


[illegible]



|  |     |  |     |                                    |  |                           |   |   |                    |                                     |  |
|--|-----|--|-----|------------------------------------|--|---------------------------|---|---|--------------------|-------------------------------------|--|
|  <b>British Geological Survey</b><br>NATURAL ENVIRONMENT RESEARCH COUNCIL |     |  |     |                                    |  |                           | Site<br>M1 WIDENING JUNCTION 21 TO 30 PRELIMINARY GI-<br>CONTRACT 2 |   |                    | Borehole<br>Number<br><b>RC1219</b> |  |
| Machine:<br>Flush :<br>Core Dia: mm<br>Method :  |     | Casing Diameter<br>140mm cased to 18.00m |     | Ground Level (mOD)<br>103.70       |  | Client<br>Highways Agency |   | Job<br>Number<br>WAL060099  |                    |                                     |  |
|  |     | Location<br>445345 E 365122 N            |     | Dates<br>24/10/2006-<br>30/10/2006 |  | Engineer<br>Arup          |   | Sheet<br>2/4  |                    |                                     |  |
| Depth<br>(m)   | TCR | SCR                                      | RQD | FI                                 | Field Records  | Level<br>(mOD)            | Depth<br>(m)<br>(Thickness)   | Description   | Legend             | Water                               |  |
|  |     |  |     |                                    |  |                           | (12.80)   | From 12.00m to 13.00m; driller notes wet void. No flush return.   |                    |                                     |  |
| 14.00  |     |  |     |                                    |  | 89.70                     | 14.00   | MADE GROUND. Grey very clayey angular to subangular fine to coarse gravel of mudstone and coal with frequent subangular mudstone cobbles and possibly boulders. |                    |                                     |  |
|  | 77  | 5  | 0   | 0                                  |  |                           |   |   |                    |                                     |  |
| 16.00<br>16.00-16.17   |     |  |     |                                    | /25,41,34<br>SPT 0°/0<br>100/168                                 |                           | (4.00)  |   |                    |                                     |  |
|  | 80  | 11                                       | 11  | 0                                  |  |                           |   |   |                    |                                     |  |
| 17.50  |     |  |     |                                    | /49,51<br>24/10/2006:  |                           |   |   |                    |                                     |  |
| 17.50-17.62  |     |  |     |                                    | 24/10/2006:<br>SPT 0°/0<br>100/115<br>24/10/2006:<br>25/10/2006: | 85.70                     | 18.00   | MADE GROUND. Light brown clayey angular to subangular fine to coarse gravel of mudstone and sandstone with occasional similar cobbles.                          |                    |                                     |  |
|  | 75  | 17                                       | 17  | 0                                  |  |                           |   |   |                    |                                     |  |
| 19.00<br>19.00-19.18   |     |  |     |                                    | /41,49,10<br>SPT 0°/0<br>100/180                                 |                           | (2.15)  |   |                    |                                     |  |
|  |     |  | 0   | 0                                  |  |                           |   |   |                    |                                     |  |
| Remarks  |     |  |     |                                    |  |                           |   | Scale<br>(approx)<br>1:50   | Logged<br>By<br>TL |                                     |  |
|  |     |  |     |                                    |  |                           |   | Figure No.  |                    |                                     |  |

| British Geological Survey<br>NATURAL ENVIRONMENT RESEARCH COUNCIL |     |     |                       |    |   |                       | Site<br>M1 WIDENING JUNCTION 21 TO 30 PRELIMINARY GI-CONTRACT 2 |  | Borehole Number<br>RC1219 |            |                 |
|---|-----|-----|-----------------------|----|---|-----------------------|---|--|---------------------------|------------|-----------------|
| Machine:  |     |     | Casing Diameter       |    |   | Ground Level (mOD)    |   | Client   |                           | Job Number |                 |
| Flush :   |     |     | 140mm cased to 18.00m |    |   | 103.70                |   | Highways Agency  |                           | WAL060099  |                 |
| Core Dia: mm  |     |     | Location              |    |   | Dates                 |   | Engineer   |                           | Sheet      |                 |
| Method :  |     |     | 445345 E 365122 N     |    |   | 24/10/2006-30/10/2006 |   | Arup   |                           | 3/4        |                 |
| Depth (m)   | TCR | SCR | RQD                   | FI | Field Records   | Level (mOD)           | Depth (m) (Thickness)   | Description  | Legend                    | Water      |                 |
| 20.15<br>20.15-20.45  | 70  | 31  | 21                    | 0  | U1  | 83.55                 | (2.15)<br>20.15   | Moderately weak to moderately strong light and dark grey thinly colour laminated SILTSTONE. Fractures: horizontal, Between 20.50m to 21.10m; non-intact, closely and medium spaced, smooth, planar, moderately open to open; vertical, smooth, planar to irregular.  | XXXXXX                    |            |                 |
| 20.50<br>20.50-20.66  |     |     | 0                     | 0  | /37.50,13<br>SPT 0*/0<br>100/162  |                       |   |  | XXXXXX                    |            |                 |
| 21.10   | 100 | 72  | 46                    | 0  |   |                       | (3.50)  | Between 21.10m and 22.00m; grading to mudstone.  | XXXXXX                    |            |                 |
| 22.00<br>22.00-22.15<br>22.06-22.38                               | 100 | 63  | 39                    | 0  | /62.38<br>SPT 0*/0<br>100/150<br>U2   |                       |   |  | XXXXXX                    |            |                 |
| 23.50<br>23.50-23.50  | 97  | 23  | 0                     | 0  | /100<br>SPT 0*/0<br>100/0   | 80.05                 | 23.65   | Generally weak (variably very weak to moderately weak) thinly laminated dark grey MUDSTONE with rare very thin beds of moderately strong light brown ironstone. Fractures where evident: horizontal, closely spaced, smooth, planar; subvertical, smooth, planar; occasionally others irregular, apparently random strike.             | XXXXXX                    |            |                 |
| 24.30   |     |     |                       |    | P3  |                       |   |  | XXXXXX                    |            |                 |
| 25.00<br>25.00-25.00  | 100 | 14  | 0                     | 0  | /100<br>25/10/2006:<br>25/10/2006:<br>SPT 0*/0<br>100/0<br>25/10/2006:<br>27/10/2006: |                       | (4.00)  |  | XXXXXX                    |            |                 |
| 26.40<br>26.50  |     |     |                       |    | P4  |                       |   | Between 26.50m and 27.20m; non-intact.   | XXXXXX                    |            |                 |
| 27.95<br>28.00-28.42<br>28.00                                     | 87  | 53  | 39                    | 0  | U5  | 76.05<br>75.75        | 27.65<br>(0.30)<br>27.95  | Weak brittle black COAL. Fractures are horizontal and vertical, extremely closely spaced, planar.  | XXXXXX                    |            |                 |
| 28.90   |     |     | 0                     | 0  |   |                       | (0.95)  | Moderately weak to moderately strong light grey locally thinly colour laminated dark grey MUDSTONE with occasional subrounded medium to coarse gravel size ironstone nodules and occasional carbonised plant remains. Fractures: vertical, locally very closely spaced, smooth, planar, horizontal, medium spaced, smooth, undulating. | XXXXXX                    |            |                 |
| 29.15   | 100 | 86  | 67                    | 0  |   |                       | (0.60)  | Between 28.90m to 29.15m; non-intact. Weak to moderately weak thinly laminated dark grey MUDSTONE with occasional subrounded coarse gravel size ironstone nodules and rare thin laminations of weak black coal and black carbonaceous mudstone.  | XXXXXX                    |            |                 |
| 29.50   |     |     |                       |    |   | 74.20                 | 29.50   | Generally moderately strong variably moderately weak to strong light to dark grey SILTSTONE with rare very thin beds   | XXXXXX                    |            |                 |
| Remarks   |     |     |                       |    |   |                       |   |  | Scale (approx)<br>1:50    |            | Logged By<br>TL |
|   |     |     |                       |    |   |                       |   |  | Figure No.                |            |                 |

| British Geological Survey<br>NATURAL ENVIRONMENT RESEARCH COUNCIL |     |     |  |    |               |                                | Site<br>M1 WIDENING JUNCTION 21 TO 30 PRELIMINARY GI - CONTRACT 2 |   | Borehole Number<br>RC1219  |                         |  |
|---|-----|-----|--|----|---------------|--------------------------------|---|---|--|-------------------------|--|
| Machine:<br>Flush :<br>Core Dia: mm<br>Method :                   |     |     | Casing Diameter<br>140mm cased to 18.00m |    |               | Ground Level (mOD)<br>103.70   |   | Client<br>Highways Agency   |  | Job Number<br>WAL060099 |  |
|   |     |     | Location<br>445345 E 365122 N            |    |               | Dates<br>24/10/2006-30/10/2006 |   | Engineer<br>Arup  |  | Sheet<br>4/4            |  |
| Depth (m)   | TCR | SCR | RQD                                      | FI | Field Records | Level (mOD)                    | Depth (m) (Thickness)   | Description   | Legend   | Water                   |  |
| 30.80<br>31.00  | 84  | 65  | 41                                       | 0  | P6            |                                |   | of strong light brown ironstone. Fractures: horizontal, medium spaced, smooth, planar; subvertical to vertical, smooth, planar. | XX |                         |  |