ENGINEERING BOREHOLE LOG

Queensland Government

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

BOREHOLE No BH111
SHEET 1 of 4
REFERENCE No H10895

PROJECT Ipswich Motorway Upgrade - Rocklea to Darra
LOCATION Oxley Creek Overflow
COORDINATES 498781.2 E; 6951053.7 N
PROJECT No FG5779 SURFACE R.L. 2.38 m PLUNGE -90 ° DATE STARTED 02/11/10 GRID DATUM GDA94
JOB No 140/U16/902 HEIGHT DATUM AHD BEARING DATE COMPLETED 03/11/10 DRILLER R&D Drilling Pty Ltd

DEPTH (m)	R.L. (m)	AUGER / CASING / WASH BORING / CORE DRILLING	RQD ( ) % CORE REC %	SAMPLE	MATERIAL DESCRIPTION	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	2.38				**Silty CLAY** Brown to grey, moist, ~~firm.~~ stiff Medium plasticity. Becoming grey with depth.						Based on drillers logs only		
1				A		(CH)					2,3,4 N=7		SPT
											inferred GWT		
2				B							p'c=96kPa OCR=2.9		U100
	0.13				**Sandy CLAY (Alluvium)** Grey to brown, moist, ~~firm to very~~ stiff. Low to medium plasticity. Sand fraction fine grained; clayey sand below 4m depth. Sand fraction decreasing with depth.								
3				C							RW,1,3 N=4		SPT
4				D		(CI/ML)					4,4,3 N=7		SPT
5				E							RW,2,4 N=6		SPT
6	-3.62			F	**Silty SAND (Residual)** Brown to grey, moist , ~~very loose to mainly~~ medium dense. Sand fraction fine grained; occasional silty clay layers in parts.						4,6,13 N=19		SPT
7				G							9,9,9 N=18		SPT
8				H		(SM)					7,8,8 N=16		SPT
9	-7.02			J	Becoming ~~very~~ soft silty clay below 9.0m app. 400mm thick.						1,2,0 N=2		SPT
10					(See over)						▽ 11/2/2011 ▽ 4/2/2011		

REMARKS Observation well installed, infiltration zone from 6.3m to 35.0m.

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QLD_DMR_LIB_01.GLB Log A_ENGINEERING BOREHOLE LOG FG5779 IPSWICH MWY_ROCKLEA TO DARRA.GPJ <<DrawingFile>> Datgel CPT Tool gINt Add-In 14/02/2011 17:34

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10	-7.62			K	**Silty SAND (Residual) Cont'd**	(SM)					4,7,5 N=12	SPT
11	-8.82			L	**Silty CLAY (Residual)** Grey, moist, ~~firm~~. stiff High plasticity; minor traces of organic material.	(CH)					1,2,5 N=7	SPT
12	-9.62			M	**SILTSTONE** **FINE GRAINED SEDIMENTARY ROCK COMPRISED MAINLY OF SILT SIZED PARTICLES.** **XW:**Generally exhibits engineering properties of pale brown to grey, moist, very stiff to hard clayey silt. High plasticity. Traces of organic material.	XW					5,9,13 N=22	SPT
13				N							8,11,16 N=27	SPT
14				P							9,15,23 N=38	SPT
15	-12.62			Q	**HW:**Generally exhibits engineering properties of pale grey to brown, moist, hard, clayey silt. Low plasticity. Occasional fine grained HW sandstone bands.	HW					19,25,30/140mm N>50	SPT
16				R							11,20,27 N=47	SPT
17				S							12,22,29 N>50	SPT
18				T							18,20,27 N=47	SPT
19	-16.62			U	**CLAYSTONE** **FINE GRAINED SEDIMENTARY ROCK COMPRISED MAINLY OF CLAY SIZED PARTICLES.** (See over)	HW					DD = 1.76t/m^3; WD = 2.09t/m^3; MC = 18.8%; UCS=1222KPa 14,20,23 N=43	SPT
20											DD = 1.76t/m^3; WD = 2.10t/m^3;	

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20	-17.62		(86)		**CLAYSTONE (Cont'd)** **HW:**Brown, bedded with minor lamination, fine grained, mainly very low strength. Generally defects are rare -Drilling induced bedding/lamination partings @5-10°(1/m)					MC = 19.4%; UCS=873KPa Mudstone interbeds app. 400mm thick. Is(50) = 0.07MPa		o
21			100		Defects are close to wide spaced, planar, smooth, tight, clean.							
22			(98)		Occasional fine grained sand in parts.					Is(50) = 0.07MPa Is(50) = 0.06MPa DD = 1.90t/m^3; WD = 2.20t/m^3; MC = 16%; UCS=804KPa	x o	
23			100			HW				Is(50) = 0.06MPa Is(50) = 0.04MPa	x o	
24			(100)							Is(50) = 0.09MPa Is(50) = 0.09MPa DD = 1.81t/m^3; WD = 2.12t/m^3; MC = 16.8%; UCS=2300KPa	x o	
25	-22.69		100							Is(50) = 0.04MPa DD = 1.73t/m^3; WD = 2.05t/m^3; MC = 18.8%; UCS=2397KPa	o	
26			(92)		**Interbedded SANDSTONE and MUDSTONE** **HW:** Grey to dark grey, fine grained, bedded, very low strength. Sand particles are fine grained; dark grey mudstone interbeds are generally >50mm thick.					▽ 22/12/2010		
27			100									
	-25.02		(50)		Defects: - Bedding / lamination parting @ 10° (3/m) - Joint @ 10° (3/m) Defects are close to medium spaced, planar, smooth, tight and clean.	HW				Is(50) = 0.02MPa	o	
28			100		**MUDSTONE** **MW:** Dark grey, fine grained, laminated, mainly very low to low strength.					Is(50) = 0.06MPa Is(50) = 0.10MPa	x o	
29			(77)		Defects: - Lamination parting @ 10° (1-2/m) - Joint @ 40° (<1/m) Defects are close to medium spaced, planar, smooth, tight and clean.	MW				Is(50) = 0.14MPa Is(50) = 0.24MPa Is(50) = 0.09MPa Is(50) = 0.07MPa	x o x o	
30			100									
			(72)		(See over)					Is(50) = 0.08MPa Is(50) = 0.06MPa	x o	

REMARKS Observation well installed, infiltration zone from 6.3m to 35.0m.

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30	-27.62				**MUDSTONE MW: (Cont'd)** Occasional high strength bands below @31m depth.						DD = 1.74t/m^3; WD = 2.08t/m^3; MC = 19.2%; UCS=1305KPa		
			100								Jt @ 40		
			(70)								Is(50) = 0.08MPa		x
31											Is(50) = 0.08MPa		o
			100								Is(50) = 3.14MPa		x
			(98)								Is(50) = 8.03MPa		o
											Is(50) = 3.74MPa		x
											Is(50) = 1.25MPa		o
32											DD = 1.68t/m^3; WD = 2.04t/m^3; MC = 21.6%; UCS=1589KPa		x
											Is(50) = 0.06MPa		o
											Is(50) = 0.09MPa		
						MW							
			100								DD = 1.65t/m^3; WD = 2.02t/m^3; MC = 22.6%; UCS=2074KPa		
33			(93)								Piezometer tip @ 30.0m depth		
											Is(50) = 0.08MPa		x
											Is(50) = 0.10MPa		o
											DD = 1.58t/m^3; WD = 1.97t/m^3; MC = 24.8%; UCS=1891KPa		x
											Is(50) = 0.08MPa		o
34											Is(50) = 0.09MPa		
			100								Is(50) = 0.05MPa		x
			(100)								Is(50) = 0.11MPa		o
			100								Is(50) = 0.08MPa		x
	-32.62										Is(50) = 0.15MPa		o
35					Borehole terminated at 35m						DD = 1.62t/m^3; WD = 2.02t/m^3; MC = 24.2%; UCS=1606KPa		
											DD = 1.78t/m^3; WD = 2.10t/m^3; MC = 18%; UCS=799KPa		
36													
37													
38													
39													
40													

REMARKS Observation well installed, infiltration zone from 6.3m to 35.0m.

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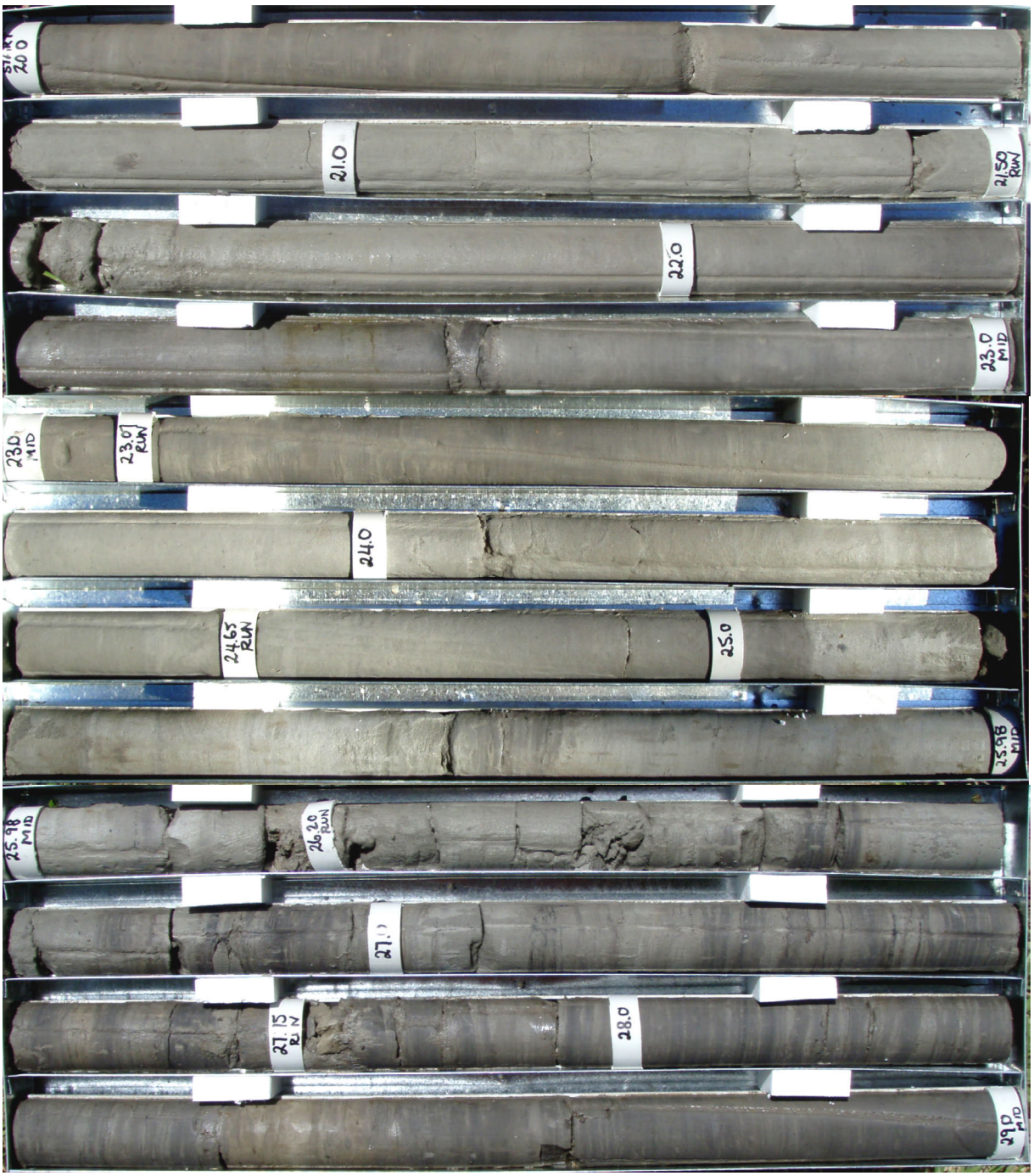
Project: **Ipswich Motorway Upgrade - Rocklea to Darra**
Borehole No: **BH 111**
Start Depth: 20.00m
Finish Depth: 35.00m
Project No: FG5779
H No: H10895



0 100 200 300 400 500 600mm

SCALE 1:5

F:GEOT043/1

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0 100 200 300 400 500 600mm

SCALE 1:5

F:GEOT043/1