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ENGINEERING BOREHOLE LOG

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

BOREHOLE No BH063
SHEET 1 of 2
REFERENCE No H10630

PROJECT BRUCE HIGHWAY (COOROY - CURRA) SECTION A GEOTECHNICAL INVESTIGATION
LOCATION Cut 24 COORDINATES 481565.0 E; 7080708.8 N
PROJECT No FG5825 SURFACE R.L. 113.29m PLUNGE DATE STARTED 10/9/09 GRID DATUM MGA94
JOB No 128/10A/901 HEIGHT DATUM AHD BEARING DATE COMPLETED 10/9/09 DRILLER R & D Drilling

DEPTH (m)	R.L. (m)	AUGER CASING WASH BORING CORE DRILLING	RQD (%)	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH					DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
							EH	VH	H	M	J				
0	113.29			Clayey SILT Pale brown with mottled red iron staining, moist, stiff. Intermediate plasticity, traces of organics and XW rock.											
1					(Cl-ML)									5,5,7 N=12	SPT
2	111.29			PHYLLITE (XW) Generally exhibits the engineering properties of light brown to pale grey, moist, hard silty clay / clayey silt.										4,6,8 N=14	SPT
3					XW									7,15,18 N=33	SPT
4	109.79		(0)	PHYLLITE (HW) Brown with pale grey clay seams up to 450mm thick, fine grained, foliated. Foliation typically dips 50-60°.										Is(50) = 0.05MPa	x
5			100	Defects are generally close to medium spacing. Prominent defect set dips parallel to foliation. Defect surfaces are clay infilled.										MC = 6%; UCS=1.76MPa	UCS
6	108.09		(0)	PHYLLITE (MW) Brown, fine grained, foliated. Some clay seams up to 200mm throughout. Foliation typically dips 50-60°.										Is(50) = 0.06MPa Is(50) = 0.83MPa	x x
7			100	Defects are generally close to medium spacing. Prominent defect set dips parallel to foliation. Defect surfaces are clay infilled.										Is(50) = 0.78MPa	x
8	106.79		(37)	PHYLLITE (HW) Pale brown, fine grained. Extensive pale grey clay seams throughout, brecciated phyllite. 6.85-6.95m 100mm zone of ANDESITE.										MC = 5.4%; UCS=3.20MPa Is(50) = 0.49MPa	UCS x
9	106.19		(45)	PHYLLITE (MW/SW) Pale brown with occasional dark grey interbeds, fine grained. Weakly foliated, dipping at 10° - 30°. Defects are generally medium spacing. Prominent defect sets typically dip along foliation. Defect surfaces are generally clay infilled or iron stained. Clay seams up to 30mm. Detailed defect descriptions shown on Form GEOT533/8 attached.										MC = 4.4%; UCS=4.78MPa	UCS
10	103.29			(See over)										Is(50) = 0.37MPa Is(50) = 0.88MPa Is(50) = 1.24MPa Is(50) = 1.49MPa Is(50) = 1.39MPa	x x x x x

REMARKS Detailed defect descriptions are shown on Form GEOT533/8 attached.

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Department of Main Roads

ENGINEERING BOREHOLE LOG

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

BOREHOLE No BH063

SHEET 2 of 2

REFERENCE No H10630

PROJECT BRUCE HIGHWAY (COOROY - CURRA) SECTION A GEOTECHNICAL INVESTIGATION

LOCATION Cut 24 COORDINATES 481565.0 E; 7080708.8 N

PROJECT No FG5825 SURFACE R.L. 113.29m PLUNGE _____ DATE STARTED 10/9/09 GRID DATUM MGA94

JOB No 128/10A/901 HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 10/9/09 DRILLER R & D Drilling

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																																																																																																																																																																																																																																																												
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10	103.29					PHYLITE (MW/SW) (Cont'd)	Wavy	MW-SW																102.89		100			Borehole terminated at 10.4m																	11																							12																							13																							14																							15																							16																							17																							18																							19																							20																						
	102.89		100			Borehole terminated at 10.4m																	11																							12																							13																							14																							15																							16																							17																							18																							19																							20																																													
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REMARKS Detailed defect descriptions are shown on Form GEOT533/8 attached.

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Project: **Bruce Highway Upgrade (Cooroy – Curra) Section A**
Borehole No: **BH63**
Start Depth: 3.50m
Finish Depth: 10.40m
Project No: FG5825
H No: 10630



SCALE 1:5

F:GEOT043/1

DEFECT DESCRIPTIONS OF ENGINEERING BORELOGS

[CHARACTERISATION OF DEFECTS ARE IN ACCORDANCE WITH
GEOTECHNICAL TERMS AND SYMBOLS – FORM : GEOT 017/5 – 2009

BOREHOLE NO.: BH63
SHEET: 1 of 2
REFERENCE NO.: H10630

PROJECT: Bruce Highway Upgrade (Cooroy – Curra) Section A Geotechnical Investigation

LOCATION: Cut 24

PROJECT NO.: FG5825 **SURFACE R.L.:** 113.3 **DRILLER:** R & D Drilling

JOB NO.: 128/10A/901 **DATUM:** AHD **DATE DRILLED:** 10/09/09

DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
3.5-3.63	Ws						Clay seam
3.7	Jt	30	PI		C	Ci	20mm thick
3.71	Jt	70	PI		C	Ci	2mm
3.87-4.13	Ws						Clay seam
4.16	Jt	50	PI		C	Ci	
4.22	Jt	40	PI		O	Ci	
4.43	Jt	40	PI		C	Ci	
4.45-4.55	Ws						Clay seam
4.56	Jt	50	PI		C	Ci	
4.64-5.11	Ws						Clay seam
5.03	Jt	70	PI		C	Ci	170mm long
5.23	Jt	70	PI		C	Ci	120mm long
5.27	Jt	20	PI		C	Ci	20mm thick
5.4-5.66	Ws						Brecciated zone & clay seams
5.66	Jt	40	PI		C	Ci	
5.68	Jt	50	PI	S	O	FeSt	Slight Ci
5.78-6.04	Ws	70					Clay seam
5.78	Jt	70	PI	S	O	Ci	

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	B	Bedding	CLy	Clayey
S	Smooth	Smn	Secondary Mineralisation	BP	Bedding Parting	Co	Coal Seam
SL	Slickensided	Cn	Clean	FP	Foliation Parting	Carb	Carbonaceous
PO	Polished	MnSt	Manganese Stained	LP	Lamination Parting	SI	Sand Infill
PLANARITY		APERTURE		CLV	Cleavage	QZ	Quartz
PI	Planar	C	Closed	Fr	Fracture	CA	Calcite
St	Stepped	O	Open	SZ	Sheared Zone	Chl	Chlorite
Un	Undulating	F	Filled	CZ	Crushed Zone	In	Incipient
Cu	Curved	T	Tight	BZ	Broken Zone	Int	Intersecting
Ir	Irregular			HFZ	Highly Fractured Zone	Lam (s)	Lamination (s)
				WS	Weathered Seam	Di	Drilling Induced
				Vn	Vein	H	Horizontal
						V	Vertical

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

BOREHOLE NO.:	BH63
SHEET:	2 of 2
REFERENCE NO.:	H10630

DEPTH	DEFECT TYPE	DIP°	PLANARITY	ROUGHNESS	APERTURE	WALL ALTERATION	OTHER
5.91	Jt	70	Pl	S	O	Cl	
6.03	Jt	70	Pl		C	Cl	
6.11-6.24	Ws						Clay seam
6.11	Jt	45	Pl		C	Cl	
6.14	Jt	50	Pl		C	Cl	
6.24	Jt	60	Pl		C	Cl	
6.29	Jt	90	lr		C	Cl	200mm long
6.36	Jt	20	lr	R	O	Cl	
6.37-6.45	Ws						Clay seam
6.4	Jt	50	Pl		C	Cl	
6.44	Jt	65	Pl		C	Cl	5mm thick
6.51-6.8	Ws						Brecciated zone & clay seam
6.8	Jt	50	Pl		C	Cl	10mm thick
6.85	Jt	30	Pl	S	O	FeSt	
6.9-6.95	Ws						Gravelly clay
6.85	Jt	80	Pl		C		60mm long
6.9	Jt	30	lr		C	Cl	
7.0	Jt	30	lr	R	O	FeSt	
7.04-7.08	Ws						Clay seam
7.16	Jt	40	Pl	S	O	Cl	
7.24	Jt	30	Pl	S	O	FeSt	
7.3	Jt	30	Pl	S	O	FeSt	
7.41	Jt	30	Pl	S	O	FeSt	
7.42	Jt	30	Pl	S	O	FeSt	
7.49	Jt	30	Pl	S	O	FeSt	
7.79	Jt	30	Pl	S	O	Cl	
7.79	Qz	60	Pl				30mm long
7.8	Jt	50	Pl		C	FeSt	
7.82	Jt	40	Pl	S	O	FeSt	
7.9	Jt	60	lr		C	Cl	
7.98	Jt	40	Pl		C	Cl	20mm thick
8.06	Jt	30	Pl	S	O	FeSt	
8.12	Jt	30	Pl	S	O	FeSt	
8.3	Jt	40	Pl		C	Cl	10mm thick
8.35	Jt	20	Pl	S	O	Cl	
8.74	Jt	45	Pl	S	O	FeSt	
7.8	Jt	10	lr	R	O	MnSt	
7.85	Jt	30	Pl	S	O	FeSt	
9.0	Jt	40	Pl	S	O	FeSt	
9.01	Jt	60	Pl		C	Cl	
9.21-9.25	Ws	40	Pl				Clay seam
9.27	Jt	40	Pl	S	O	Cl	
9.7	Jt	70	Pl	R	O	Cl	10mm thick
10.0-10.4	Ws						Clay seam
10.06	Jt	20	Pl		C	Cl	5mm thick
10.1	Jt	30	Pl	S	O	MnSt	
10.23	Jt	30	Pl	S	O	Cn	
10.32	Jt	30	Pl	S	O	Cn	