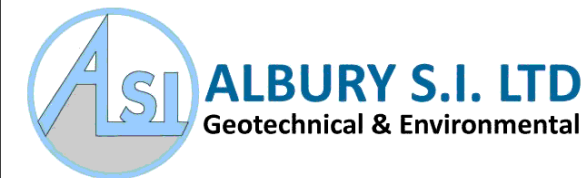




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10k Raster Mapping

Published 2006

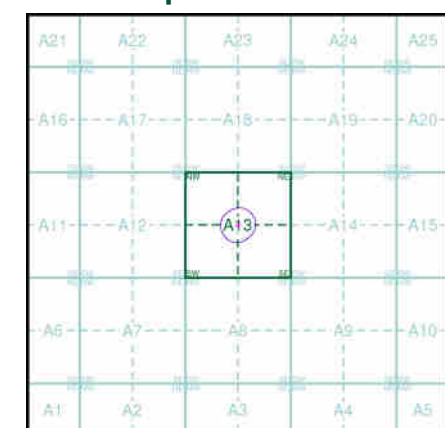
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

TQ27NW	2006
1:10,000	
TQ27SW	2006
1:10,000	

Historical Map - Slice A



Order Details

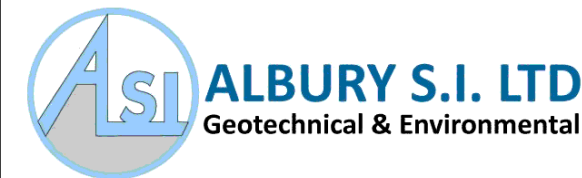
Order Number: 250006383_1_1
 Customer Ref: 20/11891/GO
 National Grid Reference: 521560, 175910
 Slice: A
 Site Area (Ha): 0.03
 Search Buffer (m): 1000

Site Details

32, Cross Street, London, SW13 0PD



Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



VectorMap Local

Published 2020

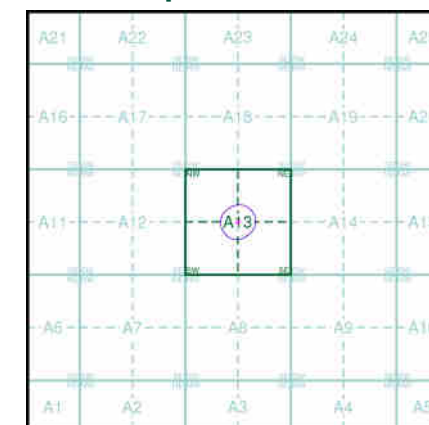
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

- TQ27NW |
- 2020 |
- Variable |
- TQ27SW |
- 2020 |
- Variable |

Historical Map - Slice A



Order Details

Order Number: 250006383_1_1
 Customer Ref: 20/11891/GO
 National Grid Reference: 521560, 175910
 Slice: A
 Site Area (Ha): 0.03
 Search Buffer (m): 1000

Site Details


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APPENDIX 2









EXPLORATORY RECORDS

 ALBURY S.I. LTD Miltons Yard, Petworth Road, Witley, Surrey GU8 5LH		BOREHOLE	BH1
Contract	Cross Street, Barnes	Report Ref	20/11891/GO
Client	McBains Ltd	Ground Level	
Site Address	32 Cross Street, Barnes, London SW13 0PD	Date Commenced	03/08/2020
		Date Completed	05/08/2020
Type & Diameter of Boring	Light Cable Percussion: 150mm diameter	Sheet No	1 of 3
Water Strikes, m	Water levels recorded during boring, m		
1 7.00	Date	03/08/2020	03/08/2020
2	Hole Depth	7.00	25.00
3	Casing Depth	7.00	GL
4	Water Level	7.00	6.00

Remarks

Excavation of hand dug starter pit to clear buried services

1 hour chiselling techniques to advance borehole from 1.2m to 2m through brick and concrete obstructions

Samples or Tests		Standard Penetration Tests			Depth m	Legend	Strata Description
Type	Depth, m	Seat	Test Drive	N			
D	0.30				0.50		Grass over MADE GROUND (dark brown silty SAND with occasional gravel and brick fragments)
B	0.50						MADE GROUND (recovered as cobble and coarse gravel sized fragments of brick and concrete in a sandy matrix)
B	1.20-1.65	8, 19	20, 8, 12, 20	60	2.60		
D	1.75						
D	2.00-2.45	4, 4	5, 5, 8, 11	29	2.60		
D	2.75						
B	3.00-3.45	3, 4	5, 6, 7, 7	25	2.60		Medium dense brown sandy GRAVEL [KEMPTON PARK GRAVEL MEMBER]
D	4.00						
B	4.50-4.95	4, 5	6, 7, 7, 6	26	2.60		
D	5.50						
B	6.00-6.45	4, 5	6, 7, 7, 8	28	2.60		
D	7.00						
B	7.50-7.95	3, 4	4, 4, 5, 6	19	2.60		
D	8.50						
							~with lenses of greyish brown clayey silt at 8.5m

(Continued on next sheet)



Contract		Cross Street, Barnes			Report Ref		20/11891/GO	
Samples or Tests		Standard Penetration Tests			Depth m	Legend	Strata Description	
Type	Depth, m	Seat	Test Drive	N				
D	9.00-9.45	2, 3	4, 4, 4, 5	17	9.10		Medium dense brown sandy GRAVEL (<i>continued ...</i>) Stiff to very stiff dark brownish grey silty CLAY [LONDON CLAY FORMATION]	
D	10.00							
U	10.50-10.95							
D	11.50							
D	12.00-12.45	3, 4	4, 5, 5, 5	19				
D	13.00							
U	13.50-13.95							
D	14.50							
D	15.00-15.45	4, 4	5, 5, 6, 6	22				
D	16.00							
D	16.50-16.95	4, 5	5, 6, 7, 7	25				
D	17.50							
D	18.00-18.45	5, 6	7, 7, 8, 8	30				
D	19.00							
D	19.50-19.95	5, 6	7, 8, 9, 10	34				

(Continued on next sheet)

Contract	Cross Street, Barnes	Report Ref	20/11891/GO
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Samples or Tests		Standard Penetration Tests			Depth m	Legend	Strata Description
Type	Depth, m	Seat	Test Drive	N			
D	20.50					— ×	Very stiff dark brownish grey silty CLAY (continued...) [LONDON CLAY FORMATION]
D	21.00-21.45	4, 6	7, 8, 10, 10	35		× —	
						— ×	
						× —	
D	22.00					— ×	
D	22.50-22.95	5, 6	8, 9, 10, 11	38		× —	
						— ×	
						× —	
D	23.50					— ×	
D	24.00					× —	
D	24.55-25.00	4, 6	8, 9, 10, 12	39		— ×	
						× —	
				25.00			END OF BOREHOLE

**ALBURY S.I. LTD**

Miltens Yard, Petworth Road, Witley, Surrey GU8 5LH

BOREHOLE**WS1**

Contract	Cross Street, Barnes	Report Ref	20/11891/GO
Client	McBains Ltd	Date	07/08/2020
Site Address	32 Cross Street, Barnes, London SW13 0PD	Ground Level	

Type of excavator:	Window Sampler	Water level after completion, m	dry
Water strikes, m	Dimensions, m	Ease of excavation, m	
1 none	Diameter 0.06	Very easy	Difficult
2		Moderate GL-2.00	Very hard 2.00-3.10

Remarks

Standpipe installed to 3m - Return monitoring on 14/08/2020 instrument dry

Samples or tests		Shear Strength kPa	Depth	Legend	Strata Description
Type	Depth, m				
D	0.20		0.15		MADE GROUND (concrete)
D	0.50		0.40		MADE GROUND (brown silty SAND with brick and concrete fragments)
D	1.00				MADE GROUND (brown silty SAND with brick fragments)
D	1.50		1.35		Brown silty SAND with occasional gravel, clayey partings and dark mottling (possible disturbed or MADE GROUND?)
D	2.00		2.05		Brown silty SAND with occasional gravel [KEMPTON PARK GRAVEL MEMBER]
D	2.50				
D	3.00		3.10		
					END OF BOREHOLE

**ALBURY S.I. LTD**

Miltons Yard, Petworth Road, Witley, Surrey GU8 5LH

BOREHOLE**WS2a**

Contract	Cross Street, Barnes	Report Ref	20/11891/GO
Client	McBains Ltd	Date	07/08/2020
Site Address	32 Cross Street, Barnes, London SW13 0PD	Ground Level	

Type of excavator:	Window Sampler	Water level after completion, m	dry	
Water strikes, m	Dimensions, m	Ease of excavation, m		
1 none	Diameter 0.06	Very easy	Difficult	GL-1.50
2		Moderate	Very hard	1.50-3.10

Remarks

Standpipe installed to 3m - Return monitoring 14/08/20 instrument dry

Samples or tests		Shear Strength kPa	Depth	Legend	Strata Description
Type	Depth, m				
D	0.10				MADE GROUND (grass over greyish brown silty SAND with occasional gravel, roots and occasional brick fragments)
D	0.30				
B	0.50				
D	1.00				
D	1.50		1.40		Brown silty SAND with clayey partings and rare gravel; grading to gravelly SAND below 2m [KEMPTON PARK GRAVEL MEMBER]
D	2.00				
D	2.50				
D	3.00		3.10		
					END OF BOREHOLE

**ALBURY S.I. LTD**

Miltons Yard, Petworth Road, Witley, Surrey GU8 5LH

TRIAL PIT**1**

Contract	Cross Street, Barnes	Report Ref	20/11891/GO
Client	McBains Ltd	Date	07/08/2020
Site Address	32 Cross Street, Barnes, London SW13 0PD	Ground Level	

Type of excavator:	Manual	Water level after completion, m	dry	
Water strikes, m	Dimensions, m		Ease of excavation, m	
1	none	Length	0.45	Very easy
2		Breadth	0.45	Moderate
				Difficult
				Very hard
				GL-1.80

Remarks

Samples or tests		Shear Strength kPa	Depth	Legend	Strata Description
Type	Depth, m				
D	0.20		0.10		MADE GROUND (paving slab)
D	0.50				MADE GROUND (dark brown silty SAND with occasional gravel and roots)
D	1.00				
D	1.50				
D	1.60		1.60		Brown SAND with rare gravel
D	1.60		1.80		END OF TRIAL PIT

**ALBURY S.I. LTD**

Miltons Yard, Petworth Road, Witley, Surrey GU8 5LH

TRIAL PIT**2**

Contract	Cross Street, Barnes	Report Ref	20/11891/GO
Client	McBains Ltd	Date	07/08/2020
Site Address	32 Cross Street, Barnes, London SW13 0PD	Ground Level	

Type of excavator:	Manual	Water level after completion, m		dry	
Water strikes, m	Dimensions, m		Ease of excavation, m		
1	none	Length	0.45	Very easy	Difficult GL-1.30
2		Breadth	0.45	Moderate	Very hard

Remarks

Samples or tests		Shear Strength kPa	Depth	Legend	Strata Description
Type	Depth, m				
			0.15		MADE GROUND (paving slab over sand)
D	0.30				MADE GROUND (dark brown silty SAND with occasional gravel and brick fragments)
D	0.50				
D	1.00		1.10		Brown silty SAND with rare flint gravel and brick particles (possible disturbed or MADE GROUND)
D	1.20		1.35		
					END OF TRIAL PIT

**ALBURY S.I. LTD**

Miltons Yard, Petworth Road, Witley, Surrey GU8 5LH

TRIAL PIT**3**

Contract	Cross Street, Barnes	Report Ref	20/11891/GO
Client	McBains Ltd	Date	07/08/2020
Site Address	32 Cross Street, Barnes, London SW13 0PD	Ground Level	

Type of excavator:	Manual	Water level after completion, m		dry	
Water strikes, m	Dimensions, m		Ease of excavation, m		
1	none	Length	0.45	Very easy	Difficult GL-0.90
2		Breadth	0.35	Moderate 0.90-1.40	Very hard

Remarks

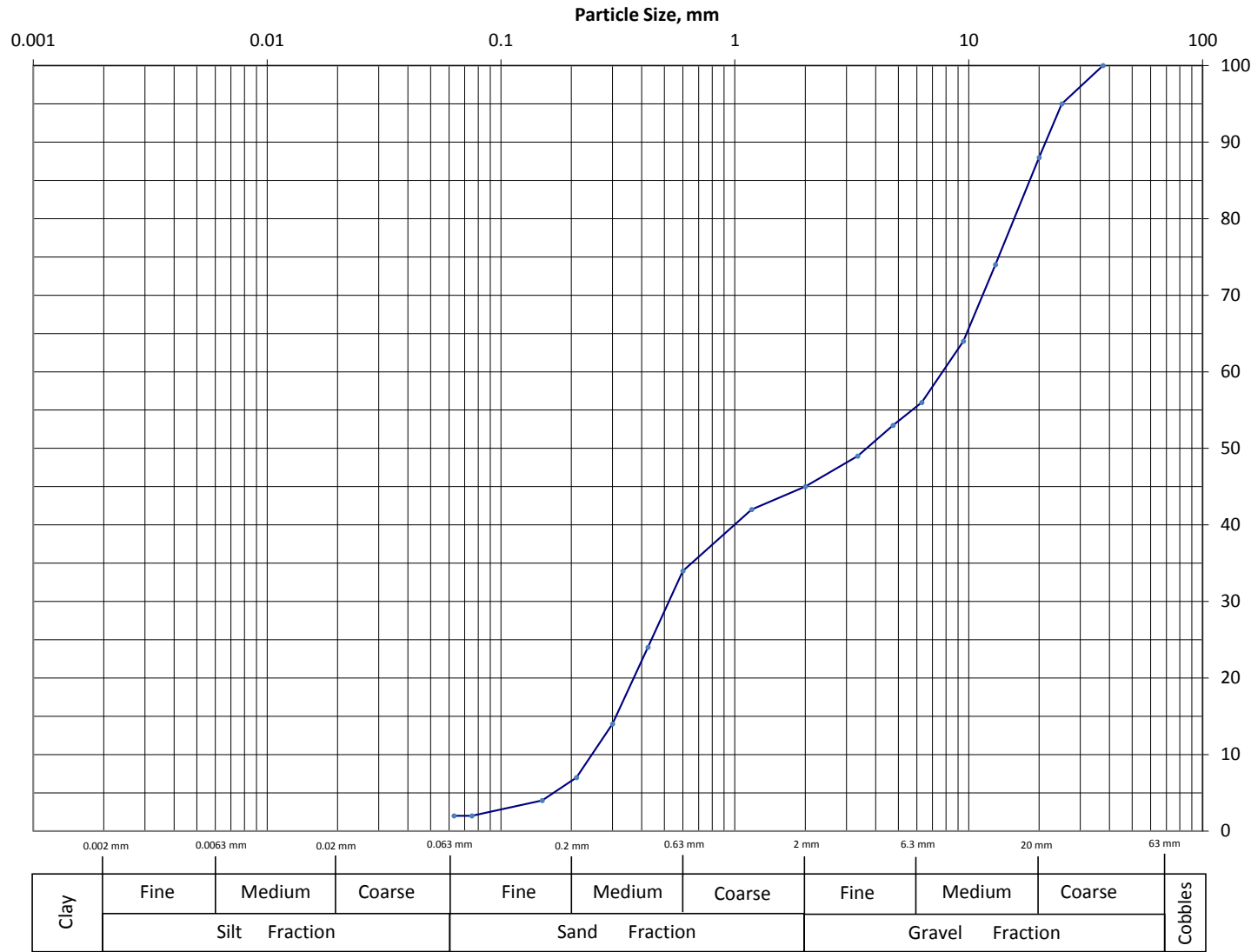
Samples or tests		Shear Strength kPa	Depth	Legend	Strata Description
Type	Depth, m				
D	0.10				MADE GROUND (dark brown silty SAND with gravel, brick and concrete fragments and large roots)
D	0.30				
D	0.50				
D	1.00				
			1.40		END OF TRIAL PIT

APPENDIX 3

LABORATORY TEST RESULTS

PARTICLE SIZE DISTRIBUTION TEST

BS 1377 : Part 2 : Clauses 9.2, 9.3 : 1990 Particle Size Distribution by Wet/Dry Sieving Method



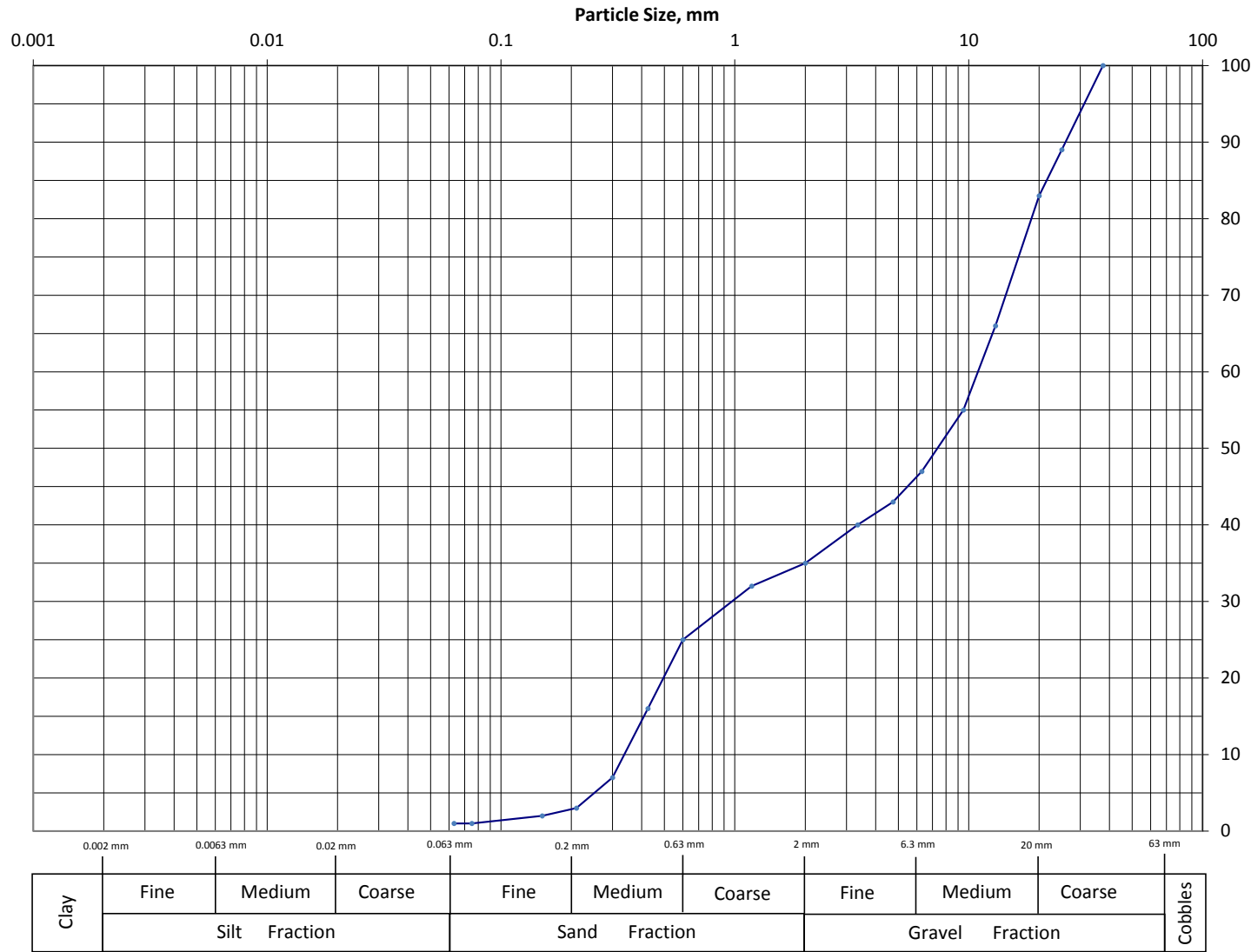
BS Test Sieve Aperture Size (mm)	Percentage Passing
75	
63	
50	
37.5	100
25	95
20	88
13	74
9.5	64
6.3	56
4.75	53
3.35	49
2	45
1.18	42
0.6	34
0.425	24
0.3	14
0.21	7
0.15	4
0.075	2
0.063	2

Particle Proportions (%)	
Cobbles	0
Gravel	55
Sand	43
Silt & Clay	2

BH/TP No.	BH1	Depth, m	3.00-3.45	Report Ref	20/11891/GO
Visual Description	Brown sandy GRAVEL			Contract	Cross Street, Barnes

PARTICLE SIZE DISTRIBUTION TEST

BS 1377 : Part 2 : Clauses 9.2, 9.3 : 1990 Particle Size Distribution by Wet/Dry Sieving Method



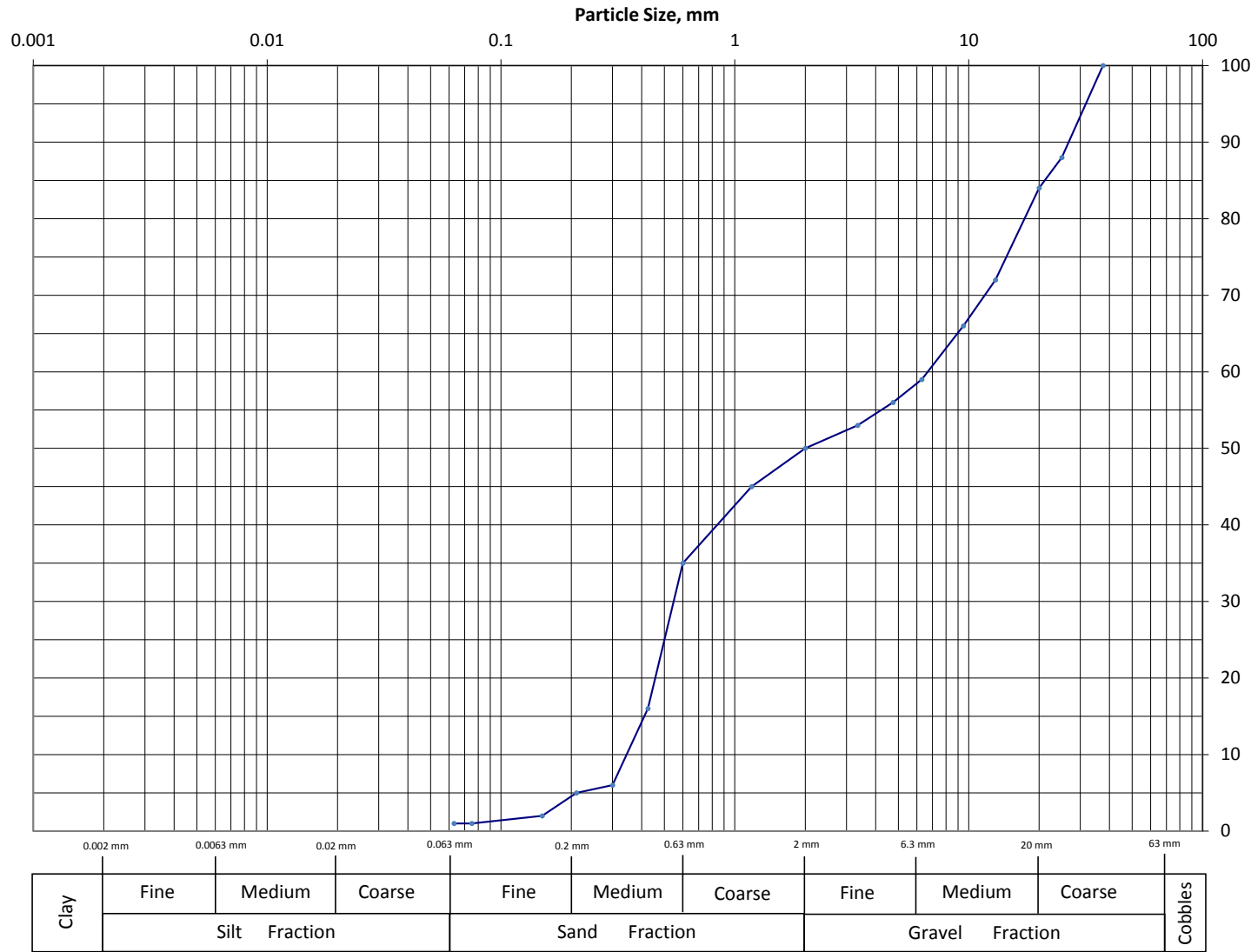
BS Test Sieve Aperture Size (mm)	Percentage Passing
75	
63	
50	
37.5	100
25	89
20	83
13	66
9.5	55
6.3	47
4.75	43
3.35	40
2	35
1.18	32
0.6	25
0.425	16
0.3	7
0.21	3
0.15	2
0.075	1
0.063	1

Particle Proportions (%)	
Cobbles	0
Gravel	65
Sand	34
Silt & Clay	1

BH/TP No.	BH1	Depth, m	4.50-4.95	Report Ref	20/11891/GO
Visual Description	Brown sandy GRAVEL			Contract	Cross Street, Barnes

PARTICLE SIZE DISTRIBUTION TEST

BS 1377 : Part 2 : Clauses 9.2, 9.3 : 1990 Particle Size Distribution by Wet/Dry Sieving Method



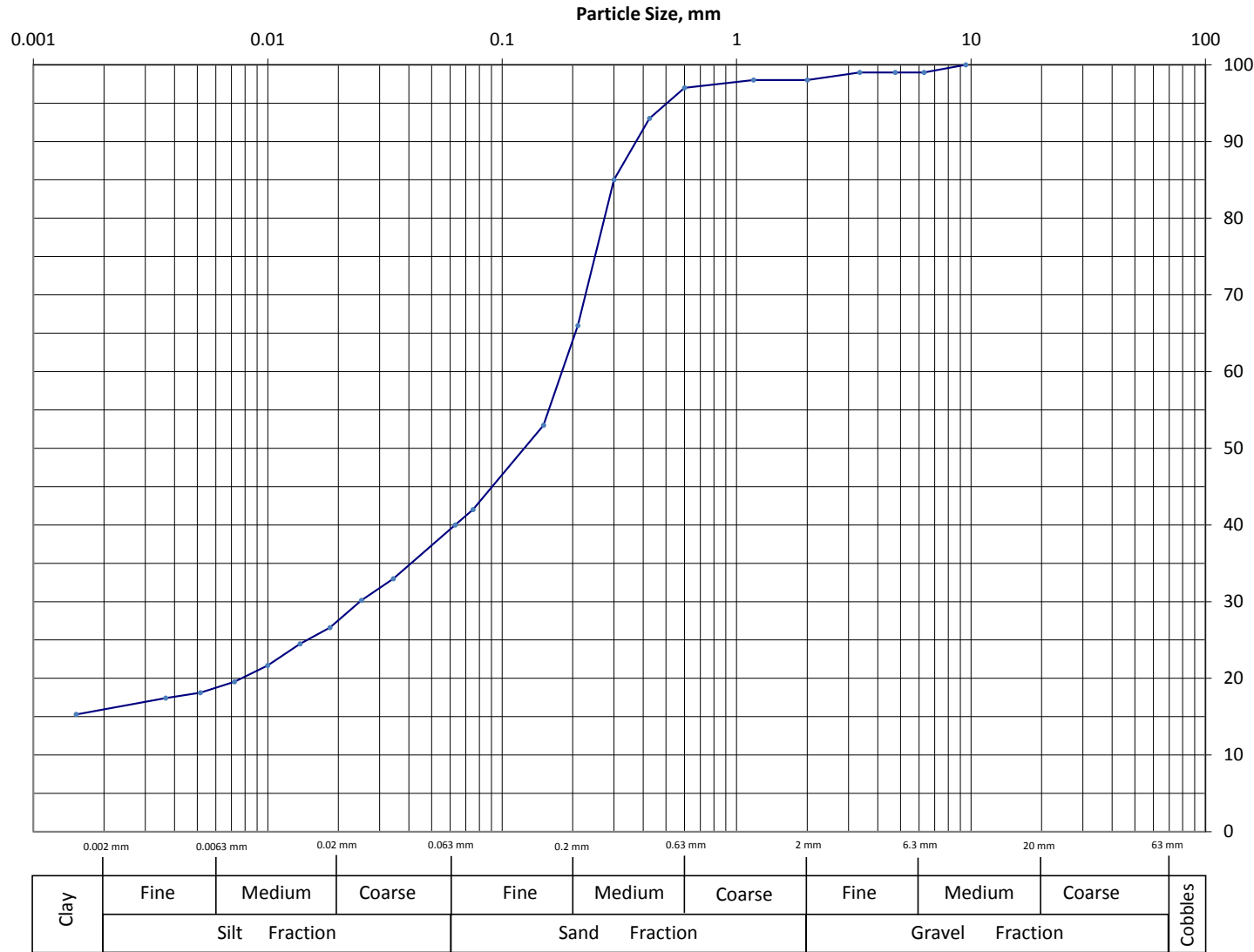
BS Test Sieve Aperture Size (mm)	Percentage Passing
75	
63	
50	
37.5	100
25	88
20	84
13	72
9.5	66
6.3	59
4.75	56
3.35	53
2	50
1.18	45
0.6	35
0.425	16
0.3	6
0.21	5
0.15	2
0.075	1
0.063	1

Particle Proportions (%)	
Cobbles	0
Gravel	50
Sand	49
Silt & Clay	1

BH/TP No.	BH1	Depth, m	6.00-6.45	Report Ref	20/11891/GO
Visual Description	Brown sandy GRAVEL			Contract	Cross Street, Barnes

PARTICLE SIZE DISTRIBUTION TEST

BS 1377 : Part 2 : Clauses 9.2 and 9.5 : 1990 Particle Size Distribution by Wet Sieving & Sedimentation by Hydrometer Method



Sieve Aperture/ Particle Size (mm)	Percentage Passing
75	
63	
50	
37.5	
25	
20	
13	
9.5	100
6.3	99
4.75	99
3.35	99
2	98
1.18	98
0.6	97
0.425	93
0.3	85
0.21	66
0.15	53
0.075	42
0.063	40
0.034	33
0.025	30
0.018	27
0.014	24
0.010	22
0.0072	20
0.0052	18
0.0037	17
0.0015	15

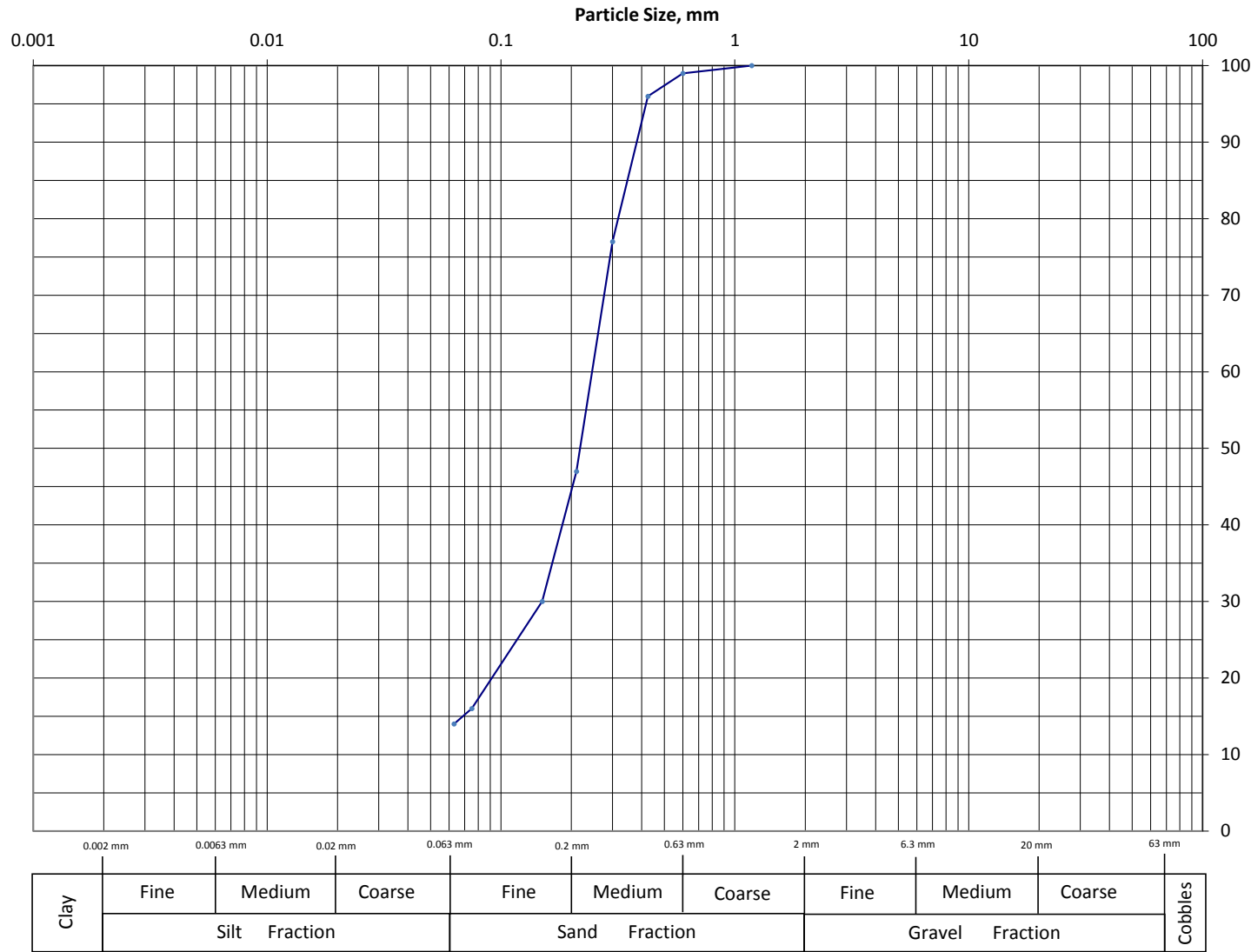
Sample Proportions (%)	
Cobbles	0
Gravel	2
Sand	58
Silt & Clay	40

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt Fraction			Sand Fraction			Gravel Fraction			

BH/TP No.	WS2a	Depth, m	1.50	Report Ref	20/11891/GO
Visual Description	Brown silty SAND with clayey partings and rare gravel			Contract	Cross Street, Barnes

PARTICLE SIZE DISTRIBUTION TEST

BS 1377 : Part 2 : Clauses 9.2, 9.3 : 1990 Particle Size Distribution by Wet/Dry Sieving Method



BS Test Sieve Aperture Size (mm)	Percentage Passing
75	
63	
50	
37.5	
25	
20	
13	
9.5	
6.3	
4.75	
3.35	
2	
1.18	100
0.6	99
0.425	96
0.3	77
0.21	47
0.15	30
0.075	16
0.063	14

Particle Proportions (%)	
Cobbles	0
Gravel	0
Sand	86
Silt & Clay	14

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt Fraction			Sand Fraction			Gravel Fraction			

BH/TP No.	WS1	Depth, m	1.50	Report Ref	20/11891/GO
Visual Description	Brown silty SAND with occasional gravel and clayey partings			Contract	Cross Street, Barnes

INDEX PROPERTIES & TRIAXIAL COMPRESSION TESTS

BS 1377 : Parts 2 & 7 : 1990

Report Ref	20/11891/GO	Contract	Cross Street, Barnes
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BH No.	Sample		INDEX PROPERTIES						TRIAxIAL COMPRESSION						Remarks	
	Depth m	Description	Liquid Limit %	Plastic Limit %	Plasticity Index %	% Passing 425micron Sieve	Corrected Plasticity Index IP %	Soil Plasticity	Code	Lateral Pressure kPa	Compressive Strength kPa	Cohesion kPa	Angle of Friction °	Bulk Density kg/cu.m		Water Content % dry wt
BH1	10.50-11.00	Dark brownish grey silty CLAY	72	26	46	100	46	CV	U100	220	280	140	0	2235	25.6	
	13.50-13.95	Dark brownish grey silty CLAY							U100	280	390	195	0	2230	26.7	

KEY: *Code:* **38** - 38mm nominal diameter specimen **100** - 100mm nominal diameter specimen **R** - Remoulded **F** - Functional **LV** - Laboratory Vane
 U - Undrained **CD** - Consolidated Drained **CU** - Consolidated Undrained **M** - Multi Stage **S** - Single Stage
 Soil Type: **C** - Clay **M** - Silt **O** - Organic **NP** - Non Plastic
 Plasticity: **L** - Low **I** - Intermediate **H** - High **V** - Very High **E** - Extremely High



LABORATORY CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Report Ref	20/11891/GO	Contract	Cross Street, Barnes
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BH No.	Sample			Natural Condition		Laboratory		CBR		Remarks
	Depth m	Description	% retained on 20mm sieve	Bulk Density kg/cu.m	Water Content %	Dry Density kg/cu.m	Water Content %	Top %	Base %	
BH1	0.50	MADE GROUND (dark brown silty sand with occasional gravel and brick fragments)	12		5.7	1680	6.0	25	19	
WS2a	0.50	MADE GROUND (greyish brown silty SAND with occasional gravel, roots and occasional brick fragments)	3		7.5	1650	7.7	28	27	



SUMMARY OF CHEMICAL ANALYSES

Determination of Soluble Sulphate Contents of Soil and Groundwater, Organic Matter Content and pH Value

Report Ref	20/11891/GO	Contract	Cross Street, Barnes
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BH No.	Sample			Concentration of Sulphates expressed as SO ₄		pH Value	Organic Content %
	Depth m	Soil Type	% passing 2mm sieve	2:1 Water:Soil Extract mg/l	Groundwater mg/l		
BH1	0.50	MADE GROUND	77	<250		7.3	
	1.20-1.65	MADE GROUND	43	2979		7.3	
	3.00-3.45	SAND and GRAVEL	45	<250		7.9	
	6.00-6.45	SAND and GRAVEL	50	<250		7.3	
	10.50-10.95	CLAY	100	650		7.7	
	13.50-13.95	CLAY	100	502		8.1	
	16.50-16.95	CLAY	100	<250		6.9	
	21.00-21.45	CLAY	100	<250		7.4	
WS2a	0.50	MADE GROUND	90	<250		7.5	
	1.50	SAND with rare gravel	98	<250		7.7	





4041



Environmental Science

George Owens

Albury SI Ltd
 Miltons Yard
 Petworth Road
 Witley
 Surrey
 GU8 5LH

i2 Analytical Ltd.
 7 Woodshots Meadow,
 Croxley Green
 Business Park,
 Watford,
 Herts,
 WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

e: george.owens@alburysil.co.uk

Analytical Report Number : 20-24191

Project / Site name:	Cross Street, Barnes	Samples received on:	11/08/2020
Your job number:	20-11891-GO	Samples instructed on/ Analysis started on:	11/08/2020
Your order number:		Analysis completed by:	18/08/2020
Report Issue Number:	1	Report issued on:	19/08/2020
Samples Analysed:	3 soil samples		

Signed:

Rachel Bradley
 Deputy Quality Manager
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: 20-24191
Project / Site name: Cross Street, Barnes

Lab Sample Number	1589611	1589612	1589613
Sample Reference	WS1	WS2a	TP2
Sample Number	None Supplied	None Supplied	None Supplied
Depth (m)	0.20	0.10	0.30
Date Sampled	07/08/2020	07/08/2020	07/08/2020
Time Taken	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
Moisture Content	%	N/A	NONE	4.5	4.3	9.6
Total mass of sample received	kg	0.001	NONE	1.1	0.9	0.7

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	11.1	8.6	8.4
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1
Total Sulphate as SO4	mg/kg	50	MCERTS	4800	560	880
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	660	33	33
Water Soluble SO4 16hr extraction (2:1 Leachate Equivale	g/l	0.00125	MCERTS	0.33	0.016	0.016
Water Soluble SO4 16hr extraction (2:1 Leachate Equivale	mg/l	1.25	MCERTS	329	16.4	16.3
Sulphide	mg/kg	1	MCERTS	22	1.1	2.5
Elemental Sulphur	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.3	1.9	1.4

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	0.6	< 0.05	0.22
Acenaphthylene	mg/kg	0.05	MCERTS	0.54	0.22	0.44
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	3.4	1.4	3.2
Anthracene	mg/kg	0.05	MCERTS	1.1	0.36	0.78
Fluoranthene	mg/kg	0.05	MCERTS	11	3.5	8.5
Pyrene	mg/kg	0.05	MCERTS	9.6	2.9	7.4
Benzo(a)anthracene	mg/kg	0.05	MCERTS	6.2	2.3	4.9
Chrysene	mg/kg	0.05	MCERTS	4.8	1.8	4.1
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	6.2	2.7	6.1
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	2.6	0.93	1.7
Benzo(a)pyrene	mg/kg	0.05	MCERTS	5.3	2	4.6
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	2.9	1.3	3.1
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.83	0.35	0.7
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	3.1	1.5	3.7

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	57.8	21.3	49.3
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	13	19
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.75	0.88	0.89
Boron (water soluble)	mg/kg	0.2	MCERTS	1.3	0.6	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.5	0.9
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	20	24	24
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	24	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	33	47	54
Lead (aqua regia extractable)	mg/kg	1	MCERTS	220	320	300
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	320	320	250



Analytical Report Number: 20-24191
Project / Site name: Cross Street, Barnes

Lab Sample Number	1589611	1589612	1589613			
Sample Reference	WS1	WS2a	TP2			
Sample Number	None Supplied	None Supplied	None Supplied			
Depth (m)	0.20	0.10	0.30			
Date Sampled	07/08/2020	07/08/2020	07/08/2020			
Time Taken	None Supplied	None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.7	0.9
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	17	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	33	36	38
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	82	230	380

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH C6 - C40	mg/kg	10	NONE	130	540	160
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TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	12	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	84	< 8.0
TPH-CWG - Aliphatic >EC21 - EC40	mg/kg	10	NONE	< 10	130	< 10
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	100	< 8.4
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	96	< 10
TPH-CWG - Aliphatic (EC5 - EC44)	mg/kg	10	NONE	< 10	200	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	3.4	6.1	4.6
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	7.4	11	8
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	49	82	31
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	67	260	94
TPH-CWG - Aromatic >EC21 - EC40	mg/kg	10	NONE	74	290	110
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	63	44
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	130	350	140
TPH-CWG - Aromatic (EC5 - EC44)	mg/kg	10	NONE	130	420	180

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



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Environmental Science

Analytical Report Number : 20-24191

Project / Site name: Cross Street, Barnes

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1589611	WS1	None Supplied	0.2	Brown loam and sand with gravel and vegetation.
1589612	WS2a	None Supplied	0.1	Brown loam and sand with gravel and vegetation.
1589613	TP2	None Supplied	0.3	Brown loam and clay with gravel and vegetation.



Analytical Report Number : 20-24191
Project / Site name: Cross Street, Barnes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Elemental sulphur in soil	Determination of elemental sulphur in soil by extraction in acetonitrile followed by HPLC.	In-house method based on Secondsite Property Holdings Guidance for Assessing and Managing Potential	L021-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPH Chromatogram in Soil	TPH Chromatogram in Soil.	In-house method	L064-PL	D	NONE
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE



Analytical Report Number : 20-24191
Project / Site name: Cross Street, Barnes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	NONE
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

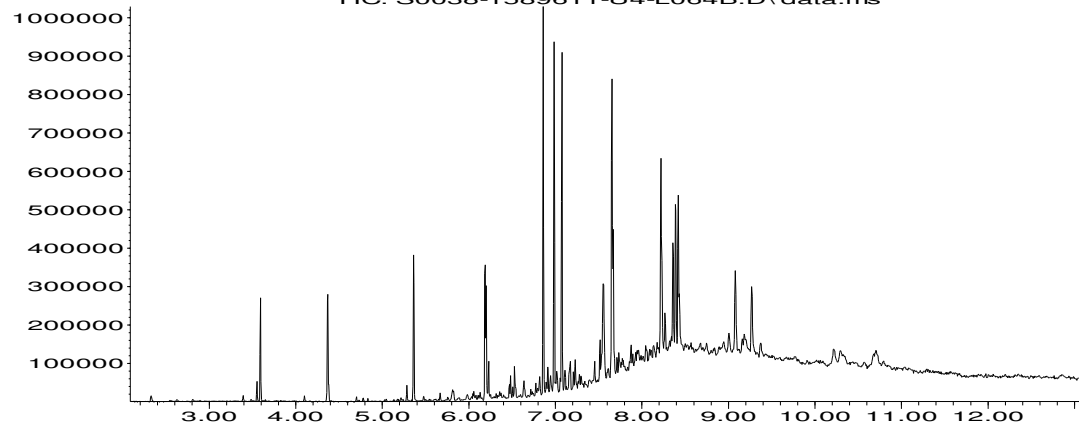
For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Abundance

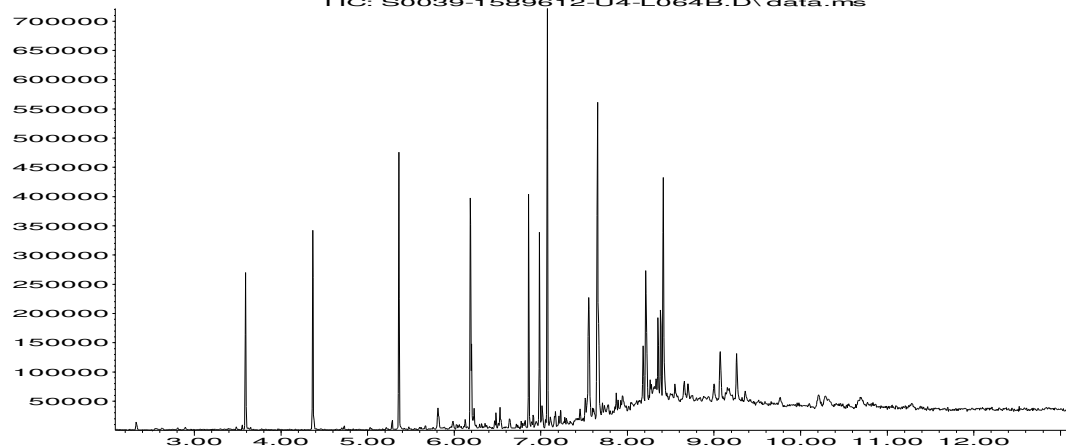
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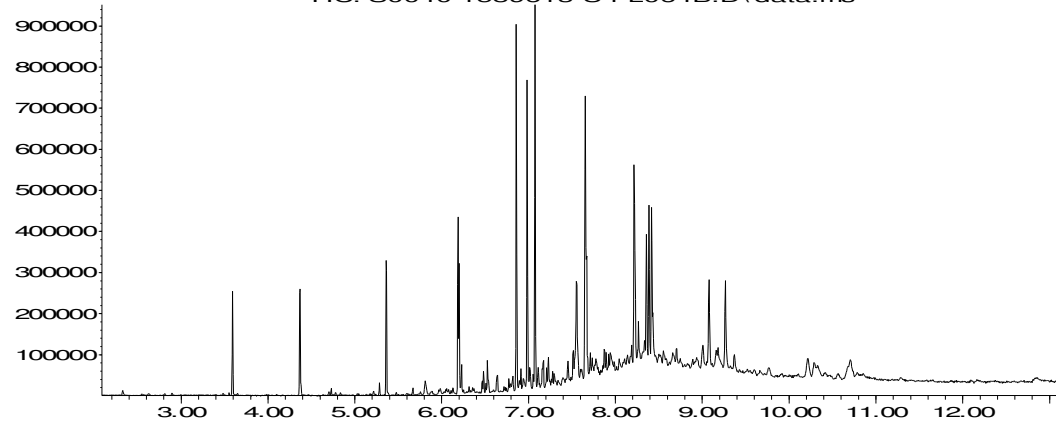
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Abundance

TIC: S0040-1589613-U4-L064B.D\data.ms



Time-->



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Environmental Science

George Owens

Albury SI Ltd
Miltons Yard
Petworth Road
Witley
Surrey
GU8 5LH

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

e: george.owens@alburysi.co.uk

Analytical Report Number : 20-24193

Project / Site name:	Cross Street, Barnes	Samples received on:	11/08/2020
Your job number:	20-11891-GO	Samples instructed on/ Analysis started on:	11/08/2020
Your order number:		Analysis completed by:	18/08/2020
Report Issue Number:	1	Report issued on:	18/08/2020
Samples Analysed:	10:1 WAC sample		

Signed: *A. Czerwińska*

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.

i2 Analytical

7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS

Telephone: 01923 225404
Fax: 01923 237404
email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results							
Report No:	20-24193						
	Client: ALBURY SIL						
Location	Cross Street, Barnes						
Lab Reference (Sample Number)	1589625 / 1589626						
Sampling Date	07/08/2020						
Sample ID	WS2a						
Depth (m)	0.50						
				Limits			
				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Solid Waste Analysis							
TOC (%)**	1.4				3%	5%	6%
Loss on Ignition (%) **	3.2				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	34.8				100	--	--
pH (units)**	7.8				--	>6	--
Acid Neutralisation Capacity (mol / kg)	4.5				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0064			0.0605	0.5	2	25
Barium *	0.0342			0.322	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0015			0.014	0.5	10	70
Copper *	0.014			0.13	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0038			0.0359	0.5	10	30
Nickel *	0.0020			0.019	0.4	10	40
Lead *	0.0073			0.069	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.016			0.15	4	50	200
Chloride *	1.3			13	800	15000	25000
Fluoride	0.85			8.0	10	150	500
Sulphate *	4.9			46	1000	20000	50000
TDS*	64			610	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	7.24			68.1	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	96						
Moisture (%)	4.1						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.				* = UKAS accredited (liquid eluate analysis only)			
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation				** = MCERTS accredited			

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3. This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.



Analytical Report Number : 20-24193

Project / Site name: Cross Street, Barnes

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1589625	WS2a	None Supplied	0.5	Brown loam and sand with gravel and vegetation.



Analytical Report Number : 20-24193
Project / Site name: Cross Street, Barnes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as received, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance""	L046-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270. MCERTS accredited except Coronene.	L064-PL	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH at 20oC in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Total BTEX in soil (Poland)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073-PL	W	MCERTS
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	ISO 17025
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025



Analytical Report Number : 20-24193
Project / Site name: Cross Street, Barnes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

APPENDIX 4

WASTE

WASTE CLASSIFICATION

The European Waste Framework Directive is implemented in the UK by the 2002 Landfill Regulations, together with a number of other acts and regulations. A key part of this process is to establish the hazardous properties of potential waste. The classification and definition of hazardous waste is interpreted within the Environment Agency guidance WM3 and all wastes require classifying in accordance with the European Waste Catalogue [EWC]. The EWC is a detailed list of typical industry waste types and each has a 6 digit code. Typically the appropriate EWC codes for excavated soil being disposed off site are:

- 17 05 03* soil and stones containing dangerous substances, or
- 17 05 04 soil and stones other than those mentioned in 17 05 03

If excavated soils are to be discarded or exported from site then they would be considered controlled waste and require classification. However, if soils can be re-used on site then they are not considered to be controlled waste. A Desk Study, soil descriptions, laboratory chemical analysis and risk assessment can all contribute to basic waste characterisation. Depending upon the chemical composition or levels of contaminants in the waste (e.g. metals, TPH, asbestos), soil and stones can either be hazardous or non-hazardous. Waste Acceptance Criteria [WAC] test results are used to determine the suitability of the waste intended for disposal against the acceptance criteria for a particular class of landfill site. WAC tests are not used for the classification of waste soils and are only required for inert or hazardous excavated material which is destined for landfill.

Wastes containing asbestos with a concentration of >0.10% weight/weight (w/w) are generally considered to be hazardous. While waste with <0.10% w/w of asbestos are considered non-hazardous. Where free fibres or fibrous asbestos is present at concentrations of >0.001% then these are considered to pose a risk to human health and are deemed hazardous waste. These waste materials also require a suitably licensed company to handle them.

Waste Treatment

It is a requirement of the 2002 Landfill Regulations that all wastes must undergo some form of pre-treatment prior to disposal at an appropriately licensed landfill. Treatment is defined using a 'three-point test' and can include physical, chemical, biological or thermal processes, which must change the characteristics of the waste in order to:

- reduce its volume, or
- reduce its hazardous nature, or
- facilitate its handling, or
- enhance its recovery.

The exceptions to this are:

- inert waste for which treatment is not technically feasible.
- it is waste other than inert waste and treatment would not reduce its quantity or its hazards to human health or the environment.

The waste producer should either treat their own waste or ensure that the waste will be treated by a subsequent handler. The waste producer should record the type and amount of pre-treatment undertaken prior to disposal.

Examples of treatment include mechanical segregation or sorting, composting, soil treatment hubs and incineration. This can include physical sorting of waste soil types into separate stockpiles at the producer site, e.g. topsoil, made ground and natural clay, sand or gravels.

Site Name	32 Cross Street
Location	Barnes
Site ID	
Job Number	20/11891/GO
Date	26/08/2020
User Name	
Company Name	Albury S.I Ltd

Hole ID	Sample Depth	Contaminant	Contaminant Concentration (%)	Hazardous Waste Y/N	Hazard Property	Individual Hazard Statements Exceeded	Cumulative Hazard Statements Exceeded	Additional Hazard Statements (see notes section)
WS1	0.20	pH	0.00000	N				
WS1	0.20	Benzene	0.00010	N				H225 test
WS1	0.20	Toluene	0.00010	N				H225 test
WS1	0.20	Ethylbenzene	0.00010	N				H225 test
WS1	0.20	m,p-xylene	0.00010	N				H226 test
WS1	0.20	o-xylene	0.00000	N				H226 test
WS1	0.20	Naphthalene	0.00006	N				H228 test
WS1	0.20	Acenaphthylene	0.00005	N				
WS1	0.20	Acenaphthene	0.00001	N				
WS1	0.20	Fluorene	0.00001	N				
WS1	0.20	Phenanthrene	0.00034	N				
WS1	0.20	Anthracene	0.00011	N				
WS1	0.20	Fluoranthene	0.00110	N				
WS1	0.20	Pyrene	0.00096	N				
WS1	0.20	Benzo(a)anthracene	0.00062	N				
WS1	0.20	Chrysene	0.00048	N				
WS1	0.20	Benzo(b)fluoranthene	0.00062	N				
WS1	0.20	Benzo(k)fluoranthene	0.00026	N				
WS1	0.20	Benzo(a)pyrene	0.00053	N				
WS1	0.20	Indeno(1,2,3-cd)pyrene	0.00029	N				
WS1	0.20	Di-benz(a,h)anthracene	0.00008	N				
WS1	0.20	Benzo(g,h,i)perylene	0.00031	N				
WS1	0.20	Unknown hydrocarbon/oil with marker compound	0.01300	N				H225 test
WS1	0.20	Arsenic	0.00230	N				
WS1	0.20	Boron	0.00301	N				
WS1	0.20	Cadmium	0.00004	N				
WS1	0.20	Hexavalent Chromium	0.00012	N				
WS1	0.20	Chromium (Total)	0.00289	N				
WS1	0.20	Copper	0.00829	N				
WS1	0.20	Lead	0.00000	N				
WS1	0.20	Leadx	0.02200	N				
WS1	0.20	Manganese	0.08796	N				
WS1	0.20	Mercury	0.00003	N				
WS1	0.20	Nickel	0.00501	N				
WS1	0.20	Selenium	0.00038	N				
WS1	0.20	Zinc	0.00000	N				
WS1	0.20	Zincx	0.02025	N				
WS1	0.20	Vanadium	0.00589	N				
WS2a	0.10	pH	0.00000	N				
WS2a	0.10	Benzene	0.00010	N				H225 test
WS2a	0.10	Toluene	0.00010	N				H225 test
WS2a	0.10	Ethylbenzene	0.00010	N				H225 test
WS2a	0.10	m,p-xylene	0.00010	N				H226 test
WS2a	0.10	o-xylene	0.00000	N				H226 test
WS2a	0.10	Naphthalene	0.00001	N				H228 test
WS2a	0.10	Acenaphthylene	0.00002	N				
WS2a	0.10	Acenaphthene	0.00001	N				
WS2a	0.10	Fluorene	0.00001	N				
WS2a	0.10	Phenanthrene	0.00014	N				
WS2a	0.10	Anthracene	0.00004	N				
WS2a	0.10	Fluoranthene	0.00035	N				
WS2a	0.10	Pyrene	0.00029	N				

Site Name	32 Cross Street
Location	Barnes
Site ID	
Job Number	20/11891/GO
Date	26/08/2020
User Name	
Company Name	Albury S.I Ltd

Hole ID	Sample Depth	Contaminant	Contaminant Concentration (%)	Hazardous Waste Y/N	Hazard Property	Individual Hazard Statements Exceeded	Cumulative Hazard Statements Exceeded	Additional Hazard Statements (see notes section)
WS2a	0.10	Benzo(a)anthracene	0.00023	N				
WS2a	0.10	Chrysene	0.00018	N				
WS2a	0.10	Benzo(b)fluoranthene	0.00027	N				
WS2a	0.10	Benzo(k)fluoranthene	0.00009	N				
WS2a	0.10	Benzo(a)pyrene	0.00020	N				
WS2a	0.10	Indeno(1,2,3-cd)pyrene	0.00013	N				
WS2a	0.10	Di-benz(a,h)anthracene	0.00004	N				
WS2a	0.10	Benzo(g,h,i)perylene	0.00015	N				
WS2a	0.10	Unknown hydrocarbon/oil with marker compound	0.05400	N				H225 test
WS2a	0.10	Arsenic	0.00199	N				
WS2a	0.10	Boron	0.00139	N				
WS2a	0.10	Cadmium	0.00009	N				
WS2a	0.10	Hexavalent Chromium	0.00012	N				
WS2a	0.10	Chromium (Total)	0.00333	N				
WS2a	0.10	Copper	0.01181	N				
WS2a	0.10	Lead	0.00000	N				
WS2a	0.10	Leadx	0.03200	N				
WS2a	0.10	Manganese	0.08796	N				
WS2a	0.10	Mercury	0.00007	N				
WS2a	0.10	Nickel	0.00448	N				
WS2a	0.10	Selenium	0.00038	N				
WS2a	0.10	Zinc	0.00000	N				
WS2a	0.10	Zincx	0.05679	N				
WS2a	0.10	Vanadium	0.00643	N				
TP2	0.30	pH	0.00000	N				
TP2	0.30	Benzene	0.00000	N				H225 test
TP2	0.30	Toluene	0.00000	N				H225 test
TP2	0.30	Ethylbenzene	0.00000	N				H225 test
TP2	0.30	m,p-xylene	0.00000	N				H226 test
TP2	0.30	o-xylene	0.00000	N				H226 test
TP2	0.30	Naphthalene	0.00002	N				H228 test
TP2	0.30	Acenaphthylene	0.00004	N				
TP2	0.30	Acenaphthene	0.00001	N				
TP2	0.30	Fluorene	0.00001	N				
TP2	0.30	Phenanthrene	0.00032	N				
TP2	0.30	Anthracene	0.00008	N				
TP2	0.30	Fluoranthene	0.00085	N				
TP2	0.30	Pyrene	0.00074	N				
TP2	0.30	Benzo(a)anthracene	0.00049	N				
TP2	0.30	Chrysene	0.00041	N				
TP2	0.30	Benzo(b)fluoranthene	0.00061	N				
TP2	0.30	Benzo(k)fluoranthene	0.00017	N				
TP2	0.30	Benzo(a)pyrene	0.00046	N				
TP2	0.30	Indeno(1,2,3-cd)pyrene	0.00031	N				
TP2	0.30	Di-benz(a,h)anthracene	0.00007	N				
TP2	0.30	Benzo(g,h,i)perylene	0.00037	N				
TP2	0.30	Unknown hydrocarbon/oil with marker compound	0.01600	N				H225 test
TP2	0.30	Arsenic	0.00291	N				
TP2	0.30	Boron	0.00185	N				
TP2	0.30	Cadmium	0.00017	N				

Notes - Additional Information on Hazard Properties

Hazardous Property	Description	Hazard Statement	Note
HP1	Explosive	H200, H201, H202, H203, H204, H240 and H241	A waste is assessed for HP1 via test methods, rather than a concentration limit. If you have substances or a mixture containing explosive properties the waste should be tested in accordance with the European Chemical Agency's guidance on the application of the CLP Criteria.
HP2	Oxidising	H270, H271, H272	A waste is assessed for HP2 via test methods, rather than a concentration limit. If you have substances or a mixture containing oxidising properties the waste should be tested in accordance with the European Chemical Agency's guidance on the application of the CLP Criteria.
HP3	Flammable	H220 to H226, H228, H242, H250, H251m, H252, H260, H261	A waste is assessed for HP3 via test methods, rather than a concentration limit. If you have substances or a mixture containing flammable properties the waste should be tested in accordance with the European Chemical Agency's guidance on the application of the CLP Criteria. If a waste contains either H220, H221, H260 or H261 a calculation can be performed to identify the minimum amount of that substance that will trigger HP3.
HP5	Specific Target Organ Toxicity (STOT)	H304	Should a waste contain two or more compounds displaying H304 (Asp. Tox 1) and equal or exceed its specific concentration limit of 10%, then a waste will be hazardous by HP5 if its kinematic viscosity exceeds 20.5 mm ² /s. Guidance should be sought from the CLP Criteria.
HP9	Infectious	N/A	A waste is assessed for HP9 via further testing, rather than a concentration limit. In cases where there is the potential for toxins to be present, further testing will be required. For healthcare waste reference should be made to the Department of health guidance: Safe management of healthcare waste.
HP12	Release of acute toxic gas	EUH029, EUH031, EUH032, H260 or H261	A waste is assessed for HP12 via test methods, rather than a concentration limit. If you have substances or a mixture that may release acute toxic gas the waste should be tested in accordance with the European Chemical Agency's guidance on the application of the CLP Criteria.
HP15	Explosive or explosive properties	H205, EUH001, EUH019 or EUH044	A waste is assessed for HP15 via test methods, rather than a concentration limit. If you have substances or a mixture that may exhibit explosive or explosive properties the waste should be tested in accordance with the European Chemical Agency's guidance on the application of the CLP Criteria.
HP16	Persistent organic pollutants	N/A	A waste is considered hazardous if the concentration of one or more compound (persistent organic pollutant) as listed in Appendix C of Environment Agency guidance WM3 is above its assigned concentration limit. For reference for dioxins and furans, this assessment incorporates the use of specific toxicity equivalent factors.

APPENDIX 5

MONITORING DATA

GROUND GAS AND GROUNDWATER MONITORING

Contract	Cross Street, Barnes	Report Ref	20/11891/GO
Date	14/08/2020	Visit	1
Engineer	DH	Check	GO
Weather	Cloudy	Page	1
Atmospheric Pressure		Before	1013
		After	1013
Published Pressure Trend		High (steady/rising)	

Remarks

Position	Flow (l/hr)		Common Gases (%)				H ₂ S	VOC (ppm)	Groundwater (m)		Remarks
	High	Low	Time	CO ₂	CH ₄	O ₂			Water	Base	
WS1	0.0	0.0	15s	0.4	0.0	20.4	0		dry	2.70	
			30s	0.7	0.0	19.8					
			45s	1.2	0.0	19.4					
			1m	1.8	0.0	18.9					
			1m 15s	1.9	0.0	18.8					
			1m 30s	1.9	0.0	18.7					
			1m 45s	1.9	0.0	18.8					
			2m	1.9	0.0	18.8					
			2m 15s	1.9	0.0	18.8					
			2m 30s	1.9	0.0	18.8					
			2m 45s	1.9	0.0	18.8					
			3m	1.9	0.0	18.8					
WS2a	0.0	0.0	15s	0.1	0.0	20.9	0		dry	2.70	
			30s	0.1	0.0	20.8					
			45s	0.1	0.0	20.7					
			1m	0.2	0.0	20.6					
			1m 15s	0.6	0.0	20.4					
			1m 30s	0.7	0.0	20.3					
			1m 45s	0.8	0.0	20.1					
			2m	1.0	0.0	19.9					
			2m 15s	0.9	0.0	20.0					
			2m 30s	0.9	0.0	20.0					
			2m 45s	0.9	0.0	20.0					
			3m	0.9	0.0	20.0					

GROUND GAS AND GROUNDWATER MONITORING

Contract		Cross Street, Barnes				Report Ref		20/11891/GO			
Date		04/09/2020				Visit		2			
Engineer		JH				Check		GO			
Weather		Cloudy				Page		1			
Atmospheric Pressure			Before			1021					
			After			1021					
Published Pressure Trend			High								
Remarks		Tiger PID									
Position	Flow (l/hr)		Common Gases (%)				H ₂ S	VOC (ppm)	Groundwater (m)		Remarks
	High	Low	Time	CO ₂	CH ₄	O ₂			Water	Base	
WS1	0.0	0.0	15s	0.9	0.0	19.5	0	0	dry	2.70	
			30s	1.3	0.0	19.2					
			45s	1.5	0.0	19.3					
			1m	1.5	0.0	19.3					
			1m 15s	1.6	0.0	19.3					
			1m 30s	1.7	0.0	19.3					
			1m 45s	1.7	0.0	19.4					
			2m	1.7	0.0	19.4					
			2m 15s	1.7	0.0	19.3					
			2m 30s	1.7	0.0	19.3					
			2m 45s	1.7	0.0	19.3					
			3m	1.7	0.0	19.3					
WS2a	0.0	0.0	15s	0.3	0.0	21.1	0	0	dry	2.70	
			30s	0.4	0.0	21.0					
			45s	0.6	0.0	20.9					
			1m	0.6	0.0	21.0					
			1m 15s	0.6	0.0	21.0					
			1m 30s	0.6	0.0	21.0					
			1m 45s	0.6	0.0	21.0					
			2m	0.6	0.0	21.0					
			2m 15s	0.6	0.0	21.0					
			2m 30s	0.6	0.0	21.0					
			2m 45s	0.5	0.0	21.0					
			3m	0.5	0.0	21.0					

GROUND GAS AND GROUNDWATER MONITORING

Contract		Cross Street, Barnes				Report Ref		20/11891/GO			
Date		05/10/2020				Visit		4			
Engineer		JH				Check		GO			
Weather		Cloudy				Page		1			
Atmospheric Pressure			Before			995					
			After			995					
Published Pressure Trend			Low - following a period of significantly falling pressure trend								
Remarks											
Position	Flow (l/hr)		Common Gases (%)				H ₂ S	VOC (ppm)	Groundwater (m)		Remarks
	High	Low	Time	CO ₂	CH ₄	O ₂			Water	Base	
WS1	0.0	0.0	15s	0.9	0.0	19.4	0		dry	2.70	
			30s	1.1	0.0	19.4					
			45s	1.2	0.0	19.4					
			1m	1.3	0.0	19.6					
			1m 15s	1.2	0.0	19.6					
			1m 30s	1.2	0.0	19.7					
			1m 45s	1.2	0.0	19.5					
			2m	1.2	0.0	19.5					
			2m 15s	1.2	0.0	19.5					
			2m 30s	1.4	0.0	19.5					
			2m 45s	1.4	0.0	19.5					
			3m	1.3	0.0	19.6					
WS2a	0.0	0.0	15s	0.8	0.0	20.5	0		dry	2.70	
			30s	0.8	0.0	20.3					
			45s	1.0	0.0	20.2					
			1m	1.2	0.0	20.2					
			1m 15s	1.0	0.0	20.1					
			1m 30s	1.0	0.0	20.2					
			1m 45s	0.9	0.0	20.2					
			2m	1.2	0.0	20.1					
			2m 15s	1.1	0.0	20.1					
			2m 30s	1.1	0.0	20.1					
			2m 45s	1.1	0.0	20.1					
			3m	1.1	0.0	20.1					

TEST DATE AND CONDITIONS	
Date	29/01/20
Atmospheric Pressure	981mB
Ambient Temp	24.4°C
Enviroics Serial No.	2518/3268



GAS DATA LTD
Pegasus House
Seven Stars Estate
Wheler Rd
Coventry
CV3 4LB
Tel 02476303311 Fax 02476307711

GFM436-1 FINAL INSPECTION & CALIBRATION CHECK CERTIFICATE

INSTRUMENT DETAILS	
Serial No	Customer
11158	Gas Data Hire Fleet

INSTRUMENT CHECKS			
Keyboard	✓	Pump Flow	500cc/min
Display Contrast	✓	Pump Flow @ -200mB	325cc/min
Clock Set / Running	✓	S/W Version	G436.0027/0010
Labels Fitted	✓	Recalibration Date	29/01/21


GAS CHECKS							
Calibration Gas		Instrument Gas Channels Read					
Gas Type	Applied Conc.	CH4 (%)	tol. (% vol.)	CO2 (%)	tol. (% vol.)	O2 (%)	tol. (% vol.)
N2	100%	0.0	0.0	0.0	0.0	0.0	+/-0.1
CH4	5%	4.9	+/-0.3	0.0	0.0	0.0	+/-0.1
	60%	59.9	+/-3.0	0.0	0.0	0.0	+/-0.1
CO2	5%	0.0	0.0	5.0	+/-0.3	0.0	+/-0.1
	40%	0.0	0.0	39.8	+/-3.0	0.0	+/-0.1
O2	20.9%	0.0	0.0	0.0	+0.1	20.9	+/-0.5

OPTIONAL GAS CHECKS							
Calibration Gas		Instrument Gas Channels Read					
Gas Type	Applied Conc.	Label Range	H2S 5000ppm	CO 2000ppm		Hexane 2.00%	tol. (% vol.)
N2	100%		0	0		0.000	+/- 5.0
H2S	1500ppm		1500	0			+/- 5.0
CO	1000ppm		80	995			+/- 5.0
Hexane	2.00%					2.127	+/- 10.0

PRESSURE CHECKS					
Calibration Pressure		Instrument Pressure Channels Read			
Pressure @	Applied Pressure	Atmospheric [Ap] (mB)	tol. (mB)		
All Ports	Current Atmospheric	983	+/-2.0		
Ap Port (Internal)	+800mB(a)	798	+/-5.0		
	+1200mB(a)	1201	+/-5.0		

TEST DATE AND CONDITIONS			
Date	25/08/2020		
Atmospheric Pressure	975	mB	
Ambient Temperature	22.2	°C	
Envionics Serial No.	5089		

**GFM436 Final Inspection & Calibration
Check Certificate**

GAS DATA LTD	
Unit 4, Fairfield Court	
Seven Stars Estate	
Wheler Rd	
Coventry	
CV3 4LJ	
Tel 02476303311	Fax 02476307711

Customer	Albury S.I.
Certificate Number	121963
Order Number	326503

Serial Number	12733
Software Version	G436-00.0027/0010

Recalibration DUE Date
25/08/21

Instrument Checks					
Keyboard	✓		Display Contrast	✓	
Pump Flow In	400	Accept > 200 cc/min	Pump Flow @ -200mB	200	Accept > 200 cc/min
Clock Set / Running	✓		Labels Fitted	✓	

Gas Checks						
Sensor	CH ₄		CO ₂		O ₂	
	Instrument Gas	True Gas Value %	Instrument Gas	True Gas Value %	Instrument Gas	True Gas Value %
	Readings %		Readings %		Readings %	
	60	60	40	40	20.9	20.9
	Accept ±3.0		Accept ±3.0		Accept ±0.5	
	5	5	5	5	6	6
	Accept ±0.3		Accept ±0.3		Accept ±0.3	
Zero Reading 100% N ₂	0	0	0	0	0	0
	Accept ±0.0		Accept ±0.0		Accept ±0.1	

Optional Gas Checks						
Applied Gas & Range		Concentration Tested @ (ppm)	Instrument Readings (ppm)			
Gas Type	Range (ppm)		Zero Reading		Instrument Gas Reading	
H ₂ S	5000	1500	0	Accept ±0.0	1500	Accept ±5.0
CO	2000	1000	0	Accept ±0.0	1000	Accept ±5.0
Hexane	2.0%	2.0%	0	Accept ±0.0	1.99	Accept ±10.0

Cross Gas Effects									
Applied Gas (ppm)		Instrument Readings (ppm)							
Gas Type	Concentration	Toxic 1:	H2S	Toxic 2:	CO	Toxic 3:	HEX		
H2S	1500	1500		0		0			
CO	1000	70		1000		0			
Hexane	2.0%	0		0		1.99			

Pressure Checks			
Atmospheric Pressure [AP] (mB)			
Current Atmospheric Pressure (mB)		Instrument Atmospheric Pressure Reading (mB)	
AP Open Ports		975	Accept ±2.0
AP Port (Internal)	+800 mB	800	Accept ±5.0
	+1200mb	1200	Accept ±5.0

Flow Checks					
Borehole Flow			Differential Pressure		
Applied Reading (l/h)	Instrument Reading (l/h)		Applied Pressure (Pa)	Instrument Reading (Pa)	
-30	-29.7	Accept ±3.0	-411	-409	Accept ±50
-3	-3	Accept ±1.0	-20	-20	Accept ±6.0
0	0	Accept ±0.0	0	0	Accept ±0.5
3	3	Accept ±0.5	18	18	Accept ±3.0
30	30	Accept ±3.0	349	346	Accept ±50
60	60.7	Accept ±6.0	1046	1049	Accept ±130
90	90.4	Accept ±9.0	2046	>>>>	Accept ±250

Temperature Checks		
Calibration Temperature	Instrument Temperature Reading °C	
Applied Temperature °C		
-10	-10	Accept ±2.0
0	0	Accept ±1.0
30	30	Accept ±1.0
60	60	Accept ±1.0
100	100	Accept ±1.0

Technician:
<i>Jack Rutland</i>

Date Tested:
26/08/2020

The instrument identified by the serial number stated above has been tested by Gas Data personnel for calibration accuracy on the date and under the ambient conditions stated. Gas Data Ltd internal BS EN ISO9001:2015 compliant workshop procedures were followed to apply known calibration test gases, gas flow rates, pressures and temperatures of the values stated. The results displayed on the instrument at each stage are recorded above.