WEST BURTON C POWER STATION

FACTUAL REPORT ON GROUND INVESTIGATION

Report No A7102-17

February 2018

Client:
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West Burton Power Station
Retford
Nottinghamshire
DN22 9BL

Principal Contractor:
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Please be aware that as of 17 October 2017, Environmental Scientifics Group Limited has become SOCOTEC UK Limited. This is a name change only, the legal identity of the company, including company registration number remains unchanged.

In the interim period during the rebranding process please note that some reports may display two logos and company references.

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Report No A7102-17

February 2018

Issue No Date	Status	Prepared by	Checked by	Approved by
1 Jan 2018	Draft report	NAME and QUALIFICATIONS M STANLEY BSc (Hons)	NAME and QUALIFICATIONS	NAME and QUALIFICATIONS
		SIGNATURE [redacted]	SIGNATURE	SIGNATURE
2 Feb 2018	Final report	NAME and QUALIFICATIONS M STANLEY BSc (Hons)	NAME and QUALIFICATIONS T CLIFFORD BEng FGS	NAME and QUALIFICATIONS T CLIFFORD BEng FGS
		SIGNATURE [redacted]	SIGNATURE [redacted]	SIGNATURE [redacted]

SOCOTEC UK Limited was formerly known as Environmental Scientifics Group Limited. The Certificate of Incorporation on Change of Name was filed on 16 October 2017.

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1 INTRODUCTION

In November 2017 SOCOTEC UK Limited (SOCOTEC) was commissioned by Firbeck Construction Limited (FCL), on behalf of EDF Energy CGR Limited (EDF), to carry out a ground investigation at West Burton Power Station, Nottinghamshire. The investigation was required to obtain geotechnical and geoenvironmental information for the proposed development of West Burton C and D gas turbine power plants, adjacent to the existing station.

The Investigation Supervisor was Sir Robert McAlpine Design Group (SRM).

The scope of the investigation was specified by SRM and comprised cable percussion, dynamic sampling and rotary drilled boreholes, trial pits, in situ testing and laboratory testing. The investigation was performed in accordance with the contract specification, and the general requirements of BS 5930 (2015), BS EN 1997-2 (2007), BS EN ISO 22475-1 (2006) and other relevant related standards identified below. The fieldwork took place between 4 and 21 December 2017.

This report presents the factual records of the fieldwork and laboratory testing. The information is also presented as digital data as defined in AGS (2017).

2 SITE SETTING

2.1 Location and Description

West Burton Power Station is located on the River Trent between Retford and Gainsborough, approximately 7 km south west from Gainsborough. The National Grid reference is SK 803 862, see Site Location Plan in Appendix A.

The site of the ground investigation is on the north-eastern side of the West Burton B CCGT power station, in an area formerly used for disposal of ash from West Burton A coal power station and subsequently landscaped. Most of the site area is currently a flower meadow, while the perimeter is partially wooded.

To the north and west of the site are areas currently used for processing ash from West Burton A. To the east is a series of ponds with the River Trent beyond, to the northwest is a small sewage

treatment plant and to the southwest is West Burton B. To the west is the rail merry-go-round loop and coal store of West Burton A, with the Retford to Gainsborough railway line beyond.

2.2 Published Geology

The published geological map covering the site (BGS sheet 101, 1967) and the BGS Geology of Britain Viewer (2018) shows the site underlain by Alluvium and River Terrace Deposits. Bedrock is shown to be the Mercia Mudstone Group consisting of mudstones with subordinate siltstone and beds of gypsum.

Information provided by SRM indicates that ash fill and other made ground is present associated with the historical use of the site. This was confirmed by the investigation.

3 FIELDWORK

3.1 General

The exploratory hole locations were selected by SRM; they were set out by EDF and SOCOTEC from local features. Co-ordinates and reduced levels of the as dug locations were surveyed by SOCOTEC to National Grid and Ordnance Datum. The exploratory hole locations are shown on the Site Plan in Appendix A.

3.2 Exploratory Holes

The exploratory holes are briefly summarised in the table below and in further detail in the Exploratory Hole Summary included in Appendix B.

TABLE 1 : EXPLORATORY HOLES

TYPE	QUANTITY	MAXIMUM DEPTH (m)	REMARKS
Cable Percussion Boreholes	12	15.60	WS101 to WS112
Dynamic Sampling extended by Rotary Core Drilling	6	30.30	BH101 to BH106
Rotary Open Hole Drilling	2	30.00	BH107 and BH108
Trial pits (machine excavated)	14	3.70	TP02 to TP08 and TP10 to TP116 TP101 and TP109 were removed by SRM. TP107 and TP110 were hand excavated.

The exploratory hole logs are presented in Appendix B. These provide information including the equipment and methods used, samples taken, tests carried out, water observations and descriptions of the strata encountered. Explanation of the terms and abbreviations used on the logs is given in the Key to Exploratory Hole Records in Appendix B, together with other explanatory information. The logging of soil and rock materials is in accordance with BS 5930 (2015). Material of the Mercia Mudstone Group has been divided according to the weathering grades defined in Spink and Norbury (1993).

Standard penetration tests (SPT) in the boreholes were carried out in accordance with BS EN ISO 22476-3+A1 (2011) and the SPT hammer energy ratio certificates are included in Appendix B. The SPT results are presented on the logs as uncorrected N values.

Photographs of the trial pits and rotary drilled core are presented in Appendix E.

On completion of the fieldwork geotechnical samples were transported to the Doncaster laboratory of SOCOTEC for testing and temporary retention.

3.3 Instrumentation

Gas and groundwater monitoring Instrumentation was installed in selected exploratory holes as instructed by SRM; details are shown on the relevant borehole logs and summarised in Appendix C.

SOCOTEC were not required to undertake post fieldwork monitoring of the instrumentation.

3.4 In Situ Testing

In situ testing was carried out in accordance with the relevant standards as tabulated below. The testing is summarised in the following table and the results are presented under separate cover.

TABLE 2: SUMMARY OF IN SITU TESTING

TYPE	QUANTITY	STANDARDS	REPORT
Self Boring Pressuremeter	4 tests at 2 locations – BH101 and BH102	BS 5930 (2015)	SOCOTEC Report A7104-17
High Pressure Dilatometer Test (HPD)	6 tests at 2 locations – BH101 and BH102	BS 5930 (2015)	SOCOTEC Report A7104-17
Cross Hole Seismic Survey	3 locations – BH101, BH107, BH108	-	SOCOTEC Report L7104-17

4 LABORATORY TESTING

Geotechnical laboratory testing was scheduled by SRM and was carried out in accordance with BS 1377 (1990) and ISRM (2007) unless otherwise stated. The testing is summarised below and the results are presented in Appendix D.

- Moisture Content Determination
- Atterberg Limits Determination
- Particle Size Distribution Analysis
- Unconsolidated Undrained Triaxial Compression Testing
- Dry Density / Moisture Content Relationship
- Point Load index Testing
- Uniaxial Compressive Strength of Rock
- pH value and Water Soluble Sulphate, Acid Soluble Sulphate and Total Sulphur Contents of Soils. Test methods are BS 1377 or others recognised in BRE Special Digest 1 (2005)
- Organic Matter Content

REFERENCES

AGS : 2017 : Electronic transfer of geotechnical and geoenvironmental data (Edition 4.0.4 February 2017). Association of Geotechnical and Geoenvironmental Specialists.

BGS England and Wales Sheet 101 : 1967 : East Retford. 1:63,360 geological map (solid and drift). British Geological Survey.

BGS Geology of Britain Viewer : 2018. www.bgs.ac.uk. British Geological Survey.

BRE Special Digest 1 : 2005 : Concrete in aggressive ground. Building Research Establishment.

BS 1377 : 1990 : Methods of test for soils for civil engineering purposes. British Standards Institution.

BS 5930 : 2015 : Code of practice for ground investigations. British Standards Institution.

BS EN 1997-2 : 2007 : Eurocode 7 - Geotechnical design - Part 2 Ground investigation and testing. British Standards Institution.

BS EN ISO 22475-1 : 2006 : Geotechnical investigation and testing – Sampling methods and groundwater measurements - Part 1 Technical principles for execution. British Standards Institution.

BS EN ISO 22476-3:2005+A1 : 2011 : Geotechnical investigation and testing - Field testing - Part 3 Standard penetration test. British Standards Institution.

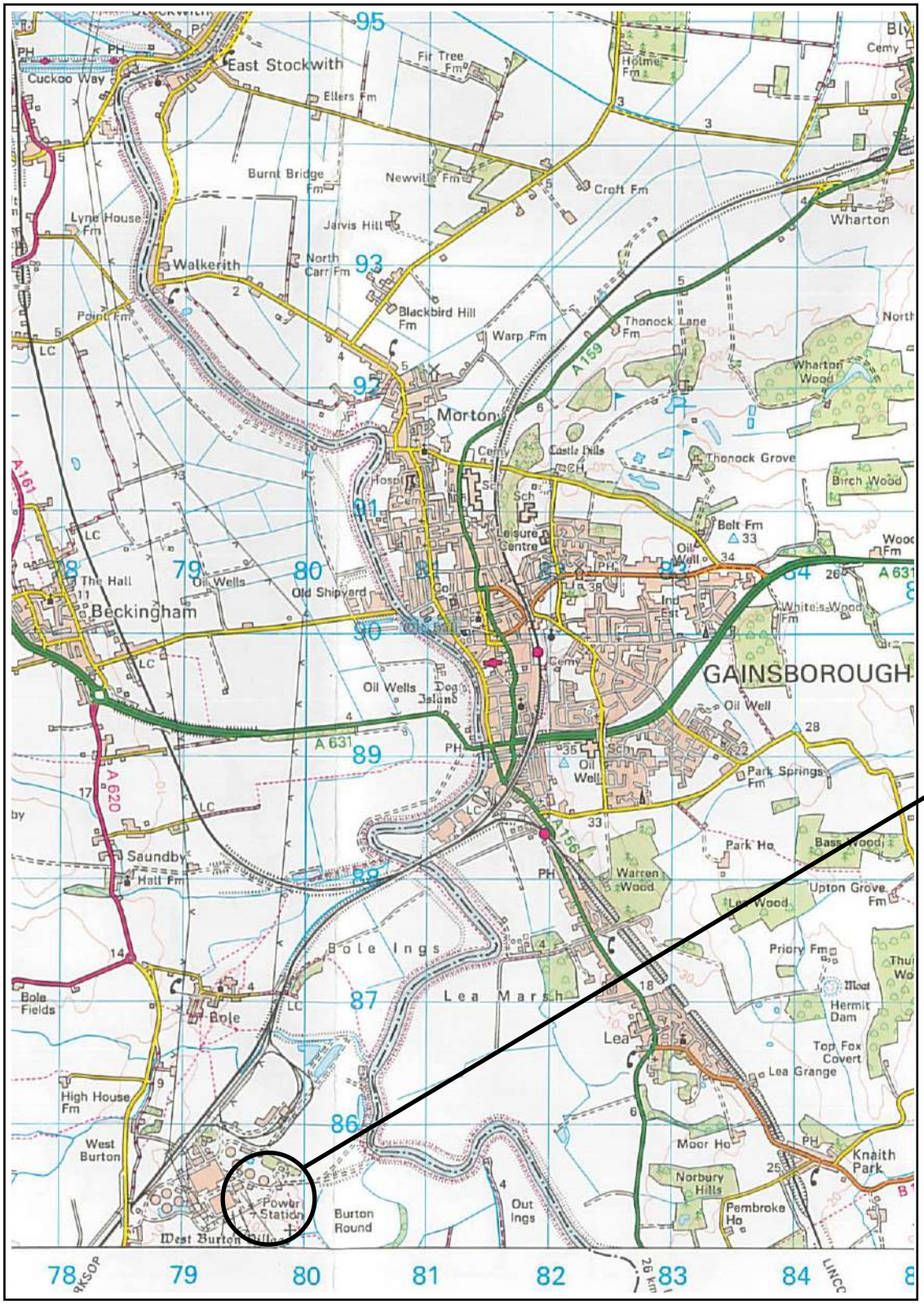
ISRM : 2007 : The Complete ISRM Suggested Methods for Rock Characterisation, Testing and Monitoring (1974-2006). Commission on Testing Methods, International Society for Rock Mechanics (Editors Ulusay R & Hudson JA).

Spink TW and Norbury DR : 1993 : The Engineering Geological Description of Weak Rocks and Overconsolidated Soils. Proc 26th Regional Meeting of Engineering Group of Geological Society, Leeds.

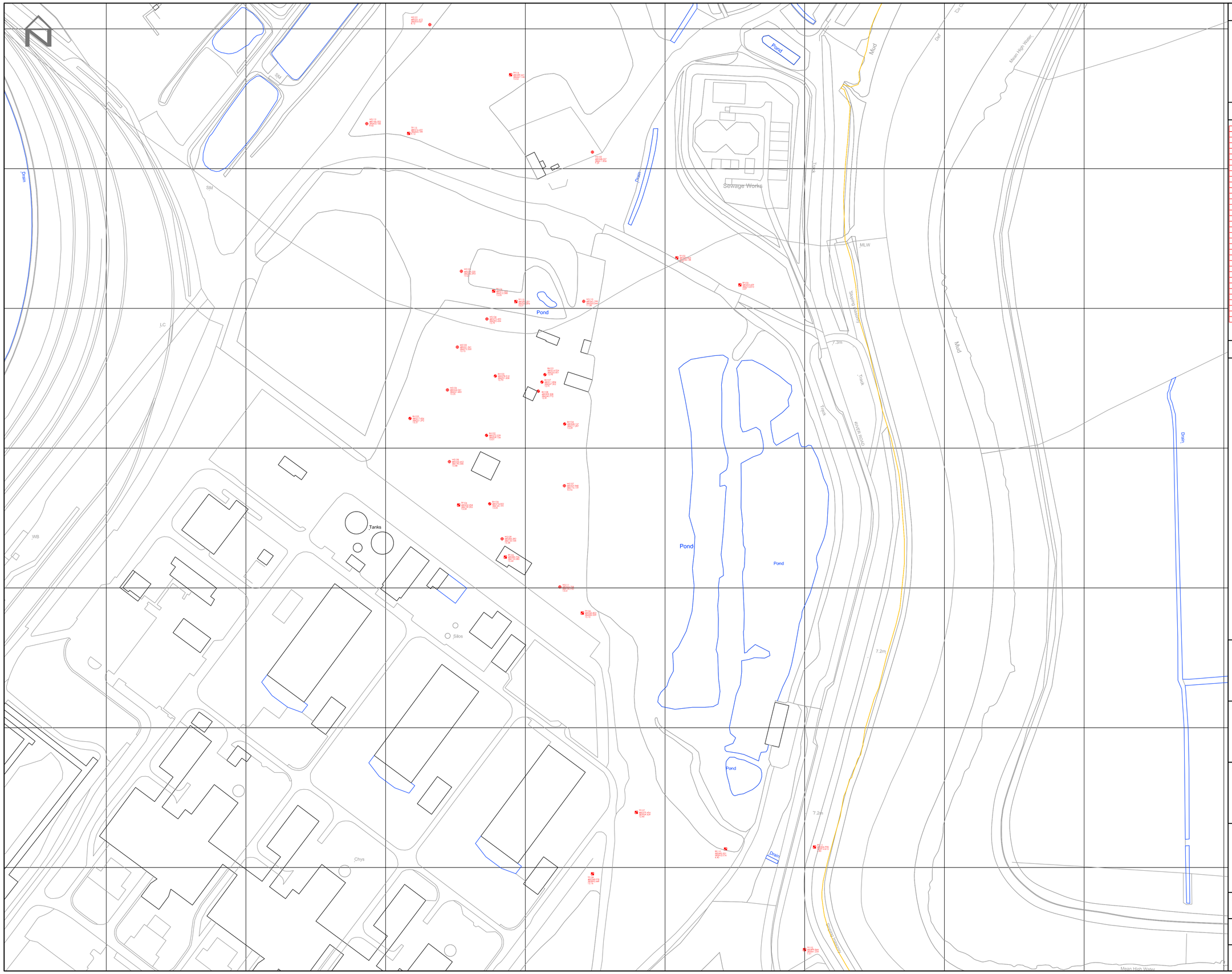
APPENDIX A
FIGURES AND DRAWINGS

Site Location Plan	A1
Site Plan	A2

Site Location Plan



Notes: Scale 1:50 000	**Project** WEST BURTON C POWER STATION **Project No.** A7102-17 **Carried out for** Firbeck Construction Limited	**Figure** **A1**



CONTROL & DATUM INFORMATION

Co-ordinates and levels are based upon OSGB 1936 National Grid (OSGB36) and Ordnance Survey Datum Newlyn (ODN).

They are derived using realtime on site GPS survey, that utilises the National Grid Transformation OSTN15GB and the National Geoid Model OSGM15GB.

The data obtained for use in this drawing involved the use of realtime GPS survey and total station survey.

COORDINATES

Ground Investigation Co-ordinates

Reference	East	North	Elevation	Description
BH101	480314.024	386252.601	12.95	Dynamic Sample
BH102	480272.229	386209.156	13.01	Dynamic Sample
BH103	480278.514	386251.638	12.70	Dynamic Sample
BH104	480328.157	386217.397	13.09	Dynamic Sample
BH105	480217.436	386221.292	13.31	Dynamic Sample
BH106	480274.502	386160.191	13.05	Dynamic Sample
BH107	480331.894	386247.302	12.91	Dynamic Sample
BH108	480309.308	386240.772	12.91	Dynamic Sample
TP102	480408.463	386336.138	4.47	Trial Pit
TP103	480453.609	386316.810	3.87	Trial Pit
TP104	480252.254	386159.355	13.09	Trial Pit
TP105	480285.706	386122.080	13.44	Trial Pit
TP106	480340.802	386082.009	13.10	Trial Pit
TP107	480379.494	385939.429	12.45	Trial Pit
TP108	480348.078	385895.449	12.16	Trial Pit
TP110	480443.301	385913.174	4.40	Trial Pit
TP111	480506.993	385914.615	4.80	Trial Pit
TP112	480499.866	385841.234	7.01	Trial Pit
TP113	480293.201	386304.894	13.01	Trial Pit
TP114	480277.305	386312.388	13.05	Trial Pit
TP115	480216.451	386425.199	9.12	Trial Pit
TP116	480289.441	386467.146	13.55	Trial Pit
WS101	480231.613	386503.027	8.12	Borehole
WS102	480348.037	386411.836	7.29	Borehole
WS103	480254.250	386326.593	13.22	Borehole
WS104	480272.493	386292.434	12.79	Borehole
WS105	480251.341	386272.330	13.13	Borehole
WS106	480244.241	386241.683	13.20	Borehole
WS107	480327.968	386173.119	13.16	Borehole
WS108	480245.663	386190.345	13.48	Borehole
WS109	480283.382	386135.144	13.38	Borehole
WS110	480341.799	386305.044	11.58	Borehole
WS111	480324.708	386100.720	13.41	Borehole
WS112	480186.502	386432.185	9.42	Borehole

LEGEND TO SYMBOLS

- Denotes Cable Tool Borehole Locatlon
- Denotes Trial Pit Location
- Denotes Dynamic Sampling & Rotary Borehole Location

Scale: 1:1250

0 12.5m 25 50 75 100

Title

SITE PLAN

Project

WEST BURTON C/D
POWER STATION

Client

Firbeck Construction Limited

SOCOTEC

Date	Drawn By	Approv. By
05.01.18	AW	MJS

Sheet Size	Scale	Project No
A1	1:1250	A7102-17

Drawing No	Rev
A2	0

APPENDIX B

EXPLORATORY HOLE RECORDS

Exploratory Hole Summary	Table B1
Key to Exploratory Hole Records	Key
SPT Hammer Energy Ratio Report	SPT Hammer Reference AR868, AR932, AR1121, AR1777, ESG01 and SM39
Borehole Logs	BH101 to BH108 and WS101 to WS112
Trial Pit Logs	TP102 to TP108 and TP110 to TP116

Exploratory Hole Summary

SOCOTEC

Hole ID	Hole Depth, (m)	Hole Type	Eastings, (m)	Northings, (m)	Ground Level, (m AOD)	Hole Remarks
WS101	15.15	CP	480231.61	386503.03	8.12	Standpipe installed on completion
WS102	10.88	CP	480348.04	386411.84	7.29	Standpipe installed on completion
WS103	15.00	CP	480254.22	386326.59	13.22	Standpipe installed on completion
WS104	15.00	CP	480272.49	386292.43	12.79	Standpipe installed on completion
WS105	15.45	CP	480251.34	386272.33	13.13	-
WS106	15.00	CP	480244.24	386241.68	13.20	Standpipe installed on completion
WS107	15.45	CP	480327.97	386173.12	13.16	-
WS108	14.60	CP	480245.66	386190.35	13.48	Standpipe installed on completion
WS109	15.45	CP	480283.38	386135.14	13.38	Standpipe installed on completion
WS110	15.00	CP	480341.80	386305.04	11.58	Standpipe installed on completion
WS111	15.60	CP	480324.71	386100.72	13.41	Standpipe installed on completion
WS112	15.00	CP	480186.50	386432.19	9.42	Standpipe installed on completion
BH101	30.30	DS+RC	480314.02	386252.60	12.95	SBP and HPD carried out - see Report A7104-17 Cross Hole Seismic Survey - see Report L7104-17
BH102	30.07	DS+RC	480272.23	386209.16	13.01	SBP and HPD carried out - see Report A7104-17
BH103	29.80	DS+RC	480278.51	386251.64	12.70	-
BH104	30.10	DS+RC	480328.16	386217.30	13.09	Standpipe installed on completion
BH105	29.50	DS+RC	480217.44	386221.29	13.31	Standpipe installed on completion
BH106	29.80	DS+RC	480274.50	386160.19	13.05	-
BH107	30.00	RO	480311.89	386247.30	12.91	Cross Hole Seismic Survey - see Report L7104-17
BH108	28.00	RO	480309.31	386240.77	12.91	Cross Hole Seismic Survey - see Report L7104-17
TP101	-	-	-	-	-	Removed from scope of works by SRM
TP102	3.00	MDTP	480408.46	386336.14	4.47	-
TP103	3.50	MDTP	480453.61	386316.81	3.87	-
TP104	3.70	MDTP	480252.25	386159.36	13.09	-
TP105	3.50	MDTP	480285.71	386122.08	13.44	-
TP106	3.50	MDTP	480340.80	386082.01	13.10	-
TP107	1.20	HDTP	480379.49	385939.43	12.45	Hand dug
TP108	3.50	MDTP	480348.08	385895.45	12.16	-
TP109	-	-	-	-	-	Removed from scope of works by SRM
TP110	1.20	HDTP	480443.30	385913.17	4.40	Hand dug
TP111	3.50	MDTP	480507.00	385914.62	4.80	-
TP112	3.50	MDTP	480499.87	385841.23	7.01	-
TP113	3.50	MDTP	480293.20	386304.89	13.01	-
TP114	3.50	MDTP	480277.31	386312.39	13.05	-
TP115	3.50	MDTP	480216.45	386425.20	9.12	-
TP116	3.50	MDTP	480289.44	386467.15	13.55	-

CP = Cable Percussive DS = Dynamic Sampling RC = Rotary Coring RO = Rotary Openhole
MDTP = Machine Dug Trial Pit HDTP = Hand Dug Trial Pit

Notes:

AGS

Project	WEST BURTON C POWER STATION
Project No.	A7102-17
Carried out for	Firbeck Construction Limited

Table **B1**

Key to Exploratory Hole Records

SOCOTEC

SAMPLES

Undisturbed

U	Driven tube sample	nominally 100 mm diameter and full recovery unless otherwise stated
UT	Driven thin wall tube sample	
TW	Pushed thin wall tube sample	
P	Pushed piston sample	
L	Liner sample from dynamic (windowless) sampling. Full recovery unless otherwise stated	
CBR	CBR mould sample	
BLK	Block sample	
C / CS	Core sample (from rotary core) taken for laboratory testing.	
AMAL	Amalgamated sample	

Disturbed

D	Small sample
B	Bulk sample

Other

W	Water sample
G	Gas sample
	Environmental chemistry samples (in more than one container where appropriate)
ES	Soil sample
EW	Water sample

Comments

Sample reference numbers are assigned to every sample taken. A sample reference of 'NR' indicates that, while an attempt was made to take a tube sample, there was no recovery.

Samples taken from borehole installations (ie water or gas) after hole construction are not shown on the exploratory hole logs.

Specimens for point load testing undertaken on site (or other non-lab location) are not shown on the log.

IN SITU TESTS

SPT S or SPT C — Standard Penetration Test, open shoe (S) or solid cone (C)

The Standard Penetration Test is defined in BS EN ISO 22476-3:2005+A1:2011.
The incremental blow counts are given in the Field Records column; each increment is 75 mm unless stated otherwise and any penetration under self-weight in mm (SW) is noted. Where the full 300 mm test drive is achieved the total number of blows for the test drive is presented as N = ** in the Test column. Where the test drive blows reach 50 the total blow count beyond the seating drive is given (without the N = prefix).

IV	*in situ* vane shear strength, peak (p) and remoulded (r)
HV	Hand vane shear strength, peak (p) and remoulded (r)
PP	Pocket penetrometer test, converted to shear strength
KFH, KRH, KPI	Permeability tests (KFH = falling head, KRH = rising head; KPI = packer inflow); results provided in Field Records column (one value per stage for packer tests)

DRILLING RECORDS

The mechanical indices (TCR/SCR/RQD & If) are defined in BS 5930:2015

TCR	Total Core Recovery, %
SCR	Solid Core Recovery, %
RQD	Rock Quality Designation, %
If	Fracture spacing, mm. Minimum, typical and maximum spacing measurements are presented.
NI	The term non-intact (NI) is used where the core is fragmented.
NA	Used where a measurement is not applicable (eg. If, SCR and RQD in non-rock materials).

Flush returns, estimated percentage with colour where relevant, are given in the Records column

CRF	Core recovered (length in m) in the following run
AZCL	Assessed zone of core loss

GROUNDWATER

▼	Groundwater entry
▽	Depth to groundwater after standing period

Key to Exploratory Hole Records

INSTALLATION

Details of standpipe/piezometer installations are given on the Record. Legend column shows installed instrument depths including slotted pipe section or tip depth, response zone filter material type and layers of backfill.

Standpipe/ piezometer

The type of instrument installed is indicated by a code in the Legend column at the depth of the response zone:

SP	Standpipe
SPIE	Standpipe piezometer
PPIE	Pneumatic piezometer
EPIE	Electronic piezometer

Inclinometer or Slip Indicator

The installation of vertical profiling instruments is indicated on the Record. The base of tubing is shown in the Legend column.

The type of instrument installed is indicated by a code in the Legend column at the base of the tubing:

ICE	Biaxial inclinometer
ICM	Inclinometer tubing for use with probe
SLIP	Slip indicator

Settlement Points or Pressure Cells

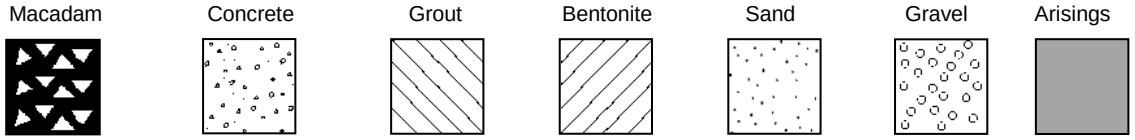
The installation of single point instruments is indicated on the Record. The location of the measuring device is shown in the Legend column.

The type of instrument installed is indicated by a code in the Legend column:

ESET	Electronic settlement cell/gauge
ETM	Magnetic extensometer settlement point
EPCE	Electronic embedment pressure cell
PPCE	Electronic push in pressure cell

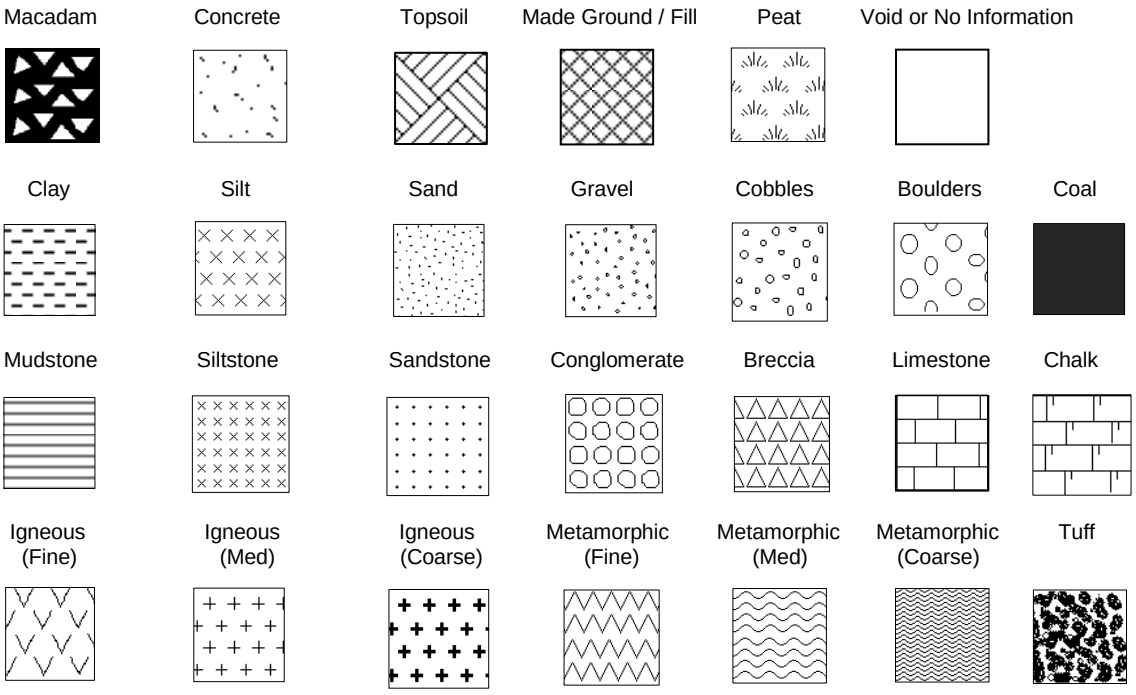
INSTALLATION / BACKFILL LEGENDS

A legend describing the installation is shown in the rightmost column. Legend symbols used to describe the backfill materials are indicated below.



STRATUM LEGENDS

The legend symbols used for graphical representation of soils, rocks and other materials on the borehole logs are shown below. For soils with significant proportions of secondary soil types, a combination of two or more symbols may be used.



Notes:

See report text for full references of standards.

Updated October 2017

Project	**WEST BURTON C POWER STATION**
Project No.	**A7102-17**
Carried out for	**Firbeck Construction Limited**

Key

Key to Exploratory Hole Records

SOCOTEC

NOTES

1 Soils and rocks are described in accordance with BS EN ISO 14688-1:2002+A1:2013 and 14689-1:2003 respectively as amplified by BS 5930:2015.

2 For fine soils, consistency determined during description is reported for those strata where undisturbed samples are available. Where the logger considers that the sample may not be representative of the condition in situ, for whatever reason, the reported consistency is given in brackets. The reliability of the sample is indicated by Probably or Possibly as appropriate. Hence (Probably firm) indicates the logger is reasonably confident of the assessment, but (Possibly firm) means less certainty. Where the samples available are too disturbed to allow a reasonable assessment of the in situ condition, no consistency is given.

3 Evidence of the occurrence of very coarse particles (cobbles and boulders) is presented on the logs. However, because of their size in relation to the exploratory hole these records may not be fully representative of their size and frequency in the ground mass.

4 The declination of bedding and joints is given with respect to the normal to the core axis. Thus in a vertical borehole this will be the dip.

5 The assessment of SCR, RQD and Fracture Spacing excludes artificial fractures.

6 Observations of discernible groundwater entries during the advancement of the exploratory hole are given at the foot of the log and in the Legend column. The absence of a recorded groundwater entry should not, however, be interpreted as a groundwater level below the base of the borehole. Under certain conditions groundwater entry may not be observed, for instance, drilling with water flush or overwater, or boring at a rate faster than water can accumulate in the borehole. Similarly, where water entry observations do exist, groundwater may also be present at higher elevations in the ground than where recorded in the borehole. In addition, where appropriate, water levels in the hole at the time of recovering individual samples or carrying out in situ tests and at shift changes are given in the Records column.

7 The borehole logs present the results of Standard Penetration Tests recorded in the field without correction or interpretation. However, in certain ground conditions (eg high hydraulic head or where very coarse particles are present) some judgement may be necessary in considering whether the results are representative of in situ mass conditions.

REFERENCES

1 BS EN ISO 14688-1:2002+A1 : 2013 : Geotechnical investigation and testing - Identification and classification of soil. Part 1 Identification and description. British Standards Institution

2 BS EN ISO 14689-1 : 2003 : Geotechnical investigation and testing - Identification and classification of rock. Part 1 Identification and description. British Standards Institution

3 BS EN ISO 22476-3:2005+A1 : 2011 : Geotechnical investigation and testing - Field testing. Part 3 Standard penetration test. British Standards Institution

4 BS 5930 : 2015 : Code of practice for ground investigations. British Standards Institution

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref:	AR868
Test Date:	16/08/2017
Report Date:	16/08/2017
File Name:	AR868.spt
Test Operator:	SH

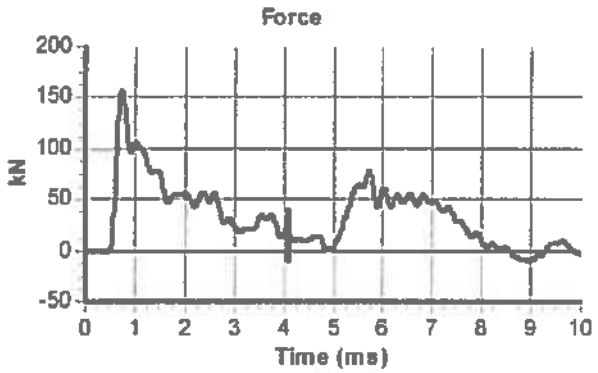
Instrumented Rod Data

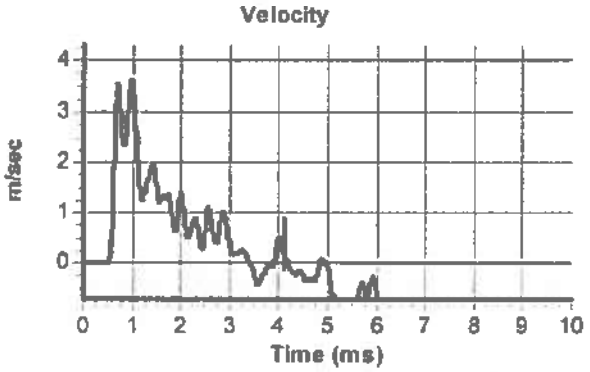
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.0
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	7080
Accelerometer No.2:	11609

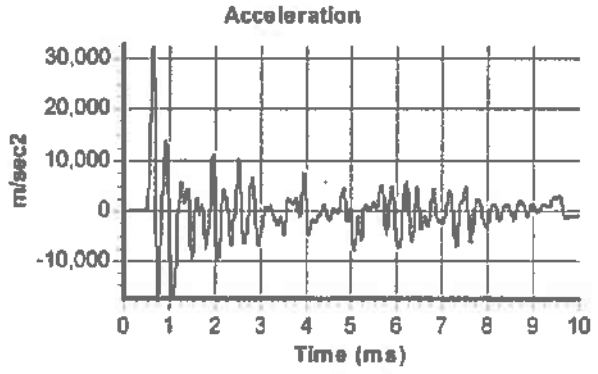
SPT Hammer Information

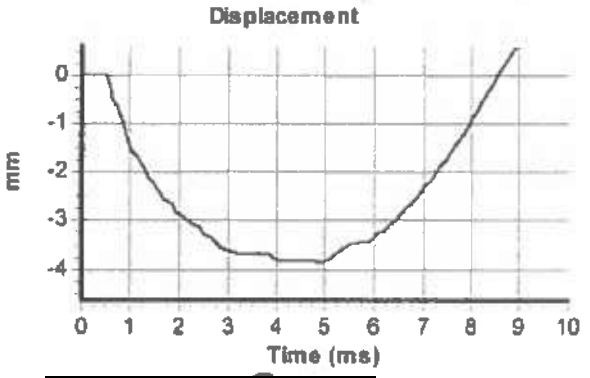
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

Comments / Location
CALIBRATION









Calculations

Area of Rod A (mm2):	905
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	343

Energy Ratio E_r (%): **72**

[redacted]

Signed: S. HOWARTH
Title: FITTER

The recommended calibration interval is 12 months

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX59JP

SPT Hammer Ref:	AR932
Test Date:	19/12/2016
Report Date:	19/12/2016
File Name:	AR932.spt
Test Operator:	SH

Instrumented Rod Data

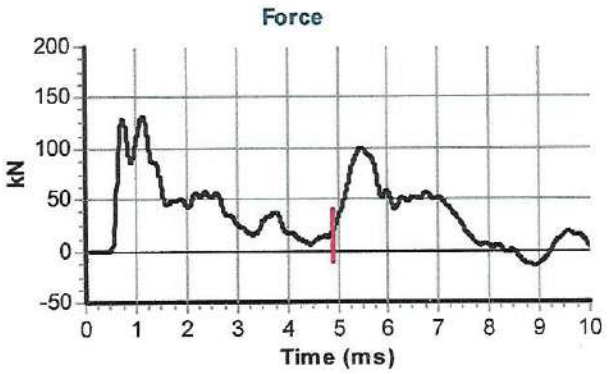
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.1
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	7080
Accelerometer No.2:	7079

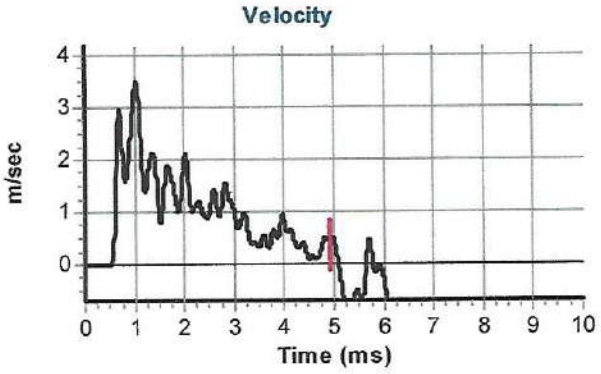
SPT Hammer Information

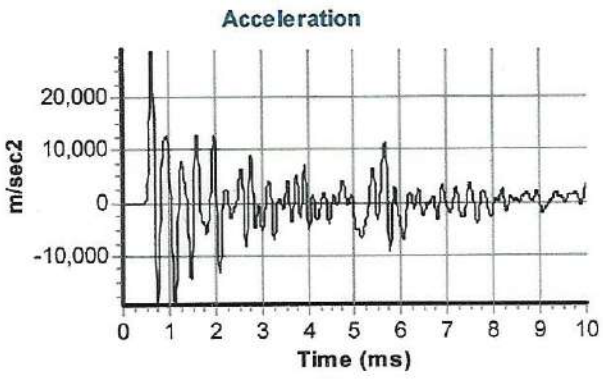
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

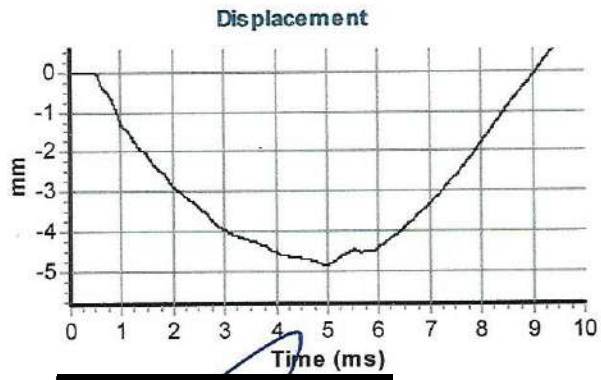
Comments / Location

CALIBRATION









Calculations

Area of Rod A (mm2):	918
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	288

Energy Ratio E_r (%): **61**

[redacted]

Signed: S. HOWARTH

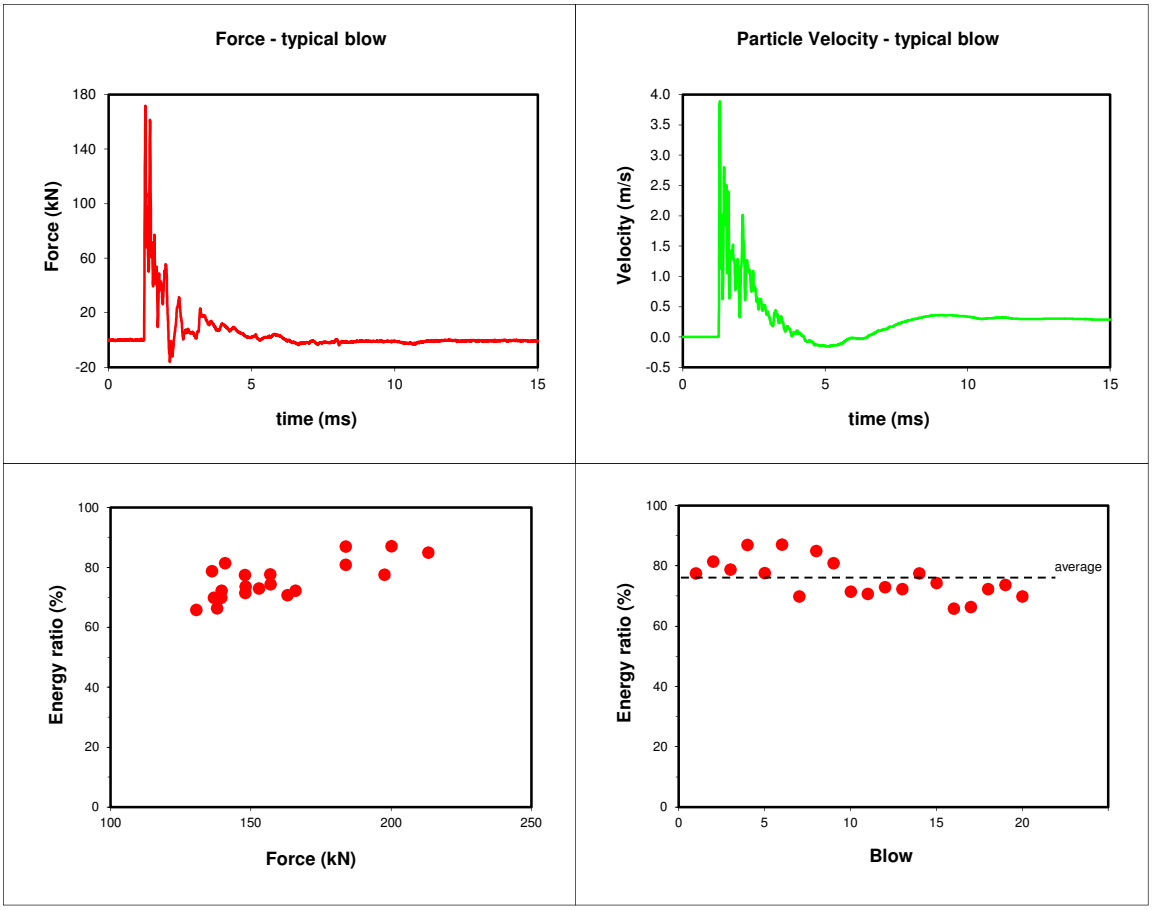
Title: FITTER

The recommended calibration interval is 12 months

Hammer Energy Report

Date of test:	03/01/2018	**Hammer ID:**	AR1121
		Hammer mass (*m*)	63.5 kg
Instrumented rod:		**Fall height (*h*)**	0.76 m
Type	NWY	**Test type:**	SPT
Cross-sectional area (*A*a)	11.30 cm^2	**Manufacturer:**	Archway
Young's modulus (*E*a)	207000 MPa	**Model:**	Automatic Trip Hammer
Length	0.60 m		
		Rig:	Beretta T51
Test rod type:	NWY	**Rig ID:**	R62
		Type:	Rotary
		Foreman:	D Strong

Remarks:
Data obtained from test carried out in BH1, located in the SOCOTEC UK Doncaster yard. Test carried out at depth of 4.96 mbgl, with a total blow count of 20. Energy determined from every blow.



Theoretical energy (E_{theor}) = *m x g x h* = **0.473 kN-m (473 J)**

Measured energy (E_{meas}) *average of 20 blows* = **0.359 kN-m**

Energy ratio = $\frac{E_{meas}}{E_{theor}}$ = **76 %**

Test carried out by: John Holt

Test carried out in accordance with BS EN ISO 22476-3:2005

Signed for issue: [redacted]

Equipment used: SPT Analyzer Serial No. 4032T

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX59JP

SPT Hammer Ref:	AR1777
Test Date:	13/04/2017
Report Date:	13/04/2017
File Name:	AR1777.spt
Test Operator:	SH

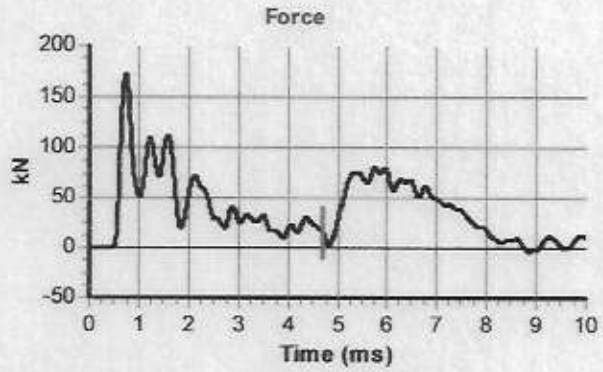
Instrumented Rod Data

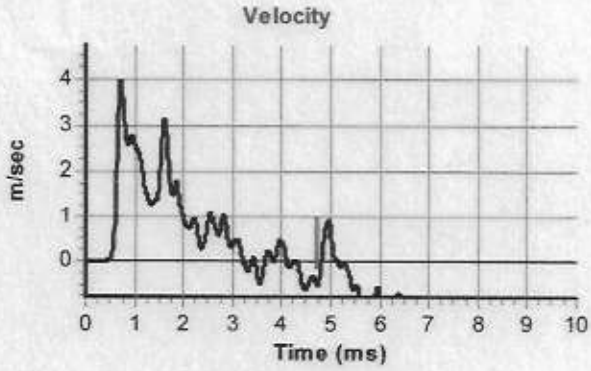
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.0
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	7080
Accelerometer No.2:	11609

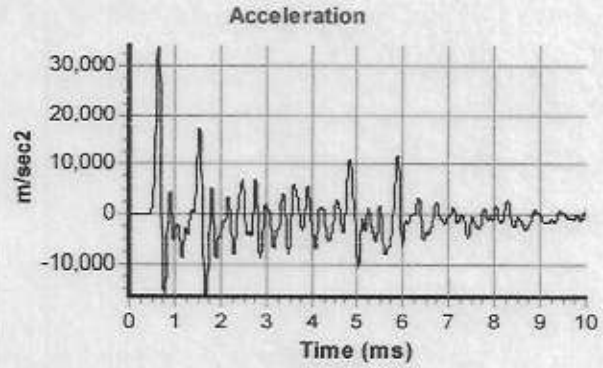
SPT Hammer Information

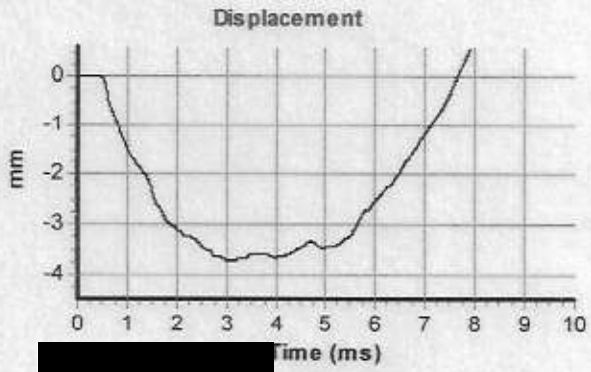
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

Comments / Location
CALIBRATION









Calculations

Area of Rod A (mm2):	905
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	340

Energy Ratio E_r (%): **72**

[redacted]

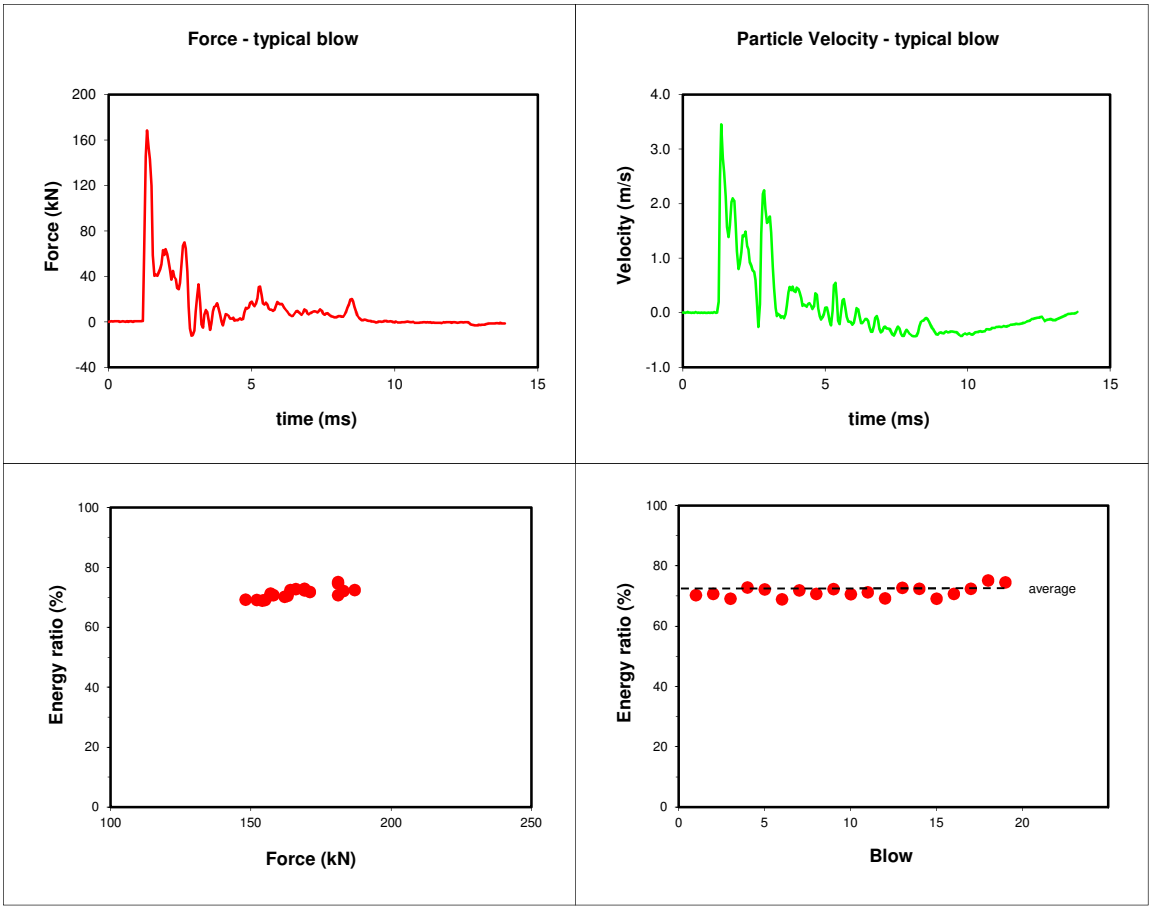
Signed: S. HOWARTH
Title: FITTER

The recommended calibration interval is 12 months

Hammer Energy Report

Date of test:	19/05/2017	**Hammer ID:**	ESG01
		Hammer mass (*m*)	63.5 kg
Instrumented rod:		**Fall height (*h*)**	0.76 m
Type	BW	**Test type:**	SPT
Cross-sectional area (*A*a)	11.30 cm^2	**Manufacturer:**	Archway
Young's modulus (*E*a)	207000 MPa	**Model:**	Automatic Trip Hammer
Length	0.60 m		
		Rig:	Beretta T41
Test rod type:	NWY	**Rig ID:**	R29
		Type:	Rotary
		Foreman:	J Govan

Remarks:
Data obtained from test carried out in BH1, located in ESG Doncaster yard. Test carried out at depth of 5.70 mbgl, with a total blow count of 19. Energy determined from every blow.



Theoretical energy (E_{theor}) = *m x g x h* = **0.473 kN-m (473 J)**

Measured energy (E_{meas}) *average of 19 blows* = **0.340 kN-m**

Energy ratio = $\frac{E_{meas}}{E_{theor}}$ = **72 %**

Test carried out by: John Holt

Test carried out in accordance with BS EN ISO 22476-3:2005

Signed for issue: [redacted]

Equipment used: SPT Analyzer Serial No. 4032T

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX59JP

SPT Hammer Ref:	SM39
Test Date:	29/06/2017
Report Date:	06/07/2017
File Name:	SM39.spt
Test Operator:	SH

Instrumented Rod Data

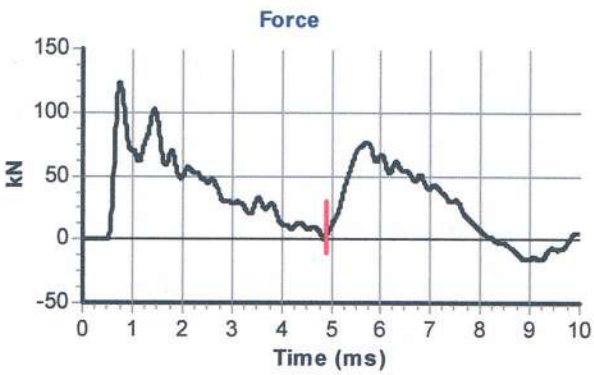
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.0
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	7080
Accelerometer No.2:	11609

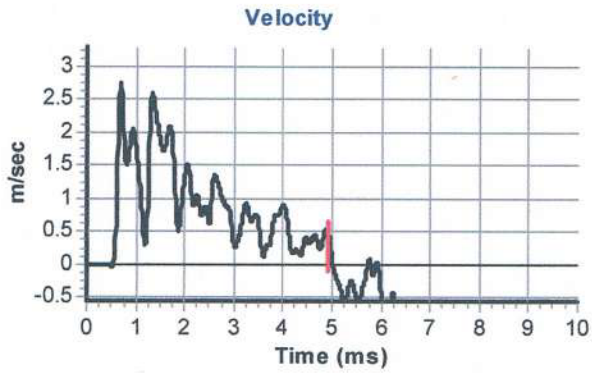
SPT Hammer Information

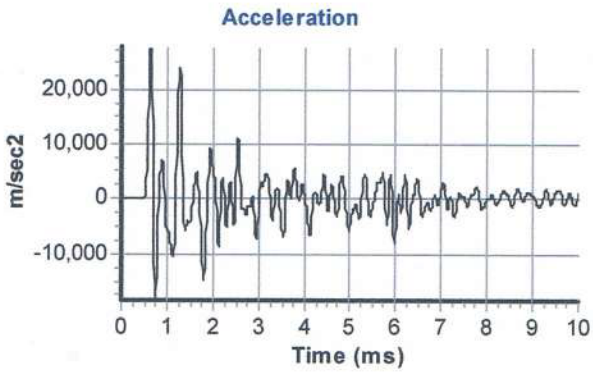
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

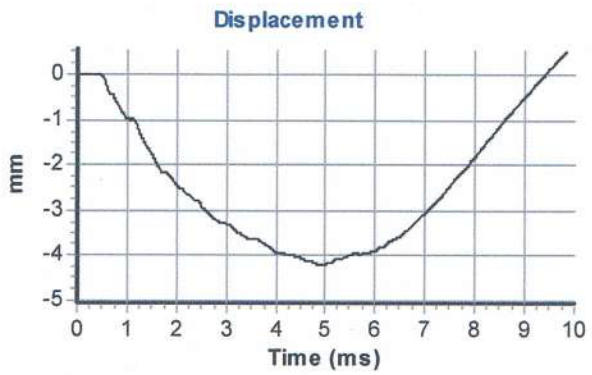
Comments / Location

CALIBRATION









Calculations

Area of Rod A (mm2):	905
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	290

Energy Ratio E_r (%): **61**

[redacted]

Signed: M.GARDNER

Title: FITTER

The recommended calibration interval is 12 months

Borehole Log

SOCOTEC

Drilled	SS	Start	Equipment, Methods and Remarks	Depth from (m)	to (m)	Diameter (mm)	Casing Depth (m)	Ground Level	8.12 mOD
Logged	RT	18/12/2017	Dando 175. Cable percussion boring. SPT Hammer ID: ARI777, Rod type: 54mm Whitworth.	1.20	15.15	150	13.50	Coordinates (m)	E 480231.61
Checked	MS	End						National Grid	N 386503.03
Approved	TC	20/12/2017							

Samples and Tests

Depth	Type & No.	Records	Date / Casing	Time / Water
		0.00-1.20 Hand excavated inspection pit.		
0.30	D 1			
0.50 - 1.00	B 2			
1.20 - 1.65	UT 4	42 blows 100% rec	1.20	Dry
1.20	D 3			
1.65 - 1.85	D 5			
1.85 - 2.30	SPTS	N=13 (3,3/3,4,3,3)	1.50	Dry
1.85 - 2.30	D 6			
			18/12/17 1.50	1620 Dry
			19/12/17 1.50	0800 Dry
3.00 - 3.45	UT 7	28 blows 100% rec	3.00	Dry
3.45 - 3.65	D 8			
3.65 - 4.10	SPTS	N=9 (2,3/2,3,2,2)	3.00	Dry
3.65 - 4.10	D 9			
4.50 - 4.95	UT 10	37 blows 100% rec	4.50	Dry
4.95 - 5.15	D 11			
5.15 - 5.60	SPTS	N=12 (3,3/3,3,3,3)	4.50	Dry
5.15 - 5.60	D 12			
5.80	D 13			
6.00 - 6.45	UT 14	23 blows 100% rec	6.00	Damp
6.45 - 6.65	D 15			
6.65 - 7.10	SPTS	N=8 (2,1/2,2,2,2)	6.00	Damp
6.65 - 7.10	D 16			
7.50 - 7.95	UT 17	17 blows 100% rec	7.50	Damp
7.95 - 8.15	D 18			
8.15 - 8.60	SPTS	N=2 (1,0/1,0,1,0)	8.15	2.10
8.15 - 8.60	D 19			
9.00 - 9.65	UT NR	8 blows No Recovery	9.00	2.00
9.00 - 9.65	B 20			
9.65 - 10.10	SPTS	N=10 (2,2/4,2,2,2)	9.00	3.10
9.65 - 10.10	D 21			

Strata Description

Main	Detail	Depth	Level	(Thickness)
Grey slightly gravelly sandy SILT. Gravel is subangular fine to medium of clinker and brick. (MADE GROUND - Pulverised Fuel Ash)		1.20	+6.92	(1.20)
Grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		4.40	+3.72	(3.20)
Soft to firm grey and greyish brown, mottled orangish brown, slightly sandy silty CLAY with frequent gravel size pockets of black silt. (Possible ALLUVIUM)		5.80	+2.32	(1.40)
Soft to firm orangish brown, mottled dark greyish brown, slightly sandy silty CLAY with frequent pockets (<5mm) of orange sand. Frequent pockets of dark grey silt. (ALLUVIUM)		6.30	+1.82	(0.50)
Soft brown, mottled grey, slightly sandy SILT with frequent pockets (<1mm) and partings (<2mm) of orange fine sand. (ALLUVIUM)		7.60	+0.52	(1.30)
Soft greyish brown slightly sandy SILT. (ALLUVIUM)		10.00	-1.88	(2.40)

Legend | Backfill

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)
1	6.80	Rose to 6.10 m after 20 minutes.	12.10

Depth Related Remarks

Depths (m)	Remarks
8.00 - 12.10	Water added to assist boring.

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

AGS

Scale 1:50

05/02/2018 12:27:37

Project	WEST BURTON C POWER STATION
Project No.	A7102-17
Carried out for	Firbeck Construction Limited

Borehole **WS101**

Borehole Log

SOCOTEC

Drilled	SS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	8.12 mOD
Logged	RT	18/12/2017	Dando 175.	1.20	15.15	150	13.50	**Coordinates (m)**	E 480231.61
Checked	MS	**End**	Cable percussion boring.					**National Grid**	N 386503.03
Approved	TC	20/12/2017	SPT Hammer ID: ARI777, Rod type: 54mm Whitworth.						

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date / Time Casing	Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
10.50 - 10.95 10.50 - 10.95	SPTS D 22	N=24 (2,3/4,6,6,8)	10.50	4.10	Medium dense reddish brown slightly gravelly silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium of flint and mudstone. (RIVER TERRACE DEPOSITS)		(1.30)		
11.40	D 23				Greyish brown slightly sandy GRAVEL. Gravel is predominantly angular to subangular fine to coarse of mudstone and occasionally subrounded fine to coarse of sandstone. (RIVER TERRACE DEPOSITS)		11.30 -3.18 (0.80)		
12.00 - 12.45 12.00 - 12.45	SPTS D 24	N=10 (2,2/3,3,2,2)	12.00 19/12/17 12.00	3.20 1610 3.20	Soft to firm reddish brown, bluish grey, dark brown and grey, silty CLAY. (MERCIA MUDSTONE - Class Dc)		12.10 -3.98		
13.00	D 25		20/12/17 12.00	0810 6.10			(2.60)		
13.50 - 13.95 13.50 - 13.95	SPTS D 26	N=10 (2,2/2,3,2,3)	13.50	8.80					
14.50	D 27								
14.70 - 15.15 14.70 - 15.15	SPTS D 28	N=49 (3,3/4,9,11,25)	13.50 20/12/17 13.50	9.10 1300 9.10	Firm reddish brown, mottled brownish grey and grey, silty CLAY with frequent powdery white gypsum. (MERCIA MUDSTONE - Class Dc)		14.70 -6.58 (0.45)		
					END OF EXPLORATORY HOLE		15.15 -7.03		

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:37

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS101

Borehole Log

SOCOTEC

Drilled	JJ	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	7.29 mOD
Logged	RT	15/12/2017	Dando 3000.	1.20	10.88	150	8.50	**Coordinates (m)**	E 480348.04
Checked	MS	**End**	Cable percussion boring.					**National Grid**	N 386411.84
Approved	TC	18/12/2017	SPT Hammer ID: AR932, Rod type: 54mm Whitworth.						

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date / Casing	Time / Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
0.00 - 0.30	B 1	0.00-1.20 Hand excavated inspection pit.			Dark grey slightly sandy SILT with some angular to subangular fine to coarse gravel of ash to 0.30m. (MADE GROUND - Pulverised Fuel Ash)				
0.30	D 2						(1.20)		
1.20 - 1.65	SPTS	N=24 (4,4/5,6,6,7)		Dry	Light brownish grey slightly sandy SILT with rare gravel size pockets of yellowish brown fine sand. (MADE GROUND - Pulverised Fuel Ash)		1.20 +6.09		
1.20 - 1.65	D 3								
							(2.80)		
3.00 - 3.45	SPTS	N=4 (1,1/1,1,1,1)	3.00	Dry					
3.00 - 3.45	D 5								
3.00 - 3.45	B 4								
					Soft orangish brown, mottled reddish brown, silty CLAY with lenses of orangish brown fine sand (<1mm) and rare black rootlet relicts. (ALLUVIUM)		4.00 +3.29		
4.50 - 4.95	UT 6	41 blows 100% rec	4.00	Dry					
4.90 - 5.35	SPTS	N=25 (4,6/6,6,6,7)	4.50	Dry					
4.90 - 5.35	D 8						(2.00)		
4.95	D 7								
			15/12/17 4.50	1600 Dry					
6.00 - 6.45	SPTS	N=3 (0,0/0,1,1,1)	18/12/17 4.50	0800 Dry	Brown slightly sandy SILT with occasional gravel size pockets of orange fine sand. (ALLUVIUM)		6.00 +1.29		
6.00 - 6.45	D 10								
6.00	B 9								
							(2.50)		
7.50 - 7.95	SPTS	N=4 (0,0/1,1,1,1)	7.50	Dry		7.50 reddish brown, brownish grey with orange fine sand.			
7.50 - 7.95	D 12					7.95 dark greyish brown silt			
7.50	B 11								
8.50	D 13				Firm reddish brown, mottled bluish grey, silty CLAY with lenses of bluish grey relict mudstone and occasional bluish grey veins. Rare angular coarse gravel size fragments of bluish grey mudstone. (MERCIA MUDSTONE - Class Db)		8.50 -1.21		
9.00 - 9.45	SPTS	N=50 (5,6/9,12,14,15)	9.00	Dry					
9.00 - 9.45	D 14						(2.38)		

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks
0.00 - 10.88	No groundwater encountered during drilling.

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:37

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS102

Borehole Log

SOCOTEC

Drilled	JJ	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	7.29 mOD
Logged	RT	15/12/2017	Dando 3000.	1.20	10.88	150	8.50	**Coordinates (m)**	E 480348.04
Checked	MS	**End**	Cable percussion boring.					**National Grid**	N 386411.84
Approved	TC	18/12/2017	SPT Hammer ID: AR932, Rod type: 54mm Whitworth.						

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date / Casing	Time / Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
10.50 - 10.88	SPTS	50 (6,7/9,15,26 for 75mm)		Dry	Firm reddish brown, mottled bluish grey, silty CLAY with lenses of bluish grey relict mudstone and occasional bluish grey veins. Rare angular coarse gravel size fragments of bluish grey mudstone.				
10.50 - 10.88	D 16								
10.50	B 15		18/12/17 8.50	1600 Dry	(MERCIA MUDSTONE - Class Db)				
					END OF EXPLORATORY HOLE		10.88 (-3.59)		

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:37

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole WS102

Borehole Log

SOCOTEC

Drilled	JJ	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.22 mOD
Logged	RT/DP	13/12/2017	Dando 3000. Cable percussion boring. SPT Hammer ID: AR932, Rod type: 54mm Whitworth.	1.20	15.00	150	13.50	**Coordinates (m)**	E 480254.22
Checked	MS	**End**						**National Grid**	N 386326.59
Approved	TC	14/12/2017							

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
0.00 - 0.80	B 2	0.00-1.20 Hand excavated inspection pit.			Soft to firm reddish brown slightly sandy CLAY with frequent rootlets to 0.20m. (MADE GROUND)				
0.40	D 1						(0.80)		
0.80 - 1.20	B 4						0.80 +12.42		
1.00	D 3				Soft to firm dark brownish grey silty CLAY with frequent rootlets and occasional roots (<10mm). (MADE GROUND)				
1.20 - 1.65	SPTS	N=4 (1,1/1,1,1,1)	1.20	Dry					
1.20 - 1.65	D 5						(1.00)		
							1.80 +11.42		
					Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)				
3.00 - 3.50	UT 6	87 blows 100% rec	3.00	Dry					
3.50 - 3.78	SPTS	50 (15,15/25,25 for 50mm)	3.00	Dry					
3.50	D 7								
3.50 - 3.95	D 8								
4.50 - 5.00	UT 9	36 blows 100% rec	4.50	Dry					
5.00 - 5.45	SPTS	N=13 (2,3/3,3,3,4)	5.00	Dry					
5.00	D 10								
5.00 - 5.45	D 11								
6.00 - 6.50	UT 12	14 blows 100% rec	6.00	Dry			(8.50)		
6.50 - 6.95	SPTS	N=17 (2,2/3,4,5,5)	6.00	Dry					
6.50	D 13								
6.50 - 6.95	D 14		13/12/17	1630					
			6.00	Dry					
			14/12/17	0800					
			6.00	Dry					
7.50 - 8.00	UT 15	87 blows 100% rec	7.50	Dry					
8.00 - 8.45	SPTS	N=24 (9,9/7,7,5,5)	8.00	Dry					
8.00	D 16								
8.00 - 8.45	D 17								
9.00 - 9.50	B 18								
9.50 - 9.95	SPTS	N=13 (3,3/3,3,4,3)	9.00	Dry					
9.50 - 10.00	D 19								

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks
0.00 - 15.00	No water encountered during drilling.

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:38

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS103

Borehole Log

SOCOTEC

Drilled	JJ	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.22 mOD
Logged	RT/DP	13/12/2017	Dando 3000. Cable percussion boring. SPT Hammer ID: AR932, Rod type: 54mm Whitworth.	1.20	15.00	150	13.50	**Coordinates (m)**	E 480254.22
Checked	MS	**End**						**National Grid**	N 386326.59
Approved	TC	14/12/2017							

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
					Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		10.30 +2.92		
10.50 - 11.00 10.50 - 11.00	UT NR B 20	19 blows No Recovery	10.50	Dry	Orangish brown, mottled light brown, SILT. (ALLUVIUM)				
11.00 - 11.45 11.00 - 11.45	SPTS D 21	N=13 (2,3/3,3,3,4)	10.50	Dry		11.00-11.45 slightly sandy	(1.70)		
12.00 - 12.50 12.00 - 12.50	UT NR B 22	23 blows No Recovery	12.00	Dry	Dark grey, mottled orangish brown, slightly sandy SILT. (ALLUVIUM)		12.00 +1.22		
12.50 - 12.95 12.50 - 12.95	SPTS D 23	N=14 (2,2/3,3,4,4)	12.00	Dry		12.50-14.50 no mottling	(2.50)		
13.50 - 14.00 13.50 - 14.00	UT NR B 24	31 blows No Recovery	13.50	Dry					
14.00 - 14.45	SPTS	N=28 (3,3/3,7,9,9)	13.50	Dry					
14.50	D 25				Firm to stiff reddish brown, mottled light bluish grey, silty CLAY. (MERCIA MUDSTONE - Class Dc)		14.50 -1.28		
			14/12/17 13.50	1630 Dry			(0.50)		
					END OF EXPLORATORY HOLE		15.00 -1.78		

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:38

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS103

Borehole Log

SOCOTEC

Drilled	LM	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	12.79 mOD
Logged	RT/DP	13/12/2017	Dando 175.	1.20	15.00	150	14.50	**Coordinates (m)**	E 480272.49
Checked	MS	**End**	Cable percussion boring.					**National Grid**	N 386292.43
Approved	TC	15/12/2017	SPT Hammer ID: AR1777, Rod type: 54mm Whitworth.						

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date / Casing	Time / Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
		0.00-1.20 Hand excavated inspection pit.			Firm brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of brick, concrete and sandstone. (MADE GROUND)		(0.50)		
0.30	D 1								
0.50	B 2				Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		0.50 +12.29		
1.00	D 3								
1.20 - 1.65	UT 5	60 blows 89% rec	1.20	Dry					
1.20	B 4								
1.70 - 2.15	SPTS	N=21 (2,4/5,4,5,7)	1.50	Dry					
1.70	D 6								
1.70	D 7								
2.20	D 8								
2.70 - 3.15	UT 9	70 blows 100% rec	2.70	Dry					
3.20	D 10								
			14/12/17 2.50	0830 Dry					
			13/12/17 2.50	1600 Dry					
4.20 - 4.65	UT 12	40 blows 100% rec							
4.70 - 5.15	SPTS	N=6 (2,1/2,1,1,2)	4.50	Dry					
4.70	D 13								
4.70	D 14								
5.20	D 15								
5.70 - 6.15	UT 16	30 blows 100% rec	5.70	Dry		5.70 slightly gravelly			
6.20 - 6.65	SPTS	N=39 (4,9/10,9,10,10)	6.00	Dry					
6.20	D 17								
6.20	D 18								
6.70	D 19						(12.50)		
7.20 - 7.65	UT 20	60 blows 100% rec	7.20	Dry					
7.70 - 8.15	SPTS	N=34 (7,7/7,9,9,9)	7.50	Dry					
7.70	D 21								
7.70	D 22								
8.20	D 23								
8.70 - 9.15	UT 24	20 blows 100% rec	8.70	8.40					
9.20 - 9.65	SPTS	N=15 (2,3/2,4,4,5)	9.00	Damp					
9.20	D 25	No sample							
9.20	D 26								
9.70	D 27								

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)
1	8.70	Rose to 8.40 m after 20 minutes. Medium inflow	

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:38

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS104

Borehole Log

SOCOTEC

Drilled	LM	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	12.79 mOD
Logged	RT/DP	13/12/2017	Dando 175.	1.20	15.00	150	14.50	**Coordinates (m)**	E 480272.49
Checked	MS	**End**	Cable percussion boring.					**National Grid**	N 386292.43
Approved	TC	15/12/2017	SPT Hammer ID: AR1777, Rod type: 54mm Whitworth.						

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date / Casing	Time / Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
					Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)				
10.70 - 11.15	SPTS	N=15 (2,2/3,3,3,6)	10.50	Damp					
10.70	D 28								
11.20	D 29								
12.20 - 12.65	UT 30	20 blows 100% rec	12.00	Damp					
12.70 - 13.30	SPTS	N=2 (1,0/0,0,1,1) SW=150	12.00	Dry					
12.70	D 31		14/12/17	1600					
12.70	D 32		12.00	Dry					
			15/12/17	0800	Firm dark reddish brown, mottled light bluish grey, silty CLAY. (MERCIA MUDSTONE - Class Dc)		13.00 -0.21		
			12.00	12.20					
13.50	D 33						(2.00)		
14.20 - 14.65	UT 34	60 blows 100% rec	14.20	Damp					
14.70 - 15.15	SPTS	N=14 (2,2/2,4,4,4)	14.50	Damp					
			15/12/17	1225					
			14.50	Damp					
					END OF EXPLORATORY HOLE		15.00 -2.21		

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:38

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS104

Borehole Log

SOCOTEC

Drilled	JJ	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.13 mOD
Logged	RT	11/12/2017	Dando 3000.	1.20	15.45	150	13.00	**Coordinates (m)**	E 480251.34
Checked	MS	**End**	Cable percussion boring.					**National Grid**	N 386272.33
Approved	TC	12/12/2017	SPT Hammer ID: AR932, Rod type: 54mm Whitworth.						

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date / Casing	Time / Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
		0.00-1.20 Hand excavated inspection pit.			TOPSOIL. (Driller's description)	0.00-0.30 frequent rootlets	(0.40)		
					Firm brown slightly sandy CLAY. (MADE GROUND)		0.40 +12.73		
							(0.40)		
					Soft dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		0.80 +12.33		
1.20 - 1.65 1.20 - 1.65	SPTS D 1	N=7 (2,2/1,2,2,2)	1.20	Dry					
3.00 - 3.45	UT 2	41 blows 100% rec	3.00	Dry					
3.45 - 3.90 3.50 - 3.95 3.55	D 4 SPTS D 3	N=7 (2,2/1,2,2,2)	3.45	Dry					
4.50 - 4.80	UT 5	20 blows 100% rec	4.00 11/12/17 4.00	Dry 1700 Dry		4.50 occasional pockets (<2mm) of black silt			
4.90 - 5.35 4.90 - 5.35	SPTS D 6	N=3 (0,0/0,1,1,1)	12/12/17 4.00	0800 Dry					
							(10.10)		
6.00 - 6.45	UT 7	21 blows 80% rec	6.00	Dry					
6.45 - 6.90 6.45	SPTS D 8	N=27 (3,4/5,6,8,8)	6.45	Dry					
7.50 - 7.95 7.50 - 7.95 7.50 7.50	SPTS UT NR D 9 B 11	N=3 (0,0/0,1,1,1) 15 blows No Recovery	7.50 7.50	Dry Dry					
9.00 - 9.45 9.00 9.00 - 9.45	SPTS D 10 D 15	N=8 (0,0/0,2,3,3)	9.00	Dry		9.00-9.45 rare subangular fine gravel of ash			

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks
0.00 - 15.45	No groundwater encountered during drilling.

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:39

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS105

Borehole Log

SOCOTEC

Drilled	JJ	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.13 mOD
Logged	RT	11/12/2017	Dando 3000.	1.20	15.45	150	13.00	**Coordinates (m)**	E 480251.34
Checked	MS	**End**	Cable percussion boring.					**National Grid**	N 386272.33
Approved	TC	12/12/2017	SPT Hammer ID: AR932, Rod type: 54mm Whitworth.						

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date / Time Casing / Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
				Soft dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)				
10.50 - 10.95	UT 16	51 blows 100% rec	10.50 Dry					
10.90 - 11.35	SPTS	N=25 (4,4/5,5,7,8)	10.90 Dry	Firm dark greyish brown, mottled reddish brown, silty CLAY with rare black silt veins (1x10mm) and rare pockets (<2mm) of lignite. Slight organic odour. (ALLUVIUM)	10.80-10.90 occasional gravel size pockets of grey fine sand, rare black silt and rare reddish brown fine sand	10.90 +2.23		
10.90	D 17					(1.60)		
10.90 - 11.35	D 18							
12.00 - 12.45	UT NR	40 blows No Recovery	12.00 Dry					
12.00 - 12.45	D 20							
12.00 - 12.45	B 21							
				Soft dark brown slightly sandy SILT. (ALLUVIUM)		12.50 +0.63		
						(1.30)		
13.50 - 13.95	SPTS	N=34 (6,6/8,8,9,9)	13.00 Dry					
13.50	UT NR	21 blows No Recovery	13.00 Dry					
13.50 - 13.95	D 24							
13.50 - 13.95	B 23							
				Firm reddish brown, mottled dark brown and greyish blue, silty CLAY. (MERCIA MUDSTONE - Class Dc)		13.80 -0.67		
						(1.65)		
15.00 - 15.45	SPTS	N=29 (6,6/5,8,8,8)	13.00 Dry					
15.00 - 15.45	D 25		12/12/17 1700					
			13.00 Dry					
				END OF EXPLORATORY HOLE		15.45 -2.32		

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:39

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS105

Borehole Log

SOCOTEC

Drilled	DD	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.20 mOD
Logged	RT	11/12/2017	Dando 175. Cable percussion boring.	1.20	15.00	150	15.00	**Coordinates (m)**	E 480244.24
Checked	MS	**End**	SPT Hammer ID: ESG01, Rod type: 54mm Whitworth.					**National Grid**	N 386241.68
Approved	TC	12/12/2017							

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
		0.00-1.20 Hand excavated inspection pit.			Firm brown slightly sandy CLAY with rare subangular fine to medium gravel size fragments of ash and brick. Frequent rootlets to 0.20m. (MADE GROUND)		(0.60)		
0.20	D 1								
0.60	D 2				Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)	0.60-1.00 rare subangular to subrounded fine to medium gravel of ash/clinker	0.60 +12.60		
0.60 - 1.00	B 3								
1.20 - 1.65	SPTS	N=16 (5,6/6,4,3,3)	1.20	Dry					
1.20	D 4								
3.00 - 3.45	UT 5	17 blows 100% rec	3.00	Dry					
3.50 - 3.95	SPTS	N=14 (4,9/4,4,3,3)	3.50	Dry					
3.50	D 6								
						3.90-3.95 firm reddish brown slightly gravelly clay. Gravel is subangular fine to medium of sandstone			
4.50 - 4.95	UT NR	23 blows No Recovery	4.50	Damp					
4.50 - 5.00	B 7								
5.00 - 5.45	SPTS	N=14 (4,4/4,3,3,4)	5.00	Damp					
5.00	D 8								
			11/12/17 5.00	1731 Damp			(9.60)		
5.50	D 9		12/12/17 5.00	0752 Damp		5.50 firm reddish brown slightly gravelly clay. Gravel is subangular fine to medium of sandstone			
5.90	D 10								
6.00 - 6.45	UT 11	24 blows 100% rec	6.00	Dry					
6.50 - 6.95	SPTS	N=15 (2,2/3,3,4,5)	6.50	Dry					
6.50	D 12								
6.50	D 13								
7.50 - 7.95	UT 14	27 blows 100% rec	7.50	Dry					
8.00 - 8.45	SPTS	N=17 (2,3/4,4,4,5)	8.00	Dry					
8.00	D 15								
8.00	D 16								
9.00 - 9.45	UT NR	52 blows No Recovery	9.00	Dry					
9.00 - 9.50	B 18								
9.10	D 17					9.10-9.50 dark grey gravelly silty fine to coarse sand. Gravel is subangular fine to medium of clinker			
9.50 - 9.95	SPTS	N=15 (4,4/4,4,4,3)	9.50	8.90					
9.50	D 19								

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)
1	9.10	Rose to 7.70 m after 20 minutes. Medium inflow	9.10

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:39

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS106

Borehole Log

SOCOTEC

Drilled	DD	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.20 mOD
Logged	RT	11/12/2017	Dando 175.	1.20	15.00	150	15.00	**Coordinates (m)**	E 480244.24
Checked	MS	**End**	Cable percussion boring.					**National Grid**	N 386241.68
Approved	TC	12/12/2017	SPT Hammer ID: ESG01, Rod type: 54mm Whitworth.						

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date / Time Casing	Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
10.20	D 20				Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		10.20 +3.00		
10.50 - 10.95	UT 21	37 blows 100% rec	10.50	Dry	Soft reddish brown slightly sandy clayey SILT. (ALLUVIUM)				
11.00 - 11.45 11.00	SPTS D 22	N=7 (1,1/1,2,2,2)	11.00	Dry		10.95 very soft reddish brown mottled grey silty clay	(1.80)		
12.00 - 12.45	UT 23	37 blows 100% rec	12.00	Dry			12.00 +1.20		
12.50 - 12.95 12.50 12.50	SPTS D 24 D 25	N=28 (3,3/5,7,8,8)	12.50	Dry	Soft to firm dark brown, mottled reddish brown, silty CLAY with frequent lenses of reddish brown silt. (MERCIA MUDSTONE - Class Dc)				
13.50 - 13.95	UT 26	89 blows 56% rec	13.50	Dry			(3.00)		
14.00 - 14.45 14.00	SPTS D 27	N=26 (3,3/4,7,7,8)	14.00	Dry					
			12/12/17 15.00	1707 Dry					
					END OF EXPLORATORY HOLE		15.00 -1.80		

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:39

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS106

Borehole Log

SOCOTEC

Drilled	SS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.16 mOD
Logged	RT	05/12/2017	Dando 175. Cable percussion boring.	1.20	15.45	150	14.20	**Coordinates (m)**	E 480327.97
Checked	MS	**End**	SPT Hammer ID: ARI777, Rod type: 54mm Whitworth.					**National Grid**	N 386173.12
Approved	TC	06/12/2017							

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
		0.00-1.20 Hand excavated inspection pit.			Soft dark grey slightly gravelly SILT. Gravel is subangular fine to coarse of concrete. Occasional soft dark brown clay pockets (<25mm). (MADE GROUND)		(0.50)		
0.50	D 1				Dark greyish brown, locally mottled orangish brown, slightly sandy SILT. (MADE GROUND)		0.50 +12.66		
1.00	D 2						(1.15)		
1.20 - 1.65	UT 3	100 blows 100% rec	1.20	Dry					1
1.65 - 1.85	D 4				Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		1.65 +11.51		
1.85 - 2.14	SPTS	34 (7,10/12,22 for 70mm)	1.50	Dry					
1.85 - 2.15	D 5								
3.00 - 3.45	UT 6	32 blows 100% rec	3.00	Dry			(2.75)		
3.45 - 3.65	D 7								
3.65 - 4.10	SPTS	N=16 (3,4/4,4,4,4)	3.00	Dry					
3.65 - 4.10	D 8								
4.40	D 9						4.40 +8.76		
4.50 - 4.95	UT 10	34 blows 100% rec	4.50	Dry	Firm reddish brown, mottled dark brown, slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of sandstone and clinker. (MADE GROUND)		(0.55)		
4.95 - 5.15	D 11				Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)	5.00-5.15 rare fine to medium gravel of clinker	4.95 +8.21		
5.15 - 5.60	SPTS	N=20 (3,4/5,5,6,4)	4.50	Dry					
5.15 - 5.60	D 12								
			05/12/17	1600					
			6.00	Dry					
6.00 - 6.45	UT 13	52 blows 100% rec							
			06/12/17	0750					
			6.00	Dry					
6.45 - 6.65	D 14					6.45-6.65 occasional pockets (<10mm) of soft reddish brown clay			
6.65 - 7.10	SPTS	N=12 (5,3/3,3,3,3)	6.00	Dry					
6.65 - 7.10	D 15								
7.50 - 7.95	UT 16	28 blows 100% rec	7.50	Dry					
7.95 - 8.10	D 17								
8.10 - 8.55	SPTS	N=12 (4,3/3,3,3,3)	7.50	Dry					
8.10 - 8.55	D 18						(6.75)		
9.00 - 9.45	UT 19	48 blows 100% rec	9.00	Damp		9.00-9.45 rare subangular fine to medium gravel of lignite			
9.45 - 9.65	D 20								
9.65 - 10.10	SPTS	N=17 (4,3/5,4,5,3)	9.00	1.20					1
9.65 - 10.10	D 21								

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)
1	9.60	Rose to 1.20 m after 20 minutes.	12.20

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:39

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS107

Borehole Log

SOCOTEC

Drilled	SS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.16 mOD
Logged	RT	05/12/2017	Dando 175.	1.20	15.45	150	14.20	**Coordinates (m)**	E 480327.97
Checked	MS	**End**	Cable percussion boring.					**National Grid**	N 386173.12
Approved	TC	06/12/2017	SPT Hammer ID: ARI777, Rod type: 54mm Whitworth.						

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
					Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)				
10.50 - 11.15	UT NR	16 blows No Recovery	10.50	Damp					
11.00	D 22								
11.15 - 11.60	SPTS	N=10 (1,2/3,2,3,2)	10.50	Damp					
11.15 - 11.60	D 23								
11.70	D 24						11.70 +1.46		
					Very soft reddish brown, mottled grey, slightly sandy clayey SILT. (Possible ALLUVIUM)		(0.30)		
12.00 - 12.45	UT 25	22 blows 100% rec	12.00	Damp			12.00 +1.16		
					Soft dark brown SILT with occasional pockets (<5mm) of lignite. (ALLUVIUM)				
12.45 - 12.65	D 26					12.45-12.65 rare subangular fine to medium gravel of sandstone			
12.65 - 13.10	SPTS	N=13 (2,3/3,3,3,4)	12.00	Damp			(1.40)		
12.65 - 13.10	D 27								
13.40	D 28								
13.50 - 13.95	SPTS	N=16 (2,3/4,4,4,4)	13.50	10.00	Soft to firm reddish brown, mottled light greyish blue, silty CLAY with occasional grey silt veins. (MERCIA MUDSTONE - Class Dc)	13.40 occasional gravel size pockets of fine to coarse sand, occasional subangular fine to medium gravel of sandstone 13.50-14.00 occasional gravel size pockets of grey fine sand	13.40 -0.24		
13.50 - 13.95	D 29								
14.50	D 30						(2.05)		
15.00 - 15.45	SPTS	N=17 (3,3/4,4,4,5)	14.20	Dry					
15.00 - 15.45	D 31								
			06/12/17	1500					
			14.20	Dry					
					END OF EXPLORATORY HOLE		15.45 -2.29		

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)
2	13.10	Rose to 10.05 m after 20 minutes.	13.70

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:39

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS107

Sheet 2 of 2

Borehole Log

SOCOTEC

Drilled	SS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.48 mOD
Logged	RT	07/12/2017	Dando 175.	0.00	14.60	150	13.50	**Coordinates (m)**	E 480245.66
Checked	MS	**End**	Cable percussion boring.					**National Grid**	N 386190.35
Approved	TC	07/12/2017	SPT Hammer ID: ARI777, Rod type: 54mm Whitworth.						

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
0.00 - 0.50	B 1	0.00-1.20 Hand excavated inspection pit.			TOPSOIL.		(0.20) 0.20 +13.28		
0.50 - 1.00	B 2				Firm brown slightly sandy CLAY with frequent rootlets. (MADE GROUND)	0.50-1.00 occasional pockets (<2mm) of soft reddish brown clay	(0.40) 0.60 +12.88		
1.20 - 1.65	UT 3	98 blows 100% rec	1.20	Dry	Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)				
1.65 - 1.85	D 4					1.65-1.85 slightly gravelly. Gravel is subangular fine of pulverised fuel ash			
1.85 - 2.30	SPTS	N=36 (5,7/8,9,11,8)	1.20	Dry					
1.85 - 2.30	D 5								
3.00 - 3.45	UT 6	22 blows 100% rec	3.00	Dry					
3.45 - 3.65	D 7								
3.65 - 4.10	SPTS	N=13 (3,3/4,3,3,3)	3.00	Dry					
3.65 - 4.10	D 8								
4.50 - 4.95	UT 9	15 blows 100% rec	4.50	Dry					
4.95 - 5.15	D 10					4.95-5.15 firm reddish brown slightly sandy slightly gravelly clay. Gravel is angular to subangular fine to medium of sandstone. Occasional gravel size pockets of light grey silt.			
5.15 - 5.60	SPTS	N=42 (4,5/5,5,10,22)	4.50	Dry					
5.15 - 5.60	D 11								
6.00 - 6.45	UT 12	88 blows 100% rec	6.00	Dry		5.15-5.60 firm grey slightly sandy silty clay. Occasional gravel size pockets of grey and greenish grey fine sand/silt. Rare fine gravel size fragments of brick	(10.90)		
6.45 - 6.65	D 13					6.45-6.65 occasional coarse gravel size fragments of slightly cemented slightly sandy silt			
6.65 - 7.10	SPTS	N=31 (5,5/7,8,9,7)	6.00	Dry					
6.65 - 7.10	D 14								
7.50 - 8.15	UT NR	10 blows No Recovery	7.50	Damp					
7.90	D 15								
8.15 - 8.60	SPTS	N=1 (1,0/0,0,1,0)	8.15	Damp					
8.50	D 16								
9.00 - 9.45	SPTS	N=10 (1,2/2,3,3,2)	9.00	Damp					
9.00 - 9.45	D 17								

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:40

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS108

Borehole Log

SOCOTEC

Drilled	SS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.48 mOD
Logged	RT	07/12/2017	Dando 175.	0.00	14.60	150	13.50	**Coordinates (m)**	E 480245.66
Checked	MS	**End**	Cable percussion boring.					**National Grid**	N 386190.35
Approved	TC	07/12/2017	SPT Hammer ID: ARI777, Rod type: 54mm Whitworth.						

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
					Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)				
10.50 - 10.95	SPTS	N=7 (1,0/2,1,2,2)	10.50	8.70					
10.50 - 10.95	D 18								
11.50	D 19						11.50 +1.98		
					Very soft reddish brown, mottled grey, slightly sandy clayey SILT with occasional pockets of orange fine sand. (ALLUVIUM)				
12.00 - 12.45	UT 20	15 blows 100% rec	12.00	Damp			(1.40)		
12.45 - 12.65	D 21								
12.65 - 13.10	SPTS	N=18 (3,3/3,5,5,5)	12.00	Damp					
12.65 - 13.10	D 22								
					Firm reddish brown, mottled bluish grey silty CLAY. (MERCIA MUDSTONE - Class Dc)		12.90 +0.58		
13.50 - 13.95	UT 23	9 blows 100% rec	13.50	Damp			(1.70)		
13.95 - 14.10	D 24								
14.10 - 14.55	SPTS	N=13 (2,2/3,2,3,5)	13.50	Damp					
14.10 - 14.60	D 25								
			07/12/17	1630					
			13.50	Damp					
					END OF EXPLORATORY HOLE		14.60 -1.12		

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)
1	10.40	Rose to 8.70 m after 20 minutes.	12.00

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

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Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS108

Borehole Log

SOCOTEC

Drilled	KP	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.38 mOD
Logged	RT	07/12/2017	Dando 175. Cable percussion boring. SPT Hammer ID: ESG01, Rod type: 54mm Whitworth.	1.20	15.45	150	15.00	**Coordinates (m)**	E 480283.38
Checked	MS	**End**						**National Grid**	N 386135.14
Approved	TC	08/12/2017							

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
		0.00-1.20 Hand excavated inspection pit.			TOPSOIL.		(0.40)		
0.50 0.50 - 1.00	D 1 B 2				Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)	0.40-1.00 with occasional pockets (<10mm) of soft reddish brown slightly sandy clay	0.40 +12.98		
1.00	D 3								
1.20 - 1.65 1.20	SPTS D 4	N=30 (3,4/4,8,10,8)	1.20	Dry					
3.00 - 3.45 3.00	SPTS D 5	N=18 (2,4/4,4,5,5)	3.00	Dry		3.00-3.45 rare gravel size lenses of slightly gravelly fine to coarse sand. Gravel is subangular fine of clinker			
4.50 - 4.95	UT 6	54 blows 100% rec	4.50	Dry					
5.05 - 5.50 5.05 5.05	SPTS D 7 D 8	N=23 (3,4/5,6,6,6)	5.05	Dry					
6.00 - 6.65	UT 9	70 blows 100% rec	6.00	Dry					
6.55 - 7.00 6.55 6.55	SPTS D 10 D 11	N=13 (4,4/3,3,4,3)	6.55	Dry			(13.00)		
7.50 - 7.95	UT 12	25 blows 100% rec	7.50	Dry					
8.05 - 8.50 8.05 8.05	SPTS D 13 D 14	N=38 (8,10/11,9,9,9)	8.05	Dry					
9.00 - 9.45	UT 15	15 blows 100% rec	9.00	Damp					
9.65 - 10.10 9.65 9.65	SPTS D 16 D 17	N=47 (7,9/9,10,15,13)	9.65 07/12/17 10.10	Damp 1630 Damp					

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:40

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS109

Borehole Log

SOCOTEC

Drilled	KP	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.38 mOD
Logged	RT	07/12/2017	Dando 175.	1.20	15.45	150	15.00	**Coordinates (m)**	E 480283.38
Checked	MS	**End**	Cable percussion boring.					**National Grid**	N 386135.14
Approved	TC	08/12/2017	SPT Hammer ID: ESG01, Rod type: 54mm Whitworth.						

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date / Casing	Time / Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			08/12/17	0800	Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)				
			10.10	Damp					
10.50 - 10.95 10.50	SPTS D 18	N=7 (1,2/2,1,2,2)	10.50	7.00					
12.00 - 12.45	UT 19	72 blows 67% rec	12.00	Damp		12.40 dark brownish grey			
13.40 13.50 - 13.95	D 20 UT 21	45 blows 100% rec	13.50	Damp	Firm reddish brown, mottled grey and brown, slightly sandy silty CLAY. (MERCIA MUDSTONE - Class Dc)		13.40 -0.02		
14.05 - 14.50 14.05 14.05	SPTS D 22 D 23	N=10 (3,3/2,2,3,3)	14.05	Damp			(2.05)		
15.00 - 15.45 15.00	SPTS D 24	N=16 (4,3/4,3,4,5)	15.00	Damp					
			08/12/17 15.45	1600 Damp					
					END OF EXPLORATORY HOLE		15.45 -2.07		

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:40

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS109

Borehole Log

SOCOTEC

Drilled	DD	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	11.58 mOD
Logged	RT/DP	13/12/2017	Dando 175. Cable percussion boring.	1.20	15.00	150	15.00	**Coordinates (m)**	E 480341.80
Checked	MS	**End**	SPT Hammer ID: ESG01, Rod type: 54mm Whitworth.					**National Grid**	N 386305.04
Approved	TC	14/12/2017							

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date / Casing	Time / Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
0.10 0.20	D 1 D 2	0.00-1.20 Hand excavated inspection pit.			Soft dark brown slightly gravelly CLAY with frequent rootlets. Gravel is subangular to subrounded fine to medium of flint, brick and sandstone. (MADE GROUND)	0.40 plastic geotextile mesh	(0.20) 0.20 +11.38		
0.60 - 1.00	B 3				Soft brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse of sandstone and concrete. Occasional rootlets. (MADE GROUND)	0.60-1.00 rare subangular to subrounded fine to medium gravel of clinker	(0.40) 0.60 +10.98		
1.20 - 1.65 1.20	SPTS D 4	N=23 (2,4/4,5,5,9)	1.20	Dry	Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)				
3.00 - 3.45	UT 5	79 blows 89% rec	3.00	Dry					
3.50 - 3.95 3.50	SPTS D 6	N=37 (4,6/8,9,10,10)	3.50	Dry					
							(7.40)		
4.50 - 4.95	UT 7	68 blows 100% rec	4.50	Dry					
5.00 - 5.45 5.00 5.00	SPTS D 8 D 9	N=30 (4,5/5,7,9,9)	5.00 13/12/17 5.00 14/12/17 5.00	Dry 1708 Dry 0800 Dry					
6.00 - 6.45	UT 10	48 blows 100% rec	6.00	Dry					
6.50 - 6.95 6.50 6.50	SPTS D 11 D 12	N=25 (4,5/5,6,6,8)	6.50	Dry		7.00-7.50 mottled light greyish brown			
7.50 - 7.95 7.50 - 8.00	UT NR B 13	37 blows No Recovery	7.50	Damp					
8.00 - 8.45 8.00 8.20	SPTS D 14 D 15	N=18 (4,4/4,4,5,5)	8.00	Damp	Dark greyish brown, mottled orangish brown, slightly sandy SILT with rare relict rootlets. Rare pockets (<10mm) of dark orange fine sand. (ALLUVIUM)		8.00 +3.58		
							(1.50)		
9.00 - 9.45	UT 16	39 blows 89% rec	9.00	Damp					
9.50 - 9.95 9.50 9.50	SPTS D 17 D 18	N=12 (2,3/3,3,3,3)	9.50	Dry	Dark greyish brown slightly sandy SILT with rare relict rootlets. (ALLUVIUM)		9.50 +2.08		

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:41

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS110

Borehole Log

SOCOTEC

Drilled	DD	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	11.58 mOD
Logged	RT/DP	13/12/2017	Dando 175. Cable percussion boring. SPT Hammer ID: ESG01, Rod type: 54mm Whitworth.	1.20	15.00	150	15.00	**Coordinates (m)**	E 480341.80
Checked	MS	**End**						**National Grid**	N 386305.04
Approved	TC	14/12/2017							

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
					Dark greyish brown slightly sandy SILT with rare relict rootlets. (ALLUVIUM)		(1.50)		
10.50 - 10.95	UT 19	34 blows 100% rec	10.50	Dry					
11.00 - 11.45 11.00 11.00 11.30	SPTS D 20 D 21 D 22	N=16 (2,2/3,3,4,6)	11.00	Dry	Firm to stiff dark reddish brown silty CLAY with occasional pockets of light bluish grey clayey SILT (<10mm). (MERCIA MUDSTONE - Class Dc)		11.00 +0.58		
12.00 - 12.45	UT 23	84 blows 100% rec	12.00	Dry					
12.50 - 12.95 12.50 12.50	SPTS D 24 D 25	N=24 (3,3/5,6,6,7)	12.50	Dry			(4.00)		
13.50 - 13.95	UT 26	87 blows 100% rec	13.50	Dry					
14.00 - 14.45 14.00 14.00	SPTS D 27 D 28	N=25 (4,5/5,7,7,6)	14.00	Dry					
			14/12/17 15.00	1748 Dry					
15.00	D 29				END OF EXPLORATORY HOLE		15.00 -3.42		

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:41

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS110

Borehole Log

SOCOTEC

Drilled	KP	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.41 mOD
Logged	RT	05/12/2017	Dando 175. Cable percussion boring. SPT Hammer ID: ESG01, Rod type: 54mm Whitworth.	0.00	15.60	150	15.60	**Coordinates (m)**	E 480324.71
Checked	MS	**End**						**National Grid**	N 386100.72
Approved	TC	06/12/2017							

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date / Casing	Time / Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
		0.00-1.20 Hand excavated inspection pit.			Soft to firm dark reddish brown and dark grey silty CLAY. Occasional subangular to subrounded fine to coarse gravel of sandstone. (MADE GROUND)		(0.40)		
0.50 - 1.00	B 1				Dark grey, frequently slightly sandy, SILT. (MADE GROUND - Pulverised Fuel Ash)		0.40 +13.01		
1.00	D 2								
1.00	D 3								
1.20 - 1.65	SPTS	N=17 (4,4/3,5,4,5)	1.20	Dry					
1.20	D 4								
2.70 - 3.15	SPTS	N=26 (7,7/6,5,8,7)	2.70	Dry					
2.70	D 5								
4.20 - 4.65	SPTS	N=7 (2,1/2,1,2,2)	4.65	Dry					
4.20	D 6								
5.60	D 7								
5.70 - 6.15	UT 8	60 blows 100% rec	5.70	Dry					
							(11.30)		
6.25 - 6.70	SPTS	N=14 (3,4/3,4,3,4)	6.25	Damp					
6.25	D 10								
6.25	D 9								
7.65 - 8.10	SPTS	N=13 (4,2/2,3,2,6)	7.65	Damp					
7.65	D 12								
			05/12/17 8.15	1630 Damp					
			06/12/17 8.15	0800 Damp					
8.70 - 9.15	SPTS	N=18 (2,3/4,3,5,6)	8.70	Dry					

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:41

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS111

Borehole Log

SOCOTEC

Drilled	KP	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.41 mOD
Logged	RT	05/12/2017	Dando 175. Cable percussion boring. SPT Hammer ID: ESG01, Rod type: 54mm Whitworth.	0.00	15.60	150	15.60	**Coordinates (m)**	E 480324.71
Checked	MS	**End**						**National Grid**	N 386100.72
Approved	TC	06/12/2017							

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
10.20 - 10.70 10.20 - 10.70	UT NR B 14	31 blows No Recovery	10.20	Damp	Dark grey, frequently slightly sandy, SILT. (MADE GROUND - Pulverised Fuel Ash)				
10.80	D 15								
11.70 - 12.15 11.70	SPTS D 16	N=8 (1,1/2,3,1,2)	11.70	Damp	Reddish brown, mottled light grey and grey, slightly sandy clayey SILT. (ALLUVIUM)		11.70 +1.71 (1.50)		
13.20 - 13.65 13.20	SPTS D 17	N=9 (1,1/1,2,2,4)	13.20	Damp	Soft to firm, mottled greyish brown and reddish brown, silty CLAY. (MERCIA MUDSTONE - Class Dc)	13.20-13.65 slightly organic odour	13.20 +0.21		
13.65 - 14.10	UT 18	44 blows 100% rec	13.65	Damp			(2.40)		
14.20	D 19								
15.00 - 15.45	UT 20	31 blows 100% rec	15.00	Damp					
15.60	D 21		06/12/17 15.60	1600 Dry	END OF EXPLORATORY HOLE		15.60 -2.19		

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:41

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS111

Borehole Log

SOCOTEC

Drilled	DD	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	9.42 mOD
Logged	DP/RT	15/12/2017	Dando 175. Cable percussion boring.	1.20	15.00	150	14.50	**Coordinates (m)**	E 480186.50
Checked	MS	**End**	SPT Hammer ID: ESG01, Rod type: 54mm Whitworth.					**National Grid**	N 386432.19
Approved	TC	18/12/2017							

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date / Time Casing / Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
0.10	D 1	0.00-1.20 Hand excavated inspection pit.		Brown slightly sandy SILT with frequent rootlets and frequent pockets (<50mm) of soft reddish brown clay from 0.50m. (MADE GROUND)		(1.00)		
0.50 - 1.00	B 2					1.00 +8.42		
1.00	D 3			Stiff dark brown slightly sandy gravelly CLAY. Gravel is angular to subangular fine to medium of brick, ceramics and siltstone. (MADE GROUND)		(0.70)		
1.20 - 1.50	SPTS	50 (7,12/24,26 for 70mm)	1.20 Dry					
1.20	D 4					1.70 +7.72		
1.70	D 5			Dark grey slightly gravelly sandy SILT. Gravel is angular to subangular fine to medium of brick and clinker. (MADE GROUND - Pulverised Fuel Ash)	1.70 clayey	(1.30)		
3.00 - 3.45	UT 6	24 blows 89% rec	3.00 Dry	Light brownish grey slightly sandy slightly gravelly SILT. Gravel is angular fine of clinker/slag. (MADE GROUND - Pulverised Fuel Ash)		3.00 +6.42		
3.50 - 3.95	SPTS	N=6 (1,2/2,2,1,1)	3.50 Dry		3.50-3.95 some subangular medium gravel size nodules of poorly cemented silt			
3.50	D 7							
3.50	D 8							
4.50 - 4.95	UT 9	19 blows 100% rec	4.50 Dry			(3.30)		
			15/12/17 1734 4.50 Dry					
5.00 - 5.45	SPTS	N=7 (2,2/2,2,2,1)	18/12/17 0400 4.50 Dry		5.00-5.45 occasional gravel size pockets of black silt			
5.00	D 10							
6.00 - 6.45	UT 11	30 blows 100% rec	6.00 Dry			6.30 +3.12		
6.50 - 6.95	SPTS	N=7 (1,2/2,2,2,1)	6.50 Dry	Brownish grey slightly sandy SILT with rare gravel size pockets of black silt and rare relict rootlets. (ALLUVIUM)				
6.50	D 12							
6.50	D 13							
7.50 - 7.95	UT 14	26 blows 100% rec	7.50 Dry		7.50-7.95 occasionally mottled grey			
8.00 - 8.45	SPTS	N=8 (1,1/1,2,2,3)	8.00 Dry		8.00-9.30 orangish brown mottled, occasional gravel size pockets of angular fine sand	(3.40)		
8.00	D 15							
8.00	D 16							
9.00 - 9.45	UT 17	17 blows 100% rec	9.00 Dry					
9.50 - 9.95	SPTS	N=6 (1,1/1,2,2,1)	9.50 Dry					
9.50	D 18							
9.50	D 19							
				Reddish brown gravelly very silty fine to medium SAND with lenses of soft brownish grey clay		9.70 -0.28		1

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:42

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

WS112

Sheet 1 of 2

Borehole Log

SOCOTEC

Drilled	DD	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	9.42 mOD
Logged	DP/RT	15/12/2017	Dando 175. Cable percussion boring. SPT Hammer ID: ESG01, Rod type: 54mm Whitworth.	1.20	15.00	150	14.50	**Coordinates (m)**	E 480186.50
Checked	MS	**End**						**National Grid**	N 386432.19
Approved	TC	18/12/2017							

Samples and Tests

Strata Description

Depth	Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
					(<50mm). Gravel is subangular to rounded fine to medium of flint, mudstone and sandstone. (RIVER TERRACE DEPOSTS)		(1.40)		
10.50 - 10.95 10.50 - 11.00	UT NR B 20	36 blows No Recovery	10.50	Dry					
11.00 - 11.45 11.00 11.00 - 11.50	SPTS D 21 B 22	N=14 (2,3/3,3,4,4)	11.00	Dry			11.10 -1.68		1
					Medium dense reddish brown fine to coarse SAND with rare subangular to subrounded fine to coarse gravel of mudstone and sandstone. (RIVER TERRACE DEPOSITS)		(1.80)		
12.50 - 12.95 12.50 12.50 - 13.00	SPTS D 0 B 23	N=12 (4,2/2,2,4,4)	12.50	7.90					
12.90	D 24						12.90 -3.48		
					Soft to firm reddish brown, mottled bluish grey, slightly sandy silty CLAY. (MERCIA MUDSTONE - Class Dc)		(1.10)		
14.00 - 14.45	UT 25	72 blows 100% rec	14.00	Dry			14.00 -4.58		
14.50 - 14.95 14.50 14.50	SPTS D 26 D 27	N=18 (3,3/4,4,5,5)	14.50 18/12/17 14.50	Dry 1737 Dry	Firm bluish grey and light grey, mottled reddish brown, slightly sandy slightly gravelly silty CLAY. Gravel is subangular to subrounded fine to coarse of mudstone. Abundant gravel size pockets of dark grey silt.	14.00-15.00 bluish grey and light grey, mottled reddish brown, slightly gravelly. Gravel is subangular to subrounded fine to coarse of poorly cemented grey mudstone.	(1.00)		
					END OF EXPLORATORY HOLE	Abundant gravel size pockets of dark grey silt	15.00 -5.58		

Groundwater Entries

No.	Depth Strike (m)	Remarks	Depth Sealed (m)
1	11.10	Rose to 9.90 m after 20 minutes. Medium inflow	11.10

Depth Related Remarks

Depths (m)	Remarks

Hard Boring

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 12:27:42

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole WS112

Borehole Log

SOCOTEC

Drilled	DS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	12.95 mOD
Logged	DP	08/12/2017	Comacchio 305.	1.20	30.30	121	16.00	**Coordinates (m)**	E 480314.02
Checked	MS	**End**	Dynamic sampling followed by rotary core drilling (PWF size) using water flush.					**National Grid**	N 386252.60
Approved	TC	15/12/2017	SPT Hammer ID: AR868, Rod type: NWY. SBP and HPD testing at selected depths. Cross Hole Seismic Survey on completion.						

Samples and Tests

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water
			0.00-1.20 Hand excavated inspection pit.		
0.25 - 1.20	B 3				
0.50	D 1				
1.00	D 2				
1.20 - 1.65	SPTS		N=32 (4,5/7,8,8,9)		
1.20 - 2.20	L 5				
1.20	D 4				
				08/12/17 2.20	1630 Dry
2.20 - 2.65	SPTS		N=20 (3,3/4,7,4,5)		
2.20	D 6			11/12/17 2.20	0800 Dry
3.50 - 3.95	SPTS		N=9 (2,2/3,2,2,2)	2.20	1.95
3.50 - 4.50	L 8				
3.50	D 7				
4.50 - 4.95	SPTS		N=12 (3,2/3,3,3,3)	2.20	3.55
4.50 - 5.20	L 9				
5.50 - 5.95	SPTS		N=24 (3,4/5,5,6,8)	5.50	3.10
5.50 - 6.50	L 12				
5.50	D 10				
5.50	D 11				
6.50 - 6.95	SPTS		N=54 (6,9/10,13,15,16)	5.50	3.90
6.50 - 7.00	L 14				
6.50	D 13				
7.00 - 8.50	L 15				
8.50 - 8.95	SPTS		N=26 (5,5/6,6,7,7)	8.50	4.65
8.50 - 9.50	L 17				
8.50	D 16				
9.50 - 10.50	L 18				

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
TOPSOIL.		(0.25) 0.25 +12.70		
Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		(4.75)		
	3.00 Self boring pressuremeter test			
Firm dark red, mottled bluish grey, gravelly CLAY. Gravel is angular coarse of poorly cemented siltstone. (MADE GROUND)	5.00 Self boring pressuremeter test	5.00 +7.95 (0.20) 5.20 +7.75		
Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)	5.70-6.00 clayey			
	7.00-7.50 brownish grey	(5.10)		
	9.50-10.00 slightly gravelly. Gravel is angular to subrounded of clinker and poorly cemented siltstone			

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:08

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH101

Borehole Log

SOCOTEC

Drilled	DS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	12.95 mOD
Logged	DP	08/12/2017	Comacchio 305. Dynamic sampling followed by rotary core drilling (PWF size) using water flush.	1.20	30.30	121	16.00	**Coordinates (m)**	E 480314.02
Checked	MS	**End**	SPT Hammer ID: AR868, Rod type: NWY. SBP and HPD testing at selected depths.					**National Grid**	N 386252.60
Approved	TC	15/12/2017	Cross Hole Seismic Survey on completion.						

Samples and Tests

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water
10.50 - 10.95	SPTS		N=11 (5,3/3,2,3,3)	9.00	4.15
10.50 - 12.00	L 20				
10.50	D 19				
12.00 - 13.50	L 21				
				11/12/17	1630
				9.00	6.10
13.50 - 13.95	SPTS		N=9 (3,3/2,2,2,3)		
13.50 - 14.50	L 21A			12/12/17	0800
				9.00	7.50
14.50 - 16.00	L 22				
				12/12/17	1707
				16.00	3.00
16.00 - 16.45			N=15 (3,4/3,4,4,4)		
16.00		-	D 23	13/12/17	0800
		NA		16.00	3.60
		-			
	100				
16.00 - 17.50	40	NI			
	0	30			
		60			
	100	-			
	34	NA			
17.50 - 18.30	25	-	Flush: 16.00 - 19.80 Water 100%		
18.05 - 18.16			CS 24		
18.83 - 19.05		NI	CS 25		
	87	100			
18.30 - 19.80	82	200			
	59				
19.80 - 19.94			SPTC 50 (25 for 70mm/50 for 70mm)	16.00	1.90

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend
Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		10.30 +2.65	
		(0.30)	
Firm greyish brown silty CLAY. Strong organic odour. (ALLUVIUM)		10.60 +2.35	
Thinly laminated orangish brown, mottled brown and grey, becoming dark brown, clayey SILT. Slight organic odour. (ALLUVIUM)			
		(4.60)	
		15.20 -2.25	
Firm reddish brown, locally mottled light greenish grey, CLAY. (MERCIA MUDSTONE - Class Dc)			
		(1.25)	
		16.45 -3.50	
Extremely weak thinly laminated light greenish grey, mottled reddish brown, MUDSTONE, locally reduced to subrounded fine gravel size fragments in a clay matrix. Fractures are subhorizontal, very closely spaced, undulating and planar, smooth. (MERCIA MUDSTONE - Class B)	16.60 High pressure dilatometer test 17.10 10 degree 5mm band of white fibrous gypsum 17.35 subhorizontal 10mm band of white fibrous gypsum	(1.15)	
		17.60 -4.65	
Stiff reddish brown, locally mottled light greenish grey, CLAY, locally reduced to subrounded fine to coarse very stiff clay to extremely weak mudstone lithorelicts. (MERCIA MUDSTONE - Class C)		(0.45)	
		18.05 -5.10	
Very weak to weak very thinly bedded light greenish grey, locally mottled light reddish brown, MUDSTONE with 20 degree subhorizontal bands (up to 20mm) of white fibrous gypsum. Fractures are subhorizontal, closely spaced, undulating, planar and smooth. (MERCIA MUDSTONE - Class B)		(1.85)	
	19.15 subhorizontal 40mm spaced bands of white fibrous gypsum 19.53 10 degree 30mm bands of white fibrous gypsum.	19.90 -6.95	

Backfill

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:08

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH101

Borehole Log

SOCOTEC

Drilled	DS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	12.95 mOD
Logged	DP	08/12/2017	Comacchio 305.	1.20	30.30	121	16.00	**Coordinates (m)**	E 480314.02
Checked	MS	**End**	Dynamic sampling followed by rotary core drilling (PWF size) using water flush.					**National Grid**	N 386252.60
Approved	TC	15/12/2017	SPT Hammer ID: AR868, Rod type: NWY. SBP and HPD testing at selected depths. Cross Hole Seismic Survey on completion.						

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
19.80 - 21.30	100 23 0	NI 10 30	Flush: 19.80 - 21.30 Water 90%			Extremely weak thinly laminated dark reddish brown MUDSTONE, locally disintegrating to subrounded fine to medium gravel size fragments in a clay matrix. Fractures are subhorizontal, very closely spaced, undulating, rough. (MERCIA MUDSTONE - Class B)	20.40 High pressure dilatometer test	(1.25)		
								21.15 -8.20		
21.30 - 22.80	100 37 19	NI 20 120	Flush: 21.30 - 22.80 Water 85%			Extremely weak very thinly bedded light reddish brown MUDSTONE, locally reduced to subangular and subrounded fine to coarse lithorelicts of very stiff clay to extremely weak mudstone. Fractures are subhorizontal, very closely spaced, planar, rough. (MERCIA MUDSTONE - Class B)	21.50 20 degree 10mm band of off white fibrous gypsum 21.70 subhorizontal 30mm band of off white fibrous gypsum	(1.00)		
22.50 - 22.59			CS 26	13/12/17 16.00	1615 3.60			22.15 -9.20		
22.80 - 22.92			SPTC 50 (25 for 50mm/50 for 70mm)	14/12/17 16.00	0800 7.60	Very weak to weak, locally very weak, very thinly bedded dark reddish brown, becoming light greenish grey, locally mottled reddish brown, MUDSTONE with 10 degree subhorizontal, closely spaced (up to 10mm) bands of white fibrous gypsum. Fractures are subhorizontal, closely, locally medium spaced, planar, smooth. (MERCIA MUDSTONE - Class B)	21.80 subhorizontal 30mm band of off white fibrous gypsum 22.05-22.10 20 degree stepped 10mm band of off white fibrous gypsum 22.60-22.80 turning to clay and subangular to subrounded fine to coarse gravel size lithorelics of mudstone 23.30 subhorizontal 30mm band of white fibrous gypsum 23.40 High pressure dilatometer test 23.85 subhorizontal 60mm band of white fibrous gypsum			
22.88 - 23.19			CS 27							
22.80 - 24.30	100 97 75	30 200 350	Flush: 22.80 - 24.30 Water 100%					(2.70)		
24.50 - 24.69			CS 28							
24.30 - 25.60	92 62 51					Extremely weak very thinly bedded dark reddish brown MUDSTONE, locally turning to (up to 50mm) clay bands and subangular to subrounded fine to coarse gravel size mudstone lithorelicts. Fractures are subhorizontal, closely spaced, undulating, smooth. (MERCIA MUDSTONE - Class B)	24.10 10 degree 15mm band of white fibrous gypsum 24.25 20 degree 10mm band of white fibrous gypsum 24.30-24.35 subhorizontal and 80 degree bands (up to 5mm) of white fibrous gypsum 24.65 10 degree 50mm band of white fibrous gypsum 25.70-25.90 subhorizontal and 70 degree 5mm band of withe fibrous gypsum 26.25 10 degree 30mm band of white fibrous gypsum 26.70 subhorizontal 30mm band of fibrous white gypsum 26.70-27.10 AZCL. Core loss assumed to be more weathered material 27.15 10 degree 20mm band of fibrous white gypsum	24.85 -11.90		
25.82 - 25.92			Flush: 24.30 - 27.10 Water 50% CS 29							
25.60 - 27.10	80 27 19	NI 100 140						(3.10)		
27.10 - 27.25			SPTC 50 (19,6 for 15mm/50 for 60mm)	14/12/17 16.00	1430 1.10					
27.30 - 27.43			CS 30	15/12/17 16.00	0800 8.90					
27.10 - 28.70	94 43 43					Extremely weak thinly laminated dark reddish brown, becoming light greenish grey, MUDSTONE, locally reduced to clay and angular to subrounded fine to coarse gravel size mudstone lithorelicts. Fractures are randomly orientated, extremely closely locally, very closely spaced, smooth, planar. (MERCIA MUDSTONE - Class B)		27.95 -15.00		
			Flush: 27.10 - 30.30 Water 80%							
28.70 - 30.30	94 50 0	NI NI 8						(2.35)		

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:08

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole BH101

Borehole Log

SOCOTEC

Drilled	DS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	12.95 mOD
Logged	DP	08/12/2017	Comacchio 305. Dynamic sampling followed by rotary core drilling (PWF size) using water flush. SPT Hammer ID: AR868, Rod type: NWY. SBP and HPD testing at selected depths. Cross Hole Seismic Survey on completion.	1.20	30.30	121	16.00	**Coordinates (m)**	E 480314.02
Checked	MS	**End**						**National Grid**	N 386252.60
Approved	TC	15/12/2017							

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date / Casing	Time / Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
				15/12/17 16.00	1630 Dry	Extremely weak thinly laminated dark reddish brown, becoming light greenish grey, MUDSTONE, locally reduced to clay and angular to subrounded fine to coarse gravel size mudstone lithorelicts. Fractures are randomly orientated, extremely closely locally, very closely spaced, smooth, planar. (MERCIA MUDSTONE - Class B) END OF EXPLORATORY HOLE		30.30 -17.35		?

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:08

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH101

Borehole Log

SOCOTEC

Drilled	DS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.01 mOD
Logged	DP	05/12/2017	Comacchio 305.	1.20	30.07	121	12.30	**Coordinates (m)**	E 480272.23
Checked	MS	**End**	Dynamic sampling followed by rotary core drilling (PWF size) using water flush.					**National Grid**	N 386209.16
Approved	TC	08/12/2017	SPT Hammer ID: AR868, Rod type: NWY. SBP and HPD testing at selected depths.						

Samples and Tests

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water
			0.00-1.20 Hand excavated inspection pit.		
0.20	D 1				
0.20 - 1.20	B 4				
0.50	D 2				
1.00	D 3				
1.20 - 1.65	SPTS		N=58 (2,8/12,16,16,14)		Dry
1.20 - 2.20	L 6				
1.20	D 5				
3.50 - 3.95	SPTS		N=32 (3,5/5,7,9,11)	1.50	2.30
3.50	D 7				
3.50 - 4.00	B 8				
4.00 - 5.30	L 9				
				05/12/17	1630
				5.50	0.10
				06/12/17	0800
				5.50	0.35
6.50 - 6.95	SPTS		N=2 (1,0/0,1,0,1)	6.00	3.90
6.50 - 7.50	L 10				
6.50	D 9A				
7.50 - 8.80	L 11				
8.80 - 9.25	SPTS		N=10 (2,3/2,2,3,3)	6.00	6.30
8.80 - 9.80	L 13				
8.80	D 12				
9.80 - 11.30	L 14				

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
TOPSOIL.		(0.25) 0.25 +12.76		
Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)				
	3.00 Self boring pressuremeter test	(3.95)		
	4.00-4.15 AZCL	4.20 (0.10) +8.81 4.30 +8.71		
Firm dark greyish brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to medium of clinker and brick. (MADE GROUND)		(0.70)		
Firm reddish brown, locally mottled light bluish grey, slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to medium of clinker. Frequent pockets (up to 20mm) of light bluish grey silt. (MADE GROUND)	4.70-4.75 light grey angular coarse gravel of quartzite	5.00 +8.01		
Firm thinly laminated brown and dark grey slightly sandy silty CLAY with rare angular fine to medium gravel of clinker. (MADE GROUND)		(0.50) 5.50 +7.51		
Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)	6.00 Self boring pressuremeter test			
	6.80-7.50 rare angular fine to medium gravel of brick	(4.25)		
Firm dark greyish brown, becoming dark brown, silty CLAY with rare relict roots (<2x<120mm).		9.75 +3.26		

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:09

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH102

Sheet 1 of 4

Borehole Log

SOCOTEC

Drilled	DS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.01 mOD
Logged	DP	05/12/2017	Comacchio 305. Dynamic sampling followed by rotary core drilling (PWF size) using water flush.	1.20	30.07	121	12.30	**Coordinates (m)**	E 480272.23
Checked	MS	**End**	SPT Hammer ID: AR868, Rod type: NWY.					**National Grid**	N 386209.16
Approved	TC	08/12/2017	SBP and HPD testing at selected depths.						

Samples and Tests

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water
11.30 - 11.75	SPTS		N=11 (2,1/2,3,3,3)	9.00	3.65
11.30 - 12.70	L 16				
11.30	D 15				
12.70 - 13.15			N=36 (6,6/7,8,10,11)	10.50	6.55
12.70			D 17		
12.70 - 13.80	86 NA NA				
				06/12/17 12.30	1703 3.90
		- NA -		07/12/17 12.30	0800 3.90
13.80 - 15.30	97 4 0				
			20 40 60		
		- NA -			
15.30 - 16.80	67 17 0	NI 20 50			
		- NA -			
16.80 - 16.86			SPTC 50 (25 for 30mm/50 for 30mm)	12.30	3.60
16.90 - 17.00			CS 18		
16.80 - 18.30	100 43 7	NI 40 60			
17.70 - 17.78			CS 19		
18.00 - 18.15			CS 20		
		- NA -			
		NI			
18.30 - 19.80	100 5 0	20 30			
		- NA -			
19.80 - 19.88			SPTC 50 (25 for 40mm/50 for 40mm)	12.30	2.90

Strata Description

Main	Detail	Depth, Level (Thickness)
Faint organic odour. (ALLUVIUM)		(0.75)
	10.30-10.50 mottled dark greyish green	10.50 +2.51
Thinly laminated dark orangish brown, mottled brown and light grey, slightly sandy clayey SILT with rare relict rootlets. Rare pockets (up to 5mm) of dark purple fine sand. (ALLUVIUM)		(1.30)
		11.80 +1.21
Thinly laminated dark brown slightly sandy clayey SILT with rare relict roots (<3x<40mm). (ALLUVIUM)		(0.90)
	12.60-12.70 firm reddish brown, mottled light bluish grey, silty clay	12.70 +0.31
Firm, mottled greenish brown, silty CLAY. (MERCIA MUDSTONE - Class Dc)		(0.70)
	13.20-13.40 clayey silt	13.40 -0.39
Firm reddish brown, locally mottled light greenish grey and brown, slightly gravelly CLAY. Gravel is subangular fine lithorelicts of extremely weak mudstone. (MERCIA MUDSTONE - Class Da)		
	14.10-14.15 light greenish grey clayey silt	(1.84)
	14.70 High pressure dilatometer test	
	14.90-15.24 firm thinly laminated bluish grey, mottled light reddish brown, clayey SILT	15.24 -2.23
Extremely weak thinly laminated light reddish brown, locally mottled light bluish grey MUDSTONE with frequent white gypsum (<1x<20mm). Fractures are subhorizontal, very closely spaced, undulating, rough. (MERCIA MUDSTONE - Class B)		(0.26) 15.50 -2.49
Soft to firm dark reddish brown, mottled light greenish grey, gravelly CLAY with rare subvertical bands (up to 5mm) of white fibrous gypsum. Gravel is tabular fine to coarse lithorelicts of extremely weak mudstone. ((MERCIA MUDSTONE - Class Da)		(0.40) 15.90 -2.89
	15.95 subhorizontal 10mm band of white fibrous gypsum	
	16.15 subhorizontal 50mm band of white fibrous gypsum	
	16.20 High pressure dilatometer test	
Extremely weak to weak thinly and thickly laminated light grey, locally dark grey, dark reddish brown, mottled dark greenish grey, MUDSTONE with subhorizontal undulating bands (up to 20mm) of white fibrous gypsum. Fractures are subhorizontal, extremely closely to closely spaced, undulating, planar, rough, smooth. (MERCIA MUDSTONE - Class B)	16.20-16.30 reduced to subrounded coarse gravel	(2.35)
	16.90-17.00 mottled dark reddish brown	
	17.25-17.30 reduced to clay bound tabular gravel size mudstone lithorelicts	
	17.60-17.70 reduced to clay bound tabular gravel size mudstone lithorelicts	18.25 -5.24
Very stiff thinly laminated dark reddish brown, mottled dark greenish grey, CLAY.	17.75-17.80 mottled dark reddish brown	(0.60)
	17.80-18.25 subhorizontal very closely spaced, undulating bands (<5mm) of white fibrous gypsum	18.85 (0.10) -5.84 18.95 -5.94
Extremely weak thinly laminated dark grey MUDSTONE with very closely spaced, 30 degree bands (up to 5mm) of white fibrous gypsum. Fractures are subhorizontal, very closely spaced, undulating, rough. (MERCIA MUDSTONE - Class B)	18.50 20 degree 20mm band of white fibrous gypsum	
Stiff fissured reddish brown, locally mottled bluish grey, CLAY, locally reduced to clay bound tabular fine to coarse gravel size lithorelicts of mudstone.	18.95-19.05 60 degree 2mm bands of white fibrous gypsum	(1.15)

Legend | **Backfill**

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:09

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole BH102

Borehole Log

SOCOTEC

Drilled	DS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.01 mOD
Logged	DP	05/12/2017	Comacchio 305. Dynamic sampling followed by rotary core drilling (PWF size) using water flush. SPT Hammer ID: AR868, Rod type: NWY. SBP and HPD testing at selected depths.	1.20	30.07	121	12.30	**Coordinates (m)**	E 480272.23
Checked	MS	**End**						**National Grid**	N 386209.16
Approved	TC	08/12/2017							

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
20.13 - 20.26			NI 100 120 CS 21			Fissures are randomly orientated, very closely spaced, undulating, rough. (MERCIA MUDSTONE)	19.15 subhorizontal 15mm band of white fibrous gypsum 19.50 subhorizontal 20mm band of white fibrous gypsum	20.10 -7.09 (0.25)		
19.80 - 21.30	100 21 15	- NA -				Extremely weak dark reddish brown, mottled dark grey, MUDSTONE. Fractures are subhorizontal, closely spaced, undulating, smooth. (MERCIA MUDSTONE - Class B)	19.75-19.80 extremely weak thinly laminated	20.35 -7.34 (0.60)		
21.30 - 21.38		NI 30 30	SPTC 50 (25 for 50mm/50 for 30mm)	12.30	3.00	Soft, locally firm, reddish brown, mottled bluish grey, gravelly CLAY. Gravel is angular to subrounded fine to medium of extremely weak mudstone lithorelicts. (MERCIA MUDSTONE - Class C)	bluish grey mudstone 19.80-19.85 subvertical 2mm bands of white fibrous gypsum	20.95 -7.94		
21.57 - 21.90		NI 110 330	Flush: 12.70 - 30.00 Water 100% CS 22			Extremely weak to very weak thinly laminated light and dark grey, locally mottled dark reddish brown, MUDSTONE, locally reduced to clay bound tabular gravel size lithorelicts. Fractures are subhorizontal, very closely spaced, undulating, smooth. (MERCIA MUDSTONE - Class B)	19.85-20.10 subhorizontal very closely spaced bands (<5mm) of white fibrous gypsum 20.30-20.35 tending to clay bound tabular gravel size lithorelicts 20.50 subhorizontal 20mm band of white fibrous gypsum 20.70 High pressure dilatometer test	(2.15)		
21.30 - 22.80	100 45 27	NI 30 100						23.10 -10.09		
22.80 - 24.30	100 7 0	NI 5 10				Very stiff fissured reddish brown gravelly CLAY with very closely spaced, 30 degree bands (<10mm) of white fibrous gypsum. Gravel is subangular fine to coarse lithorelicts of extremely weak mudstone. Fissures are randomly orientated, very closely spaced, undulating, planar, rough. (MERCIA MUDSTONE)	21.45-21.50 40 degree 5mm band of white fibrous gypsum 21.95 subhorizontal 20mm undulating band of white fibrous gypsum 22.70-22.80 2No. 50mm bands of white fibrous gypsum 22.80 subhorizontal 20mm band of white fibrous gypsum	(0.35) 23.45 -10.44		
24.30 - 24.39		60	SPTC 50 (25 for 50mm/50 for 40mm)	12.30	3.10	Extremely weak to weak thinly bedded dark reddish brown MUDSTONE, locally reduced to clay bound tabular coarse gravel size lithorelicts. Fractures are subhorizontal, very closely to medium spaced, planar, undulating, rough, smooth. (MERCIA MUDSTONE - Class B)	24.00-24.20 subhorizontal very closely spaced bands (<5mm) of white fibrous gypsum 24.30-24.50 subhorizontal very closely spaced bands (<10mm) of white fibrous gypsum 24.93 subhorizontal 20mm band of white fibrous gypsum 25.10-25.30 40 degree very closely spaced bands (<5mm) of white fibrous gypsum 25.55 subhorizontal 10mm band of white fibrous gypsum 26.60-26.70 dark bluish grey	(3.20)		
24.72 - 24.85		130 200	CS 23							
24.30 - 25.80	100 33 23	- NI -						26.65 -13.64 (0.20) 26.85 -13.84 (0.15) 27.00 -13.99		
25.80 - 27.30 26.62 - 26.73	100 13 13		CS 24							
				07/12/17 12.30	1630 4.05	Extremely weak to very weak dark reddish brown MUDSTONE with very closely spaced, subhorizontal bands (<2mm) of white fibrous gypsum. Fractures are subhorizontal, closely spaced, undulating, smooth. (MERCIA MUDSTONE - Class B)				
27.30 - 27.42		NI 60 60	SPTC 50 (25 for 70mm/50 for 50mm)	08/12/17 12.30	0800 8.23	Soft dark reddish brown slightly gravelly CLAY. Gravel is angular fine to medium of very stiff clay to extremely weak lithorelicts of mudstone. (MERICA MUDSTONE - Class Da)	27.00-27.10 30 degree 20mm band of white fibrous gypsum	(0.80)		
27.30 - 28.80	100 8 0	NI NI 30				Extremely weak to very weak dark reddish brown and bluish grey MUDSTONE, locally reduced to clay bound tabular medium to coarse gravel size lithorelicts. Fractures are randomly orientated, very closely spaced, undulating, smooth. (MERICA MUDSTONE - Class B)	27.90 subhorizontal 20mm band of white fibrous gypsum 28.20 subhorizontal 30mm band of white fibrous gypsum	27.80 -14.79 (0.60) 28.40 -15.39		
28.80 - 30.00	100 13 0	NI NI 50				Extremely weak bluish grey MUDSTONE, locally reduced to subrounded coarse gravel size lithorelicts in a clay matrix. (MERCIA MUDSTONE - Class B) Extremely weak thinly bedded reddish brown MUDSTONE. Fractures are randomly orientated, very closely spaced, undulating, smooth. (MERCIA MUDSTONE - Class B)	29.50-29.70 dark bluish grey silty clay with subrounded coarse gravel of gypsum	(1.50) 29.90 -16.89 (0.17)		
		10 10 30		08/12/17 12.30	1130 Dry					

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:09

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH102

Borehole Log

SOCOTEC

Drilled	DS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.01 mOD
Logged	DP	05/12/2017	Comacchio 305. Dynamic sampling followed by rotary core drilling (PWF size) using water flush. SPT Hammer ID: AR868, Rod type: NWY. SBP and HPD testing at selected depths.	1.20	30.07	121	12.30	**Coordinates (m)**	E 480272.23
Checked	MS	**End**						**National Grid**	N 386209.16
Approved	TC	08/12/2017							

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
30.00 - 30.07			SPTC 50 (25 for 30mm/50 for 40mm)	12.50	3.10	Weak white fibrous GYPSUM. Fractures are subhorizontal, very closely spaced, undulating, smooth. END OF EXPLORATORY HOLE		30.07 -17.06		

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:09

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH102

Borehole Log

SOCOTEC

Drilled	SR	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	12.70 mOD
Logged	DT	04/12/2017	Comacchio 305.	1.20	29.80	121	15.30	**Coordinates (m)**	E 480278.51
Checked	MS	**End**	Dynamic sampling and rotary core drilling (PWF size) using water flush.					**National Grid**	N 386251.64
Approved	TC	08/12/2017	SPT Hammer ID: SM39, Rod type: NWY.						

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			0.00-1.20 Hand excavated inspection pit.			TOPSOIL.		(0.20) 0.20 +12.50		
0.50	D 1					Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)				
0.50 - 1.00	B 2									
1.00	D 3									
1.00 - 1.20	B 4									
1.20 - 1.65	SPTS		N=47 (3,4/7,10,15,15)		Dry					
1.20 - 2.10	L 5									
2.10 - 3.10	L 6							(4.30)		
3.10 - 3.58	SPTS		N=3 (1,0/1,0,1,1) SW=25	3.00	Dry					
3.10 - 4.10	L 7									
4.10 - 4.70	L 8									
				05/12/17 4.00	1630 Dry	Dark reddish brown and grey subangular to subrounded fine to coarse sandy silty GRAVEL of concrete and mudstone. (MADE GROUND)		4.50 +8.20		
4.70 - 4.76	SPTC		50 (25 for 35mm/50 for 20mm)	06/12/17 4.00	0730 Dry			(0.50)		
			Flush: 4.70 - 5.50 Water 100%			Dark grey slightly sandy SILT. with rare gravel. (MADE GROUND - Pulverised Fuel Ash)		5.00 +7.70		
5.50 - 6.40	L 9						5.50-5.52 very sandy 5.50-6.20 clayey			
6.40 - 7.40	L 10							(4.00)		
7.40 - 7.85	SPTS		N=38 (1,2/4,6,11,17)	5.15	Damp		7.40-8.10 clayey			
7.40 - 8.30	L 11									
8.30 - 9.30	L 12									
							8.80 relic wood fragments (80x2mm)	9.00 +3.70		
						Firm dark greyish brown slightly sandy silty CLAY. (ALLUVIUM)	8.90 rare coarse gravel of siltstone			
9.30 - 9.75	SPTS		N=11 (3,2/3,3,2,3)	9.15	Damp					
9.30 - 10.30	L 13							(1.30)		

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:10

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH103

Borehole Log

SOCOTEC

Drilled	SR	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	12.70 mOD
Logged	DT	04/12/2017	Comacchio 305.	1.20	29.80	121	15.30	**Coordinates (m)**	E 480278.51
Checked	MS	**End**	Dynamic sampling and rotary core drilling (PWF size) using water flush.					**National Grid**	N 386251.64
Approved	TC	08/12/2017	SPT Hammer ID: SM39, Rod type: NWY.						

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
						Firm dark greyish brown slightly sandy silty CLAY. (ALLUVIUM)				
10.30 - 11.30	L 14					Dark greyish brown, occasionally mottled brownish orange, slightly sandy clayey SILT.	10.30-11.30 rare wood fragments (<40x2mm)	10.30 +2.40 (0.60)		
				06/12/17 9.15	1630 Damp	Thinly laminated dark grey slightly sandy clayey SILT. (ALLUVIUM)		10.90 +1.80 (0.40)		
11.30 - 12.30	L 15			07/12/17 9.15	0730 Damp	NO RECOVERY.		11.30 +1.40 (1.00)		
12.30 - 13.30	L 16					Dark greyish brown slightly sandy SILT. (ALLUVIUM)	12.30-12.50 very clayey 12.60 becoming thinly laminated 12.90-13.05 thickly laminated clayey silt	12.30 +0.40 (0.85)		
13.30 - 13.75			N=28 (8,3/4,5,7,12)	12.30	0.60	NO RECOVERY - MUDSTONE. (Driller's description)	13.30-15.30 no recovery	13.15 -0.45		
13.30 - 14.30	0 0 0							(2.15)		
14.30 - 15.30	0 0 0	- NA -						15.30 -2.60		
15.30 - 16.30	100 4 0					Firm reddish brown, locally mottled light greenish grey, CLAY. (MERCIA MUDSTONE - Class Dc)		(1.00)		
16.30 - 16.44			SPTS 50 (13,12 for 25mm/50 for 45mm)	15.30	0.60		16.23-16.30 extremely weak greenish grey mudstone	16.30 -3.60		
16.30 - 17.80	100 22 0	- NA -				Firm to very stiff reddish brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to medium lithorelicts of very stiff clay to extremely weak mudstone. Fissures are randomly orientated, extremely closely to closely spaced, planar, rough. (MERCIA MUDSTONE - Class C)	17.05-17.06 white fibrous gypsum 17.30-17.32 white fibrous gypsum 17.35-17.38 white fibrous gypsum	(1.35)		
17.80 - 19.30	100 19 0	NI 40 90 - NA -				Extremely weak and very weak thinly laminated to very thinly bedded greenish grey and reddish brown, locally calcareous, MUDSTONE. Fractures are subhorizontal to subvertical, very closely spaced, undulating rough, locally infilled with clay and gypsum. (MERCIA MUDSTONE - Class B) Firm to very stiff fissured greenish grey sandy gravelly CLAY. Gravel is subangular to subrounded fine to medium of extremely weak mudstone and very stiff clay lithorelicts. Fissures are randomly orientated, extremely closely spaced, planar to undulating, rough. (MERCIA MUDSTONE - Class C)	18.17-18.20 white fibrous gypsum 18.75-18.80 white fibrous gypsum	17.65 -4.95 (0.95) 18.60 -5.90 (0.70)		
19.30 - 19.42			SPTC 50 (18,7 for 30mm/50 for 20mm)	15.30	0.80		19.20-19.24 white fibrous gypsum 19.50 gypsum 40 degree 19.60 gypsum 40 degree	19.30 -6.60		
						Stiff to very stiff fissured reddish brown, locally mottled greenish grey, slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of extremely weak				

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:10

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole BH103

Borehole Log

SOCOTEC

Drilled	SR	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	12.70 mOD
Logged	DT	04/12/2017	Comacchio 305.	1.20	29.80	121	15.30	**Coordinates (m)**	E 480278.51
Checked	MS	**End**	Dynamic sampling and rotary core drilling (PWF size) using water flush.					**National Grid**	N 386251.64
Approved	TC	08/12/2017	SPT Hammer ID: SM39, Rod type: NWY.						

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
19.30 - 20.80	100 4 0	- NA -		07/12/17 15.30	1630 3.70	mudstone lithorelicts. Fissures are subhorizontal and subvertical, planar to undulating, rough. Rare fissures at 40-60 degree infilled with off white extremely weak gypsum. (MERCIA MUDSTONE - Class C)	20.05 60 degree gypsum vein 20.30-20.34 very weak mudstone 20.60 40 degree gypsum vein	(2.10)		
20.80 - 20.88			SPTC 50 (25 for 30mm/50 for 45mm)	08/12/17 15.30	0730 1.80					
20.80 - 22.30	100 50 15		Flush: 13.30 - 29.80 Water 100%			Very weak to weak thinly bedded greenish grey, locally calcareous, MUDSTONE, locally tending to clay with gravel size mudstone lithorelicts. Fractures are subhorizontal and subvertical, very closely to closely spaced, planar, occasionally undulating, smooth. (MERCIA MUDSTONE - Class B)	21.30-21.31 white fibrous gypsum 21.40-21.70 reddish brown locally mottled greenish grey 21.45-21.60 subvertical undulating rough fracture	21.40 -8.70		
22.08 - 22.21			CS 17							
22.55 - 22.65		NI 50 150	CS 18					(2.50)		
22.30 - 23.80	100 27 0						23.30-23.33 white fibrous gypsum			
23.80 - 23.90			SPTC 50 (25 for 35mm/50 for 60mm)	15.30	0.80		23.80-23.87 cream fibrous gypsum	23.90 -11.20		
23.80 - 23.87			CS 19							
23.80 - 25.30	100 0 0					Stiff fissured reddish brown, locally mottled greenish grey, slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium of extremely weak mudstone and very stiff clay lithorelicts. Fissures are subhorizontal to subvertical, planar, smooth, locally infilled with gypsum. (MERCIA MUDSTONE - Class C)	25.27-25.30 white fibrous gypsum			
25.30 - 26.80	100 0 0	- NA -					26.15-26.17 extremely weak mudstone 26.55-26.58 extremely weak mudstone	(4.30)		
26.80 - 26.86			SPTC 50 (25 for 30mm/50 for 35mm)	15.30	0.80					
26.80 - 28.30	100 0 0						27.25-27.28 fine to medium gravel of gypsum and mudstone 27.53-27.58 fine to medium gravel of gypsum and mudstone			
								28.20 -15.50		
28.95 - 29.01 28.30 - 29.80	100 0 0	- NA -	CS 20			Very stiff indistinctly fissured greenish grey gravelly to very gravelly CLAY. Gravel is subangular to subrounded fine to coarse of extremely weak mudstone lithorelicts. Fissures are randomly orientated, extremely closely spaced, planar, smooth. (MERCIA MUDSTONE - Class C)	28.95-29.01 white fibrous gypsum	(1.60)		
				08/12/17 15.30	1630 0.60					
						END OF EXPLORATORY HOLE		29.80 -17.10		

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:10

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH103

Borehole Log

SOCOTEC

Drilled	SR	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.09 mOD
Logged	DP	11/12/2017	Comacchio 205.	1.20	30.10	121	15.20	**Coordinates (m)**	E 480328.16
Checked	MS	**End**	Dynamic sampling and rotary core drilling (PWF size) using water flush.					**National Grid**	N 386217.30
Approved	TC	15/12/2017	SPT Hammer ID: SM39, Rod type: NWY.						

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			0.00-1.20 Hand excavated inspection pit.			TOPSOIL.		(0.60)		
0.50 0.50 - 0.60	D 1 B 2					Dark grey, locally grey, slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		0.60 +12.49		
1.00 1.00 - 1.20 1.20 - 1.65 1.20 - 2.20	D 3 B 4 SPTS L 5		N=8 (2,2/2,2,2,2)		Dry					
2.20 - 3.20	L 6							(4.10)		
3.20 - 3.65 3.20 - 4.20	SPTS L 7		N=10 (2,3/3,2,3,3,2)	3.00	Dry					
4.20 - 4.90	L 8									
						Soft to firm reddish brown slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse of quartzite and clinker. (MADE GROUND)		4.70 +8.39 (0.20) 4.90 +8.19		
4.90 - 4.97	40		50 (25 for 45mm/50 for 30mm)		Dry					
4.90 - 5.40	NA			11/12/17 4.70	1630 0.80			(0.40)		
5.40 - 5.85 5.40 - 6.10	NA		SPTS N=5 (1,2/1,1,2,1) L 9	12/12/17 4.70	0730 0.80	Dark grey slightly sandy slightly gravelly SILT. Gravel is angular to rounded fine to medium of siltstone and concrete. (MADE GROUND)		5.30 +7.79 (0.40)		
						Soft reddish brown slightly sandy gravelly CLAY. Gravel is angular to rounded fine to medium of quartzite, brick and clinker. (MADE GROUND)		5.70 +7.39		
6.10 - 7.10			L 10			Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)				
7.10 - 7.55 7.18 - 8.00			SPTS N=21 (1,3/4,3,6,8) L 11	4.70	Damp					
8.00 - 9.00			L 12					(5.65)		
9.00 - 9.45 9.00 - 10.00			SPTS N=10 (2,3/3,2,3,3,2) L 13	7.00	Damp		9.10-10.00 sandy			

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:10

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH104

Borehole Log

SOCOTEC

Drilled	SR	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.09 mOD
Logged	DP	11/12/2017	Comacchio 205.	1.20	30.10	121	15.20	**Coordinates (m)**	E 480328.16
Checked	MS	**End**	Dynamic sampling and rotary core drilling (PWF size) using water flush.					**National Grid**	N 386217.30
Approved	TC	15/12/2017	SPT Hammer ID: SM39, Rod type: NWY.						

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
10.00 - 11.00			L 14			Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)				
11.00 - 11.45			SPTS N=9 (2,1/2,3,2,2)	10.70	Damp					
11.00 - 12.00			L 15							
						Thinly laminated light brown, mottled orangish brown, clayey SILT. (ALLUVIUM)		11.35 +1.74 (0.35) 11.70 +1.39		
12.00 - 13.00			L 16			Dark brown, locally dark greyish brown, clayey SILT. (ALLUVIUM)		(1.30)		
				12/12/17 13.00	1630 Damp					
13.00 - 13.45			SPTS N=26 (3,4/6,6,6,8)	13/12/17 13.00	0730 11.20			13.00 +0.09		
13.00 - 14.50			L 17			Medium dense brown, mottled light brown, silty fine to coarse SAND. (ALLUVIUM)		(1.00)		
						Firm, locally stiff, dark reddish brown, locally light bluish grey, CLAY. (MERCIA MUDSTONE - Class Dc)		14.00 -0.91		
14.50 - 15.20	71 0 0	- NA -						(2.45)		
15.20 - 16.60	100 0 0									
16.60 - 16.70			SPTS 50 (25 for 50mm/50 for 45mm)	15.20	0.80	Dark reddish brown, becoming light grey, clayey angular to rounded fine to coarse GRAVEL of extremely weak mudstone lithorelicts. (MERCIA MUDSTONE - Class C)	16.70-16.80 extremely weak dark grey mudstone 17.03 suhorizontal 50mm band of white fibrous gypsum	16.45 -3.36 (0.35) 16.80 -3.71		
16.79 - 16.90			CS 18					(0.50)		
16.60 - 18.10	100 27		CS 19			Firm to stiff thinly laminated dark reddish brown, locally light bluish grey, slightly gravelly CLAY. Gravel is angular to subrounded fine to medium of extremely weak mudstone lithorelicts. (MERCIA MUDSTONE - Class C)		17.30 -4.21 (0.25) 17.55 -4.46		
17.40 - 17.60	13	NI 60 100				Extremely weak to very weak thinly laminated light greenish grey, mottled dark reddish brown, MUDSTONE with very closely spaced subhorizontal (<2mm) bands of white fibrous gypsum. Fractures are subhorizontal, closely spaced, rough, undulating. (MERCIA MUDSTONE - Class B)	17.70-17.75 angular fine to medium gravel of gypsum	(0.25) 17.80 -4.71		
18.10 - 18.21			CS 20					(0.85)		
18.10 - 19.60	100 17 7					Extremely weak thinly laminated dark reddish brown, locally mottled light greenish grey, MUDSTONE. Fractures are randomly orientated, extremely closely spaced, rough, undulating. (MERCIA MUDSTONE - Class B)	18.60 subhorizontal 50mm band of white fibrous gypsum	18.65 -5.56 (0.45) 19.10 -6.01		
						Very weak thinly to thickly laminated light greenish grey, locally mottled reddish brown, MUDSTONE, locally reduced to clay bound angular gravel size lithorelicts. Fractures are subhorizontal closely spaced, locally NI, rough, undulating.	19.20-19.30 subhorizontal very closely spaced bands of white fibrous gypsum			
19.60 - 19.71			SPTC 50 (25 for 60mm/50 for 50mm)	15.20	0.60	Firm light greenish grey gravelly CLAY. Gravel is angular to subangular fine to medium of extremely	19.90 10 degree 5mm band of white fibrous gypsum			

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:10

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole BH104

Borehole Log

SOCOTEC

Drilled	SR	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.09 mOD
Logged	DP	11/12/2017	Comacchio 205.	1.20	30.10	121	15.20	**Coordinates (m)**	E 480328.16
Checked	MS	**End**	Dynamic sampling and rotary core drilling (PWF size) using water flush.					**National Grid**	N 386217.30
Approved	TC	15/12/2017	SPT Hammer ID: SM39, Rod type: NWY.						

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
						weak mudstone lithorelicts. (MERCIA MUDSTONE - Class C)		(1.90)		
19.60 - 21.10	100 7 7	- NA -				Firm to stiff fissured dark reddish brown, locally mottled light greenish grey, slightly gravelly CLAY. Gravel is angular to subangular fine to medium of extremely weak mudstone lithorelicts. Fissures are randomly orientated, very closely spaced, smooth, planar. (MERCIA MUDSTONE - Class C)	20.25-20.30 30 degree 5mm band of white fibrous gypsum 20.40-20.50 50 degree 15mm band of white fibrous gypsum			
			NI 60 100			Extremely weak very thinly bedded dark reddish brown MUDSTONE. Fractures are subhorizontal, closely spaced, rough, undulating. (MERCIA MUDSTONE - Class B)	20.90 subhorizontal 10mm band of white fibrous gypsum 21.00 20 degree 20mm band of white fibrous gypsum	21.00 (0.30) 21.30		-7.91 -8.21
21.10 - 22.60	100 15 7	- NI -				Extremely weak very thinly bedded light reddish brown MUDSTONE, locally reduced to clay bound angular gravel size mudstone lithorelicts. Fractures are randomly orientated, very closely spaced, smooth, planar. (MERCIA MUDSTONE - Class B)		(0.80)		
22.05 - 22.15			CS 21				22.05-22.10 20 degree bands (<5mm) of white fibrous gypsum	22.10		-9.01
			Flush: 14.50 - 30.10 Water 100%	13/12/17 15.20	1630 1.80	Extremely weak to very weak thinly bedded light reddish brown MUDSTONE, locally reduced to clay bound angular to subangular extremely weak gravel size mudstone lithorelicts. Fractures are subhorizontal, closely spaced, locally NI, rough, undulating. (MERCIA MUDSTONE - Class B)	22.30 subhorizontal 30mm band of white fibrous gypsum 22.50 subhorizontal 20mm band of white fibrous peat 22.80 subhorizontal 40mm band of white fibrous gypsum			
22.60 - 22.67			SPTC 50 (25 for 30mm/50 for 40mm)	14/12/17 15.20	0730 1.80			(2.15)		
22.60 - 24.10 23.40 - 23.52	100 47 13	NI 60 200	CS 22					24.25		-11.16
						Firm fissured dark reddish brown slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of extremely weak mudstone lithorelicts. Fissures are randomly orientated, closely spaced. (MERCIA MUDSTONE - Class C)	24.30-24.35 angular fine to medium gravel of gypsum 24.50 subhorizontal 2mm band of white fibrous gypsum 24.60 subhorizontal band of white fibrous gypsum	(0.85)		
24.10 - 25.60	40 0 0	- NA -						25.10		-12.01
						Extremely weak to very weak thinly bedded dark reddish brown, locally reduced greenish grey, MUDSTONE, locally tending to clay bound tabular gravel size mudstone lithorelicts. Fractures are randomly orientated, occasionally 10 degree, very closely spaced, smooth, planar. (MERCIA MUDSTONE - Class B)	25.40 subhorizontal 20mm band of white fibrous gypsum 25.60-25.80 clay			
25.60 - 25.70		NI 10 30	SPTC 50 (25 for 60mm/50 for 45mm)	15.20	0.80			(1.35)		
25.60 - 27.00 26.39 - 26.51	13 7 0		CS 23					26.45		-13.36
			NI 50 100			Extremely weak thinly laminated dark reddish brown MUDSTONE. Fractures are subhorizontal, closely spaced, undulating, rough. (MERCIA MUDSTONE - Class B)		(0.25) 26.70		-13.61
						Firm dark reddish brown gravelly CLAY. Gravel is angular to subrounded fine to coarse of extremely weak mudstone lithorelicts. (MERCIA MUDSTONE - Class C)	26.95 subhorizontal 40mm band of white fibrous gypsum			
27.00 - 27.90	100 NA NA							(1.20)		
						Stiff fissured reddish brown, becoming light greenish grey, gravelly CLAY. Gravel is angular to subangular fine to coarse of extremely weak mudstone lithorelicts. (MERCIA MUDSTONE - Class C)		27.90		-14.81
27.90 - 28.60	100 0 0	- NA -								
28.60 - 28.70			SPTC 50 (25 for 50mm/50 for 45mm)	15.20	0.60		28.50 subhorizontal 20mm band of white fibrous gypsum	(2.00)		
28.60 - 30.10 29.45 - 29.53	100 9 0		CS 24				29.40-29.47 very weak mudstone with rounded gypsum inclusions (<10mm)			
			NI	14/12/17	1630		29.70-29.77 very weak mudstone with rounded gypsum inclusions (<10mm)	29.90		-16.81
			NI	15.20	4.60			(0.20)		
			NI							

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:10

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH104

Borehole Log

SOCOTEC

Drilled	SR	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.09 mOD
Logged	DP	11/12/2017	Comacchio 205.	1.20	30.10	121	15.20	**Coordinates (m)**	E 480328.16
Checked	MS	**End**	Dynamic sampling and rotary core drilling (PWF size) using water flush.					**National Grid**	N 386217.30
Approved	TC	15/12/2017	SPT Hammer ID: SM39, Rod type: NWY.						

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
						Extremely weak dark reddish brown MUDSTONE. Fractures are randomly orientated, very closely spaced, smooth planar. (MERCIA MUDSTONE - Class B)		30.10 -17.01		
						END OF EXPLORATORY HOLE				

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:10

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH104

Borehole Log

SOCOTEC

Drilled	SS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.31 mOD
Logged	DP	11/12/2017	Beretta T41.	1.20	29.50	121	15.00	**Coordinates (m)**	E 480217.44
Checked	MS	**End**	Dynamic sampling followed by rotary core drilling (PWF size) using water flush.					**National Grid**	N 386221.29
Approved	TC	15/12/2017	SPT Hammer ID: AR1777, Rod type: NWY.						

Samples and Tests

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water
			0.00-1.20 Hand excavated inspection pit.		
1.20 - 1.65 1.20 - 1.65	SPTS D 1		N=16 (3,4/4,4,5,3)		Dry
2.70 - 3.15 2.70 - 3.15	SPTS D 2		N=15 (2,4/3,4,4,4)		Dry
				11/12/17 3.00	1600 Dry
4.20 - 4.65 4.20 - 4.65	SPTS D 3		N=20 (3,4/6,7,3,4)		
				12/12/17 3.00	0800 Dry
5.30 - 5.75 5.30 - 5.75	SPTS D 4		N=14 (4,2/3,4,3,4)	4.50	Dry
6.00 - 6.30 6.00 - 6.30	SPTS D 5		39 (4,17/20,19 for 75mm)	6.00	Dry
8.70 - 9.15 8.70 - 9.15	SPTS D 6		N=13 (5,4/3,3,3,4)	7.50	Dry

Strata Description

Main	Detail	Depth, Level (Thickness)	Legend	Backfill
TOPSOIL.		(0.50)		
		0.50 +12.81		
Light greyish brown slightly sandy slightly gravelly SILT. Gravel is angular to subangular fine to coarse of clinker and poorly cemented silt. (MADE GROUND - Pulverised Fuel Ash)		(3.40)		
	2.80-2.85 clayey			
		3.90 +9.41		
Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)	4.20-5.30 driller notes void			
	5.00-5.30 clayey			
	5.30 slightly gravelly			
		(6.10)		
	8.00-8.50 slightly gravelly. Gravel is angular fine to coarse of poorly cemented silt			
		10.00 +3.31		

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:11

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH105

Borehole Log

SOCOTEC

Drilled	SS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.31 mOD
Logged	DP	11/12/2017	Beretta T41. Dynamic sampling followed by rotary core drilling (PWF size) using water flush. SPT Hammer ID: AR1777, Rod type: NWY.	1.20	29.50	121	15.00	**Coordinates (m)**	E 480217.44
Checked	MS	**End**						**National Grid**	N 386221.29
Approved	TC	15/12/2017							

Samples and Tests

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water
11.50 - 11.95			N=12 (2,2/2,3,3,4)	12/12/17	1600
11.50 - 11.95			D 7	10.50	6.50
				13/12/17	0800
				10.50	8.50
11.50 - 13.00	100 0 0				
13.00 - 13.30			0 0 0		
13.30 - 13.60			SPTS 34 (10,19/17,17 for 75mm)	13.00	8.50
13.30 - 13.60			D 8		
13.30 - 14.80	0 0 0	- NA -			
				13/12/17	1615
				14.80	0.50
14.80 - 15.11			SPTC 37 (6,9 for 14mm/12,10,15 for 75mm)	14/12/17	0800
14.80 - 16.00	25 0 0			14.80	3.50
16.00 - 17.50	90 8 0	NI 10 50			
17.50 - 17.80			NI 50	15.00	3.50
17.50 - 17.64			130		
			SPTC 42 (7,10/19,23 for 75mm)		
			CS 9		
17.50 - 19.00	100 15 9	- NA -			
			NI 20 50		
19.00 - 20.50	100 11 0				

Strata Description

Main	Detail	Depth, Level (Thickness)
Thinly laminated orangish brown, mottled brownish grey, clayey SILT with rare pockets (<5mm) of dark purple silt. (ALLUVIUM)		(0.70) 10.70 +2.61
Soft greenish brown, mottled greenish grey, silty CLAY with slight organic odour. (ALLUVIUM)		(0.50) 11.20 +2.11
Medium dense dark grey silty fine to coarse SAND. (ALLUVIUM)		(0.85) 12.05 +1.26
Thinly to thickly laminated orangish brown, mottled brownish grey, clayey SILT. (ALLUVIUM)		(0.95) 13.00 +0.31
Firm reddish brown, mottled greenish grey, slightly gravelly CLAY. Gravel is angular to subangular fine to medium of mudstone. (Description from SPT only) (MERCIA MUDSTONE - Class Dc)	13.00-14.50 SBP	(1.80) 14.80 -1.49
Firm reddish brown, mottled bluish grey, CLAY. (MERCIA MUDSTONE - Class Dc)		(1.20) 16.00 -2.69
Firm fissured bluish grey, locally mottled reddish brown, slightly gravelly CLAY. Gravel is subangular to rounded fine to medium of mudstone. Fissures are randomly orientated, extremely closely spaced, rough undulating. (MERCIA MUDSTONE - Class Dc)	16.20-16.26 subhorizontal bands (<15mm) of white fibrous gypsum	(0.55) 16.55 -3.24
Extremely weak thinly laminated light bluish grey MUDSTONE, locally reduced to subangular gravel size lithorelicts. Fractures are subvertical, locally non-intact, smooth, planar. (MERCIA MUDSTONE - Class B)	16.37 subhorizontal 15mm band of white fibrous gypsum	(0.20) 16.75 -3.44
Stiff fissured reddish brown, locally mottled bluish grey, gravelly CLAY. Gravel is subangular to subrounded fine to coarse of extremely weak mudstone lithorelicts. Fissures are randomly orientated, very closely spaced, smooth, planar. (MERCIA MUDSTONE - Class C)	16.69 subhorizontal 10mm band of white fibrous gypsum	(0.35) 17.10 -3.79
Extremely weak to weak very thinly bedded reddish brown, mottled greenish grey, MUDSTONE. Fractures are randomly orientated, very closely spaced, undulating, planar, smooth. (MERCIA MUDSTONE - Class B)	16.75-16.85 subhorizontal bands (<10mm) of white fibrous gypsum	(0.70) 17.80 -4.49
Firm fissured greenish grey, becoming reddish brown, gravelly CLAY. Gravel is angular to subrounded fine to coarse of extremely weak mudstone lithorelicts. Fissures are randomly orientated, very closely spaced, rough, undulating. (MERCIA MUDSTONE - Class C)	17.40-17.50 soft reddish brown, mottled greenish grey, clay	(1.10) 18.90 -5.59
Extremely weak very thinly bedded dark reddish brown MUDSTONE. Fractures are subhorizontal, very closely spaced, smooth, undulating. (MERCIA MUDSTONE - Class B)	17.50 30 degree 10mm band of fibrous white gypsum 17.73-17.76 reduced to clay 17.76-18.00 subhorizontal 40mm band of white fibrous gypsum 18.14 subhorizontal 10mm band of white fibrous gypsum 18.22 subhorizontal 15mm band of white fibrous gypsum 19.15-19.23 40 degree and subhorizontal 10mm bands of white fibrous gypsum	(0.20) 19.10 -5.79

Legend | **Backfill**

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:11

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole BH105

Borehole Log

SOCOTEC

Drilled	SS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.31 mOD
Logged	DP	11/12/2017	Beretta T41.	1.20	29.50	121	15.00	**Coordinates (m)**	E 480217.44
Checked	MS	**End**	Dynamic sampling followed by rotary core drilling (PWF size) using water flush.					**National Grid**	N 386221.29
Approved	TC	15/12/2017	SPT Hammer ID: AR1777, Rod type: NWY.						

Samples and Tests / Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
		-				Firm to stiff reddish brown, locally mottled greenish grey, gravelly CLAY. Gravel is subangular to subrounded fine to coarse of extremely weak mudstone lithorelicts. (MERCIA MUDSTONE - Class C)	19.98 subhorizontal 15mm band of white fibrous gypsum 20.30 subhorizontal 30mm band of white fibrous gypsum 20.30-20.40 very stiff	(1.65)		
20.50 - 20.95		NA -	SPTC N=39 (8,10/10,8,12,9)	15.00	3.50			20.95	-7.64	
21.08 - 21.28	93		CS 10			Very weak to weak very thinly bedded reddish brown, becoming light greenish grey, MUDSTONE. Fractures are subhorizontal, closely spaced, smooth, stepped. (MERCIA MUDSTONE - Class B)				
20.50 - 22.00	47 30		Flush: 13.30 - 29.50 Water 100%				21.30-21.35 40 degree 20mm band of white fibrous gypsum 21.60-21.65 50 degree band of white fibrous gypsum			
21.60 - 21.72		NI 100 200	CS 11					(1.95)		
22.10 - 22.30			CS 12				22.00 subhorizontal 30mm band of white fibrous gypsum 22.20-22.60 subhorizontal bands (<5mm) of white fibrous gypsum			
22.00 - 23.50	100 51 27							22.90	-9.59	
		NI NI NI				Extremely weak light greenish grey MUDSTONE, locally reduced to claybound tabular subangular to subrounded fine to coarse gravel size mudstone lithorelicts. Fractures are randomly orientated, extremely closely spaced, smooth, undulating. (MERCIA MUDSTONE - Class B)		(0.60)		
23.50 - 23.65			SPTC 25 (20 for 75mm/25 for 75mm)	15.00	3.50		23.45 subhorizontal 50mm band of white fibrous gypsum	23.50	-10.19	
						NO RECOVERY. Red clay/mudstone/gypsum. (Driller's description)				
23.50 - 25.00	0 0 0	- NA -						(1.50)		
				14/12/17 15.00	1600 3.50					
		NI 10 60		15/12/17 15.00	0800 3.50	Extremely weak thinly bedded light greenish grey, becoming dark reddish brown, MUDSTONE. Fractures are subhorizontal, very closely spaced, smooth, planar. (MERCIA MUDSTONE - Class B)		25.00	-11.69	
								(0.50)		
25.00 - 26.50 25.78 - 25.88	100 42 33		CS 13			Extremely weak to very weak, locally very weak, very thinly bedded dark reddish brown, locally mottled greenish grey, MUDSTONE with subhorizontal bands (<5mm) of white fibrous gypsum. Fractures are subhorizontal, very closely spaced, smooth, planar and undulating. (MERCIA MUDSTONE - Class B)	26.10 subhorizontal 15mm band of white fibrous gypsum 26.10-26.40 locally reduced to claybound tabular gravel size mudstone lithorelicts 26.25 subhorizontal 50mm band of white fibrous gypsum 26.50-26.90 drilling disturbed firm clay 26.98-27.15 40 degree closely spaced smooth undulating fractures 27.35 subhorizontal 30mm band of white fibrous gypsum 28.30-28.40 locally reduced to claybound tabular gravel size mudstone lithorelicts 28.35 subhorizontal 10mm band of white fibrous gypsum 28.60 subhorizontal 10mm band of white fibrous gypsum	25.50	-12.19	
27.16 - 27.31 26.50 - 28.00	80 53 26	NI 70 90	CS 14					(4.00)		
28.00 - 28.30			SPTC 47 (9,6/20,27 for 75mm)	15.00						
28.16 - 28.27			CS 15							
28.00 - 29.50	57 35 24									
				15/12/17 15.00	1600					
						END OF EXPLORATORY HOLE		29.50	-16.19	

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:11

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole BH105

Borehole Log

SOCOTEC

Drilled	DS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.05 mOD
Logged	DP	16/12/2017	Comacchio 305.	1.20	29.80	121	16.00	**Coordinates (m)**	E 480274.50
Checked	MS	**End**	Dynamic sampling followed by rotary core drilling (PWF size) using water flush.					**National Grid**	N 386160.19
Approved	TC	19/12/2017	SPT Hammer ID: AR1121, Rod type: NWY.						

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			0.00-1.20 Hand excavated inspection pit.			TOPSOIL.		(0.20) 0.20 +12.85		
0.20 - 1.20	B 3					Dark grey, locally grey, slightly sandy slightly gravelly SILT. Gravel is angular fine to medium of clinker and poorly cemented silt. (MADE GROUND - Pulverised Fuel Ash)				
0.50	D 1									
1.00	D 2									
1.20 - 1.65	SPTS		N=56 (5,10/10,15,15,16)		Dry					
1.20 - 2.20	L 5									
1.20	D 4									
2.20 - 3.60	L 6									
3.60 - 4.05	SPTS		N=18 (2,3/3,4,5,6)	3.00	Dry					
3.60 - 4.60	L 8									
3.60	D 7									
4.60 - 5.60	L 9						4.80-4.95 clayey, mottled brown	(9.55)		
5.60 - 6.05	SPTS		N=14 (3,3/2,3,4,5)	3.00	Dry					
5.60 - 6.20	L 11									
5.60	D 10									
6.20 - 7.70	L 12						7.00-7.50 clayey			
7.70 - 8.15	SPTS		N=20 (1,2/1,3,7,9)	6.00	Dry					
7.70 - 9.40	L 14									
7.70	D 13									
9.40 - 10.40	L 15									
						Medium dense dark grey slightly gravelly silty fine to coarse SAND. Gravel is angular to subrounded		9.75 +3.30		

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:12

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH106

Borehole Log

SOCOTEC

Drilled	DS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.05 mOD
Logged	DP	16/12/2017	Comacchio 305.	1.20	29.80	121	16.00	**Coordinates (m)**	E 480274.50
Checked	MS	**End**	Dynamic sampling followed by rotary core drilling (PWF size) using water flush.					**National Grid**	N 386160.19
Approved	TC	19/12/2017	SPT Hammer ID: AR1121, Rod type: NWY.						

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
						fine to coarse of clinker and slag. (MADE GROUND)				
10.40 - 10.85 10.40 - 11.00	SPTS L 16		N=13 (2,2/3,3,4,3)	10.40	2.10			(1.90)		
11.00 - 12.50	L 17						10.95-11.00 soft dark grey silty clay			
						Orangish brown, mottled brown and grey, clayey SILT. (MADE GROUND)	11.65 soft dark greenish grey silty clay	11.65 +1.40 (0.85)		
12.50 - 12.95 12.50 - 13.70 12.50	SPTS L 19 D 18		N=10 (1,2/1,2,3,4)	12.00	3.00	Loose to medium dense dark brownish grey gravelly slightly clayey fine to coarse SAND. Gravel is angular fine of clinker. (MADE GROUND)	12.90-13.00 soft orangish brown clay	12.50 +0.55 (0.70)		
						Dark brown thinly laminated clayey SILT. (ALLUVIUM)		13.20 -0.15 (0.20)		
						Soft thinly laminated light bluish grey, mottled reddish brown, silty CLAY. Slight organic odour. (ALLUVIUM)		13.40 -0.35 (0.30)		
13.70 - 15.10	L 20					Dark brown clayey SILT. (ALLUVIUM)		13.70 -0.65 (0.65)		
						Soft to firm reddish brown, mottled bluish grey, CLAY. (MERCIA MUDSTONE - Class Dc)		14.35 -1.30 (1.15)		
15.10 - 15.55 15.10 - 16.00 15.10	SPTS L 22 D 21		N=22 (2,3/5,5,6,6)	15.00	3.00					
						Bluish grey SILT with frequent pockets (<30mm) of clayey silt. (MERCIA MUDSTONE - Class Dc)		15.50 -2.45 (0.30)		
				16/12/17 15.60	1530 0.90			15.80 -2.75		
				18/12/17 15.60	0800 5.95	Stiff fissured bluish grey CLAY. Fissures are randomly orientated, extremely closely spaced, undulating, smooth. (MERCIA MUDSTONE - Class Dc)	16.00-16.20 drilling disturbed, soft	(0.70)		
16.25 - 16.32			CS 22A				16.25-16.30 subhorizontal 50mm band of white fibrous gypsum			
16.00 - 17.05	100 0 0					Stiff fissured reddish brown CLAY. Fissures are subhorizontal, undulating, rough. (MERCIA MUDSTONE - Class Dc)	16.70 20 degree 10mm band of white fibrous gypsum	16.50 -3.45 (0.65)		
17.05 - 17.18		-	SPTC 50 (25 for 70mm/50 for 60mm)	16.00	2.90		17.00 subhorizontal 15mm band of white fibrous gypsum with mudstone inclusions	17.15 -4.10		
17.05 - 18.55	100 0 0	NA -				Stiff, locally very stiff, fissured dark reddish brown slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse lithorelicts of very stiff clay to extremely weak mudstone. Fissures are randomly orientated, extremely closely spaced, planar, smooth. (MERCIA MUDSTONE - Class Da)	17.40 subhorizontal 10mm band of white fibrous gypsum 17.50-17.68 subvertical 2mm band of white fibrous gypsum 17.70-18.00 30 degree very closely spaced bands (<5mm) of white fibrous gypsum	(1.40)		
						Extremely weak thinly laminated dark reddish brown, locally light greenish grey, MUDSTONE, locally reduced to claybound tabular gravel size mudstone lithorelicts. Fractures are subhorizontal, very closely spaced, undulating smooth and rough. (MERCIA MUDSTONE - Class B)	18.40 subhorizontal 20mm band of white fibrous gypsum 18.75 subhorizontal 10mm band of white fibrous gypsum 18.95 subhorizontal 20mm band of white fibrous gypsum with mudstone inclusions	18.55 -5.50 (0.95)		
18.90 - 19.01		NI 60 100	CS 23					19.50 -6.45		
18.55 - 20.05	100 25 7						19.20 subangular fine and medium gypsum gravel	(0.55)		
		-				Extremely weak thinly laminated light greenish grey MUDSTONE. Predominantly recovered as a claybound angular to subrounded coarse gravel. Fractures are randomly orientated, extremely				
		NI -								

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:12

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH106

Borehole Log

SOCOTEC

Drilled	DS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.05 mOD
Logged	DP	16/12/2017	Comacchio 305. Dynamic sampling followed by rotary core drilling (PWF size) using water flush. SPT Hammer ID: AR1121, Rod type: NWY.	1.20	29.80	121	16.00	**Coordinates (m)**	E 480274.50
Checked	MS	**End**						**National Grid**	N 386160.19
Approved	TC	19/12/2017							

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
20.05 - 20.19			SPTC 50 (25 for 50mm/32,18 for 15mm)	16.00	3.05	closely spaced, planar, smooth. (MERCIA MUDSTONE - Class B)	19.30 30 degree band of white fibrous gypsum	20.05 -7.00		
20.20 - 20.34		50 100 140	CS 24			Extremely weak very thinly bedded light greenish grey, mottled reddish brown, MUDSTONE with subhorizontal, very closely spaced bands (<5mm) of white fibrous gypsum. Fractures are subhorizontal, closely spaced, planar and stepped, smooth. (MERCIA MUDSTONE - Class B)		(0.40)		
20.05 - 21.55	90 35 19						20.75 subhorizontal 15mm band of white fibrous gypsum with mudstone inclusions.	20.45 -7.40		
21.55 - 22.30	100 0 0	- NA -				Very stiff fissured thinly laminated light greenish grey, becoming dark reddish brown, gravelly CLAY. Gravel is tabular angular to subrounded fine to coarse lithorelicts of extremely weak mudstone. Fissures are randomly orientated, very closely spaced, planar, smooth. (MERCIA MUDSTONE - Class C)	21.70-22.70 subhorizontal bands (<15mm) of white fibrous gypsum 22.05 subhorizontal 50mm band of white fibrous gypsum. 22.20-22.30 extremely weak thinly laminated dark reddish brown mudstone	(3.45)		
22.30 - 22.42			SPTC 50 (25 for 65mm/50 for 55mm)	16.00	3.00					
22.30 - 23.80	100 0 0		Flush: 16.00 - 29.80 Water 100%				23.45 subhorizontal 40mm band of white fibrous gypsum			
23.90 - 24.00			CS 25				23.90 subhorizontal 10mm band of white fibrous gypsum	23.90 -10.85		
23.80 - 25.30	100 25 11	80 80 160 - NA -				Extremely weak to very weak thickly laminated reddish brown, locally mottled light greenish grey, MUDSTONE with subhorizontal very closely spaced bands (<3mm) of white fibrous gypsum. Fractures are subhorizontal, very closely spaced, undulating and planar, smooth. (MERCIA MUDSTONE - Class B)		(0.45)		
						Firm dark reddish brown CLAY, locally reduced to claybound tabular subrounded fine to coarse gravel size extremely weak mudstone lithorelicts. (MERCIA MUDSTONE - Class C)		24.35 -11.30		
25.30 - 25.39			SPTC 50 (25 for 40mm/50 for 50mm)	16.00	3.10			(1.05)		
25.30 - 26.80	100 20 0	NI 30 60 - NA -				Extremely weak thinly laminated dark reddish brown MUDSTONE. Fractures are randomly orientated, locally subhorizontal, very closely spaced, planar, smooth. (MERCIA MUDSTONE - Class B)	25.80-25.90 subhorizontal bands (<10mm) of white fibrous gypsum	25.40 -12.35		
						Stiff, locally very stiff, fissured dark reddish brown, becoming light greenish grey, CLAY, locally reduced to claybound tabular subrounded fine to coarse lithorelicts of very stiff clay to extremely weak mudstone. Fissures are randomly orientated, very closely spaced, planar, smooth. (MERCIA MUDSTONE - Class C)	26.50 subhorizontal 30mm band of white fibrous gypsum	(0.60)		
27.10 - 27.19			CS 26			Dark reddish brown MUDSTONE. Recovered as angular to subrounded fine to coarse gravel. (MERCIA MUDSTONE - Class C)		26.00 -12.95		
26.80 - 28.30	70 9 0	- NI -		18/12/17 16.00	1630 3.25	Extremely weak very thinly bedded dark reddish brown, locally mottled light greenish grey, MUDSTONE. Fractures are randomly orientated, extremely closely spaced, planar, smooth. Predominantly non-intact. (MERCIA MUDSTONE - Class B)	27.80 subhorizontal 60mm band of white fibrous gypsum 28.12 subhorizontal 80mm band of white fibrous gypsum	(0.80)		
28.30 - 28.40			SPTC 50 (25 for 50mm/50 for 50mm)	19/12/17 16.00	0800 6.10	Extremely weak dark reddish brown, mottled greenish grey MUDSTONE. Recovered as angular to subrounded fine to coarse gravel. (MERCIA MUDSTONE - Class C)		26.80 -13.75		
28.30 - 29.80	67 5 0							(0.55)		
29.40 - 29.48		NI NI 80	CS 27	19/12/17 16.00	1530 Dry	Very weak to weak very thinly bedded dark reddish brown MUDSTONE. Fractures are randomly orientated, extremely and very closely spaced, planar, smooth.	29.70 subhorizontal 40mm band of white fibrous gypsum	27.35 -14.30		
								(0.85)		
								28.20 -15.15		
								(1.20)		
								29.40 -16.35		
								(0.40)		
								29.80 -16.75		

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:12

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole BH106

Borehole Log

SOCOTEC

Drilled	DS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	13.05 mOD
Logged	DP	16/12/2017	Comacchio 305.	1.20	29.80	121	16.00	**Coordinates (m)**	E 480274.50
Checked	MS	**End**	Dynamic sampling followed by rotary core drilling (PWF size) using water flush.					**National Grid**	N 386160.19
Approved	TC	19/12/2017	SPT Hammer ID: AR1121, Rod type: NWY.						

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
						(MERCIA MUDSTONE - Class B) END OF EXPLORATORY HOLE				

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:12

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH106

Borehole Log

SOCOTEC

Drilled	SS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	12.91 mOD
Logged	SS	16/12/2017	Beretta T41. Rotary open hole drilling using water flush.	1.20	30.00	168	14.00	**Coordinates (m)**	E 480311.89
Checked	MS	**End**	Cross Hole Seismic Survey on completion.					**National Grid**	N 386247.30
Approved	TC	18/12/2017							

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			0.00-1.20 Hand excavated inspection pit.			Pulverised fuel ash. (MADE GROUND) (Driller's description)		(15.00)		

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:13

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH107

Borehole Log

SOCOTEC

Drilled	SS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	12.91 mOD
Logged	SS	16/12/2017	Beretta T41. Rotary open hole drilling using water flush.	1.20	30.00	168	14.00	**Coordinates (m)**	E 480311.89
Checked	MS	**End**	Cross Hole Seismic Survey on completion.					**National Grid**	N 386247.30
Approved	TC	18/12/2017							

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
						Pulverised fuel ash. (MADE GROUND) (Driller's description)				
						MUDSTONE. (Driller's description)		15.00 -2.09		
			Flush: 1.20 - 30.00 Water 100%	16/12/17 14.00	1600 4.00					
				18/12/17 14.00	0800 4.50			(9.00)		

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:13

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH107

Borehole Log

SOCOTEC

Drilled	SS	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	12.91 mOD
Logged	SS	16/12/2017	Beretta T41. Rotary open hole drilling using water flush.	1.20	30.00	168	14.00	**Coordinates (m)**	E 480311.89
Checked	MS	**End**	Cross Hole Seismic Survey on completion.					**National Grid**	N 386247.30
Approved	TC	18/12/2017							

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
						MUDSTONE. (Driller's description)				
						MUDSTONE and gypsum bands. (Driller's description)		24.00 -11.09 (6.00) 30.00 -17.09		
				18/12/17 14.00	1600					
						END OF EXPLORATORY HOLE				

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:13

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH107

Borehole Log

SOCOTEC

Drilled	JG	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	12.91 mOD
Logged	JG	15/12/2018	R37 Commachio 205. Rotary open hole drilling using water flush.	1.20	28.00	143	13.60	**Coordinates (m)**	E 480309.31
Checked	MS	**End**	Cross Hole Seismic Survey on completion.					**National Grid**	N 386240.77
Approved	TC	19/12/2018							

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			0.00-1.20 Hand excavated inspection pit.			Pulverised fuel ash. (MADE GROUND) (Driller's description)				
				15/12/17 0.00	1701 Dry					
				16/12/17 0.00	0735 Dry					
								(5.10)		
						Mercia mudstone fill. (MADE GROUND) (Driller's description)		5.10 +7.81		
								(0.30)		
						Pulverised fuel ash. (MADE GROUND) (Driller's description)		5.40 +7.51		
								(8.60)		

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:14

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH108

Borehole Log

SOCOTEC

Drilled	JG	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	12.91 mOD
Logged	JG	15/12/2018	R37 Commachio 205. Rotary open hole drilling using water flush.	1.20	28.00	143	13.60	**Coordinates (m)**	E 480309.31
Checked	MS	**End**	Cross Hole Seismic Survey on completion.					**National Grid**	N 386240.77
Approved	TC	19/12/2018							

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
				16/12/17 9.60	1600 1.30	Pulverised fuel ash. (MADE GROUND) (Driller's description)				
				18/12/17 9.60	0757 1.30					
			Flush: 1.20 - 28.00 Water 100%			Mercia MUDSTONE. (Driller's description)		14.00 -1.09		

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:14

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH108

Borehole Log

SOCOTEC

Drilled	JG	**Start**	**Equipment, Methods and Remarks**	**Depth from (m)**	**to (m)**	**Diameter (mm)**	**Casing Depth (m)**	**Ground Level**	12.91 mOD
Logged	JG	15/12/2018	R37 Commachio 205. Rotary open hole drilling using water flush.	1.20	28.00	143	13.60	**Coordinates (m)**	E 480309.31
Checked	MS	**End**	Cross Hole Seismic Survey on completion.					**National Grid**	N 386240.77
Approved	TC	19/12/2018							

Samples and Tests

Strata Description

Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
						Mercia MUDSTONE. (Driller's description)				
								(14.00)		
				18/12/17 13.60	1700 1.60					
						END OF EXPLORATORY HOLE		28.00 -15.09		

Groundwater Entries

No.	Depth Strike	Remarks	Depth Sealed

Depth Related Remarks

Depths (m)	Remarks

Chiselling Details

Depths (m)	Duration (mins)	Tools used

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:50

05/02/2018 13:06:14

Project WEST BURTON C POWER STATION

Project No. A7102-17

Carried out for Firbeck Construction Limited

Borehole

BH108

Trial Pit Log

SOCOTEC

Logged DP **Checked** MS **Approved** TC	**Start** 14/12/2017 **End** 14/12/2017	**Equipment, Methods and Remarks** 360 tracked excavator. Machine excavated.	**Dimension and Orientation** Width 0.60 m Length 2.70 m A / B / C / D 290 (Deg)	**Ground Level** 4.47 mOD **Coordinates (m)** E 480408.46 **National Grid** N 386336.14	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			Dark brown slightly sandy slightly gravelly SILT. (MADE GROUND - Pulverised Fuel Ash)		(0.60)		
0.50	D1				0.60 +3.87		
			Soft to firm reddish brown slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse of brick and concrete. (MADE GROUND)		(0.30)		
			Soft to firm light brown slightly sandy silty CLAY. (ALLUVIUM)		0.90 +3.57		
1.00	D2						
					(0.90)		
1.50	D3						
			Light brown, mottled orangish brown, slightly sandy clayey SILT. (ALLUVIUM)		1.80 +2.67		
2.00	D4						
					(1.20)		
2.50	D5			2.50-3.00 wet		1	
		14/12/17					
3.00	D6		END OF EXPLORATORY HOLE		3.00 +1.47		

Groundwater Entries

No.	Depth Strike (m)	Remarks
1	2.50	Wet

Remarks

Depth (m)	Remarks
3.00	Trial pit terminated due to collapse.

Stability Unstable

Shoring None

Weather Overcast

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

05/02/2018 12:31:47

Project **WEST BURTON C POWER STATION**

Project No. **A7102-17**

Carried out for **Firbeck Construction Limited**

Trial Pit

TP102

Trial Pit Log

SOCOTEC

Logged DP **Checked** MS **Approved** TC	**Start** 14/12/2017 **End** 14/12/2017	**Equipment, Methods and Remarks** 360 tracked excavator. Machine excavated.	**Dimension and Orientation** Width 0.60 m Length 2.80 m A / B / C / D 105 (Deg)	**Ground Level** 3.87 mOD **Coordinates (m)** E 480453.61 **National Grid** N 386316.81	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			Black organic SILT with abundant rootlets. (TOPSOIL)		(0.50)		
0.50	D1		Soft light brown, mottled orangish brown, slightly sandy silty CLAY with rare relict rootlets. (ALLUVIUM)		0.50 +3.37		
1.00	D2				(0.70)		
			Light brown, mottled orange, slightly sandy clayey SILT. (ALLUVIUM)		1.20 +2.67		
1.50	D3				(0.80)		
2.00	D4		Dark grey clayey SILT with abundant relict roots. Strong organic odour. Frequent bands of fine dark grey sand (up to 30mm). (ALLUVIUM)		2.00 +1.87		
2.50	D5				(1.50)		
3.00	D6						
		14/12/17 3.50					
3.50	D7		END OF EXPLORATORY HOLE		3.50 +0.37		

Groundwater Entries

No.	Depth Strike (m)	Remarks
1	3.50	Fast inflow

Remarks

Depth (m)	Remarks

Stability Stable
Shoring None
Weather Overcast

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

05/02/2018 12:31:47

Project **WEST BURTON C POWER STATION**

Project No. **A7102-17**

Carried out for **Firbeck Construction Limited**

Trial Pit

TP103

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged DP **Checked** MS **Approved** TC	**Start** 13/12/2017 **End** 13/12/2017	**Equipment, Methods and Remarks** 360 tracked excavator. Machine excavated.	**Dimension and Orientation** Width 0.60 m Length 2.80 m A / D / B / C 140 (Deg)	**Ground Level** 13.09 mOD **Coordinates (m)** E 480252.25 **National Grid** N 386159.36	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			Soft brown slightly sandy CLAY with abundant rootlets. (TOPSOIL)		(0.20)		
			Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		0.20 +12.89		
0.50	D1			0.40-0.60 soft brown silty clay lenses (80x30mm)			
					(1.00)		
1.00	D2						
			Dark grey slightly sandy, locally slightly gravelly, SILT. Gravel is angular to subangular fine to coarse of extremely weak siltstone. Rare angular cobbles of siltstone. (MADE GROUND - Pulverised Fuel Ash)		1.20 +11.89		
1.50	D3						
					(1.10)		
2.00	D4						
			Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		2.30 +10.79		
2.50	D5						
3.00	D6				(1.40)		
3.50	D7	13/12/17 Dry					
			END OF EXPLORATORY HOLE		3.70 +9.39		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.00 - 3.70	No groundwater encountered during excavation.

Stability Stable

Shoring None

Weather Overcast

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

05/02/2018 12:31:47

Project **WEST BURTON C POWER STATION**

Project No. **A7102-17**

Carried out for **Firbeck Construction Limited**

Trial Pit

TP104

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged DP **Checked** MS **Approved** TC	**Start** 12/12/2017 **End** 12/12/2017	**Equipment, Methods and Remarks** 360 tracked excavator. Machine excavated.	**Dimension and Orientation** Width 2.80 m Length 0.60 m A / D / B / C 150 (Deg)	**Ground Level** 13.44 mOD **Coordinates (m)** E 480285.71 **National Grid** N 386122.08	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			Soft brown slightly sandy CLAY with abundant rootlets. (TOPSOIL)		(0.30)		
			Dark grey, becoming light brownish grey, slightly sandy SILT with rare, becoming frequent, gravel size pockets of fine sand. (MADE GROUND - Pulverised Fuel Ash)	0.30 rare angular coarse gravel of brick in Face D	0.30 +13.14		
0.50	D1						
1.00	D2						
1.50	D3						
					(3.20)		
2.00	D4						
2.50	D5						
3.00	D6	12/12/17 Dry					
3.50	D7		END OF EXPLORATORY HOLE		3.50 +9.94		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.00 - 3.50	No groundwater encountered during excavation.

Stability Stable
Shoring None
Weather Overcast

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

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Project **WEST BURTON C POWER STATION**

Project No. **A7102-17**

Carried out for **Firbeck Construction Limited**

Trial Pit

TP105

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged DP **Checked** MS **Approved** TC	**Start** 12/12/2017 **End** 12/12/2017	**Equipment, Methods and Remarks** 360 tracked excavator. Machine excavated.	**Dimension and Orientation** Width 0.60 m Length 2.70 m A / D / B / C 120 (Deg)	**Ground Level** 13.10 mOD **Coordinates (m)** E 480340.80 **National Grid** N 386082.01	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			Brown slightly sandy CLAY with abundant rootlets. (TOPSOIL)		(0.40)		
0.50	D1		Light brown silty angular to subrounded fine to coarse GRAVEL of brick and sandstone. (MADE GROUND)	0.40 mm black geomembrane	0.40 +12.70 (0.10) 0.50 +12.60		
1.00	D2		Dark grey, becoming light brownish grey, slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)				
1.50	D3						
				1.70-2.00 frequent roots (<40x150mm)			
2.00	D4			2.00 rubber (150x80mm)	(3.00)		
2.50	D5			2.50-3.00 frequent lenses (60x20mm) of brown sandy clay			
3.00	D6						
		12/12/17 Dry					
3.50	D7		END OF EXPLORATORY HOLE		3.50 +9.60		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.00 - 3.50	No groundwater encountered during excavation.

Stability Stable
Shoring None
Weather Overcast

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

05/02/2018 12:31:48

Project **WEST BURTON C POWER STATION**

Project No. **A7102-17**

Carried out for **Firbeck Construction Limited**

Trial Pit

TP106

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged RT **Checked** MS **Approved** TC	**Start** 20/12/2017 **End** 20/12/2017	**Equipment, Methods and Remarks** Hand excavated.	**Dimension and Orientation** Width 0.40 m Length 0.40 m A / D / B / C 90 (Deg)	**Ground Level** 12.45 mOD **Coordinates (m)** E 480379.49 **National Grid** N 385939.43	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			Firm dark brownish grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse of flint, brick, concrete and glass. (MADE GROUND)		(0.10) 0.10 +12.35		
0.30	D1		Firm dark grey slightly sandy slightly gravelly SILT with occasional pockets of firm orangish brown clay with low cobble content. Gravel is subangular to subrounded fine to coarse of flint, sandstone and brick. Cobbles are subangular of concrete 100x90x90mm. (MADE GROUND - Pulverised Fuel Ash)				
0.50 - 1.00	B2				(1.10)		
1.20	D3		END OF EXPLORATORY HOLE		1.20 +11.25		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.00 - 1.20	No possible asbestos containing material identified. No groundwater encountered during excavation.

Stability Stable

Shoring None

Weather Overcast

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

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Project **WEST BURTON C POWER STATION**

Project No. **A7102-17**

Carried out for **Firbeck Construction Limited**

Trial Pit

TP107

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged DP **Checked** MS **Approved** TC	**Start** 14/12/2017 **End** 14/12/2017	**Equipment, Methods and Remarks** 360 tracked excavator. Machine excavated.	**Dimension and Orientation** Width 0.60 m Length 2.80 m A / D / B / C 210 (Deg)	**Ground Level** 12.16 mOD **Coordinates (m)** E 480348.08 **National Grid** N 385895.45	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			Brown slightly sandy gravelly SILT with abundant rootlets. Gravel is angular to subrounded fine to coarse of brick and ceramics. (MADE GROUND)	0.10-0.20 orangish brown gravelly silt. Gravel is angular to subangular fine to medium of brick (Face B) 0.30 80x110mm copper pipe fragment	(0.40)		
0.50	D1		Firm brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of brick and ceramics. (MADE GROUND)		0.40 +11.76		
					(0.60)		
1.00	D2		Dark grey slightly sandy, locally slightly gravelly, SILT. Gravel is angular to subangular fine to coarse of poorly cemented silt. (MADE GROUND - Pulverised Fuel Ash)		1.00 +11.16		
1.50	D3						
2.00	D4						
					(2.50)		
2.50	D5						
3.00	D6	14/12/17 Dry					
3.50	D7		END OF EXPLORATORY HOLE		3.50 +8.66		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.00 - 3.50	No groundwater encountered during excavation.

Stability Stable
Shoring None
Weather Overcast

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

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Project **WEST BURTON C POWER STATION**

Project No. **A7102-17**

Carried out for **Firbeck Construction Limited**

Trial Pit

TP108

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged RT **Checked** MS **Approved** TC	**Start** 20/12/2017 **End** 20/12/2017	**Equipment, Methods and Remarks** Hand excavated.	**Dimension and Orientation** Width 0.40 m Length 0.40 m A / D / B / C 90 (Deg)	**Ground Level** 4.40 mOD **Coordinates (m)** E 480443.30 **National Grid** N 385913.17	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			Dark grey slightly sandy subangular to subrounded fine to coarse GRAVEL of ash and clinker with frequent rootlets. (MADE GROUND - Pulverised Fuel Ash)		(0.15) 0.15 +4.25		
0.30	D1		Dark grey slightly sandy slightly gravelly SILT. Gravel is subangular to subrounded fine to coarse of brick and clinker. (MADE GROUND - Pulverised Fuel Ash)				
0.50 - 1.00	B2				(1.05)		
1.20	D3		END OF EXPLORATORY HOLE		1.20 +3.20		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.00 - 1.20	No possible asbestos containing material identified. No groundwater encountered during excavation.

Stability Stable

Shoring None

Weather Overcast

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

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Project **WEST BURTON C POWER STATION**

Project No. **A7102-17**

Carried out for **Firbeck Construction Limited**

Trial Pit

TP110

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged DP **Checked** MS **Approved** TC	**Start** 14/12/2017 **End** 14/12/2017	**Equipment, Methods and Remarks** 360 tracked excavator. Machine excavated.	**Dimension and Orientation** Width 0.60 m Length 2.70 m A / D / B / C 120 (Deg)	**Ground Level** 4.80 mOD **Coordinates (m)** E 480507.00 **National Grid** N 385914.62	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			Soft brown, becoming light brown, clayey SILT. Frequent rootlets. Rare subrounded medium gravel of siltstone. (ALLUVIUM)				
0.50	D1				(1.30)		
1.00	D2						
			Soft light brown silty CLAY with frequent relict rootlets. (ALLUVIUM)		1.30 +3.50		
1.50	D3						
2.00	D4				(1.70)		
2.50	D5						
3.00	D6		Dark grey SILT with frequent relict rootlets. (ALLUVIUM)		3.00 +1.80	1	
		14/12/17			(0.50)		
3.50	D7		END OF EXPLORATORY HOLE		3.50 +1.30		

Groundwater Entries

No.	Depth Strike (m)	Remarks
1	3.00	Wet

Remarks

Depth (m)	Remarks

Stability Stable
Shoring None
Weather Sunny

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

05/02/2018 12:31:49

Project **WEST BURTON C POWER STATION**

Project No. **A7102-17**

Carried out for **Firbeck Construction Limited**

Trial Pit

TP111

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged DP **Checked** MS **Approved** TC	**Start** 14/12/2017 **End** 14/12/2017	**Equipment, Methods and Remarks** 360 tracked excavator. Machine excavated.	**Dimension and Orientation** Width 0.60 m Length 2.80 m A / B / C / D 155 (Deg)	**Ground Level** 7.01 mOD **Coordinates (m)** E 480499.87 **National Grid** N 385841.23	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			Soft brown slightly sandy CLAY with abundant rootlets. Strong organic odour. (TOPSOIL)		(0.15) 0.15 +6.86		
			Dark brown slightly sandy gravelly SILT. Gravel is angular to subrounded fine to coarse of brick. (MADE GROUND)		(0.35)		
0.50	D1		Stiff reddish brown, mottled light bluish grey, silty CLAY with frequent pockets (up to 50mm) of light grey silt. (MADE GROUND - Reworked mercia mudstone)		0.50 +6.51		
1.00	D2						
1.50	D3						
					(2.50)		
2.00	D4						
2.50	D5			2.50 subangular to subrounded fine to coarse gravel of mudstone			
3.00	D6		Dark greyish brown SILT. (ALLUVIUM)		3.00 +4.01		
		14/12/17 Dry			(0.50)		
3.50	D7		END OF EXPLORATORY HOLE		3.50 +3.51		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.00 - 3.50	No groundwater encountered during excavation.

Stability Stable

Shoring None

Weather Overcase

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

05/02/2018 12:31:49

Project **WEST BURTON C POWER STATION**

Project No. **A7102-17**

Carried out for **Firbeck Construction Limited**

Trial Pit

TP112

Trial Pit Log

SOCOTEC

Logged DP **Checked** MS **Approved** TC	**Start** 13/12/2017 **End** 13/12/2017	**Equipment, Methods and Remarks** 360 tracked excavator. Machine excavated.	**Dimension and Orientation** Width 2.90 m Length 0.60 m A / B / C / D 55 (Deg)	**Ground Level** 13.01 mOD **Coordinates (m)** E 480293.20 **National Grid** N 386304.89	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			Soft to firm brown, mottled orangish brown, slightly sandy CLAY with frequent rootlets. Rare angular coarse gravel of brick. (MADE GROUND)		(0.80)		
0.50	D1						
			Firm dark grey slightly sandy silty CLAY. Strong organic odour. (MADE GROUND)		0.80 +12.21		
1.00	D2				(1.00)		
1.50	D3			1.40-1.50 roots (<30x600mm) in centre of Face B			
			Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		1.80 +11.21		
2.00	D4						
2.50	D5				(1.70)		
3.00	D6	13/12/17 Dry					
3.50	D7		END OF EXPLORATORY HOLE		3.50 +9.51		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.00 - 3.50	No groundwater encountered during excavation.

Stability Stable
Shoring None
Weather Overcast

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

05/02/2018 12:31:49

Project **WEST BURTON C POWER STATION**

Project No. **A7102-17**

Carried out for **Firbeck Construction Limited**

Trial Pit

TP113

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged DP **Checked** MS **Approved** TC	**Start** 13/12/2017 **End** 13/12/2017	**Equipment, Methods and Remarks** 360 tracked excavator. Machine excavated.	**Dimension and Orientation** Width 0.60 m Length 2.80 m A / D / B / C 36 (Deg)	**Ground Level** 13.05 mOD **Coordinates (m)** E 480277.31 **National Grid** N 386312.39	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			Soft to firm brown, mottled orangish brown, slightly sandy CLAY with abundant rootlets. (TOPSOIL)		(1.00)		
0.50	D1						
1.00	D2		Firm dark grey slightly sandy silty CLAY with abundant roots (5x60mm). (MADE GROUND)	1.20-1.40 Face D - firm orangish brown slightly sandy slightly gravelly clay. Gravel is angular to subangular fine to coarse of brick	1.00 +12.05 (0.65)		
1.50	D3						
			Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		1.65 +11.40		
2.00	D4						
2.50	D5				(1.85)		
3.00	D6	13/12/17 Dry					
3.50	D7		END OF EXPLORATORY HOLE		3.50 +9.55		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.00 - 3.50	No groundwater encountered during excavation.

Stability Stable
Shoring None
Weather Overcast

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

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Project **WEST BURTON C POWER STATION**

Project No. **A7102-17**

Carried out for **Firbeck Construction Limited**

Trial Pit

TP114

Sheet 1 of 1

Trial Pit Log

SOCOTEC

Logged DP **Checked** MS **Approved** TC	**Start** 13/12/2017 **End** 13/12/2017	**Equipment, Methods and Remarks** 360 tracked excavator. Machine excavated.	**Dimension and Orientation** Width 0.60 m Length 2.70 m A / D / B / C 30 (Deg)	**Ground Level** 9.12 mOD **Coordinates (m)** E 480216.45 **National Grid** N 386425.20	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			Light yellowish grey silty CLAY with abundant rootlets. (MADE GROUND)		(0.10) 0.10 +9.02		
0.50	D1		Soft dark brown slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse of brick and clinker. Rare rebar. (MADE GROUND)		(0.90)		
1.00	D2		Firm orangish brown gravelly CLAY. Gravel is angular fine to coarse of brick. (MADE GROUND)		1.00 +8.12 (0.20) 1.20 +7.92		
1.50	D3		Light greyish brown slightly gravelly sandy SILT, locally grading to silty sand. Gravel is angular to subrounded fine to coarse of clinker/slag. (MADE GROUND - Pulverised Fuel Ash)				
2.00	D4						
2.50	D5				(2.30)		
3.00	D6	13/12/17 Dry					
3.50	D7		END OF EXPLORATORY HOLE		3.50 +5.62		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.00 - 3.50	No groundwater encountered during excavation.

Stability Stable
Shoring None
Weather Raining

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

05/02/2018 12:31:50

Project **WEST BURTON C POWER STATION**

Project No. **A7102-17**

Carried out for **Firbeck Construction Limited**

Trial Pit

TP115

Trial Pit Log

SOCOTEC

Logged DP **Checked** MS **Approved** TC	**Start** 13/12/2017 **End** 13/12/2017	**Equipment, Methods and Remarks** 360 tracked excavator. Machine excavated.	**Dimension and Orientation** Width 0.60 m Length 2.90 m A / D / B / C 150 (Deg)	**Ground Level** 13.55 mOD **Coordinates (m)** E 480289.44 **National Grid** N 386467.15	

Samples and Tests

Strata Description

Depth	Type & No.	Records	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			Soft to firm reddish brown slightly sandy gravelly CLAY with low cobble content. Gravel is angular to subrounded fine to coarse of brick and concrete. Frequent rootlets. Cobbles are subangular of concrete. (MADE GROUND)		(0.50)		
0.50	D1		Dark grey slightly sandy gravelly SILT. Gravel is angular to subrounded fine to coarse of clinker, brick and concrete. Rare rebar. (MADE GROUND - Pulverised Fuel Ash)		0.50 +13.05		
1.00	D2			0.80 fabric sheeting in centre of Face A	(0.80)		
1.50	D3		Firm slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse of brick, clinker and concrete. (MADE GROUND)		1.30 +12.25		
2.00	D4				(1.00)		
2.50	D5		Dark grey slightly sandy gravelly SILT. Gravel is angular to subrounded fine to medium of clinker. (MADE GROUND - Pulverised Fuel Ash)		2.30 +11.25		
3.00	D6				(1.20)		
		13/12/17 Dry		3.30-3.50 concrete boulder with rebar			
3.50	D7		END OF EXPLORATORY HOLE		3.50 +10.05		

Groundwater Entries

No.	Depth Strike (m)	Remarks

Remarks

Depth (m)	Remarks
0.00 - 3.50	No groundwater encountered during excavation.

Stability Stable

Shoring None

Weather Raining

Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Scale 1:25

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Project **WEST BURTON C POWER STATION**

Project No. **A7102-17**

Carried out for **Firbeck Construction Limited**

Trial Pit

TP116

Sheet 1 of 1

APPENDIX C

INSTRUMENTATION

Installation Details Table C1

Installation Details

Instrument Reference	Instrument Type (See Notes)	Installation Date, dd/mm/yyyy	Pipe Diameter, mm	Instrument Base, mbgl	Response Zone Range, mbgl	Pipe Top Details	Headworks	Remarks
BH101 (1)	-	15/12/2017	90	30.30	-	Open	Raised cover	Plain pipe installed for geophysical survey
BH104 (1)	SP	15/12/2017	50	14.00	11.00 to 14.00	Gas tap	Raised cover	
BH105 (1)	SP	15/12/2017	50	14.00	11.00 to 14.00	Gas tap	Raised cover	
BH107 (1)	-	18/12/2017	90	28.00	-	Open	Raised cover	Plain pipe installed for geophysical survey
BH108 (1)	-	19/12/2017	90	28.00	-	Open	Raised cover	Plain pipe installed for geophysical survey
WS101 (1)	SP	20/12/2017	50	12.00	9.00 to 12.00	Gas tap	Raised cover	
WS102 (1)	SP	18/12/2017	50	10.50	7.50 to 10.50	Gas tap	Raised cover	
WS103 (1)	SP	14/12/2017	50	15.00	12.00 to 15.00	Gas tap	Raised cover	
WS104 (1)	SP	15/12/2017	50	14.50	9.00 to 14.50	Gas tap	Raised cover	
WS106 (1)	SP	13/12/2017	50	10.50	9.00 to 10.50	Gas tap	Raised cover	
WS108 (1)	SP	08/12/2017	50	11.00	11.00 to 14.10	Gas tap	Raised cover	
WS109 (1)	SP	08/12/2017	50	13.50	9.00 to 13.50	Gas tap	Raised cover	
WS110 (1)	SP	15/12/2017	50	15.00	12.00 to 15.00	Gas tap	Raised cover	
WS111 (1)	SP	06/12/2017	50	15.00	12.00 to 15.00	Gas tap	Raised cover	
WS112 (1)	SP	19/12/2017	50	14.00	11.00 to 14.00	Gas tap	Raised cover	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well

APPENDIX D

GEOTECHNICAL LABORATORY TEST RESULTS

Index Properties – Summary of Results	INDX
Particle Size Distribution Analyses	PSD 1 to 23
Unconsolidated Undrained Triaxial Compression Tests – Summary of Results	UUSUM
Compaction Test Results	COMPV 1 to 4
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Uniaxial Compressive Strength of Rocks – Summary of Results	RUCS
Chemical Tests – Reports	EFS/S182228 EFS/S182229 EFS/S182237 EFS/S182238 EFS/S182239 EFS/S182504 EFS/S182533 EFS/S182589 EFS/S182590

INDEX PROPERTIES - SUMMARY OF RESULTS

Hole No.	Sample No.	Depth (m) from	Depth (m) to	type	Soil Description	p Mg/m3	p_d Mg/m3	w %	< 425 µm sieve %	W_L %	W_P %	I_P	p_s Mg/m3	Remarks
BH102	3	1.00		D	Grey slightly sandy SILT.			26	99	43 b	NP			
BH102	15	11.30		D	Brown slightly sandy silty CLAY.			29	100	38 a	26	12		
BH104	7	3.20		L	Grey slightly sandy clayey SILT.			29	100	29 b	NP			
BH104	12	8.00		L	Grey slightly sandy slightly gravelly SILT.			29	99	31 b	NP			
BH105	4	5.30		D	Grey slightly sandy slightly gravelly clayey SILT.			27	88	32 b	NP			
BH106	14	7.70		L	Grey slightly sandy slightly gravelly SILT.			25	97	27 b	NP			
TP102	3	1.50		D	Brown slightly sandy SILT with clay pockets.			31	100	42 a	24	18		
TP103	7	3.50		D	Brown slightly sandy clayey SILT.			40	100	47 a	NP			
TP104	4	2.00		D	Dark grey slightly sandy SILT.			19	99	28 b	NP			
TP106	2	1.00		D	Dark brown slightly gravelly sandy SILT.			24	89	39 b	NP			
TP108	4	2.00		D	Grey slightly sandy SILT.			17	99	27 b	NP			
TP111	2	1.00		D	Brown slightly sandy clayey SILT with rare rootlets.			33	100	43 a	28	15		
TP113	3	1.50		D	Brown slightly sandy CLAY with rare rootlets.			34	98	58 a	31	27		
TP115	5	2.50		D	Brown slightly gravelly sandy SILT with rare rootlets.			17	64	42 b	NP			
WS101	4	1.20		UT	Grey slightly sandy SILT.			24	100	33 b	NP			
WS101	7	3.00		UT	Grey slightly gravelly slightly silty SAND.			20	65	60 b	NP			
WS101	28	14.70		D	Brown slightly sandy silty CLAY.			43	94	48 a	30	18		
WS102	6	4.50		UT	Brown slightly sandy SILT.			21	100	35 b	NP			
WS103	24	13.50		B	Brown slightly sandy clayey SILT.			79	100	35 b	NP			
WS104	16	5.70		UT	Grey slightly sandy slightly gravelly SILT.			21	81	28 b	NP			
WS105	16	10.50		UT	Firm to stiff brown slightly sandy clayey SILT with rare rootlets.			28	100	44 a	25	19		
WS106	11	6.00		UT	Grey slightly sandy SILT.				100	27 b	NP			
WS106	21	10.50		UT	Light brown slightly sandy SILT.				99	36 a	NP			
WS106	26	13.50		UT	Stiff reddish brown mottled grey slightly sandy CLAY				100	41 a	30	11		
WS107	6	3.00		UT	Grey slightly sandy SILT.			28	99	37 b	NP			
WS108	17	9.00		D	Grey slightly sandy SILT with rare rootlets.			27	100	30 b	NP			
WS108	20	12.00		UT	Brown slightly sandy clayey SILT.				100	36 a	NP			
WS110	26	13.50		UT	Firm to stiff brown silty CLAY				100	46 a	31	15		
WS111	18	13.65		UT	Very soft multicoloured slightly sandy silty CLAY				95	61 a	27	34		
WS112	9	4.50		UT	Grey slightly sandy slightly gravelly clayey SILT			27	83	32 a	25	7		
WS112	20	10.50		B	Brown slightly gravelly sandy clayey SILT.			27						

General notes: All above tests carried out to BS1377 : 1990 unless annotated otherwise. See Remarks for further details

Key :

p bulk density, linear
pd dry density
w moisture content
* test carried out to BS EN ISO 17892-1 2014

WL Liquid limit
a 4 point cone test
b 1 point cone test

WP Plastic limit
NP non - plastic
IP Plasticity Index

<425um preparation
n from natural soil
s sieved specimen

ps particle density
-g = gas jar
-p = small pyknometer

QA Ref
SLR 1
Rev 2.91
Mar 17

SOCOTEC

Project No A7102-17

Project Name WEST BURTON C/D POWER STATION

Figure

INDX

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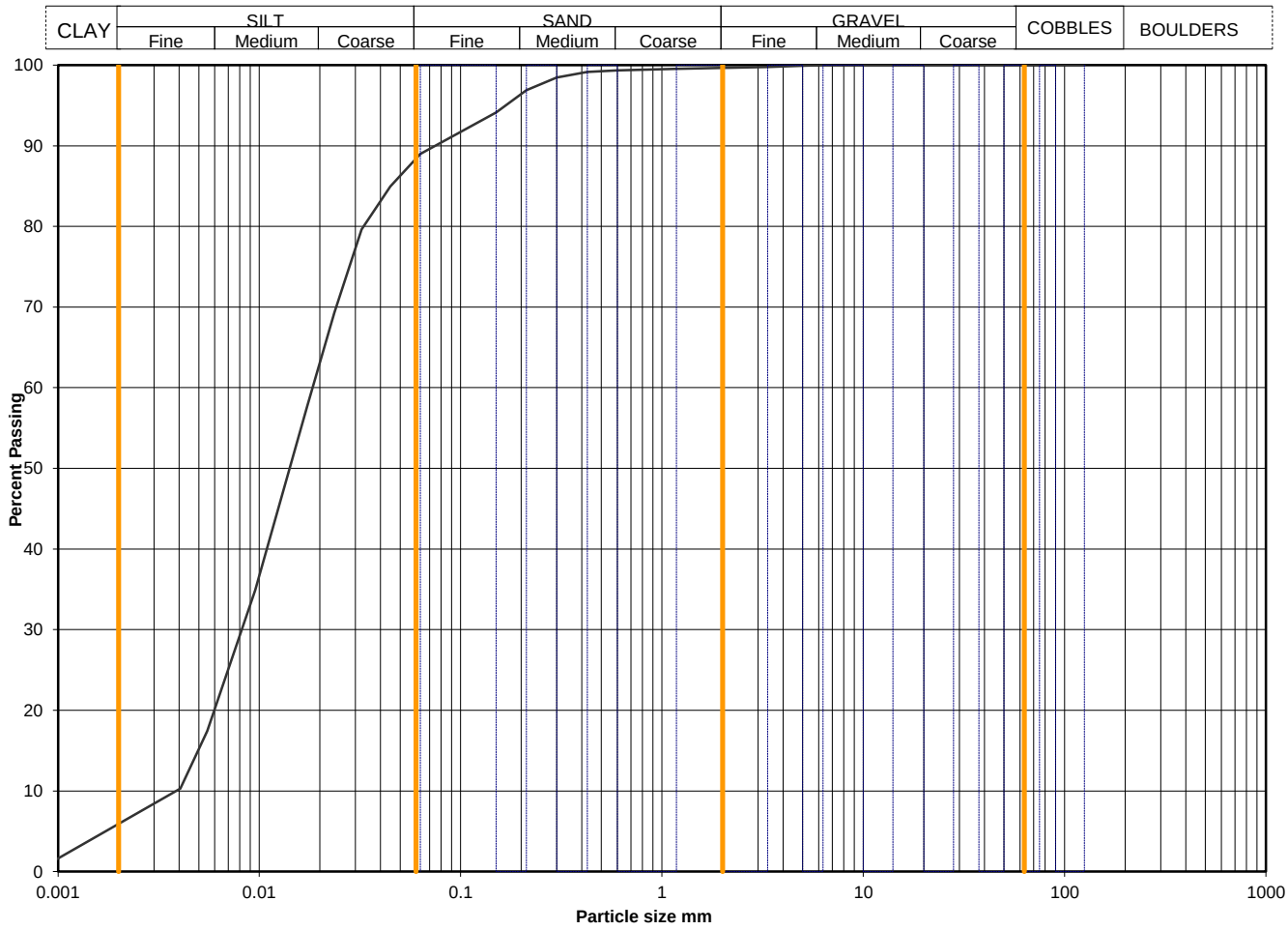
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-17-20171205050358

Hole No	BH102
Sample Depth (m BGL)	1
Sample Type and No	D3
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	89
90	100	0.0447	85
75	100	0.0322	80
63	100	0.0236	69
50	100	0.0173	58
37.5	100	0.0095	35
28	100	0.0055	17
20	100	0.0040	10
14	100	0.0009	1
10	100		
6.3	100		
5.0	100		
3.35	100		
2.00	100		
1.18	100	Particle density, Mg/m3	
0.600	99		
0.425	99	2.65 assumed	
0.300	98	Dry mass of sample, kg	
0.212	97		
0.150	94	0.8	
0.063	89		

Soil description	Grey slightly sandy SILT.
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377
Remarks	

Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	0	0
	Sand	11	11
*<60mm values to aid description only	Silt	83	83
	Clay	6	6

Uniformity Coefficient	D60 / D10	5

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

QA Ref
SLR 2,9
Rev 2.10
Oct 16

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Project No A7102-17

Project Name WEST BURTON C/D POWER STATION

Figure
PSD

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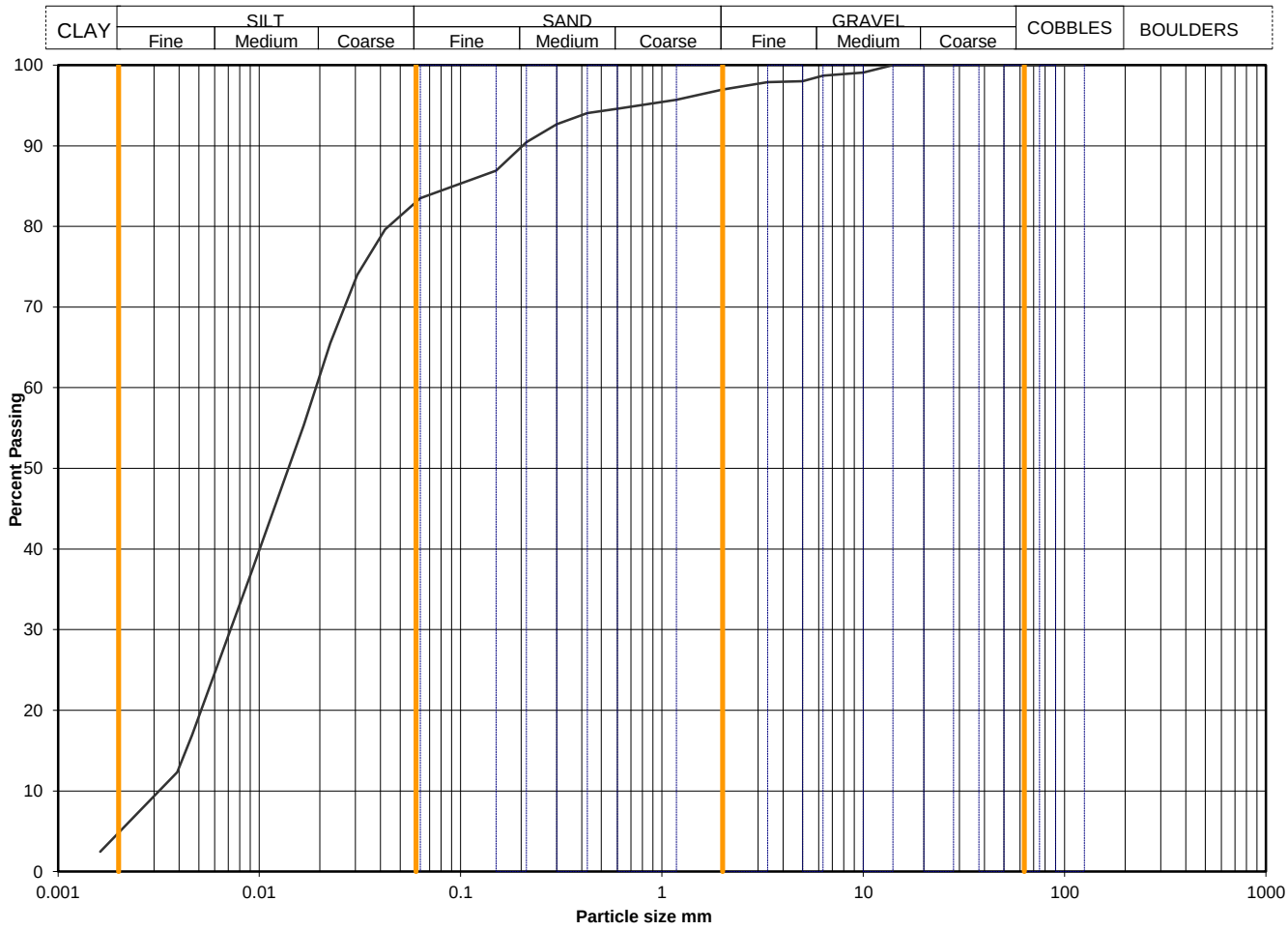
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-17-20171206055931

Hole No	BH103
Sample Depth (m BGL)	6.4
Sample Type and No	L10
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	84
90	100	0.0420	80
75	100	0.0306	74
63	100	0.0225	66
50	100	0.0166	55
37.5	100	0.0092	37
28	100	0.0046	17
20	100	0.0039	12
14	100	0.0016	2
10	99		
6.3	99		
5.0	98		
3.35	98		
2.00	97		
1.18	96	Particle density, Mg/m3	
0.600	95		
0.425	94	2.65 assumed	
0.300	93	Dry mass of sample, kg	
0.212	90		
0.150	87	9.0	
0.063	84		

Soil description	Grey slightly sandy slightly gravelly SILT.		
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377		
Remarks			
Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	3	3
	Sand	13	13
*<60mm values to aid description only	Silt	79	79
	Clay	5	5

Uniformity Coefficient	**D60 / D10**	6

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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Project Name WEST BURTON C/D POWER STATION

Figure

PSD

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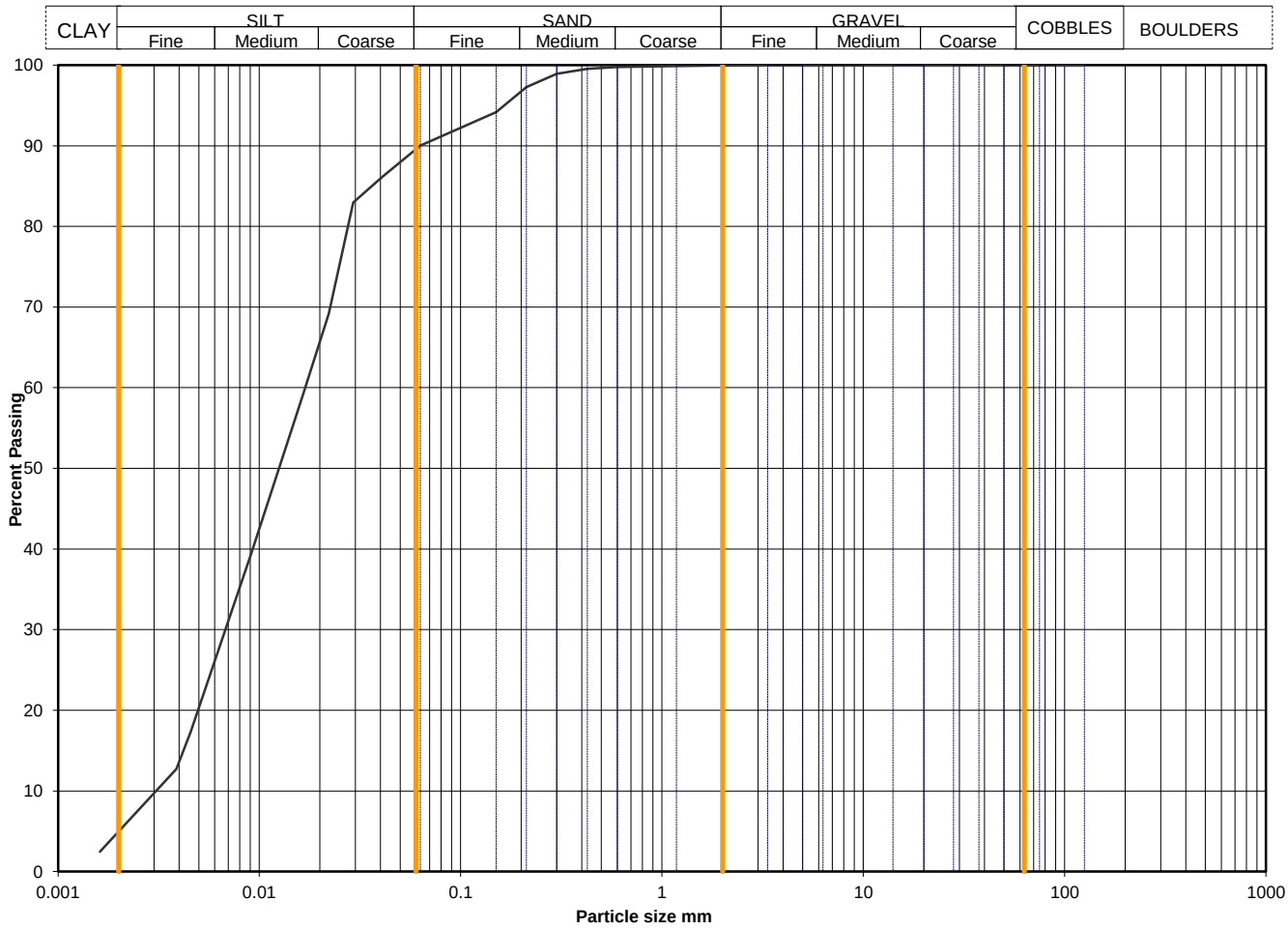
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-17-20171211071145

Hole No	BH104
Sample Depth (m BGL)	3.2
Sample Type and No	L7
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	90
90	100	0.0406	86
75	100	0.0292	83
63	100	0.0221	69
50	100	0.0164	59
37.5	100	0.0091	40
28	100	0.0046	17
20	100	0.0039	13
14	100	0.0016	2
10	100		
6.3	100		
5.0	100		
3.35	100		
2.00	100		
1.18	100	Particle density, Mg/m3	
0.600	100		
0.425	100	2.65 assumed	
0.300	99	Dry mass of sample, kg	
0.212	97		
0.150	94	8.5	
0.063	90		

Soil description	Grey slightly sandy clayey SILT.		
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377		
Remarks			
Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	0	0
	Sand	10	10
*<60mm values to aid description only	Silt	85	85
	Clay	5	5

Uniformity Coefficient	**D60 / D10**	6

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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Project Name WEST BURTON C/D POWER STATION

Figure

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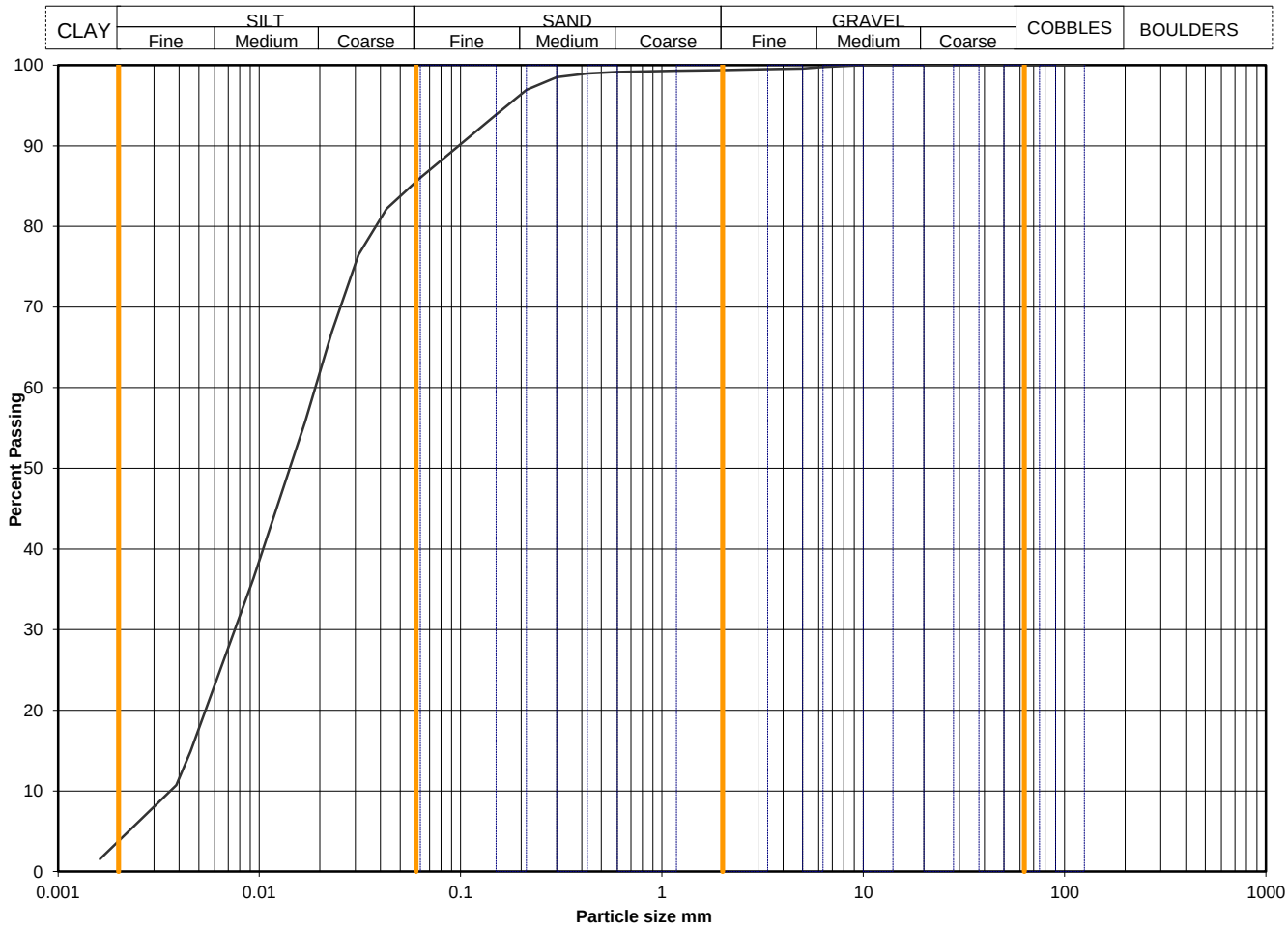
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-17-20171212062105

Hole No	BH104
Sample Depth (m BGL)	8
Sample Type and No	L12
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	86
90	100	0.0429	82
75	100	0.0311	76
63	100	0.0229	67
50	100	0.0169	56
37.5	100	0.0093	36
28	100	0.0045	15
20	100	0.0039	11
14	100	0.0016	2
10	100		
6.3	100		
5.0	100		
3.35	100		
2.00	99		
1.18	99	Particle density, Mg/m3	
0.600	99		
0.425	99	2.65 assumed	
0.300	99	Dry mass of sample, kg	
0.212	97		
0.150	94	9.3	
0.063	86		

Soil description	Grey slightly sandy slightly gravelly SILT.
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377
Remarks	

Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	1	1
	Sand	13	13
*<60mm values to aid description only	Silt	82	82
	Clay	4	4

Uniformity Coefficient	D60 / D10	5

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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Project Name WEST BURTON C/D POWER STATION

Figure
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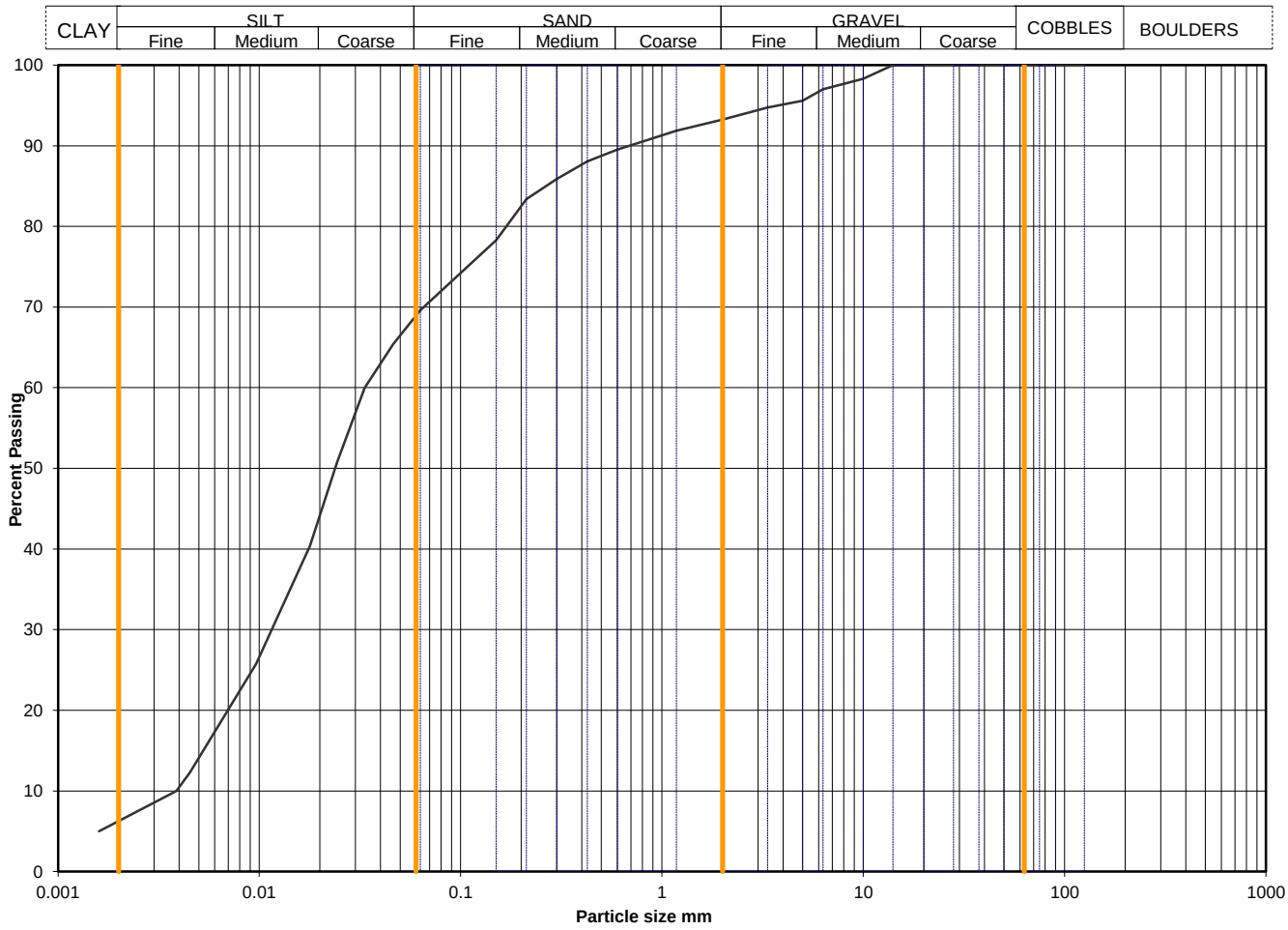
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-1720171213025132

Hole No	BH105
Sample Depth (m BGL)	5.3
Sample Type and No	D4
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	70
90	100	0.0462	65
75	100	0.0333	60
63	100	0.0244	51
50	100	0.0179	40
37.5	100	0.0097	26
28	100	0.0045	12
20	100	0.0039	10
14	100	0.0016	5
10	98		
6.3	97		
5.0	96		
3.35	95		
2.00	93		
1.18	92	Particle density, Mg/m3	
0.600	90		
0.425	88	2.65 assumed	
0.300	86	Dry mass of sample, kg	
0.212	83		
0.150	78	0.3	
0.063	70		

Soil description	Grey slightly sandy slightly gravelly clayey SILT.
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377
Remarks	

Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	7	7
	Sand	24	24
*<60mm values to aid description only	Silt	63	63
	Clay	6	6

Uniformity Coefficient	D60 / D10	9

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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Project Name WEST BURTON C/D POWER STATION

Figure
PSD

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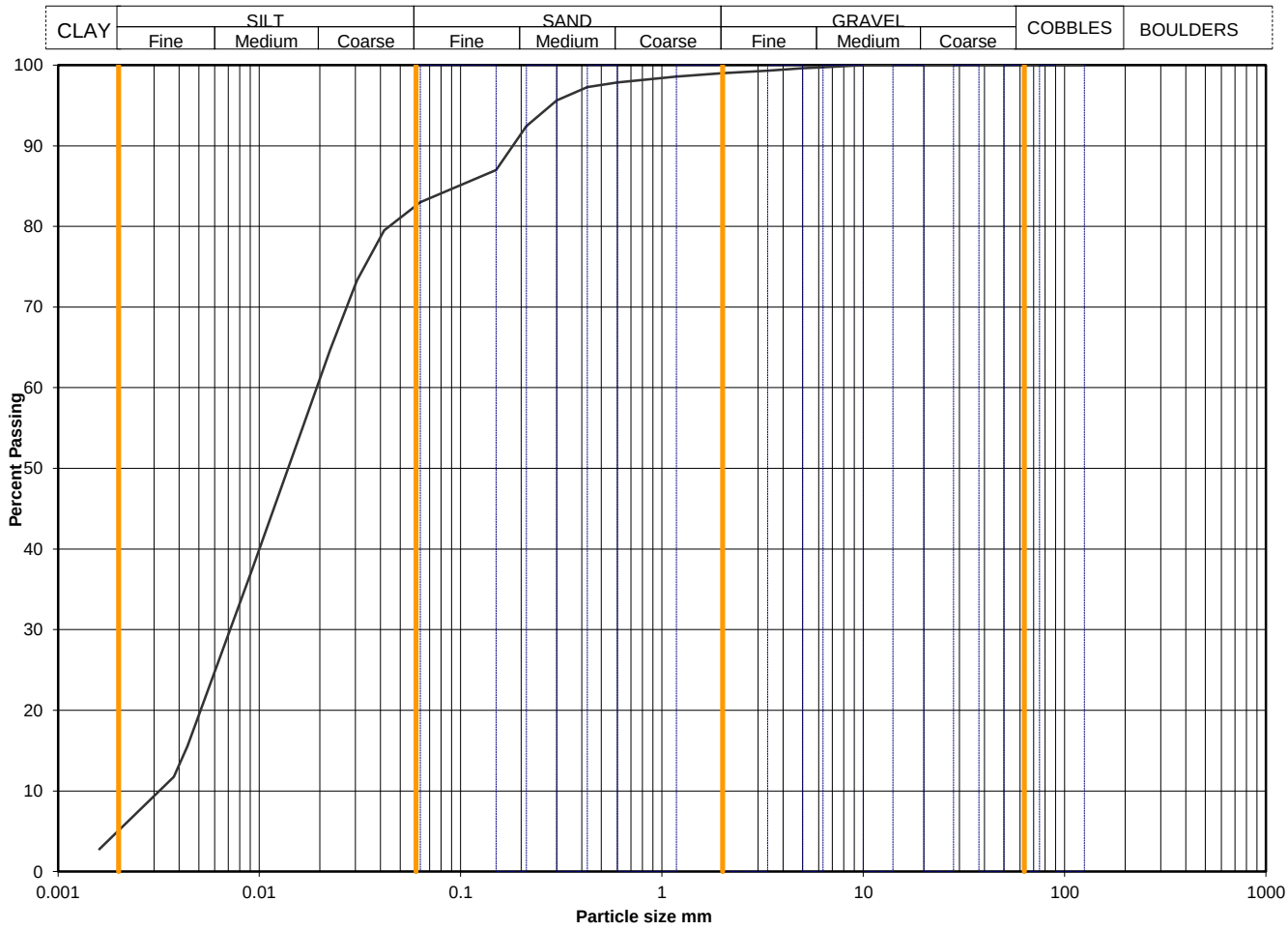
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-17-20171216040857

Hole No	BH106
Sample Depth (m BGL)	7.7
Sample Type and No	L14
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	83
90	100	0.0417	80
75	100	0.0305	73
63	100	0.0225	65
50	100	0.0166	55
37.5	100	0.0092	37
28	100	0.0044	16
20	100	0.0038	12
14	100	0.0016	3
10	100		
6.3	100		
5.0	100		
3.35	99		
2.00	99		
1.18	99	Particle density, Mg/m3	
0.600	98		
0.425	97	2.65 assumed	
0.300	96	Dry mass of sample, kg	
0.212	92		
0.150	87	0.7	
0.063	83		

Soil description	Grey slightly sandy slightly gravelly SILT.		
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377		
Remarks			
Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	1	1
	Sand	16	16
*<60mm values to aid description only	Silt	78	78
	Clay	5	5

Uniformity Coefficient	**D60 / D10**	6

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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Project Name WEST BURTON C/D POWER STATION

Figure

PSD

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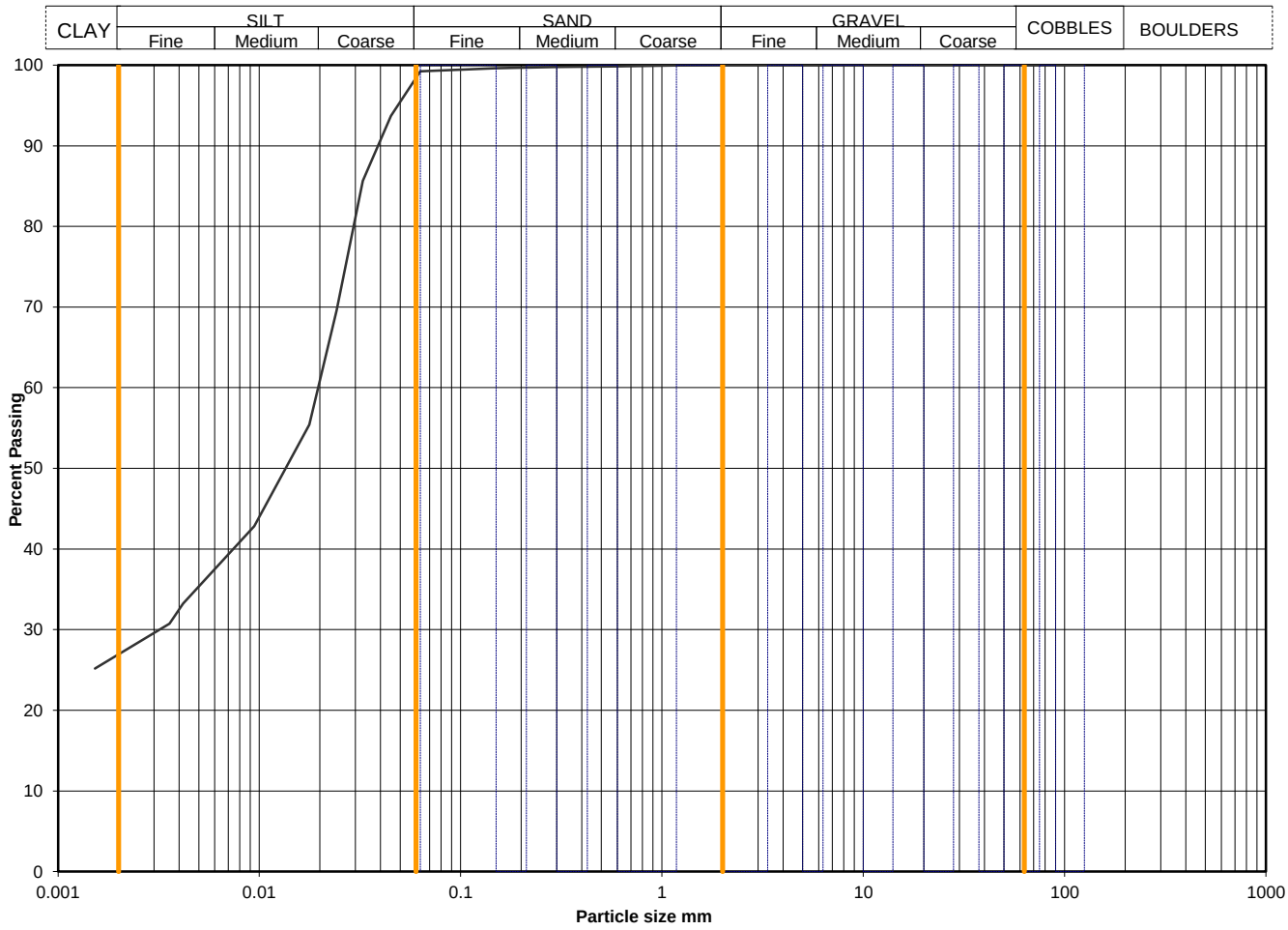
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-1720171214123757

Hole No	TP102
Sample Depth (m BGL)	1.5
Sample Type and No	D3
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	99
90	100	0.0450	94
75	100	0.0326	86
63	100	0.0241	70
50	100	0.0177	55
37.5	100	0.0094	43
28	100	0.0042	33
20	100	0.0036	31
14	100	0.0015	25
10	100		
6.3	100		
5.0	100		
3.35	100		
2.00	100		
1.18	100	Particle density, Mg/m3	
0.600	100		
0.425	100	2.65 assumed	
0.300	100	Dry mass of sample, kg	
0.212	100		
0.150	100	1.2	
0.063	99		

Soil description	Brown slightly sandy SILT with clay pockets.
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377
Remarks	

Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	0	0
	Sand	1	1
*<60mm values to aid description only	Silt	72	72
	Clay	27	27

Uniformity Coefficient	D60 / D10	Not applicable

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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SLR 2,9
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Project No A7102-17

Project Name WEST BURTON C/D POWER STATION

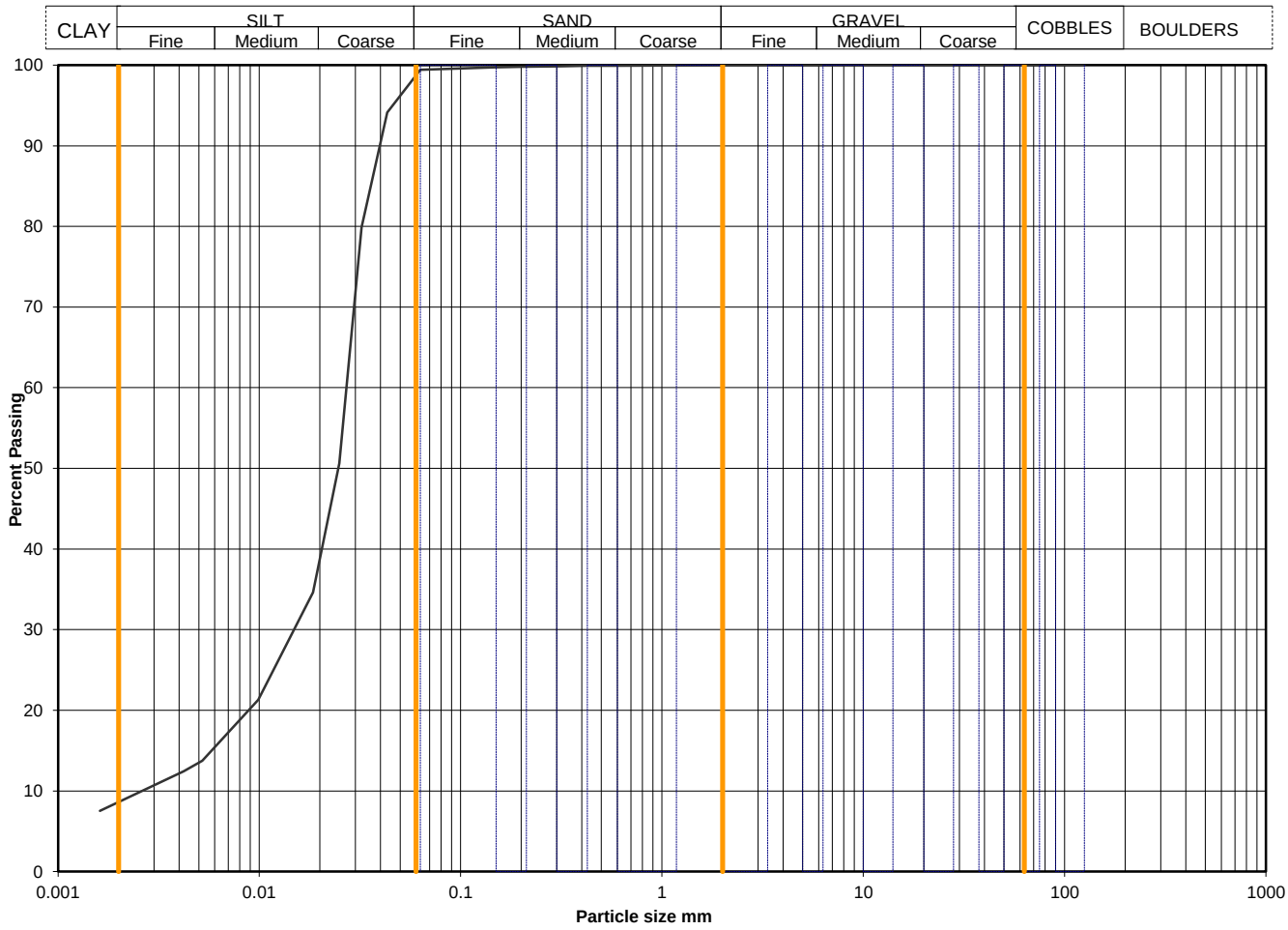
Figure
PSD

Printed: 06/02/2018 09:21

Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-1720171214123310

Hole No	TP103
Sample Depth (m BGL)	3.5
Sample Type and No	D7
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	99
90	100	0.0431	94
75	100	0.0321	80
63	100	0.0250	51
50	100	0.0185	35
37.5	100	0.0099	21
28	100	0.0052	14
20	100	0.0042	12
14	100	0.0016	8
10	100		
6.3	100		
5.0	100		
3.35	100		
2.00	100		
1.18	100	Particle density, Mg/m3	
0.600	100		
0.425	100	2.65 assumed	
0.300	100	Dry mass of sample, kg	
0.212	100		
0.150	100	1.1	
0.063	99		

Soil description	Brown slightly sandy clayey SILT.
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377
Remarks	

Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	0	0
	Sand	1	1
*<60mm values to aid description only	Silt	91	91
	Clay	9	9

Uniformity Coefficient	D60 / D10	10

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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SOCOTEC

Project No A7102-17

Project Name WEST BURTON C/D POWER STATION

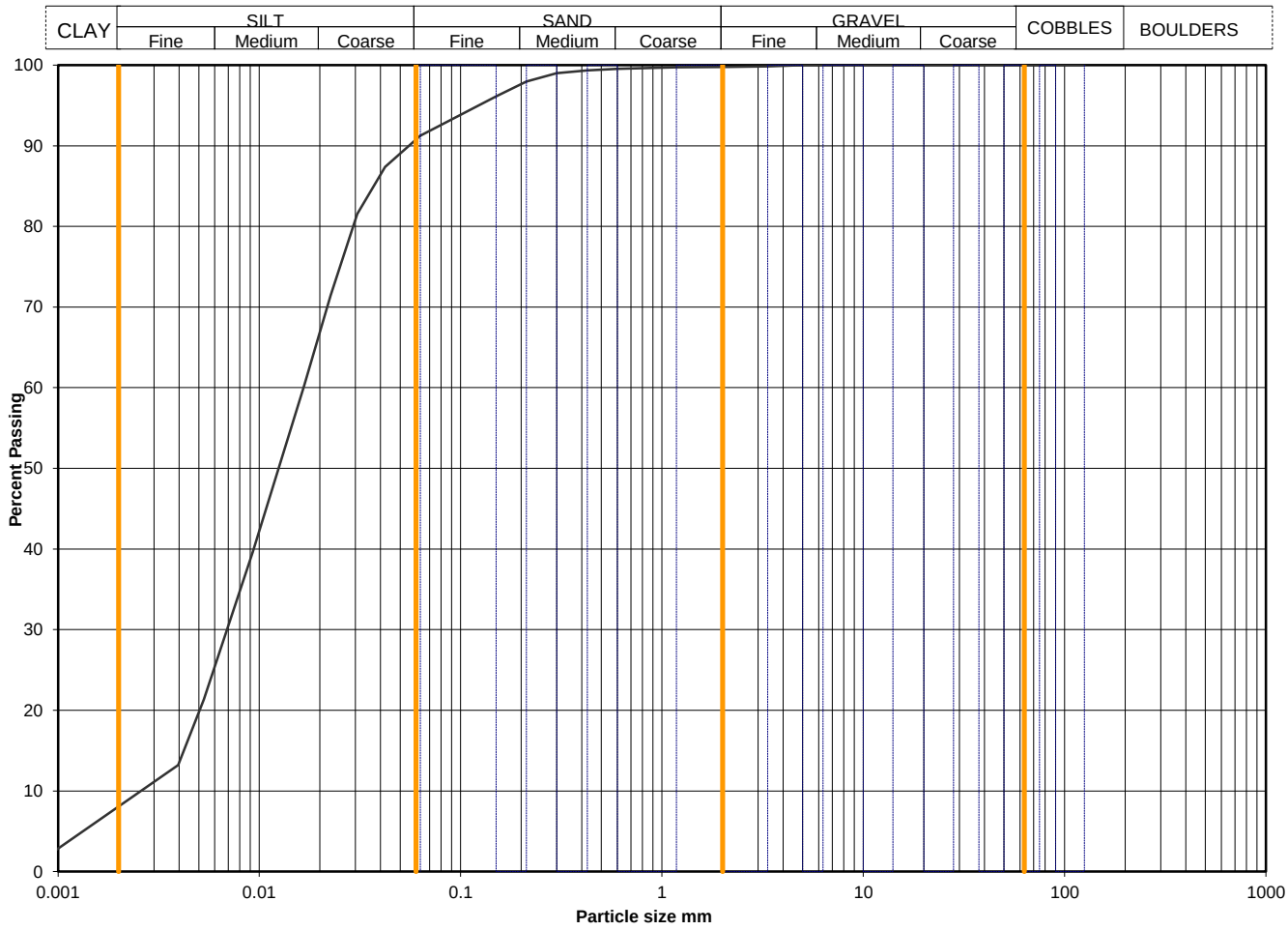
Figure
PSD

Printed: 06/02/2018 09:21

Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-1720171213010640

Hole No	TP104
Sample Depth (m BGL)	2
Sample Type and No	D4
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	91
90	100	0.0421	87
75	100	0.0306	82
63	100	0.0226	71
50	100	0.0167	60
37.5	100	0.0093	40
28	100	0.0053	21
20	100	0.0040	13
14	100	0.0009	2
10	100		
6.3	100		
5.0	100		
3.35	100		
2.00	100		
1.18	100	Particle density, Mg/m3	
0.600	100		
0.425	99	2.65 assumed	
0.300	99	Dry mass of sample, kg	
0.212	98		
0.150	96	1.0	
0.063	91		

Soil description	Dark grey slightly sandy SILT.		
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377		
Remarks			
Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	0	0
	Sand	9	9
*<60mm values to aid description only	Silt	83	83
	Clay	8	8

Uniformity Coefficient	**D60 / D10**	6

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

QA Ref
SLR 2,9
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Project No A7102-17

Project Name WEST BURTON C/D POWER STATION

Figure

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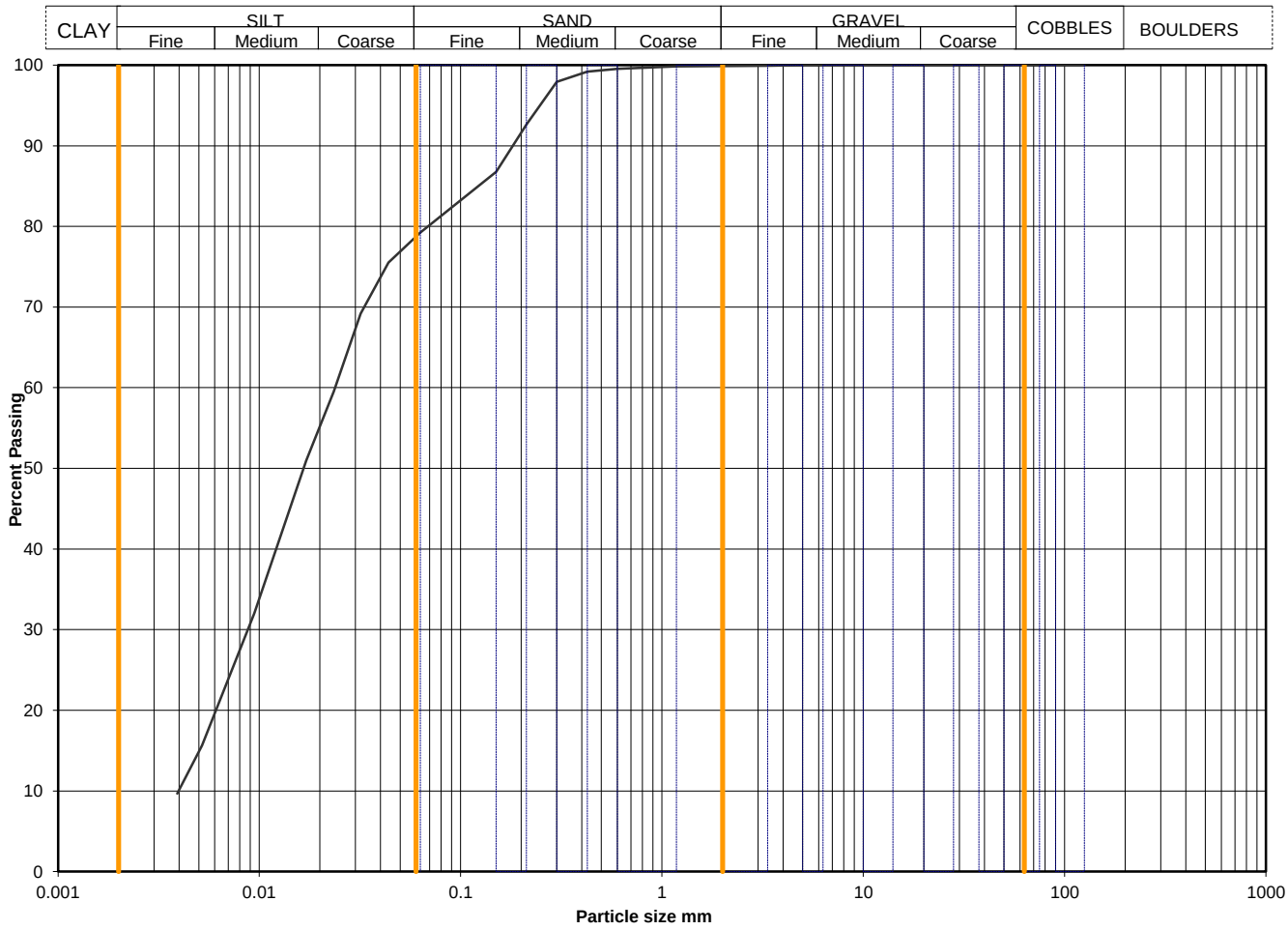
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-1720171215092611

Hole No	TP108
Sample Depth (m BGL)	2
Sample Type and No	D4
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	79
90	100	0.0438	76
75	100	0.0318	69
63	100	0.0234	60
50	100	0.0171	51
37.5	100	0.0094	32
28	100	0.0052	16
20	100	0.0039	10
14	100		
10	100		
6.3	100		
5.0	100		
3.35	100		
2.00	100		
1.18	100	Particle density, Mg/m3	
0.600	100		
0.425	99	2.65 assumed	
0.300	98	Dry mass of sample, kg	
0.212	93		
0.150	87	1.0	
0.063	79		

Soil description	Grey slightly sandy SILT.
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377
Remarks	

Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	0	0
	Sand	21	21
*<60mm values to aid description only	Silt	79	79
	Clay	0	0

Uniformity Coefficient	D60 / D10	6

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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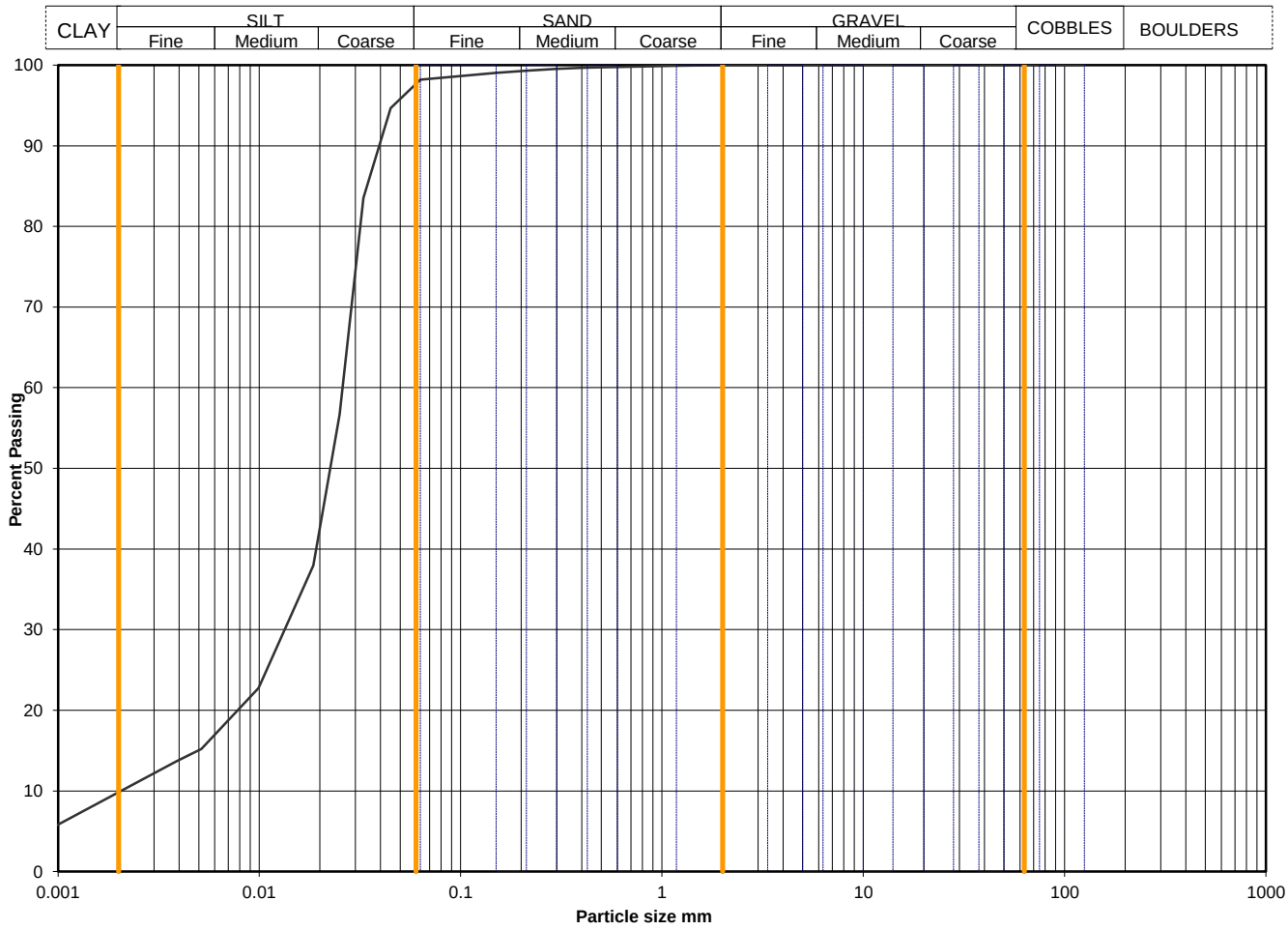
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-1720171215093602

Hole No	TP111
Sample Depth (m BGL)	1
Sample Type and No	D2
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	98
90	100	0.0449	95
75	100	0.0329	84
63	100	0.0250	57
50	100	0.0185	38
37.5	100	0.0099	23
28	100	0.0052	15
20	100	0.0039	14
14	100	0.0009	5
10	100		
6.3	100		
5.0	100		
3.35	100		
2.00	100		
1.18	100	Particle density, Mg/m3	
0.600	100		
0.425	100	2.65 assumed	
0.300	100	Dry mass of sample, kg	
0.212	99		
0.150	99	1.1	
0.063	98		

Soil description	Brown slightly sandy clayey SILT with rare rootlets.
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377
Remarks	

Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	0	0
	Sand	2	2
*<60mm values to aid description only	Silt	88	88
	Clay	10	10

Uniformity Coefficient	D60 / D10	13

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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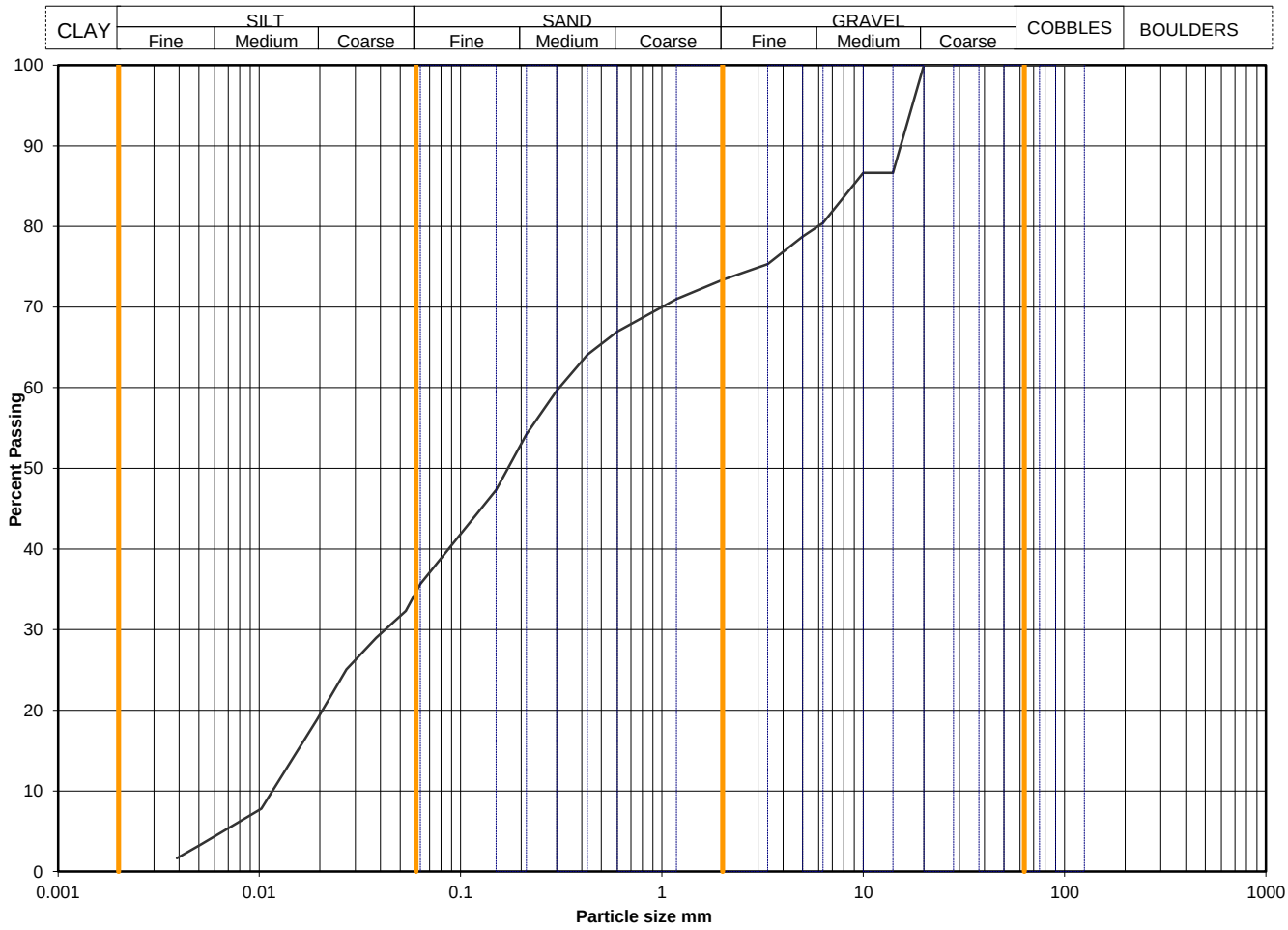
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-1720171214124120

Hole No	TP115
Sample Depth (m BGL)	2.5
Sample Type and No	D5
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	36
90	100	0.0534	32
75	100	0.0380	29
63	100	0.0271	25
50	100	0.0194	19
37.5	100	0.0102	8
28	100	0.0051	3
20	100	0.0039	2
14	87		
10	87		
6.3	80		
5.0	79		
3.35	75		
2.00	73		
1.18	71	Particle density, Mg/m3	
0.600	67		
0.425	64	2.65 assumed	
0.300	60	Dry mass of sample, kg	
0.212	54		
0.150	47	0.9	
0.063	36		

Soil description	Brown slightly gravelly sandy SILT with rare rootlets.		
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377		
Remarks			
Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	27	27
	Sand	38	38
*<60mm values to aid description only	Silt	36	36
	Clay	0	0

Uniformity Coefficient	**D60 / D10**	27

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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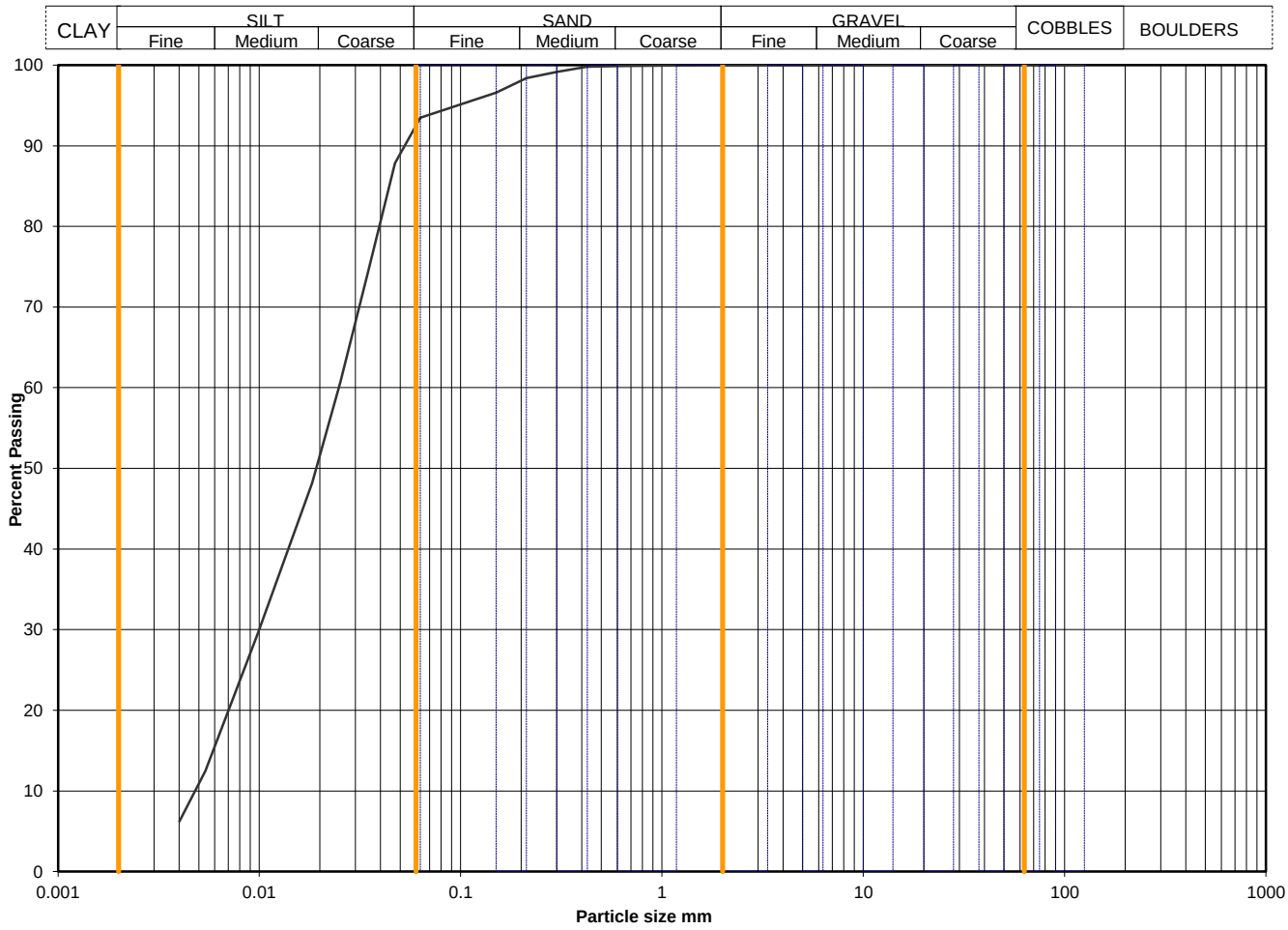
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-1720171219035352

Hole No	WS101
Sample Depth (m BGL)	1.2
Sample Type and No	UT4
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	93
90	100	0.0472	88
75	100	0.0345	74
63	100	0.0252	61
50	100	0.0183	48
37.5	100	0.0098	29
28	100	0.0054	12
20	100	0.0040	6
14	100		
10	100		
6.3	100		
5.0	100		
3.35	100		
2.00	100		
1.18	100	Particle density, Mg/m3	
0.600	100		
0.425	100	2.65 assumed	
0.300	99	Dry mass of sample, kg	
0.212	98		
0.150	97	1.4	
0.063	93		

Soil description	Grey slightly sandy SILT.		
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377		
Remarks			
Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	0	0
	Sand	7	7
*<60mm values to aid description only	Silt	93	93
	Clay	0	0

Uniformity Coefficient	**D60 / D10**	5

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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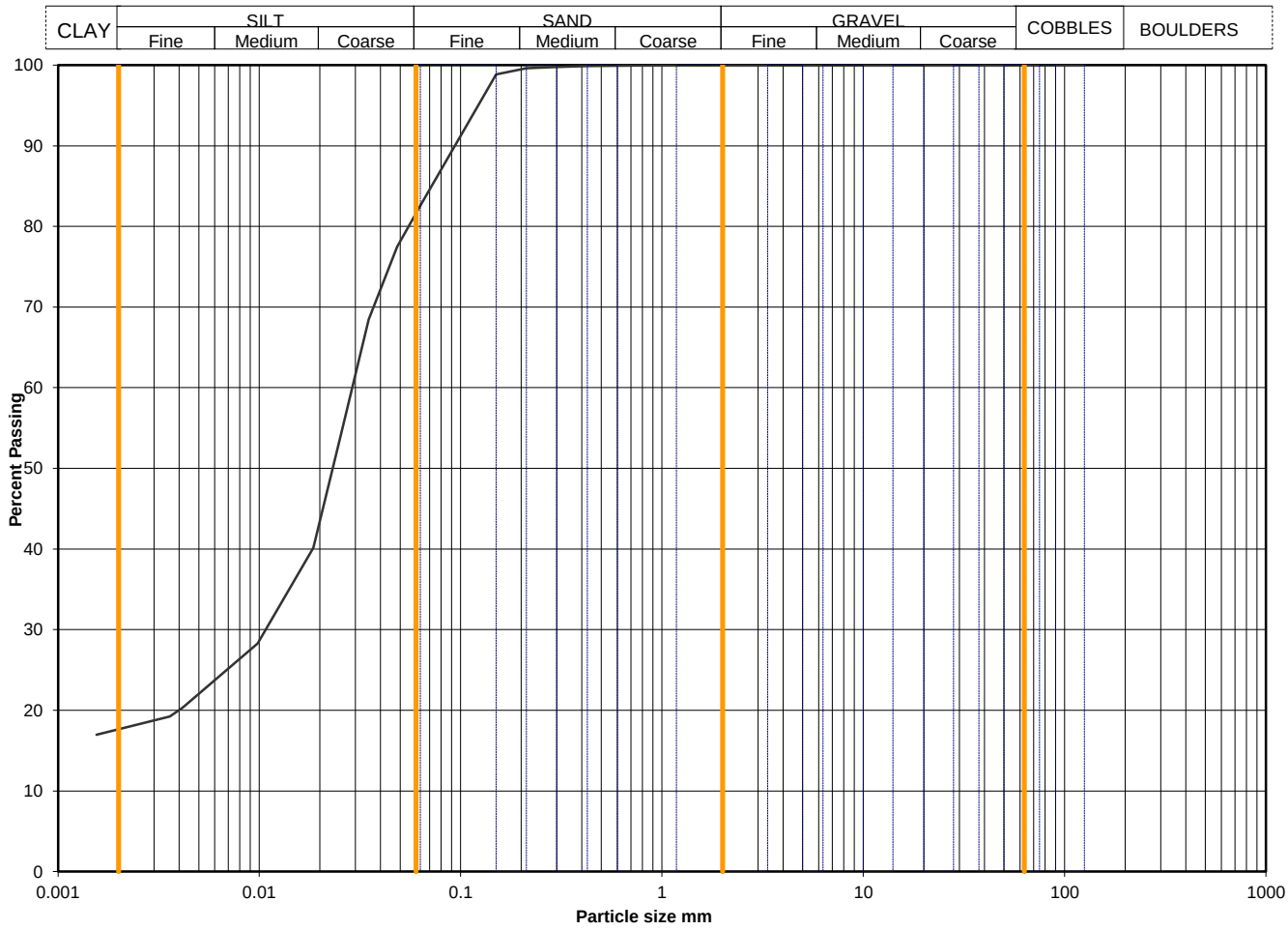
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-1720171215113538

Hole No	WS103
Sample Depth (m BGL)	13.5
Sample Type and No	B24
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	83
90	100	0.0484	77
75	100	0.0349	68
63	100	0.0255	54
50	100	0.0186	40
37.5	100	0.0098	28
28	100	0.0042	20
20	100	0.0036	19
14	100	0.0016	17
10	100		
6.3	100		
5.0	100		
3.35	100		
2.00	100		
1.18	100	Particle density, Mg/m3	
0.600	100		
0.425	100	2.65 assumed	
0.300	100	Dry mass of sample, kg	
0.212	100		
0.150	99	6.1	
0.063	83		

Soil description	Brown slightly sandy clayey SILT.		
Preparation / Pretreatment	Sieve: pre dried, Hydro: as BS1377		
Remarks			
Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	0	0
	Sand	17	17
*<60mm values to aid description only	Silt	65	65
	Clay	18	18

Uniformity Coefficient	**D60 / D10**	Not applicable

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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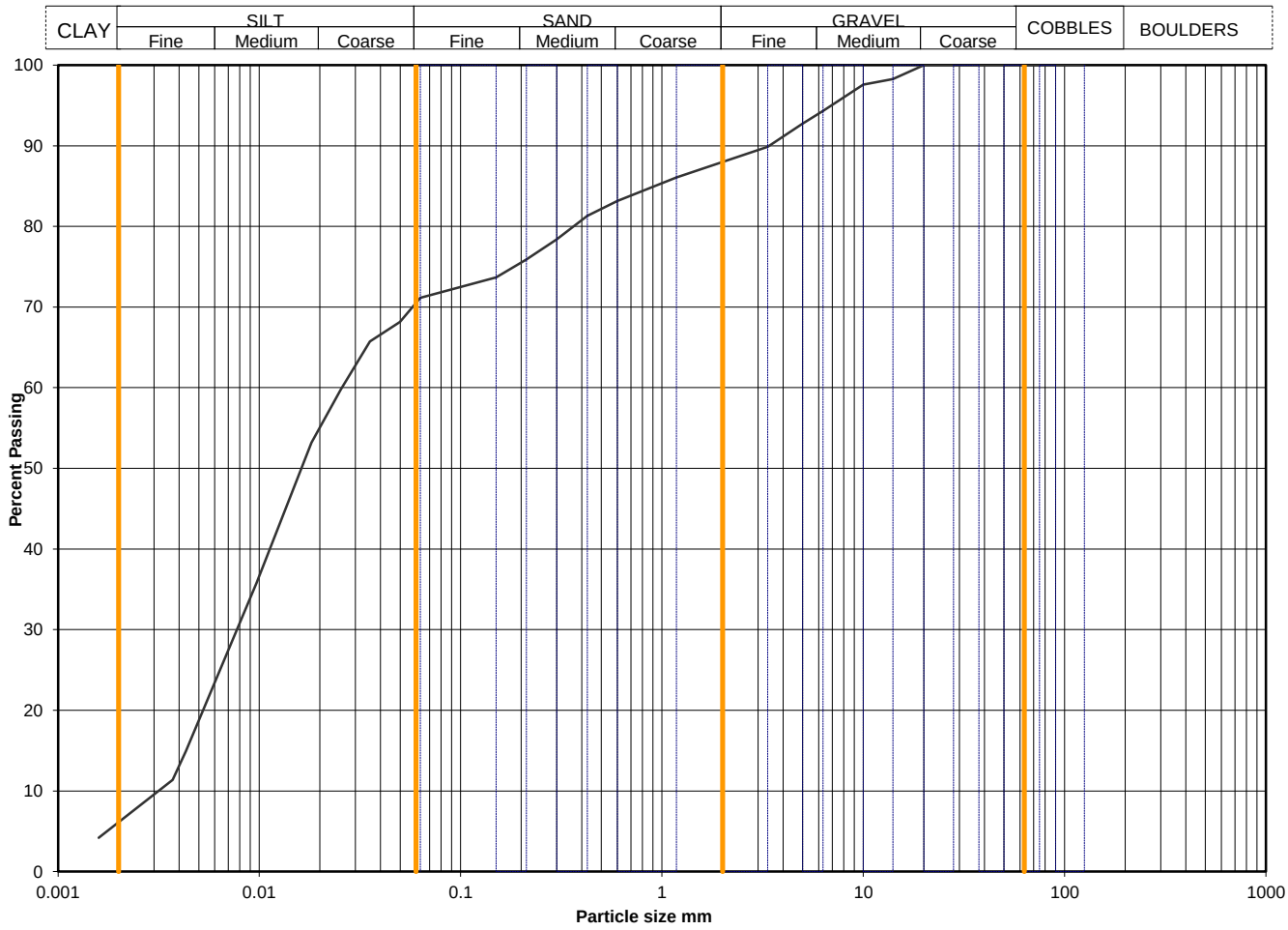
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-17-20171215074835

Hole No	WS104
Sample Depth (m BGL)	5.7
Sample Type and No	UT16
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	71
90	100	0.0498	68
75	100	0.0354	66
63	100	0.0254	60
50	100	0.0182	53
37.5	100	0.0097	36
28	100	0.0043	15
20	100	0.0037	11
14	98	0.0016	4
10	98		
6.3	94		
5.0	93		
3.35	90		
2.00	88		
1.18	86	Particle density, Mg/m3	
0.600	83		
0.425	81	2.65 assumed	
0.300	78	Dry mass of sample, kg	
0.212	76		
0.150	74	1.2	
0.063	71		

Soil description	Grey slightly sandy slightly gravelly SILT.		
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377		
Remarks			
Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	12	12
	Sand	17	17
*<60mm values to aid description only	Silt	65	65
	Clay	6	6

Uniformity Coefficient	**D60 / D10**	8

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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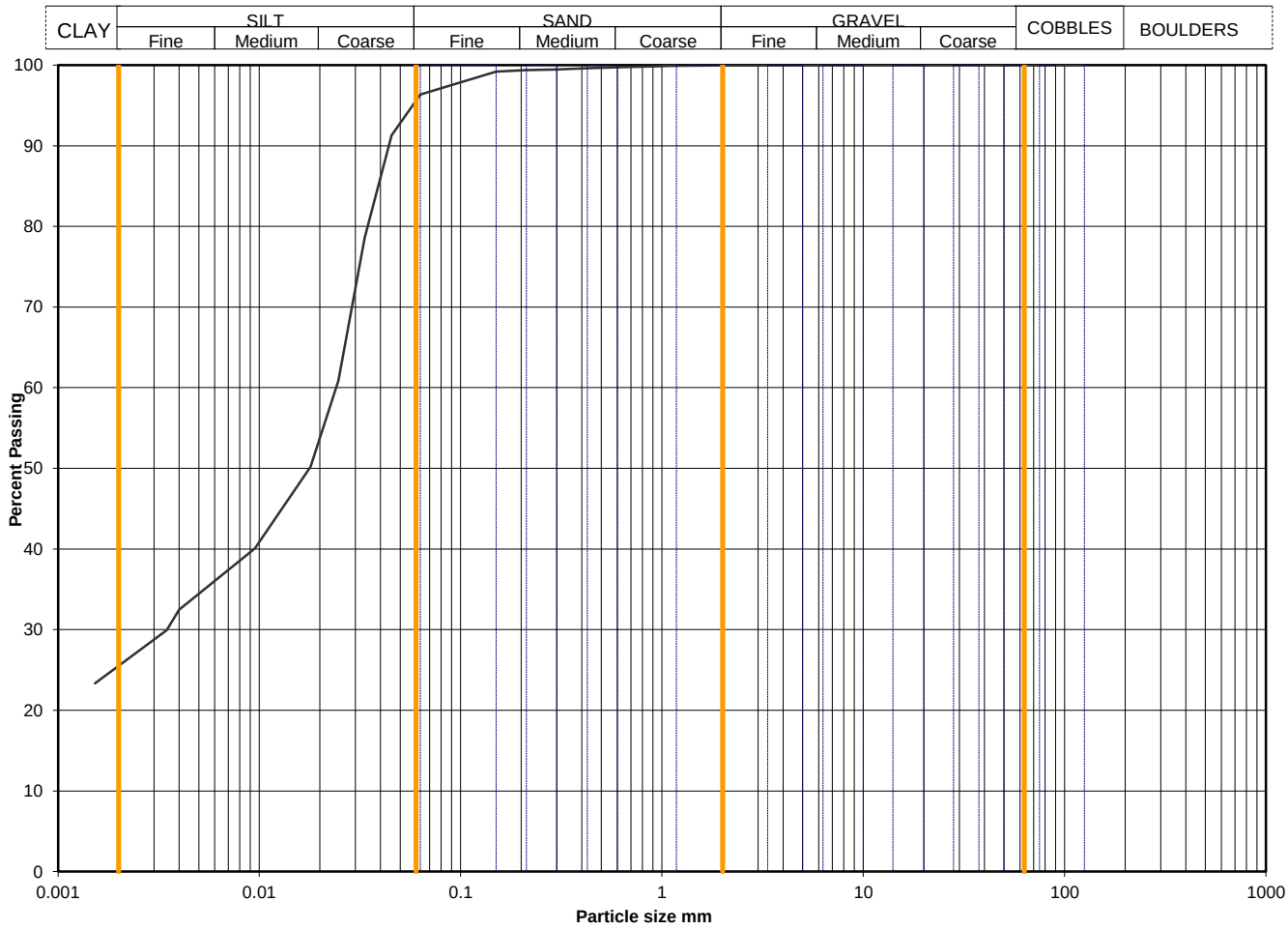
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-1720171213022255

Hole No	WS105
Sample Depth (m BGL)	10.5
Sample Type and No	UT16
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	96
90	100	0.0454	91
75	100	0.0333	79
63	100	0.0247	61
50	100	0.0180	50
37.5	100	0.0095	40
28	100	0.0040	32
20	100	0.0035	30
14	100	0.0015	23
10	100		
6.3	100		
5.0	100		
3.35	100		
2.00	100		
1.18	100	Particle density, Mg/m3	
0.600	100		
0.425	100	2.65 assumed	
0.300	99	Dry mass of sample, kg	
0.212	99		
0.150	99	0.9	
0.063	96		

Soil description	Firm to stiff brown slightly sandy clayey SILT with rare rootlets.		
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377		
Remarks			
Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	0	0
	Sand	4	4
*<60mm values to aid description only	Silt	71	71
	Clay	26	26

Uniformity Coefficient	**D60 / D10**	Not applicable

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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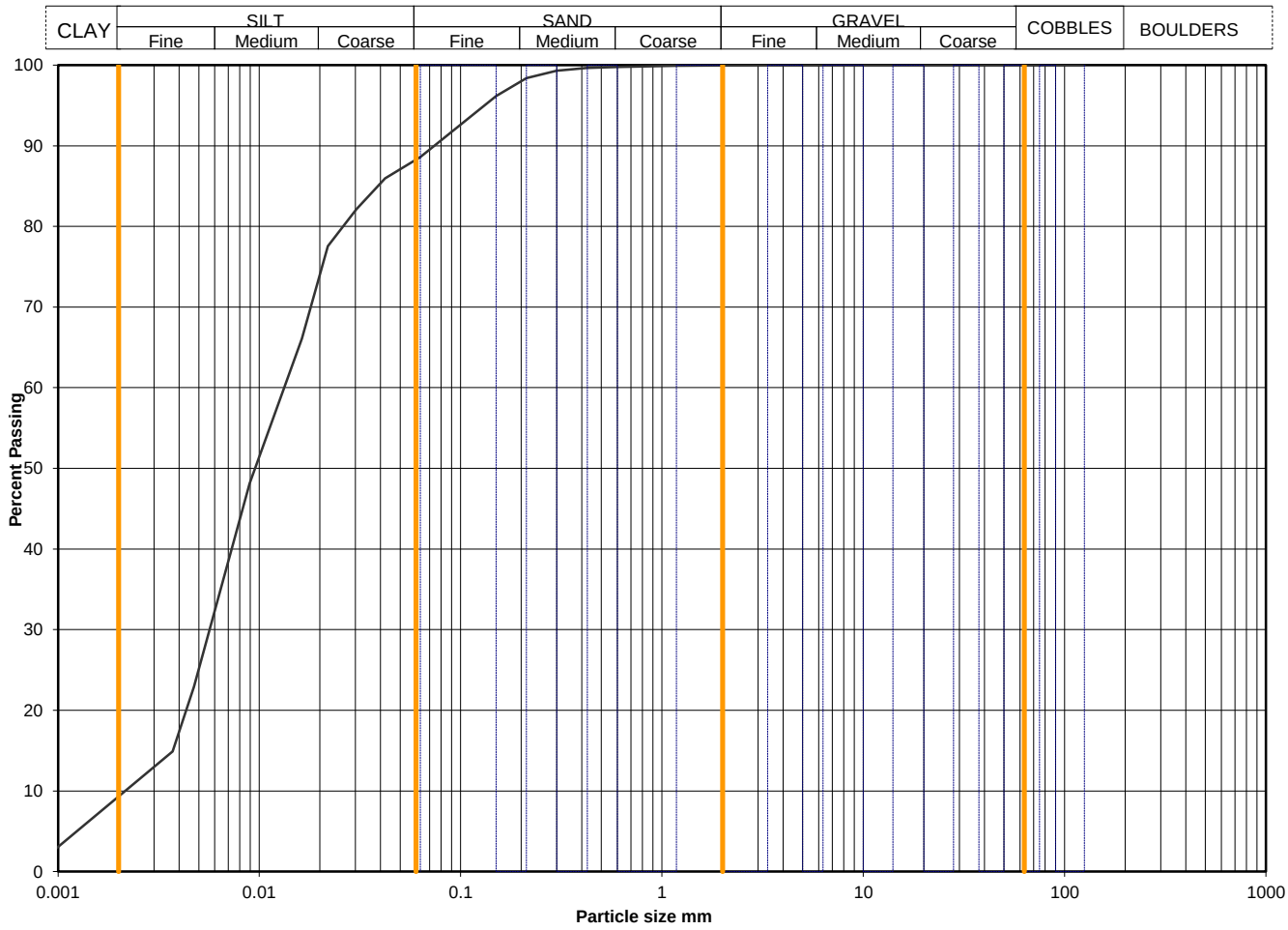
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-17-20171212085635

Hole No	WS106
Sample Depth (m BGL)	6
Sample Type and No	UT11
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	89
90	100	0.0422	86
75	100	0.0304	82
63	100	0.0219	78
50	100	0.0162	66
37.5	100	0.0090	48
28	100	0.0047	23
20	100	0.0037	15
14	100	0.0009	2
10	100		
6.3	100		
5.0	100		
3.35	100		
2.00	100		
1.18	100	Particle density, Mg/m3	
0.600	100		
0.425	100	2.65 assumed	
0.300	99	Dry mass of sample, kg	
0.212	98		
0.150	96	0.8	
0.063	89		

Soil description	Grey slightly sandy SILT.		
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377		
Remarks			
Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	0	0
	Sand	11	11
*<60mm values to aid description only	Silt	79	79
	Clay	9	9

Uniformity Coefficient	**D60 / D10**	6

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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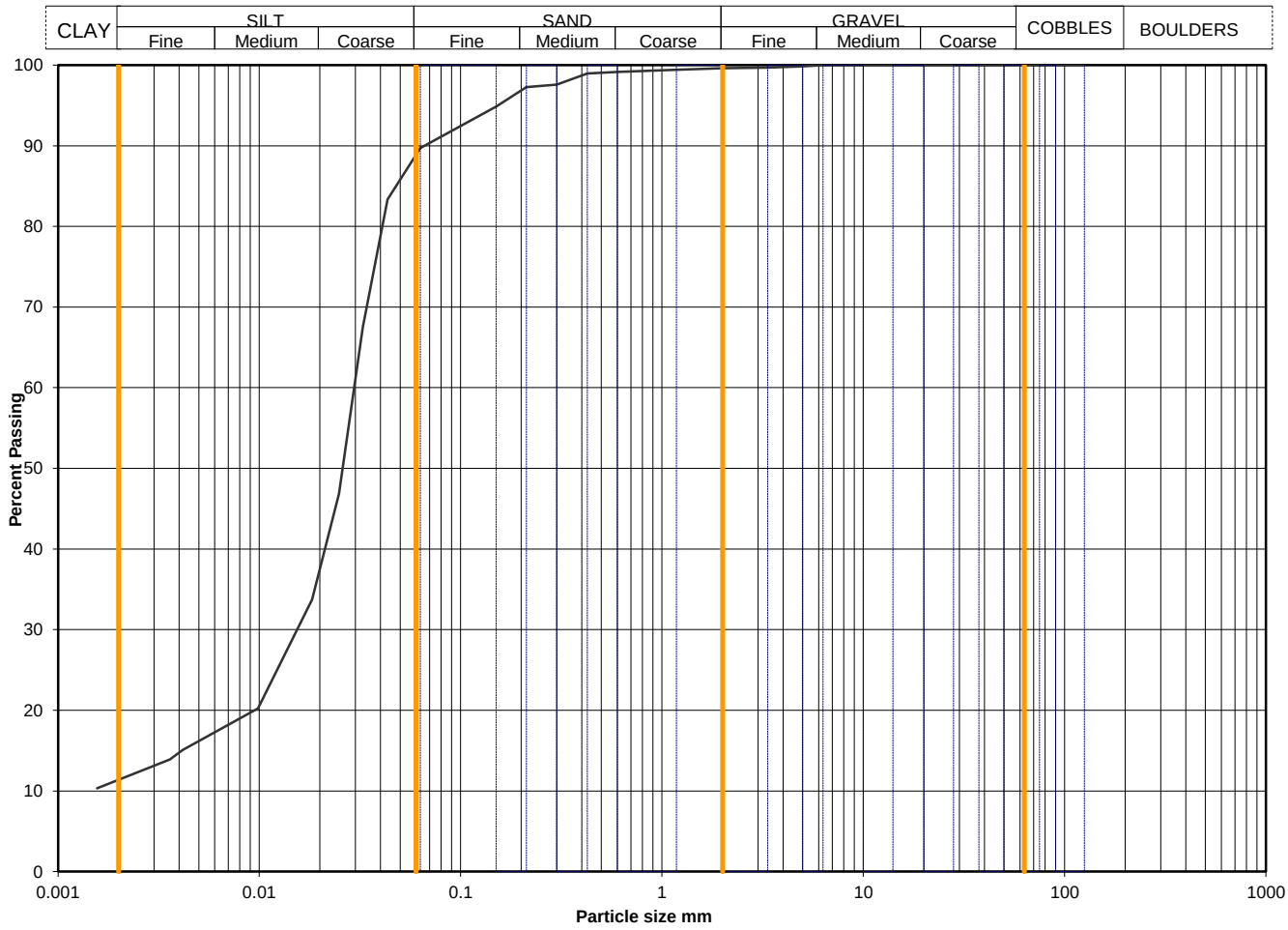
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-17-20171212090158

Hole No	WS106
Sample Depth (m BGL)	10.5
Sample Type and No	UT21
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	90
90	100	0.0433	83
75	100	0.0326	67
63	100	0.0248	47
50	100	0.0183	34
37.5	100	0.0098	20
28	100	0.0042	15
20	100	0.0036	14
14	100	0.0016	10
10	100		
6.3	100		
5.0	100		
3.35	100		
2.00	100		
1.18	99	Particle density, Mg/m3	
0.600	99		
0.425	99	2.65 assumed	
0.300	98	Dry mass of sample, kg	
0.212	97		
0.150	95	3.8	
0.063	90		

Soil description	Light brown slightly sandy SILT.		
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377		
Remarks			
Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	0	0
	Sand	10	10
*<60mm values to aid description only	Silt	78	78
	Clay	11	11

Uniformity Coefficient	**D60 / D10**	Not applicable

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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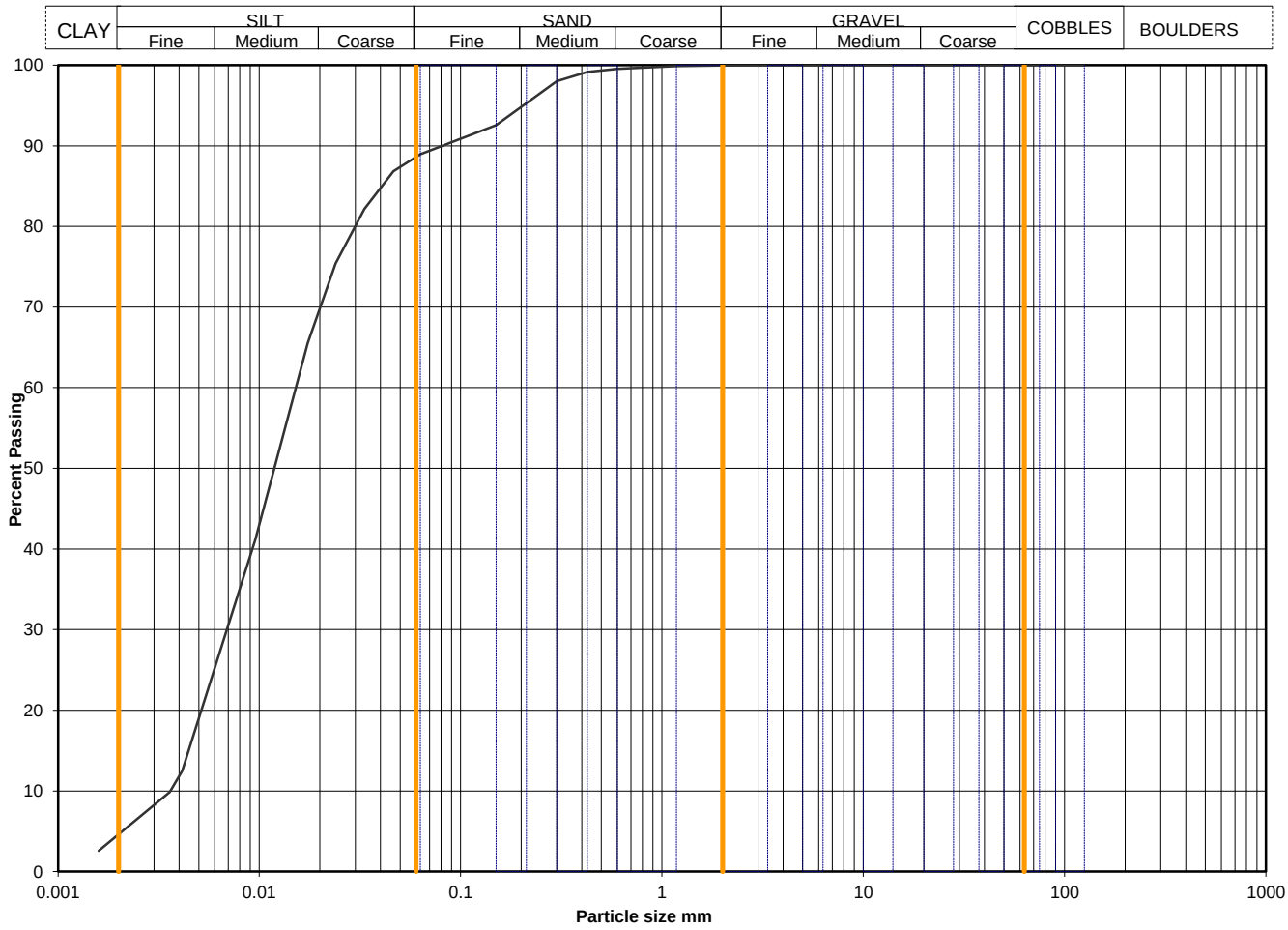
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-1720171206121532

Hole No	WS107
Sample Depth (m BGL)	3
Sample Type and No	UT6
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	89
90	100	0.0464	87
75	100	0.0332	82
63	100	0.0239	75
50	100	0.0174	66
37.5	100	0.0095	41
28	100	0.0041	12
20	100	0.0036	10
14	100	0.0016	3
10	100		
6.3	100		
5.0	100		
3.35	100		
2.00	100		
1.18	100	Particle density, Mg/m3	
0.600	100		
0.425	99	2.65 assumed	
0.300	98	Dry mass of sample, kg	
0.212	95		
0.150	93	1.1	
0.063	89		

Soil description	Grey slightly sandy SILT.		
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377		
Remarks			
Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	0	0
	Sand	11	11
*<60mm values to aid description only	Silt	84	84
	Clay	5	5

Uniformity Coefficient	**D60 / D10**	4

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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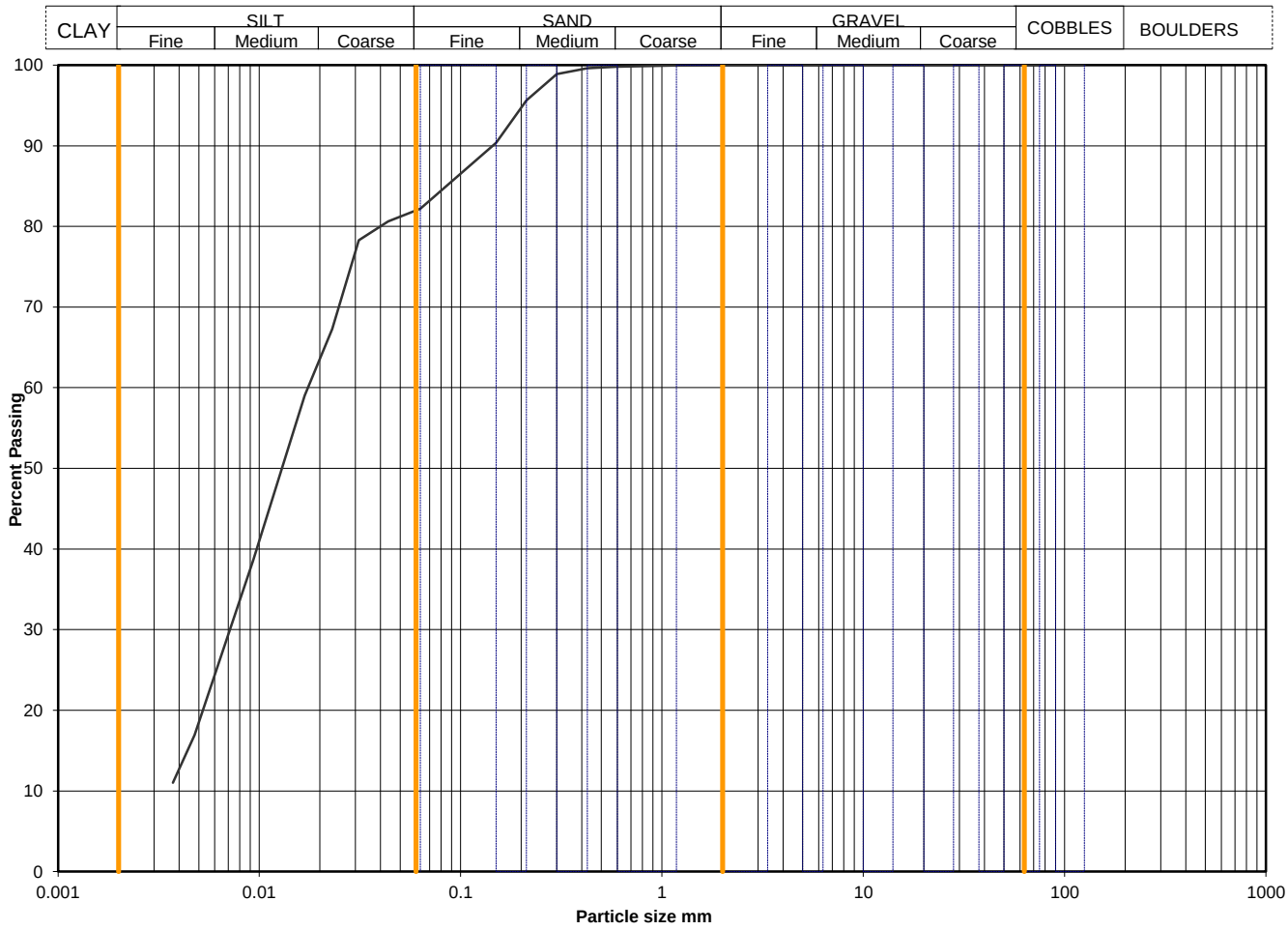
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-1720171212092603

Hole No	WS108
Sample Depth (m BGL)	9
Sample Type and No	D17
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	82
90	100	0.0436	81
75	100	0.0312	78
63	100	0.0230	67
50	100	0.0168	59
37.5	100	0.0093	39
28	100	0.0048	17
20	100	0.0037	11
14	100		
10	100		
6.3	100		
5.0	100		
3.35	100		
2.00	100		
1.18	100	Particle density, Mg/m3	
0.600	100		
0.425	100	2.65 assumed	
0.300	99	Dry mass of sample, kg	
0.212	96		
0.150	90	0.5	
0.063	82		

Soil description	Grey slightly sandy SILT with rare rootlets.
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377
Remarks	

Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	0	0
	Sand	18	18
*<60mm values to aid description only	Silt	82	82
	Clay	0	0

Uniformity Coefficient	D60 / D10	Not applicable

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

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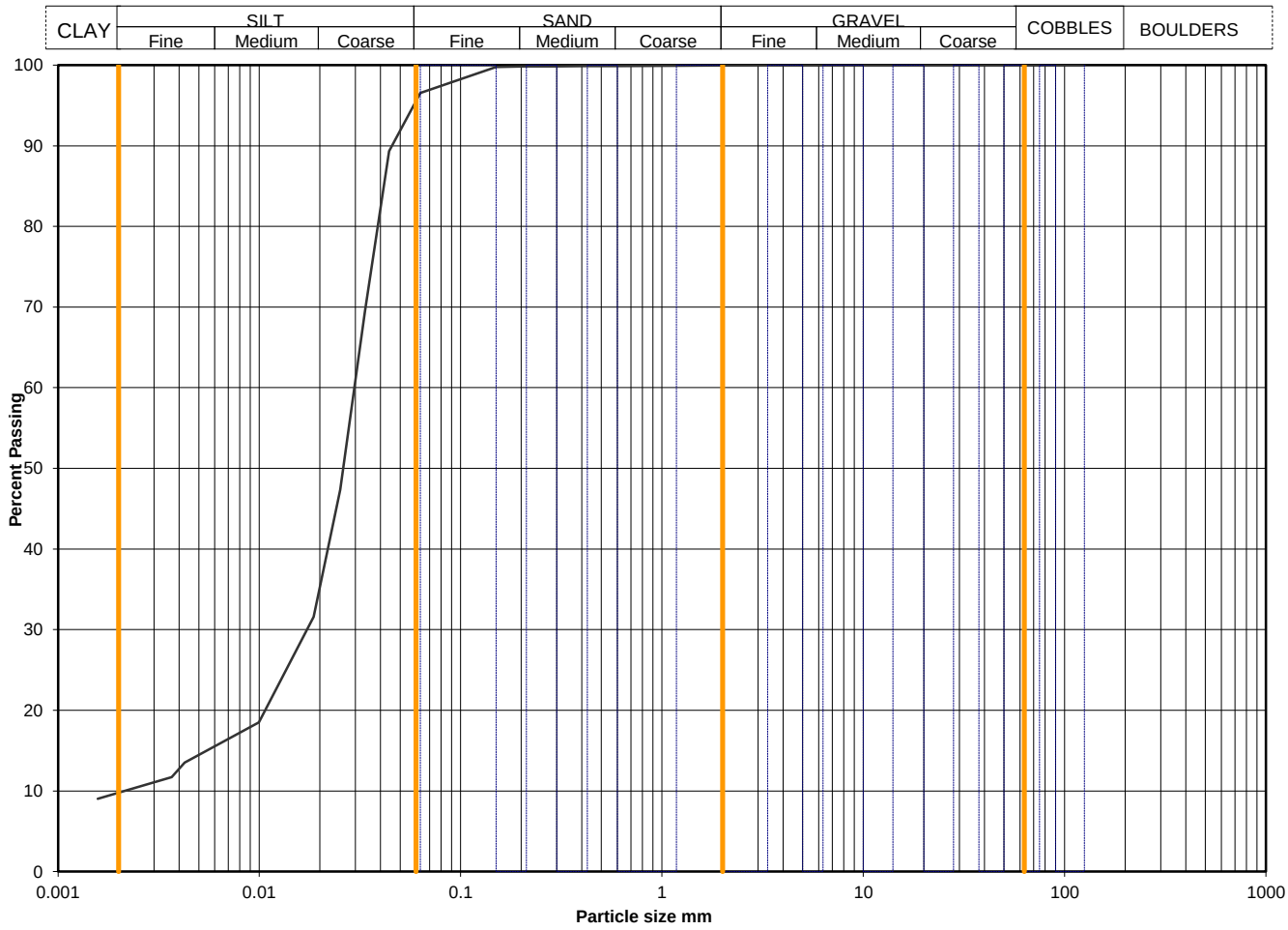
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-1720171212092715

Hole No	WS108
Sample Depth (m BGL)	12
Sample Type and No	UT20
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	97
90	100	0.0441	89
75	100	0.0334	69
63	100	0.0252	47
50	100	0.0186	32
37.5	100	0.0099	18
28	100	0.0042	14
20	100	0.0037	12
14	100	0.0016	9
10	100		
6.3	100		
5.0	100		
3.35	100		
2.00	100		
1.18	100	Particle density, Mg/m3	
0.600	100		
0.425	100	2.65 assumed	
0.300	100	Dry mass of sample, kg	
0.212	100		
0.150	100	4.6	
0.063	97		

Soil description	Brown slightly sandy clayey SILT.		
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377		
Remarks			
Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	0	0
	Sand	3	3
*<60mm values to aid description only	Silt	87	87
	Clay	10	10

Uniformity Coefficient	**D60 / D10**	14

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

QA Ref
SLR 2,9
Rev 2.10
Oct 16

UKAS TESTING
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Project No A7102-17

Project Name WEST BURTON C/D POWER STATION

Figure

PSD

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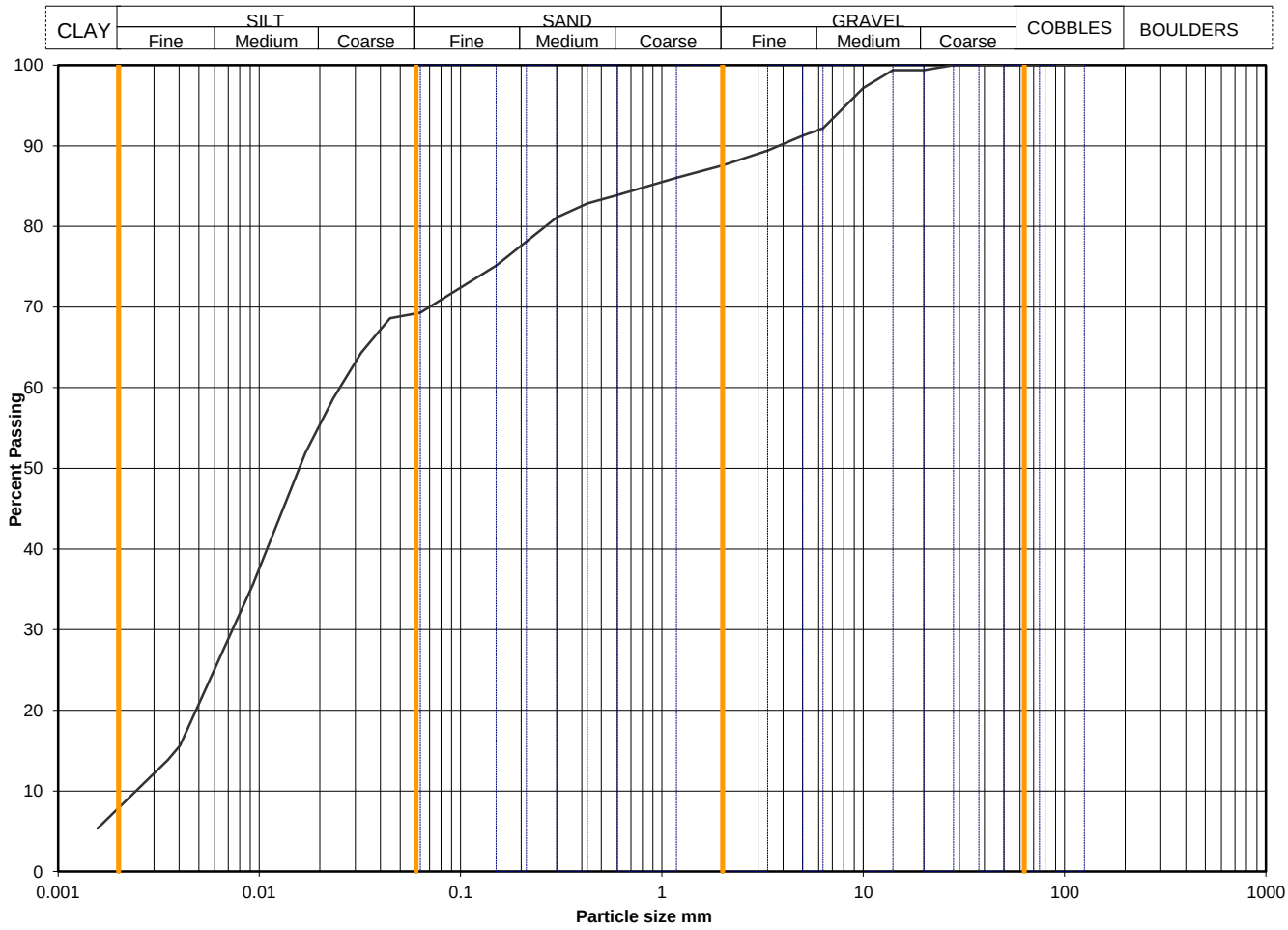
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-17-20171216023413

Hole No	WS112
Sample Depth (m BGL)	4.5
Sample Type and No	UT9
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	69
90	100	0.0445	69
75	100	0.0321	64
63	100	0.0232	59
50	100	0.0169	52
37.5	100	0.0093	36
28	100	0.0040	16
20	99	0.0035	14
14	99	0.0016	5
10	97		
6.3	92		
5.0	91		
3.35	89		
2.00	88		
1.18	86	Particle density, Mg/m3	
0.600	84		
0.425	83	2.65 assumed	
0.300	81	Dry mass of sample, kg	
0.212	78		
0.150	75	1.8	
0.063	69		

Soil description	Grey slightly sandy slightly gravelly clayey SILT		
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377		
Remarks			
Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	12	12
	Sand	18	18
*<60mm values to aid description only	Silt	61	61
	Clay	8	8

Uniformity Coefficient	**D60 / D10**	10

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

QA Ref
SLR 2,9
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Project No A7102-17

Project Name WEST BURTON C/D POWER STATION

Figure

PSD

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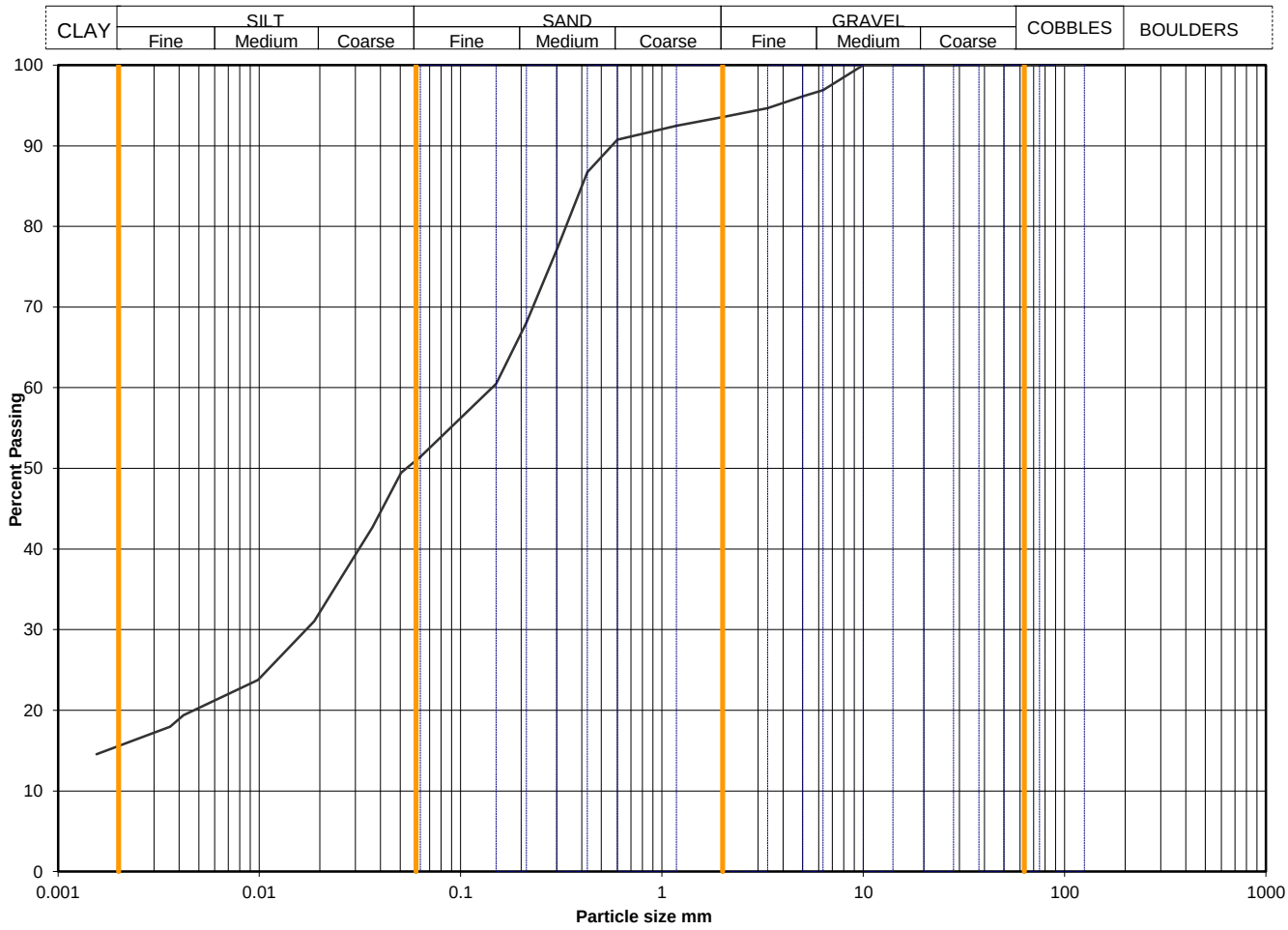
Particle Size Distribution Analysis

Sample Details:	SAMPLE ID:
	A7102-17-20171218073153

Hole No	WS112
Sample Depth (m BGL)	10.5
Sample Type and No	B20
Specimen Ref	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	51
90	100	0.0506	49
75	100	0.0364	43
63	100	0.0261	37
50	100	0.0187	31
37.5	100	0.0098	24
28	100	0.0042	19
20	100	0.0036	18
14	100	0.0016	15
10	100		
6.3	97		
5.0	96		
3.35	95		
2.00	94		
1.18	92	Particle density, Mg/m3	
0.600	91		
0.425	87	2.65 assumed	
0.300	77	Dry mass of sample, kg	
0.212	68		
0.150	60	7.3	
0.063	51		

Soil description	Brown slightly gravelly sandy clayey SILT.		
Preparation / Pretreatment	Sieve: natural material Hydro: as BS1377		
Remarks			
Sample Proportions		Whole	*<60mm
	Cobbles / boulders	0	0
	Gravel	6	6
	Sand	42	42
*<60mm values to aid description only	Silt	36	36
	Clay	16	16

Uniformity Coefficient	**D60 / D10**	Not applicable

Test Method	BS 1377 : Part 2 : 1990	
	Sieving	9.2 wet sieve
	Sedimentation	9.5 hydrometer

QA Ref
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Project No A7102-17

Project Name WEST BURTON C/D POWER STATION

Figure

PSD

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UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TESTS WITHOUT MEASUREMENT OF PORE PRESSURE - SUMMARY OF RESULTS

Hole No.	Sample No.	Depth (m) from	Depth (m) to	type	Soil Description	Density bulk Mg/m3	Density dry Mg/m3	*w* %	Test type	Dia. mm	ó3 kPa	At failure / end of stage: Axial strain %	ó1 - ó3 kPa	*CU* kPa	MODE	Membrane Thickness mm	Remarks
WS104	34	14.20		UT	Stiff brown mottled grey slightly sandy silty CLAY.	1.99	1.53	29	UU	103	275	19.3	311	155	C	0	
WS106	21	10.50		UT	Light brown sandy SILT.	2.12	1.65	29	UU	100.9	206	20.3	173	86	P	0	
WS106	26	13.50		UT	Stiff reddish brown mottled grey slightly sandy CLAY	1.82	1.4	30	UU	102.2	263	20	279	140	C	0	
WS108	20	12.00		UT	Brown sandy clayey SILT.	2.01	1.52	32	UU	103.2	235	20.6	128	64	P	0	
WS110	16	9.00		UT	Firm to stiff brown sandy SILT	1.95	1.49	31	UU	102.7	178	15.4	739	369	B	0	
WS110	23	12.00		UT	Stiff brown slightly sandy CLAY	2.02	1.58	28	UU	102.2	234	10.9	319	160	B	0	
WS110	26	13.50		UT	Firm to stiff brown clayey SILT	1.94	1.47	32	UU	103.6	263	4.5	196	98	B	0	
WS111	18	13.65		UT	Very soft multicoloured clayey SILT	1.8	1.15	57	UU	101.4	266	18.4	58	29	P	0	
WS112	25	14.00		UT	Firm to stiff brown mottled grey slightly sandy silty CLAY.	1.86	1.34	39	UU	103.4	270	13.9	133	67	C	0	

General notes: Tests carried out in accordance with BS1377: Part 7: 1990, clause 8 for single stage, clause 9 for multistage tests. Specimens nominally 2:1 height diameter ratio and tested at a rate of strain of 2%/minute, unless annotated otherwise. Latex rubber membrane used and membrane correction applied in accordance with BS1377-7 8.5.1.4 unless stated.

Legend

UU - single stage test (may be in sets of specimens)	ó3	cell pressure	Mode of failure	P	plastic
UUM - multistage test on a single specimen	ó1 - ó3	deviator stress		B	brittle
suffix R - remoulded or recompacted	*CU*	undrained shear strength		C	compound

QA Ref SLR 2 Rev 2.7 Apr 15

UKAS TESTING 1157

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Project Name WEST BURTON C/D POWER STATION

Figure

UUSUM

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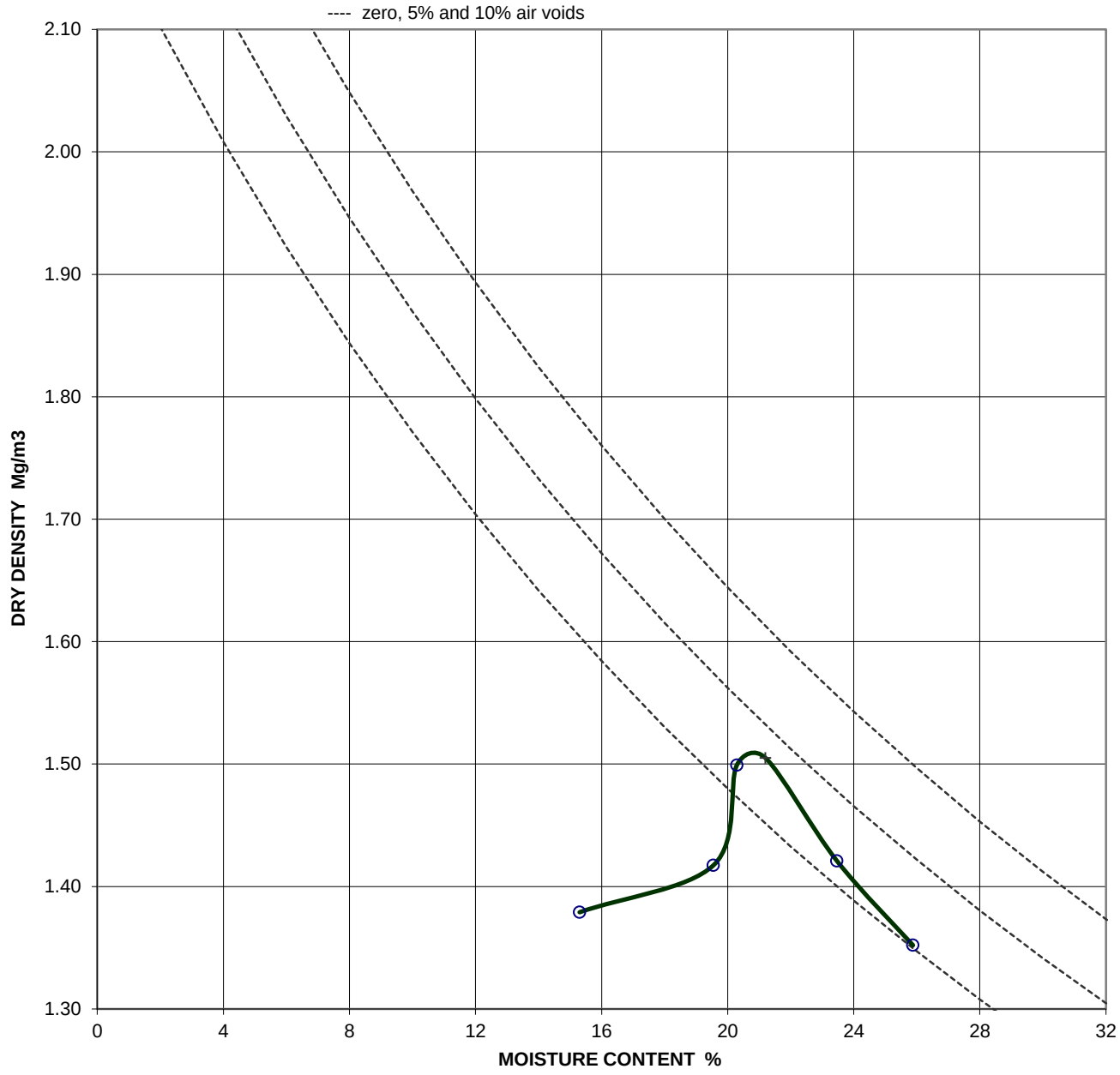
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : VIBRATING HAMMER COMPACTION

Sample Details:	SAMPLE ID:
	A7102-17-20171211055417

Hole No	BH101
Sample Depth (m BGL)	9.5
Sample Type and No	L18
Specimen Ref	



Soil description

Test method	BS 1377:part 4:1990:clause 3.7, vibrating hammer in a CBR mould						
Preparation	Material was natural, composite specimens tested						
Coarse material	> 37.5mm	0	%	< 37.5mm > 20mm	1	%	
Particle density	2.45	Mg/m3	assumed				
Remarks							

Derived Parameters +

Maximum dry density, Mg/m3
1.51

Optimum moisture content, %
21

QA Ref
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Figure
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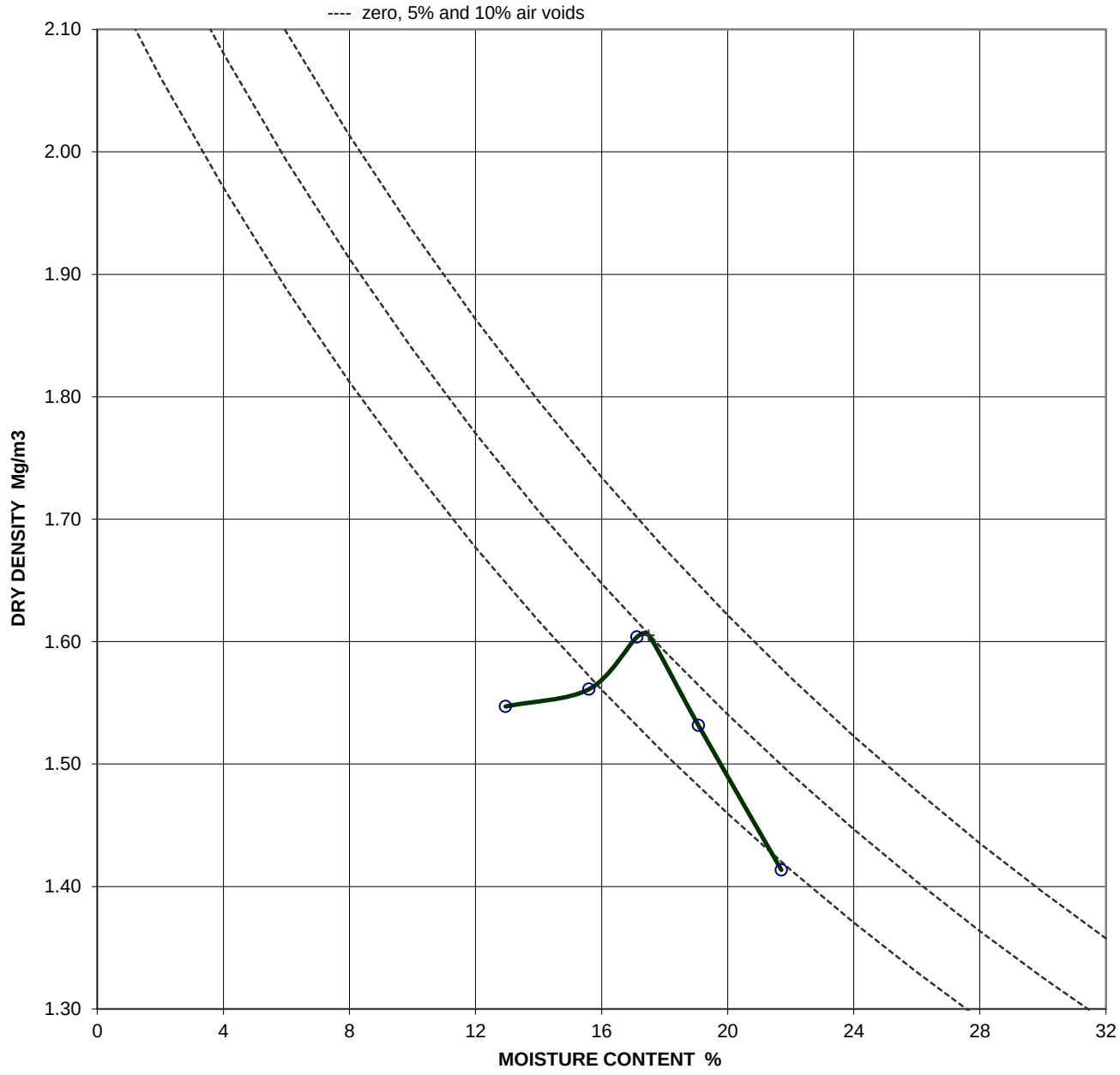
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : VIBRATING HAMMER COMPACTION

Sample Details:	SAMPLE ID:
	A7102-1720171214122421

Hole No	WS103
Sample Depth (m BGL)	3
Sample Type and No	UT6
Specimen Ref	



Soil description

Test method	BS 1377:part 4:1990:clause 3.7, vibrating hammer in a CBR mould						
Preparation	Material was natural, composite specimens tested						
Coarse material	> 37.5mm	0	%	< 37.5mm > 20mm	0	%	
Particle density	2.40	Mg/m3	assumed				
Remarks							
	Combined with D7,D8,UT9,D10						

Derived Parameters +

Maximum dry density, Mg/m3
1.61

Optimum moisture content, %
18

QA Ref
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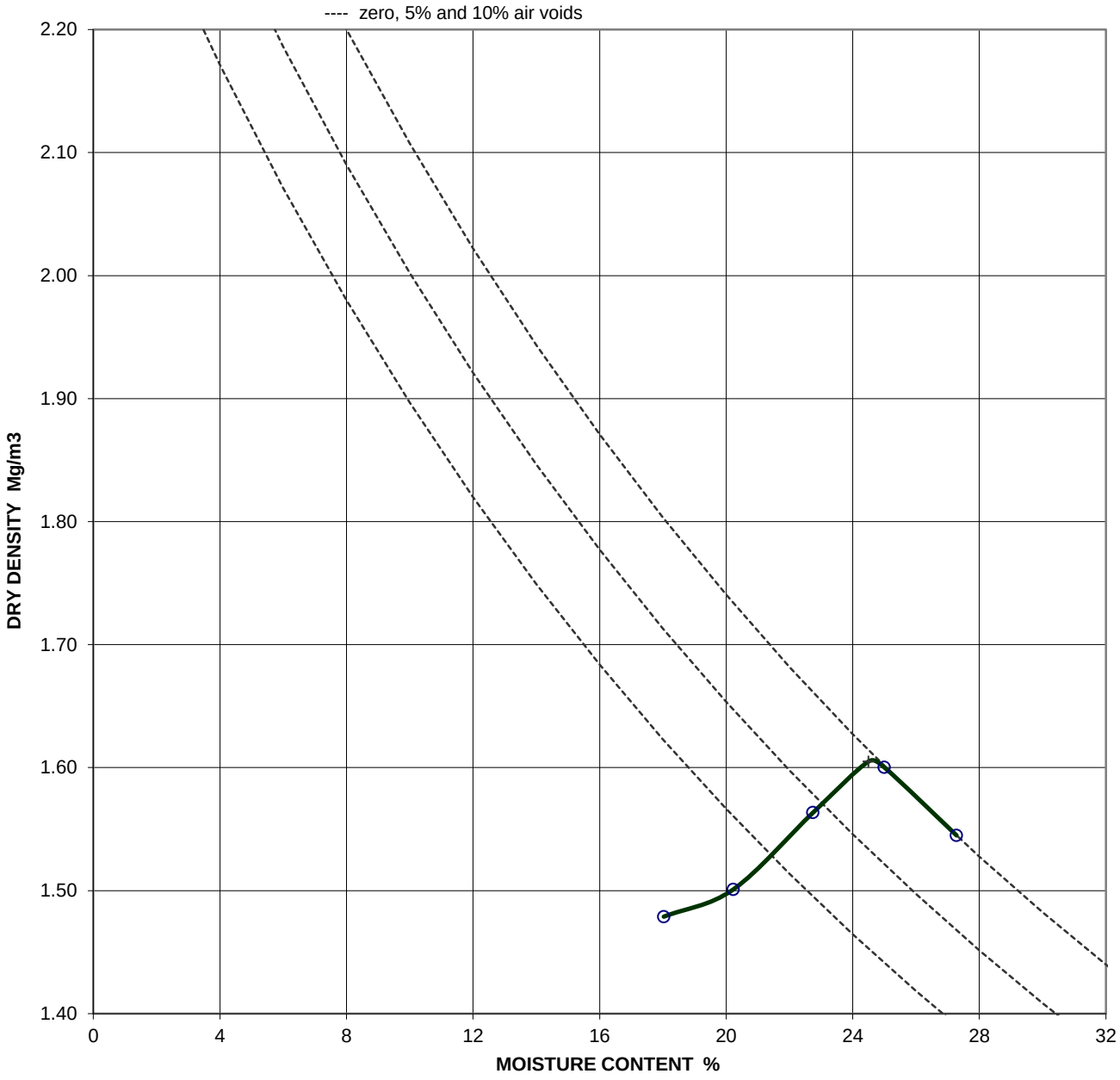
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : VIBRATING HAMMER COMPACTION

Sample Details:	SAMPLE ID:
	A7102-17201712071132O6

Hole No	WS107
Sample Depth (m BGL)	6
Sample Type and No	UT13
Specimen Ref	



Soil description

Test method	BS 1377:part 4:1990:clause 3.7, vibrating hammer in a CBR mould						
Preparation	Material was natural, composite specimens tested						
Coarse material	> 37.5mm	0	%	< 37.5mm > 20mm	0	%	
Particle density	2.67	Mg/m3	assumed				
Remarks							
	Combined with D14,D15,UT16 and D17						

Derived Parameters +

Maximum dry density, Mg/m3
1.61

Optimum moisture content, %
25

QA Ref
SLD 4, 3.
Rev 2.6
Sep 17

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Project Name WEST BURTON C/D POWER STATION

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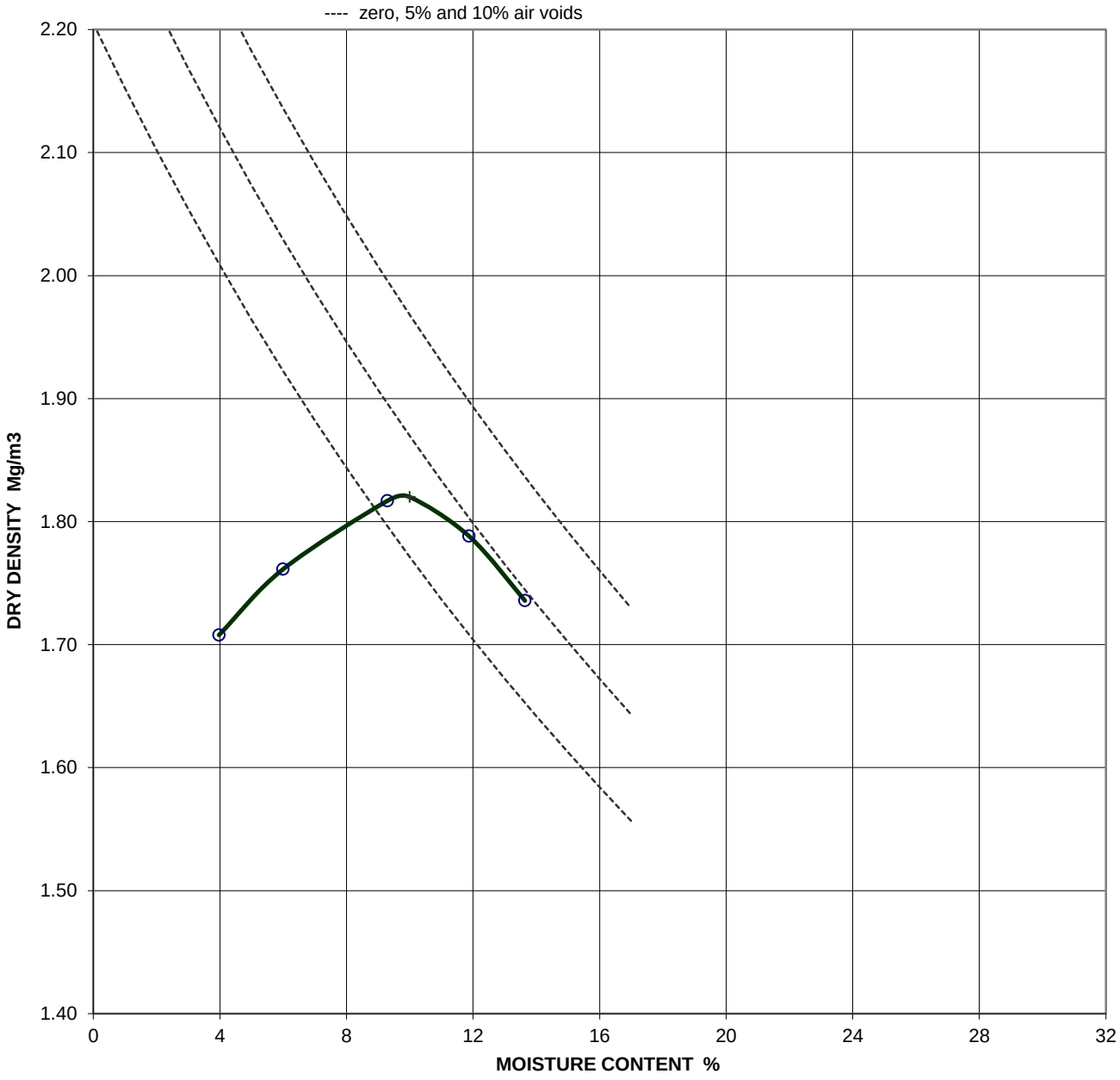
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP
BS1377 : PART 4 : 1990 : VIBRATING HAMMER COMPACTION

Sample Details:	SAMPLE ID:
	A7102-1720171212092320

Hole No	WS108
Sample Depth (m BGL)	1.2
Sample Type and No	UT3
Specimen Ref	



Soil description

Test method	BS 1377:part 4:1990:clause 3.7, vibrating hammer in a CBR mould						
Preparation	Material was natural, composite specimens tested						
Coarse material	> 37.5mm	0	%	< 37.5mm > 20mm	0	%	
Particle density	2.45	Mg/m3	assumed				
Remarks							
	Combined with D4,D5,UT6,D7						

Derived Parameters +

Maximum dry density, Mg/m3
1.82

Optimum moisture content, %
10

QA Ref
SLD 4, 3.
Rev 2.6
Sep 17

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Project No A7102-17
Project Name WEST BURTON C/D POWER STATION

Figure
COMPV

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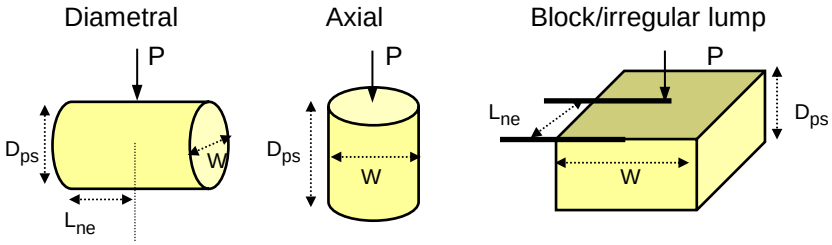
Point Load Index Test

All specimens tested at as received water content unless shown otherwise

Test Type
D - Diametral, A - Axial, I - Irregular Lump, B - Block
Direction (U = unknown or random)
L - parallel to planes of weakness
P - perpendicular to planes of weakness
Dimensions
Dps - Distance between platens (platen separation)
Dps' - at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P

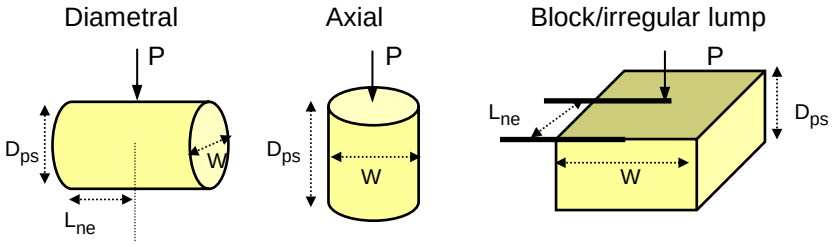


Borehole	Depth, m	Sample Ref	Sample Type	Specimen Ref	Specimen Depth	Rock type	Test Type see ISRM Fig 5 and 8		Failure Valid (Y/N)	Dimensions				LOAD P	De equivalent diameter, mm	Point Load Index MPa F = (De/50)0.45		Remarks
							Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Dps mm	Dps' mm	kN		Is	Is(50)	
BH101	18.05	24	CS	1		MUDSTONE	D	U	Y	50.0	86.1	86.0	84.0	0.60	85.04	0.08	0.11	
BH101	18.05	24	CS	2		MUDSTONE	A	P	Y		86.1	58.0	48.0	3.00	72.54	0.57	0.67	
BH101	22.50	26	CS	1		MUDSTONE	D	L	N	39.0	76.6	77.0	73.0	0.80	74.78	0.14	0.17	
BH101	22.50	26	CS	2		MUDSTONE	A	P	Y		76.6	55.0	43.0	1.10	64.76	0.26	0.29	
BH101	24.50	28	CS	1		MUDSTONE	D	L	Y	50.0	82.9	71.0	78.0	0.30	80.41	0.05	0.06	Laminated
BH101	24.50	28	CS	2		MUDSTONE	A	P	N		82.9	58.0	48.0	0.90	71.18	0.18	0.21	Laminated
BH101	25.82	29	CS	1		MUDSTONE	D	L	Y	45.0	84.6	85.0	81.0	0.40	82.78	0.06	0.07	
BH101	25.82	29	CS	2		MUDSTONE	A	L	N		84.6	52.0	50.0	0.20	73.39	0.04	0.04	
BH101	27.30	30	CS	1		MUDSTONE	D	U	N	60.0	85.1	85.0	70.0	1.60	77.18	0.27	0.33	
BH101	27.30	30	CS	2		MUDSTONE	A	P	Y		85.1	60.0	41.0	1.40	66.65	0.32	0.36	
BH102	16.90	18	CS	1		MUDSTONE	D	L	N	45.0	82.7	80.0	77.0	0.30	79.80	0.05	0.06	
BH102	16.90	18	CS	2		MUDSTONE	A	U	Y		82.7	67.0	57.0	1.00	77.47	0.17	0.20	
BH102	17.70	19	CS	1		MUDSTONE	A	P	N		85.2	67.0	57.0	1.30	78.63	0.21	0.26	
BH102	17.70	19	CS	2		MUDSTONE	I	L	Y	34.0	55.3	52.0	51.0	1.00	59.92	0.28	0.30	
BH102	18.00	20	CS	1		MUDSTONE	D	L	N	43.0	85.6	86.0	85.0	0.20	85.30	0.03	0.03	
BH102	18.00	20	CS	2		MUDSTONE	A	P	N		85.6	50.0	47.0	0.50	71.57	0.10	0.11	
BH102	20.13	21	CS	1		MUDSTONE	D	L	Y	45.0	60.6	61.0	58.0	1.60	59.29	0.46	0.49	
BH102	20.13	21	CS	2		MUDSTONE	A	P	Y		60.6	50.0	41.0	2.00	56.24	0.63	0.67	

Point Load Index Test

All specimens tested at as received water content unless shown otherwise

Test Type
D - Diametral, A - Axial, I - Irregular Lump, B - Block
Direction (U = unknown or random)
L - parallel to planes of weakness
P - perpendicular to planes of weakness
Dimensions
Dps - Distance between platens (platen separation)
Dps' - at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Borehole	Depth, m	Sample Ref	Sample Type	Specimen Ref	Specimen Depth	Rock type	Test Type see ISRM Fig 5 and 8		Failure Valid (Y/N)	Dimensions				LOAD P	De equivalent diameter, mm	Point Load Index MPa F = (De/50)0.45		Remarks
							Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Dps mm	Dps' mm	kN		Is	Is(50)	
BH102	24.72	23	CS	1		MUDSTONE	D	L	N	47.0	85.5	86.0	84.0	0.70	84.75	0.10	0.12	
BH102	24.72	23	CS	2		MUDSTONE	A	L	Y		85.5	65.0	63.0	0.90	82.81	0.13	0.16	
BH102	26.62	24	CS	1		MUDSTONE	D	L	Y	45.0	85.0	85.0	84.0	0.20	84.50	0.03	0.04	
BH102	26.62	24	CS	2		MUDSTONE	A	P	N		85.0	52.0	50.0	0.90	73.56	0.17	0.20	
BH103	22.08	17	CS	1		MUDSTONE	D	U	Y	56.0	86.2	86.0	84.0	2.20	85.09	0.30	0.39	
BH103	22.08	17	CS	2		MUDSTONE	A	P	N		86.2	65.0	53.0	2.00	76.27	0.34	0.42	
BH103	22.55	18	CS	1		MUDSTONE	D	L	N	42.0	83.3	83.0	82.0	0.90	82.65	0.13	0.17	
BH103	22.55	18	CS	2		MUDSTONE	A	P	Y		83.3	63.0	52.0	2.50	74.26	0.45	0.54	
BH103	23.80	19	CS	1		GYPSUM	A	U	Y		84.2	69.0	68.0	2.40	85.38	0.33	0.42	
BH103	23.80	19	CS	2		GYPSUM	I	P	Y	41.0	69.5	50.0	49.0	1.70	65.85	0.39	0.44	
BH103	28.95	20	CS	1		GYPSUM/MUDSTONE	A	P	N		82.3	71.0	60.0	1.30	79.29	0.21	0.25	
BH103	28.95	20	CS	2		GYPSUM/MUDSTONE	I	L	Y	38.0	61.1	56.0	54.0	0.90	64.81	0.21	0.24	
BH104	16.79	18	CS	1		MUDSTONE	A	P	N		86.1	77.0	58.0	0.50	79.74	0.08	0.10	
BH104	16.79	18	CS	2		MUDSTONE	I	L	Y	41.0	64.6	58.0	56.0	0.30	67.87	0.07	0.07	
BH104	18.10	20	CS	1		MUDSTONE	D	U	N	53.0	85.0	85.0	83.0	1.50	83.99	0.21	0.27	
BH104	18.10	20	CS	2		MUDSTONE	A	P	N		85.0	78.0	75.0	1.20	90.09	0.15	0.19	
BH104	22.05	21	CS	1		SILTSTONE	D	U	Y	60.1	86.1	84.0	76.0	1.20	80.89	0.18	0.23	
BH104	22.05	21	CS	2		SILTSTONE	A	U	Y		85.8	49.0	44.0	0.90	69.33	0.19	0.22	

QA Ref
ISRM 85
Rev 2.5
Jan 17

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1157

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Project No A7102-17

Project Name WEST BURTON C/D POWER STATION

Figure
PLT

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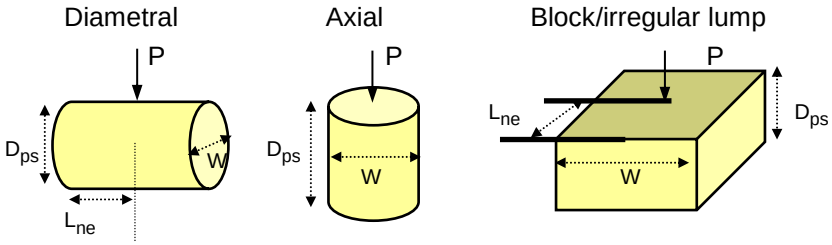
Point Load Index Test

All specimens tested at as received water content unless shown otherwise

Test Type
D - Diametral, A - Axial, I - Irregular Lump, B - Block
Direction (U = unknown or random)
L - parallel to planes of weakness
P - perpendicular to planes of weakness
Dimensions
Dps - Distance between platens (platen separation)
Dps' - at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P

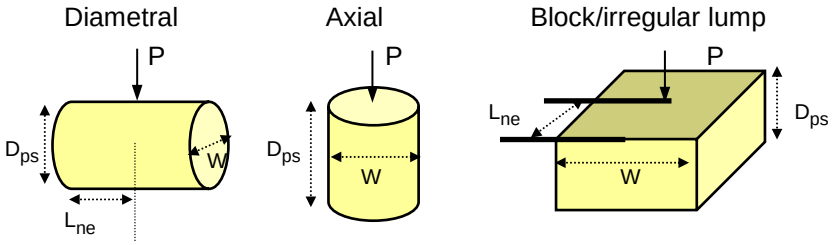


Borehole	Depth, m	Sample Ref	Sample Type	Specimen Ref	Specimen Depth	Rock type	Test Type see ISRM Fig 5 and 8		Failure Valid (Y/N)	Dimensions				LOAD P	De equivalent diameter, mm	Point Load Index MPa F = (De/50)0.45		Remarks
							Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Dps mm	Dps' mm	kN		Is	Is(50)	
BH104	23.40	22	CS	1		SILTSTONE	D	U	Y	71.5	85.6	84.0	81.0	0.20	83.27	0.03	0.04	
BH104	23.40	22	CS	2		SILTSTONE	A	U	Y		84.9	83.0	79.0	0.40	92.41	0.05	0.06	
BH104	26.39	23	CS	1		SILTSTONE	D	U	Y	64.8	82.1	80.0	75.0	1.10	78.47	0.18	0.22	
BH104	26.39	23	CS	2		SILTSTONE	A	U	Y		80.9	63.0	58.0	1.30	77.29	0.22	0.26	
BH104	29.45	24	CS	1		SILTSTONE	D	U	Y	58.1	87.1	86.0	81.0	1.10	83.99	0.16	0.20	
BH104	29.45	24	CS	2		SILTSTONE	A	U	Y		86.5	42.0	40.0	0.80	66.37	0.18	0.21	
BH105	17.50	9	CS	1		MUDSTONE	D	U	Y	79.5	84.2	83.0	78.0	1.50	81.04	0.23	0.28	
BH105	17.50	9	CS	2		MUDSTONE	A	U	Y		83.9	52.0	46.0	1.70	70.10	0.35	0.40	
BH105	21.60	11	CS	1		MUDSTONE	D	U	Y	70.5	84.2	82.0	73.0	1.40	78.40	0.23	0.28	
BH105	21.60	11	CS	2		MUDSTONE	A	U	Y		84.0	53.0	47.0	1.20	70.90	0.24	0.28	
BH105	25.78	13	CS	1		MUDSTONE	D	U	Y	62.8	83.2	82.0	80.0	0.40	81.58	0.06	0.07	
BH105	25.78	13	CS	2		MUDSTONE	A	U	Y		82.9	48.0	37.0	0.40	62.49	0.10	0.11	
BH105	27.16	14	CS	1		GYPSUM	D	U	Y	62.1	85.1	83.0	82.0	0.30	83.54	0.04	0.05	
BH105	27.16	14	CS	2		GYPSUM	A	U	Y		85.0	45.0	43.0	0.60	68.22	0.13	0.15	
BH105	28.16	15	CS	1		SILTSTONE	D	U	Y	53.1	84.9	83.0	80.0	0.40	82.41	0.06	0.07	
BH105	28.16	15	CS	2		SILTSTONE	A	U	Y		84.8	45.0	41.0	0.80	66.53	0.18	0.21	
BH106	16.25	22A	CS	1		GYPSUM	D	U	Y	50.0	87.3	84.0	78.0	1.00	82.52	0.15	0.18	
BH106	16.25	22A	CS	2		GYPSUM	I	U	Y	54.5	87.1	55.0	50.0	1.70	74.46	0.31	0.37	

Point Load Index Test

All specimens tested at as received water content unless shown otherwise

Test Type
D - Diametral, A - Axial, I - Irregular Lump, B - Block
Direction (U = unknown or random)
L - parallel to planes of weakness
P - perpendicular to planes of weakness
Dimensions
Dps - Distance between platens (platen separation)
Dps' - at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Borehole	Depth, m	Sample Ref	Sample Type	Specimen Ref	Specimen Depth	Rock type	Test Type see ISRM Fig 5 and 8		Failure Valid (Y/N)	Dimensions				LOAD P	De equivalent diameter, mm	Point Load Index MPa F = (De/50)0.45		Remarks
							Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Dps mm	Dps' mm	kN		Is	Is(50)	
BH106	18.90	23	CS	1		MUDSTONE	D	U	Y	53.1	79.7	79.0	76.0	0.10	77.83	0.02	0.02	
BH106	18.90	23	CS	2		MUDSTONE	A	U	Y		79.6	49.0	40.0	1.00	63.67	0.25	0.28	
BH106	20.20	24	CS	1		SILTSTONE	D	U	Y	69.5	83.7	83.0	66.0	2.00	74.32	0.36	0.43	
BH106	20.20	24	CS	2		SILTSTONE	A	U	Y		83.2	58.0	46.0	1.70	69.81	0.35	0.41	
BH106	23.90	25	CS	1		MUDSTONE	D	U	Y	83.6	85.6	83.0	81.0	0.20	83.27	0.03	0.04	
BH106	23.90	25	CS	2		MUDSTONE	A	U	Y		85.6	54.0	52.0	0.40	75.28	0.07	0.08	
BH106	27.10	26	CS	1		GYPSUM	D	U	Y	65.8	85.0	84.0	70.0	4.40	77.13	0.74	0.90	
BH106	27.10	26	CS	2		GYPSUM	A	U	Y		84.9	62.0	52.0	4.70	74.97	0.84	1.00	
BH106	29.40	27	CS	1		SILTSTONE	D	U	Y	44.0	82.5	82.0	68.0	1.60	74.90	0.29	0.34	
BH106	29.40	27	CS	2		SILTSTONE	I	U	Y	45.0	82.9	63.0	53.0	1.80	74.79	0.32	0.39	

QA Ref
ISRM 85
Rev 2.5
Jan 17

UKAS TESTING
1157

SOCOTEC

Project No A7102-17

Project Name WEST BURTON C/D POWER STATION

Figure
PLT

Printed:
06/02/2018 09:20

Uniaxial Compressive Strength Of Rock - Summary of Results

Hole No.	Sample				Rock Type	Specimen Dimensions [2]			Bulk Density [2]	Water Content [1]	Uniaxial Compression [3]				Remarks
	No.	Depth (m)		type		Dia.	Height	H/D			Load Rate	Time to failure	Mode of failure	UCS	
		from	to			mm	mm		Mg/m 3	%	kN/min	secs		MPa	
BH101	27	22.88		CS	MUDSTONE	67.2	164.7	2.5	2.23	20.4	2	182	shear	3.93	
BH102	22	21.57		CS	CLAY/MUDSTONE	85.1	218.3	2.6	2.24	14.5	2	369	shear	3.45	
BH104	19	17.40		CS	MUDSTONE	86.0	175.6	2.0	2.25	15.3	2	593	multiple shear	4.6	Outside ISRM Specification
BH105	10	21.08		CS	MUDSTONE	83.6	170.1	2.0	2.23	19.2	2	183	multiple shear	2.53	Outside ISRM Specification
BH105	12	22.10		CS	MUDSTONE	83.7	150.4	1.8	2.22	16.3	2	75	multiple shear	1.33	Outside ISRM Specification

Notes :

Test Specification : International Society for Rock Mechanics, The complete ISRM suggested methods for Rock Characterization Testing and Monitoring, 2007

1 ISRM p87 test 1, water content at 105 ± 3 oC, specimen as received at the laboratory

2 ISRM p86 clause (vii), Caliper method used for determination of bulk volume and derivation of bulk density

3 ISRM p153 part 1, determination of Uniaxial Compressive Strength (UCS) of Rock Materials

above notes apply unless annotated otherwise in the remarks

Mode of failure :

S - Single shear MS - multiple shear

AC - Axial cleavage F - Fragmented

QA Ref
RLR 2
Rev 2.16
Apr 15

UKAS TESTING
1157

SOCOTEC

Project No A7102-17

Project Name WEST BURTON C/D POWER STATION

Figure

RUCS

Printed: 06/02/2018 09:23

TEST REPORT

1252

Report No. EFS/182228 (Ver. 1)

SOCOTEC UK Limited Doncaster
Askern Road
Carcroft
Doncaster
South Yorkshire
DN6 8DG

Site: A7102-17 West Burton

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 16-Jan-2018. This report supersedes any versions previously issued by the laboratory.
The analysis was completed by: 23-Jan-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2)
Analytical and Deviating Sample Overview (Page 3)
Table of Method Descriptions (Page 4)
Table of Report Notes (Page 5)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Li [redacted]
Tim Barnes s Director
Energy & Waste Services

Date of Issue: 23-Jan-2018

Tests marked '^' have been subcontracted to another laboratory.
Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

Units :			mg/kg	mg/l	%	pH Units												
Method Codes :			ICPACIDS	ICPWSS	TSBRE1	WSLM50												
Method Reporting Limits :			20	10	0.005													
UKAS Accredited :			Yes	Yes	No	No												
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**SO4-- (acid sol)**	**SO4-- (H2O sol) mg/l**	**Total Sulphur.**	**pH (BS1377)**												
1890119	WS107 UT 6 3.00		4610	1550	0.182	8.6												

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Client Name	**SOCOTEC UK Limited Doncaster**
Contact	Neil Cooke

A7102-17 West Burton

Sample Analysis

Date Printed	**23-Jan-2018**
Report Number	**EFS/182228**
Table Number	**1**

SOCOTEC UK Ltd Environmental Chemistry
Analytical and Deviating Sample Overview

Customer SOCOTEC UK Limited Doncaster
Site A7102-17 West Burton
Report No S182228

Consignment No S71743
Date Logged 16-Jan-2018
In-House Report Due 24-Jan-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	CustServ	Dep.Opt			ICPACIDS	ICPBRE	ICPWSS	KONECL	KoneNO3	TSBRE1	WSLM50
		Sampled	REPORT A	DO Cl if pH<5.5	DO Mg if SO4(W)>3000	DO NO3 if pH<5.5	SO4-- (acid sol)	Magnesium (BRE)	SO4-- (H2O sol) mg/l	Chloride:(2:1)	Nitrate (BRE 2:1): mg/l	Total Sulphur.	pH (BS1377)
							✓		✓				
CL/1890119	WS107 3.00-3.45	D	D	D	D	D	D	D	D	D	D	D	D

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ICPACIDS	Oven Dried @ < 35°C	Determination of Total Sulphate in soil samples by Hydrochloric Acid extraction followed by ICPOES detection
Soil	ICPWSS	Oven Dried @ < 35°C	Determination of Water Soluble Sulphate in soil samples by water extraction followed by ICPOES detection
Soil	TSBRE1	Oven Dried @ < 35°C	Determination of Total Carbon and/or Total Sulphur in solid samples by high temperature combustion/infrared detection
Soil	WSLM50	Oven Dried @ < 35°C	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Limited Doncaster
Site : A7102-17 West Burton
Report Number : S18_2228

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1890119	WS107 UT 6 3.00	SILT

TEST REPORT

UKAS TESTING
1252

Report No. EFS/182229 (Ver. 1)

SOCOTEC UK Limited Doncaster
Askern Road
Carcroft
Doncaster
South Yorkshire
DN6 8DG

Site: A7102-17 West Burton

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 16-Jan-2018. This report supersedes any versions previously issued by the laboratory.
The analysis was completed by: 22-Jan-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2)
Analytical and Deviating Sample Overview (Page 3)
Table of Method Descriptions (Page 4)
Table of Report Notes (Page 5)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim[redacted]
Tim Barnes Operations Director
Energy & Waste Services

Date of Issue: 22-Jan-2018

Tests marked '^' have been subcontracted to another laboratory.
Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

Units :			mg/kg	mg/l	%	%	pH Units											
Method Codes :			ICPACIDS	ICPWSS	ORGMAT	TSBRE1	WSLM50											
Method Reporting Limits :			20	10	0.1	0.005												
UKAS Accredited :			Yes	Yes	No	No	No											
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**SO4-- (acid sol)**	**SO4-- (H2O sol) mg/l**	**Organic Matter %**	**Total Sulphur.**	**pH (BS1377)**											
1890120	WS103 B 24 13.50		1930	778	1.9	0.234	7.9											

SOCOTEC

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Client Name	**SOCOTEC UK Limited Doncaster**
Contact	Neil Cooke

A7102-17 West Burton

Sample Analysis

Date Printed	**22-Jan-2018**
Report Number	**EFS/182229**
Table Number	**1**

Where individual results are flagged see report notes for status.

SOCOTEC UK Ltd Environmental Chemistry
Analytical and Deviating Sample Overview

Customer SOCOTEC UK Limited Doncaster
Site A7102-17 West Burton
Report No S182229

Consignment No S71743
Date Logged 16-Jan-2018
In-House Report Due 24-Jan-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	CustServ	Dep.Opt			ICPACIDS	ICPBRE	ICPWSS	KONECL	KoneNO3	ORGMAT	TSBRE1	WSLM50
		Sampled	REPORT A	DO Cl if pH<5.5	DO Mg if SO4(W)>3000	DO NO3 if pH<5.5	SO4-- (acid sol)	Magnesium (BRE)	SO4-- (H2O sol) mg/l	Chloride:(2:1)	Nitrate (BRE 2:1): mg/l	Organic Matter %	Total Sulphur.	pH (BS1377)
							✓		✓					
CL/1890120	WS103 13.50-14.00	D	D	D	D	D	D	D	D	D	D	D	D	D

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ICPACIDS	Oven Dried @ < 35°C	Determination of Total Sulphate in soil samples by Hydrochloric Acid extraction followed by ICPOES detection
Soil	ICPWSS	Oven Dried @ < 35°C	Determination of Water Soluble Sulphate in soil samples by water extraction followed by ICPOES detection
Soil	ORGMAT	Oven Dried @ < 35°C	Acid Dichromate oxidation of the sample followed by colorimetric analysis of the extract
Soil	TSBRE1	Oven Dried @ < 35°C	Determination of Total Carbon and/or Total Sulphur in solid samples by high temperature combustion/infrared detection
Soil	WSLM50	Oven Dried @ < 35°C	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

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Sample Descriptions

Client : SOCOTEC UK Limited Doncaster
Site : A7102-17 West Burton
Report Number : S18_2229

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1890120	WS103 B 24 13.50	SILT

TEST REPORT

UKAS TESTING
1252

Report No. EFS/182237 (Ver. 1)

SOCOTEC UK Limited Doncaster
Askern Road
Carcroft
Doncaster
South Yorkshire
DN6 8DG

Site: A7102-17 West Burton

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 17-Jan-2018. This report supersedes any versions previously issued by the laboratory.
The analysis was completed by: 22-Jan-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited.
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On behalf of
SOCOTEC UK Lim[redacted]
Tim Barnes Operations Director
Energy & Waste Services

Date of Issue: 22-Jan-2018

Tests marked '^' have been subcontracted to another laboratory.
Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

Units :			mg/kg	mg/l	%	pH Units												
Method Codes :			ICPACIDS	ICPWSS	TSBRE1	WSLM50												
Method Reporting Limits :			20	10	0.005													
UKAS Accredited :			Yes	Yes	No	No												
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**SO4-- (acid sol)**	**SO4-- (H2O sol) mg/l**	**Total Sulphur.**	**pH (BS1377)**												
1890132	WS112 B 20 10.50		635	185	0.130	8.1												

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Client Name	**SOCOTEC UK Limited Doncaster**
Contact	Neil Cooke

A7102-17 West Burton

Sample Analysis

Date Printed	**22-Jan-2018**
Report Number	**EFS/182237**
Table Number	**1**

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Limited Doncaster
Site A7102-17 West Burton
Report No S182237

Consignment No S71743
Date Logged 17-Jan-2018
In-House Report Due 24-Jan-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	CustServ	Dep.Opt			ICPACIDS	ICPBRE	ICPWSS	KONECL	KoneNO3	TSBRE1	WSLM50
		Sampled	REPORT A	DO Cl if pH<5.5	DO Mg if SO4(W)>3000	DO NO3 if pH<5.5	SO4-- (acid sol)	Magnesium (BRE)	SO4-- (H2O sol) mg/l	Chloride:(2:1)	Nitrate (BRE 2:1): mg/l	Total Sulphur.	pH (BS1377)
							✓		✓				
CL/1890132	WS112 10.50-11.00	D	D	D	D	D	D	D	D	D	D	D	D

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key

A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key

	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.

 The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ICPACIDS	Oven Dried @ < 35°C	Determination of Total Sulphate in soil samples by Hydrochloric Acid extraction followed by ICPOES detection
Soil	ICPWSS	Oven Dried @ < 35°C	Determination of Water Soluble Sulphate in soil samples by water extraction followed by ICPOES detection
Soil	TSBRE1	Oven Dried @ < 35°C	Determination of Total Carbon and/or Total Sulphur in solid samples by high temperature combustion/infrared detection
Soil	WSLM50	Oven Dried @ < 35°C	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Limited Doncaster
Site : A7102-17 West Burton
Report Number : S18_2237

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1890132	WS112 B 20 10.50	Brown SILT

TEST REPORT

UKAS TESTING
1252

Report No. EFS/182238 (Ver. 2)

SOCOTEC UK Limited Doncaster
Askern Road
Carcroft
Doncaster
South Yorkshire
DN6 8DG

Site: A7102-17 West Burton

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 17-Jan-2018. This report supersedes any versions previously issued by the laboratory.
The analysis was completed by: 05-Feb-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2)
Analytical and Deviating Sample Overview (Page 3)
Table of Method Descriptions (Page 4)
Table of Report Notes (Page 5)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim [redacted]
Tim Barnes Operations Director
Energy & Waste Services

Date of Issue: 05-Feb-2018

Tests marked '^' have been subcontracted to another laboratory.
Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

Units :			mg/kg	mg/l	%	%	pH Units											
Method Codes :			ICPACIDS	ICPWSS	ORGMAT	TSBRE1	WSLM50											
Method Reporting Limits :			20	10	0.1	0.005												
UKAS Accredited :			Yes	Yes	No	No	No											
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**SO4-- (acid sol)**	**SO4-- (H2O sol) mg/l**	**Organic Matter %**	**Total Sulphur.**	**pH (BS1377)**											
1890133	WS102 UT 6 4.50		723	227	1.0	0.050	8.3											

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Fax +44 (0) 1283 554422

Client Name	**SOCOTEC UK Limited Doncaster**
Contact	Neil Cooke

A7102-17 West Burton

Sample Analysis

Date Printed	**05-Feb-2018**
Report Number	**EFS/182238**
Table Number	**1**

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Limited Doncaster
Site A7102-17 West Burton
Report No S182238

Consignment No S71743
Date Logged 17-Jan-2018
In-House Report Due 07-Feb-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	CustServ	Dep.Opt			ICPACIDS	ICPBRE	ICPWSS	KONECL	KoneNO3	ORGMAT	TSBRE1	WSLM50
		Sampled	REPORT A	DO Cl if pH<5.5	DO Mg if SO4(W)>3000	DO NO3 if pH<5.5	SO4-- (acid sol)	Magnesium (BRE)	SO4-- (H2O sol) mg/l	Chloride:(2:1)	Nitrate (BRE 2:1): mg/l	Organic Matter %	Total Sulphur.	pH (BS1377)
							✓		✓					
CL/1890133	WS102 4.50-4.95	D	D	D	D	D	D	D	D	D	D	D	D	D

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.

 The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ICPACIDS	Oven Dried @ < 35°C	Determination of Total Sulphate in soil samples by Hydrochloric Acid extraction followed by ICPOES detection
Soil	ICPWSS	Oven Dried @ < 35°C	Determination of Water Soluble Sulphate in soil samples by water extraction followed by ICPOES detection
Soil	ORGMAT	Oven Dried @ < 35°C	Acid Dichromate oxidation of the sample followed by colorimetric analysis of the extract
Soil	TSBRE1	Oven Dried @ < 35°C	Determination of Total Carbon and/or Total Sulphur in solid samples by high temperature combustion/infrared detection
Soil	WSLM50	Oven Dried @ < 35°C	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Limited Doncaster
Site : A7102-17 West Burton
Report Number : S18_2238

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1890133	WS102 UT 6 4.50	Brown SILT

TEST REPORT

UKAS TESTING
1252

Report No. EFS/182239 (Ver. 1)

SOCOTEC UK Limited Doncaster
Askern Road
Carcroft
Doncaster
South Yorkshire
DN6 8DG

Site: A7102-17 West Burton

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 17-Jan-2018. This report supersedes any versions previously issued by the laboratory.
The analysis was completed by: 23-Jan-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2)
Analytical and Deviating Sample Overview (Page 3)
Table of Method Descriptions (Page 4)
Table of Report Notes (Page 5)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim[redacted]
Tim Barnes Operations Director
Energy & Waste Services

Date of Issue: 23-Jan-2018

Tests marked '^' have been subcontracted to another laboratory.
Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

Units :			mg/kg	mg/l	%	pH Units												
Method Codes :			ICPACIDS	ICPWSS	TSBRE1	WSLM50												
Method Reporting Limits :			20	10	0.005													
UKAS Accredited :			Yes	Yes	No	No												
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**SO4-- (acid sol)**	**SO4-- (H2O sol) mg/l**	**Total Sulphur.**	**pH (BS1377)**												
1890134	WS109 UT 15 9.00		5840	1430	0.276	9.2												

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Client Name	**SOCOTEC UK Limited Doncaster**
Contact	Neil Cooke

A7102-17 West Burton

Sample Analysis

Date Printed	**23-Jan-2018**
Report Number	**EFS/182239**
Table Number	**1**

Where individual results are flagged see report notes for status.

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Limited Doncaster
Site A7102-17 West Burton
Report No S182239

Consignment No S71743
Date Logged 17-Jan-2018
In-House Report Due 24-Jan-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	CustServ	Dep.Opt			ICPACIDS	ICPBRE	ICPWSS	KONECL	KoneNO3	TSBRE1	WSLM50
		Sampled	REPORT A	DO Cl if pH<5.5	DO Mg if SO4(W)>3000	DO NO3 if pH<5.5	SO4-- (acid sol)	Magnesium (BRE)	SO4-- (H2O sol) mg/l	Chloride:(2:1)	Nitrate (BRE 2:1): mg/l	Total Sulphur.	pH (BS1377)
							✓		✓				
CL/1890134	WS109 9.00-9.45	D	D	D	D	D	D	D	D	D	D	D	D

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.

 The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ICPACIDS	Oven Dried @ < 35°C	Determination of Total Sulphate in soil samples by Hydrochloric Acid extraction followed by ICPOES detection
Soil	ICPWSS	Oven Dried @ < 35°C	Determination of Water Soluble Sulphate in soil samples by water extraction followed by ICPOES detection
Soil	TSBRE1	Oven Dried @ < 35°C	Determination of Total Carbon and/or Total Sulphur in solid samples by high temperature combustion/infrared detection
Soil	WSLM50	Oven Dried @ < 35°C	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Limited Doncaster
Site : A7102-17 West Burton
Report Number : S18_2239

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1890134	WS109 UT 15 9.00	Brown SILT

TEST REPORT

UKAS TESTING
1252

Report No. EFS/182504 (Ver. 1)

SOCOTEC UK Limited Doncaster
Askern Road
Carcroft
Doncaster
South Yorkshire
DN6 8DG

Site: A7102-17 West Burton C/D Power Station

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 25-Jan-2018. This report supersedes any versions previously issued by the laboratory.
The analysis was completed by: 30-Jan-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a * are not UKAS accredited.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2)
Analytical and Deviating Sample Overview (Page 3)
Table of Method Descriptions (Page 4)
Table of Report Notes (Page 5)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Li [redacted]
Tim Barnes Operations Director
Energy & Waste Services

Date of Issue: 30-Jan-2018

Tests marked '^' have been subcontracted to another laboratory.
Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

Units :			mg/kg	mg/l	%	pH Units												
Method Codes :			ICPACIDS	ICPWSS	TSBRE1	WSLM50												
Method Reporting Limits :			20	10	0.005													
UKAS Accredited :			Yes	Yes	No	No												
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**SO4-- (acid sol)**	**SO4-- (H2O sol) mg/l**	**Total Sulphur.**	**pH (BS1377)**												
1891268	WS111 UT 18 13.65		1950	811	0.293	8.0												

SOCOTEC

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Client Name	**SOCOTEC UK Limited Doncaster**
Contact	Neil Cooke

A7102-17 West Burton C/D Power Station

Sample Analysis

Date Printed	**30-Jan-2018**
Report Number	**EFS/182504**
Table Number	**1**

SOCOTEC UK Ltd Environmental Chemistry
Analytical and Deviating Sample Overview

Customer SOCOTEC UK Limited Doncaster
Site A7102-17 West Burton C/D Power Station
Report No S182504

Consignment No S71981
Date Logged 25-Jan-2018
In-House Report Due 30-Jan-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	CustServ	Dep.Opt			ICPACIDS	ICPBRE	ICPWSS	KONECL	KoneNO3	TSBRE1	WSLM50
		Sampled	REPORT A	DO Cl if pH<5.5	DO Mg if SO4(W)>3000	DO NO3 if pH<5.5	SO4-- (acid sol)	Magnesium (BRE)	SO4-- (H2O sol) mg/l	Chloride:(2:1)	Nitrate (BRE 2:1): mg/l	Total Sulphur.	pH (BS1377)
							✓		✓				
CL/1891268	WS111 13.65-14.10	D	D	D	D	D	D	D	D	D	D	D	D

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ICPACIDS	Oven Dried @ < 35°C	Determination of Total Sulphate in soil samples by Hydrochloric Acid extraction followed by ICPOES detection
Soil	ICPWSS	Oven Dried @ < 35°C	Determination of Water Soluble Sulphate in soil samples by water extraction followed by ICPOES detection
Soil	TSBRE1	Oven Dried @ < 35°C	Determination of Total Carbon and/or Total Sulphur in solid samples by high temperature combustion/infrared detection
Soil	WSLM50	Oven Dried @ < 35°C	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Limited Doncaster
Site : A7102-17 West Burton C/D Power Station
Report Number : S18_2504

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1891268	WS111 UT 18 13.65	CLAY

TEST REPORT

Report No. EFS/182533 (Ver. 1)

SOCOTEC UK Limited Doncaster
Askern Road
Carcroft
Doncaster
South Yorkshire
DN6 8DG

Site: A7102-17 West Burton

The 4 samples described in this report were registered for analysis by SOCOTEC UK Limited on 25-Jan-2018. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 29-Jan-2018

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2)
Analytical and Deviating Sample Overview (Page 3)
Table of Method Descriptions (Page 4)
Table of Report Notes (Page 5)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim [redacted]
Tim Barnes Operations Director
Energy & Waste Services

Date of Issue: 29-Jan-2018

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected. SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

		Units :	%															
		Method Codes :	ORGMAT															
		Method Reporting Limits :	0.1															
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Organic Matter %**															
1891366	WS106 UT 21 10.50	**25-Jan-18**	1.5															
1891367	WS108 UT 20 12.00	**25-Jan-18**	1.2															
1891368	BH104 L 12 8.00	**25-Jan-18**	1.7															
1891369	BH103 L 14 10.30	**25-Jan-18**	2.6															

SOCOTEC

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Client Name	**SOCOTEC UK Limited Doncaster**
Contact	Mike Stanley

A7102-17 West Burton

Sample Analysis

Date Printed	**29-Jan-2018**
Report Number	**EFS/182533**
Table Number	**1**

Where individual results are flagged see report notes for status.

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Limited Doncaster
Site A7102-17 West Burton
Report No S182533

Consignment No S72004
Date Logged 25-Jan-2018
In-House Report Due 29-Jan-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	Sampled	72hr T/R	Organic Matter %
		MethodID	CustServ	ORGMAT
CL/1891366	WS106 10.50-10.95	25/01/18		
CL/1891367	WS108 12.00-12.45	25/01/18		
CL/1891368	BH104 8.00-9.00	25/01/18		
CL/1891369	BH103 10.30-11.30	25/01/18		

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key	
A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ORGMAT	Oven Dried @ < 35°C	Acid Dichromate oxidation of the sample followed by colorimetric analysis of the extract

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

Note: The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

Sample Descriptions

Client : SOCOTEC UK Limited Doncaster

Site : A7102-17 West Burton

Report Number : S18_2533

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1891366	WS106 UT 21 10.50	SILT
CL/1891367	WS108 UT 20 12.00	SILT
CL/1891368	BH104 L 12 8.00	SILT
CL/1891369	BH103 L 14 10.30	SILT

TEST REPORT

Report No. EFS/182589 (Ver. 1)

SOCOTEC UK Limited Doncaster
Askern Road
Carcroft
Doncaster
South Yorkshire
DN6 8DG

Site: A7102-17 West Burton

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 26-Jan-2018. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 29-Jan-2018

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2)
Analytical and Deviating Sample Overview (Page 3)
Table of Method Descriptions (Page 4)
Table of Report Notes (Page 5)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim [redacted]
Tim Barnes Operations Director
Energy & Waste Services

Date of Issue: 29-Jan-2018

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected. SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Where individual results are flagged see report notes for status.

		Units :	%															
		Method Codes :	ORGMAT															
		Method Reporting Limits :	0.1															
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Organic Matter %**															
1891568	BH101 L 22 14.50		0.4															

SOCOTEC

Bretby Business Park, Ashby Road

Burton-on-Trent, Staffordshire, DE15 0YZ

Tel +44 (0) 1283 554400

Fax +44 (0) 1283 554422

Client Name	**SOCOTEC UK Limited Doncaster**
Contact	Neil Cooke

A7102-17 West Burton

Sample Analysis

Date Printed	**29-Jan-2018**
Report Number	**EFS/182589**
Table Number	**1**

Where individual results are flagged see report notes for status.

Analytical and Deviating Sample Overview

Customer SOCOTEC UK Limited Doncaster
Site A7102-17 West Burton
Report No S182589

Consignment No S72057
Date Logged 26-Jan-2018
In-House Report Due 30-Jan-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID / Sampled	CustServ / 72hr T/R	ORGMAT / Organic Matter %
CL/1891568	BH101 14.50-16.00	D	D	D

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

Deviating Sample Key

A	The sample was received in an inappropriate container for this analysis
B	The sample was received without the correct preservation for this analysis
C	Headspace present in the sample container
D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
E	Sample processing did not commence within the appropriate holding time
F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key

	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ORGMAT	Oven Dried @ < 35°C	Acid Dichromate oxidation of the sample followed by colorimetric analysis of the extract

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
- SG is expressed as g/cm^3@ 15^{o}C

Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
CR Denotes Crocidolite **AC** Denotes Actinolite
AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

Symbol Reference

^ Sub-contracted analysis.
$$ Unable to analyse due to the nature of the sample
¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols. This may have resulted in deterioration of the sample(s) during transit to the laboratory. Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling
¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
N.F No Flow
NS Information Not Supplied
Req Analysis requested, see attached sheets for results
Þ Raised detection limit due to nature of the sample
***** All accreditation has been removed by the laboratory for this result
‡ MCERTS accreditation has been removed for this result
§ accreditation has been removed for this result as it is a non-accredited matrix

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Sample Descriptions

Client : SOCOTEC UK Limited Doncaster
Site : A7102-17 West Burton
Report Number : S18_2589

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1891568	BH101 L 22 14.50	SILT

TEST REPORT

Report No. EFS/182590 (Ver. 1)

SOCOTEC UK Limited Doncaster
Askern Road
Carcroft
Doncaster
South Yorkshire
DN6 8DG

Site: A7102-17 West Burton

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 26-Jan-2018. This report supersedes any versions previously issued by the laboratory.
The analysis was completed by: 29-Jan-2018

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2)
Analytical and Deviating Sample Overview (Page 3)
Table of Method Descriptions (Page 4)
Table of Report Notes (Page 5)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of
SOCOTEC UK Lim [redacted]
Tim Barnes Operations Director
Energy & Waste Services

Date of Issue: 29-Jan-2018

Tests marked '^' have been subcontracted to another laboratory.
Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected.
SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

		Units :	%															
		Method Codes :	ORGMAT															
		Method Reporting Limits :	0.1															
LAB ID Number CL/	**Client Sample Description**	**Sample Date**	**Organic Matter %**															
1891569	BH106 15.10-16.00		0.7															

SOCOTEC

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Burton-on-Trent, Staffordshire, DE15 0YZ

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Fax +44 (0) 1283 554422

Client Name	**SOCOTEC UK Limited Doncaster**
Contact	Neil Cooke

A7102-17 West Burton

Sample Analysis

Date Printed	**29-Jan-2018**
Report Number	**EFS/182590**
Table Number	**1**

Sample Analysis

SOCOTEC UK Ltd Environmental Chemistry
Analytical and Deviating Sample Overview

S182590

Customer **SOCOTEC UK Limited Doncaster**
Site **A7102-17 West Burton**
Report No **S182590**

Consignment No S72057
Date Logged 26-Jan-2018
In-House Report Due 30-Jan-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

ID Number	Description	MethodID	CustServ	ORGMAT
		Sampled	72hr T/R	Organic Matter %
CL/1891569	BH106 15.10-16.00	D	D	D

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

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A	The sample was received in an inappropriate container for this analysis
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F	Sample processing did not commence within the appropriate handling time

Requested Analysis Key	
	Analysis Required
	Analysis dependant upon trigger result - **Note: due date may be affected if triggered**
	No analysis scheduled
^	Analysis Subcontracted - **Note: due date may vary**

Where individual results are flagged see report notes for status.

The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

Method Descriptions

Matrix	MethodID	Analysis Basis	Method Description
Soil	ORGMAT	Oven Dried @ < 35°C	Acid Dichromate oxidation of the sample followed by colorimetric analysis of the extract

Where individual results are flagged see report notes for status.

Report Notes

Generic Notes

Soil/Solid Analysis

Unless stated otherwise,
- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
  All results on MCERTS reports are reported on a 105ºC dry weight basis with the exception of pH and conductivity.
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Waters Analysis

Unless stated otherwise results are expressed as mg/l

Nil: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

Oil analysis specific

Unless stated otherwise,
- Results are expressed as mg/kg
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Gas (Tedlar bag) Analysis

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Asbestos Analysis

CH Denotes Chrysotile **TR** Denotes Tremolite
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AM Denotes Amosite **AN** Denotes Anthophylite
NAIIS No Asbestos Identified in Sample
NADIS No Asbestos Detected In Sample

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¥ Results for guidance only due to possible interference
& Blank corrected result
I.S Insufficient sample to complete requested analysis
I.S(g) Insufficient sample to re-analyse, results for guidance only
Intf Unable to analyse due to interferences
N.D Not determined **N.Det** Not detected
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Sample Descriptions

Client : SOCOTEC UK Limited Doncaster

Site : A7102-17 West Burton

Report Number : S18_2590

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1891569	BH106 15.10-16.00	SILT

APPENDIX E
PHOTOGRAPHS

Trial Pits	Plate 1 to 30
Rotary Cores	Plate 31 to 47

Photographs

TP102 – Pre-excavation

TP102

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	1
	Carried out for	Firbeck Construction Limited	

Photographs

TP102 – Post-excavation

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	2
	Carried out for	Firbeck Construction Limited	

Photographs

TP103 – Pre-excavation

TP103

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	3
	Carried out for	Firbeck Construction Limited	

Photographs

TP103

TP103 – Post-excavation

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	4
	Carried out for	Firbeck Construction Limited	

Photographs

TP104 – Pre-excavation

TP104

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	5
	Carried out for	Firbeck Construction Limited	

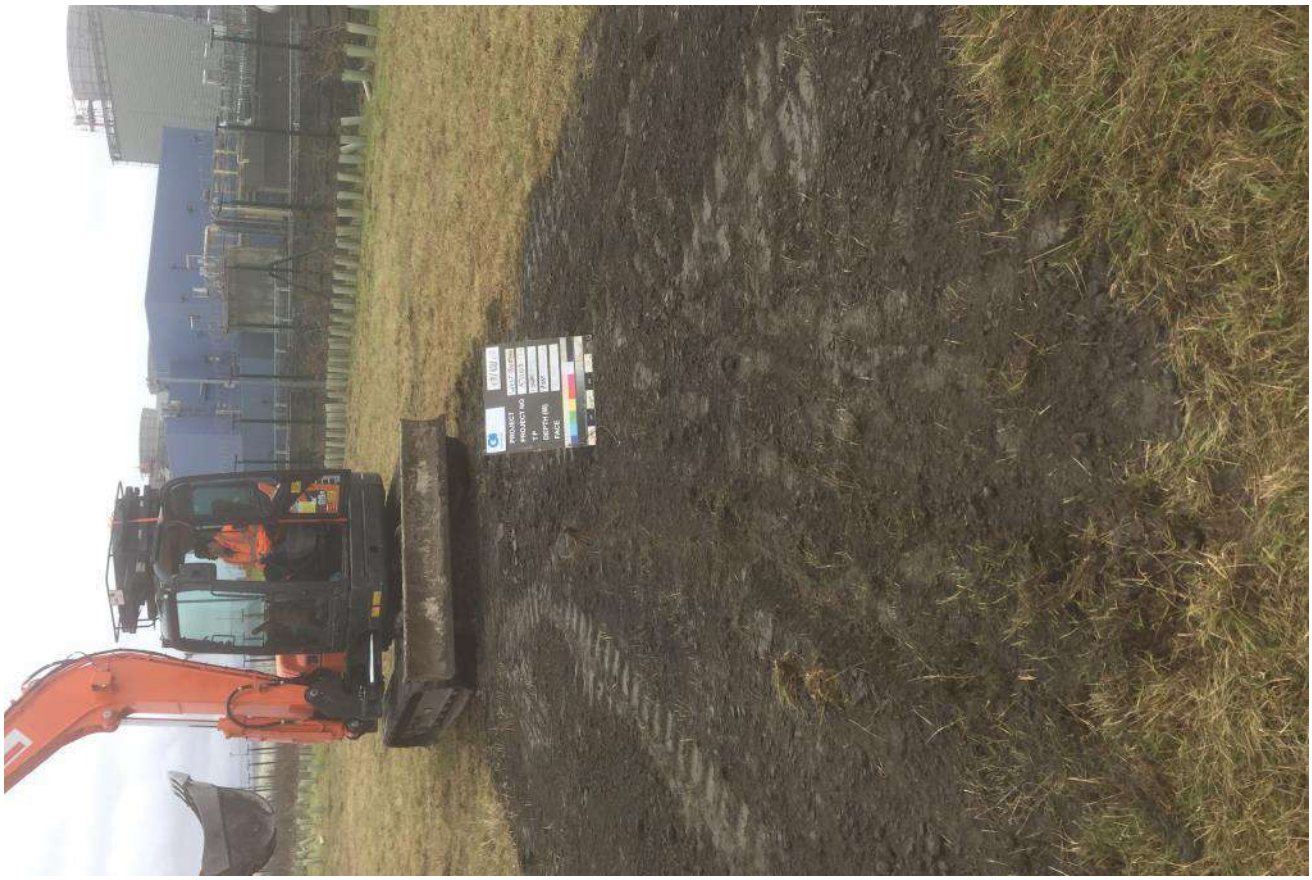
Photographs

TP104

TP104 – Spoil

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	6
	Carried out for	Firbeck Construction Limited	

Photographs



TP104 – Post-excavation

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	7
	Carried out for	Firbeck Construction Limited	

Photographs

TP105 – Pre-excavation

TP105

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	8
	Carried out for	Firbeck Construction Limited	

Photographs

TP105

TP105 - Spoil

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	9
	Carried out for	Firbeck Construction Limited	

Photographs

TP105 – Post-excavation

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	10
	Carried out for	Firbeck Construction Limited	

Photographs

TP106 – Pre-excavation

TP106

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	11
	Carried out for	Firbeck Construction Limited	

Photographs

TP106

TP106 - Spoil

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	12
	Carried out for	Firbeck Construction Limited	

Photographs

TP106 – Post-excavation

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	13
	Carried out for	Firbeck Construction Limited	

Photographs

TP108

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	14
	Carried out for	Firbeck Construction Limited	

Photographs

TP108 – Post-excavation

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	15
	Carried out for	Firbeck Construction Limited	

Photographs

TP111 – Pre-excavation

TP111

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	16
	Carried out for	Firbeck Construction Limited	

Photographs

TP111

TP111 - Spoil

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	17
	Carried out for	Firbeck Construction Limited	

Photographs

TP111 – Post-excavation

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	18
	Carried out for	Firbeck Construction Limited	

Photographs

TP112 – Pre-excavation

TP112

Notes:	Project	WEST BURTON C POWER STATION	Plate
	Project No.	A7102-17	19
	Carried out for	Firbeck Construction Limited	