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# ENGINEERING BOREHOLE LOG

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

BOREHOLE No BH121  
SHEET 1 of 4  
REFERENCE No H10916

PROJECT Ipswich Motorway Upgrade - Rocklea to Darra  
LOCATION Cnr Archerfield Rd & Ipswich Rd service road (Darra Motel) COORDINATES 495557.9 E; 6949963.2 N  
PROJECT No FG5779 SURFACE R.L. 36.12m PLUNGE -90° DATE STARTED 29/11/10 GRID DATUM GDA94  
JOB No 140/U16/902 HEIGHT DATUM AHD BEARING DATE COMPLETED 29/11/10 DRILLER Soil Surveys

DEPTH (m)	R.L. (m)	CASING OTHER WASH BORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
0	36.12					TOPSOIL					Non destructive digging up to 1.5m (Based on Drillers logs only)	
1												
2	34.62				A	<b>Silty CLAY (Residual)</b> Mottled red-grey, moist, stiff to mainly very stiff. High plasticity; iron staining throughout. Occasional fine grained sand in parts.					4,7,8 N=15	SPT
3					B						6,8,12 N=20	SPT
4					C		(CH)				8,11,16 N=27	SPT
5					D						7,10,16 N=26	SPT
6	29.92				E	Becoming grey below 5.5m depth.					6,11,15 N=26	SPT
7					F	<b>CLAYSTONE</b> <b>FINE GRAINED SEDIMENTARY ROCK</b> <b>COMPOSED MAINLY OF CLAY SIZED PARTICLES</b> HW: Generally exhibits engineering properties of pale grey, moist, hard silty clay. Low to medium plasticity; minor traces of fine grained sand in parts.	HW				18,30/150mm N>50	SPT
8					G						18,24,30 N>50	SPT
9	27.62				H						12,30/150mm N>50	SPT
10					I	<b>SILTSTONE</b> <b>FINE GRAINED SEDIMENTARY ROCK</b> <b>COMPOSED MAINLY OF SILT SIZED PARTICLES</b> HW: Generally exhibits engineering properties of red-brown to yellow-brown, moist, hard sandy silt. Minor clay fraction throughout.	HW				30/60mm N>50	SPT
					J						30/130mm N>50	SPT
						(See over)						

REMARKS

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BOREHOLE No BH121  
SHEET 2 of 4  
REFERENCE No H10916

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DEPTH (m)	R.L. (m)	CASING OTHER WASH BORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
10	26.12											
	25.62					<b>SILTSTONE HW (Cont'd)</b> Iron concretions nodules in parts.	HW					
					K	<b>SANDSTONE</b> <b>FINE TO COARSE GRAINED, MASSIVE,</b> <b>POORLY CEMENTED SEDIMENTARY ROCK</b> <b>XW:</b> Yellowish, moist very dense silty sand.					30/120mm N>50	SPT
					L	Sand fraction mainly fine to medium grained.					30/110mm N>50	SPT
					M	Occasional fine gravel between 15.1 to 15.3m.					30/140mm N>50	SPT
					N	Becoming mottled red, iron stained below 14.5m depth.	XW				32/150mm N>50	SPT
					O						33/150mm N>50	SPT
	20.72				P	<b>CLAYSTONE</b> <b>XW:</b> Generally exhibits engineering properties of dark grey, moist, hard silty clay.					11,15,18 N=33	SPT
					Q	Mainly high plasticity; minor red iron staining in parts.					10,14,19 N=33	SPT
					R	Contains interbeds of siltstone and mudstone in parts.	XW				9,14,16 N=30	SPT
					S						9,14,18 N=32	SPT
					T	(See over)					9,14,18 N=32	SPT

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BOREHOLE No BH121  
SHEET 3 of 4  
REFERENCE No H10916

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JOB No 140/U16/902 HEIGHT DATUM AHD BEARING  DATE COMPLETED 29/11/10 DRILLER Soil Surveys

DEPTH (m)	R.L. (m)	CASING OTHER WASH BORING CORE DRILLING	RQD (%)	CORE REC %	SAMPLE	MATERIAL DESCRIPTION	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
20	16.12					<b>CLAYSTONE XW: (Cont'd)</b>	XW					
21					U						12,18,25 N=43	SPT
22					V						13,20,27 N=47	SPT
23					W						14,24,31 N>50	SPT
24	12.12				X	<b>SANDSTONE</b> <b>MW:</b> Grey, massive with minor inter laminations, fine to coarse grained, mainly very low strength.  Becoming coarse grained below 26.8m depth.  Defects are almost nil.  Defects are predominantly wide to very wide spaced, tight and clean.	MW					
25			(97)								Is(50) = 0.07MPa Is(50) = 0.06MPa  DD = 1.69t/m <sup>3</sup> ; WD = 2.04t/m <sup>3</sup> ; MC = 20.6%; UCS=1255KPa	x o
26			97								Is(50) = 0.07MPa Is(50) = 0.11MPa	x o
27			(0) 0								Is(50) = 0.05MPa Is(50) = 0.05MPa	x o
28			(85)								Is(50) = 0.05MPa Is(50) = 0.04MPa	x o
29			87 (60)								Is(50) = 0.02MPa	o
30						(See over)						

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SHEET 4 of 4  
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DEPTH (m)	R.L. (m)	CASING OTHER WASH BORING CORE DRILLING	RQD (%)	SAMPLE	MATERIAL DESCRIPTION	USC WEATHERING	INTACT STRENGTH	DEFECT SPACING (mm)	GRAPHIC LOG	ADDITIONAL DATA AND TEST RESULTS	SAMPLES TESTS
30	6.12										
30	5.72				<b>SANDSTONE MW (cont'd)</b>	MW					
31					<b>CLAYSTONE MW:</b> Grey to yellow-brown, minor iron stained, massive, mainly very low to low strength.  Generally defects are rare.  - Drilling induced bedding / lamination partings @ 5° (<1/m)	MW				Is(50) = 0.09MPa Is(50) = 0.09MPa	x o
32			62		Defects are predominantly wide spaced, planar, smooth, closed and clean.						
32	3.72		(90)		<b>SANDSTONE MW:</b> Grey, massive, mainly medium to coarse grained, very low to low strength.  Contains interbeds of siltstone app. 400mm thick.  Defects are rare.	MW				DD = 1.64t/m <sup>3</sup> ; WD = 2.05t/m <sup>3</sup> ; MC = 24.6%; UCS=747KPa  (XW) loose sand  Is(50) = 0.11MPa Is(50) = 0.12MPa	x o
33			99							Is(50) = 0.05MPa Is(50) = 5.00MPa	x x
34	2.12		(100)		<b>MUDSTONE MW:</b> Mottled yellow-brown, laminated, fine grained mainly low strength.  Contains interbeds of siltstone in parts.  Defects as above.	MW				Is(50) = 0.12MPa Is(50) = 0.09MPa	o o
35										Is(50) = 0.08MPa Is(50) = 0.10MPa Is(50) = 0.12MPa Is(50) = 0.14MPa	x o x o
35	0.52		100		Borehole terminated at 35.6m						
36											
37											
38											
39											
40											

REMARKS \_\_\_\_\_

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Project: Ipswich Motorway Upgrade - Rocklea to Darra  
Borehole No: **BH 121**  
Start Depth: 24.00m  
Finish Depth: 35.60m  
Project No: FG5779  
H No: H10916

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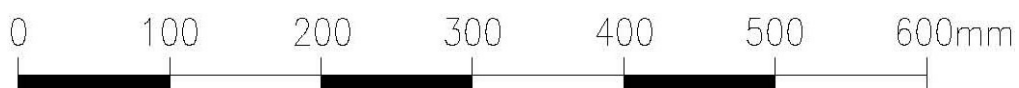
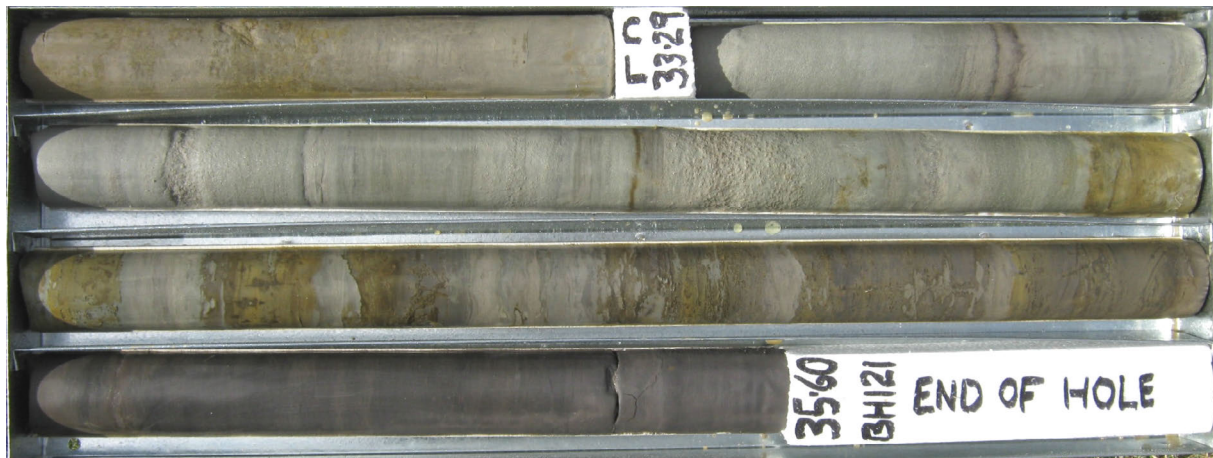
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SCALE 1:5



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SCALE 1:5