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ENGINEERING BOREHOLE LOG

FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/5-2009

BOREHOLE No	BH018
SHEET	_1_ of _2_
REFERENCE No	H10579

	JECT ATION	BRU Cut			AY (COOROY - CURRA) SECTION A GEOTE				<u>BATION</u>		OORDINATES <u>486802.4 E; 7080871.3</u>	
					SURFACE R.L132_71m PLUNGE				 TARTED _			
JOB					HEIGHT DATUM AHD BEARING							
DEPTH (m)	R.L. (m)	GER SING SRE DRILLING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	SC EATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES
0	132.71	₹88 TTT	REC %	SA	Silty CLAY (RESIDUALI)	5	USC	111111	11111	9		S E
-1				Α	Mottled red and grey, moist, firm to very stiff. Crumbly texture from iron staining.						1,2,2 N=4	SPT
2/05/2010 10:29				В			(CI)	+			2,4,5 N=9	SPT
Datgel CPT Tool giNt Add-l				С	2.5m: Becoming very stiff with depth.						5,7,12 N=19	SPT
GDW	129.21				PHYLLITE (HW):	***		+			12,19,30	SPT
395012				D	Mottled red, fine grained, foliated.	***					N=49	371
MG -			(0)		Foliations dip at <10°.	***		1	1	1111	Broken core	
SHS.GF			100		Defects are generally very closely spaced.	***			_		Clay seam and quartz veins.	,
NOI -			(0)		Prominent defect set parallel to foliation.	***			ት			
5 - 5					Defect surfaces are typically clay infilled.	***	HW			XXXXX	□- Crushed zone ⊵- Quartz vein	
CURR			100		Occasional quartz inclusions; clay seams up to 70mm.	***		一里	J		Clay seam Clay seam	
HWY COOROY-			(0)		Detailed defect descriptions are shown on Form GEOT533/8 attached.	*****					- Olay Sealii	
RUCE			400			***]		☐- Clay seam	
5825 B			(0)			***			-		Clay seam and broken quartz	
GY FG	126.01		(0)		ANDESITE (MW):	\nearrow			<u> </u>			
SEHOLE LOG W LITHOLO					Dark grey, fine grained, hard, heavily altered. Heavily jointed, small vesicles throughout. Defects are generally very closely to closely spaced, irregular and iron stained.	>>>					Is(50) = 0.32MPa Is(50) = 0.48MPa	0
QLD_DMR_LIB_01.GLB Log A_ENGINEERING BOREHOLE LOG W LITHOLOGY F65825 BRUCE HWY COOROY-CURRA SECTION A BHS.GPJ DWG95012.GDW Datgel CPT Tool gilkt Add-in 12/05/2010 10/29			(0)		Corestone development throughout. Detailed defect descriptions are shown on Form GEOT533/8 attached.	> > > > <	MW				Is(50) = 0.60MPa Is(50) = 0.85MPa	o x
			100			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \					□ - Quartz gravels, possible fall in	
F	REMARK	<u>Deta</u>	iled defe	ct de	scriptions are shown on Form GEOT533/8 attach	ed.					LOGGED BY	
											-	



ENGINEERING BOREHOLE LOG

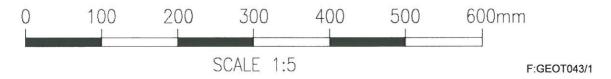
FOR GEOTECHNICAL TERMS AND SYMBOLS REFER FORM F:GEOT 017/5-2009

PROJECT	_BR	UCE HIC	<u>SHW</u>	<u> AY (COOROY - CURRA) SECTION A GEO</u>	<u>rech</u>	NIC/	L INVESTIC	<u>GATION</u>			
LOCATION		t 10								OORDINATES 486802.4 E; 7080871.3	3 N
PROJECT I				SURFACE R.L132.71m PLUNGE _							
JOB No	_128	<u>8/10A/90</u>	1_	HEIGHT DATUM <u>AHD</u> BEARING _			DATE COM	PLETED _	21/7/	09 DRILLER Geodrill	
(E) HL GU 10 122.7	AUGER CASING CORE DRILLING	RQD ()%	MPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES
10 122.7	11			ANDESITE (MW): (Cont'd)		7 8 6 9					-
121.9	4			10.8m: Shallow dipping, clean contact.	\ \ \ \ \ \	MW		_		Is(50) = 0.70MPa	0 -
121.5		100		PHYLLITE (MW): Brown to slightly green, fine grained, foliated.	\$ \$\$\$\$\$	MW				⇒– Clay seam	-
120.9	91	(0)		PHYLLITE (HW): Light brown to slighlty green, fine grained, clay seams throughout.	 	HW	무			⊐– Quartz vein	-
- -12 -		(0)		PHYLLITE (MW): Green to brown, fine grained,foliated. Foliations dip at 20°.	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\					Clay seam Detailed defect descriptions are shown on Form GEOT533/8	-
		400		Defects are generally closely spaced.	}	MW				attached. Is(50) = 0.35MPa ⇒− Clay seam	0]
13 119.7	1	100	1	Prominent defect set parallel to foliation	$\overline{}$					City Scam	
				Defect surfaces are typically iron stained. Borehole terminated at 13m	_		l I]
E				Borenoie terminated at 13m			1				
							1				-
14							I 7				-
							1]
-							1				1
_ 15							+	-			
E							Ī]
E							1	-			-
- - -16											-
- - -							1				-
- 17 - 17				v							-
-											
18											Ī
							1				-
E							1				-
10							1				-
- 19 -							+				-
							1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			-
-							1				-
20				= 22			+	•			-
REMAR	KS Det	ailed defe	<u>ect de</u>	scriptions are shown on Form GEOT533/8 atta	hed.	 				LOGGED BY JA	

Project: Bruce Highway Upgrade (Cooroy - Curra) Section A

Borehole No: BH18
Start Depth: 4.00m
Finish Depth: 13.00m
Project No: FG5825
H No: 10579





GEOTECHNICAL BRANCH LABORATORY

Materials Services - Brisbane 35 Butterfield Street, HERSTON Q 4006 Phone: (07) 3115 3035 Fax: (07) 3115 3011



DEFECT DESCRIPTIONS OF ENGINEERING BORELOGS

[CHARACTERISATION OF DEFECTS ARE IN ACCORDANCE WITH ISRM SUGGESTED METHODS (1981)]

BOREHOLE NO.: BH18

SHEET: 1 of 3

REFERENCE NO.: H10579

Bruce Highway (Cooroy – Curra) Section A Geotechnical Investigation

LOCATION: Cut 10

PROJECT NO.: FG5825 SURFACE R.L.: 132.7 DRILLER: GeoDrill

JOB NO.: 120/10A/901 DATUM: MGA94 DATE DRILLED: 21/07/09

DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
4.13	J	10°	PI	S	0	FeSt	
4.17	J	10°	PI	S	0	FeSt	
4.24	J	10°	PI	S	0	FeSt	
4.71	J	10°	PI	S	0		CI
4.75	J	10°	PI	S	0	FeSt	
4.81	J	10°	PI	S	0	FeSt	der dan
5.87	J	10°	PI	S	0	FeSt	
5.97	J	10°	PI	S	0	FeSt	
6.39	J	10°	PI	S	0	FeSt	
6.73	J	10°	PI	S	0	FeSt	
6.76	J	10°	PI	S	0	FeSt	
6.78	J	10°	lr	SR	0	FeSt	
6.84	J	60°	PI		С		
6.9	J	60°	PI		С		
6.98	J	60°	PI		С	1000	
7.11	J	20°	Pl		С	FeSt	E 1 Mayer
7.12	J	20°	PI		С	FeSt	
7.13	J	20°	Pl		С	FeSt	

Abbreviations (as per F: GEOT 017/5 - 2009)

	ROUGHNESS		WALL ALTERATIONS		TYPE		OTHER		
R	Rough	FeSt	Iron Stained	J, Js	Joint, Joints	CI	Clay Infill		
Sr	Slightly Rough	W	Weathered	В	Bedding	CLy	Clayey		
S	Smooth	Smn	Secondary Mineralisation	BP	Bedding Parting	Со	Coal Seam		
SL	Slickensided	Cn	Clean	FP	Foliation Parting	Carb	Carbonaceous		
РО	Polished	MnSt	Manganese Stained	LP	Lamination Parting	SI	Sand Infill		
PLANARITY			APERTURE		Cleavage	QZ	Quartz		
PI	Planar	С	Closed	Fr	Fracture	CA	Calcite		
St	Stepped	0	Open	SZ	Sheared Zone	Chl	Chlorite		
Un	Undulating	F	Filled	CZ	Crushed Zone	ln	Incipient		
Cu	Curved	T	Tight	BZ	Broken Zone	Int	Intersecting		
lr	Irregular			HFZ	Highly Fractured Zone	Lam (s)	Lamination (s)		
				WS	Weathered Seam	Di	Drilling Induced		
				Vn	Vein	Н	Horizontal		
							Vertical		

NOTE: This sheet should be read in conjunction with appropriate Engineering Borelog. Defect angles were measured with respect to horizontal plane.

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BOREHOLE NO.: BH18
SHEET: 2 of 3

REFERENCE NO.: H10579

						REFERENCE NO.:	H10579
DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
7.16	J	20°	PI		С	FeSt	
7.25	J	20°	PI		С	FeSt	
7.3	J	20°	PI		С	FeSt	
7.35	J	20°	PI		С	FeSt	
7.36	J	20°	PI		С	FeSt	
7.41	J	30°	PI		С	FeSt	
7.48	J	45°	PI		С	FeSt	19049 9/100
7.55	J	30°	PI		С	FeSt	
7.58	J	10°	PI	SR	0	FeSt	
7.61	J	30°	PI		С	FeSt	
7.66	J	20°	PI		С	FeSt	
7.74	J	70°	PI		С	FeSt	10 10 10 10 10 10 10 10 10 10 10 10 10 1
7.81	J	20°	PI		С	FeSt	3330
7.83	J	20°	PI		С	FeSt	
7.9	J	10°	PI	SR	0	FeSt	
8.01	J	60°	PI	J.	C	FeSt	
8.11	j	10°	PI	R	0	FeSt	1
8.16	J	10°	lr .	R	0	FeSt	
8.2	j	10°	PI	SR	0	FeSt	
8.22	J	20°	PI	SR	0	FeSt	
8.24) J	45°	PI	SR SR	0	FeSt	
8.3	J	50°		76	C	FeSt	
		10°	PI PI	CD.			
8.35	J			SR	0	FeSt	
8.39	J ,	30°	PI	60	С	FeSt	
8.46	J	30°	PI	SR	0	FeSt	
8.49	J	10°	lr	R	0	FeSt	
8.51	J	30°	PI		С	FeSt	
8.62	J	20°	PI	SR	0	FeSt	
8.7	J	10°	lr		С	FeSt	
8.73	J	50°	PI		С	FeSt	
8.81	J	20°	PI	SR	0	FeSt	
8.85	J	20°	PI		С	FeSt	
8.97	J	60°	PI		С	FeSt	
9.04	J	30°	PI		С	FeSt	
9.12	J	40°	PI	30.03.0	С	FeSt	
9.17	J	30°	PI		С	FeSt	
9.24	J	50°	PI		С	FeSt	
9.3	J	45°	PI		С	FeSt	
9.37	J	45°	PI	4.00	С	FeSt	
9.46	J	10°	lr	R	0		CI
9.52	J	20°	PI		С		CI
9.55	J	20°	PI	SR	0	FeSt	
9.65	J	30°	PI	R	0	FeSt	
9.75	J	30°	PI		С	FeSt	
9.82	J	30°	PI		С	FeSt	4000
9.89	J	30°	PI		С	FeSt	
9.9	J	20°	PI	SR	0	FeSt	
9.92	J	10°	Un	SR	0	FeSt	177-19
9.93	J	20°	PI	SR	0	FeSt	
10.1	J	40°	lr e	SR	0	FeSt	
10.19	, J	20°	PI		С	FeSt	
10.26	J	10°	PI		С	FeSt	
10.28	J	20°	PI		С	FeSt	and the same of th
10.3	J	20°	PI		С	FeSt	
10.36	J	10°	PI		С	FeSt	
10.4	J	10°	PI	SR	0		CI
10.45	J	10°	PI	SR	0	FeSt	

F:GEOT533/7

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BOREHOLE NO.: BH18

SHEET:

3 of 3

REFERENCE NO.: H10579

DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
10.5	J	10°	lr		С	FeSt	
10.71	J	60°	PI	40.00	С	FeSt	
10.9	J	10°	PI	S	0		CI
11.06	J	45°	PI		С		CI
11.29	J	10°	PI	S	0		CI
11.46	J	10°	PI	S	0		CI
11.93	J	30°	PI		С		CI
11.95	J	20°	PI		С		CI
12.09	J	10°	PI		С	FeSt	
12.24	J	20°	PI		С	FeSt	
12.38	J	20°	PI	S	0	FeSt	
12.58	J	20°	PI	S	0	FeSt	
12.64	J	20°	Pl	S	0	FeSt	
12.75	J	10°	PI	S	0	FeSt	
12.8	J	10°	PI	S	0	FeSt	
12.96	J	30°	PI	S	0	FeSt	
13	J	30°	PI	S	0	FeSt	