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# ENGINEERING BOREHOLE LOG

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

BOREHOLE No   BH304    
SHEET   1   of   4    
REFERENCE No   11482  

PROJECT   Townsville Ring Road Section 4    
LOCATION   Stony Creek Bridge   COORDINATES   464693.6 E; 7871516.5 N    
PROJECT No   FG6020   SURFACE R.L.   12.32m   PLUNGE \_\_\_\_\_ DATE STARTED   22/4/13   GRID DATUM   GDA 94    
JOB No   268/10M/5   HEIGHT DATUM   AHD   BEARING \_\_\_\_\_ DATE COMPLETED   23/4/13   DRILLER   Saxon Drilling  

DEPTH (m)	R.L. (m)	AUGER 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	M	L	VL				
0	12.32					<b>Sandy CLAY (TOPSOIL)</b> Dark brown, moist, soft to firm. Low to medium plasticity. Some roots.												
1	12.02				A	<b>Silty Sandy CLAY</b> Dark brown, grey, moist, stiff to very stiff. Medium plasticity.	(Cl)										4,8,12 N=20	SPT
2	10.32				B												4,3,5 N=8	SPT
3					C	<b>Silty SAND</b> Pale grey, pale brown, pale yellow, moist, medium dense. Mostly fine to coarse grained sand.											3,6,11 N=17	SPT
4					D	Becoming very dense	(SM)										8,21,29 N=50	SPT
5				(0)	E												Tried to core. No recovery.	
6	6.32			0	F												29,30/95mm,HB N>50	SPT
7					G	<b>Sandy SILT</b> Pale grey, pale brown, pale yellow, moist, hard. Low plasticity.											11,21,25 N=46	SPT
8					H		(ML)										14,22,30/130mm N>50	SPT
9																		
10	2.32																	

REMARKS \_\_\_\_\_

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BOREHOLE No   BH304    
SHEET   2   of   4    
REFERENCE No   11482  

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LOCATION   Stony Creek Bridge   COORDINATES   464693.6 E; 7871516.5 N    
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DEPTH (m)	R.L. (m)	AUGER 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	M	L	V				
10	2.32				J	<b>Sandy SILT (Cont'd)</b> Becoming dense silty sand.											13,21,28 N=49	SPT
11	1.32				K	<b>Clayey SAND</b> Pale grey, pale brown, moist, dense. Fine to medium grained sand.	(ML)										11,16,23 N=39	SPT
12					L		(SC)										14,20,28 N=48	SPT
13					M	<b>Clayey SAND (RESIDUAL)</b> Grey, pale brown, moist, dense. Fine to coarse grained sand.											11,22,24 N=46	SPT
14	-1.68				N	Becoming sandy clay. Low plasticity.											9,17,29 N=46	SPT
15					P	Becoming pale grey, pale brown, white, moist, dense to very dense clayey sand. Fine to coarse grained sand.	(SC)										10,19,27 N=46	SPT
16					Q												21,27,30/120mm N>50	SPT
17																		
18																		
19																		
20	-7.68																	

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FOR GEOTECHNICAL TERMS AND  
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BOREHOLE No **BH304**  
SHEET **3** of **4**  
REFERENCE No **11482**

PROJECT Townsville Ring Road Section 4  
LOCATION Stony Creek Bridge COORDINATES 464693.6 E; 7871516.5 N  
PROJECT No FG6020 SURFACE R.L. 12.32m PLUNGE \_\_\_\_\_ DATE STARTED 22/4/13 GRID DATUM GDA 94  
JOB No 268/10M/5 HEIGHT DATUM AHD BEARING \_\_\_\_\_ DATE COMPLETED 23/4/13 DRILLER Saxon Drilling

DEPTH (m)	R.L. (m)	AUGER CASING WASH BORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	INTACT STRENGTH						DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS	
								USC	WEATHERING	EH	VH	H	M					J
20	-7.68					<b>TUFF</b> Fine to medium grained, pyroclastic rock. <b>XW:</b> Generally exhibits the engineering properties of brown orange grey, moist, dense to very dense clayey sand. Fine to coarse grained sand. Some fine fragments of HW rock. High content of clay in some places.												
21					R												17,26,27 N>50	SPT
22					S												17,17,30 N=47	SPT
23						Becoming brown, pale yellow, moist, hard sandy silt. Low plasticity.												
24					T												11,19,24 N=43	SPT
25	-12.78				U												30/100mm, HB N>50 Is(50) = 2.18MPa	SPT
26	-13.38		(22)			<b>HW:</b> Dark grey, fine, massive, low to high strength. Some defects @ 35°-45° (3/m), irregular joints (5/m). <b>MW:</b> Pink, brown, fine grained, massive to fractured, medium to high strength.												
27	-14.73		(0)			Defects: - Joints @ 25°-30° (3/m) - Joints @ 45°-55° (6/m) - Joints @ 60°-65° (6/m) - Irregular joints (3/m)											Is(50) = 0.34MPa	
28			(18)			Defects are generally planar or irregular, rough, open, clayey coated. <b>VOLCANIC BRECCIA</b> Pyroclastic rock consisting of angular fragments embedded in a finer grained matrix.											Is(50) = 2.16MPa Is(50) = 4.23MPa	
29			(39)			<b>MW:</b> Pink, grey, brown, fine to coarse grained, massive, high strength. Some medium & very high strength zones. Coarse grained phenocrysts and dark angular fragments.											Is(50) = 2.69MPa Is(50) = 0.50MPa Is(50) = 1.05MPa	
30	-17.68		(29)			Defects: - Joints @ 30° (1/m) - Joints @ 50° (1/m) - Joints @ 60°-65° (5/m) - Joints @ 70°-80° (1/m)											Is(50) = 1.76MPa UCS=38.3MPa	
			(54)															

REMARKS \_\_\_\_\_

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PROJECT Townsville Ring Road Section 4  
 LOCATION Stony Creek Bridge COORDINATES 464693.6 E; 7871516.5 N  
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									EH	VH	H	M	L	V	EL	20			
30	-17.68					<b>VOLCANIC BRECCIA MW: (Cont'd)</b> Defects are generally planar, rough, open, discoloured, clayey coated. Becoming fine grained.	+	MW										Is(50) = 3.83MPa	o
			100																
	-18.60		(0)	100															
31						Borehole terminated at 30.92m													
32																			
33																			
34																			
35																			
36																			
37																			
38																			
39																			
40																			

REMARKS \_\_\_\_\_

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**CORE PHOTO LOG**

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



Department of  
**Transport and Main Roads**

Project Name	<b>Townsville Ring Road Section 4</b>		
Project No	FG6020	Date	23/04/13
Borehole No	BH 304	TMR H No	11482
Location	Stony Creek Bridge	Start Depth (m)	25.10
Detail	Pier 1 (Left)	Finish Depth (m)	30.92
Chainage		Submitted By	BW
Remarks			

