Queensland Government

ENGINEERING BOREHOLE LOG

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

BOREHOLE No **BH301**
SHEET 1 of 4
REFERENCE No **11479**

PROJECT Townsville Ring Road Section 4
LOCATION Stony Creek Bridge COORDINATES 464703.6 E; 7871500.6 N
PROJECT No FG6020 SURFACE R.L. 12.52m PLUNGE DATE STARTED 20/4/13 GRID DATUM GDA 94
JOB No 268/10M/5 HEIGHT DATUM AHD BEARING DATE COMPLETED 21/4/13 DRILLER Saxon Drilling

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( )% CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (mm) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
0	12.52				**Silty CLAY (TOPSOIL)** Dark brown, moist, soft to firm. Medium plasticity. Some tree roots.									
	12.22			A	**Silty CLAY** Dark brown, grey, moist, very stiff. Medium to high plasticity.		(CI - CH)					3,7,10 N=17	SPT	
1				B								6,10,13 N=23	SPT	
2	10.52			C	**Sandy SILT** Pale grey, pale brown, moist, hard. Low plasticity. Some white calcareous material.							9,18,30 N=48	SPT	
3				D			(ML)					15,23,30/110mm N>50	SPT	
4				E								30,30/90mm,HB N>50	SPT	
5	7.27			F	**Silty SAND** Grey, pale brown, pale yellow, moist, very dense. Fine to medium grained sand. Some coarse grains.							30/140mm,30/100mm,HB N>50	SPT	
6												17/06/13		
7				G			(SM)					14,29,30/90mm N>50	SPT	
8				H	Minor sandy silt lens. Grey, brown, moist, hard. Low plasticity silt. Very fine grained sand.							17,30/150mm,30/75mm N>50	SPT	
9														
10	2.52													

REMARKS Standpipe piezometer installed.

LOGGED BY MS

Queensland Government

ENGINEERING BOREHOLE LOG

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

BOREHOLE No **BH301**
SHEET 2 of 4
REFERENCE No **11479**

PROJECT Townsville Ring Road Section 4
LOCATION Stony Creek Bridge COORDINATES 464703.6 E; 7871500.6 N
PROJECT No FG6020 SURFACE R.L. 12.52m PLUNGE DATE STARTED 20/4/13 GRID DATUM GDA 94
JOB No 268/10M/5 HEIGHT DATUM AHD BEARING DATE COMPLETED 21/4/13 DRILLER Saxon Drilling

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( )% CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (mm) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES / TESTS
10	2.52			J	**Silty SAND (Cont'd)** Becoming very fine grained, medium dense sand.							6,9,12 N=21	SPT
11							(SM)						
12				K	Becoming fine to medium grained, dense sand.							8,14,20 N=34	SPT
13	-0.48			L	**Clayey SAND** Pale grey to pale brown, moist, dense. Fine to coarse grained sand. Some places high clay content.							12,15,23 N=38	SPT
14													
15				M			(SC)					11,18,24 N=42	SPT
16				N								10,13,19 N=32	SPT
17	-4.98												
18				P	**Clayey SAND (RESIDUAL)** Pale grey to pale brown, white, moist, very dense. Fine to coarse grained sand.							16,26,29 N>50	SPT
19				Q			(SC)					17,24,30/130mm N>50	SPT
20	-7.48				(See over)								

REMARKS Standpipe piezometer installed.

LOGGED BY MS

ENGINEERING BOREHOLE LOG

Queensland Government

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

BOREHOLE No **BH301**
SHEET 3 of 4
REFERENCE No **11479**

PROJECT Townsville Ring Road Section 4
LOCATION Stony Creek Bridge — COORDINATES 464703.6 E; 7871500.6 N
PROJECT No FG6020 — SURFACE R.L. 12.52m — PLUNGE — DATE STARTED 20/4/13 — GRID DATUM GDA 94
JOB No 268/10M/5 — HEIGHT DATUM AHD — BEARING — DATE COMPLETED 21/4/13 — DRILLER Saxon Drilling

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( )% CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (mm) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
20	-7.48				**Clayey SAND (RESIDUAL) (Cont'd)**									
				R			(SC)					21,23,30/110mm N>50		SPT
21														
22	-9.48			S	**TUFF** **Fine to medium grained, pyroclastic rock.** **XW:** Generally exhibits the engineering properties of grey brown white, moist, hard sandy silt. Low plasticity.							8,23,23 N=46		SPT
23							XW							
				T								21,28,50/95mm N>50		SPT
24					Some XW - HW rock fragments.									
25	-12.58			U								30/100mm N>50		SPT
			(0) 100 (0) 100 (0) 100 (0) 100		**HW:** Pale grey, pale brown to white, fine grained, massive - fractured, very low to low strength. Defects: - Joints @ 35° (1/m) - Joints @ 40°-50° (3/m) - Joints @ 60°-70° (2/m) - Irregular joints (5/m) Defect surfaces are generally planar or irregular, rough, open, weathered, clayey coated.		HW					Is(50) = 0.03MPa		o
27	-14.63				**VOLCANIC BRECCIA** **Pyroclastic rock consisting of angular fragments embedded in a finer grained matrix.**							UCS=10.5MPa		
			100 (0) 100 (12) 100 (37) 100 (0)		**MW:** Pink brown, grey, fine to coarse grained, massive to fractured, medium to mainly high strength. Occasional very high strength patches. Coarse grained phenocrysts. Defects: - Joints @ 45° (5/m) - Joints @ 55° (3/m) - Joints @ 60°-70° (5/m) - Irregular joints (4/m) Defects are generally planar or irregular,		MW					Is(50) = 1.61MPa Is(50) = 2.47MPa Is(50) = 0.96MPa Is(50) = 3.62MPa Is(50) = 1.46MPa		o o o o o
28														
29														
30	-17.48											HW zone, low strength		

REMARKS Standpipe piezometer installed.

LOGGED BY MS

ENGINEERING BOREHOLE LOG

Queensland Government

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

BOREHOLE No **BH301**
SHEET 4 of 4
REFERENCE No **11479**

PROJECT Townsville Ring Road Section 4
LOCATION Stony Creek Bridge COORDINATES 464703.6 E; 7871500.6 N
PROJECT No FG6020 SURFACE R.L. 12.52m PLUNGE DATE STARTED 20/4/13 GRID DATUM GDA 94
JOB No 268/10M/5 HEIGHT DATUM AHD BEARING DATE COMPLETED 21/4/13 DRILLER Saxon Drilling

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( )% CORE REC %	SAMPLE	MATERIAL DESCRIPTION	LITHOLOGY	USC	WEATHERING	INTACT STRENGTH (EH VH H M L VL EL)	DEFECT SPACING (mm) (20 60 200 600 2000)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES	TESTS
30	-17.48				rough, open, some weathered, clay infilled. **VOLCANIC BRECCIA MW: (Cont'd)**							Is(50) = 1.00MPa		o
												Is(50) = 1.61MPa		o
												Is(50) = 0.56MPa		o
31			100 (7)				MW							
			100 (23)									Is(50) = 1.21MPa		o
	-19.38		100									HW / MW zone, low to medium strength		
32					Borehole terminated at 31.9m									
33														
34														
35														
36														
37														
38														
39														
40														

REMARKS Standpipe piezometer installed.

LOGGED BY MS

QLD_DMR_LIB_01A.GLB Log A_ENGINEERING BOREHOLE LOG W LITHOLOGY TOWNSVILLE RING ROAD 4 STONY CREEK.GPJ <<DrawingFile>> Datgel CPT Tool gINt Add-In 17/10/2013 11:55

CORE PHOTO LOG

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

Queensland Government

Department of Transport and Main Roads

Project Name	**Townsville Ring Road Section 4**		
Project No	FG 6020	Date	21/04/13
Borehole No	BH 301	TMR H No	11479
Location	Stony Creek Bridge	Start Depth (m)	25.10
Detail	Abutment A (Right)	Finish Depth (m)	31.90
Chainage		Submitted By	BW
Remarks			

0 100 200 300 400 500 600 700

SCALE 1:5

GEOT043/2