ENGINEERING BOREHOLE LOG

Queensland Government

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

BOREHOLE No **BH108**
SHEET 1 of 4
REFERENCE No **H10892**

PROJECT Ipswich Motorway Upgrade - Rocklea to Darra
LOCATION Oxley Creek - Left Bank COORDINATES 498951.7 E; 6951115.3 N
PROJECT No FG5779 SURFACE R.L. 3.23 m PLUNGE -90 ° DATE STARTED 27/10/10 GRID DATUM GDA94
JOB No 140/U16/902 HEIGHT DATUM AHD BEARING DATE COMPLETED 27/10/10 DRILLER R&D Drilling Pty Ltd

DEPTH (m)	R.L. (m)	AUGER / CASING / ROCK ROLLER / 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	3.23				**Silty CLAY** Red-brown, moist, mainly firm. Medium to high plasticity. Minor trace of plant material. Becoming sandy at base.	(CI-CH)					Based on Drillers logs only up to 1m depth.	A	SPT
				A							2,2,4 N=6		
1	1.73				**SAND** Brown to dark grey, moist, mainly loose. Sand fraction mainly fine to medium grained.							B	SPT
				B							2,2,3 N=5		
2											inferred GWT		
				C		(SP-SM)						C	SPT
3											1,1,4 N=5		
											Dark grey, sandy clay and peat (based on Driller's Logs).	D	SPT
4				D							5,4,3 N=7		
	-1.53				**Silty CLAY (Estuarine?)** Dark grey to black, moist, ~~mainly very soft to soft.~~ soft to firm High plasticity. Contains high organic content. Minor trace of decomposed carbonaceous materials (peat / wooden material).							E	SPT
5				E							RW,RW,HW N<1		
				F							su=32kPa p'c=90kPa OCR=2.2	F	U100
6						(CH/OH)					Sample slip		U100
				H							su=25kPa p'c=90kPa OCR=1.9	H	U100
7													
				J							RW,RW,2 N=2	J	SPT
8													
	-5.78				**SILTSTONE** **FINE GRAINED SEDIMENTARY ROCK COMPOSED MAINLY OF SILT SIZED PARTICLES.** (See over)							K	SPT
9				K		XW					4,11,17 N=28		
10													

REMARKS

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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	-6.78			L	**SILTSTONE (Cont'd)** **XW:** Generally exhibits engineering properties of grey to dark grey, fine grained, very stiff to hard, clayey silt / silty clay. Relict rock fabric and structure visible throughout.	XW				20,24,31 N>50	SPT
11	-8.03			M	**MUDSTONE** **FINE GRAINED SEDIMENTARY ROCK COMPOSED MAINLY OF CLAY SIZED PARTICLES** **XW:**Generally exhibits engineering properties of black, moist, mainly very stiff to hard silty clay.					15,17,26 N=43	SPT
12				N	Contains interbeddeds of siltstone; slightly fissiling on drying.					10,15,20 N=35	SPT
13				P						7,10,14 N=24	SPT
14				Q		XW				20/100mm,HB N>50	SPT
15				R						12,12,12 N=24	SPT
16				S						9,17,19 N=36	SPT
17	-13.78			T	**Sandy SILTSTONE** **HW:** Generally exhibits engineering properties of greenish-grey, moist, fine grained, hard, sandy silt. Relict rock fabric and structure visible throughout; minor clay fraction in parts.					29,30/100mm N>50	SPT
18				U	Becoming more sandy below 20m depth.	HW				24,30/85mm N>50	SPT
19				V						30/120mm,30/80mm N>50	SPT
20					(See over)						

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20	-16.78			W	**Sandy SILTSTONE HW: (Cont'd)**		HW				30,30/100mm N>50		SPT
	-17.28		(84)		**SANDSTONE FINE TO MEDIUM GRAINED SEDIMENTARY ROCK COMPOSED MAINLY OF SAND SIZED PARTICLES** **MW:** Pale grey, massive, fine grained, mainly very low strength. Generally defects are rare. - Drilling induced bedding/ lamination partings @ 5° (3/m)		MW				Siltstone interbed, approx. 250mm thick Is(50) = 0.09MPa Is(50) = 0.06MPa Rock core broken due to drilling and handling Displays cracking on drying Is(50) = 0.06MPa Is(50) = 0.10MPa DD = 1.87t/m^3; MC = 15%; UCS=1.53MPa Is(50) = 0.09MPa Is(50) = 0.15MPa	x o x o x o	
21													
22			100										
	-19.38		(81)		Defects are medium to wide spaced, planar, slightly rough, open and clean.								
23			100		**SILTSTONE** **MW:** Mottled grey, bedded with faint laminations, fine grained, mainly very low to low strength. Generally defects are rare. - Drilling induced bedding/ lamination partings @ 5° (3/m) -Joint@45° (1/m)		MW				Irregular fracture @ 45° Iron stained Is(50) = 0.10MPa Is(50) = 0.08MPa Is(50) = 0.09MPa Is(50) = 0.12MPa Is(50) = 0.12MPa Is(50) = 0.11MPa	x o x o x o	
24			(25)										
25			100		Defects are mainly medium spaced, planar, slightly rough, open and clean.								
	-22.13		(73)								Is(50) = 0.05MPa	x	
26			100		**MUDSTONE** **MW:** Pale grey to dark grey, massive with faint laminations, very low to low strength. Becoming greyish-brown and iron stained below 29.25m depth, approx. 900mm long; iron staining in parts.		MW				Brown iron staining in parts Is(50) = 0.13MPa DD = 1.86t/m^3; MC = 15.6%; UCS=1.13MPa Is(50) = 0.10MPa Is(50) = 0.12MPa	o x o	
			(78)		Numerous drilling-induced partings.						Is(50) = 0.05MPa Is(50) = 0.11MPa	x o	
27			100										
			(27)								HFZ		
28			100								Is(50) = 0.18MPa Is(50) = 0.11MPa	x o	
			(70)								Is(50) = 0.13MPa Is(50) = 0.09MPa	x o	
29			100								Is(50) = 0.11MPa Is(50) = 0.11MPa	x o	
			(50)										
30					(See over)								

REMARKS

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30	-26.78				**MUDSTONE (Cont'd)** **MW:** Becoming dark grey, highly fractured, extremely low to very low strength.				Is(50) = 0.11MPa Is(50) = 0.08MPa	x o
	-27.28		100		Generally defects are rare. - Drilling induced lamination partings @ 5-10° (2/m) - Joint / irregular fracture @ 45° (1/m)					
31			(0)		Defects are close to wide spaced, planar, smooth, closed and open with clay infill or iron stained.			XW CLy zone		
32			100					XW CLy zone		
			(0)			MW				
			(71)					Yellow-brown iron stained band.		
33										
34			100							
			(87)					Siltstone Interbeds		
35	-32.08		100							
					Borehole terminated at 35.3m					
36										
37										
38										
39										
40										

REMARKS

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Project: **Ipswich Motorway Upgrade - Rocklea to Darra**
Borehole No: **BH 108**
Start Depth: 20.50m
Finish Depth: 35.30m
Project No: FG5779
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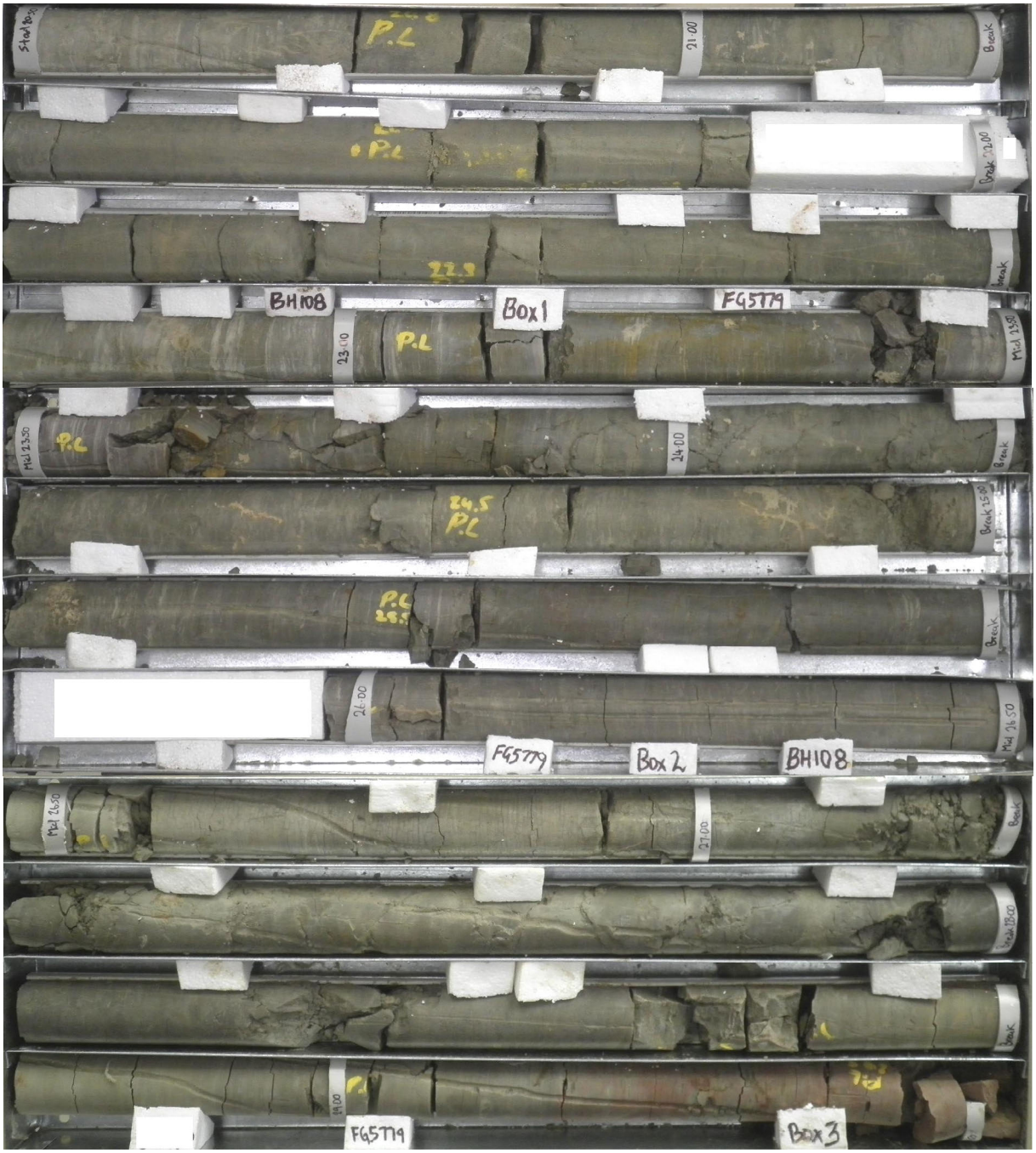

0 100 200 300 400 500 600mm

SCALE 1:5

F:GEOT043/1

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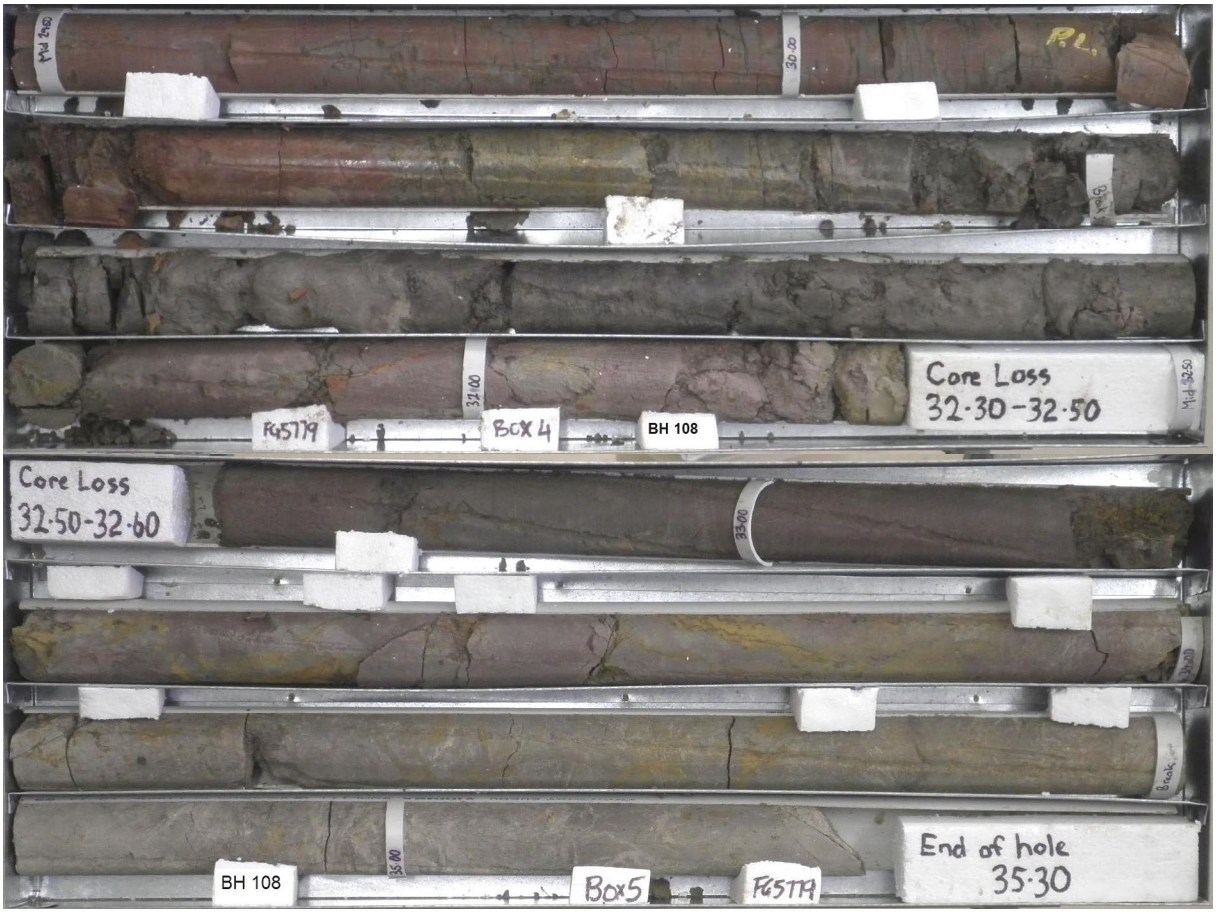

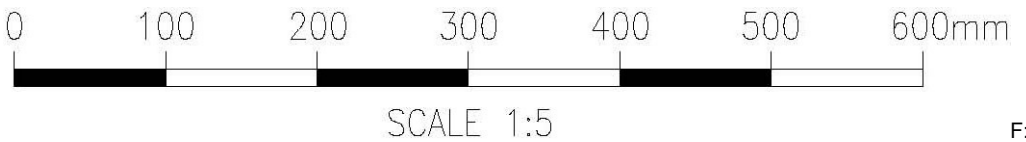

F:GEOT043/1