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# ENGINEERING BOREHOLE LOG

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

BOREHOLE No   BH103    
SHEET   1   of   5    
REFERENCE No   11462  

PROJECT   Townsville Ring Road Section 4    
LOCATION   Kalynda Parade Overpass   COORDINATES   467735.9 E; 7866467.1 N    
PROJECT No   FG6020   SURFACE R.L.   14.31m   PLUNGE            DATE STARTED   26/3/13   GRID DATUM   GDA 94    
JOB No   268/10M/5   HEIGHT DATUM   AHD   BEARING            DATE COMPLETED   27/3/13   DRILLER   Cairns Drilling  

DEPTH (m)	R.L. (m)	AUGER WASH BORING CORE DRILLING	RQD ( ) %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC WEATHERING	INTACT STRENGTH					DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
								EH	VH	H	M	L				
0	14.31				<b>Silty SAND (TOPSOIL)</b> Brown, moist, loose. Fine to medium grained. Some tree roots.											
13.81				A	<b>Silty SAND</b> Pale brown, minor orange, slightly moist, dense. Fine to coarse grained sand.									2,13,27 N=40	SPT	
				B										15,19,18 N=37	SPT	
				C	Becoming very dense. Fine to medium grained, partially cemented sand.									23,30/110 N>50	SPT	
				D										30/135 N>50	SPT	
				E		(SM)								30/140 N>50	SPT	
				F	Colour change to pale brown, dark brown. Becoming medium to coarse grained sand.									26,30/70 N>50	SPT	
				G	Some fine to medium gravel. Colour change to brown.									14,19,20 N=39	SPT	
5.31				H	<b>Sandy Silty CLAY</b> Pale brown, moist, hard. Mainly low to medium plasticity.									MC= 21.2% LL=47.8% PI=26.4% LS=12% 8,17,24 N=41	SPT	
10						(CI)										

REMARKS \_\_\_\_\_

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SHEET   2   of   5    
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DEPTH (m)	R.L. (m)	AUGER WASH BORING CORE DRILLING	RQD ( ) %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	INTACT STRENGTH						DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS				
							USC	WEATHERING	EH	VH	H	M					L	VL	EL	20
10	4.31				<b>Sandy Silty CLAY</b> Cont'd															
11				J													12,21,28 N=49	SPT		
12				K		(C)											MC = 26.1% LL=41.8% PI=16.2% LS=11.6% 10,16,22 N=38	SPT		
13					Trace angular gravel.															
14				L													10,15,23 N=38	SPT		
15	-0.19			M	<b>Gravelly clayey SAND</b> Brown, orange, dark grey, moist, mainly dense to very dense. Coarse grained sand, fine gravel.												14,19,33 N>50	SPT		
16																				
17				N	Becoming pale brown, medium to coarse grained sand.												12,16,16 N=32	SPT		
18				P		(SW)											10,16,25 N=41	SPT		
19																				
20				Q	Occasional medium angular gravel.												12,19,24 N=43	SPT		

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SHEET   3   of   5    
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DEPTH (m)	R.L. (m)	AUGER 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	VL				
20	-5.69					<b>Gravelly clayey SAND</b> Cont'd Medium to coarse grained sand.												
21					R	Trace clay mixed with sand.											11,13,18 N=31	SPT
22							(SW)											
23					S												16,25,26 N>50	SPT
24					T	From 24.40 to 24.60m - Cemented, fine to coarse grained sand layer.											14,15,24 N=39	SPT
25	-10.29					<b>Clayey SAND</b> Pale brown, minor grey brown, slightly moist, very dense. Fine to medium grained sand.												
26					U	Minor clay layer at 25.50m. Pale brown, slightly moist, hard, low plasticity.											15,25,28 N>50	SPT
27					V												22,30/140 N>50	SPT
28							(SC)											
29					W	Becoming fine grained sand.											21,30/100 N>50	SPT
30																		

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BOREHOLE No   BH103    
SHEET   4   of   5    
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DEPTH (m)	R.L. (m)	AUGER 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	J	VL				
30	-15.69				X	<b>Clayey SAND</b> Cont'd Occasional orange / dark grey brown layers.	(SC)										22,30/150 N>50	SPT
31	-16.49				Y	<b>Silty SAND</b> Pale brown, slightly moist, mainly very dense. Fine grained. High silt content. Occasional dark grey brown layers.											15,25,30/125 N>50	SPT
32					Z												14,23,30/125 N>50	SPT
33					AA		(SM)										12,18,29 N=47	SPT
34					AB	Becoming pale yellow brown.											14,21,31 N>50	SPT
35					AC	<b>Clayey SAND</b> Pale yellow, slightly moist, dense to very dense. Medium to coarse grained sand.	(SC)										10,16,25 N=41	SPT
36					AD												19,30/130 N>50	SPT
37	-22.69																	
38																		
39	-25.19																	
40						<b>GRANITE</b> Medium to coarse grained, intrusive igneous rock of felsic composition.		XW										

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SHEET   5   of   5    
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									EH	VH	H	M	J	V				
40	-25.69																	
	-26.29					<b>XW:</b> Generally exhibits engineering properties of a pink, brown, orange, moist, very dense to extremely low strength clayey sand. Medium to coarse grained sand.	XW										30/30 N>50	SPT
41			(0)			<b>MW:</b> Orange, pink, brown, grey, coarse grained, generally medium to high strength with some low strength bands.											Is(50) = 1.45MPa	o
42			100 (8)			Defects: - Joint at 20° (10/m) - Joint at 35° (2/m) - Joint at 35° (1/m) - Irregular joints (5/m)	MW										Is(50) = 0.48MPa	o
43	-29.19		100			Defects are generally planar or irregular, rough, open and altered or weathered.											Is(50) = 0.48MPa	o
44						Borehole terminated at 43.5m												
45																		
46																		
47																		
48																		
49																		
50																		

REMARKS \_\_\_\_\_

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VP

**CORE PHOTO LOG**

DEPARTMENT OF TRANSPORT & MAIN ROADS  
 Geotechnical Branch  
 35 Butterfield Street, HERSTON Qld 4006  
 Phone 07 3066 3336



Department of  
 Transport and Main Roads

Project Name	<b>Townsville Ring Road Stage 4</b>		
Project No	FG 6020	Date	27/03/13
Borehole No	BH 103	TMR H No	11462
Location	Kalynda Parade Overpass	Start Depth (m)	40.60
Detail	Pier 1 (Right)	Finish Depth (m)	43.50
Chainage		Submitted By	MS
Remarks			

