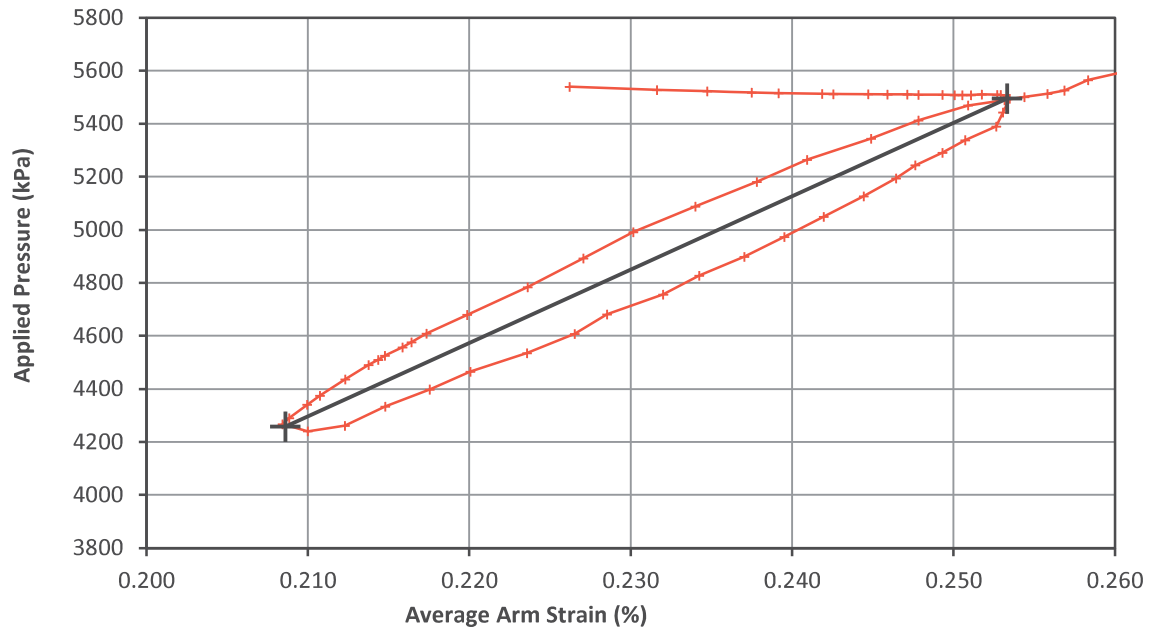


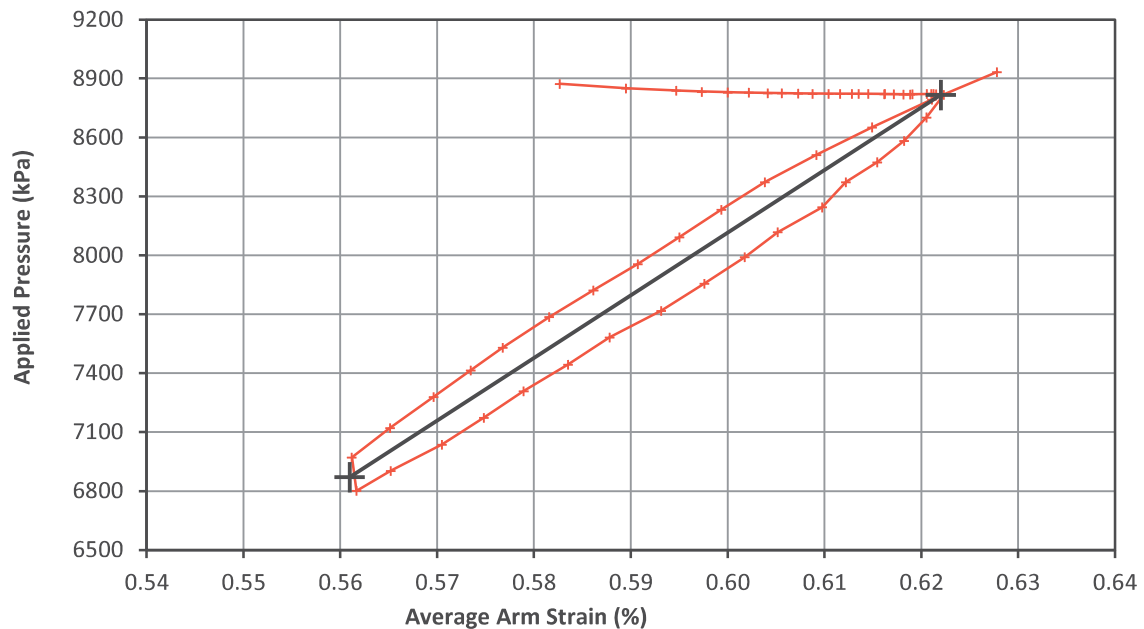
Pressuremeter Analysis - Unload Reload Loop

IN SITU
SITE INVESTIGATION

Test Date	22/04/2021	Test No.	4
Borehole	BH1R	Test Depth (m)	24.30



Loop 1	Shear Modulus	1387.5 MPa
	Cavity Strain Range	0.045 %



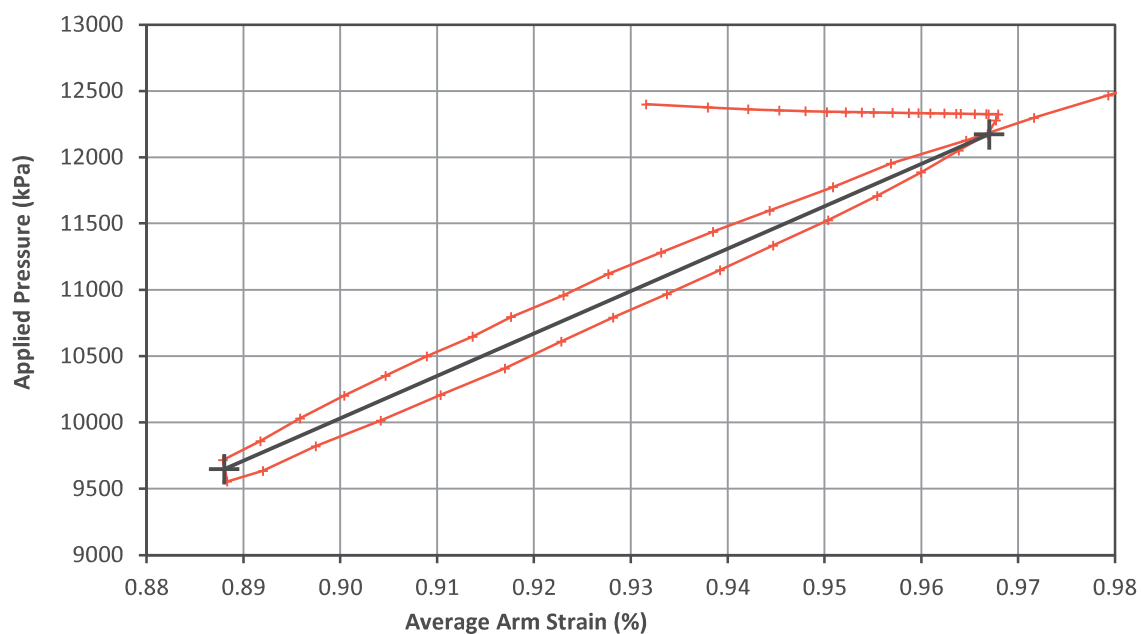
Loop 2	Shear Modulus	1605.6 MPa
	Cavity Strain Range	0.061 %

Project	Great Jackson Street, Manchester	Figure No.	BH1R T04 - 05
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis - Unload Reload Loop

IN SITU
SITE INVESTIGATION

Test Date	22/04/2021	Test No.	4
Borehole	BH1R	Test Depth (m)	24.30



Loop 3	Shear Modulus	1612.9	MPa
	Cavity Strain Range	0.079	%

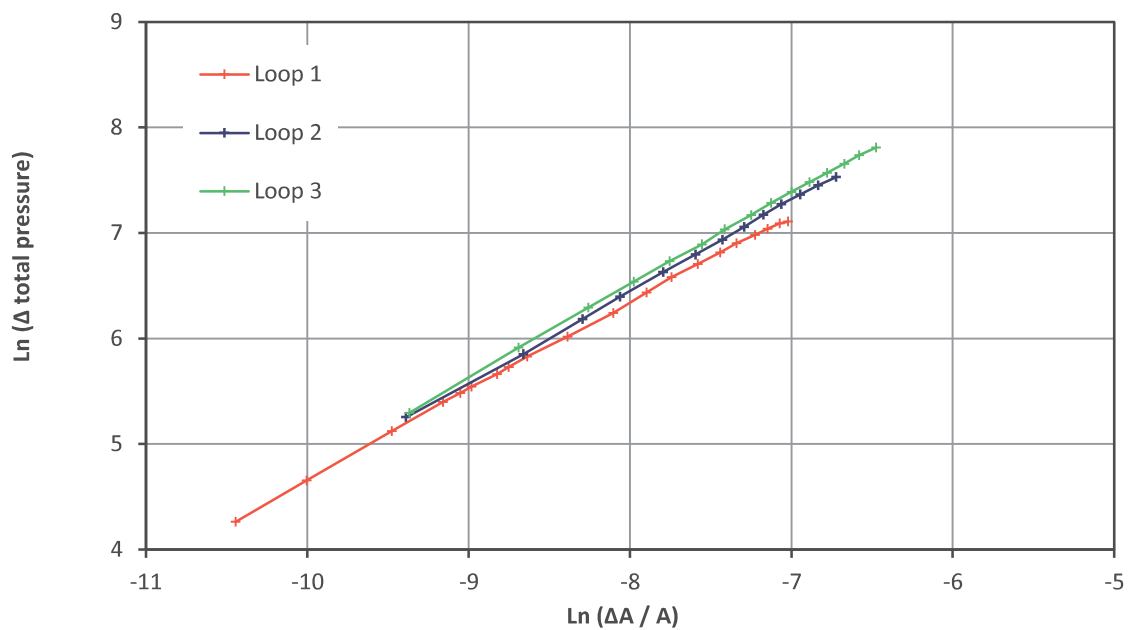
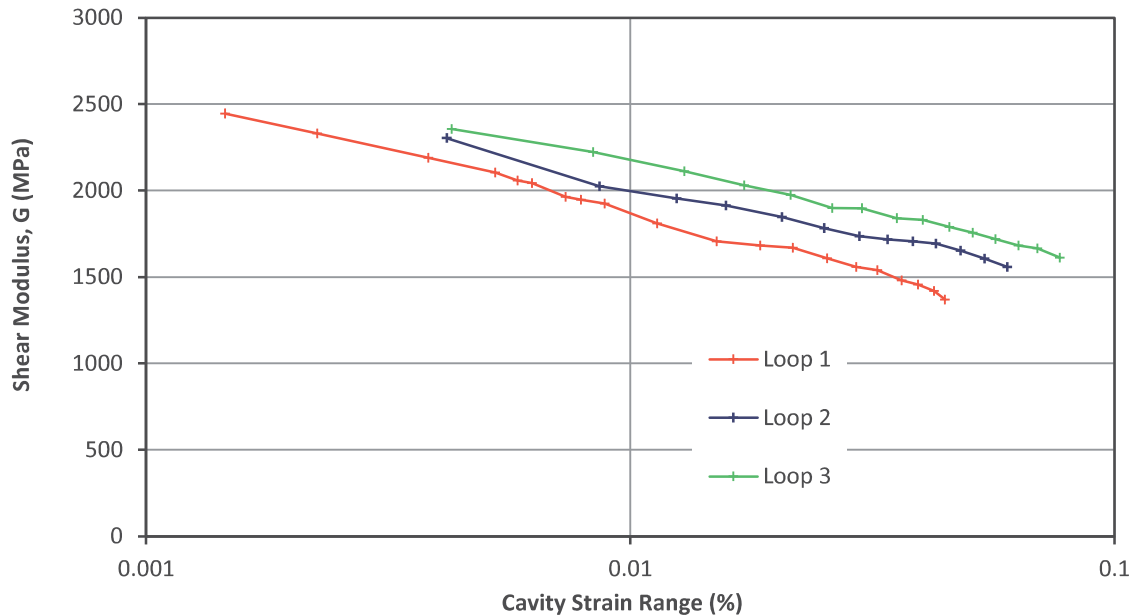
Project	Great Jackson Street, Manchester	Figure No.	BH1R T04 - 06
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis

Small Strain Stiffness and Bolton & Whittle (1999)

IN SITU
SITE INVESTIGATION

Test Date	22/04/2021	Test No.	4
Borehole	BH1R	Test Depth (m)	24.30



Loop 1		Loop 2		Loop 3	
Gradient(β)	Intercept	Gradient(β)	Intercept	Gradient(β)	Intercept
0.832	442.285 (MPa)	0.865	637.146 (MPa)	0.869	705.170 (MPa)

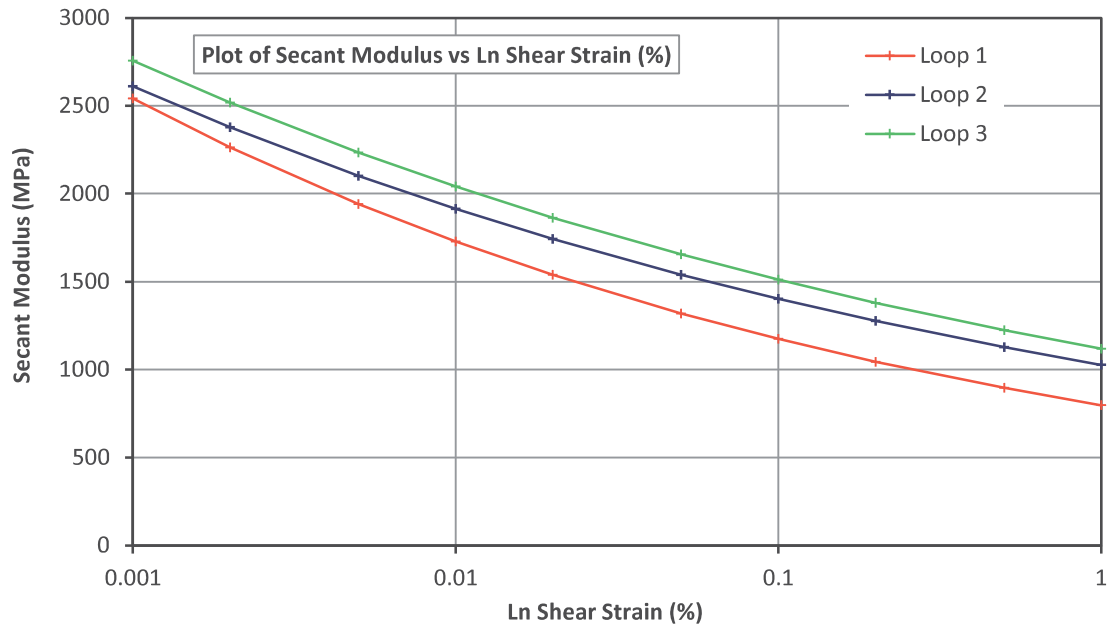
Project	Great Jackson Street, Manchester	Figure No.	BH1R T04 - 07
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis

Secant Modulus - Shear Strain (%)

IN SITU
SITE INVESTIGATION

Test Date	22/04/2021	Test No.	4
Borehole	BH1R	Test Depth (m)	24.30



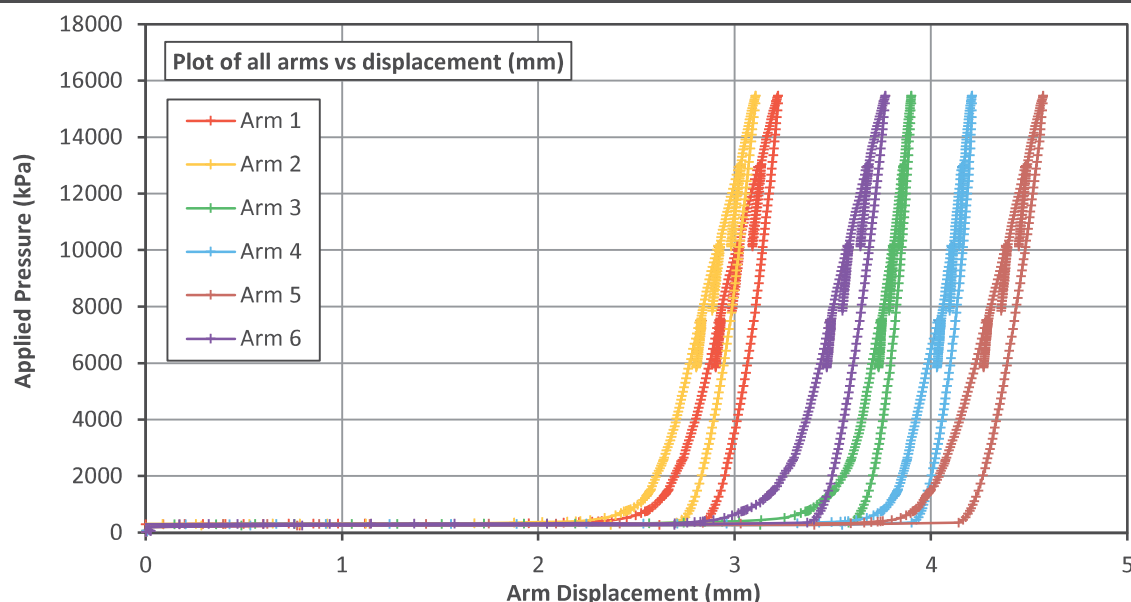
Shear Strain	Loop 1	Loop 2	Loop 3
0.001%	2543	2611	2757
0.002%	2264	2378	2518
0.005%	1941	2101	2234
0.010%	1728	1913	2041
0.020%	1538	1742	1864
0.050%	1319	1539	1654
0.100%	1174	1402	1511
0.200%	1045	1276	1380
0.500%	896	1128	1225
1.000%	797	1027	1119

Project	Great Jackson Street, Manchester	Figure No.	BH1R T04 - 08
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Test Overview High Pressure Dilatometer (HPD)

IN SITU
SITE INVESTIGATION

Test Date	23/04/2021		Test No.	5
Borehole	BH1R		Test Depth (m)	32.60
Coordinates (m)	383353.9 (E)	397240.7 (N)	Elevation (m)	32.28



Material description from borehole log:

SANDSTONE.

Test pocket conditions:

Total core recovery:	88 %	Test pocket depth range:	
Solid core recovery:	71 %	From: 31.10 m to: 35.50 m	
Rock quality designation:	35 %	Flush: Water	

Test comment:

The test pocket was reasonable with arms lifting off at 2.5 to 4.0mm. The po was estimated to be at 3763kPa, with the following loading section being long and linear. No material yield was observed and the test was taken to a high pressure of 15465kPa. The displacement-pressure response shown by the arms was consistent, albeit at slightly varying expansion. Analysis of three unload reload loops provides modulus values of 1842 to 1872MPa.

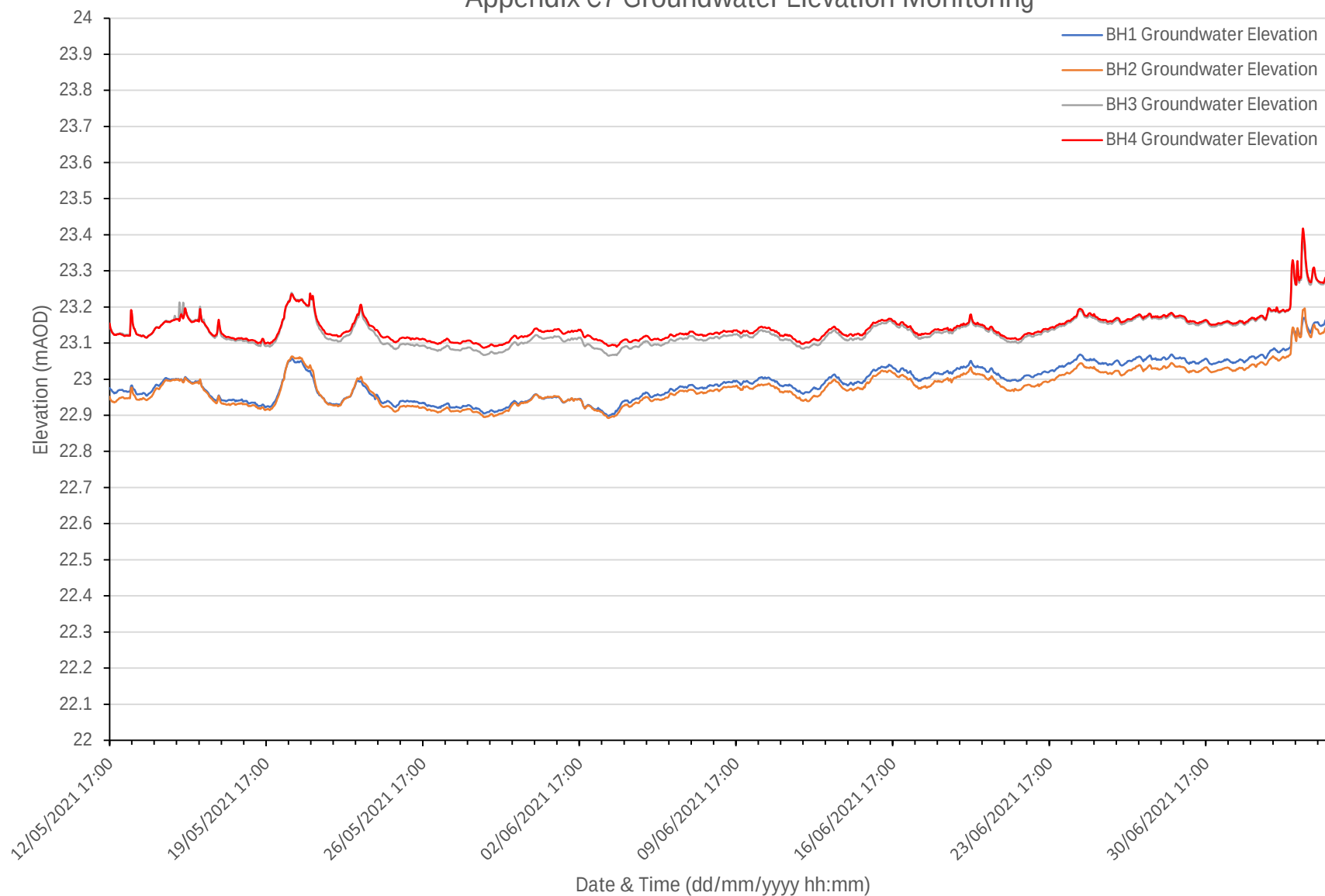
Test details:		Instrument:		Eleanor (HPD04)		
Drilling method:	Rotary coring		mV	mV/mm	mV	mV/MPa
Casing depth:	30.50 m	Arm 1:	-2373.0	122.9	TPC A: 292.7	102.9
Water level:	9.40 m	Arm 2:	-2033.1	124.9	TPC B: -2136.4	110.7
		Arm 3:	-2289.1	129.5		
Test time:		Arm 4:	-2118.8	127.4		
Start (probe in):	12:00 hrs	Arm 5:	-2289.3	132.1		
Finish (probe out):	13:50 hrs	Arm 6:	-2138.3	124.1		

Project	Great Jackson Street, Manchester	Figure No.	BH1R T05 - 01
Client	GeoAssist		
Project No.	P1210114		

Plots F1 F2 Great Jackson Street
Appendix C7
Weekly Groundwater Elevation Monitoring

Date (dd/mm/yyyy)	Time (hh:mm:ss)	BH1 Groundwater (mAOD)	Temp	BH2 Groundwater (mAOD)	Temp	BH3 Groundwater (mAOD)	Temp	BH4 Groundwater (mAOD)	Temp
12/05/2021	17:00:00	22.98	-	22.95	-	23.15	-	23.16	-
19/05/2021	17:00:00	22.92	-	22.92	-	23.09	-	23.10	-
26/05/2021	17:00:00	22.94	-	22.92	-	23.09	-	23.11	-
02/06/2021	17:00:00	22.95	-	22.94	-	23.11	-	23.14	-
09/06/2021	17:00:00	23.00	-	22.98	-	23.12	-	23.14	-
16/06/2021	17:00:00	23.03	-	23.02	-	23.16	-	23.16	-
23/06/2021	17:00:00	23.02	-	22.99	-	23.13	-	23.14	-
30/06/2021	17:00:00	23.06	-	23.03	-	23.16	-	23.16	-

Plots F1 & F2 Great Jackson Street Appendix C7 Groundwater Elevation Monitoring



GeoAssist Limited SOIL LABORATORY SUMMARY SHEET	Project:	Plots F1 & F2 Great Jackson Street	Site Ref:	6069/CGJ
	Location:	Manchester	Project Code :	
	Client:	Coffey Geotechnics Ltd		
	Consultant :	Coffey Geotechnics Ltd	Hole Ref	BH1

Sample Ref.	Depth m	Sample Description	Classification					Triaxial Compression					Chemical		Test Code
			LL %	PL %	PI %	% passing 425	Moist Cont. %	Bulk Density Mg/m ³	Sample Dia mm	Confining Pressure kN/m ²	Deviator /Shear Stress kN/m ²	Shear Cohesion kN/m ² /Friction angle degrees	So4 Total %	pH	
BH1 B1	0.50	Brown clayey sand and gravel with brick fragments and cobbles - MADE GROUND					-						0.033	7.1	GRAD WS Organic = 1.4% See BRE
													39.4		
BH1 D1	0.80	Brown clayey silty gravelly SAND					-								GRAD WS
BH1 D3	1.80	Brown/grey clayey silty gravelly SAND with dark grey fibrous matter					-						0.062	7.4	GRAD WS Organic = 1.5% See BRE
													270		
BH1 D4	2.50	Brown slightly gravelly very sandy silty CLAY	36	17	19	91	16						0.043	8.3	NMC+CLSS GRAD WS+HYD See BRE
													108		
BH1 U1	3.00	Brown slightly gravelly very sandy silty CLAY	37	19	18	100	19 15	1.98	102	50 100 200	291 291 291	146			NMC CLSS UUM
BH1 D5	3.50	Brown slightly gravelly very sandy silty CLAY	35	16	19	100	15								NMC+CLSS
BH1 U2	4.00	Brown slightly gravelly very sandy silty CLAY	28	13	15	76	13	Sample unsuitable for Triaxial – high gravel content in middle of sample							NMC+CLSS CONG CUP
BH1 D6	4.50	Brown gravelly very sandy silty CLAY	24	12	12	93	8.7								NMC+CLSS
BH1 D7	5.50	Brown gravelly very sandy silty CLAY	29	13	16	85	9.5								NMC+CLSS GRAD WS+HYD
BH1 D8	7.00	Orange/brown silty SAND with sandstone fragments and rounded gravel					-						0.014	8.3	GRAD WS SEE BRE
													22.4		

GeoAssist Limited SOIL LABORATORY SUMMARY SHEET	Project:	Plots F1 & F2 Great Jackson Street	Site Ref:	6069/CGJ
	Location:	Manchester	Project Code :	
	Client:	Coffey Geotechnics Ltd		
	Consultant :	Coffey Geotechnics Ltd	Hole Ref	BH2

Sample Ref.	Depth m	Sample Description	Classification					Triaxial Compression					Chemical		Test Code
			LL %	PL %	PI %	% passing 425	Moist Cont. %	Bulk Density Mg/m ³	Sample Dia mm	Confining Pressure kN/m ²	Deviator /Shear Stress kN/m ²	Shear Cohesion kN/m ² /Friction angle degrees	So4 Total %	pH	
BH2 B1	0.50	Dark brown brick rubble - MADE GROUND					-								Asbestos
BH2 D1	0.80	Brown clayey silty sand and gravel - MADE GROUND					-						0.054	6.9	Organic = 3.1% See BRE
													96.8		
BH2 U1	1.00	Grey very sandy silty clay with brick and glass fragments and organic inclusions - MADE GROUND					39	2.06	100	50 100 200	132 154 161	75			NMC UUM
BH2 U2	2.00	Brown/grey slightly sandy silty CLAY, laminated with silt partings and inclusions					24	2.04	102	50 100 200	103 105 107	53			UUM
BH2 D3	2.50	Brown/grey slightly sandy silty CLAY, laminated with silt partings and inclusions	44	19	25	100	21						0.026	8.0	NMC+CLSS GRAD WS SEE BRE
													58.0		
BH2 U3	3.00	Brown/grey slightly sandy silty CLAY, laminated with silt partings and inclusions					25	2.13	102	50	106	53			NMC CONG UU
BH2 D4	3.50	Brown/grey slightly sandy silty CLAY, laminated with silt partings and inclusions	44	21	23	88	25								NMC+CLSS GRAD WS
BH2 D5	4.50	Brown slightly gravelly very sandy very silty CLAY	24	12	12	94	8.9								NMC+CLSS GRAD WS+HYD
BH2 D6	5.50	Orange/brown silty SAND with sandstone fragments and rounded gravel					-								GRAD WS

GeoAssist Limited SOIL LABORATORY SUMMARY SHEET	Project:	Plots F1 & F2 Great Jackson Street	Site Ref:	6069/CGJ
	Location:	Manchester	Project Code :	
	Client:	Coffey Geotechnics Ltd		
	Consultant :	Coffey Geotechnics Ltd	Hole Ref	BH3

Sample Ref.	Depth m	Sample Description	Classification					Triaxial Compression					Chemical		Test Code
			LL %	PL %	PI %	% passing 425	Moist Cont. %	Bulk Density Mg/m ³	Sample Dia mm	Confining Pressure kN/m ²	Deviator /Shear Stress kN/m ²	Shear Cohesion kN/m ² /Friction angle degrees	So4 Total %	pH	
BH3 B1	0.50	Dark brown/grey clayey gravelly silty SAND with brick fragments - MADE GROUND					-								Asbestos
BH3 D2	1.50	Dark brown/grey very sandy silty clay - MADE GROUND					-						0.040	8.1	Organic =1.3% See BRE
													48.5		
BH3 U1	2.00	Dark brown/grey very sandy silty clay - MADE GROUND changing at 2.10m to Dark brown clayey silty very gravelly SAND - MADE GROUND	43	22	21	100	27 13.5 7.4	Unsuitable for Triaxial test changing to gravelly Sand at 2.10m							NMC+CLSS UUM
BH3 D3	2.50	Dark brown clayey silty very gravelly SAND - MADE GROUND					-						0.060	9.1	GRAD WS See BRE
													124		
BH3 U2	3.00	Dark brown clayey silty very gravelly SAND - MADE GROUND changing at 3.20m to brown/grey silty CLAY with silt partings					18	2.19	102	50 100 200	188 188 188	94			UUM
BH3 D4	3.50	Brown/grey silty CLAY with silt partings	47	21	26	100	25								NMC+CLSS
BH3 U3	3.50	Brown/grey silty CLAY with silt partings					26	2.12	102	50 100 200	155 155 155	78			CONG UUM
BH3 D5	4.50	Brown slightly gravelly very sandy silty CLAY	30	12	18	85	14								NMC+CLSS GRAD WS+HYD
BH3 U3	5.20	Brown slightly gravelly very sandy silty CLAY with cobble					9.6								NMC
BH3 D6	5.70	Brown slightly gravelly very sandy silty CLAY	28	12	16	97	9.7								NMC+CLSS GRAD WS

GeoAssist Limited SOIL LABORATORY SUMMARY SHEET	Project:	Plots F1 & F2 Great Jackson Street	Site Ref:	6069/CGJ
	Location:	Manchester	Project Code :	
	Client:	Coffey Geotechnics Ltd		
	Consultant :	Coffey Geotechnics Ltd	Hole Ref	BH3

			Classification					Triaxial Compression					Chemical		
Sample Ref.	Depth m	Sample Description	LL %	PL %	PI %	% passing 425	Moist Cont. %	Bulk Density Mg/m³	Sample Dia mm	Confining Pressure kN/m²	Deviator /Shear Stress kN/m²	Shear Cohesion kN/m² /Friction angle degrees	So4 Total %	pH	Test Code
													So4 2:1 extract Soil:Water mg/l		
BH3 D7	6.50	Orange/brown clayey silty SAND with sandstone fragments and rounded gravel					-								GRAD WS

GeoAssist Limited SOIL LABORATORY SUMMARY SHEET	Project:	Plots F1 & F2 Great Jackson Street	Site Ref:	6069/CGJ
	Location:	Manchester	Project Code :	
	Client:	Coffey Geotechnics Ltd		
	Consultant :	Coffey Geotechnics Ltd	Hole Ref	BH4

Sample Ref.	Depth m	Sample Description	Classification					Triaxial Compression					Chemical		Test Code
			LL %	PL %	PI %	% passing 425	Moist Cont. %	Bulk Density Mg/m ³	Sample Size mm	Effective Confining Pressure kN/m ²	Deviator /Shear Stress kN/m ²	Shear Cohesion kN/m ² /Friction angle degrees	So4 Total %	pH	
BH4 B1	0.50	Brown clayey sand and gravel, brick rubble and fragments with glass and asbestos cement fragments - MADE GROUND					-						0.193	10.6	See BRE
													136		
BH4 D1	1.50	Dark brown/grey clayey sandy gravel with brick fragments - MADE GROUND					-						0.136	10.1	See BRE
													87.0		
BH4 B2	2.50	Brown/grey clayey silty SAND and GRAVEL					-						0.073	8.8	GRAD WS See BRE
													131		
BH4 U1	3.00	Brown gravelly sandy silty CLAY	37	18	19	83	16 15	2.21	102	50 100 200	275 294 304	146			NMC+clss CONG UUM
BH4 D3	3.50	Grey/brown slightly gravelly very silty CLAY with silt partings	52	21	31	100	24						0.074	8.3	NMC+CLSS See BRE
													297		
BH4 U2	3.80	Grey/brown slightly gravelly very silty CLAY with silt partings	28	13	15	84	12 14	2.25	103	100 200 300	123 240 427	0/30°			NMC+CLSS CUP
BH4 D4	4.30	Brown slightly gravelly very sandy silty CLAY	27	12	15	93	11								NMC+CLSS GRAD WS +HYD
BH4 D5	5.50	Brown slightly gravelly very sandy silty CLAY	26	11	15	89	8.6								NMC+CLSS GRAD WS+HYD
BH4 D6	6.50	Orange/brown silty SAND with sandstone fragments and rounded gravel					-								GRAD WS



SUMMARY REPORT

Summary of Classification Test Results

Tested in Accordance with:

Moisture Content by BS 1377-2: 1990: Clause 3.2; Water Content by BS EN 17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2: 1990: Clause 8.2

GeoAssist Ltd

Unit 4, Sheffield Street, Heaton Norris,
Stockport, Cheshire,
SK4 1RU

Contact: Matthew Benson

Site Address: Great Jackson Street, Manchester

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample			Description	Remarks	Moisture Content [W] %	Water Content [W] %	Atterberg				Density			Total Porosity# %	
		Reference	Depth Top m	Depth Base m	Type				% Passing 425um	WL %	Wp %	Ip %	bulk Mg/m3	dry Mg/m3	PD Mg/m3		
1937326	BH1	D4	2.50	Not Given	D	Brown slightly gravelly sandy very clayey SILT	16		91	36	17	19					
1937327	BH1	U1-D	3.00	Not Given	D	Brown sandy CLAY	19		100	37	19	18					
1937328	BH1	D5	3.50	Not Given	D	Brown sandy CLAY	15		100	35	16	19					
1937329	BH1	U2-D	4.00	Not Given	D	Brown slightly gravelly very sandy CLAY	13		76	28	13	15					
1937330	BH1	D6	4.50	Not Given	D	Brown slightly gravelly clayey SAND	8.7		93	24	12	12					
1937331	BH1	D7	5.50	Not Given	D	Brown gravelly very clayey SAND	9.5		85	29	13	16					
1937333	BH2	D3	2.50	Not Given	D	Brownish grey slightly sandy CLAY	21		100	44	19	25					
1937334	BH2	D4	3.50	Not Given	D	Brown slightly sandy gravelly CLAY	25		88	44	21	23					
1937335	BH2	D5	4.50	Not Given	D	Brown silty clayey slightly gravelly SAND	8.9		94	24	12	12					
1937337	BH3	U1-D	2.00	Not Given	D	Grey sandy CLAY	27		100	43	22	21					

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd



SUMMARY REPORT

Summary of Classification Test Results

Tested in Accordance with:

Moisture Content by BS 1377-2; 1990; Clause 3.2; Water Content by BS EN 17892-1; 2014; Atterberg by BS 1377-2; 1990; Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2; 1990; Clause 8.2

GeoAssist Ltd

Unit 4, Sheffield Street, Heaton Norris,
Stockport, Cheshire,
SK4 1RU

Contact: Matthew Benson

Site Address: Great Jackson Street, Manchester

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample			Description	Remarks	Moisture Content [W] %	Water Content [W] %	Atterberg				Density			Total Porosity# %	
		Reference	Depth Top m	Depth Base m	Type				% Passing 425um	WL %	Wp %	Ip %	bulk Mg/m3	dry Mg/m3	PD		
1937339	BH3	D4	3.50	Not Given	D	Reddish brown slightly sandy CLAY	Atterberg 1 Point	25	100	47	21	26					
1937340	BH3	D5	4.50	Not Given	D	Brown gravelly very sandy very clayey SILT	Atterberg 1 Point	14	85	30	12	18					
1937341	BH3	D6	5.70	Not Given	D	Brown slightly gravelly clayey very silty SAND	Atterberg 1 Point	9.7	97	28	12	16					
1937344	BH4	U1-D	3.00	Not Given	D	Brown slightly gravelly sandy CLAY	Atterberg 1 Point	16	83	37	18	19					
1937345	BH4	D3	3.50	Not Given	D	Brown slightly sandy CLAY	Atterberg 1 Point	24	100	52	21	31					
1937346	BH4	U2-D	3.80	Not Given	D	Brown slightly gravelly very sandy CLAY	Atterberg 1 Point	12	84	28	13	15					
1937347	BH4	D4	4.30	Not Given	D	Brown slightly gravelly very sandy very clayey SILT	Atterberg 1 Point	11	93	27	12	15					
1937348	BH4	D5	5.50	Not Given	D	Brown silty clayey slightly gravelly SAND	Atterberg 1 Point	8.6	89	26	11	15					

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Szczepan Bielawicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: GeoAssist Ltd
Client Address: Unit 4, Sheffield Street, Heaton Norris,
Stockport, Cheshire,
SK4 1RU

Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

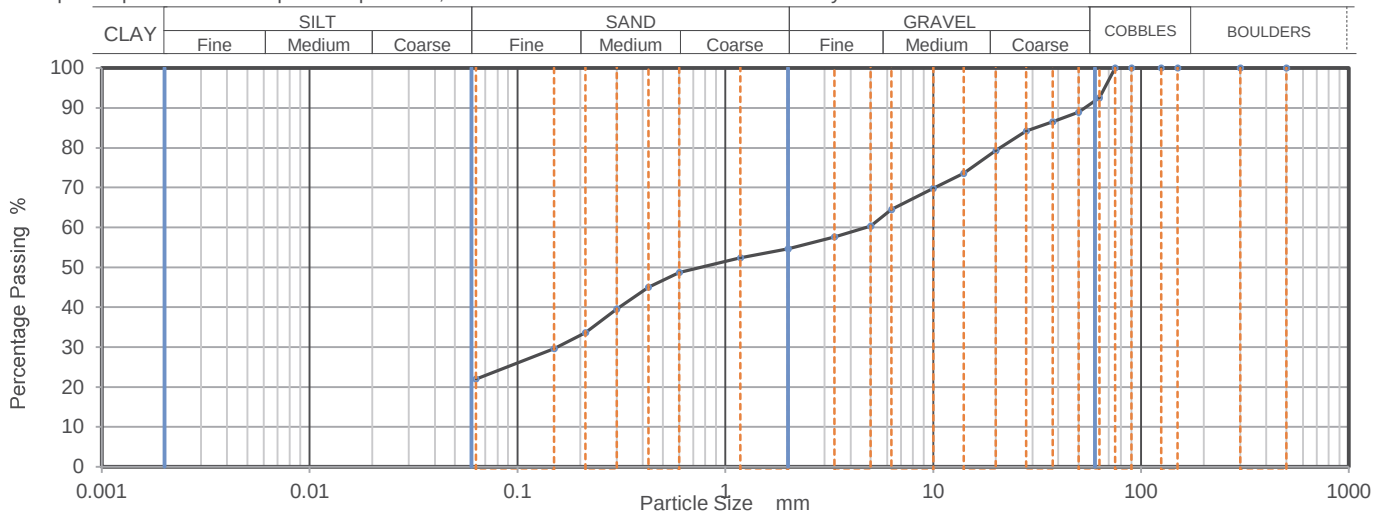
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 17/07/2021
Sampled By: Client - MR

Test Results:

Laboratory Reference: 1937323
Hole No.: BH1
Sample Reference: B1
Sample Description: Brown very clayey very sandy GRAVEL with cobbles
Sample Preparation: Sample was quartered, oven dried at 106.0 °C and broken down by hand.

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	93		
50	89		
37.5	87		
28	84		
20	79		
14	74		
10	70		
6.3	65		
5	60		
3.35	58		
2	55		
1.18	52		
0.6	49		
0.425	45		
0.3	40		
0.212	34		
0.15	30		
0.063	23		

Sample Proportions	% dry mass
Very coarse	7
Gravel	38
Sand	32
Fines <0.063mm	23

Grading Analysis	
D100	mm 75
D60	mm 4.76
D30	mm 0.155
D10	mm
Uniformity Coefficient	> 76
Curvature Coefficient	

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: GeoAssist Ltd
Client Address: Unit 4, Sheffield Street, Heaton Norris,
Stockport, Cheshire,
SK4 1RU

Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

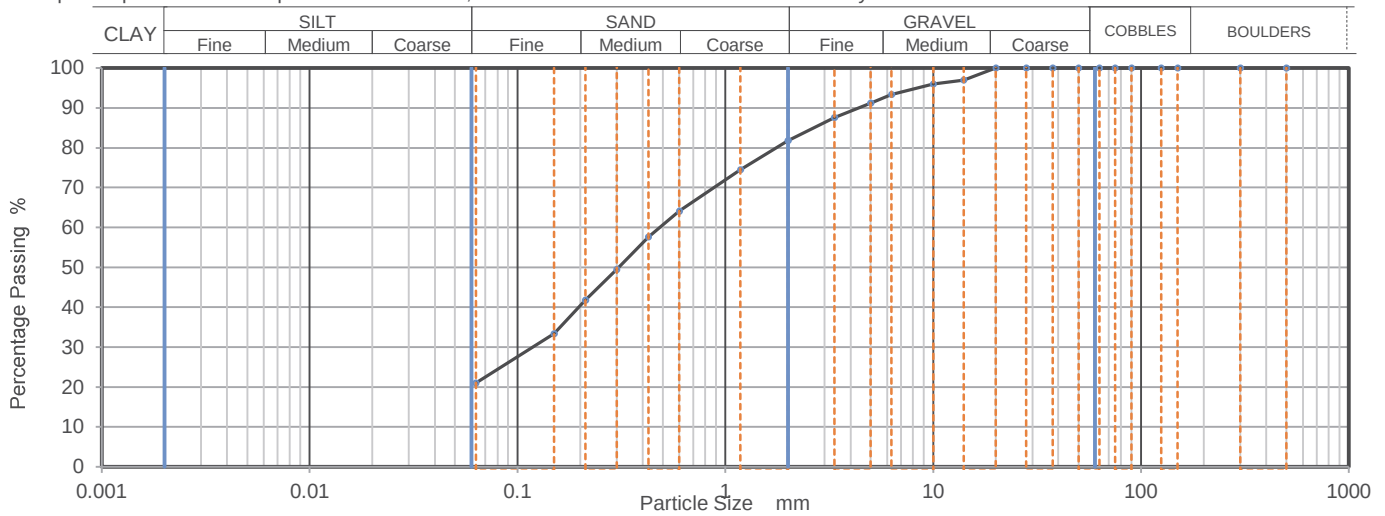
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 22/07/2021
Sampled By: Client - MR

Test Results:

Laboratory Reference: 1937324
Hole No.: BH1
Sample Reference: D1
Sample Description: Brown gravelly clayey SAND
Sample Preparation: Sample was whole tested, oven dried at 106.1 °C and broken down by hand.

Depth Top [m]: 0.80
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	97		
10	96		
6.3	93		
5	91		
3.35	88		
2	82		
1.18	75		
0.6	64		
0.425	58		
0.3	50		
0.212	42		
0.15	33		
0.063	22		

Sample Proportions	% dry mass
Very coarse	0
Gravel	18
Sand	60
Fines <0.063mm	22

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 7.7
Curvature Coefficient	

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: GeoAssist Ltd
Client Address: Unit 4, Sheffield Street, Heaton Norris,
Stockport, Cheshire,
SK4 1RU

Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

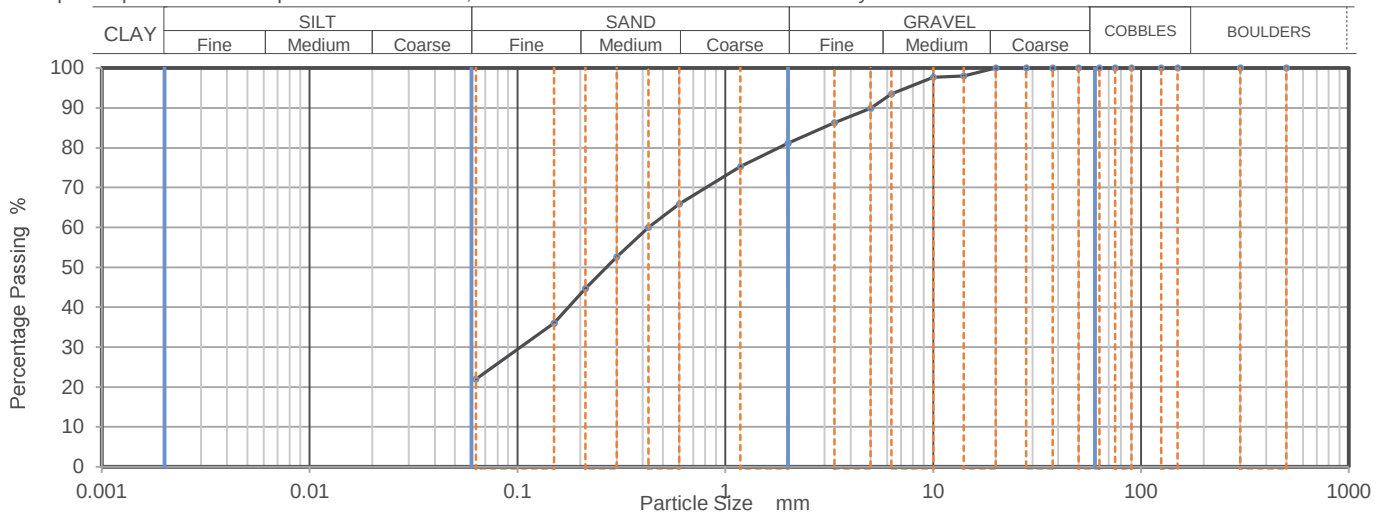
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 22/07/2021
Sampled By: Client - MR

Test Results:

Laboratory Reference: 1937325
Hole No.: BH1
Sample Reference: D3
Sample Description: Brown gravelly clayey SAND
Sample Preparation: Sample was whole tested, oven dried at 107.5 °C and broken down by hand.

Depth Top [m]: 1.80
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	98		
10	98		
6.3	94		
5	90		
3.35	86		
2	81		
1.18	75		
0.6	66		
0.425	60		
0.3	53		
0.212	45		
0.15	36		
0.063	23		

Sample Proportions	% dry mass
Very coarse	0
Gravel	19
Sand	59
Fines <0.063mm	22

Grading Analysis	
D100	mm 20
D60	mm 0.425
D30	mm 0.102
D10	mm
Uniformity Coefficient	> 6.7
Curvature Coefficient	

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

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SK4 1RU
Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

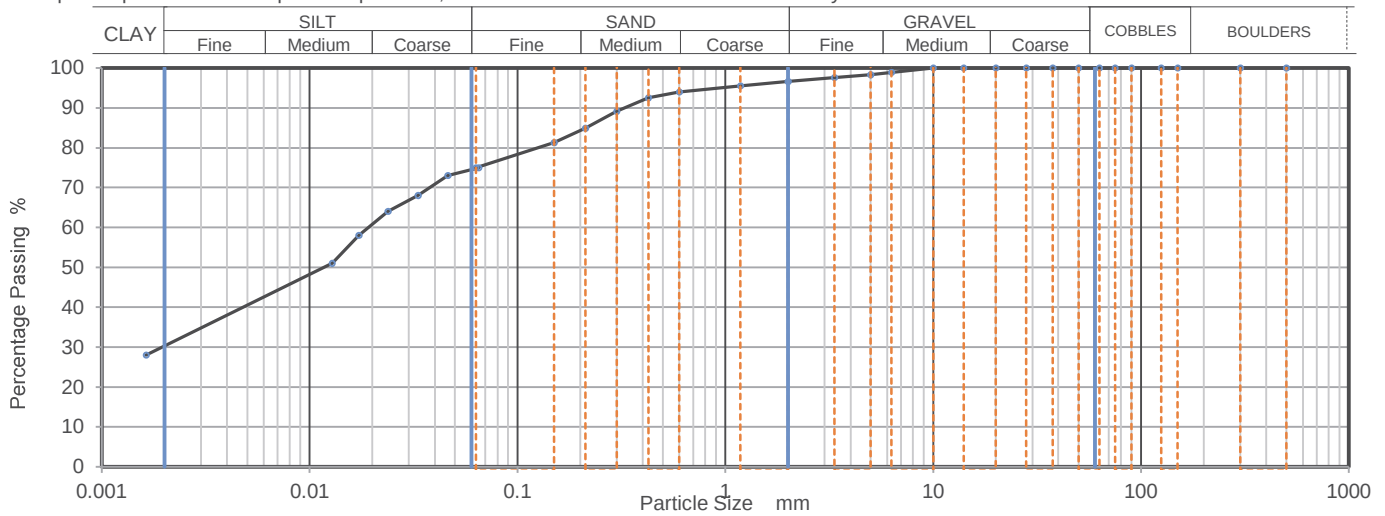
Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 22/07/2021
Sampled By: Client - MR

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1937326
Hole No.: BH1
Sample Reference: D4
Sample Description: Brown slightly gravelly sandy very clayey SILT
Sample Preparation: Sample was quartered, oven dried at 107.5 °C and broken down by hand.

Depth Top [m]: 2.50
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0649	75
300	100	0.0462	73
150	100	0.0332	68
125	100	0.0238	64
90	100	0.0172	58
75	100	0.0128	51
63	100	0.0016	28
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	98		
3.35	98	Particle density (assumed) 2.65 Mg/m3	
2	97		
1.18	96		
0.6	94		
0.425	93		
0.3	89		
0.212	85		
0.15	81		
0.063	75		

Sample Proportions	% dry mass
Very coarse	0
Gravel	3
Sand	22
Silt	45
Clay	30

Grading Analysis	
D100	mm 10
D60	mm 0.0194
D30	mm 0.00198
D10	mm
Uniformity Coefficient	> 12
Curvature Coefficient	

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

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Client: GeoAssist Ltd
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SK4 1RU
Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

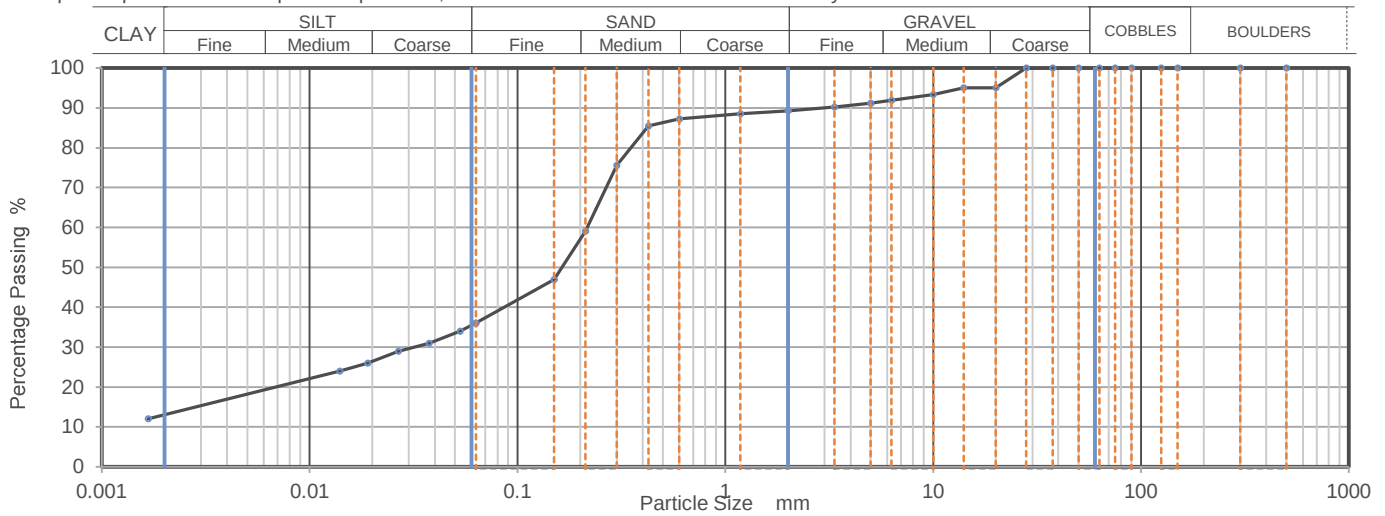
Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 22/07/2021
Sampled By: Client - MR

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1937331
Hole No.: BH1
Sample Reference: D7
Sample Description: Brown gravelly very clayey SAND
Sample Preparation: Sample was quartered, oven dried at 110.0 °C and broken down by hand.

Depth Top [m]: 5.50
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	36
300	100	0.0528	34
150	100	0.0376	31
125	100	0.0267	29
90	100	0.0190	26
75	100	0.0140	24
63	100	0.0017	12
50	100		
37.5	100		
28	100		
20	95		
14	95		
10	93		
6.3	92		
5	91		
3.35	90	Particle density (assumed) 2.65 Mg/m3	
2	89		
1.18	89		
0.6	87		
0.425	85		
0.3	76		
0.212	59		
0.15	47		
0.063	36		

Sample Proportions	% dry mass
Very coarse	0
Gravel	11
Sand	53
Silt	23
Clay	13

Grading Analysis	
D100	mm 28
D60	mm 0.216
D30	mm 0.0313
D10	mm
Uniformity Coefficient	> 130
Curvature Coefficient	

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

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Client: GeoAssist Ltd
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SK4 1RU

Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

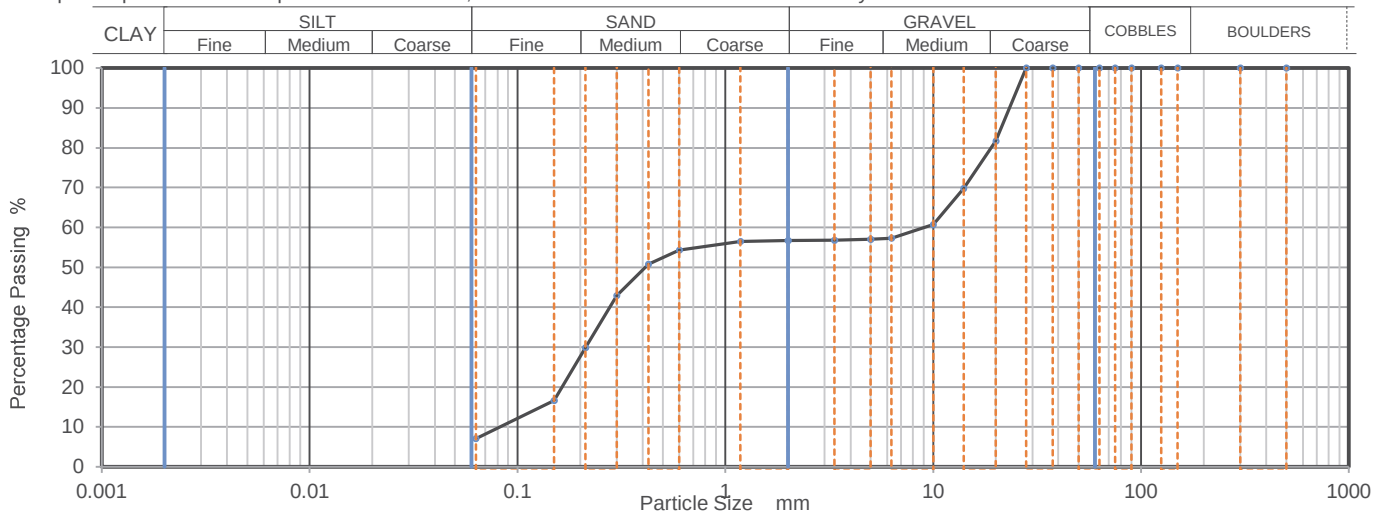
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 22/07/2021
Sampled By: Client - MR

Test Results:

Laboratory Reference: 1937332
Hole No.: BH1
Sample Reference: D8
Sample Description: Reddish brown slightly clayey very gravelly SAND
Sample Preparation: Sample was whole tested, oven dried at 107.5 °C and broken down by hand.

Depth Top [m]: 7.00
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	82		
14	70		
10	61		
6.3	57		
5	57		
3.35	57		
2	57		
1.18	57		
0.6	54		
0.425	51		
0.3	43		
0.212	30		
0.15	17		
0.063	8		

Sample Proportions	% dry mass
Very coarse	0
Gravel	43
Sand	49
Fines <0.063mm	8

Grading Analysis		
D100	mm	28
D60	mm	9.08
D30	mm	0.213
D10	mm	0.0779
Uniformity Coefficient		120
Curvature Coefficient		0.064

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Signed:

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SK4 1RU

Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

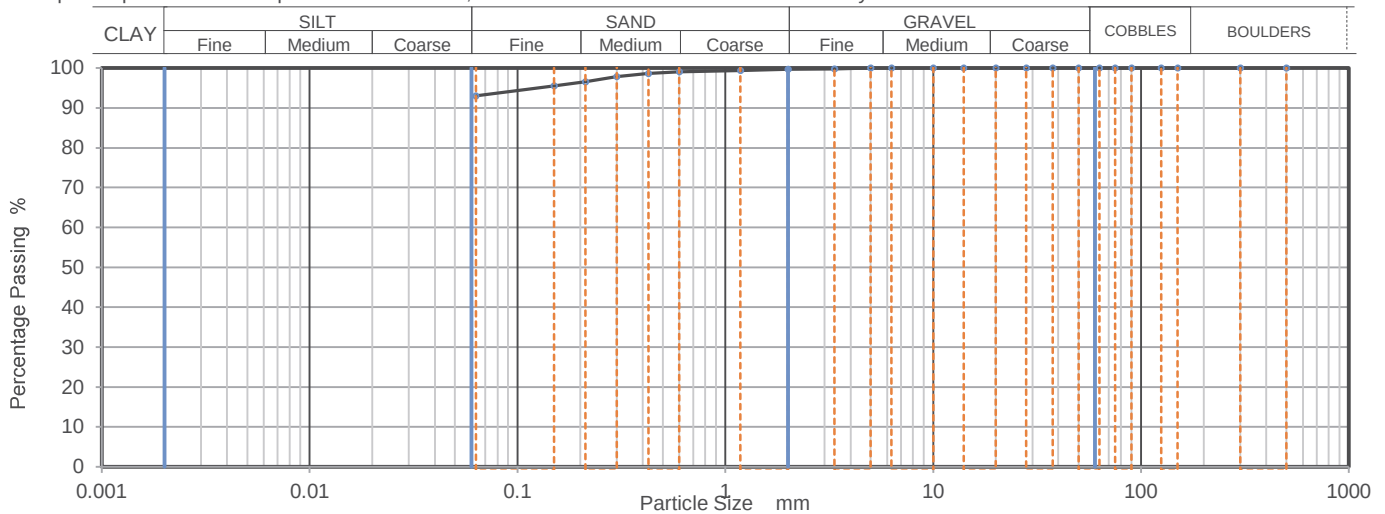
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 22/07/2021
Sampled By: Client - MR

Test Results:

Laboratory Reference: 1937333
Hole No.: BH2
Sample Reference: D3
Sample Description: Brownish grey slightly sandy CLAY
Sample Preparation: Sample was whole tested, oven dried at 106.1 °C and broken down by hand.

Depth Top [m]: 2.50
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	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	100		
1.18	99		
0.6	99		
0.425	99		
0.3	98		
0.212	97		
0.15	96		
0.063	93		

Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	6
Fines <0.063mm	93

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	N/A
Curvature Coefficient	

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

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TEST CERTIFICATE

Particle Size Distribution

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i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: GeoAssist Ltd
Client Address: Unit 4, Sheffield Street, Heaton Norris,
Stockport, Cheshire,
SK4 1RU

Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

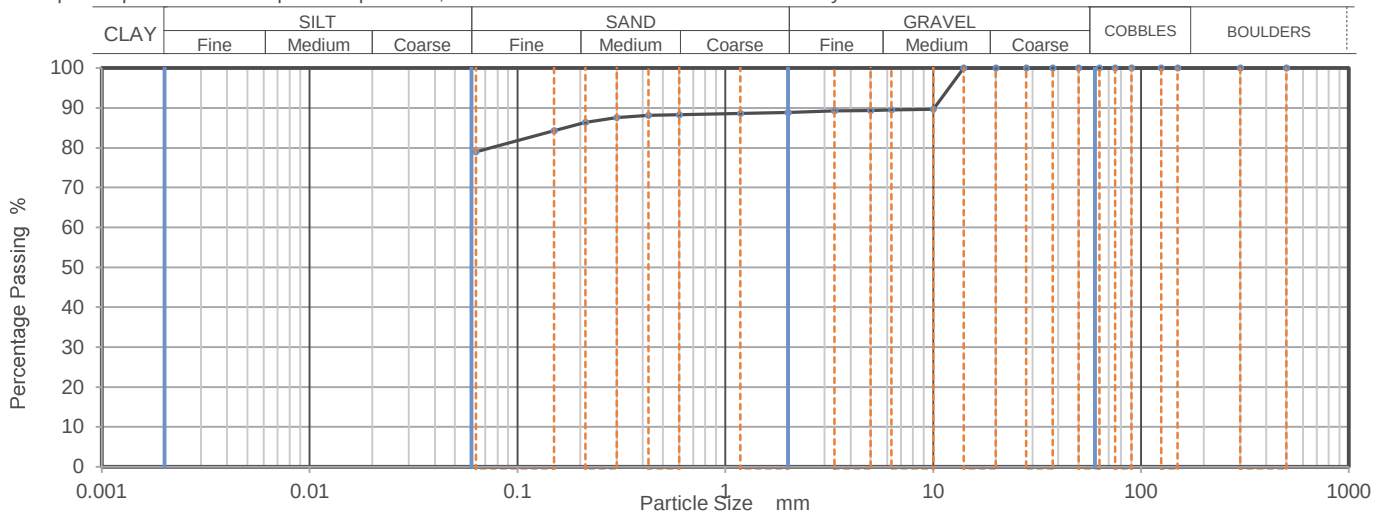
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 22/07/2021
Sampled By: Client - MR

Test Results:

Laboratory Reference: 1937334
Hole No.: BH2
Sample Reference: D4
Sample Description: Brown slightly sandy gravelly CLAY
Sample Preparation: Sample was quartered, oven dried at 110.0 °C and broken down by hand.

Depth Top [m]: 3.50
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	90		
6.3	90		
5	89		
3.35	89		
2	89		
1.18	89		
0.6	88		
0.425	88		
0.3	88		
0.212	86		
0.15	84		
0.063	80		

Sample Proportions	% dry mass
Very coarse	0
Gravel	11
Sand	9
Fines <0.063mm	80

Grading Analysis		
D100	mm	14
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		N/A
Curvature Coefficient		

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Signed:

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Client: GeoAssist Ltd
Client Address: Unit 4, Sheffield Street, Heaton Norris,
Stockport, Cheshire,
SK4 1RU
Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

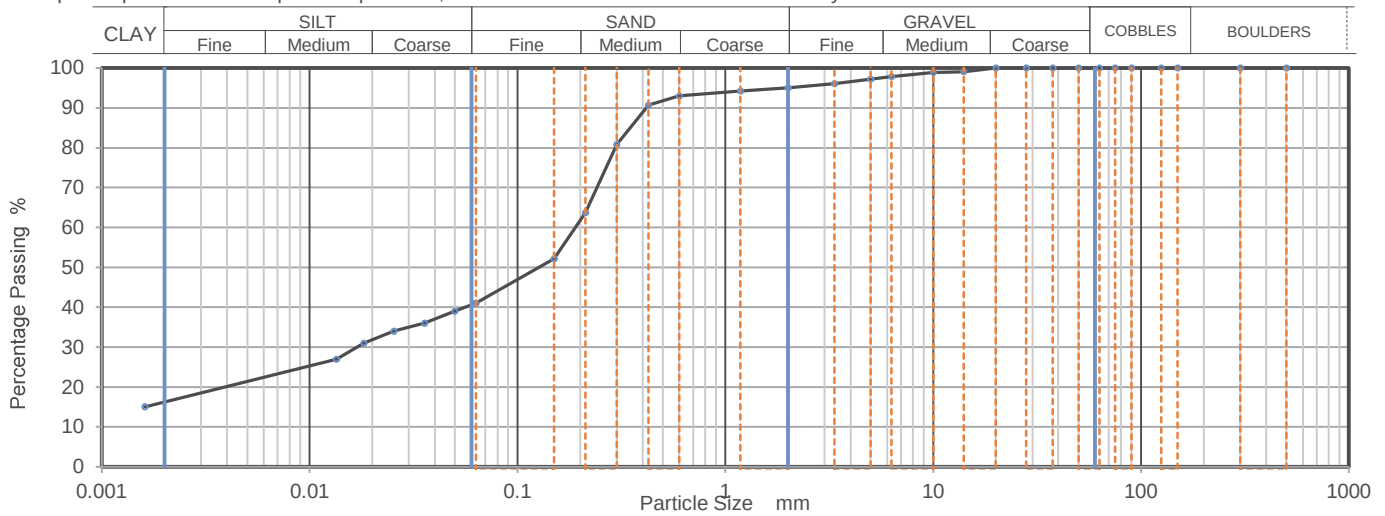
Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 22/07/2021
Sampled By: Client - MR

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1937335
Hole No.: BH2
Sample Reference: D5
Sample Description: Brown silty clayey slightly gravelly SAND
Sample Preparation: Sample was quartered, oven dried at 110.0 °C and broken down by hand.

Depth Top [m]: 4.50
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	41
300	100	0.0498	39
150	100	0.0356	36
125	100	0.0254	34
90	100	0.0182	31
75	100	0.0134	27
63	100	0.0016	15
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	99		
6.3	98		
5	97		
3.35	96	Particle density (assumed) 2.65 Mg/m3	
2	95		
1.18	94		
0.6	93		
0.425	91		
0.3	81		
0.212	64		
0.15	52		
0.063	41		

Sample Proportions	% dry mass
Very coarse	0
Gravel	5
Sand	54
Silt	24
Clay	17

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 120
Curvature Coefficient	

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

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Contact: Matthew Benson
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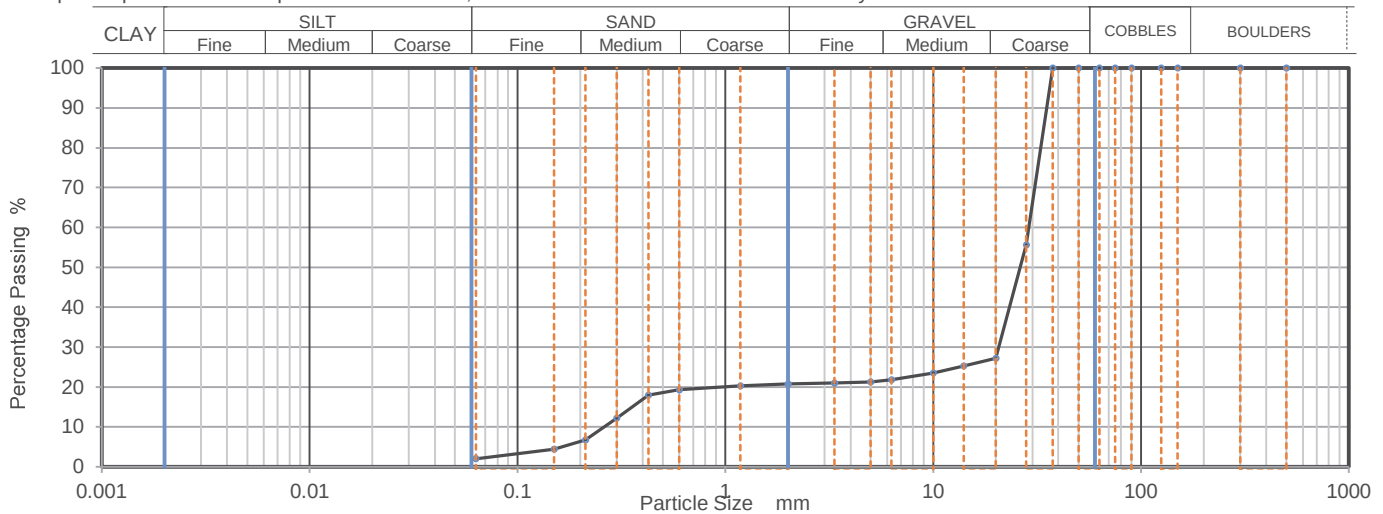
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 22/07/2021
Sampled By: Client - MR

Test Results:

Laboratory Reference: 1937336
Hole No.: BH2
Sample Reference: D6
Sample Description: Reddish brown slightly clayey sandy GRAVEL
Sample Preparation: Sample was whole tested, oven dried at 107.5 °C and broken down by hand.

Depth Top [m]: 5.50
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	56		
20	27		
14	25		
10	24		
6.3	22		
5	21		
3.35	21		
2	21		
1.18	20		
0.6	19		
0.425	18		
0.3	12		
0.212	7		
0.15	4		
0.063	3		

Sample Proportions	% dry mass
Very coarse	0
Gravel	79
Sand	18
Fines <0.063mm	3

Grading Analysis	
D100	mm 37.5
D60	mm 28.8
D30	mm 20.7
D10	mm 0.261
Uniformity Coefficient	110
Curvature Coefficient	57

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Signed:

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Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

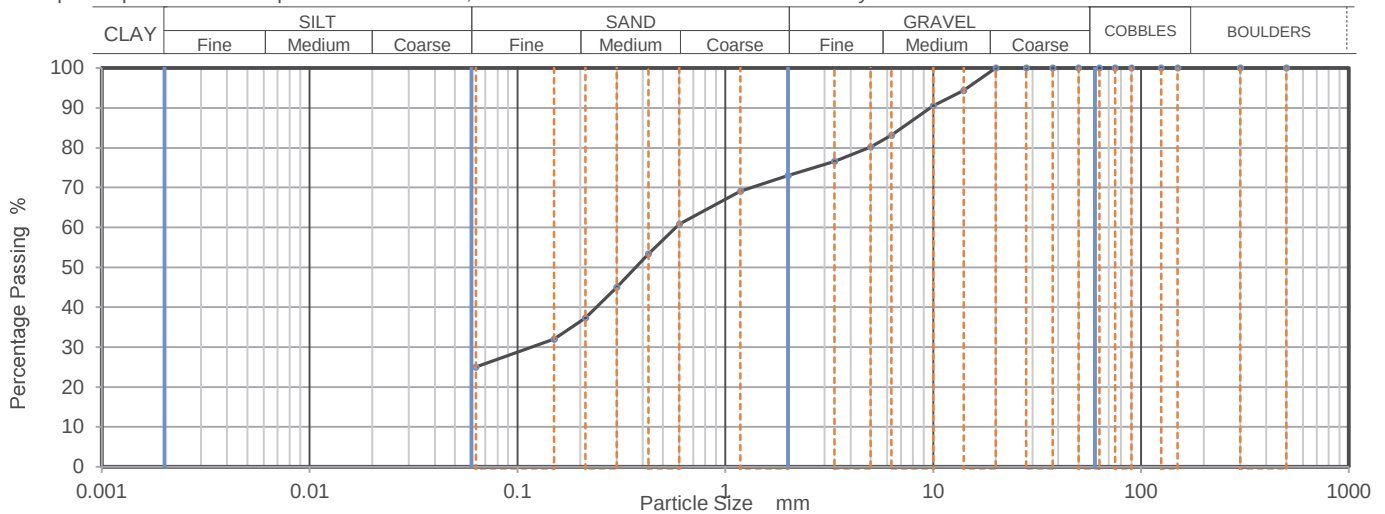
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 22/07/2021
Sampled By: Client - MR

Test Results:

Laboratory Reference: 1937338
Hole No.: BH3
Sample Reference: D3
Sample Description: Dark brown very gravelly very clayey SAND
Sample Preparation: Sample was whole tested, oven dried at 107.5 °C and broken down by hand.

Depth Top [m]: 2.50
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	94		
10	91		
6.3	83		
5	80		
3.35	77		
2	73		
1.18	69		
0.6	61		
0.425	53		
0.3	45		
0.212	37		
0.15	32		
0.063	25		

Sample Proportions	% dry mass
Very coarse	0
Gravel	27
Sand	48
Fines <0.063mm	25

Grading Analysis		
D100	mm	20
D60	mm	0.579
D30	mm	0.116
D10	mm	
Uniformity Coefficient		> 9.2
Curvature Coefficient		

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

Signed:

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Client: GeoAssist Ltd
Client Address: Unit 4, Sheffield Street, Heaton Norris,
Stockport, Cheshire,
SK4 1RU

Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

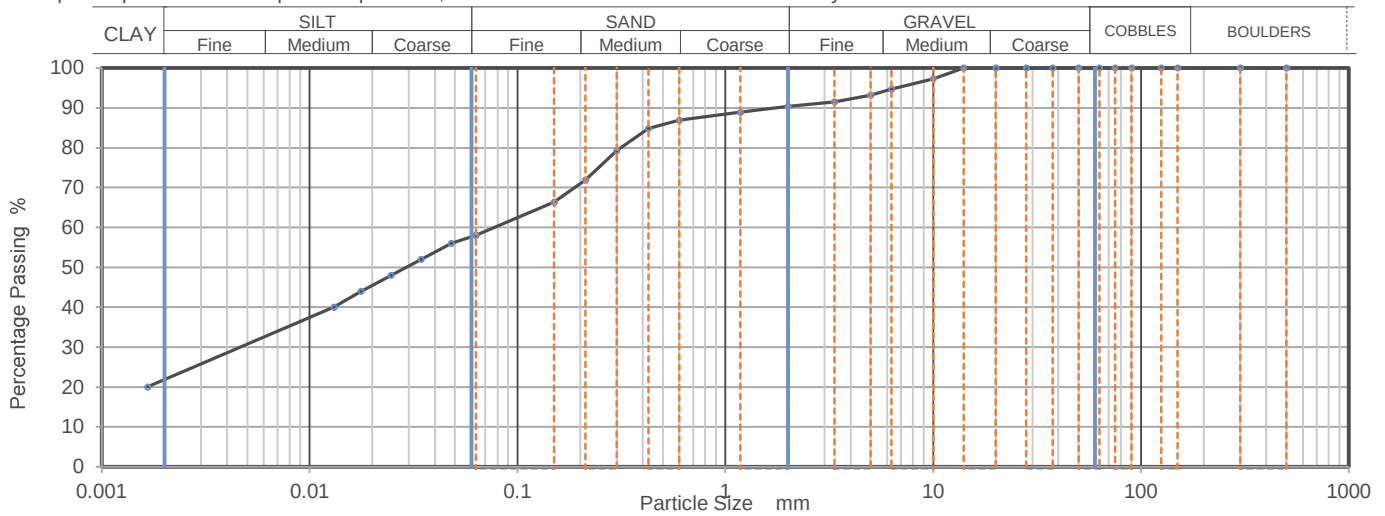
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 22/07/2021
Sampled By: Client - MR

Test Results:

Laboratory Reference: 1937340
Hole No.: BH3
Sample Reference: D5
Sample Description: Brown gravelly very sandy very clayey SILT
Sample Preparation: Sample was quartered, oven dried at 106.1 °C and broken down by hand.

Depth Top [m]: 4.50
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	58
300	100	0.0479	56
150	100	0.0344	52
125	100	0.0246	48
90	100	0.0176	44
75	100	0.0131	40
63	100	0.0017	20
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	97		
6.3	95		
5	93		
3.35	92	Particle density (assumed) 2.65 Mg/m3	
2	90		
1.18	89		
0.6	87		
0.425	85		
0.3	79		
0.212	72		
0.15	66		
0.063	58		

Sample Proportions	% dry mass
Very coarse	0
Gravel	10
Sand	32
Silt	36
Clay	22

Grading Analysis	
D100	mm 14
D60	mm 0.0779
D30	mm 0.00465
D10	mm
Uniformity Coefficient	> 47
Curvature Coefficient	

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: GeoAssist Ltd
Client Address: Unit 4, Sheffield Street, Heaton Norris,
Stockport, Cheshire,
SK4 1RU
Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

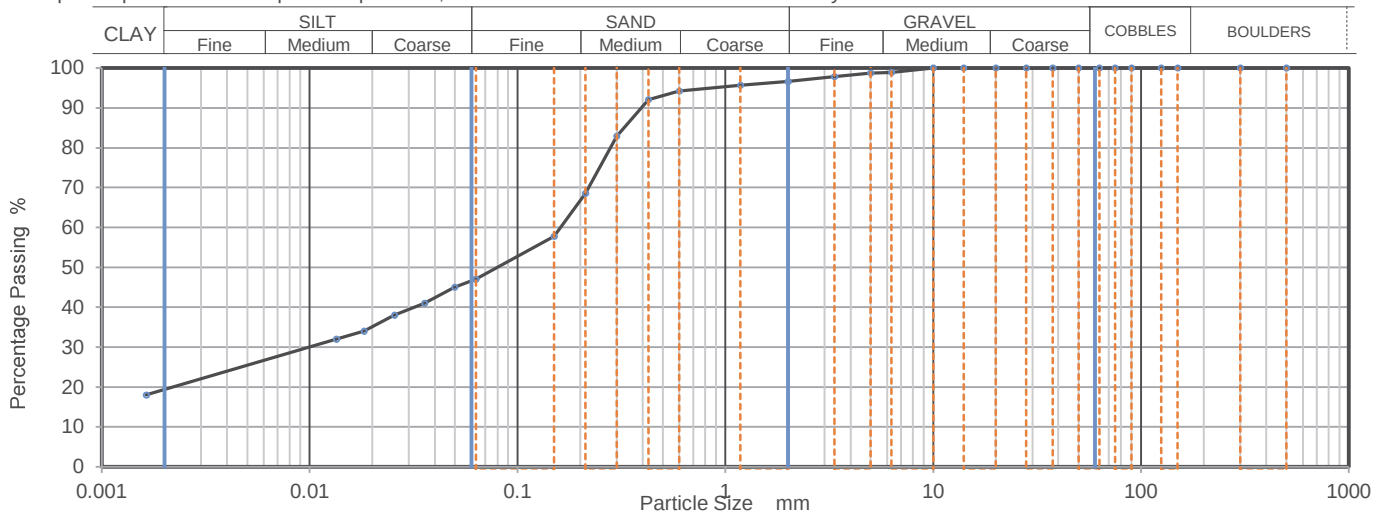
Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 22/07/2021
Sampled By: Client - MR

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1937341
Hole No.: BH3
Sample Reference: D6
Sample Description: Brown slightly gravelly clayey very silty SAND
Sample Preparation: Sample was quartered, oven dried at 107.5 °C and broken down by hand.

Depth Top [m]: 5.70
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	47
300	100	0.0498	45
150	100	0.0356	41
125	100	0.0255	38
90	100	0.0183	34
75	100	0.0134	32
63	100	0.0016	18
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	99		
3.35	98		
2	97		
1.18	96		
0.6	94		
0.425	92		
0.3	83		
0.212	69		
0.15	58		
0.063	47		

Sample Proportions	% dry mass
Very coarse	0
Gravel	3
Sand	49
Silt	29
Clay	19

Grading Analysis	
D100	mm 10
D60	mm 0.161
D30	mm 0.0105
D10	mm
Uniformity Coefficient	> 98
Curvature Coefficient	

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

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PL Deputy Head of Geotechnical Section
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TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: GeoAssist Ltd
Client Address: Unit 4, Sheffield Street, Heaton Norris,
Stockport, Cheshire,
SK4 1RU
Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

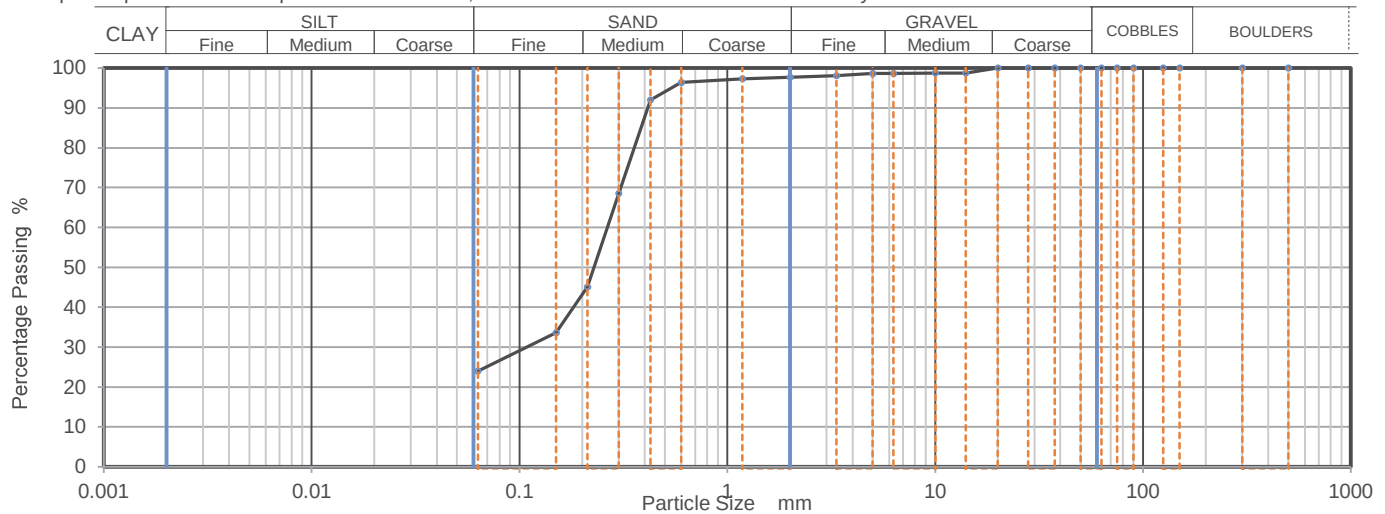
Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 22/07/2021
Sampled By: Client - MR

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1937342
Hole No.: BH3
Sample Reference: D7
Sample Description: Reddish brown slightly gravelly clayey SAND
Sample Preparation: Sample was whole tested, oven dried at 108.7 °C and broken down by hand.

Depth Top [m]: 6.50
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	99		
6.3	99		
5	99		
3.35	98		
2	98		
1.18	97		
0.6	96		
0.425	92		
0.3	69		
0.212	45		
0.15	34		
0.063	25		

Sample Proportions	% dry mass
Very coarse	0
Gravel	2
Sand	73
Fines <0.063mm	25

Grading Analysis	
D100	mm 20
D60	mm 0.264
D30	mm 0.106
D10	mm
Uniformity Coefficient	> 4.2
Curvature Coefficient	

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: GeoAssist Ltd
Client Address: Unit 4, Sheffield Street, Heaton Norris,
Stockport, Cheshire,
SK4 1RU

Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

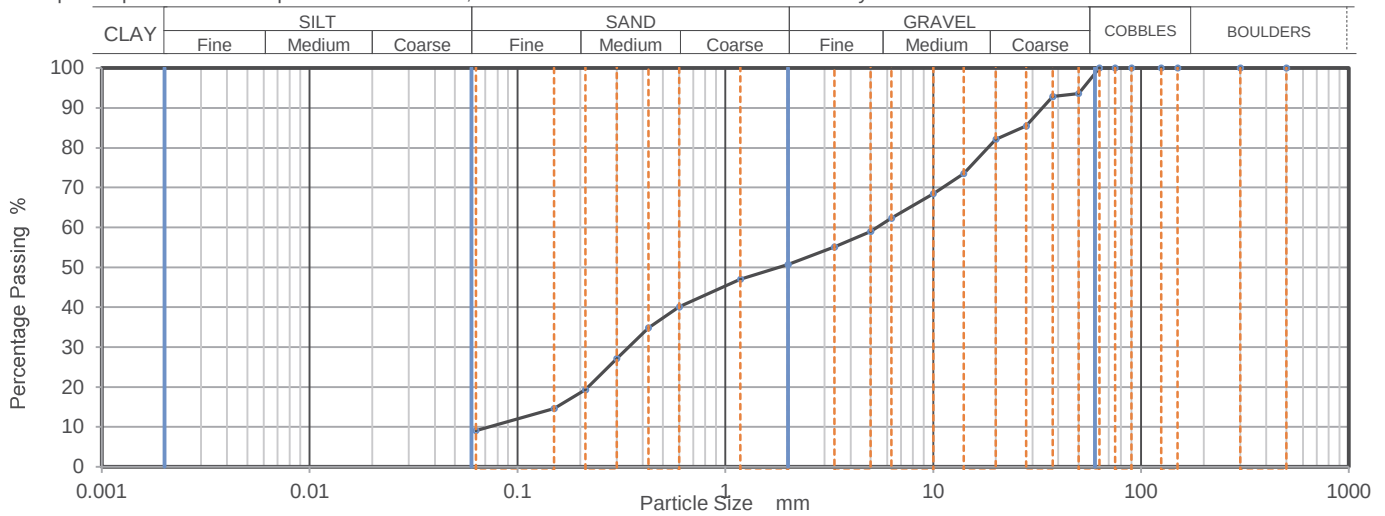
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 17/07/2021
Sampled By: Client - MR

Test Results:

Laboratory Reference: 1937343
Hole No.: BH4
Sample Reference: B2
Sample Description: Brown sandy GRAVEL
Sample Preparation: Sample was whole tested, oven dried at 106.0 °C and broken down by hand.

Depth Top [m]: 2.50
Depth Base [m]: Not Given
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	94		
37.5	93		
28	85		
20	82		
14	74		
10	69		
6.3	62		
5	59		
3.35	55		
2	51		
1.18	47		
0.6	40		
0.425	35		
0.3	27		
0.212	19		
0.15	15		
0.063	10		

Sample Proportions	% dry mass
Very coarse	0
Gravel	49
Sand	41
Fines <0.063mm	10

Grading Analysis		
D100	mm	63
D60	mm	5.36
D30	mm	0.342
D10	mm	0.0684
Uniformity Coefficient		78
Curvature Coefficient		0.32

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Client: GeoAssist Ltd
Client Address: Unit 4, Sheffield Street, Heaton Norris,
Stockport, Cheshire,
SK4 1RU
Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

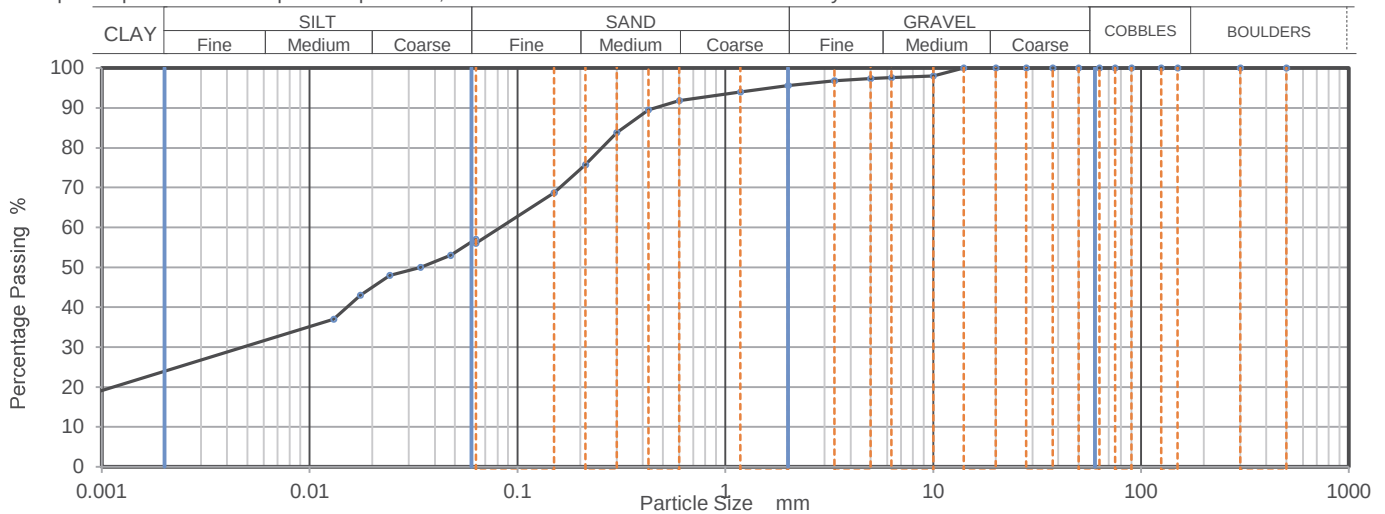
Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 22/07/2021
Sampled By: Client - MR

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1937347
Hole No.: BH4
Sample Reference: D4
Sample Description: Brown slightly gravelly very sandy very clayey SILT
Sample Preparation: Sample was quartered, oven dried at 107.5 °C and broken down by hand.

Depth Top [m]: 4.30
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	57
300	100	0.0475	53
150	100	0.0341	50
125	100	0.0243	48
90	100	0.0175	43
75	100	0.0130	37
63	100	0.0009	18
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	98		
6.3	98		
5	97		
3.35	97	Particle density (assumed) 2.65 Mg/m3	
2	96		
1.18	94		
0.6	92		
0.425	90		
0.3	84		
0.212	76		
0.15	69		
0.063	57		

Sample Proportions	% dry mass
Very coarse	0
Gravel	4
Sand	39
Silt	33
Clay	24

Grading Analysis	
D100	mm 14
D60	mm 0.0797
D30	mm 0.00472
D10	mm
Uniformity Coefficient	> 93
Curvature Coefficient	

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: GeoAssist Ltd
Client Address: Unit 4, Sheffield Street, Heaton Norris,
Stockport, Cheshire,
SK4 1RU
Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

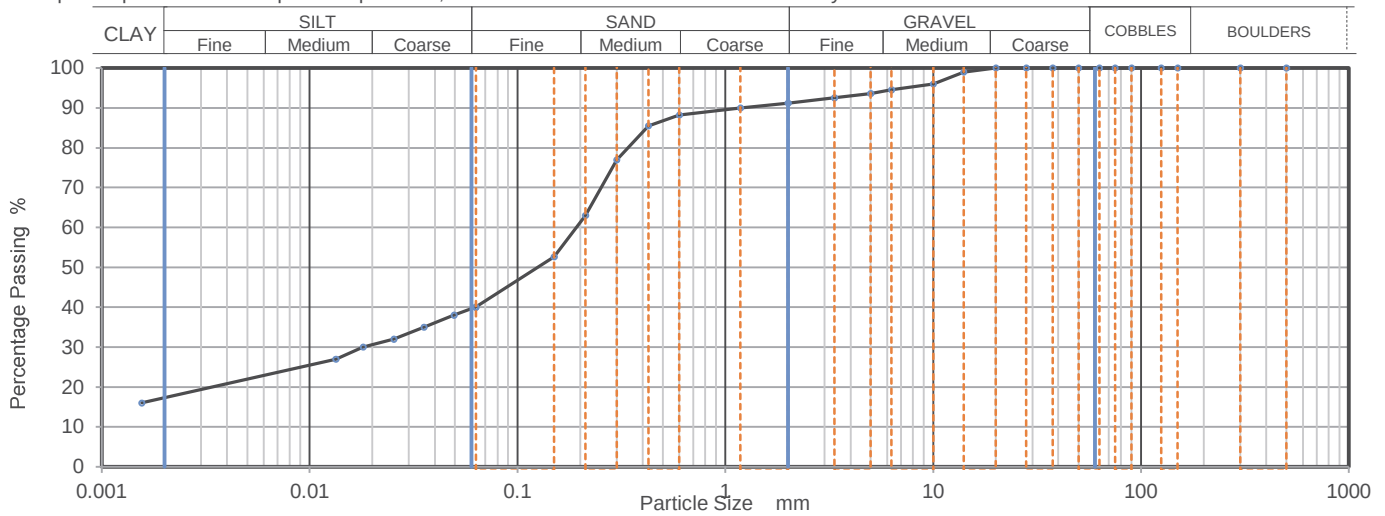
Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 22/07/2021
Sampled By: Client - MR

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1937348
Hole No.: BH4
Sample Reference: D5
Sample Description: Brown silty clayey slightly gravelly SAND
Sample Preparation: Sample was quartered, oven dried at 110.0 °C and broken down by hand.

Depth Top [m]: 5.50
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	40
300	100	0.0495	38
150	100	0.0354	35
125	100	0.0254	32
90	100	0.0180	30
75	100	0.0133	27
63	100	0.0016	16
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	96		
6.3	95		
5	94		
3.35	93	Particle density (assumed) 2.65 Mg/m3	
2	91		
1.18	90		
0.6	88		
0.425	86		
0.3	77		
0.212	63		
0.15	53		
0.063	40		

Sample Proportions	% dry mass
Very coarse	0
Gravel	9
Sand	51
Silt	23
Clay	17

Grading Analysis		
D100	mm	20
D60	mm	0.192
D30	mm	0.0176
D10	mm	
Uniformity Coefficient		> 120
Curvature Coefficient		

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: GeoAssist Ltd
Client Address: Unit 4, Sheffield Street, Heaton Norris,
Stockport, Cheshire,
SK4 1RU
Contact: Matthew Benson
Site Address: Great Jackson Street, Manchester

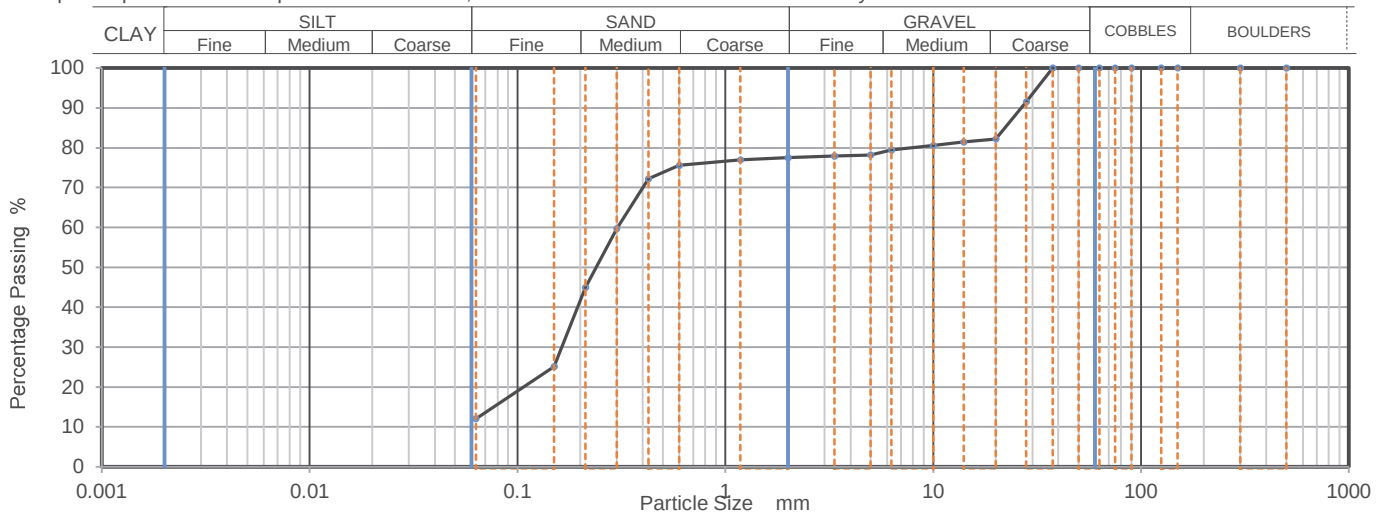
Client Reference: 6069-CGJ
Job Number: 21-86752
Date Sampled: Not Given
Date Received: 13/07/2021
Date Tested: 22/07/2021
Sampled By: Client - MR

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1937349
Hole No.: BH4
Sample Reference: D6
Sample Description: Reddish brown gravelly clayey SAND
Sample Preparation: Sample was whole tested, oven dried at 110.0 °C and broken down by hand.

Depth Top [m]: 6.50
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	92		
20	82		
14	81		
10	81		
6.3	79		
5	78		
3.35	78		
2	78		
1.18	77		
0.6	76		
0.425	72		
0.3	60		
0.212	45		
0.15	25		
0.063	13		

Sample Proportions	% dry mass
Very coarse	0
Gravel	23
Sand	65
Fines <0.063mm	13

Grading Analysis	
D100	mm 37.5
D60	mm 0.303
D30	mm 0.163
D10	mm
Uniformity Coefficient	> 4.8
Curvature Coefficient	

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks: The material submitted - fails to meet the minimum mass requirements as stated in BS1377 Part 2 Table 3

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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GEO ASSIST LIMITED ROCK LABORATORY U.C.S. TEST SUMMARY SHEET	Project: Plots F1 & F2 Great Jackson Street Location: Manchester Client: Coffey Geotechnics Ltd Contractor: Coffey Geotechnics Ltd	Site Ref: CGJ Project No : 6069	
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Borehole Ref	Sample Depth	Sample Ref.	Description	L Length (mm)	D Diameter (mm)	Load (kN)	Bulk Density (Mg/m3)	U.C.S (Mpa)	Moisture Content (%)	L/D Corrected U.C.S. (Mpa)	Secant E (Gpa) 0 to 50%
BH1	12.20	UCS1	Orange/brown silty SANDSTONE	189.0	75.8	66.3	2.18	14.7	12.1	15.1	
BH1	13.70	UCS2	Orange/brown silty SANDSTONE	185.0	75.3	63.2	2.20	14.2	13.3	14.5	1.36
BH1	18.70	UCS3	Orange/brown silty SANDSTONE	187.0	75.5	42.2	2.20	9.4	12.6	9.7	
BH1	19.10	UCS4	Orange/brown silty SANDSTONE	189.0	75.7	79.2	2.20	17.6	12.7	18.0	1.80
BH1	22.20	UCS5	Orange/brown silty SANDSTONE	190.0	72.6	76.2	2.14	18.4	11.7	18.9	
BH1	23.10	UCS6	Orange/brown silty SANDSTONE	190.0	72.6	67.1	2.18	16.2	11.8	16.7	1.66
BH1	28.90	UCS7	Orange/brown silty SANDSTONE	185.0	72.7	39.8	2.17	9.6	13.2	9.8	

GEO ASSIST LIMITED ROCK LABORATORY U.C.S. TEST SUMMARY SHEET			Project:	Plots F1 & F2 Great Jackson Street					Site Ref:	CGJ	
			Location:	Manchester					Project No :	6069	
			Client:	Coffey Geotechnics Ltd							
			Contractor:	Coffey Geotechnics Ltd							
Borehole	Sample	Sample	Description	L	D					L/D	Secant
Ref	Depth	Ref.		Length	Diameter	Load	Bulk Density	U.C.S	Moisture	Corrected U.C.S.	E
				(mm)	(mm)	(kN)	(Mg/m3)	(Mpa)	Content	(Mpa)	(Gpa)
									(%)		0 to 50%
BH4	11.60	UCS1	Orange/brown silty SANDSTONE	179.0	74.7	56.3	2.20	12.9	14.2	13.1	
BH4	13.10	UCS2	Orange/brown silty SANDSTONE	180.0	72.6	57.6	2.19	13.9	11.5	14.3	1.02
BH4	15.70	UCS3	Orange/brown silty SANDSTONE	177.0	75.0	42.2	2.21	9.6	14.9	9.7	
BH4	16.60	UCS4	Orange/brown silty SANDSTONE	179.0	75.2	81.5	2.25	18.4	12.4	18.7	1.43
BH4	19.20	UCS5	Orange/brown silty SANDSTONE	186.0	72.3	76.0	2.24	18.5	12.7	19.0	
BH4	21.50	UCS6	Orange/brown silty SANDSTONE	190.0	75.8	54.1	2.17	12.0	14.2	12.3	1.58
BH4	25.20	UCS7	Orange/brown silty SANDSTONE	191.0	72.4	80.8	2.28	19.6	13.2	20.2	
BH4	33.90	UCS8	Orange/brown silty SANDSTONE	169.0	72.5	49.7	2.20	12.0	12.5	12.2	
BH4	35.20	UCS9	Orange/brown silty SANDSTONE	190.0	72.7	77.6	2.15	18.7	13.3	19.2	

GeoAssist Limited ROCK LABORATORY POINT LOAD TEST SUMMARY SHEET	Project: Plots F1 & F2 Great Jackson Street Location: Manchester Client: Coffey Geotechnics Ltd Consultant: Coffey Geotechnics Ltd	Site Ref: CGJ Project No : 6069
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Borehole Ref	Sample Depth (m)	Description	Shape A/D/I	Width (mm)	Platon Separation (mm)	Load (kN)	Equivalent Diameter (mm)	Is (MPa)	Size Correction	Is ₅₀ (MPa)
BH1	8.70	Orange/brown silty SANDSTONE	A	72.3	54.0	1.67	70.51	0.45	1.17	0.53
BH1	8.80	Orange/brown silty SANDSTONE	A	72.3	52.0	1.91	69.19	0.53	1.16	0.61
BH1	16.60	Orange/brown silty SANDSTONE	A	72.3	54.0	2.48	70.51	0.66	1.17	0.77
BH1	16.70	Orange/brown silty SANDSTONE	A	72.3	51.0	2.60	68.52	0.74	1.15	0.85
BH1	17.20	Orange/brown silty SANDSTONE	A	71.7	51.0	3.54	68.23	1.01	1.15	1.16
BH1	17.30	Orange/brown silty SANDSTONE	A	72.3	52.0	3.51	69.19	0.98	1.16	1.13
BH1	19.80	Orange/brown silty SANDSTONE	A	75.8	57.0	3.74	74.17	0.90	1.19	1.07
BH1	19.90	Orange/brown silty SANDSTONE	A	75.8	48.0	3.05	68.06	0.88	1.15	1.01
BH1	20.20	Orange/brown silty SANDSTONE	A	75.7	54.0	3.71	72.14	0.95	1.18	1.12
BH1	20.30	Orange/brown silty SANDSTONE	A	76.0	49.0	3.58	68.86	1.00	1.15	1.15
BH1	24.80	Orange/brown silty SANDSTONE	A	75.3	55.0	4.06	72.62	1.02	1.18	1.21
BH1	24.90	Orange/brown silty SANDSTONE	A	75.2	50.0	3.79	69.19	1.05	1.16	1.22
BH1	28.20	Orange/brown silty SANDSTONE	A	73.2	51.0	3.44	68.94	0.96	1.16	1.11
BH1	28.30	Orange/brown silty SANDSTONE	A	73.0	50.0	3.72	68.17	1.06	1.15	1.22
BH1	29.90	Orange/brown silty SANDSTONE	A	72.6	55	5.42	71.30	1.42	1.17	1.67
BH1	30.00	Orange/brown silty SANDSTONE	A	72.8	53	3.19	70.09	0.86	1.16	1.00
BH1	32.60	Orange/brown silty SANDSTONE	A	73.9	52	3.14	69.95	0.85	1.16	0.99
BH1	32.70	Orange/brown silty SANDSTONE	A	73.6	54	2.26	71.14	0.59	1.17	0.69
BH1	34.70	Orange/brown silty SANDSTONE	A	71.0	51	4.77	67.90	1.38	1.15	1.58
BH1	34.80	Orange/brown silty SANDSTONE	A	71.6	49	4.52	66.84	1.35	1.14	1.54

A Axial Load applied parallel to core axis

D Diametral Load applied across core axis

GeoAssist Limited ROCK LABORATORY POINT LOAD TEST SUMMARY SHEET	Project: Plots F1 & F2 Great Jackson Street Location: Manchester Client: Coffey Geotechnics Ltd Consultant: Coffey Geotechnics Ltd	Site Ref: CGJ Project No : 6069
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Borehole Ref	Sample Depth (m)	Description	Shape A/D/I	Width (mm)	Platon Seperation (mm)	Load (kN)	Equivalent Diameter (mm)	Is (MPa)	Size Correction	Is ₅₀ (MPa)
BH2	7.60	Orange/brown silty SANDSTONE	A	72.6	52.0	2.42	69.33	0.67	1.16	0.78
BH2	7.70	Orange/brown silty SANDSTONE	A	72.6	50.0	2.64	67.98	0.76	1.15	0.87
BH2	13.40	Orange/brown silty SANDSTONE	A	72.5	51.0	2.81	68.61	0.79	1.15	0.91
BH2	13.50	Orange/brown silty SANDSTONE	A	72.5	50.0	1.87	67.94	0.54	1.15	0.62

A Axial Load applied parallel to core axis

D Diametral Load applied across core axis

GeoAssist Limited ROCK LABORATORY POINT LOAD TEST SUMMARY SHEET	Project:	Plots F1 & F2 Great Jackson Street	Site Ref:	CGJ
	Location:	Manchester	Project No :	6069
	Client:	Coffey Geotechnics Ltd		
	Consultant:	Coffey Geotechnics Ltd		

Borehole Ref	Sample Depth (m)	Description	Shape A/D/I	Width (mm)	Platon Separation (mm)	Load (kN)	Equivalent Diameter (mm)	Is (MPa)	Size Correction	Is ₅₀ (MPa)
BH3	8.40	Orange/brown silty SANDSTONE	A	72.3	55.0	1.62	71.16	0.43	1.17	0.50
BH3	8.50	Orange/brown silty SANDSTONE	A	72.3	49.0	1.21	67.16	0.36	1.14	0.41
BH3	16.80	Orange/brown silty SANDSTONE	A	72.2	52.0	2.30	69.14	0.64	1.16	0.74
BH3	16.90	Orange/brown silty SANDSTONE	A	72.3	51.0	2.62	68.52	0.74	1.15	0.85
BH3	18.60	Orange/brown silty SANDSTONE	A	72.4	51.0	2.90	68.57	0.82	1.15	0.95
BH3	18.70	Orange/brown silty SANDSTONE	A	72.4	50.0	2.71	67.89	0.78	1.15	0.90
BH3	19.50	Orange/brown silty SANDSTONE	A	72.3	51.0	2.67	68.52	0.76	1.15	0.88
BH3	19.60	Orange/brown silty SANDSTONE	A	72.4	51.0	2.49	68.57	0.70	1.15	0.81

A Axial Load applied parallel to core axis

D Diametral Load applied across core axis

GeoAssist Limited ROCK LABORATORY POINT LOAD TEST SUMMARY SHEET	Project: Plots F1 & F2 Great Jackson Street Location: Manchester Client: Coffey Geotechnics Ltd Consultant: Coffey Geotechnics Ltd	Site Ref: CGJ Project No : 6069
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Borehole Ref	Sample Depth (m)	Description	Shape A/D/I	Width (mm)	Platon Separation (mm)	Load (kN)	Equivalent Diameter (mm)	Is (MPa)	Size Correction	Is ₅₀ (MPa)
BH4	11.00	Orange/brown silty SANDSTONE	A	74.3	45.0	3.21	65.25	1.00	1.13	1.13
BH4	11.10	Orange/brown silty SANDSTONE	A	74.4	44.0	3.08	64.56	0.98	1.12	1.10
BH4	14.40	Orange/brown silty SANDSTONE	A	72.3	50.0	2.28	67.84	0.66	1.15	0.76
BH4	14.50	Orange/brown silty SANDSTONE	A	72.5	50.0	2.78	67.94	0.80	1.15	0.92
BH4	18.50	Orange/brown silty SANDSTONE	A	72.5	53.0	3.30	69.95	0.90	1.16	1.05
BH4	18.60	Orange/brown silty SANDSTONE	A	72.5	53.0	2.71	69.95	0.74	1.16	0.86
BH4	24.50	Orange/brown silty SANDSTONE	A	72.4	53.0	3.30	69.90	0.90	1.16	1.05
BH4	24.60	Orange/brown silty SANDSTONE	A	72.4	55.0	2.85	71.20	0.75	1.17	0.88
BH4	25.80	Orange/brown silty SANDSTONE	A	72.7	53.0	2.42	70.04	0.66	1.16	0.77
BH4	25.90	Orange/brown silty SANDSTONE	A	72.7	52.0	1.98	69.38	0.55	1.16	0.64
BH4	30.40	Orange/brown silty SANDSTONE	A	75.5	54.0	3.26	72.05	0.84	1.18	0.99
BH4	30.50	Orange/brown silty SANDSTONE	A	75.5	52.0	2.90	70.70	0.77	1.17	0.90
BH4	34.40	Orange/brown silty SANDSTONE	A	72.4	57.0	4.13	72.49	1.05	1.18	1.24
BH4	34.50	Orange/brown silty SANDSTONE	A	72.4	53.0	3.99	69.90	1.09	1.16	1.27
BH4	34.60	Orange/brown silty SANDSTONE	A	72.1	53	2.99	69.75	0.82	1.16	0.95
BH4	34.70	Orange/brown silty SANDSTONE	A	72.0	42	2.58	62.05	0.89	1.10	0.98

A Axial Load applied parallel to core axis

D Diametral Load applied across core axis



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Analytical Report Number : 21-79676

Replaces Analytical Report Number: 21-79676, issue no. 1
Additional analysis undertaken.

Project / Site name:	Great Jackson Street, Manchester	Samples received on:	07/06/2021
Your job number:	6069-CGJ	Samples instructed on/ Analysis started on:	07/06/2021
Your order number:	2210604	Analysis completed by:	27/09/2021
Report Issue Number:	2	Report issued on:	28/09/2021
Samples Analysed:	14 soil samples		

Signed:

Agnieszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-79676
Project / Site name: Great Jackson Street, Manchester
Your Order No: 2210604

Lab Sample Number				1895299	1895300	1895301	1895302	1895303
Sample Reference				BH1-B1	BH1-D3	BH1-D4	BH1-D8	BH2-B1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	1.80	2.50	7.00	0.50
Date Sampled				04/06/2021	04/06/2021	04/06/2021	04/06/2021	04/06/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	-
Moisture Content	%	0.01	NONE	11	13	12	11	-
Total mass of sample received	kg	0.001	NONE	1.2	0.40	0.40	0.40	-

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	-	-	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.1	7.4	8.3	8.3	-
Total Sulphate as SO ₄	%	0.005	MCERTS	0.033	0.062	0.043	0.014	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.039	0.27	0.11	0.022	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	39.4	270	108	22.4	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	2.3	2.7	3.6	4.7	-
Total Sulphur	%	0.005	MCERTS	0.017	0.060	0.082	0.005	-
Ammoniacal Nitrogen as NH ₄	mg/kg	0.5	MCERTS	< 0.5	< 0.5	12	< 0.5	-
Ammonium as NH ₄ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	< 0.05	< 0.05	1.19	< 0.05	-
Organic Matter (automated)	%	0.1	MCERTS	1.4	1.5	-	-	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	2.1	< 2.0	< 2.0	< 2.0	-

Heavy Metals / Metalloids

Magnesium (water soluble)	mg/kg	5	NONE	8.7	16	19	8.8	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	4.3	7.7	9.5	4.4	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-79676
Project / Site name: Great Jackson Street, Manchester
Your Order No: 2210604

Lab Sample Number				1895304	1895305	1895306	1895307	1895308
Sample Reference				BH2-D1	BH2-D3	BH3-B1	BH3-D2	BH3-D3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	2.50	0.50	1.50	2.50
Date Sampled				04/06/2021	04/06/2021	04/06/2021	04/06/2021	04/06/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	-	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	22	16	-	14	12
Total mass of sample received	kg	0.001	NONE	0.40	0.40	-	0.50	0.50

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.9	8.0	-	8.1	9.1
Total Sulphate as SO4	%	0.005	MCERTS	0.054	0.026	-	0.040	0.060
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.097	0.058	-	0.049	0.12
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	96.8	58.0	-	48.5	124
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	23	9.5	-	2.8	11
Total Sulphur	%	0.005	MCERTS	0.037	0.047	-	0.025	0.040
Ammoniacal Nitrogen as NH4	mg/kg	0.5	MCERTS	46	< 0.5	-	< 0.5	< 0.5
Ammonium as NH4 (10:1 leachate equivalent)	mg/l	0.05	MCERTS	4.57	< 0.05	-	< 0.05	< 0.05
Organic Matter (automated)	%	0.1	MCERTS	3.1	-	-	1.3	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	< 2.0	-	< 2.0	< 2.0

Heavy Metals / Metalloids

Magnesium (water soluble)	mg/kg	5	NONE	11	24	-	7.2	< 5.0
Magnesium (leachate equivalent)	mg/l	2.5	NONE	5.3	12	-	3.6	< 2.5

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-79676
 Project / Site name: Great Jackson Street, Manchester
 Your Order No: 2210604

Lab Sample Number				1895309	1895310	1895311	1895312
Sample Reference				BH4-B1	BH4-D1	BH4-B2	BH4-D3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	1.50	2.50	3.50
Date Sampled				04/06/2021	04/06/2021	04/06/2021	04/06/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	7.6	9.6	17
Total mass of sample received	kg	0.001	NONE	0.50	1.0	0.60	0.40

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	-	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.958	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	0.958	-	-	-

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	10.6	10.1	8.8	8.3
Total Sulphate as SO ₄	%	0.005	MCERTS	0.193	0.136	0.073	0.074
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.14	0.087	0.13	0.30
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	136	87.0	131	297
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	51	24	8.6	3.3
Total Sulphur	%	0.005	MCERTS	0.092	0.061	0.042	0.101
Ammoniacal Nitrogen as NH ₄	mg/kg	0.5	MCERTS	< 0.5	< 0.5	< 0.5	< 0.5
Ammonium as NH ₄ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	3.3	2.5	< 2.0	< 2.0

Heavy Metals / Metalloids

Magnesium (water soluble)	mg/kg	5	NONE	< 5.0	< 5.0	12	52
Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 2.5	< 2.5	5.9	26

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-79676
Project / Site name: Great Jackson Street, Manchester
Your Order No: 2210604

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking / weighing (%)	Total % Asbestos in Sample
1895309	BH4-B1	0.50	52	Hard/Cement Type Material	Chrysotile	0.958	0.958

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



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Analytical Report Number : 21-76875

Replaces Analytical Report Number: 21 76875, issue no. 1
Additional analysis undertaken.

Project / Site name:	Great Jackson Street, Manchester	Samples received on:	13/05/2021
Your job number:	6069 CGJ	Samples instructed on/ Analysis started on:	24/05/2021
Your order number:	2210514	Analysis completed by:	07/10/2021
Report Issue Number:	2	Report issued on:	07/10/2021
Samples Analysed:	12 soil samples		

Signed:

Agnieszka Czerwińska
Agnieszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Honierów 39, 41 -/11 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-76875
 Project / Site name: Great Jackson Street, Manchester
 Your Order No: 2210514

Lab Sample Number				1880948	1880949	1880950	1880951	1880952
Sample Reference				WS1-ES1	WS1-ES2	WS1-ES3	WS1-ES4	WS2-ES1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.60	1.30	1.90	0.60
Date Sampled				11/05/2021	11/05/2021	11/05/2021	11/05/2021	10/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	27	23	28	7.6
Total mass of sample received	kg	0.001	NONE	0.40	0.40	0.40	0.40	0.50

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile & Amosite	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	-	-	-	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	-	-	-	-

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.1	8.2	7.1	7.5	7.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	5.3	< 5.0
Total Sulphate as SO4	%	0.005	MCERTS	0.075	0.081	0.104	0.068	0.009
Sulphide	mg/kg	1	MCERTS	25	5.7	14	32	< 1.0
Total Sulphur	%	0.005	MCERTS	0.048	0.041	0.071	0.162	0.007
Organic Matter (automated)	%	0.1	MCERTS	-	-	1.5	7.1	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
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Analytical Report Number: 21-76875
 Project / Site name: Great Jackson Street, Manchester
 Your Order No: 2210514

Lab Sample Number				1880948	1880949	1880950	1880951	1880952
Sample Reference				WS1-ES1	WS1-ES2	WS1-ES3	WS1-ES4	WS2-ES1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.60	1.30	1.90	0.60
Date Sampled				11/05/2021	11/05/2021	11/05/2021	11/05/2021	10/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	24	14	6.7	4.9	4.9
Barium (aqua regia extractable)	mg/kg	1	MCERTS	280	180	140	160	22
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.5	1.2	0.88	1.8	0.44
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	1.3	1.3	3.3	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.6	< 0.2	< 0.2	0.4	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	23	18	28	8.0
Copper (aqua regia extractable)	mg/kg	1	MCERTS	83	62	11	30	8.5
Lead (aqua regia extractable)	mg/kg	1	MCERTS	180	80	17	17	6.5
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.7	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	30	20	11	22	8.1
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	40	34	28	21	11
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	140	86	45	43	25

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-76875
 Project / Site name: Great Jackson Street, Manchester
 Your Order No: 2210514

Lab Sample Number				1880953	1880954	1880955	1880956	1880957
Sample Reference				WS2-ES2	WS2-ES3	WS6-ES1	WS6-ES2	WS6-ES3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.30	1.80	0.30	0.60	1.30
Date Sampled				10/05/2021	10/05/2021	11/05/2021	11/05/2021	11/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8.3	12	17	16	15
Total mass of sample received	kg	0.001	NONE	0.50	0.50	0.40	0.40	0.40

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.9	8.1	8.1	8.3	8.0
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Sulphate as SO4	%	0.005	MCERTS	0.016	0.012	0.096	0.121	0.142
Sulphide	mg/kg	1	MCERTS	< 1.0	1.1	18	19	16
Total Sulphur	%	0.005	MCERTS	0.009	0.008	0.071	0.099	0.091
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.8	0.57	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.29	0.23	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	2.6	0.65	0.28
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	2.0	0.57	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	17	5.5	2.1
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	4.0	1.4	0.57
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	16	5.4	3.6
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	16	5.1	3.6
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	8.8	3.1	2.5
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	7.8	2.8	2.0
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	7.1	2.5	2.1
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	3.5	1.4	1.0
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	7.3	2.6	2.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	3.4	1.3	1.1
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.1	0.49	0.27
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	4.1	1.7	1.4

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	103	35.3	22.6
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Analytical Report Number: 21-76875
 Project / Site name: Great Jackson Street, Manchester
 Your Order No: 2210514

Lab Sample Number				1880953	1880954	1880955	1880956	1880957
Sample Reference				WS2-ES2	WS2-ES3	WS6-ES1	WS6-ES2	WS6-ES3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.30	1.80	0.30	0.60	1.30
Date Sampled				10/05/2021	10/05/2021	11/05/2021	11/05/2021	11/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.6	5.2	39	42	33
Barium (aqua regia extractable)	mg/kg	1	MCERTS	41	45	570	570	420
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.50	0.38	1.8	1.8	1.4
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.7	0.4	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	0.2	3.1	4.6	38
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	11	7.9	27	27	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	14	230	380	250
Lead (aqua regia extractable)	mg/kg	1	MCERTS	13	20	790	1100	1000
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	1.1	1.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	12	9.3	35	35	25
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	14	9.9	46	44	33
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	33	31	300	360	300

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-76875
 Project / Site name: Great Jackson Street, Manchester
 Your Order No: 2210514

Lab Sample Number				1880958	1880959
Sample Reference				WS6-ES4	WS6-ES5
Sample Number				None Supplied	None Supplied
Depth (m)				1.90	2.30
Date Sampled				11/05/2021	11/05/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	10	6.6
Total mass of sample received	kg	0.001	NONE	0.50	0.50

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.4	7.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0
Total Sulphate as SO ₄	%	0.005	MCERTS	0.048	0.009
Sulphide	mg/kg	1	MCERTS	1.2	< 1.0
Total Sulphur	%	0.005	MCERTS	0.028	0.008
Organic Matter (automated)	%	0.1	MCERTS	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80
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Analytical Report Number: 21-76875
 Project / Site name: Great Jackson Street, Manchester
 Your Order No: 2210514

Lab Sample Number				1880958	1880959
Sample Reference				WS6-ES4	WS6-ES5
Sample Number				None Supplied	None Supplied
Depth (m)				1.90	2.30
Date Sampled				11/05/2021	11/05/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Heavy Metals / Metalloids					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	5.0
Barium (aqua regia extractable)	mg/kg	1	MCERTS	140	28
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.72	0.50
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15	9.6
Copper (aqua regia extractable)	mg/kg	1	MCERTS	42	9.5
Lead (aqua regia extractable)	mg/kg	1	MCERTS	170	7.6
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	5.8	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	16	12
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	20	14
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	130	37

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-76875
Project / Site name: Great Jackson Street, Manchester
Your Order No: 2210514

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking / weighing (%)	Total % Asbestos in Sample
1880948	WS1-ES1	0.30	94	Loose Fibres	Chrysotile & Amosite	< 0.001	< 0.001

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



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Analytical Report Number : 21-76899

Project / Site name:	Great Jackson Street, Manchester	Samples received on:	17/05/2021
Your job number:	6069-CGJ	Samples instructed on/ Analysis started on:	24/05/2021
Your order number:	2210516	Analysis completed by:	02/06/2021
Report Issue Number:	1	Report issued on:	02/06/2021
Samples Analysed:	15 soil samples		

Signed:

Joanna Wawrzeczek
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Honorów 39, 41 -/11 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-76899
Project / Site name: Great Jackson Street, Manchester
Your Order No: 2210516

Lab Sample Number				1881028	1881029	1881030	1881031	1881032
Sample Reference				WS3	WS3	WS3	WS3	WS3
Sample Number				1	2	3	4	5
Depth (m)				0.40	0.80	1.30	1.90	2.20
Date Sampled				12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	22	13	8.9	19
Total mass of sample received	kg	0.001	NONE	0.40	0.40	0.50	0.50	0.40

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	-	-	-
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General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.8	7.1	7.7	7.7	8.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Sulphate as SO4	%	0.005	MCERTS	0.027	0.041	0.017	0.013	0.057
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphur	%	0.005	MCERTS	0.036	0.023	0.010	0.013	0.030
Organic Matter	%	0.1	MCERTS	-	-	-	-	1.8

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.77
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.20
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.92
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.84
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.46
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.45
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.53
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.15
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.39
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.27
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.31

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	5.29
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Analytical Report Number: 21-76899
 Project / Site name: Great Jackson Street, Manchester
 Your Order No: 2210516

Lab Sample Number				1881028	1881029	1881030	1881031	1881032
Sample Reference				WS3	WS3	WS3	WS3	WS3
Sample Number				1	2	3	4	5
Depth (m)				0.40	0.80	1.30	1.90	2.20
Date Sampled				12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.7	6.8	2.1	3.3	5.9
Barium (aqua regia extractable)	mg/kg	1	MCERTS	64	110	60	41	91
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.90	0.72	0.24	0.55	1.1
Boron (water soluble)	mg/kg	0.2	MCERTS	0.8	0.5	< 0.2	< 0.2	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	0.3
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	3.5	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	21	12	13	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	60	14	4.3	11	26
Lead (aqua regia extractable)	mg/kg	1	MCERTS	28	18	11	21	34
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	12	8.4	12	33
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	24	28	13	19	29
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	91	39	20	33	74

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-76899
Project / Site name: Great Jackson Street, Manchester
Your Order No: 2210516

Lab Sample Number				1881033	1881034	1881035	1881036	1881037
Sample Reference				WS4	WS4	WS4	WS4	WS4
Sample Number				1	2	3	4	5
Depth (m)				0.30	0.60	1.40	1.90	2.30
Date Sampled				12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	17	20	22	12
Total mass of sample received	kg	0.001	NONE	0.50	0.50	0.40	0.40	0.50

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	-	-
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General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.5	8.4	8.5	9.5	7.9
Total Cyanide	mg/kg	1	MCERTS	1.6	1.0	2.5	1.6	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Sulphate as SO4	%	0.005	MCERTS	0.144	0.201	0.264	0.248	0.040
Sulphide	mg/kg	1	MCERTS	32	23	20	18	< 1.0
Total Sulphur	%	0.005	MCERTS	0.092	0.103	0.116	0.106	0.037
Organic Matter	%	0.1	MCERTS	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	4.7	9.2	0.89	0.20	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	7.5	10	3.1	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	4.8	6.7	2.2	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	39	52	21	1.3	0.32
Anthracene	mg/kg	0.05	MCERTS	9.0	14	5.3	0.22	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	49	50	26	2.0	0.28
Pyrene	mg/kg	0.05	MCERTS	42	45	25	2.0	0.34
Benzo(a)anthracene	mg/kg	0.05	MCERTS	22	27	13	1.3	< 0.05
Chrysene	mg/kg	0.05	MCERTS	20	24	11	1.1	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	24	22	14	1.6	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	11	12	5.1	0.54	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	23	23	13	1.4	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	11	11	6.5	0.85	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	3.2	3.5	1.7	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	14	14	8.4	1.1	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	282	322	156	13.7	0.94
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Analytical Report Number: 21-76899
 Project / Site name: Great Jackson Street, Manchester
 Your Order No: 2210516

Lab Sample Number				1881033	1881034	1881035	1881036	1881037
Sample Reference				WS4	WS4	WS4	WS4	WS4
Sample Number				1	2	3	4	5
Depth (m)				0.30	0.60	1.40	1.90	2.30
Date Sampled				12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	22	26	25	29	8.0
Barium (aqua regia extractable)	mg/kg	1	MCERTS	360	490	820	470	95
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.1	1.0	0.77	0.66	0.94
Boron (water soluble)	mg/kg	0.2	MCERTS	0.4	0.6	0.5	0.3	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	1.0	0.3
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	19	21	19	28
Copper (aqua regia extractable)	mg/kg	1	MCERTS	110	190	63	64	49
Lead (aqua regia extractable)	mg/kg	1	MCERTS	430	510	2200	1200	55
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.9	0.9	1.8	1.3	1.1
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	19	14	13	31
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	1.9	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	25	26	19	20	27
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	200	330	230	720	78

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-76899
 Project / Site name: Great Jackson Street, Manchester
 Your Order No: 2210516

Lab Sample Number				1881038	1881039	1881040	1881041	1881042
Sample Reference				WS5	WS5	WS5	WS5	WS5
Sample Number				1	2	3	4	5
Depth (m)				0.30	0.80	1.30	1.60	2.20
Date Sampled				12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	10	8.9	15	15	13
Total mass of sample received	kg	0.001	NONE	0.50	0.50	0.50	0.50	0.50

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	-
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General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.2	8.3	7.9	7.7	7.8
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	2.4	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Sulphate as SO ₄	%	0.005	MCERTS	0.113	0.068	0.198	0.026	0.034
Sulphide	mg/kg	1	MCERTS	3.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphur	%	0.005	MCERTS	0.063	0.027	0.071	0.008	0.012
Organic Matter	%	0.1	MCERTS	-	-	-	-	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	4.1	1.3	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.68	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	5.1	1.6	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	4.4	1.4	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	26	11	0.35	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	5.9	2.5	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	26	13	0.47	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	24	12	0.52	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	13	6.1	0.33	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	11	5.2	0.24	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	12	6.1	0.36	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	5.1	2.4	0.12	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	12	5.4	0.27	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	5.7	2.8	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	1.7	0.75	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	6.9	3.4	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	163	74.4	2.66	< 0.80	< 0.80
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Analytical Report Number: 21-76899
 Project / Site name: Great Jackson Street, Manchester
 Your Order No: 2210516

Lab Sample Number				1881038	1881039	1881040	1881041	1881042
Sample Reference				WS5	WS5	WS5	WS5	WS5
Sample Number				1	2	3	4	5
Depth (m)				0.30	0.80	1.30	1.60	2.20
Date Sampled				12/05/2021	12/05/2021	12/05/2021	12/05/2021	12/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	8.1	16	2.4	8.6
Barium (aqua regia extractable)	mg/kg	1	MCERTS	190	180	400	58	43
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.95	0.75	0.67	0.29	1.1
Boron (water soluble)	mg/kg	0.2	MCERTS	1.0	0.2	0.6	0.3	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	12	16	13	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	65	33	35	18	24
Lead (aqua regia extractable)	mg/kg	1	MCERTS	350	280	950	9.3	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1.6	1.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	20	12	14	7.2	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	26	16	19	16	40
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110	64	85	23	48

U/S = Unsuitable Sample I/S = Insufficient Sample



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Analytical Report Number : 21-76761

Project / Site name:	Great Jackson Street, Manchester	Samples received on:	13/05/2021
Your job number:	6069-CGJ	Samples instructed on/ Analysis started on:	24/05/2021
Your order number:	2210515	Analysis completed by:	01/06/2021
Report Issue Number:	1	Report issued on:	01/06/2021
Samples Analysed:	4 water samples		

Signed: 

Agnieszka Czerwińska
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-76761
 Project / Site name: Great Jackson Street, Manchester

Your Order No: 2210515

Lab Sample Number				1880477	1880478	1880479	1880480
Sample Reference				BH1-W1	BH2-W1	BH3-W1	BH4-W1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				16.00	16.00	16.00	16.00
Date Sampled				12/05/2021	12/05/2021	12/05/2021	12/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status				

General Inorganics

pH	pH Units	N/A	ISO 17025	7.6	7.5	7.4	7.4
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10
Thiocyanate as SCN	µg/l	200	ISO 17025	220	< 200	240	< 200
Sulphate as SO4	mg/l	0.045	ISO 17025	17.9	21.3	13.3	30.4
Total Sulphur	µg/l	15	NONE	6000	7100	4400	10000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0

Total Phenols

Total Phenols (monohydric)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16
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Analytical Report Number: 21-76761
 Project / Site name: Great Jackson Street, Manchester

Your Order No: 2210515

Lab Sample Number				1880477	1880478	1880479	1880480
Sample Reference				BH1-W1	BH2-W1	BH3-W1	BH4-W1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				16.00	16.00	16.00	16.00
Date Sampled				12/05/2021	12/05/2021	12/05/2021	12/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status				

Heavy Metals / Metalloids

Boron (dissolved)	µg/l	10	ISO 17025	33	55	28	69
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0

Arsenic (dissolved)	µg/l	0.15	ISO 17025	< 0.15	< 0.15	< 0.15	< 0.15
Barium (dissolved)	µg/l	0.06	ISO 17025	59	47	63	96
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	1.6	2.0	2.1	2.3
Copper (dissolved)	µg/l	0.5	ISO 17025	1.2	2.1	2.0	1.5
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	1.6	2.0	2.8	1.9
Selenium (dissolved)	µg/l	0.6	ISO 17025	< 0.6	< 0.6	< 0.6	< 0.6
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	3.4	3.1	4.4	3.2

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-76761
 Project / Site name: Great Jackson Street, Manchester

Your Order No: 2210515

Lab Sample Number				1880477	1880478	1880479	1880480
Sample Reference				BH1-W1	BH2-W1	BH3-W1	BH4-W1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				16.00	16.00	16.00	16.00
Date Sampled				12/05/2021	12/05/2021	12/05/2021	12/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status				

General Inorganics

pH	pH Units	N/A	ISO 17025	7.6	7.5	7.4	7.4
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10
Thiocyanate as SCN	µg/l	200	ISO 17025	220	< 200	240	< 200
Sulphate as SO4	mg/l	0.045	ISO 17025	17.9	21.3	13.3	30.4
Total Sulphur	µg/l	15	NONE	6000	7100	4400	10000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0

Total Phenols

Total Phenols (monohydric)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16
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Analytical Report Number: 21-76761
 Project / Site name: Great Jackson Street, Manchester

Your Order No: 2210515

Lab Sample Number				1880477	1880478	1880479	1880480
Sample Reference				BH1-W1	BH2-W1	BH3-W1	BH4-W1
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				16.00	16.00	16.00	16.00
Date Sampled				12/05/2021	12/05/2021	12/05/2021	12/05/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status				

Heavy Metals / Metalloids

Boron (dissolved)	µg/l	10	ISO 17025	33	55	28	69
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0

Arsenic (dissolved)	µg/l	0.15	ISO 17025	< 0.15	< 0.15	< 0.15	< 0.15
Barium (dissolved)	µg/l	0.06	ISO 17025	59	47	63	96
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	1.6	2.0	2.1	2.3
Copper (dissolved)	µg/l	0.5	ISO 17025	1.2	2.1	2.0	1.5
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	1.6	2.0	2.8	1.9
Selenium (dissolved)	µg/l	0.6	ISO 17025	< 0.6	< 0.6	< 0.6	< 0.6
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	3.4	3.1	4.4	3.2

U/S = Unsuitable Sample I/S = Insufficient Sample

Appendix B

Geological Information

Geology 1:10,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene
	WGR	Worked Ground (Undivided)	Void	Holocene - Holocene
	WMGR	Infilled Ground	Artificial Deposit	Holocene - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Sand with Clay And Gravel	Flandrian - Pleistocene
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Pleistocene
	GFSDD	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	Sand and Gravel	Devensian - Ipswichian
	TILLD	Till, Devensian	Diamicton	Devensian - Ipswichian
	GFDUD	Glaciofluvial Deposits, Devensian	Sand and Gravel	Devensian - Ipswichian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	CPB	Chester Pebble Beds Formation	Sandstone	Early Triassic - Early Triassic
	WLSF	Wilmslow Sandstone Formation	Sandstone	Early Triassic - Early Triassic
	MM	Manchester Marls Formation	Mudstone	Late Permian - Late Permian
	Fault			



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Geology 1:10,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:10,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around a site. This mapping may be more up to date than previously published paper maps.

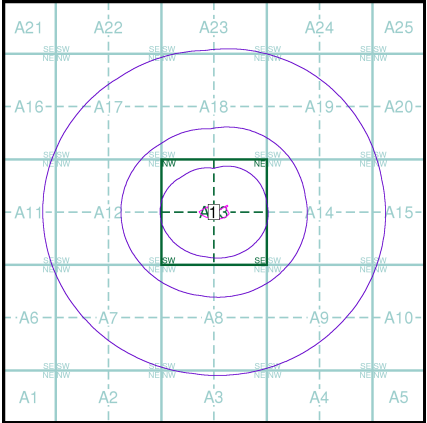
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page.

Please Note: Not all of the layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:10,000 Maps Coverage

Map ID:	1
Map Name:	SJ89NW
Map Date:	1973
Bedrock Geology:	Available
Superficial Geology:	Available
Artificial Geology:	Available
Faults:	Available
Landslip:	Not Available
Rock Segments:	Not Available

Geology 1:10,000 Maps - Slice A



Order Details

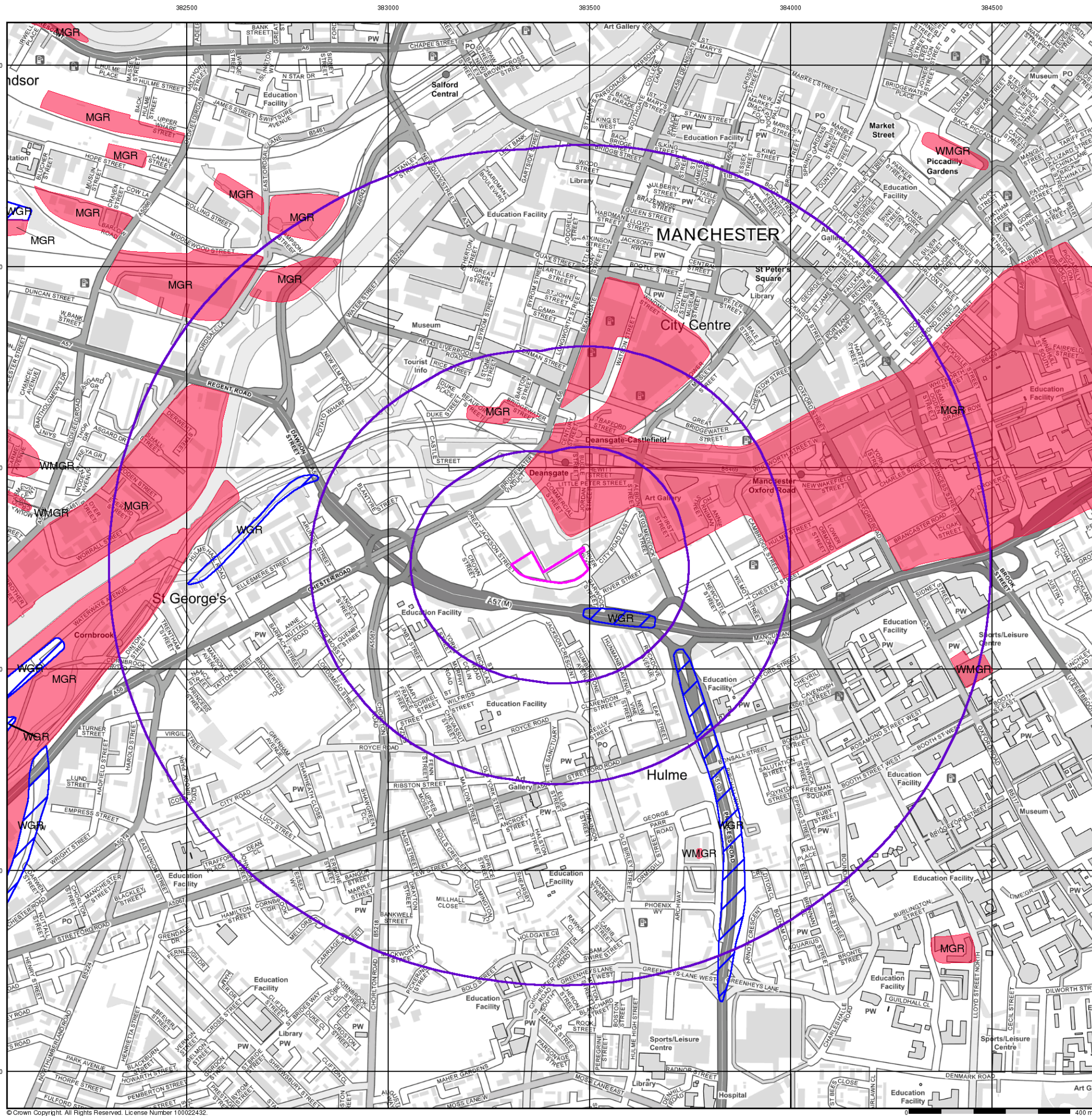
Order Number:	276405343_1_1
Customer Ref:	03558AA
National Grid Reference:	383410, 397260
Slice:	A
Site Area (Ha):	0.86
Search Buffer (m):	1000

Site Details

Site at 383410, 397220

Landmark
INFORMATION GROUP

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Artificial Ground and Landslip

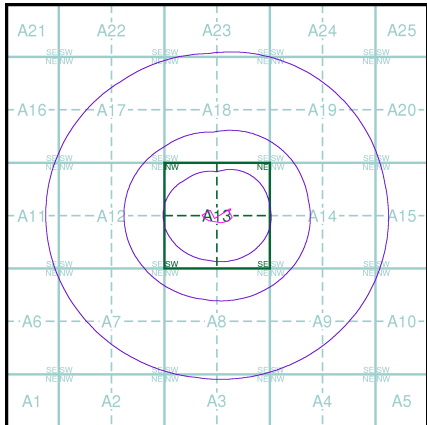
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes founded strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



Order Details

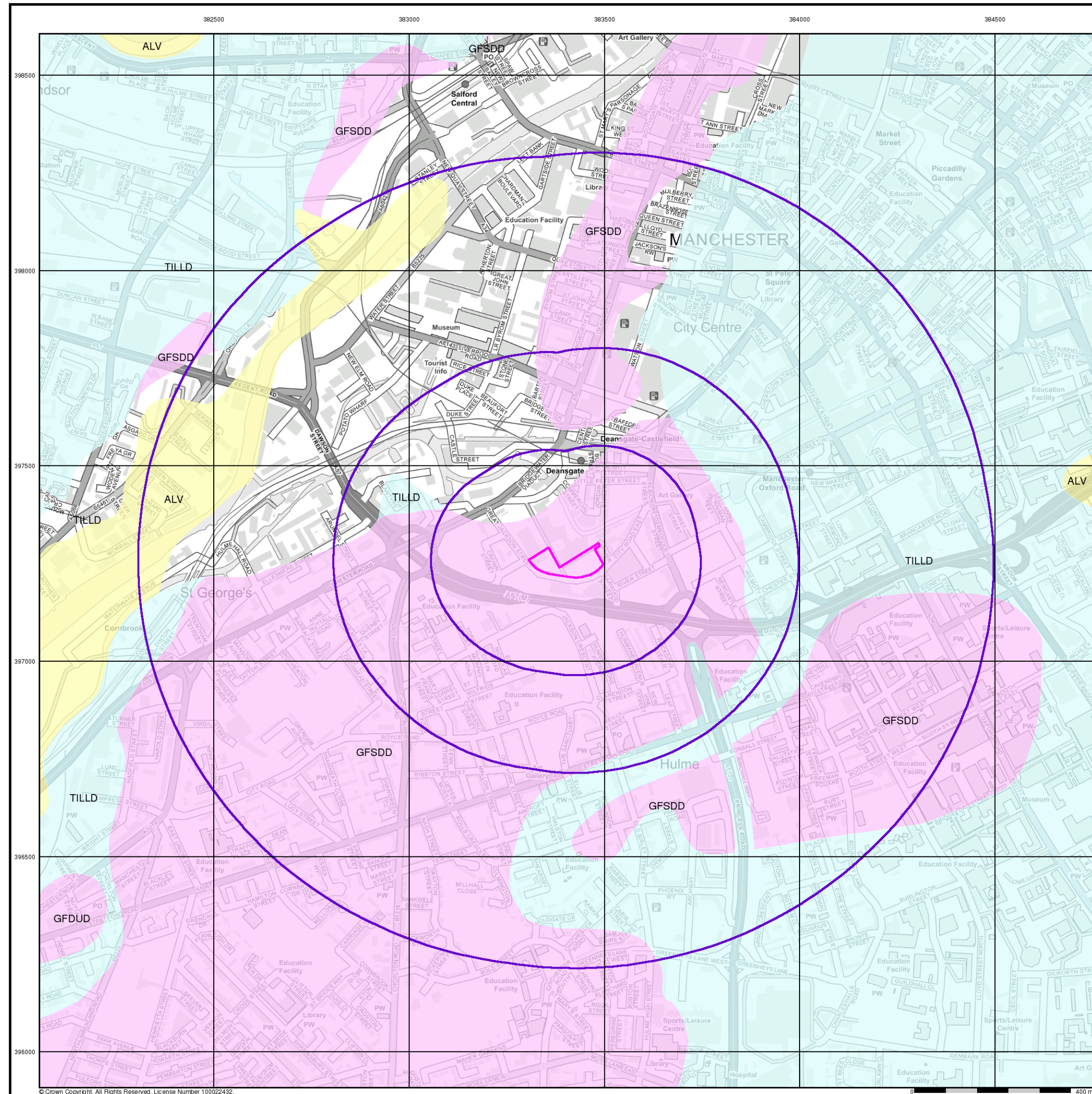
Order Number: 276405343_1_1
 Customer Ref: 03558AA
 National Grid Reference: 383410, 397260
 Slice: A
 Site Area (Ha): 0.86
 Search Buffer (m): 1000

Site Details

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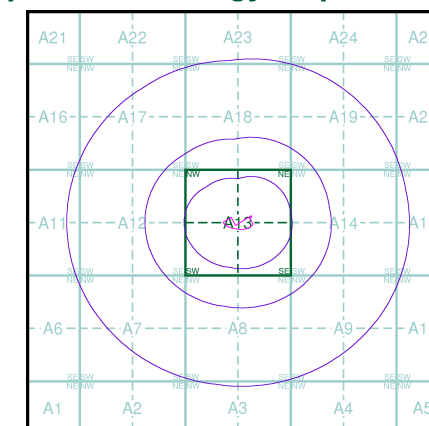
Superficial Geology

BGS 1:10,000 Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



Order Details

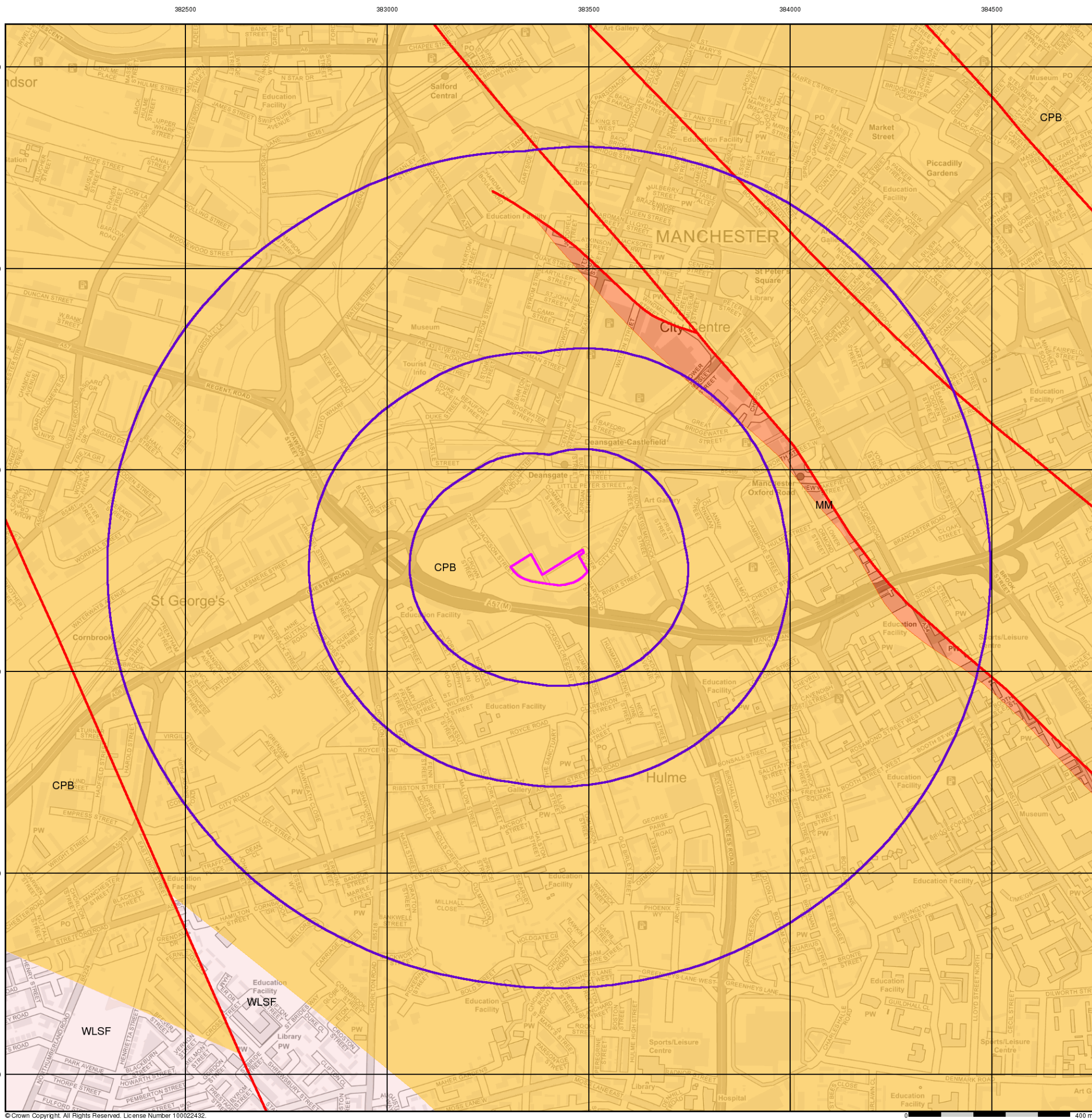
Order Number: 276405343_1_1
Customer Ref: 03558AA
National Grid Reference: 383410, 397260
Slice: A
Site Area (Ha): 0.86
Search Buffer (m): 1000

Site Details

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Bedrock and Faults

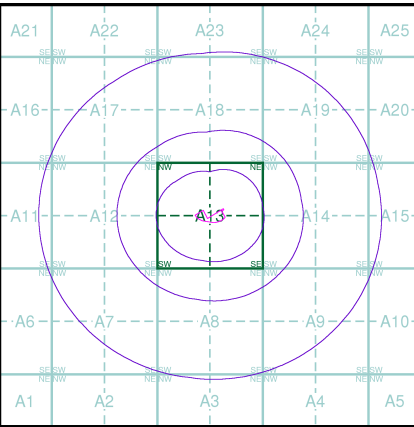
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults and thin beds mapped as lines such as coal seams and mineral veins. These are not restricted by age and could relate to features of any of the 1:10,000 geology datasets.

Bedrock and Faults Map - Slice A



Order Details

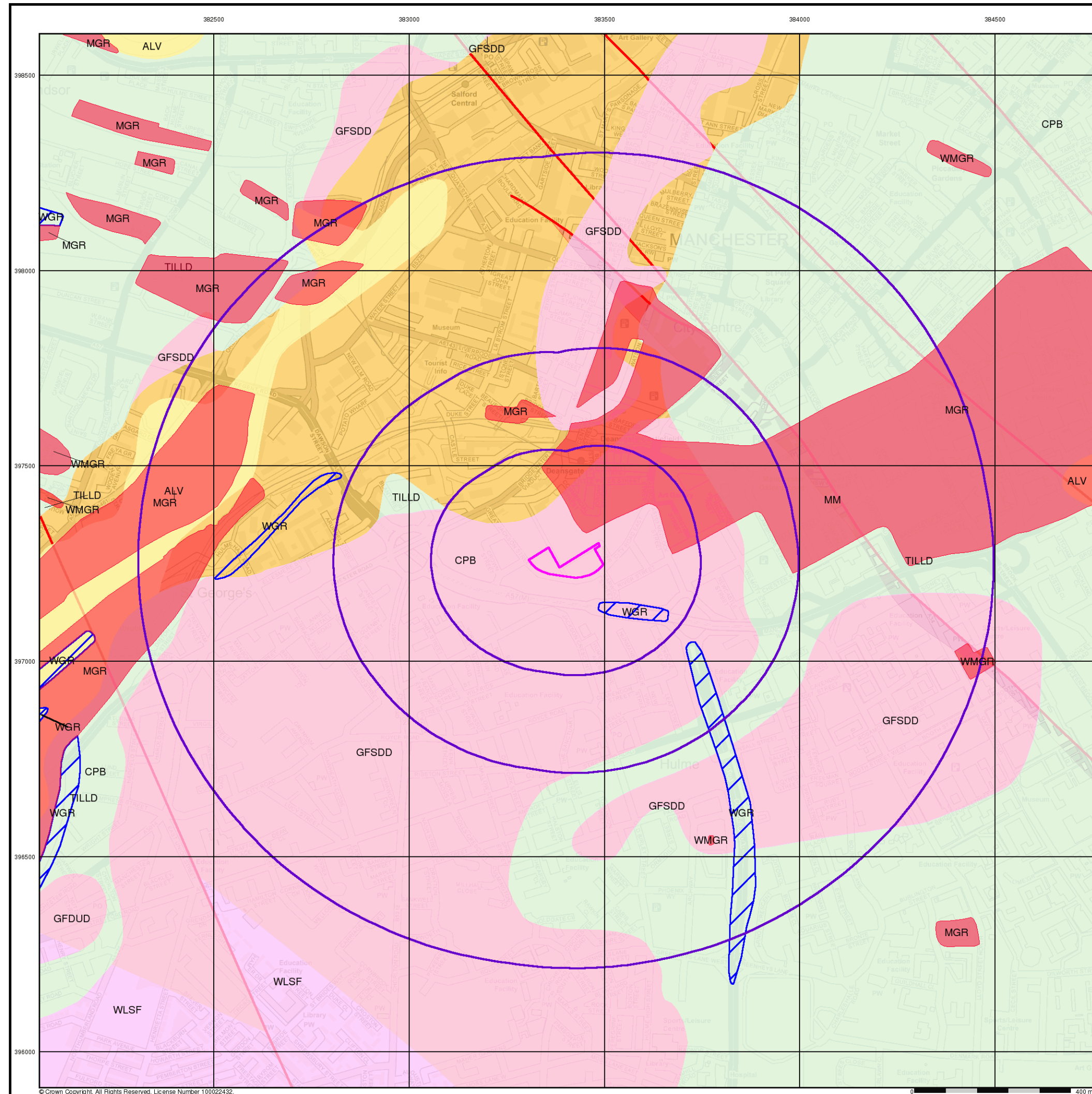
Order Number: 276405343_1_1
Customer Ref: 03558AA
National Grid Reference: 383410, 397260
Slice: A
Site Area (Ha): 0.86
Search Buffer (m): 1000

Site Details

Site at 383410, 397220



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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

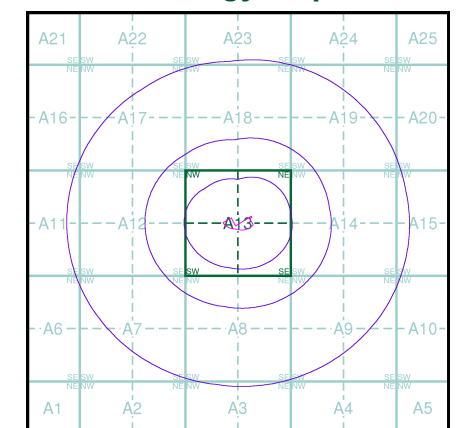
Additional Information

More information on 1:10,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: www.bgs.ac.uk

Combined Geology Map - Slice A



Order Details

Order Number: 276405343_1_1
Customer Ref: 03558AA
National Grid Reference: 383410, 397260
Slice: A
Site Area (Ha): 0.86
Search Buffer (m): 1000

Site Details

Site at 383410, 397220



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Appendix C

S4UL Geo-Environmental Assessment

[illegible]

GENERIC QUANTITATIVE RISK ASSESSMENT (GQRA) - GROUNDWATER

Document Ref:	161.14_GAC_SGV & WATER_GQRA_v2.xlsx
Site:	Great Jackson Street
Project No.:	03558AA
Client:	Renaker Build Ltd
Specific Values Standard:	Inland surface waters EQS (1)



INORGANICS & METALS		Drinking Water								Concentration			
				Lab Sample Number						1880477	1880478	1880479	1880480
				Sample Reference						BH1-W1	BH2-W1	BH3-W1	BH4-W1
				Sample Number						None Supplied	None Supplied	None Supplied	None Supplied
				Depth (m)						16.00	16.00	16.00	16.00
				Date Sampled						12/05/2021	12/05/2021	12/05/2021	12/05/2021
Determinand	Surface Water	WHO	UK / EU	Assessment Value* (AV)	Samples Exceeding AV	Results where LOD > AV	Units	Limit of Detection					
pH	- -	- -	- -	-	-	-	0		7.6	7.5	7.4	7.4	
cyanide	1 -	70 17	50 -	1	0	4	µg/l	10	< 10	< 10	< 10	< 10	
cyanide	1 -	70 17	50 -	1	0	4	µg/l	10	< 10	< 10	< 10	< 10	
<BLANK>	- -	- -	- -	-	-	-	-	200	220.0	< 200	240.0	< 200	
sulphate	- -	N/A 15	250 -	250	0	0	mg/l	0.045	17.9	21.3	13.3	30.4	
<BLANK>	- -	- -	- -	-	-	-	-	15	6000.0	7100.0	4400.0	10000.0	
sulphide	- -	- -	- -	-	-	-	µg/l	5	< 5.0	< 5.0	< 5.0	< 5.0	
phenols (total monohydric)	- -	- -	- -	-	-	-	0	1	< 0.16	< 0.16	< 0.16	< 0.16	
boron	- -	2400 -	1000 -	1000	0	0	µg/l	10	33	55	28	69	
chromium(vi)	0.6 -	- -	- -	0.6	0	4	µg/l	5	< 5.0	< 5.0	< 5.0	< 5.0	
arsenic	25 -	10 -	10 -	25	0	0	µg/l	0.15	< 0.15	< 0.15	< 0.15	< 0.15	
barium	- -	0.7 -	- -	0.7	0	0	mg/l	0.06	0.06	0.05	0.06	0.10	
beryllium	- -	N/A 13	- -	-	-	-	µg/l	0.1	< 0.1	< 0.1	< 0.1	< 0.1	
cadmium and its compounds	≤0.08 5	3 -	5 -	≤0.08	0	0	µg/l	0.02	< 0.02	< 0.02	< 0.02	< 0.02	
chromium	- -	50 -	50 -	50	0	0	µg/l	0.2	1.6	2	2.1	2.3	
Copper	1 6	2000 -	2000 -	1	4	0	µg/l	0.5	1.2	2.1	2	1.5	
lead and its compounds	1.2 -	10 -	10 -	1.2	0	0	µg/l	0.2	< 0.2	< 0.2	< 0.2	< 0.2	
mercury	0.07 4	6 -	1 -	0.07	0	0	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05	
nickel and its compounds	4 -	70 -	20 -	4	0	0	µg/l	0.5	1.6	2	2.8	1.9	
selenium	- -	40 -	10 -	10	0	0	µg/l	0.6	< 0.6	< 0.6	< 0.6	< 0.6	
vanadium	- -	- -	- -	-	-	-	µg/l	0.2	< 0.2	< 0.2	< 0.2	< 0.2	
zinc	8.2 8	N/A 15	- -	8.2	0	0	µg/l	0.5	3.4	3.1	4.4	3.2	

Appendix D

Outputs from JIWG Risk Decision Support

Decision Support Tool for Receptor Risk Ranking

Stage 1		Score
Hazard Identification		
Select ACM type (run model for each type to generate 'Worst Case' output)	Loose fibrous asbestos debris	3
Extent of degradation of ACMs	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	Occasional/random occurrences of visible contamination by ACMs	1
Asbestos fibre type	Mainly amosite (and possible trace tremolite/anthophyllite) with/without chrysotile (no crocidolite)	3
Sub-total		15
Hazard ranking		Medium

No warranty, expressed or implied, or reliance, is provided in relation to the use of this tool.

It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.



Joint Industry Working Group
Asbestos in Soil and Construction & Demolition Materials

Stage 2		Score
Emission Factors		
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Low quantities - >0.01 to <0.05 %wt/wt	2
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Negligible	0
Activity type and effect on deterioration of ACMs	High disturbance, significant deterioration expected	4
Best description of primary host material matrix	Coarse to Fine Sand	2
Sub-total		8
Exposure ranking		Low

Stage 3		
Pathway and Receptor Sensitivity		Score
Receptor category	Construction	No score required
Age of Receptor	Young adult (>16 and <24)	2
Duration of exposure/site occupancy	> 1hr <10 hr daily exposure (e.g. part-time to full time occupational exposure or extended daily recreational exposure)	3
Receptor ranking		5 Medium
Combined hazard, exposure and receptor ranking		Medium
Pathway: Distance of Receptor from Source	In or within 10m of area of disturbance	4
Pathway: Depth to impacted material	Material buried at shallow depth, potential to be disturbed by excavation	C
Pathway ranking		4C Low
Overall ranking		Low



Joint Industry Working Group

Asbestos in Soil and Construction & Demolition Materials

Project Reference	Plot F, Great Jackson Street, Manchester
Site Name	Plot F, Great Jackson Street
Client	Renaker Build Ltd
Run by	Craig Temporal
Date	15-Nov-21
Reviewed by	Ed Barrett
Characterisation of scenario being evaluated	Inhalation by construction workers of fibres blown from any open ground where soils are exposed during construction
Interpretation of scenario ranking by DST	LOW

Decision Support Tool for Receptor Risk Ranking

Stage 1		Score
Hazard Identification		
Select ACM type (run model for each type to generate 'Worst Case' output)	Loose fibrous asbestos debris	3
Extent of degradation of ACMs	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	Occasional/random occurrences of visible contamination by ACMs	1
Asbestos fibre type	Mainly amosite (and possible trace tremolite/anthophyllite) with/without chrysotile (no crocidolite)	3
Sub-total		15
Hazard ranking		Medium

No warranty, expressed or implied, or reliance, is provided in relation to the use of this tool.
It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.



Joint Industry Working Group
Asbestos in Soil and Construction & Demolition Materials

Stage 2		Score
Emission Factors		
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Low quantities - >0.01 to <0.05 %wt/wt	2
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Negligible	0
Activity type and effect on deterioration of ACMs	No disturbance activity	0
Best description of primary host material matrix	Coarse to Fine Sand	2
Sub-total		4
Exposure ranking		Very Low

Stage 3			
Pathway and Receptor Sensitivity		Score	
Receptor category	Public open space or building	No score required	
Age of Receptor	Infant (under 5)	4	
Duration of exposure/site occupancy	<1 hour in any week (e.g. short duration work or equivalent infrequent exposure event when exposure aggregated over 1 yr)	0	
Receptor ranking		4	Low
Combined hazard, exposure and receptor ranking			Low
Pathway: Distance of Receptor from Source	In or within 10m of area of disturbance	4	
Pathway: Depth to impacted material	Material buried at shallow depth, potential to be disturbed by excavation	C	
Pathway ranking		4C	Low
Overall ranking			Very Low



Joint Industry Working Group
Asbestos in Soil and Construction & Demolition Materials

Project Reference	Plot F, Great Jackson Street, Manchester
Site Name	Plot F, Great Jackson street
Client	Renaker Build Ltd
Run by	Craig Temporal
Date	15-Nov-21
Reviewed by	Ed Barrett
Characterisation of scenario being evaluated	Inhalation by end user of fibres blown from any open ground where soils are exposed post construction including maintenance work.
Interpretation of scenario ranking by DST	VERY LOW

Decision Support Tool for Receptor Risk Ranking

Stage 1		Score
Hazard Identification		
Select ACM type (run model for each type to generate 'Worst Case' output)	Loose fibrous asbestos debris	3
Extent of degradation of ACMs	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	Occasional/random occurrences of visible contamination by ACMs	1
Asbestos fibre type	Mainly amosite (and possible trace tremolite/anthophyllite) with/without chrysotile (no crocidolite)	3
Sub-total		15
Hazard ranking		Medium

No warranty, expressed or implied, or reliance, is provided in relation to the use of this tool.
It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.



Joint Industry Working Group
Asbestos in Soil and Construction & Demolition Materials

Stage 2		Score
Emission Factors		
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Low quantities - >0.01 to <0.05 %wt/wt	2
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Negligible	0
Activity type and effect on deterioration of ACMs	High disturbance, significant deterioration expected	4
Best description of primary host material matrix	Coarse to Fine Sand	2
Sub-total		8
Exposure ranking		Low

Stage 3 Pathway and Receptor Sensitivity		Score	
Receptor category	Public open space or building	No score required	
Age of Receptor	Infant (under 5)	4	
Duration of exposure/site occupancy	<1 hour in any week (e.g. short duration work or equivalent infrequent exposure event when exposure aggregated over 1 yr)	0	
Receptor ranking		4	Low
Combined hazard, exposure and receptor ranking			Low
Pathway: Distance of Receptor from Source	>10m of edge of area of disturbance	3	
Pathway: Depth to impacted material	Material buried at shallow depth, potential to be disturbed by excavation	C	
Pathway ranking		3C	Low
Overall ranking			Very Low



Joint Industry Working Group
Asbestos in Soil and Construction & Demolition Materials

Project Reference	Plot F, Great Jackson Street, Manchester
Site Name	Plot F, Great Jackson Street
Client	Renaker Build Ltd
Run by	Craig Temporal
Date	15-Nov-21
Reviewed by	Ed Barrett
Characterisation of scenario being evaluated	Inhalation by offsite personnel of fibres blown from any open ground where soils are exposed during construction, maintenance works and building use
Interpretation of scenario ranking by DST	VERY LOW