



**Geo-Environmental
London**

Published 1895

Source map scale - 1:1,056

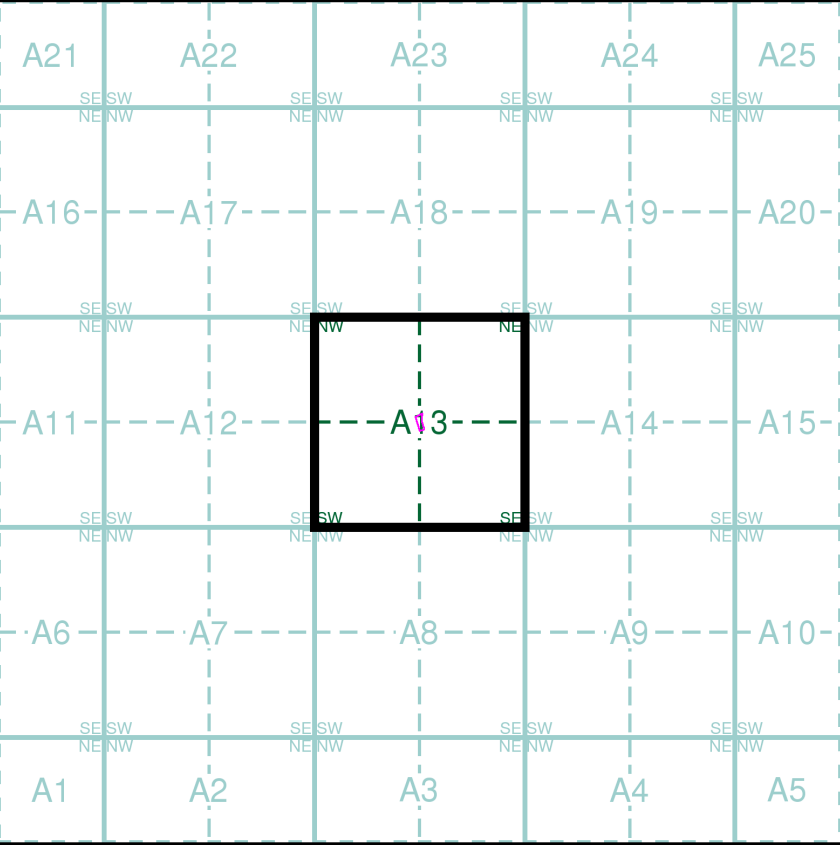
The 1:1056 scale of Ordnance Survey mapping was adopted from Ireland in 1848 and was used to survey towns with a population of over 4000, plus county towns of lesser population, in those counties mapped at the six-inch scale in 1841-55. The scale was the largest scale at which London was mapped by the Ordnance Survey and a 'skeleton' survey of the capital, showing little more than streets, street names, frontages and altitudes, was undertaken between 1848 and 1850. The majority of the 1:1056 surveys were later replaced by 1:500 surveys; although almost all the remainder were revised at this scale, sometimes more than once before 1895. The type of detail shown on the 1:1056 scale is broadly similar to that on 1:500; the apparent omission of minor details such as sewer access points and street lights may be as much a reflection of the generally earlier date of these plans, as of the specification of the map.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

Map Name(s) and Date(s)

006_00_020
1895
1:1,056
006_00_030
1895
1:1,056

Historical Town Plan - Segment A13



Order Details

Order Number: 72033053_1_1
Customer Ref: GE10977
National Grid Reference: 527040, 183950
Slice: A
Site Area (Ha): 0.09
Search Buffer (m): 0

Site Details

1 Wadham Gardens, LONDON, NW3 3DN



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



**Geo-Environmental
London**

Published 1938

Source map scale - 1:1,056

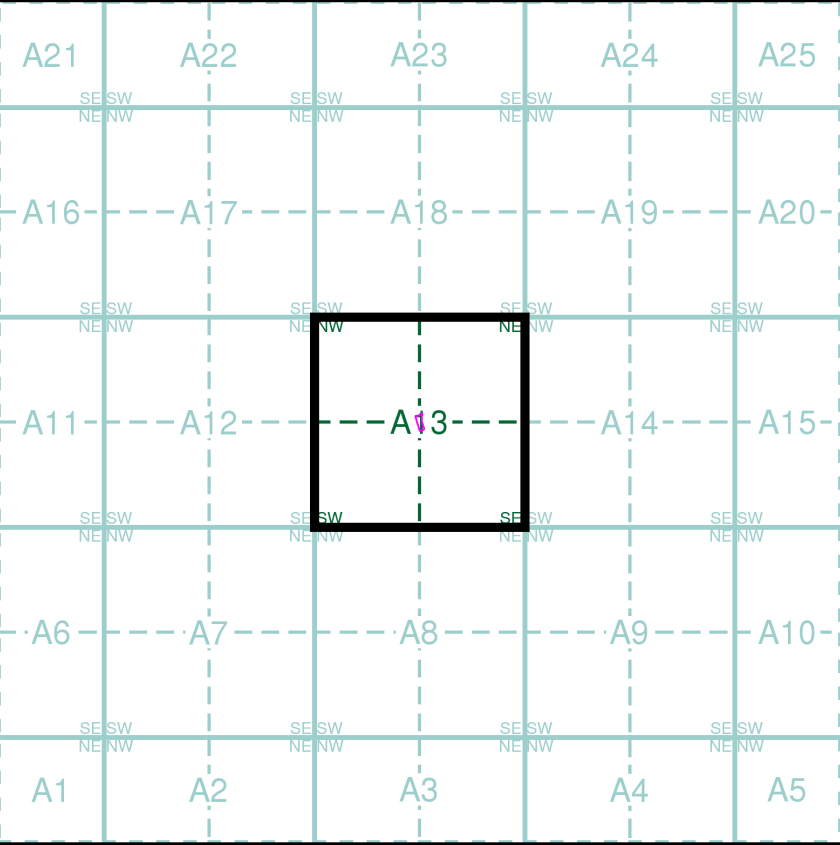
The 1:1056 scale of Ordnance Survey mapping was adopted from Ireland in 1848 and was used to survey towns with a population of over 4000, plus county towns of lesser population, in those counties mapped at the six-inch scale in 1841-55. The scale was the largest scale at which London was mapped by the Ordnance Survey and a 'skeleton' survey of the capital, showing little more than streets, street names, frontages and altitudes, was undertaken between 1848 and 1850. The majority of the 1:1056 surveys were later replaced by 1:500 surveys; although almost all the remainder were revised at this scale, sometimes more than once before 1895. The type of detail shown on the 1:1056 scale is broadly similar to that on 1:500; the apparent omission of minor details such as sewer access points and street lights may be as much a reflection of the generally earlier date of these plans, as of the specification of the map.

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Map Name(s) and Date(s)

006_00_020
1938
1:1,056
006_00_030
1938
1:1,056

Historical Town Plan - Segment A13



Order Details

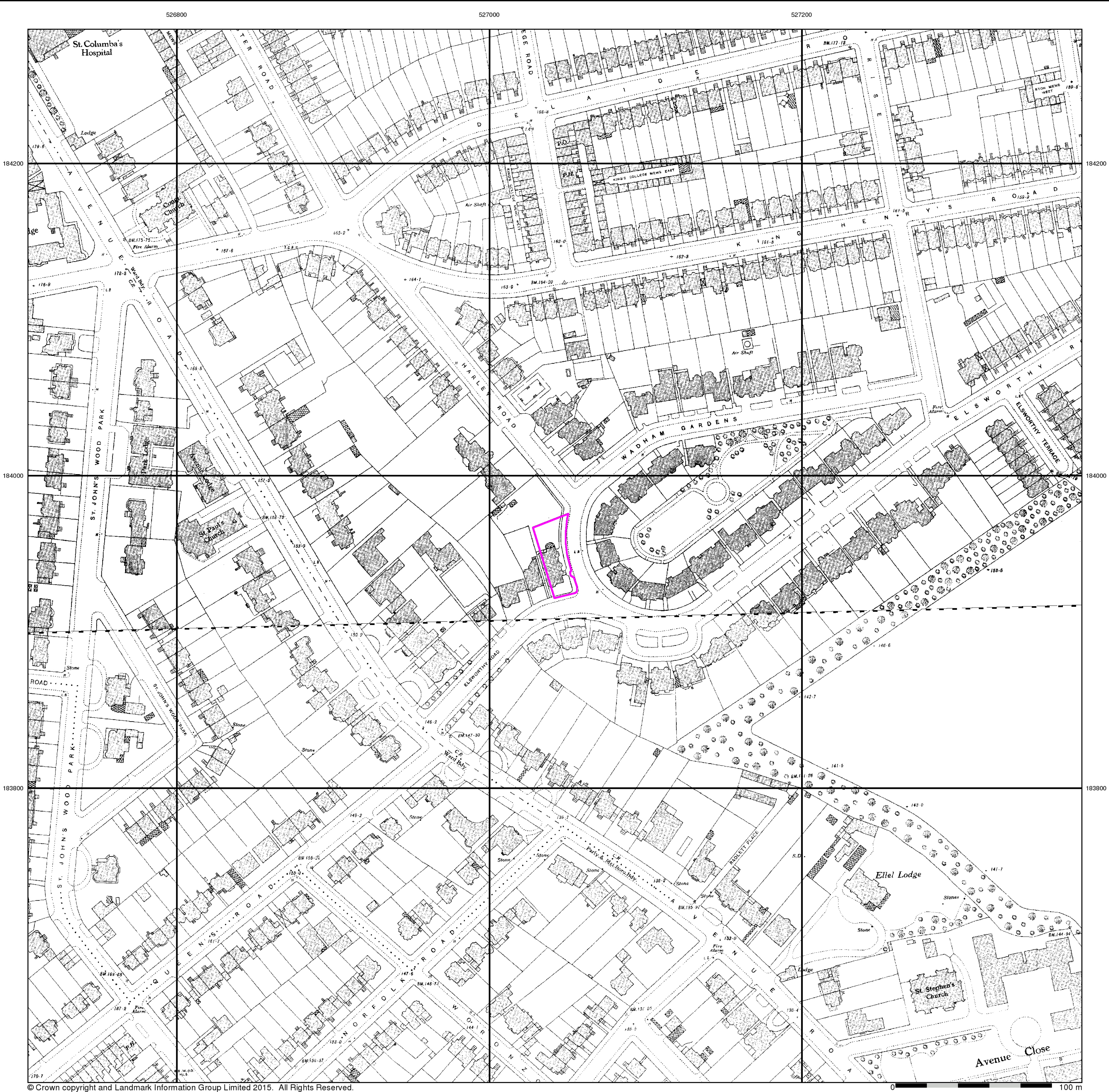
Order Number: 72033053_1_1
Customer Ref: GE10977
National Grid Reference: 527040, 183950
Slice: A
Site Area (Ha): 0.09
Search Buffer (m): 0

Site Details

1 Wadham Gardens, LONDON, NW3 3DN



Tel: 0844 844 9952
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Geo-Environmental London

Published 1850

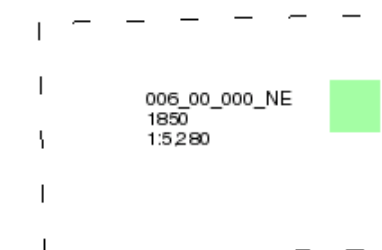
Source map scale - 1:5,280

The historical town plans shown derive from Ordnance Survey mapping from the early to mid 1850s. The 1:2640 scale was introduced in the early 1850s, to survey districts covered by the Local Boards of Health and for a map of the Osborne Estate of Queen Victoria. The general style is similar to that of the early 1:2500s published shortly afterwards.

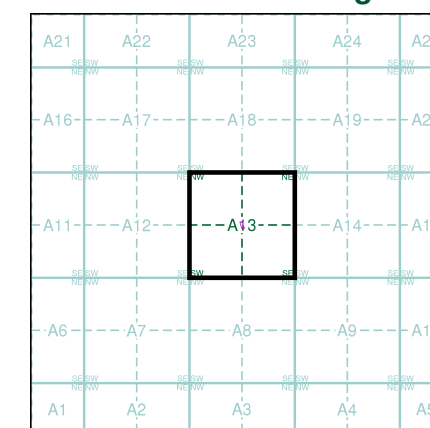
1:5280 scale was surveyed shortly afterwards in the mid 1850s as general purpose mapping with a standard of content similar to the more contemporary 1:10,560 mapping. The scale was also used for a reduction of the 1:1056 'skeleton survey' of London that was undertaken between 1848 and 1850.

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Map Name(s) and Date(s)



Historical Town Plan - Segment A13



Order Details

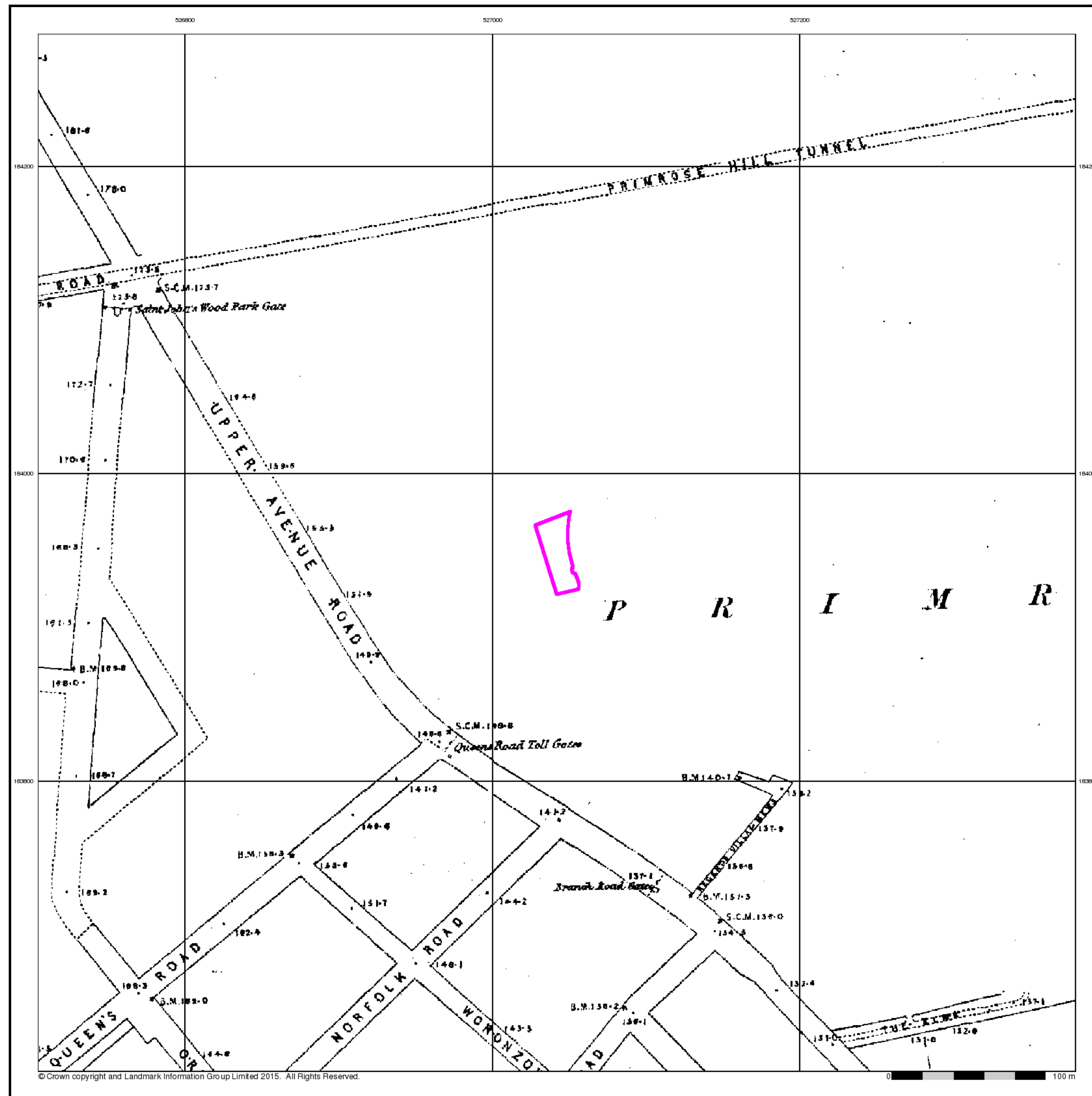
Order Number: 72033053_1_1
Customer Ref: GE10977
National Grid Reference: 527040, 183950
Slice: A
Site Area (Ha): 0.09
Search Buffer (m): 0

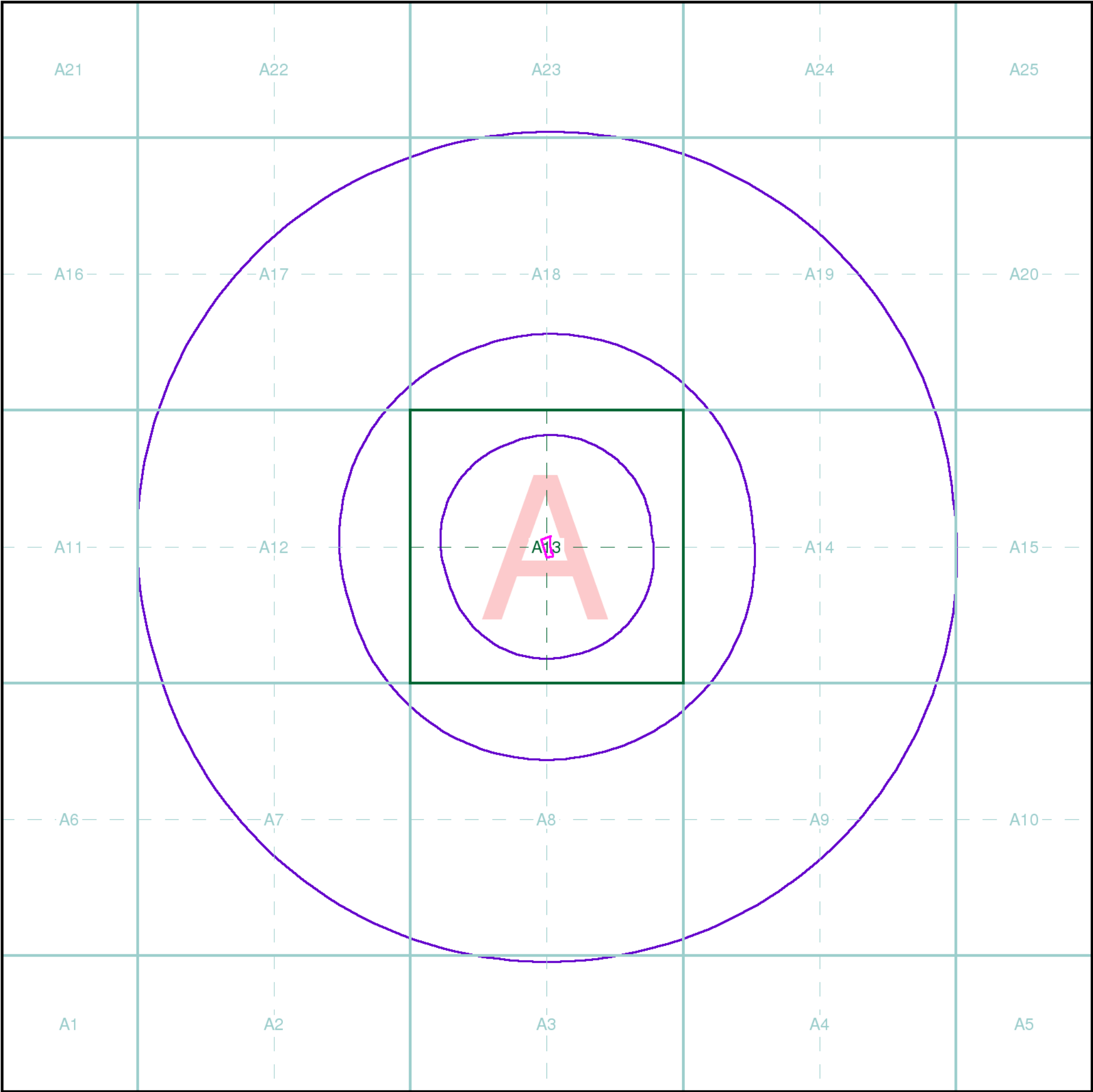
Site Details

1 Wadham Gardens, LONDON, NW3 3DN



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Geo-Environmental Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice

Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment

A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant

A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:



Envirocheck reports are compiled from 136 different sources of data.

Client Details

MR J Tingley, Geo Environmental Services Ltd, Unit 7
Danworth Farm, Cuckfield Road, Hurstpierpoint, West
Sussex, BN6 9GL

Order Details

Order Number: 72033053_1_1
Customer Ref: GE10977
National Grid Reference: 527040, 183950
Site Area (Ha): 0.09
Search Buffer (m): 1000

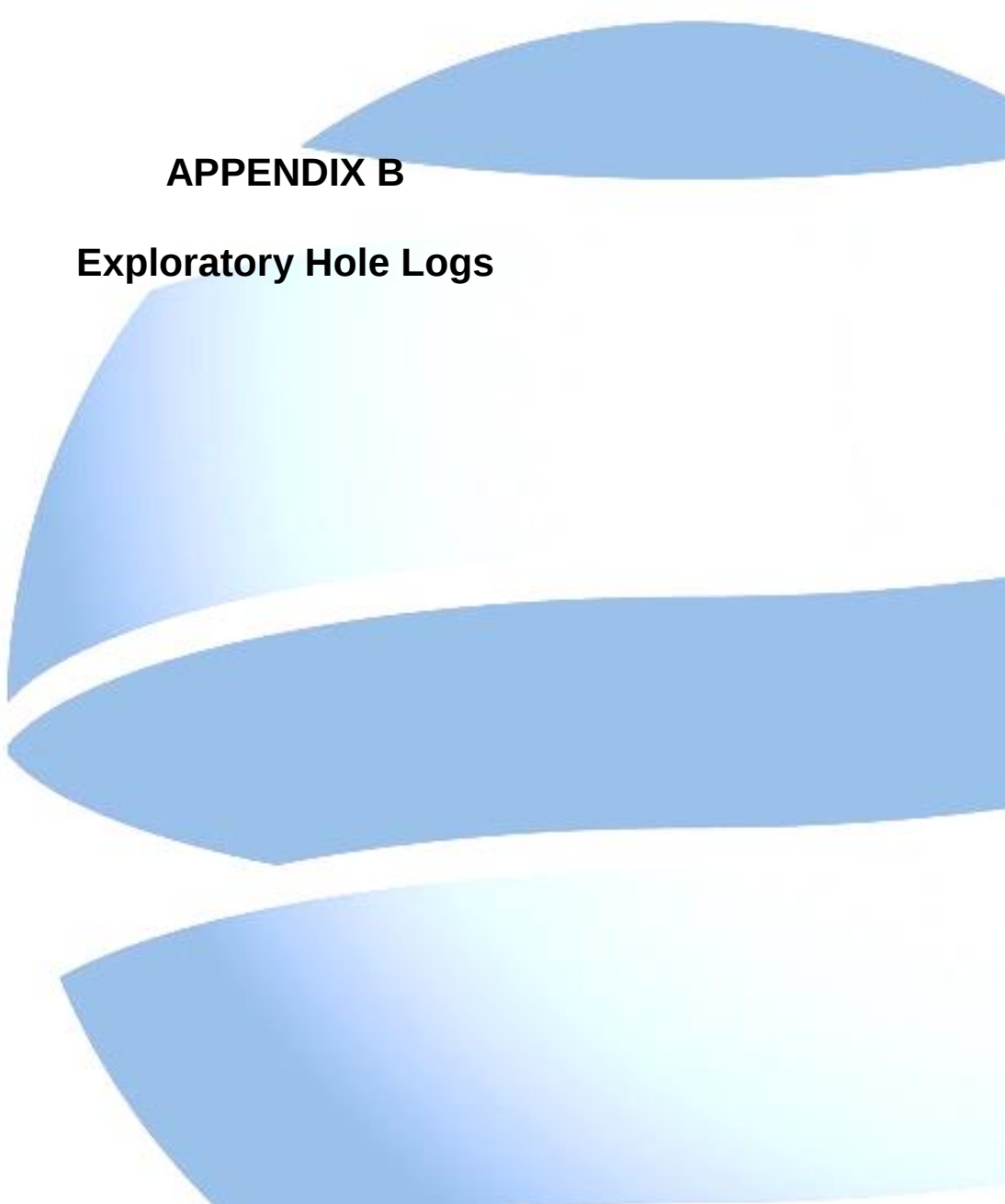
Site Details

1 Wadham Gardens, LONDON, NW3 3DN

Full Terms and Conditions can be found on the following link:
<http://www.landmarkinfo.co.uk/Terms/Show/515>



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A decorative graphic consisting of three horizontal, wavy blue bands of varying shades (light blue, medium blue, and dark blue) that curve and overlap, creating a sense of movement and depth.

APPENDIX B

Exploratory Hole Logs



Geo-Environmental
www.gesl.net

Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Borehole Log

Borehole No.

WS1

Sheet 1 of 1

Project Name: 1 Wadham Gardens

Project No.
GE10977

Co-ords: 527035E - 183956N

Hole Type
WS

Location: London

Level:

Scale
1:25

Client: Marcus Cooper Group

Dates: 03/09/2015

Logged By
PC

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.12 0.20			Paving slab. MADE GROUND	
								Sandstone blocks and orangish brown sand. MADE GROUND	
		0.55	D		0.60			Dark brown sand and gravel comprising demolition rubble; concrete, brick and occasional breeze block fragments.. MADE GROUND	
		1.00 1.00	D PP	2.0kg/cm2				Stiff orangish brown silty CLAY. LONDON CLAY	1
		1.50 1.55	PP D	2.0kg/cm2					
		2.00 2.00	D PP	3.2kg/cm2					2
		2.50 2.50	D PP	3.1kg/cm2					
		3.00 3.00	D PP	3.0kg/cm2					3
		3.50 3.50	D PP	3.2kg/cm2					
		4.00 4.00	D PP	3.3kg/cm2					4
		4.50 4.50	D PP	3.7kg/cm2	4.50				
								End of Borehole at 4.50m	5

Casing

Water Strikes (mbgl)

Chiselling (mbgl)

Remarks

Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS2 Sheet 1 of 1	
Project Name: 1 Wadham Gardens		Project No. GE10977		Co-ords: 527053E - 183952N		Hole Type WS	
Location: London				Level:		Scale 1:25	
Client: Marcus Cooper Group				Dates: 03/09/2015		Logged By PC	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.10		Pea shingle over weed fabric. MADE GROUND		
					0.30		Black very silty clay with rare brick fragments. TOPSOIL		
		0.50 0.55	PP D	1.4kg/cm2	0.60		Orangish brown clay with very rare brick fragments. MADE GROUND		
		1.00 1.00	D PP	1.8kg/cm2			Stiff orangish brown silty CLAY. LONDON CLAY	1	
		1.50 1.55	PP D	1.2kg/cm2					
		2.00 2.00	D PP	2.6kg/cm2					2
		2.50 2.50	D PP	3.0kg/cm2					
		3.00 3.00	D PP	4.0kg/cm2	3.00				3
							End of Borehole at 3.00m	4	
								5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		





Geo-Environmental
www.gesl.net

Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Borehole Log

Borehole No.

WS4

Sheet 1 of 1

Project Name: 1 Wadham Gardens

Project No.
GE10977

Co-ords: 527046E - 183925N

Hole Type
WS

Location: London

Level:

Scale
1:25

Client: Marcus Cooper Group

Dates: 03/09/2015

Logged By
PC

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.05			0.05			Pea shingle over weed fabric. MADE GROUND	
		0.30	ES					Dark brown and black gravelly silty CLAY with occasional brick and ash fragments. TOPSOIL	
		0.50	D		0.40			Orangish brown clay with rare brick and concrete fragments. MADE GROUND	
					0.60			Stiff orangish brown silty CLAY. LONDON CLAY	
		1.00	D					Occasional carbonaceous deposits from 1.40m.	1
		1.00	PP	2.5kg/cm2				Becoming very stiff with occasional fine calcareous nodules from 2.40m.	
		1.50	D					Becoming very stiff with some fine selenite crystals from 2.50m.	
		1.50	PP	1.8kg/cm2				Very stiff orangish brown and bluish grey silty CLAY. LONDON CLAY	
		2.00	D					End of Borehole at 4.50m	2
		2.00	PP	2.6kg/cm2					
		2.50	D						
		2.50	PP	3.7kg/cm2					
		3.00	D						3
		3.00	PP	3.1kg/cm2					
		3.50	D						
		3.50	PP	2.7kg/cm2					
		3.80			3.80				
		4.00	D						4
		4.00	PP	3.0kg/cm2					
		4.50	D						
		4.50	PP	3.1kg/cm2	4.50				5

Casing

Water Strikes (mbgl)

Chiselling (mbgl)

Remarks

Diameter

Depth (m)

Depth Strike

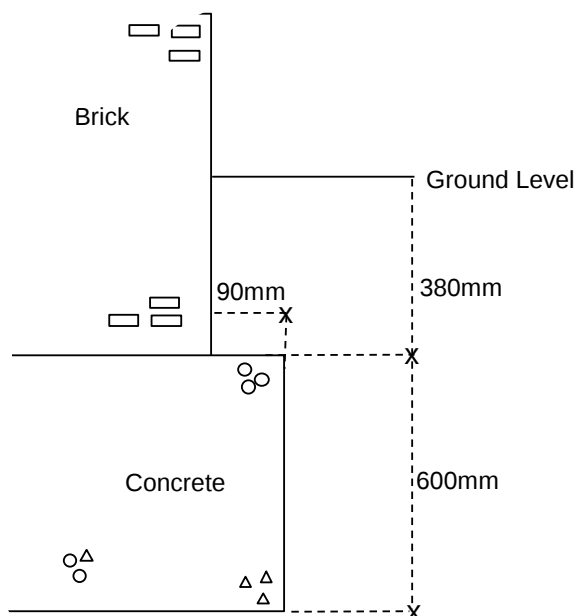
Rose to

Depth from

Depth to



FE1



Ground Conditions:

GL - 0.12: Paving slab.

0.12 - 0.20m: Sandstone rubble.

0.20 - 0.60m: Black and brown silty sand and gravel comprising demolition rubble; brick, concrete, paving slabs and flints. (MADE GROUND)

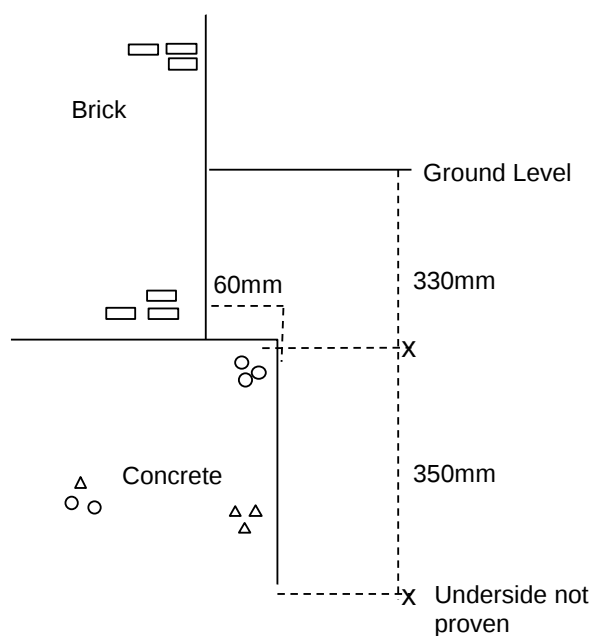
>0.60m: Orangish brown silty CLAY with occasional rounded flint gravel.(LONDON CLAY)



Project:	1 Wadham Gardens			Title	Foundation Sketch
Client:				Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE10977	Revision:	V1		
Drawn:	PC	Date:	17/09/2015		
Figure:		Scale:	Not to Scale		



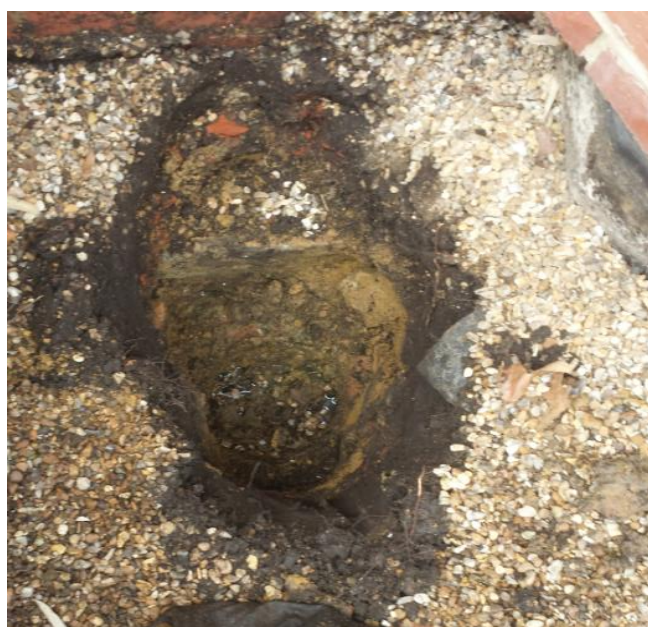
FE2



Ground Conditions:

GL - 0.12: Pea shingle over weed fabric

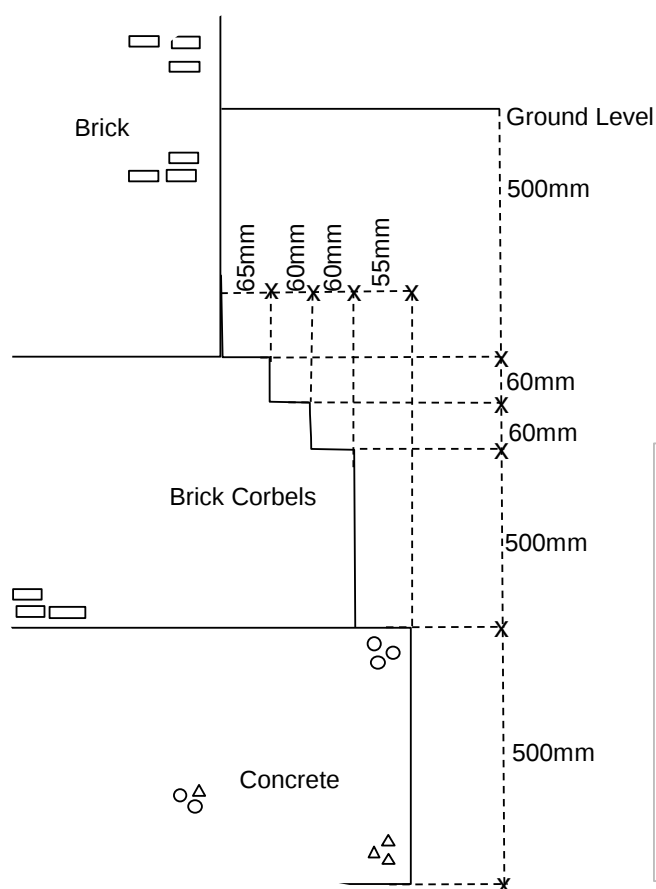
0.12 - >0.70 Black and brown silty sand and gravel comprising demolition rubble; brick, concrete, paving slabs and flints. (MADE GROUND)



Project:	1 Wadham Gardens			Title	Foundation Sketch
Client:				Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE10977	Revision:	V1		
Drawn:	PC	Date:	17/09/2015		
Figure:		Scale:	Not to Scale		



FE3

**Ground Conditions:**

GL-0.05: Pea shingle over weed fabric.

0.05 - 1.20m: Black and brown silty sand and gravel comprising demolition rubble; brick, concrete, paving slabs and flints. (MADE GROUND)

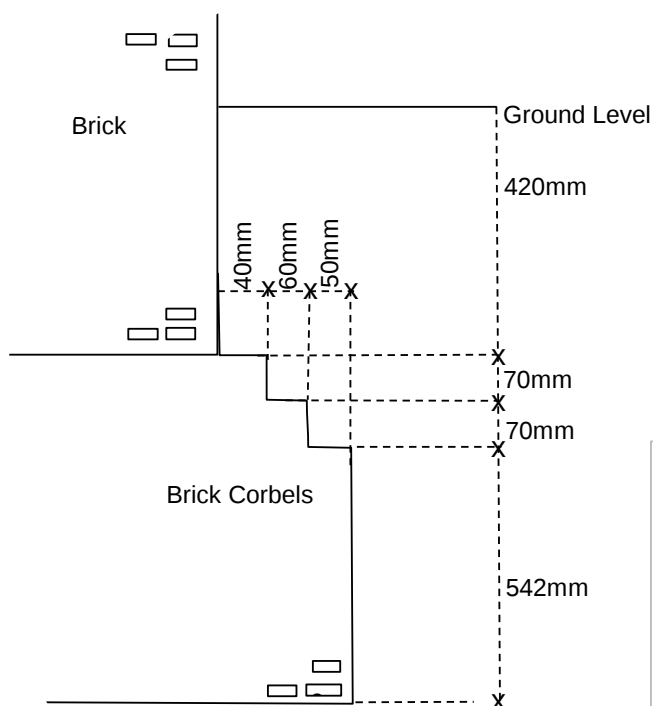
>1.20m: Orangish brown silty CLAY with occasional rounded flint gravel. (LONDON CLAY)



Project:	1 Wadham Gardens			Title	Foundation Sketch
Client:				Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE10977	Revision:	V1		
Drawn:	PC	Date:	17/09/2015		
Figure:		Scale:	Not to Scale		



FE4

**Ground Conditions:**

GL-0.05m: Pea shingle over weed fabric.

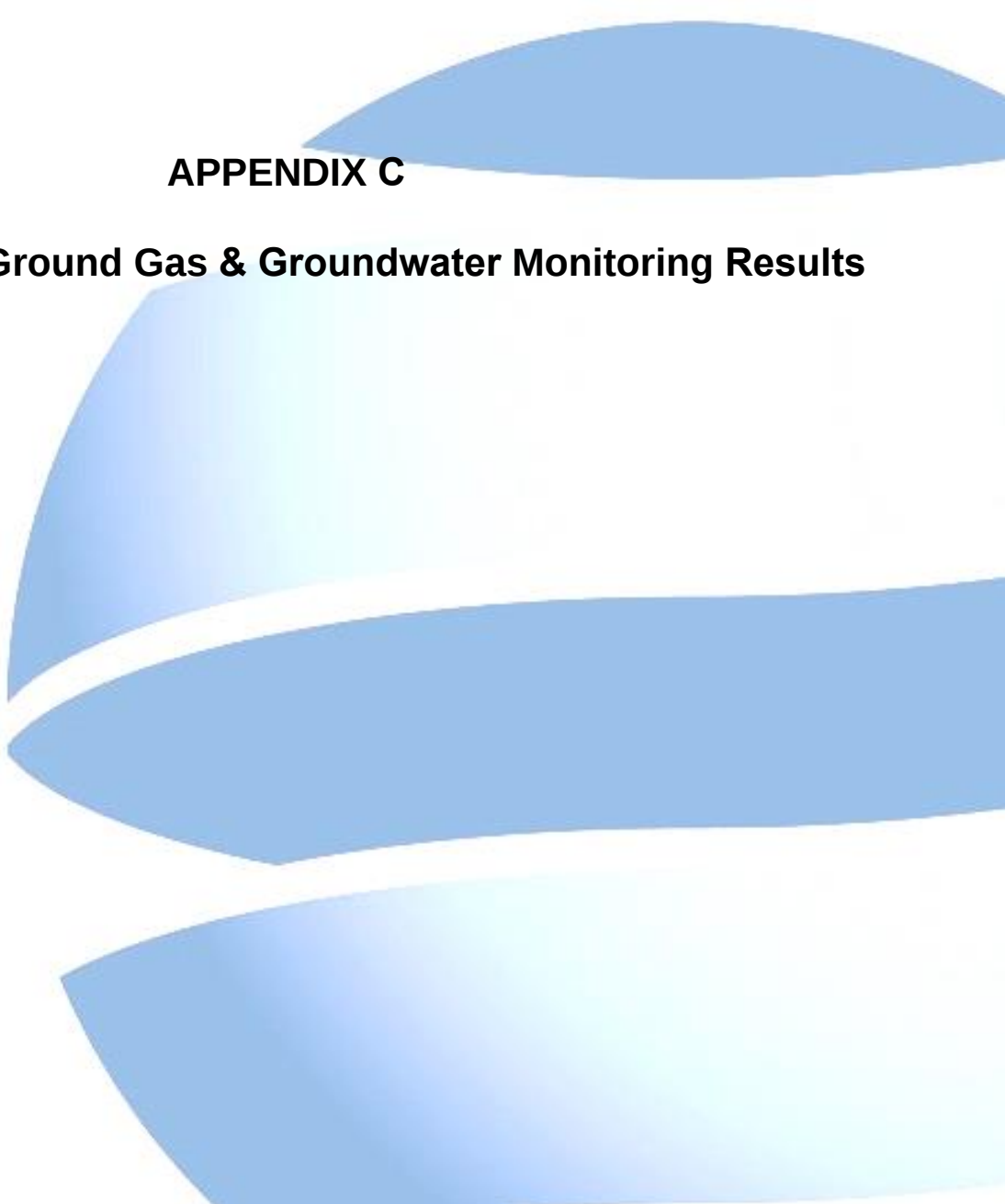
0.05 - 0.15m Paving slab.

0.15 - 0.75m: Black and brown silty sand and gravel comprising demolition rubble; brick, concrete, paving slabs and flints. (MADE GROUND)

>0.75m: Orangish brown silty CLAY. (LONDON



Project:	1 Wadham Gardens			Title	Foundation Sketch
Client:				Geo-Environmental Services Ltd Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL E: mail@gesl.net T: 01273 832972	
Ref No:	GE10977	Revision:	V1		
Drawn:	PC	Date:	17/09/2015		
Figure:		Scale:	Not to Scale		

A decorative graphic consisting of three overlapping, wavy, blue shapes that resemble stylized waves or clouds, positioned on the right side of the page.

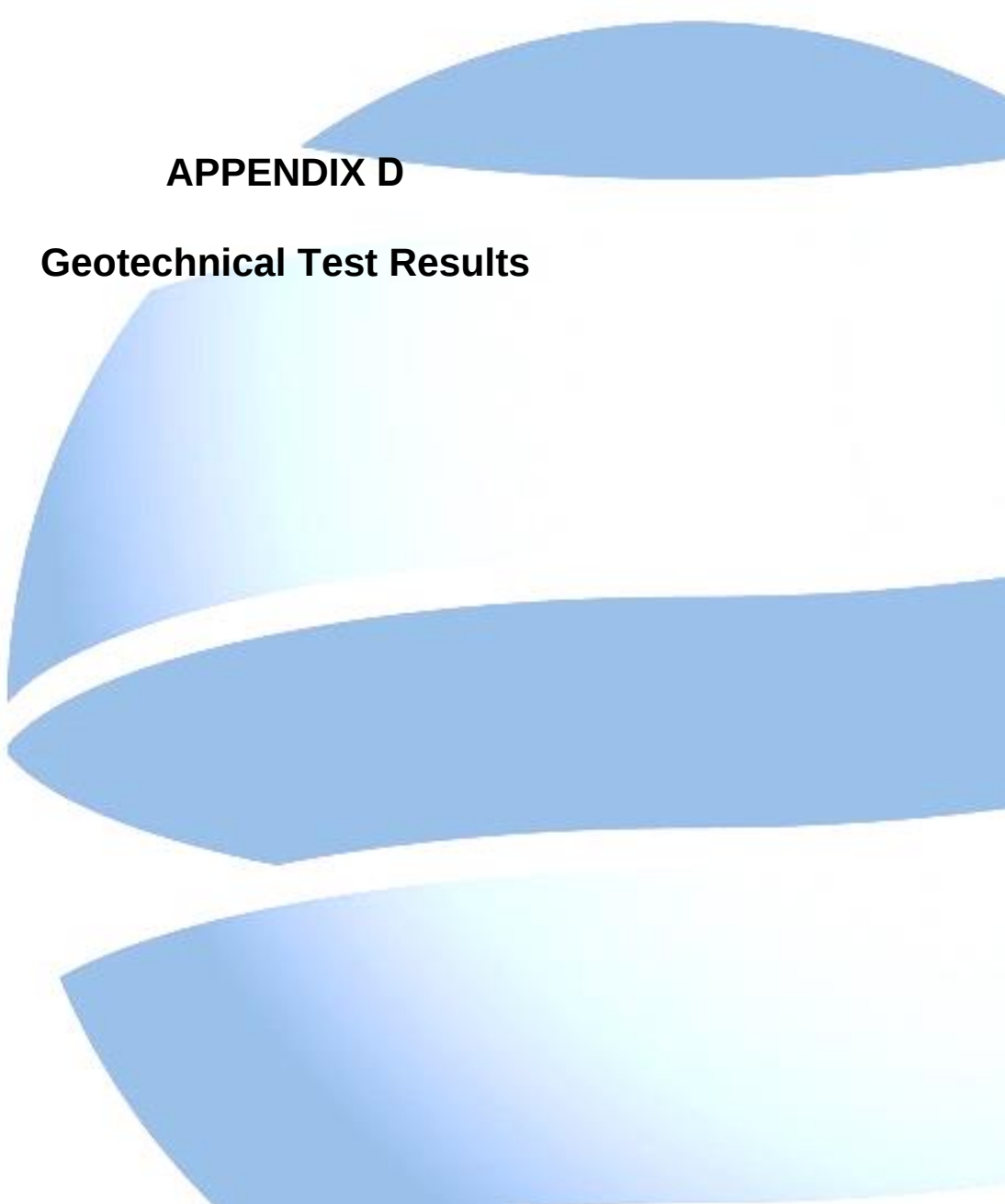
APPENDIX C

Ground Gas & Groundwater Monitoring Results

Project: Wadham Gardens
Ref: GE10977
Client: Marcus Cooper Group



Location	Date	Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Flow (l/hr)	VOC (ppm)	Pressure (mb)	GWL (m bgl)	GSV/Qhgs		Characteristic Situation		CS1 Limiting Value Check			NHBC			
										CH ₄	CO ₂	BS8485 & C665		Flow	CH ₄	CO ₂	CH ₄		CO ₂	
												CH ₄	CO ₂				GSV	Conc.	GSV	Conc.
WS2	10/09/15	10	0.0	1.3	20.0	-0.1	-	1019	Dry	0.000	-0.001	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	10/09/15	20	0.0	4.9	18.8	-0.1	-	1019	Dry	0.000	-0.005	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	10/09/15	30	0.0	5.0	18.2	-0.1	-	1019	Dry	0.000	-0.005	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	AMBER 1
WS2	10/09/15	60	0.0	5.1	18.0	-0.1	-	1019	Dry	0.000	-0.005	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS2	10/09/15	120	0.0	3.3	18.5	-0.1	-	1019	Dry	0.000	-0.003	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS4	10/09/15	10	0.0	1.8	20.4	-0.1	-	1018	Dry	0.000	-0.002	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS4	10/09/15	20	0.0	4.7	19.1	-0.1	-	1018	Dry	0.000	-0.005	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS4	10/09/15	30	0.0	4.8	18.5	-0.1	-	1018	Dry	0.000	-0.005	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS4	10/09/15	60	0.0	4.8	18.3	-0.1	-	1018	Dry	0.000	-0.005	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS4	10/09/15	120	0.0	2.6	19.0	-0.1	-	1018	Dry	0.000	-0.003	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	17/09/15	10	0.1	2.4	19.9	0.0	-	999	2.39	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	17/09/15	20	0.0	5.6	18.1	0.0	-	999	2.39	0.000	0.000	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS2	17/09/15	30	0.1	5.7	17.3	0.0	-	999	2.39	0.000	0.000	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS2	17/09/15	60	0.0	5.8	17.1	0.0	-	999	2.39	0.000	0.000	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS2	17/09/15	120	0.0	5.8	17.1	0.0	-	999	2.39	0.000	0.000	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS4	17/09/15	10	0.0	1.3	20.2	0.0	-	999	3.16	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS4	17/09/15	20	0.0	2.8	19.5	0.0	-	999	3.16	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS4	17/09/15	30	0.0	3.8	18.7	0.0	-	999	3.16	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS4	17/09/15	60	0.0	4.6	17.9	0.0	-	999	3.16	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS4	17/09/15	120	0.0	4.7	17.7	0.0	-	999	3.16	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	24/09/15	10	0.1	0.6	20.4	0.9	-	1011	2.12	0.001	0.005	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	24/09/15	20	0.1	2.9	19.3	0.9	-	1011	2.12	0.001	0.026	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	24/09/15	30	0.1	5.0	17.9	0.9	-	1011	2.12	0.001	0.045	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	AMBER 1
WS2	24/09/15	60	0.1	5.8	16.3	0.9	-	1011	2.12	0.001	0.052	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS2	24/09/15	120	0.1	5.9	16.0	0.9	-	1011	2.12	0.001	0.053	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS4	24/09/15	10	0.1	2.8	19.9	-0.1	-	1011	3.04	0.000	-0.003	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS4	24/09/15	20	0.1	5.8	16.3	-0.1	-	1011	3.04	0.000	-0.006	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS4	24/09/15	30	0.1	5.8	15.4	-0.1	-	1011	3.04	0.000	-0.006	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS4	24/09/15	60	0.1	5.9	15.1	-0.1	-	1011	3.04	0.000	-0.006	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS4	24/09/15	120	0.1	6.0	15.0	-0.1	-	1011	3.04	0.000	-0.006	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS2	01/10/15	10	0.1	1.1	20.2	0.0	-	1027	1.82	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	01/10/15	20	0.1	3.4	18.4	0.0	-	1027	1.82	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	01/10/15	30	0.1	4.5	17.0	0.0	-	1027	1.82	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	01/10/15	60	0.1	5.4	15.5	0.0	-	1027	1.82	0.000	0.000	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS2	01/10/15	120	0.1	5.6	15.4	0.0	-	1027	1.82	0.000	0.000	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS4	01/10/15	10	0.1	5.7	15.7	0.0	-	1027	2.94	0.000	0.000	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS4	01/10/15	20	0.1	6.2	14.4	0.0	-	1027	2.94	0.000	0.000	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS4	01/10/15	30	0.1	6.2	14.3	0.0	-	1027	2.94	0.000	0.000	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS4	01/10/15	60	0.1	6.3	14.2	0.0	-	1027	2.94	0.000	0.000	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS4	01/10/15	120	0.1	6.0	14.5	0.0	-	1027	2.94	0.000	0.000	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
Max values			0.1	6.3	20.4	0.9	0.0	1027.0		0.001	0.057	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
Min Vaules			0.0	0.6	14.2	-0.1	0.0	999.0		0.000	-0.001	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
BH Flow LoD check			0.1	6.3	20.4	0.1	0.0	1027.0		0.000	0.006	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1

A decorative graphic consisting of three horizontal, wavy blue bands of varying shades (light blue, medium blue, and dark blue) that sweep across the lower half of the page from left to right.

APPENDIX D

Geotechnical Test Results



Summary of Classification Test Results

Job No. 19504	Project Name 1 Wadham Gardens	Programme	
		Samples received	11/09/2015
		Schedule received	14/09/2015
Project No. GE10977	Client GESL	Project started	15/09/2015
		Testing Started	25/09/2015

Hole No.	Sample				Soil Description	NMC %	Passing 425µm %	LL %	PL %	PI %	Remarks
	Ref	Top	Base	Type							
WS1	2	1.00		D	Brown CLAY	24	100	67	21	46	
WS1	6	3.00		D	Brown CLAY	23	100	67	22	45	
WS1	9	4.50		D	Brown CLAY with occasional selenite crystals	25	100	68	24	44	
WS2	3	1.55		D	Brown and occasional pale grey CLAY	25	100	70	23	47	
WS2	6	3.00		D	Brown CLAY	22	100	65	22	43	
WS3	2	1.00		D	Brown and orange slightly gravelly CLAY (gravel is fine and sub-angular)	34	97	76	24	52	
WS3	4	2.00		D	Brown and occasional pale grey slightly gravelly CLAY with sandy clay pockets (gravel is fine and sub-angular)	20	98	45	15	30	
WS4	2	1.00		D	Brown CLAY	25	100	72	22	50	
WS4	9	4.50		D	Brown and occasional blue grey CLAY	25	100	71	23	48	

 2519	Test Methods: BS1377: Part 2: 1990: Natural Moisture Content : clause 3.2 Atterberg Limits: clause 4.3 and 5.0	Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU Tel: 01923 711 288 Email: James@k4soils.com	Checked and Approved Initials J.P Date: 29/09/2015
	Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)		MSF-5-R1(a) -Rev. 0



Sulphate Content (Gravimetric Method) for 2:1 Soil: Water Extract and pH Value - Summary of Results

Tested in accordance with BS1377 : Part 3 : 1990, clause 5.3 and clause 9

Job No.	Project Name	Programme	
19504	1 Wadham Gardens	Samples received	11/09/2015
		Schedule received	14/09/2015
Project No.	Client	Project started	15/09/2015
GE10977	GESL	Testing Started	22/09/2015

[illegible]

Test Report by K4 SOILS LABORATORY

Unit 8 Olds Close Olds Approach

Watford Herts WD18 9RU

Tel: 01923 711 288

Email: James@k4soils.com

Checked and
Approved

Initials J.P

Date: 29/09/2015

2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5-R29 (Rev. 0)



Geo-Environmental
Services Limited
www.gesl.net
+44 (0) 1273 832972

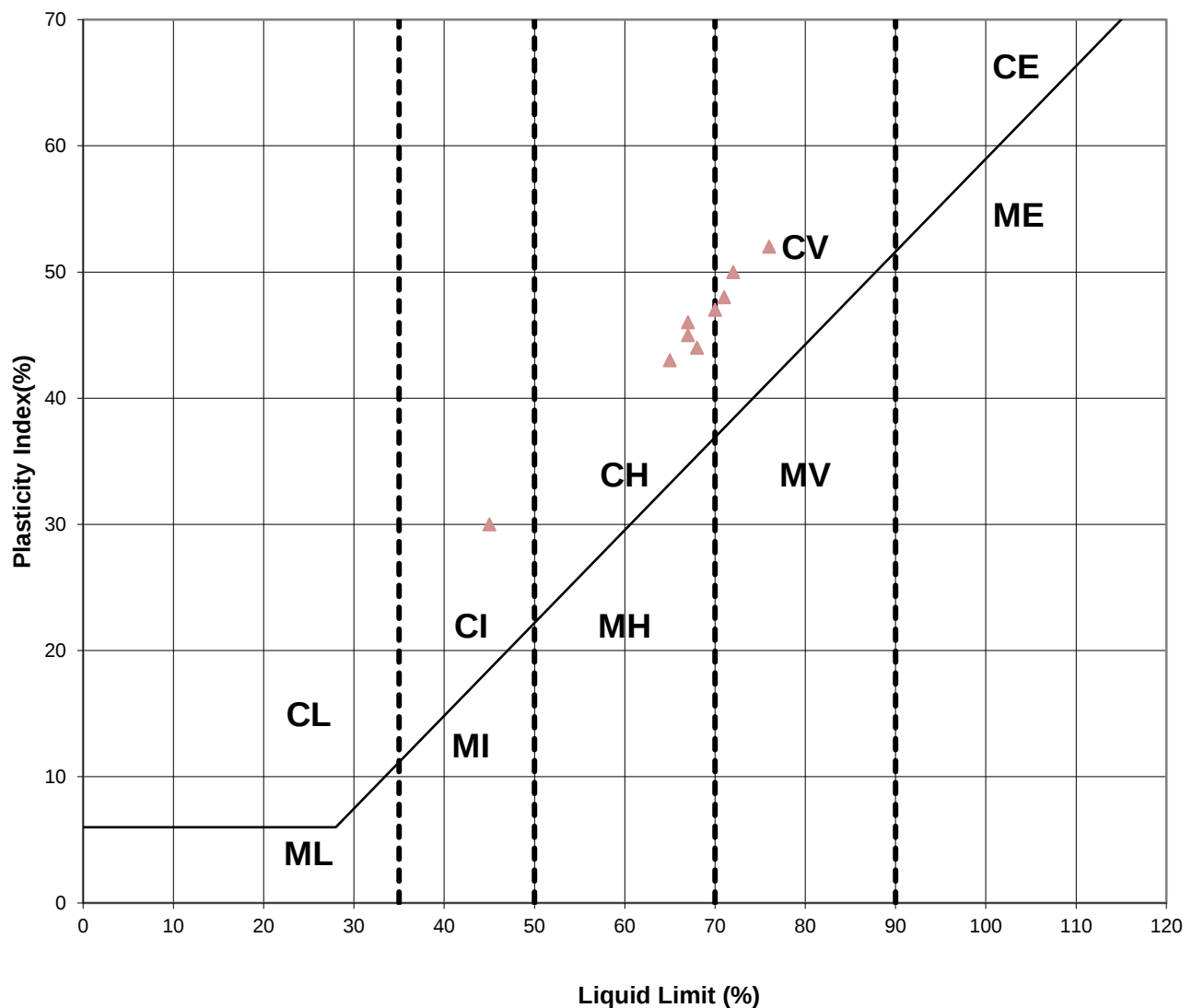
A Line Plot -

Project ID: **GE10977**

Project Title: **1 Wadham Gardens**

Client: **Quadrant Harmon**

Location: **London**

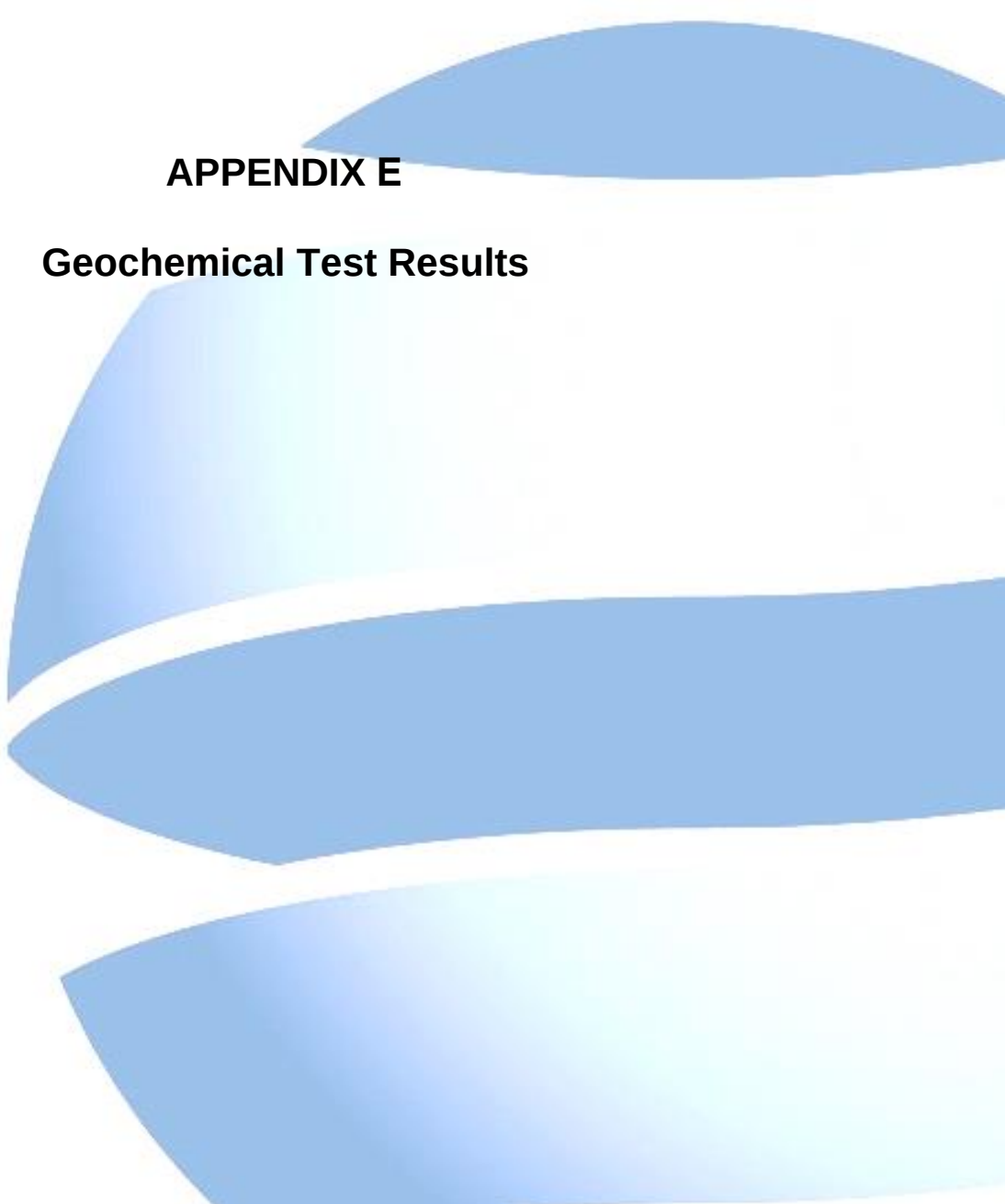


▲ LONDON CLAY

Date Reported:

01/10/2015

Data Status:

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APPENDIX E

Geochemical Test Results



Unit A2
Windmill Road
Ponswood Industrial Estate
St Leonards on Sea
East Sussex
TN38 9BY
Telephone: (01424) 718618
Facsimile: (01424) 729911
info@elab-uk.co.uk

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 15-03656

Issue: 1

Date of Issue: 14/09/2015

Contact: Jonathan Tingley

Customer Details: GESL
Unit 7
Danworth Farm
Hurstpierpoint
West Sussex
BN6 9GL

Quotation No: Q14-00021

Order No: Not Supplied

Customer Reference: GE10977

Date Received: 08/09/2015

Date Approved: 14/09/2015

Details: Wadham Gardens

Approved by:

Naomi Williams, Customer services officer

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)



Sample Summary

Report No.: 15-03656

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
38961	WS1 0.50	08/09/2015	08/09/2015	Sand	
38962	WS2 0.20	04/09/2015	08/09/2015	Sandy silty loam	
38963	WS3 0.20	03/09/2015	08/09/2015	Silty clayey loam	
38964	WS4 0.30	03/09/2015	08/09/2015	Silty loam	

Results Summary

Report No.: 15-03656

ELAB Reference	38961	38962	38963	38964
Customer Reference				
Sample ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sample Location	WS1	WS2	WS3	WS4
Sample Depth (m)	0.50	0.20	0.20	0.30
Sampling Date	08/09/2015	04/09/2015	03/09/2015	03/09/2015

Determinand	Codes	Units	LOD				
Metals							
Arsenic	M	mg/kg	1	18.8	14.3	25.7	21.1
Barium	M	mg/kg	10	159	66.6	166	247
Beryllium	U	mg/kg	1	1.2	< 1.0	1.5	1.3
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	0.5	< 0.5
Chromium	M	mg/kg	5	54.9	28.7	44.3	41.3
Copper	M	mg/kg	5	19.3	29.6	105	117
Lead	M	mg/kg	5	24.7	71.0	761	2400
Mercury	M	mg/kg	0.5	< 0.5	< 0.5	0.6	0.8
Nickel	M	mg/kg	5	33.5	22.2	27.0	25.7
Selenium	M	mg/kg	1	< 1.0	1.7	2.0	1.2
Vanadium	M	mg/kg	5	99.3	47.2	79.3	74.1
Zinc	M	mg/kg	45	77.7	67.4	296	247
Anions							
Water Soluble Chloride	M	mg/kg	40	< 40	< 40	< 40	< 40
Water Soluble Sulphate	M	g/l	0.02	0.66	0.05	0.03	0.03
Inorganics							
Elemental Sulphur	N	mg/kg	20	< 20	< 20	< 20	37
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2	< 2	< 2	< 2	< 2
Total Cyanide	M	mg/kg	1	< 1.0	< 1.0	1.0	1.0
Acid Soluble Sulphate (SO4)	U	%SO4	0.02	0.51	0.12	0.08	0.10
Water Soluble Boron	N	mg/kg	0.5	1.5	1.0	0.8	0.6
Miscellaneous							
pH	M	units	0.1	9.8	7.8	7.4	7.4
Total Organic Carbon	N	%	0.01	0.09	2.6	2.0	1.7
Phenols							
Total Phenols	N	mg/kg	6	< 6	< 6	< 6	< 6
Polyaromatic hydrocarbons							
Naphthalene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	< 0.1	0.2	0.2
Acenaphthene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	< 0.1	1.5	0.8
Anthracene	M	mg/kg	0.1	< 0.1	0.2	0.5	0.2
Fluoranthene	M	mg/kg	0.1	< 0.1	0.4	5.2	2.9
Pyrene	M	mg/kg	0.1	0.1	0.3	4.5	2.6
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	0.2	2.5	1.7
Chrysene	M	mg/kg	0.1	< 0.1	0.3	3.0	1.9
Benzo (b) fluoranthene	M	mg/kg	0.1	< 0.1	0.2	3.1	1.7
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	0.3	2.9	1.8
Benzo (a) pyrene	M	mg/kg	0.1	< 0.1	0.2	2.6	1.8
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	< 0.1	0.1	2.1	1.2
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	0.2	0.6	0.3
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	0.1	1.8	1.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	2.6	30.7	18.3
BTEX							
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10	< 10.0	< 10.0	< 10.0	< 10.0



Results Summary

Report No.: 15-03656

ELAB Reference	38961	38962	38963	38964
Customer Reference				
Sample ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sample Location	WS1	WS2	WS3	WS4
Sample Depth (m)	0.50	0.20	0.20	0.30
Sampling Date	08/09/2015	04/09/2015	03/09/2015	03/09/2015

Determinand	Codes	Units	LOD				
TPH CWG							
>C5-C6 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	7.7	< 1.0
>C35-C40 Aliphatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
>C21-C35 Aromatic	N	mg/kg	1	< 1.0	5.8	6.8	10.4
>C35-C40 Aromatic	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1	< 1.0	5.8	14.6	10.4



Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards on Sea, East Sussex, TN38 9BY
Tel: +44 (0)1424 718618, Email: info@elab-uk.co.uk, Web: www.elab-uk.co.uk

Results Summary

Report No.: 15-03656

Asbestos Qualitative Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Result
38961	0.50	WS1	Sand	No asbestos detected
38962	0.20	WS2	Sandy silty loam	No asbestos detected
38963	0.20	WS3	Silty clayey loam	No asbestos detected
38964	0.30	WS4	Silty loam	No asbestos detected

Method Summary

Report No.: 15-03656

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Sulphide	N	As submitted sample	10/09/2015	109	Colorimetry
Hexavalent chromium	N	As submitted sample	10/09/2015	110	Colorimetry
pH	M	Air dried sample	11/09/2015	113	Electromeric
Acid Soluble Sulphate	U	Air dried sample	14/09/2015	115	Ion Chromatography
Aqua regia extractable metals	M	Air dried sample	11/09/2015	118	ICPMS
Phenols in solids	M	As submitted sample	10/09/2015	121	HPLC
Elemental Sulphur	N	Air dried sample	11/09/2015	122	HPLC
Polyaromatic hydrocarbons (GC-FID)	M	As submitted sample	09/09/2015	133	GC-FID
Water soluble anions	M	Air dried sample	11/09/2015	172	Ion Chromatography
BTEX in solids	M	As submitted sample	10/09/2015	181	GC-MS
Water soluble boron	N	Air dried sample	11/09/2015	202	Colorimetry
Total cyanide	M	As submitted sample	11/09/2015	204	Colorimetry
Total organic carbon/Total sulphur	N	Air dried sample	10/09/2015	210	IR
Aliphatic hydrocarbons in soil	N	As submitted sample	09/09/2015	214	GC-FID
Aliphatic/Aromatic hydrocarbons in soil	N	As submitted sample	10/09/2015	214	GC-FID
Aromatic hydrocarbons in soil	N	As submitted sample	09/09/2015	214	GC-FID
Low range Aliphatic hydrocarbons soil	N	As submitted sample	10/09/2015	214	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	10/09/2015	214	GC-MS
Asbestos identification	U	As submitted sample	14/09/2015	PMAN	Microscopy

Tests marked N are not UKAS accredited

Report Information

Report No.: 15-03656

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"

Soil sample results are expressed on an air dried basis

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Deviation Codes

-
- | | |
|---|--|
| a | No date of sampling supplied |
| b | No time of sampling supplied (Waters Only) |
| c | Sample not received in appropriate containers |
| d | Sample not received in cooled condition |
| e | The container has been incorrectly filled |
| f | Sample age exceeds stability time (sampling to receipt) |
| g | Sample age exceeds stability time (sampling to analysis) |

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month

All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage

CLEA Software Version 1.06

Page 1 of 11

Report generated 01-Oct-15

Report title



Created by Geo-Environmental

RESULTS

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Client/client ref: Marcus Cooper Group
Project ref: GE10977
Site ref:
Data description: Near Surface Soils
Contaminant(s): Metals and BAP
Test scenario: Planning
Date: 1 October 2015
User details:

	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Vanadium	Zinc	Hexavalent Chromium	Total Cyanide	Total Phenols	Benzo (a) pyrene
Critical concentration, C _c	32	1330	41.2	5.17	3010	5200	200	169	127	350	107	19400	48.9	5	312	5
Notes																
Full dataset size	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Outliers present?	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No
Number of outliers temporarily excluded							0									
Number removed by filter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sample size, n	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Sample mean, $\bar{x}$	19.975	159.65	1.125	0.3125	42.3	67.725	814.175	0.475	27.1	1.35	74.975	172.025	0.4	0.75	3	1.1625
Standard deviation, s	4.74789427	73.7768482	0.43493295	0.125	10.7814656	50.3850093	1109.5417	0.27233558	4.72369912	0.65574385	21.4680188	116.668544	0	0.28867513	0	1.24323168
Number of non-detects	0	0	1	3	0	0	0	2	0	1	0	0	4	2	4	1
Set non-detect values to:	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit	Half detection limit
Distribution	Normal	Normal	Normal	Non-normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Single value	Non-normal	Single value	Normal
Statistical approach	Auto: One-sample t	Auto: One-sample t	Auto: One-sample t	Auto: Chebychev	Auto: One-sample t	Auto: One-sample t	Auto: One-sample t	Auto: One-sample t	Auto: One-sample t	Auto: One-sample t	Auto: One-sample t	Auto: One-sample t	Auto: Chebychev	Auto: Chebychev	Auto: Chebychev	Auto: One-sample t

Test scenario:	Planning: is true mean lower than critical concentration ($\mu < C_c$)?			Evidence level required:			95%	Use Normal distribution to test for outliers								
t statistic, t ₀ (or k ₀)	-5.065403447	-31.72675516	-184.2812804	-77.72	-550.5188471	-203.7223002	1.107078713	-1237.627501	-42.29735957	-1063.372531	-2.983507721	-329.6171245	N/A	-29.44486373	N/A	-6.173427004
Upper confidence limit (on true mean concentration, μ)	25.5617604	246.461868	1.63677764	0.58493118	54.9863534	127.012119	2119.75244	0.79545229	32.6582904	2.1216018	100.236025	309.306743	0.4	1.37915287	3	2.62538798
Evidence level	99%	100%	100%	100%	100%	100%	17%	100%	100%	100%	97%	100%	100%	100%	100%	100%
Base decision on:	evidence level	evidence level	evidence level	evidence level	evidence level	evidence level	evidence level	evidence level	evidence level	evidence level	evidence level	evidence level	evidence level	evidence level	evidence level	evidence level
Result	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$	$\mu \geq C_c$	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$	$\mu < C_c$
Select dataset	☐ Y	☐ Y	☐ Y	☐ Y	☐ Y	☐ Y	☒ Y	☐ Y	☐ Y	☐ Y	☐ Y	☐ Y	☐ Y	☐ Y	☐ Y	☐ Y

Back to data

Go to outlier test

Go to normality test

Show individual summary