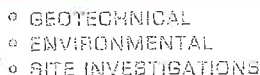


## **Appendix III**

### Borehole Logs

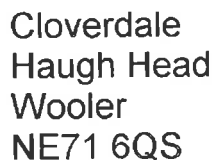


## DAILY RECORD SHEET

CLIENT MET ENGINEERS  
LOCATION HIGHSTONES WORSBROUGH  
JOB No. 01  
BOREHOLE No. C130  
RIG TYPE WEDS 19th MARCH 2014  
DATE S. WOOD  
OPERATOR

SIGNED \_\_\_\_\_  
DRILLER

[illegible]



CLIENT MET ENGINEERS  
LOCATION HIGHSTONES WORKSBROUGH.  
JOB No.  
BOREHOLE No. 02  
RIG TYPE C130  
DATE WEDS. 19TH MARCH 2014  
OPERATOR S. WOOD.

## DAILY RECORD SHEET

[illegible]

CLIENT



- GEOTECHNICAL
- ENVIRONMENTAL
- SITE INVESTIGATIONS

Cloverdale  
Haugh Head  
Wooler  
NE71 6QS

CLIENT **MET ENGINEERS**  
LOCATION **HIGHSTONES WORSBROUGH**  
JOB No. \_\_\_\_\_  
BOREHOLE No. **04**  
RIG TYPE **C130**  
DATE **WEDS. 19TH MARCH 2014**  
OPERATOR **S. WOOD**

## DAILY RECORD SHEET

| STRATA DESCRIPTION                                                                                                                       | START DEPTH | STRATA BASE (m) |              |                 |
|------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|--------------|-----------------|
| GRASS OVERLYING DARK BROWN SAND                                                                                                          | 6.1         |                 |              |                 |
| GRAVEL, BRICK, COAL, SANDSTONE FRAGMENTS. MADE GROUND                                                                                    |             | 0.400           |              |                 |
| (COMPACT BROWN, YELLOW BROWN SANDY SANDSTONE FRAGMENTS) BOBBLES, SOME BRICK FRAGMENTS AT BASE. MADE GROUND                               |             | 0.850           |              |                 |
| COMPLETELY WEATHERED, SLIGHTLY WEATHERED FINE, COARSE YELLOW BROWN SANDSTONE. RECOVERED AS GRAVELS, SOME ROCKS OF FIRM BROWN SANDY CLAY. |             |                 |              |                 |
| Borehole Complete / Incomplete                                                                                                           |             | 1.790           |              |                 |
| CASING                                                                                                                                   |             |                 |              |                 |
| Size (mm)                                                                                                                                | From        | To              |              |                 |
|                                                                                                                                          |             |                 |              |                 |
| INSTALLATION                                                                                                                             |             |                 |              |                 |
| Type                                                                                                                                     | Size        | Depth (m)       | Seal Top (m) | Seal Bottom (m) |
| Gas/Water                                                                                                                                | 63mm        | 1.60            | 0500-0100    |                 |
| CORING                                                                                                                                   |             |                 |              |                 |
| Ground                                                                                                                                   | From (m)    | To (m)          |              |                 |
|                                                                                                                                          |             |                 |              |                 |

| TESTING: SPT(s) CPT(c) U100(u) VANE TEST(v) |       |                   |               |           |            |            |            |            |           |
|---------------------------------------------|-------|-------------------|---------------|-----------|------------|------------|------------|------------|-----------|
| Type No.                                    | m     | Blows             | 0 to 75       | 75 to 150 | 150 to 225 | 225 to 300 | 300 to 375 | 375 to 450 | V Reading |
| S1                                          | 1.00  | 1.45              | 6             | 7         | 10         | 10         | 11         | 10         |           |
| S1                                          | 1.60  | 1.710             | 11            | 14        |            |            |            |            |           |
| S1                                          | 1.710 | 1.790             | 42            | 8         |            |            |            |            |           |
| SAMPLES: - BULK (B) DISTURBED (D)           |       |                   |               |           |            |            |            |            |           |
| Type No.                                    | m     | Sampler Used (mm) | Recovery (mm) |           |            |            |            |            |           |
| D1                                          | 6.1   | 0.40              |               |           |            |            |            |            |           |
| D1                                          | 6.1   | 0.40              |               |           |            |            |            |            |           |
|                                             | 6.1   | 1.00              | PIT           |           |            |            |            |            |           |
|                                             | 1.00  | 1.60              | 92 Recovered  |           |            |            |            |            |           |
| WATER                                       |       |                   |               |           |            |            |            |            |           |
| Observation                                 | Depth | Sealed            | In Flow       | Casing    |            |            |            |            |           |
| NO WATER OBSERVED                           |       |                   |               |           |            |            |            |            |           |
| DURING OR ON COMPLETION OF BH.              |       |                   |               |           |            |            |            |            |           |
| REMARKS                                     |       |                   |               |           |            |            |            |            |           |
| ARISING BATTER FOR DISPOSAL.                |       |                   |               |           |            |            |            |            |           |

SIGNED  
DRILLER

CLIENT



Cloverdale  
Haugh Head  
Wooler  
NE71 6QS

CLIENT **MET ENGINEERS**  
LOCATION **HIGHSTONES - WORSWORTH**  
JOB No. \_\_\_\_\_  
BOREHOLE No. **OS C130**  
RIG TYPE \_\_\_\_\_  
DATE **WEDS. 19TH MARCH 2014**  
OPERATOR **S. WOOD**

### DAILY RECORD SHEET

| STRATA DESCRIPTION                                                                                                                                                                   | START DEPTH | STRATA BASE (m) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|
| GRASS OVERLAIN DARK BROWN SAND                                                                                                                                                       | 6.1         |                 |
| GRAVELS, BRICK, SANDSTONE, GLASS, CONCRETE FRAGMENTS, POSSIBLE FOUNDATION AT 1.20 TO 1.20 (WEAK) / MADE GROUND                                                                       |             | 1.200           |
| COMPLETELY WEATHERED / HIGHLY WEATHERED FINE, COARSE SANDSTONE RECOVERED AS GRAVELS, SOME INTERBEDDED BROWN FINE, COARSE SAND LENSES TO 1.40. SOME POCKETS OF FINE BROWN SANDY CLAY. |             |                 |
| Borehole Complete / Incomplete                                                                                                                                                       |             | 1.845           |

| CASING    |      |    |
|-----------|------|----|
| Size (mm) | From | To |
|           |      |    |

| INSTALLATION |      |           |              |                 |
|--------------|------|-----------|--------------|-----------------|
| Type         | Size | Depth (m) | Seal Top (m) | Seal Bottom (m) |
| GAS/WATER    | 63mm | 1.500     | 0.500-0.100  |                 |

| CORING |          |        |
|--------|----------|--------|
| Ground | From (m) | To (m) |
|        |          |        |

| TESTING: SPT(s) CPT(c) U100(u) VANE TEST(v) |       |       |   |         |           |            |            |            |            |           |
|---------------------------------------------|-------|-------|---|---------|-----------|------------|------------|------------|------------|-----------|
| Type                                        | m     |       | U | 0 to 75 | 75 to 150 | 150 to 225 | 225 to 300 | 300 to 375 | 375 to 450 | V Reading |
| S                                           | 1.00  | 1.45  |   | 4       | 5         | 9          | 9          | 12         | 20         |           |
| S                                           | 1.50  | 1.630 |   | 13      | 12        |            |            |            |            |           |
| S                                           | 1.630 | 1.845 |   | 22      | 17        | 11         |            |            |            |           |

| SAMPLES:- BULK (B) DISTURBED (D) |      |      |                   |               |
|----------------------------------|------|------|-------------------|---------------|
| Type                             | m    |      | Sampler Used (mm) | Recovery (mm) |
| D1                               | 6.1  | 0.50 |                   |               |
| D1                               | 6.1  | 0.50 |                   |               |
|                                  | 6.1  | 1.00 | PIT               |               |
|                                  | 1.00 | 1.50 | 92 REPOSED.       |               |

| WATER                          |       |        |         |        |
|--------------------------------|-------|--------|---------|--------|
| Observation                    | Depth | Sealed | In Flow | Casing |
| NO WATER OBSERVED:-            |       |        |         |        |
| DURING OR ON COMPLETION OF BH. |       |        |         |        |

| REMARKS                      |
|------------------------------|
| ARISING BABBED FOR DISPOSAL. |

SIGNED  
DRILLER

CLIENT

## **Appendix IV**

### **Soil Test Results**

## FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 14/01458  
**Issue Number:** 1

**Date:** 03 April, 2014

**Client:** MET Engineers Ltd  
Southgate House  
Pontefract Road  
Leeds  
LS10 1SW

**Project Manager:** Sam Fuller  
**Project Name:** Village Green Worsborough  
**Project Ref:** 11978/5003  
**Order No:** 108-2014-saf  
**Date Samples Received:** 21/03/14  
**Date Instructions Received:** 21/03/14  
**Date Analysis Completed:** 03/04/14

**Prepared by:**

  
Lynette Toon  
Administrative Assistant

**Approved by:**

  
Liz Oliver  
Client Service Manager

Envirolab Job Number: 14/01458

Client Project Name: Village Green Worsborough

Client Project Ref: 11978/5003

| Lab Sample ID                                                   | 14/01458/1 | 14/01458/2 | 14/01458/3 | 14/01458/4 | 14/01458/5 | 14/01458/6 | 14/01458/7 | 14/01458/8 | Units | Method ref |
|-----------------------------------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|-------|------------|
| Client Sample No                                                |            |            |            |            |            |            |            |            |       |            |
| Client Sample ID                                                | BH01       | BH02       | BH03       | BH04       | BH05       | HD01       | HD02       | HD03       |       |            |
| Depth to Top                                                    | 0.40       | 0.00       | 0.00       | 0.40       | 0.00       | 0.30       | 0.40       | 0.30       |       |            |
| Depth To Bottom                                                 |            | 0.50       | 0.50       |            | 0.50       |            |            |            |       |            |
| Date Sampled                                                    | 19-Mar-14  | 19-Mar-14  | 19-Mar-14  | 19-Mar-14  | 19-Mar-14  | 19-Mar-14  | 19-Mar-14  | 19-Mar-14  |       |            |
| Sample Type                                                     | Soil - D   | Soil - D   | Soil - D   | Soil - D   | Soil - D   | Soil - D   | Soil - D   | Soil - D   |       |            |
| MCERTS Sample Matrix Code                                       | 4AE        | 6ABE       | 6AE        | 6AC        | 6AE        | 6AE        | 6AE        | 4AE        |       |            |
| % Stones >10mm <sub>A</sub> <sup>#</sup>                        | 17.9       | 22.7       | 12.0       | 14.8       | 15.2       | 2.8        | 8.2        | 4.5        | % w/w | A-T-044    |
| pH <sub>D</sub> <sup>M#</sup>                                   | 8.19       | -          | -          | -          | -          | -          | 9.88       | 9.10       | pH    | A-T-031s   |
| Sulphate (water sol 2:1) <sub>D</sub> <sup>M#</sup>             | 0.50       | -          | -          | -          | -          | -          | 0.76       | 0.65       | g/l   | A-T-026s   |
| Arsenic <sub>D</sub> <sup>M#</sup>                              | 4          | 5          | 4          | 3          | 8          | -          | -          | -          | mg/kg | A-T-024    |
| Cadmium <sub>D</sub> <sup>M#</sup>                              | <0.5       | 0.6        | <0.5       | <0.5       | 1.0        | -          | -          | -          | mg/kg | A-T-024    |
| Copper <sub>D</sub> <sup>M#</sup>                               | 13         | 17         | 18         | 9          | 26         | -          | -          | -          | mg/kg | A-T-024    |
| Chromium <sub>D</sub> <sup>#</sup>                              | 15         | 11         | 12         | 8          | 20         | -          | -          | -          | mg/kg | A-T-024    |
| Lead <sub>D</sub> <sup>M#</sup>                                 | 27         | 78         | 48         | 30         | 91         | -          | -          | -          | mg/kg | A-T-024    |
| Mercury <sub>D</sub>                                            | 0.20       | 0.90       | 0.39       | 0.21       | 0.47       | -          | -          | -          | mg/kg | A-T-024    |
| Nickel <sub>D</sub> <sup>M#</sup>                               | 7          | 9          | 8          | 6          | 15         | -          | -          | -          | mg/kg | A-T-024    |
| Selenium <sub>D</sub> <sup>M#</sup>                             | <1         | <1         | <1         | <1         | <1         | -          | -          | -          | mg/kg | A-T-024    |
| Zinc <sub>D</sub> <sup>M#</sup>                                 | 43         | 116        | 89         | 56         | 145        | -          | -          | -          | mg/kg | A-T-024    |
| Asbestos in Soil (inc. matrix)                                  |            |            |            |            |            |            |            |            |       |            |
| Asbestos in soil <sub>D</sub> <sup>#</sup>                      | -          | -          | -          | -          | -          | NAD        | NAD        | NAD        |       | A-T-045    |
| Asbestos ACM - Suitable for Water Absorption Test? <sub>A</sub> | -          | -          | -          | -          | -          | N/A        | N/A        | N/A        |       | Gravimetry |

Envirolab Job Number: 14/01458

Client Project Name: Village Green Worsborough

Client Project Ref: 11978/5003

| Lab Sample ID                                    | 14/01458/1 | 14/01458/2 | 14/01458/3 | 14/01458/4 | 14/01458/5 | 14/01458/6 | 14/01458/7 | 14/01458/8 | Units | Method ref |
|--------------------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|-------|------------|
| Client Sample No                                 |            |            |            |            |            |            |            |            |       |            |
| Client Sample ID                                 | BH01       | BH02       | BH03       | BH04       | BH05       | HD01       | HD02       | HD03       |       |            |
| Depth to Top                                     | 0.40       | 0.00       | 0.00       | 0.40       | 0.00       | 0.30       | 0.40       | 0.30       |       |            |
| Depth To Bottom                                  |            | 0.50       | 0.50       |            | 0.50       |            |            |            |       |            |
| Date Sampled                                     | 19-Mar-14  | 19-Mar-14  | 19-Mar-14  | 19-Mar-14  | 19-Mar-14  | 19-Mar-14  | 19-Mar-14  | 19-Mar-14  |       |            |
| Sample Type                                      | Soil - D   | Soil - D   | Soil - D   | Soil - D   | Soil - D   | Soil - D   | Soil - D   | Soil - D   |       |            |
| MCERTS Sample Matrix Code                        | 4AE        | 6ABE       | 6AE        | 6AC        | 6AE        | 6AE        | 6AE        | 4AE        |       |            |
| PAH 16                                           |            |            |            |            |            |            |            |            |       |            |
| Acenaphthene <sub>A</sub> <sup>M#</sup>          | 0.29       | 0.16       | 0.09       | 0.08       | 0.55       | 0.37       | 0.24       | 2.31       | mg/kg | A-T-019s   |
| Acenaphthylene <sub>A</sub> <sup>M#</sup>        | 0.03       | 0.08       | 0.05       | 0.04       | 0.11       | 0.29       | 0.09       | 0.14       | mg/kg | A-T-019s   |
| Anthracene <sub>A</sub> <sup>M#</sup>            | 0.51       | 0.70       | 0.28       | 0.33       | 2.31       | 1.60       | 1.00       | 9.04       | mg/kg | A-T-019s   |
| Benzo(a)anthracene <sub>A</sub> <sup>M#</sup>    | 1.68       | 3.32       | 1.37       | 1.38       | 6.55       | 4.31       | 3.23       | 13.4       | mg/kg | A-T-019s   |
| Benzo(a)pyrene <sub>A</sub> <sup>M#</sup>        | 1.36       | 3.16       | 1.36       | 1.19       | 5.52       | 3.65       | 2.84       | 8.81       | mg/kg | A-T-019s   |
| Benzo(b)fluoranthene <sub>A</sub> <sup>M#</sup>  | 1.39       | 3.07       | 1.32       | 1.19       | 5.27       | 3.46       | 2.65       | 8.30       | mg/kg | A-T-019s   |
| Benzo(ghi)perylene <sub>A</sub> <sup>M#</sup>    | 0.58       | 1.38       | 0.73       | 0.56       | 2.35       | 1.62       | 1.36       | 2.97       | mg/kg | A-T-019s   |
| Benzo(k)fluoranthene <sub>A</sub> <sup>M#</sup>  | 0.73       | 1.40       | 0.65       | 0.56       | 2.32       | 1.70       | 1.39       | 4.47       | mg/kg | A-T-019s   |
| Chrysene <sub>A</sub> <sup>M#</sup>              | 1.73       | 3.22       | 1.38       | 1.40       | 5.68       | 3.95       | 3.11       | 10.8       | mg/kg | A-T-019s   |
| Dibenzo(ah)anthracene <sub>A</sub> <sup>M#</sup> | 0.16       | 0.37       | 0.18       | 0.16       | 0.62       | 0.41       | 0.36       | 0.84       | mg/kg | A-T-019s   |
| Fluoranthene <sub>A</sub> <sup>M#</sup>          | 3.93       | 6.34       | 2.53       | 3.02       | 14.1       | 9.73       | 7.36       | 34         | mg/kg | A-T-019s   |
| Fluorene <sub>A</sub> <sup>M#</sup>              | 0.27       | 0.18       | 0.09       | 0.07       | 0.65       | 0.64       | 0.28       | 2.84       | mg/kg | A-T-019s   |
| Indeno(123-cd)pyrene <sub>A</sub> <sup>M#</sup>  | 0.71       | 1.61       | 0.82       | 0.67       | 2.73       | 1.91       | 1.56       | 3.73       | mg/kg | A-T-019s   |
| Naphthalene <sub>A</sub> <sup>M#</sup>           | 0.05       | 0.12       | 0.11       | 0.06       | 0.50       | 1.43       | 0.12       | 0.23       | mg/kg | A-T-019s   |
| Phenanthrene <sub>A</sub> <sup>M#</sup>          | 2.03       | 2.51       | 1.03       | 1.20       | 7.98       | 5.82       | 3.76       | 28.2       | mg/kg | A-T-019s   |
| Pyrene <sub>A</sub> <sup>M#</sup>                | 3.23       | 5.79       | 2.28       | 2.57       | 12.4       | 8.70       | 6.42       | 28         | mg/kg | A-T-019s   |
| PAH (total 16) <sub>A</sub> <sup>M#</sup>        | 18.7       | 33.4       | 14.3       | 14.5       | 69.7       | 49.6       | 35.8       | 158        | mg/kg | A-T-019s   |

## **REPORT NOTES**

### **Notes - Soil chemical analysis**

All results are reported as dry weight (<40 °C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

### **Notes - General**

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts.

Superscript "M" indicates method accredited to MCERTS.

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations. If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

### **TPH analysis of water by method A-T-007**

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

### **Asbestos in soil**

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified a being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed.

Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

### **Predominant Matrix Codes:**

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER.

Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our MCERTS accreditation.

### **Secondary Matrix Codes:**

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

IS indicates Insufficient sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

## Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR  
Tel. 0161 368 4921 email. ask@envlab.co.uk

**Client:** MET Engineers Ltd, Southgate House, Pontefract Road, Leeds, LS10 1SW

**Project No:**

14/01458

**Date Instructions Received:** 21/03/2014 (am)

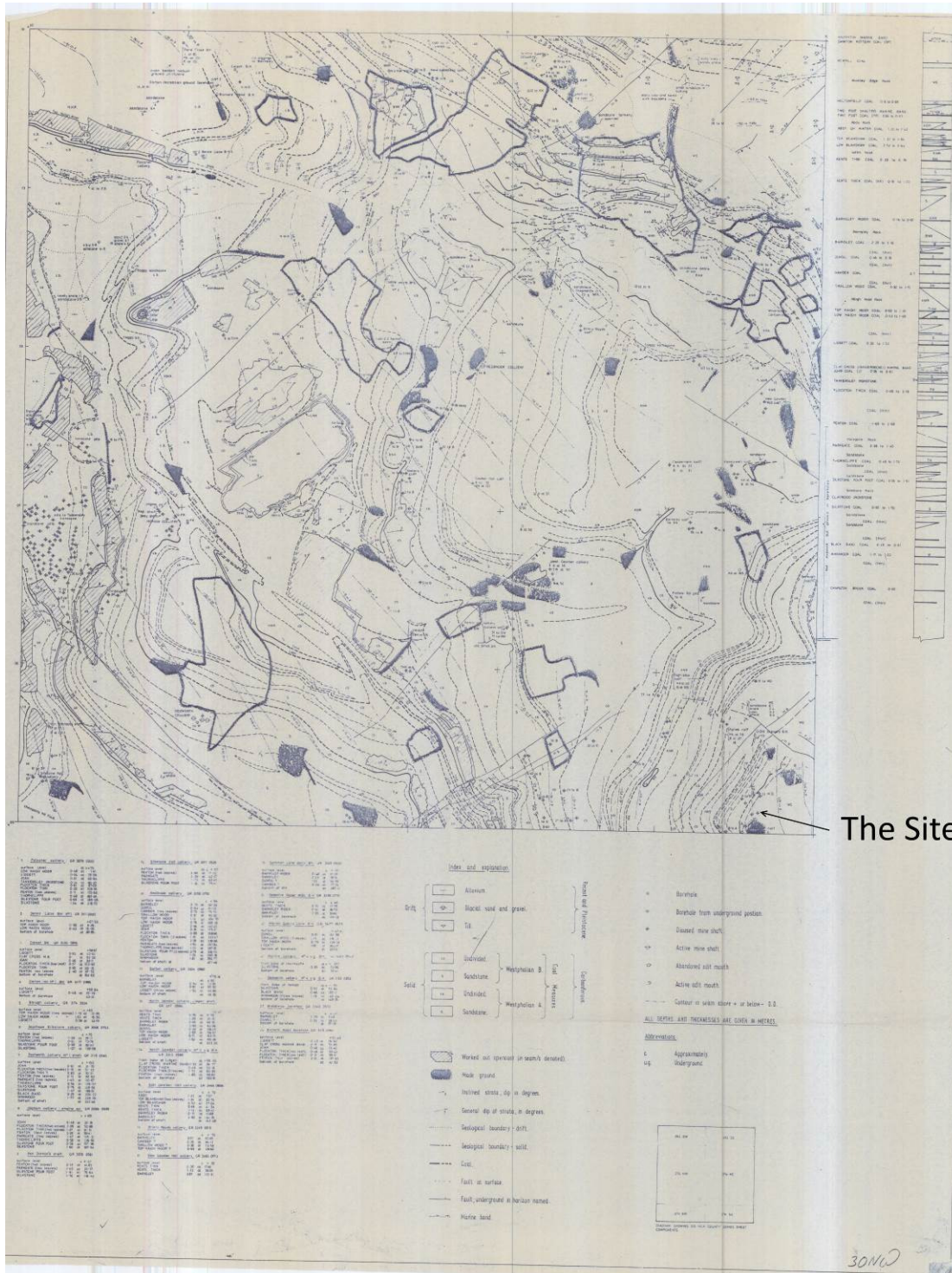
**Project:** Village Green Worsborough

**Clients Project No:** 11978/5003

NO DEVIATIONS IDENTIFIED

## **Appendix V**

### Mine Shaft Abandonment Plans



## **Appendix VI**

### South Yorkshire Mining Advisory Service Report

# MINERAL REPORT



Date: 20<sup>th</sup> August, 2012

My Ref: PJ/M2321/6

## CONFIDENTIAL

### LAND AT HIGHSTONE ROAD/KENWORTHY ROAD, WORSBOROUGH COMMON

#### SITUATION

The land under consideration for housing development is shown edged orange on the attached drawing no M2321/6A.

#### GEOLOGICAL INFORMATION

Geological records indicate that the sites are underlain by middle coal measures mudstones, siltstones and sandstones. The strata generally dips to the east at a rate of around 1 in 12.

The Meltonfield Coal Seam (thickness 900 mm to 1400 mm) outcrops to the west. The coal seam will therefore be present at a shallow depth beneath the land.

There are no known geological faults affecting the sites.

#### MINING

##### Shallow Workings

Several mine entries are present in the surrounding area as shown on the attached drawing. A number of these shafts accessed the Meltonfield Coal Seam. Shallow mineworkings are recorded in the area of the shafts. Further shallow mine workings may be present beneath the land.

It is therefore recommended that a borehole site investigation be undertaken on the development plots to prove the position, condition and thickness of the Meltonfield coal seam. Where workings are proved within a critical depth of the surface, stabilisation works will be necessary.

Suitable gas monitoring should also be undertaken to check for the presence of fugitive mine gases.

##### Deep Mineworkings

The land has been affected by mineworkings several coal seams in the past. Any movement at the surface should be complete and as the site now lies remote from the presently active coalfield no future mining should occur.

#### FORMER LAND USES

The relevant Ordnance Survey Sheets have been checked and there are no indications of any previous land use which may give rise to contamination issues.

#### LANDFILL

The site does not lie within 250 m of a known landfill site, as indicated on the current Borough Landfill Site Map.

Tel: (01226)772689

Fax: (01226)772688

E-mail: [symas@barnsley.gov.uk](mailto:symas@barnsley.gov.uk)

Website: [www.barnsley.gov.uk/symas](http://www.barnsley.gov.uk/symas)



**BARNSLEY**  
Metropolitan Borough Council



**Doncaster**  
Metropolitan Borough Council



**Rotherham**  
Metropolitan Borough Council

## CONCLUSIONS

1. The site is stable from the deep mining subsidence aspect and should remain so in future years.
2. Shallow mine workings in the Meltonfield Seam have been proved in the general area and it is possible that further workings could be present at a critical depth beneath the plots. It is therefore recommended that a borehole site investigation is undertaken in each of the plots to determine the depth, condition and thickness of the Meltonfield Seam and the existence, or otherwise, of any shallow mine workings. Boreholes to a depth of 15 m would be recommended; the results of this exercise would determine whether further remedial measures may be required to ensure the future stability of any new development.

If any unrecorded shafts etc. are encountered during development works, these should be reported to the Coal Authority and will require appropriate treatment.

Consultation with the Coal Authority is required prior to any investigation or operations that involves entry into any coal or mines of coal, including coal mine shafts, adits and workings. The Documentation which supports the Coal Authority's Permissions procedures can be viewed at: [www.coal.gov.uk/services/permissions/index.cfm](http://www.coal.gov.uk/services/permissions/index.cfm).

3. The presence of fugitive gases should be adequately investigated and it is recommended that monitoring in respect of fugitive gases should be undertaken during all site investigation and excavation works. Precautions against fugitive gases may need to be incorporated into future development.

**THIS REPORT IS BASED ON AND LIMITED TO THE RECORDS IN THE POSSESSION OF SYMAS AT THE TIME THE ENQUIRY IS ANSWERED.**

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Report prepared by P. James 20th August, 2012.

A handwritten signature in blue ink, appearing to be 'P. James', is located below the report preparation date.

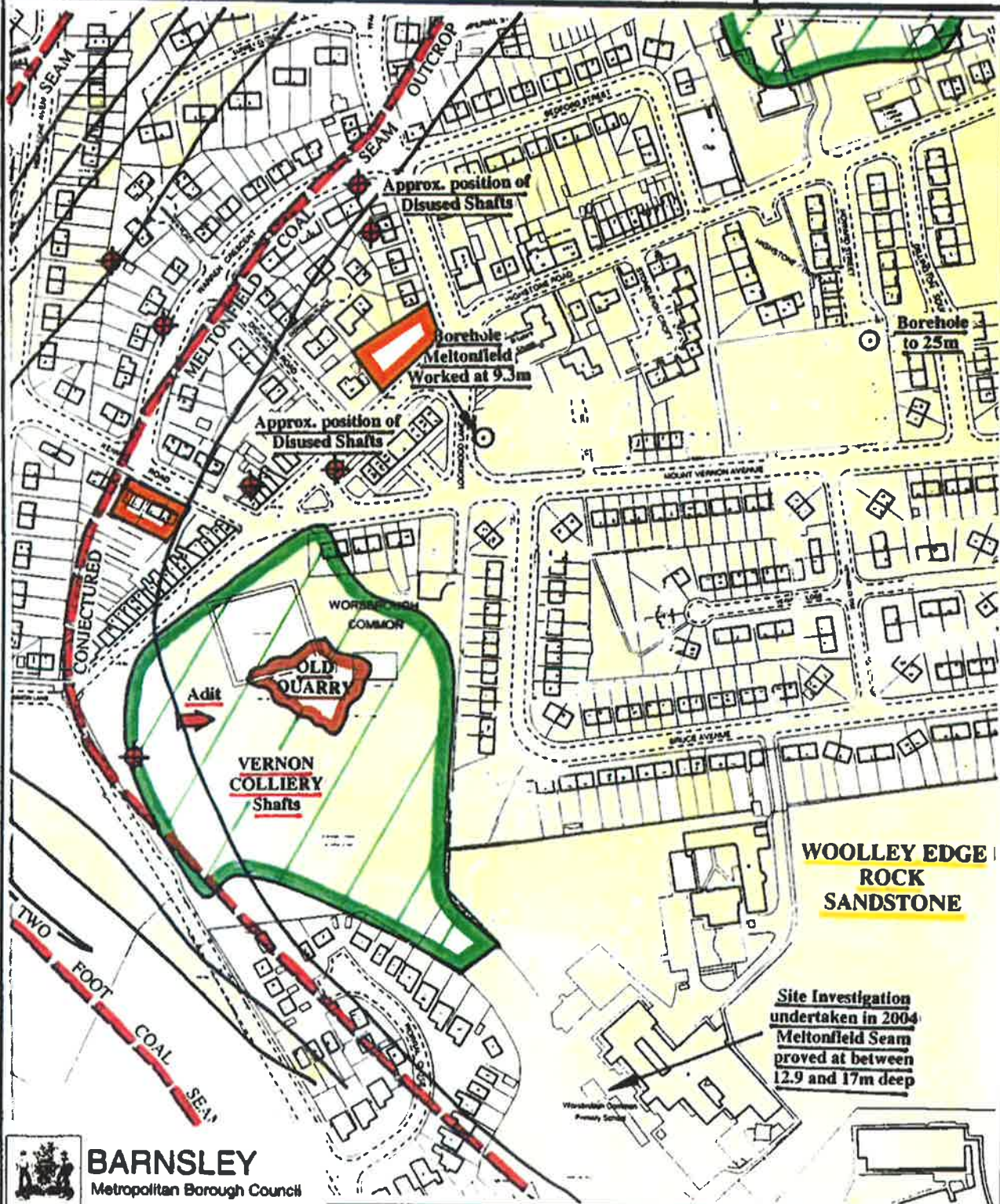
P. James,  
Principal Mining Engineer.

DRAWING TITLE

DRAWING NO.

**LAND AT HIGHSTONE ROAD/KENWORTHY ROAD  
WORSBOROUGH COMMON**

M2321/6A



**BARNESLEY**  
Metropolitan Borough Council

SCALE

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DATE

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SOUTH YORKSHIRE MINING

O.S. REFERENCE

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P. JAMES BSc (Hons)  
PRINCIPAL MINING ENGINEER

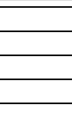
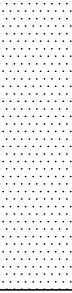
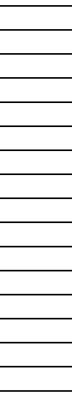
## **Appendix VII**

### Rotary Borehole Logs

# GEOL - CONSULTANTS LTD

Drillhole Log

|                                                                    |                   |                  |                  |                             |  |
|--------------------------------------------------------------------|-------------------|------------------|------------------|-----------------------------|--|
| Project :<br>Land between Lockwood Lane & Highstone Road, Barnsley |                   |                  |                  | Drillhole No.<br><b>BH1</b> |  |
| Client :<br>Met Engineers                                          |                   |                  |                  |                             |  |
| Job no.                                                            | Date :<br>15.7.15 | Co-ordinates (m) | Ground Level (m) | Sheet :<br>1 of 3           |  |

| RUN DETAILS |  |  | STRATA          |                                                                                     |                           |                 |        | Geology                                          | Instrument/<br>Backfill |      |
|-------------|--|--|-----------------|-------------------------------------------------------------------------------------|---------------------------|-----------------|--------|--------------------------------------------------|-------------------------|------|
|             |  |  | Red'cd<br>Level | Legend                                                                              | Depth<br>(Thick-<br>ness) | DESCRIPTION     |        |                                                  |                         |      |
|             |  |  |                 |                                                                                     |                           | Discontinuities | Detail |                                                  |                         | Main |
|             |  |  |                 |    | 0.30                      |                 |        | Sand, Gravel & Stones                            |                         |      |
|             |  |  |                 |    | (1.53)<br>1.83            |                 |        | SANDSTONE - Weathered (pos. well compacted fill) |                         |      |
|             |  |  |                 |    | (0.46)<br>2.23            |                 |        | MUDSTONE - Strong, grey                          |                         |      |
|             |  |  |                 |    | (1.06)<br>3.35            |                 |        | MUDSTONE - Strong, Dk grey                       |                         |      |
|             |  |  |                 |    | (0.61)<br>3.96            |                 |        | MUDSTONE - Strong, grey                          |                         |      |
|             |  |  |                 |  | (2.24)<br>6.40            |                 |        | SANDSTONE - Occ silty bands, grey, strong        |                         |      |
|             |  |  |                 |  | (4.10)<br>10.00           | Cont.           |        | MUDSTONE - Strong, grey                          |                         |      |
|             |  |  |                 |  |                           |                 |        |                                                  |                         |      |

| Drilling Progress and Water Observations |      |       |        |          |        |                | Rotary Flush |       |       |         | Method/ Plant used:<br><br>Hand held rotary rig with water flush |
|------------------------------------------|------|-------|--------|----------|--------|----------------|--------------|-------|-------|---------|------------------------------------------------------------------|
| Date                                     | Time | Depth | Casing | Core dia | Strike | Water Standing | From         | To    | Type  | Returns |                                                                  |
|                                          |      |       |        |          |        |                | 0            | 25.91 | WATER | Partial |                                                                  |

|                                                                                                                       |  |  |  |  |  |  |  |  |  |                  |
|-----------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|------------------|
| General Remarks                                                                                                       |  |  |  |  |  |  |  |  |  |                  |
| REFERENCE TO MATERIAL DENSITY/STRENGTH REFERES TO DRILLERS INTERPRETATION FROM DRILLING PROGRESS AND CHARACTERISITICS |  |  |  |  |  |  |  |  |  |                  |
|                                                                                                                       |  |  |  |  |  |  |  |  |  | Logged By:<br>SP |

GEOL - CONSULTANTS LTD

Drillhole Log

|                                                                    |                   |                  |                  |                             |  |
|--------------------------------------------------------------------|-------------------|------------------|------------------|-----------------------------|--|
| Project :<br>Land between Lockwood Lane & Highstone Road, Barnsley |                   |                  |                  | Drillhole No.<br><b>BH1</b> |  |
| Client :<br>Met Engineers                                          |                   |                  |                  |                             |  |
| Job no.                                                            | Date :<br>15.7.15 | Co-ordinates (m) | Ground Level (m) | Sheet :<br>2 of 3           |  |

| RUN DETAILS |  |  | STRATA          |        |                           |                 |                                                | Geology                 | Instrument/<br>Backfill |      |  |
|-------------|--|--|-----------------|--------|---------------------------|-----------------|------------------------------------------------|-------------------------|-------------------------|------|--|
|             |  |  | Red'cd<br>Level | Legend | Depth<br>(Thick-<br>ness) | DESCRIPTION     |                                                |                         |                         |      |  |
|             |  |  |                 |        |                           | Discontinuities | Detail                                         |                         |                         | Main |  |
|             |  |  |                 |        | 10.00                     |                 |                                                | MUDSTONE - Strong, grey |                         |      |  |
|             |  |  |                 |        | (0.66)                    |                 |                                                |                         |                         |      |  |
|             |  |  |                 |        | 10.66                     |                 |                                                |                         |                         |      |  |
|             |  |  |                 |        | (0.62)                    |                 | Dark Mudstone (Poss. Inf COAL<br>(weak flush)) |                         |                         |      |  |
|             |  |  |                 |        | 11.28                     |                 |                                                |                         |                         |      |  |
|             |  |  |                 |        |                           |                 |                                                |                         |                         |      |  |
|             |  |  |                 |        | (1.22)                    |                 |                                                |                         |                         |      |  |
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|             |  |  |                 |        | 12.50                     |                 |                                                |                         |                         |      |  |
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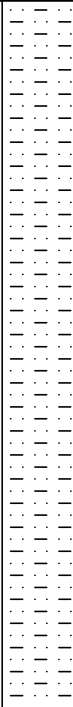
| Drilling Progress and Water Observations |      |       |        |          |        |                   | Rotary Flush |       |       |         | Method/ Plant used:<br><br>Hand held rotary rig<br>with water flush |
|------------------------------------------|------|-------|--------|----------|--------|-------------------|--------------|-------|-------|---------|---------------------------------------------------------------------|
| Date                                     | Time | Depth | Casing | Core dia | Strike | Water<br>Standing | From         | To    | Type  | Returns |                                                                     |
|                                          |      |       |        |          |        |                   | 0            | 25.91 | WATER | Partial |                                                                     |

|                                                                                                                          |  |  |  |  |  |  |  |  |  |                  |
|--------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|------------------|
| General Remarks                                                                                                          |  |  |  |  |  |  |  |  |  |                  |
| REFERENCE TO MATERIAL DENSITY/STRENGTH REFERES TO DRILLERS<br>INTERPRETATION FROM DRILLING PROGRESS AND CHARACTERISITICS |  |  |  |  |  |  |  |  |  |                  |
|                                                                                                                          |  |  |  |  |  |  |  |  |  | Logged By:<br>SP |

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## Drillhole Log

|                                                                    |                   |                  |                  |                             |
|--------------------------------------------------------------------|-------------------|------------------|------------------|-----------------------------|
| Project :<br>Land between Lockwood Lane & Highstone Road, Barnsley |                   |                  |                  | Drillhole No.<br><b>BH1</b> |
| Client :<br>Met Engineers                                          |                   |                  |                  |                             |
| Job no.                                                            | Date :<br>15.7.15 | Co-ordinates (m) | Ground Level (m) | Sheet :<br>3 of 3           |

| RUN DETAILS |  |  | STRATA          |                                                                                     |                           |                 | Geology | Instrument/<br>Backfill |        |
|-------------|--|--|-----------------|-------------------------------------------------------------------------------------|---------------------------|-----------------|---------|-------------------------|--------|
|             |  |  | Red'cd<br>Level | Legend                                                                              | Depth<br>(Thick-<br>ness) | DESCRIPTION     |         |                         |        |
|             |  |  |                 |                                                                                     |                           | Discontinuities |         |                         | Detail |
|             |  |  |                 |   | (5.91)                    |                 |         |                         |        |
|             |  |  | 25.91           | END                                                                                 | SILTSTONE - Strong, grey  |                 |         |                         |        |
|             |  |  |                 |  |                           |                 |         |                         |        |

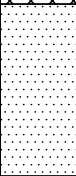
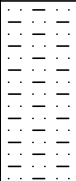
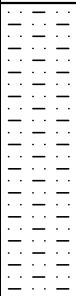
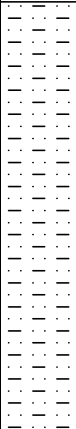
| Drilling Progress and Water Observations |      |       |        |          |        |                | Rotary Flush |       |       |         | Method/ Plant used: |
|------------------------------------------|------|-------|--------|----------|--------|----------------|--------------|-------|-------|---------|---------------------|
| Date                                     | Time | Depth | Casing | Core dia | Strike | Water Standing | From         | To    | Type  | Returns |                     |
|                                          |      |       |        |          |        |                | 0            | 25.91 | WATER | Partial |                     |

|                                                                                                                          |                  |
|--------------------------------------------------------------------------------------------------------------------------|------------------|
| General Remarks                                                                                                          |                  |
| REFERENCE TO MATERIAL DENSITY/STRENGTH REFERES TO DRILLERS<br>INTERPRETATION FROM DRILLING PROGRESS AND CHARACTERISITICS | Logged By:<br>SP |

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## Drillhole Log

|                                                                    |                   |                  |                  |                                 |
|--------------------------------------------------------------------|-------------------|------------------|------------------|---------------------------------|
| Project :<br>Land between Lockwood Lane & Highstone Road, Barnsley |                   |                  |                  | Drillhole No.<br><br><b>BH2</b> |
| Client :<br>Met Engineers                                          |                   |                  |                  |                                 |
| Job no.                                                            | Date :<br>15.7.15 | Co-ordinates (m) | Ground Level (m) | Sheet :<br>1 of 2               |

| RUN DETAILS |  |  | STRATA          |                                                                                     |                           |                 |        | Geology                                               | Instrument/<br>Backfill |      |
|-------------|--|--|-----------------|-------------------------------------------------------------------------------------|---------------------------|-----------------|--------|-------------------------------------------------------|-------------------------|------|
|             |  |  | Red'cd<br>Level | Legend                                                                              | Depth<br>(Thick-<br>ness) | DESCRIPTION     |        |                                                       |                         |      |
|             |  |  |                 |                                                                                     |                           | Discontinuities | Detail |                                                       |                         | Main |
|             |  |  |                 |    | 0.40                      |                 |        | Sand, Gravel & Stones                                 |                         |      |
|             |  |  |                 |    | (1.43)<br>1.83            |                 |        | SANDSTONE - Weathered (pos. well compacted fill)      |                         |      |
|             |  |  |                 |    | (1.06)<br>3.35            |                 |        | SILTSTONE, strong grey                                |                         |      |
|             |  |  |                 |    | (0.61)<br>3.96            |                 |        | MUDSTONE - Strong, grey                               |                         |      |
|             |  |  |                 |   | (2.24)<br>6.40            |                 |        | MUDSTONE - Frequent silty / sandy bands, grey, strong |                         |      |
|             |  |  |                 |  | (4.10)<br>10.00           | Cont.           |        | MUDSTONE - Occ. silty / sandy bands, grey, strong     |                         |      |
|             |  |  |                 |  |                           |                 |        |                                                       |                         |      |
|             |  |  |                 |  |                           |                 |        |                                                       |                         |      |

| Drilling Progress and Water Observations |      |       |        |          |        |                | Rotary Flush |       |       |         | Method/ Plant used:<br><br>Hand held rotary rig<br>with water flush |
|------------------------------------------|------|-------|--------|----------|--------|----------------|--------------|-------|-------|---------|---------------------------------------------------------------------|
| Date                                     | Time | Depth | Casing | Core dia | Strike | Water Standing | From         | To    | Type  | Returns |                                                                     |
|                                          |      |       |        |          |        |                | 0            | 13.11 | WATER | Partial |                                                                     |

### General Remarks

REFERENCE TO MATERIAL DENSITY/STRENGTH REFERES TO DRILLERS  
INTERPRETATION FROM DRILLING PROGRESS AND CHARACTERISITICS

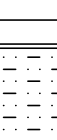
Logged By:

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# GEOL - CONSULTANTS LTD

## Drillhole Log

|                                                                    |                   |                  |                  |                             |
|--------------------------------------------------------------------|-------------------|------------------|------------------|-----------------------------|
| Project :<br>Land between Lockwood Lane & Highstone Road, Barnsley |                   |                  |                  | Drillhole No.<br><b>BH2</b> |
| Client :<br>Met Engineers                                          |                   |                  |                  |                             |
| Job no.                                                            | Date :<br>15.7.15 | Co-ordinates (m) | Ground Level (m) | Sheet :<br>2 of 2           |

| RUN DETAILS |                                                                                   |       | STRATA          |                                                                                    |                           |                 |                          | Geology                                           | Instrument/<br>Backfill |      |
|-------------|-----------------------------------------------------------------------------------|-------|-----------------|------------------------------------------------------------------------------------|---------------------------|-----------------|--------------------------|---------------------------------------------------|-------------------------|------|
|             |                                                                                   |       | Red'cd<br>Level | Legend                                                                             | Depth<br>(Thick-<br>ness) | DESCRIPTION     |                          |                                                   |                         |      |
|             |                                                                                   |       |                 |                                                                                    |                           | Discontinuities | Detail                   |                                                   |                         | Main |
|             |                                                                                   |       |                 |   | 10.00                     |                 |                          | MUDSTONE - Occ. silty / sandy bands, grey, strong |                         |      |
|             |                                                                                   |       |                 |   | 11.28                     |                 |                          |                                                   |                         |      |
|             |                                                                                   |       |                 |   | 12.04                     |                 |                          | Dark Mudstone (Poss. Inf COAL (weak flush))       |                         |      |
|             |                                                                                   |       |                 |   |                           |                 |                          |                                                   |                         |      |
|             |                                                                                   |       |                 |   | (5.91)                    | END             | SILTSTONE - Strong, grey |                                                   |                         |      |
|             |  | 13.11 |                 |                                                                                    |                           |                 |                          |                                                   |                         |      |
|             |                                                                                   |       |                 |  |                           |                 |                          |                                                   |                         |      |

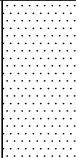
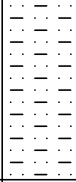
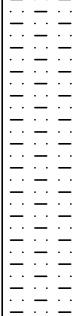
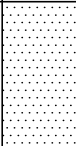
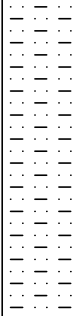
| Drilling Progress and Water Observations |      |       |        |          |        |                | Rotary Flush |       |       |         | Method/ Plant used: |
|------------------------------------------|------|-------|--------|----------|--------|----------------|--------------|-------|-------|---------|---------------------|
| Date                                     | Time | Depth | Casing | Core dia | Strike | Water Standing | From         | To    | Type  | Returns |                     |
|                                          |      |       |        |          |        |                | 0            | 13.11 | WATER | Partial |                     |

|                                                                                                                          |                  |
|--------------------------------------------------------------------------------------------------------------------------|------------------|
| General Remarks                                                                                                          |                  |
| REFERENCE TO MATERIAL DENSITY/STRENGTH REFERES TO DRILLERS<br>INTERPRETATION FROM DRILLING PROGRESS AND CHARACTERISITICS | Logged By:<br>SP |

# GEOL - CONSULTANTS LTD

Drillhole Log

|                                                                    |                   |                  |                  |                             |  |
|--------------------------------------------------------------------|-------------------|------------------|------------------|-----------------------------|--|
| Project :<br>Land between Lockwood Lane & Highstone Road, Barnsley |                   |                  |                  | Drillhole No.<br><b>BH3</b> |  |
| Client :<br>Met Engineers                                          |                   |                  |                  |                             |  |
| Job no.                                                            | Date :<br>15.7.15 | Co-ordinates (m) | Ground Level (m) | Sheet :<br>1 of 1           |  |

| RUN DETAILS |  |  | STRATA          |                                                                                     |                           |                 |        | Geology                                                                              | Instrument/<br>Backfill |      |
|-------------|--|--|-----------------|-------------------------------------------------------------------------------------|---------------------------|-----------------|--------|--------------------------------------------------------------------------------------|-------------------------|------|
|             |  |  | Red'cd<br>Level | Legend                                                                              | Depth<br>(Thick-<br>ness) | DESCRIPTION     |        |                                                                                      |                         |      |
|             |  |  |                 |                                                                                     |                           | Discontinuities | Detail |                                                                                      |                         | Main |
|             |  |  |                 |    | 0.50                      |                 |        | Sand, Gravel & Stones                                                                |                         |      |
|             |  |  |                 |    | (1.33)<br>1.83            |                 |        | SANDSTONE - Weathered (pos. well compacted fill)                                     |                         |      |
|             |  |  |                 |    | (1.52)<br>3.35            |                 |        | SILTSTONE, strong grey                                                               |                         |      |
|             |  |  |                 |   | (2.24)<br>6.40            |                 |        | MUDSTONE - Strong, grey<br><br>MUDSTONE - Frequent silty / sandy bands, grey, strong |                         |      |
|             |  |  |                 |  | 7.32                      |                 |        | SANDSTONE - Very Weak                                                                |                         |      |
|             |  |  |                 |  | (3.35)<br>10.67           |                 |        | MUDSTONE - Occ. silty / sandy bands, grey, strong                                    |                         |      |
|             |  |  |                 |  | (0.30)<br>10.97           | END             |        | COAL (Probably)                                                                      |                         |      |

| Drilling Progress and Water Observations |      |       |        |          |        |                | Rotary Flush |       |       |         | Method/ Plant used:<br><br>Hand held rotary rig with water flush |
|------------------------------------------|------|-------|--------|----------|--------|----------------|--------------|-------|-------|---------|------------------------------------------------------------------|
| Date                                     | Time | Depth | Casing | Core dia | Strike | Water Standing | From         | To    | Type  | Returns |                                                                  |
|                                          |      |       |        |          |        |                | 0            | 10.97 | WATER | Partial |                                                                  |

|                                                                                                                       |  |  |  |  |  |  |  |  |  |                  |
|-----------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|------------------|
| General Remarks                                                                                                       |  |  |  |  |  |  |  |  |  |                  |
| REFERENCE TO MATERIAL DENSITY/STRENGTH REFERES TO DRILLERS INTERPRETATION FROM DRILLING PROGRESS AND CHARACTERISITICS |  |  |  |  |  |  |  |  |  |                  |
|                                                                                                                       |  |  |  |  |  |  |  |  |  | Logged By:<br>SP |

## **Appendix VIII**

### Hand Dug Pit Summary

| Hand Dug Pit | Depth To Sandstone Bedrock (m) |
|--------------|--------------------------------|
| A            | 0.4                            |
| B            | 0.35                           |
| C            | 0.4                            |
| D            | 0.3                            |
| E            | 0.3                            |
| F            | 0.25                           |
| G            | 0.5                            |
| H            | 0.3                            |
| I            | 0.4                            |
| J            | 0.4                            |
| K            | 0.6                            |
| L            | 0.5                            |
| M            | 0.3                            |
| N            | 0.5                            |
| O            | 0.6                            |
| P            | 0.5                            |
| Q            | 0.3                            |