



 <b>British Geological Survey</b> NATURAL ENVIRONMENT RESEARCH COUNCIL						<b>Site</b> M1 WIDENING JUNCTION 21 TO 30 PRELIMINARY GI - CONTRACT 2		<b>Borehole Number</b> RC1196		
<b>Machine:</b> <b>Flush :</b> <b>Core Dia: mm</b> <b>Method :</b>		<b>Casing Diameter</b> 140mm cased to 5.00m		<b>Ground Level (mOD)</b> 150.75		<b>Client</b> Highways Agency		<b>Job Number</b> WAL060099A		
		<b>Location</b> 444654 E 358389 N		<b>Dates</b> 20/09/2006- 21/09/2006		<b>Engineer</b> Arup		<b>Sheet</b> 1/2		
<b>Depth (m)</b>	<b>TCR</b>	<b>SCR</b>	<b>RQD</b>	<b>FI</b>	<b>Field Records</b>	<b>Level (mOD)</b>	<b>Depth (m) (Thickness)</b>	<b>Description</b>	<b>Legend</b>	<b>Water</b>
0.00			0	0				OPEN HOLE		
	57	21	21	0			(1.60)			
1.60						149.15	1.60	MADE GROUND. Recovered non-intact as orange brown angular to subangular coarse gravel and cobble sized fragments of moderately weak and moderately strong fine to medium grained sandstone. One fragment 320mm long - possible boulder. Driller notes sandstone boulders.		
2.20-2.48	27	0	0	0	C1					
3.00-3.04 3.00					35/ SPT 35'/39					
	69	32	0	0			(3.75)			
4.50			0	0						
5.35			0	0		145.40	5.35	Completely weathered SILTSTONE. Recovered as stiff to very stiff (locally very weak) grey thickly laminated extremely closely fissured silt/clay.		
5.50			0	0				From 5.50m to 5.65m: weak grey weathered fine to medium sandstone with occasional very narrow wispy black laminae.		
5.65	89	89	9	0						
6.00			0	0			(1.70)			
								Below 6.60: generally very weak with frequent black carbonised plant remains (up to 4mmx30mm).		
7.05						143.70	7.05	Generally weak (variably very weak to moderately weak) dark grey SILTSTONE (occasionally grading to mudstone). Orange brown discolouration on some fracture surfaces. Fractures, subhorizontal (10 degrees to 30 degrees), closely spaced smooth, planar frequently irregular, others subvertical and vertical, smooth, planar to irregular.		
7.25-7.35	100	94	29	0	P5					
7.35	91	85	21	0						
8.05										
8.55-8.75	99	77	0	0	C2		(3.60)	At 8.35m; 65mm rounded ironstone nodule.		
9.00			0	0						
9.20			0	0	P6					
9.35			0	0				From 9.35m to 10.10m; structure generally lost to weathering, recovered as soft to very stiff thickly laminated extremely closely fissured silt/clay with frequent lithorelics of very weak mudstone.		
<b>Remarks</b>								<b>Scale (approx)</b> 1:50	<b>Logged By</b> TL	
								<b>Figure No.</b>		



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Machine: Flush : Core Dia: mm Method :		Casing Diameter 140mm cased to 5.00m		Ground Level (mOD) 150.75		Client Highways Agency		Job Number WAL060099A		
		Location 444654 E 358389 N		Dates 20/09/2006-21/09/2006		Engineer Arup		Sheet 2/2		
Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
10.40 10.50 10.65	95	95	57 0	0	20/09/2006:DRY	140.10	10.65	At 10.25m; 55mm rounded ironstone nodule. From 10.40m to 10.65m; weak dark and light grey thinly colour laminated with frequent orange brown discolouration up to 15mm.		
11.00 11.00-11.71	97	87	79	0	20/09/2006: 20/09/2006: 21/09/2006: C3		(2.55)	Moderately strong to strong light grey brown fine to medium grained SANDSTONE with frequent very narrow brown and black wispy non-persistent interlaminae. Light orange brown discolouration throughout. Fractures, horizontal, widely spaced smooth and rough, undulating, open with brown very sandy silt fill up to 5mm. From 10.65m to 11.00m; heavy dark orange brown discolouration, very weak and weak. 1 No vertical smooth, undulating fracture.		
12.00 12.55-12.80			0	0	C4			From 12.55m to 12.60m; heavy dark orange brown discolouration and thinly laminated ferrous mineralisation. From 12.60m to 13.20m; light and dark grey thinly and thickly colour-laminated.		
13.20 13.50	95	58	0	0	Water strike(1) at 13.50m, no rise after 20 mins.	137.55	13.20	Very weak and weak grey green (becoming weak blue grey) thinly and thickly laminated MUDSTONE. Variably recovered as soft to firm thinly to thickly laminated clay. Horizontal fractures very closely and closely spaced, smooth, planar; subvertical, smooth, planar; others subvertical, smooth, irregular. At 13.80m; 40mm bed of moderately strong light brown ironstone. At 13.90m; 40mm bed of moderately strong light brown ironstone.		
14.80 14.90 15.00	100	84	25	0	P7	135.85	14.90	Very weak and weak brittle black COAL. Fractures, horizontal and vertical, extremely closely spaced.		
15.30			0	0		135.45	15.30	Stiff to very stiff SILT/CLAY becoming very weak grey thickly laminated siltstone with occasional black carbonised plant remains (5mmx25mm) with rare thin laminae of very weak black coal. Fractures, horizontal, extremely closely spaced irregular, incipient, tight. Others subvertical, irregular.		
16.15 16.15 16.50	94	73	0	0	P8	134.60	16.15	Moderately strong grey and dark grey thinly colour-laminated SILTSTONE. Orange brown discolouration on fracture surface. Fractures, horizontal, very closely and closely spaced, smooth, undulating, open.		
17.20 17.85			0	0	21/09/2006: 21/09/2006:	134.25	16.50	At 16.20m; 50mm subrounded ironstone nodule. From 16.25m to 16.50m; 1 No vertical fracture smooth, planar, open.		
			0	0		132.75	18.00	Very weak and weak, light and dark brown thinly colour-laminated SILTSTONE. Occasional orange brown discolouration up to 30mm, variably very weak. From 16.50m to 17.20m; fractures horizontal, very closely spaced, smooth, planar, open; others subvertical, irregular. From 17.20m to 17.85m; non-intact. From 17.85m to 18.00m; horizontal, very closely spaced, smooth, planar, others subvertical, smooth, planar, irregular.		
Complete at 18.00m										
Remarks								Scale (approx) 1:50	Logged By TL	Figure No.