Queensland Government

ENGINEERING BOREHOLE LOG

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

BOREHOLE No **BH401**
SHEET 1 of 3
REFERENCE No **H11489**

PROJECT Townsville Ring Road Section 4
LOCATION Geaney Lane Overpass COORDINATES 464715.5 E; 7871645.0 N
PROJECT No FG6020 SURFACE R.L. 12.33m PLUNGE DATE STARTED 18/4/13 GRID DATUM GDA 94
JOB No 268/10M/5 HEIGHT DATUM AHD BEARING DATE COMPLETED 19/4/13 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	12.33				**Clayey SAND (FILL)** Dark grey to dark brown, dry to slightly moist, dense to very dense. Fine to medium grained sand with coarse grained bands in part.		(SC)					10,21,28 N=49	A	SPT
1														
	10.73			B	**Clayey SAND** Pale brown/brown to orange, dry to slightly moist, very dense. Fine to medium grained sand.							20,30/130 N>50	B	SPT
2				C	Iron staining in part.							23,30/120 N>50	C	SPT
3				D								30/100\ N>50	D	SPT
4				E	Becoming fine grained sand with trace fine gravel.							25,30/80 N>50	E	SPT
5							(SC)							
6				F	Becoming medium to coarse grained sand.							30/140 N>50	F	SPT
7														
8				G	Sandy Clay band. Pale brown to yellow brown.							10,21,30/110 N>50	G	SPT
9				H								22,30/90 N>50	H	SPT
10	2.33													

REMARKS

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BOREHOLE No **BH401**
SHEET 2 of 3
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PROJECT Townsville Ring Road Section 4
LOCATION Geaney Lane Overpass COORDINATES 464715.5 E; 7871645.0 N
PROJECT No FG6020 SURFACE R.L. 12.33m PLUNGE DATE STARTED 18/4/13 GRID DATUM GDA 94
JOB No 268/10M/5 HEIGHT DATUM AHD BEARING DATE COMPLETED 19/4/13 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	2.33				**Silty CLAY** Pale brown to brown, moist, hard. Low plasticity.		(CL)					9,16,29 N=45	J	SPT
11	1.13				**Clayey SAND** Pale brown, brown, slightly moist, very dense. Medium to coarse grained sand.									
12				K								18,30/130 N>50	K	SPT
13														
14				L			(SC)					19,27,30/110 N>50	L	SPT
15				M								17,30/120 N>50	M	SPT
16	-3.87				**Silty CLAY** Pale brown, slightly moist, hard. Low plasticity.									
17				N			(CL)					22,30/100 N>50	N	SPT
18				P								12,23,30/135 N>50	P	SPT
19	-6.37				**VOLCANIC BRECCIA** **Pyroclastic rock consisting of angular fragments embedded in a finer grained matrix. XW:**Generally exhibits the engineering properties of a red, pink to grey, brown, slightly moist, very dense, Clayey Gravelly Sand. Fine to coarse grained, subangular gravel.		XW							
20				Q								21,30/105 N>50	Q	SPT

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SHEET 3 of 3
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PROJECT Townsville Ring Road Section 4
LOCATION Geaney Lane Overpass COORDINATES 464715.5 E; 7871645.0 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	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	-7.67				**VOLCANIC BRECCIA** **XW: (Cont'd)**									
21				R								30/50 N>50		SPT
22							XW							
22				S								30/125 N>50		SPT
24	-11.72		(0)	T	**MW:** Red, pink to brown, grey, fine to coarse grained, very low to medium strength. Clasts (sizing from 2mm to 50mm diameter) in a finer grained matrix. Defects: - Joints @ 30° (1/m) - Joints @ 45° (1/m) - Irregular Jonts (2-3/m) Defects are generally planar to irregular, rough, open, clay infilled. Defect spacing: close to medium.							30/50 N>50; No recovery		SPT
			100											
			(0)									Is(50) = 0.09MPa		o
25												Is(50) = 0.17MPa		o
							MW					Is(50) = 0.17MPa		o
26												Is(50) = 0.52MPa		o
												Is(50) = 0.52MPa		o
												UCS=14.9 MPa		
27	-14.67		100									Is(50) = 0.68MPa		o
					Borehole terminated at 27m									
28														
29														
30														

REMARKS

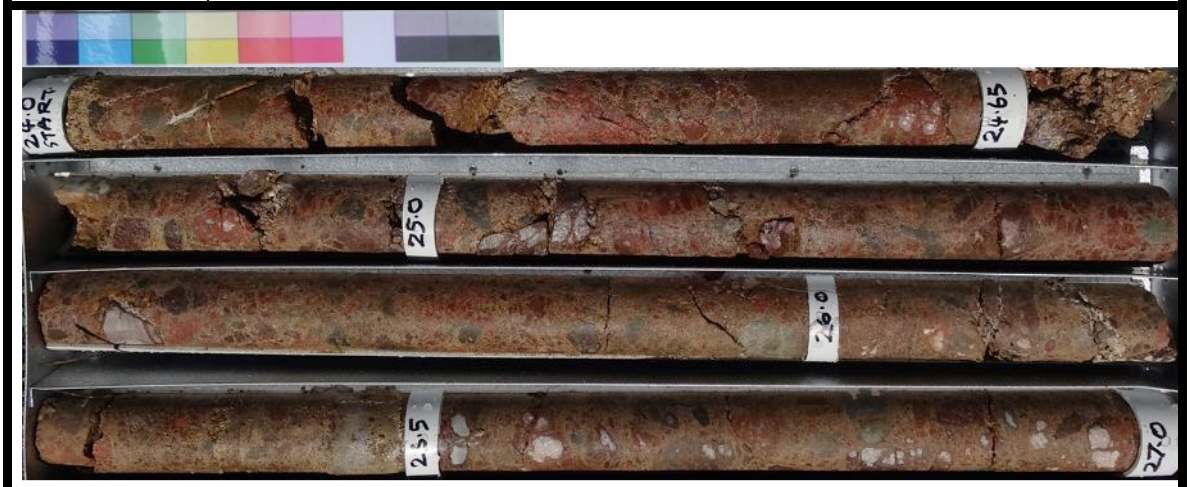
LOGGED BY
VP

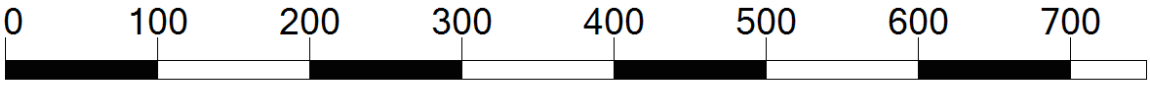
CORE PHOTO LOG

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	19/04/13
Borehole No	BH 401	TMR H No	11489
Location	Geaney Lane Overpass	Start Depth (m)	24.00
Detail	Abutment A (Right)	Finish Depth (m)	27.00
Chainage		Submitted By	MS
Remarks			





SCALE 1:5