Queensland Government

ENGINEERING BOREHOLE LOG

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

BOREHOLE No **BH404**
SHEET 1 of 4
REFERENCE No **H11492**

PROJECT Townsville Ring Road Section 4
LOCATION Geaney Lane Overpass COORDINATES 464706.1 E; 7871666.1 N
PROJECT No FG6020 SURFACE R.L. 14.10m 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 Cairns 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	14.10				**Clayey SAND (FILL)** Dark grey to brown, moist, loose to medium dense.									
				A			(SC)					1,5,4 N=9		SPT
1				B								4,4,8 N=12		SPT
	12.20				**Clayey SAND** Pale brown to brown, slighty moist to moist, very dense. Generally fine to medium grained sand with coarse grained bands throughout.									
2				C								30/50 N>50		SPT
3				D								30/100 N>50		SPT
4				E								12,23,30/100 N>50		SPT
5							(SC)							
6				F								30/150 N>50		SPT
7														
				G								28,30/60 N>50		SPT
8														
9	5.10			H	**Sandy CLAY** Pale brown with occasional orange brown ironstaining, slightly moist, hard. Low plasticity, fine to medium grained sand.		(CL)					30/150 N>50		SPT
10														

REMARKS

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VP

QLD_DMR_LIB_01A.GLB Log A_ENGINEERING BOREHOLE LOG W LITHOLOGY TOWNSVILLE RING ROAD 4 GEANEY LANE.GPJ <<DrawingFile>> Datgel CPT Tool gINt Add-In 17/10/2013 11:47

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BOREHOLE No **BH404**
SHEET 2 of 4
REFERENCE No **H11492**

PROJECT Townsville Ring Road Section 4
LOCATION Geaney Lane Overpass COORDINATES 464706.1 E; 7871666.1 N
PROJECT No FG6020 SURFACE R.L. 14.10m 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 Cairns 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	4.10				**Sandy CLAY (Cont'd)**									
				J								18,30/110 N>50		SPT
11							(CL)							
12				K	Trace fine gravel.							12,30/150 N>50		SPT
13	0.90													
				L	**Clayey SAND** Pale brown with some orange brown iron staining in part, moist, dense to mainly very dense. Medium to coarse grained sand.							13,26,30/105 N>50		SPT
14														
15				M								10,17,26 N=43		SPT
16							(SC)							
				N	Becoming fine to medium grained sand.							14,25,30/110 N>50		SPT
17														
18				P	Becoming medium to coarse grained sand.							23,30/110 N>50		SPT
	-4.60													
19					**VOLCANIC BRECCIA** **Pyroclastic rock consisting of angular fragments embedded in a finer grained matrix.** **XW:** Generally exhibits the engineering properties of a pale brown, moist, hard, Sandy Gravelly Clay. Low plasticity.	△	XW							
				Q		△						14,30/140 N>50		SPT
20						△								

REMARKS

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BOREHOLE No **BH404**
SHEET 3 of 4
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PROJECT Townsville Ring Road Section 4
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PROJECT No FG6020 SURFACE R.L. 14.10m 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 Cairns 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	-5.90				**VOLCANIC BRECCIA** **XW:(Cont'd)** Becoming pale brown, red, moist, very dense, Clayey Gravelly Sand.									
21				R								27,30/130 N>50		SPT
22					Becoming brown, brown to red, pink, moist, very dense Gravelly Sand. HW rock fragments.									
				S				XW				30/50 N>50		SPT
23														
24				T								30/50 N>50		SPT
25														
	-11.40			U								30/50 N>50		SPT
			(0)		**HW:** Pale brown, pink, red, medium to coarse grained, massive, generally very low to low strength. Defects: -Joint at 60°-70° (3/m) -Irregular Joints (3/m) Defects are generally planar to irregular, rough, open, clayey infilled. Defect spacing: Close to medium.			HW				Is(50) = 0.31MPa Is(50) = 0.05MPa		o
26	-12.75		100											
27			(0)		**MW:**Brown to red, pink, fine to coarse grained, massive, medium to mainly high strength. Clasts (sizing from 2mm to 30mm diameter) in a finer grained matrix. Defects: -Joint at 0°-30° (1/m) -Joint at 45° (1/m) -Joint at 60°-70° (2/m) Defects are generally planar, rough, open, clayey infilled. Defect spacing: Mainly medium to wide.			MW				Is(50) = 0.11MPa Is(50) = 0.42MPa		o o
28			100 (40)									Is(50) = 1.58MPa		o
29												Is(50) = 1.95MPa		o
30												Is(50) = 1.56MPa		o

REMARKS

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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	-15.90				**VOLCANIC BRECCIA** **MW: (Cont'd)**							UCS=13.7 MPa		
			100 (20)				MW					Is(50) = 2.23MPa		o
31	-17.30											~~Is(50) = 4.59MPa~~		o
					ANDESITE: Fine grained, intermediate extrusive igneous rock. **MW:**Brown, fine grained, massive, medium to mainly high strength. Defects: -Joint at 0°-30° (2/m) -Joint at 40°-50° (3/m) -Joint at 60°-70° (2/m) Defects are generally planar, rough, open. Defect spacing: medium									
32							MW					Is(50) = 1.79MPa		o
33	-18.90		100		Borehole terminated at 33m									
34														
35														
36														
37														
38														
39														
40														

REMARKS

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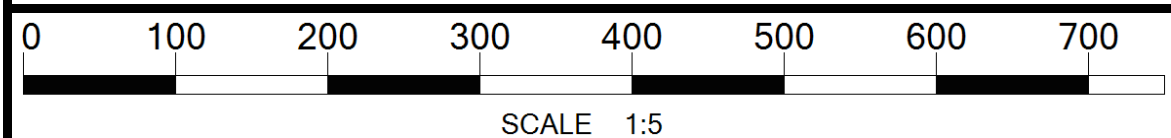
QLD_DMR_LIB_01A.GLB Log A_ENGINEERING BOREHOLE LOG W LITHOLOGY TOWNSVILLE RING ROAD 4 GEANEY LANE.GPJ <<DrawingFile>> Datgel CPT Tool gINt Add-In 17/10/2013 11:47

CORE PHOTO LOG

DEPARTMENT OF TRANSPORT & MAIN ROADS
Geotechnical Branch
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 404	TMR H No	11492
Location	Geaney Lane Overpass	Start Depth (m)	25.50
Detail	Pier 1 (Left)	Finish Depth (m)	33.00
Chainage		Submitted By	MS
Remarks			



SCALE 1:5

GEOT043/1