








British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL						Site M1 WIDENING JUNCTION 21 TO 30 PRELIMINARY GI - CONTRACT 2		Borehole Number RC1191			
Machine:			Casing Diameter			Ground Level (mOD)		Client		Job Number	
Flush :			140mm cased to 1.50m			133.55		Highways Agency		WAL060099	
Core Dia: mm			Location			Dates		Engineer		Sheet	
Method :			445152 E 356837 N			21/09/2006-25/09/2006		Arup		1/3	
Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.00			0	0	Groundwater was not apparent during boring(1) at 0.00m.			INSPECTION PIT		V1	
	100	85	0	0			(1.20)				
						132.35	1.20 (0.30)	OPEN HOLE			
						132.05	1.50				
1.50								Generally very weak thinly laminated grey brown weathered SILTSTONE (variably recovered as soft to stiff gravelly silt/clay) with very frequent dark brown discolouration of fracture surface. Fractures, where evident horizontal to subhorizontal (0 to 25 degrees), extremely closely to very closely spaced (5/20/45) smooth, planar tight; vertical, locally very closely spaced, frequently irregular.	XX		



 British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL							Site M1 WIDENING JUNCTION 21 TO 30 PRELIMINARY GI-CONTRACT 2			Borehole Number RC1191	
Machine: Flush : Core Dia: mm Method :		Casing Diameter 140mm cased to 1.50m		Ground Level (mOD) 133.55		Client Highways Agency		Job Number WAL060099			
		Location 445152 E 356837 N		Dates 21/09/2006-25/09/2006		Engineer Arup		Sheet 2/3			
Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
10.20	100	81	15	0	P5			Recovered in very thin to thin beds as very stiff friable extremely closely fissured gravelly clay, structure frequently not apparent. Fractures, where evident horizontal (0 degree to 10 degrees), extremely closely to closely spaced (15/45/110), smooth, planar, occasional stepped. Incipient to open; subvertical and vertical, smooth, planar to irregular. Between 9.60m and 10.20m; very stiff friable extremely closely fractured silt/clay. At 10.30m; very thin bed of strong light brown ironstone (60mm)			
10.50								At 11.45m; very thin bed of strong light brown ironstone (45mm)			
10.55								Between 12.00m and 12.35m; no recovery.			
								Between 12.65m and 12.90m; recovered as soft to stiff friable fractured silt/clay.			
12.00			0	0	P6 D23		(4.75)	At 13.55m; very thin bed of strong light brown ironstone (45mm)			
12.35			0	0							
12.90	100	87	38	0							
13.45			0	0							
13.50					C7			Moderately weak to moderately strong light and dark grey thinly colour laminated fine grained SANDSTONE locally with very thin brown wispy interlaminae. Light orange brown discolouration penetrating occasionally throughout, occasional heavy red brown discolouration on fracture surfaces, locally weak. Fractures, horizontal (0 degree to 15 degrees), closely to medium spaced (90/200/530), smooth, undulating and planar, open, vertical (80 degrees to 90 degrees), rough, undulating and planar, open subvertical (75 degrees) smooth, undulating, open apparently intersecting vertical at 90 degrees. Between 15.60m and 15.90m; frequent vertical irregular fracturing vertical displacement up to 3mm.			
13.50			0	0							
14.15	100	96	52	0							
14.69-14.90											
15.00			0	0	C8		(4.10)	Between 16.70m and 18.10m; vertical fracture, locally non intact.			
15.60			0	0							
15.90	97	75	53	0							
15.97-16.50			0	0							
16.50			0	0	C9			Generally moderately weak (variably becoming weak) light and dark grey thinly colour and cross colour laminated SILTSTONE (rarely grading to fine grained sandstone). Fractures, horizontal (0 degree to 10 degrees) closely to medium spaced (80/130/230), smooth, planar, tight open, subvertical, smooth, planar, open. Between 18.60m and 18.70m; grading to fine grained sandstone.			
16.70	95	95	63	0							
18.00			0	0							
18.00-18.23			0	0							
18.10					W24 W25			Between 19.60m and 20.15m; weakened by leaching in closely spaced thin zones (up to 150mm), occasionally recovered non intact, weak, fractures locally very closely			
18.25	97	79	16	0							
19.50			0	0							
19.60			0	0							
19.60											
19.80			0	0							
Remarks								Scale (approx) 1:50	Logged By TL		
								Figure No.			

British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL							Site M1 WIDENING JUNCTION 21 TO 30 PRELIMINARY GI - CONTRACT 2		Borehole Number RC1191		
Machine: Flush : Core Dia: mm Method :			Casing Diameter 140mm cased to 1.50m			Ground Level (mOD) 133.55		Client Highways Agency		Job Number WAL060099	
			Location 445152 E 356837 N			Dates 21/09/2006-25/09/2006		Engineer Arup		Sheet 3/3	
Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
20.15 20.20			0	0	P10			spaced due to weathering.	XXXXXX		
20.60	93	73	29	0				Between 20.60m and 21.00m; non intact, weak with subangular coarse gravel size ironstone nodule at 20.85m.	XXXXXX		
21.00			0	0			(4.25)		XXXXXX		
21.65					P11				XXXXXX		
22.00	100	50	0	0				Between 22.00m and 22.50m; non intact, weak with closely spaced very thin beds of moderately strong brown ironstone.	XXXXXX		
22.50			0	0		111.05	22.50 (0.45)	Weak thinly to thickly laminated dark grey carbonaceous MUDSTONE with rare subrounded medium gravel size nodules of ironstone. Fractures, horizontal, very closely spaced smooth, planar, incipient to moderately open.	XXXXXX		
22.95						110.60	22.95 (0.50)	Weak brittle black COAL with occasional speckles and rare very narrow veins of pyrite. Fractures, horizontal, extremely closely and very closely spaced, vertical very closely spaced, irregular.	XXXXXX		
23.30	93	63	0	0	P16	110.10	23.45 (1.00)	Very weak to weak grey brown MUDSTONE with very frequent black carbonised plant remains (up to 10mmx25mm). Fractures, where evident horizontal, very closely spaced, frequent irregular; others irregular, apparently random strike.	XXXXXX		
24.00			0	0		109.10	24.45		XXXXXX		
24.45 24.45	95	67	0	0	P12			Generally weak (variably very weak and moderately weak) thinly and thickly laminated dark grey SILTSTONE (variably grading to mudstone) with frequent black carbonised plant remains (up to 25mmx45mm), rare subrounded to rounded coarse gravel size nodules of strong ironstone. Frequently recovered in dark grey leached zones non intact and very weak to weak (up to 0.75m). Fractures, horizontal (0 degree to 10 degrees), extremely closely to closely spaced (10/55/85), smooth, planar, subvertical (70 degrees to 75 degrees), smooth, planar, moderately open, frequent others irregular, apparently random strike.	XXXXXX		
25.50									XXXXXX		
26.15	93	48	0	0	P13				XXXXXX		
27.00							(5.55)		XXXXXX		
28.05	100	76	0	0	P14				XXXXXX		
28.50									XXXXXX		
29.55					P15 25/09/2006: 25/09/2006:	103.55	30.00		XXXXXX		
Remarks									Scale (approx) 1:50	Logged By TL	
									Figure No.		