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

PROJ	ECT					SYPASS PROJECT GEOTECHNICAL INVE				EYS ROA			
LOCATION ABUTMENT A - (Ch. 84486.6 on control line) COORDINATES 721480.3 E; 765482												<u> </u>	
PROJ	ECT No					SURFACE R.L. <u>8.81m</u> PLUNGE _							
JOB N	10	242	2/33	3 <u>B/6</u> _		HEIGHT DATUM _AHD BEARING _			DATE COM	IPLETED _	17 <u>/9/</u>	11 DRILLER <u>Cairns Drilling</u>	Pty Ltd_
о DEPTH (m)	R.L. (m)	AUGER CASING WASH BORING	CORE DRILLING	RQD ()%	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	INTACT STRENGTH 番号エミコラロ	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES
-	0.01					Silty CLAY (ALLUVIAL)			-			Based on Driller's logs only	-
-1	7.51					Brown, moist, soft. High plasticity; some roots.		(СН					
2					A	Sandy Silty CLAY (ALLUVIAL) Brown, minor orange, moist, stiff. High plasticity; fine grained sand fraction.		(СН)			4,5,6 N=11	SPT
Tool giNt Add-in 12/12/2011 15:3	6.21				В	Silty CLAY (ALLUVIAL) Brown grey, minor orange, moist, stiff to very stiff. High plasticity.				-		4,5,7 N=12	SPT
GPJ < <drawngfile>> Datgel CPT Tool gil</drawngfile>	4.11							(CH)			4,7,11	
BYPASS - 1	3.41				С	Sandy Clayey SILT (ALLUVIAL) Orange grey, moist, very stiff.		(MH)			N=18	SPT
FG5635- WALKERSTON					1747	Clayey SAND (ALLUVIAL) Pale grey, moist, medium dense. Fine grained sand.		(SC)	 		7,7,4	
G W LITHOLOGY COWLEYS F	2.41				D	SAND (ALLUVIAL) Pale grey, wet, medium dense. Fine to medium grained; minor silt.						N=11	SPT
RING BOREHOLE LO					Е			(SF	-			6,7,7 N=14	SPT
OLD DIMR, LIB 01ACIB Log A ENGINEERING BOREHOLE LOG WLITHOLOGY COWEYS					F				-			9,7,7 N=14	SPT
REMARKS Mode									LOGGED BY JLo/ME				



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

BOREHOLE No __BH118__

SHEET __2_ of __4__

REFERENCE No __H11198__

## PROJECT No. G65935 SURFACE R.L. ESTIN PLUNGE DATE STARTED 169(11) GRID DATUM MGA.94	PROJECT	WALKERSTON BYPASS PROJECT GEOTECHNICAL INVESTIGATION - COWLEYS ROAD OVERPASS BRIDGE											
DOB No. 243/3896	LOCATION									OORDINATES 721480.3 E; 7654825.2 N			
AL	PROJECT No												
Manual Description Security	JOB No	242/	33 <u>B</u> / <u>6</u>		HEIGHT DATUMAHD BEARING			DATE COMPLETED _	17/9/1	11 DRILLER <u>Cairns Drilling Pty</u>	y <u>Ltd</u>		
S	(m)	92	RQD				(2)		g	ADDITIONAL DATA			
S	E) H	ORIN			MATERIAL	λĐC	ERIN	(mm)	IC LO	AND 8			
SAND Pale grey and orange, wet, medium dense. Medium to coarse grained, minor silt and gravel. H Pale grey and orange, wet, medium dense. Medium to coarse grained, minor silt and gravel. 12.12.9 SPT 7.8.11 SPT 12.10.13 SPT 13.12.23 SPT 14.15 A. 15.22.22 SPT 15.22.25 SITy CLAY (RESIDUAL) Grey, minor orange mottling, moist, hard. High plasticity, occasional Mn nodules. (SC) M R. 15.22.25 SPT M R. 16.19 N R. 17.12.10.13 SPT (SC) SITy CLAY (RESIDUAL) Grey, minor orange mottling, moist, hard. High plasticity, occasional Mn nodules. (SC) REMARKS Note: "Failure appears to have occurred along a pre-existing defect plane. LOGGED BY	DEPT	띴줐돐븼	CORE	MPLE	DESCRIPTION	HOLO	SATH	TI-= 00000	SAPHI	TEST RESULTS	STS		
Pale grey and orange, wet, medium dense.	10 -1.19	8888	REC %	SA		5	S	111111111111111111111111111111111111111	20	8	- 1		
10	-							Ī]		
10	-				Medium to coarse grained; minor silt and			+		12 12 0			
H	E			G	gravel.			‡		N=21 S	SPT 1		
H	-11							+			-		
H								Ī			1		
H	E							Ī			-		
H	-						(SP)	Ė			-		
J Clayey SAND (ALLUVIAL) Pale grey, moist, very dense. Fine to medium grained; some fine quartz gravel. Sity CLAY (RESIDUAL)	- 12			н				Ŧ		7,8,11 s	SPT -		
2. Clayey SAND (ALLUVIAL) Pale grey, moist, very dense. Fine to medium grained; some fine quartz gravel. Silly CLAY (RESIDUAL)	Ē							1		N=19	-		
2. Clayey SAND (ALLUVIAL) Pale grey, moist, very dense. Fine to medium grained; some fine quartz gravel. Silly CLAY (RESIDUAL)	E		}					<u> </u>					
Clayey SAND (ALLUVIAL) Pale grey, moist, very dense. Fine to medium grained; some fine quartz gravel. 15,22,29	- 13				20			1 +			-		
Clayey SAND (ALLUMAL) Pale grey, moist, very dense. Fine to medium grained; some fine quartz gravel. 15,22,28 SPT								‡			-		
Clayey SAND (ALLUVIAL) Pale grey, moist, very dense. Fine to medium grained; some fine quartz gravel. 15,22,29	-			12.5				+		12 10 12			
Pale grey, moist, very dense. Fine to medium grained; some fine quartz gravel. 15,22,29 SPT	-4.99			J	Clavey SAND (ALLINIAL)	-	-	-			SPT -		
gravel. Sity CLAY (RESIDUAL) Spt.	- 14	141			Pale grey, moist, very dense.			+			-		
15,22,29 SPT					Fine to medium grained; some fine quartz			Ī			-		
15,22,29 SPT N>50 SPT N=41 SPT SPT SPT N=31 SPT N=31 SPT SPT	<u> </u>				gravel.			Ī			- 7		
Silty CLAY (RESIDUAL) Grey, minor orange mottling, moist, hard. High plasticity; occasional Mn nodules. 15,22,29 SPT							(SC)	l ±			_		
Silty CLAY (RESIDUAL) Grey, minor orange mottling, moist, hard. High plasticity; occasional Mn nodules. (CH) N 9,13,18 N=31 SPT (CH) 8,16,19 N=31 SPT 19 0 8,13,19 N=32 SPT REMARKS Note: "Failure appears to have occured along a pre-existing defect plane. LOGGED BY	- 13			K				‡		15,22,29	SPT		
Silty CLAY (RESIDUAL) Grey, minor orange mottling, moist, hard. High plasticity; occasional Mn nodules. 10.17.24 SPT								Ī		N230	-		
Grey, minor orange mottling, moist, hard. High plasticity; occasional Mn nodules. SPT M 8,16,19 N=35 SPT N=31 SPT O REMARKS Note: "Failure appears to have occured along a pre-existing defect plane. LOGGED BY	-6.99							L -	ļ				
High plasticity; occasional Mn nodules. High plasticity; occasional Mn nodules. N	-16							<u> </u>			S E S A		
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY				L						10,17,24 N=41	SPT		
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY	-				Tright plasticity, occasional wirthodales.			+					
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY	<u> </u>							Ī .					
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY	- 17							l ±		8,16,19	CDT :		
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY	E			М						N=35	SP1 -		
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY	E							Ī			-		
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY	10						(CH	Ī					
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY	- 18			N				‡		9,13,18	SPT -		
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY								1 1		14-51			
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY								1 ‡					
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY	19			10000				1 ±					
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY				0				Į		8,13,19 N=32	SPT		
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY								1 ‡			-		
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY	20							1 ±			-		
VENALUS		e Note	*Failure	ann	ears to have occured along a pre-existing defect pla	ne		I I	1	LOGGED BY			
	KEWAKK	.S								-			



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

PROJECT	WALKERSTON BYPASS PROJECT GEOTECHNICAL INVESTIGATION - COWLEYS ROAD OVERPASS BRIDGE												
			(Ch. 84486.6 on control line)	ORDINATES 721480.3 E; 7654825.2 N									
PROJECT No			SURFACE R.L. 8.81m PLUNGE										
JOB No	242/33B/6		HEIGHT DATUM AHD BEARING			DATE COMPLETED	17/9/	11 DRILLER <u>Cairns</u> <u>Drilling</u>	Pty Ltd				
R.L. (m) HLL 20 -11.19	MOSER AASING AASING ASH BORING SORE DRILLING W (1) W	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	INTACT DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES				
20 -11.19	₹ð≶ö REC%	P	Silty CLAY (RESIDUAL) (Cont'd)		(CH)	7 2 1 2 2 2 4 2 4 4 4 4 4		9,13,18	SPT				
		Q	GRANODIORITE Intrusive, medium to coarse grained, massive, crystalline, porphyritic, acidic, igneous rock. XW: Generally displays engineering properties of brown grey, moist, hard, sandy silty clay.					N=31 20,15,21 N=36	SPT				
-22		R				#		13,26,30/120mm N>50	SPT				
-23		S			xw	#		16,30/90mm N>50	SPT				
-24		Т						23,30/130mm N>50	SPT				
		U				#		30/110mm N≥50.	SPT -				
	(17)		HW: Speckled brown and pale grey, medium to coarse grained, massive, very low strength.		HW			Is(50) = 0.02MPa; * Is(50) = 0.03MPa; *	L -				
-26 - -17.56			MW:					Is(50) = 0.02MPa; *	L -				
	(34)		Speckled grey, brown and pink, medium to coarse grained, massive, generally medium strength. Defects:					Is(50) = 0.22MPa; * Is(50) = 1.63MPa Is(50) = 1.02MPa Is(50) = 1.02MPa Is(50) = 0.24MPa; *	x - x - 0				
-28	100		- Joints @ 40-50° (4/m) - Joints @ 5-10° (2/m) Defects are generally planar, rough and open.		MW			Is(50) = 0.16MPa; * Is(50) = 0.13MPa; * Is(50) = 0.14MPa; *	x				
-29 -20.35	(19)								0 -				
30 -21.19	100 (70)		HW: Speckled brown and pale grey, medium to coarse grained, massive, very low strength.		HW			ls(50) = 0.01MPa; *	-				
REMARKS Note: *Failure appears to have occured along a pre-existing defect plane. LOGGED BY JLo/ME													



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

PROJE	OJECT WALKERSTON BYPASS PROJECT GEOTECHNICAL INVESTIGATION - COWLEYS ROAD OVERPASS BRIDGE															
LOCAT	TION	ABUTMENT A - (Ch. 84486.6 on control line) COORDINATES										S 721480	.3 E; 7654825.2	<u> </u>		
PROJE	CT No	_FG56	35	. _ -	SURFACE R.L. 8.81m PLUNGE	<u> </u>						16/9/	11 GR			
JOB No <u>242/33B/6</u>			33B/6	. — -	HEIGHT DATUM _AHD _ BEARING	3			DATE COM	MP	LETED _	17/9/	11	DRILLER	Cairns Drilling	Pty Ltd
PTH (m)	R.L. (m)	AUGER CASING WASH BORING CORE DRILLING		SAMPLE	MATERIAL DESCRIPTION	ПНОГОВУ		USC	INTACT STRENGTH	20 c	DEFECT SPACING (mm)	GRAPHIC LOG		AND TEST RESU		SAMPLES
-					GRANODIORITE HW: (Cont'd)			HW						15(50) - 0.01MFa,	
	-21.65		100		Borehole terminated at 30.46m		-			+						
Εl					Butefible terminated at 30.40m					Ŧ]
-31									1,3911	ŧ						1
F										‡						=
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39										Ŧ						
	MARK	S Note:	*Failure	арр	ears to have occured along a pre-existing defe	ect plane.	_			_			_		LOGGED BY	
											JLo/ME					

Project:

Walkerston Bypass Geotechnical Investigation BH118 (Cowleys Road Bridge Ch. 84486.6 on control line) Borehole No:

Start Depth: 23.20 m Finish Depth: 30.46 m Project No: FG5635 11198 H No:



