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BOREHOLE: BHL-08

Project: Pioneer-Burdekin PHES
Location: Netherdale/Dalrymple Heights
Client: Queensland Hydro
Job No.: PS138693

Position: Upper Reservoir
Coords: 660370.6 m E 7660961.8 m N MGA2020-55
Surface RL: 203.3 m AHD
Contractor: Twin Hills Engineering & Drilling Drill Rig: Hydrapower Scout
Mark V
Inclination: -89° Direction: 234°

Sheet 1 of 12
Date Started: 6/10/2023
Date Completed: 18/10/2023
Logged: FAS/DD/AV/FH

Drilling				Sampling		Field Material Description						
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/V	E	Groundwater Not Encountered	0	203.30	D 0.00-0.40 m PB-BHL-08-001		X	SM	Silty SAND: fine to coarse grained, brown.	D		COLLUVIAL SOIL
			1	202.30			X	SW	SAND: fine to coarse grained, cream and orange brown, with high plasticity clay.	MD		RESIDUAL SOIL
			2		SPT 1.50-1.95 m 9,11,13 N=24 D 1.50-1.95 m PB-BHL-08-002		X					
			3		SPT 3.00-3.45 m 13,19,24 N=43 D 3.00-3.45 m PB-BHL-08-003		X			D		
			4	199.30	SPT 4.50-4.95 m 11,14,16 N=30 D 4.50-4.95 m PB-BHL-08-004		X	SC	Clayey SAND: fine to coarse grained, cream and orange brown, clay is high plasticity.	MD - D		
			5				X			D - M		
			6		SPT 6.00-6.33 m 23,8/30mm,0 N=R D 6.00-6.33 m PB-BHL-08-005		X			VD		
			7				X					
			8				X					
			9	9.19	SPT 9.10-9.19 m 26/90mm HB N=R D 9.10-9.19 m PB-BHL-08-006		X		Continued as Cored Borehole			
10												
Comments										Checked	GEM	
										Date	19/10/2024	

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Sheet 2 OF 12

Logged: FAS/DD/AV/FH

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Date	19/10/2024



BOREHOLE: BHL-08

Project: Pioneer-Burdekin PHES

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Position: Upper Reservoir

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Mark V

Inclination: -89° Direction: 234°

Sheet 3 OF 12

Date Started: 6/10/2023

Date Completed: 18/10/2023

Logged: FAS/DD/AV/FH

Drilling					Field Material Description				Defect Information			
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)		AVERAGE DEFECT SPACING (mm)
16/10/2024 01:00, VCP1	100	0		10			SP Gravelly SAND: fine to coarse grained, orange-brown and pale orange with white and pale grey, gravel is fine to medium grained, sub-rounded to sub-angular; trace medium plasticity clay; (EXTREMELY WEATHERED GRANITE). very dense.	XW		13.97: J, 70°, VN, PR, RF 14.30-14.60: PLT(A) Is50 = 0.018MPa (M); PLT(D) Is50 = 0.018MPa (M) 14.28: J, 60°, Fe SN, PR, RF 14.75: J, 75°, Fe SN, PR, RF 14.84: J, 40°, Fe SN, PR, RF		
	100	0		11								
	100	0		12								
				12.40	190.90		NO CORE 0.60m (12.40-13.00)					
	60	0		13			SP SAND: coarse grained, orange-brown and pale orange with white and pale grey, (EXTREMELY WEATHERED GRANITE). very dense.	XW				
				13.55	189.75		GRANODIORITE: medium to coarse grained, pale orange brown to orange brown and pale grey, crystalline, massive, dry.	HW				
	100	75		14								
				15								
	61	51		16			NO CORE 1.79m (15.97-17.76)					
				17								
HQ3	19	9		18			GRANODIORITE: coarse grained, brown orange and dark brown with white and pale grey, crystalline, massive.	XW		19.12: J, 60°, CN, PR, RF 19.42: J, 50°, CN, PR, RF 19.75-20.00: EW, gravel, sand, 250 mm		
				18.05	185.25		NO CORE 0.32m (18.05-18.37)					
				18.37	184.93		GRANODIORITE: coarse grained, brown orange and dark brown with white and pale grey, crystalline, massive.	XW				
	80	59		19				HW				
				19.53	183.77		NO CORE 0.22m (19.53-19.75)	XW				
	90	40		19.75	183.55		SP SAND: coarse grained, orange-brown and pale orange with white and pale grey, (EXTREMELY	XW				
				20.00								

Comments

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GEM

Date

19/10/2024



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Drill Rig: Hydrapower Scout

Mark V

Inclination: -89° Direction: 234°

Sheet 4 OF 12

Date Started: 6/10/2023

Date Completed: 18/10/2023

Logged: FAS/DD/AV/FH

Drilling						Field Material Description		Defect Information			
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)	AVERAGE DEFECT SPACING (mm)
				20	183.30		WEATHERED GRANITE). very dense. GRANODIORITE: medium to coarse grained, brown to dark brown with white and pale grey, crystalline, massive, slightly altered.	XW		20.13: J, 60°, CN, PR, RF	
								HW		20.38: J, 60°, CN, PR, RF 20.53: J, 0°, CN, UN, RF 20.53-20.61: EW, 60°, gravel, sand, clay, PR, RF, 80 mm 20.83: J, 50°, CN, PR, RF	
				21						21.10: J, 60°, CN, UN, RF 21.30: J, 70°, CN, PR, RF 21.39-21.46: CS, 10°, CN, IR, RF	
										21.75-22.00: PLT(A) Is50 = 0.078MPa (M) 21.76: J, 10°, CN, PR, RF	
				22						22.10: J, 10°, CN, PR, RF 22.17: J, 45°, Fe SN, PR, RF	
										22.46: J, 15°, Fe SN, IR, RF 22.52-22.61: EW, 10°, gravel, sand VN, IR, RF, 90 mm	
				23				MW		22.80: J, 10°, Fe SN, PR, RF	
										23.21: J, 60°, CN, PR, RF 23.27: J, 10°, Fe SN, PR, RF 23.28: J, 80°, Fe SN, PR, RF 23.42: J, 20°, CN, UN, RF 23.69: CS, 20°, SN, PR	
										23.86-23.96: J, 70°, Fe SN, IR, SM 24.03-24.06: J x2, 10°, CN, PR-UN, RF 24.05: J, 80°, CN, UN, RF 24.27: J, 10°, CN, PR, RF	
										24.43: J, 5°, Fe SN, PR, RF 24.58: J, 10°, CN, PR, RF 24.71: J, 10°, CN, PR, RF 24.78: J, 10°, CN, PR, RF	
										24.96: J, 20°, CN, PR, RF 24.98: J, 80°, CN, PR, RF 25.05: J x2, 50 - 60°, Fe SN, PR, SM 25.12: J, 60°, Fe SN, PR, SM 25.26-25.50: PLT(A) Is50 = 0.067MPa (W)	
										25.23: J, 15°, CN, PR, SM 25.27: J, 10°, CN, PR, SM 25.50: J, 10°, Fe SN, UN, RF 25.68: J, 5°, CN, PR, RF 25.77: J, 25°, CN, PR, RF 25.80: J, 80°, CN, PR, SM 26.06: J, 10°, CN, UN, RF	
										26.11: J, 25°, Fe SN, PR, RF 26.27: J, 75°, Fe SN, UN, SM 26.30: J, 30°, CN, PR, RF 26.31-26.36: J x3, 5°, CN, PR, RF 26.38: J, 70°, CN, UN, SM 26.44: J x2, 45 - 50°, CN, PR, SM	
										26.57: J, 30°, CN, ST, RF 26.63: J, 25°, CN, PR, RF 26.72: J, 80°, CN, UN, SM 26.76: J, 80°, CN, PR, SM 26.81: J, 30°, CN, PR, SM 26.91-26.95: J x2, 10°, CN, PR, SM 27.40: J, 10°, CN, PR, SM	
										27.81: J x3, 0 - 10°, Fe SN, PR, RF-SM	
										28.20: J, CN, PR, RF	
										28.67: J, 5°, CN, PR, SM 28.65-28.86: J, 90°, SN, PR, SM-RF 28.90-28.91: J x2, 5°, CN, PR, SM-RF 28.91: J, 5°, CN, PR, RF 29.19: J x2, 30 - 35°, CN, ST, RF	
										29.48: CS, 60°, wedged host rock SN, UN	
				30	30.00			SW to FR			

Comments

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Date 19/10/2024



Sheet 5 OF 12

Inclination: -89° Direction: 234°

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Contractor: Twin Hills Engineering & Drilling

Mark V

Inclination: -89° Direction: 234°

Sheet 6 OF 12

Date Started: 6/10/2023

Date Completed: 18/10/2023

Logged: FAS/DD/AV/FH

Drilling						Field Material Description				Defect Information			
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)	AVERAGE DEFECT SPACING (mm)		
											10	30	100
HO3				40			ALTERED RHYOLITE: fine to medium grained, grey with pale yellow, crystalline, massive.	SW to FR		39.88: J, 80°, CN, PR, RF			
				40.50						40.00: J, 70°, CN, UN, RF			
				162.80			GRANODIORITE: medium to coarse grained, dark grey and black with white and pale grey, crystalline, massive, slightly altered.			40.13: J, 40°, CN, PR, SM			
		100	47	41						40.35: J, 60°, CN, PR, RF			
										40.43: J, 60°, CN, PR, RF			
										40.57: J, 40°, CN, PR, SM			
										40.65: J, 90°, CN, UN, RF			
										40.72: J, 70°, CN, PR, SM			
										40.75: J, 35°, CN, PR, RF			
										40.83: J, 70°, CN, UN, RF			
				42						40.92-40.95: J, 50°, CN, PR, RF, joint set 30-80 degrees			
										41.03: J, 80°, CN, IR			
										41.36: J, 45°, wh mi VN, PR, RF			
										41.57: J, 35°, CN, UN, RF			
										41.62: J, 50°, CN, PR, SM			
				43						41.92: J, 60°, CN, PR, SM			
										42.06: J, 10°, CN, PR, RF			
										42.35-42.43: J, CN, PR, SM			
										42.58: J, 40°, CN, PR, SM			
										42.72: J, 60°, CN, PR, SM			
										42.76: J, 20°, CN, PR, RF			
				44						43.75-43.85: J x2, 50°, bk SN, PR, RF			
										43.80: J, 25°, bk SN, PR, RF			
										44.59: J x2, 10°, bk SN, UN, RF			
										44.89: J, 0°, bk SN, PR, RF			
				45						45.20: J, 70°, bk/Fe SN, PR, RF			
										45.24: J, 20°, CN, PR, RF			
										45.27: J, 70°, CN, PR, RF			
										45.44: J, 40°, bk SN, PR, RF			
										45.59-45.63: J, 45°, bk SN, UN, RF, gravelled host rock, possible SS			
										45.66-45.74: AZ, multiple healed defects, possible SS			
										45.86: J, 30°, bk mi/Fe SN, UN, SM			
										46.09: J, 60°, bk mi/Fe SN, PR, SM			
										46.15: J, 15°, CN, PR, RF			
										46.28: J, bk mi SN, UN, RF			
				46						46.52: J, 70°, CN, PR, RF			
										46.66: J, 60°, CN, PR, SM			
										46.69: J, 0°, bk mi SN, PR, RF			
										46.87: J, 20°, CN, PR, RF			
				47						47.36: J, 30°, CN, CU, SM			
										47.43-47.71: PLT(A) Is50 = 5.0MPa (M); PLT(D) Is50 = 5.3MPa (M)			
										47.42: J, 10°, CN, PR, RF			
										47.55: J, 30°, CN, PR, SM			
										47.94: J, 20°, CN, PR, SM			
				48						48.03: J, 0°, CN, IR, RF			
							mafic inclusion, dark grey to black porphyritic about 500 mm diameter diorite			48.39: J, 60°, CN, PR, SM			
										48.47: J, 20°, CN, PR, RF			
				49						49.46: J, 10°, Fe SN, PR, RF			
										49.52: J, 70°, Fe SN, PR, RF			
										49.56: J, 50°, CN, PR, SM			
										49.60: J, 80°, CN, PR, SM			
										49.77: J, 40°, CN, PR, RF			
				50									

Comments

Checked GEM
Date 19/10/2024



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Drill Rig: Hydrapower Scout

Mark V

Inclination: -89° Direction: 234°

Sheet 7 OF 12

Date Started: 6/10/2023

Date Completed: 18/10/2023

Logged: FAS/DD/AV/FH

Drilling						Field Material Description				Defect Information		
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)	AVERAGE DEFECT SPACING (mm)	
HQ3			100	68	50.33 50.45 50.85		APLITE: fine grained, pale red with grey, porphyritic, massive. GRANODIORITE: medium to coarse grained, dark grey and black with white and pale grey, crystalline, massive, slightly altered.	FR SW to FR		50.26: J, 0°, CN, UN, RF 50.37: J, 10°, CN, UN, RF		
										50.84: J, 60°, CN, PR, SM 51.10: J, 70°, CN, PR, RF		
HQ3			100	92						52.21: J, 20°, CN, ST, RF 52.59: J, 40°, CN, PR, RF 52.88: J, 30°, CN, PR, RF 53.20: J, 10°, CN, UN, RF 53.50: J, 0°, CN, UN, RF 53.53: J, 30°, CN, PR, SM 53.83: J, 60°, CN, PR, RF 54.10: J, 10°, CN, UN, RF 54.17: J, 10°, CN, UN, RF		
HQ3			100	94						55.20: J, 60°, CN, PR, RF 55.21-55.40: J x2, 60°, CN, PR, SM 55.40: J, 30°, CN, PR, SM 55.49: J, 65°, CN, PR, SM 55.73: J, 80°, CN, PR, SM 55.96: J, 65°, CN, PR, RF		
HQ3			100	99						58.70-59.00: PLT(A) Is50 = 8.9MPa (M); PLT(D) Is50 = 11MPa (M) 59.17: J, 0°, CN, UN, closed		

Comments

Checked GEM
Date 19/10/2024

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Sheet 8 OF 12

Date Started: 6/10/2023

Date Completed: 18/10/2023

Logged: FAS/DD/AV/FH

Drilling						Field Material Description				Defect Information			
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)		AVERAGE DEFECT SPACING (mm)	
HO3		100	100	60			GRANODIORITE: medium to coarse grained, dark grey and black with white and pale grey, crystalline, massive, slightly altered.	SW to FR		60.35: J, 0°, CN, PR, RF			
				61						60.54: J, 50°, CN, PR, RF 60.67: J, 45°, bk mi SN, PR, RF			
HO3		100	73	62			ALTERED RHYOLITE: fine to medium grained, grey with pale yellow, crystalline, massive, dark coloured phenocrysts.			61.66: J, 50°, CN, PR, RF 61.82: J, 20°, CN, PR, RF			
				63						62.28: J, 50°, CN, ST, RF 62.44: J, 30°, CN, IR, RF 62.75: J, 60°, wh mi VN, PR			
HO3		100	100	64	63.67 139.63					63.17: J, 60°, CN, UN, RF 63.35: J, 40°, CN, ST, RF			
				65						64.03: J, 30°, CN, IR, RF 64.17: J, 20°, CN, PR, RF			
HO3		100	100	66						64.61: J, 60°, CN, PR, SM 64.89-64.93: J x3, 50 - 70°, wh mi VN, PR, RF 65.09-65.32: J, 80°, Fe SN, PR, RF			
				67						65.64: J, 60°, wh mi VN, PR, RF, with Fe SN 65.86: J, 30°, CN, PR, SM			
HO3		100	100	68						66.19: J, 20°, CN, UN, RF 66.39: J, 60°, CN, PR, RF 66.56: J, 60°, CN, PR, RF			
				69						67.45: J, 20°, wh mi VN, PR, RF 67.48: J, 20°, wh mi VN, PR, RF			
HO3		100	100	70						68.48: J, 30°, CN, PR, RF 68.58: J, 30°, CN, PR, RF			
										68.98: J, 20°, CN, PR, RF 69.36: J, 0°, CN, ST, RF 69.83: J, 70°, CN, PR, RF			

Comments

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Sheet 9 OF 12

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Drilling						Field Material Description				Defect Information			
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)		AVERAGE DEFECT SPACING (mm)	
								SW to FR	VL-2 J M H V 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80			10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 510 520 530 540 550 560 570 580 590 600 610 620 630 640 650 660 670 680 690 700 710 720 730 740 750 760 770 780 790 800 810 820 830 840 850 860 870 880 890 900 910 920 930 940 950 960 970 980 990 1000 1010 1020 1030 1040 1050 1060 1070 1080 1090 1100 1110 1120 1130 1140 1150 1160 1170 1180 1190 1200 1210 1220 1230 1240 1250 1260 1270 1280 1290 1300 1310 1320 1330 1340 1350 1360 1370 1380 1390 1400 1410 1420 1430 1440 1450 1460 1470 1480 1490 1500 1510 1520 1530 1540 1550 1560 1570 1580 1590 1600 1610 1620 1630 1640 1650 1660 1670 1680 1690 1700 1710 1720 1730 1740 1750 1760 1770 1780 1790 1800 1810 1820 1830 1840 1850 1860 1870 1880 1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010 2020 2030 2040 2050 2060 2070 2080 2090 2100 2110 2120 2130 2140 2150 2160 2170 2180 2190 2200 2210 2220 2230 2240 2250 2260 2270 2280 2290 2300 2310 2320 2330 2340 2350 2360 2370 2380 2390 2400 2410 2420 2430 2440 2450 2460 2470 2480 2490 2500 2510 2520 2530 2540 2550 2560 2570 2580 2590 2600 2610 2620 2630 2640 2650 2660 2670 2680 2690 2700 2710 2720 2730 2740 2750 2760 2770 2780 2790 2800 2810 2820 2830 2840 2850 2860 2870 2880 2890 2900 2910 2920 2930 2940 2950 2960 2970 2980 2990 3000	
HO3			100	100	70		ALTERED RHYOLITE: fine to medium grained, grey with pale yellow, crystalline, massive, dark coloured phenocrysts.			70.35: J, 30°, wh mi CT, PR, RF			
					71					71.01: J, 50°, wh mi VN, PR, RF			
					72	72.01 131.30	GRANODIORITE: coarse grained, dark grey and black with white and pale grey, crystalline, massive, slightly altered.			72.21: J, 0°, CN, PR, RF 72.28: J, 0°, wh mi SN, UN, RF 72.36: J, 0°, CN, IR, RF 72.60: J, 10°, CN, PR, RF			
			100	97	73					73.02: J, 0°, CN, PR, SM 73.15: J, 30°, CN, PR, RF			
					74					73.85: J, 30°, CN, PR, SM 73.86: J, 35°, CN, PR, SM 73.98: J, 25°, CN, PR, RF 74.12: J, 0°, CN, PR, RF			
					75					74.60: J, 20°, wh mi CT, PR, RF			
					76					74.93: J, 80°, wh mi VN, PR, RF 75.05: J, 30°, wh mi VN, UN, RF 75.05-75.21: J x2, 60°, CN, UN, RF 75.32: J, 45°, Fe SN, PR, RF			
			100	98	77					75.98: J, 30°, CN, PR, RF			
					78					76.44: J, 20°, wh mi VN, PR, RF			
			100	81	79					78.08: J, 60°, Fe SN, PR, SM 78.20: J, 60°, Fe SN, PR, RF 78.26: J, 30°, CN, PR, RF			
										78.75: J, 20°, CN, PR, SM 78.87: J, 40°, bk mi SN, PR, SM			

Comments

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Date 19/10/2024

PEPHES LIB REV VGLB Log IS AU CORED BOREHOLE 3 BHL-08 241008.GPJ <<DrawingFile>> 2010102024 23:05 10.03.00.09 Datalog Lab and In Situ Tool - DGD Lib WSP 5.07.2 2023-10-30 Pjt WSP 5.04.1 2023-06-14



BOREHOLE: BHL-08

Project: Pioneer-Burdekin PHES

Location: Netherdale/Dalrymple Heights

Client: Queensland Hydro

Job No.: PS138693

Position: Upper Reservoir

Coords: 660370.6 m E 7660961.8 m N MGA2020-55

Surface RL: 203.3 m AHD

Contractor: Twin Hills Engineering & Drilling

Drill Rig: Hydrapower Scout

Mark V

Inclination: -89° Direction: 234°

Sheet 10 OF 12

Date Started: 6/10/2023

Date Completed: 18/10/2023

Logged: FAS/DD/AV/FH

Drilling						Field Material Description			Defect Information		
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)	AVERAGE DEFECT SPACING (mm)
HO3		100	81	80			GRANODIORITE: coarse grained, dark grey and black with white and pale grey, crystalline, massive, slightly altered.	SW to FR		80.20: J, 20°, Fe SN, PR, RF 80.25: J, 10°, CN, PR, RF 80.38: J, 30°, CN, PR, RF 80.60: J, 60°, wh mi, bk SN CT, PR, RF 80.75: J, 50°, wh mi CT, PR, RF 80.82: J, 50°, wh mi VN, PR, RF 80.85: J, 50°, wh mi CN, PR, RF 80.85-80.89: SS, IR, RF, multiple high angle defects, crushed host rock, wh mi CT 81.07: J, 60°, CN, PR, RF 81.08: J, 60°, wh mi CT, PR, SM 81.12: J, 40°, wh mi CN, PR, SM 81.76-82.00: PLT(A) Is50 = 5.6MPa (M); PLT(D) Is50 = 6.4MPa (W) 81.75: J, 20°, wh mi CN, PR, SM 82.13: J, 80°, wh mi CT, PR, SM, pi br 20mm alteration halo 82.26: J, 70°, wh mi CT, PR, SM, pi br 20mm alteration halo 82.28: J, 70°, wh mi CT, PR, SM, pi br 10mm alteration halo 82.30: J, 45°, wh mi CT, PR, SM 82.41: J, 70°, CN, PR, SM 82.42: J, 60°, wh mi CT, PR, SM, white mineral coating 82.49: J, 25°, CN, UN, RF 82.53: J, 70°, CN, PR, SM 82.55: J, 60°, CN, PR, RF 82.57: J, 20°, CN, PR, SM 82.67: J, 60°, CN, PR, SM 82.72: J, 70°, CN, PR, SM 82.76: J, 75°, CN, PR, SM, or br alteration 82.85: J, 65°, CN, PR, SM, or br alteration 82.87: J, 75°, wh mi CT, PR, SM, or br alteration 82.91: J, 70°, wh mi CT, PR, SM, or br alteration 82.93: J, 80°, CN, PR, SM 83.10: J, 75°, wh mi CT, PR, SM 83.20: J, 15°, wh mi CT, PR, RF 83.34: J, 70°, CN, PR, RF, or br alteration 85.05: J, 0°, CN, PR, RF 85.22: J, 10°, CN, PR, RF 85.41: J, 10°, CN, PR, RF 85.56: J, 70°, CN, PR, RF 87.13: J, 10°, CN, PR, RF 87.19: J, 40°, CN, PR, SM 87.37: J, 0°, CN, UN, RF 88.88: J, 30°, Fe SN, PR, SM 88.92: J, 60°, Fe SN, PR, RF 88.94: J, 50°, Fe SN, PR, RF 89.88: J, 60°, CN, PR, RF	
				81							
		100	63	82							
				83							
				84							
				85							
		100	80	86							
				87							
				88							
				87.90			GRANODIORITE: medium to coarse grained, dark grey and black with white and pale grey, crystalline, massive, slightly altered.	FR to SW			
		100	98	88							

PEPHES LIB REV B.GLB Log IS AU CORED BOREHOLE 3 BHL-08 241008.GPJ <<DrawingFile>> 2010/2024 23:06 10.03.00.09 Datalog Lab and In Situ Tool - DGD Lib: WSP 5.07.2 2023-10-30 Pjt: WSP 5.04.1 2023-06-14



BOREHOLE: BHL-08

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Sheet 11 OF 12

Date Started: 6/10/2023

Date Completed: 18/10/2023

Logged: FAS/DD/AV/FH

Drilling						Field Material Description				Defect Information			
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	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
				90			GRANODIORITE: medium to coarse grained, dark grey and black with white and pale grey, crystalline, massive, slightly altered.	SW to FR		90.05: J, 60°, CN, PR, RF 90.31: J, 0°, CN, PR, RF 90.86: J, 20°, CN, PR, RF 92.59: J, 30°, bk mi VN, PR, SM 93.30-93.58: PLT(A) Is50 = 0.83MPa (W); PLT(D) Is50 = 7.2MPa (W) 93.58-93.61: J x2, 20°, CN, PR, RF 94.54: J, 30°, CN, PR, RF 94.58: J, 30°, CN, PR, RF 95.03: J, 60°, CN, PR, RF 95.18: J, 60°, CN, PR, RF 95.37: J, 30°, CN, PR, RF 95.58: J, 30°, CN, IR, RF 95.64: J, 20°, CN, UN, RF 95.63-95.73: J, 85°, CN, PR, RF 95.69: J, 0°, CN, PR, RF 95.95: J, CN, PR, RF 96.38: J, 30°, Fe SN, PR, RF 96.70-96.76: mafic inclusion 97.48: J, 20°, CN, UN, RF 97.62: J, 20°, bk mi, Fe SN, PR, RF 97.65: J, 70°, bk mi, Fe SN, PR, SM 97.75: J, 20°, CN, UN, RF 97.92: J, 20°, CN, IR, RF 98.46: J, 10°, CN, IR, RF 98.70: J, 80°, CN, PR, RF, 5mm pale pi alteration halo 98.80: J, 20°, CN, IR, RF 98.87: J, 50°, CN, PR, RF 98.93: J, 50°, CN, PR, RF 98.98: J, 20°, CN, PR, RF 99.05: J, 80°, Fe SN, PR, RF			
				91									
				92									
				93									
				94									
				95									
				96									
				97									
				98									
				99									
				100									

Comments

Checked GEM
Date 19/10/2024



BOREHOLE: BHL-08

Project: Pioneer-Burdekin PHES

Location: Netherdale/Dalrymple Heights

Client: Queensland Hydro

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Sheet 12 OF 12

Date Started: 6/10/2023

Date Completed: 18/10/2023

Logged: FAS/DD/AV/FH

Drilling						Field Material Description				Defect Information		
METHOD	WATER	TCR	RQD	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	ROCK / SOIL MATERIAL DESCRIPTION	WEATHERING	INFERRED STRENGTH (MPa)	DEFECT DESCRIPTION & Additional Observations (Core partings shown - refer to Detailed Defect Descriptions table for all logged features)	AVERAGE DEFECT SPACING (mm)	
								SW to FR				
HO3			100 96	100			GRANODIORITE: coarse grained, dark grey and black with white and pale grey, crystalline, massive, slightly altered.			100.05: J, 10°, CN, PR, RF		
										100.34: J, 40°, wh mi VN, ST, RF		
										100.50: J, 0°, pk br mi SN, PR, SM, 5-10mm pi br alteration halo		
										100.71: J, 40°, Fe SN, PR, RF, 2-3mm pale pi alteration halo		
										100.87: J, 20°, Fe SN, PR, RF, 2-3mm pale pi alteration halo		
										101.05: J, 0°, CN, PR, RF		
										101.12: J, 5°, CN, PR, RF		
										101.90: J, 30°, Fe SN, PR, RF		
										102.89: J, 60°, CN, PR, SM		
										105.11: J, 10°, wh mi CT, PR, SM		
										105.22: J, 40°, CN, PR, SM		
										106.65: J, 50°, CN, UN, SM		
			100 92	103						106.97: J, 70°, CN, PR, RF		
										107.03: J, 50°, CN, PR, SM		
			100 100	108						108.48: J, 30°, CN, PR, RF		
										108.83: J, 15°, CN, PR, RF		
			100 100	109						109.18: J, 35°, CN, PR, RF		
										109.20: J, 65°, CN, PR, SM		
										109.22: J, 15°, CN, PR, RF		
				110.00								

Comments

Hole Terminated at 110.00 m
Target depth. Vibrating Wire Piezometers Installed.

Checked GEM

Date 19/10/2024



Pioneer-Burdekin Pumped Hydro Energy Scheme: Tranche 1 – BHL-08 Defects List

Refer to Explanatory Notes sheets for abbreviation definitions

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
BHL-08	9.10																Relict defects observed in extremely weathered material
BHL-08	13.58				HB												
BHL-08	13.64				HB												
BHL-08	13.80				HB												
BHL-08	13.97				J		70			VN	PR	RF					
BHL-08	14.06				HB												
BHL-08	14.10				HB												
BHL-08	14.28				J		60		Fe	SN	PR	RF					
BHL-08	14.75				J		75		Fe	SN	PR	RF					
BHL-08	14.84				J		40		Fe	SN	PR	RF					
BHL-08	14.93	15.00			HB												XW Granite - crushed seam
BHL-08	15.10				HB												
BHL-08	18.44	18.50			HB												XW Granite. Crushed seam.
BHL-08	18.64				MB												
BHL-08	19.12				J		60			CN	PR	RF					
BHL-08	19.42				J		50			CN	PR	RF					
BHL-08	19.75	20.00			EW				gravel, sand					250			
BHL-08	20.13				J		60			CN	PR	RF					
BHL-08	20.38				J		60			CN	PR	RF					
BHL-08	20.53				J		0			CN	UN	RF					
BHL-08	20.53	20.61			EW		60		gravel, sand, clay		PR	RF		80			
BHL-08	20.54				MB					CN	IR	RF					
BHL-08	20.83				J		50			CN	PR	RF					
BHL-08	21.10				J		60			CN	UN	RF					
BHL-08	21.30				J		70			CN	PR	RF					
BHL-08	21.39	21.46			CS		10			CN	IR	RF					
BHL-08	21.76				J		10			CN	PR	RF					
BHL-08	21.94				MB					CN	IR	RF					
BHL-08	22.10				J		10			CN	PR	RF					
BHL-08	22.17				J		45		Fe	SN	PR	RF					
BHL-08	22.26	22.34			hJ	x2	15	20	Fe	SN	PR						
BHL-08	22.38				DB												
BHL-08	22.46				J		15		Fe	SN	IR	RF					
BHL-08	22.52	22.61			EW		10		gravel, sand	VN	IR	RF		90			
BHL-08	22.80				J		10		Fe	SN	PR	RF					
BHL-08	23.12	23.17			hJ	x3	30	45	br/bk mi		PR						
BHL-08	23.21				J		60			CN	PR	RF					
BHL-08	23.27				J		10		Fe	SN	PR	RF					
BHL-08	23.28				J		80		Fe	SN	PR	RF					
BHL-08	23.38				hJ		70		br mi		PR						
BHL-08	23.42				J		20			CN	UN	RF					
BHL-08	23.61	23.68			hJ		90		br mi	VN	UN	RF					
BHL-08	23.66				hJ		50		br mi	VN	PR						
BHL-08	23.69				CS		20			SN	PR						
BHL-08	23.70				hJ		70		br mi	SN	PR						
BHL-08	23.72	23.78			hJ		70		br mi	SN	PR						healed joints
BHL-08	23.82				hJ		10		br mi	SN	PR						
BHL-08	23.83	24.03			hJ		80		br mi	SN	PR						
BHL-08	23.86	23.96			J		70		Fe	SN	IR	SM					
BHL-08	24.03	24.06			J	x2	10			CN	PR-UN	RF					
BHL-08	24.05				J		80			CN	UN	RF					
BHL-08	24.27				J		10			CN	PR	RF					
BHL-08	24.27	24.42			hJ		70		br mi	SN	PR						
BHL-08	24.43				J		5		Fe	SN	PR	RF					
BHL-08	24.43	25.02			hJ		80	90	wh mi	VN	UN						
BHL-08	24.54				hJ		10	40	br mi	VN	UN						
BHL-08	24.58				J		10			CN	PR	RF					
BHL-08	24.71				J		10			CN	PR	RF					
BHL-08	24.78				J		10			CN	PR	RF					
BHL-08	24.96				J		20			CN	PR	RF					
BHL-08	24.98				J		80			CN	PR	RF					
BHL-08	25.05				J	x2	50	60	Fe	SN	PR	SM					
BHL-08	25.12				J		60		Fe	SN	PR	SM					
BHL-08	25.18				hJ		60		wh mi	SN	PR	RF					
BHL-08	25.23				J		15			CN	PR	SM					
BHL-08	25.27				J		10			CN	PR	SM					
BHL-08	25.30				hJ		15		wh mi	SN	UN						
BHL-08	25.32				hJ		50		wh mi	SN	PR						
BHL-08	25.50				J		10		Fe	SN	UN	RF					
BHL-08	25.51				hJ		70		br mi	SN	PR						
BHL-08	25.54				hJ		50			VN	PR						
BHL-08	25.68				J		5			CN	PR	RF					
BHL-08	25.77				J		25			CN	PR	RF					
BHL-08	25.80				J		80			CN	PR	SM					
BHL-08	25.93				hJ		70		br mi	SN	PR	RF					
BHL-08	26.06				J		10			CN	UN	RF					
BHL-08	26.11				J		25		Fe	SN	PR	RF					
BHL-08	26.27				J		75		Fe	SN	UN	SM					
BHL-08	26.30				J		30			CN	PR	RF					



Pioneer-Burdekin Pumped Hydro Energy Scheme: Tranche 1 – BHL-08 Defects List

Refer to Explanatory Notes sheets for abbreviation definitions

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
BHL-08	26.31	26.36			J	x3	5			CN	PR	RF					
BHL-08	26.38				J		70			CN	UN	SM					
BHL-08	26.40				hJ		45		wh mi	VN	UN						
BHL-08	26.44				J	x2	45	50		CN	PR	SM					
BHL-08	26.57				J		30			CN	ST	RF					
BHL-08	26.63				J		25			CN	PR	RF					
BHL-08	26.72				J		80			CN	UN	SM					
BHL-08	26.76				J		80			CN	PR	SM					
BHL-08	26.81				J		30			CN	PR	SM					
BHL-08	26.91	26.95			J	x2	10			CN	PR	SM					
BHL-08	26.91	27.15			hJ		85		wh mi	SN	PR						
BHL-08	27.11				hJ	x3	0		br mi, Fe SN	SN	PR						
BHL-08	27.20				hJ		0		wh mi	SN	PR						
BHL-08	27.20	27.55			hJ	x6	40	60	wh mi, Fe SN	SN	PR						
BHL-08	27.32				hJ		85		wh mi	SN	PR						
BHL-08	27.33				hJ		90		wh mi	SN	PR						
BHL-08	27.40				J		10			CN	PR	SM					
BHL-08	27.61				hJ		70		wh mi	SN	PR						
BHL-08	27.70				hJ		85		wh mi	SN	UN						
BHL-08	27.81				J	x3	0	10	Fe	SN	PR	RF-SM					
BHL-08	27.85	30.10			hJ		80	90	wh mi	SN	UN						multiple defects, often terminating and restarting, up to 3 parallel defects, sub-vertical to vertical, sporadic up to 30mm or-pi alteration halo
BHL-08	28.20				J					CN	PR	RF					
BHL-08	28.61				hJ		70				PR						
BHL-08	28.62				hJ		40				PR						
BHL-08	28.65	28.86			J		90			SN	PR	SM-RF					
BHL-08	28.67				J		5			CN	PR	SM					
BHL-08	28.90	28.91			J	x2	5			CN	PR	SM-RF					
BHL-08	28.91				J		5			CN	PR	RF					
BHL-08	28.95	29.45			hJ		80	90	wh mi	VN	UN		<=	4			
BHL-08	29.19				J	x2	30	35		CN	ST	RF					
BHL-08	29.41				hJ		20		wh mi	SN	PR						minor pi alteration halo
BHL-08	29.44				hJ		5		wh mi	SN	PR						minor pi alteration halo
BHL-08	29.48				CS		60		wedged host rock	SN	UN						
BHL-08	29.63				hJ		70		wh mi, Fe SN	SN	UN						
BHL-08	29.64				hJ		80		wh mi, Fe SN	SN	UN						
BHL-08	29.66				hJ		70		wh mi, Fe SN	SN	UN						
BHL-08	29.70				hJ		50		wh mi, Fe SN	SN	UN						
BHL-08	29.77				hJ		80		wh mi, Fe SN	SN	UN						
BHL-08	29.80				hJ		10		wh mi, Fe SN	SN	UN						
BHL-08	30.12				J		10			CN	PR	RF					
BHL-08	30.25				J		10			CN	PR	RF					
BHL-08	30.61				J		0			CN	PR	RF					
BHL-08	31.10				hJ		60		bk mi	SN	UN						5mm pi alteration halo
BHL-08	31.22				J		30			CN	PR	RF					
BHL-08	31.30				hJ		50		wh mi	SN	CU						
BHL-08	31.30	31.37			S		75		wh mi	VN	PR	RF					
BHL-08	31.32	31.52			SZ									200			fragmented rock, significant
BHL-08	31.42				J		15		wh mi	SN	PR	RF					
BHL-08	31.45				J		40		wh mi	SN	PR	RF					
BHL-08	31.52				hJ		60			SN	PR						
BHL-08	31.60				J		10			CN	PR	RF					possible DB
BHL-08	31.61				hJ		80		wh mi	SN	ST						
BHL-08	31.66				J		20			CN	PR	RF					
BHL-08	31.74				J		20			CN	PR	RF					
BHL-08	31.80				hJ		80		bk mi	SN	PR						
BHL-08	32.27				J		20			CN	PR	RF					
BHL-08	32.28				J		10			CN	PR	RF					
BHL-08	32.57				J		70			CN	PR	RF					
BHL-08	32.58				J		60			CN	UN	RF					
BHL-08	32.65				J		90			CN	PR	RF					
BHL-08	32.70				J		60			CN	ST	RF					
BHL-08	32.76				hJ		60		wh mi	SN	PR						2mm alteration halo
BHL-08	32.80				hJ		70		wh mi	SN	PR						
BHL-08	32.83				hJ		70		wh mi	SN	PR						
BHL-08	32.87				J		35		Fe	SN	PR	RF					rubbled by drilling
BHL-08	32.90	33.00			J	x2	80			CN	PR	RF					
BHL-08	33.08				J		60			CN	UN	RF					
BHL-08	33.15				J		50		wh mi	VN	PR	RF					
BHL-08	33.31				J		60			CN	PR	RF					
BHL-08	33.40				J		50			CN	PR	SM					
BHL-08	33.49				J		75			CN	PR	RF					
BHL-08	33.65				J	x2	60	90		CN	UN	RF					
BHL-08	33.71				J		20			CN	CU	RF					
BHL-08	33.74	33.82			J		75			CN	UN	RF					
BHL-08	33.77				J		35			CN	PR	RF					
BHL-08	33.83				J		80			CN	UN	RF					
BHL-08	33.84				hJ		20			SN	PR						
BHL-08	33.95				J		30			CN	PR	RF					



Pioneer-Burdekin Pumped Hydro Energy Scheme: Tranche 1 – BHL-08 Defects List

Refer to Explanatory Notes sheets for abbreviation definitions

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
BHL-08	34.05				J		40			CN	PR	RF					
BHL-08	34.25				J		60			CN	PR	RF					
BHL-08	34.30	34.50			CO		75	90			UN						
BHL-08	34.31				J		60		wh mi	VN	PR	RF					
BHL-08	34.41	34.50			hJ	x3	30	70	wh mi	VN	PR						
BHL-08	34.48	34.60			hJ	x2	90		wh mi	VN	PR						
BHL-08	34.60				CO					CN	ST	RF					
BHL-08	34.66	34.73			CO					CN	PR	RF					
BHL-08	34.67	34.75															core fragmented by drilling
BHL-08	34.68	35.80			hJ		90		wh mi	VN	PR-UN						
BHL-08	34.72				J		60			CN	PR	RF					
BHL-08	34.76				J		80			CN	PR	SM					
BHL-08	34.80				hJ		80		wh mi	SN	PR						
BHL-08	34.96				hJ		40		wh mi	SN	PR						
BHL-08	35.16				hJ		80		wh mi	SN	PR						
BHL-08	35.25				hJ		90		wh mi	SN	PR						
BHL-08	35.27				hJ		0		wh mi	SN	PR						
BHL-08	35.30				hJ		30		wh mi	SN	PR						
BHL-08	35.30	35.37			V		85		wh mi	SN	UN		<=	5			
BHL-08	35.31				hJ		70		wh mi	SN	PR						
BHL-08	35.36	35.85			J		70		wh mi	CT	PR	RF					likely opened by drilling
BHL-08	35.49				hJ		90		wh mi	SN	PR						
BHL-08	35.54				DB												
BHL-08	35.72				hJ		90		wh mi	VN	PR						
BHL-08	35.87				hJ		80		wh mi	VN	PR						
BHL-08	35.90				J		5		wh mi	VN	PR						opened by drilling
BHL-08	35.93				hJ		80		wh mi	VN	PR						
BHL-08	36.10	36.30			hJ	x5	50	80	wh mi	VN	UN						
BHL-08	36.10	36.85			hJ												multiple defects, generally sub-vertical, PR-UN, wh mi IN, intensifying alteration and decreasing defect spacing (30-100mm to 10-30mm) with depth
BHL-08	36.31	36.56			hJ	x3	80	90	wh mi	SN	UN						
BHL-08	36.31	36.80			AZ												multiple defects, generally sub-vertical, wh mi IN, IR, <10mm spacing
BHL-08	36.57	36.75			V		70	90	wh mi	VN	IR		<=	3			
BHL-08	36.90				CO						UN						
BHL-08	36.98				CO						IR						
BHL-08	36.98	37.28			AZ				wh, pale gy mi	VN	IR						multiple healed defects, generally sub-horizontal, decreasing defect spacing with depth (10-30mm to 0-10mm)
BHL-08	37.04				hJ		30		wh mi	SN	PR						
BHL-08	37.06				hJ		60		wh mi	SN	PR						
BHL-08	37.10				hJ		80		wh mi	SN	PR						
BHL-08	37.11				hJ		90		wh mi	SN	PR						
BHL-08	37.13				hJ		90		wh mi	VN	PR						
BHL-08	37.18				hJ		80		wh mi	SN	PR						
BHL-08	37.28				J		50			CN	PR	SM					
BHL-08	37.36				hJ		10		wh mi	SN	PR						
BHL-08	37.46				hJ		90		wh mi	SN	PR						
BHL-08	37.51				hJ	x4	80		wh mi	SN	PR						
BHL-08	37.72				hJ		80		wh mi	SN	PR						
BHL-08	37.73				J		40		Fe	SN	PR	SM					
BHL-08	37.87				J		70			CN	PR	RF					
BHL-08	38.02				J		40		Fe	SN	PR	RF					
BHL-08	38.12				J		75			CN	PR	RF					
BHL-08	38.13				J		70			CN	PR	RF					
BHL-08	38.21	40.30			J	/hJ	80	90		CN	UN	RF					open defect becoming healed at base, wh mi VN to IN
BHL-08	38.22				J		30			CN	ST	RF					
BHL-08	38.35	38.52			hJ	x2	80		wh mi	SN	PR						
BHL-08	38.43				J		30			CN	ST	RF					
BHL-08	38.55	38.58			hJ	x2	5		wh mi	SN	PR						
BHL-08	38.58				J		60			CN	PR	SM					
BHL-08	38.66				J		30			CN	PR	RF					
BHL-08	38.75				J		20			CN	PR	RF					
BHL-08	38.79				hJ		90		wh mi	SN	PR						
BHL-08	38.83				J		40			CN	PR	RF					
BHL-08	38.94				J		30			CN	PR	RF					
BHL-08	39.00				J		90			CN	PR	RF					1 metre length
BHL-08	39.04	39.13			hJ	x3	5		wh mi	SN	PR						
BHL-08	39.17	39.35			hJ	x2	50		wh mi	SN	UN						
BHL-08	39.25				hJ		90				PR						
BHL-08	39.49				J		90		wh mi	SN	UN	SM					
BHL-08	39.73				J		90		wh mi	SN	UN	SM					
BHL-08	39.78				J		25			CN	PR	SM					
BHL-08	39.88				J		80			CN	PR	RF					
BHL-08	40.00				J		70			CN	UN	RF					
BHL-08	40.13				J		40			CN	PR	SM					
BHL-08	40.20				hJ		80		wh mi	SN	PR						
BHL-08	40.21				hJ		50		wh mi	SN	PR						
BHL-08	40.23				hJ	x2	60		wh mi	SN	PR						
BHL-08	40.35				J		60			CN	PR	RF					
BHL-08	40.40				hJ		10		wh mi	SN							



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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
BHL-08	40.43				J		60			CN	PR	RF					
BHL-08	40.49				CO		25										
BHL-08	40.57				J		40			CN	PR	SM					
BHL-08	40.60				hJ		90		bk mi	SN	UN						
BHL-08	40.65				J		90			CN	UN	RF					
BHL-08	40.72				J		70			CN	PR	SM					
BHL-08	40.75				J		35			CN	PR	RF					
BHL-08	40.80				hJ		40		wh mi	SN	PR						
BHL-08	40.83				J		70			CN	UN	RF					
BHL-08	40.86				V		90		wh mi	VN	PR		<=	10			
BHL-08	40.92	40.95			J		50			CN	PR	RF					joint set 30-80 degrees
BHL-08	40.98				hJ		90		yl mi	VN	PR						
BHL-08	41.03				J		80			CN	IR						
BHL-08	41.17				hJ		80		bk mi	VN	PR						
BHL-08	41.25				hJ		70		bk mi	SN	PR						
BHL-08	41.29				hJ		50		wh mi	SN	PR						
BHL-08	41.36				J		45		wh mi	VN	PR	RF					
BHL-08	41.52				hJ		50		wh mi	SN	PR						
BHL-08	41.57				J		35			CN	UN	RF					
BHL-08	41.62				J		50			CN	PR	SM					
BHL-08	41.70				hJ		70		bk mi	CN	UN						
BHL-08	41.88				hJ		15		bk mi	SN	PR						
BHL-08	41.92				J		60			CN	PR	SM					
BHL-08	42.06				J		10			CN	PR	RF					
BHL-08	42.07	42.12			hJ	x2	90		bk mi	SN	UN						
BHL-08	42.18				hJ		20		bk mi	SN	PR						
BHL-08	42.19				hJ		30		bk mi	SN	PR						
BHL-08	42.28				hJ		10		bk mi	SN	PR						
BHL-08	42.35	42.43			J					CN	PR	SM					
BHL-08	42.36				hJ		70		bk mi	SN	PR						
BHL-08	42.45				hJ		90		wh mi	SN	UN						
BHL-08	42.58				J		40			CN	PR	SM					
BHL-08	42.65				hJ		90		wh mi	SN	PR						
BHL-08	42.72				J		60			CN	PR	SM					
BHL-08	42.76				J		20			CN	PR	RF					
BHL-08	42.80				hJ		80		bk mi	SN	PR						
BHL-08	43.13	43.40			hJ	x4	60	70	bk mi	SN	PR						
BHL-08	43.42				hJ		30		bk mi	SN	PR						
BHL-08	43.48	43.75			hJ	x3	70		bk/wh mi	SN	PR						
BHL-08	43.75	43.85			J	x2	50		bk	SN	PR	RF					
BHL-08	43.80				J		25		bk	SN	PR	RF					
BHL-08	43.82				hJ		0		bk mi	SN	UN						
BHL-08	43.87				hJ	x2	45	55	bk mi	SN	PR						
BHL-08	43.96				hJ		10		bk mi	SN	PR						
BHL-08	44.03	44.25			hJ		50	70	gy mi	SN	CU		<=	2			
BHL-08	44.21				hJ		5		bk mi	SN	UN		<=	4			
BHL-08	44.28				hJ		5		bk mi	SN	PR						
BHL-08	44.40	44.50			hJ	x2	70		bk mi	SN	PR						
BHL-08	44.59				J	x2	10		bk	SN	UN	RF					
BHL-08	44.70	44.84			hJ	x2	5	10	bk mi	SN	PR						
BHL-08	44.89				J		0		bk	SN	PR	RF					
BHL-08	45.20				J		70		bk/Fe	SN	PR	RF					
BHL-08	45.24				J		20			CN	PR	RF					
BHL-08	45.27				J		70			CN	PR	RF					
BHL-08	45.44				J		40		bk	SN	PR	RF					
BHL-08	45.50	45.60			hJ	x3	60	70	bk mi	SN	PR						
BHL-08	45.59	45.63			J		45		bk	SN	UN	RF					gravelled host rock, possible SS
BHL-08	45.66	45.74			AZ												multiple healed defects, possible SS
BHL-08	45.85				hJ		70		bk mi	SN	PR						
BHL-08	45.86				J		30		bk mi/Fe	SN	UN	SM					
BHL-08	45.96				MB												
BHL-08	46.09				J		60		bk mi/Fe	SN	PR	SM					
BHL-08	46.15				J		15			CN	PR	RF					
BHL-08	46.15	46.40			hJ	x6	45	90	bk mi	VN	PR						
BHL-08	46.28				J				bk mi	SN	UN	RF					
BHL-08	46.44				MB												
BHL-08	46.48				MB												
BHL-08	46.52				J		70			CN	PR	RF					
BHL-08	46.66				J		60			CN	PR	SM					
BHL-08	46.69				J		0		bk mi	SN	PR	RF					
BHL-08	46.87				J		20			CN	PR	RF					
BHL-08	47.05	47.23			hJ	x2	75	80	bk mi	SN	UN						
BHL-08	47.13	47.30			hJ		80		bk mi	SN	PR						
BHL-08	47.36				J		30			CN	CU	SM					
BHL-08	47.38				hJ		10		bk mi	SN	PR						
BHL-08	47.42				J		10			CN	PR	RF					
BHL-08	47.49				hJ		10		bk mi	SN	UN						
BHL-08	47.55				J		30			CN	PR	SM					
BHL-08	47.63				hJ		0		bk mi	SN	PR						



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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
BHL-08	47.67				MB												
BHL-08	47.70				hJ		80		bk mi	SN	PR						
BHL-08	47.73				hJ		10		bk mi	SN	PR		<=	2			
BHL-08	47.94				J		20			CN	PR	SM					
BHL-08	48.03				J		0			CN	IR	RF					
BHL-08	48.03	48.12			hJ		90		Fe SN	SN	PR						
BHL-08	48.39				J		60			CN	PR	SM					
BHL-08	48.47				J		20			CN	PR	RF					
BHL-08	48.51	48.65			hJ	x2	75		bk mi	SN	PR						
BHL-08	49.04				hJ		10		bk mi	SN	UN						
BHL-08	49.46				J		10		Fe	SN	PR	RF					
BHL-08	49.52				J		70		Fe	SN	PR	RF					
BHL-08	49.56				J		50			CN	PR	SM					
BHL-08	49.60				J		80			CN	PR	SM					
BHL-08	49.61				hJ		10		bk mi	SN	PR						
BHL-08	49.68				hJ		80		bk mi	SN	PR						15mm pi alteration halo
BHL-08	49.77				J		40			CN	PR	RF					
BHL-08	49.87				hJ		90		bk mi	SN	PR						pi alteration halo
BHL-08	50.26				J		0			CN	UN	RF					
BHL-08	50.32	50.50			hJ	x2	85		bk mi	SN	PR						
BHL-08	50.37				J		10			CN	UN	RF					
BHL-08	50.76				hJ		70		wh mi	SN	PR		<=	3			
BHL-08	50.84				J		60			CN	PR	SM					
BHL-08	50.88				MB												
BHL-08	51.02				MB												
BHL-08	51.10				J		70			CN	PR	RF					
BHL-08	51.18				MB												
BHL-08	51.19				MB												
BHL-08	51.27	51.30			hJ	x2	50		wh mi	SN	PR						pi alteration halo
BHL-08	51.27	51.60			hJ		80		wh mi	SN	PR						pi alteration halo
BHL-08	51.43				hJ		70	80	wh mi	SN	PR						pi alteration halo
BHL-08	51.95				hJ		60		wh mi	SN	PR						pi alteration halo
BHL-08	52.20	52.55			hJ		80		wh mi	SN	PR						10mm pi alteration halo
BHL-08	52.21				J		20			CN	ST	RF					
BHL-08	52.43	52.49			hJ	x2	30		bk mi	SN	PR						
BHL-08	52.57				hJ		0		bk mi	SN	PR						
BHL-08	52.59				J		40			CN	PR	RF					
BHL-08	52.73				hJ		10		wh mi	SN	PR						
BHL-08	52.88				J		30			CN	PR	RF					
BHL-08	52.98				MB												
BHL-08	53.20				J		10			CN	UN	RF					
BHL-08	53.50				J		0			CN	UN	RF					
BHL-08	53.53				J		30			CN	PR	SM					
BHL-08	53.60	54.05			hJ	x3	60		wh mi	SN	PR						
BHL-08	53.83				J		60			CN	PR	RF					
BHL-08	53.98	55.20			hJ		90		wh mi	SN	UN						5-15mm pi alteration halo
BHL-08	54.10				J		10			CN	UN	RF					
BHL-08	54.17				J		10			CN	UN	RF					
BHL-08	54.30				HB												
BHL-08	55.20				J		60			CN	PR	RF					
BHL-08	55.21	55.40			J	x2	60			CN	PR	SM					
BHL-08	55.25	55.40			hJ	x2	60		wh mi	SN	PR						
BHL-08	55.40				J		30			CN	PR	SM					
BHL-08	55.40	55.80			hJ	x2	90		wh mi	SN	PR						
BHL-08	55.45				hJ		65		wh mi	SN	PR						
BHL-08	55.49				J		65			CN	PR	SM					
BHL-08	55.73				J		80			CN	PR	SM					
BHL-08	55.96				J		65			CN	PR	RF					
BHL-08	56.33				hJ		50		wh mi	SN	PR						2mm pi alteration halo
BHL-08	56.40				J		30			CN	PR	RF					
BHL-08	56.52				J		30			CN	PR	RF					
BHL-08	56.64				hJ		70		wh mi	SN	PR						
BHL-08	56.66				hJ		70		wh mi	SN	PR						
BHL-08	56.81				J		60			CN	PR	RF					
BHL-08	56.95				J		20			CN	PR	RF					
BHL-08	56.96				hJ		0		wh mi	SN	PR						
BHL-08	57.00	57.29			hJ		90		wh mi	SN	PR						
BHL-08	57.17				J		30			CN	PR	SM					
BHL-08	57.30	57.62			hJ	x3	70	90	wh mi	SN	PR-UN						5mm pi alteration halo
BHL-08	57.65				hJ		60		wh mi	SN	PR						
BHL-08	57.68				J		60			CN	PR	RF					
BHL-08	57.81	57.90			hJ		70		wh mi	SN	PR						5mm gy alteration halo
BHL-08	57.89				J		70			CN	PR	RF					
BHL-08	58.27	58.70			hJ	x7	60	90	wh mi	SN	PR-UN						2mm pi alteration halo
BHL-08	58.80	58.95			hJ		85		wh mi	SN	PR						
BHL-08	59.17				J		0			CN	UN						closed
BHL-08	59.21	59.27			hJ	x3	70			SN	PR						closed, 30-100mm spacing
BHL-08	59.80				hJ		70		bk mi	SN	PR						
BHL-08	59.84				hJ		50		bk mi	SN	PR						



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BHL-08	59.85				J		45			CN	PR	SM					
BHL-08	59.91				hJ		40		bk mi	SN	PR						
BHL-08	60.14				MB												
BHL-08	60.18				hJ		80		bk mi	SN	PR						
BHL-08	60.27				hJ		45		wh mi	SN	PR						
BHL-08	60.35				J		0			CN	PR	RF					
BHL-08	60.45				hJ		50		bk mi	SN	PR						
BHL-08	60.54				J		50			CN	PR	RF					
BHL-08	60.60				hJ		70		bk mi	SN	PR						
BHL-08	60.67				J		45		bk mi	SN	PR	RF					
BHL-08	60.72				hJ		40		bk mi	SN	PR						
BHL-08	61.12				hJ		70		wh mi	SN	PR						
BHL-08	61.22				hJ		80		wh mi	SN	PR						
BHL-08	61.55				hJ		85		bk mi	SN	UN						
BHL-08	61.66				J		50			CN	PR	RF					
BHL-08	61.70				hJ		50		bk mi	VN	CU						
BHL-08	61.82				J		20			CN	PR	RF					
BHL-08	62.14				hJ	x3	70	80	w mi	SN	PR						
BHL-08	62.28				J		50			CN	ST	RF					
BHL-08	62.37				hJ		10		bk mi	SN	UN						
BHL-08	62.44				J		30			CN	IR	RF					
BHL-08	62.49				hJ		40		wh mi	SN	PR						
BHL-08	62.53	62.95			hJ	x5	60	80	wh mi	SN	PR						
BHL-08	62.67	62.87			hJ	x3	40		wh mi	SN	PR						
BHL-08	62.75				J		60		wh mi	VN	PR						
BHL-08	63.08				hJ		90		bk mi	SN	PR						
BHL-08	63.17				J		60			CN	UN	RF					
BHL-08	63.35				J		40			CN	ST	RF					
BHL-08	63.38	63.90			hJ	x8	60	80	bk/wh mi	SN	PR						sporadic Fe SN on IN defects
BHL-08	63.67				DB												
BHL-08	63.69				CO		0										
BHL-08	63.91	63.98			hJ	x5	30	60	wh mi	SN	PR						
BHL-08	64.03				J		30			CN	IR	RF					
BHL-08	64.07				hJ		70			SN	UN						
BHL-08	64.17				J		20			CN	PR	RF					
BHL-08	64.27	64.42			hJ	x3	80	90	wh mi	SN	PR						
BHL-08	64.57				hJ		50		wh mi	SN	UN						
BHL-08	64.61				J		60			CN	PR	SM					
BHL-08	64.79	64.85			hJ	x2	60	70	wh mi	SN	PR						
BHL-08	64.89	64.93			J	x3	50	70	wh mi	VN	PR	RF					
BHL-08	65.09	65.32			J		80		Fe	SN	PR	RF					
BHL-08	65.25				hJ		80		wh mi	SN	PR						
BHL-08	65.38				hJ		30		wh mi	SN	PR						
BHL-08	65.39				hJ		80		wh mi	SN	PR						
BHL-08	65.40				hJ		40		wh mi	SN	PR						
BHL-08	65.47				hJ		50		wh mi	SN	PR						
BHL-08	65.50				hJ		70		wh mi	SN	PR						
BHL-08	65.64				J		60		wh mi	VN	PR	RF					with Fe SN
BHL-08	65.73				hJ		90		wh mi	VN	PR						
BHL-08	65.80				hJ		30		wh mi	SN	PR						
BHL-08	65.83				hJ		30		wh mi	SN	PR						
BHL-08	65.84				hJ		30		wh mi	SN	PR						
BHL-08	65.86				J		30			CN	PR	SM					
BHL-08	65.87				hJ		70		wh mi	SN	PR						
BHL-08	66.19				J		20			CN	UN	RF					
BHL-08	66.39				J		60			CN	PR	RF					
BHL-08	66.56				J		60			CN	PR	RF					
BHL-08	67.45				J		20		wh mi	VN	PR	RF					
BHL-08	67.48				J		20		wh mi	VN	PR	RF					
BHL-08	67.55				hJ		80		wh mi	VN	PR						
BHL-08	67.75				hJ		90		wh mi	VN	IR						
BHL-08	68.33				hJ		90		wh mi	SN	IR						
BHL-08	68.42				MB												
BHL-08	68.48				J		30			CN	PR	RF					
BHL-08	68.58				J		30			CN	PR	RF					
BHL-08	68.98				J		20			CN	PR	RF					
BHL-08	69.01	69.24			hJ		90		wh mi	SN	PR		<=	8			
BHL-08	69.36				J		0			CN	ST	RF					
BHL-08	69.83				J		70			CN	PR	RF					
BHL-08	69.90				hJ		60		wh mi	SN	PR						
BHL-08	70.00	70.12			hJ	x3	60	70	wh mi	SN	PR						
BHL-08	70.25				hJ		50		wh mi	SN	PR						
BHL-08	70.35				J		30		wh mi	CT	PR	RF					
BHL-08	70.58				hJ	x2	80		wh mi	VN	PR						
BHL-08	70.88				hJ		0		wh mi	VN	PR						
BHL-08	70.95				hJ		85		wh mi	VN	PR						
BHL-08	71.01				J		50		wh mi	VN	PR	RF					
BHL-08	71.10	71.25			hJ	x4	10	20	wh mi	SN	PR						
BHL-08	71.41	71.50			hJ	x3	30	50	wh mi	SN	PR						



Pioneer-Burdekin Pumped Hydro Energy Scheme: Tranche 1 – BHL-08 Defects List

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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
BHL-08	71.61				hJ		80		wh mi	SN	PR						
BHL-08	71.78				hJ	x2	20		wh mi	SN	UN						
BHL-08	71.82				hJ		75		wh mi	SN	PR						
BHL-08	71.85				hJ		45	90	wh mi	SN	CU						
BHL-08	72.02				CO		0	20			CU						
BHL-08	72.21				J		0			CN	PR	RF					
BHL-08	72.28				J		0		wh mi	SN	UN	RF					
BHL-08	72.31	72.38			hJ	x2	50	60	wh mi	SN	CU						
BHL-08	72.36				J		0			CN	IR	RF					
BHL-08	72.39				hJ		70		wh mi	SN	PR						
BHL-08	72.47				hJ		0		bk mi	SN	PR						
BHL-08	72.49	72.57			hJ	x2	60		wh mi	SN	PR						
BHL-08	72.60				J		10			CN	PR	RF					
BHL-08	72.65				hJ		70		wh mi	SN	PR						
BHL-08	72.90	73.39			hJ		70	90	wh mi	SN	UN						
BHL-08	72.95	73.10			hJ	x2	80		wh mi	SN	PR						becomes open at 73.20m
BHL-08	73.02				J		0			CN	PR	SM					
BHL-08	73.15				J		30			CN	PR	RF					
BHL-08	73.41				hJ		70		wh mi	SN	PR						
BHL-08	73.58	73.82			hJ	x4	70		wh mi	SN	PR						30-100mm spacing
BHL-08	73.85				J		30			CN	PR	SM					
BHL-08	73.86				J		35			CN	PR	SM					
BHL-08	73.89				hJ		30		wh mi	SN	PR						
BHL-08	73.96				hJ		70		wh mi	SN	PR						
BHL-08	73.98				J		25			CN	PR	RF					
BHL-08	74.06	74.22			hJ	x5	60	90	wh mi	SN	PR-UN						
BHL-08	74.12				J		0			CN	PR	RF					
BHL-08	74.41				hJ		30		wh mi	SN	PR						
BHL-08	74.46				hJ		90		wh mi	SN	PR						
BHL-08	74.60				J		20		wh mi	CT	PR	RF					
BHL-08	74.65				hJ		70			CN	PR	RF					
BHL-08	74.93				J		80		wh mi	VN	PR	RF					
BHL-08	74.96				hJ		70				PR						
BHL-08	75.03				hJ		0		wh mi	SN	PR						
BHL-08	75.05				J		30		wh mi	VN	UN	RF					
BHL-08	75.05	75.21			J	x2	60			CN	UN	RF					
BHL-08	75.26				hJ		90		wh mi	SN	PR						
BHL-08	75.27				hJ		10		brown mi, Fe SN	SN	CU						
BHL-08	75.32				J		45		Fe	SN	PR	RF					
BHL-08	75.56				hJ		55		wh mi	SN	PR						
BHL-08	75.77				hJ		50		wh mi	SN	PR						
BHL-08	75.86				hJ		80		wh mi	SN	PR						5mm pi alteration halo
BHL-08	75.97	76.18			hJ	x4	70		wh mi, Fe SN	SN	PR						
BHL-08	75.98				J		30			CN	PR	RF					
BHL-08	76.37				hJ		60		wh mi	SN	PR						10mm brown alteration halo
BHL-08	76.44				J		20		wh mi	VN	PR	RF					
BHL-08	76.77				hJ		30		wh mi	VN	PR						
BHL-08	76.78				hJ		0		wh mi	VN	PR						
BHL-08	76.97	77.14			V		80		wh mi	VN	PR		<=	5			pi br 20mm alteration halo
BHL-08	77.18				hJ		10	60	wh mi	VN	CU		<=	3			
BHL-08	77.55				hJ		65		wh mi	VN	PR						
BHL-08	77.82				hJ		70				PR						
BHL-08	78.08				J		60		Fe	SN	PR	SM					
BHL-08	78.20				J		60		Fe	SN	PR	RF					
BHL-08	78.24				hJ		0		Fe	CT	PR						
BHL-08	78.26				J		30			CN	PR	RF					
BHL-08	78.52				hJ		80		wh mi	VN	PR						
BHL-08	78.75				J		20			CN	PR	SM					
BHL-08	78.79				hJ		0		wh mi	SN	PR						
BHL-08	78.81				hJ		80		wh mi, Fe SN	SN	PR						
BHL-08	78.87				J		40		bk mi	SN	PR	SM					
BHL-08	79.12				hJ		70		wh mi	SN	PR						
BHL-08	79.15				hJ		60		wh mi	SN	PR						
BHL-08	79.24				hJ		70		wh mi	SN	PR						
BHL-08	79.33				hJ		80		wh mi	SN	PR						
BHL-08	79.50				hJ		60		wh mi	SN	PR						
BHL-08	79.59				hJ		40		wh mi	SN	PR						
BHL-08	79.67				hJ		50		wh mi	SN	PR						
BHL-08	79.70				hJ		70		wh mi	SN	PR						
BHL-08	79.94				hJ		20		wh mi	SN	PR						
BHL-08	80.10				hJ		60		wh mi	SN	PR						
BHL-08	80.20				J		20		Fe	SN	PR	RF					
BHL-08	80.25				J		10			CN	PR	RF					
BHL-08	80.29				hJ		30		wh mi	SN	PR						
BHL-08	80.32				hJ		50		wh mi	SN	PR						
BHL-08	80.34				hJ		20		wh mi	SN	PR						
BHL-08	80.38				J		30			CN	PR	RF					
BHL-08	80.47				hJ		20		wh mi	SN	PR						
BHL-08	80.54				hJ		10		wh mi	SN	PR						



Pioneer-Burdekin Pumped Hydro Energy Scheme: Tranche 1 – BHL-08 Defects List

Refer to Explanatory Notes sheets for abbreviation definitions

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
BHL-08	80.58				hJ		60		wh mi	SN	PR						
BHL-08	80.60				J		60		wh mi, bk SN	CT	PR	RF					
BHL-08	80.75				J		50		wh mi	CT	PR	RF					
BHL-08	80.82				J		50		wh mi	VN	PR	RF					
BHL-08	80.85				J		50		wh mi	CN	PR	RF					
BHL-08	80.85	80.89			SS						IR	RF					multiple high angle defects, crushed host rock, wh mi CT
BHL-08	81.07				J		60			CN	PR	RF					
BHL-08	81.08				J		60		wh mi	CT	PR	SM					
BHL-08	81.12				J		40		wh mi	CN	PR	SM					
BHL-08	81.22				MB												
BHL-08	81.75				J		20		wh mi	CN	PR	SM					
BHL-08	81.90				hJ		60		wh mi	SN	PR						
BHL-08	82.13				J		80		wh mi	CT	PR	SM					pi br 20mm alteration halo
BHL-08	82.26				J		70		wh mi	CT	PR	SM					pi br 20mm alteration halo
BHL-08	82.28				J		70		wh mi	CT	PR	SM					pi br 10mm alteration halo
BHL-08	82.30				J		45		wh mi	CT	PR	SM					
BHL-08	82.41				J		70			CN	PR	SM					
BHL-08	82.42				J		60		wh mi	CT	PR	SM					white mineral coating
BHL-08	82.49				J		25			CN	UN	RF					
BHL-08	82.51				hJ		80		wh mi	SN	PR						
BHL-08	82.53				J		70			CN	PR	SM					
BHL-08	82.55				J		60			CN	PR	RF					
BHL-08	82.56				hJ	x3	5	10	wh mi	SN	UN						
BHL-08	82.57				J		20			CN	PR	SM					
BHL-08	82.67				J		60			CN	PR	SM					
BHL-08	82.72				J		70			CN	PR	SM					
BHL-08	82.76				J		75			CN	PR	SM					or br alteration
BHL-08	82.85				J		65			CN	PR	SM					or br alteration
BHL-08	82.87				J		75		wh mi	CT	PR	SM					or br alteration
BHL-08	82.91				J		70		wh mi	CT	PR	SM					or br alteration
BHL-08	82.93				J		80			CN	PR	SM					
BHL-08	83.10				J		75		wh mi	CT	PR	SM					
BHL-08	83.20				J		15		wh mi	CT	PR	RF					
BHL-08	83.34				J		70			CN	PR	RF					or br alteration
BHL-08	83.57				hJ		70		wh mi	SN	PR						pi or 10mm alteration halo
BHL-08	84.51				hJ		60		wh mi	SN	PR						
BHL-08	85.05				J		0			CN	PR	RF					
BHL-08	85.10				hJ		70		wh mi	SN	PR						pi or 5mm alteration halo
BHL-08	85.22				J		10			CN	PR	RF					
BHL-08	85.40	85.60			hJ		60	90	wh mi	SN	UN						
BHL-08	85.41				J		10			CN	PR	RF					
BHL-08	85.56				J		70			CN	PR	RF					
BHL-08	85.63	85.91			hJ	x2	60	90	wh mi	SN	UN						
BHL-08	85.84				hJ		70		wh mi	SN	PR						or 10mm alteration halo
BHL-08	85.87	86.35			hJ	x8	70	80	wh mi	SN	PR						sporadic or 10mm alteration halo
BHL-08	86.23				hJ		20		wh mi	SN	PR						
BHL-08	86.52				hJ		60		wh mi	SN	PR						
BHL-08	86.65				hJ		40		wh mi	SN	PR						
BHL-08	86.66				hJ		60		wh mi	SN	PR						
BHL-08	87.02				hJ		70		wh mi	SN	PR						
BHL-08	87.13				J		10			CN	PR	RF					
BHL-08	87.15				hJ		45		wh mi	SN	PR						
BHL-08	87.18				hJ		30		wh mi	SN	PR						
BHL-08	87.19				J		40			CN	PR	SM					
BHL-08	87.23				hJ		60		wh mi	SN	PR						
BHL-08	87.37				J		0			CN	UN	RF					
BHL-08	87.63				hJ		70		wh mi	SN	PR						pi or 10mm alteration halo
BHL-08	87.91				CO		0	10			UN						
BHL-08	87.94				hJ		70				PR						
BHL-08	88.03				CO		45				UN						
BHL-08	88.73				hJ		60		wh mi	SN	PR						
BHL-08	88.78	88.86			hJ	x2	70		wh mi	SN	PR						pi or 5mm alteration halo
BHL-08	88.88				J		30		Fe	SN	PR	SM					
BHL-08	88.92				J		60		Fe	SN	PR	RF					
BHL-08	88.94				J		50		Fe	SN	PR	RF					
BHL-08	89.21				MB												
BHL-08	89.88				J		60			CN	PR	RF					
BHL-08	89.89	90.00			hJ		90		wh mi	SN	PR						
BHL-08	89.94				hJ		90		wh mi	SN	PR						
BHL-08	90.05				J		60			CN	PR	RF					
BHL-08	90.18				hJ		20		wh mi	SN	PR						
BHL-08	90.20				hJ	x2	75		wh mi	SN	PR						
BHL-08	90.27				hJ		70		wh mi	SN	PR						
BHL-08	90.31				J		0			CN	PR	RF					
BHL-08	90.39				hJ		60		wh mi	SN	PR						
BHL-08	90.72				hJ		60		wh mi	SN	PR						
BHL-08	90.86				J		20			CN	PR	RF					
BHL-08	91.98				hJ		60				PR						
BHL-08	92.09				hJ		70		bk mi	SN	PR						



Pioneer-Burdekin Pumped Hydro Energy Scheme: Tranche 1 – BHL-08 Defects List

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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
BHL-08	92.16				hJ		80		bk mi	SN	PR						
BHL-08	92.27				hJ		40		wh mi	SN	PR						
BHL-08	92.35				hJ		70	90	wh mi	SN	UN						
BHL-08	92.59				J		30		bk mi	VN	PR	SM					
BHL-08	93.25				hJ		65		wh mi	SN	PR						
BHL-08	93.31				HB												
BHL-08	93.35				hJ		60		wh mi	SN	PR						
BHL-08	93.58	93.61			J	x2	20			CN	PR	RF					
BHL-08	93.61				hJ		20		wh mi	SN	PR						
BHL-08	93.72				hJ		30		wh mi	SN	PR						
BHL-08	93.84				hJ		40		wh mi	SN	PR						
BHL-08	94.06				hJ		50		wh mi	SN	PR						
BHL-08	94.17				hJ		70		wh mi	SN	PR						
BHL-08	94.28				hJ		70		wh mi	SN	PR						
BHL-08	94.33				hJ		20		wh mi	SN	PR						
BHL-08	94.36				hJ		70		wh mi	SN	PR						
BHL-08	94.47				hJ		60		wh mi	SN	PR						2mm or br alteration halo
BHL-08	94.54				J		30			CN	PR	RF					
BHL-08	94.58				J		30			CN	PR	RF					
BHL-08	94.62				hJ		50		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	94.75				hJ		40		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	94.80				hJ		50		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	94.92				hJ		40		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	95.03				J		60			CN	PR	RF					
BHL-08	95.04				hJ		40		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	95.18				J		60			CN	PR	RF					
BHL-08	95.20				hJ		60		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	95.24				hJ		60		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	95.37				J		30			CN	PR	RF					
BHL-08	95.39				hJ		40		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	95.44				hJ		40		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	95.58				J		30			CN	IR	RF					
BHL-08	95.63	95.73			J		85			CN	PR	RF					
BHL-08	95.64				J		20			CN	UN	RF					
BHL-08	95.69				J		0			CN	PR	RF					
BHL-08	95.90				hJ		40		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	95.95				J					CN	PR	RF					
BHL-08	96.17				hJ		70		wh mi	SN	PR						1mm pale pi alteration halo
BHL-08	96.28				HB												
BHL-08	96.38				J		30		Fe	SN	PR	RF					
BHL-08	96.45				hJ		40		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	96.53				hJ		60		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	96.58				hJ		60		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	97.36				hJ		60		wh mi	SN	PR						
BHL-08	97.42				hJ		60		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	97.48				J		20			CN	UN	RF					
BHL-08	97.62				J		20		bk mi, Fe	SN	PR	RF					
BHL-08	97.65				J		70		bk mi, Fe	SN	PR	SM					
BHL-08	97.71				hJ		50		wh mi	SN	PR						1mm pale pi alteration halo
BHL-08	97.75				J		20			CN	UN	RF					
BHL-08	97.81				hJ		40				PR						
BHL-08	97.85				hJ		70		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	97.92				J		20			CN	IR	RF					
BHL-08	98.01	98.12			V		45	50	aplite	SN	PR						
BHL-08	98.26				hJ		30		wh mi	SN	PR						
BHL-08	98.46				J		10			CN	IR	RF					
BHL-08	98.70				J		80			CN	PR	RF					5mm pale pi alteration halo
BHL-08	98.80				J		20			CN	IR	RF					
BHL-08	98.80	98.91			V		10		aplite	SN	PR						
BHL-08	98.83				hJ		40		wh mi	SN	PR						
BHL-08	98.86				hJ		45		wh mi	SN	PR						
BHL-08	98.87				J		50			CN	PR	RF					
BHL-08	98.91				hJ		50		wh mi	SN	PR						
BHL-08	98.93				J		50			CN	PR	RF					
BHL-08	98.96				hJ		50		wh mi	SN	PR						
BHL-08	98.98				J		20			CN	PR	RF					
BHL-08	99.05				J		80		Fe	SN	PR	RF					
BHL-08	99.10				MB												
BHL-08	99.88				hJ		50		wh mi	SN	PR						
BHL-08	99.89				hJ		50		wh mi	SN	PR						
BHL-08	99.93				hJ		80		wh mi	SN	PR						5-10mm pi br alteration halo
BHL-08	100.02				hJ		10		wh mi	SN	UN						
BHL-08	100.05				J		10			CN	PR	RF					
BHL-08	100.21				hJ	x2	10	15	wh mi	SN	UN						2-3mm pale pi alteration halo
BHL-08	100.33				hJ		30		wh mi	SN	ST						2-3mm pale pi alteration halo
BHL-08	100.34				J		40		wh mi	VN	ST	RF					
BHL-08	100.44				hJ	x5	30	50	wh mi	SN	PR						1mm pale pi alteration halo
BHL-08	100.50				J		0		pk br mi	SN	PR	SM					5-10mm pi br alteration halo
BHL-08	100.65				hJ		40		wh mi	SN	PR						



Pioneer-Burdekin Pumped Hydro Energy Scheme: Tranche 1 – BHL-08 Defects List

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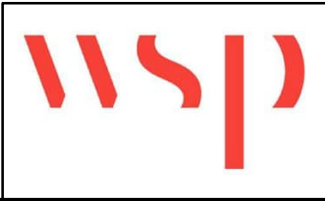
PointID	Depth	Bottom	Fracture Set	Defect Number	Type	Type Suffix	Dip Minimum (degrees)	Dip Maximum (degrees)	Infilling Material	Aperture Observation	Planarity	Roughness	Aperture Measurement Sign	Aperture Measurement	Aperture	Spacing	Remark
BHL-08	100.68				hJ		40		wh mi	SN	PR						
BHL-08	100.71				J		40		Fe	SN	PR	RF					2-3mm pale pi alteration halo
BHL-08	100.75				hJ		50		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	100.82				hJ		40		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	100.87				J		20		Fe	SN	PR	RF					2-3mm pale pi alteration halo
BHL-08	100.91				hJ		50		bk mi	SN	PR						1mm pale pi alteration halo
BHL-08	100.94				hJ		40		bk mi	SN	PR						1mm pale pi alteration halo
BHL-08	100.97				hJ		50		wh mi	SN	PR						
BHL-08	101.05				J		0			CN	PR	RF					
BHL-08	101.12				J		5			CN	PR	RF					
BHL-08	101.17				hJ		40		bk mi	SN	PR						
BHL-08	101.82				MB												
BHL-08	101.90				J		30		Fe	SN	PR	RF					
BHL-08	102.00	102.06			MB												
BHL-08	102.11				hJ		60		wh mi	SN	PR						
BHL-08	102.89				J		60			CN	PR	SM					
BHL-08	103.30				hJ		70		wh mi	SN	PR						
BHL-08	105.11				J		10		wh mi	CT	PR	SM					
BHL-08	105.22				J		40			CN	PR	SM					
BHL-08	106.56				hJ	x2	70	80	wh mi	SN	PR						
BHL-08	106.65				J		50			CN	UN	SM					
BHL-08	106.97				J		70			CN	PR	RF					
BHL-08	107.03				J		50			CN	PR	SM					
BHL-08	107.09				MB												
BHL-08	107.85	108.11			V		70		Fe	SN	PR	RF					5-10mm pi or alteration halo
BHL-08	108.48				J		30			CN	PR	RF					
BHL-08	108.73				hJ		80		wh mi	SN	PR						2-3mm pale pi alteration halo
BHL-08	108.83				J		15			CN	PR	RF					
BHL-08	108.85				V		70			SN	PR						5-10mm pi or alteration halo
BHL-08	108.95				V		70			SN	PR						20-30mm pi or alteration halo
BHL-08	109.18				J		35			CN	PR	RF					
BHL-08	109.20				J		65			CN	PR	SM					
BHL-08	109.22				J		15			CN	PR	RF					



PointID : BHL-08 Depth Range: 9.20 - 13.00 m



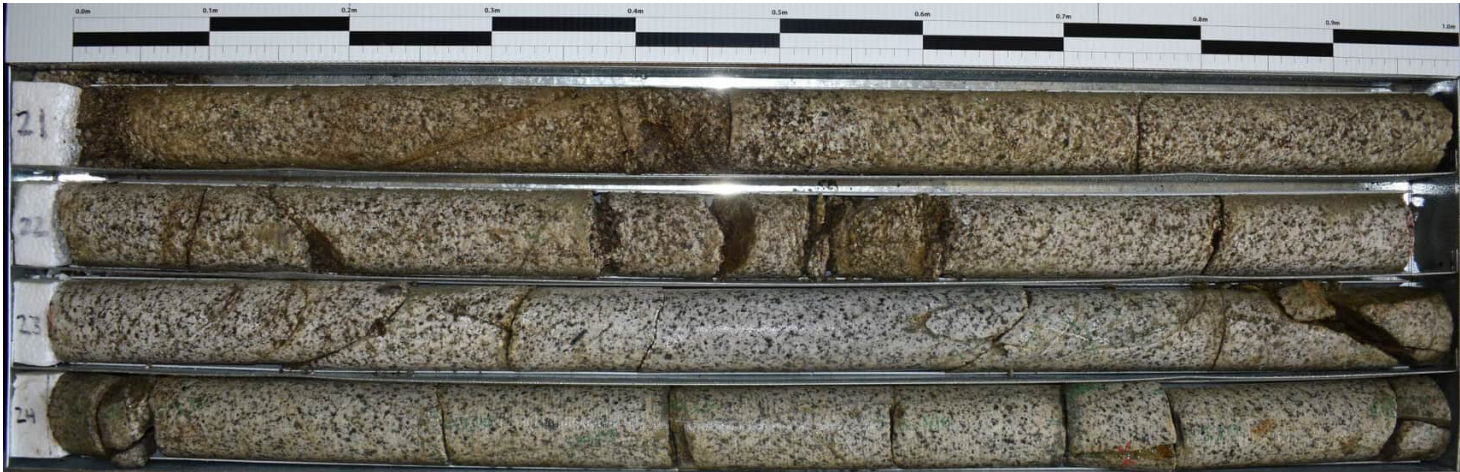
PointID : BHL-08 Depth Range: 13.00 - 17.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHL-08	DRAWN	RC/PL	DATE	15/08/2024
		CHECKED	GEM	DATE	7/10/2024
		SCALE	Not To Scale		A4
		PROJECT No	PS138693		FIGURE No 1/13

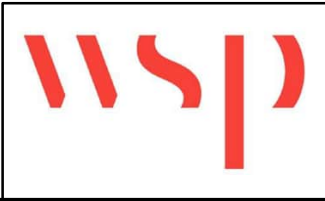
(c) Queensland Hydro Pty Ltd 2025, CC BY 4.0. Please note copyright and limitation of liability notices on attached cover page.

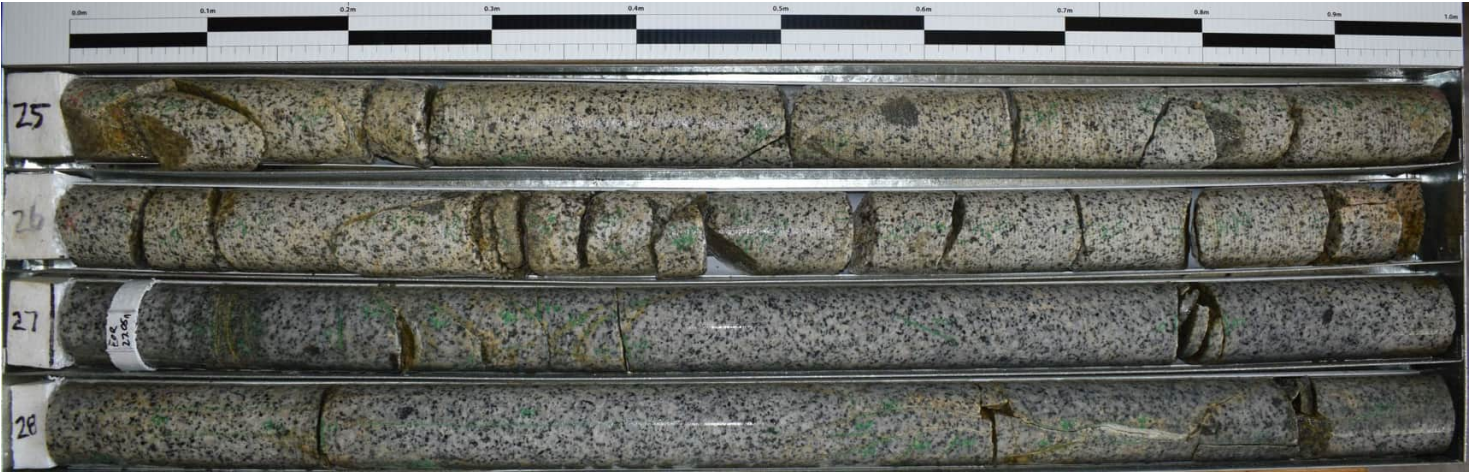


PointID : BHL-08 Depth Range: 17.00 - 21.00 m

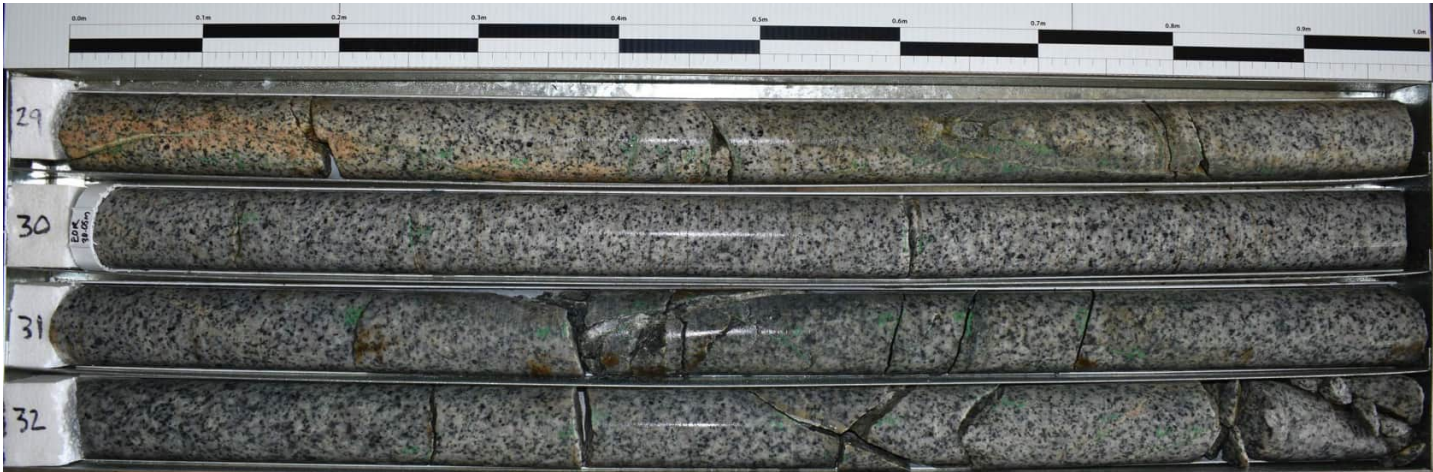


PointID : BHL-08 Depth Range: 21.00 - 25.00 m

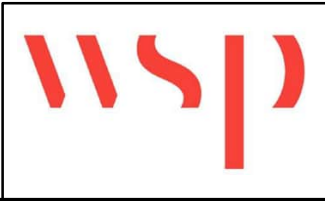
	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHL-08	DRAWN	RC/PL	DATE	15/08/2024
		CHECKED	GEM	DATE	7/10/2024
		SCALE Not To Scale			A4
		PROJECT No PS138693		FIGURE No 2/13	



PointID : BHL-08 Depth Range: 25.00 - 29.00 m



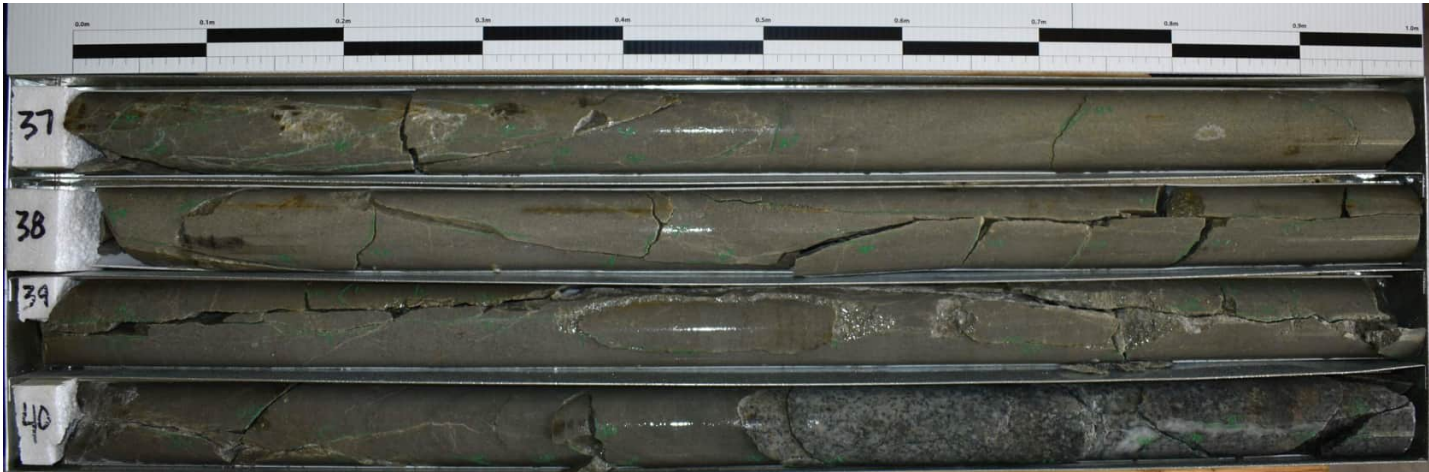
PointID : BHL-08 Depth Range: 29.00 - 33.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHL-08	DRAWN	RC/PL	DATE	15/08/2024
		CHECKED	GEM	DATE	7/10/2024
		SCALE	Not To Scale		A4
		PROJECT No	PS138693		FIGURE No 3/13

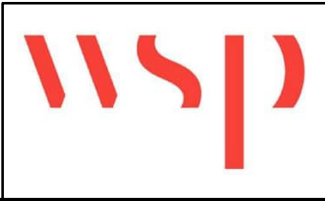
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PointID : BHL-08 Depth Range: 33.00 - 37.00 m



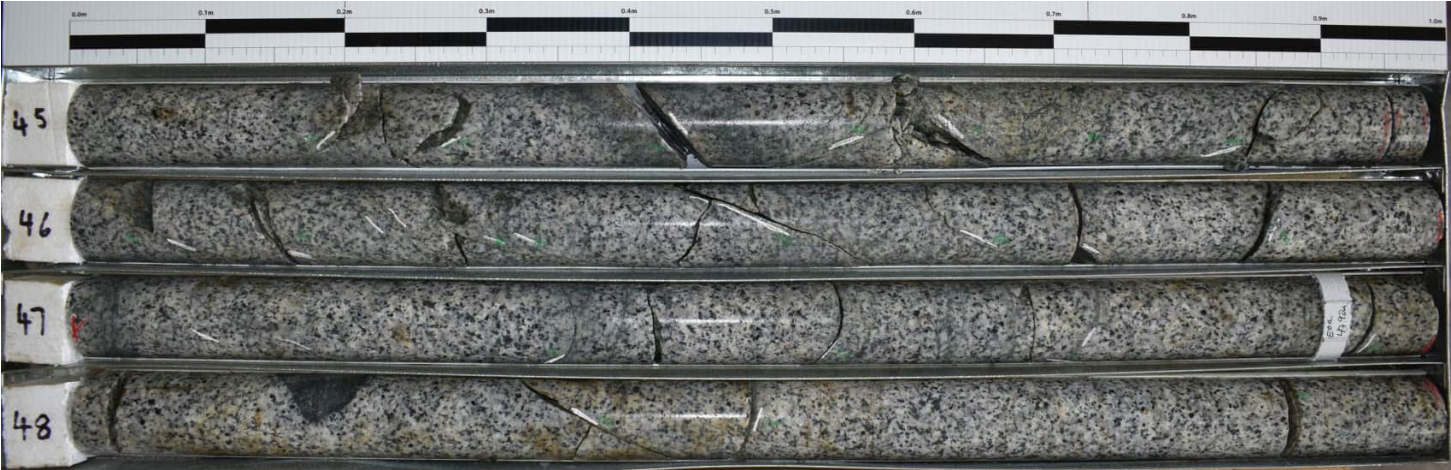
PointID : BHL-08 Depth Range: 37.00 - 41.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHL-08		DRAWN	RC/PL	DATE	15/08/2024
			CHECKED	GEM	DATE	7/10/2024
			SCALE Not To Scale			A4
			PROJECT No PS138693		FIGURE No 4/13	

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PointID : BHL-08 Depth Range: 41.00 - 45.00 m

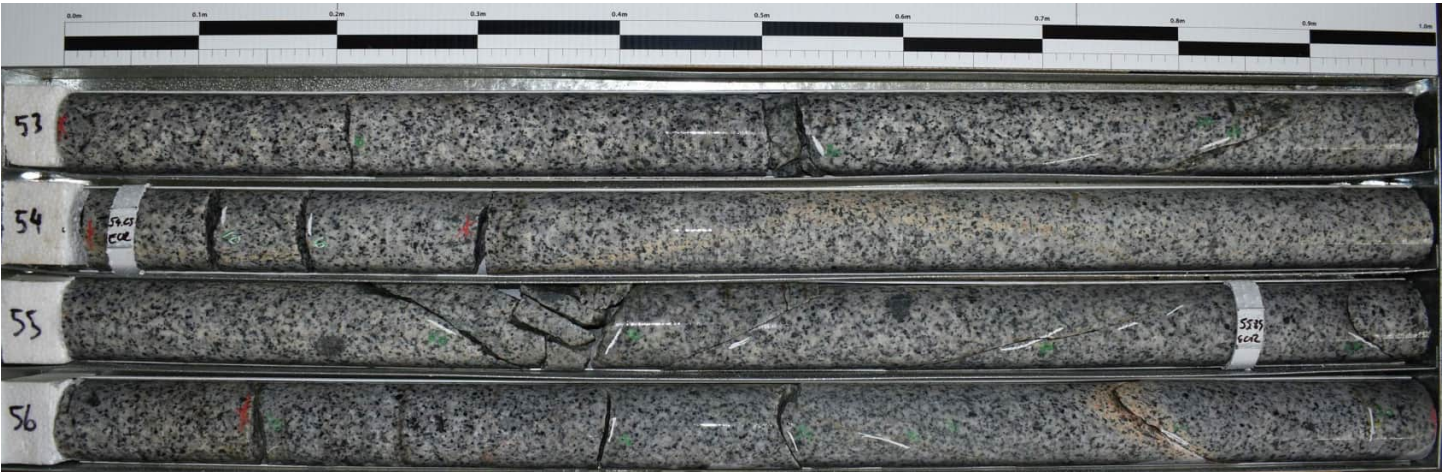


PointID : BHL-08 Depth Range: 45.00 - 49.00 m

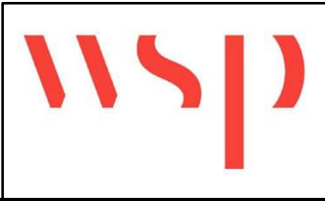
	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHL-08	DRAWN	RC/PL	DATE	15/08/2024	
		CHECKED	GEM	DATE	7/10/2024	
		SCALE			Not To Scale	A4
		PROJECT No		PS138693	FIGURE No	



PointID : BHL-08 Depth Range: 49.00 - 53.00 m



PointID : BHL-08 Depth Range: 53.00 - 57.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHL-08	DRAWN	RC/PL	DATE	15/08/2024
		CHECKED	GEM	DATE	7/10/2024
		SCALE	Not To Scale		A4
		PROJECT No	PS138693		FIGURE No 6/13

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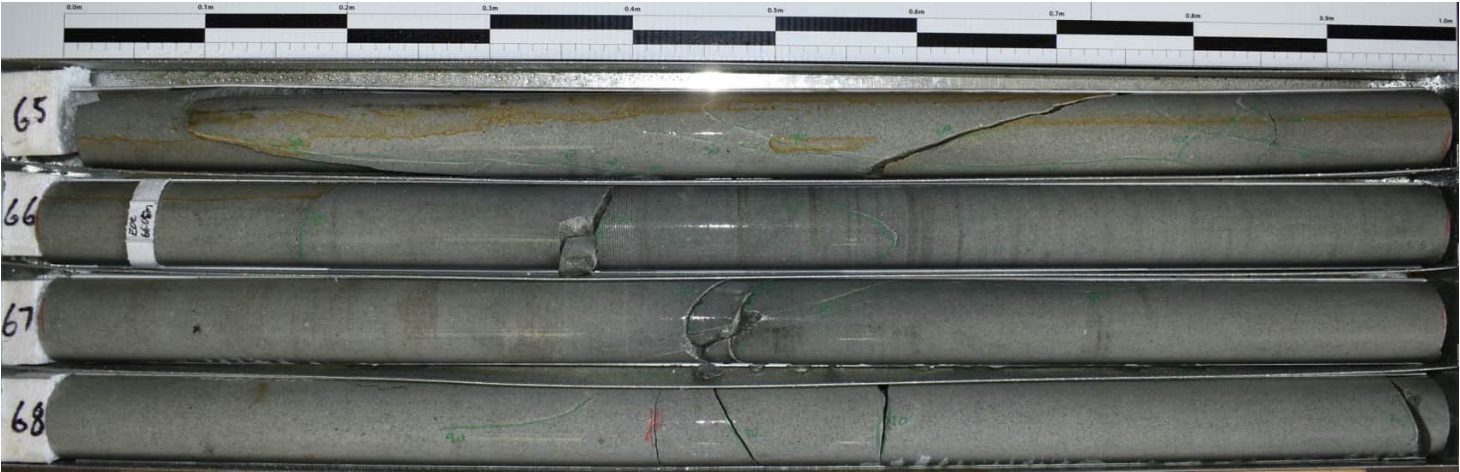
PointID : BHL-08 Depth Range: 57.00 - 61.00 m



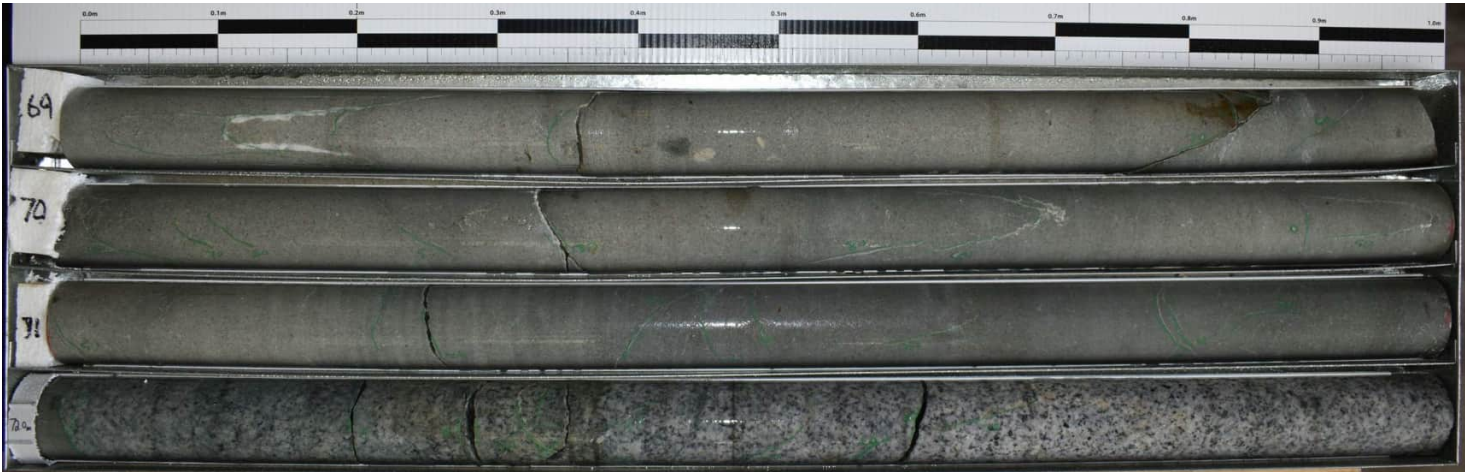
PointID : BHL-08 Depth Range: 61.00 - 65.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHL-08	DRAWN RC/PL	DATE 15/08/2024	
		CHECKED GEM	DATE 7/10/2024	
		SCALE Not To Scale		A4
		PROJECT No PS138693		FIGURE No 7/13

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PointID : BHL-08 Depth Range: 65.00 - 69.00 m



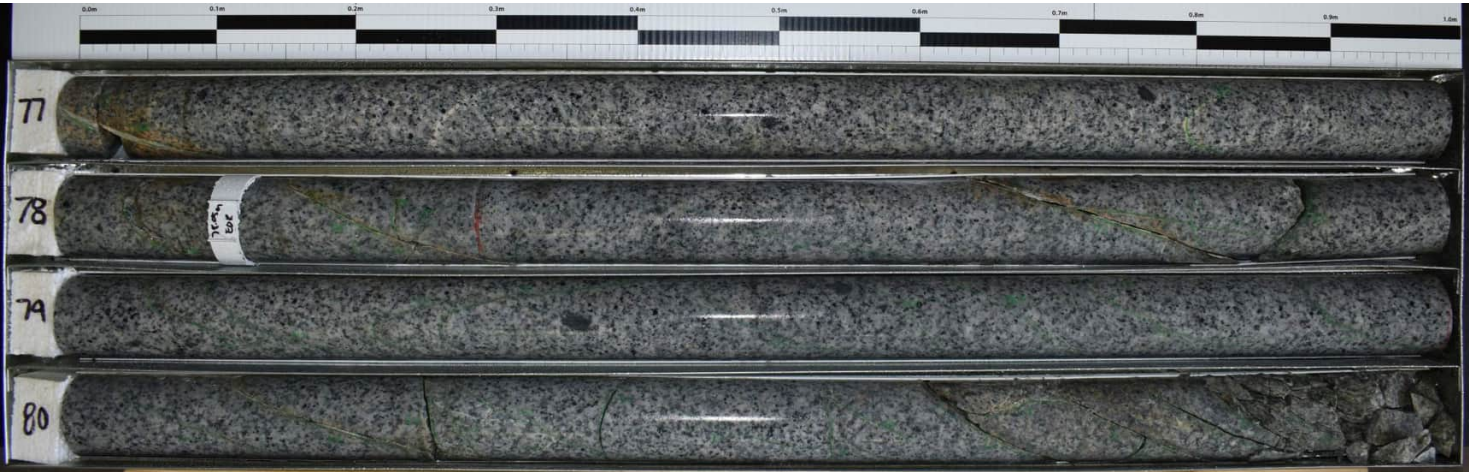
PointID : BHL-08 Depth Range: 69.00 - 73.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHL-08	DRAWN	RC/PL	DATE	15/08/2024
		CHECKED	GEM	DATE	7/10/2024
		SCALE Not To Scale			A4
		PROJECT No PS138693		FIGURE No 8/13	

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PointID : BHL-08 Depth Range: 73.00 - 77.00 m



PointID : BHL-08 Depth Range: 77.00 - 81.00 m



TITLE
Queensland Hydro
Netherdale/Dalrymple Heights
Pioneer-Burdekin PHES
Core Photo - BHL-08

DRAWN	RC/PL	DATE	15/08/2024
CHECKED	GEM	DATE	7/10/2024
SCALE	Not To Scale		A4
PROJECT No	PS138693		FIGURE No 9/13



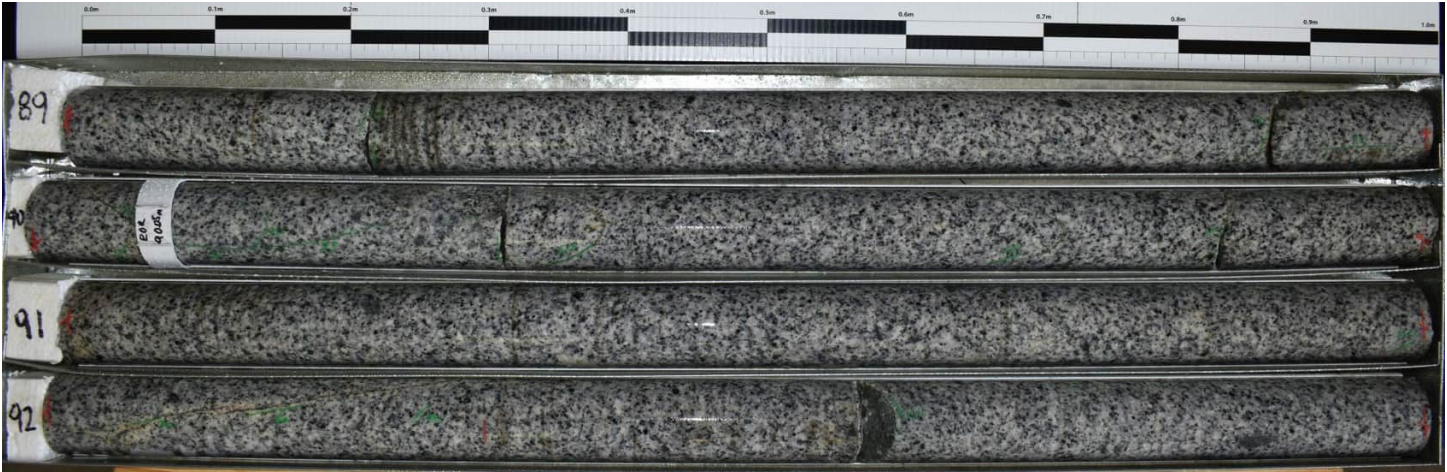
PointID : BHL-08 Depth Range: 81.00 - 85.00 m



PointID : BHL-08 Depth Range: 85.00 - 89.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHL-08	DRAWN RC/PL	DATE 15/08/2024	
		CHECKED GEM	DATE 7/10/2024	
		SCALE Not To Scale		A4
		PROJECT No PS138693		FIGURE No 10/13

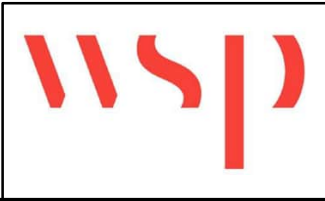
(c) Queensland Hydro Pty Ltd 2025, CC BY 4.0. Please note copyright and limitation of liability notices on attached cover page.



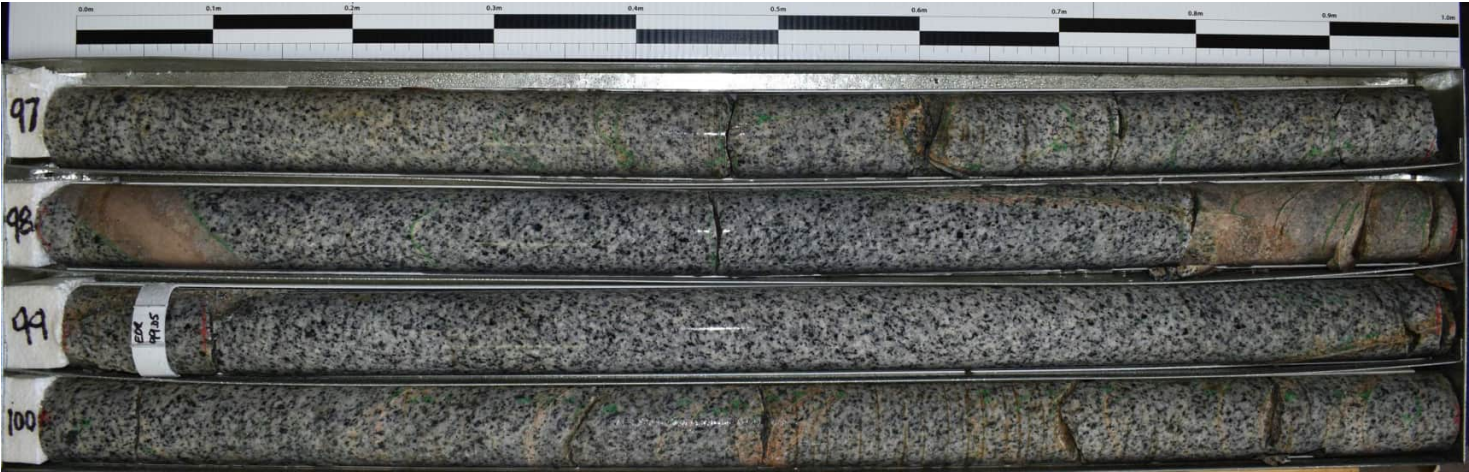
PointID : BHL-08 Depth Range: 89.00 - 93.00 m



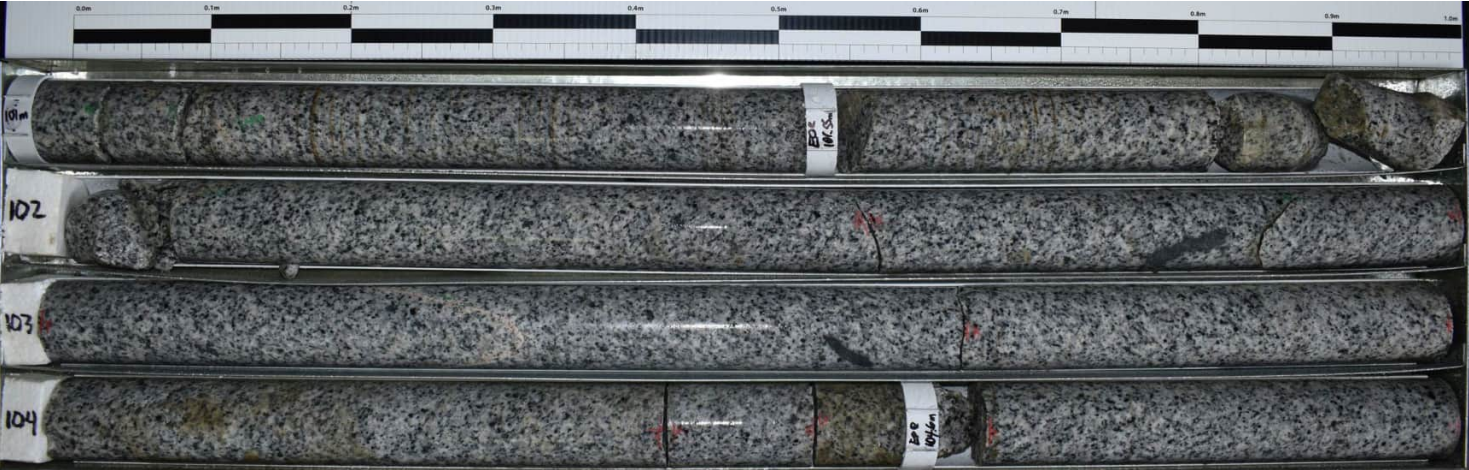
PointID : BHL-08 Depth Range: 93.00 - 97.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHL-08	DRAWN	RC/PL	DATE	15/08/2024
		CHECKED	GEM	DATE	7/10/2024
		SCALE Not To Scale			A4
		PROJECT No PS138693		FIGURE No 11/13	

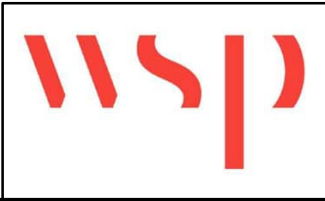
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PointID : BHL-08 Depth Range: 97.00 - 101.00 m



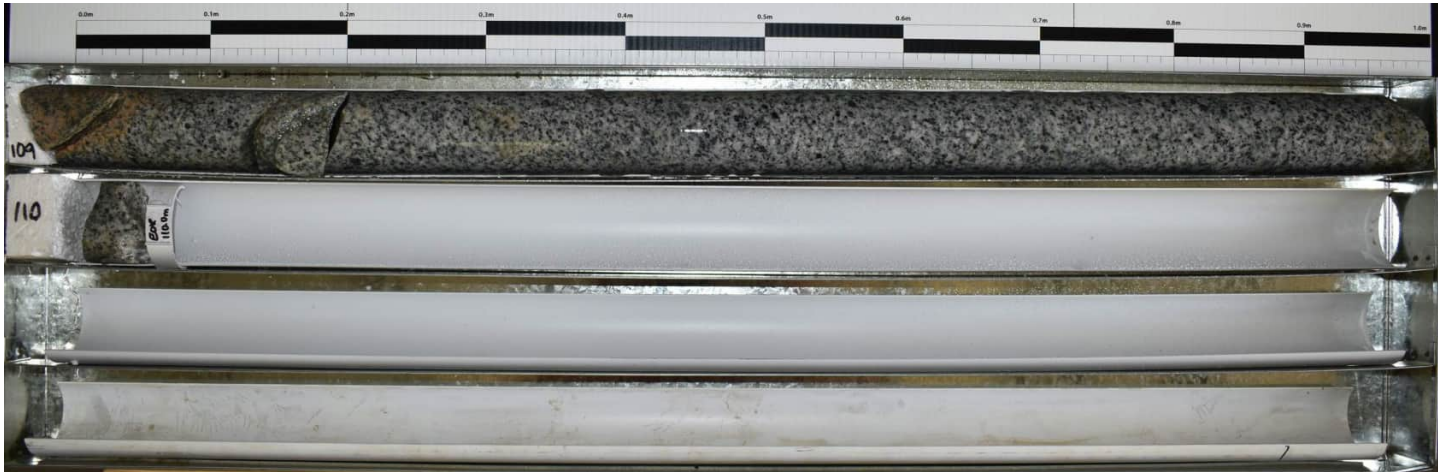
PointID : BHL-08 Depth Range: 101.00 - 105.00 m

	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHL-08	DRAWN	RC/PL	DATE	15/08/2024
		CHECKED	GEM	DATE	7/10/2024
		SCALE Not To Scale			A4
		PROJECT No PS138693		FIGURE No 12/13	

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PointID : BHL-08 Depth Range: 105.00 - 109.00 m



PointID : BHL-08 Depth Range: 109.00 - 110.00 m

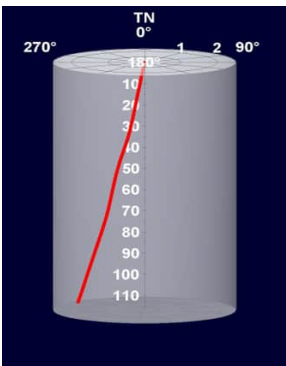
	TITLE Queensland Hydro Netherdale/Dalrymple Heights Pioneer-Burdekin PHES Core Photo - BHL-08	DRAWN	RC/PL	DATE	15/08/2024	
		CHECKED	GEM	DATE	7/10/2024	
		SCALE			Not To Scale	A4
		PROJECT No		PS138693	FIGURE No	



BHL-08 Structural Log



PROJECT:	Pioneer-Burdekin PHES	JOB #	PS138693
CLIENT:	Queensland Hydro	DATE:	20/11/2023



LOCATION:	Lower Reservoir	BH DEPTH:	110.00 m
EASTING:	660370.596 m E	BH DIAMETER:	96 mm (HQ)
NORTHING:	7660961.815 m N	BH AZIMUTH:	234°
ELEVATION:	203.295 m	BH PLUNGE:	-89°
COORD SYSTEM:	MGA2020-55	CASING DEPTH:	21.00 m
LOGGING DATUM:	Ground Level	CASING TYPE:	HWT

LOGGED BY: GH
LOGGED DATE: 17-18/10/2023
DRAWN BY: SB
REVIEWED BY: GH
FILE: BHL-08_Structure_Rev
LOGGED DEPTH: 109.91 m

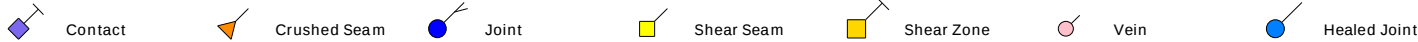
Image logs are oriented relative to magnetic north. Final structures corrected to true north using magnetic declination of 8.2 deg East.

Image orientation above 22.2 m affected by steel casing. No structures picked above 22.2 m.

Mechanical calliper log used for structure dip corrections.

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

INTERPRETED STRUCTURES



Depth		Image Logs			BHL-08							Structural Data			Core
Depth	RL m	Reflectivity	Amplitude-NM HPF	Image-NM	Apparent Structures	3D ATV	3D OTV	Structures - TN	Stereoplots	Core Photo					
		09500	06000	0°90°180°270°0°	0°90°180°270°0°	-0°	-0°	090 Freq/metre 0counts/m18	Schmidt Plot - LH - Type						
21.0	AHD														
21.5															
22.0															
22.5															
23.0															
23.5															
24.0															
24.5															
25.0															
25.5															
26.0															
26.5															
1m:20m	AHD	09500	06000	0°90°180°270°0°	0°90°180°270°0°	-0°	-0°	090 Freq/metre 0counts/m18	Schmidt Plot - LH - Type	Core Photo					
Depth	RL m	Reflectivity	Amplitude-NM HPF	Image-NM	Apparent Structures	3D ATV	3D OTV	Structures - TN	Stereoplots	Core Photo					
Depth		Image Logs			BHL-08							Structural Data			Core

Schmidt Plot - LH - Type

Depth: 22.20 [m] to 25.00 [m]

0°

180°

Mean

Counts

Dip[deg]

Azi[deg]

●

16

58.70

251.03

●

13

12.24

193.17

●

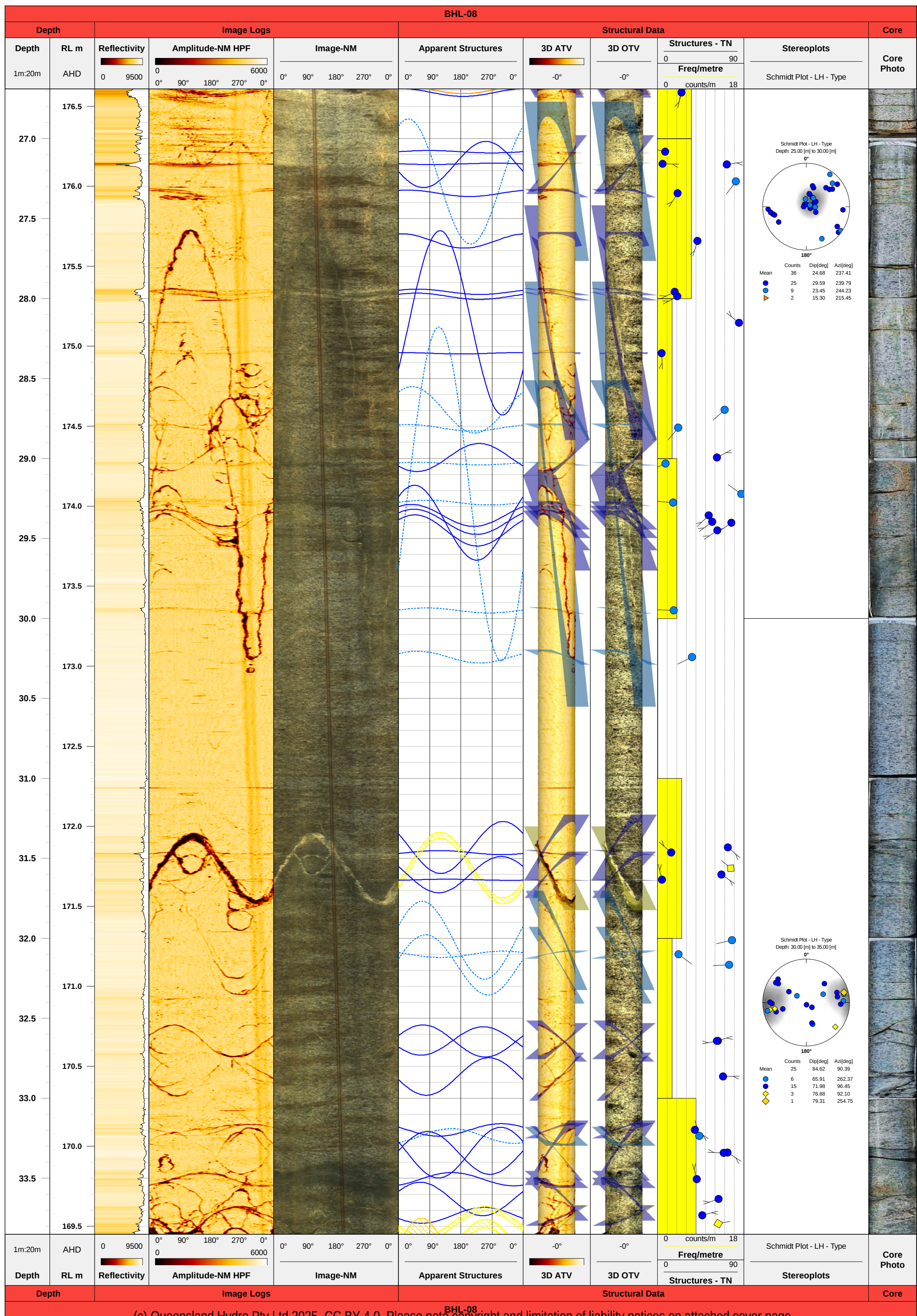
3

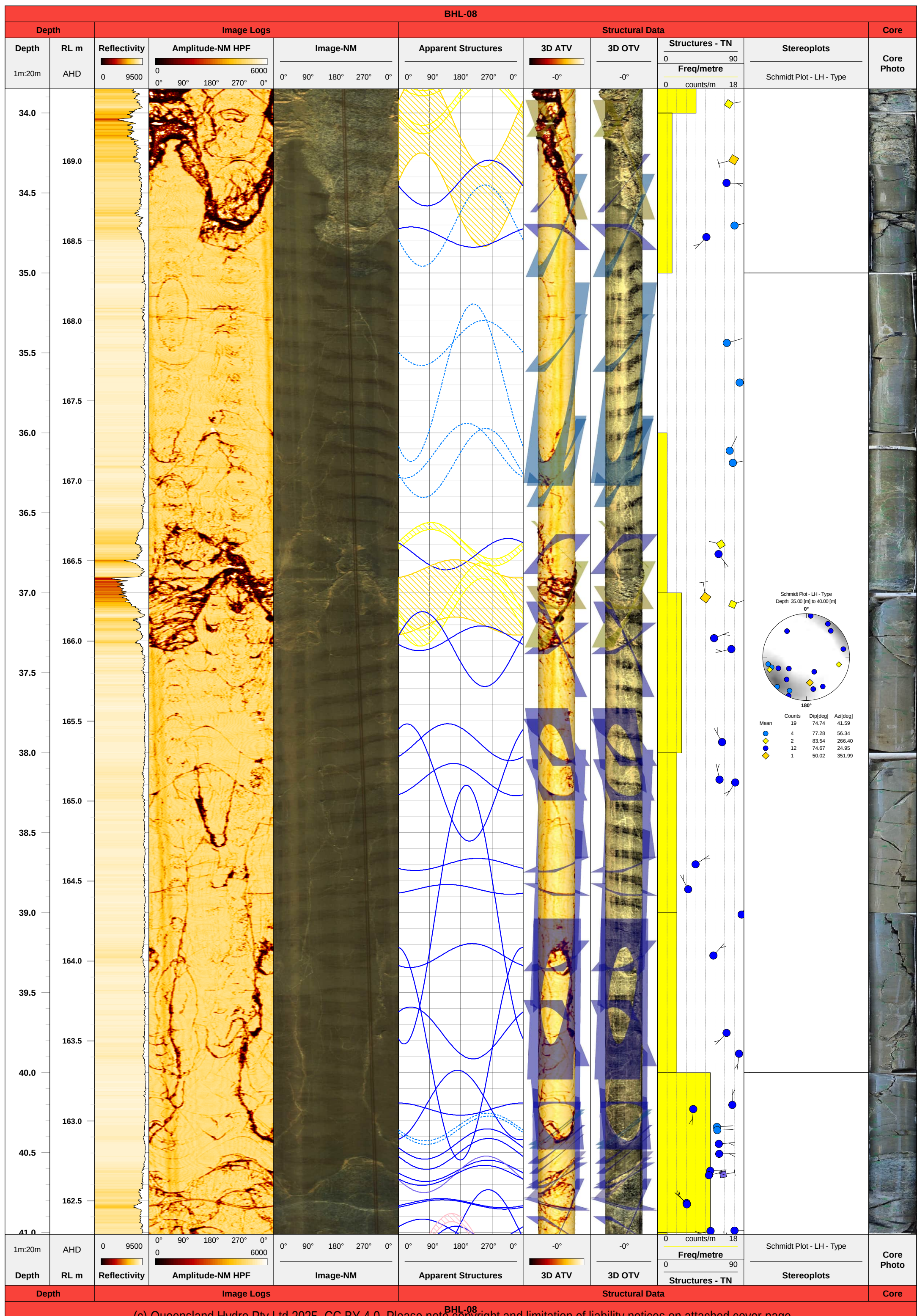
72.46

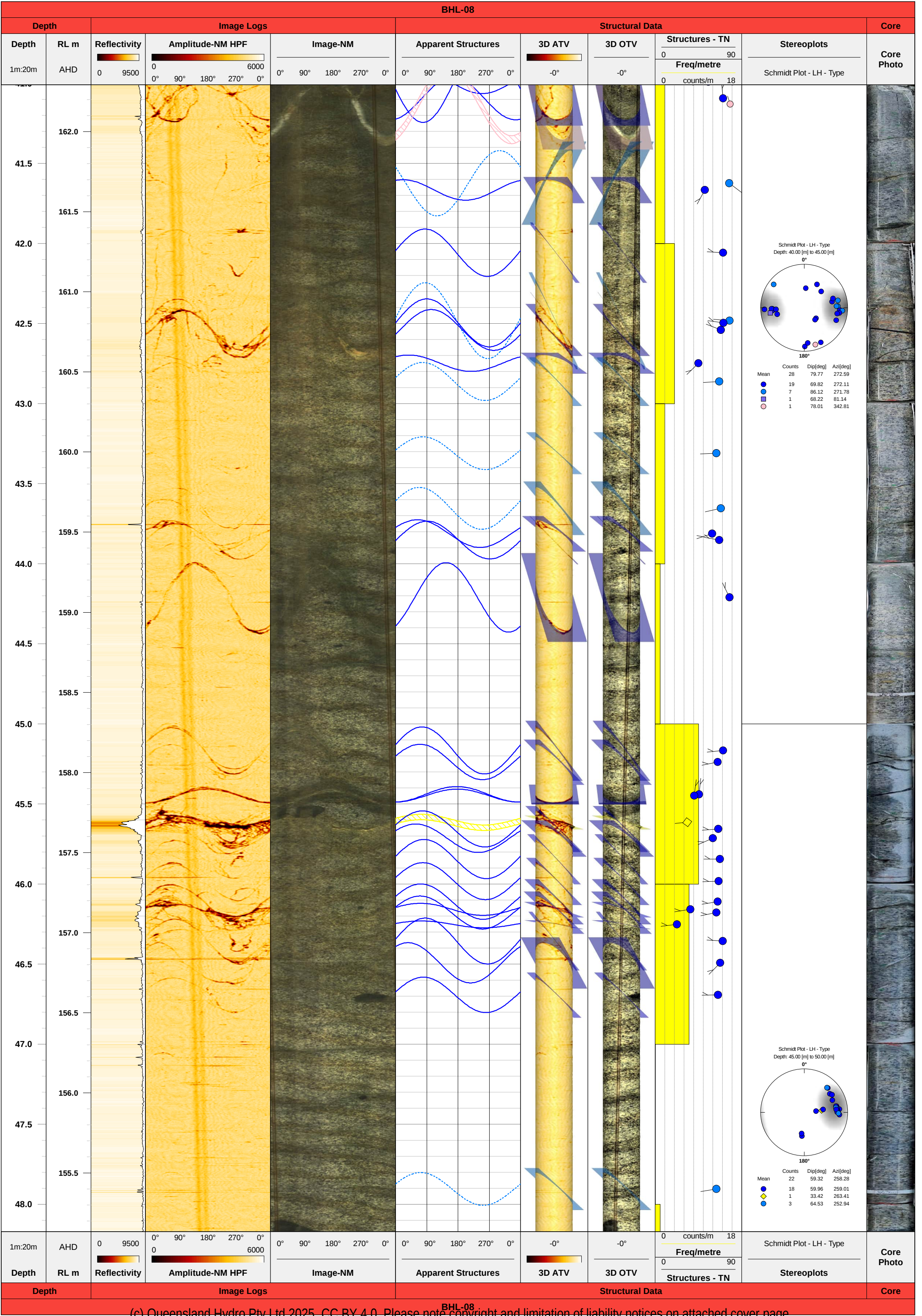
255.57

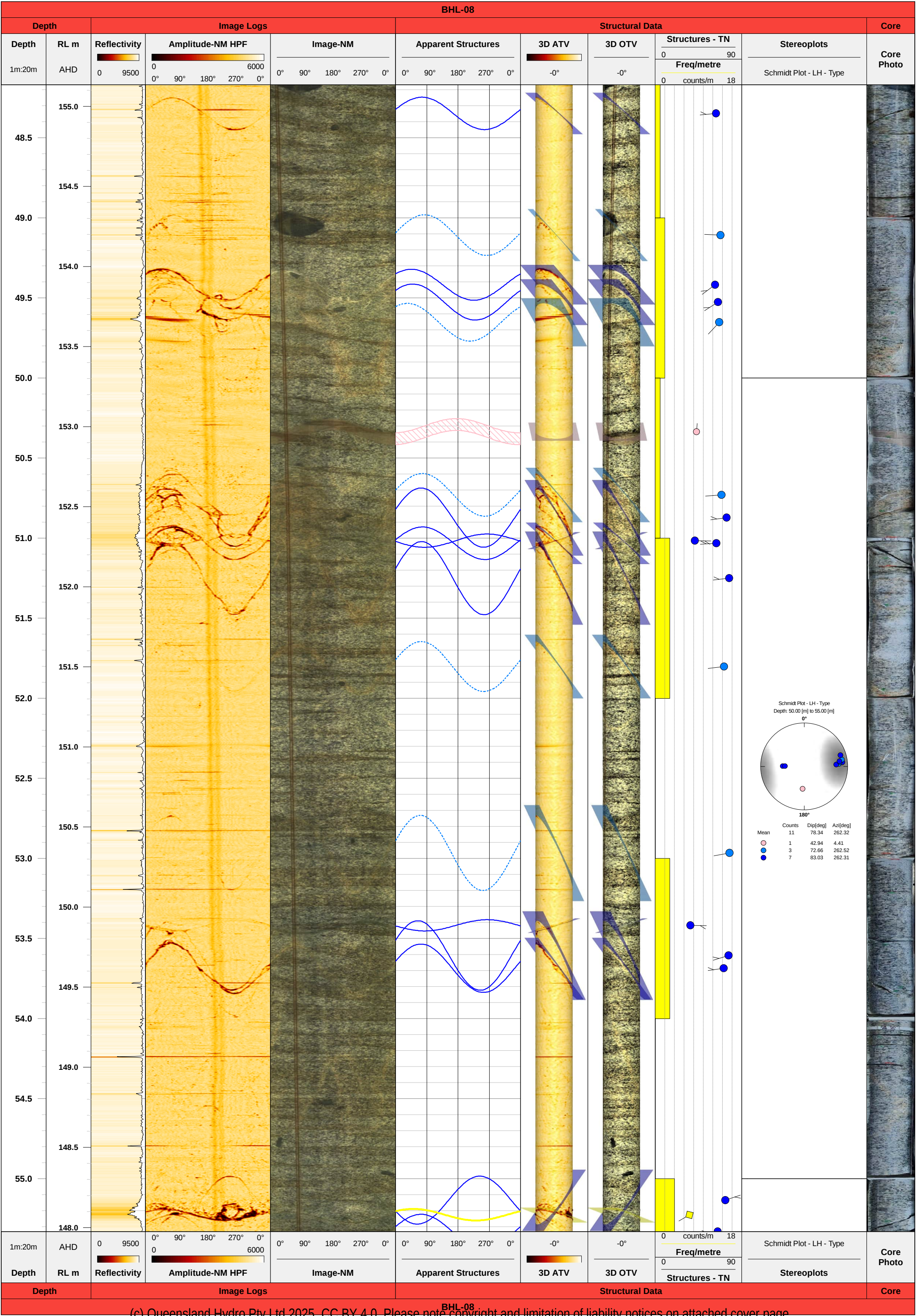
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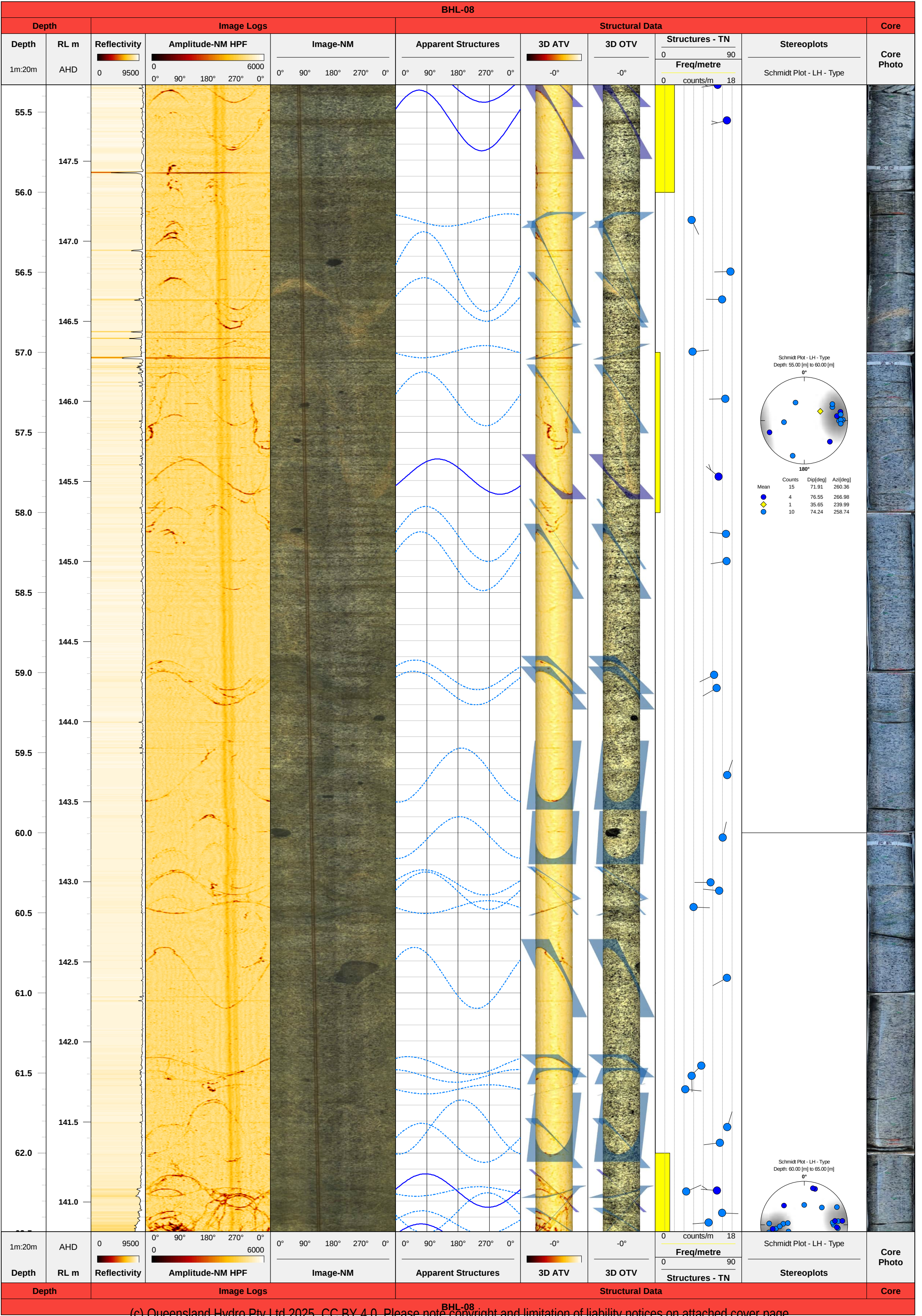
BHL-08

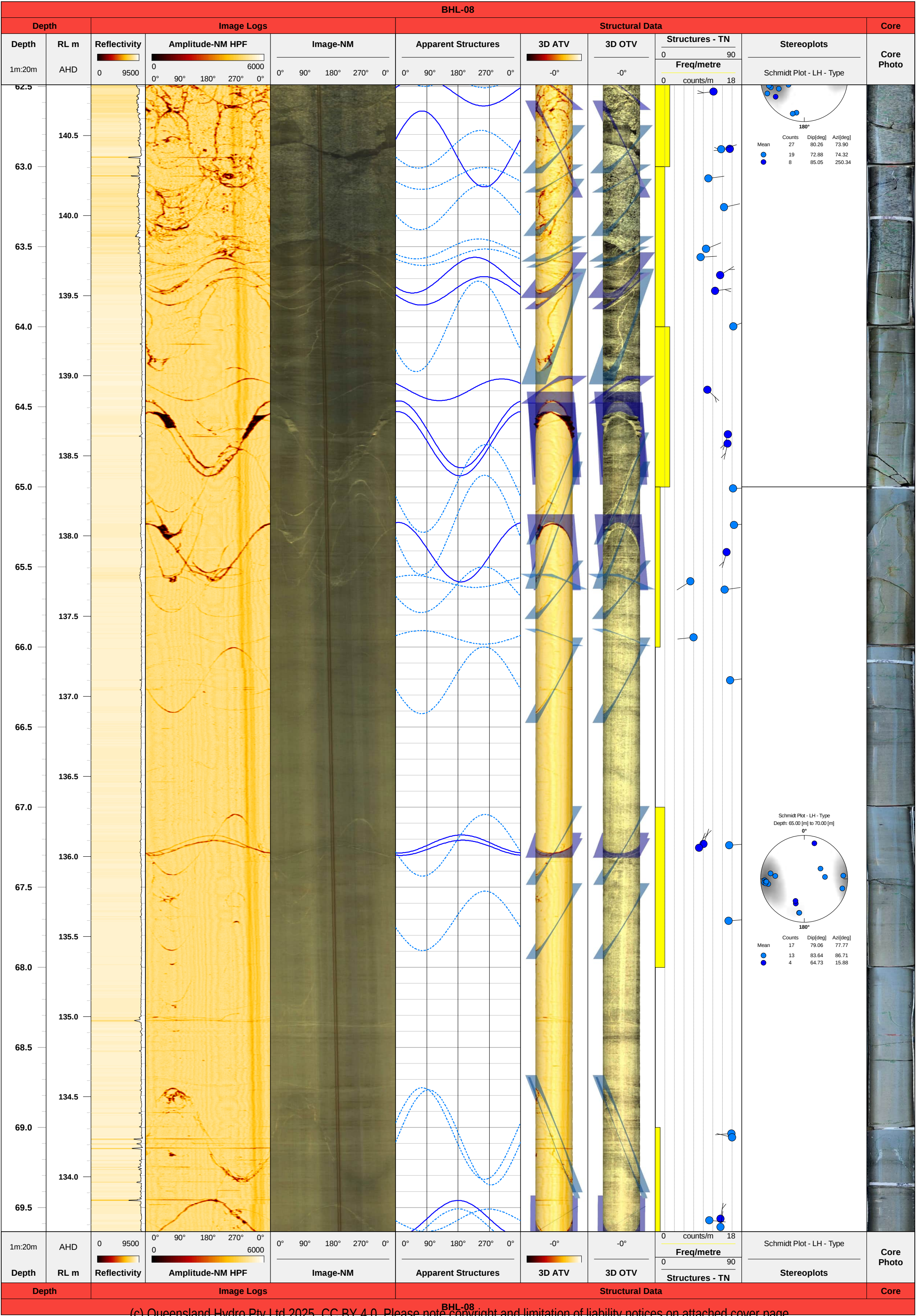


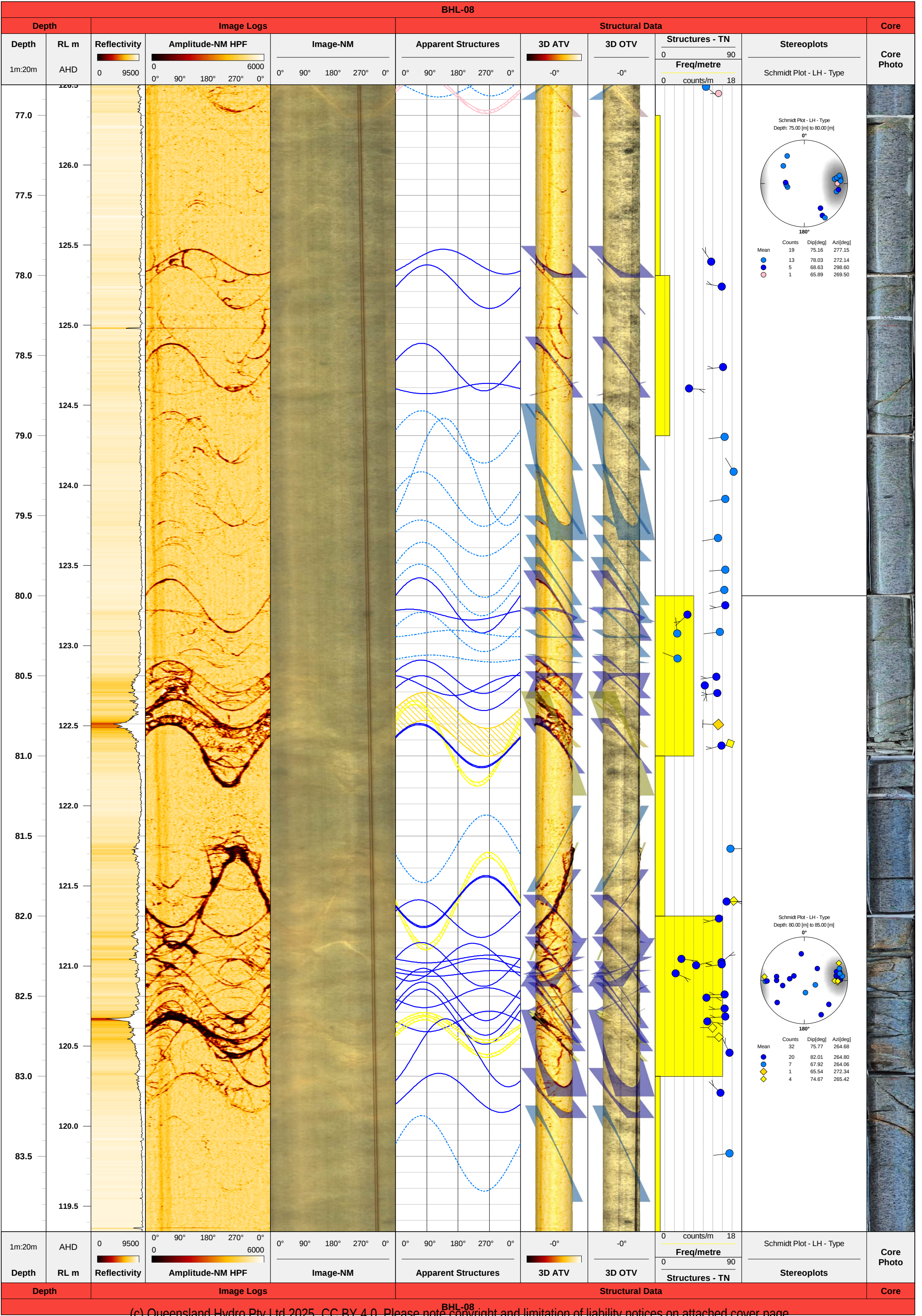


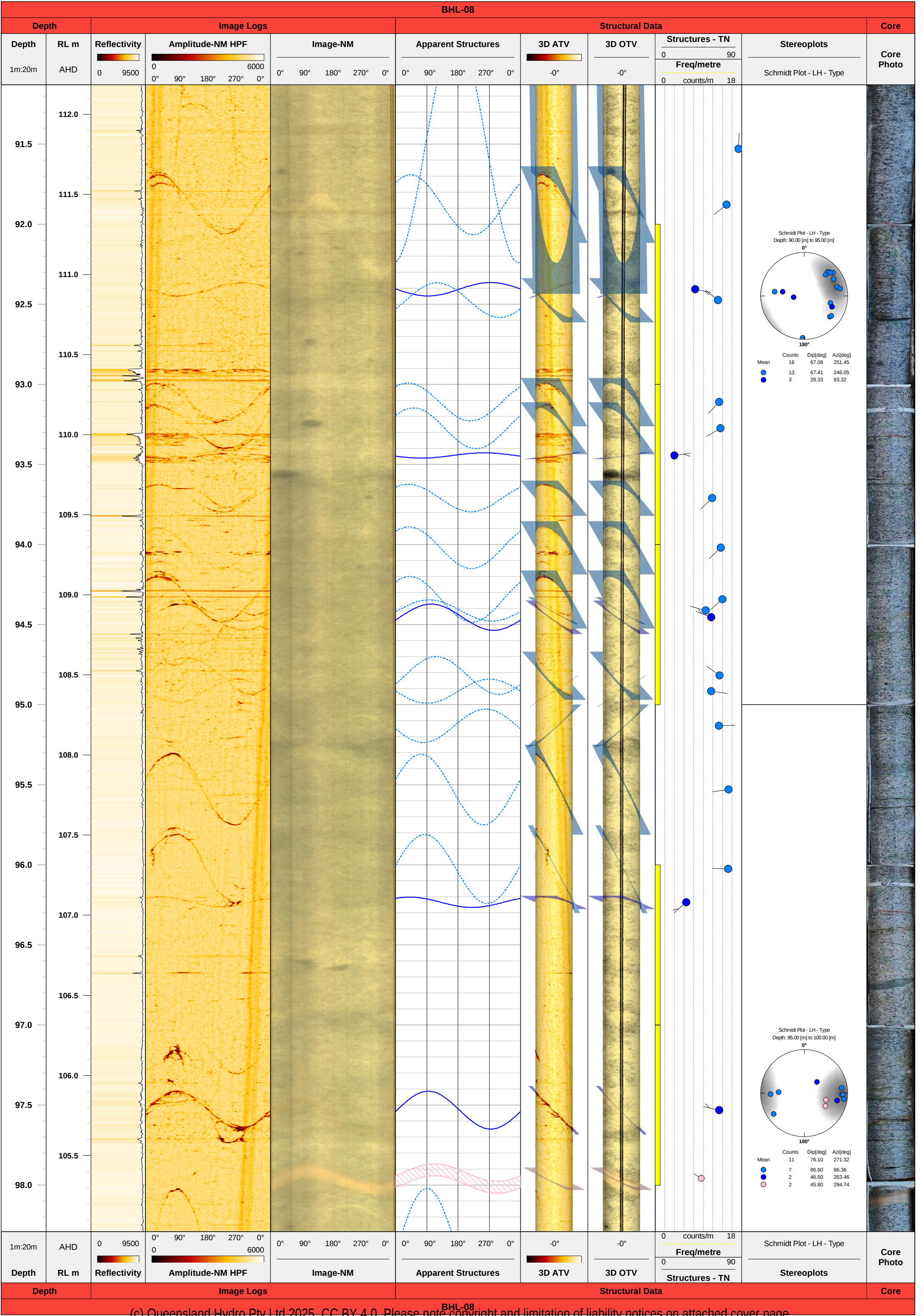


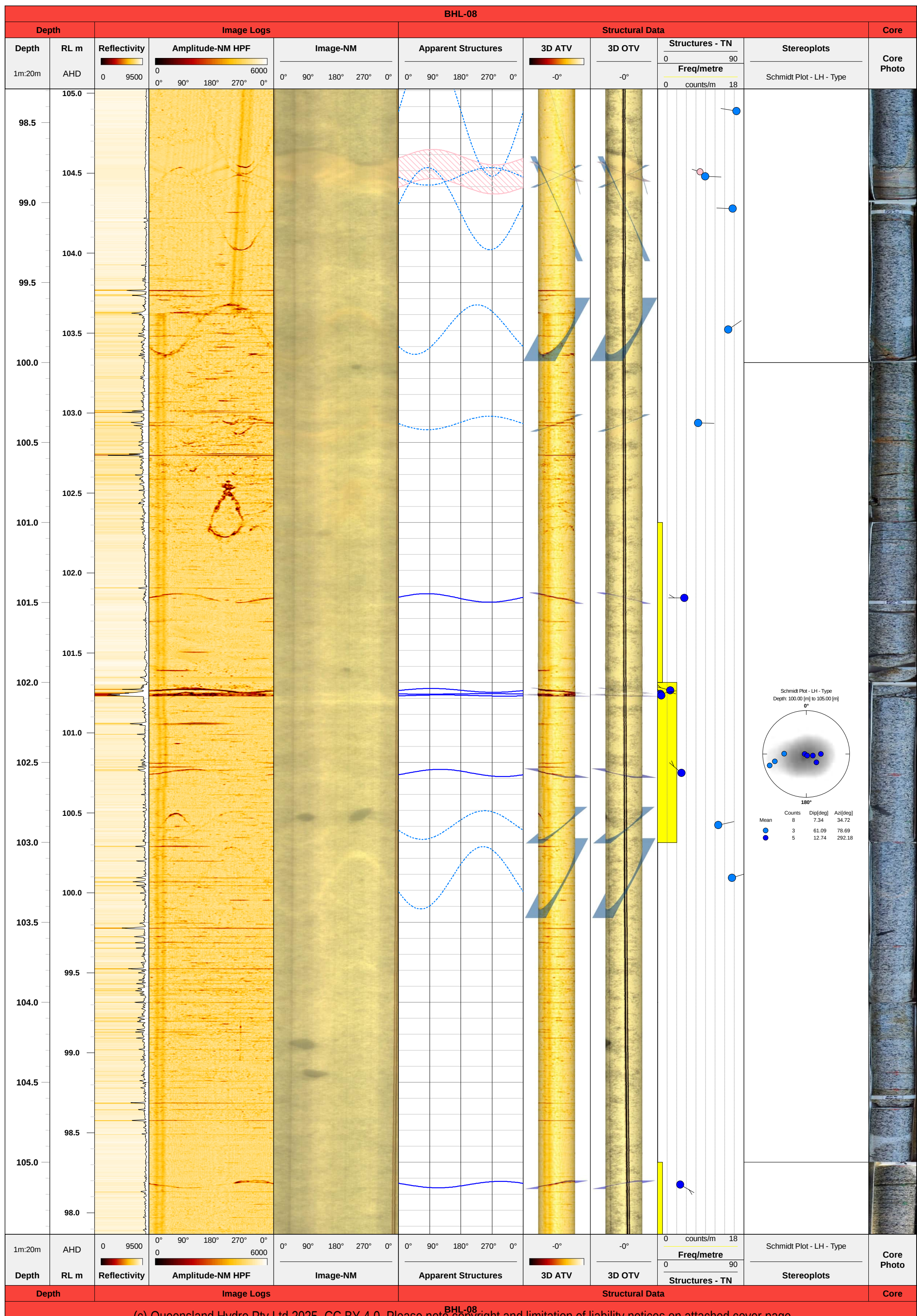


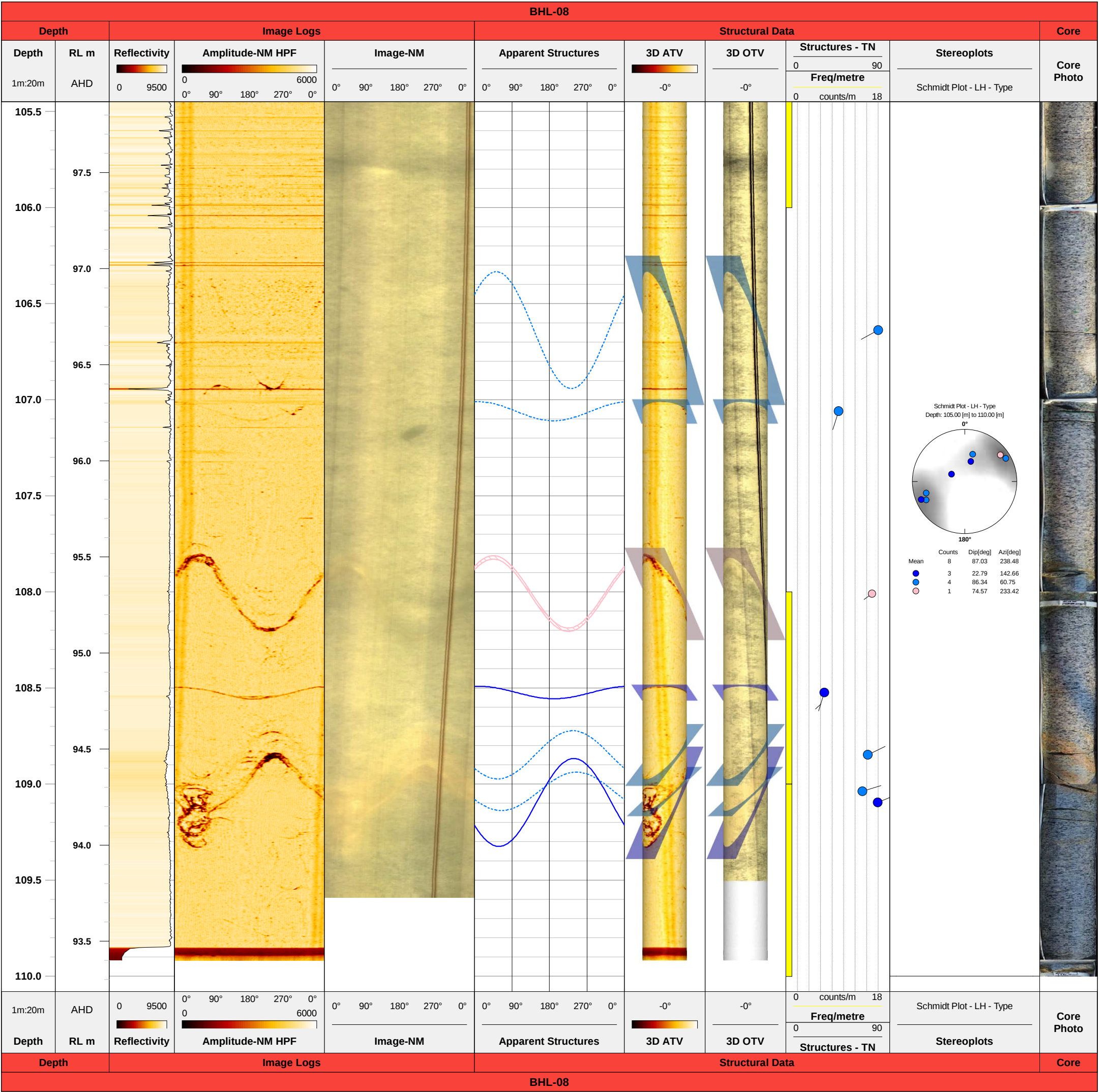










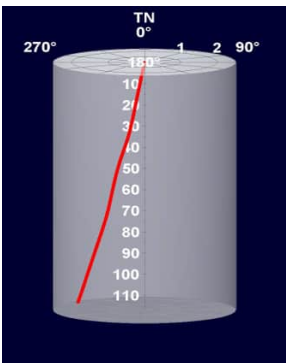




BHL-08 Composite Log



PROJECT:	Pioneer-Burdekin PHES	JOB #	PS138693
CLIENT:	Queensland Hydro	DATE:	20/11/2023



LOCATION:	Lower Reservoir	BH DEPTH:	110.00 m
EASTING:	660370.596 m E	BH DIAMETER:	96 mm (HQ)
NORTHING:	7660961.815 m N	BH AZIMUTH:	234°
ELEVATION:	203.295 m	BH PLUNGE:	-89°
COORD SYSTEM:	MGA2020-55	CASING DEPTH:	21.00 m
LOGGING DATUM:	Ground Level	CASING TYPE:	HWT

LOGGED BY: GH
LOGGED DATE: 17-18/10/2023
DRAWN BY: SB
REVIEWED BY: GH
FILE: BHL-08_Composite_Re
LOGGED DEPTH: 109.91 m

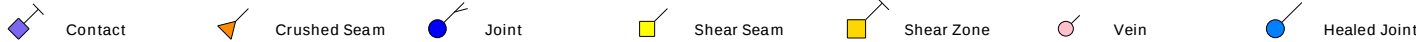
Image logs are oriented relative to magnetic north. Final structures corrected to true north using magnetic declination of 8.2 deg East.

Image orientation above 22.2 m affected by steel casing. No structures picked above 22.2 m.

Mechanical calliper log used for structure dip corrections.

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

INTERPRETED STRUCTURES



BHL-08														
Depth	Image Logs			Calliper	Structural Logs			Sonic Logs	Gamma Logs			Electrical Logs		
Depth	Amplitude-NM HPF	Image-NM	Reflectivity	CAL	Structures - TN	3D ATV	Core	Vs	GR	K	N8	Ma16		
	500 6000 0° 90° 180° 270° 0°	0° 90° 180° 270° 0°	0 9500		0 90 Freq/metre 0 counts/m 18	-0°		1000 m/s 7000 Vp 1000 m/s 7000		0 API 250	0 % 10 Th 0 ppm 20 U 0 ppm 10	200 Ohm.m 20000 N32 200 Ohm.m 20000 N16	0 ms 50 Ma64 0 ms 50	
1m:50m														
20														
21														
22														
23														
24														
25														
26														
27														
28														
29														
30														
31														
32														
33														
1m:50m	0° 90° 180° 270° 0° 500 6000	0° 90° 180° 270° 0°	0 9500	80 mm 160	0 counts/m 18 Freq/metre 0 90	-0°		1000 m/s 7000 Vp 1000 m/s 7000	0 API 250	U 0 ppm 20 Th 0 % 10	N16 200 Ohm.m 20000 N32 200 Ohm.m 20000 N8	0 ms 50 Ma64 0 ms 50 Ma16		
Depth	Image Logs			Calliper	Structural Logs			Sonic Logs	Gamma Logs			Electrical Logs		

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