

L24/02431/GRM - 24-43078

Project Reference - P10525 CASCID Christie Hospital
Manchester

Analytical Test Results - Solid

Lab Reference	347803
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Client Sample ID	-
Client Sample Location	TP105
Client Sample Type	ES
Client Sample Number	-
Depth - Top (m)	0.50
Depth - Bottom (m)	0.50
Date of Sampling	17/03/2024
Time of Sampling	-
Sample Matrix	Sand

Determinant	Units	Accreditation	
Antimony	(mg/kg)	u	< 3.5
Arsenic	(mg/kg)	MCERTS	26
Barium	(mg/kg)	MCERTS	120
Beryllium	(mg/kg)	MCERTS	0.7
Boron (w/s)	(mg/kg)	u	< 2.5
Cadmium	(mg/kg)	MCERTS	0.7
Chromium (III)	(mg/kg)	u	5.4
Chromium (Total)	(mg/kg)	UKAS	6.4
Copper	(mg/kg)	MCERTS	63
Iron	(mg/kg)	u	34000
Lead	(mg/kg)	MCERTS	450
Manganese	(mg/kg)	MCERTS	590
Mercury	(mg/kg)	UKAS	< 2.5
Mercury (Total, Low level)	(mg/kg)	u	< 1.0
Molybdenum	(mg/kg)	u	2.8
Nickel	(mg/kg)	MCERTS	21
Selenium	(mg/kg)	u	< 8.0
Vanadium	(mg/kg)	UKAS	32
Zinc	(mg/kg)	MCERTS	73
Phenol	(mg/kg)	MCERTS	< 0.20
Cresols	(mg/kg)	MCERTS	< 0.20
Xylenols	(mg/kg)	MCERTS	< 0.20
Trimethyl Phenols	(mg/kg)	UKAS	< 0.20
Total Phenols (via HPLC)	(mg/kg)	UKAS	< 0.80
Cyanide (Free)	(mg/kg)	u	< 1.0
Chromium (Hexavalent)	(mg/kg)	u	< 1.0
pH	pH Units	MCERTS	7.8
Sulphate (Water soluble as SO ₄)	(mg/l)	u	29
Sulphur (Total)	(%)	UKAS	0.01
Acenaphthene	(mg/kg)	MCERTS	< 0.02
Acenaphthylene	(mg/kg)	UKAS	< 0.02
Anthracene	(mg/kg)	UKAS	< 0.02
Benzo (a) anthracene	(mg/kg)	MCERTS	< 0.02
Benzo (a) pyrene	(mg/kg)	MCERTS	< 0.02
Benzo (b) fluoranthene	(mg/kg)	MCERTS	< 0.02
Benzo (g, h, i) perylene	(mg/kg)	MCERTS	< 0.02
Benzo (k) fluoranthene	(mg/kg)	MCERTS	< 0.02
Chrysene	(mg/kg)	MCERTS	< 0.02
Dibenzo (a,h) anthracene	(mg/kg)	MCERTS	< 0.02
Fluoranthene	(mg/kg)	MCERTS	< 0.02
Fluorene	(mg/kg)	MCERTS	< 0.02
Indeno (1, 2, 3,-cd) pyrene	(mg/kg)	MCERTS	< 0.02
Naphthalene	(mg/kg)	MCERTS	< 0.02



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Manchester

Analytical Test Results - Solid

Lab Reference	347803
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Client Sample ID	-
Client Sample Location	TP105
Client Sample Type	ES
Client Sample Number	-
Depth - Top (m)	0.50
Depth - Bottom (m)	0.50
Date of Sampling	17/03/2024
Time of Sampling	-
Sample Matrix	Sand
Determinant	Units Accreditation
Phenanthrene	(mg/kg) MCERTS < 0.02
Pyrene	(mg/kg) MCERTS < 0.02
Total PAH (Sum of USEPA 16)	(mg/kg) UKAS < 0.32
FOC	- UKAS 0.038
Asbestos	- UKAS No asbestos detected



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Manchester

Analytical Test Results - Chemical Analysis

Lab Reference	347802
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Client Sample ID	-
Client Sample Location	TP103
Client Sample Type	ES
Client Sample Number	-
Depth - Top (m)	0.30
Depth - Bottom (m)	0.40
Date of Sampling	17/03/2024
Time of Sampling	-
Sample Matrix	Sand

Determinant	Units	Accreditation	
Water soluble sulphate (as SO ₄)	(mg/l)	u	< 10
Acid Soluble Sulphate	(%)	u	0.03
Total Sulphur	(%)	UKAS	0.02
pH Value	pH Units	MCERTS	8.7

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Project Reference - P10525 CASCID Christie Hospital
Manchester

Analytical Test Results - VPH / EPH

Lab Reference	347803
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Client Sample ID	-
Client Sample Location	TP105
Client Sample Type	ES
Client Sample Number	-
Depth - Top (m)	0.50
Depth - Bottom (m)	0.50
Date of Sampling	17/03/2024
Time of Sampling	-
Sample Matrix	Sand

Determinant	Units	Accreditation	
Aliphatic >C ₅ to C ₆ [HS_MS_1D_AL]	(mg/kg)	MCERTS	< 0.06
Aliphatic >C ₆ to C ₈ [HS_MS_1D_AL]	(mg/kg)	MCERTS	< 0.06
Aliphatic >C ₈ to C ₁₀ [HS_MS_1D_AL]	(mg/kg)	MCERTS	< 0.06
Aliphatic >C ₁₀ to C ₁₂ [EH_CU_1D_AL]	(mg/kg)	u	< 10
Aliphatic >C ₁₂ to C ₁₆ [EH_CU_1D_AL]	(mg/kg)	u	< 10
Aliphatic >C ₁₆ to C ₂₁ [EH_CU_1D_AL]	(mg/kg)	u	< 10
Aliphatic >C ₂₁ to C ₃₅ [EH_CU_1D_AL]	(mg/kg)	u	< 20
Aliphatic >C ₃₅ to C ₄₄ [EH_CU_1D_AL]	(mg/kg)	u	< 15
Aromatic >C ₅ to C ₇ [HS_MS_1D_AR]	(mg/kg)	MCERTS	< 0.01
Aromatic >C ₇ to C ₈ [HS_MS_1D_AR]	(mg/kg)	MCERTS	< 0.01
Aromatic >C ₈ to C ₁₀ [HS_MS_1D_AR]	(mg/kg)	MCERTS	< 0.06
Aromatic >C ₁₀ to C ₁₂ [EH_CU_1D_AR]	(mg/kg)	u	< 10
Aromatic >C ₁₂ to C ₁₆ [EH_CU_1D_AR]	(mg/kg)	u	< 10
Aromatic >C ₁₆ to C ₂₁ [EH_CU_1D_AR]	(mg/kg)	u	< 10
Aromatic >C ₂₁ to C ₃₅ [EH_CU_1D_AR]	(mg/kg)	u	< 20
Aromatic >C ₃₅ to C ₄₄ [EH_CU_1D_AR]	(mg/kg)	u	< 15
Total >C ₅ to C ₃₅ [EH_CU+HS_1D_Total]	(mg/kg)	u	< 50
Benzene	(mg/kg)	MCERTS	< 0.01
Toluene	(mg/kg)	MCERTS	< 0.01
Ethylbenzene	(mg/kg)	MCERTS	< 0.01
m&p Xylene	(mg/kg)	MCERTS	< 0.02
o-Xylene	(mg/kg)	MCERTS	< 0.01
MTBE	(mg/kg)	MCERTS	< 0.01

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Project Reference - P10525 CASCID Christie Hos

Analytical Test Results - VOC

Lab Reference	347803
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Client Sample ID	-
Client Sample Location	TP105
Client Sample Type	ES
Client Sample Number	-
Depth - Top (m)	0.50
Depth - Bottom (m)	0.50
Date of Sampling	17/03/2024
Time of Sampling	-
Sample Matrix	Sand

Determinant	Units	Accreditation	
Benzene	(mg/kg)	MCERTS	< 0.01
Toluene	(mg/kg)	MCERTS	< 0.01
Ethylbenzene	(mg/kg)	MCERTS	< 0.01
m&p Xylene	(mg/kg)	MCERTS	< 0.02
o-Xylene	(mg/kg)	MCERTS	< 0.01
Dichlorodifluoromethane	(mg/kg)	UKAS	< 0.05
Chloromethane	(mg/kg)	UKAS	< 0.02
Vinyl Chloride	(mg/kg)	MCERTS	< 0.02
Bromomethane	(mg/kg)	u	< 0.05
Chloroethane	(mg/kg)	MCERTS	< 0.01
Trichlorofluoromethane	(mg/kg)	MCERTS	< 0.01
1,1-Dichloroethylene	(mg/kg)	MCERTS	< 0.01
Dichloromethane	(mg/kg)	u	< 0.10
MTBE	(mg/kg)	MCERTS	< 0.01
trans-1,2,-dichloroethylene	(mg/kg)	MCERTS	< 0.01
1,1-Dichloroethane	(mg/kg)	MCERTS	< 0.01
2,2-Dichloropropane	(mg/kg)	MCERTS	< 0.01
cis-1,2,-dichloroethylene	(mg/kg)	MCERTS	< 0.01
Bromochloromethane	(mg/kg)	MCERTS	< 0.05
Chloroform	(mg/kg)	MCERTS	< 0.01
1,1,1-Trichloroethane	(mg/kg)	MCERTS	< 0.01
1,1-Dichloropropene	(mg/kg)	MCERTS	< 0.01
Carbon Tetrachloride	(mg/kg)	MCERTS	< 0.01
1,2-dichloroethane	(mg/kg)	MCERTS	< 0.02
Trichloroethylene	(mg/kg)	MCERTS	< 0.01
1,2-Dichloropropane	(mg/kg)	MCERTS	< 0.01
Dibromomethane	(mg/kg)	MCERTS	< 0.02
Bromodichloromethane	(mg/kg)	MCERTS	< 0.01
cis-1,2-dichloropropylene	(mg/kg)	MCERTS	< 0.01
trans-1,3-dichloropropylene	(mg/kg)	MCERTS	< 0.01
1,1,2-Trichloroethane	(mg/kg)	MCERTS	< 0.01
1,3-Dichloropropane	(mg/kg)	MCERTS	< 0.01
Tetrachloroethylene	(mg/kg)	MCERTS	< 0.01
Chlorodibromomethane	(mg/kg)	MCERTS	< 0.01
1,2-Dibromoethane	(mg/kg)	MCERTS	< 0.01
Chlorobenzene	(mg/kg)	MCERTS	< 0.01
1,1,1,2-tetrachloroethane	(mg/kg)	MCERTS	< 0.01
Styrene	(mg/kg)	UKAS	< 0.01
Isopropylbenzene	(mg/kg)	MCERTS	< 0.01
Bromoform	(mg/kg)	MCERTS	< 0.05
1,1,2,2-Tetrachloroethane	(mg/kg)	MCERTS	< 0.01
1,2,3-Trichloropropane	(mg/kg)	MCERTS	< 0.02
n-Propylbenzene	(mg/kg)	MCERTS	< 0.01
Bromobenzene	(mg/kg)	MCERTS	< 0.01
1,3,5-Trimethylbenzene	(mg/kg)	UKAS	< 0.01
2-chlorotoluene	(mg/kg)	MCERTS	< 0.01
4-chlorotoluene	(mg/kg)	MCERTS	< 0.01
tert-butylbenzene	(mg/kg)	UKAS	< 0.01
1,2,4-trimethylbenzene	(mg/kg)	UKAS	< 0.01
sec-Butylbenzene	(mg/kg)	UKAS	< 0.01
4-Isopropyltoluene (P-Cymene)	(mg/kg)	UKAS	< 0.01
1,3-Dichlorobenzene	(mg/kg)	u	< 0.01
1,4-Dichlorobenzene	(mg/kg)	u	< 0.01
n-Butylbenzene	(mg/kg)	UKAS	< 0.01
1,2-Dichlorobenzene	(mg/kg)	MCERTS	< 0.01
1,2-Dibromo-3-chloropropane	(mg/kg)	u	< 0.05
1,2,4-Trichlorobenzene	(mg/kg)	u	< 0.05
Hexachlorobutadiene	(mg/kg)	u	< 0.05
Naphthalene	(mg/kg)	u	< 0.05
1,2,3-Trichlorobenzene	(mg/kg)	u	< 0.05

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Sample Descriptions

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Description	Moisture Content (%)	Stone Content (%)	Passing 2mm test sieve (%)
347802	-	TP103	ES	-	Dark greyish brown gravelly silty sand	-	-	74
347803	-	TP105	ES	-	Brown gravelly silty sand	13	< 0.1	87



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Leicester
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Sample Comments

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Comments
347802	-	TP103	ES	-	
347803	-	TP105	ES	-	VOC - Sample taken from container with headspace. VPH/BTEX - Sample taken from container with headspace.

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Project Reference - P10525 CASCID Christie Hospital Manchester

Analysis Methodologies

Test Code	Test Name / Reference	Sample condition for analysis	Sample Preparation	Test Details
ANIONSS	MS - CL - Anions by Aquakem (2:1Extract)	Oven dried	Passing 2mm test sieve	Determination of Anions (inc Sulphate, chloride etc.) in soils by Aquakem. Analysis is based on a 2:1 water to soil extraction ratio
EPHS	MS - CL - EPH in Soil	As received	Passing 10mm test sieve	Determination of Extractable Petroleum Hydrocarbons in soils via GC-MS
PAHASRDS	MS - CL - PAH (As Received)	As received	Passing 10mm test sieve	Determination of Polyaromatic hydrocarbons in soil via GC-MS
CWGS	MS - CL - VPH & MS - CL - EPH	As received	Passing 10mm test sieve	Determination of TPH CWG (Volatile Petroleum Hydrocarbons and Extractable Petroleum Hydrocarbons) in soils via Headspace-GC-MS and GC-MS respectively
TOCS	MS - CL - TOC Eltra	Air Dried	Passing 10mm test sieve	Determination of Total Organic Carbon in soils
VOCS	MS - CL - VOC and MBTEX	As received	Passing 10mm test sieve	Determination of VOCs (inc BTEX) in soils via Headspace-GC-MS
VPHS	MS - CL - VPH	As received	Passing 10mm test sieve	Determination of VPH in soils via Headspace-GC-MS
WSBORONS	MS - CL - WS Boron	Air dried	Passing 10mm test sieve	Determination of Water soluble Boron in soils via ICP
SKALARCNS	MS - CL - Cyanide by Skalar	As received	Passing 10mm test sieve	Determination of cyanide (total / free / complex) in soil using a Skalar segmented flow analyser
SKALARHCS	MS - CL - Hexavalent Chromium by Skalar	As received	Passing 10mm test sieve	Determination of hexavalent chromium in soil using Skalar segmented flow analyser
ICPMETS	MS - CL - ICP Metals	Air dried	Passing 10mm test sieve	Determination of metals in soils via ICP
PHS	MS - CL - pH in Soils	As received	Passing 10mm test sieve	Determination of pH in soils using a pH probe (using a 1:3 soil to water extraction)
PHOHHPLCS	MS - CL - Phenols by HPLC (soil)	As received	Passing 10mm test sieve	Determination of speciated phenols in soil using HPLC
ASSO4S	MS - CL - Acid Soluble Sulphate	Oven Dried	Passing 2mm test sieve	Determination of total sulphate in soils by acid extraction followed by ICP analysis
ASB	MS - AS - Asbestos	-	-	Fibre identification is in accordance with in house documented methods which are based on the procedure documented in the HSE Document HSG 248 "Asbestos: The analysts guide for sampling, analysis and clearance procedures"
SAMPLEPREP	MS - CL - Sample Preparation	-	-	Preparation of samples (including determination of moisture content) to allow for subsequent analysis
SUBCON-ENV	Subcontract - ENV Lab	-	-	Subcontract testing
1377TS-ELT	BS1377 Total Sulphur Content by HTC	Oven dried	BS1377 : Part 1 : 2016	Total Sulphur Content testing of Soil in accordance with BS 1377 : Part 3 : 2018 + A1 : 2021 Clause 7.10 (using Eltra CS-800 Analyser)



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HWOL TPH Acronym Index

Acronym	Description
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics and Aromatics
AL	Aliphatics Only
AR	Aromatics Only
2D	GC-GC - Double Coil Gas Chromatography
#1	EH_Total but with humics mathmatically subtracted
#2	EH_Total but with fatty acids mathmatically subtracted
_	Operator - underscore to separate acronyms (except for +)
+	Operator to indicate cumlative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry



7 - 11 Harding Street
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LE1 4DH

GRM Development Solutions

Laurus House
First Avenue
Centrum 100
Burton Upon Trent
DE14 2WH

Analytical Test Report: L24/03842/GRM - 24-44683

Your Project Reference: **CASID-Christie Hospital, Manchester**

Your Order Number: P10525 Samples Received / Instructed: 30/04/2024 / 01/05/2024

Report Issue Number: 1 Sample Tested: 01/05 to 21/05/2024

Samples Analysed: 4 soil samples Report issued: 21/05/2024

Signed

James Gane
Analytical Services Manager
CTS Group

Notes:

General

Please refer to Methodologies page for details pertaining to the analytical methods undertaken.

Samples will be retained for 14 days after issue of this report with the exception of the asbestos test portion which is held for 6 months unless otherwise requested.

Moisture Content was determined in accordance with CTS method statement MS - CL - Sample Prep, oven dried at <30°C.

Moisture Content is reported as a percentage of the dry mass of soil, this calculation is in accordance with BS1377, Part 2, 1990, Clause 3.2

Stone Content was determined in accordance with CTS method statement MS - CL - Sample Prep and refers to the percentage of stones retained on a 10mm BS test sieve.

Where specification limits are included these are for guidance only. Where a measured value has been highlighted this is not implying acceptance or failure and certainty of measurement values have not been taken into account.

Uncertainty of measurement values are available on request.

Samples were supplied by customer, results apply to the samples as received.

Asbestos

Please note: Where further analysis is required samples identified as containing asbestos are screened and tested on an as received basis. No correction is made for moisture content and these results are not covered by our accreditation

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

WAC Testing

Samples were leached in accordance with BS EN 12457-2: 2002.

Eluate Results are reported as L/S 10. These results have been calculated in accordance with BS EN 12457-2:2002.

Comparative values are taken from the Council Decision Annex - CRITERIA AND PROCEDURES FOR THE ACCEPTANCE OF WASTE AT LANDFILLS, (2003/33/EC).

Deviating Samples

On receipt samples are compared against our sample holding and handling protocols, where any deviations have been noted these are reported on our deviating sample page (if present)

Accreditation Key

UKAS = UKAS Accreditation, MCERTS = MCERTS Accreditation, u = Unaccredited, subUKAS - Subcontracted to a laboratory UKAS accredited for this test, subMCERTS - Subcontracted to a laboratory MCERTS accredited for this test

MCERTS Accreditation only covers the SAND, CLAY and LOAM matrices

Date of Issue: 13.05.2024

Issued by: J. Gane

Issue No: 4

Rev No: 9

L24/03842/GRM - 24-44683

Project Reference - CASID-Christie Hospital, Manchester

Analytical Test Results - Solid

Lab Reference			360713	360715
Client Sample ID			-	-
Client Sample Location			WS101	WS102
Client Sample Type			ES	ES
Client Sample Number			-	-
Depth - Top (m)			0.80	0.80
Depth - Bottom (m)			0.80	0.80
Date of Sampling			28/04/2024	28/04/2024
Time of Sampling			-	-
Sample Matrix			Sand	Sand
Determinant	Units	Accreditation		
Antimony	(mg/kg)	u	< 3.5	< 3.5
Arsenic	(mg/kg)	MCERTS	13	290
Barium	(mg/kg)	MCERTS	170	140
Beryllium	(mg/kg)	MCERTS	0.7	< 4.0
Boron (w/s)	(mg/kg)	u	< 2.5	< 2.5
Cadmium	(mg/kg)	MCERTS	0.6	0.5
Chromium (III)	(mg/kg)	u	7.5	2.7
Chromium (Total)	(mg/kg)	UKAS	8.5	3.7
Copper	(mg/kg)	MCERTS	46	41
Iron	(mg/kg)	u	25000	18000
Lead	(mg/kg)	MCERTS	56	190
Manganese	(mg/kg)	MCERTS	580	390
Mercury	(mg/kg)	UKAS	< 2.5	< 2.5
Mercury (Total, Low Level)	(mg/kg)	u	< 0.1	0.2
Molybdenum	(mg/kg)	u	< 2.0	< 40.0
Nickel	(mg/kg)	MCERTS	18	12
Selenium	(mg/kg)	u	< 8.0	< 8.0
Vanadium	(mg/kg)	UKAS	8.4	11
Zinc	(mg/kg)	MCERTS	56	61
Phenol	(mg/kg)	MCERTS	< 0.20	< 0.20
Cresols	(mg/kg)	MCERTS	< 0.20	< 0.20
Xylenols	(mg/kg)	MCERTS	< 0.20	< 0.20
Trimethyl Phenols	(mg/kg)	UKAS	< 0.20	< 0.20
Total Phenols (via HPLC)	(mg/kg)	UKAS	< 0.80	< 0.80
Cyanide (Free)	(mg/kg)	u	< 1.0	< 1.0
Chromium (Hexavalent)	(mg/kg)	u	< 1.0	< 1.0
pH	pH Units	MCERTS	7.6	8.1
Sulphate (Water soluble as SO ₄)	(mg/l)	u	< 10	63
Sulphur (Total)	(%)	UKAS	< 0.01	0.02
Acenaphthene	(mg/kg)	MCERTS	< 0.02	0.87
Acenaphthylene	(mg/kg)	UKAS	< 0.02	< 0.20
Anthracene	(mg/kg)	UKAS	< 0.02	1.1
Benzo (a) anthracene	(mg/kg)	MCERTS	< 0.02	4.4
Benzo (a) pyrene	(mg/kg)	MCERTS	< 0.02	2.8
Benzo (b) fluoranthene	(mg/kg)	MCERTS	< 0.02	3.2
Benzo (g, h, i) perylene	(mg/kg)	MCERTS	< 0.02	1.5
Benzo (k) fluoranthene	(mg/kg)	MCERTS	< 0.02	1.3
Chrysene	(mg/kg)	MCERTS	< 0.02	4.2
Dibenzo (a,h) anthracene	(mg/kg)	MCERTS	< 0.02	0.29
Fluoranthene	(mg/kg)	MCERTS	< 0.02	13
Fluorene	(mg/kg)	MCERTS	< 0.02	0.60
Indeno (1, 2, 3,-cd) pyrene	(mg/kg)	MCERTS	< 0.02	1.1
Naphthalene	(mg/kg)	MCERTS	< 0.02	0.53



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L24/03842/GRM - 24-44683

Project Reference - CASID-Christie Hospital, Manchester

Analytical Test Results - Solid

Lab Reference			360713	360715
Client Sample ID			-	-
Client Sample Location			WS101	WS102
Client Sample Type			ES	ES
Client Sample Number			-	-
Depth - Top (m)			0.80	0.80
Depth - Bottom (m)			0.80	0.80
Date of Sampling			28/04/2024	28/04/2024
Time of Sampling			-	-
Sample Matrix			Sand	Sand
Determinant	Units	Accreditation		
Phenanthrene	(mg/kg)	MCERTS	< 0.02	8.5
Pyrene	(mg/kg)	MCERTS	< 0.02	12
Total PAH (Sum of USEPA 16)	(mg/kg)	UKAS	< 0.32	56
FOC	-	UKAS	0.027	0.019
Asbestos	-	UKAS	No asbestos detected	No asbestos detected

L24/03842/GRM - 24-44683

Project Reference - CASID-Christie Hospital,
Manchester

Analytical Test Results - Chemical Analysis

Lab Reference			360712	360714
Client Sample ID			-	-
Client Sample Location			WS101	WS102
Client Sample Type			ES	ES
Client Sample Number			-	-
Depth - Top (m)			0.30	0.45
Depth - Bottom (m)			0.30	0.45
Date of Sampling			28/04/2024	28/04/2024
Time of Sampling			-	-
Sample Matrix			Sand	Sand
Determinant	Units	Accreditation		
Water soluble sulphate (as SO ₄)	(mg/l)	u	< 10	48
Acid Soluble Sulphate	(%)	u	< 0.01	0.02
Total Sulphur	(%)	UKAS	< 0.01	0.01
pH Value	pH Units	MCERTS	7.5	7.8

L24/03842/GRM - 24-44683

Project Reference - CASID-Christie Hospital,
Manchester

Analytical Test Results - VPH / EPH

Lab Reference			360713	360715
Client Sample ID			-	-
Client Sample Location			WS101	WS102
Client Sample Type			ES	ES
Client Sample Number			-	-
Depth - Top (m)			0.80	0.80
Depth - Bottom (m)			0.80	0.80
Date of Sampling			28/04/2024	28/04/2024
Time of Sampling			-	-
Sample Matrix			Sand	Sand
Determinant	Units	Accreditation		
Benzene	(mg/kg)	MCERTS	< 0.01	< 0.01
Toluene	(mg/kg)	MCERTS	< 0.01	< 0.01
Ethylbenzene	(mg/kg)	MCERTS	< 0.01	< 0.01
m&p Xylene	(mg/kg)	MCERTS	< 0.02	< 0.02
o-Xylene	(mg/kg)	MCERTS	< 0.01	< 0.01
MTBE	(mg/kg)	MCERTS	< 0.01	< 0.01
Aliphatic >C ₅ to C ₆ [HS_MS_1D_AI]	(mg/kg)	MCERTS	< 0.06	< 0.06
Aliphatic >C ₆ to C ₈ [HS_MS_1D_AI]	(mg/kg)	MCERTS	< 0.06	< 0.06
Aliphatic >C ₈ to C ₁₀ [HS_MS_1D_AI]	(mg/kg)	MCERTS	< 0.06	< 0.06
Aliphatic >C ₁₀ to C ₁₂ [EH_CU_1D_AI]	(mg/kg)	u	< 10	< 10
Aliphatic >C ₁₂ to C ₁₆ [EH_CU_1D_AI]	(mg/kg)	u	< 10	< 10
Aliphatic >C ₁₆ to C ₂₁ [EH_CU_1D_AI]	(mg/kg)	u	< 10	< 10
Aliphatic >C ₂₁ to C ₃₅ [EH_CU_1D_AI]	(mg/kg)	u	< 20	< 20
Aliphatic >C ₃₅ to C ₄₄ [EH_CU_1D_AI]	(mg/kg)	u	23	< 15
Aromatic >C ₅ to C ₇ [HS_MS_1D_AR]	(mg/kg)	MCERTS	< 0.01	< 0.01
Aromatic >C ₇ to C ₈ [HS_MS_1D_AR]	(mg/kg)	MCERTS	< 0.01	< 0.01
Aromatic >C ₈ to C ₁₀ [HS_MS_1D_AR]	(mg/kg)	MCERTS	< 0.06	< 0.06
Aromatic >C ₁₀ to C ₁₂ [EH_CU_1D_AR]	(mg/kg)	u	< 10	< 10
Aromatic >C ₁₂ to C ₁₆ [EH_CU_1D_AR]	(mg/kg)	u	< 10	< 10
Aromatic >C ₁₆ to C ₂₁ [EH_CU_1D_AR]	(mg/kg)	u	< 10	28
Aromatic >C ₂₁ to C ₃₅ [EH_CU_1D_AR]	(mg/kg)	u	49	80
Aromatic >C ₃₅ to C ₄₄ [EH_CU_1D_AR]	(mg/kg)	u	95	57
Total >C ₅ to C ₃₅ [EH_CU+HS_1D_Total]	(mg/kg)	u	< 50	110

L24/03842/GRM - 24-44683

Project Reference - CASID-Christie Hospital, Ma

Analytical Test Results - VOC

Lab Reference			360713	360715
Client Sample ID			-	-
Client Sample Location			WS101	WS102
Client Sample Type			ES	ES
Client Sample Number			-	-
Depth - Top (m)			0.80	0.80
Depth - Bottom (m)			0.80	0.80
Date of Sampling			28/04/2024	28/04/2024
Time of Sampling			-	-
Sample Matrix			Sand	Sand
Determinant	Units	Accreditation		
Benzene	(mg/kg)	MCERTS	< 0.01	< 0.01
Toluene	(mg/kg)	MCERTS	< 0.01	< 0.01
Ethylbenzene	(mg/kg)	MCERTS	< 0.01	< 0.01
m&p Xylene	(mg/kg)	MCERTS	< 0.02	< 0.02
o-Xylene	(mg/kg)	MCERTS	< 0.01	< 0.01
Dichlorodifluoromethane	(mg/kg)	UKAS	< 0.05	< 0.05
Chloromethane	(mg/kg)	UKAS	< 0.02	< 0.02
Vinyl Chloride	(mg/kg)	MCERTS	< 0.02	< 0.02
Bromomethane	(mg/kg)	u	< 0.05	< 0.05
Chloroethane	(mg/kg)	MCERTS	< 0.01	< 0.01
Trichlorofluoromethane	(mg/kg)	MCERTS	< 0.01	< 0.01
1,1-Dichloroethylene	(mg/kg)	MCERTS	< 0.01	< 0.01
Dichloromethane	(mg/kg)	u	0.13	0.11
MTBE	(mg/kg)	MCERTS	< 0.01	< 0.01
trans-1,2,-dichloroethylene	(mg/kg)	MCERTS	< 0.01	< 0.01
1,1-Dichloroethane	(mg/kg)	MCERTS	< 0.01	< 0.01
2,2-Dichloropropane	(mg/kg)	MCERTS	< 0.01	< 0.01
cis-1,2,-dichloroethylene	(mg/kg)	MCERTS	< 0.01	< 0.01
Bromochloromethane	(mg/kg)	MCERTS	< 0.05	< 0.05
Chloroform	(mg/kg)	MCERTS	< 0.01	< 0.01
1,1,1-Trichloroethane	(mg/kg)	MCERTS	< 0.01	< 0.01
1,1-Dichloropropene	(mg/kg)	MCERTS	< 0.01	< 0.01
Carbon Tetrachloride	(mg/kg)	MCERTS	< 0.01	< 0.01
1,2-dichloroethane	(mg/kg)	MCERTS	< 0.02	< 0.02
Trichloroethylene	(mg/kg)	MCERTS	< 0.01	< 0.01
1,2-Dichloropropane	(mg/kg)	MCERTS	< 0.01	< 0.01
Dibromomethane	(mg/kg)	MCERTS	< 0.02	< 0.02
Bromodichloromethane	(mg/kg)	MCERTS	< 0.01	< 0.01
cis-1,2-dichloropropylene	(mg/kg)	MCERTS	< 0.01	< 0.01
trans-1,3-dichloropropylene	(mg/kg)	MCERTS	< 0.01	< 0.01
1,1,2-Trichloroethane	(mg/kg)	MCERTS	< 0.01	< 0.01
1,3-Dichloropropane	(mg/kg)	MCERTS	< 0.01	< 0.01
Tetrachloroethylene	(mg/kg)	MCERTS	< 0.01	< 0.01
Chlorodibromomethane	(mg/kg)	MCERTS	< 0.01	< 0.01
1,2-Dibromoethane	(mg/kg)	MCERTS	< 0.01	< 0.01
Chlorobenzene	(mg/kg)	MCERTS	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	(mg/kg)	MCERTS	< 0.01	< 0.01
Styrene	(mg/kg)	UKAS	< 0.01	< 0.01
Isopropylbenzene	(mg/kg)	MCERTS	< 0.01	< 0.01
Bromoform	(mg/kg)	MCERTS	< 0.05	< 0.05
1,1,2,2-Tetrachloroethane	(mg/kg)	MCERTS	< 0.01	< 0.01
1,2,3-Trichloropropane	(mg/kg)	MCERTS	< 0.02	< 0.02
n-Propylbenzene	(mg/kg)	MCERTS	< 0.01	< 0.01
Bromobenzene	(mg/kg)	MCERTS	< 0.01	< 0.01
1,3,5-Trimethylbenzene	(mg/kg)	UKAS	< 0.01	< 0.01
2-chlorotoluene	(mg/kg)	MCERTS	< 0.01	< 0.01
4-chlorotoluene	(mg/kg)	MCERTS	< 0.01	< 0.01
tert-butylbenzene	(mg/kg)	UKAS	< 0.01	< 0.01
1,2,4-trimethylbenzene	(mg/kg)	UKAS	< 0.01	< 0.01
sec-Butylbenzene	(mg/kg)	UKAS	< 0.01	< 0.01
4-Isopropyltoluene (P-Cymene)	(mg/kg)	UKAS	< 0.01	< 0.01
1,3-Dichlorobenzene	(mg/kg)	u	< 0.01	< 0.01
1,4-Dichlorobenzene	(mg/kg)	u	< 0.01	< 0.01
n-Butylbenzene	(mg/kg)	UKAS	< 0.01	< 0.01
1,2-Dichlorobenzene	(mg/kg)	MCERTS	< 0.01	< 0.01
1,2-Dibromo-3-chloropropane	(mg/kg)	u	< 0.05	< 0.05
1,2,4-Trichlorobenzene	(mg/kg)	u	< 0.05	< 0.05
Hexachlorobutadiene	(mg/kg)	u	< 0.05	< 0.05
Naphthalene	(mg/kg)	u	< 0.05	0.05
1,2,3-Trichlorobenzene	(mg/kg)	u	< 0.05	< 0.05

L24/03842/GRM - 24-44683

Project Reference - CASID-Christie Hospital, Manchester

Certificate Of Analysis - WAC Suite

Lab Reference		360715
Client Sample ID	-	
Client Sample Location	WS102	
Client Sample Type	ES	
Client Sample Number	-	
Depth - Top (m)	0.8	
Depth - Bottom (m)	0.8	
Date of Sampling	28/04/2024	
Time of Sampling	-	
Sample Description	Brown slightly gravelly silty sand	
Sample Matrix	Sand	
Moisture Content (%)	7.6	
Stone content (%)	30	

Determined Result	Inert Waste Landfill	Stable non reactive hazardous waste in a non hazardous landfill	Hazardous Waste Landfill
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Solid Analysis

Total Organic Carbon	%	MCERTS	1.9	3.0	5.0	6.0
Loss on Ignition	%	UKAS	2.4	-	-	10.0
BTEX	mg/kg	MCERTS	< 0.06	6.00	-	-
PCB's (7 Congeners)	mg/kg	u	< 0.028	1.00	-	-
Mineral Oil (>C ₁₀ to C ₄₀) [EH_1D_Total]	mg/kg	MCERTS	185	500	-	-
PAH	mg/kg	u	57	100	-	-
pH	units	MCERTS	8.1	-	> 6	-

Eluate Analysis

Arsenic	mg/kg	u	3.90	0.50	2	25
Barium	mg/kg	u	< 0.05	20	100	300
Cadmium	mg/kg	u	< 0.03	0.04	1	5
Chromium (total)	mg/kg	u	< 0.03	0.5	10	70
Copper	mg/kg	u	< 0.01	2.0	50	100
Mercury	mg/kg	u	< 0.01	0.01	0.2	2
Molybdenum	mg/kg	u	< 0.03	0.5	10.0	30
Nickel	mg/kg	u	< 0.03	0.4	10.0	40
Lead	mg/kg	u	< 0.05	0.5	10.0	50
Antimony	mg/kg	u	< 0.03	0.06	0.7	5
Selenium	mg/kg	u	< 0.01	0.1	0.5	7
Zinc	mg/kg	u	< 0.05	4	50	200
Chloride	mg/kg	u	3	800	15000	25000
Fluoride	mg/kg	u	10	10	150	500
Sulphate (as SO ₄)	mg/kg	u	87	1000	20000	50000
Total Dissolved Solids	mg/kg	u	770	4000	60000	100000
Phenol Index	mg/kg	u	< 1.0	1	-	-
Dissolved Organic Carbon	mg/kg	u	28.0	500	800	1000

L24/03842/GRM - 24-44683

**Project Reference - CASID-Christie Hospital,
Manchester**

Analytical Test Results - 2:1 Leachate Suite

Lab Reference		360713	
Client Sample ID		-	
Client Sample Location		WS101	
Client Sample Type		ES	
Client Sample Number		-	
Depth - Top (m)		0.80	
Depth - Bottom (m)		0.80	
Date of Sampling		28/04/2024	
Time of Sampling		-	
Sample Matrix		Leachate	
Determinant	Units	Accreditation	
Boron	(mg/l)	u	0.015
Calcium	(mg/l)	u	11
Iron	(mg/l)	u	12
Antimony	(µg/l)	u	< 2.5
Arsenic	(µg/l)	u	4
Barium	(µg/l)	u	120
Beryllium	(µg/l)	u	< 1
Boron	(µg/l)	u	15
Cadmium (LL)	(µg/l)	u	0.83
Cadmium	(µg/l)	u	< 3
Chromium	(µg/l)	u	19
Chromium (III)	(µg/l)	u	< 20
Copper	(µg/l)	u	8
Lead	(µg/l)	u	41
Magnesium	(µg/l)	u	2300
Manganese	(µg/l)	u	210
Mercury (LL)	(µg/l)	u	< 0.20
Mercury	(µg/l)	u	< 1
Molybdenum	(µg/l)	u	< 2.5
Nickel	(µg/l)	u	< 3
Selenium	(µg/l)	u	< 1
Vanadium	(µg/l)	u	57.4
Zinc	(µg/l)	u	27
Phenol	(µg/l)	u	8.52
pH	pH Units	u	8.1
Cyanide (Free)	(mg/l)	u	< 0.5
Cyanide (Complex)	(mg/l)	u	< 0.5
Cyanide (Total)	(mg/l)	u	< 0.5
Chromium (Hexavalent)	(mg/l)	u	0.02
Chloride	(mg/l)	u	4.9
Fluoride	(mg/l)	u	0.53
Sulphate (As SO ₄)	(mg/l)	u	< 10
Cresols	(µg/l)	u	0.49
Xylenols	(µg/l)	u	< 0.20
Trimethyl Phenols	(µg/l)	u	< 0.50
Phenols (Total)	(µg/l)	u	9.01
Ammonium (As N)	(mg/l)	u	< 0.02

L24/03842/GRM - 24-44683

Project Reference - CASID-Christie Hospital, Manchester

Sample Descriptions

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Description	Moisture Content (%)	Stone Content (%)	Passing 2mm test sieve (%)
360712	-	WS101	ES	-	Brown slightly gravelly silty sand	-	-	85
360713	-	WS101	ES	-	Brown slightly gravelly slightly clayey silty sand	12	< 0.1	90
360714	-	WS102	ES	-	Brown slightly gravelly silty sand	-	-	95
360715	-	WS102	ES	-	Brown slightly gravelly silty sand	7.6	30	89



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L24/03842/GRM - 24-44683

Project Reference - CASID-Christie Hospital, Manchester

Sample Comments

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Comments
360712	-	WS101	ES	-	
360713	-	WS101	ES	-	VPH/BTEX - Sample taken from container with headspace.
360714	-	WS102	ES	-	
360715	-	WS102	ES	-	VPH/BTEX - Sample taken from container with headspace.

L24/03842/GRM - 24-44683

Project Reference - CASID-Christie Hospital, Manchester

Analysis Methodologies

Test Code	Test Name / Reference	Sample condition for analysis	Sample Preparation	Test Details
ANIONS	MS - CL - Anions by Aquakem	As received	-	Determination of Anions (inc Sulphate, chloride etc.) in leachate samples by Aquakem
ANIONSS	MS - CL - Anions by Aquakem (2:1Extract)	Oven dried	Passing 2mm test sieve	Determination of Anions (inc Sulphate, chloride etc.) in soils by Aquakem. Analysis is based on a 2:1 water to soil extraction ratio
EPHS	MS - CL - EPH in Soil	As received	Passing 10mm test sieve	Determination of Extractable Petroleum Hydrocarbons in soils via GC-FID
PCB7S	MS - CL - PCB Soils	As received	Passing 10mm test sieve	Determination of PCB's (7 congeners) in soils via GC-MS
PAHASRDS	MS - CL - PAH (As Received)	As received	Passing 10mm test sieve	Determination of Polyaromatic hydrocarbons in soil via GC-MS
CWGS	Calculation from VPH-S and EPH-S	As received	Passing 10mm test sieve	Determination of TPH CWG (Volatile Petroleum Hydrocarbons and Extractable Petroleum Hydrocarbons) in soils via Headspace-GC-MS and GC-GC-FID respectively
WACTOCS	MS - CL - TOC Eltra (WAC)	Air dried	Passing 10mm test sieve	Determination of Total Organic Carbon in soil as part of a WAC test
TOCS	MS - CL - TOC Eltra	Air Dried	Passing 10mm test sieve	Determination of Total Organic Carbon in soils
TPHS	MS - CL - TPH (GC-FID)	As received	Passing 10mm test sieve	Determination of Total Petroleum Hydrocarbons in soil using GC-FID
WACSKALAR	MS - CL - Phenols by Skalar (WAC)	As received	BSEN:12457 Leaching	Determination of Total Phenols within leachate as part of a WAC test using a Skalar Segmented flow analyser
VOCS	MS - CL - VOC and MBTEX	As received	Passing 10mm test sieve	Determination of VOCs (inc BTEX) in soils via Headspace-GC-MS
VPHS	MS - CL - VPH	As received	Passing 10mm test sieve	Determination of VPH in soils via Headspace-GC-MS
WSBORONS	MS - CL - WS Boron	Air dried	Passing 10mm test sieve	Determination of Water soluble Boron in soils via ICP
SKALARCNL	MS - CL - Cyanide by Skalar - Leachate	As received	BSEN:12457 Leaching	Determination of cyanide (total / free / complex) in leachates using a Skalar segmented flow analyser
SKALARCNS	MS - CL - Cyanide by Skalar	As received	Passing 10mm test sieve	Determination of cyanide (total / free / complex) in soil using a Skalar segmented flow analyser
WACDOC	MS - CL - DOC (WAC)	As received	BSEN:12457 Leaching	Determination of dissolved organic carbon in a leachate as part of a WAC test
SKALARHCL	MS - CL - Hexavalent Cr by Skalar - L	As received	BSEN:12457 Leaching	Determination of hexavalent chromium in leachate using Skalar segmented flow analyser
SKALARHCS	MS - CL - Hexavalent Chromium by Skalar	As received	Passing 10mm test sieve	Determination of hexavalent chromium in soil using Skalar segmented flow analyser
WACMETALS	MS - CL - ICP - Metals in Waters (WAC)	As received	BSEN:12457 Leaching	Determination of metals in a leachate as part of a WAC test via ICP
ICPMETL	MS - CL - ICP Metals in Waters	As received	BSEN:12457 Leaching	Determination of metals in leachates via ICP
ICPMETS	MS - CL - ICP Metals	Air dried	Passing 10mm test sieve	Determination of metals in soils via ICP
PHL	MS - CL - pH in Waters	As received	BSEN:12457 Leaching	Determination of pH in leachates using a pH probe

L24/03842/GRM - 24-44683

Project Reference - CASID-Christie Hospital, Manchester

Analysis Methodologies

Test Code	Test Name / Reference	Sample condition for analysis	Sample Preparation	Test Details
WACPHS	MS - CL - pH in Soils (WAC)	As received	BSEN:12457 Leaching	Determination of pH in soils as part of a WAC test via pH probe
PHS	MS - CL - pH in Soils	As received	Passing 10mm test sieve	Determination of pH in soils using a pH probe (using a 1:3 soil to water extraction)
PHOHHPLCL	MS - CL - Phenol Waters by HPLC	As received	BSEN:12457 Leaching	Determination of speciated phenols in leachates using HPLC
PHOHHPLCS	MS - CL - Phenols by HPLC (soil)	As received	Passing 10mm test sieve	Determination of speciated phenols in soil using HPLC
WACANIONS	MS - CL - Anions by Aquakem (WAC)	As received	BSEN:12457 Leaching	Determination of sulphate, chloride and fluoride in a leachate as part of a WAC test using a Aquakem analyser
TDSL	MS-CL-Conductivity in Water(TDS by Calc)	As received	BSEN:12457 Leaching	Determination of total dissolved solids in leachates (by calculation)
ASSO4S	MS - CL - Acid Soluble Sulphate	Oven Dried	Passing 2mm test sieve	Determination of total sulphate in soils by acid extraction followed by ICP analysis
ASB	MS - AS - Asbestos	-	-	Fibre identification is in accordance with in house documented methods which are based on the procedure documented in the HSE Document HSG 248 "Asbestos: The analysts guide for sampling, analysis and clearance procedures"
ENLEACHP	BS EN 12457-2	As Received	-	Leaching in accordance with BSEN 12457-2 (10:1 Ratio)
ENLEACHP2	BS EN 12457-3	As Received	-	Leaching in accordance with BSEN 12457-3
SAMPLEPREP	MS - CL - Sample Preparation	-	-	Preparation of samples (including determination of moisture content) to allow for subsequent analysis
SUBCON-ENV	Subcontract - ENV Lab	-	-	Subcontract testing
1377LOI	BS1377 Lol	Oven dried	Passing 2mm test sieve	Testing was in accordance with BS 1377: Part 3: 2018 + A1 :2021 Clause 6. Determination of the mass loss on ignition. Some information required by BS1377: 2016: Part 1 has not been reported. This information is available on request.
1377TS-ELT	BS1377 Total Sulphur Content by HTC	Oven dried	BS1377 : Part 1 : 2016	Total Sulphur Content testing of Soil in accordance with BS 1377 : Part 3 : 2018 + A1 : 2021 Clause 7.10 (using Eltra CS-800 Analyser)



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L24/03842/GRM - 24-44683

Project Reference - CASID-Christie Hospital, Manchester

HWOL TPH Acronym Index

Acronym	Description
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics and Aromatics
AL	Aliphatics Only
AR	Aromatics Only
2D	GC-GC - Double Coil Gas Chromatography
#1	EH_Total but with humics mathmatically subtracted
#2	EH_Total but with fatty acids mathmatically subtracted
_	Operator - underscore to separate acronyms (except for +)
+	Operator to indicate cumlative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry



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11 April 2024

Report No : GEO/40186/01

Page 1 of 1

For the attention of Charlie Needham / Rob McGoff

Our ref **GEO / 40186**
Your Ref **11359**

Date samples received 26/03/2024
Date written instructions received 26/03/2024
Date testing commenced 27/03/2024
Date of sample disposal 09/05/2024

Project **CASCID - CHRISTIE HOSPITAL, MANCHESTER**

Further to your instructions we have pleasure in enclosing the results of the tests you requested in the attached figures.

LABORATORY TEST REPORT

Item No	Test Quantity	Description
1	2	Point Load Strength Index

Any opinions or interpretations expressed herein are outside the scope of UKAS accreditation. All results contained in this report are provisional unless signed by an approved signatory. The results contained in this report relate only to samples received in the laboratory and are tested 'as received' unless otherwise stated. This report should not be reproduced, except in full, without the written approval of the laboratory. The results reported are applicable only to the test items received by the laboratory.

All the necessary data required by the documented test procedures has been recorded and will be stored for a period of not less than 6 years. This data will be issued to yourselves at your request. All samples will be disposed of after the date shown above. Written confirmation will be required to retain the samples beyond this period and a storage charge may be applied.

We trust that the above meets your requirements and should you require any further information or assistance, please do not hesitate to contact us.

Yours faithfully
on behalf of **GEOLABS Limited**



I Tabios
Laboratory Manager

DETERMINATION OF POINT LOAD STRENGTH ON ROCK

Sample details													
Borehole Ref.	Depth (m)	Description	D. Tested	Test type & Direction	Sample width W (mm)	Platen separation (mm)		Water Content (%)	Equiv. Diameter D _e (mm)	Failure Load P (kN)	I _s P/De ² (MPa)	Correction Factor F	Point Load Index I _{sg(50)} (MPa)
						Start D	End D'						
BH101 (11359/20861)	5.95-6.05	Extremely weak reddish brown fine to medium grained SANDSTONE. Fresh to slightly weathered	10/04/24	D L	84.7	81.8	79.6		80.7	0.14	0.02	1.24	0.02
BH101 (11359/20865)	10.25-10.35	Extremely weak reddish brown fine to medium grained SANDSTONE. Fresh to slightly weathered	10/04/24	D L	84.5	82.2	80.1		81.1	0.03	0.01	1.24	0.01

(*) Sample failed on weakness

Test type and direction: **D** - Diametral **A** - Axial **B** - Block **I** - Irregular lump **P** - Perpendicular to planes of weakness **U** - Random or unknown orientation **L** - Parallel to planes of weakness

(*) Sample failed on weakness

Test type and direction: D - Diametral A - Axial B - Block I - Irregular lump P - Perpendicular to planes of weakness U - Random or unknown orientation L - Parallel to planes of weakness

Checked and Approved by

IT

I Tabios (Head of Department)
Date: 11/04/2024

Project Number:
GEO / 40186

Project Name:
CASCID - CHRISTIE HOSPITAL, MANCHESTER
11359

GEOLABS



TESTING RESTRICTION

The following tests have been scheduled on the below project. Those listed **CANNOT** be performed for the reason stated. If alternative samples are available for the restricted tests, please supply details.

Sample details			
Borehole Ref.	Depth (m)	Description	
BH101 (11359/20860)	5.50-5.75	n/a	Tests restricted
BH101 (11359/20861)	5.95-6.05	n/a	Reason for restriction and comments
BH101 (11359/20865)	10.25-10.35	n/a	Sample not received.
			Sample too short and broken into pieces before any testing has been done.
			Sample too short and broken into pieces before any testing has been done.

Checked and Approved by

I Tabios (Head of Department)
Date: 11/04/2024

Project Number:
GEO / 40186
Project Name:
CASCID - CHRISTIE HOSPITAL, MANCHESTER
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Simtec Material Testing

72, 113, 114, 116 The Burrows
East Goscote
Leicester

LE7 3XD

11 April 2024

Report No : GEO/40187/01

Page 1 of 1

For the attention of Charlie Needham / Rob McGoff

Our ref **GEO / 40187**

Your Ref **11360**

Date samples received 26/03/2024

Date written instructions received 26/03/2024

Date testing commenced 27/03/2024

Date of sample disposal 09/05/2024

Project **CASCID - CHRISTIE HOSPITAL, MANCHESTER**

Further to your instructions we have pleasure in enclosing the results of the tests you requested in the attached figures.

LABORATORY TEST REPORT

Item No	Test Quantity	Description
1	2	Unconfined Compressive Strength with Deformability
2	1	Point Load Strength Index

Any opinions or interpretations expressed herein are outside the scope of UKAS accreditation. All results contained in this report are provisional unless signed by an approved signatory. The results contained in this report relate only to samples received in the laboratory and are tested 'as received' unless otherwise stated. This report should not be reproduced, except in full, without the written approval of the laboratory. The results reported are applicable only to the test items received by the laboratory.

All the necessary data required by the documented test procedures has been recorded and will be stored for a period of not less than 6 years. This data will be issued to yourselves at your request. All samples will be disposed of after the date shown above. Written confirmation will be required to retain the samples beyond this period and a storage charge may be applied.

We trust that the above meets your requirements and should you require any further information or assistance, please do not hesitate to contact us.

Yours faithfully
on behalf of **GEOLABS Limited**

I Tabios
Laboratory Manager

UNCONFINED COMPRESSIVE STRENGTH WITH YOUNG'S MODULUS

Borehole Ref.: BH102 (11360/20869)
 Sample Ref.: -
 Depth (m): 3.40-3.55

Description:
 Very weak thinly laminated reddish brown fine grained SANDSTONE. Fresh to slightly weathered

Diameter
Height
Bulk Density
Dry Density
Water Content

Degree of Saturation: 77.8 %

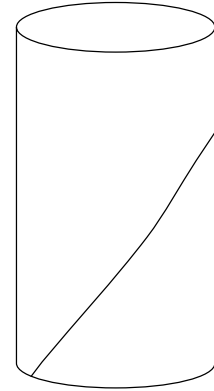
Specific Gravity: 2.9 Mg/m³ (Assumed)

84.90 mm
125.60 mm
2.17 Mg/m ³
1.90 Mg/m ³
14 %

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Diagonal shearing



Solid lines for material failures.
 Dashed lines for apparent weakness failure.

Angle of foliation/Axis of loading: n/a
 Angle of shear plane/Axis of loading: n/a

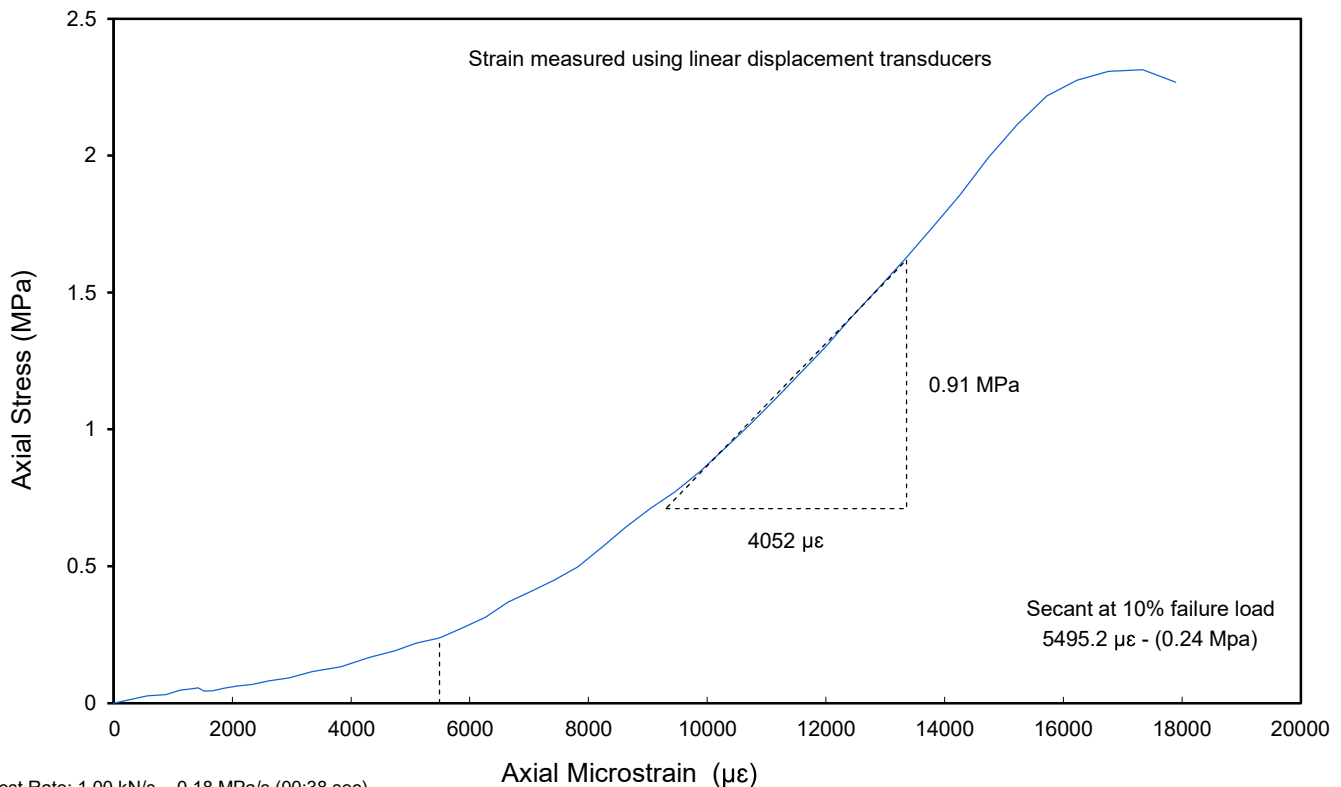
Date tested: 10/04/2024

Test results

Unconfined Compressive Strength Maximum load (kN): 13.10
Young's Modulus (tangential at 50% failure load)
Poisson's Ratio (tangential at 50% failure load)
Young's Modulus (secant at 10% failure load)
Poisson's Ratio (secant at 10% failure load)

2.31 MPa
0.224 GPa
n/a
0.0434 GPa
n/a

Sample type

C

Test Rate: 1.00 kN/s - 0.18 MPa/s (00:38 sec)

Remarks: Non-standard test as samples does not meet the required height to diameter ratio.

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

IT

I Tabios (Head of Department)

Date: 11/04/2024

Project Number:

GEO / 40187

Project Name:

CASCID - CHRISTIE HOSPITAL, MANCHESTER
11360

GEOLABS

UNCONFINED COMPRESSIVE STRENGTH WITH YOUNG'S MODULUS

Borehole Ref.: BH102 (11360/20876)
 Sample Ref.: -
 Depth (m): 16.50-16.70

Description:
 Extremely weak thinly laminated reddish brown fine grained SANDSTONE.
 Fresh to slightly weathered

Diameter
Height
Bulk Density
Dry Density
Water Content

Degree of Saturation: 78.9 %

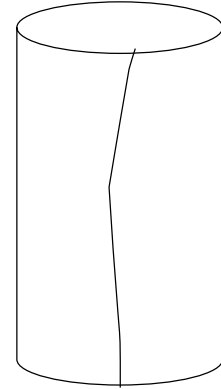
Specific Gravity: 2.9 Mg/m³ (Assumed)

84.30 mm
173.20 mm
2.13 Mg/m ³
1.84 Mg/m ³
16 %

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Axial splitting



Solid lines for material failures.
 Dashed lines for apparent weakness failure.

Angle of foliation/Axis of loading: n/a
 Angle of shear plane/Axis of loading: n/a

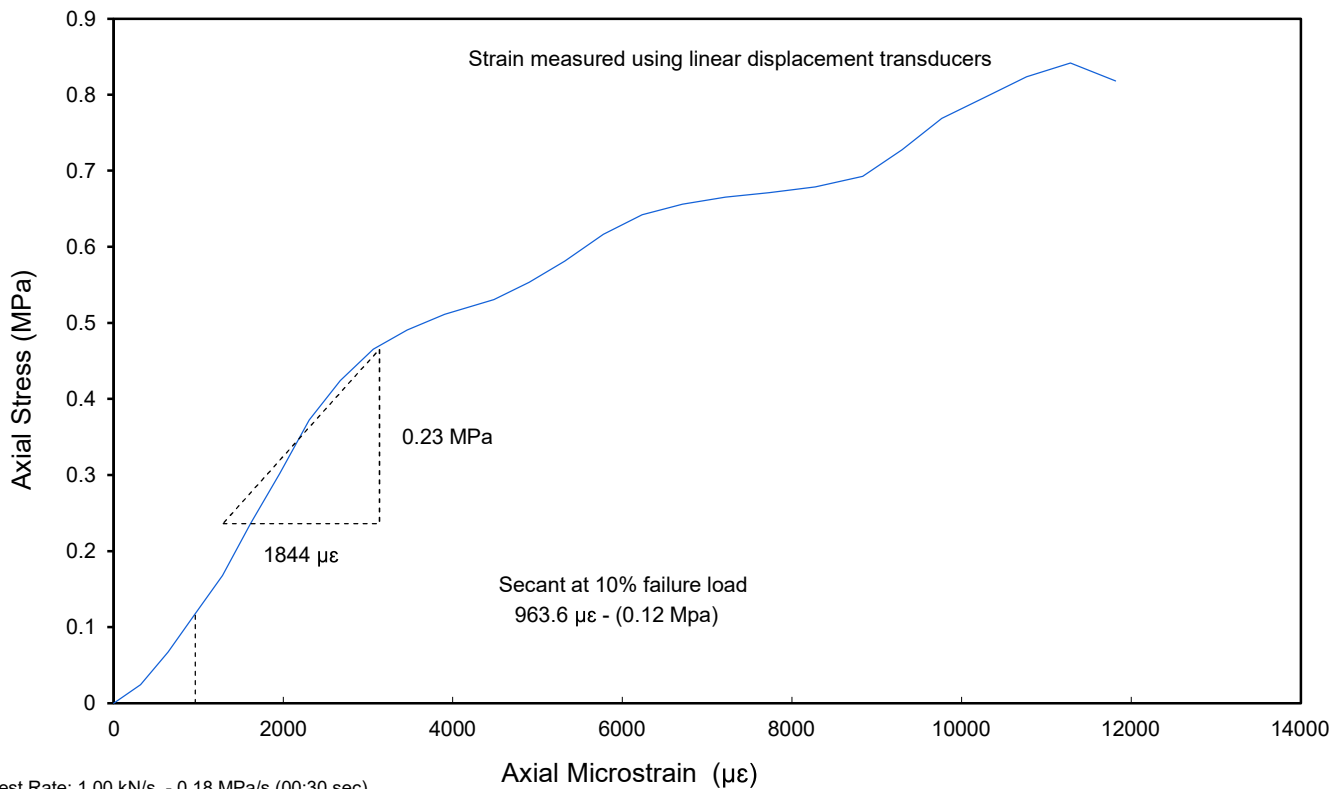
Date tested: 10/04/2024

Test results

Unconfined Compressive Strength Maximum load (kN): 4.70
Young's Modulus (tangential at 50% failure load)
Poisson's Ratio (tangential at 50% failure load)
Young's Modulus (secant at 10% failure load)
Poisson's Ratio (secant at 10% failure load)

0.842 MPa
0.124 GPa
n/a
0.122 GPa
n/a

Sample type

C

Test Rate: 1.00 kN/s - 0.18 MPa/s (00:30 sec)

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

IT

I Tabios (Head of Department)

Date: 11/04/2024

Project Number:

GEO / 40187

Project Name:

CASCID - CHRISTIE HOSPITAL, MANCHESTER
11360

GEOLABS

DETERMINATION OF POINT LOAD STRENGTH ON ROCK

Sample details														Point Load test						
Borehole Ref.	Depth (m)	Description	D. Tested	Test type & Direction	Sample width W (mm)	Platen separation (mm)		Water Content (%)	Equiv. Diameter D _e (mm)	Failure Load P (kN)	I _s P/De ² (MPa)	Correction Factor F	Point Load Index I _{s(50)} (MPa)							
						Start D	End D'													
BH102 (11360/20873)	8.30-8.45	Extremely weak thinly laminated reddish brown fine grained SANDSTONE. Fresh to slightly weathered	10/04/24	D L	85.1	83.3	81.5		82.4	0.24	0.04	1.25	0.05							

(*) Sample failed on weakness

Test type and direction: **D** - Diametral **A** - Axial **B** - Block **I** - Irregular lump **P** - Perpendicular to planes of weakness **U** - Random or unknown orientation **L** - Parallel to planes of weakness

(*) Sample failed on weakness

Test type and direction: D - Diametral A - Axial B - Block I - Irregular lump P - Perpendicular to planes of weakness U - Random or unknown orientation L - Parallel to planes of weakness

Checked and Approved by

IT

I Tabios (Head of Department)
Date: 11/04/2024

Project Number:
GEO / 40187
Project Name:
CASCID - CHRISTIE HOSPITAL, MANCHESTER
11360

GEOLABS

UKAS

TESTING

TESTING RESTRICTION

The following tests have been scheduled on the below project. Those listed **CANNOT** be performed for the reason stated. If alternative samples are available for the restricted tests, please supply details.

[illegible]

Checked and Approved by
IT
I I Tabios (Head of Department)
Date: 11/04/2024

Project Number:
Project Name:

GEO / 40187

**CASCID - CHRISTIE HOSPITAL, MANCHESTER
11360**



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Simtec Material Testing

72, 113, 114, 116 The Burrows
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Leicester

LE7 3XD

11 April 2024

Report No : GEO/40185/01

Page 1 of 1

For the attention of Charlie Needham / Rob McGoff

Our ref **GEO / 40185**

Your Ref **11358**

Date samples received 26/03/2024

Date written instructions received 26/03/2024

Date testing commenced 27/03/2024

Date of sample disposal 09/05/2024

Project **CASCID - CHRISTIE HOSPITAL, MANCHESTER**

Further to your instructions we have pleasure in enclosing the results of the tests you requested in the attached figures.

LABORATORY TEST REPORT

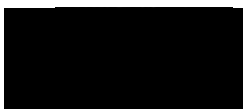
Item No	Test Quantity	Description
1	3	Unconfined Compressive Strength with Deformability
2	2	Point Load Strength Index

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We trust that the above meets your requirements and should you require any further information or assistance, please do not hesitate to contact us.

Yours faithfully
on behalf of **GEOLABS Limited**



I Tabios
Laboratory Manager

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Uniaxial Compression Test (LF0879C (1000kN) compression frame used)														
Sample details			Density				Mean after prep.				Failure Sketch	D. Tested	Remarks	
			MC (%)	Degree of Saturation (%)	Bulk (Mg/m³)	Dry (Mg/m³)	Diameter (mm)	Height (mm)	H/D Ratio	Load at Failure (kN)				UCS (MPa) 3 sig. fig.
Borehole Ref.	Depth (m)	Description												
BH104 (11358/20848)	4.30-4.40	Very weak reddish brown fine to medium grained SANDSTONE. Fresh to slightly weathered	11	51.9	2.01	1.82	86.50	93.90	1.1	14.4	2.45		10/04/24	Non-standard test as the sample does not meet the required height to diameter ratio.
BH104 (11358/20853)	11.20-11.38	Very weak reddish brown fine to medium grained SANDSTONE. Fresh to slightly weathered	15	75.3	2.11	1.83	85.50	138.90	1.6	22.1	3.85		10/04/24	Non-standard test as the sample does not meet the required height to diameter ratio.
BH104 (11358/20855)	14.75-14.90	Very weak reddish brown fine to medium grained SANDSTONE. Fresh to slightly weathered	13	78.5	2.21	1.95	84.90	115.10	1.4	10.4	1.84		10/04/24	Non-standard test as the sample does not meet the required height to diameter ratio.

Note: The dimensional requirements of flatness (<0.02 mm), perpendicularity (<0.05 / 50 mm) and straightness (0.3 mm deviation) are all met. Specific Gravity used for Degree of Saturation is assumed unless specified by the client.

Checked and Approved by

I Tabios (Head of Department)
Date: 11/04/2024

Project Number:

Project Name:

GEO / 40185

CASCID - CHRISTIE HOSPITAL, MANCHESTER

11358



UNCONFINED COMPRESSIVE STRENGTH WITH YOUNG'S MODULUS

Borehole Ref.: BH104 (11358/20848)
 Sample Ref.: -
 Depth (m): 4.30-4.40

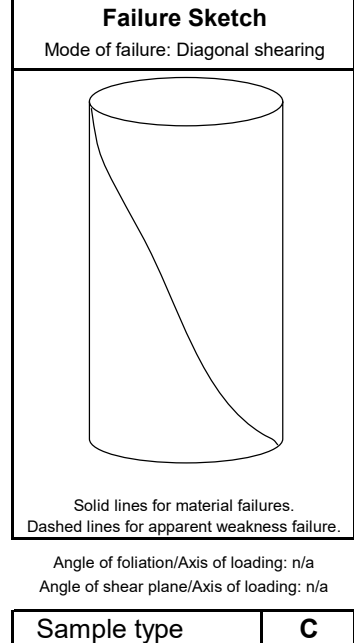
Description:
 Very weak reddish brown fine to medium grained SANDSTONE. Fresh to slightly weathered

Diameter	86.50 mm
Height	93.90 mm
Bulk Density	2.01 Mg/m ³
Dry Density	1.82 Mg/m ³
Water Content	11 %
Degree of Saturation: 51.9 % Specific Gravity: 2.9 Mg/m ³ (Assumed)	

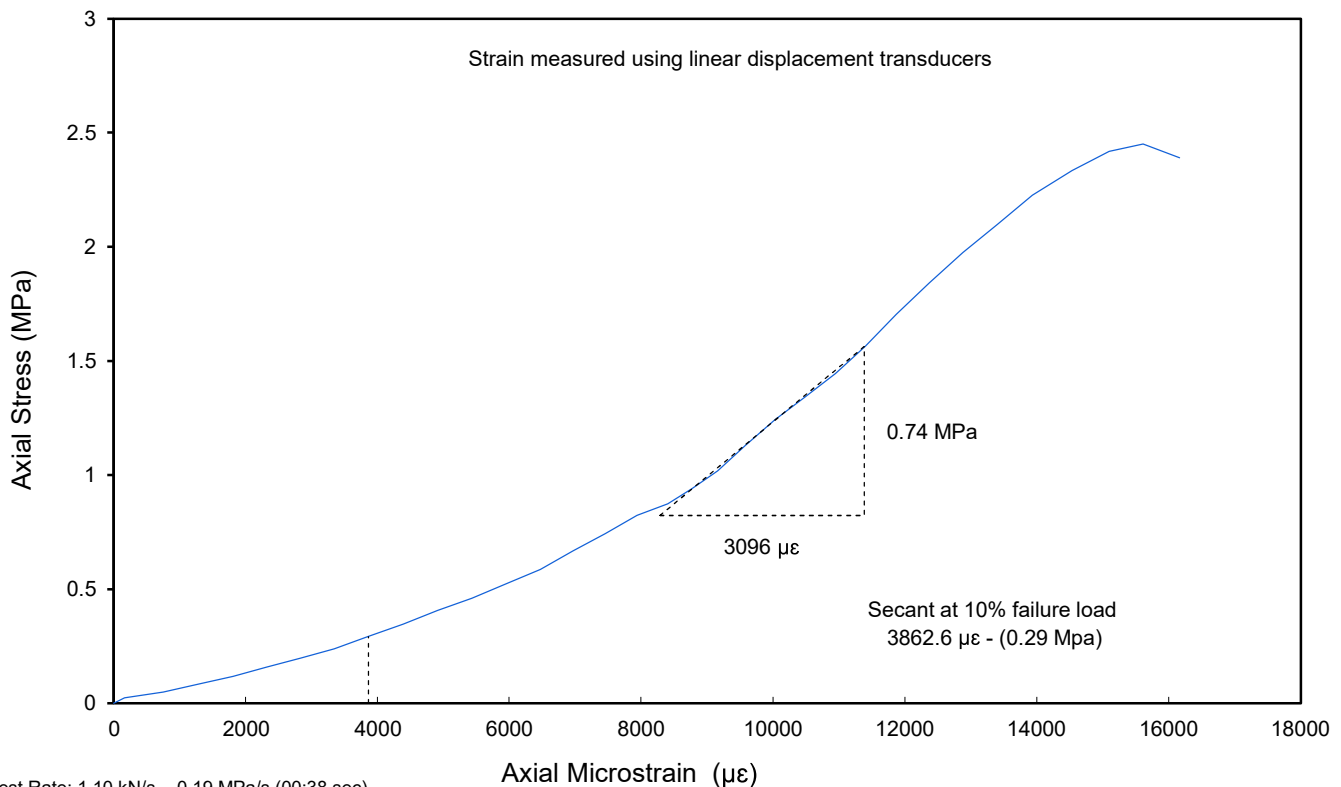
Test results

Unconfined Compressive Strength Maximum load (kN): 14.40	2.45 MPa
Young's Modulus (tangential at 50% failure load)	0.239 GPa
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	0.0757 GPa
Poisson's Ratio (secant at 10% failure load)	n/a

LF0879C (1000kN) compression frame used



Date tested: 10/04/2024



Test Rate: 1.10 kN/s - 0.19 MPa/s (00:38 sec)

Remarks: Non-standard test as the sample does not meet the required height to diameter ratio.

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

IT

I Tabios (Head of Department)

Date: 11/04/2024

Project Number:

GEO / 40185

Project Name:

**CASCID - CHRISTIE HOSPITAL, MANCHESTER
11358****GEOLABS**

UNCONFINED COMPRESSIVE STRENGTH WITH YOUNG'S MODULUS

Borehole Ref.: BH104 (11358/20853)
 Sample Ref.: -
 Depth (m): 11.20-11.38

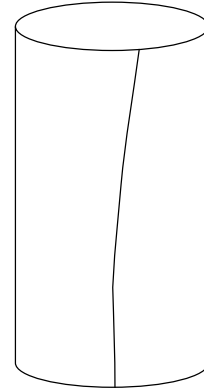
Description:
 Very weak reddish brown fine to medium grained SANDSTONE. Fresh to slightly weathered

Diameter	85.50 mm
Height	138.90 mm
Bulk Density	2.11 Mg/m ³
Dry Density	1.83 Mg/m ³
Water Content	15 %
Degree of Saturation: 75.3 % Specific Gravity: 2.9 Mg/m ³ (Assumed)	

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Axial splitting



Solid lines for material failures.
 Dashed lines for apparent weakness failure.

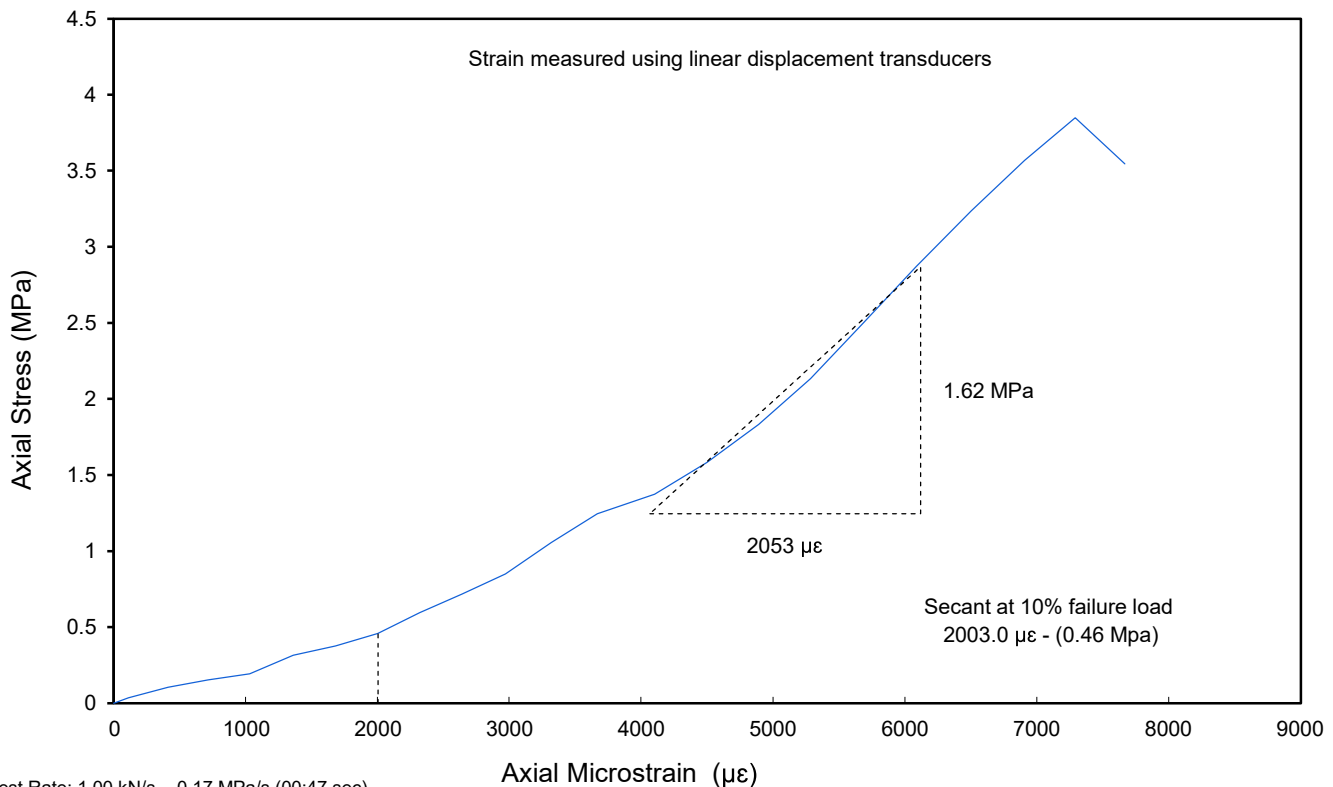
Angle of foliation/Axis of loading: n/a
 Angle of shear plane/Axis of loading: n/a

Date tested: 10/04/2024

Test results

Unconfined Compressive Strength Maximum load (kN): 22.10	3.85 MPa
Young's Modulus (tangential at 50% failure load)	0.791 GPa
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	0.228 GPa
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type

C

Test Rate: 1.00 kN/s - 0.17 MPa/s (00:47 sec)

Remarks: Non-standard test as the sample does not meet the required height to diameter ratio.

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

IT

I Tabios (Head of Department)

Date: 11/04/2024

Project Number:

GEO / 40185

Project Name:

CASCID - CHRISTIE HOSPITAL, MANCHESTER
11358

UNCONFINED COMPRESSIVE STRENGTH WITH YOUNG'S MODULUS

Borehole Ref.: BH104 (11358/20855)
 Sample Ref.: -
 Depth (m): 14.75-14.90

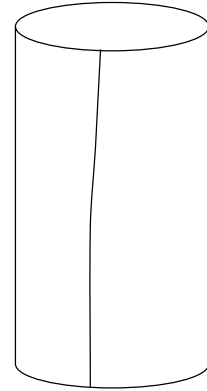
Description:
 Very weak reddish brown fine to medium grained SANDSTONE. Fresh to slightly weathered

Diameter	84.90 mm
Height	115.10 mm
Bulk Density	2.21 Mg/m ³
Dry Density	1.95 Mg/m ³
Water Content	13 %
Degree of Saturation: 78.5 % Specific Gravity: 2.9 Mg/m ³ (Assumed)	

LF0879C (1000kN) compression frame used

Failure Sketch

Mode of failure: Axial splitting



Solid lines for material failures.
 Dashed lines for apparent weakness failure.

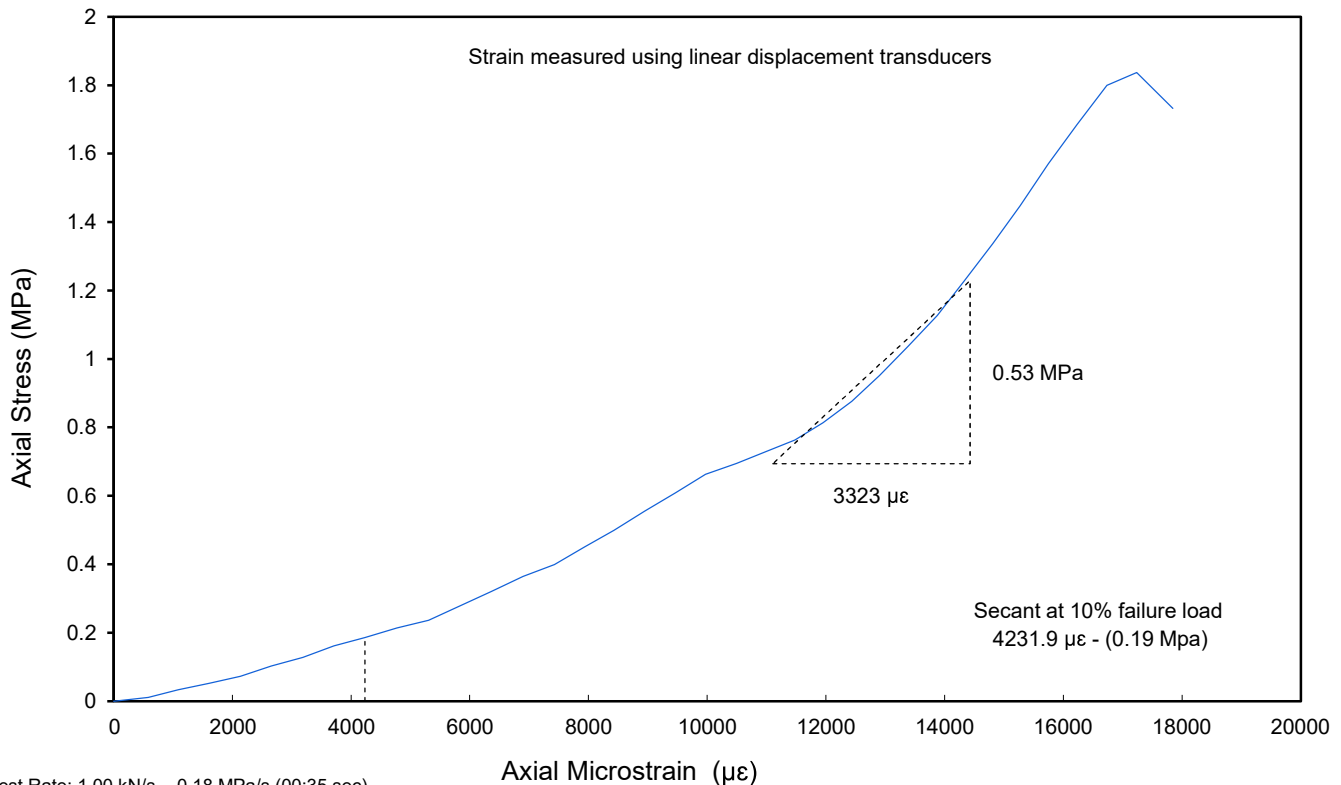
Angle of foliation/Axis of loading: n/a
 Angle of shear plane/Axis of loading: n/a

Date tested: 10/04/2024

Test results

Unconfined Compressive Strength Maximum load (kN): 10.40	1.84 MPa
Young's Modulus (tangential at 50% failure load)	0.161 GPa
Poisson's Ratio (tangential at 50% failure load)	n/a
Young's Modulus (secant at 10% failure load)	0.044 GPa
Poisson's Ratio (secant at 10% failure load)	n/a

Sample type

C

Test Rate: 1.00 kN/s - 0.18 MPa/s (00:35 sec)

Remarks: Non-standard test as the sample does not meet the required height to diameter ratio.

Note: The dimensional requirements of Flatness (<0.02 mm), Perpendicularity (<0.05 / 50 mm) and Straightness (0.3 mm deviation) are all met.

Checked and Approved by

IT

I Tabios (Head of Department)

Date: 11/04/2024

Project Number:

GEO / 40185

Project Name:

CASCID - CHRISTIE HOSPITAL, MANCHESTER
11358

GEOLABS

DETERMINATION OF POINT LOAD STRENGTH ON ROCK

Sample details														Point Load test						
Borehole Ref.	Depth (m)	Description	D. Tested	Test type & Direction	Sample width W (mm)	Platen separation (mm)		Water Content (%)	Equiv. Diameter D _e (mm)	Failure Load P (kN)	I _s P/De ² (MPa)	Correction Factor F	Point Load Index I _{sg(50)} (MPa)							
						Start D	End D'													
BH104 (11358/20849)	7.10-7.20	Very weak reddish brown fine to medium grained SANDSTONE. Fresh to slightly weathered	10/04/24	A P	85.4	57.8	56.2		78.2	0.79	0.13	1.22	0.16							
BH104 (11358/20890)	17.10-17.30	Extremely weak reddish brown fine to medium grained SANDSTONE. Fresh to slightly weathered	10/04/24	D L	85.0	80.8	78.4		79.6	0.08	0.01	1.23	0.01							

(*) Sample failed on weakness

Test type and direction: **D** - Diametral **A** - Axial **B** - Block **I** - Irregular lump **P** - Perpendicular to planes of weakness **U** - Random or unknown orientation **L** - Parallel to planes of weakness

(*) Sample failed on weakness

Test type and direction: D - Diametral A - Axial B - Block I - Irregular lump P - Perpendicular to planes of weakness U - Random or unknown orientation L - Parallel to planes of weakness

Checked and Approved by

IT

I Tabios (Head of Department)
Date: 11/04/2024

Project Number:

Project Name:

GEO / 40185

CASCID - CHRISTIE HOSPITAL, MANCHESTER
11358



TESTING RESTRICTION

The following tests have been scheduled on the below project. Those listed **CANNOT** be performed for the reason stated. If alternative samples are available for the restricted tests, please supply details.

Sample details			
Borehole Ref.	Depth (m)	Description	
BH104 (11358/20849)	7.10-7.20	Very weak reddish brown fine to medium grained SANDSTONE. Fresh to slightly weathered	Tests restricted
BH104 (11358/20890)	17.10-17.30	Extremely weak reddish brown fine to medium grained SANDSTONE. Fresh to slightly weathered	Reason for restriction and comments
			Sample broken into short pieces before any testing has been done.
			Sample broken into short pieces before any testing has been done.

Checked and Approved by

I Tabios (Head of Department)
Date: 11/04/2024

Project Number:

Project Name:

GEO / 40185

CASCID - CHRISTIE HOSPITAL, MANCHESTER
11358



GRM Development Solutions Ltd
Laurus House First Avenue, Centrum
100, Burton-on-Trent, Staffordshire,
DE14 2WH



10108



Unit 116, The Burrows, East Goscote Ind Est
East Goscote, Leicestershire, LE7 3XD
t: 0116 3196100 e: info@simtec-mt.co.uk

Analytical Test Report: CERT084b-SM10947-PIP-1

Your Project Reference:	P10525 - CASCID-Christie Hospital, Manchester		
Your Order Number:	P10525	Testing Received / Instructed:	12/03/2024
Report Issue Number:	1	Sample Tested:	12/03/2024 to 25/03/2024
Samples Analysed:	7 soil Samples	Report issued:	25/03/2024

Rob McGoff
Laboratory Supervisor
Simtec Materials Testing Ltd

Notes:

Samples will be retained for 14 days after issue of this report unless otherwise requested.

The results included within the report are representative of the samples submitted for analysis.

Some information required by BS1377 is not included in the report. The information will be provided if requested.

A certificate of sampling was not supplied

Samples were supplied by customer, results apply to the samples as received.

Within the report any information provided by the client is identified with a 'H'

Where specification limits are included these are for guidance only. Where a measured value has been highlighted this is not implying acceptance or failure and certainty of measurement values have not been taken into account.

Accreditation Key

UKAS = UKAS Accreditation, u = Unaccredited

Date of Issue: 25.03.2024

Issued by: RM

Issue No: 01

Rev No: 01

CERT084b-SM10947-PIP-1

Unit 116, The Burrows, East Goscote Ind Est

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

East Goscote, Leicestershire, LE7 3XD

Analytical Test Results - Soil

t: 0116 3196100 e: info@simtec-mt.co.uk

Lab Reference		19757	19758	19759	19760	19761
Client Sample ID (#)		-	-	-	-	-
Client Sample Location (#)		TP101	TP102	TP106	TP107	BH103
Client Sample Type (#)		B	D	B	B	B
Depth - Top (m) (#)		0.6	1.00	0.50	0.70	1.90
Depth - Bottom (m) (#)		0.7	1.10	0.60	0.70	2.00
Date of Sampling (#)		Not supplied	Not supplied	Not supplied	Not supplied	Not supplied
Sample type		Bulk	Disturbed	Bulk	Bulk	Bulk
Sample Description		Brown slightly gravelly clayey silty SAND	Brown slightly gravelly silty clayey SAND	Red slightly gravelly slightly silty SAND	Brown slightly gravelly clayey silty SAND	Red slightly silty SAND
Determinant	Units					
BS1377 PSD						
125.0	(% Passing)	100	100	100	100	100
90.0	(% Passing)	100	100	100	100	100
75.0	(% Passing)	100	100	100	100	100
63.0	(% Passing)	100	100	100	100	100
50.0	(% Passing)	100	100	100	100	100
37.5	(% Passing)	100	100	100	100	100
28.0	(% Passing)	100	100	100	100	100
20.0	(% Passing)	100	100	100	100	100
14.0	(% Passing)	100	100	100	97	100
10.0	(% Passing)	98	100	99	95	100
6.3	(% Passing)	96	100	96	93	100
5.0	(% Passing)	96	100	95	92	100
3.35	(% Passing)	94	99	94	90	100
2.00	(% Passing)	93	98	93	88	100
1.18	(% Passing)	92	97	92	86	100
0.600	(% Passing)	89	93	89	79	99
0.425	(% Passing)	81	86	84	69	92
0.300	(% Passing)	64	72	70	50	55
0.212	(% Passing)	44	55	42	31	36
0.150	(% Passing)	32	44	25	21	22
0.063	(% Passing)	19	33	9.0	14	9.0
0.02	(% Passing)	13	27	5.5	12	5.3
0.006	(% Passing)	9.8	22	3.8	9.4	3.8
0.002	(% Passing)	7.0	18	2.6	6.9	2.4
PSD test Method	-	Wet Sieve	Wet Sieve	Wet Sieve	Wet Sieve	Wet Sieve
Sedimentation was pretreated	-	No	No	No	No	No

CERT084b-SM10947-PIP-1

Project Reference - P10525 - CASCID-Chr

Analytical Test Results - Soil

Lab Reference		19762	19763
Client Sample ID (#)			
Client Sample Location (#)		BH103	BH104
Client Sample Type (#)		D	D
Depth - Top (m) (#)		2.50	2.80
Depth - Bottom (m) (#)		2.60	2.90
Date of Sampling (#)		Not supplied	Not supplied
Sample type		Disturbed	Disturbed
Sample Description		Red slightly silty SAND	Brown silty SAND and GRAVEL
Determinant	Units		
BS1377 PSD			
125.0	(% Passing)	100	100
90.0	(% Passing)	100	100
75.0	(% Passing)	100	100
63.0	(% Passing)	100	100
50.0	(% Passing)	100	100
37.5	(% Passing)	100	100
28.0	(% Passing)	100	100
20.0	(% Passing)	100	100
14.0	(% Passing)	100	89
10.0	(% Passing)	100	83
6.3	(% Passing)	100	77
5.0	(% Passing)	100	72
3.35	(% Passing)	100	66
2.00	(% Passing)	100	60
1.18	(% Passing)	100	55
0.600	(% Passing)	98	47
0.425	(% Passing)	90	40
0.300	(% Passing)	51	31
0.212	(% Passing)	29	21
0.150	(% Passing)	17	18
0.063	(% Passing)	7.0	15
0.02	(% Passing)	4.2	9.6
0.006	(% Passing)	3.0	5.9
0.002	(% Passing)	1.8	4.1
PSD test Method	-	Wet Sieve	Wet Sieve
Sedimentation was pretreated	-	No	No

CERT084b-SM10947-PIP-1

Unit 116, The Burrows, East Goscote Ind Est

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

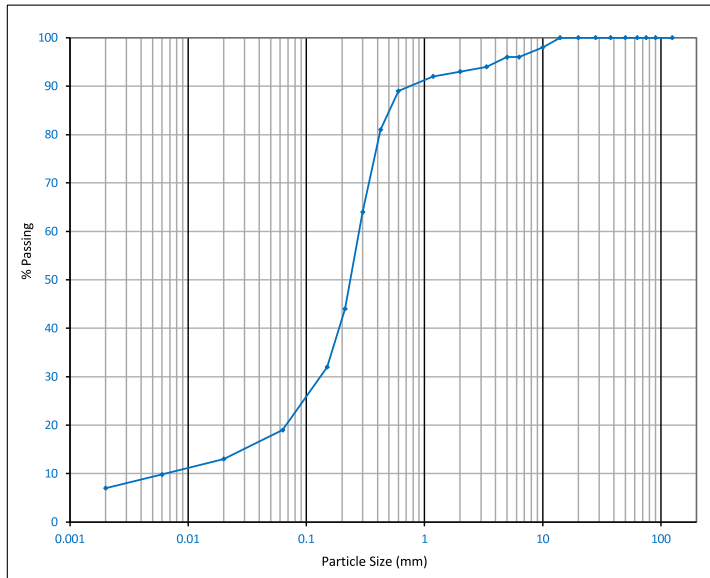
East Goscote, Leicestershire, LE7 3XD

Material Analysis Results

t: 0116 3196100 e: info@simtec-mt.co.uk

Lab Reference	19757
---------------	-------

Client Sample ID (#) -
 Client Sample Location (#) TP101
 Client Sample Type (#) B
 Depth - Top (m) (#) 0.60
 Depth - Bottom (m) (#) 0.70
 Date of Sampling (#) Not supplied
 Sample type Bulk
 Sample Description Brown slightly gravelly clayey silty SAND



Specification:				
Sieve Size (mm)	Upper Limit (%)	Lower Limit (%)	Passing (%)	
125			100	Cobbles
90			100	
75			100	
63			100	
50			100	Gravel
37.5			100	
28			100	
20			100	
14			100	
10			98	
6.3			96	
5			96	
3.35			94	
2			93	Sand
1.18			92	
0.6			89	
0.425			81	
0.3			64	
0.212			44	
0.15			32	
0.063			19	
0.02			13	Silt
0.006			10	
0.002			7	12
				Clay
				7

NOTES:

CERT084b-SM10947-PIP-1

Unit 116, The Burrows, East Goscote Ind Est

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

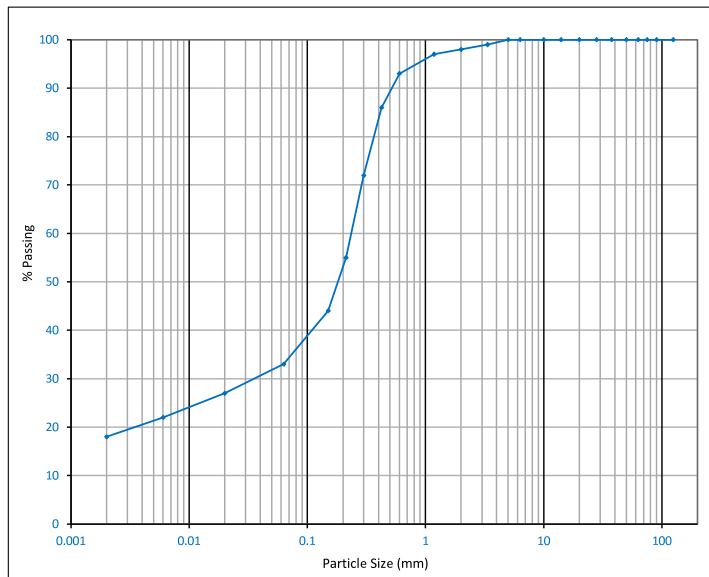
East Goscote, Leicestershire, LE7 3XD

Material Analysis Results

t: 0116 3196100 e: info@simtec-mt.co.uk

Lab Reference	19758
---------------	-------

Client Sample ID (#) -
 Client Sample Location (#) TP102
 Client Sample Type (#) D
 Depth - Top (m) (#) 1.00
 Depth - Bottom (m) (#) 1.10
 Date of Sampling (#) Not supplied
 Sample type Disturbed
 Sample Description Brown slightly gravelly silty clayey SAND



Specification:				
Sieve Size (mm)	Upper Limit (%)	Lower Limit (%)	Passing (%)	
125			100	Cobbles
90			100	
75			100	
63			100	
50			100	Gravel
37.5			100	
28			100	
20			100	
14			100	
10			100	
6.3			100	
5			100	
3.35			99	
2			98	Sand
1.18			97	
0.6			93	
0.425			86	
0.3			72	
0.212			55	
0.15			44	
0.063			33	
0.02			27	Silt
0.006			22	
0.002			18	
				Clay
				18

NOTES :

CERT084b-SM10947-PIP-1

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

Material Analysis Results

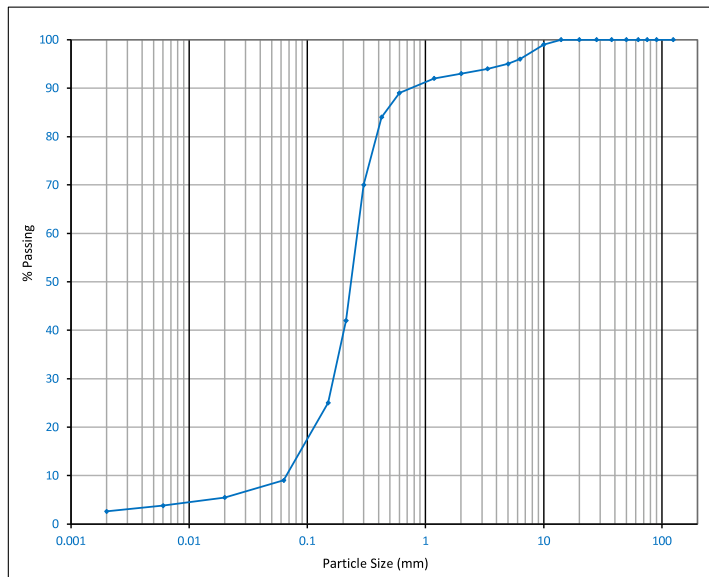
Unit 116, The Burrows, East Goscote Ind Est

East Goscote, Leicestershire, LE7 3XD

t: 0116 3196100 e: info@simtec-mt.co.uk

Lab Reference	19759
---------------	-------

Client Sample ID (#) -
 Client Sample Location (#) TP106
 Client Sample Type (#) B
 Depth - Top (m) (#) 0.50
 Depth - Bottom (m) (#) 0.60
 Date of Sampling (#) Not supplied
 Sample type Bulk
 Sample Description Red slightly gravelly slightly silty SAND



Specification:				
Sieve Size (mm)	Upper Limit (%)	Lower Limit (%)	Passing (%)	
125			100	Cobbles
90			100	
75			100	
63			100	
50			100	Gravel
37.5			100	
28			100	
20			100	
14			100	
10			99	
6.3			96	
5			95	
3.35			94	
2			93	
1.18			92	Sand
0.6			89	
0.425			84	
0.3			70	
0.212			42	
0.15			25	
0.063			9	
0.02			6	Silt
0.006			4	
0.002			3	
				Clay
				3

NOTES :

CERT084b-SM10947-PIP-1

Unit 116, The Burrows, East Goscote Ind Est

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

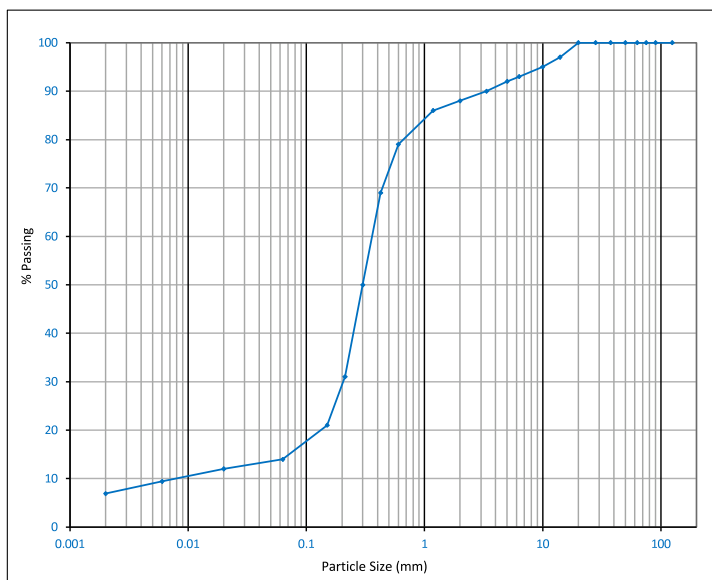
East Goscote, Leicestershire, LE7 3XD

Material Analysis Results

t: 0116 3196100 e: info@simtec-mt.co.uk

Lab Reference	19760
---------------	-------

Client Sample ID (#) -
 Client Sample Location (#) TP107
 Client Sample Type (#) B
 Depth - Top (m) (#) 2.50
 Depth - Bottom (m) (#) 2.60
 Date of Sampling (#) Not supplied
 Sample type Bulk
 Sample Description Brown slightly gravelly clayey silty SAND



Specification:				
Sieve Size (mm)	Upper Limit (%)	Lower Limit (%)	Passing (%)	
125			100	Cobbles
90			100	
75			100	
63			100	
50			100	Gravel
37.5			100	
28			100	
20			100	
14			97	
10			95	
6.3			93	
5			92	
3.35			90	
2			88	Sand
1.18			86	
0.6			79	
0.425			69	
0.3			50	
0.212			31	
0.15			21	
0.063			14	
0.02			12	Silt
0.006			9	
0.002			7	
				Clay
				7

NOTES:

CERT084b-SM10947-PIP-1

Unit 116, The Burrows, East Goscote Ind Est

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

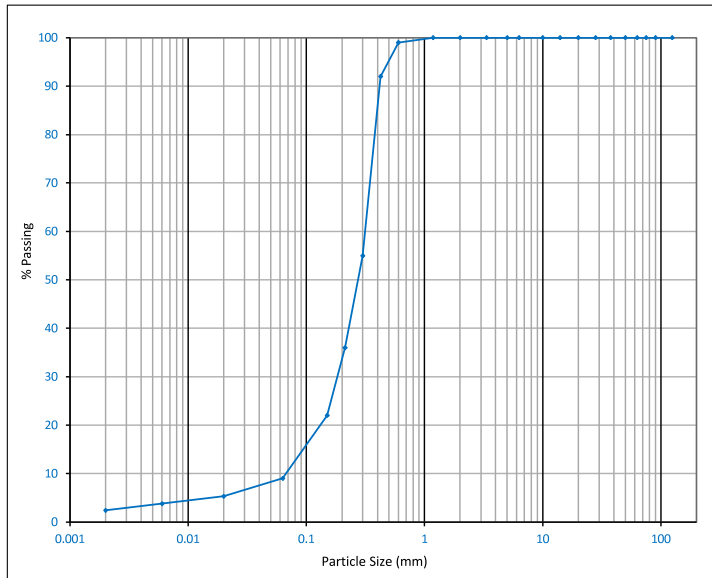
East Goscote, Leicestershire, LE7 3XD

Material Analysis Results

t: 0116 3196100 e: info@simtec-mt.co.uk

Lab Reference	19761
---------------	-------

Client Sample ID (#) -
 Client Sample Location (#) BH103
 Client Sample Type (#) D
 Depth - Top (m) (#) 1.90
 Depth - Bottom (m) (#) 2.00
 Date of Sampling (#) Not supplied
 Sample type Disturbed
 Sample Description Red slightly silty SAND



Specification:				
Sieve Size (mm)	Upper Limit (%)	Lower Limit (%)	Passing (%)	
125			100	Cobbles
90			100	
75			100	
63			100	
50			100	Gravel
37.5			100	
28			100	
20			100	
14			100	
10			100	
6.3			100	
5			100	
3.35			100	
2			100	Sand
1.18			100	
0.6			99	
0.425			92	
0.3			55	
0.212			36	
0.15			22	
0.063			9	
0.02			5	Silt
0.006			4	
0.002			2	
				Clay
				2

NOTES :

CERT084b-SM10947-PIP-1

Unit 116, The Burrows, East Goscote Ind Est

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

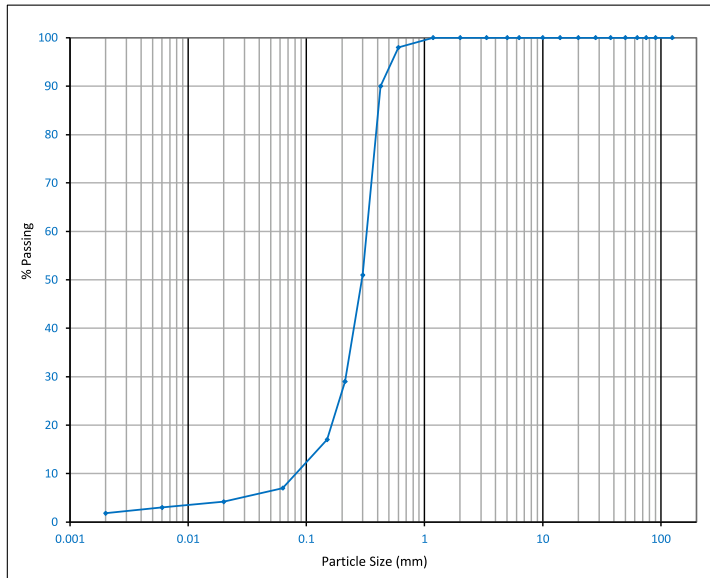
East Goscote, Leicestershire, LE7 3XD

Material Analysis Results

t: 0116 3196100 e: info@simtec-mt.co.uk

Lab Reference	19762
---------------	-------

Client Sample ID (#) -
 Client Sample Location (#) BH103
 Client Sample Type (#) D
 Depth - Top (m) (#) 2.50
 Depth - Bottom (m) (#) 2.60
 Date of Sampling (#) Not supplied
 Sample type Disturbed
 Sample Description Red Slightly silty SAND



Specification:				
Sieve Size (mm)	Upper Limit (%)	Lower Limit (%)	Passing (%)	
125			100	Cobbles
90			100	
75			100	
63			100	
50			100	Gravel
37.5			100	
28			100	
20			100	
14			100	
10			100	
6.3			100	
5			100	
3.35			100	
2			100	Sand
1.18			100	
0.6			98	
0.425			90	
0.3			51	
0.212			29	
0.15			17	
0.063			7	
0.02			4	Silt
0.006			3	
0.002			2	
				Clay
				2

NOTES :

CERT084b-SM10947-PIP-1

Unit 116, The Burrows, East Goscote Ind Est

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

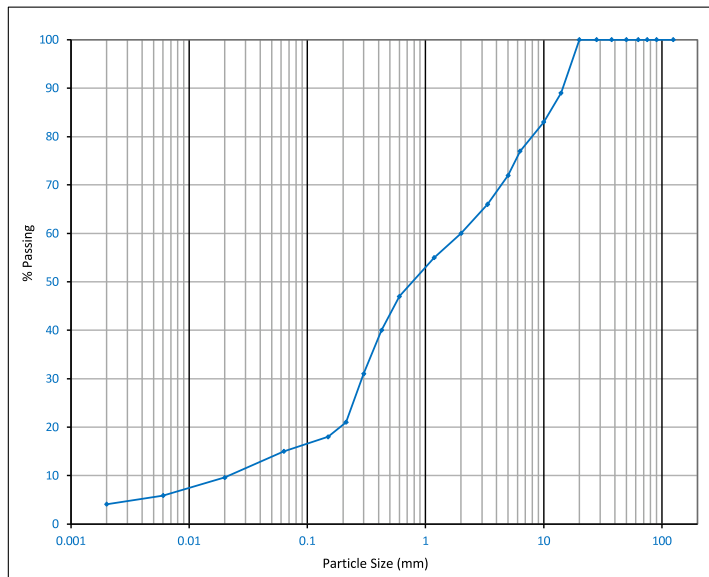
East Goscote, Leicestershire, LE7 3XD

Material Analysis Results

t: 0116 3196100 e: info@simtec-mt.co.uk

Lab Reference	19762
---------------	-------

Client Sample ID (#) -
 Client Sample Location (#) BH104
 Client Sample Type (#) D
 Depth - Top (m) (#) 2.80
 Depth - Bottom (m) (#) 2.90
 Date of Sampling (#) Not supplied
 Sample type Disturbed
 Sample Description Brown silty SAND and GRAVEL



Specification:				
Sieve Size (mm)	Upper Limit (%)	Lower Limit (%)	Passing (%)	
125			100	Cobbles
90			100	
75			100	
63			100	
50			100	Gravel
37.5			100	
28			100	
20			100	
14			89	
10			83	
6.3			77	
5			72	
3.35			66	
2			60	Sand
1.18			55	
0.6			47	
0.425			40	
0.3			31	
0.212			21	
0.15			18	
0.063			15	
0.02			10	Silt
0.006			6	
0.002			4	
				Clay
				4

NOTES:



Unit 116, The Burrows, East Goscote Ind Est
East Goscote, Leicestershire, LE7 3XD
t: 0116 3196100 e: info@simtec-mt.co.uk

CERT084b-SM10947-PIP-1

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

Analysis Methodologies

Determinant	Details and Test method used
BS1377 PSD	1377 Particle Size Distribution 1. Sample preparation was in accordance with BS1377:Part 1:2016. 2. Testing was in accordance with BS1377:Part 2:1990 clause 9.2 wet sieving method
BS1377 Sedimentation by pipette	1377 Particle Size Distribution Sedimentation 1. Sample preparation was in accordance with BS1377:Part 1:2016. 2. Testing was in accordance with BS1377:Part 2:1990 clause 9.4 sedimentation by pipette method.

GRM Development Solutions Ltd
Laurus House First Avenue, Centrum
100, Burton-on-Trent, Staffordshire,
DE14 2WH



10108



Unit 116, The Burrows, East Goscote Ind Est
East Goscote, Leicestershire, LE7 3XD
t: 0116 3196100 e: info@simtec-mt.co.uk

Analytical Test Report: CERT084b-SM11106-PIP-1

Your Project Reference:	P10525 - CASCID-Christie Hospital, Manchester		
Your Order Number:	P10525	Testing Received / Instructed:	18/03/2024
Report Issue Number:	1	Sample Tested:	18/03/2024 to 25/03/2024
Samples Analysed:	5 soil Samples	Report issued:	25/03/2024

Signed

Rob McGoff
Laboratory Supervisor
Simtec Materials Testing Ltd

Notes:

Samples will be retained for 14 days after issue of this report unless otherwise requested.

The results included within the report are representative of the samples submitted for analysis.

Some information required by BS1377 is not included in the report. The information will be provided if requested.

A certificate of sampling was not supplied

Samples were supplied by customer, results apply to the samples as received.

Within the report any information provided by the client is identified with a 'H'

Where specification limits are included these are for guidance only. Where a measured value has been highlighted this is not implying acceptance or failure and certainty of measurement values have not been taken into account.

Accreditation Key

UKAS = UKAS Accreditation, u = Unaccredited

Date of Issue: 25.03.2024

Issued by: RM

Issue No: 01

Rev No: 01

CERT084b-SM11106-PIP-1

Unit 116, The Burrows, East Goscote Ind Est

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

East Goscote, Leicestershire, LE7 3XD

Analytical Test Results - Soil

t: 0116 3196100 e: info@simtec-mt.co.uk

Lab Reference	20302	20303	20304	20305	20306
Client Sample ID (#)	-	-	-	-	-
Client Sample Location (#)	BH101	BH101	BH102	BH102	TP104
Client Sample Type (#)	B	D	B	D	D
Depth - Top (m) (#)	0.4	2.30	0.50	2.50	0.70
Depth - Bottom (m) (#)	0.5	2.40	0.60	2.60	0.80
Date of Sampling (#)	Not supplied	Not supplied	Not supplied	Not supplied	Not supplied
Sample type	Bulk	Disturbed	Bulk	Disturbed	Disturbed
Sample Description	Brown slightly gravelly slightly clayey silty SAND	Red silty SAND	Brown slightly gravelly slightly clayey slightly silty SAND	Red slightly silty SAND	Brown slightly silty SAND
Determinant	Units				
BS1377 PSD					
125.0	(% Passing)	100	100	100	100
90.0	(% Passing)	100	100	100	100
75.0	(% Passing)	100	100	100	100
63.0	(% Passing)	100	100	100	100
50.0	(% Passing)	100	100	100	100
37.5	(% Passing)	100	100	100	100
28.0	(% Passing)	100	100	100	100
20.0	(% Passing)	100	100	100	100
14.0	(% Passing)	99	100	98	100
10.0	(% Passing)	97	100	98	95
6.3	(% Passing)	93	100	98	93
5.0	(% Passing)	92	100	97	92
3.35	(% Passing)	90	100	97	92
2.00	(% Passing)	87	100	96	91
1.18	(% Passing)	84	100	96	90
0.600	(% Passing)	77	100	89	84
0.425	(% Passing)	70	98	77	71
0.300	(% Passing)	57	86	52	46
0.212	(% Passing)	44	56	29	23
0.150	(% Passing)	36	35	21	13
0.063	(% Passing)	25	13	15	8.0
0.02	(% Passing)	16	8.2	12	9.0
0.006	(% Passing)	11	6.0	9.8	6.0
0.002	(% Passing)	7.3	4.2	7.3	4.2
PSD test Method	-	Wet Sieve	Wet Sieve	Wet Sieve	Wet Sieve
Sedimentation was pretreated	-	No	No	No	No

CERT084b-SM11106-PIP-1

Unit 116, The Burrows, East Goscote Ind Est

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

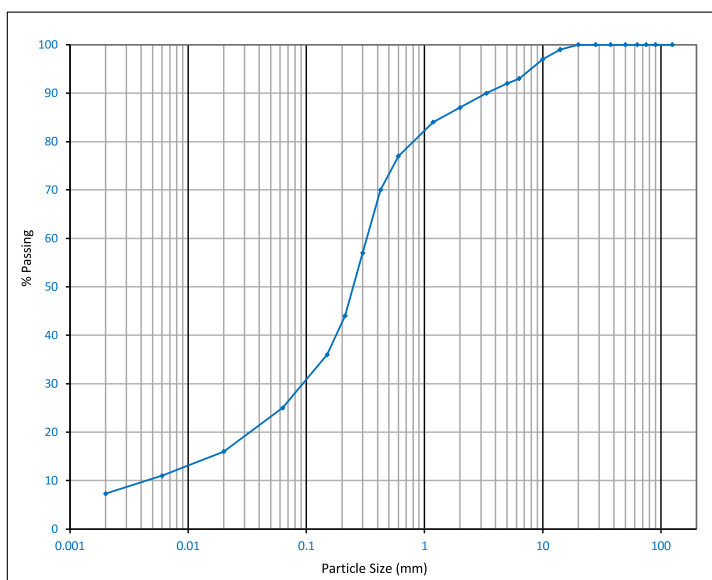
East Goscote, Leicestershire, LE7 3XD

Material Analysis Results

t: 0116 3196100 e: info@simtec-mt.co.uk

Lab Reference	20302
---------------	-------

Client Sample ID (#) -
 Client Sample Location (#) BH101
 Client Sample Type (#) B
 Depth - Top (m) (#) 0.40
 Depth - Bottom (m) (#) 0.50
 Date of Sampling (#) Not supplied
 Sample type Bulk
 Sample Description Brown slightly gravelly slightly clayey silty SAND



Specification:				
Sieve Size (mm)	Upper Limit (%)	Lower Limit (%)	Passing (%)	
125			100	Cobbles
90			100	
75			100	
63			100	
50			100	Gravel
37.5			100	
28			100	
20			100	
14			99	
10			97	
6.3			93	
5			92	
3.35			90	
2			87	Sand
1.18			84	
0.6			77	
0.425			70	
0.3			57	
0.212			44	
0.15			36	
0.063			25	
0.02			16	Silt
0.006			11	
0.002			7	
				Clay
				7

NOTES:

CERT084b-SM11106-PIP-1

Unit 116, The Burrows, East Goscote Ind Est

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

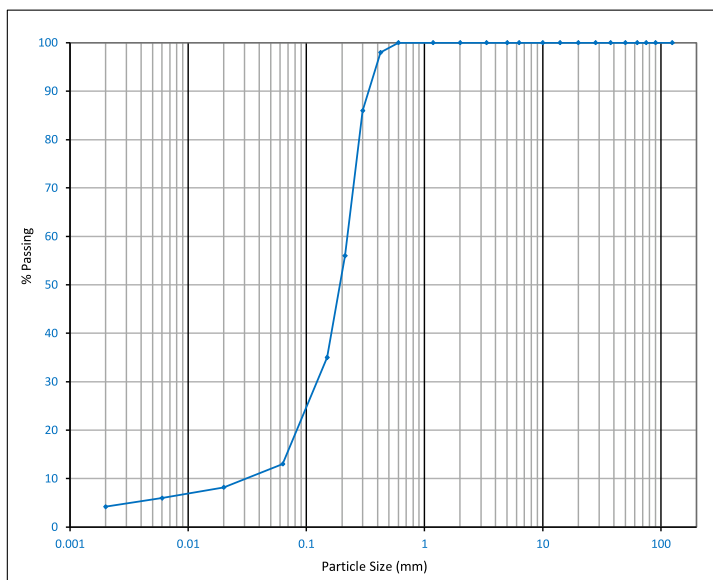
East Goscote, Leicestershire, LE7 3XD

Material Analysis Results

t: 0116 3196100 e: info@simtec-mt.co.uk

Lab Reference	20303
---------------	-------

Client Sample ID (#) -
 Client Sample Location (#) BH101
 Client Sample Type (#) D
 Depth - Top (m) (#) 2.30
 Depth - Bottom (m) (#) 2.40
 Date of Sampling (#) Not supplied
 Sample type Disturbed
 Sample Description Red silty SAND



Specification:				
Sieve Size (mm)	Upper Limit (%)	Lower Limit (%)	Passing (%)	
125			100	Cobbles
90			100	
75			100	
63			100	
50			100	Gravel
37.5			100	
28			100	
20			100	
14			100	
10			100	
6.3			100	
5			100	
3.35			100	
2			100	Sand
1.18			100	
0.6			100	
0.425			98	
0.3			86	
0.212			56	
0.15			35	
0.063			13	
0.02			8	Silt
0.006			6	
0.002			4	Clay

NOTES :

CERT084b-SM11106-PIP-1

Unit 116, The Burrows, East Goscote Ind Est

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

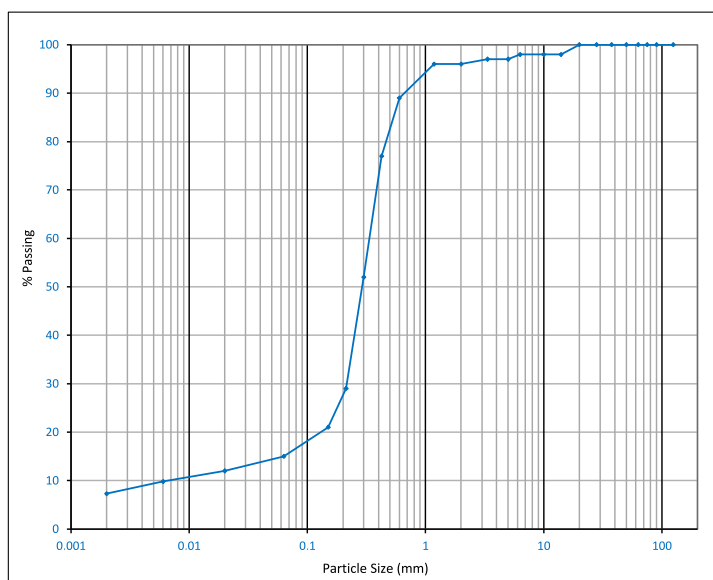
East Goscote, Leicestershire, LE7 3XD

Material Analysis Results

t: 0116 3196100 e: info@simtec-mt.co.uk

Lab Reference	20304
---------------	-------

Client Sample ID (#) -
 Client Sample Location (#) BH102
 Client Sample Type (#) B
 Depth - Top (m) (#) 0.50
 Depth - Bottom (m) (#) 0.60
 Date of Sampling (#) Not supplied
 Sample type Bulk
 Sample Description Brown slightly gravelly slightly clayey slightly silty SAND



Specification:				
Sieve Size (mm)	Upper Limit (%)	Lower Limit (%)	Passing (%)	
125			100	Cobbles
90			100	
75			100	
63			100	
50			100	Gravel
37.5			100	
28			100	
20			100	
14			98	
10			98	
6.3			98	
5			97	
3.35			97	
2			96	Sand
1.18			96	
0.6			89	
0.425			77	
0.3			52	
0.212			29	
0.15			21	
0.063			15	
0.02			12	Silt
0.006			10	
0.002			7	Clay

NOTES:

CERT084b-SM11106-PIP-1

Unit 116, The Burrows, East Goscote Ind Est

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

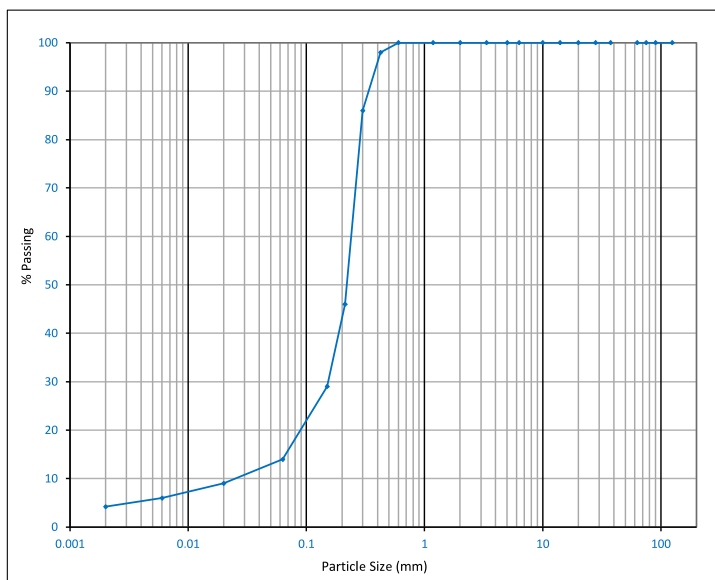
East Goscote, Leicestershire, LE7 3XD

Material Analysis Results

t: 0116 3196100 e: info@simtec-mt.co.uk

Lab Reference	20305
---------------	-------

Client Sample ID (#) -
 Client Sample Location (#) BH102
 Client Sample Type (#) D
 Depth - Top (m) (#) 2.50
 Depth - Bottom (m) (#) 2.60
 Date of Sampling (#) Not supplied
 Sample type Disturbed
 Sample Description Red slightly silty SAND



Specification:				
Sieve Size (mm)	Upper Limit (%)	Lower Limit (%)	Passing (%)	
125			100	Cobbles
90			100	
75			100	
63			100	
50			1000	Gravel
37.5			100	
28			100	
20			100	
14			100	
10			100	
6.3			100	
5			100	
3.35			100	
2			100	Sand
1.18			100	
0.6			100	
0.425			98	
0.3			86	
0.212			46	
0.15			29	
0.063			14	
0.02			9	Silt
0.006			6	
0.002			4	10
				Clay
				4

NOTES :

CERT084b-SM11106-PIP-1

Unit 116, The Burrows, East Goscote Ind Est

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

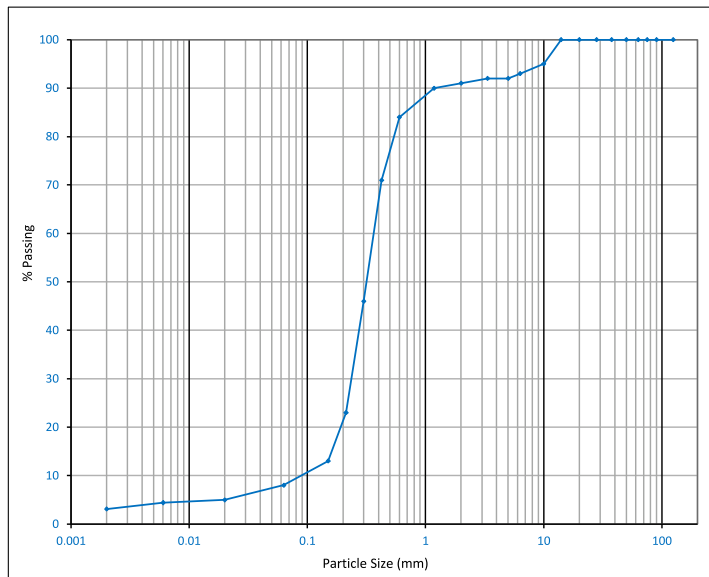
East Goscote, Leicestershire, LE7 3XD

Material Analysis Results

t: 0116 3196100 e: info@simtec-mt.co.uk

Lab Reference	20306
---------------	-------

Client Sample ID (#) -
 Client Sample Location (#) TP104
 Client Sample Type (#) D
 Depth - Top (m) (#) 0.70
 Depth - Bottom (m) (#) 0.80
 Date of Sampling (#) Not supplied
 Sample type Disturbed
 Sample Description Brown slightly silty SAND



Specification:				
Sieve Size (mm)	Upper Limit (%)	Lower Limit (%)	Passing (%)	
125			100	Cobbles
90			100	
75			100	
63			100	
50			100	Gravel
37.5			100	
28			100	
20			100	
14			100	
10			95	
6.3			93	
5			92	
3.35			92	
2			91	Sand
1.18			90	
0.6			84	
0.425			71	
0.3			46	
0.212			23	
0.15			13	
0.063			8	
0.02			5	Silt
0.006			4	
0.002			3	
				Clay
				3

NOTES :



Unit 116, The Burrows, East Goscote Ind Est
East Goscote, Leicestershire, LE7 3XD
t: 0116 3196100 e: info@simtec-mt.co.uk

CERT084b-SM11106-PIP-1

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

Analysis Methodologies

Determinant	Details and Test method used
BS1377 PSD	1377 Particle Size Distribution 1. Sample preparation was in accordance with BS1377:Part 1:2016. 2. Testing was in accordance with BS1377:Part 2:1990 clause 9.2 wet sieving method
BS1377 Sedimentation by pipette	1377 Particle Size Distribution Sedimentation 1. Sample preparation was in accordance with BS1377:Part 1:2016. 2. Testing was in accordance with BS1377:Part 2:1990 clause 9.4 sedimentation by pipette method.

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Laurus House First Avenue, Centrum
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10108

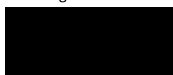


Unit 116, The Burrows, East Goscote Ind Est
East Goscote, Leicestershire, LE7 3XD
t: 0116 3196100 e: info@simtec-mt.co.uk

Analytical Test Report: CERT084b-SM11247-PIP-1

Your Project Reference:	P10525 - CASCID-Christie Hospital, Manchester		
Your Order Number:	P10525	Testing Received / Instructed:	24/03/2024
Report Issue Number:	1	Sample Tested:	25/032024 to 27/03/2024
Samples Analysed:	1 Soil Sample	Report issued:	25/04/2024

Signed



Rob McGoff
Laboratory Supervisor
Simtec Material Testing

Notes:

Samples will be retained for 14 days after issue of this report unless otherwise requested.
The results included within the report are representative of the samples submitted for analysis.
Some information required by BS1377 is not included in the report. The information will be provided if requested.
A certificate of sampling was not supplied
Samples were supplied by customer, results apply to the samples as received.
Within the report any information provided by the client is identified with a '#'

Accreditation Key

UKAS = UKAS Accreditation, u = Unaccredited

Date of Issue: 18.08.2022

Issued by: RM

Issue No: 1

Rev No: 1

CERT084b-SM11247-PIP-1

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

Analytical Test Results - Soil

Unit 116, The Burrows, East Goscote Ind Est

East Goscote, Leicestershire, LE7 3XD

t: 0116 3196100 e: info@simtec-mt.co.uk

Lab Reference		20561	
Client Sample ID (#)			-
Client Sample Location (#)			TP105
Client Sample Type (#)			B
Depth - Top (m) (#)			0.8
Depth - Bottom (m) (#)			0.8
Date of Sampling (#)			17/03/2024
Sample type			Bulk - Disturbed
Sample Description			Brown SAND
Determinant	Units		
BS1377 PSD			
125.0	(% Passing)	100	
90.0	(% Passing)	100	
75.0	(% Passing)	100	
63.0	(% Passing)	100	
50.0	(% Passing)	100	
37.5	(% Passing)	100	
28.0	(% Passing)	100	
20.0	(% Passing)	100	
14.0	(% Passing)	100	
10.0	(% Passing)	100	
6.3	(% Passing)	100	
5.0	(% Passing)	100	
3.35	(% Passing)	100	
2.00	(% Passing)	99	
1.18	(% Passing)	99	
0.600	(% Passing)	95	
0.425	(% Passing)	82	
0.300	(% Passing)	48	
0.212	(% Passing)	14	
0.150	(% Passing)	3.0	
0.063	(% Passing)	1.0	
0.02	(% Passing)	0.3	
0.006	(% Passing)	0.2	
0.002	(% Passing)	0.1	
PSD test Method		-	Wet sieving
Sedimentation was pretreated		-	no

CERT084b-SM11247-PIP-1

Unit 116, The Burrows, East Goscote Ind Est

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

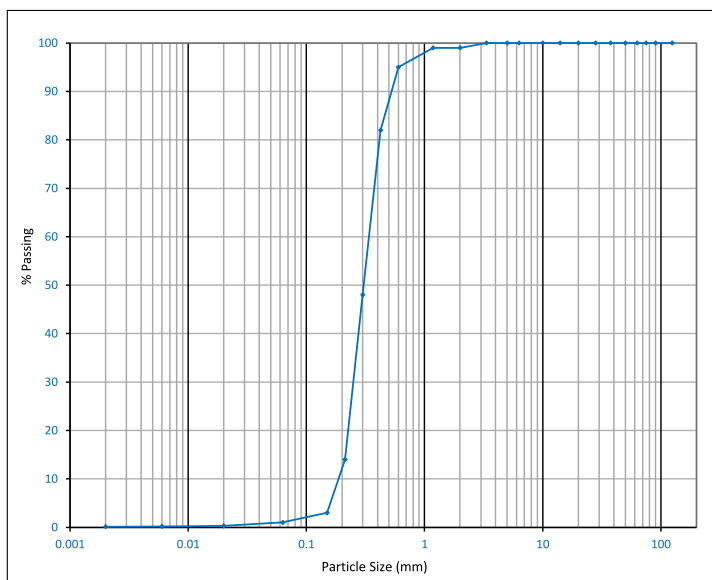
East Goscote, Leicestershire, LE7 3XD

Analytical Test Results - Soil

t: 0116 3196100 e: info@simtec-mt.co.uk

Lab Reference	20561
---------------	-------

Client Sample ID (#) -
 Client Sample Location (#) TP105
 Client Sample Type (#) B
 Depth - Top (m) (#) 0.80
 Depth - Bottom (m) (#) 0.80
 Date of Sampling (#) 17/03/2024
 Sample type Bulk - Disturbed
 Sample Description Brown SAND



Specification:				
Sieve Size (mm)	Upper Limit (%)	Lower Limit (%)	Passing (%)	
125			100	Cobbles
90			100	
75			100	
63			100	
50			100	Gravel
37.5			100	
28			100	
20			100	
14			100	
10			100	
6.3			100	
5			100	
3.35			100	
2			99	Sand
1.18			99	
0.6			95	
0.425			82	
0.3			48	
0.212			14	
0.15			3	
0.063			1	
0.02			0	Silt
0.006			0	
0.002			0	
				Clay
				0

NOTES :



Unit 116, The Burrows, East Goscote Ind Est
East Goscote, Leicestershire, LE7 3XD
t: 0116 3196100 e: info@simtec-mt.co.uk

CERT084b-SM11247-PIP-1

Project Reference - P10525 - CASCID-Christie Hospital, Manchester

Analysis Methodologies

Determinant	Details and Test method used
BS1377 PSD	1377 Particle Size Distribution 1. Sample preparation was in accordance with BS1377:Part 1:2016. 2. Testing was in accordance with BS1377:Part 2:1990 clause 9.2 wet sieving method
BS1377 Sedimentation by pipette	1377 Particle Size Distribution Sedimentation 1. Sample preparation was in accordance with BS1377:Part 1:2016. 2. Testing was in accordance with BS1377:Part 2:1990 clause 9.4 sedimentation by pipette method.



LABORATORY REPORT



Contract Number: PSL24/2235

Report Date: 05 April 2024

Client's Reference:

Client Name: Simtec - Leicester
116 The Burrows
East Goscote
Leicester
LE7 3XD

For the attention of: Charlie Needham/Rob McGoff

Contract Title: CASCID - Chrisite Hospital, Manchester

Date Received: 27/3/2024

Date Commenced: 27/3/2024

Date Completed: 5/4/2024

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins
(Managing Director)

R Berriman
(Associate Director)

S Royle
(Laboratory Manager)

L Knight
(Assistant Laboratory Manager) (Senior Technical Coordinator)



S Eyre
(Senior Technical Coordinator)

T Watkins
(Senior Technician)

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Hexthorpe,
Doncaster,
DN4 0AR
Tel: 01302 768098

Page 1 of



ISRM Suggested Methods : 2007

Par = parallel, Perp = perpendicular, U = Random
A = Axial, D = Diametral, I = Irregular

All testing carried out on samples as received water content

A = Axial, D = Diametral, I = Irregular



CASCID - Chrisite Hospital, Manchester

Contract No:

PSL24/2235

Client Ref:



LABORATORY REPORT



Contract Number: PSL24/2236

Report Date: 05 April 2024

Client's Reference:

Client Name: Simtec - Leicester
116 The Burrows
East Goscote
Leicester
LE7 3XD

For the attention of: Charlie Needham/Rob McGoff

Contract Title: CASCID - Chrisite Hospital, Manchester

Date Received: 27/3/2024

Date Commenced: 27/3/2024

Date Completed: 5/4/2024

Notes: Opinions and Interpretations are outside the UKAS Accreditation

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S Eyre

T Watkins
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Page 1 of



ISRM Suggested Methods : 2007

***Note** All testing carried out on samples at as received water content

Par = parallel, Perp = perpendicular, U = Random

A = Axial, D = Diametral, I = Irregular



CASCID - Chrisite Hospital, Manchester

Contract No:

PSL24/2236

Client Ref:

ISRM Suggested Methods : 2007

Par = parallel, Perp = perpendicular, U = Random

All testing carried out on samples as received water content

***Note**



Contract No:

PSL24/2236

Client Ref:



LABORATORY REPORT



Contract Number: PSL24/2237

Report Date: 05 April 2024

Client's Reference:

Client Name: Simtec - Leicester
116 The Burrows
East Goscote
Leicester
LE7 3XD

For the attention of: Charlie Needham/Rob McGoff

Contract Title: CASCID - Chrisite Hospital, Manchester

Date Received: 27/3/2024

Date Commenced: 27/3/2024

Date Completed: 5/4/2024

Notes: Opinions and Interpretations are outside the UKAS Accreditation

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Page 1 of

ISRM Suggested Methods : 2007

***Note** All testing carried out on samples at as received water content

A = Axial, D = Diametral, I = Irregular

Par = parallel, Perp = perpendicular, U = Random



CASCID - Chrisite Hospital, Manchester

Contract No:

PSL24/2237

Client Ref:

ISRM Suggested Methods: 2007

Par = parallel, Perp = perpendicular, U = Random

All testing carried out on samples at as received water content

***Note**



Contract No:

PSL24/2237

Client Ref:

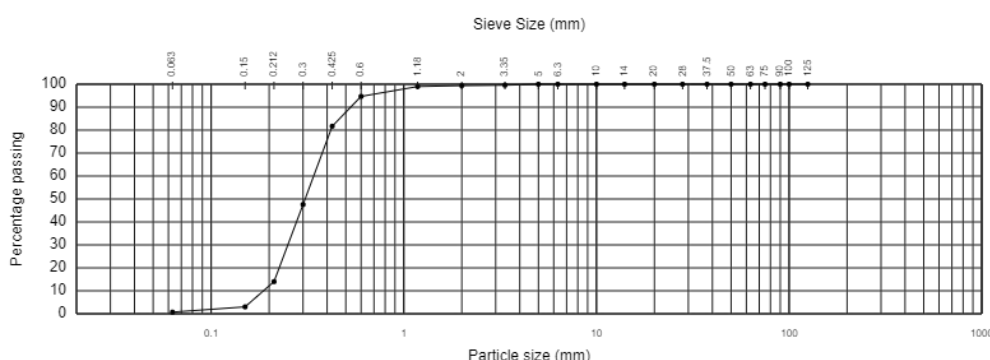
TEST REPORT: DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in accordance with BS 1377 - 2 : 1990, Method 9.2 Washing & Dry Sieving and BS 1377 - 2 : 1990, Method 3.2

REPORT NUMBER:	C4002211 / 11247.1.1.1	CLIENT:	GRM Development Solutions Ltd
SAMPLE NUMBER:	20561	ADDRESS:	Laurus House First Avenue, Centrum 100, Burton-on-Trent, Staffordshire, DE14 2WH
CLIENT REF:	TP105 0.80m	SITE:	P10525 - CASCID-Christie Hospital, Manchester
DATE SAMPLED:	17/03/2024	SOURCE / SUPPLIER:	Unknown, Unknown
SAMPLED BY:	Client	MATERIAL DESCRIPTION:	Brown SAND
DATE RECEIVED:	21/03/2024	PROPOSED CLASSIFICATION:	Class 1B
DATE COMPLETED:	05/04/2024	LOCATION:	TP105, TP, 0.80, B, 0.80
TESTED BY:	Jacob Haywood	PREPARATION METHOD:	BS 1377:Part 1:2016 clause 8.3 & 8.4.5
TYPE OF SAMPLE:	Disturbed	SAMPLING PLAN:	Client Provided
VARIATIONS:	No variations	LOCATION AND ORIENTATION WITHIN SAMPLE:	
METHOD OF SAMPLING:	Sampled by client		
ENVIRONMENTAL CONDITIONS:			

RESULT **Test Location: Simtec East Goscote**

SIEVE ANALYSIS



Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	63	200
0.020	0.063	0.20	0.63	2.0	6.3	20		
SILT/CLAY	SAND			GRAVEL				

Percentage BOULDERS: 0%
 Percentage COBBLES: 0%
 Percentage GRAVEL: 1%
 Percentage SAND: 99%
 Percentage SILT/CLAY: 1%

Applied Specification: Class 1B - Specification for Highway Works (2016) Table 6/2 Earthworks Materials - Class 1B

This certificate only confirms the material has met the relevant grading requirements of the material specification

Decision Rule: For a test performed according to published method BS 1377-2: 1990 , with bias consistent with the published method values, and no additional influences being identified... PASS: when percentage passing stated sieve size is within the tolerances stated in specification, FAIL: otherwise.

Particle Diameter mm	Passing %	Specification Limits
125	100	100 - 100
100	100	
90	100	
75	100	
63	100	
50	100	
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	100	
2	99	
1.18	99	
0.6	95	
0.425	82	
0.3	48	
0.212	14	
0.15	3	
0.063	1	0 - 15

Remarks:
 Test results reported relate only to the items tested.
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 Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation. The laboratory does not apply a conformity statement to test reports as standard, unless specifically requested by the customer.

For and on behalf of Simtec
 Robert McGoff - Laboratory Supervisor



Approved Signatory
 Report date 10-Apr-24



10108

Report Format: PSDsoil/TP02/Rep Issue 1 Rev 0 05/17

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 East Goscote,
 Leicester LE7 3XD

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 END OF REPORT

E. 2019 CC Geotechnical Ground Investigation Report