




















 <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> RC1229		
<b>Machine:</b> <b>Flush :</b> <b>Core Dia: mm</b> <b>Method :</b>			<b>Casing Diameter</b> 140mm cased to 3.00m		<b>Ground Level (mOD)</b> 99.35		<b>Client</b> Highways Agency		<b>Job Number</b> WAL060099	
			<b>Location</b> 445322 E 368612 N		<b>Dates</b> 04/09/2006-05/09/2006		<b>Engineer</b> Arup		<b>Sheet</b> 1/2	
Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00			0	0	Borehole was wet at 16.20m(1) at 0.00m.		(0.50)	TOPSOIL.		V1
	83	83	0	0		98.85	0.50 (0.45)	Firm grey brown slightly sandy CLAY. Sand is medium. Possible		
						98.40	0.95 (0.75)	Stiff brown mottled light grey slightly gravelly CLAY. Gravel is angular medium and coarse of mudstone.		
1.20-1.70					U1					
1.20						97.65	1.70 (0.50)	Stiff brown friable gravelly CLAY. Gravel is angular fine to coarse of mudstone lithorelics. Occasional thick interlaminations of very weak weathered mudstone.		
	80	80	0	0		97.15	2.20 (0.70)	Very stiff dark grey very closely fissured thinly laminated CLAY (variably very weak mudstone).		
					2.4/6.7.7.8 SPT N=28					
2.70-3.15			0	0		96.45	2.90 (0.70)	Very weak dark grey and brown thinly to thickly laminated MUDSTONE. Recovered in closely and medium spaced thin beds as soft to stiff grey brown very gravelly clay. Fractures are extremely closely spaced, irregular.		
2.70										
2.90			0	0						
3.80	64	45	0	0	4.6/7.8,10,13 SPT N=38 04/09/2006:			Between 3.80m and 4.20m; no recovery.		
4.20										
4.20-4.65	80	37	0	0	04/09/2006: 05/09/2006:		(3.10)	Between 4.20m and 5.70m; occasional subrounded coarse gravel size ironstone nodules.		
5.20			0	0				Between 5.20m and 5.70m; no recovery.		
5.70-6.15			0	0	5.6/9,12,13,12 SPT N=46					
5.70										
6.00					P2	93.35	6.00	Very weak dark grey to black thinly laminated MUDSTONE with rare thick laminae and subrounded medium to coarse gravel sized nodules of weak ironstone. Fractures are horizontal (5 to 15 degrees) extremely closely and very closely spaced smooth, planar, stepped, incipient to open and vertical smooth planar. Other fractures irregular apparently random strike.		
6.30			0	0						
6.90	57	17	0	0	6.8/11,14,16,16 SPT N=57					
7.20-7.65							(2.80)			
7.20			0	0				At 7.70m; gravel size ironstone nodule.		
8.00	67	49	0	0				Between 8.40m and 8.50m; thin bed strong light grey brown ironstone.		
8.70-8.79					8/35 SPT 8'/75 35/10	90.55	8.80	Weak to moderately weak light and dark grey thinly colour laminated SILTSTONE. Fractures are horizontal (5 to 10 degrees) very closely and closely spaced smooth, planar, open and subvertical (60 degrees) smooth, planar and open.		
8.70			0	0						
8.80					P3		(1.40)			
9.00			0	0						
9.70	93	77	0	0				Between 9.70m and 10.20m; no recovery.		
<b>Remarks</b>								<b>Scale (approx)</b> 1:50	<b>Logged By</b> TL	
								<b>Figure No.</b>		



 <b>British Geological Survey</b> NATURAL ENVIRONMENT RESEARCH COUNCIL								Site M1 WIDENING JUNCTION 21 TO 30 PRELIMINARY GI- CONTRACT 2		Borehole Number <b>RC1229</b>	
Machine: Flush : Core Dia: mm Method :		Casing Diameter 140mm cased to 3.00m		Ground Level (mOD) 99.35		Client Highways Agency		Job Number WAL060099		Sheet 2/2	
		Location 445322 E 368612 N		Dates 04/09/2006- 05/09/2006		Engineer Arup					
Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
10.20 10.20-10.30			0	0	14/35 SPT 14'/75 35/20 P4	89.15	(1.40) 10.20	Weak black carbonaceous MUDSTONE with very closely spaced thin to thick laminae of very weak brittle black coal. Fractures are horizontal (0 to 10 degrees) extremely closely to very closely spaced smooth and planar.		XXXXXX	
10.35 10.75						88.60	(0.55) 10.75	Weak becoming moderately weak grey brown slightly weathered fine grained SANDSTONE (variably siltstone). Fractures are subhorizontal to vertical, irregular, smooth, stepped and undulating.			
11.25	97	97	0	0	P5						
11.70 11.70-11.81					8/35 SPT 8'/75 35/30		(2.45)				
	94	94	0	0							
13.20 13.20-13.33					12/35 SPT 12'/75 35/50	86.15	13.20	Generally weak (variably moderately weak) light and dark grey thinly to thickly colour laminated fine grained SANDSTONE with occasional (locally frequent) subrounded and rounded coarse gravel size strong ironstone nodules (up to 60mm). Fractures are horizontal to subhorizontal (0 to 25 degrees) very closely and closely spaced smooth, planar, stepped, undulating, frequent. Other fractures are extremely closely to closely spaced, irregular and incipient to very open.			
13.90-14.20	97	85	0	0	P6						
14.70 14.70-14.81					13/35 SPT 13'/75 35/30						
	93	87	0	0							
15.70					P7						
16.20 16.20-16.31					14/35 SPT 14'/75 35/30		(6.80)				
	100	93	0	0	P8						
17.10											
17.70 17.70-17.80					5/35 SPT 5'/75 35/20						
	96	96	0	0							
19.10 19.20 19.20-19.33					P9 9/35 SPT 9'/75 35/50 05/09/2006:16.20m 05/09/2006:	79.35	20.00	Between 18.70m and 19.20m; frequent ironstone nodules.			
Remarks								Scale (approx) 1:50		Logged By TL	
								Figure No.			