ, yl/gn
11.35: J, wh/yl SN, IR, SM
12.40: J, 25°, SN, IR, RF
12.44: J, 25°, SN, PR
12.74: J, 25°, VN, PR, RF
13.16: J, 5°, SN, PR, RF
13.27: J, SN, UN, RF
13.50: J, 50°, SN, UN, RF
13.65-13.85: AZ, gn/yl, IR, multiple defects, various angles, 0-10mm spacing
13.82: J, PR, RF
17.60: J, VN, IR, RF
18.00: J, 45°, SN, PR, RF
19.48: J, 5°, yl SN, PR

AVERAGE DEFECT SPACING (mm): 10, 30, 100, 300, 1000, 3000

Comments

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BOREHOLE: BGUA-03

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Project:	Pioneer-Burdekin PHES	Coords:	657828.1 m E 7667677.5 m N MGA2020-55		
Location:	Netherdale/Dalrymple Heights	Surface RL:	854.29 m AHD	Date Started:	13/5/2024
Client:	Queensland Hydro	Contractor:	Twin Hills Drilling Drill Rig: Rig 25	Date Completed:	3/6/2024
Job No.:	PS138693	Inclination:	-79° Direction: 082°	Logged:	LH/MFR

Drilling						Field Material Description				Defect Information	
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa) ■ - UCS VL -2 L -5 M -20 H -60 VH -200 EH	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)	AVERAGE DEFECT SPACING (mm) 10 30 100 300 1000 3000
HQ3		100	100	20–21			MIX OF LAMPROPHYRE AND ALTERED GRANITE: black and dark grey with mottled white, lamprophyre is fine to medium grained, dark grey to grey, slightly altered green to yellow around healed defects, porphyritic, massive; altered granite is fine to medium grained, dark grey mottled grey to white, crystalline, massive.	FR		21.60-21.80: J x2, 60 - 70°, wh VN, PR	
		100	100	22–23							
		100	100	23–24							
					24.72 / 830.02		LAMPROPHYRE: fine to medium grained, black and dark grey, massive, with numerous healed joints, alteration around defects.			24.98: J, 80°, mi quartz SN, PR 25.58: J, 80°, SN, PR 26.16: J, 60°, SN, PR 26.00-26.40: J, 60°, SN, UN, RF	
		100	93	25–27						27.01-27.10: J x4, 55 - 65°, SN, PR, RF 27.25-27.35: J x2, 40 - 45°, SN, UN 27.32: J, 35°, SN, PR	
					27.40 / 827.39		ALTERED GRANITE: fine to medium grained, black and dark grey mottled white to grey, crystalline, massive.			28.14: J, 35°, SN, PR, RF	
		100	55	28–29							
					29.75 / 825.09 / 30.00		METAGRANITE: medium to coarse grained, pale pink and pale orange and grey, crystalline, massive.				
				30							

Comments

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Project:	Pioneer-Burdekin PHES	Coords:	657828.1 m E 7667677.5 m N MGA2020-55		
Location:	Netherdale/Dalrymple Heights	Surface RL:	854.29 m AHD	Date Started:	13/5/2024
Client:	Queensland Hydro	Contractor:	Twin Hills Drilling Drill Rig: Rig 25	Date Completed:	3/6/2024
Job No.:	PS138693	Inclination:	-79° Direction: 082°	Logged:	LH/MFR

Drilling

METHOD	WATER	TCR	RQD
HQ3		100	55
		100	56
		100	91
		100	75
		100	100

Field Material Description

DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING
30	824.84		METAGRANITE: medium to coarse grained, pale pink and pale orange and grey, crystalline, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation.	MW - SW
31				FR
32				
33				
34				
35				
36	36.48 / 818.48		LAMPROPHYRE: fine to medium grained, black and dark grey, porphyritic, massive, phenocrysts to 2 mm diameter, altered along healed defects.	
37				
38				
39				
40				

INFERRED STRENGTH (MPa) ■ - UCS: VL <2, L 2-5, M 5-20, H 20-60, VH 60-200, EH >200

Defect Information

DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)

29.90-31.89: SZ, 80 - 90°, crushed rock, IR, RF, 150 mm

32.02-32.22: J x5, 40 - 60°, SN, UN, RF

32.27-32.48: Js, mi Qz SN, UN, RF

32.68: J, 30°, SN, PR

32.79-33.07: J, 80°, mi Qz SN, PR, RF, 30-100mm spacing

33.18: J, 20°, SN, IR, RF

33.27: J, 5°, SN, PR

33.32-33.50: J, SN, IR

33.57: J, 30°, SN, PR, RF

33.72: J, 30°, gy SN, PR, RF

33.83: J, 20°, SN, PR, RF

34.18: J, 30°, gy SN, PR

34.23: J, 45°, gy SN, PR, RF

34.41: J, 70°, gy SN, PR

34.54: J, 45°, gy SN, PR, RF

34.65: J, 60°, gy SN, PR, RF

34.83: J, 40°, gy SN, UN, RF

35.10-35.40: J x4, 40 - 60°, gy SN, PR

35.51: J, 20°, gy SN, PR, RF

35.57-35.69: J, 50°, clay, UN, RF, 5-10mm aperature

35.78: J, 10°, SN, PR, RF

36.27: J, 65°, SN, PR, RF

36.37: J, 55°, VN, PR

36.68: J, 45°, PR, RF

38.60: J, 45°, yl SN, PR, RF

38.52-38.98: AZ, yl

39.66: J, 45°, SN, PR, RF

39.75: J, 40°, SN, PR, RF

39.78: J, 40°, SN, PR, RF

AVERAGE DEFECT SPACING (mm): 10, 30, 100, 300, 1000, 3000

Comments

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Project:	Pioneer-Burdekin PHES	Coords:	657828.1 m E 7667677.5 m N MGA2020-55		
Location:	Netherdale/Dalrymple Heights	Surface RL:	854.29 m AHD	Date Started:	13/5/2024
Client:	Queensland Hydro	Contractor:	Twin Hills Drilling Drill Rig: Rig 25	Date Completed:	3/6/2024
Job No.:	PS138693	Inclination:	-79° Direction: 082°	Logged:	LH/MFR

Drilling

METHOD	WATER	TCR	RQD
HQ3		100	100
		100	100
		100	100
		100	66
		100	100

Field Material Description

DEPTH (metres)	DEPTH RL	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa) ■ - UCS
40		LAMPROPHYRE: fine to medium grained, black and dark grey, porphyritic, massive, phenocrysts to 2 mm diameter, altered along healed defects.	FR	
41				
42				
	42.73 / 812.35	METAGRANITE: medium to coarse grained, pale orange pale-brown black grey brown, crystalline, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation.		
43				
44				
45				
46				
47	47.00 / 808.15	Grey.		
48				
	48.95 / 806.24	DOLERITE: fine grained, dark grey, crystalline, massive, chilled margin.		
49				
50				

Defect Information

DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)

41.95: J, 65°, SN, PR, RF
42.24-42.40: AZ, SN, PR
42.41-42.67: AZ, SN, PR
42.72-42.74: J, 35°, SN, PR, RF
43.42: J, 20°, SN, PR, RF
44.38: J, 15°, SN, PR, RF
44.50: J, 20°, SN, PR, RF
44.77: J, 20°, SN, PR, RF
45.02: J, 20°, SN, PR, RF
45.21: J, 15°, SN, PR, RF
45.33: J, 15°, SN, PR, RF
45.48-45.62: J, 80°, RF
45.81: J, 10°, SN, PR
45.90: J, 30°, SN, PR, RF
46.03: J, 10°, SN, PR, RF
46.12-46.16: J, 20°, SN, PR, RF
46.28-46.29: J, 15°, SN, PR, RF
46.46-46.77: J, 85°, SN, PR
46.77: J, 45°, SN, PR, RF
46.93: J, 15°, SN, PR, RF
47.00-48.00: SZ /FZ, 80 - 90°, SN, PR, RF, recovered as fragmented rock
47.78: J, 20°, SN, PR, RF
47.81: J, 30°, SN, PR, RF
48.01-48.10: J, 70°, SN, PR, RF
48.12: J, 30°, CN, PR, RF
48.21-48.25: J, 25 - 30°, SN, PR, RF
48.00-48.52: J x6, 15°, bk SN, CU
48.42-48.44: J, 10°, PR, RF
48.60: J, 55°, gy, PR
48.68: J, 40°, gy, or, PR
49.30: J, 5°, wh SN, PR, RF
49.62: J, 10°, gy SN, PR, RF

AVERAGE DEFECT SPACING (mm) 10 30 100 300 1000 3000

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Project:	Pioneer-Burdekin PHES	Coords:	657828.1 m E 7667677.5 m N MGA2020-55		
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Job No.:	PS138693	Inclination:	-79° Direction: 082°	Logged:	LH/MFR

Drilling						Field Material Description				Defect Information	
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa) ■ - UCS VL -2 L -5 M -20 H -60 VH -200 EH	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)	AVERAGE DEFECT SPACING (mm) 10 30 100 300 1000 3000
HQ3		100	100	50			DOLERITE: fine grained, dark grey, crystalline, massive, chilled margin.	FR		50.30: J, 25°, gy, mi fe VN, PR, RF	
					50.65 / 804.57		Fine to medium grained, grey.				
				51							
				52							
				53							
		100	100								
				54							
				55						54.88: J, 50°, Qz SN, PR, RF 55.10: J, 15°, or, gy SN, PR, RF 55.26: J, 20°, gy; iron stained SN, PR, RF	
				56						56.00: J, 45°, gy; iron stained SN, PR, RF	
		100	100							56.74: J, 45°, gy SN, PR, RF	
				57						56.94: J, 45°, gy; iron stained SN, PR, RF	
										57.59: J, 50°, gy SN, PR	
				58							
										58.72: J, 45°, pale orange and grey SN, PR, RF	
		100	100	59						59.20: J, 50°, gy SN, PR, RF	
				60	60.00						

Comments

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Project:	Pioneer-Burdekin PHES	Coords:	657828.1 m E 7667677.5 m N MGA2020-55		
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Job No.:	PS138693	Inclination:	-79° Direction: 082°	Logged:	LH/MFR

Drilling

METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL
HQ3		100	100	60	795.39
		100	100	61	
		100	100	62	
		100	97	63	
		100	100	64	64.25
					791.22
					64.65
					790.83
				65	
				66	
				67	
				68	68.55
					787.00
				69	
				70	70.00

Field Material Description

GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa) ■ - UCS (VL -2, L -5, M -20, H -60, VH -200, EH -200)
	DOLERITE: fine to medium grained, grey green to dark grey, porphyritic, massive, phenocrysts to 2 mm diameter.	FR	
	BASALT: fine grained, dark grey, crystalline, massive.		
	DOLERITE: fine to medium grained, grey green to dark grey, porphyritic, massive, phenocrysts to 2 mm diameter.		
	Fine grained, dark grey, chilled margin.		

Defect Information

DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)

60.80: J, 45°, SN, IR, RF
60.91: J, 20°, SN, UN, RF
61.85: J, 55°, wh/bk SN, UN, RF
63.67: J, 5°, wh SN, PR, RF
63.89: J, 10°, wh SN, PR, RF
64.40: J, 65°, SN, PR, RF
64.65: J, 70°, SN, CU, RF
65.00: J, 80°, SN, CU, RF
65.27: J, 5°, or SN, CU, RF
65.80: J, 90°, or SN, PR, RF
66.10: J, 90°, SN, PR, RF
66.25-66.37: FZ, 75°, SN, UN, RF
66.78: J, 15°, SN, CU, RF
67.07: J, 70°, or/wh; iron stained and quartz SN, PR
67.08: J, 25°, mi, iron stained CN, PR
67.40: J, 25°, mi, iron stained SN, PR
67.85: J, 15°, SN, PR
69.52: J, 70°, wh VN, PR, RF
69.45-69.62: AZ, wh/or SN, PR

AVERAGE DEFECT SPACING (mm) (10, 30, 100, 300, 1000, 3000)

Comments

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Date 2/12/2024

Preliminary

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BOREHOLE: BGUA-03

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Job No.:	PS138693	Inclination:	-79° Direction: 082°	Logged:	LH/MFR

Drilling

METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL
HQ3		100	93	70	785.58
					70.72
					784.87
		100	80	73	
		100	100	76	
		100	100	79	

Field Material Description

GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa) ■ - UCS
	DOLERITE: fine grained, dark grey, porphyritic, massive, chilled margin.	FR	
	METAGRANITE: medium to coarse grained, orange and grey, crystalline, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation, numerous healed microfractures.		

Defect Information

DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)
70.68: J, 45°, SN, PR, RF
70.72: J, 45°, SN, PR, RF
71.15: J, 40°, VN, PR
71.20-71.30: J, 55°, SN, UN
71.76-72.00: J x4, 40 - 60°, wh SN, UN
72.12: J, 10°, VN, IR
72.17: J, 55°, SN, UN
72.40: J, 10 - 20°, CN, UN, RF
72.50: J, 70°, CN, PR, RF
72.56: J, 10°, CN, UN, RF
72.61: J, 25°, CN, PR, RF
72.64: J, 60°, CN, PR, SM
72.70: J, 70°, CN, PR, SM
73.25: J, 75°, or; iron stained VN, PR
73.40: J, 20°, SN, PR, RF
73.29-73.60: J, 45°, yl and wh VN, PR
73.54: J, 10°, bk to wh SN, PR, RF
73.56: J, VN, UN, RF
73.61: J, 20°, SN, PR, RF
73.75: J, 20°, wh and pale orange; iron stained VN, PR
73.83: J, 60°, pale orange to greyish; iron stained SN, PR
73.92: J, 10°, greyish SN, PR
74.61-74.82: J x8, 90°, pale yl, wh or; alteration mineral and iron stained; SN, PR
74.85: J, 20°, or and gy; iron stained SN, PR
74.95: J, 75°, gr SN, PR, RF
75.20-75.32: J x2, 45 - 60°, wh to gy and or mi SN, PR
75.90: J, 60 - 65°, CN, PR, RF
76.58: J, 65°, SN, PR, RF
76.96: J, 90°, bk-or SN, CU
77.32: J, 55°, SN, PR, RF
77.50-77.60: AZ, bk SN, PR
77.65: J, 65°, bk SN, rp, RF
77.90: J, 25°, SN, PR, RF
78.16: J, SN, PR, RF
78.42: J, 5°, SN, UN, RF
78.71: J, 10°, SN, UN, RF
79.13-79.38: AZ, SN, PR
79.31: J, 20°, gy and or; iron stained SN, PR
79.60-79.70: J, 60°, SN, PR, RF
79.67: J, 55°, gy; iron stained SN, PR

AVERAGE DEFECT SPACING (mm): 10, 30, 100, 300, 1000, 3000

Comments

Checked GEM

Date 2/12/2024

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BOREHOLE: BGUA-03

Project:	Pioneer-Burdekin PHES	Coords:	657828.1 m E 7667677.5 m N MGA2020-55		
Location:	Netherdale/Dalrymple Heights	Surface RL:	854.29 m AHD	Date Started:	13/5/2024
Client:	Queensland Hydro	Contractor:	Twin Hills Drilling Drill Rig: Rig 25	Date Completed:	3/6/2024
Job No.:	PS138693	Inclination:	-79° Direction: 082°	Logged:	LH/MFR

Drilling						Field Material Description				Defect Information	
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa) ■ - UCS VL .2 L .6 M 20 H 60 VH 200 EH	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)	AVERAGE DEFECT SPACING (mm) 10 30 100 300 1000 3000
HQ3		100	100	81			METAGRANITE: medium to coarse grained, orange and grey, crystalline, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation, numerous healed microfractures.	FR		80.25: J, 45°, SN, PR, RF 80.35: J, 85°, bk SN, PR 80.89: J, 50°, SN, PR, RF 81.22: J, 65°, qtz SN, PR, RF 81.20-81.40: J x2, 60 - 80°, gy mi, CU, RF 81.48: J, 50°, bk SN, PR 81.77: J, 35°, gn-bk SN, PR, RF 81.89: J, 20°, SN, PR, SM	
		100	100	83						82.02: J, 25°, SN, PR 82.88: J, 20°, SN, PR 83.22-83.28: AZ, bk-wh-rd SN, PR 83.42: J, 55°, SN, PR	
		100	100	85						84.50: J, 80°, gn to rd, SN, UN, RF 84.54: J, 5°, SN, PR, RF 85.81: J, 35°, SN, PR, RF	
		100	100	87						86.05: J, 60°, SN, PR 86.15-86.30: J, 65°, wh, interconnected zone of joints, generally dipping 65 degrees SN, UN 86.32-86.43: J, 65°, wh, interconnected zone of joints, generally dipping 65 degrees, SN, UN 86.41: J, gn-bk SN, PR 86.45: J, 15°, gn-bk SN, ST, RF 86.75: J, 85°, yl/gn / gy; secondary mineral alteration SN, PR 87.65: J, 15°, or to gy; iron stained SN, PR 87.85: J, 85°, bk and l gy SN, PR	
		100	100	89						88.25-88.35: AZ, wh to gy SN, PR 88.55-88.61: AZ, wh to bk SN, PR 88.81: J, 10°, or to gr/yl; iron stained SN, PR 88.81-88.84: AZ, wh to bk SN, PR 89.51: J, 5°, gy SN, PR 89.73-89.84: AZ, gn/gy SN, PR 89.80: J, 45°, gy SN, PR	

Comments

Checked GEM

Date 2/12/2024

Preliminary

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BOREHOLE: BGUA-03

Sheet 10 OF 14

Project:	Pioneer-Burdekin PHES	Coords:	657828.1 m E 7667677.5 m N MGA2020-55		
Location:	Netherdale/Dalrymple Heights	Surface RL:	854.29 m AHD	Date Started:	13/5/2024
Client:	Queensland Hydro	Contractor:	Twin Hills Drilling Drill Rig: Rig 25	Date Completed:	3/6/2024
Job No.:	PS138693	Inclination:	-79° Direction: 082°	Logged:	LH/MFR

Drilling

METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL
HQ3		100	100	90	
		100	100	91	
		100	87	92	
		100	88	93	
				94	
				95	
				96	
				97	
				98	
				99	
				100	100.00

Field Material Description

GRAPHIC LOG

ROCK / SOIL MATERIAL DESCRIPTION

METAGRANITE: medium to coarse grained, orange and grey, crystalline, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation, numerous healed microfractures.

94.17-94.32m: basalt inclusion 30-60mm diameter

WEATHERING: FR

INFERRED STRENGTH (MPa) ■ - UCS: VL <2, L 2-5, M 5-20, H 20-60, VH 60-200, EH >200

Defect Information

DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)

90.39: J, 70°, gy and gr; secondary mineral alteration SN, PR
90.48: J, 90°, gy and or; iron stained SN, PR
90.80: J, 15°, gy and or; iron stained SN, PR
90.86: J, 25°, gy; iron stained SN, PR
91.00: J, 35°, gy to or; iron stained SN, PR
91.42: J, 65°, gy to or; iron stained SN, PR
91.75: J, 45°, gy and or; iron stained SN, PR
92.33: J, 55°, bk SN, PR, RF
92.52: J, 55°, bk SN, PR, RF
92.67: J, 55°, bk-gn SN, PR, RF
92.92: J, 45°, bk SN, PR, RF
93.00: J, 40°, or SN, PR
93.10: J, 75°, SN, PR
93.44: J, 45°, SN, PR
93.46: J, 60°, SN, PR
94.68: J, 25°, bk SN, PR
94.96: J, 40°, wh to bk; mi calcite SN, PR
95.04: J, 20°, gy / pk SN, PR
95.25: J, 60°, bk SN, PR
95.31: J, 35°, gy, pk SN, PR
95.44: J, 10°, gy, pk SN, PR
95.51: J, 55°, gy / pk SN, PR
95.83-95.95: AZ, bk to rd; hematite alteration SN, UN
96.05-96.08: J x2, 0 - 10°, CN, PR, SM
95.96-96.60: J /hJ, 80 - 90°, br, bk mi SN, UN, RF, healed to open, possibly opened by drilling
96.42-96.49: J, 80°, br, bk mi SN, UN, RF
96.63-96.70: J, 90°, br, bk mi SN, ST, RF
96.74: J, 10°, br and bk mi SN, IR, RF
96.91-97.05: J /hJ, 80°, br and bk mi SN, UN, RF
97.90-98.23: CS, 70 - 90°, angular gravel, UN, RF, 10-30mm aperature
98.23-98.50: AZ, clhorite alterations SN, UN
99.40: J, 45°, SN, PR

AVERAGE DEFECT SPACING (mm): 10, 30, 100, 300, 1000, 3000

Comments

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Date 2/12/2024

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BOREHOLE: BGUA-03

Project:	Pioneer-Burdekin PHES	Coords:	657828.1 m E 7667677.5 m N MGA2020-55		
Location:	Netherdale/Dalrymple Heights	Surface RL:	854.29 m AHD	Date Started:	13/5/2024
Client:	Queensland Hydro	Contractor:	Twin Hills Drilling Drill Rig: Rig 25	Date Completed:	3/6/2024
Job No.:	PS138693	Inclination:	-79° Direction: 082°	Logged:	LH/MFR

Drilling

METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL
HQ3		100	90	100	756.13
					101.00
				101	755.15
				102	102.56
					753.61
		100	82	103	103.10
					753.08
		100	100	104	
				105	
				106	
				107	107.00
		100	95		107.18
					749.08
				108	108.48
					108.67
					747.62
		85	33	109	
				110	

Field Material Description

GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING
	Pale brown, pink, grey, strongly fractured zone.	FR
	METAGRANITE: medium to coarse grained, pale brown, pink, grey, crystalline, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation.	
	Pink, brown and grey.	
	LAMPROPHYRE: fine to medium grained, dark green grey, dark brown, porphyritic, massive, trace phenocrysts 2 mm diameter.	
	METAGRANITE: medium to coarse grained, pink, brown, dark grey, crystalline, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation, with basalt inclusions, numerous healed microfractures.	
	105.01-105.07m: mafic inclusion 50mm diameter	
	LAMPROPHYRE: fine to medium grained, dark green, dark brown, porphyritic, massive, phenocrysts to 2 mm diameter.	
	METAGRANITE: medium to coarse grained, pink pale mottled, phaneritic, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation; numerous healed microfractures, hematitie alteration halos around some defects.	
	LAMPROPHYRE: fine to medium grained, dark green, dark brown, porphyritic, massive, phenocrysts to 2 mm diameter.	
	METAGRANITE: medium to coarse grained, pale pink, brown and grey, crystalline, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation, numerous healed microfractures.	

INFERRED STRENGTH (MPa) ■ - UCS: VL <2, L 2-5, M 5-20, H 20-60, VH 60-200, EH >200

Defect Information

DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)

100.30: J, 75°, gy, wh SN, IR
100.35: Js, 10 - 20°, CN, PR, RF, 10-50mm spacing
100.65-100.98: J, 45 - 60°, SN, PR, 10-60mm spacing
101.38: J, 45°, SN, IR, SM
103.00-103.10: AZ, gn, gn SN, PR
103.05: J, 65°, rd SN, PR, RF
103.26: J, 15°, gy SN, PR, RF
103.60-103.68: J, 35°, gy, rd SN, PR
103.80: J, 45°, gy, rd SN, PR
103.80-103.88: J, 80°, wh, pk, gy - calcite SN, PR, RF
104.03: J, 30°, gy, rd SN, PR
104.07: J, 50°, gy, rd, pk SN, PR
104.08: J, 50°, gy, rd, pk SN, PR
104.80: J, 30°, gy to rd, PR
104.91: J, 25°, gy to rd, PR
104.95: J, 85°, gy, rd, PR
105.23: J, 25°, bk to rd, PR
105.65: J, 85°, bk to gy, rd, PR
105.75: J, 65°, bk to rd, PR
105.85: J, 50°, bk to rd, PR
105.87-105.95: AZ, rd to gy, PR
105.94: J, 10°, rd to bk, PR
105.95: J, 15°, rd to bk, PR
105.97: J, 80°, dark red to bk, PR
106.19: J, 50°, dark red to bk, PR
106.30: J, 70°, dark red to bk, PR
106.48-106.57: AZ, pale gr/yl, PR
106.54: J, 35°, wh to gy, PR
107.04: J, 45°, yl to gn, PR
107.11: J, 10°, rd to gn, PR
107.18: J, 5°, rd, PR, RF
107.21: J, 45°, rd to gy, PR
107.25: J, 75°, gn, PR
107.22-107.32: AZ, rd, PR
107.31-107.47: FZ, rd to gy, PR
107.62: J, 85°, rd to gy, PR
107.72: J, 50°, rd to gy, PR
107.75: J, 80°, rd, PR
107.90: J, 70°, rd to gy, PR, RF
108.25: J, 20°, rd to bk, PR
108.30: J, 15°, rd to bk, PR
108.42: J, 45°, wh to pink; calcite, PR
108.58: J, 70°, gn and rd, PR
108.83: J, 35°, rd to bk, PR
108.96: J, 40°, bk to rd, PR
109.10-109.50: J, 90°, rd to gy, PR
109.30: J, 90°, gn to pk, PR
109.55: J, 80°, dark/pale gy/gr and pale pink, PR

AVERAGE DEFECT SPACING (mm): 10, 30, 100, 300, 1000, 3000

Comments

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BOREHOLE: BGUA-03

Project:	Pioneer-Burdekin PHES	Coords:	657828.1 m E 7667677.5 m N MGA2020-55		
Location:	Netherdale/Dalrymple Heights	Surface RL:	854.29 m AHD	Date Started:	13/5/2024
Client:	Queensland Hydro	Contractor:	Twin Hills Drilling Drill Rig: Rig 25	Date Completed:	3/6/2024
Job No.:	PS138693	Inclination:	-79° Direction: 082°	Logged:	LH/MFR

Drilling

METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL
HQ3		85	33	110	
				111	111.55
					744.79
					112.00
		100	92	112	744.35
					112.25
					744.10
					112.58
				113	
				114	114.58
					741.82
					114.85
					741.55
		100	94	115	
				116	116.05
					740.37
		100	83	117	
				118	118.44
					738.03
		100	100	119	
				120	120.00

Field Material Description

GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING
	METAGRANITE: medium to coarse grained, pale pink, brown and grey, crystalline, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation, numerous healed microfractures.	FR
	NO CORE 0.45m (111.55-112.00)	
	METAGRANITE: medium to coarse grained, pale pink, pale brown and grey, crystalline, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation, phenocrysts to 2 mm diameter, highly to extremely altered around the crushed seam. Pink, brown and grey. Mafic inclusion 50mm diameter.	
	LAMPROPHYRE: fine to medium grained, dark grey to black, porphyritic, massive, phenocrysts to 2 mm diameter.	
	METAGRANITE: medium to coarse grained, pale pink, brown and grey, crystalline, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation.	
	LAMPROPHYRE: fine grained, dark grey, porphyritic, massive.	
	METAGRANITE: medium to coarse grained, pale pink, brown and grey, crystalline, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation, increased hematite alteration, numerous healed microfractures.	

INFERRED STRENGTH (MPa) ■ - UCS: VL <2, L 2-5, M 5-20, H 20-60, VH 60-200, EH >200

Defect Information

DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)

AVERAGE DEFECT SPACING (mm): 10, 30, 100, 300, 1000, 3000

109.94: J, 25°, bk to pale red, PR
109.95: J, 75°, rd to bk, PR
110.12: J, 50°, rd to bk, PR
110.16: J, rd to bk, PR
110.18: J, 40°, rd to bk, PR
110.21: J, 80°, rd to bk, PR
110.22: J, 80°, rd to bk, PR
110.23: J, 40°, rd to bk, PR
110.24: J, 35°, rd to bk, PR
110.29: J, 40°, rd to bk, PR
110.32: J, 25°, rd to bk, PR
110.40: J, 45°, rd to bk, PR
110.42: J, 30°, rd to bk, PR
110.46: J, 75°, rd to bk, PR
110.52: J, rd to bk, PR
110.57: J, rd to bk, PR, RF
110.64: J, 65°, rd to gr, PR
110.69: J, 65°, rd to bk, PR
110.76: J, 55°, rd to bk, PR
110.80-110.88: FZ, rd to bk, IR
110.90-110.96: CS, gy SN, UN
111.12-111.19: CS, br to bk, rd SN, IR
111.20: J, 50°, bk to rd and yl and gr SN, PR, RF
111.00-111.55: FZ, bk to rd and yl and gr SN, UN
111.35: J, 45°, bk SN, PR
111.39: J, 50°, bk and pk SN, PR
112.10: J, 60°, gy to gn and pk SN, PR
112.05-112.16: CS, 55°, SN, PR, 10 mm
112.25: J, 65°, gy and pk SN, PR
113.03: J, 75°, gy to pk and bk SN, PR
113.06: J, wh; partially opened healed joint SN, PR
113.53: J, 50°, bk SN, PR, RF
113.56: J, 10°, gy and pk SN, PR, RF
113.58: J, 65°, bk to yl SN, PR, RF
114.12: J, 75°, bk and wh SN, PR
114.13: J, 30°, rd and gn SN, PR, RF
114.23: J, 35°, rd to wh SN, PR, RF
114.40: J, 25°, rd SN, PR, RF
114.89: J, 70°, rd SN, PR, RF
115.30: J, 25°, gn SN, PR
115.69: J, 70°, wh to gy SN, PR, RF
115.82: J, 90°, bk to rd SN, PR
115.90-115.98: AZ, gn/yl SN, PR
116.14: J, 85°, wh SN, PR, RF
116.41: J, 10°, wh SN, PR, RF
116.55: J, 20°, dark gr to bk SN, PR, RF
117.55: J, 30°, dark gr SN, PR, RF
117.92: J, 60°, gn VN, PR, RF
117.94: J, 80°, gn SN, PR, RF
118.06: J, 80°, gn SN, PR
118.18: J, 5°, gn VN, PR
118.19: J, 75°, gn SN, PR
118.29: J, 40°, gn SN, PR
118.37: J, 65°, gn VN, PR
118.42: J, 75°, wh to gn SN, PR, RF
118.44-118.55: AZ, yl VN, PR
118.86: J, 25°, pk to bk SN, PR, RF
119.06: J, 75°, pk to bk VN, PR, RF
119.07: J, 10°, pk to bk SN, PR, RF
119.34: J, 5°, gn to pk VN, PR, RF
119.46: J, 65°, pk to bk SN, PR, RF
119.53: J, 15°, gy to pk SN, PR, RF
119.76: J, 75°, gy SN, PR
119.81: J, 20°, gr to pale pk VN, PR

Comments

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Date 2/12/2024

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BOREHOLE: BGUA-03

Project:	Pioneer-Burdekin PHES	Coords:	657828.1 m E 7667677.5 m N MGA2020-55		
Location:	Netherdale/Dalrymple Heights	Surface RL:	854.29 m AHD	Date Started:	13/5/2024
Client:	Queensland Hydro	Contractor:	Twin Hills Drilling Drill Rig: Rig 25	Date Completed:	3/6/2024
Job No.:	PS138693	Inclination:	-79° Direction: 082°	Logged:	LH/MFR

Drilling

METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL
HQ3		100	100	120	120.12
		100	95	121	122.85
		100	90	123	125.21
		100	97	125	127.95
				127	129.65

Field Material Description

GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING
	METAGRANITE: medium to coarse grained, pale pink, brown and grey, crystalline, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation, increased hematite alteration, numerous healed microfractures. Mafic inclusion 120mm diameter.	FR
	Highly to extremely altered; hematite and chlorite; multiple joint sets and veins.	
	123.33-123.44m: very distinctive chlorite and hematite alteration	
	124.35-124.48m: notable chlorite alteration	
	733.70 — 731.38 — 731.06 — 730.07 — 728.69 — 728.35 — 727.02	
	LAMPROPHYRE: fine to medium grained, pale grey to white, porphyritic, massive.	
	METAGRANITE: pale pink and grey; black mottled, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation, numerous healed microfractures.	
	LAMPROPHYRE: fine to medium grained, pale grey to dark grey green, porphyritic, massive, phenocrysts to 2 mm diameter.	
	METAGRANITE: medium to coarse grained, pale pink, brown and grey, crystalline, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation.	
	LAMPROPHYRE: fine to medium grained, pale grey green to grey, porphyritic, massive, phenocrysts to 2 mm diameter. 128.35-130.00m: apparent banding alteration; pale brown to dark/ pale gr and dark gy; chlorite alteration	

Defect Information

DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)
119.91: J, 45°, gn to gy and pale pk SN, PR, RF
120.35: J, 45°, gy and pk SN, PR
120.59: J, 40°, gn to bl and pk SN, UN, RF
120.69: J, dark gy to bk and pale pink SN, PR, RF
120.78: J, 45°, dark gy to pale pink SN, UN
120.97: J, 50°, dark gy to pale pink SN, PR, RF
121.19: J, 45°, dark gy to pale pink SN, UN, RF
121.26: J, 35°, dark gy to pale pink SN, PR, RF
121.31: J, 50°, dark gy to pale pink SN, PR, RF
121.35: J, 70°, dark gy to pale pink SN, UN, RF
121.78: J, 25°, dark gy to pale pink SN, PR, RF
121.85: J, 50°, dark gy to pale pink SN, PR, RF
122.10: J, 55°, dark gy to pale pink SN, PR, RF
122.20: J, 50°, dark gy SN, PR, RF
122.41: J, 40°, dark gy to pale pink SN, PR, RF
122.76: J, 25°, dk gr to pl pk and rd SN, PR, RF
122.79: J, 70°, dk gy to pl pk SN, PR, RF
122.84-123.00: AZ, dark gy to pale red SN, PR
123.26: J, 35°, dark gy to pale pink SN, PR
123.40: J, 10°, dark gy SN, PR, RF
123.33-123.50: AZ, dark red/gy and pale yl SN, PR
123.63: J, 50°, dark gy to pale pink SN, PR, RF
123.71: J, 70°, pale gr/pink SN, PR, RF
123.76: J, 55°, dk rd SN, PR, RF
123.94: J, 45°, pale gy to pale pink SN, PR, RF
124.11: J, 50°, dark gy to pale pink SN, PR
124.12: J, 40°, dark gy to pale pink SN, PR
124.34: J, 25°, dark gy to bk SN, PR, RF
124.48: J, 45°, dark gy to pale pk SN, PR, RF
124.66: J, 50°, dark gy to bk SN, PR
124.65-124.73: AZ, bk and wh SN, PR
124.80: J, 15°, dark gy to pale pink SN, PR
124.82: J, 60°, dark gy to pale pink SN, PR
124.87: J, 20°, dark gy/gr to pale dark pink/red SN, PR
125.14: J, 40°, dark gy to pale pink SN, PR
125.22-125.27: J x4, 65°, pale gr SN, PR
125.56: J, 35°, pale gr and dark gy to pale pink SN, PR
125.71: J, 40°, dark gy to pale pink SN, PR, RF
125.78: J, 30°, dark gy to pale pink VN, PR, RF
125.89: J, 35°, dark gy to pale pink SN, PR, RF
125.96: J, 40°, dark gy to pale pink VN, PR, RF
126.05: J, 30°, dark gy to pale pink VN, PR, RF
126.35: J, 40°, dark gy to pale pink SN, PR
126.62: J, 80°, gn SN, PR
126.70: J, 55°, gn SN, PR, RF
126.75: J, 75°, gn SN, PR, RF
127.42: J, 15°, gn SN, PR
127.80: J, 50°, gn SN, PR
127.90: J, 75°, gn SN, PR
127.95: J, 60°, gn/gy SN, PR
128.14: J, 5°, gy / pk VN, PR
128.34: J, gn SN, PR
128.41: J, 80°, gn SN, PR
128.42: J, 35°, gn VN, PR, RF
128.58: J, 5°, gn SN, PR
128.74: J, 10°, gn SN, PR, RF
128.96: J, 70°, gn VN, PR, RF
129.14: J, 10°, gn SN, PR, RF
129.79: J, 10°, wh/gn VN, PR, RF

Comments

Checked GEM

Date 2/12/2024

Preliminary

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BOREHOLE: BGUA-03

Sheet 14 OF 14

Project:	Pioneer-Burdekin PHES	Coords:	657828.1 m E 7667677.5 m N MGA2020-55		
Location:	Netherdale/Dalrymple Heights	Surface RL:	854.29 m AHD	Date Started:	13/5/2024
Client:	Queensland Hydro	Contractor:	Twin Hills Drilling Drill Rig: Rig 25	Date Completed:	3/6/2024
Job No.:	PS138693	Inclination:	-79° Direction: 082°	Logged:	LH/MFR

Drilling

METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL
HQ3		100	100	130	
				131	
				132	
					132.25
					724.47
		100	63	133	
				134	
				135	
				136	136.00
					720.79
				137	
				138	
				139	
				140	

Field Material Description

GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING
	LAMPROPHYRE: fine to medium grained, pale grey green to grey, porphyritic, massive, phenocrysts to 2 mm diameter. Grey to dark grey. Grey to dark grey.	FR
	METAGRANITE: medium to coarse grained, pale pink, brown and grey, crystalline, massive, highly altered granite, pink alteration, fabric shows metamorphic crystal reorientation, numerous healed microfractures.	
	Hole Terminated at 136.00 m Target depth. Vibrating Wire Piezometers Installed	

INFERRED STRENGTH (MPa) ■ - UCS
VL -2, L -5, M -20, H -60, VH -200, EH -200

Defect Information

DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)

- 132.13: J, 55°, wh SN, PR, RF
- 132.00-132.81: J, 45°, br / wh SN, PR, RF
- 132.68: J, 40°, br SN, PR
- 132.82: J, 40°, br SN, PR
- 132.92: J, 40°, br SN, PR
- 133.06: J, 50°, br VN, PR
- 133.16: J, 35°, br VN, PR
- 133.24: J, 35°, br VN, PR
- 133.27: J, 45°, br VN, PR
- 133.36: J, 25°, br VN, PR
- 133.41: J, 30°, br VN, PR
- 133.45: J, 50°, br VN, PR
- 133.70: J, 60°, br VN, PR
- 134.28: J, 45°, gn VN, PR
- 134.84: J, 55°, SN, PR
- 135.19: J, 45°, gn VN, PR
- 135.26: J, 45°, gn VN, PR
- 135.40: J, 50°, gn VN, PR
- 135.47: J, 45°, gn VN, PR
- 135.62-135.80: SZ, 35°, PR
- 135.75: J, 80°, rd to gn VN, PR
- 135.92: J, 45°, rd to gn VN, PR

AVERAGE DEFECT SPACING (mm) 10, 30, 100, 300, 1000, 3000

Comments

Checked GEM
Date 2/12/2024

Preliminary

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	4.87				HB												
BGUA-03	5.05				hJ		65		or, br		PR						orange/brown
BGUA-03	5.40	5.75			J		60	80		SN	UN	RF					
BGUA-03	5.45				J		55			VN	PR	RF					
BGUA-03	5.60				HB		55		wh		IR	RF					white
BGUA-03	5.91				J		25			SN	UN	RF					
BGUA-03	6.00	6.18			J		65			SN	UN	RF					
BGUA-03	6.18	6.40			J		65		br, or	SN	PR	RF					
BGUA-03	6.35	6.60			J		65			SN	PR	RF					
BGUA-03	6.50				J					SN	PR	RF					
BGUA-03	6.50	6.60			MB												
BGUA-03	6.63				hJ		70		or	SN	PR	RF					
BGUA-03	6.69				hJ		65		oir	SN	PR	RF					
BGUA-03	6.83				J		30			SN	PR	RF					
BGUA-03	6.89				MB		20			SN	PR	RF					
BGUA-03	7.05				J		10		or	VN	PR	RF					
BGUA-03	7.06				J		65			VN	PR	RF					
BGUA-03	7.11				J		65		bk	VN	PR	RF					
BGUA-03	7.15	7.32			J		65		bk/wh	VN	PR	RF					
BGUA-03	7.17				J		35		bk/wh	SN	PR	RF					
BGUA-03	7.40	7.50			EW		5		clay and XW rock					80			
BGUA-03	7.40	8.00			J		10	20	bk	SN	PR	RF					
BGUA-03	8.00	8.06			EW		35										recovered as gravel
BGUA-03	8.06	8.75			J	x10			br	SN	CU	RF					iron oxide
BGUA-03	8.36	8.45			MB												
BGUA-03	8.92				J		20		br	SN	PR	RF					
BGUA-03	9.03				hJ		30		br	VN	PR	RF					
BGUA-03	9.14				J		10		br	SN	PR	RF					
BGUA-03	9.28				J		20		br	SN	PR	RF					
BGUA-03	9.46				J		25		br	SN	PR	RF					
BGUA-03	9.50				J		50		br	SN	PR	RF					
BGUA-03	9.80				J		35		br	SN	PR	RF					
BGUA-03	9.85				J		50		br	SN	PR	RF					
BGUA-03	9.92	10.00			FZ												recovered as gravel
BGUA-03	10.06				J		55			SN	PR	RF					
BGUA-03	10.10				J		60		br	SN	PR	RF					
BGUA-03	10.17	10.22			J	x2	5	10	wh	SN	PR	RF					
BGUA-03	10.22				J		5			SN	PR	RF					
BGUA-03	10.29				hJ		20		wh	VN	PR	SM			2		
BGUA-03	10.37				hJ		10		wh	VN	PR				4		
BGUA-03	10.47				hJ		35		wh	SN	PR	RF			2		
BGUA-03	10.53				hJ		20		wh	SN	PR				2		
BGUA-03	10.59	10.65			AZ												
BGUA-03	10.68	10.71			hJ		35		wh/gn	SN	UN				10		
BGUA-03	10.78				V		10		yl	SN	PR				2		
BGUA-03	10.82				J		10			VN	IR	RF					
BGUA-03	10.90	11.03			AZ				yl/gn								
BGUA-03	11.12				HB						IR	RF					
BGUA-03	11.33				V				wh/yl						2		
BGUA-03	11.35				J				wh/yl	SN	IR	SM					
BGUA-03	11.49				HB						PR	RF					
BGUA-03	11.50				V				wh/yl						1		
BGUA-03	11.53				HB		5				IR	RF					
BGUA-03	11.64				HB						IR	RF					
BGUA-03	11.77				hJ		55		wh		PR	RF			5		
BGUA-03	11.99				hJ		75		wh	SN	PR				2		
BGUA-03	12.05				HB						UN						
BGUA-03	12.08				hJ		45		wh		UN						
BGUA-03	12.10	12.15			hJ	x3	45		wh		UN				2		
BGUA-03	12.27	12.92			hJ				yl/gn								
BGUA-03	12.32				V		40		wh/gn	SN	PR				3		
BGUA-03	12.38				V		35		wh/yl	SN	PR	SM			2		
BGUA-03	12.40				J		25			SN	IR	RF					
BGUA-03	12.44				J		25			SN	PR						
BGUA-03	12.65				V		65		wh			RF			3		
BGUA-03	12.70	12.71			V		25		yl		PR	RF			2		
BGUA-03	12.74				J		25			VN	PR	RF					
BGUA-03	12.90				hJ		60		yl	VN	UN				10		
BGUA-03	13.00	13.84			hJ				wh/yl	VN	PR						
BGUA-03	13.07				V				wh/yl	SN	PR	SM					
BGUA-03	13.16				J		5			SN	PR	RF					
BGUA-03	13.27				J					SN	UN	RF					
BGUA-03	13.40				V		60		wh	SN	UN	RF			3		
BGUA-03	13.46				V		30		wh	SN	UN	RF					
BGUA-03	13.50				J		50			SN	UN	RF					
BGUA-03	13.58				V		5		wh/gn		PR				3		
BGUA-03	13.65				V		45		wh/gn						3		
BGUA-03	13.65	13.85			AZ				gn/yl		IR						multiple defects, various angles, 0-10mm spacing
BGUA-03	13.82				J						PR	RF					

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	14.60	14.90			hJ		35		yl	SN	UN						
BGUA-03	14.74				V				wh/yl	SN	UN				2		
BGUA-03	14.94	14.99			hJ		45		wh/yl	VN	PR						
BGUA-03	15.07	15.60			hJ		30		yl	VN	UN						
BGUA-03	15.11				hJ		20		yl	SN	PR						
BGUA-03	15.13				hJ				yl	SN	PR				5		
BGUA-03	15.23				hJ		15		yl	SN	PR				5		
BGUA-03	15.46				hJ		20		yl	SN	PR				4		
BGUA-03	15.50				hJ		20		yl	SN	PR				4		
BGUA-03	15.69	15.99			hJ		40		yl	VN	UN						
BGUA-03	15.73				hJ		30		yl	VN	PR						
BGUA-03	15.87				hJ		85		yl	VN	PR						
BGUA-03	16.00				V		35		wh	SN	PR				3		
BGUA-03	16.04				hJ		20		yl	SN	PR						
BGUA-03	16.05				hJ		55		yl	SN	PR						
BGUA-03	16.06				hJ		20		yl	SN	PR						
BGUA-03	16.10	16.12			hJ		35		wh/yl	SN	PR				3		
BGUA-03	16.16				hJ		30		wh	VN	PR				1		
BGUA-03	16.17				hJ		15		yl	SN	PR						
BGUA-03	16.20	16.25			hJ		80		wh/yl	SN	PR						
BGUA-03	16.30				hJ		35		wh/yl	SN	PR						
BGUA-03	16.33	16.37			hJ		40		wh/yl	VN	PR						
BGUA-03	16.44	16.45			hJ		45		yl	SN	PR						
BGUA-03	16.47				hJ		10		wh/yl	SN	PR						
BGUA-03	16.50	16.56			hJ		30		wh/yl	VN	PR						
BGUA-03	16.79				hJ		5		wh/yl	SN	PR				3		
BGUA-03	16.80				hJ		90		wh/yl	SN	CU				3		
BGUA-03	16.82				hJ		50		yl	SN	PR						
BGUA-03	16.87				hJ		10		yl	SN	PR						
BGUA-03	16.99	17.30			hJ		5		yl	SN	PR						
BGUA-03	17.10				V				yh/yl	VN	PR				2		
BGUA-03	17.10	17.30			hJ				yl	VN	PR						
BGUA-03	17.17	17.70			hJ		65		yl	VN	PR						
BGUA-03	17.20	17.31			hJ		10		yl	VN	PR						
BGUA-03	17.21				hJ		5		yl	VN	PR						
BGUA-03	17.28				hJ		10		yl	VN	PR						
BGUA-03	17.30				hJ		80		yl	SN	PR						
BGUA-03	17.34				hJ		85		yl	VN	PR						
BGUA-03	17.39	17.41			hJ		5		yl	VN	PR						
BGUA-03	17.50				hJ		65		yl	VN	PR						
BGUA-03	17.54				hJ		90		yl	VN	UN						
BGUA-03	17.60				J					VN	IR	RF					
BGUA-03	17.77	17.87			V	x6	50		wh, 25mm spacing	SN	PR				4		
BGUA-03	17.84	17.85			hJ		50		yl	SN	PR						
BGUA-03	17.90	17.91			V	x2	10		yl, 25mm spacing	VN	PR				2		
BGUA-03	17.95				V		60		yl	VN	PR						
BGUA-03	17.97	17.98			hJ		60		yl	VN	PR						
BGUA-03	18.00				J		45			SN	PR	RF					
BGUA-03	18.10				hJ		10		yl	SN	PR						
BGUA-03	18.16	18.21			hJ		5			SN	PR						
BGUA-03	18.22				hJ		80		yl	SN	IR						
BGUA-03	18.24				hJ		35		yl	SN	IR						
BGUA-03	18.26				V		10		wh/yl	VN	PR				2		
BGUA-03	18.32				V		10		wh/yl	VN	PR				2		
BGUA-03	18.33				hJ		10		yl	SN	PR						
BGUA-03	18.43				hJ				yl	SN	PR						
BGUA-03	18.47				hJ		30			SN	PR						
BGUA-03	18.48	18.49			hJ		10		wh/yl	SN	PR						
BGUA-03	18.55				hJ		60		yl	SN	PR						
BGUA-03	18.57	18.75			hJ		10		yl	SN	PR						
BGUA-03	18.68				hJ		65		yl	SN	PR						
BGUA-03	18.73				V		20		wh/yl	SN	PR				3		
BGUA-03	18.80				hJ		65			SN	PR						
BGUA-03	18.82				hJ		85		yl	SN	CU						
BGUA-03	18.92				hJ		60		yl	SN	IR						
BGUA-03	18.93				hJ		25		yl	SN	IR						
BGUA-03	19.10				hJ		10		yl	VN	PR						
BGUA-03	19.12				hJ		15		yl	VN	PR						
BGUA-03	19.13	19.30			hJ		70	85	yl	VN	PR						
BGUA-03	19.27				hJ		30		yl	VN	PR						
BGUA-03	19.48				J		5		yl	SN	PR						
BGUA-03	19.76				hJ		35		yl	SN	PR						
BGUA-03	19.82				hJ		30		yl	SN	PR						
BGUA-03	20.92	20.94			V		45		wh Qz		PR						
BGUA-03	21.05				hJ		65		yl	SN	PR						
BGUA-03	21.27				hJ		15		yl	SN	PR						
BGUA-03	21.60	21.80			J	x2	60	70	wh	VN	PR						
BGUA-03	22.00				hJ		65		yl	SN	PR						
BGUA-03	22.10				V		20		wh/yl	SN	IR				2		

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	22.40				hJ		55		yl	SN	PR						
BGUA-03	22.50				hJ		20		yl	VN	PR						
BGUA-03	22.51				hJ		45		yl	VN	PR						
BGUA-03	22.52				hJ		50		yl	VN	PR						
BGUA-03	22.55				hJ				yl	SN	PR				2		
BGUA-03	22.56	22.83			hJ	/hJs	50		yl	SN	PR						multiple joint spacing 10 - 50mm
BGUA-03	22.63	22.80			hJ		50		wh/yl	SN	PR						
BGUA-03	22.85				hJ		80		wh/yl	SN	IR				2		
BGUA-03	22.88	22.91			hJ		5		yl	SN	PR						
BGUA-03	23.00				hJ		45		yl	VN	PR				2		
BGUA-03	23.00	23.35			hJ		35		yl	VN	PR						
BGUA-03	23.05				hJ		90		yl	SN	IR						
BGUA-03	23.10				hJ		25		wh/yl	SN	IR				2		
BGUA-03	23.12				hJ		25		wh/yl	SN	IR				4		
BGUA-03	23.12	23.14			hJ		25		yl	VN	PR						
BGUA-03	23.17				hJ		20		yl	SN	PR						
BGUA-03	23.27	23.28			hJ	x2	35			SN	PR						
BGUA-03	23.31				hJ		5		yl	SN	PR						
BGUA-03	23.34	23.40			hJ	x2	35		yl	SN	PR						
BGUA-03	23.45	23.52			hJ	x4	45		yl	SN	PR						
BGUA-03	23.47	23.49			hJ		40		wh/yl	SN	IR				3		
BGUA-03	23.59	23.60			hJ	x3	5		wh/yl	SN	PR						
BGUA-03	23.61	23.63			hJ		30		yl	SN	PR						
BGUA-03	23.70	23.71			hJ	x3			yl	SN	PR						
BGUA-03	23.74	23.75			hJ		45		yl	VN	PR						
BGUA-03	23.75				hJ		5		bk	SN	PR						
BGUA-03	23.76				V		5		yl	SN	PR				2		
BGUA-03	23.77				hJ	2	90		yl	SN	PR						
BGUA-03	23.78				V		5		yl	SN	PR				2		
BGUA-03	23.80	23.86			hJ	x4	40		yl	SN	PR						
BGUA-03	23.89				V		5		yl	SN	PR				2		
BGUA-03	23.90	23.95			hJ	x3	45		yl	VN	PR						
BGUA-03	23.97	23.99			hJ	x2	35		yl	SN	PR						
BGUA-03	24.00				hJ		55		yl	SN	PR						
BGUA-03	24.00	24.76			hJ	x4	40		yl	SN	PR						
BGUA-03	24.02				hJ		35		yl	SN	PR						
BGUA-03	24.06	24.17			hJ	x5	35		yl	SN	PR						
BGUA-03	24.11	24.14			V	x2	35		yl	VN	PR				3		
BGUA-03	24.26				hJ		50		yl	SN	PR						
BGUA-03	24.30				hJ		35		wh	SN	IR				2		
BGUA-03	24.71	24.72			hJ	x4	80			SN	PR						
BGUA-03	24.74				hJ		30		yl	SN	UN				2		
BGUA-03	24.79	24.93			hJ	x6	10		wh	SN	PR						
BGUA-03	24.90	24.96			hJ	x2	75		wh	SN	PR						
BGUA-03	24.98				J		80		mi quartz	SN	PR				2		
BGUA-03	25.00				hJ		10		yl	SN	PR						
BGUA-03	25.05				hJ		85		yl	SN	PR						
BGUA-03	25.10				hJ		90		yl	SN	PR						
BGUA-03	25.18				V				yl	SN	PR				2		
BGUA-03	25.22				hJ		80		yl	SN	PR						
BGUA-03	25.26				hJ		70		yl	SN	PR						
BGUA-03	25.58				J		80			SN	PR						
BGUA-03	26.00	26.40			J		60			SN	UN	RF					
BGUA-03	26.16				J		60			SN	PR						
BGUA-03	26.47				CO		50			VN	PR						
BGUA-03	26.52				hJ		75		yl	SN	PR						
BGUA-03	26.81				hJ		25		yl	VN	PR						
BGUA-03	26.95				hJ		35		yl	SN	PR						
BGUA-03	27.01	27.10			J	x4	55	65		SN	PR	RF					
BGUA-03	27.20				hJ		70	80	yl	VN	UN						
BGUA-03	27.25	27.35			J	x2	40	45		SN	UN						
BGUA-03	27.32				J		35			SN	PR						
BGUA-03	27.46				V				yl	VN	PR						
BGUA-03	27.50				V		45		yl	VN	CU						
BGUA-03	27.78				V				yl	VN	UN						
BGUA-03	27.81				V		50		wh	VN	PR						
BGUA-03	28.00	28.72			V	x2	25		yl	SN	PR				2		
BGUA-03	28.11				hJ		5		yl	SN	PR						
BGUA-03	28.14				J		35			SN	PR	RF					
BGUA-03	28.18				V				yl	SN	PR				2		
BGUA-03	28.29	28.34			hJ		55		yl	SN	PR						
BGUA-03	28.53				hJ		20		yl	SN	PR						
BGUA-03	28.65				hJ		5		yl	SN	PR						
BGUA-03	28.66				hJ		45		yl	SN	PR						
BGUA-03	28.75				hJ		25		yl	SN	PR				4		
BGUA-03	28.80				hJ		80		mi Qz	SN	PR	RF					
BGUA-03	28.85				hJ		30		bk	SN	PR						
BGUA-03	28.95				hJ		40			SN	PR						
BGUA-03	29.00				hJ		10		yl	SN	PR						

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	29.00	29.83			hJ				rd/bk, or	SN	PR						
BGUA-03	29.02	29.06			hJ	x3	25		yl	SN	PR						
BGUA-03	29.13	29.26			hJ	x6	25		yl	SN	PR						
BGUA-03	29.25				hJ		70		yl	SN	PR						
BGUA-03	29.45	29.48			hJ	x3	45		yl	SN	PR						
BGUA-03	29.51				V		40		wh	SN	PR				2		
BGUA-03	29.54				hJ		35		yl	SN	PR						
BGUA-03	29.65	29.85			CO		70		yl	SN	PR	RF					
BGUA-03	29.90	31.89			SZ		80	90	crushed rock		IR	RF		150			
BGUA-03	32.02	32.22			J	x5	40	60		SN	UN	RF					
BGUA-03	32.27	32.48			Js				mi Qz	SN	UN	RF					
BGUA-03	32.55	32.65			hJ	x8	65			SN	ST						
BGUA-03	32.68				J		30			SN	PR						
BGUA-03	32.79	33.07			J		80		mi Qz	SN	PR	RF					30-100mm spacing
BGUA-03	33.08	33.23			hJ		5			SN	PR						
BGUA-03	33.18				J		20			SN	IR	RF					
BGUA-03	33.25				hJ		90			SN	PR						
BGUA-03	33.27				J		5			SN	PR						
BGUA-03	33.32	33.50			J					SN	IR						
BGUA-03	33.42	33.50			MB												
BGUA-03	33.54				hJ		45		gy	SN	IR						
BGUA-03	33.55				hJ		85		gy	SN	IR						
BGUA-03	33.57				J		30			SN	PR	RF					
BGUA-03	33.60				hJ		10		gy	SN	PR						
BGUA-03	33.62	33.63			hJ	x2	50		gy	SN	PR						
BGUA-03	33.66				hJ		85		gy	SN	PR						
BGUA-03	33.68	33.69			hJ	x2	75		gy	SN	PR						
BGUA-03	33.72				J		30		gy	SN	PR	RF					
BGUA-03	33.75	33.81			hJ	x4	50		bk	SN	PR						
BGUA-03	33.83				J		20			SN	PR	RF					
BGUA-03	33.88	33.97			hJ	x5	15		rd/bk	SN	PR						
BGUA-03	33.90				hJ		65		wh	SN	PR						
BGUA-03	33.94				hJ		85		wh	SN	IR						
BGUA-03	34.00				HB					SN	PR						
BGUA-03	34.14				hJ		40		gy	SN	PR						
BGUA-03	34.18				J		30		gy	SN	PR						
BGUA-03	34.23				J		45		gy	SN	PR	RF					
BGUA-03	34.32				hJ		40		gy	SN	PR						
BGUA-03	34.35				hJ		60		gy	SN	IR						
BGUA-03	34.39				hJ		60		gy	VN	PR						
BGUA-03	34.40				hJ		70		gy	SN	PR						
BGUA-03	34.41				J		70		gy	SN	PR						
BGUA-03	34.54				J		45		gy	SN	PR	RF					
BGUA-03	34.57				hJ		60		gy	SN	PR						
BGUA-03	34.65				J		60		gy	SN	PR	RF					
BGUA-03	34.83				J		40		gy	SN	UN	RF					
BGUA-03	35.10	35.40			J	x4	40	60	gy	SN	PR						
BGUA-03	35.45				hJ		85		gy	SN	UN						
BGUA-03	35.51				J		20		gy	SN	PR	RF					
BGUA-03	35.57	35.69			J		50		clay		UN	RF					5-10mm aperature
BGUA-03	35.78				J		10			SN	PR	RF					
BGUA-03	35.95				hJ		20			VN	UN						
BGUA-03	36.00				hJ		45		wh	VN	PR						
BGUA-03	36.00	36.15			hJ		85			SN	IR						
BGUA-03	36.27				J		65			SN	PR	RF					
BGUA-03	36.37				J		55			VN	PR						
BGUA-03	36.60	36.67			hJ					VN	PR						
BGUA-03	36.68				J		45				PR	RF					
BGUA-03	36.73				V		40		wh/gn	VN	CU						
BGUA-03	37.00				hJ		45			SN	PR						
BGUA-03	37.00	37.30			hJ		15		yl	SN	PR						
BGUA-03	37.00	37.41			hJ		20		yl	SN	PR						
BGUA-03	37.02				hJ		20		yl	SN	PR						
BGUA-03	37.05				hJ		25		yl	VN	PR						
BGUA-03	37.11	37.16			hJ		20		yl	SN	PR						
BGUA-03	37.20				hJ		20		yl	SN	PR						
BGUA-03	37.24	37.30			hJ		15	25	yl	SN	PR						
BGUA-03	37.64	37.71			hJ		30	45	yl	SN	PR						
BGUA-03	37.91	37.98			hJ		45		yl/wh	VN	PR						
BGUA-03	38.10				hJ		30		yl/wh	SN	PR						
BGUA-03	38.24				hJ		30		yl/wh	SN	PR						
BGUA-03	38.52	38.98			AZ				yl								
BGUA-03	38.55	38.57			V		35	45		SN	PR						
BGUA-03	38.58				V		45		yl	SN	PR						
BGUA-03	38.60				J		45		yl	SN	PR	RF					
BGUA-03	39.00				hJ		45		yl	SN	PR						
BGUA-03	39.00	39.15			hJ		40		yl	SN	PR						
BGUA-03	39.01	39.10			hJ				yl	SN	PR						
BGUA-03	39.16				hJ				wh	VN	IR						

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	39.25	39.38			hJ		20	40	yl / wh	SN	UN						
BGUA-03	39.54				hJ		60		yl	SN	PR						
BGUA-03	39.58	39.70			hJ		30		yl	SN	PR						
BGUA-03	39.66				J		45			SN	PR	RF					
BGUA-03	39.75				J		40			SN	PR	RF					
BGUA-03	39.78				J		40			SN	PR	RF					
BGUA-03	39.81				hJ		55		yl	SN	PR						
BGUA-03	40.00				hJ		50			SN	PR						
BGUA-03	40.00	40.13			hJ		70		yl	SN	PR						
BGUA-03	40.00	40.40			hJ		65	85	yl	SN	PR						
BGUA-03	40.17				hJ		70		yl	SN	PR						
BGUA-03	40.22				hJ		50		yl	SN	PR						
BGUA-03	40.29				hJ		55		yl	SN	PR						
BGUA-03	40.50				hJ		45			SN	PR						
BGUA-03	40.55				hJ		50		yl	SN	PR						
BGUA-03	40.63				hJ		50		yl	SN	PR						
BGUA-03	40.65	40.71			hJ		60	70	yl	SN	PR						
BGUA-03	40.76				hJ		30		yl	SN	PR						
BGUA-03	40.85				hJ		50		y	SN	PR						
BGUA-03	40.95				hJ		45			SN	PR						
BGUA-03	41.00				hJ				yl	SN	PR						
BGUA-03	41.13				hJ		65		yl	SN	PR						
BGUA-03	41.20				hJ		60			SN	CU						
BGUA-03	41.29				hJ		60			SN	PR						
BGUA-03	41.36				hJ		50			SN	PR						
BGUA-03	41.59				hJ		55			SN	PR						
BGUA-03	41.61				hJ		20			SN	PR						
BGUA-03	41.64				hJ		15			SN	PR						
BGUA-03	41.66				hJ		20			SN	PR						
BGUA-03	41.68	41.75			hJ		10	20	yl	SN	PR						
BGUA-03	41.80				hJ		25			SN	PR						
BGUA-03	41.83				hJ		40			SN	PR						
BGUA-03	41.83	41.95			hJ		60	70		SN	PR						
BGUA-03	41.95				J		65			SN	PR	RF					
BGUA-03	42.02				hJ		70	85		SN	PR						
BGUA-03	42.05	42.16			hJ		45	50		SN	PR						
BGUA-03	42.16	42.23			V		40			SN	PR						
BGUA-03	42.24	42.40			AZ					SN	PR						
BGUA-03	42.41	42.67			AZ					SN	PR						
BGUA-03	42.70				CO		60			SN	PR	RF					
BGUA-03	42.72	42.74			J		35			SN	PR	RF					
BGUA-03	42.76				hJ		70			SN	PR						
BGUA-03	42.89				hJ		70			SN	PR						
BGUA-03	42.93	42.95			hJ		65			SN	PR						
BGUA-03	43.02				hJ		50			SN	PR						
BGUA-03	43.03				hJ		40			SN	PR						
BGUA-03	43.10				hJ		50			SN	PR						
BGUA-03	43.13				hJ		55			SN	PR						
BGUA-03	43.16	43.19			hJ		60			SN	PR						
BGUA-03	43.22				hJ		45			SN	PR						
BGUA-03	43.24				hJ		60			SN	PR						
BGUA-03	43.32				hJ		60			SN	PR						
BGUA-03	43.42				J		20			SN	PR	RF					
BGUA-03	43.47	43.48			hJ		55			SN	PR						
BGUA-03	43.63				hJ		45			SN	PR						
BGUA-03	43.78	43.79			hJ		30			SN	PR						
BGUA-03	43.86				hJ		55			SN	PR						
BGUA-03	43.87				hJ		60			SN	PR						
BGUA-03	43.89				hJ		45			SN	PR						
BGUA-03	43.97				hJ		40			SN	PR						
BGUA-03	44.02				hJ		25			SN	PR						
BGUA-03	44.10				hJ		25			SN	PR						
BGUA-03	44.16				hJ		55			SN	PR						
BGUA-03	44.19	44.21			hJ		30			SN	PR						
BGUA-03	44.23				hJ		40			SN	PR						
BGUA-03	44.31	44.37			hJ		45			SN	PR						
BGUA-03	44.38				J		15			SN	PR	RF					
BGUA-03	44.39	44.47			hJ		60			SN	PR						
BGUA-03	44.50				J		20			SN	PR	RF					
BGUA-03	44.52	44.58			hJ		50	60		SN	PR						
BGUA-03	44.61	44.63			hJ		55	65		SN	PR						
BGUA-03	44.66	44.68			hJ		70			SN	PR						
BGUA-03	44.71				hJ		10			SN	PR						
BGUA-03	44.77				J		20			SN	PR	RF					
BGUA-03	44.83	44.86			hJ		20			SN	PR						
BGUA-03	44.92				hJ		25			SN	PR						
BGUA-03	45.02				J		20			SN	PR	RF					
BGUA-03	45.04	45.06			hJ		20			SN	PR						
BGUA-03	45.09				hJ		15			SN	PR						

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	45.13				hJ		30			SN	PR						
BGUA-03	45.18				hJ		30			SN	PR						
BGUA-03	45.20				hJ		20			SN	PR						
BGUA-03	45.21				J		15			SN	PR	RF					
BGUA-03	45.24				hJ		35			SN	PR						
BGUA-03	45.28				hJ		50			SN	PR						
BGUA-03	45.31				hJ		55			SN	PR						
BGUA-03	45.33				J		15			SN	PR	RF					
BGUA-03	45.39				hJ		35			SN	PR						
BGUA-03	45.43				hJ		30			SN	PR						
BGUA-03	45.45				hJ		15			SN	PR						
BGUA-03	45.47				hJ		20			SN	PR						
BGUA-03	45.48	45.62			J		80					RF					
BGUA-03	45.71				hJ		30			CN	PR						
BGUA-03	45.81				J		10			SN	PR						
BGUA-03	45.89				hJ		35			SN	PR						
BGUA-03	45.90				J		30			SN	PR	RF					
BGUA-03	45.91	45.92			hJ		15			SN	PR						
BGUA-03	46.03				J		10			SN	PR	RF					
BGUA-03	46.10				hJ		30			SN	PR						
BGUA-03	46.12	46.16			J		20			SN	PR	RF					
BGUA-03	46.17				hJ		50			SN	PR						
BGUA-03	46.24				hJ		40			SN	PR						
BGUA-03	46.28	46.29			J		15			SN	PR	RF					
BGUA-03	46.31				hJ		30			SN	PR						
BGUA-03	46.33				hJ		50			SN	PR						
BGUA-03	46.38				hJ		45			SN	PR						
BGUA-03	46.43				hJ		40			SN	PR						
BGUA-03	46.46	46.77			J		85			SN	PR						
BGUA-03	46.48				hJ		50			SN	PR						
BGUA-03	46.52				hJ		85			SN	UN						
BGUA-03	46.54				hJ		45			SN	PR						
BGUA-03	46.59				hJ		35			SN	PR						
BGUA-03	46.68				hJ		35			SN	PR						
BGUA-03	46.70				hJ		45			SN	PR						
BGUA-03	46.73				hJ		40			SN	PR						
BGUA-03	46.77				J		45			SN	PR	RF					
BGUA-03	46.81				hJ		50			SN	PR						
BGUA-03	46.86				hJ		25			SN	PR						
BGUA-03	46.88				hJ					SN	PR						
BGUA-03	46.93				J		15			SN	PR	RF					
BGUA-03	47.00	48.00			SZ	/FZ	80	90		SN	PR	RF					recovered as fragmented rock
BGUA-03	47.78				J		20			SN	PR	RF					
BGUA-03	47.81				J		30			SN	PR	RF					
BGUA-03	48.00	48.52			J	x6	15		bk	SN	CU						
BGUA-03	48.01	48.10			J		70			SN	PR	RF					
BGUA-03	48.12				J		30			CN	PR	RF					
BGUA-03	48.16				hJ		40				PR						
BGUA-03	48.21	48.25			J		25	30		SN	PR	RF					
BGUA-03	48.27				hJ		35			SN	PR						
BGUA-03	48.35	48.39			hJ		55			SN	PR						
BGUA-03	48.42	48.44			J		10				PR	RF					
BGUA-03	48.44	48.60			hJ	x12	25		yl	SN	PR						
BGUA-03	48.48	48.70			hJ	x8	40		yl / wh		PR						
BGUA-03	48.56	49.00			hJ	x15	70		gy, bk, wh		PR						
BGUA-03	48.60				J		55		gy		PR						
BGUA-03	48.68				J		40		gy, or		PR						
BGUA-03	49.00				V		90		gn, wh		IR	RF					
BGUA-03	49.00	50.00			hJ	x10	45		wh/gy	SN	UN						
BGUA-03	49.10	49.85			hJ	x12	55		wh/gy	SN	UN						
BGUA-03	49.30				J		5		wh	SN	PR	RF					
BGUA-03	49.51				hJ		90		gn/ wh	SN	IR	RF					
BGUA-03	49.62				J		10		gy	SN	PR	RF					
BGUA-03	49.62	50.54			hJ	x15	80		wh/yl	VN	PR						
BGUA-03	49.88				V		5		yl	SN	PR						
BGUA-03	50.00	50.63			hJ	x2	20		wh	SN	PR						
BGUA-03	50.04	50.48			hJ		25		wh	VN	PR						
BGUA-03	50.30				J		25		gy, mi fe	VN	PR	RF					
BGUA-03	50.61	50.63			hJ	x2	20		wh	VN	PR						
BGUA-03	50.65				hJ		15		yl	VN	PR						
BGUA-03	50.88	50.99			hJ	x2	80		wh	VN	PR						
BGUA-03	51.04				hJ		15		wh	VN	PR						
BGUA-03	51.19				hJ		20		wh/gy	VN	PR						
BGUA-03	51.40				hJ		25		wh	VN	PR						
BGUA-03	51.46				V		5		yl, Qz	VN	PR						
BGUA-03	51.50				hJ		70		gy	VN	PR						
BGUA-03	51.51				hJ		60		white and orange; iron stained	VN	PR						
BGUA-03	51.72				hJ		10		black, iron stained	VN	PR						

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	51.74				V		20		yellowish to light grey; quartz and iron stained	VN	PR						
BGUA-03	52.30				hJ		5		pale green	VN	PR						
BGUA-03	52.52				V				pale green to grey; quartz	SN	PR						
BGUA-03	52.68				hJ		10		dark orange; iron stained	SN	PR						
BGUA-03	52.72				hJ		60		white to light grey	SN	PR						
BGUA-03	52.76				hJ		15		grey to dark grey	SN	PR						
BGUA-03	52.78				V		10		pale green to grey; quartz	SN	PR						
BGUA-03	52.86				hJ		15		pale green to grey	SN	PR						
BGUA-03	53.00				V		45		bk	SN	PR						
BGUA-03	53.04				hJ				yl	SN	PR						
BGUA-03	53.12				hJ				yl	SN	PR						
BGUA-03	53.16				hJ		45		bk	SN	PR						
BGUA-03	53.17				hJ		90		yl	SN	PR						
BGUA-03	53.29				hJ		75		wh	SN	IR						
BGUA-03	53.62				hJ				bk	SN	PR						
BGUA-03	53.70				hJ		75		wh	SN	PR						
BGUA-03	53.79				hJ		50		yl	SN	ST						
BGUA-03	53.85				hJ		80		bk	SN	PR						
BGUA-03	53.93				hJ		85		bk	SN	PR						
BGUA-03	53.97				V		80		wh, rd, bk	SN	IR						
BGUA-03	54.06				hJ	x2	75		wh	SN	UN						
BGUA-03	54.17				hJ		80		yl	SN	PR						
BGUA-03	54.37				hJ		45		wh	SN	PR						
BGUA-03	54.88				J		50		Qz	SN	PR	RF					
BGUA-03	55.10				J		15		or, gy	SN	PR	RF					
BGUA-03	55.10	55.80			hJ		80		ot, gy	SN	PR						
BGUA-03	55.14				hJ		5		gravel	SN	PR						
BGUA-03	55.26				J		20		gy; iron stained	SN	PR	RF					
BGUA-03	55.63				hJ		60		gy, or	SN	PR						
BGUA-03	56.00				J		45		gy; iron stained	SN	PR	RF					
BGUA-03	56.00	56.42			hJ		65		wh gy or; iron stained	SN	PR						
BGUA-03	56.09				hJ		85		wh	SN	PR						
BGUA-03	56.20				hJ		10		gy or; iron stained	SN	PR						
BGUA-03	56.28				hJ		40		gy, iron stained	SN	PR						
BGUA-03	56.28	56.65			hJ	x5	60		gy or; iron stained;	SN	PR						
BGUA-03	56.37				hJ		25		yl	SN	PR						
BGUA-03	56.47				hJ		25		gy	SN	PR						
BGUA-03	56.70				hJ		25		or, gy; iron stained and quartz	SN	PR						
BGUA-03	56.74				J		45		gy	SN	PR	RF					
BGUA-03	56.77				hJ		40		wh	SN	PR						
BGUA-03	56.93	57.00			hJ	x3	80		gy, or; quartz / iron stained	SN	PR						
BGUA-03	56.94				J		45		gy; iron stained	SN	PR	RF					
BGUA-03	57.00				hJ		20		pale yellow/orange	SN	PR						
BGUA-03	57.00	57.30			hJ		65		dark grey to pale orange; quartz with iron stained surfaces around the joints	SN	PR						
BGUA-03	57.05				hJ				grey to pale orange	SN	PR						
BGUA-03	57.33				hJ		70		pale yellow	SN	PR						
BGUA-03	57.36				hJ		20		pale yellow/orange	SN	PR						
BGUA-03	57.38				hJ		50		dark grey, pale orange; iron stained	SN	PR						
BGUA-03	57.50				hJ				white	SN	PR						
BGUA-03	57.59				J		50		gy	SN	PR						
BGUA-03	57.67				hJ		55		gy	SN	PR						
BGUA-03	57.81				hJ		50		gy	SN	PR						
BGUA-03	57.83				hJ		70		pale orange; iron stained	SN	PR						
BGUA-03	57.94				hJ		5		gy	SN	PR						
BGUA-03	58.07				hJ		40		pale orange; iron stained	SN	PR						
BGUA-03	58.27				hJ		45		wh	SN	PR						
BGUA-03	58.28				hJ		5		gn	SN	PR						
BGUA-03	58.38				hJ		70		wh	SN	PR						
BGUA-03	58.47				hJ		5		pale orange; iron stained	SN	PR						
BGUA-03	58.58				hJ		5		pale grey/orange	SN	PR						
BGUA-03	58.72				J		45		pale orange and grey	SN	PR	RF					
BGUA-03	58.74				V		55		wh	SN	PR						
BGUA-03	58.82				V		5		gn	SN	PR						
BGUA-03	58.89				hJ		40		wh	SN	PR						
BGUA-03	59.00	59.42			hJ		85		pale orange and grey; iron stained	SN	PR						
BGUA-03	59.10	59.38			hJ		50		pale orange and light grey; iron stained and quartz	SN	PR						
BGUA-03	59.18	59.40			hJ		80		pale orange to grey; iron stained	SN	PR						
BGUA-03	59.20				J		50		gy	SN	PR	RF					
BGUA-03	59.55				hJ		60		pale orange; iron stained	SN	PR						
BGUA-03	59.90				hJ		5		yl	SN	PR						
BGUA-03	60.03	60.18			hJ	x7				SN	PR						
BGUA-03	60.38				hJ		5		wh	SN	IR						
BGUA-03	60.44				hJ		5			SN	PR						
BGUA-03	60.67				hJ		50		wh	SN	PR						
BGUA-03	60.74				hJ		50		wh	SN	PR						
BGUA-03	60.80				J		45			SN	IR	RF					

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	60.91				J		20			SN	UN	RF					
BGUA-03	61.33				hJ		45		bk	SN	PR						
BGUA-03	61.45	61.48			hJ		45		wh	SN	PR						
BGUA-03	61.56				hJ		45		bk	SN	PR						
BGUA-03	61.61				hJ				wh	SN	PR						
BGUA-03	61.74				V		90		yl/wh	SN	UN						
BGUA-03	61.77	61.81			hJ		30		wh/bk	SN	PR						
BGUA-03	61.85				J		55		wh/bk	SN	UN	RF					
BGUA-03	61.89				V		85		wh/yl	SN	UN						
BGUA-03	61.91				hJ		15		br	SN	PR						
BGUA-03	62.13				V		70		wh	SN	IR						
BGUA-03	62.26				V		85		wh/yl	CN	CU						
BGUA-03	62.30				hJ		75		wh	SN	UN						
BGUA-03	62.34				hJ		70		wh	SN	IR						
BGUA-03	62.43				hJ		70		bk	SN	CU						
BGUA-03	62.55				hJ		70		wh	SN	IR						
BGUA-03	62.90				hJ				wh	SN	PR						
BGUA-03	62.91				V		60		Qz	SN	PR						
BGUA-03	62.94				hJ		45		wh	SN	PR						
BGUA-03	62.97				V		45		wh	SN	IR						
BGUA-03	63.00				hJ		45		wh	SN	UN						
BGUA-03	63.04				V		60		wh	SN	UN			2			
BGUA-03	63.06				hJ		45		wh	SN	PR						
BGUA-03	63.13				hJ		30		wh	SN	PR						
BGUA-03	63.36				hJ		10		wh	SN	PR						
BGUA-03	63.43				V		75		wh/rd	SN	PR			2			
BGUA-03	63.65				V		70		yl	SN	UN			3			
BGUA-03	63.67				J		5		wh	SN	PR	RF					
BGUA-03	63.89				J		10		wh	SN	PR	RF					
BGUA-03	64.13				hJ		30		wh	SN	PR						
BGUA-03	64.35	64.65			hJ		70		or	SN	PR						
BGUA-03	64.40				J		65			SN	PR	RF					
BGUA-03	64.40	64.60			hJ	x14	15		wh/or	SN	PR						
BGUA-03	64.65				J		70			SN	CU	RF					
BGUA-03	64.71				hJ		85		wh/or	SN	PR						
BGUA-03	64.73				hJ		5		or	SN	CU						
BGUA-03	64.91				hJ		70		or	SN	CU						
BGUA-03	65.00				J		80			SN	CU	RF					
BGUA-03	65.03				hJ		5		bk	SN	UN						
BGUA-03	65.27				J		5		or	SN	CU	RF					
BGUA-03	65.32				hJ		55		or	SN	PR						
BGUA-03	65.50				V		55		wh/yl	SN	PR			4			
BGUA-03	65.80				J		90		or	SN	PR	RF					
BGUA-03	66.10				J		90			SN	PR	RF					
BGUA-03	66.25	66.37			FZ		75			SN	UN	RF					
BGUA-03	66.55				V		75		wh/yl	SN	PR						
BGUA-03	66.78				J		15			SN	CU	RF					
BGUA-03	66.94	66.96			V	x2	75		wh/or	SN	PR			3			
BGUA-03	67.04				hJ		75		or; iron stained	SN	UN						
BGUA-03	67.07				J		70		or/wh; iron stained and quartz	SN	PR						
BGUA-03	67.08				J		25		mi, iron stained	CN	PR						
BGUA-03	67.10				hJ		20		mi, iron stained	SN	PR						
BGUA-03	67.12				hJ		65		mi, iron stained	SN	CU						
BGUA-03	67.17				hJ		85		mi, iron stained	SN	PR						
BGUA-03	67.38				hJ		25		or, gy; iron stained	SN	PR						
BGUA-03	67.40				J		25		mi, iron stained	SN	PR						
BGUA-03	67.48				hJ		70		wh	SN	PR						
BGUA-03	67.50				hJ		20		wh	SN	PR						
BGUA-03	67.57				hJ		25		wh, gy	SN	PR						
BGUA-03	67.77				hJ		65		gy	SN	PR						
BGUA-03	67.78				hJ		55		gy	SN	PR						
BGUA-03	67.85				J		15			SN	PR						
BGUA-03	67.92				hJ		80		wh	SN	PR						
BGUA-03	68.10				V		80		gn; alteration mineral	SN	PR						
BGUA-03	68.22				V		75		wh; Qz	SN	PR						
BGUA-03	68.27				hJ		10		gy	SN	PR						
BGUA-03	68.48				hJ		20		gy	SN	PR						
BGUA-03	68.54				hJ		60		or, wh; fe / Qz	SN	PR						
BGUA-03	68.62				hJ		10		wh	SN	PR						
BGUA-03	68.72				V		80		gn; alteration mineral	SN	UN						
BGUA-03	68.74				hJ		15		wh	SN	PR						
BGUA-03	68.75				V		50		pale green; alteration mineral	SN	PR						
BGUA-03	68.82				V		55		pale orange and white to greyish; iron stained and quartz	SN	PR						
BGUA-03	68.84	68.96			hJ	x4	45		gy	VN	PR						
BGUA-03	68.91				V				wh, gy	SN	PR						
BGUA-03	69.03				hJ		35		bk	VN	PR						
BGUA-03	69.19				hJ		15		or	VN	PR						
BGUA-03	69.22				hJ		20		bk	SN	PR						

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	69.26				hJ		40		wh	VN	IR						
BGUA-03	69.30				hJ		80		or	SN	CU						
BGUA-03	69.32				hJ		35		wh	VN	IR						
BGUA-03	69.35				V		75		mr, br, mi, Qz, maroon mineral	VN	PR	RF	<	10			
BGUA-03	69.37				hJ		20		wh	SN	IR						
BGUA-03	69.45	69.62			AZ				wh/or	SN	PR						
BGUA-03	69.52				J		70		wh	VN	PR	RF					
BGUA-03	69.61				V		65		wh/rd	SN	PR						
BGUA-03	69.65	69.73			hJ	x5	65		wh	SN	PR						
BGUA-03	69.69	69.75			hJ		35		wh	SN	PR						
BGUA-03	69.75				hJ		25		wh	SN	PR						
BGUA-03	69.77				hJ		90		or	SN	PR						
BGUA-03	69.82				V		70		wh	SN	UN			2			
BGUA-03	69.84				hJ		70		bk	SN	PR						
BGUA-03	69.87				hJ		70		yl	SN	PR						
BGUA-03	69.94				hJ		60		or	SN	CU						
BGUA-03	69.96				hJ		60		or	VN	PR						
BGUA-03	70.00				hJ		45		yl	SN	IR						
BGUA-03	70.04	70.61			V	x13	50		wh/rd, quartz/iron staining	SN	PR	RF		4			
BGUA-03	70.13				hJ		45		yl	SN	PR						
BGUA-03	70.21				hJ		90		yl	VN	UN						
BGUA-03	70.26				hJ		55		wh	VN	PR						
BGUA-03	70.35				hJ		55		wh	VN	PR						
BGUA-03	70.54				hJ		85		wh	VN	UN						
BGUA-03	70.57				hJ		70		wh	VN	PR						
BGUA-03	70.61				hJ		65		wh	SN	PR						
BGUA-03	70.68				J		45			SN	PR	RF					
BGUA-03	70.72				J		45			SN	PR	RF					
BGUA-03	70.72	70.74			hJ		5		yl	SN	PR						
BGUA-03	70.73				CO		30			VN	PR						
BGUA-03	70.74	70.75			hJ	x2	60			SN	PR						
BGUA-03	70.75	70.76			hJ	x2	85		yl	SN	UN						
BGUA-03	70.80				hJ		45		yl	SN	IR						
BGUA-03	70.85				hJ		55			SN	PR						
BGUA-03	70.91	70.97			hJ	x3	10		yl	SN	PR						
BGUA-03	71.15				J		40			VN	PR						
BGUA-03	71.20	71.30			J		55			SN	UN						
BGUA-03	71.50	71.50			V		50		bk, vein	SN	ST						
BGUA-03	71.55	71.75			V		60		basalt		ST						5-15mm thick
BGUA-03	71.75				V		30		bk, vein	SN	CU						
BGUA-03	71.76	72.00			J	x4	40	60	wh	SN	UN						
BGUA-03	72.06				hJ		65		wh	SN	PR						
BGUA-03	72.11				hJ				yl	VN	PR						
BGUA-03	72.12				J		10			VN	IR						
BGUA-03	72.14				hJ		60		wh	VN	PR						
BGUA-03	72.16				hJ		70		wh	VN	IR						
BGUA-03	72.17				J		55			SN	UN						
BGUA-03	72.21				hJ		85		wh	SN	PR						
BGUA-03	72.22				hJ		10		yl-wh	SN	PR						
BGUA-03	72.24	72.26			hJ		20		wh, x4	VN	PR						
BGUA-03	72.30				hJ		85		wh	SN	PR						
BGUA-03	72.40				J		10	20		CN	UN	RF					
BGUA-03	72.50				J		70			CN	PR	RF					
BGUA-03	72.56				J		10			CN	UN	RF					
BGUA-03	72.61				J		25			CN	PR	RF					
BGUA-03	72.64				J		60			CN	PR	SM					
BGUA-03	72.65																partially intersected basalt inclusion
BGUA-03	72.70				J		70			CN	PR	SM					
BGUA-03	73.06	73.12			hJ	x4	75		or/yl iron stained	SN	PR						
BGUA-03	73.10	73.65			hJ	x12	15		wh, bk, yl	VN	PR						
BGUA-03	73.25				J		75		or; iron stained	VN	PR						
BGUA-03	73.29	73.60			J		45		yl and wh	VN	PR						
BGUA-03	73.36	73.54			hJ		20		yl, x12	VN	PR						
BGUA-03	73.40				J		20			SN	PR	RF					
BGUA-03	73.43				hJ		20		wh	SN	PR						
BGUA-03	73.50				hJ		50		wh	SN	IR						
BGUA-03	73.51				hJ		65		wh	SN	IR						
BGUA-03	73.54				J		10		bk to wh	SN	PR	RF					
BGUA-03	73.56				J					VN	UN	RF					
BGUA-03	73.61				J		20			SN	PR	RF					
BGUA-03	73.70	73.86			hJ		20		yl, x15	SN	PR						
BGUA-03	73.71				hJ		50		yl	SN	PR						
BGUA-03	73.75				J		20		wh and pale orange; iron stained	VN	PR						
BGUA-03	73.80				hJ		55		yl	SN	PR						
BGUA-03	73.83				J		60		pale orange to greyish; iron stained	SN	PR						
BGUA-03	73.85				hJ		65		wh to pale orange	VN	PR						
BGUA-03	73.89				hJ		35		yl	VN	PR						
BGUA-03	73.91				hJ		40		yl	VN	PR						
BGUA-03	73.92				J		10		greyish	SN	PR						

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	73.94				hJ		65		wh and bk	SN	PR						
BGUA-03	73.97				hJ		45		wh and bk	VN	PR						
BGUA-03	74.09				hJ		45		wh	VN	PR						
BGUA-03	74.13				hJ		35		wh to or; iron stained	VN	PR						
BGUA-03	74.24				hJ		30		or; iron stained	SN	PR						
BGUA-03	74.27				hJ		45		wh to or; iron stained	SN	PR						
BGUA-03	74.31				hJ		25		bk to gr	SN	PR						
BGUA-03	74.34				hJ		90		wh	SN	PR						
BGUA-03	74.42	74.52			hJ	x4	45		wh to or; iron stained	SN	PR						
BGUA-03	74.48				hJ		60		wh to gy	SN	PR						
BGUA-03	74.54	74.70			hJ	5	80		wh, yl and or; iron stained	SN	PR						
BGUA-03	74.55				hJ		70		gy to wh and or; iron stained and quartz	SN	PR						
BGUA-03	74.61	74.82			J	x8	90		pale yl, wh or; alteration mineral and iron stained;	SN	PR						
BGUA-03	74.72	74.82			hJ	x6	50		wh to gy; embedded in a mafic band	SN	PR						
BGUA-03	74.85				J		20		or and gy; iron stained	SN	PR						
BGUA-03	74.85	75.00			hJ	x6	75		wh, bk and or; iron stained	SN	PR						
BGUA-03	74.87				hJ		20		bk	SN	PR						
BGUA-03	74.95				J		75		gr	SN	PR	RF					
BGUA-03	75.00	75.90			hJ	x20	70		gy to bk and wh, or; quartz and iron stained;	SN	PR						
BGUA-03	75.20	75.32			J	x2	45	60	wh to gy and or mi	SN	PR						
BGUA-03	75.65				DB		30		gy	SN	PR	RF					
BGUA-03	75.90				J		60	65		CN	PR	RF					
BGUA-03	76.10				hJ	x3	85		yl	SN	PR						
BGUA-03	76.11				hJ		85			SN	IR						
BGUA-03	76.14	77.00			hJ		60		x25	SN	PR						
BGUA-03	76.58				J		65			SN	PR	RF					
BGUA-03	76.96				J		90		bk-or	SN	CU						
BGUA-03	77.02	77.13			hJ	x5	75			SN	PR						
BGUA-03	77.15				hJ		55		wh	SN	PR						
BGUA-03	77.21	77.23			hJ	x2	80		or	SN	PR						
BGUA-03	77.32				J		55			SN	PR	RF					
BGUA-03	77.38	77.45			hJ	x3	75		wh / or	SN	PR						
BGUA-03	77.43	77.44			hJ	x2	60		or	SN	IR						
BGUA-03	77.50				hJ		85		wh	SN	PR						
BGUA-03	77.50	77.60			AZ				bk	SN	PR						
BGUA-03	77.53	77.71			hJ	x10	65		bk	SN	PR						
BGUA-03	77.53	78.05			hJ	x15			bk	SN	PR						
BGUA-03	77.65				J		65		bk	SN	rp	RF					
BGUA-03	77.67	77.72			hJ	x3	45		wh	SN	PR						
BGUA-03	77.77				hJ		75		bk	SN	PR						
BGUA-03	77.78	77.99			hJ	x6	60		bk	SN	PR						
BGUA-03	77.90				J		25			SN	PR	RF					
BGUA-03	77.99				hJ		30		wh	SN	PR						
BGUA-03	78.12				hJ		70		bk	SN	PR						
BGUA-03	78.16				J					SN	PR	RF					
BGUA-03	78.30				hJ		90		bk	SN	CU						
BGUA-03	78.37				hJ		85		bk	SN	PR						
BGUA-03	78.42				J		5			SN	UN	RF					
BGUA-03	78.50	78.51			hJ	x3	65		bk	SN	UN						
BGUA-03	78.61				hJ		85		bk	SN	IR			5			
BGUA-03	78.65				hJ		75		bk	SN	PR						
BGUA-03	78.67				hJ		25			SN	PR						
BGUA-03	78.71				J		10			SN	UN	RF					
BGUA-03	78.74	78.93			hJ	x13	60		yl / bk	SN	UN						
BGUA-03	78.82	78.87			hJ	x3	5		yl	SN	PR						
BGUA-03	79.04	79.54			hJ	x10	50		yl and wh; alteration mineral and Qz	SN	PR						
BGUA-03	79.04	79.56			hJ		30		yl and wh; alteration mineral and Qz	SN	PR						
BGUA-03	79.07	79.70			hJ	x7	90		wh; Qz	SN	PR						
BGUA-03	79.13	79.38			AZ					SN	PR						
BGUA-03	79.31				J		20		gy and or; iron stained	SN	PR						
BGUA-03	79.48	79.65			hJ	x6	70		wh, Qz	SN	PR						
BGUA-03	79.60	79.70			J		60			SN	PR	RF					
BGUA-03	79.67				J		55		gy; iron stained	SN	PR						
BGUA-03	79.69	79.95			hJ	x7	50		wh to or; Qz and iron stained	SN	PR						
BGUA-03	79.78				hJ		85		gy to bk	SN	PR						
BGUA-03	79.79				hJ		70		gy to bk	SN	PR						
BGUA-03	80.03	80.17			hJ	x4	70		gy	SN	PR						
BGUA-03	80.04	80.11			hJ	x7	35		bk	SN	PR						
BGUA-03	80.16				hJ		70		wh	SN	PR						
BGUA-03	80.19				hJ				wh	SN	PR						
BGUA-03	80.25				J		45			SN	PR	RF					
BGUA-03	80.32	80.65			hJ	x30	65		bk	SN	PR						
BGUA-03	80.35				J		85		bk	SN	PR						
BGUA-03	80.37	80.45			hJ	x4	65		wh	SN	PR						
BGUA-03	80.45				hJ		85		wh	SN	PR						
BGUA-03	80.56				hJ		85		bk	SN	CU						
BGUA-03	80.56	80.58			hJ		45		wh	SN	CU						

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	80.61				hJ		30		yl	SN	CU						
BGUA-03	80.66	80.96			hJ	x19	55		wh/bk	SN	PR						
BGUA-03	80.70	80.72			hJ	x2	10		bk	SN	CU						
BGUA-03	80.89				J		50			SN	PR	RF					
BGUA-03	81.01				hJ		55		bk	SN	CU						
BGUA-03	81.04	81.08			hJ	x4	25		rd/bk	SN	PR						
BGUA-03	81.04	81.37			hJ	x16	55		wh/bk	SN	PR						
BGUA-03	81.20	81.40			J	x2	60	80	gy mi		CU	RF					
BGUA-03	81.22				J		65		qtz	SN	PR	RF					
BGUA-03	81.31				V		80		bk	SN	CU						
BGUA-03	81.35				hJ		80		wh	SN	IR						
BGUA-03	81.48				J		50		bk	SN	PR						
BGUA-03	81.55	81.83			hJ	x15	30		bk	SN	PR						
BGUA-03	81.60				hJ				wh	SN	PR						
BGUA-03	81.66				hJ		60		wh	SN	ST						
BGUA-03	81.71				hJ		85		wh	SN	PR						
BGUA-03	81.77				J		35		gn-bk	SN	PR	RF					
BGUA-03	81.89				J		20			SN	PR	SM					
BGUA-03	81.90				hJ		85		wh	SN	PR						
BGUA-03	82.01				hJ		45		vk	SN	PR						
BGUA-03	82.02				J		25			SN	PR						
BGUA-03	82.02	82.04			hJ	x5	75		bk	SN	IR						
BGUA-03	82.03				hJ		90		bk	SN	PR						
BGUA-03	82.04				hJ		25		bk	SN	IR						
BGUA-03	82.09				hJ	x3	15		bk	SN	PR						
BGUA-03	82.13				hJ		40		bk	SN	PR						
BGUA-03	82.16				hJ		40			SN	PR						
BGUA-03	82.18				hJ		45		rd	SN	PR						
BGUA-03	82.20	82.21			hJ	x3	25		bk	SN	PR						
BGUA-03	82.22	82.35			hJ	x9	25		bk/yl	SN	PR						
BGUA-03	82.23	82.27			hJ	x3	75		wh	SN	PR						
BGUA-03	82.25				hJ		85		wh	SN	CU						
BGUA-03	82.26				hJ		35		yl	SN	PR						
BGUA-03	82.31				hJ				yl-wh	SN	PR						
BGUA-03	82.36				hJ		80		wh	SN	PR						
BGUA-03	82.40				hJ				yl	SN	PR						
BGUA-03	82.45				hJ		80		wh	SN	PR						
BGUA-03	82.46				hJ	x2	35		yl	SN	PR						
BGUA-03	82.55	82.59			hJ	x3	50		yl	SN	PR						
BGUA-03	82.55	82.60			hJ	x3	85		wh	SN	CU						
BGUA-03	82.66				hJ		65		yl	SN	PR						
BGUA-03	82.71	82.96			hJ	x9	70		bk	SN	CU						
BGUA-03	82.76				hJ		5		yl	SN	PR						
BGUA-03	82.85				hJ		20		yl	SN	PR						
BGUA-03	82.88				J		20			SN	PR						
BGUA-03	82.89	82.94			hJ	x5	20		wh/yl	SN	PR						
BGUA-03	82.90				hJ		25		yl	SN	PR						
BGUA-03	82.92				hJ		60		yl	SN	PR						
BGUA-03	83.00	83.09			hJ	x5	75		bk/wh	SN	PR						
BGUA-03	83.07				hJ		5		yl	SN	PR						
BGUA-03	83.11				hJ		5		yl	SN	PR						
BGUA-03	83.20	83.26			hJ	x7	45		bk	SN	PR						
BGUA-03	83.22	83.28			AZ				bk-wh-rd	SN	PR						
BGUA-03	83.30				hJ		45		bk	SN	PR						
BGUA-03	83.30	83.50			hJ		85		wh	SN	PR						
BGUA-03	83.41				hJ		35		bk	SN	PR						
BGUA-03	83.42				J		55			SN	PR						
BGUA-03	83.45				hJ		35		bk	SN	PR						
BGUA-03	83.48				hJ		80		wh	SN	PR						
BGUA-03	83.50				hJ		65		yl	SN	PR						
BGUA-03	83.58	83.70			hJ	x4	70		bk-wh	SN	PR						
BGUA-03	83.75				hJ		65		bk	SN	PR						
BGUA-03	83.93	83.94			hJ	x4	70		bk	SN	PR						
BGUA-03	84.02	84.45			hJ	x17	70		bk	SN	UN						
BGUA-03	84.18				hJ		90		wh	SN	PR						
BGUA-03	84.24				hJ		10		bk	SN	PR						
BGUA-03	84.50				J		80		gn to rd,	SN	UN	RF					
BGUA-03	84.54				J		5			SN	PR	RF					
BGUA-03	84.55	84.90			hJ	x9	70		bk	SN	PR						
BGUA-03	85.00	86.15			hJ	x47	75		bk	SN	PR						
BGUA-03	85.02				hJ				bk	SN	PR						
BGUA-03	85.11				hJ		75		wh	SN	PR						
BGUA-03	85.28				hJ		50		wh	SN	PR						
BGUA-03	85.40				hJ		55		yl	SN	PR						
BGUA-03	85.81				J		35			SN	PR	RF					
BGUA-03	85.90				hJ		5		rd	SN	PR						
BGUA-03	86.05				J		60			SN	PR						
BGUA-03	86.15	86.30			J		65		wh, interconnected zone of joints, generally dipping 65 degrees	SN	UN						

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	86.27				hJ		90		wh	SN	IR						
BGUA-03	86.32	86.43			J		65		wh, interconnected zone of joints, generally dipping 65 degrees,	SN	UN						
BGUA-03	86.41				J				gn-bk	SN	PR						
BGUA-03	86.42				hJ		35		yl	SN	UN			3			
BGUA-03	86.45				J		15		gn-bk	SN	ST	RF					
BGUA-03	86.47				hJ		15		wh	SN	IR						
BGUA-03	86.47	88.00			hJ		70		wh, gy and gr/yl; iron stained and mineral alteration	SN	PR						
BGUA-03	86.57				V		75		yl to gr; mineral alteration	SN	UN						
BGUA-03	86.75				J		85		yl/gn / gy; secondary mineral alteration	SN	PR						
BGUA-03	86.82	87.00			hJ		50		wh to bk	SN	PR						
BGUA-03	86.88				hJ		20		wh to bk and or; iron stained	SN	PR						
BGUA-03	87.05	87.68			hJ	x12	55		yl to dark gy and bk	SN	PR						
BGUA-03	87.12				hJ		65		bk and gr/yl; alteration mineral (secondary)	SN	PR						
BGUA-03	87.15				hJ		70		bk	SN	PR						
BGUA-03	87.65				J		15		or to gy; iron stained	SN	PR						
BGUA-03	87.85				J		85		bk and l gy	SN	PR						
BGUA-03	87.85	88.00			hJ		80		bk to dark gy	SN	PR						
BGUA-03	87.93				hJ		45		bk and or; iron stain	SN	PR						
BGUA-03	88.07				hJ		75		bk	SN	PR						
BGUA-03	88.09	88.27			hJ	x10	65		wh to gy; Qz	SN	PR						
BGUA-03	88.17				hJ		10		rd to yl/gr; iron stained	SN	PR						
BGUA-03	88.25	88.35			AZ				wh to gy	SN	PR						
BGUA-03	88.32	88.53			hJ	x6	65		wh; Qz	SN	PR						
BGUA-03	88.39				hJ		50		bk to wh	SN	PR						
BGUA-03	88.40	88.82			hJ	x15	10		yl/gr	SN	PR						
BGUA-03	88.55	88.61			AZ				wh to bk	SN	PR						
BGUA-03	88.81				J		10		or to gr/yl; iron stained	SN	PR						
BGUA-03	88.81	88.84			AZ				wh to bk	SN	PR						
BGUA-03	88.84	88.94			hJ		40		wh ; gy and or; iron stained	SN	PR						
BGUA-03	89.02	89.54			hJ		50		wh	SN	PR						
BGUA-03	89.08	90.00			hJ		20		gy/gn	SN	PR						
BGUA-03	89.51				J		5		gy	SN	PR						
BGUA-03	89.73	89.84			AZ				gn/gy	SN	PR						
BGUA-03	89.75	90.00			hJ	x5	70		wh; Qz	SN	PR						
BGUA-03	89.80				J		45		gy	SN	PR						
BGUA-03	89.94				V		45		bk and gn	SN	PR						
BGUA-03	90.00	90.35			hJ		50		gr/yl and wh; secondary mineral alteration and Qz	SN	PR						
BGUA-03	90.07	90.35			hJ		10		yl to gr and wh; secondary mineral alteration and qua	SN	PR						
BGUA-03	90.20	90.45			hJ		70		wh; Qz	SN	PR						
BGUA-03	90.39				J		70		gy and gr; secondary mineral alteration	SN	PR						
BGUA-03	90.48				J		90		gy and or; iron stained	SN	PR						
BGUA-03	90.55	90.75			hJ	x7	20		wh to gy and or; Qz and iron stained;	SN	PR						
BGUA-03	90.75	91.00			hJ	x7	35		bk to gy	SN	PR						
BGUA-03	90.79	91.00			hJ	x6	25		bk to gy	SN	PR						
BGUA-03	90.80				J		15		gy and or; iron stained	SN	PR						
BGUA-03	90.86				J		25		gy; iron stained	SN	PR						
BGUA-03	91.00				J		35		gy to or; iron stained	SN	PR						
BGUA-03	91.02	91.65			hJ	x15	25		bk	SN	PR						
BGUA-03	91.07	91.59			hJ		55		wh to gy; Qz	SN	PR						
BGUA-03	91.12	91.68			hJ	x12	85		bk	SN	PR						
BGUA-03	91.42				J		65		gy to or; iron stained	SN	PR						
BGUA-03	91.75				J		45		gy and or; iron stained	SN	PR						
BGUA-03	91.88				hJ		75		bk and or; iron stained	SN	PR						
BGUA-03	91.94				hJ		80		bk	SN	PR						
BGUA-03	92.03				hJ					SN	IR						
BGUA-03	92.03	92.09			hJ	x4	80		bk	SN	PR						
BGUA-03	92.09				hJ		35		wh	SN	PR						
BGUA-03	92.16				hJ		15		bk	SN	PR						
BGUA-03	92.19	92.21			hJ		25		gy	SN	PR						
BGUA-03	92.21				hJ		65		bk	SN	PR						
BGUA-03	92.32				hJ		25		gy	SN	PR						
BGUA-03	92.33				J		55		bk	SN	PR	RF					
BGUA-03	92.35				hJ		45		bk	SN	PR						
BGUA-03	92.43				hJ		55		bk	SN	PR						
BGUA-03	92.45				hJ		90		bk	SN	CU						
BGUA-03	92.50				hJ		85		wh	SN	CU						
BGUA-03	92.52				J		55		bk	SN	PR	RF					
BGUA-03	92.54				hJ		45		wh	SN	PR						
BGUA-03	92.59				hJ		75		wh	SN	PR						
BGUA-03	92.64				hJ		55		bk	SN	PR						
BGUA-03	92.67				J		55		bk-gn	SN	PR	RF					
BGUA-03	92.73				hJ		75		yl-bk	SN	UN						
BGUA-03	92.78				hJ		85		wh	SN	UN						
BGUA-03	92.81				hJ		55		bk	SN	PR						
BGUA-03	92.85	92.86			hJ	x4	80		wh	SN	UN						
BGUA-03	92.87				hJ		85		bk	SN	UN						
BGUA-03	92.92				J		45		bk	SN	PR	RF					

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	92.97				hJ		70		wh	SN	PR						
BGUA-03	93.00				J		40		or	SN	PR						
BGUA-03	93.03	93.17			hJ	x4	40		bk-or	SN	PR						
BGUA-03	93.07				hJ		65		or	SN	PR						
BGUA-03	93.10				J		75			SN	PR						
BGUA-03	93.11	93.12			hJ		65		bk -or	SN	PR						
BGUA-03	93.18				hJ		45		bk-or	SN	PR						
BGUA-03	93.24	93.31			hJ	x3	80		wh	SN	PR						
BGUA-03	93.27				hJ		60		yl-wh	SN	PR						
BGUA-03	93.31	93.38			hJ	x5	60		wh	SN	PR						
BGUA-03	93.36				hJ		65		wh	SN	PR						
BGUA-03	93.44				J		45			SN	PR						
BGUA-03	93.46				J		60			SN	PR						
BGUA-03	93.47	93.49			hJ		75		yl	SN	PR						
BGUA-03	93.58				hJ		20		yl	SN	PR						
BGUA-03	93.64	93.72			hJ	x5	50		wh-yl	SN	PR						
BGUA-03	93.67	93.70			hJ	x2	80		wh	SN	PR						
BGUA-03	93.76				hJ				bk	SN	PR						
BGUA-03	93.78				hJ		15		bk	SN	PR						
BGUA-03	93.80	93.98			hJ	x18	20		bk	SN	PR						
BGUA-03	93.94				hJ		70		yl	SN	PR						
BGUA-03	94.04	94.46			hJ	x20	35		bk to gr/yl; chlorite alteration	SN	PR						
BGUA-03	94.05				V		75		gr/yl; chlorite alteration	SN	PR						
BGUA-03	94.12	94.55			hJ		70		bk to yl and/or rd; chlorite and hematite alteration	SN	PR						
BGUA-03	94.19	94.67			hJ	x15	80		bk and pale gr/yl; chlorite alteration	SN	PR						
BGUA-03	94.52				V		75		bk to dark gy; alteration	SN	PR						
BGUA-03	94.68				J		25		bk	SN	PR						
BGUA-03	94.69	95.00			hJ		45		bk to yl; chlorite alteration	SN	PR						
BGUA-03	94.72				hJ		55		bk	SN	PR						
BGUA-03	94.88				V		75		wh to bk; mi calcite	SN	PR						
BGUA-03	94.96				J		40		wh to bk; mi calcite	SN	PR						
BGUA-03	95.00	95.58			hJ		85		wh to bk; mi calcite	SN	PR						
BGUA-03	95.04				J		20		gy / pk	SN	PR						
BGUA-03	95.05	95.52			hJ		15		bk, rd; hematite alteration	SN	PR						
BGUA-03	95.25				J		60		bk	SN	PR						
BGUA-03	95.31				J		35		gy, pk	SN	PR						
BGUA-03	95.44				J		10		gy, pk	SN	PR						
BGUA-03	95.45	96.00			hJ		25		bk to rd; hematite alteration	SN	UN						
BGUA-03	95.48	96.00			hJ	x20	75		wh to rd; calcite infill and hematite alteration	SN	UN						
BGUA-03	95.51				J		55		gy / pk	SN	PR						
BGUA-03	95.62	96.00			hJ		55		bk to rd; hematite alteration	SN	PR						
BGUA-03	95.72				V		80		wh, rd to bk and yl/gr; calcite infill, hematite and chlo	SN	UN						
BGUA-03	95.83	95.95			AZ				bk to rd; hematite alteration	SN	UN						
BGUA-03	95.96	96.60			J	/hJ	80	90	br, bk mi	SN	UN	RF					healed to open, possibly opened by drilling
BGUA-03	96.05	96.08			J	x2	0	10		CN	PR	SM					
BGUA-03	96.20	96.90			hJ	x13	25			SN	PR						
BGUA-03	96.30				V		45		Fe minerals	SN	PR						
BGUA-03	96.40	96.70			hJ		30		Chlorite min	SN	PR	RF					
BGUA-03	96.42	96.49			J		80		br, bk mi	SN	UN	RF					
BGUA-03	96.63	96.70			J		90		br, bk mi	SN	ST	RF					
BGUA-03	96.74				J		10		br and bk mi	SN	IR	RF					
BGUA-03	96.91	97.05			J	/hJ	80		br and bk mi	SN	UN	RF					
BGUA-03	97.00	97.30			hJ		30			SN	UN						
BGUA-03	97.90	98.23			CS		70	90	angular gravel		UN	RF					10-30mm aperature
BGUA-03	98.23	98.50			AZ				cihorite alterations	SN	UN						
BGUA-03	98.30	98.90			hJ				Hematite Altera tion	SN	UN						
BGUA-03	99.40				J		45			SN	PR						
BGUA-03	100.30				J		75		gy, wh	SN	IR						
BGUA-03	100.35				Js		10	20		CN	PR	RF					10-50mm spacing
BGUA-03	100.65	100.98			J		45	60		SN	PR						10-60mm spacing
BGUA-03	101.00	102.52			hJ		30		gy, rd	SN	UN						
BGUA-03	101.38				J		45			SN	IR	SM					
BGUA-03	102.00	102.54			CO		30		rd	SN	PR						
BGUA-03	102.45	103.00			hJ		60		wh, gn	SN	PR						
BGUA-03	102.60				V		35		wh calcite	SN	PR						
BGUA-03	103.00	103.10			AZ				gn, gn	SN	PR						
BGUA-03	103.04	103.87			hJ		75		wh calcite	SN	PR						
BGUA-03	103.05				J		65		rd	SN	PR	RF					
BGUA-03	103.10	103.78			hJ		20		wh, rd calcite	SN	PR						
BGUA-03	103.26				J		15		gy	SN	PR	RF					
BGUA-03	103.60	103.68			J		35		gy, rd	SN	PR						
BGUA-03	103.80				J		45		gy, rd	SN	PR						
BGUA-03	103.80	103.88			J		80		wh, pk, gy - calcite	SN	PR	RF					
BGUA-03	104.00	104.45			hJ	x10	35		bk	SN	PR						
BGUA-03	104.03				J		30		gy, rd	SN	PR						
BGUA-03	104.07				J		50		gy, rd, pk	SN	PR						
BGUA-03	104.08				J		50		gy, rd, pk	SN	PR						
BGUA-03	104.19	104.38			hJ	x10	10		gy to rd	SN	PR						
BGUA-03	104.27	104.56			hJ	x10	10		gy to rd	SN	PR						

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	104.37	104.72			hJ	x10	60		bk	SN	UN						
BGUA-03	104.52	104.65			hJ	x5	85		gy to rd		UN						
BGUA-03	104.72	104.82			hJ	x5	45		bk		PR						
BGUA-03	104.80				J		30		gy to rd		PR						
BGUA-03	104.91				J		25		gy to rd		PR						
BGUA-03	104.95				J		85		gy, rd		PR						
BGUA-03	105.00	105.41			hJ	x8	80		bk to rd		PR						
BGUA-03	105.19	105.36			hJ	x10	15		rd to gy		UN						
BGUA-03	105.23				J		25		bk to rd		PR						
BGUA-03	105.49	105.65			hJ	x7	15		bk to gy		PR						
BGUA-03	105.54	105.71			hJ	x8	90		bk		UN						
BGUA-03	105.65				J		85		bk to gy, rd		PR						
BGUA-03	105.75				J		65		bk to rd		PR						
BGUA-03	105.85				J		50		bk to rd		PR						
BGUA-03	105.87	105.95			AZ				rd to gy		PR						
BGUA-03	105.94				J		10		rd to bk		PR						
BGUA-03	105.95				J		15		rd to bk		PR						
BGUA-03	105.97				J		80		dark red to bk		PR						
BGUA-03	106.00	106.62			hJ		45		bk to dark red and pale yl/gr; x15		PR						
BGUA-03	106.04	106.28			hJ		85		bk		PR						
BGUA-03	106.19				J		50		dark red to bk		PR						
BGUA-03	106.30				J		70		dark red to bk		PR						
BGUA-03	106.48	106.57			AZ				pale gr/yl		PR						
BGUA-03	106.54				J		35		wh to gy		PR						
BGUA-03	106.65	106.73			hJ	x5	20		yl to gn		PR						
BGUA-03	106.75				hJ		65		yl to gn		PR						
BGUA-03	106.78	106.88			hJ	x6	55		gy to yl, rd to bk		PR						
BGUA-03	106.85	106.95			CO		60				PR						
BGUA-03	107.02	107.30			hJ	x10	30		gy		PR						
BGUA-03	107.04				J		45		yl to gn		PR						
BGUA-03	107.11				J		10		rd to gn		PR						
BGUA-03	107.18				J		5		rd		PR	RF					
BGUA-03	107.21				J		45		rd to gy		PR						
BGUA-03	107.22	107.32			AZ				rd		PR						
BGUA-03	107.25				J		75		gn		PR						
BGUA-03	107.31	107.47			FZ				rd to gy		PR						
BGUA-03	107.48	107.78			hJ	x10	20		rd to gy		PR						
BGUA-03	107.51				hJ		85		wh to rd		PR						
BGUA-03	107.62				J		85		rd to gy		PR						
BGUA-03	107.72				J		50		rd to gy		PR						
BGUA-03	107.75				J		80		rd		PR						
BGUA-03	107.77	107.95			hJ		25		rd to gy		PR						
BGUA-03	107.90				J		70		rd to gy		PR	RF					
BGUA-03	108.14	108.33			hJ		15		rd to bk		PR						
BGUA-03	108.25				J		20		rd to bk		PR						
BGUA-03	108.30				J		15		rd to bk		PR						
BGUA-03	108.33	108.38			hJ	x5	50		rd to bk		PR						
BGUA-03	108.41	108.60			hJ	x8	15		rd to bk		PR						
BGUA-03	108.42				J		45		wh to pink; calcite		PR						
BGUA-03	108.48				V		90		wh to pink; calcite		PR						
BGUA-03	108.54				V		90		wh to pink; calcite		PR						
BGUA-03	108.58				J		70		gn and rd		PR						
BGUA-03	108.67	109.00			hJ	x15	25		rd to bk		PR						
BGUA-03	108.83				J		35		rd to bk		PR						
BGUA-03	108.96				J		40		bk to rd		PR						
BGUA-03	109.10	109.50			J		90		rd to gy		PR						
BGUA-03	109.24	109.65			hJ		75		rd to bk and wh		PR						
BGUA-03	109.28	109.75			hJ	x12	55		rd to bk		PR						
BGUA-03	109.30				J		90		gn to pk		PR						
BGUA-03	109.55				J		80		dark/pale gy/gr and pale pink		PR						
BGUA-03	109.57	109.90			hJ	x10	35		rd to bk		PR						
BGUA-03	109.80	109.94			hJ	x10	85		rd to bk		PR						
BGUA-03	109.94				J		25		bk to pale red		PR						
BGUA-03	109.95				J		75		rd to bk		PR						
BGUA-03	110.00	110.80			hJ	x20	40		rd to bk		PR						
BGUA-03	110.04	110.76			hJ	x20	85		rd to bk		PR						
BGUA-03	110.12				J		50		rd to bk		PR						
BGUA-03	110.16				J				rd to bk		PR						
BGUA-03	110.18				J		40		rd to bk		PR						
BGUA-03	110.21				J		80		rd to bk		PR						
BGUA-03	110.22				J		80		rd to bk		PR						
BGUA-03	110.23				J		40		rd to bk		PR						
BGUA-03	110.24				J		35		rd to bk		PR						
BGUA-03	110.29				J		40		rd to bk		PR						
BGUA-03	110.32				J		25		rd to bk		PR						
BGUA-03	110.40				J		45		rd to bk		PR						
BGUA-03	110.42				J		30		rd to bk		PR						
BGUA-03	110.46				J		75		rd to bk		PR						
BGUA-03	110.52				J				rd to bk		PR						

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	110.57				J				rd to bk		PR	RF					
BGUA-03	110.64				J		65		rd to gr		PR						
BGUA-03	110.69				J		65		rd to bk		PR						
BGUA-03	110.76				J		55		rd to bk		PR						
BGUA-03	110.80	110.88			FZ				rd to bk		IR						
BGUA-03	110.90	110.96			CS				gy	SN	UN						
BGUA-03	111.00	111.55			FZ				bk to rd and yl and gr	SN	UN						
BGUA-03	111.12	111.19			CS				br to bk, rd	SN	IR						
BGUA-03	111.20				J		50		bk to rd and yl and gr	SN	PR	RF					
BGUA-03	111.35				J		45		bk	SN	PR						
BGUA-03	111.39				J		50		bk and pk	SN	PR						
BGUA-03	112.05	112.16			CS		55			SN	PR			10			
BGUA-03	112.07	112.30			hJ	x5	65		gy/gn and rd	SN	PR						
BGUA-03	112.10				J		60		gy to gn and pk	SN	PR						
BGUA-03	112.22	112.95			hJ	x15	75		bk to wh and yl	SN	PR						
BGUA-03	112.25				J		65		gy and pk	SN	PR						
BGUA-03	112.26	112.75			hJ	x10	25		rd to bk	SN	PR						
BGUA-03	112.76				hJ		15		yl/gr	SN	PR						
BGUA-03	112.91				hJ		70		wh	SN	PR						
BGUA-03	113.03				J		75		gy to pk and bk	SN	PR						
BGUA-03	113.06				J				wh; partially opened healed joint	SN	PR						
BGUA-03	113.08	113.65			hJ	x12	30		bk to rd and gr,yl	SN	PR						
BGUA-03	113.18	114.00			hJ		80		bk to rd and gr,yl	SN	PR						
BGUA-03	113.53				J		50		bk	SN	PR	RF					
BGUA-03	113.56				J		10		gy and pk	SN	PR	RF					
BGUA-03	113.58				J		65		bk to yl	SN	PR	RF					
BGUA-03	113.67				hJ		25		rd to gn and yl	SN	PR						
BGUA-03	113.74				hJ				bk and wh	SN	PR						
BGUA-03	114.05	114.58			hJ	x15	85		yl and dk rd	SN	PR						
BGUA-03	114.12				J		75		bk and wh	SN	PR						
BGUA-03	114.13				J		30		rd and gn	SN	PR	RF					
BGUA-03	114.13	114.92			hJ	x20	20		yl/gn	SN	PR						
BGUA-03	114.23				J		35		rd to wh	SN	PR	RF					
BGUA-03	114.32				V		85		rd	SN	PR						
BGUA-03	114.40				J		25		rd	SN	PR	RF					
BGUA-03	114.58				CO		60		yl	SN	PR						
BGUA-03	114.89				J		70		rd	SN	PR	RF					
BGUA-03	115.10	115.98			hJ	x15			yl/gn	SN	PR						
BGUA-03	115.16	115.94			hJ	x15	15		yl/bk	SN	PR						
BGUA-03	115.30				J		25		gn	SN	PR						
BGUA-03	115.52				hJ		70		rd	SN	PR						
BGUA-03	115.69				J		70		wh to gy	SN	PR	RF					
BGUA-03	115.71				V		20		wh; Qz	SN	PR						
BGUA-03	115.82				J		90		bk to rd	SN	PR						
BGUA-03	115.90	115.98			AZ				gn/yl	SN	PR						
BGUA-03	116.11				hJ		10		wh	SN	PR						
BGUA-03	116.14				J		85		wh	SN	PR	RF					
BGUA-03	116.41				J		10		wh	SN	PR	RF					
BGUA-03	116.42				hJ		15		wh	SN	PR						
BGUA-03	116.55				J		20		dark gr to bk	SN	PR	RF					
BGUA-03	116.74				hJ		45		wh	SN	PR						
BGUA-03	116.92				hJ		90		wh	SN	PR						
BGUA-03	117.11				hJ		20		wh	SN	PR						
BGUA-03	117.32				hJ		45		wh	SN	PR						
BGUA-03	117.46				V		80		wh	SN	PR						
BGUA-03	117.47				hJ		80		wh	SN	PR						
BGUA-03	117.55				J		30		dark gr	SN	PR	RF					
BGUA-03	117.60				V		75		wh and rd	SN	PR						
BGUA-03	117.76				hJ		75		wh	SN	PR						
BGUA-03	117.79				V		80		wh	SN	PR						
BGUA-03	117.92				J		60		gn	VN	PR	RF					
BGUA-03	117.94				J		80		gn	SN	PR	RF					
BGUA-03	117.97				hJ		70		wh	SN	PR						
BGUA-03	118.06				J		80		gn	SN	PR						
BGUA-03	118.18				J		5		gn	VN	PR						
BGUA-03	118.19				J		75		gn	SN	PR						
BGUA-03	118.29				J		40		gn	SN	PR						
BGUA-03	118.29	118.35			hJ	x3	70		wh	SN	PR						
BGUA-03	118.37				J		65		gn	VN	PR						
BGUA-03	118.42				J		75		wh to gn	SN	PR	RF					
BGUA-03	118.44				CO		65		gn	SN	PR						
BGUA-03	118.44	118.55			AZ				yl	VN	PR						
BGUA-03	118.63	118.90			hJ	x10	35		yl and rd to bk	SN	PR						
BGUA-03	118.75				hJ		65		wh	SN	PR						
BGUA-03	118.86				J		25		pk to bk	SN	PR	RF					
BGUA-03	119.06				J		75		pk to bk	VN	PR	RF					
BGUA-03	119.07				J		10		pk to bk	SN	PR	RF					
BGUA-03	119.11				V		50		wh and rd	SN	PR						
BGUA-03	119.14	120.00			hJ	x15	85		gr and wh	VN	PR						

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	119.23	119.77			hJ		10		gn rd	SN	PR						
BGUA-03	119.34				J		5		gn to pk	VN	PR	RF					
BGUA-03	119.46				J		65		pk to bk	SN	PR	RF					
BGUA-03	119.53				J		15		gy to pk	SN	PR	RF					
BGUA-03	119.76				J		75		gy	SN	PR						
BGUA-03	119.81				J		20		gr to pale pk	VN	PR						
BGUA-03	119.91				J		45		gn to gy and pale pk	SN	PR	RF					
BGUA-03	119.92				V		85		yl to gn	VN	PR						
BGUA-03	120.00	120.75			hJ	x15	85		wh to bk and yl	SN	PR						
BGUA-03	120.15	120.94			hJ	x12	15		gn to bk	SN	PR						
BGUA-03	120.21				V		5		bk to gr	SN	PR						
BGUA-03	120.35				J		45		gy and pk	SN	PR						
BGUA-03	120.59				J		40		gn to bl and pk	SN	UN	RF					
BGUA-03	120.69				J				dark gy to bk and pale pink	SN	PR	RF					
BGUA-03	120.78				J		45		dark gy to pale pink	SN	UN						
BGUA-03	120.97				J		50		dark gy to pale pink	SN	PR	RF					
BGUA-03	121.00	122.00			hJ	x20	85		wh to dark gy	SN	UN						
BGUA-03	121.11	121.67			hJ	x12	5		wh to dark gy	SN	PR						
BGUA-03	121.19				J		45		dark gy to pale pink	SN	UN	RF					
BGUA-03	121.26				J		35		dark gy to pale pink	SN	PR	RF					
BGUA-03	121.31				J		50		dark gy to pale pink	SN	PR	RF					
BGUA-03	121.35				J		70		dark gy to pale pink	SN	UN	RF					
BGUA-03	121.41	121.81			hJ		50		wh and pale yl	SN	UN						
BGUA-03	121.46				V		50		wh, pale yl and dark red	VN	UN						
BGUA-03	121.59				V		55		wh to dark gy	SN	PR						
BGUA-03	121.78				J		25		dark gy to pale pink	SN	PR	RF					
BGUA-03	121.85				J		50		dark gy to pale pink	SN	PR	RF					
BGUA-03	122.00	123.00			hJ	x25	85		wh to pale yl	SN	PR						
BGUA-03	122.10				J		55		dark gy to pale pink	SN	PR	RF					
BGUA-03	122.15	123.00			hJ	x20	20		pale yl to dark red	SN	PR						
BGUA-03	122.20				J		50		dark gy	SN	PR	RF					
BGUA-03	122.41				J		40		dark gy to pale pink	SN	PR	RF					
BGUA-03	122.65	123.00			hJ	x15	20		dk rd	VN	PR						
BGUA-03	122.76				J		25		dk gr to pl pk and rd	SN	PR	RF					
BGUA-03	122.79				J		70		dk gy to pl pk	SN	PR	RF					
BGUA-03	122.84	123.00			AZ				dark gy to pale red	SN	PR						
BGUA-03	122.87				V		15		dk rd	SN	PR						
BGUA-03	123.08	123.61			hJ	x20	65		bk to wh	SN	PR						
BGUA-03	123.26				J		35		dark gy to pale pink	SN	PR						
BGUA-03	123.28	123.44			hJ	x10	15		wh to dark gy and red	SN	PR						
BGUA-03	123.33	123.50			AZ				dark red/gy and pale yl	SN	PR						
BGUA-03	123.34				V		5		dk rd to pr	SN	PR						
BGUA-03	123.40				J		10		dark gy	SN	PR	RF					
BGUA-03	123.58				hJ		55		dark gr/gy	SN	PR	RF					
BGUA-03	123.63				J		50		dark gy to pale pink	SN	PR	RF					
BGUA-03	123.71				J		70		pale gr/pink	SN	PR	RF					
BGUA-03	123.76				J		55		dk rd	SN	PR	RF					
BGUA-03	123.85				V		85		bk to dark gy	SN	PR						
BGUA-03	123.94				J		45		pale gy to pale pink	SN	PR	RF					
BGUA-03	124.00	124.25			hJ	x5	85		dark red to bk	SN	PR						
BGUA-03	124.09	124.67			hJ	x15	20		dark red to bk	SN	PR						
BGUA-03	124.11				J		50		dark gy to pale pink	SN	PR						
BGUA-03	124.12				J		40		dark gy to pale pink	SN	PR						
BGUA-03	124.30	124.67			hJ	x10	80		bk and wh	SN	PR						
BGUA-03	124.34				J		25		dark gy to bk	SN	PR	RF					
BGUA-03	124.35	124.48															fractures caused by drilling
BGUA-03	124.48				J		45		dark gy to pale pk	SN	PR	RF					
BGUA-03	124.50				V		65		wh	SN	PR						
BGUA-03	124.65	124.73			AZ				bk and wh	SN	PR						
BGUA-03	124.66				J		50		dark gy to bk	SN	PR						
BGUA-03	124.70	124.98			hJ	x8	90		bk	SN	IR						
BGUA-03	124.80				J		15		dark gy to pale pink	SN	PR						
BGUA-03	124.82				J		60		dark gy to pale pink	SN	PR						
BGUA-03	124.87				J		20		dark gy/gr to pale dark pink/red	SN	PR						
BGUA-03	124.93				V		35		bk to dark red	SN	PR						
BGUA-03	125.00	125.23			hJ	x10	85		bk to wh	SN	PR	RF					
BGUA-03	125.05	125.22			hJ	x5	25		bk to dark red	SN	PR						
BGUA-03	125.14				J		40		dark gy to pale pink	SN	PR						
BGUA-03	125.22				CO		50		wh to light gy	VN							
BGUA-03	125.22	125.27			J	x4	65		pale gr	SN	PR						
BGUA-03	125.45	125.54			V		65		bk to wh	SN	PR						
BGUA-03	125.51				V		65		wh	SN	PR						
BGUA-03	125.55	126.00			hJ	x15	85		bk to wh	VN	PR						
BGUA-03	125.56				J		35		pale gr and dark gy to pale pink	SN	PR						
BGUA-03	125.58	126.00			hJ	x10	30		bk to pale gr	SN	PR						
BGUA-03	125.71				J		40		dark gy to pale pink	SN	PR	RF					
BGUA-03	125.78				J		30		dark gy to pale pink	VN	PR	RF					
BGUA-03	125.84				hJ		50		bk to wh	SN	PR						
BGUA-03	125.89				J		35		dark gy to pale pink	SN	PR	RF					

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Pioneer Burdekin Pumped Hydro Energy Storage: Tranche 2 – BGUA-03
Defects List

PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BGUA-03	125.96				J		40		dark gy to pale pink	VN	PR	RF					
BGUA-03	126.00	126.49			hJ	x10	82		bk to dark red and wh	SN	PR						
BGUA-03	126.00	126.54			hJ	x10	40		bk to pale gn	SN	PR						
BGUA-03	126.05				J		30		dark gy to pale pink	VN	PR	RF					
BGUA-03	126.35				J		40		dark gy to pale pink	SN	PR						
BGUA-03	126.55				hJ		45		pale gn	SN	PR						
BGUA-03	126.62				J		80		gn	SN	PR						
BGUA-03	126.70				J		55		gn	SN	PR	RF					
BGUA-03	126.75				J		75		gn	SN	PR	RF					
BGUA-03	126.80	127.00			hJ	x5	90		gn	SN	PR						
BGUA-03	127.42				J		15		gn	SN	PR						
BGUA-03	127.62	127.88			hJ		55		gn	SN	PR						
BGUA-03	127.80				J		50		gn	SN	PR						
BGUA-03	127.90				J		75		gn	SN	PR						
BGUA-03	127.95				J		60		gn/gy	SN	PR						
BGUA-03	128.05	128.30			hJ		80		bk / wh	VN	PR						
BGUA-03	128.14				J		5		gy / pk	VN	PR						
BGUA-03	128.23				V		80		wh	SN	PR						
BGUA-03	128.34				J				gn	SN	PR						
BGUA-03	128.41				J		80		gn	SN	PR						
BGUA-03	128.42				J		35		gn	VN	PR	RF					
BGUA-03	128.58				J		5		gn	SN	PR						
BGUA-03	128.74				J		10		gn	SN	PR	RF					
BGUA-03	128.96				J		70		gn	VN	PR	RF					
BGUA-03	129.00	129.75			hJ	x5	90		wh	VN	PR						
BGUA-03	129.14				J		10		gn	SN	PR	RF					
BGUA-03	129.50	129.91			hJ	x10	65		wh	VN	PR						
BGUA-03	129.79				J		10		wh/gn	VN	PR	RF					
BGUA-03	130.00	130.40			hJ		50		wh mi Qz	VN	PR						
BGUA-03	130.13	130.31			hJ		5		wh mi Qz	VN	PR						
BGUA-03	130.91	131.37			hJ		45		wh mi Qz	VN	PR						
BGUA-03	131.43	131.82			hJ		40		gn	SN	PR						
BGUA-03	131.89	131.91			V		40		wh	SN	PR			15			
BGUA-03	132.00	132.81			J		45		br / wh	SN	PR	RF					
BGUA-03	132.03	132.94			hJ		55		wh	SN	PR						
BGUA-03	132.13				J		55		wh	SN	PR	RF					
BGUA-03	132.23				CO		20		wh								
BGUA-03	132.28	132.74			hJ		35		br	SN	PR						
BGUA-03	132.45	132.90			hJ		80		br	SN	PR						
BGUA-03	132.68				J		40		br	SN	PR						
BGUA-03	132.82				J		40		br	SN	PR						
BGUA-03	132.92				J		40		br	SN	PR						
BGUA-03	133.06				J		50		br	VN	PR						
BGUA-03	133.08	133.46			hJ		45		br	VN	PR						
BGUA-03	133.13	133.39			hJ		75		br	VN	PR						
BGUA-03	133.16				J		35		br	VN	PR						
BGUA-03	133.24				J		35		br	VN	PR						
BGUA-03	133.27				J		45		br	VN	PR						
BGUA-03	133.36				J		25		br	VN	PR						
BGUA-03	133.41				J		30		br	VN	PR						
BGUA-03	133.45				J		50		br	VN	PR						
BGUA-03	133.70				J		60		br	VN	PR						
BGUA-03	133.95	134.40			hJ		45		br	VN	PR						
BGUA-03	134.28				J		45		gn	VN	PR						
BGUA-03	134.52	134.61			hJ					VN	PR	SM					
BGUA-03	134.53	134.84			hJ		30		gn, br	SN	PR						
BGUA-03	134.84				J		55			SN	PR						
BGUA-03	134.98				hJ		5			SN	PR						
BGUA-03	135.06	135.97			hJ		70		gn	SN	PR						
BGUA-03	135.11	135.84			hJ		85		gn	VN	PR						
BGUA-03	135.19				J		45		gn	VN	PR						
BGUA-03	135.26				J		45		gn	VN	PR						
BGUA-03	135.40				J		50		gn	VN	PR						
BGUA-03	135.47				J		45		gn	VN	PR						
BGUA-03	135.62	135.80			SZ		35				PR						
BGUA-03	135.75				J		80		rd to gn	VN	PR						
BGUA-03	135.92				J		45		rd to gn	VN	PR						
BGUA-03	135.93	135.98			hJ		25		Qz	VN	PR						

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PointID : BGUA-03 Depth Range: 0.00 - 4.00 m

PointID : BGUA-03 Depth Range: 4.00 - 8.00 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 1/17

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PointID : BGUA-03 Depth Range: 8.00 - 11.95 m

PointID : BGUA-03 Depth Range: 11.95 - 15.90 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 2/17

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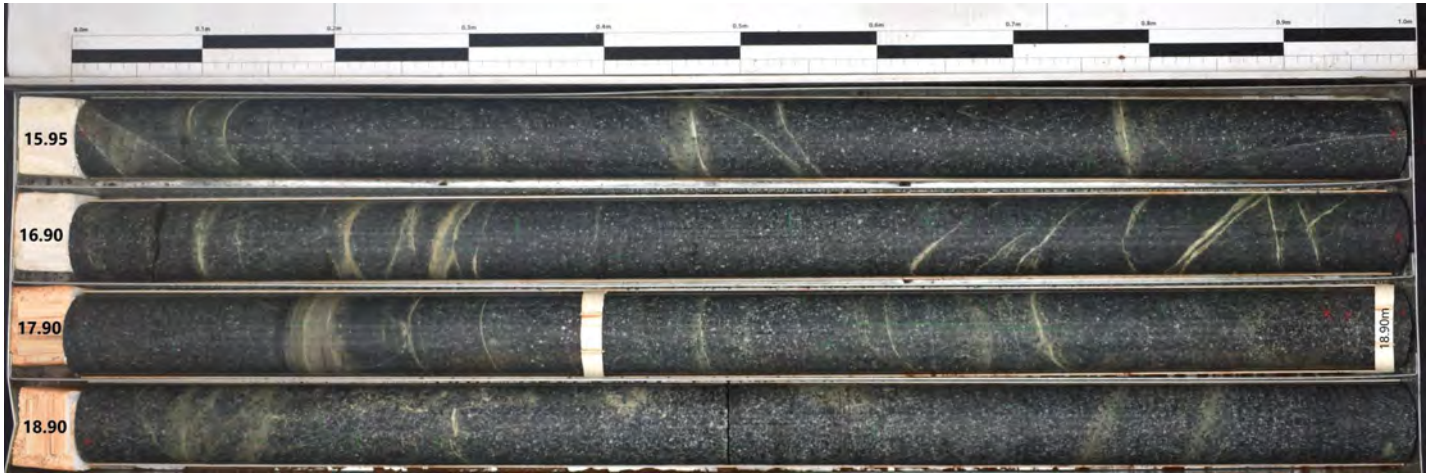
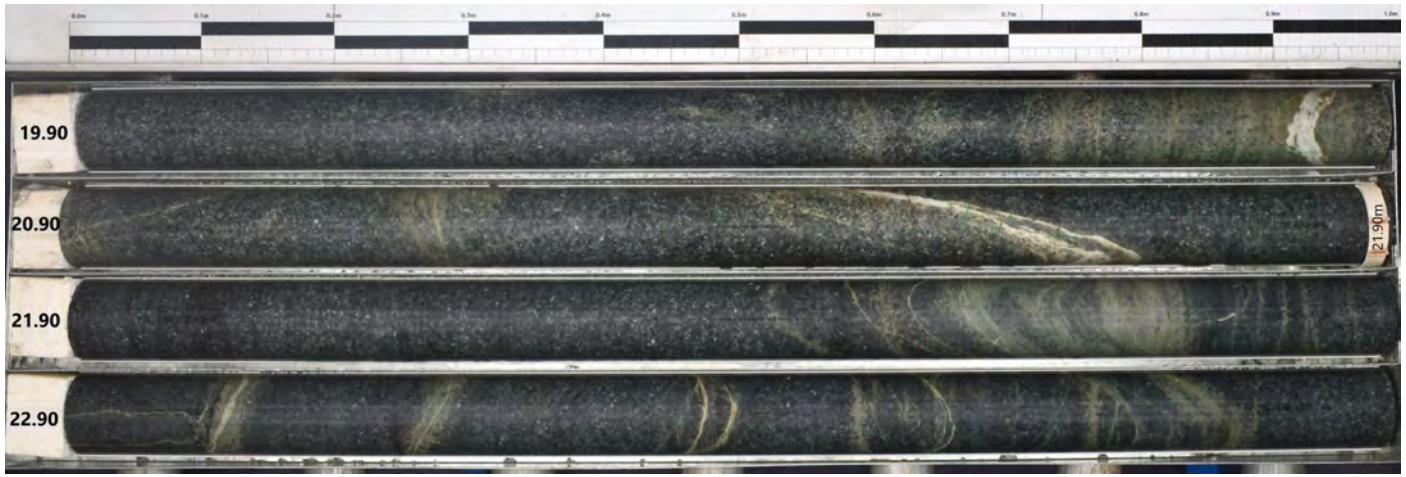


PointID : BGUA-03 Depth Range: 15.90 - 19.90 m



PointID : BGUA-03 Depth Range: 19.90 - 23.90 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 3/17

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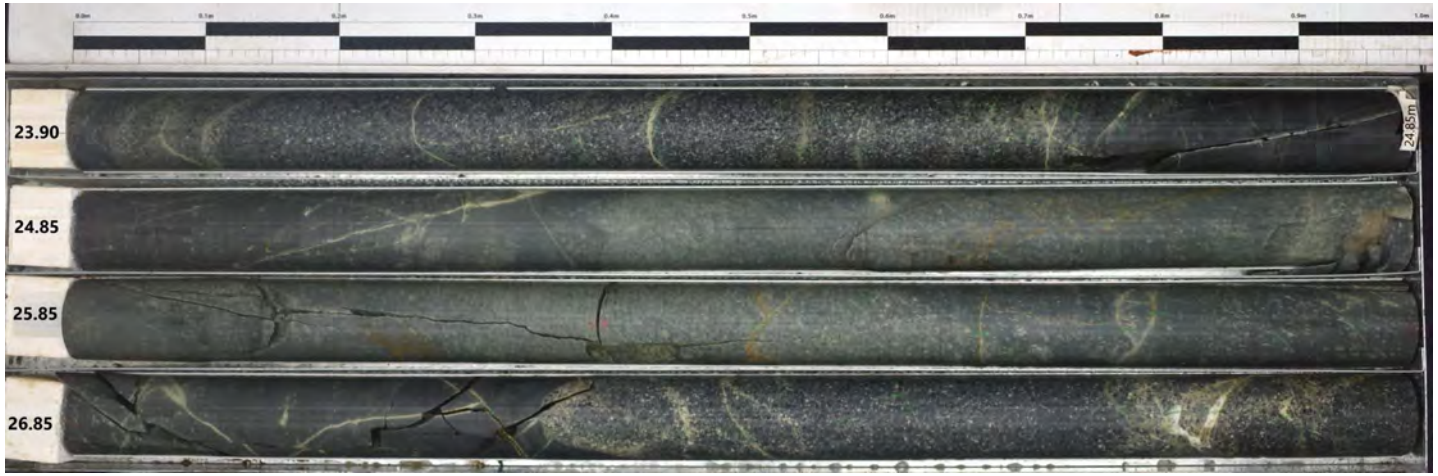
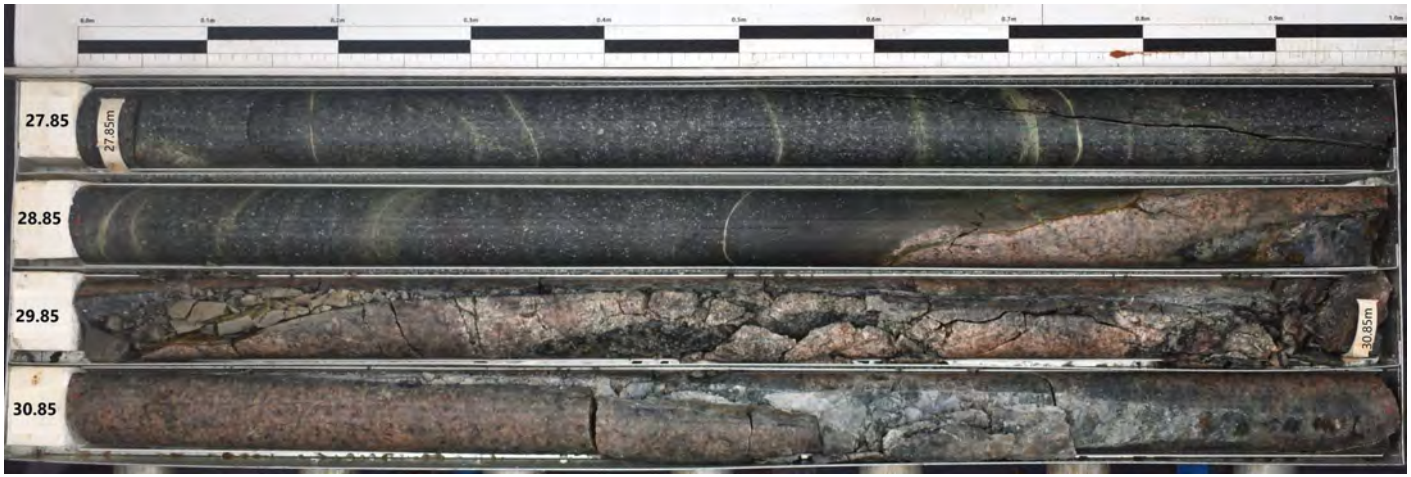


PointID : BGUA-03 Depth Range: 23.90 - 27.85 m



PointID : BGUA-03 Depth Range: 27.85 - 31.85 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 4/17

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PointID : BGUA-03 Depth Range: 31.85 - 35.85 m

PointID : BGUA-03 Depth Range: 35.85 - 39.85 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 5/17

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PointID : BGUA-03 Depth Range: 39.85 - 43.85 m

PointID : BGUA-03 Depth Range: 43.85 - 47.85 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 6/17

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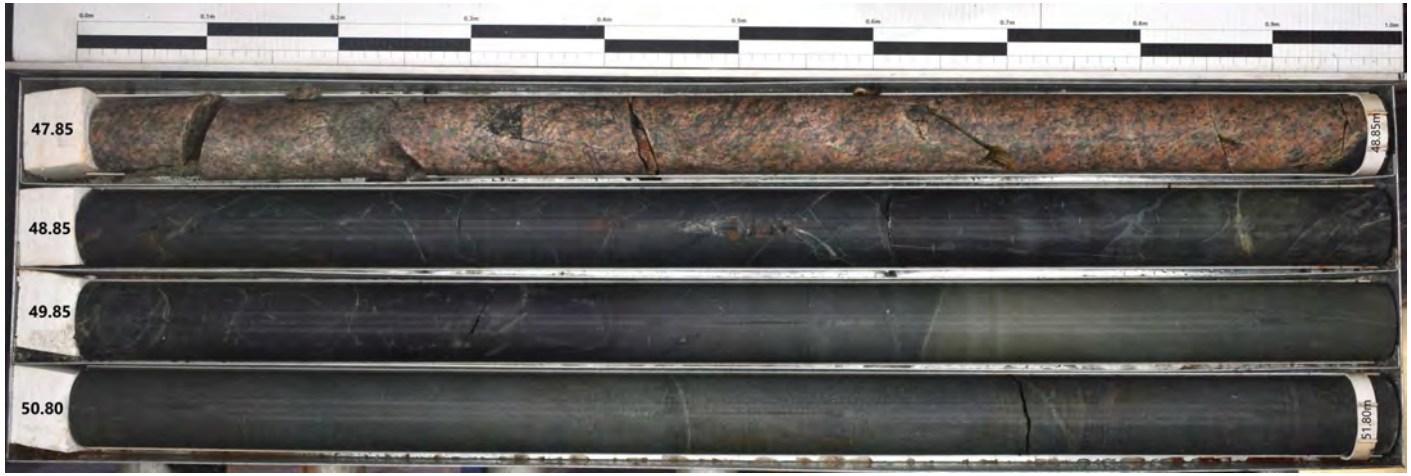

PointID : BGUA-03 Depth Range: 47.85 - 51.80 m

PointID : BGUA-03 Depth Range: 51.80 - 55.80 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 7/17

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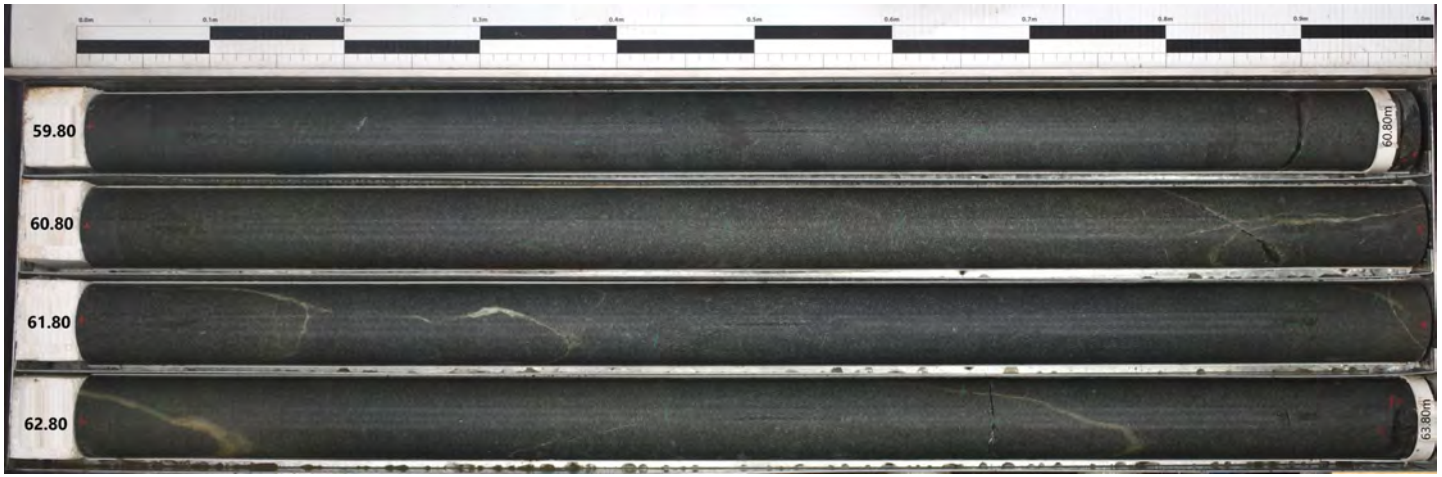
PointID : BGUA-03 Depth Range: 55.80 - 59.80 m



PointID : BGUA-03 Depth Range: 59.80 - 63.80 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 8/17

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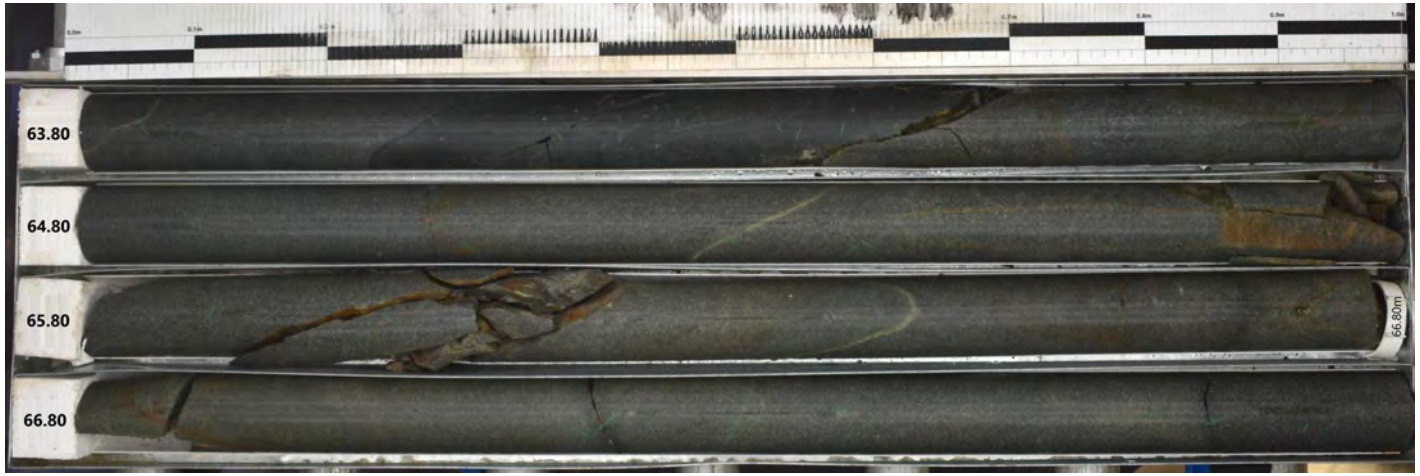

PointID : BGUA-03 Depth Range: 63.80 - 67.80 m

PointID : BGUA-03 Depth Range: 67.80 - 71.80 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 9/17

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PointID : BGUA-03 Depth Range: 71.80 - 75.80 m

PointID : BGUA-03 Depth Range: 75.80 - 79.80 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 10/17

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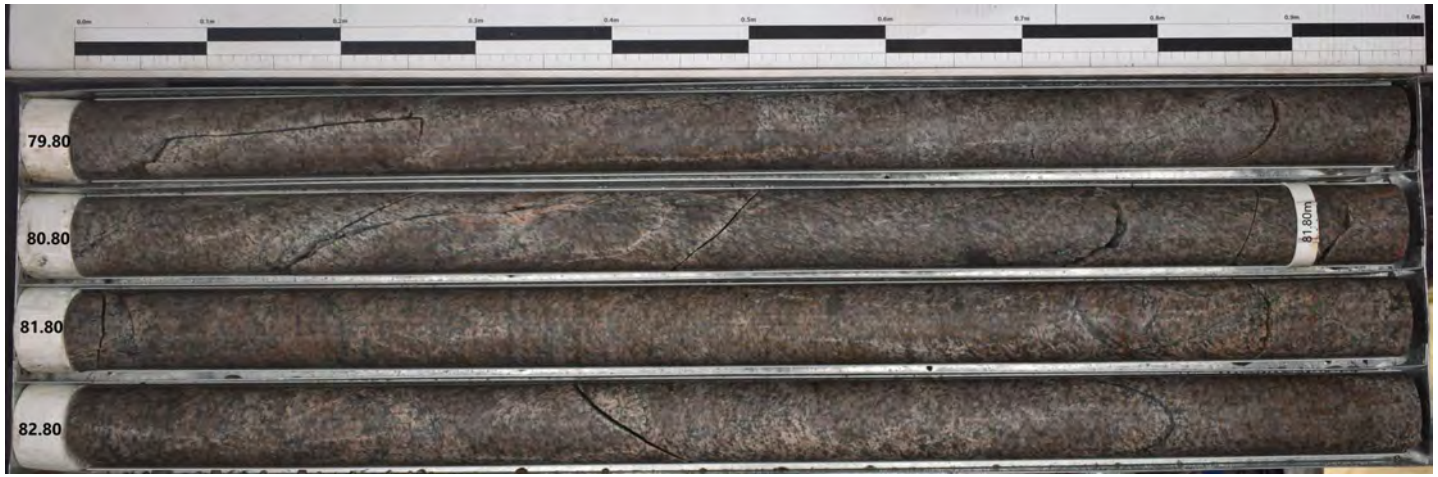

PointID : BGUA-03 Depth Range: 79.80 - 83.80 m

PointID : BGUA-03 Depth Range: 83.80 - 87.80 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 11/17

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PointID : BGUA-03 Depth Range: 87.80 - 91.80 m

PointID : BGUA-03 Depth Range: 91.80 - 95.80 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 12/17

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PointID : BGUA-03 Depth Range: 95.80 - 99.80 m

PointID : BGUA-03 Depth Range: 99.80 - 103.80 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 13/17

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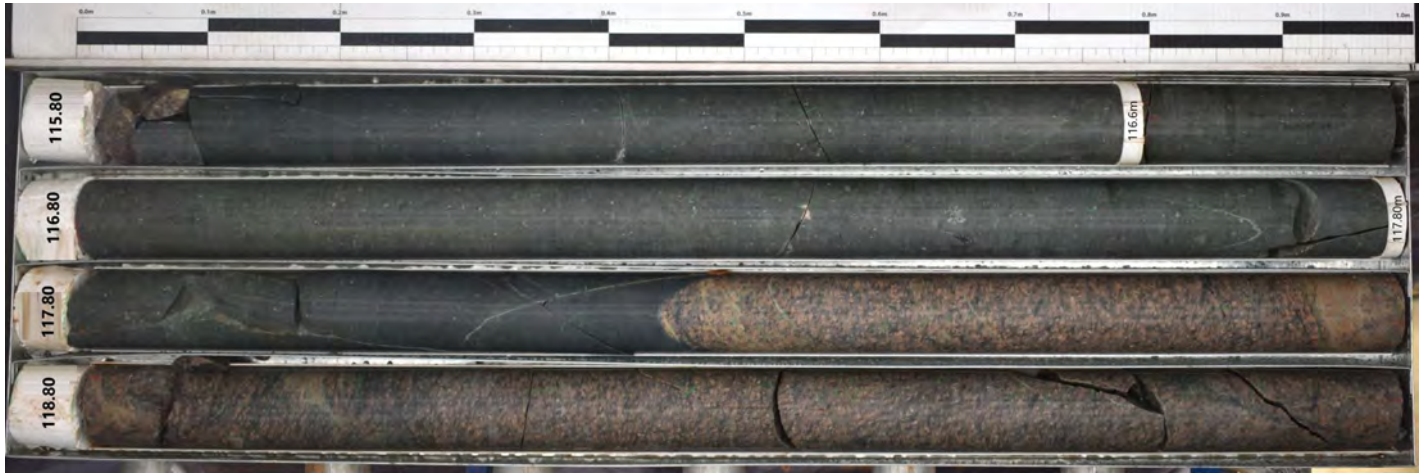
PointID : BGUA-03 Depth Range: 103.80 - 107.80 m

PointID : BGUA-03 Depth Range: 107.80 - 111.80 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 14/17

PointID : BGUA-03 Depth Range: 111.80 - 115.80 m



PointID : BGUA-03 Depth Range: 115.80 - 119.80 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 15/17

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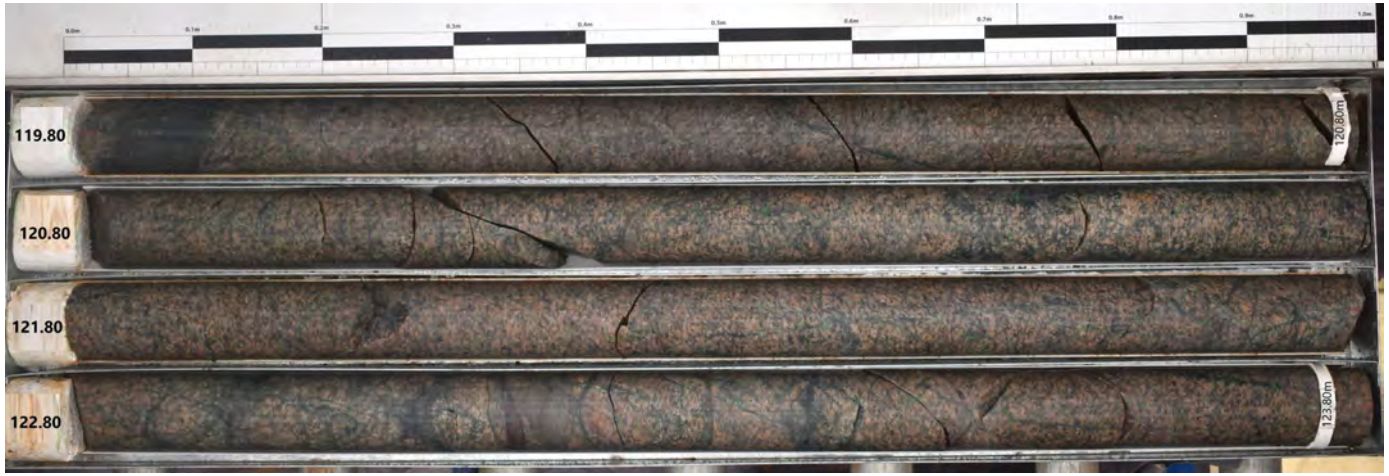

PointID : BGUA-03 Depth Range: 119.80 - 123.80 m

PointID : BGUA-03 Depth Range: 123.80 - 127.80 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 16/17

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PointID : BGUA-03 Depth Range: 127.80 - 131.80 m

PointID : BGUA-03 Depth Range: 131.80 - 135.80 m

wsp	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core photo - BGUA-03	DRAWN RC	DATE 21/11/2024
		CHECKED GEM	DATE 4/12/2024
		SCALE Not To Scale	A4
		PROJECT No PS138693	FIGURE No 17/17

BGUA-03 Structural Logs

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WSP Australia Pty Limited
Level 12, 900 Ann Street
Fortitude Valley
QLD 4006
Australia

GEOPHYSICAL RECORD OF BOREHOLE: BGUA-03

PROJECT:	Pioneer-Burdekin PHES	JOB #	PS138693
CLIENT:	Queensland Hydro	DATE:	18/11/2024

BOREHOLE DETAILS

LOCATION:	Upper Reservoir A	BH DEPTH:	136 m
EASTING:	657828.08 m	BH DIAMETER:	HQ (96 mm)
NORTHING:	7667677.47 m	BH AZIMUTH:	082°
ELEVATION:	854.29 m	BH PLUNGE:	-79°
COORD SYSTEM:	MGA2020-55	CASING DEPTH:	9.10 m
LOGGING DATUM:	Ground Level	CASING TYPE:	HWT

DOCUMENT DETAILS

LOGGED BY:	JH
LOGGED DATE:	8-10/6/2024
DRAWN BY:	JH
REVIEWED BY:	GH
FILE:	BGUA-03_Struct_RevB
LOGGED DEPTH:	132.6 m

NOTES

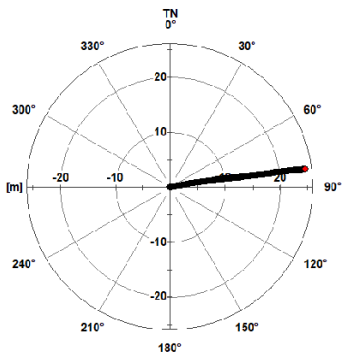
Image logs are oriented relative to borehole high side. Final structure log is oriented relative to true north using magnetic declination of 8.2° East.

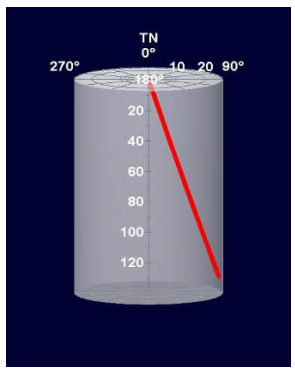
Mechanical calliper log used for structure dip corrections.

All logs zerored to ground level. Cased section assumed straight for deviation calculations.

Borehole blocked at 132.6 m. No logs collected below this point.

BOREHOLE DEVIATION

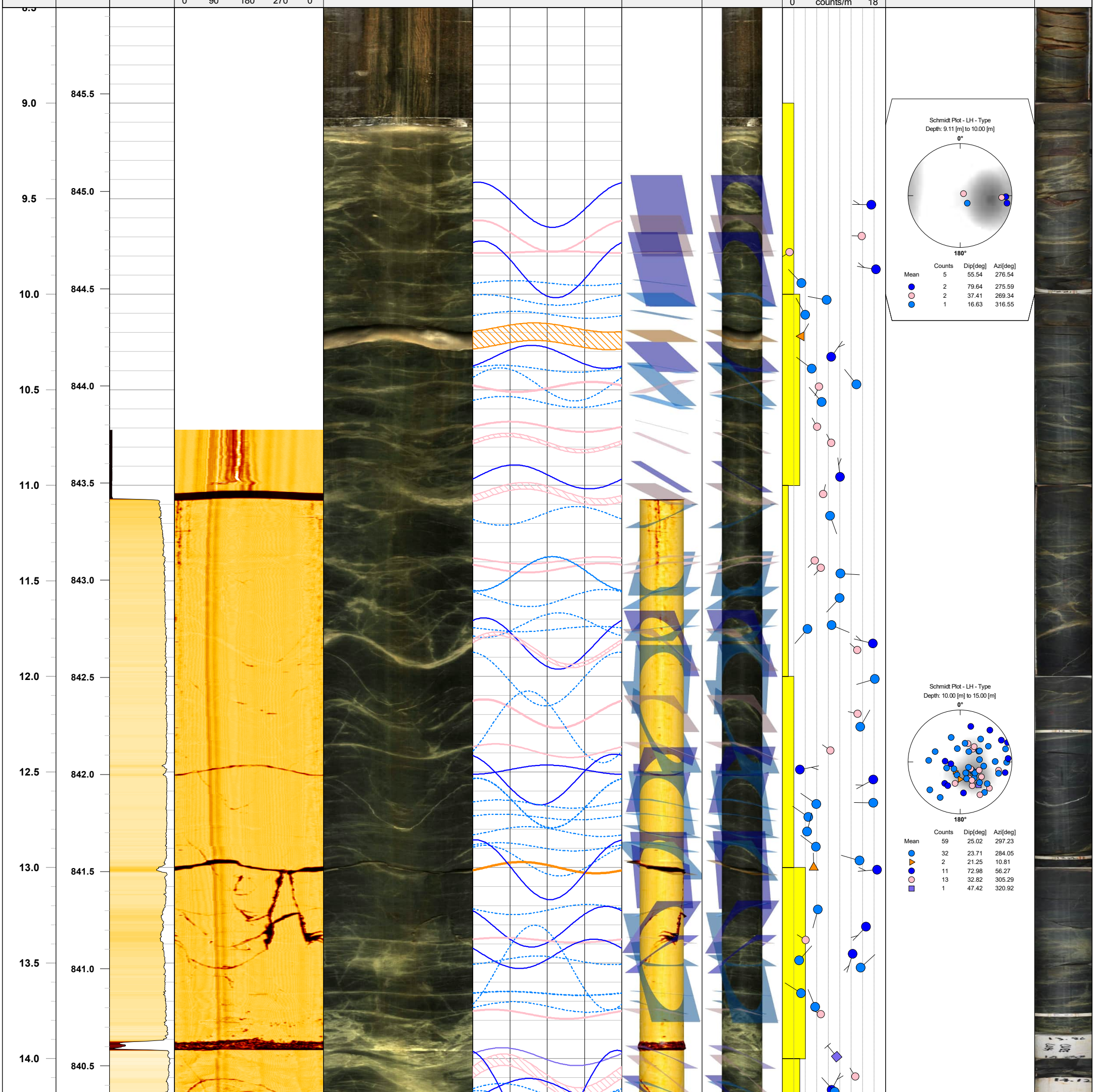




INTERPRETED STRUCTURES

Contact · Crushed Seam · Fracture Zone · Joint · Shear Seam · Sheared Surface · Shear Zone · Vein · Healed Joint

BGUA-03



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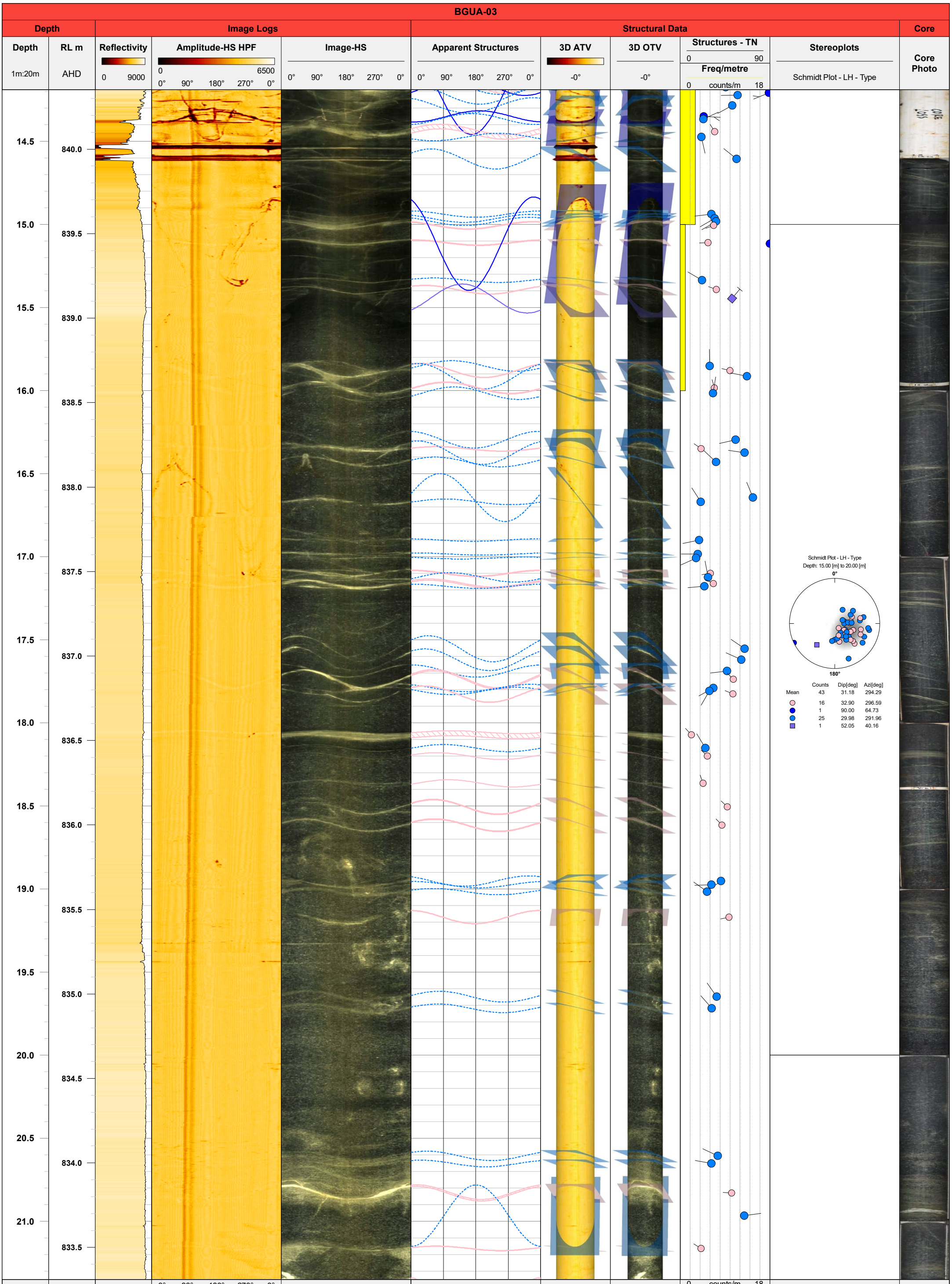

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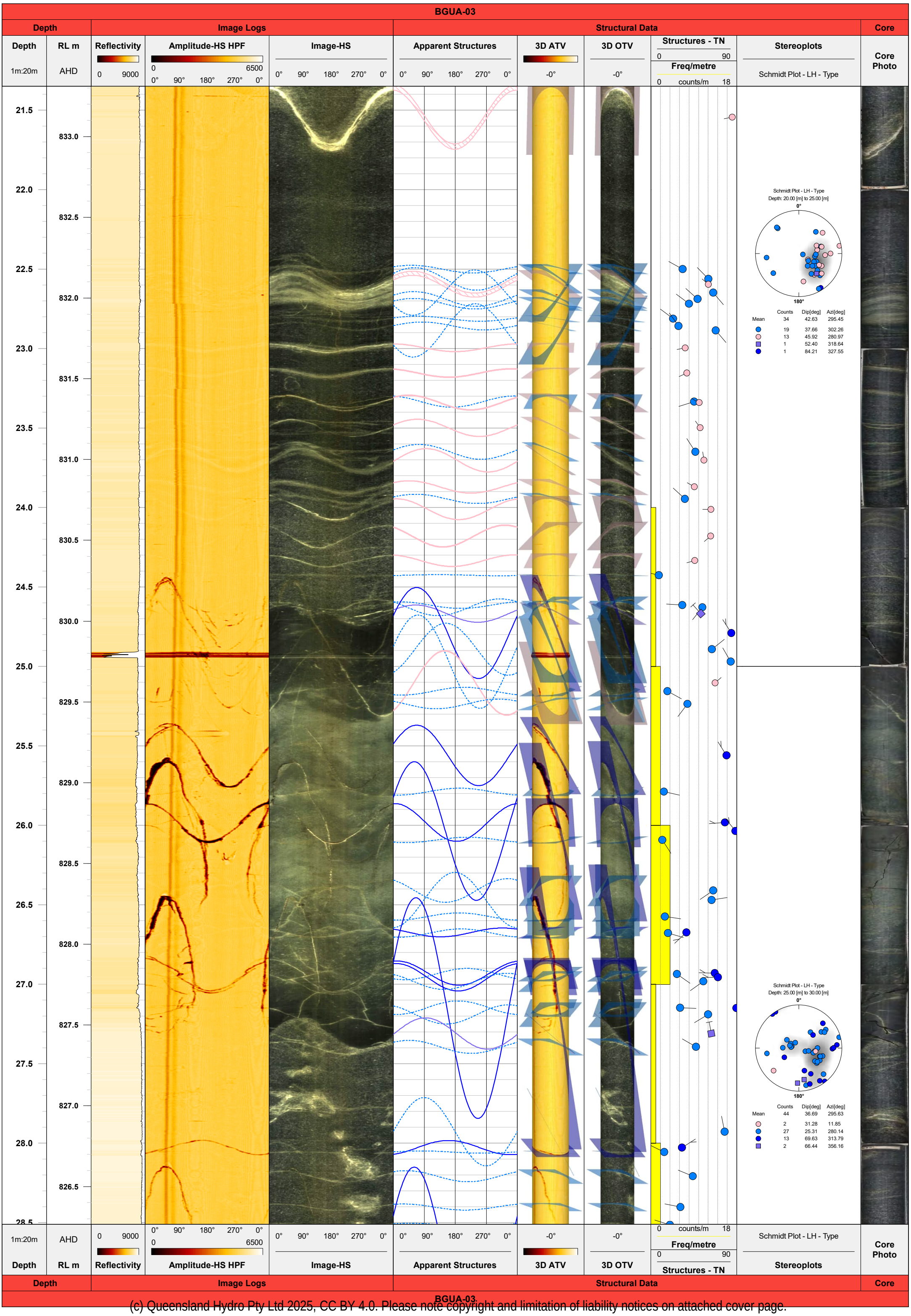

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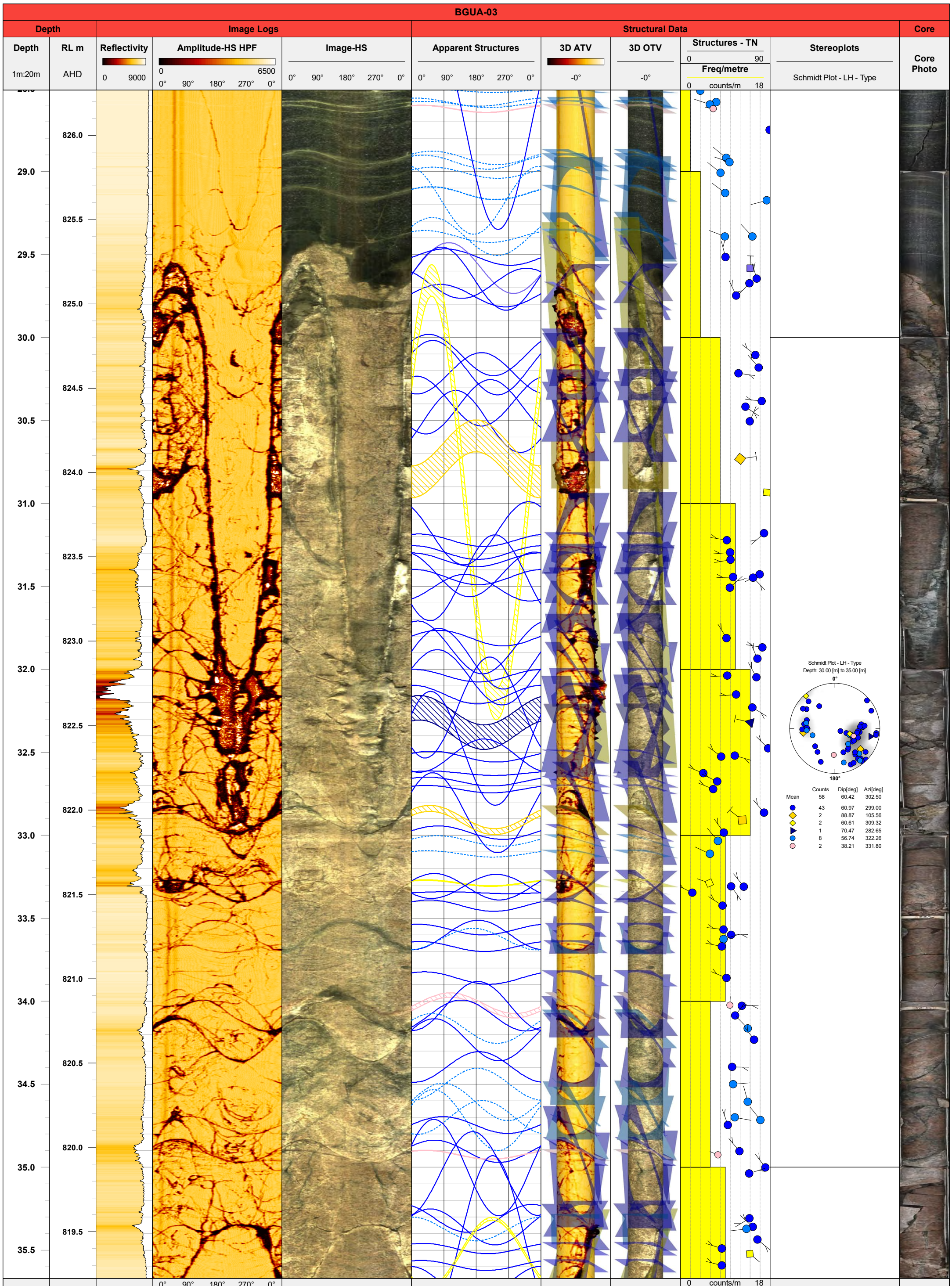

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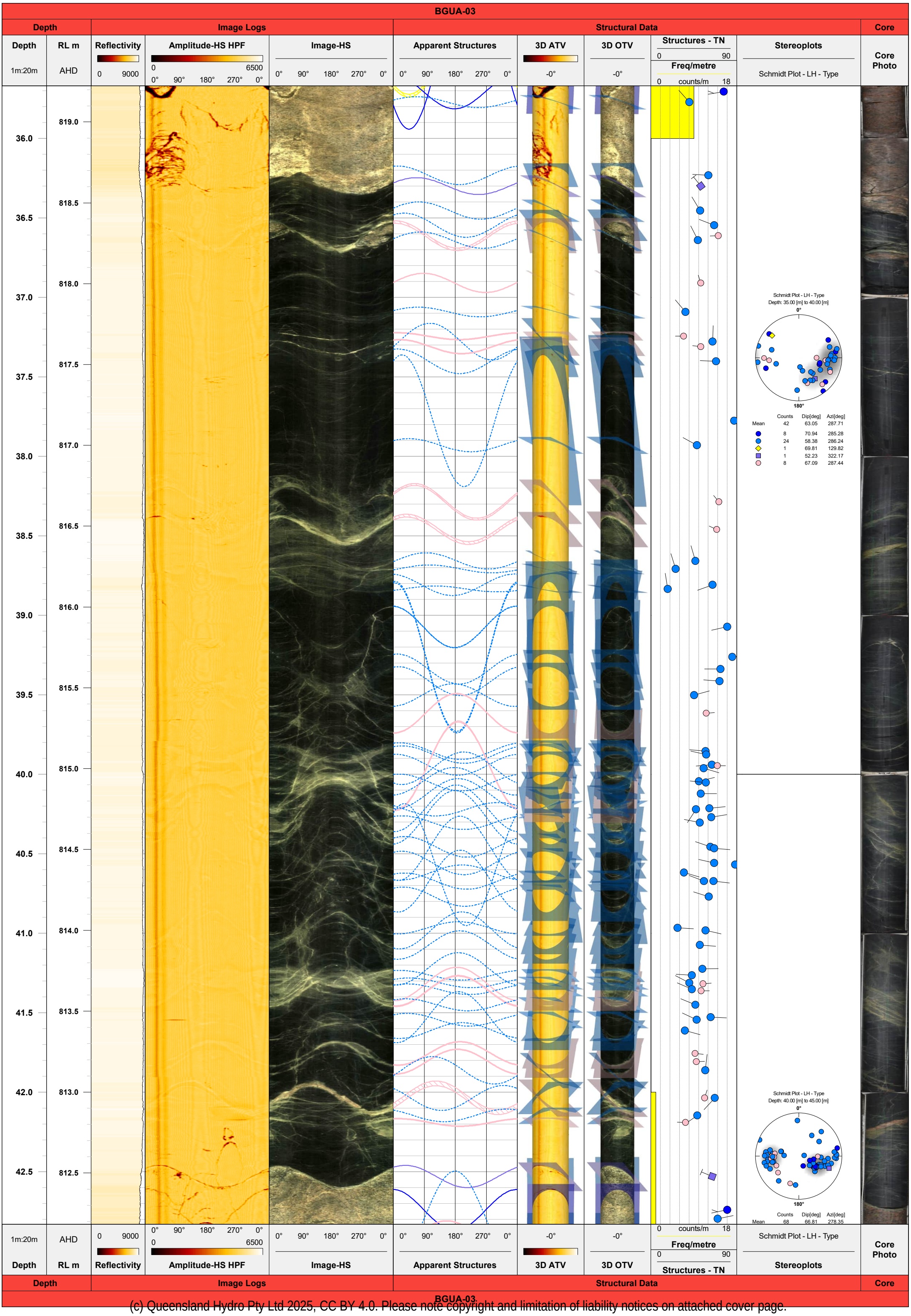

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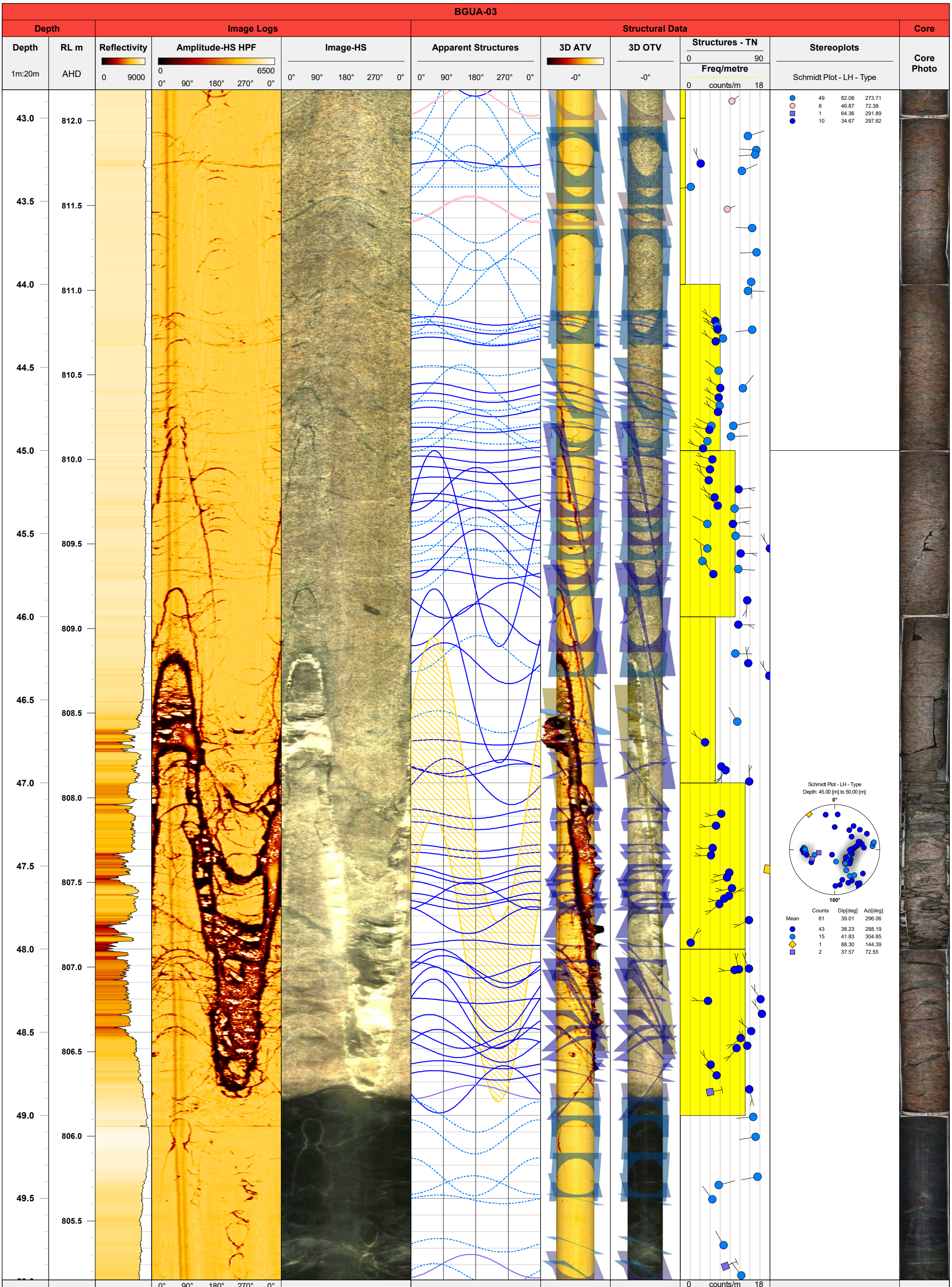

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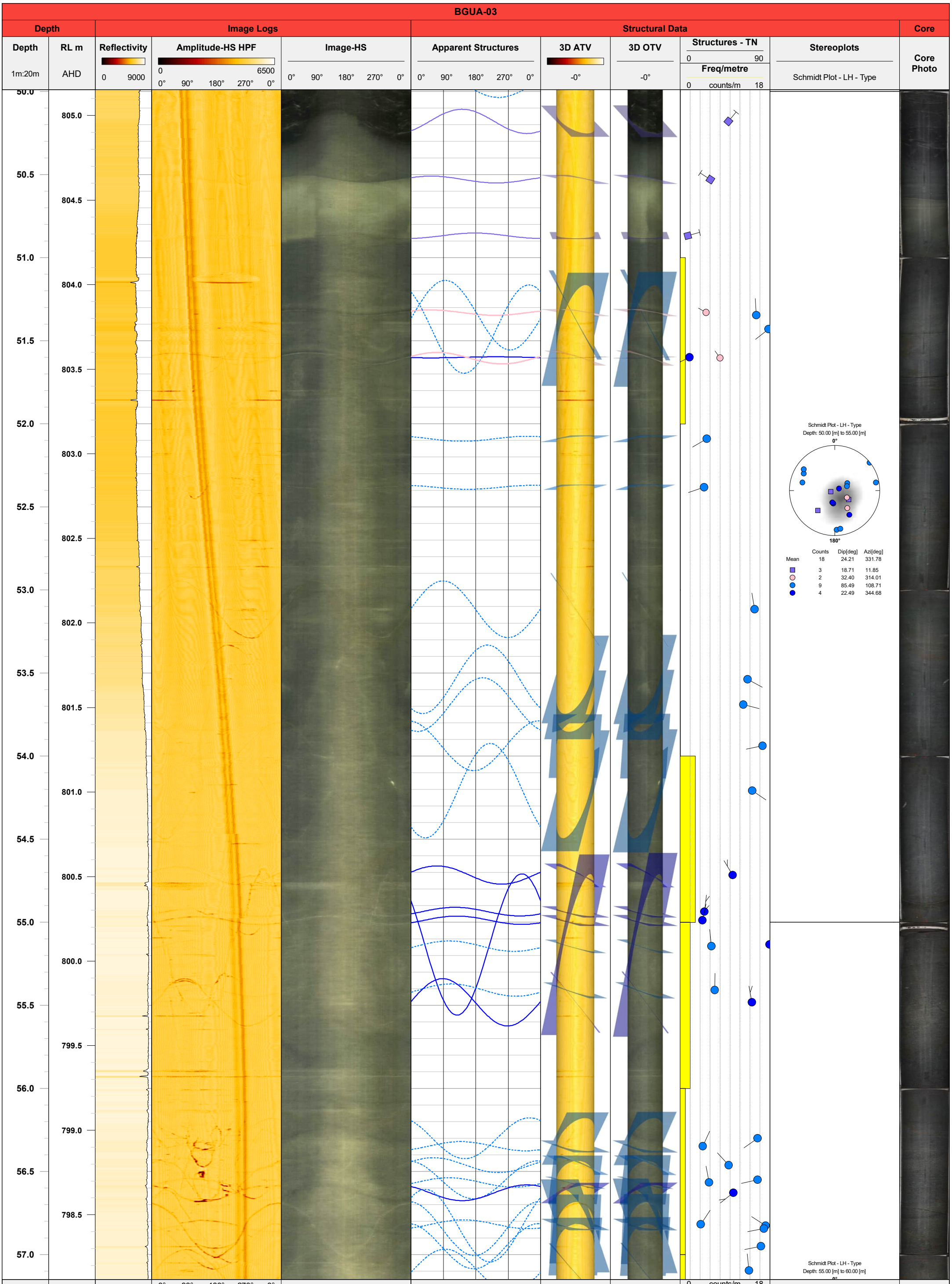

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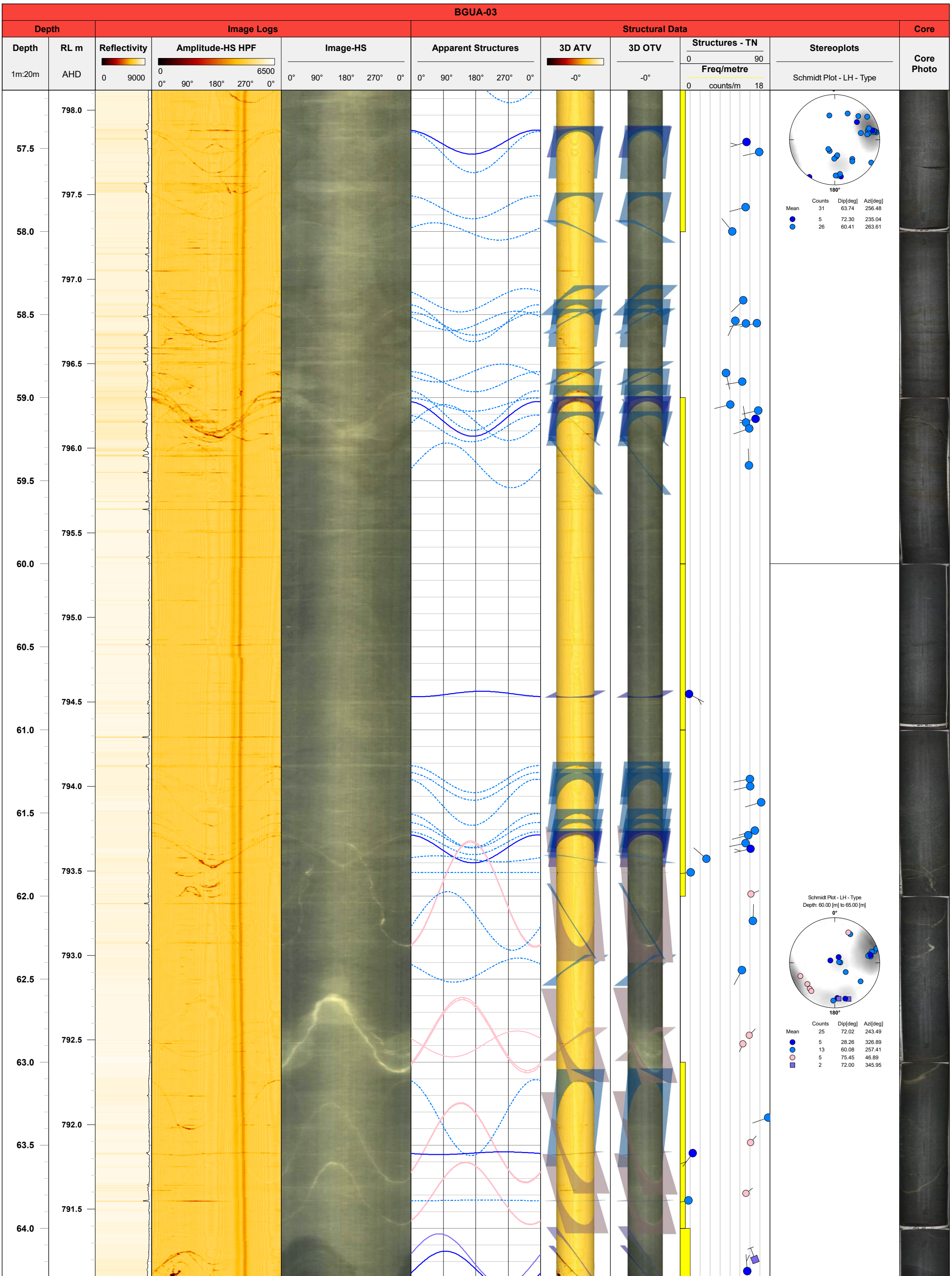

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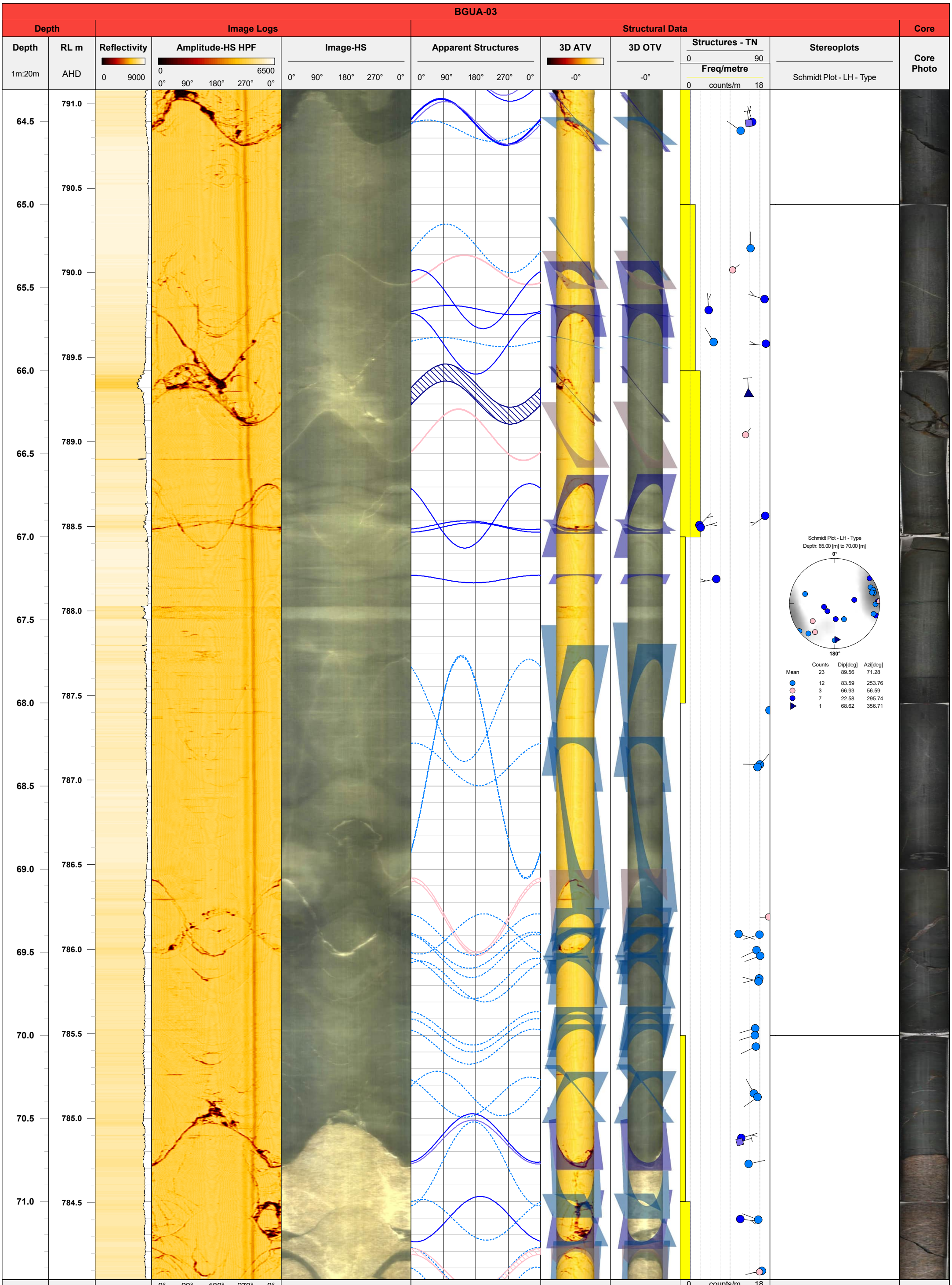

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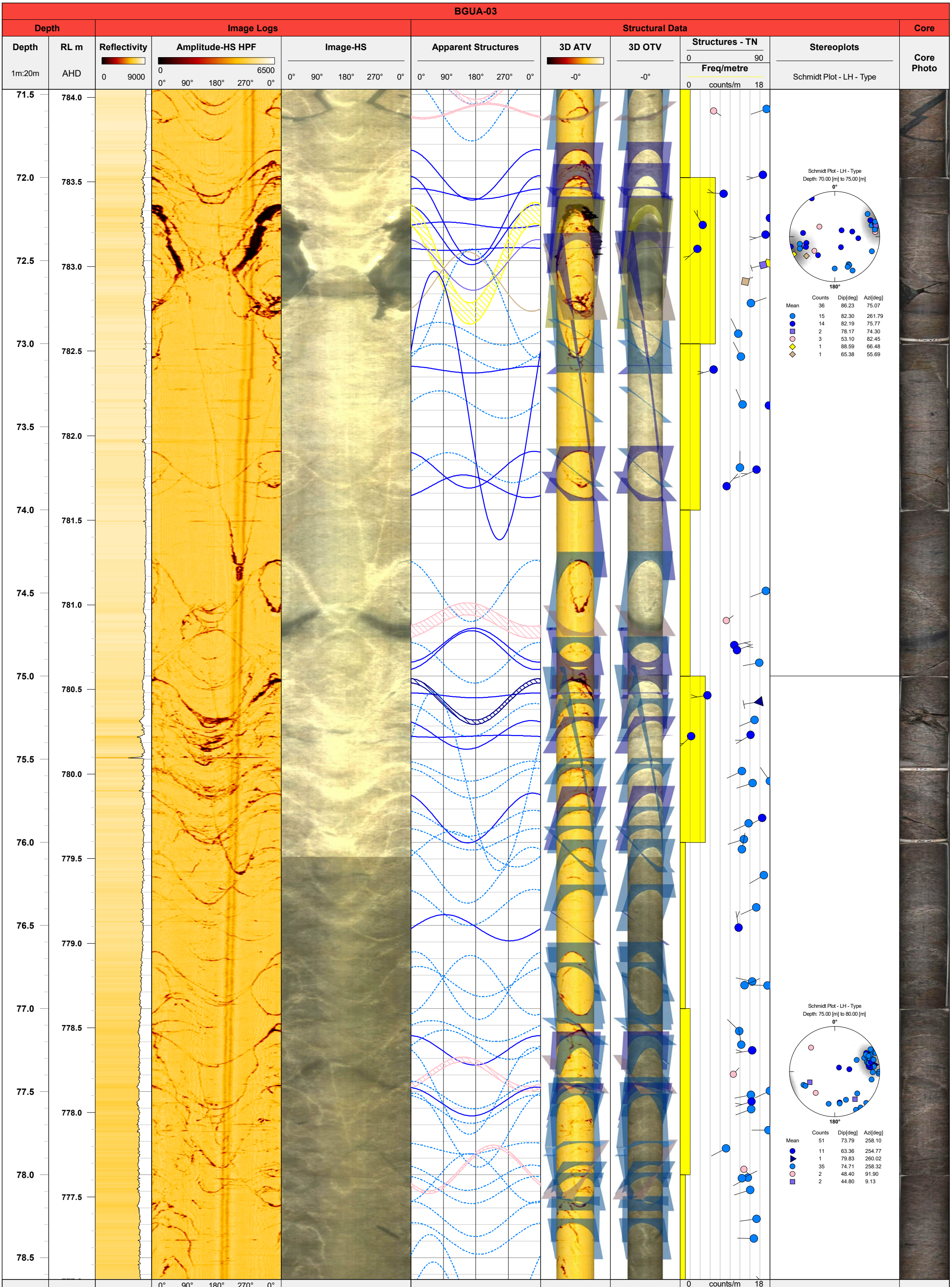

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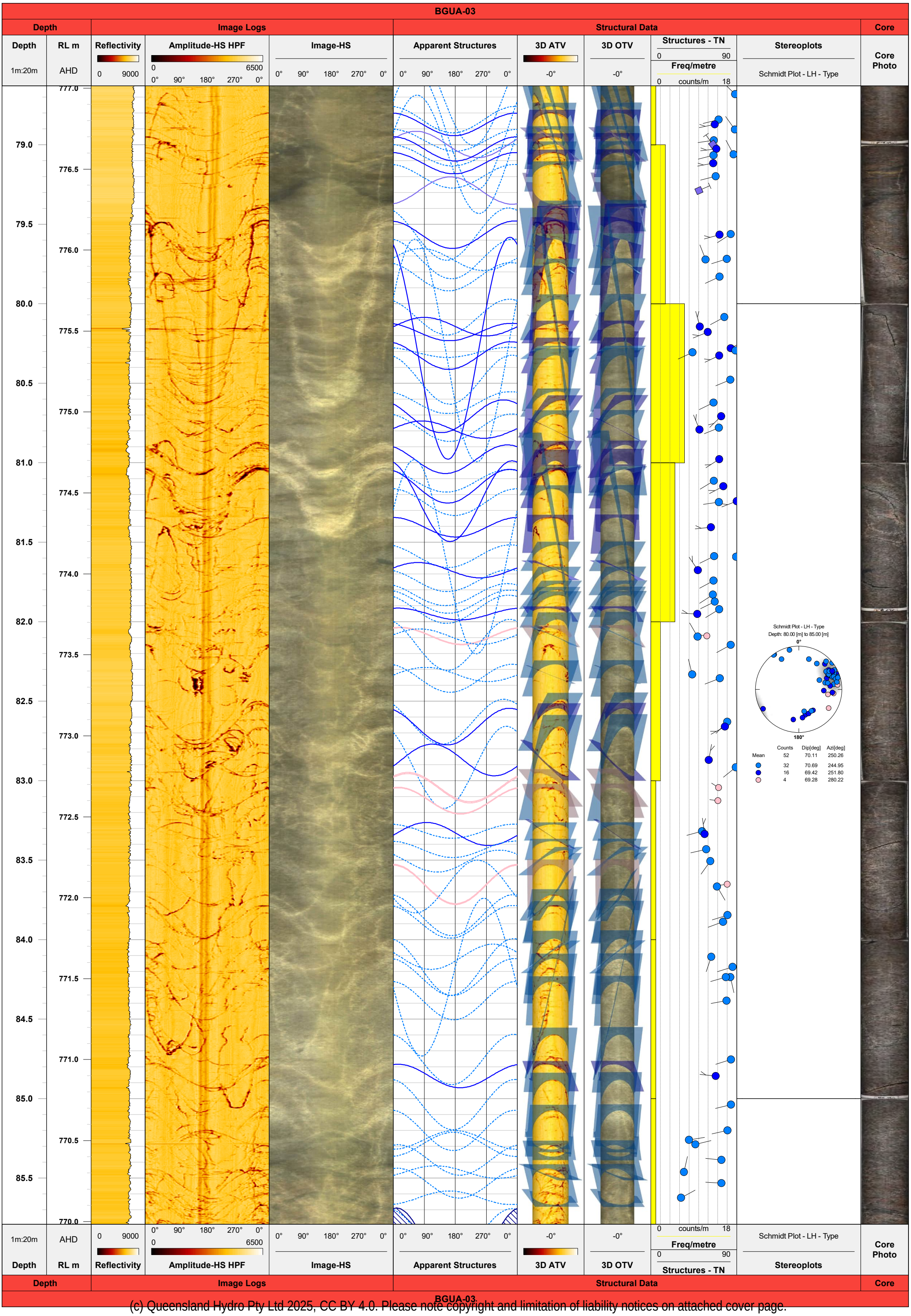

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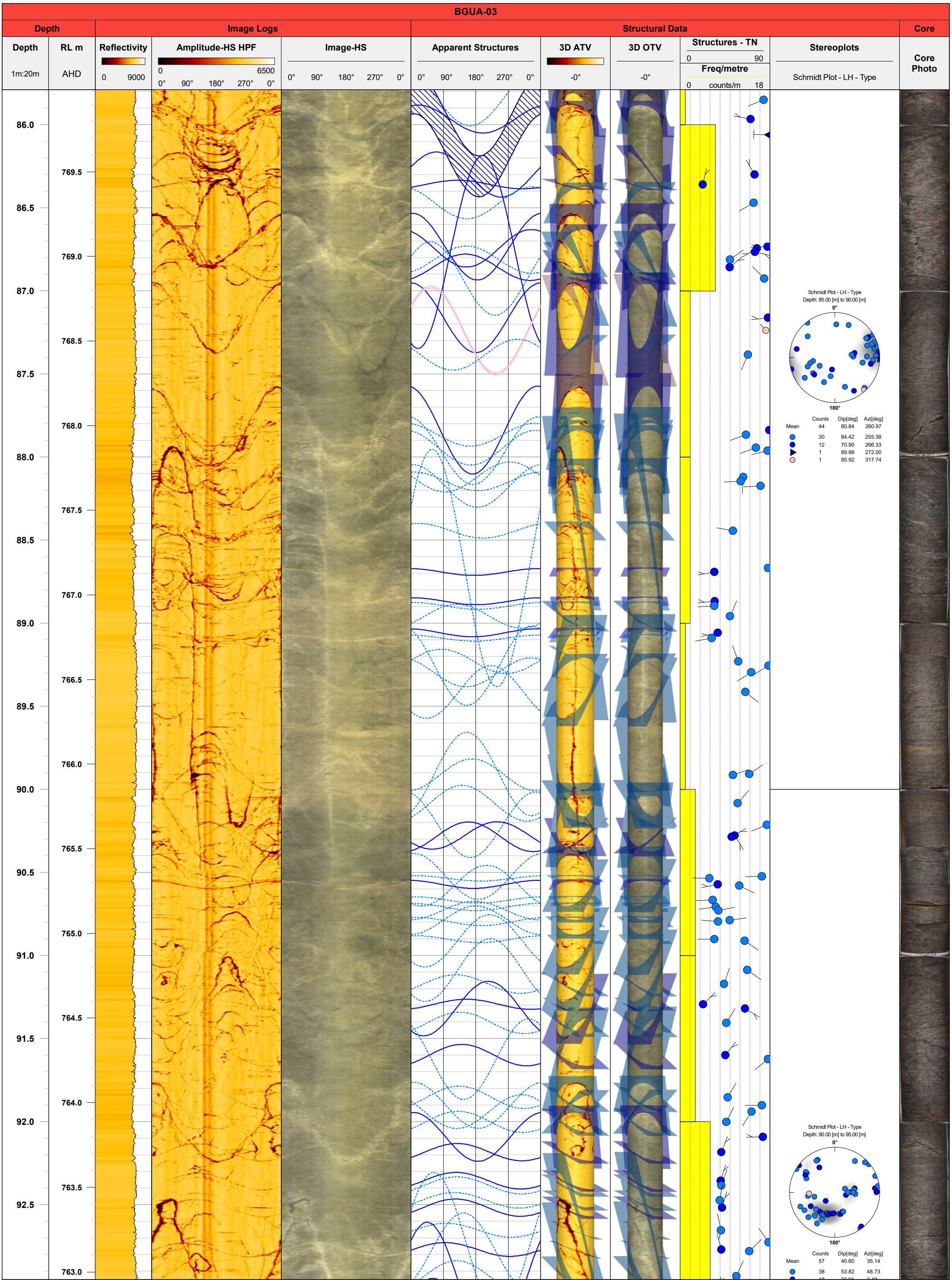

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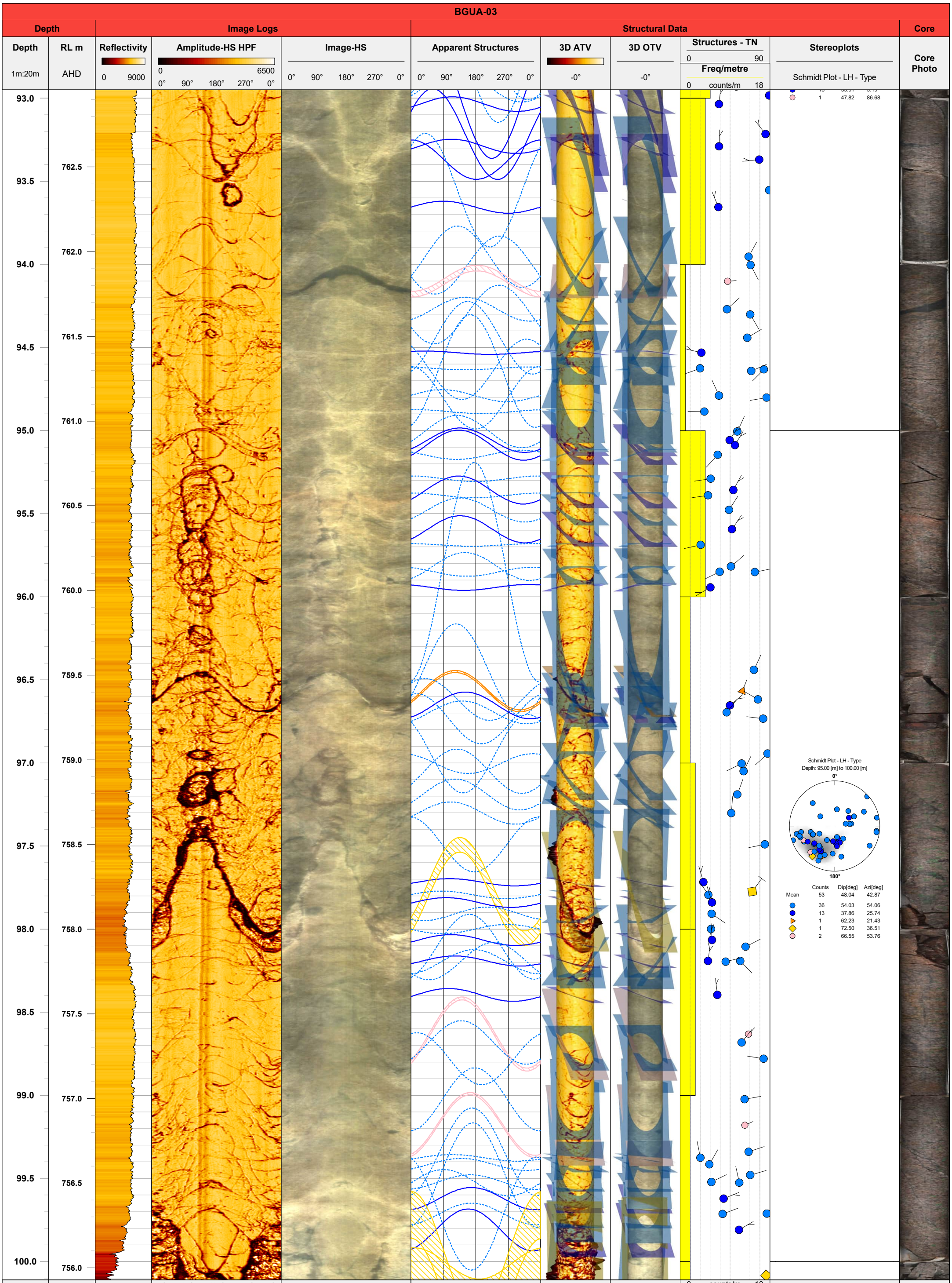

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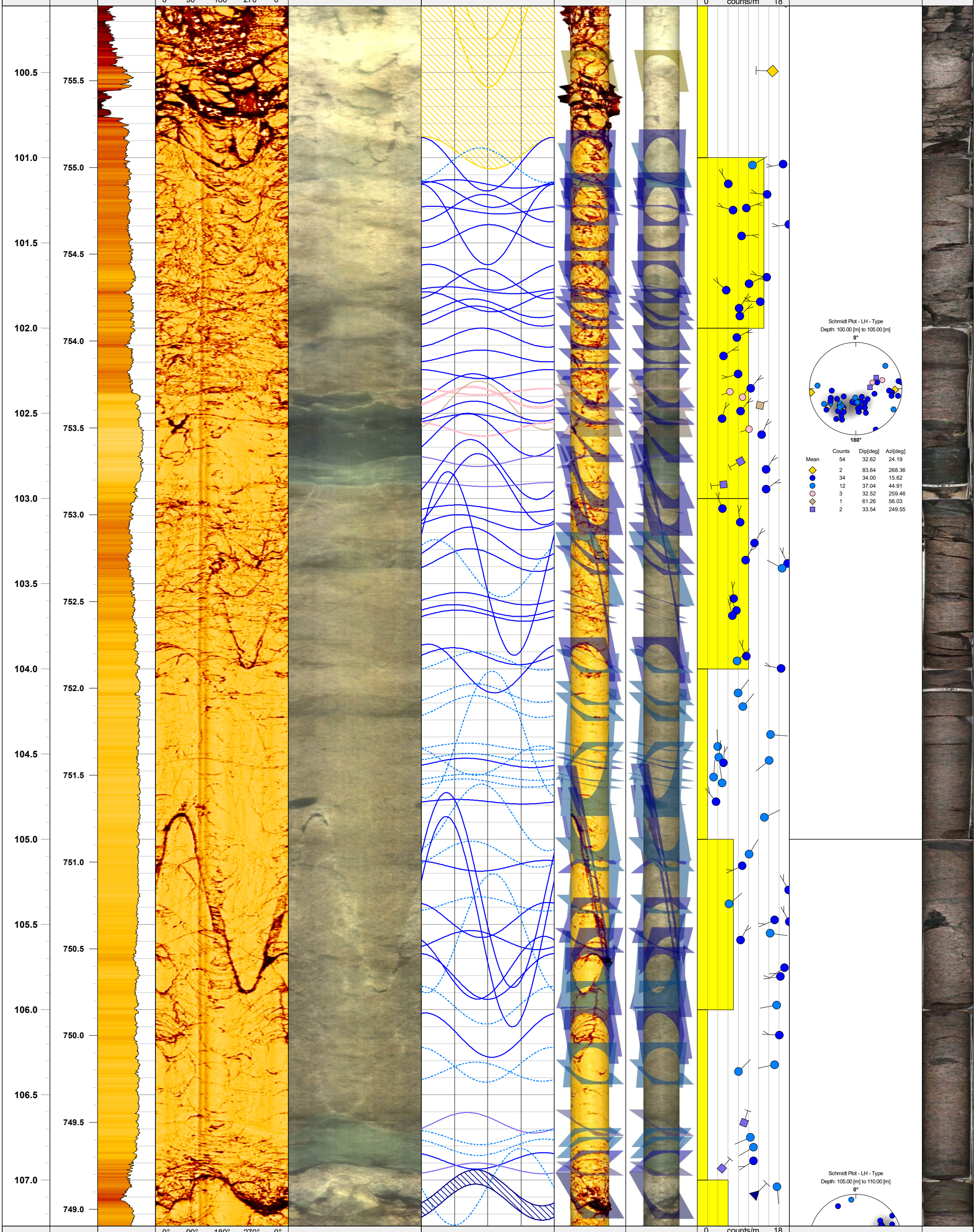
BGUA-03



BGUA-03

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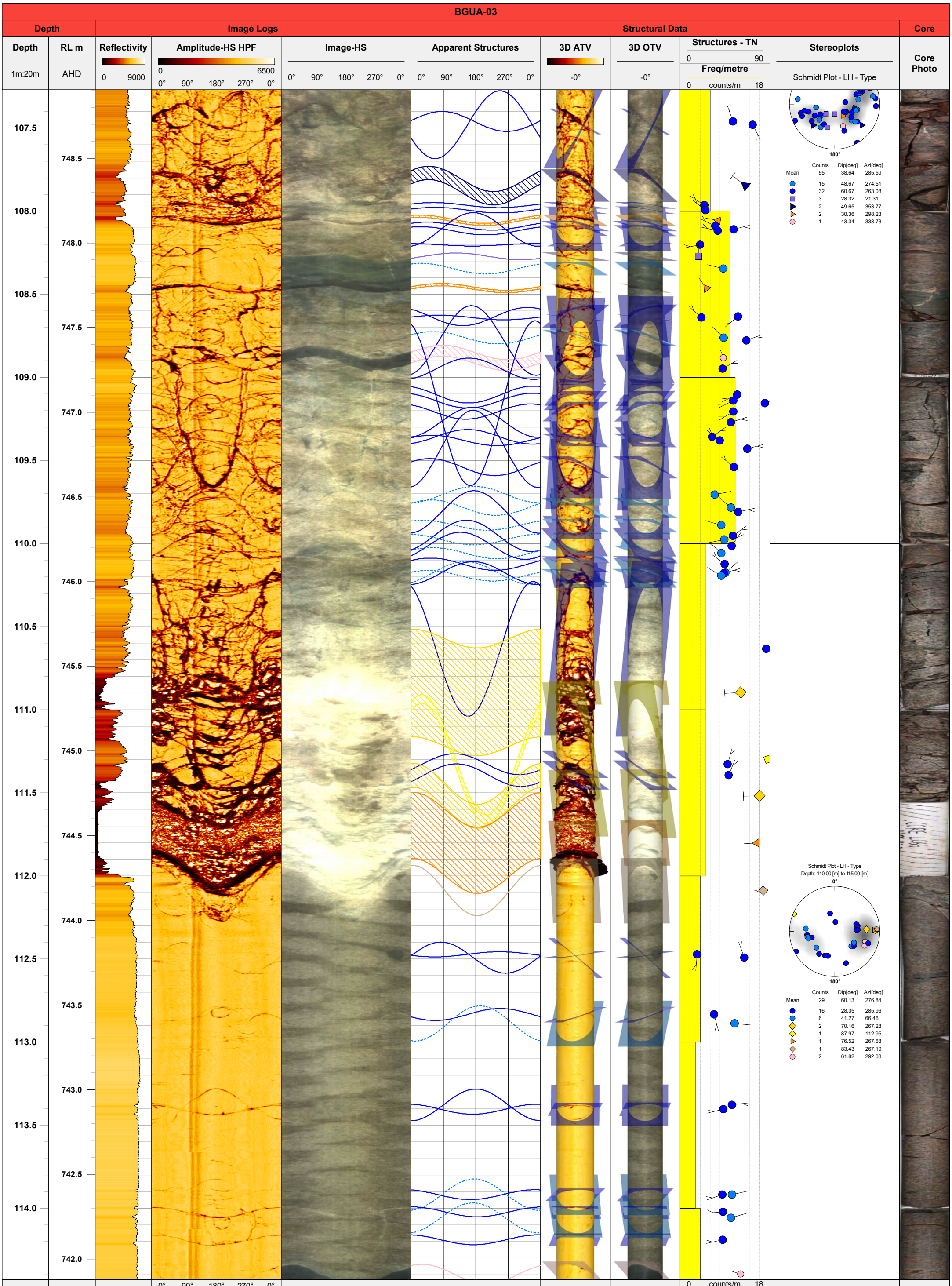

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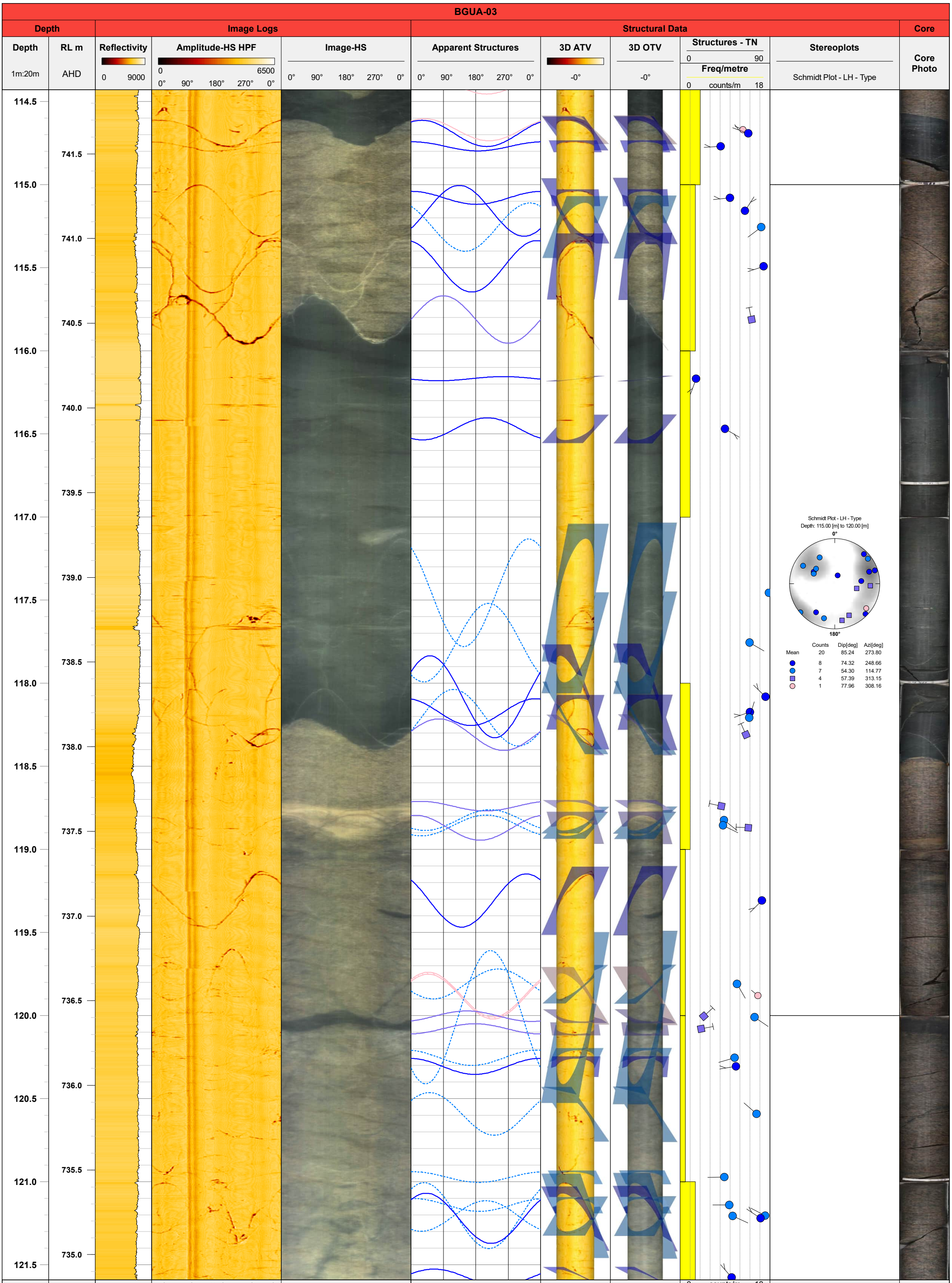

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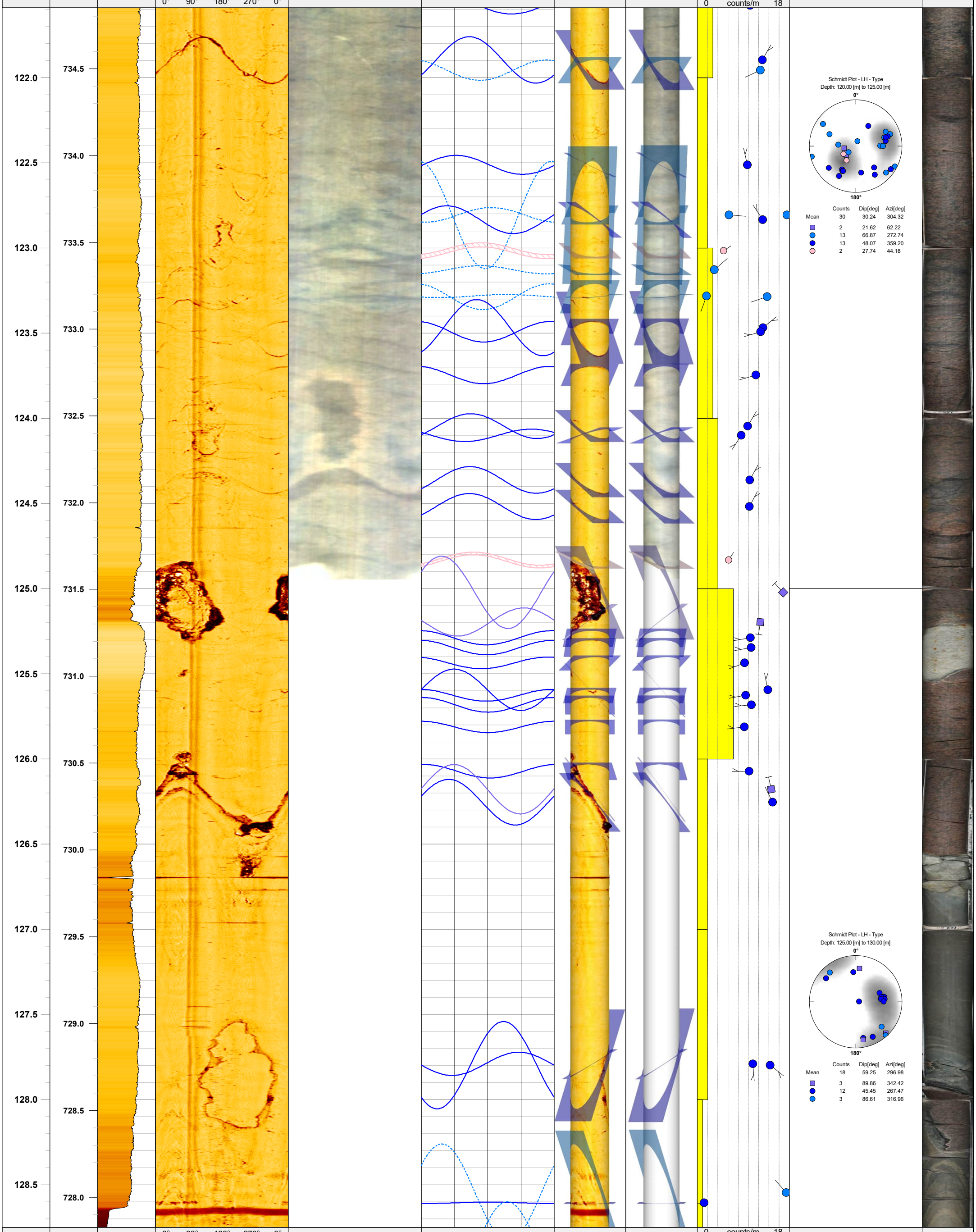

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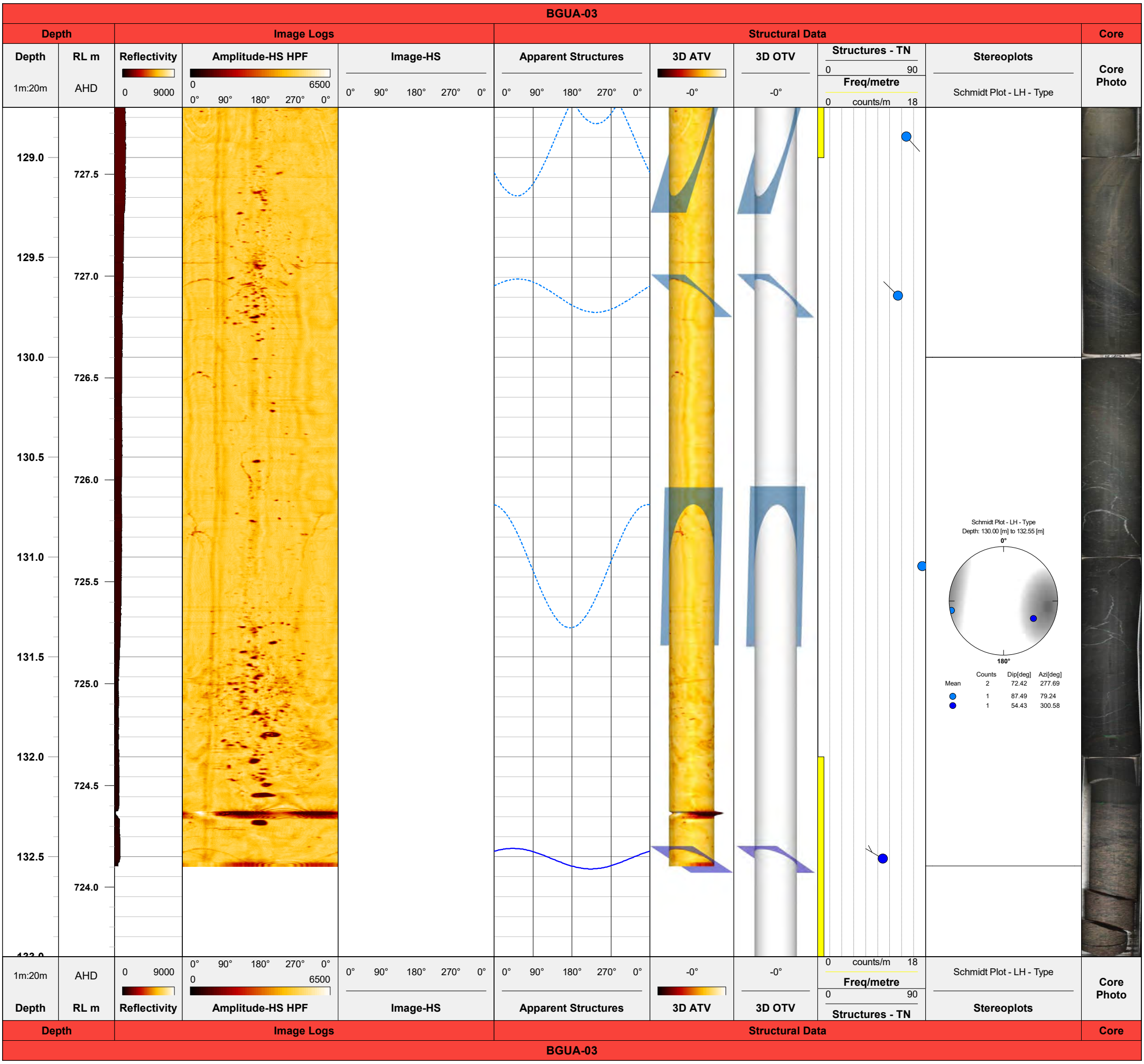

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BGUA-03 Composite Logs

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Level 12, 900 Ann Street
Fortitude Valley
QLD 4006
Australia

GEOPHYSICAL RECORD OF BOREHOLE: BGUA-03

PROJECT:	Pioneer-Burdekin PHES	JOB #	PS138693
CLIENT:	Queensland Hydro	DATE:	18/11/2024

BOREHOLE DETAILS

LOCATION:	Upper Reservoir A	BH DEPTH:	136 m
EASTING:	657828.08 m	BH DIAMETER:	HQ (96 mm)
NORTHING:	7667677.47 m	BH AZIMUTH:	082°
ELEVATION:	854.29 m	BH PLUNGE:	-79°
COORD SYSTEM:	MGA2020-55	CASING DEPTH:	9.10 m
LOGGING DATUM:	Ground Level	CASING TYPE:	HWT

DOCUMENT DETAILS

LOGGED BY:	JH
LOGGED DATE:	8-10/6/2024
DRAWN BY:	JH
REVIEWED BY:	GH
FILE:	BGUA-03_Comp_RevB
LOGGED DEPTH:	135.3 m

NOTES

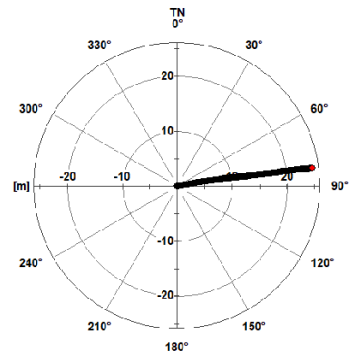
Image logs are oriented relative to borehole high side. Final structure log is oriented relative to true north using magnetic declination of 8.2° East.

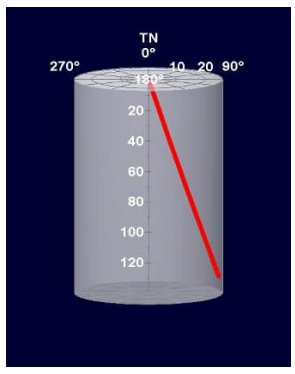
Mechanical calliper log used for structure dip corrections.

All logs zerored to ground level. Cased section assumed straight for deviation calculations.

Borehole partially blocked at 132.6 m. No image logs collected below this point.

BOREHOLE DEVIATION

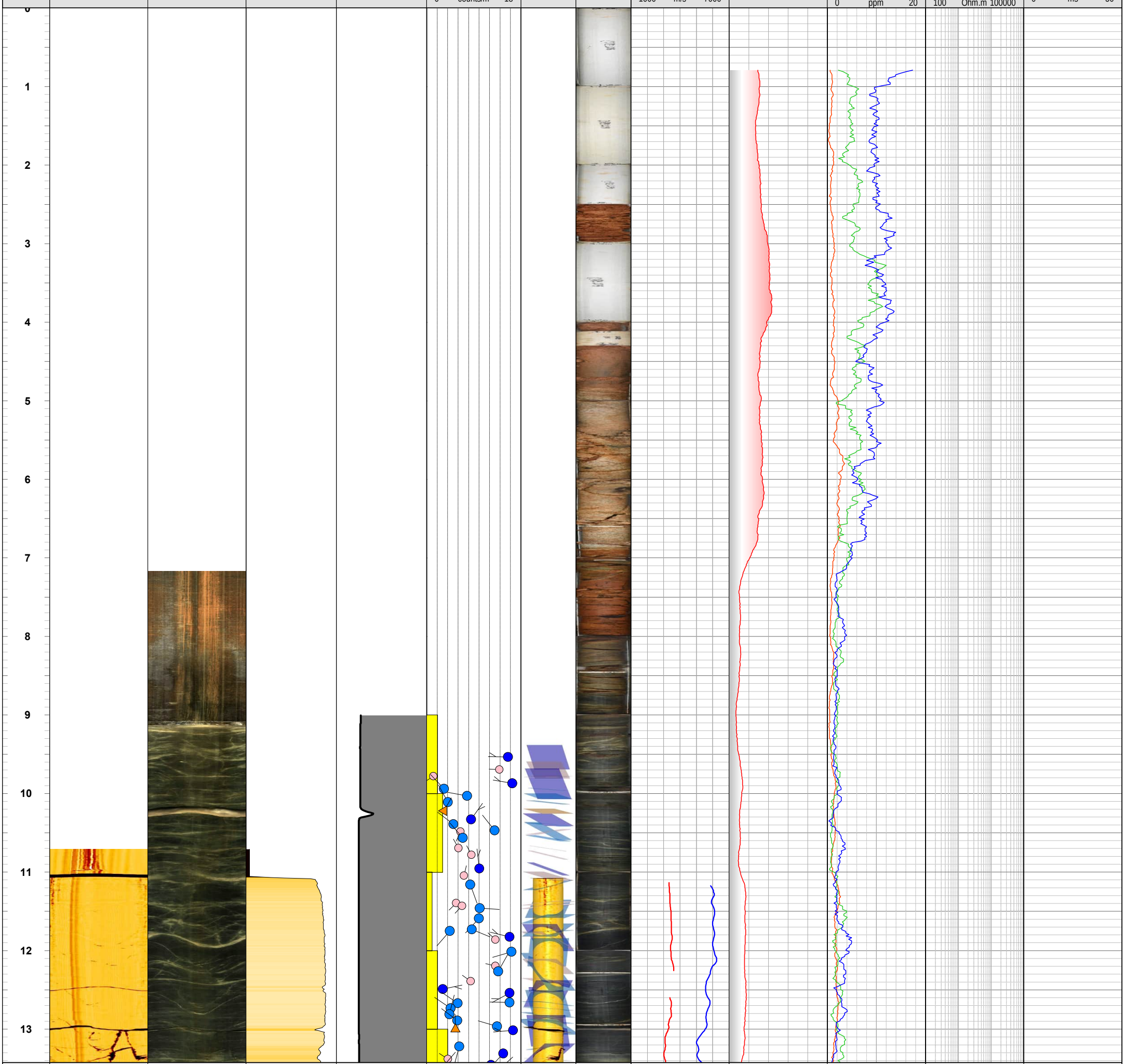




INTERPRETED STRUCTURES

Contact · Crushed Seam · Fracture Zone · Joint · Shear Seam · Sheared Surface · Shear Zone · Vein · Healed Joint

BGUA-03



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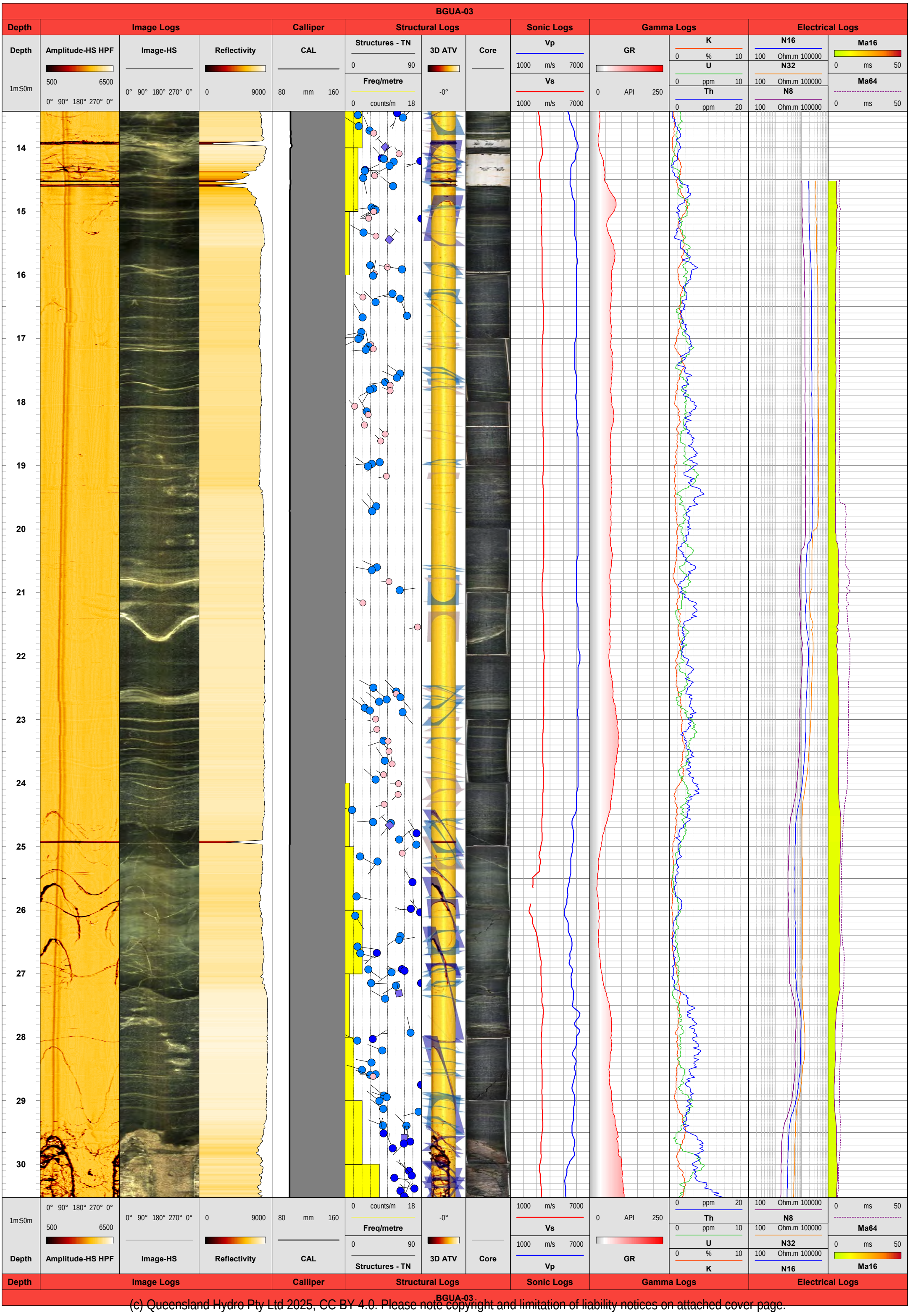

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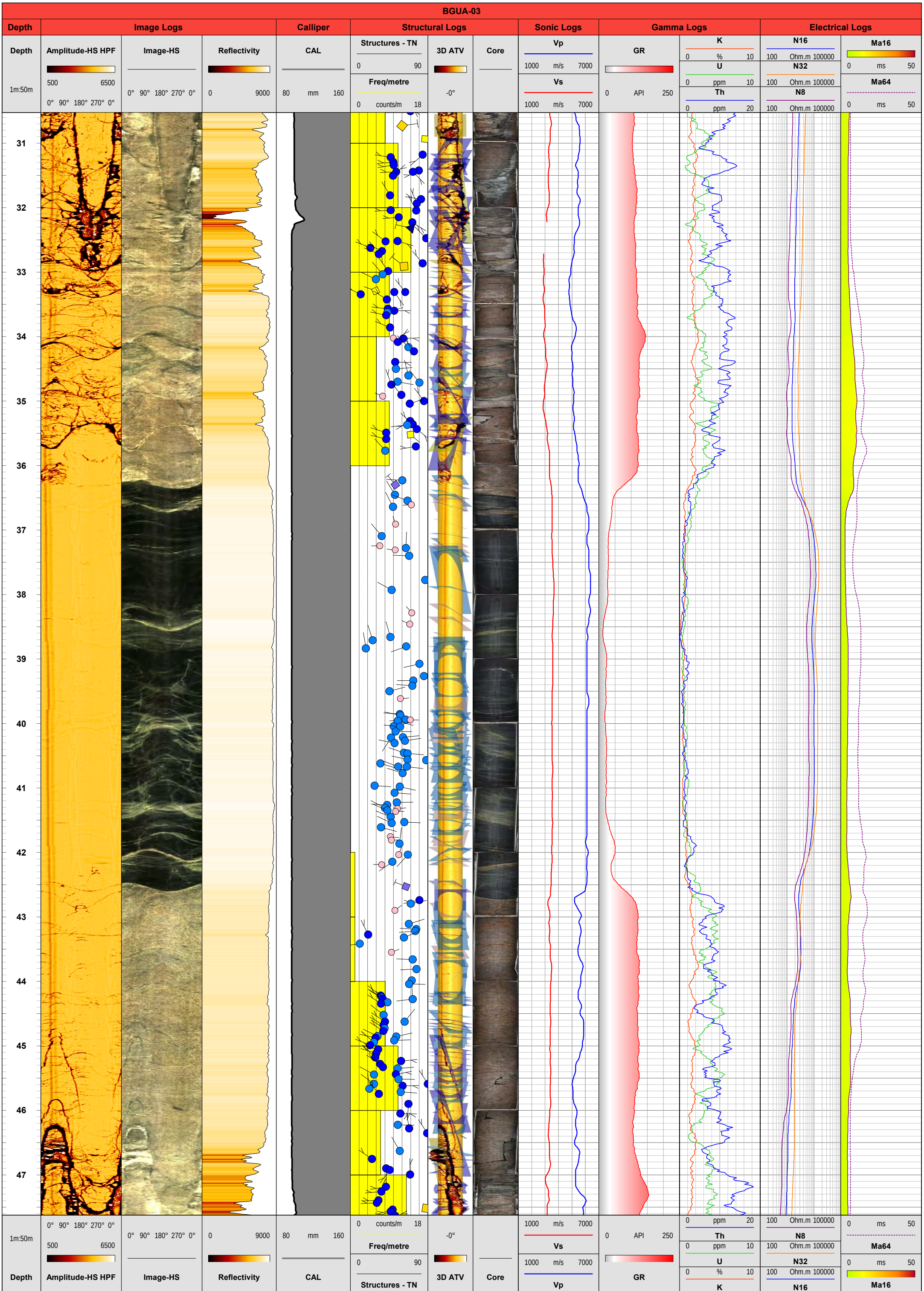

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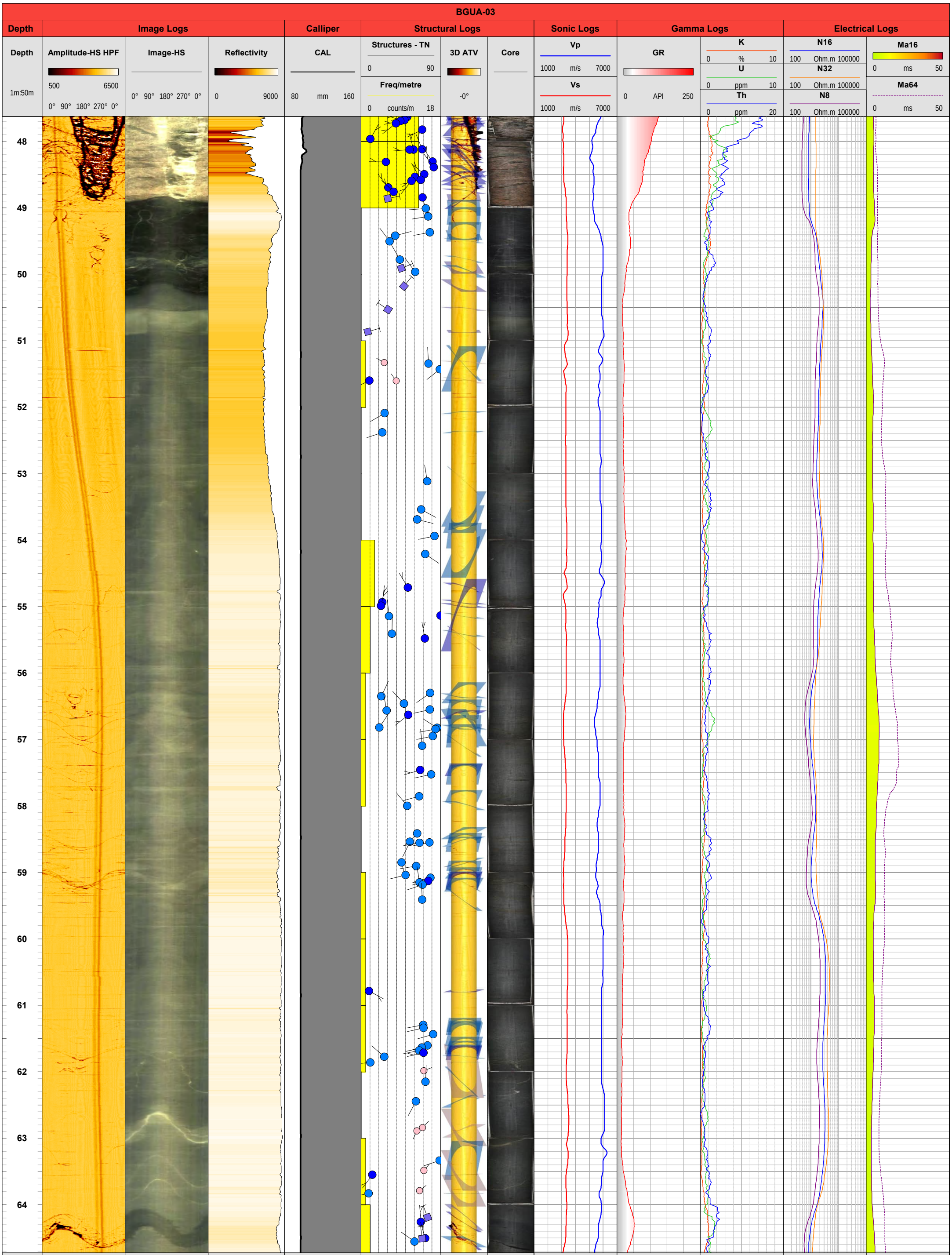

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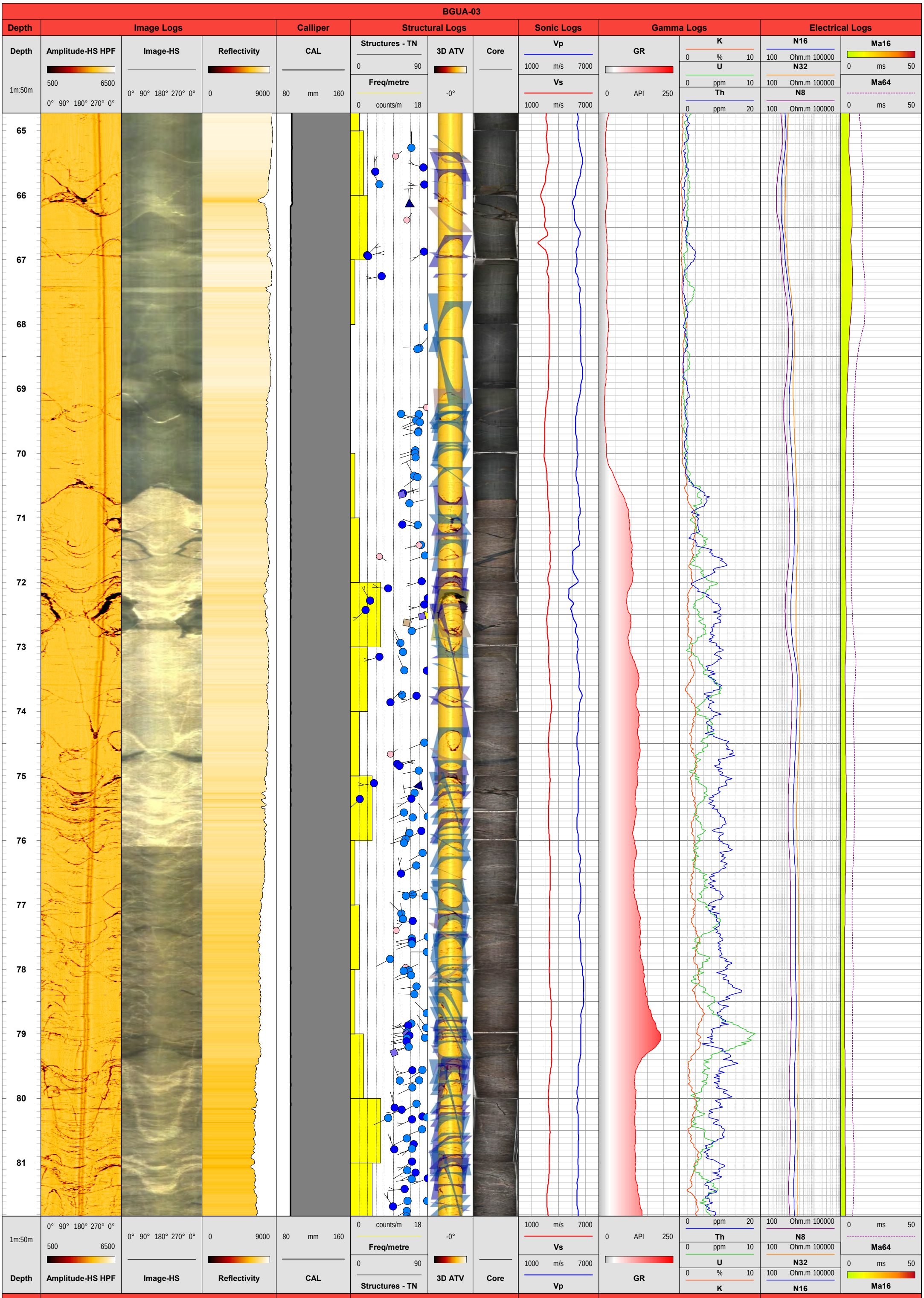

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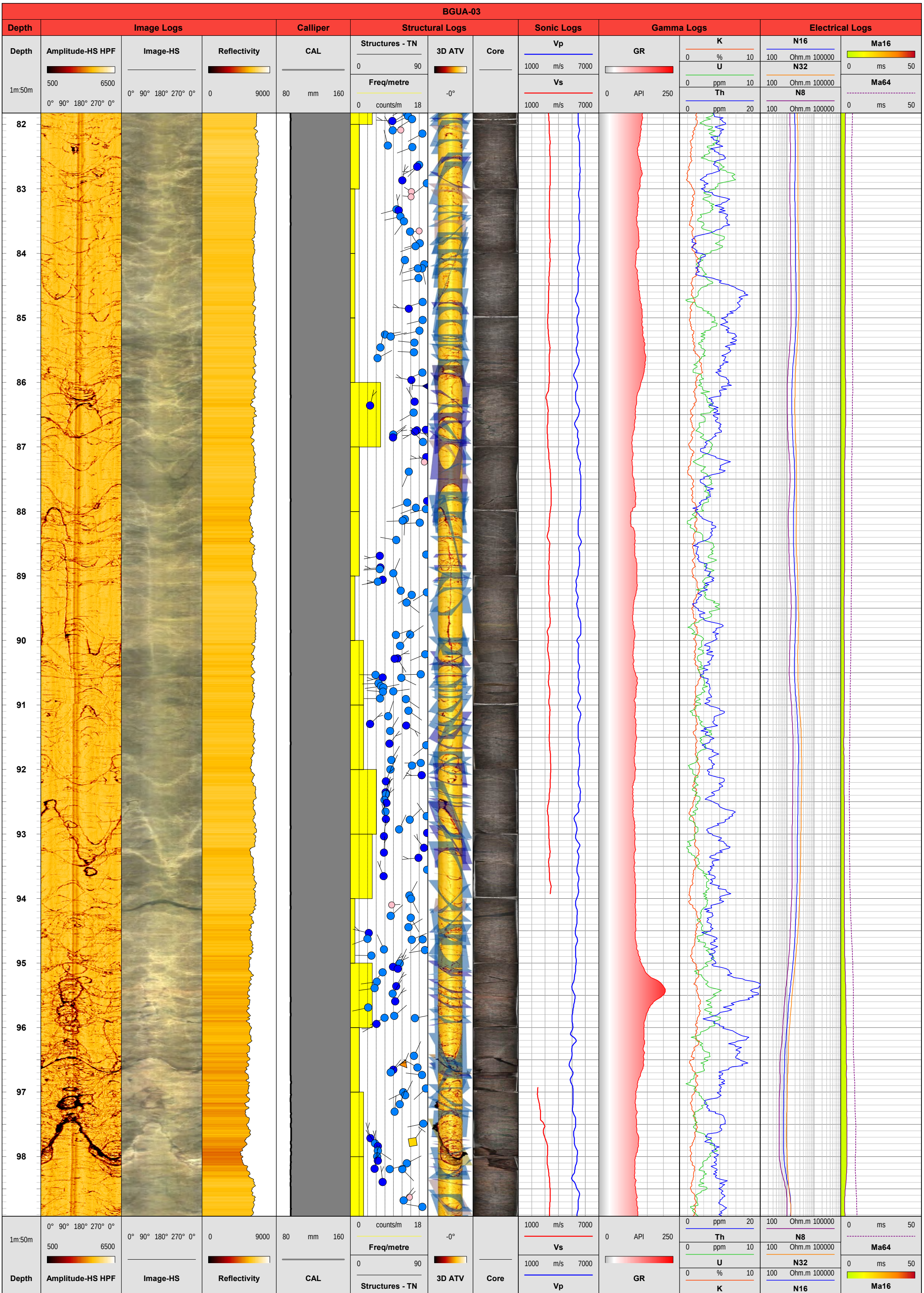

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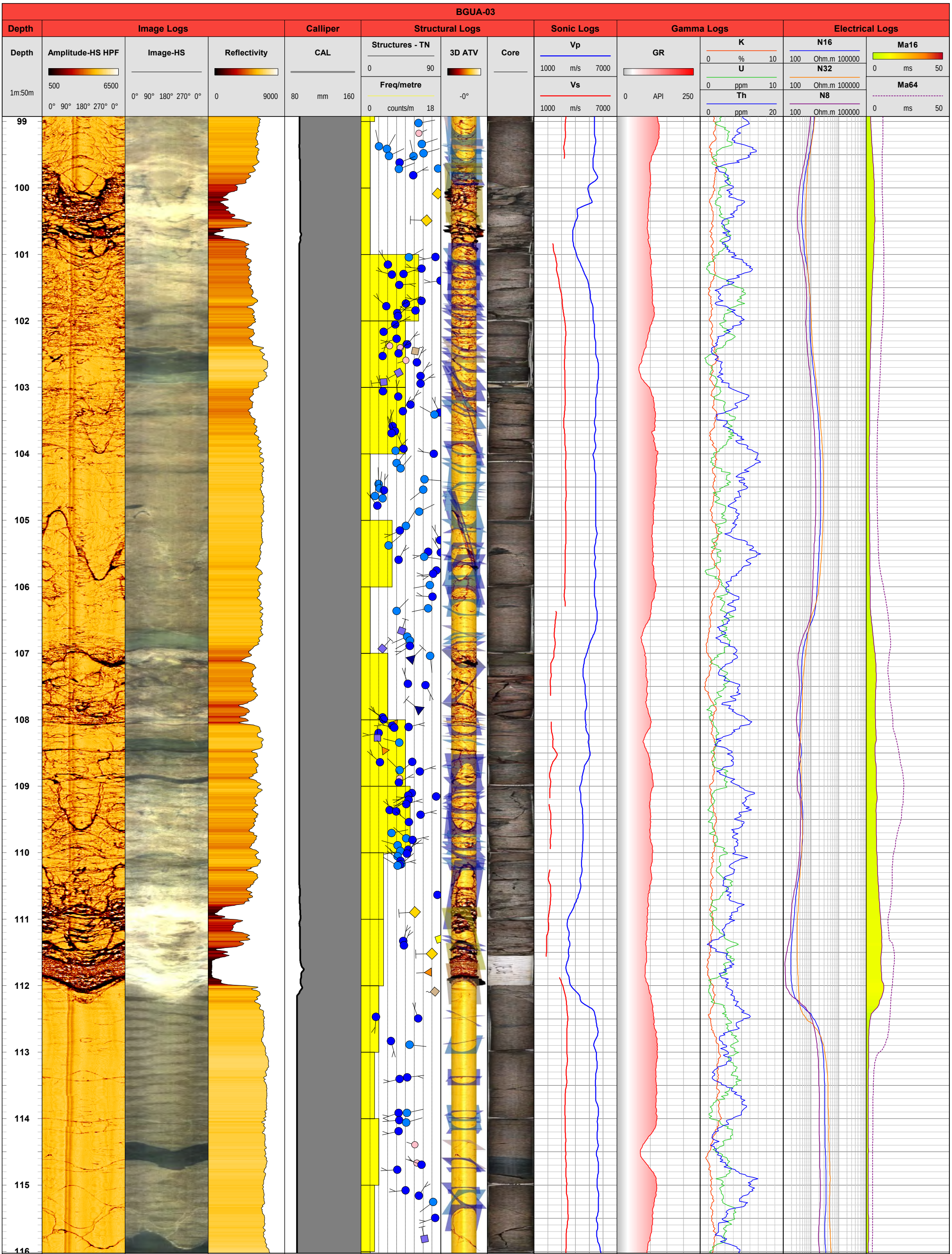

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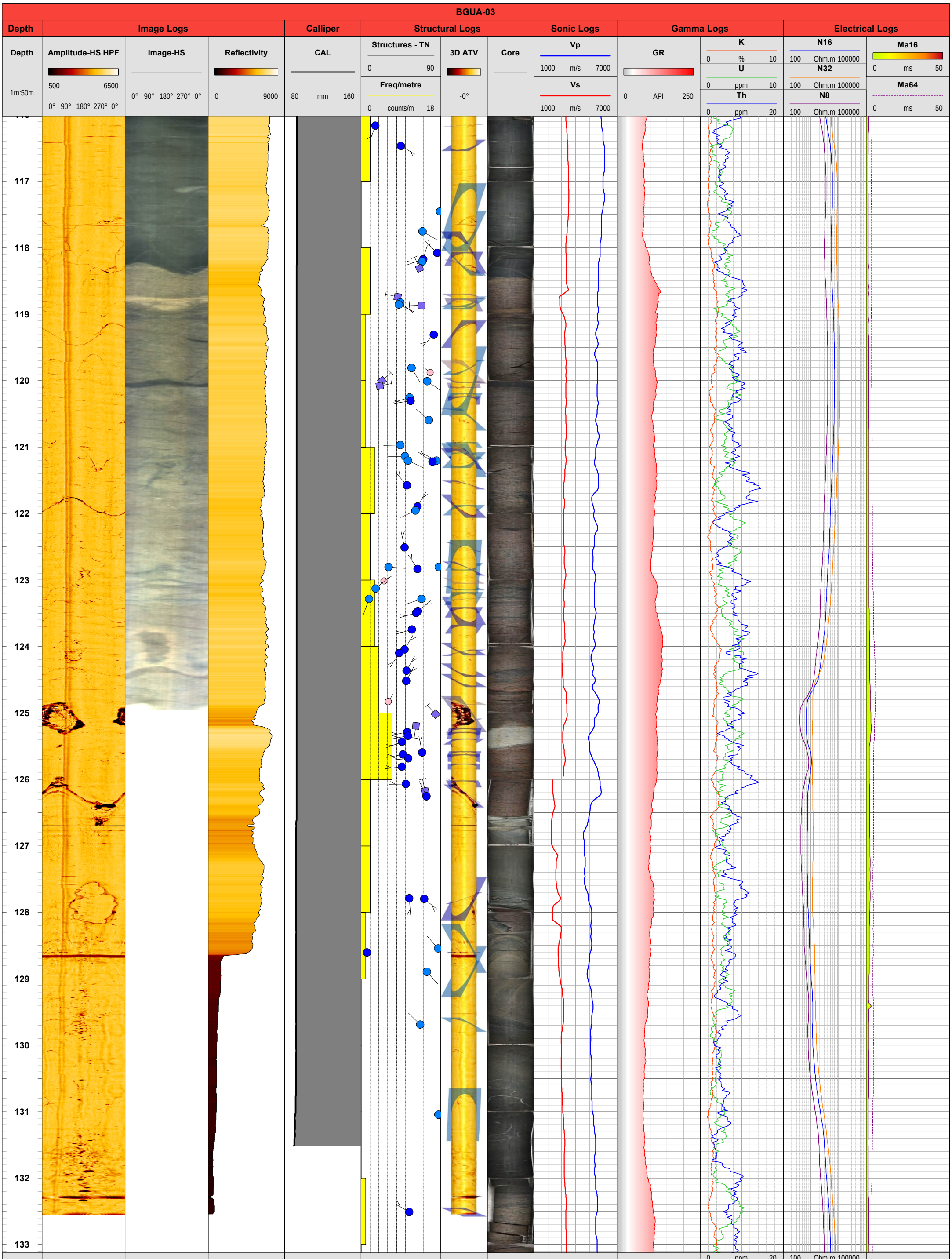

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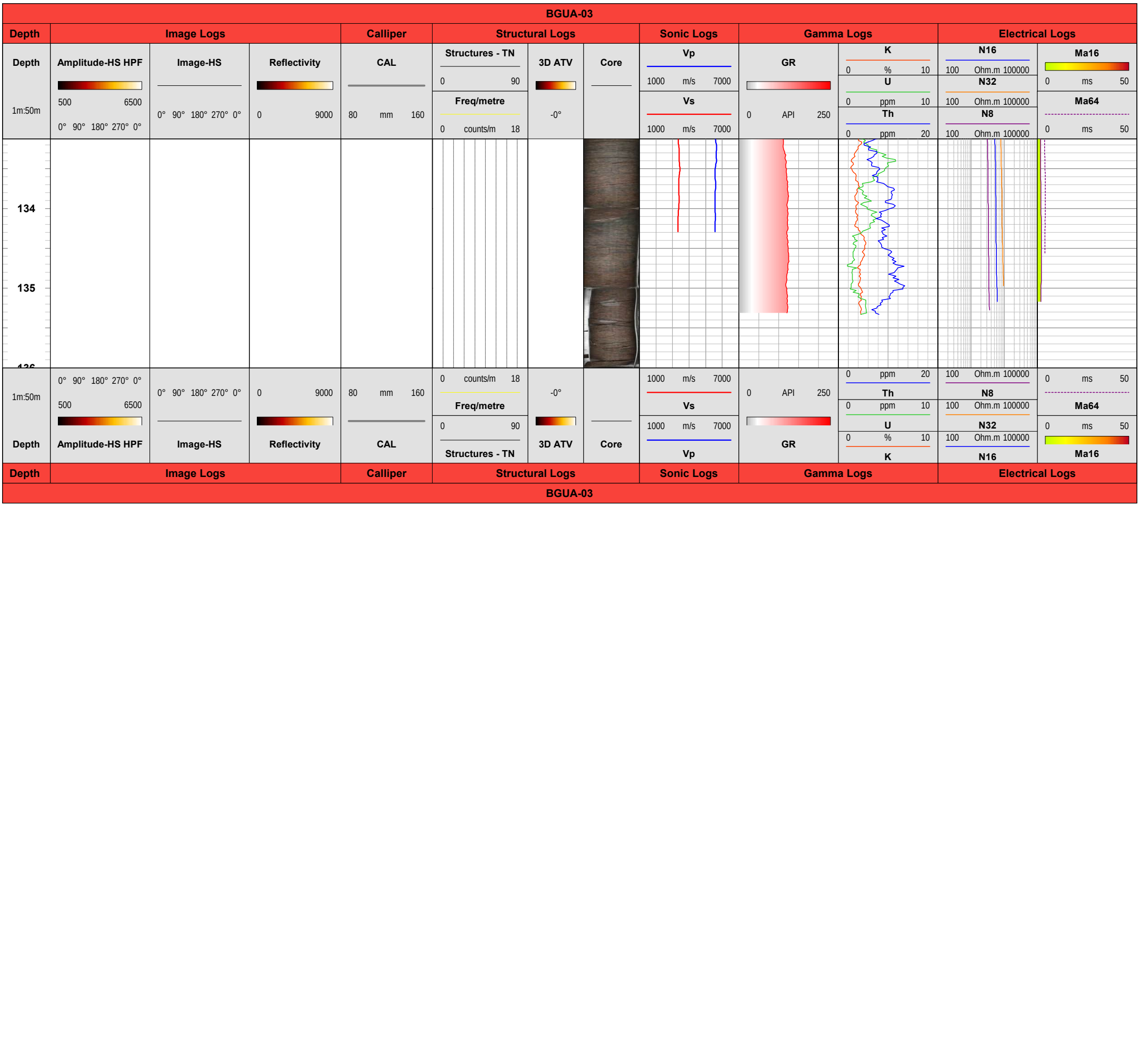

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