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ENGINEERING BOREHOLE LOG

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

BOREHOLE No	BH116
SHEET	1 of 4
REFERENCE No	H11193

PROJECT WALKERSTON BYPASS PROJECT GEOTECHNICAL INVESTIGATION - COWLEYS ROAD OVERPASS BRIDGE
LOCATION ABUTMENT A - (Ch. 84487.1 22.0m LHS) COORDINATES 721484.0 E; 7654846.6 N
PROJECT No FG5635 SURFACE R.L. 8.84m PLUNGE _____ DATE STARTED 13/9/11 GRID DATUM MGA 94
JOB No 242/33B/6 HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 14/9/11 DRILLER Cairns Drilling Pty Ltd

DEPTH (m)	R.L. (m)	ALTCER 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
0	8.84					Silty CLAY (ALLUVIAL) Dark brown, moist, soft. High plasticity.		(CH)					Based on Driller's logs only	
1	8.04				A	Silty Sandy CLAY (ALLUVIAL) Brown and grey, moist, stiff. High plasticity.		(CH)					3,3,5 N=8	SPT
2	6.74				B	Silty CLAY (ALLUVIAL) Brown and grey, moist, stiff. High plasticity; minor fine grained sand.		(CH)					4,5,9 N=14	SPT
3	4.94				C	Sandy Silty CLAY (ALLUVIAL) Pale grey mottled orange, moist, very stiff. High plasticity; fine grained sand.		(CH)					4,8,10 N=18	SPT
4	3.14				D	SAND (ALLUVIAL) Pale grey and minor orange, moist, medium dense. Fine to medium grained sand with minor silt.		(SP)					4,7,7 N=14	SPT
5					E			(SP)					2,3,7 N=10	SPT
6					F			(SP)					6,9,8 N=17	SPT
7														
8														
9														
10	-1.16													

REMARKS Note: *Failure appears to have occurred along a pre-existing defect plane.

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BOREHOLE No BH116
SHEET 2 of 4
REFERENCE No H11193

PROJECT WALKERSTON BYPASS PROJECT GEOTECHNICAL INVESTIGATION - COWLEYS ROAD OVERPASS BRIDGE
LOCATION ABUTMENT A - (Ch. 84487.1 22.0m LHS) COORDINATES 721484.0 E; 7654846.6 N
PROJECT No FG5635 SURFACE R.L. 8.84m PLUNGE DATE STARTED 13/9/11 GRID DATUM MGA 94
JOB No 242/33B/6 HEIGHT DATUM AHD BEARING DATE COMPLETED 14/9/11 DRILLER Cairns Drilling Pty Ltd

DEPTH (m)	R.L. (m)	MUCPER 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	N	J	EL				
10	-1.16					SAND (ALLUVIAL) (Cont'd)												
11					G											7,12,9 N=21	SPT	
12					H		(SP)									6,8,9 N=17	SPT	
13	-3.96					Clayey Gravelly SAND (ALLUVIAL) Pale grey and minor orange, moist, medium dense.												
14					J	Fine to medium grained sand and gravel; becoming more gravelly at base.		(SC)								8,12,15 N=27	SPT	
15	-6.16					Silty CLAY (RESIDUAL) Pale grey mottled orange, hard, wet.												
16					K	Some layers containing Mn nodules and minor fine sand fraction.										10,17,24 N=41	SPT	
17					L											12,20,24 N=44	SPT	
18					M		(CH)									12,19,29 N=48	SPT	
19					N											12,21,28 N=49	SPT	
20	-11.16				O											11,17,25 N=42	SPT	

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BOREHOLE No	<u>BH116</u>
SHEET	<u>3</u> of <u>4</u>
REFERENCE No	<u>H11193</u>

PROJECT WALKERSTON BYPASS PROJECT GEOTECHNICAL INVESTIGATION - COWLEYS ROAD OVERPASS BRIDGE
 LOCATION ABUTMENT A - (Ch. 84487.1 22.0m LHS) COORDINATES 721484.0 E; 7654846.6 N
 PROJECT No FG5635 SURFACE R.L. 8.84m PLUNGE _____ DATE STARTED 13/9/11 GRID DATUM MGA 94
 JOB No 242/33B/6 HEIGHT DATUM AHD BEARING _____ DATE COMPLETED 14/9/11 DRILLER Cairns Drilling Pty Ltd

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
									0-60	60-200	200-600	600-2000	0-60	60-200	200-600			
20	-11.16				P	GRANODIORITE Intrusive, medium to coarse grained, massive, crystalline, acidic, igneous rock. XW: Generally displays the engineering properties of grey brown, moist, hard, sandy silty clay.		XW								10,19,30/120mm N>50	SPT	
21	-12.06				Q	HW: Speckled white, grey and dark grey, medium to coarse grained, massive, very low strength.										28,30/70mm N>50	SPT	
22					R											30/149mm N>50	SPT	
23					S			HW								30/100mm N>50	SPT	
24					T											30/140mm N>50	SPT	
25	-16.19				U	HW: Speckled brown, grey and white, medium to coarse grained, massive, generally low strength. Defects: - Joints @ 5-10° (5/m) Defects are generally planar, rough and tight to closed.										30/30mm N>50 Andesite fragments present Is(50) = 0.80MPa; *	SPT o	
26					100 (23)			HW								Is(50) = 0.02MPa; *	o	
27																Is(50) = 0.66MPa	x	
28	-19.19				100 (47)	MW: Speckled brown, grey and white, medium to coarse grained, generally low strength. Defects: - Joints @ 5-20° (7/m) Defects are generally planar, rough and open with some clay infill.										Is(50) = 0.02MPa; * Is(50) = 0.03MPa; * Is(50) = 0.84MPa	o o	
29					100 (85)			MW								Is(50) = 0.14MPa; * Is(50) = 0.04MPa; * Is(50) = 0.03MPa; *	o x o	
30	-21.16															Is(50) = 0.04MPa; *	o	

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 SHEET 4 of 4
 REFERENCE No H11193

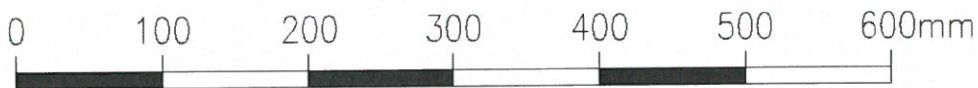
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 LOCATION ABUTMENT A - (Ch. 84487.1 22.0m LHS) COORDINATES 721484.0 E; 7654846.6 N
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 JOB No 242/33B/6 HEIGHT DATUM AHD BEARING DATE COMPLETED 14/9/11 DRILLER Cairns Drilling Pty Ltd

DEPTH (m)	R.L. (m)	AUGER Casing Logging Waste Drilling 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
										EH	VH	H	M	J	L				
30	-21.16					GRANODIORITE MW: (Cont'd) Defects: - Joints @ 5-20° (7/m)											Is(50) = 0.05MPa; *	x	
31				100 (36)		Defects are generally planar, rough and open with some clay infill.			MW								Is(50) = 0.08MPa; *	x	
																	Is(50) = 0.01MPa; *	o	
																	Is(50) = 0.11MPa; *	o	
																	Is(50) = 0.26MPa; *	x	
																	Is(50) = 0.06MPa; *	x	
	-23.60			100 (23)		HW: Speckled white, grey and dark grey, medium to coarse grained, massive, low strength. Some sections bordering on MW. Defects: - Joints @ 5-30° (7/m)											Is(50) = 0.13MPa; *	o	
																	Is(50) = 0.09MPa; *	L	
																	Is(50) = 0.03MPa; *	x	
																	Is(50) = 0.02MPa; *	o	
									HW								Is(50) = 0.02MPa; *	x	
																	Is(50) = 0.02MPa; *	x	
																	Is(50) = 0.01MPa; *	o	
	-26.66			100		Borehole terminated at 35.5m													
36																			
37																			
38																			
39																			
40																			

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Project: **Walkerston Bypass Geotechnical Investigation**
 Borehole No: BH116 (Cowleys Road Bridge Ch. 84487.1 22m left)
 Start Depth: 25.03 m
 Finish Depth: 35.50 m
 Project No: FG5635
 H No: 11193



SCALE 1:5

F:GEOT043/1