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**ENGINEERING  
BOREHOLE LOG**

FOR GEOTECHNICAL TERMS AND  
SYMBOLS REFER FORM F:GEOT 017/6-2010

BOREHOLE No   BH C50    
SHEET   1   of   2    
REFERENCE No   H11137  

PROJECT   Bruce Highway Upgrade (Cooroy to Curra) Section C    
LOCATION   Cut 13   COORDINATES   470856.1 E; 7096424.4 N    
PROJECT No   FG5799   SURFACE R.L.   79.00m   PLUNGE            DATE STARTED   16/08/11   GRID DATUM   MGA94    
JOB No   232/10A/2   HEIGHT DATUM   AHD   BEARING            DATE COMPLETED   16/08/11   DRILLER   Cairns Drilling Contract  

DEPTH (m)	R.L. (m)	AUGER CASING WASH BORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING						DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
									EH	VH	H	M	L	EL				
0	79.00					TOPSOIL												
0.80	78.80					SILTSTONE (HW): Brown, fine grained.	X											
1.00	78.00				A	SILTSTONE (MW): Brown/grey, fine grained, subtly foliated, mainly high strength, indurated and/or slightly metamorphosed.	X										HB N>50 SPT	
1.50			(9)			Defects: -Highly weathered clayey zones up to 450mm. -Foliation parting at ~40°-50° (4/m) -Joint at 30° (2/m) -Joint at 70°-80° (1/m)	X							J, 80°, Pl, T, S, FeSt				
2.50						Defect spacing is generally medium. Defect surfaces are generally planar, tight, smooth, clay in filled, iron stained.	X							XW Clay Seam J, Subvertical, I, O, Clnf Is(50) = 0.12MPa; *			x	
3.00			100 (52)				X							J, 60°, Pl, T, Clnf Clay Seam				
4.00							X							J, 15°, Pl, T, Clnf	Is(50) = 2.58MPa		x	
5.00			100 (63)				X							FP, 60°, Pl, T, Clnf J, 15°, Pl, T, Clnf				
6.00							X							XW Clay Seam FP, 45°, Pl, O, S, Clnf J, 35°, Pl, T, Clnf	Is(50) = 2.17MPa Is(50) = 3.43MPa		x o	
7.00							X							SW Dyke? Grey Cly BZ	Is(50) = 2.16MPa Is(50) = 2.37MPa		x o	
7.50							X							DD = 2.64/m <sup>3</sup> , MC = 0.8%; FP, 50°, Pl, T, Clnf	UCS=30.2MPa		UCS	
8.00							X							FP, 45°, Pl, T, Clnf, QZ FP, 55°, Pl, T, Clnf	Is(50) = 2.13MPa		x	
9.00							X							XW Cly BZ BZ	Is(50) = 3.03MPa Is(50) = 1.93MPa		x o	
10.00			100 (25)				X							HW Clayey Zone				

REMARKS   \*Point load failed along existing defect  

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# ENGINEERING BOREHOLE LOG

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SYMBOLS REFER FORM F:GEOT 017/6-2010

BOREHOLE No   BH C50    
SHEET   2   of   2    
REFERENCE No   H11137  

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LOCATION   Cut 13   COORDINATES   470856.1 E; 7096424.4 N    
PROJECT No   FG5799   SURFACE R.L.   79.00m   PLUNGE        DATE STARTED   16/08/11   GRID DATUM   MGA94    
JOB No   232/10A/2   HEIGHT DATUM   AHD   BEARING        DATE COMPLETED   16/08/11   DRILLER   Caims Drilling Contract  

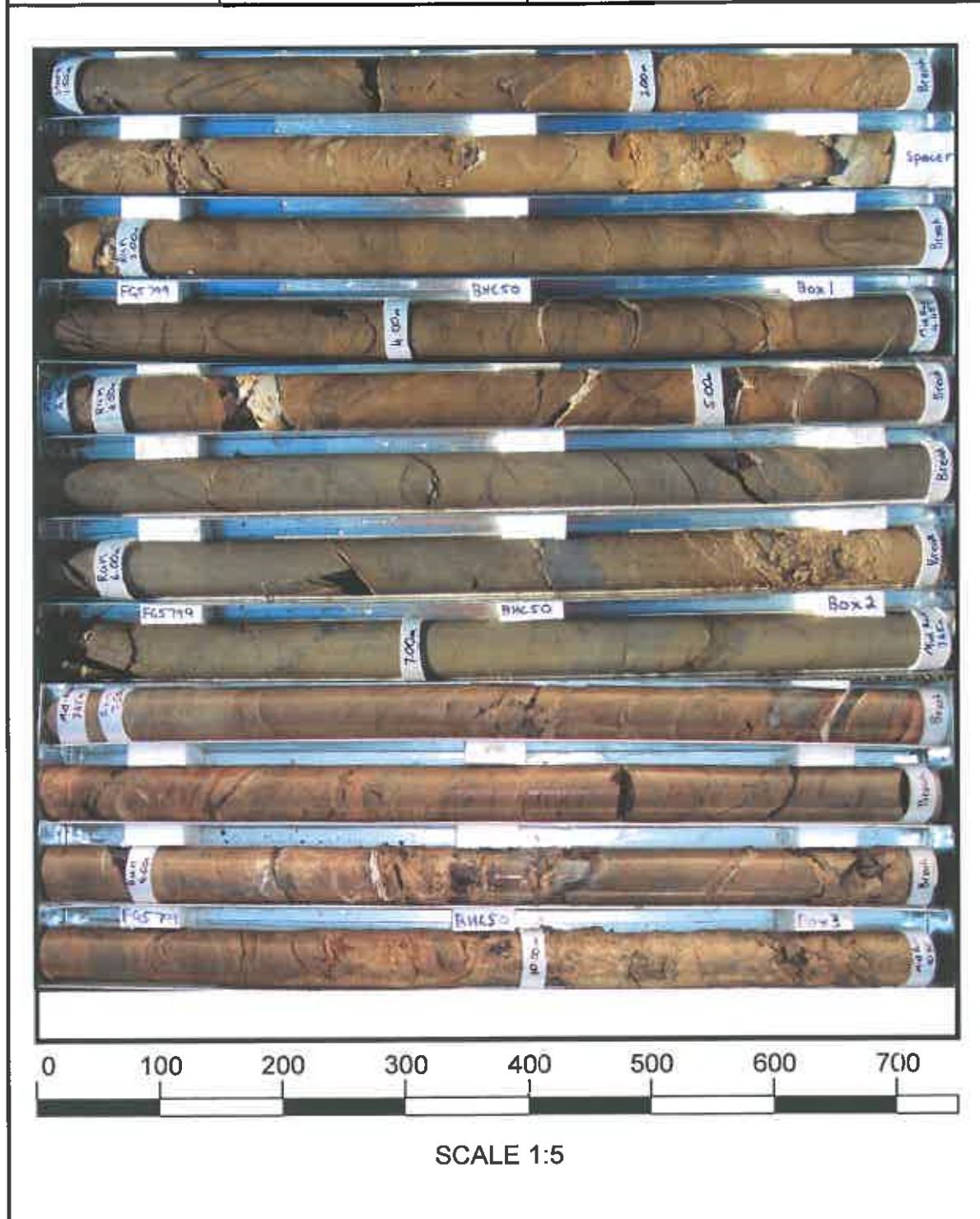
DEPTH (m)	R.L. (m)	AUGER CASING WASH BORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH		DEFECT SPACING (mm)		GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
										LT	VT	HT	NT				
10	69.00					SILTSTONE (MW): Cont'd	XXXXXX								HW Clayey Zone		
11			100 (35)			11.3: Colour change to grey mottled with brown.	XXXXXX								FP, 40°, Pl, O, S, Clnf		
12			100 (72)				XXXXXX								J, 30°, l, T, Clnf	Is(50) = 1.62MPa	x
13			100 (29)				XXXXXX								FP, 40°, Pl, T, Clnf	Is(50) = 2.07MPa	o
14			100 (79)				XXXXXX	MW							Cly BZ	Is(50) = 0.44MPa	x
15							XXXXXX								J, 50°, Pl, O, S, Clnf		
16							XXXXXX								J, 10°, Pl, O, S, C	Is(50) = 0.42MPa	x
17	62.00		100			Borehole terminated at 17m	XXXXXX								J, 10°, Pl, O, C, S	Is(50) = 1.08MPa Is(50) = 3.53MPa	x o
18							XXXXXX								DD = 2.64t/m <sup>3</sup> ; MC = 1%; UCS=2.97	UCS	

REMARKS   \*Point load failed along existing defect  

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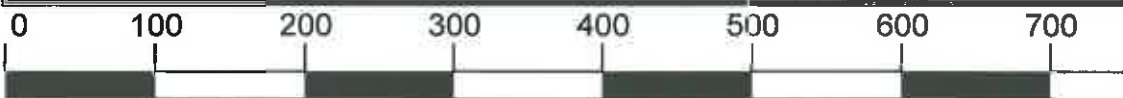
**CORE PHOTO LOG - BH C50**

Project Name:	BRUCE HIGHWAY UPGRADE - SECTION C		
Project No.:	FG5799	Date:	08/09/2011
Details:	Cut 13	Start Depth (m):	1.50
Reference No.:	H11137	Finish Depth (m):	17.00



**CORE PHOTO LOG - BH C50**

Project Name:	BRUCE HIGHWAY UPGRADE - SECTION C		
Project No.:	FG5799	Date:	08/09/2011
Details:	Cut 13	Start Depth (m):	1.50
Reference No.:	H11137	Finish Depth (m):	17.00



SCALE 1:5