

Appendix C Desk study research information

Groundsure Enviro Insight

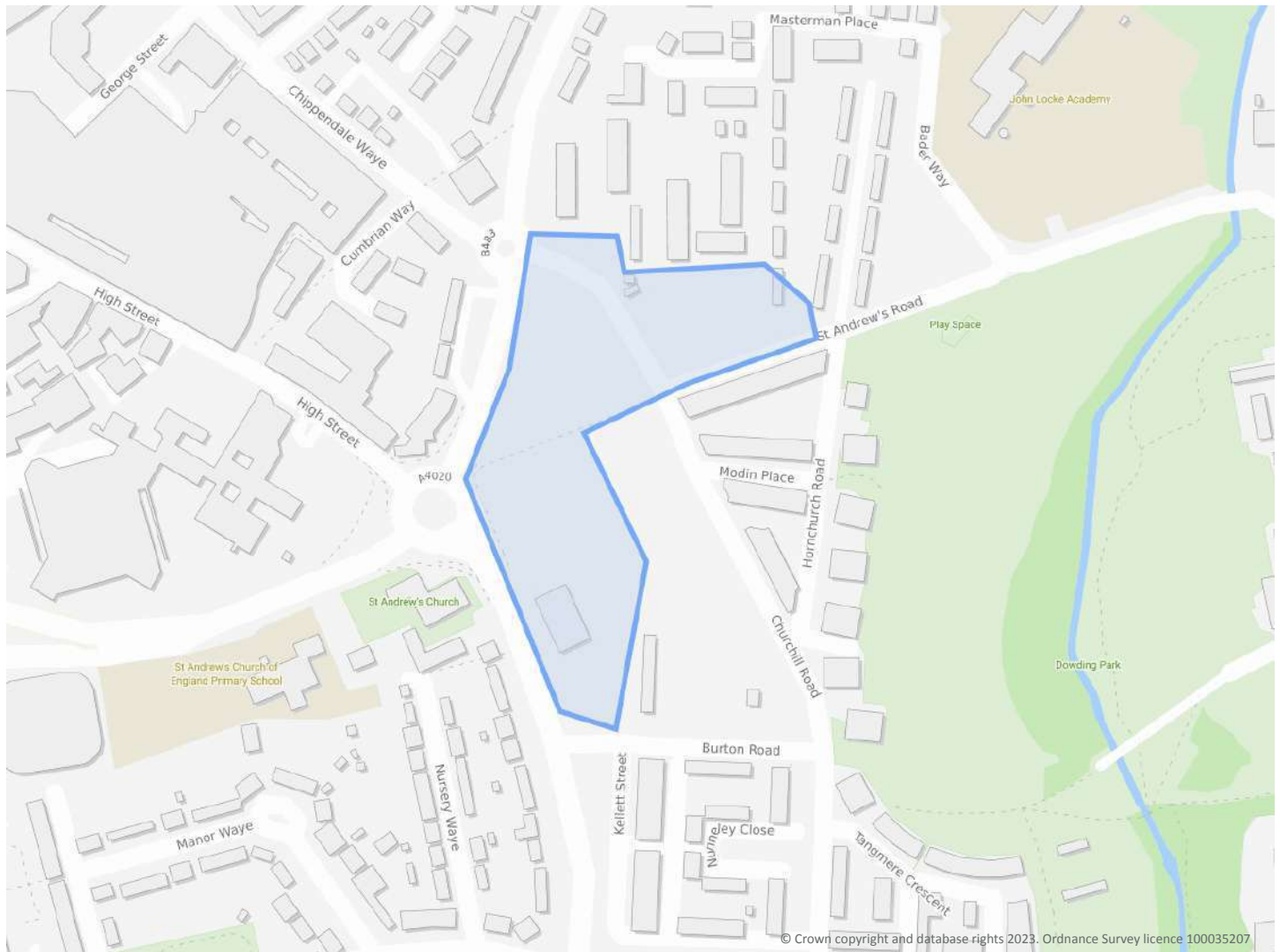
506087,183874,

Order Details

Date: 12/01/2023
Your ref: PO23248
Our Ref: HYD-9293976

Site Details

Location: 506044 183936
Area: 3.36 ha
Authority: [London Borough of Hillingdon](#)



Summary of findings

p. 2 **Aerial image**

p. 8

OS MasterMap site plan

p.13 groundsure.com/insightuserguide

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	<u>Historical industrial land uses</u>	1	2	10	143	-
20	1.2	<u>Historical tanks</u>	0	6	4	6	-
21	1.3	<u>Historical energy features</u>	0	1	3	34	-
23	1.4	Historical petrol stations	0	0	0	0	-
23	1.5	<u>Historical garages</u>	0	0	8	0	-
24	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
25	2.1	<u>Historical industrial land uses</u>	1	3	13	174	-
32	2.2	<u>Historical tanks</u>	0	7	6	13	-
34	2.3	<u>Historical energy features</u>	0	1	12	74	-
37	2.4	Historical petrol stations	0	0	0	0	-
37	2.5	<u>Historical garages</u>	0	0	12	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
39	3.1	Active or recent landfill	0	0	0	0	-
39	3.2	Historical landfill (BGS records)	0	0	0	0	-
40	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
40	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
40	3.5	Historical waste sites	0	0	0	0	-
40	3.6	Licensed waste sites	0	0	0	0	-
40	3.7	<u>Waste exemptions</u>	0	0	1	1	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
42	4.1	<u>Recent industrial land uses</u>	1	0	8	-	-
43	4.2	Current or recent petrol stations	0	0	0	0	-
43	4.3	Electricity cables	0	0	0	0	-
43	4.4	Gas pipelines	0	0	0	0	-
44	4.5	Sites determined as Contaminated Land	0	0	0	0	-



44	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
44	4.7	Regulated explosive sites	0	0	0	0	-
44	4.8	Hazardous substance storage/usage	0	0	0	0	-
44	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
45	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
45	4.11	<u>Licensed pollutant release (Part A(2)/B)</u>	0	0	1	0	-
45	4.12	Radioactive Substance Authorisations	0	0	0	0	-
45	4.13	<u>Licensed Discharges to controlled waters</u>	0	0	0	4	-
46	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
46	4.15	Pollutant release to public sewer	0	0	0	0	-
47	4.16	List 1 Dangerous Substances	0	0	0	0	-
47	4.17	List 2 Dangerous Substances	0	0	0	0	-
47	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	0	0	1	-
47	4.19	Pollution inventory substances	0	0	0	0	-
48	4.20	Pollution inventory waste transfers	0	0	0	0	-
48	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
49	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
51	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
52	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
54	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
54	5.5	<u>Groundwater vulnerability- local information</u>	Identified (within 0m)				
56	5.6	<u>Groundwater abstractions</u>	0	0	0	0	31
63	5.7	<u>Surface water abstractions</u>	0	0	0	0	2
64	5.8	<u>Potable abstractions</u>	0	0	0	0	5
66	5.9	Source Protection Zones	0	0	0	0	-
66	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
67	6.1	<u>Water Network (OS MasterMap)</u>	0	0	1	-	-



68	6.2	<u>Surface water features</u>	0	0	1	-	-
68	6.3	<u>WFD Surface water body catchments</u>	2	-	-	-	-
68	6.4	<u>WFD Surface water bodies</u>	0	0	1	-	-
69	6.5	WFD Groundwater bodies	0	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
70	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
71	7.2	<u>Historical Flood Events</u>	0	0	2	-	-
71	7.3	Flood Defences	0	0	0	-	-
71	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
72	7.5	Flood Storage Areas	0	0	0	-	-
73	7.6	Flood Zone 2	None (within 50m)				
73	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
74	8.1	<u>Surface water flooding</u>	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding					
76	9.1	<u>Groundwater flooding</u>	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
77	10.1	<u>Sites of Special Scientific Interest (SSSI)</u>	0	0	0	0	1
78	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
78	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
78	10.4	Special Protection Areas (SPA)	0	0	0	0	0
78	10.5	National Nature Reserves (NNR)	0	0	0	0	0
79	10.6	<u>Local Nature Reserves (LNR)</u>	0	0	0	0	2
79	10.7	<u>Designated Ancient Woodland</u>	0	0	0	0	2
79	10.8	Biosphere Reserves	0	0	0	0	0
80	10.9	Forest Parks	0	0	0	0	0
80	10.10	Marine Conservation Zones	0	0	0	0	0
80	10.11	<u>Green Belt</u>	0	1	0	0	21
81	10.12	Proposed Ramsar sites	0	0	0	0	0



81	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
81	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
82	10.15	Nitrate Sensitive Areas	0	0	0	0	0
82	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
83	<u>10.17</u>	<u>SSSI Impact Risk Zones</u>	1	-	-	-	-
84	<u>10.18</u>	<u>SSSI Units</u>	0	0	0	0	2
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
86	11.1	World Heritage Sites	0	0	0	-	-
87	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
87	11.3	National Parks	0	0	0	-	-
87	<u>11.4</u>	<u>Listed Buildings</u>	1	1	6	-	-
88	<u>11.5</u>	<u>Conservation Areas</u>	0	0	1	-	-
88	11.6	Scheduled Ancient Monuments	0	0	0	-	-
89	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
90	<u>12.1</u>	<u>Agricultural Land Classification</u>	Urban (within 250m)				
91	12.2	Open Access Land	0	0	0	-	-
91	12.3	Tree Felling Licences	0	0	0	-	-
91	12.4	Environmental Stewardship Schemes	0	0	0	-	-
91	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
92	<u>13.1</u>	<u>Priority Habitat Inventory</u>	0	0	2	-	-
93	13.2	Habitat Networks	0	0	0	-	-
93	13.3	Open Mosaic Habitat	0	0	0	-	-
93	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
94	<u>14.1</u>	<u>10k Availability</u>	Identified (within 500m)				
95	<u>14.2</u>	<u>Artificial and made ground (10k)</u>	0	0	2	6	-
97	<u>14.3</u>	<u>Superficial geology (10k)</u>	1	0	3	8	-

98	14.4	Landslip (10k)	0	0	0	0	-
99	14.5	<u>Bedrock geology (10k)</u>	1	0	0	0	-
100	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
101	15.1	<u>50k Availability</u>	Identified (within 500m)				
102	15.2	<u>Artificial and made ground (50k)</u>	0	0	2	4	-
103	15.3	Artificial ground permeability (50k)	0	0	-	-	-
104	15.4	<u>Superficial geology (50k)</u>	1	0	3	8	-
105	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
105	15.6	Landslip (50k)	0	0	0	0	-
106	15.7	Landslip permeability (50k)	None (within 50m)				
107	15.8	<u>Bedrock geology (50k)</u>	1	0	0	0	-
108	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
108	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
109	16.1	<u>BGS Boreholes</u>	0	4	24	-	-
Page	Section	Natural ground subsidence					
111	17.1	<u>Shrink swell clays</u>	Low (within 50m)				
112	17.2	<u>Running sands</u>	Very low (within 50m)				
113	17.3	<u>Compressible deposits</u>	Negligible (within 50m)				
114	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
115	17.5	<u>Landslides</u>	Very low (within 50m)				
116	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
118	18.1	Natural cavities	0	0	0	0	-
119	18.2	<u>BritPits</u>	0	0	0	1	-
119	18.3	Surface ground workings	0	0	0	-	-
119	18.4	Underground workings	0	0	0	0	0
119	18.5	Historical Mineral Planning Areas	0	0	0	0	-



<u>120</u>	<u>18.6</u>	<u>Non-coal mining</u>	0	0	0	1	3
120	18.7	Mining cavities	0	0	0	0	0
121	18.8	JPB mining areas	None (within 0m)				
121	18.9	Coal mining	None (within 0m)				
121	18.10	Brine areas	None (within 0m)				
121	18.11	Gypsum areas	None (within 0m)				
121	18.12	Tin mining	None (within 0m)				
122	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
<u>123</u>	<u>19.1</u>	<u>Radon</u>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
<u>125</u>	<u>20.1</u>	<u>BGS Estimated Background Soil Chemistry</u>	8	8	-	-	-
<u>126</u>	<u>20.2</u>	<u>BGS Estimated Urban Soil Chemistry</u>	11	6	-	-	-
127	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
128	21.1	Underground railways (London)	0	0	0	-	-
128	21.2	Underground railways (Non-London)	0	0	0	-	-
128	21.3	Railway tunnels	0	0	0	-	-
128	21.4	Historical railway and tunnel features	0	0	0	-	-
128	21.5	Royal Mail tunnels	0	0	0	-	-
129	21.6	Historical railways	0	0	0	-	-
129	21.7	Railways	0	0	0	-	-
129	21.8	Crossrail 1	0	0	0	0	-
129	21.9	Crossrail 2	0	0	0	0	-
129	21.10	HS2	0	0	0	0	-



Recent aerial photograph



Capture Date: 13/06/2021

Site Area: 3.36ha



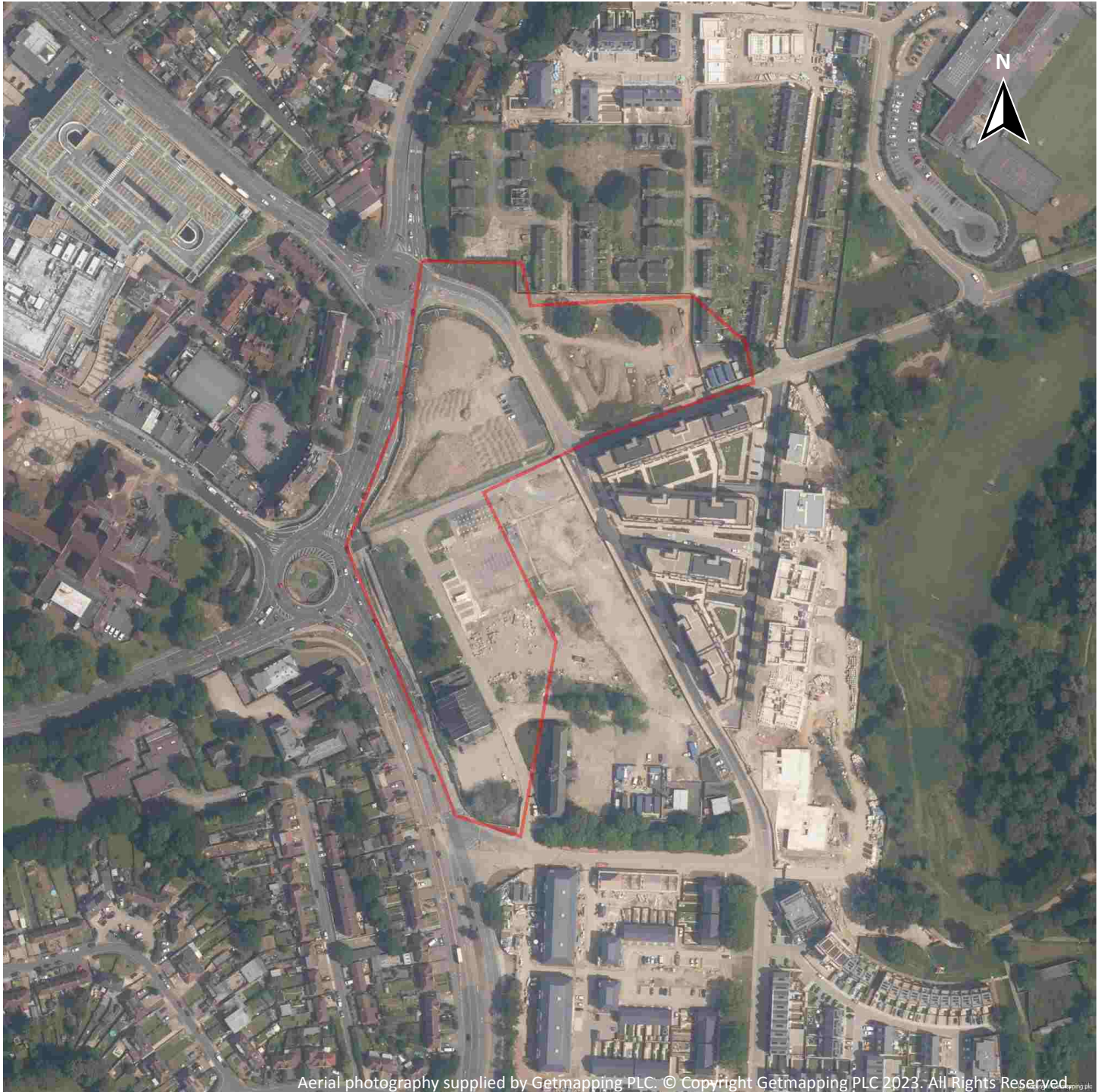
Contact us with any questions at:

info@groundsure.com

08444 159 000

Date: 12 January 2023

Recent site history - 2019 aerial photograph



Capture Date: 29/06/2019

Site Area: 3.36ha



Recent site history - 2013 aerial photograph



Capture Date: 20/04/2013

Site Area: 3.36ha



Recent site history - 2010 aerial photograph



Capture Date: 01/09/2010

Site Area: 3.36ha



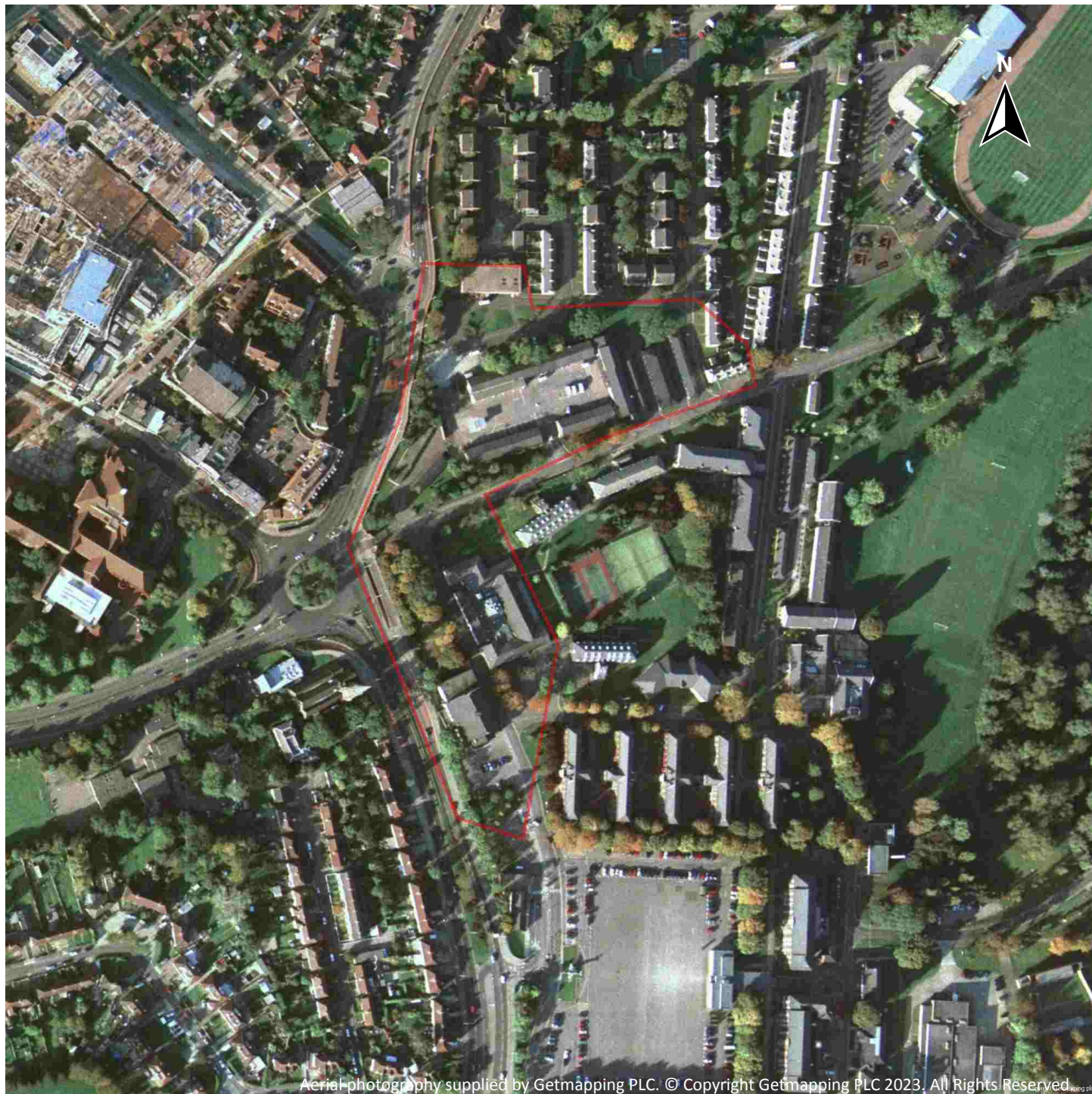
Contact us with any questions at:

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08444 159 000

Date: 12 January 2023

Recent site history - 1999 aerial photograph



Capture Date: 13/10/1999

Site Area: 3.36ha



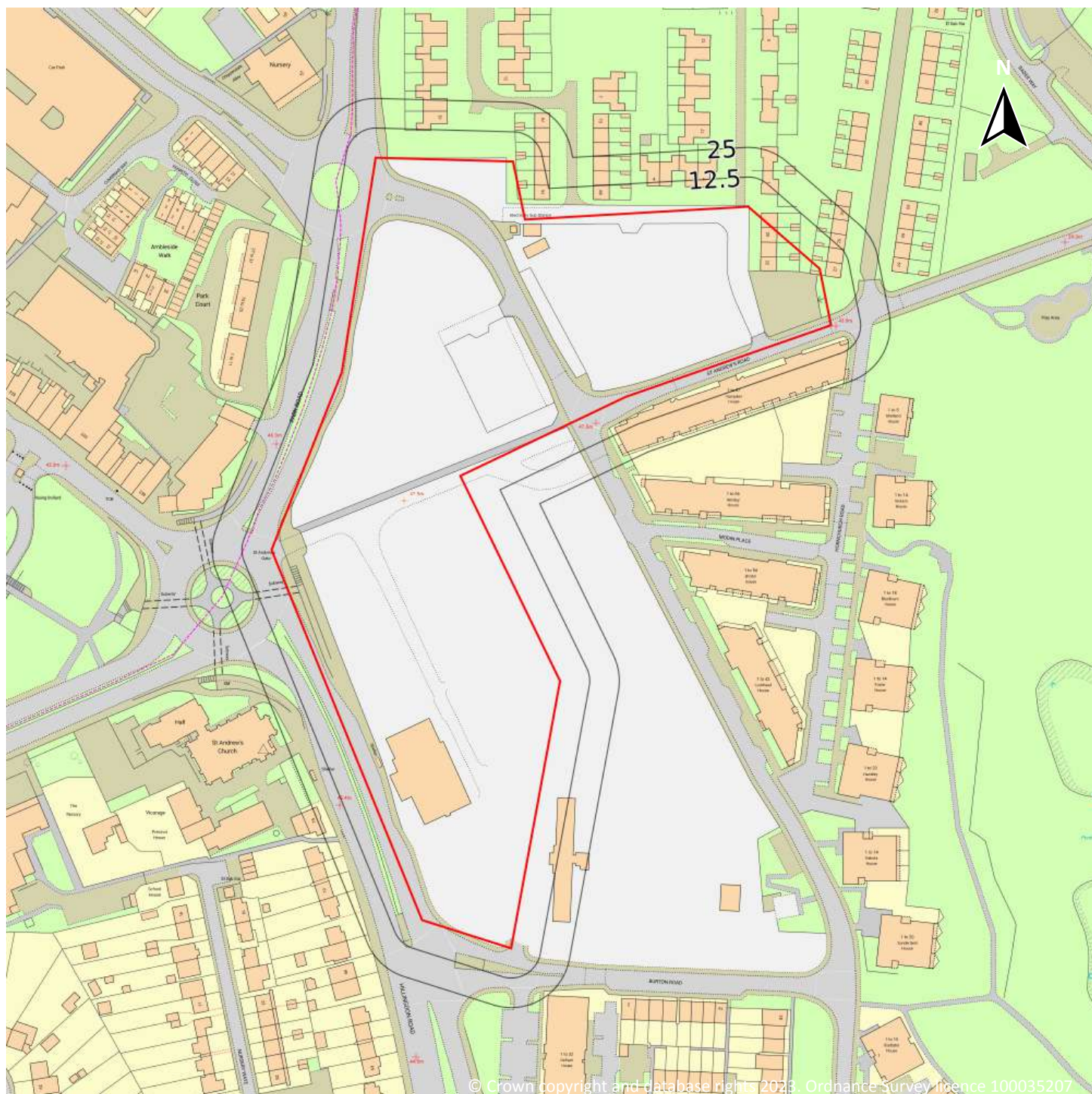
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08444 159 000

Date: 12 January 2023

OS MasterMap site plan



Site Area: 3.36ha



Contact us with any questions at:

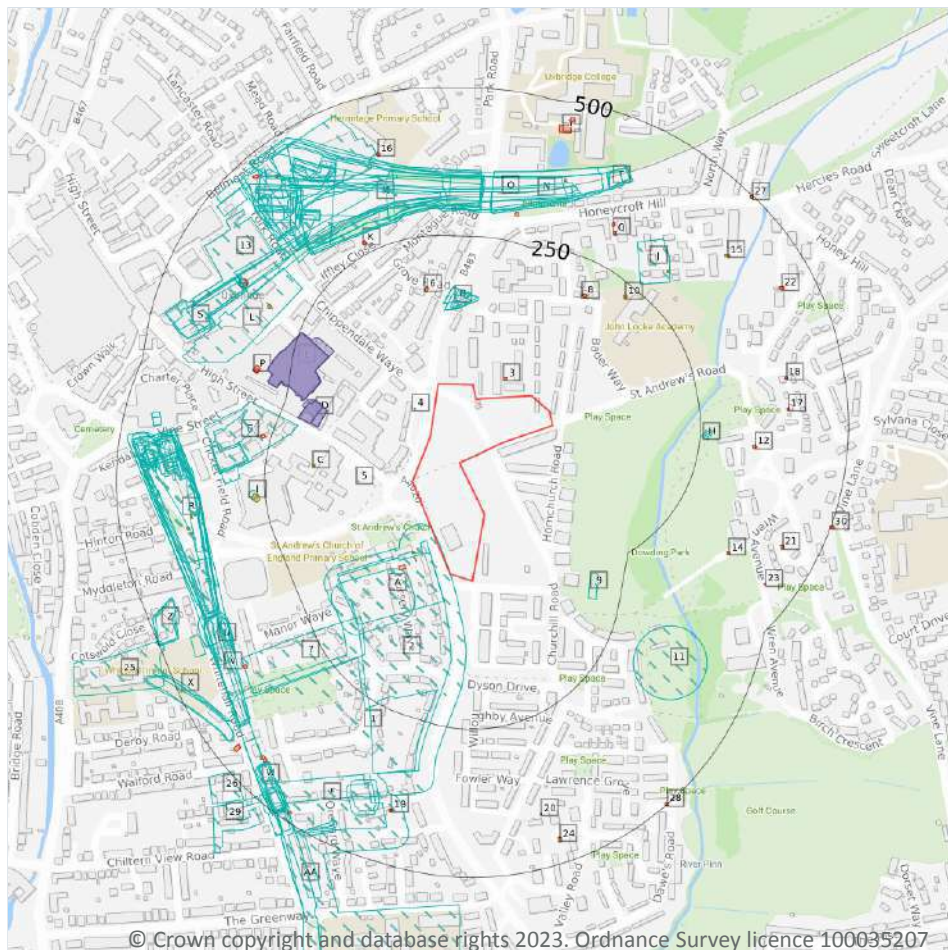
info@groundsure.com

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Date: 12 January 2023

13

1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

1.1 Historical industrial land uses

Records within 500m

156

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
1	On site	Nursery	1900	2257212



ID	Location	Land use	Dates present	Group ID
2	16m SW	Nursery	1868	2252752
A	19m S	Nursery	1913	2200465
A	67m SW	Nursery	1932	2212845
B	124m N	Hospital	1895 - 1897	2191731
B	124m N	Hospital	1932	2293633
B	127m N	Hospital	1913	2243902
B	131m N	Hospital	1913	2242771
B	136m N	Cottage Hospital	1897	2164583
7	168m SW	Nursery	1882	2233585
F	193m S	Nursery	1895 - 1900	2233584
9	194m SE	Unspecified Station	1975 - 1989	2293241
G	215m W	Unspecified Works	1970 - 1975	2175561
H	253m E	Boat House	1868	2146189
H	258m E	Boat House	1882	2146191
I	263m W	Unspecified Tank	1895 - 1897	2251184
J	263m NE	Nursery	1970 - 1975	2239205
G	279m W	Printing Works	1932	2253865
G	279m W	Printing Works	1913	2179824
L	280m NW	Iron Works	1897	2152567
M	281m N	Cuttings	1913	2188498
M	281m N	Cuttings	1938	2203507
M	282m N	Cuttings	1913	2207711
M	284m N	Cuttings	1935	2274753
G	284m W	Printing Works	1913	2196019
M	285m N	Cuttings	1932	2253990
M	288m N	Cuttings	1989	2199553
N	290m N	Cuttings	1913	2282906
M	291m N	Cuttings	1959	2274359



ID	Location	Land use	Dates present	Group ID
M	291m N	Cuttings	1970	2281676
N	292m N	Cuttings	1938	2177244
M	294m N	Cuttings	1938	2227250
11	299m SE	Rifle Ranges	1975 - 1989	2212898
O	299m N	Cuttings	1970 - 1989	2234591
M	301m N	Railway Sidings	1932	2229547
M	301m NW	Railway Buildings	1913	2231477
M	305m NW	Railway Sidings	1913	2222924
M	305m N	Railway Building	1938	2148771
M	306m N	Railway Sidings	1913	2270085
M	306m NW	Railway Sidings	1938	2170465
M	307m NW	Railway Buildings	1932	2189859
M	310m N	Railway Sidings	1959	2276548
M	311m N	Railway Sidings	1970 - 1989	2263613
M	313m N	Railway Sidings	1935	2268872
M	325m NW	Railway Building	1913	2290227
M	326m NW	Railway Sidings	1938	2194675
M	331m NW	Railway Building	1932 - 1935	2254988
M	331m NW	Railway Building	1932	2148772
M	340m NW	Goods Shed	1913	2218815
M	342m NW	Goods Shed	1935	2266042
M	346m NW	Goods Shed	1932	2205004
M	354m N	Railway Sidings	1938	2224476
13	354m NW	Bus Station	1989	2167073
M	356m NW	Unspecified Commercial/Industrial	1938 - 1959	2266519
R	358m W	Railway Sidings	1938	2222269
R	358m W	Railway Sidings	1913	2294609
R	358m W	Railway Sidings	1938	2276366



ID	Location	Land use	Dates present	Group ID
R	358m W	Railway Sidings	1935	2178263
R	359m W	Railway Sidings	1868	2281406
R	360m W	Railway Sidings	1932	2177909
R	360m W	Railway Sidings	1900 - 1913	2219976
S	360m NW	Terminus	1938	2165387
M	360m NW	Unspecified Commercial/Industrial	1938	2170593
S	362m NW	Railway Station	1970 - 1989	2217535
S	363m NW	Railway Building	1938	2148773
M	364m NW	Unspecified Depot	1970 - 1975	2245351
R	364m W	Railway Sidings	1882	2184733
S	365m NW	Railway Station	1959	2263936
R	366m W	Terminus	1895 - 1897	2229916
R	366m W	Railway Sidings	1959	2238838
R	367m W	Railway Sidings	1895	2251269
F	368m S	Nursery	1895 - 1897	2192433
R	369m W	Railway Building	1868	2148755
F	370m S	Unspecified Pit	1882	2124946
T	372m NE	Cuttings	1938	2249664
T	372m NE	Cuttings	1913	2255553
T	375m NE	Cuttings	1938	2230775
T	375m NE	Cuttings	1913	2234490
M	375m NW	Railway Building	1913	2266713
U	376m SW	Cuttings	1868	2217803
M	377m NW	Unspecified Commercial/Industrial	1989	2267587
U	378m SW	Unspecified Pit	1913	2260310
F	378m S	Unspecified Heap	1868	2136322
U	378m SW	Abattoir	1913	2168446
U	378m SW	Unspecified Pit	1932	2173981



ID	Location	Land use	Dates present	Group ID
M	378m NW	Railway Building	1913	2287288
R	379m W	Railway Sidings	1897	2244104
R	380m SW	Railway Building	1913	2148754
M	380m NW	Railway Building	1932	2210073
R	381m W	Railway Station	1882	2196656
R	383m W	Terminus	1900	2295103
U	384m SW	Cuttings	1882 - 1895	2292060
R	387m W	Railway Station	1868	2289879
M	387m NW	Terminus	1913	2251314
M	387m NW	Railway Building	1932	2148774
M	389m NW	Terminus	1938	2233418
V	390m SW	Railway Sidings	1938	2169700
M	391m NW	Terminus	1932	2176918
M	393m NW	Terminus	1935	2292301
R	394m W	Railway Building	1868	2148760
R	396m W	Terminus	1913	2178636
R	396m W	Terminus	1938 - 1959	2192062
M	397m NW	Terminus	1938	2221575
R	398m W	Terminus	1935	2233295
R	398m W	Terminus	1932	2192343
R	399m W	Unspecified Works	1970	2159677
U	399m SW	Railway Buildings	1935	2163456
M	401m NW	Railway Building	1913	2272062
U	402m SW	Cuttings	1932	2214032
U	402m SW	Unspecified Pit	1913	2271234
M	403m NW	Railway Building	1932	2246496
R	427m W	Railway Building	1913	2177473
R	427m W	Railway Building	1932	2272813



ID	Location	Land use	Dates present	Group ID
R	427m W	Railway Building	1882	2187803
R	430m W	Railway Building	1932	2267805
R	430m W	Railway Building	1900 - 1913	2294890
W	431m SW	Cuttings	1895	2194293
R	432m W	Railway Building	1913	2253479
R	432m W	Railway Building	1938	2273614
U	432m SW	Unspecified Works	1970	2159678
R	433m W	Railway Building	1938	2270570
R	434m W	Fire Station	1970	2289481
R	434m W	Fire Station	1959	2291773
R	435m W	Railway Building	1913	2251962
R	435m W	Railway Building	1900	2191451
W	439m SW	Cuttings	1938	2277282
W	441m SW	Cuttings	1938	2220108
W	442m SW	Cuttings	1935	2274667
W	444m SW	Cuttings	1959	2200180
R	446m W	Railway Building	1932	2148762
X	446m SW	Unspecified Ground Workings	1938	2133414
Z	448m SW	Gravel Pit	1932	2263325
M	448m NW	Burial Ground	1868	2279326
Z	449m SW	Gravel Pit	1913	2266384
Z	450m SW	Gravel Pit	1913	2260399
X	452m SW	Unspecified Pit	1913	2188231
X	453m SW	Unspecified Pit	1932	2245629
R	457m W	Railway Building	1868	2148756
F	459m S	Unspecified Ground Workings	1882	2133415
M	462m NW	Railway Building	1932	2148776
R	462m W	Railway Building	1932	2148761



ID	Location	Land use	Dates present	Group ID
W	462m SW	Cuttings	1959	2192044
W	463m SW	Cuttings	1932	2222396
W	466m SW	Cuttings	1913	2179245
W	467m SW	Cuttings	1913	2212937
F	467m S	Unspecified Heap	1868	2136323
M	470m NW	Burial Ground	1882	2184781
R	470m W	Railway Building	1868	2148757
AA	483m SW	Unspecified Pit	1970	2171232
AA	483m SW	Cuttings	1959	2250040
W	485m SW	Railway Buildings	1882	2163454
W	487m SW	Railway Buildings	1895	2163455
25	494m SW	Gravel Pits	1882	2187071
26	494m SW	Unspecified Works	1975	2159679
29	497m SW	Unspecified Works	1970	2159680
AA	498m SW	Cuttings	1882	2222707

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

16

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
4	32m NW	Tank or Trough	1866	379564
A	42m SW	Unspecified Tank	1992	395342
A	42m SW	Unspecified Tank	1978 - 1987	398036



ID	Location	Land use	Dates present	Group ID
A	44m SW	Unspecified Tank	1899	363826
A	44m SW	Tank or Trough	1866	379561
A	44m SW	Unspecified Tank	1866	363827
5	90m W	Tank or Trough	1866	379560
C	166m W	Unspecified Tank	1978 - 1987	384999
C	167m W	Unspecified Tank	1992	392528
10	227m NE	Unspecified Tank	1977	363829
I	260m W	Unspecified Tank	1896 - 1899	398397
J	307m NE	Tanks	1977	376167
L	310m NW	Unspecified Tank	1986 - 1988	391859
N	366m N	Unspecified Tank	1962 - 1995	394098
R	377m W	Unspecified Tank	1866	363828
15	395m NE	Unspecified Tank	1986	363831

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

38

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
3	29m NE	Electricity Substation	1977	244168
A	65m SW	Electricity Substation	1976 - 1992	267467
6	156m N	Electricity Substation	1975 - 1993	283459
8	188m NE	Electricity Substation	1977	244169
G	260m W	Electricity Substation	1976 - 1992	257063



ID	Location	Land use	Dates present	Group ID
K	266m NW	Electricity Substation	1980 - 1986	261466
K	266m NW	Electricity Substation	1988 - 1993	274605
O	293m N	Electricity Substation	1977 - 1995	257613
P	300m NW	Electricity Substation	1975 - 1988	259585
P	304m NW	Electricity Substation	1993	265010
Q	305m NE	Electricity Substation	1977	244167
Q	316m NE	Electricity Substation	1987 - 1995	289507
12	340m E	Electricity Substation	1975	244176
14	363m E	Electricity Substation	1975	244175
V	376m SW	Electricity Substation	1976 - 1992	282903
R	380m W	Electricity Substation	1978 - 1987	257677
R	384m W	Electricity Substation	1992	244170
16	397m N	Electricity Substation	1988 - 1993	265578
17	397m E	Electricity Substation	1975	244163
18	399m E	Electricity Substation	1975	244164
19	407m S	Electricity Substation	1973 - 1992	259254
20	409m S	Electricity Substation	1975	244172
S	412m NW	Electricity Substation	1975 - 1980	283994
21	435m E	Electricity Substation	1975	244178
22	439m NE	Electricity Substation	1975	244166
W	439m SW	Electricity Substation	1988 - 1992	266448
W	439m SW	Electricity Substation	1986	244171
M	441m NW	Electricity Substation	1988 - 1993	266487
23	446m E	Electricity Substation	1975	244179
Y	447m N	Electricity Substation	1994 - 1995	257701
24	456m S	Electricity Substation	1975	244173
W	458m SW	Electricity Substation	1973 - 1992	261899
M	462m NW	Electricity Substation	1975 - 1986	258736



ID	Location	Land use	Dates present	Group ID
Y	467m N	Electricity Substation	1977 - 1987	274282
W	482m SW	Electricity Substation	1986 - 1992	257117
27	494m NE	Electricity Substation	1975 - 1990	278153
28	495m SE	Electricity Substation	1975	244174
30	498m E	Electricity Substation	1975	244177

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

8

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
D	177m W	Garage	1978	74811
D	179m W	Garage	1963 - 1976	83394
E	184m NW	Garage	1980 - 1986	85285
D	187m W	Garage	1992	77034
D	187m W	Garage	1987	81003
E	190m NW	Garage	1972	77203



ID	Location	Land use	Dates present	Group ID
E	192m NW	Garage	1975	79349
E	192m NW	Garage	1962	79565

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

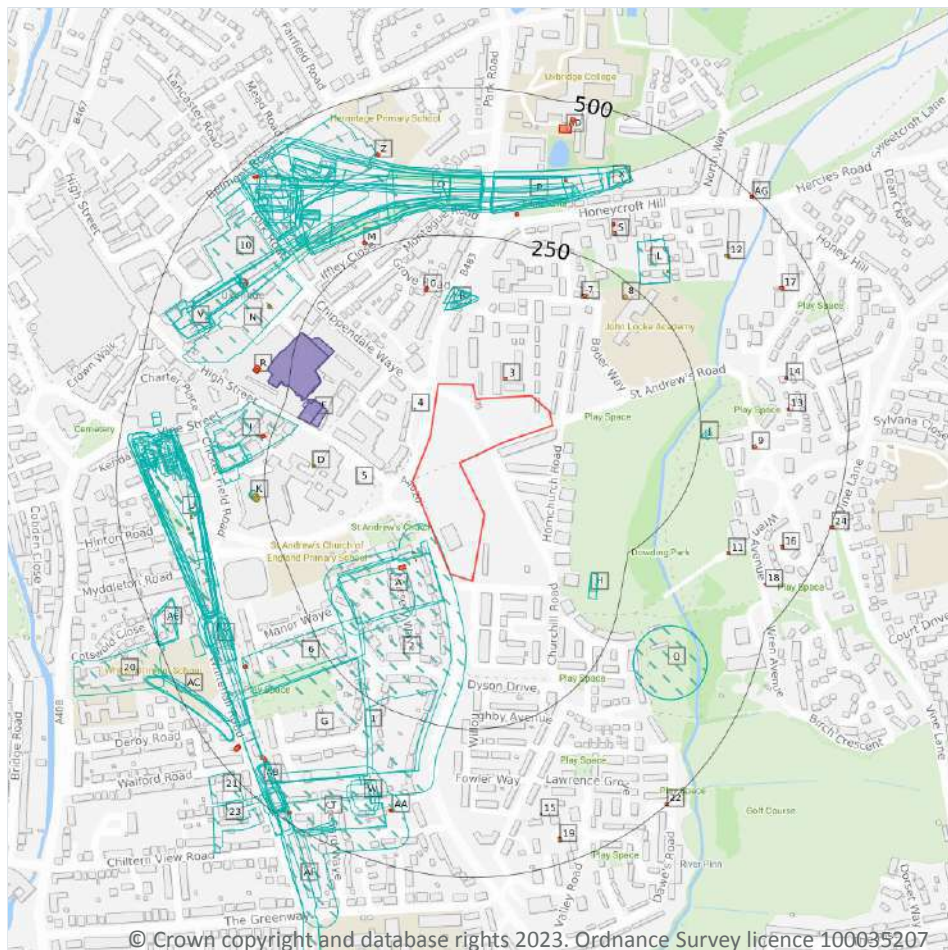
0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.



2 Past land use - un-grouped



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

2.1 Historical industrial land uses

Records within 500m

191

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 25**

ID	Location	Land Use	Date	Group ID
1	On site	Nursery	1900	2257212
2	16m SW	Nursery	1868	2252752
A	19m S	Nursery	1913	2200465

ID	Location	Land Use	Date	Group ID
A	20m S	Nursery	1913	2200465
A	67m SW	Nursery	1932	2212845
B	124m N	Hospital	1932	2293633
B	124m N	Hospital	1897	2191731
B	127m N	Hospital	1913	2243902
B	131m N	Hospital	1913	2242771
B	135m N	Hospital	1895	2191731
B	136m N	Cottage Hospital	1897	2164583
6	168m SW	Nursery	1882	2233585
G	193m S	Nursery	1897	2233584
H	194m SE	Unspecified Station	1975	2293241
H	194m SE	Unspecified Station	1989	2293241
G	211m SW	Nursery	1895	2233584
I	215m W	Unspecified Works	1975	2175561
J	253m E	Boat House	1868	2146189
J	258m E	Boat House	1882	2146191
K	263m W	Unspecified Tank	1895	2251184
L	263m NE	Nursery	1975	2239205
L	263m NE	Nursery	1970	2239205
K	264m W	Unspecified Tank	1897	2251184
I	271m W	Unspecified Works	1970	2175561
I	279m W	Printing Works	1932	2253865
I	279m W	Printing Works	1913	2179824
N	280m NW	Iron Works	1897	2152567
O	281m N	Cuttings	1938	2203507
O	281m N	Cuttings	1913	2188498
O	282m N	Cuttings	1913	2207711
O	284m N	Cuttings	1935	2274753



ID	Location	Land Use	Date	Group ID
I	284m W	Printing Works	1913	2196019
O	285m N	Cuttings	1932	2253990
O	288m N	Cuttings	1989	2199553
P	290m N	Cuttings	1913	2282906
O	291m N	Cuttings	1970	2281676
O	291m N	Cuttings	1959	2274359
P	292m N	Cuttings	1938	2177244
P	292m N	Cuttings	1913	2282906
O	294m N	Cuttings	1938	2227250
Q	299m SE	Rifle Ranges	1989	2212898
Q	299m SE	Rifle Ranges	1975	2212898
P	299m N	Cuttings	1989	2234591
P	299m N	Cuttings	1975	2234591
P	299m N	Cuttings	1970	2234591
O	301m N	Railway Sidings	1932	2229547
P	301m N	Cuttings	1938	2177244
O	301m NW	Railway Buildings	1913	2231477
O	305m NW	Railway Sidings	1913	2222924
O	305m N	Railway Building	1938	2148771
O	306m N	Railway Sidings	1913	2270085
O	306m NW	Railway Sidings	1938	2170465
O	307m NW	Railway Buildings	1932	2189859
O	310m N	Railway Sidings	1959	2276548
P	311m N	Railway Sidings	1913	2270085
O	311m N	Railway Sidings	1989	2263613
O	311m N	Railway Sidings	1975	2263613
O	311m N	Railway Sidings	1970	2263613
O	313m N	Railway Sidings	1935	2268872



ID	Location	Land Use	Date	Group ID
O	325m NW	Railway Building	1913	2290227
O	326m NW	Railway Sidings	1938	2194675
O	329m NW	Railway Building	1913	2290227
O	331m NW	Railway Building	1932	2254988
O	331m NW	Railway Building	1932	2148772
O	332m NW	Railway Building	1935	2254988
O	340m NW	Goods Shed	1913	2218815
O	342m NW	Goods Shed	1935	2266042
O	343m NW	Goods Shed	1913	2218815
O	346m NW	Goods Shed	1932	2205004
T	353m S	Nursery	1900	2233584
O	354m N	Railway Sidings	1938	2224476
10	354m NW	Bus Station	1989	2167073
O	356m NW	Unspecified Commercial/Industrial	1938	2266519
U	358m W	Railway Sidings	1938	2222269
U	358m W	Railway Sidings	1913	2294609
U	358m W	Railway Sidings	1938	2276366
U	358m W	Railway Sidings	1935	2178263
U	359m W	Railway Sidings	1868	2281406
U	360m W	Railway Sidings	1932	2177909
U	360m W	Railway Sidings	1900	2219976
O	360m NW	Unspecified Commercial/Industrial	1959	2266519
V	360m NW	Terminus	1938	2165387
O	360m NW	Unspecified Commercial/Industrial	1938	2170593
U	361m W	Railway Sidings	1913	2219976
V	362m NW	Railway Station	1989	2217535
V	362m NW	Railway Station	1975	2217535
V	362m NW	Railway Station	1970	2217535



ID	Location	Land Use	Date	Group ID
V	363m NW	Railway Building	1938	2148773
O	364m NW	Unspecified Depot	1975	2245351
O	364m NW	Unspecified Depot	1970	2245351
U	364m W	Railway Sidings	1882	2184733
V	365m NW	Railway Station	1959	2263936
U	366m W	Terminus	1897	2229916
U	366m W	Railway Sidings	1959	2238838
U	367m W	Terminus	1895	2229916
U	367m W	Railway Sidings	1895	2251269
T	368m S	Nursery	1897	2192433
U	369m W	Railway Building	1868	2148755
W	370m S	Unspecified Pit	1882	2124946
X	372m NE	Cuttings	1938	2249664
X	372m NE	Cuttings	1913	2255553
T	374m S	Nursery	1895	2192433
X	375m NE	Cuttings	1938	2230775
X	375m NE	Cuttings	1913	2234490
O	375m NW	Railway Building	1913	2266713
Y	376m SW	Cuttings	1868	2217803
O	377m NW	Unspecified Commercial/Industrial	1989	2267587
Y	378m SW	Unspecified Pit	1913	2260310
W	378m S	Unspecified Heap	1868	2136322
Y	378m SW	Abattoir	1913	2168446
Y	378m SW	Unspecified Pit	1932	2173981
O	378m NW	Railway Building	1913	2287288
U	379m W	Railway Sidings	1897	2244104
U	380m SW	Railway Building	1913	2148754
O	380m NW	Railway Building	1932	2210073



ID	Location	Land Use	Date	Group ID
U	381m W	Railway Station	1882	2196656
U	383m W	Terminus	1900	2295103
Y	384m SW	Cuttings	1882	2292060
Y	384m SW	Cuttings	1895	2292060
U	387m W	Railway Station	1868	2289879
O	387m NW	Terminus	1913	2251314
O	387m NW	Railway Building	1932	2148774
O	389m NW	Terminus	1938	2233418
O	389m NW	Terminus	1913	2251314
Y	390m SW	Railway Sidings	1938	2169700
O	391m NW	Terminus	1932	2176918
O	393m NW	Terminus	1935	2292301
U	394m W	Railway Building	1868	2148760
U	396m W	Terminus	1938	2192062
U	396m W	Terminus	1913	2178636
O	397m NW	Terminus	1938	2221575
U	398m W	Terminus	1935	2233295
U	398m W	Terminus	1932	2192343
U	398m W	Terminus	1938	2192062
U	398m W	Terminus	1913	2178636
U	399m W	Unspecified Works	1970	2159677
Y	399m SW	Railway Buildings	1935	2163456
O	401m NW	Railway Building	1913	2272062
U	402m W	Terminus	1959	2192062
Y	402m SW	Cuttings	1932	2214032
Y	402m SW	Unspecified Pit	1913	2271234
Y	403m SW	Unspecified Pit	1913	2271234
O	403m NW	Railway Building	1932	2246496



ID	Location	Land Use	Date	Group ID
U	427m W	Railway Building	1913	2177473
U	427m W	Railway Building	1932	2272813
U	427m W	Railway Building	1882	2187803
U	430m W	Railway Building	1932	2267805
U	430m W	Railway Building	1900	2294890
AB	431m SW	Cuttings	1895	2194293
U	432m W	Railway Building	1938	2273614
U	432m W	Railway Building	1913	2253479
Y	432m SW	Unspecified Works	1970	2159678
U	433m W	Railway Building	1938	2270570
U	433m W	Railway Building	1913	2294890
U	434m W	Fire Station	1970	2289481
U	434m W	Fire Station	1959	2291773
U	435m W	Railway Building	1913	2251962
U	435m W	Railway Building	1900	2191451
U	437m W	Railway Building	1913	2251962
AB	439m SW	Cuttings	1938	2277282
AB	441m SW	Cuttings	1938	2220108
AB	442m SW	Cuttings	1935	2274667
AB	444m SW	Cuttings	1959	2200180
U	446m W	Railway Building	1932	2148762
AC	446m SW	Unspecified Ground Workings	1938	2133414
AE	448m SW	Gravel Pit	1932	2263325
O	448m NW	Burial Ground	1868	2279326
AE	449m SW	Gravel Pit	1913	2266384
AE	450m SW	Gravel Pit	1913	2260399
AC	452m SW	Unspecified Pit	1913	2188231
AC	453m SW	Unspecified Pit	1932	2245629



ID	Location	Land Use	Date	Group ID
AC	453m SW	Unspecified Pit	1913	2188231
U	457m W	Railway Building	1868	2148756
T	459m S	Unspecified Ground Workings	1882	2133415
O	462m NW	Railway Building	1932	2148776
U	462m W	Railway Building	1932	2148761
AB	462m SW	Cuttings	1959	2192044
AB	463m SW	Cuttings	1932	2222396
AB	466m SW	Cuttings	1913	2179245
AB	467m SW	Cuttings	1913	2212937
T	467m S	Unspecified Heap	1868	2136323
O	470m NW	Burial Ground	1882	2184781
U	470m W	Railway Building	1868	2148757
AF	483m SW	Cuttings	1959	2250040
AF	483m SW	Unspecified Pit	1970	2171232
AB	485m SW	Railway Buildings	1882	2163454
AB	487m SW	Railway Buildings	1895	2163455
20	494m SW	Gravel Pits	1882	2187071
21	494m SW	Unspecified Works	1975	2159679
23	497m SW	Unspecified Works	1970	2159680
AF	498m SW	Cuttings	1882	2222707

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

26

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 25**



ID	Location	Land Use	Date	Group ID
4	32m NW	Tank or Trough	1866	379564
A	42m SW	Unspecified Tank	1992	395342
A	42m SW	Unspecified Tank	1978	398036
A	42m SW	Unspecified Tank	1987	398036
A	44m SW	Unspecified Tank	1899	363826
A	44m SW	Tank or Trough	1866	379561
A	44m SW	Unspecified Tank	1866	363827
5	90m W	Tank or Trough	1866	379560
D	166m W	Unspecified Tank	1978	384999
D	166m W	Unspecified Tank	1987	384999
D	166m W	Unspecified Tank	1987	384999
D	167m W	Unspecified Tank	1992	392528
8	227m NE	Unspecified Tank	1977	363829
K	260m W	Unspecified Tank	1899	398397
K	260m W	Unspecified Tank	1896	398397
L	307m NE	Tanks	1977	376167
N	310m NW	Unspecified Tank	1988	391859
N	311m NW	Unspecified Tank	1986	391859
P	366m N	Unspecified Tank	1987	394098
P	366m N	Unspecified Tank	1962	394098
P	366m N	Unspecified Tank	1977	394098
P	367m N	Unspecified Tank	1962	394098
P	367m N	Unspecified Tank	1995	394098
P	367m N	Unspecified Tank	1994	394098
U	377m W	Unspecified Tank	1866	363828
12	395m NE	Unspecified Tank	1986	363831

This data is sourced from Ordnance Survey / Groundsure.



2.3 Historical energy features

Records within 500m

87

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 25**

ID	Location	Land Use	Date	Group ID
3	29m NE	Electricity Substation	1977	244168
A	65m SW	Electricity Substation	1992	267467
A	65m SW	Electricity Substation	1978	267467
A	65m SW	Electricity Substation	1987	267467
A	65m SW	Electricity Substation	1987	267467
A	65m SW	Electricity Substation	1976	267467
C	156m N	Electricity Substation	1988	283459
C	156m N	Electricity Substation	1980	283459
C	156m N	Electricity Substation	1980	283459
C	156m N	Electricity Substation	1986	283459
C	156m N	Electricity Substation	1975	283459
C	157m N	Electricity Substation	1993	283459
7	188m NE	Electricity Substation	1977	244169
I	260m W	Electricity Substation	1978	257063
I	260m W	Electricity Substation	1987	257063
I	261m W	Electricity Substation	1992	257063
I	262m W	Electricity Substation	1976	257063
M	266m NW	Electricity Substation	1980	261466
M	266m NW	Electricity Substation	1980	261466
M	266m NW	Electricity Substation	1986	261466
M	266m NW	Electricity Substation	1988	274605
M	266m NW	Electricity Substation	1993	274605
P	293m N	Electricity Substation	1987	257613



ID	Location	Land Use	Date	Group ID
P	294m N	Electricity Substation	1977	257613
P	295m N	Electricity Substation	1995	257613
P	295m N	Electricity Substation	1994	257613
R	300m NW	Electricity Substation	1980	259585
R	300m NW	Electricity Substation	1980	259585
R	300m NW	Electricity Substation	1986	259585
R	302m NW	Electricity Substation	1975	259585
R	303m NW	Electricity Substation	1988	259585
R	304m NW	Electricity Substation	1993	265010
S	305m NE	Electricity Substation	1977	244167
S	316m NE	Electricity Substation	1987	289507
S	319m NE	Electricity Substation	1995	289507
S	319m NE	Electricity Substation	1994	289507
9	340m E	Electricity Substation	1975	244176
11	363m E	Electricity Substation	1975	244175
Y	376m SW	Electricity Substation	1978	282903
Y	376m SW	Electricity Substation	1987	282903
Y	376m SW	Electricity Substation	1987	282903
Y	377m SW	Electricity Substation	1992	282903
Y	377m SW	Electricity Substation	1976	282903
U	380m W	Electricity Substation	1978	257677
U	380m W	Electricity Substation	1987	257677
U	380m W	Electricity Substation	1987	257677
U	384m W	Electricity Substation	1992	244170
Z	397m N	Electricity Substation	1993	265578
13	397m E	Electricity Substation	1975	244163
Z	397m N	Electricity Substation	1988	265578
14	399m E	Electricity Substation	1975	244164



ID	Location	Land Use	Date	Group ID
AA	407m S	Electricity Substation	1988	259254
AA	407m S	Electricity Substation	1973	259254
AA	407m S	Electricity Substation	1986	259254
AA	407m S	Electricity Substation	1992	259254
15	409m S	Electricity Substation	1975	244172
V	412m NW	Electricity Substation	1980	283994
V	412m NW	Electricity Substation	1980	283994
V	413m NW	Electricity Substation	1975	283994
16	435m E	Electricity Substation	1975	244178
17	439m NE	Electricity Substation	1975	244166
AB	439m SW	Electricity Substation	1988	266448
AB	439m SW	Electricity Substation	1986	244171
AB	440m SW	Electricity Substation	1992	266448
O	441m NW	Electricity Substation	1993	266487
O	442m NW	Electricity Substation	1988	266487
18	446m E	Electricity Substation	1975	244179
AD	447m N	Electricity Substation	1995	257701
AD	447m N	Electricity Substation	1994	257701
19	456m S	Electricity Substation	1975	244173
AB	458m SW	Electricity Substation	1988	261899
AB	458m SW	Electricity Substation	1973	261899
AB	459m SW	Electricity Substation	1992	261899
AB	459m SW	Electricity Substation	1986	261899
O	462m NW	Electricity Substation	1980	258736
O	463m NW	Electricity Substation	1975	258736
O	464m NW	Electricity Substation	1986	258736
AD	467m N	Electricity Substation	1977	274282
AD	467m N	Electricity Substation	1987	274282



ID	Location	Land Use	Date	Group ID
AB	482m SW	Electricity Substation	1988	257117
AB	483m SW	Electricity Substation	1986	257117
AB	483m SW	Electricity Substation	1992	257117
AG	494m NE	Electricity Substation	1975	278153
AG	494m NE	Electricity Substation	1986	278153
AG	494m NE	Electricity Substation	1990	278153
22	495m SE	Electricity Substation	1975	244174
24	498m E	Electricity Substation	1975	244177

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

12

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 25**

ID	Location	Land Use	Date	Group ID
E	177m W	Garage	1978	74811
E	179m W	Garage	1976	83394
F	184m NW	Garage	1980	85285
F	184m NW	Garage	1980	85285
F	184m NW	Garage	1986	85285

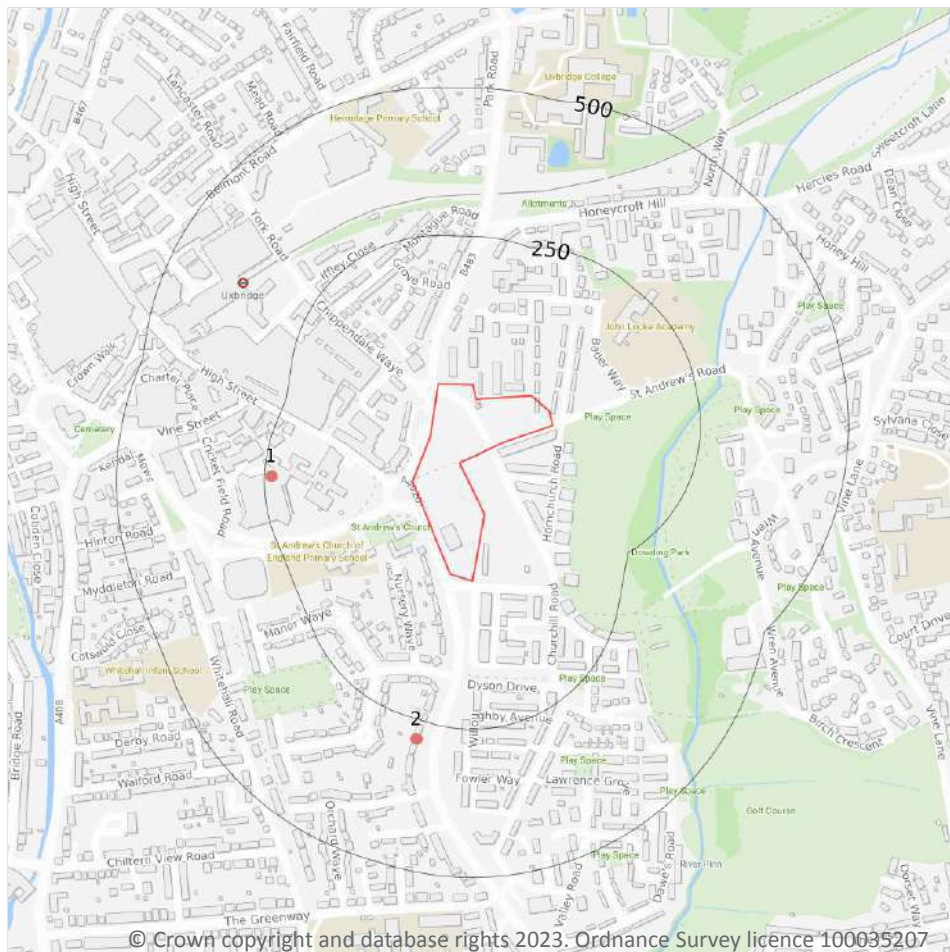


ID	Location	Land Use	Date	Group ID
E	186m W	Garage	1963	83394
E	187m W	Garage	1992	77034
E	187m W	Garage	1987	81003
E	187m W	Garage	1987	81003
F	190m NW	Garage	1972	77203
F	192m NW	Garage	1962	79565
F	192m NW	Garage	1975	79349

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m

0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m

0

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m

0

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m

0

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m

2

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 39**

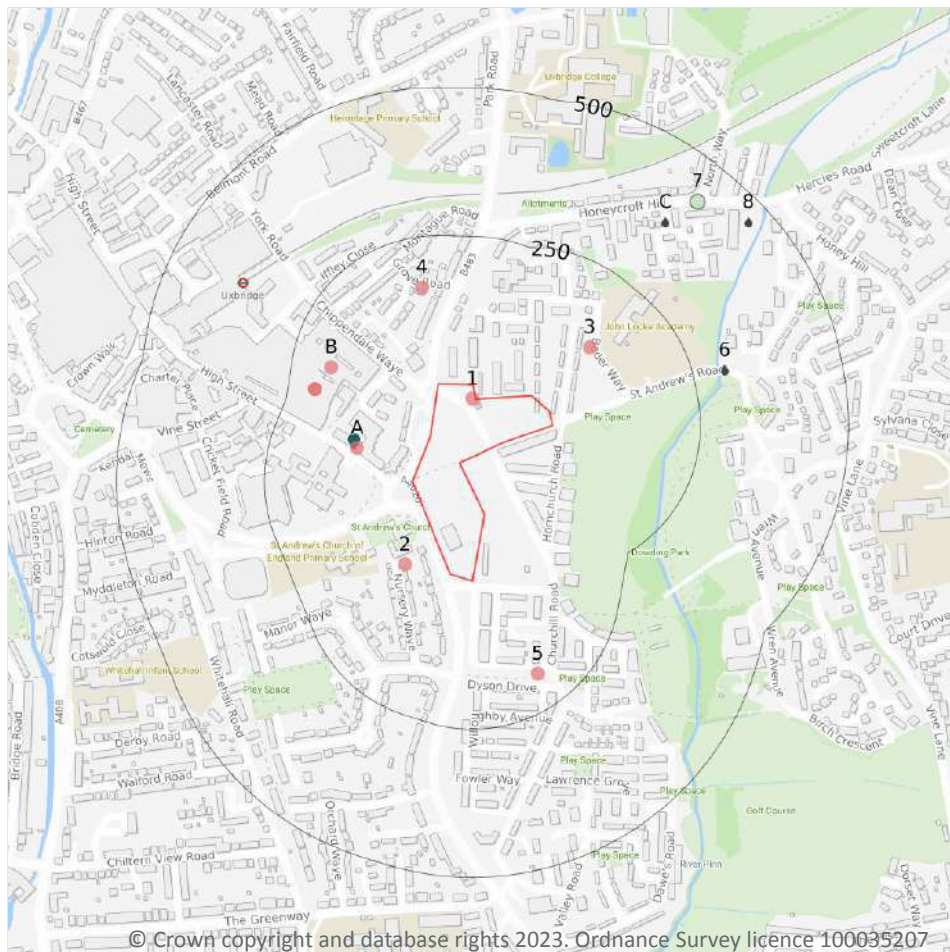
ID	Location	Site	Reference	Category	Sub-Category	Description
1	239m W	Linear Network For London Borough of Hillingdon	EPR/DE5080RZ /A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste in construction

ID	Location	Site	Reference	Category	Sub-Category	Description
2	283m S	41 Hillingdon Road UXBRIDGE Middlesex UB10 0AD	EPR/UE5783V X/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of waste in secure containers

This data is sourced from the Environment Agency and Natural Resources Wales.



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- Licensed pollutant release (Part A(2)/B)
- Licensed Discharges to controlled waters
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

9

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 42**

ID	Location	Company	Address	Activity	Category
1	On site	Electricity Sub Station	Greater London, UB8	Electrical Features	Infrastructure and Facilities
2	65m SW	Electricity Sub Station	Greater London, UB8	Electrical Features	Infrastructure and Facilities
A	108m W	Alien Repairs	231, High Street, Uxbridge, Greater London, UB8 1LD	Electrical Equipment Repair and Servicing	Repair and Servicing



ID	Location	Company	Address	Activity	Category
3	126m NE	Electricity Sub Station	Greater London, UB10	Electrical Features	Infrastructure and Facilities
4	165m N	Electricity Sub Station	Greater London, UB8	Electrical Features	Infrastructure and Facilities
B	183m NW	The Car Wash Company	The Chimes Shopping Centre (Intu Uxbridge), High Street, Town Centre, Uxbridge, Greater London, UB8 1LA	Vehicle Cleaning Services	Personal, Consumer and Other Services
5	191m S	Electricity Sub Stations	Greater London, UB10	Electrical Features	Infrastructure and Facilities
B	205m NW	Hillingdon Shopmobility	Unit 301 Intu Uxbridge the Chimes Shopping Centre, High Street, Uxbridge, Greater London, UB8 1GD	Disability and Mobility Equipment	Consumer Products
B	205m NW	Shopmobility	223a, The Chimes Shopping Centre (Intu Uxbridge), High Street, Uxbridge, Greater London, UB8 1GD	Disability and Mobility Equipment	Consumer Products

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m

0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m

0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m

0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.



4.5 Sites determined as Contaminated Land

Records within 500m

0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m

0

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m

0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.



4.10 Licensed industrial activities (Part A(1))

Records within 500m**0**

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m**1**

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on **page 42**

ID	Location	Address	Details	
A	118m W	Ariana Quality Dry Cleaners, 229 High Street, Uxbridge, Middlesex, UB3 1LD	Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m**0**

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m**4**

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on **page 42**



ID	Location	Address	Details	
6	303m E	RAF UXBRIDGE, UXBRIDGE, MIDDLESEX	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CNTM.2246 Permit Version: 1 Receiving Water: RIVER PINN	Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 29/03/1996 Effective Date: 29/03/1996 Revocation Date: -
C	370m NE	Honeycroft Hill Site	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.1184 Permit Version: 1 Receiving Water: PINN	Status: TEMPORARY CONSENTS (WATER ACT 1989, SECTION 113) Issue date: 02/11/1989 Effective Date: 02/11/1989 Revocation Date: 02/09/2010
C	370m NE	Honeycroft Hill Site	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.1184 Permit Version: 2 Receiving Water: Pinn	Status: REVOKED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03/09/2010 Revocation Date: 19/08/2014
8	463m NE	CENTRAL NURSERY, HONEY CROFT HILL, CENTRAL NURSERY HONEY CROFT HIL, L UXBRIDGE MIDDLESEX.	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.0310 Permit Version: 1 Receiving Water: RIVER PINN	Status: TRANSFERRED FROM COPA 1974 Issue date: 27/08/1985 Effective Date: 27/08/1985 Revocation Date: 21/09/1994

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.



4.16 List 1 Dangerous Substances

Records within 500m**0**

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m**0**

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m**1**

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on **page 42**

ID	Location	Details	
7	431m NE	Incident Date: 31/07/2001 Incident Identification: 20760 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m**0**

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



4.20 Pollution inventory waste transfers

Records within 500m

0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory radioactive waste

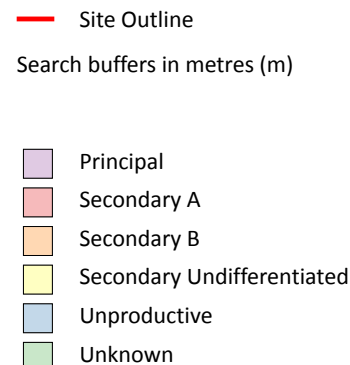
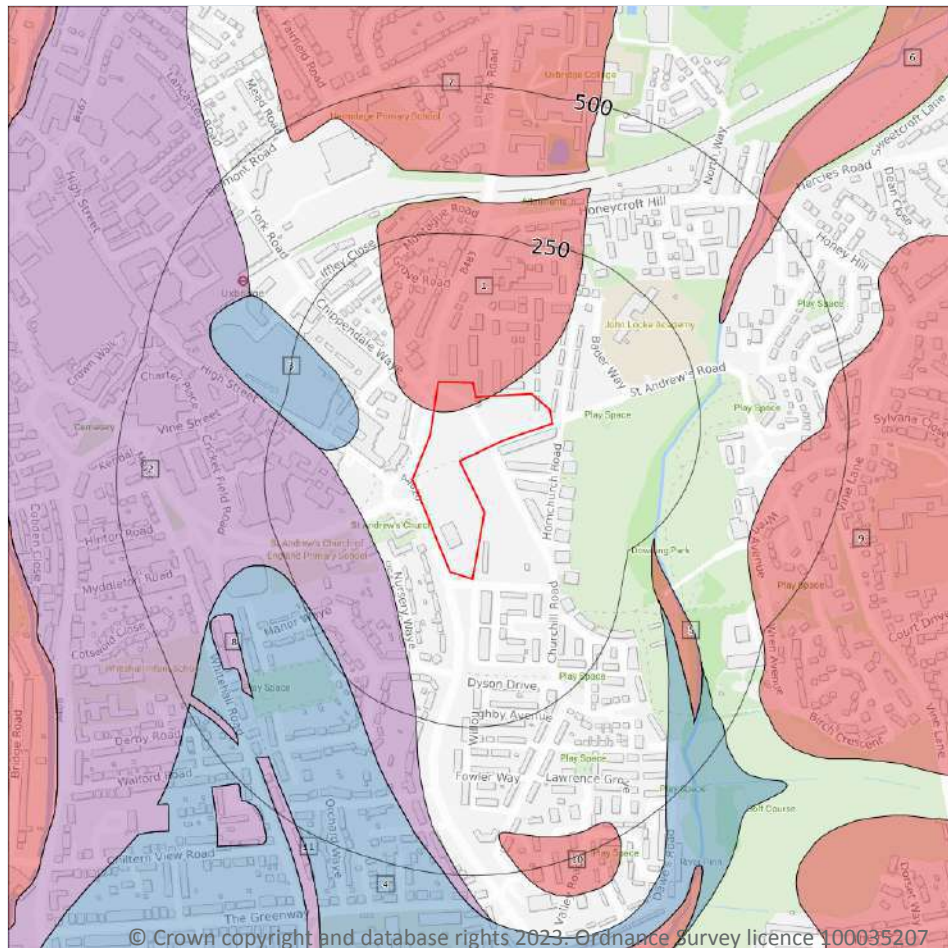
Records within 500m

0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

5 Hydrogeology - Superficial aquifer



5.1 Superficial aquifer

Records within 500m

11

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 49**

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	99m SW	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

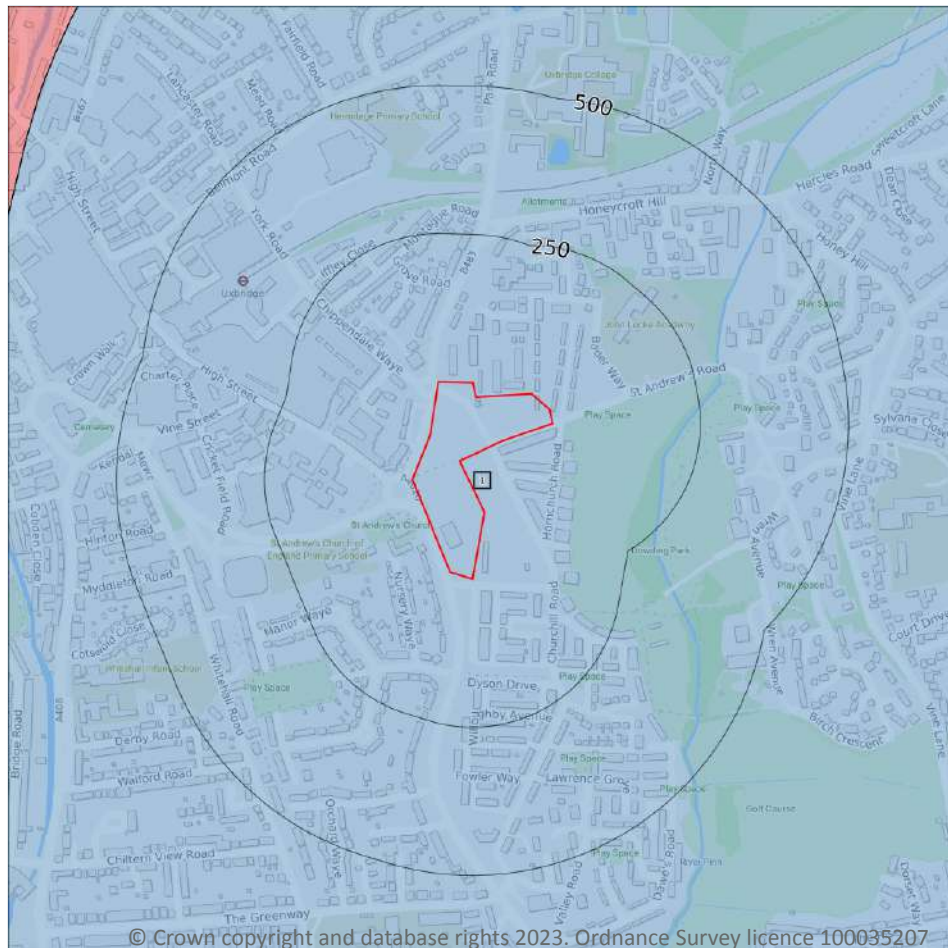


ID	Location	Designation	Description
3	118m W	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
4	236m SW	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
5	261m E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
6	323m NE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
7	352m N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
8	369m SW	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
9	377m E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
10	430m S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
11	437m SW	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Bedrock aquifer



- Site Outline**
- Search buffers in metres (m)**
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

5.2 Bedrock aquifer

Records within 500m

1

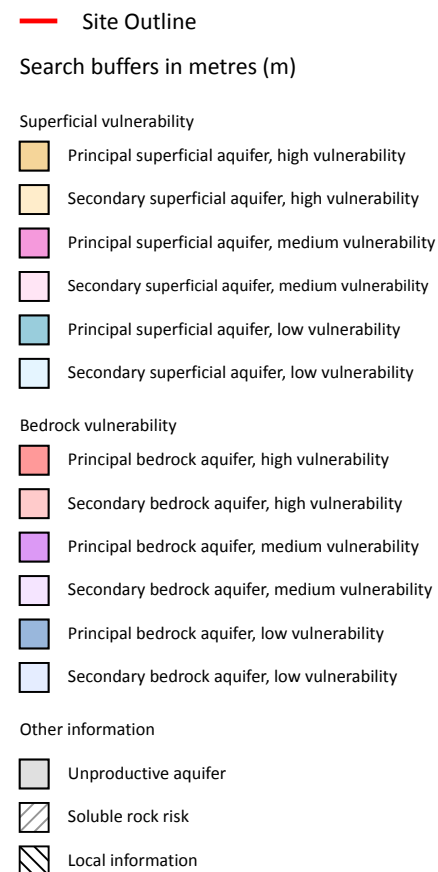
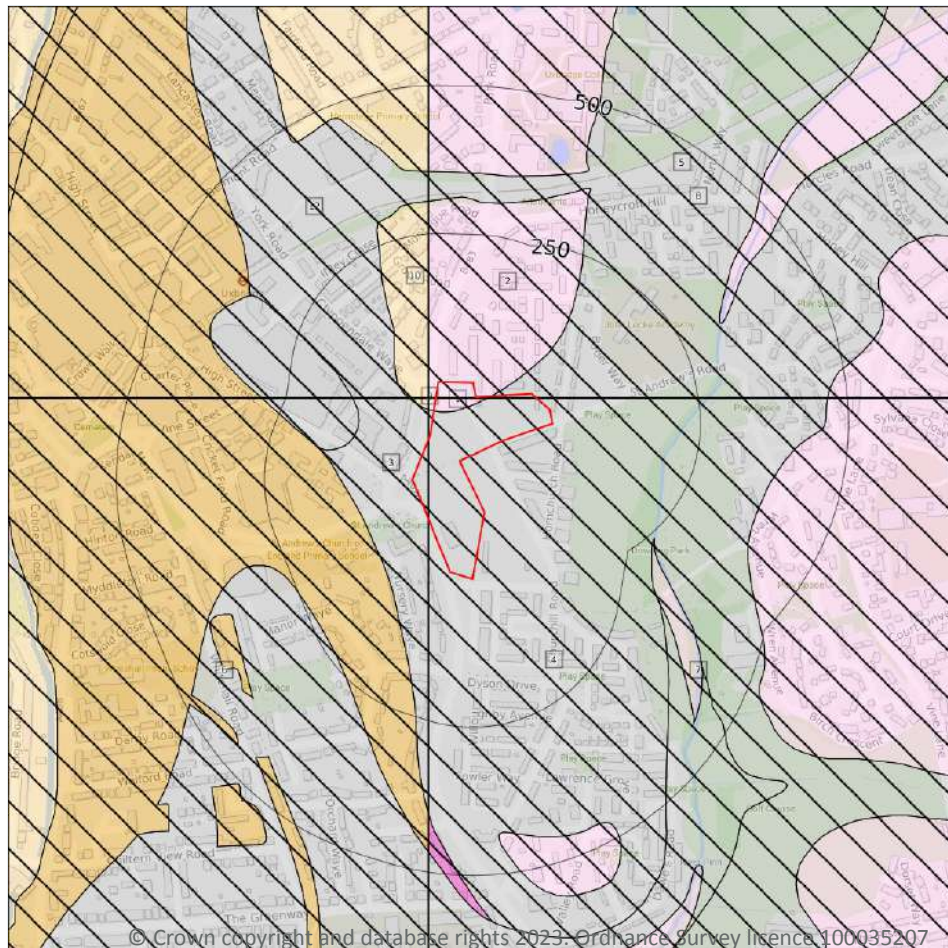
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 51**

ID	Location	Designation	Description
1	On site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

8

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 52**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Unproductive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: Medium	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Mixed
2	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Unproductive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: Medium	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Mixed
3	On site	Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: >90% Recharge potential: No Data	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Mixed
4	On site	Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: Medium	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Mixed
5	On site	Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: Medium	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Mixed
9	9m NW	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Unproductive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: No Data	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Mixed



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
10	12m NW	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Unproductive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Medium	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Mixed
12	45m NW	Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: >90% Recharge potential: Medium	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Mixed

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0
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This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site	3
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This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk.

ID	Summary	Additional information
6	Highly vulnerable Principal superficial aquifer present in river terrace gravels	Principal superficial aquifer in river terrace gravels with only a thin cover of low permeability silts and/or alluvium (shown as unproductive)
7	Highly vulnerable Principal superficial aquifer present in river terrace gravels	Principal superficial aquifer in river terrace gravels with only a thin cover of low permeability silts and/or alluvium (shown as unproductive)

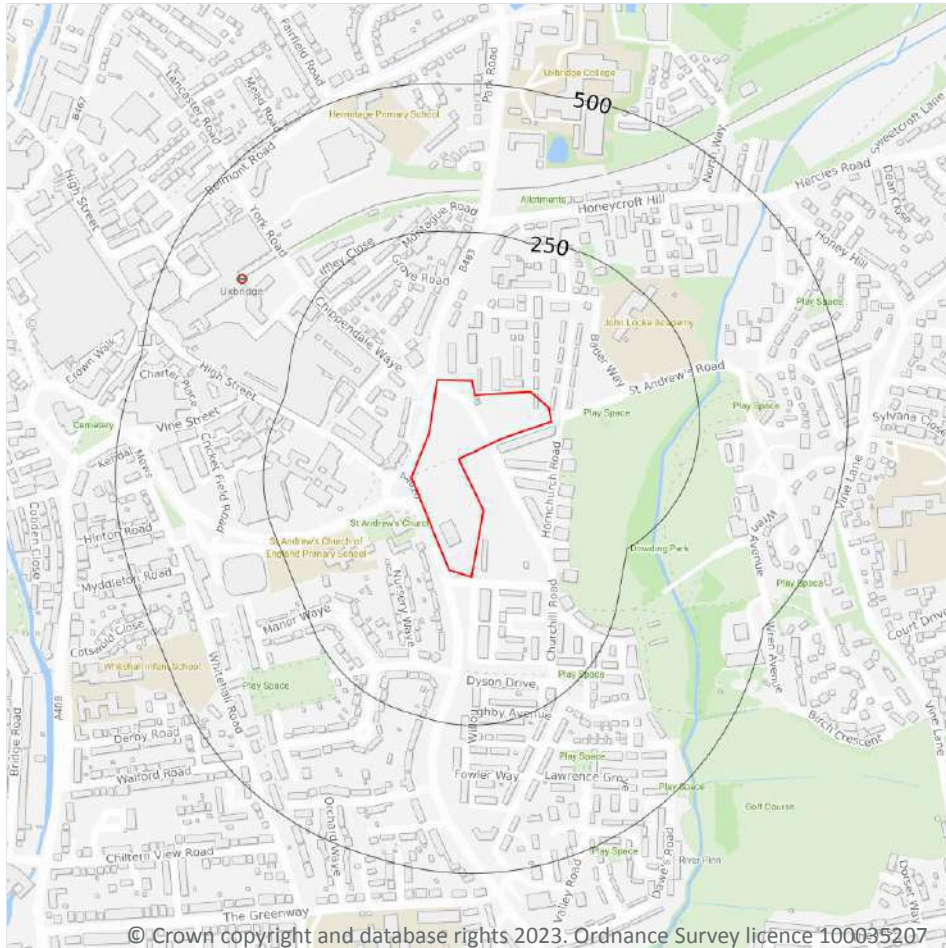


ID	Summary	Additional information
8	Highly vulnerable Principal superficial aquifer present in river terrace gravels	Principal superficial aquifer in river terrace gravels with only a thin cover of low permeability silts and/or alluvium (shown as unproductive)

This data is sourced from the British Geological Survey and the Environment Agency.



Abstractions and Source Protection Zones



- Site Outline
- Search buffers in metres (m)
- Source Protection Zone 1
Inner catchment
- Source Protection Zone 2
Outer catchment
- Source Protection Zone 3
Total catchment
- Source Protection Zone 4
Zone of Special Interest
- Source Protection Zone 1c
Inner catchment - confined aquifer
- Source Protection Zone 2c
Outer catchment - confined aquifer
- Source Protection Zone 3c
Total catchment - confined aquifer
- Drinking water abstraction licences
Polygon features
- Drinking water abstraction licences
Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m

31

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 56**

ID	Location	Details	
-	1237m NW	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: THAMES GROUNDWATER Point: BOREHOLE B AT 100ACRES Data Type: Point Name: A SANDERSON AND SONS LIMITED Easting: 505400 Northing: 185100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 08/11/1965 Expiry Date: - Issue No: 100 Version Start Date: 08/11/1965 Version End Date: -
-	1237m NW	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: THAMES GROUNDWATER Point: BOREHOLE A AT 100 ACRES Data Type: Point Name: A SANDERSON AND SONS LIMITED Easting: 505400 Northing: 185100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 08/11/1965 Expiry Date: - Issue No: 100 Version Start Date: 08/11/1965 Version End Date: -
-	1237m NW	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: THAMES GROUNDWATER Point: BOREHOLE C AT 100 ACRES Data Type: Point Name: A SANDERSON AND SONS LIMITED Easting: 505400 Northing: 185100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 08/11/1965 Expiry Date: - Issue No: 100 Version Start Date: 08/11/1965 Version End Date: -
-	1237m NW	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: THAMES GROUNDWATER Point: BOREHOLE A AT 100 ACRES, DENHAM, BUCKS. Data Type: Point Name: HARBOUR PROPERTIES LIMITED Easting: 505350 Northing: 185070	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 08/11/1965 Expiry Date: - Issue No: 101 Version Start Date: 01/01/2002 Version End Date: -
-	1237m NW	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: THAMES GROUNDWATER Point: 100 ACRES, DENHAM, BUCKS- BOREHOLE A Data Type: Point Name: ARLINGTON BUSINESS PARKS GP LTD Easting: 505350 Northing: 185070	Annual Volume (m ³): 454600 Max Daily Volume (m ³): 1637 Original Application No: - Original Start Date: 08/11/1965 Expiry Date: - Issue No: 102 Version Start Date: 08/09/2003 Version End Date: -



ID	Location	Details	
-	1300m NW	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: THAMES GROUNDWATER Point: BOREHOLE C AT 100 ACRES, DENHAM, BUCKS. Data Type: Point Name: HARBOUR PROPERTIES LIMITED Easting: 505360 Northing: 185150	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 08/11/1965 Expiry Date: - Issue No: 101 Version Start Date: 01/01/2002 Version End Date: -
-	1300m NW	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: THAMES GROUNDWATER Point: 100 ACRES, DENHAM, BUCKS- BOREHOLE C Data Type: Point Name: ARLINGTON BUSINESS PARKS GP LTD Easting: 505360 Northing: 185150	Annual Volume (m ³): 454600 Max Daily Volume (m ³): 1637 Original Application No: - Original Start Date: 08/11/1965 Expiry Date: - Issue No: 102 Version Start Date: 08/09/2003 Version End Date: -
-	1302m NW	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: THAMES GROUNDWATER Point: BOREHOLE B AT 100 ACRES, DENHAM, BUCKS Data Type: Point Name: HARBOUR PROPERTIES LIMITED Easting: 505410 Northing: 185180	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 08/11/1965 Expiry Date: - Issue No: 101 Version Start Date: 01/01/2002 Version End Date: -
-	1302m NW	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: THAMES GROUNDWATER Point: 100 ACRES, DENHAM, BUCKS- BOREHOLE B Data Type: Point Name: ARLINGTON BUSINESS PARKS GP LTD Easting: 505410 Northing: 185180	Annual Volume (m ³): 454600 Max Daily Volume (m ³): 1637 Original Application No: - Original Start Date: 08/11/1965 Expiry Date: - Issue No: 102 Version Start Date: 08/09/2003 Version End Date: -
-	1594m SW	Status: Historical Licence No: 28/39/28/0444 Details: Process water Direct Source: THAMES GROUNDWATER Point: BOREHOLE A & B AT IVER LANE, UXBRIDGE Data Type: Point Name: CAPE BUILDING PRODUCTS LIMITED Easting: 504800 Northing: 182700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 09/05/1979 Expiry Date: - Issue No: 100 Version Start Date: 17/05/1989 Version End Date: -



ID	Location	Details	
-	1687m SE	Status: Historical Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BOREHOLE C AT HILLINGDON HOSPITAL, HILLINGDON Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Easting: 506820 Northing: 182180	Annual Volume (m ³): 200000 Max Daily Volume (m ³): 1000 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 102 Version Start Date: 01/04/2005 Version End Date: -
-	1698m NW	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: WELL 'A' AT NEW DENHAM Data Type: Point Name: B T SMITH & SON Easting: 504700 Northing: 185100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 05/09/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/12/1993 Version End Date: -
-	1698m NW	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Spray Irrigation Definition Order Direct Source: THAMES GROUNDWATER Point: WELL 'A' AT NEW DENHAM Data Type: Point Name: B T SMITH & SON Easting: 504700 Northing: 185100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 05/09/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/12/1993 Version End Date: -
-	1715m NW	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: SMITHS NURSERIES, DENHAM- WELL A Data Type: Point Name: SMITHS NURSERIES LIMITED Easting: 504720 Northing: 185150	Annual Volume (m ³): 9,819 Max Daily Volume (m ³): 54.60 Original Application No: - Original Start Date: 05/09/1966 Expiry Date: - Issue No: 102 Version Start Date: 22/08/2019 Version End Date: -

ID	Location	Details	
-	1715m NW	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Spray Irrigation Definition Order Direct Source: THAMES GROUNDWATER Point: SMITHS NURSERIES, DENHAM- WELL A Data Type: Point Name: SMITHS NURSERIES LIMITED Easting: 504720 Northing: 185150	Annual Volume (m ³): 9,819 Max Daily Volume (m ³): 54.60 Original Application No: - Original Start Date: 05/09/1966 Expiry Date: - Issue No: 102 Version Start Date: 22/08/2019 Version End Date: -
-	1766m SE	Status: Historical Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BOREHOLE A AT HILLINGDON HOSPITAL, HILLINGDON Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Easting: 506950 Northing: 182160	Annual Volume (m ³): 200000 Max Daily Volume (m ³): 1000 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 102 Version Start Date: 01/04/2005 Version End Date: -
-	1766m SE	Status: Active Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: HILLINGDON HOSPITAL - BOREHOLE Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Easting: 506950 Northing: 182160	Annual Volume (m ³): 138,166 Max Daily Volume (m ³): 385.40 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 103 Version Start Date: 01/01/2010 Version End Date: -
-	1789m NW	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: SMITHS NURSERIES, DENHAM- WELL C Data Type: Point Name: SMITHS NURSERIES LIMITED Easting: 504460 Northing: 184910	Annual Volume (m ³): 9,819 Max Daily Volume (m ³): 54.60 Original Application No: - Original Start Date: 05/09/1966 Expiry Date: - Issue No: 102 Version Start Date: 22/08/2019 Version End Date: -



ID	Location	Details	
-	1789m NW	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Spray Irrigation Definition Order Direct Source: THAMES GROUNDWATER Point: SMITHS NURSERIES, DENHAM- WELL C Data Type: Point Name: SMITHS NURSERIES LIMITED Easting: 504460 Northing: 184910	Annual Volume (m ³): 9,819 Max Daily Volume (m ³): 54.60 Original Application No: - Original Start Date: 05/09/1966 Expiry Date: - Issue No: 102 Version Start Date: 22/08/2019 Version End Date: -
-	1836m SW	Status: Historical Licence No: 28/39/28/0444 Details: Process water Direct Source: THAMES GROUNDWATER Point: WET GRAVEL PIT AT IVER LANE, UXBRIDGE Data Type: Point Name: CAPE BUILDING PRODUCTS LIMITED Easting: 504500 Northing: 182700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 09/05/1979 Expiry Date: - Issue No: 100 Version Start Date: 17/05/1989 Version End Date: -
-	1837m NW	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Spray Irrigation Definition Order Direct Source: THAMES GROUNDWATER Point: WELL 'C' AT NEW DENHAM Data Type: Point Name: B T SMITH & SON Easting: 504400 Northing: 184900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 05/09/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/12/1993 Version End Date: -
-	1837m NW	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: WELL 'C' AT NEW DENHAM Data Type: Point Name: B T SMITH & SON Easting: 504400 Northing: 184900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 05/09/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/12/1993 Version End Date: -
-	1853m NW	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Spray Irrigation Definition Order Direct Source: THAMES GROUNDWATER Point: SMITHS NURSERIES, DENHAM- WELL B Data Type: Point Name: SMITHS NURSERIES LIMITED Easting: 504520 Northing: 185120	Annual Volume (m ³): 9,819 Max Daily Volume (m ³): 54.60 Original Application No: - Original Start Date: 05/09/1966 Expiry Date: - Issue No: 102 Version Start Date: 22/08/2019 Version End Date: -



ID	Location	Details	
-	1853m NW	Status: Active Licence No: 28/39/28/0132 Details: Trickle Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: SMITHS NURSERIES, DENHAM- WELL B Data Type: Point Name: SMITHS NURSERIES LIMITED Easting: 504520 Northing: 185120	Annual Volume (m ³): 9,819 Max Daily Volume (m ³): 55 Original Application No: NPS/WR/032699 Original Start Date: 05/09/1966 Expiry Date: - Issue No: 103 Version Start Date: 16/03/2020 Version End Date: -
-	1853m NW	Status: Active Licence No: 28/39/28/0132 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: SMITHS NURSERIES, DENHAM- WELL B Data Type: Point Name: SMITHS NURSERIES LIMITED Easting: 504520 Northing: 185120	Annual Volume (m ³): 9,819 Max Daily Volume (m ³): 55 Original Application No: NPS/WR/032699 Original Start Date: 05/09/1966 Expiry Date: - Issue No: 103 Version Start Date: 16/03/2020 Version End Date: -
-	1858m NW	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: WELL 'B' AT NEW DENHAM Data Type: Point Name: B T SMITH & SON Easting: 504500 Northing: 185100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 05/09/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/12/1993 Version End Date: -
-	1858m NW	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Spray Irrigation Definition Order Direct Source: THAMES GROUNDWATER Point: WELL 'B' AT NEW DENHAM Data Type: Point Name: B T SMITH & SON Easting: 504500 Northing: 185100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 05/09/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/12/1993 Version End Date: -
-	1879m NW	Status: Active Licence No: TH/039/0028/035 Details: Mineral Washing Direct Source: THAMES GROUNDWATER Point: LAGOON AT NEW DENHAM QUARRY, BUCKINGHAMSHIRE Data Type: Point Name: SUMMERLEAZE LIMITED Easting: 504263 Northing: 184702	Annual Volume (m ³): 742,500 Max Daily Volume (m ³): 2,600 Original Application No: NPS/WR/012708 Original Start Date: 01/04/2014 Expiry Date: 31/03/2026 Issue No: 1 Version Start Date: 01/04/2014 Version End Date: -



ID	Location	Details	
-	1883m NW	Status: Historical Licence No: 28/39/28/0610 Details: Mineral Washing Direct Source: THAMES GROUNDWATER Point: SUMMERLEAZE NEW DENHAM QUARRY, BUCKINGHAMSHIRE Data Type: Point Name: SUMMERLEAZE LIMITED Easting: 504250 Northing: 184680	Annual Volume (m ³): 742500 Max Daily Volume (m ³): 2600 Original Application No: - Original Start Date: 26/10/2007 Expiry Date: 31/03/2014 Issue No: 1 Version Start Date: 26/10/2007 Version End Date: -
-	1952m SE	Status: Historical Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BOREHOLE B AT HILLINGDON HOSPITAL, HILLINGDON Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Easting: 506910 Northing: 181930	Annual Volume (m ³): 200000 Max Daily Volume (m ³): 1000 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 102 Version Start Date: 01/04/2005 Version End Date: -
-	1952m SE	Status: Active Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: HILLINGDON HOSPITAL- BOREHOLE Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Easting: 506910 Northing: 181930	Annual Volume (m ³): 138,166 Max Daily Volume (m ³): 385.40 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 103 Version Start Date: 01/01/2010 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m

2

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 56**



ID	Location	Details	
-	1789m W	Status: Historical Licence No: 28/39/28/0079 Details: Spray Irrigation - Direct Direct Source: THAMES SURFACE WATER - NON TIDAL Point: REACH A-B ON RIVER ALDERBOURNE AT MANSFIELD FARM, IVER HEATH Data Type: Line Name: JONES Easting: 504000 Northing: 184200	Annual Volume (m ³): 6819 Max Daily Volume (m ³): 205 Original Application No: - Original Start Date: 04/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 25/06/1986 Version End Date: -
-	1907m W	Status: Historical Licence No: 28/39/28/0079 Details: Spray Irrigation - Direct Direct Source: THAMES SURFACE WATER - NON TIDAL Point: REACH C-D ON RIVER ALDERBOURNE AT MANSFIELD FARM, IVER HEATH Data Type: Line Name: JONES Easting: 504100 Northing: 183500	Annual Volume (m ³): 6819 Max Daily Volume (m ³): 205 Original Application No: - Original Start Date: 04/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 25/06/1986 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m

5

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 56**

ID	Location	Details	
-	1687m SE	Status: Historical Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BOREHOLE C AT HILLINGDON HOSPITAL, HILLINGDON Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Easting: 506820 Northing: 182180	Annual Volume (m ³): 200000 Max Daily Volume (m ³): 1000 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 102 Version Start Date: 01/04/2005 Version End Date: -



ID	Location	Details	
-	1766m SE	Status: Historical Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BOREHOLE A AT HILLINGDON HOSPITAL, HILLINGDON Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Easting: 506950 Northing: 182160	Annual Volume (m ³): 200000 Max Daily Volume (m ³): 1000 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 102 Version Start Date: 01/04/2005 Version End Date: -
-	1766m SE	Status: Active Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: HILLINGDON HOSPITAL - BOREHOLE Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Easting: 506950 Northing: 182160	Annual Volume (m ³): 138,166 Max Daily Volume (m ³): 385.40 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 103 Version Start Date: 01/01/2010 Version End Date: -
-	1952m SE	Status: Historical Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BOREHOLE B AT HILLINGDON HOSPITAL, HILLINGDON Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Easting: 506910 Northing: 181930	Annual Volume (m ³): 200000 Max Daily Volume (m ³): 1000 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 102 Version Start Date: 01/04/2005 Version End Date: -
-	1952m SE	Status: Active Licence No: 28/39/28/0513 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: HILLINGDON HOSPITAL- BOREHOLE Data Type: Point Name: HILLINGDON HOSPITAL NHS TRUST Easting: 506910 Northing: 181930	Annual Volume (m ³): 138,166 Max Daily Volume (m ³): 385.40 Original Application No: - Original Start Date: 05/10/1992 Expiry Date: - Issue No: 103 Version Start Date: 01/01/2010 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.



5.9 Source Protection Zones

Records within 500m

0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

Records within 500m

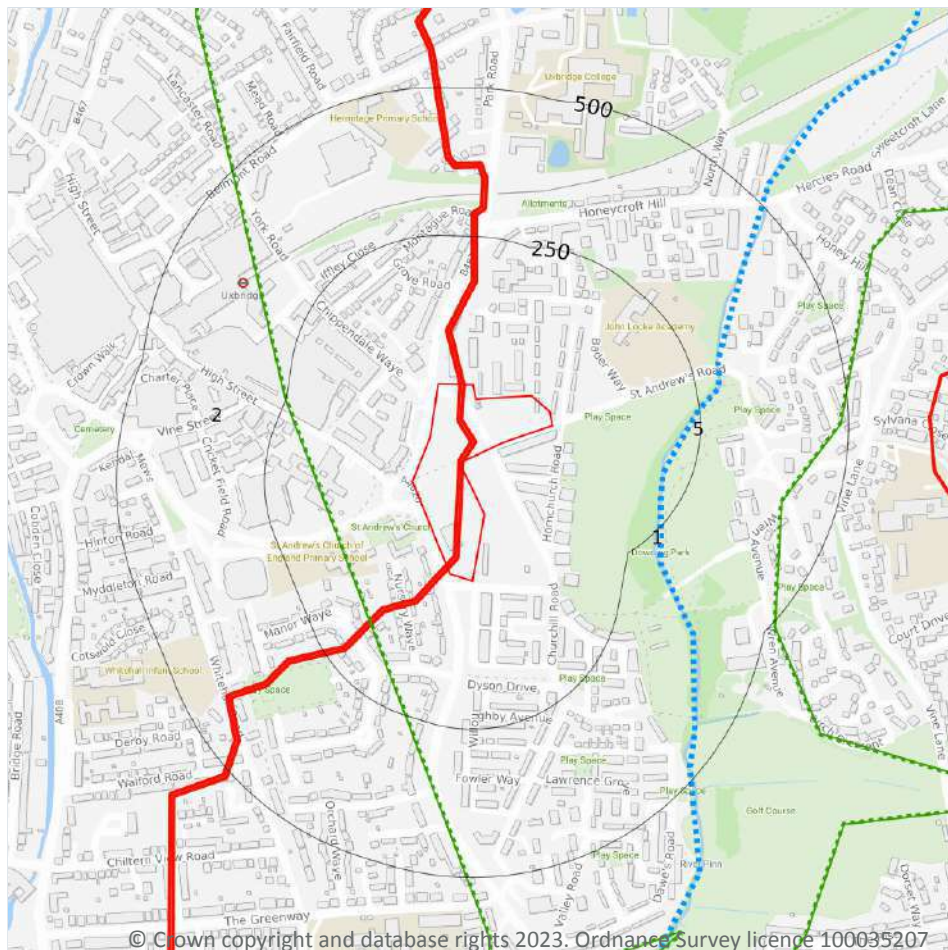
0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.



6 Hydrology



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ⋯ WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

1

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on **page 67**

ID	Location	Type of water feature	Ground level	Permanence	Name
5	196m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Pinn

This data is sourced from the Ordnance Survey.



6.2 Surface water features

Records within 250m

1

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on **page 67**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

2

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 67**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	River	Pinn	GB106039023070	Colne	Colne
2	On site	River	Colne (Confluence with Chess to River Thames)	GB106039023090	Colne	Colne

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified

2

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on **page 67**



ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
6	203m E	River	Pinn	GB106039023070	Moderate	Fail	Moderate	2019
-	680m W	River	Colne (Confluence with Chess to River Thames)	GB106039023090	Moderate	Fail	Moderate	2019

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site

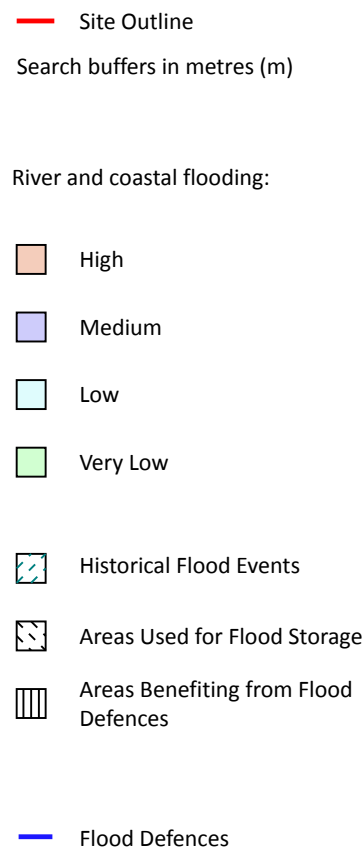
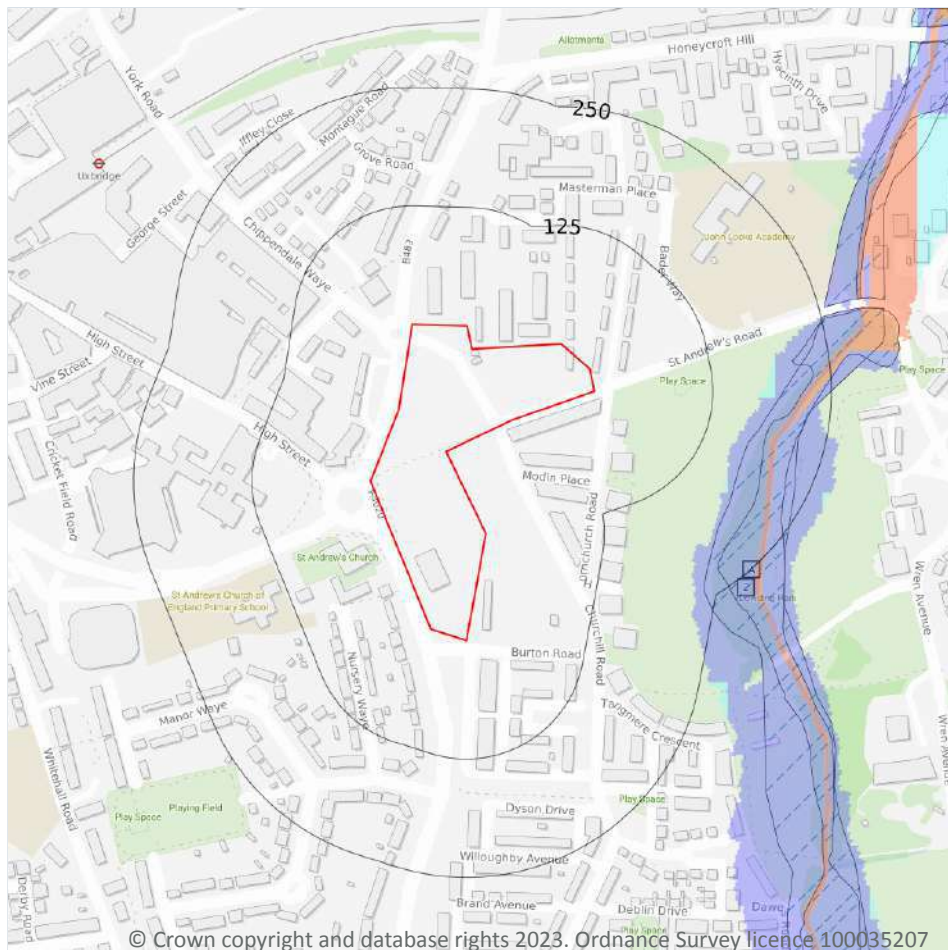
0

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

This data is sourced from the Environment Agency and Natural Resources Wales.



7 River and coastal flooding



7.1 Risk of flooding from rivers and the sea

Records within 50m

0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.



7.2 Historical Flood Events

Records within 250m

2

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

Features are displayed on the River and coastal flooding map on **page 70**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
2	171m E	06mayspring1988	1988-01-01 1988-12-12	Main river	Channel capacity exceeded (no raised defences)	Fluvial
A	187m E	06augustsummer1 977	1977-01-01 1977-12-12	Main river	Channel capacity exceeded (no raised defences)	Fluvial

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m

0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m

0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.



7.5 Flood Storage Areas

Records within 250m

0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0
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Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

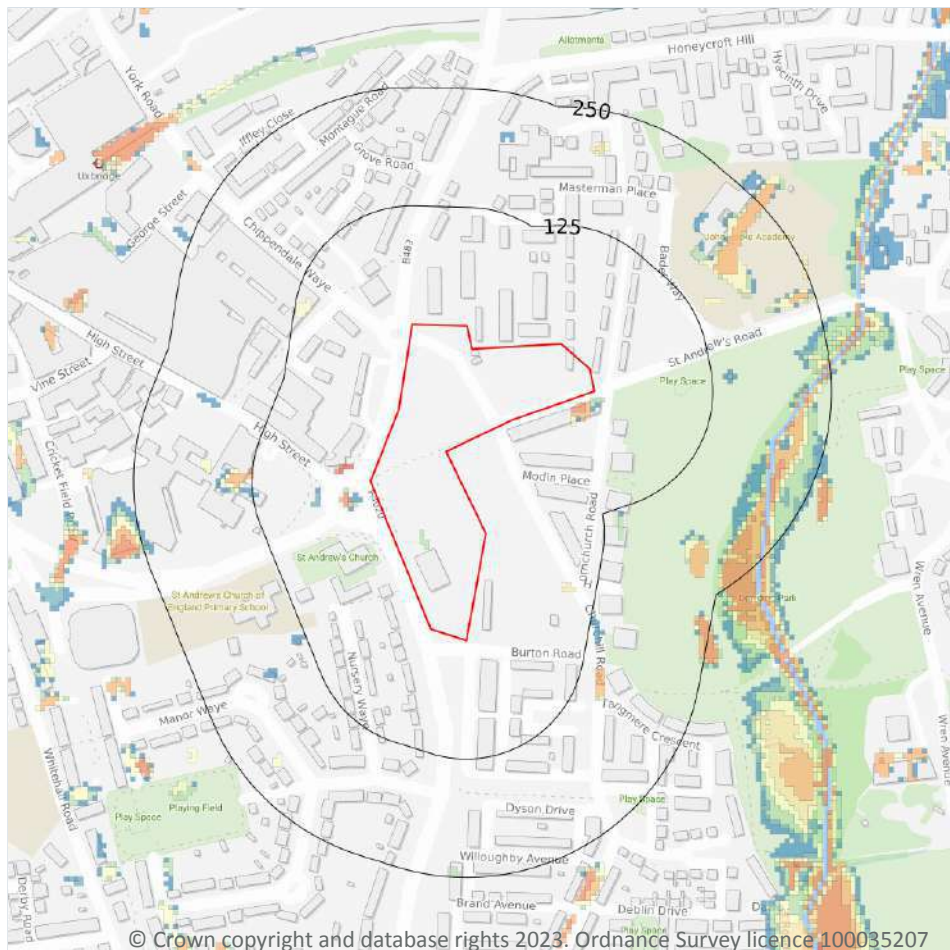
Records within 50m	0
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Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.



8 Surface water flooding



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site

1 in 250 year, 0.1m - 0.3m

Highest risk within 50m

1 in 30 year, Greater than 1.0m

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 74**

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

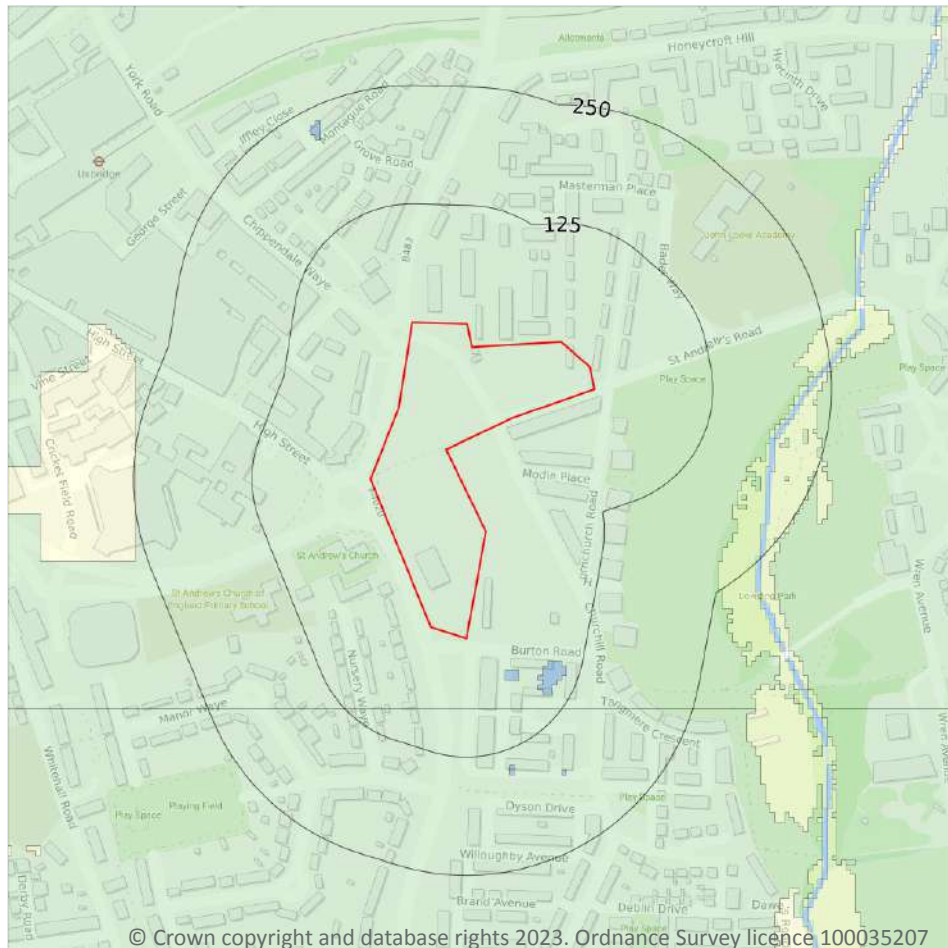
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.1m and 0.3m
1 in 250 year	Between 0.1m and 0.3m
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

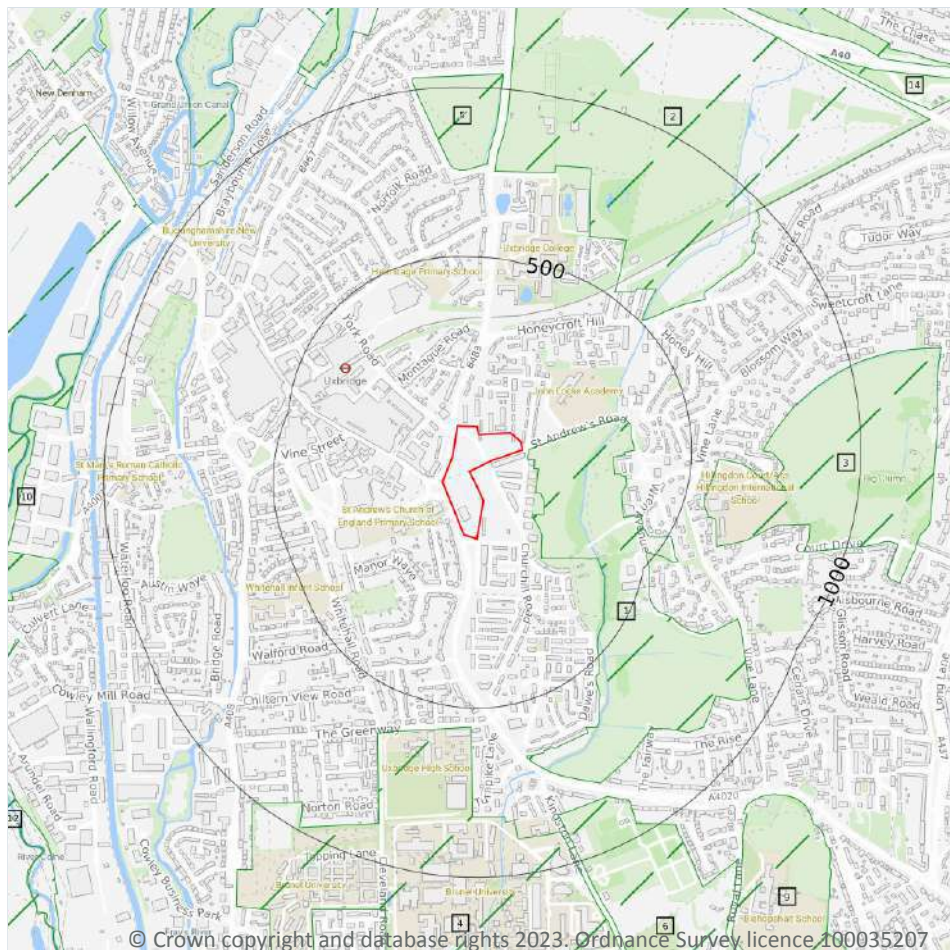
Low

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 76**

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Sites of Special Scientific Interest (SSSI)
- + Local Nature Reserves (LNR)
- Designated Ancient Woodland
- Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

1

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

Features are displayed on the Environmental designations map on **page 77**

ID	Location	Name	Data source
-	1645m N	Fray's Farm Meadows	Natural England



This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m

0

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m

0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m

0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m

2

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

Features are displayed on the Environmental designations map on **page 77**

ID	Location	Name	Data source
-	1625m N	Frays Valley	Natural England
-	1647m N	Frays Valley	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m

2

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

Features are displayed on the Environmental designations map on **page 77**

ID	Location	Name	Woodland Type
-	1317m N	Park Wood Common Plantation	Ancient Replanted Woodland
-	1456m N	Park Wood Common Plantation	Ancient Replanted Woodland

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m

0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.



10.9 Forest Parks

Records within 2000m

0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m

22

Areas designated to prevent urban sprawl by keeping land permanently open.

Features are displayed on the Environmental designations map on **page 77**

ID	Location	Name	Local Authority name
1	18m E	London	Hillingdon
2	506m NE	London	Hillingdon
3	556m E	London	Hillingdon
4	556m S	London	Hillingdon
5	756m N	London	Hillingdon
6	849m S	London	Hillingdon
7	1039m NW	London	Buckinghamshire
8	1078m N	London	Hillingdon
9	1120m SE	London	Hillingdon
10	1125m W	London	Hillingdon
12	1335m W	London	Hillingdon
13	1434m NE	London	Hillingdon
14	1440m NE	London	Hillingdon



ID	Location	Name	Local Authority name
-	1556m N	London	Hillingdon
-	1657m E	London	Hillingdon
-	1658m S	London	Hillingdon
-	1686m SW	London	Hillingdon
-	1687m S	London	Hillingdon
-	1811m NE	London	Hillingdon
-	1813m NE	London	Hillingdon
-	1862m NE	London	Hillingdon
-	1876m NE	London	Hillingdon

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m

0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the



framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m

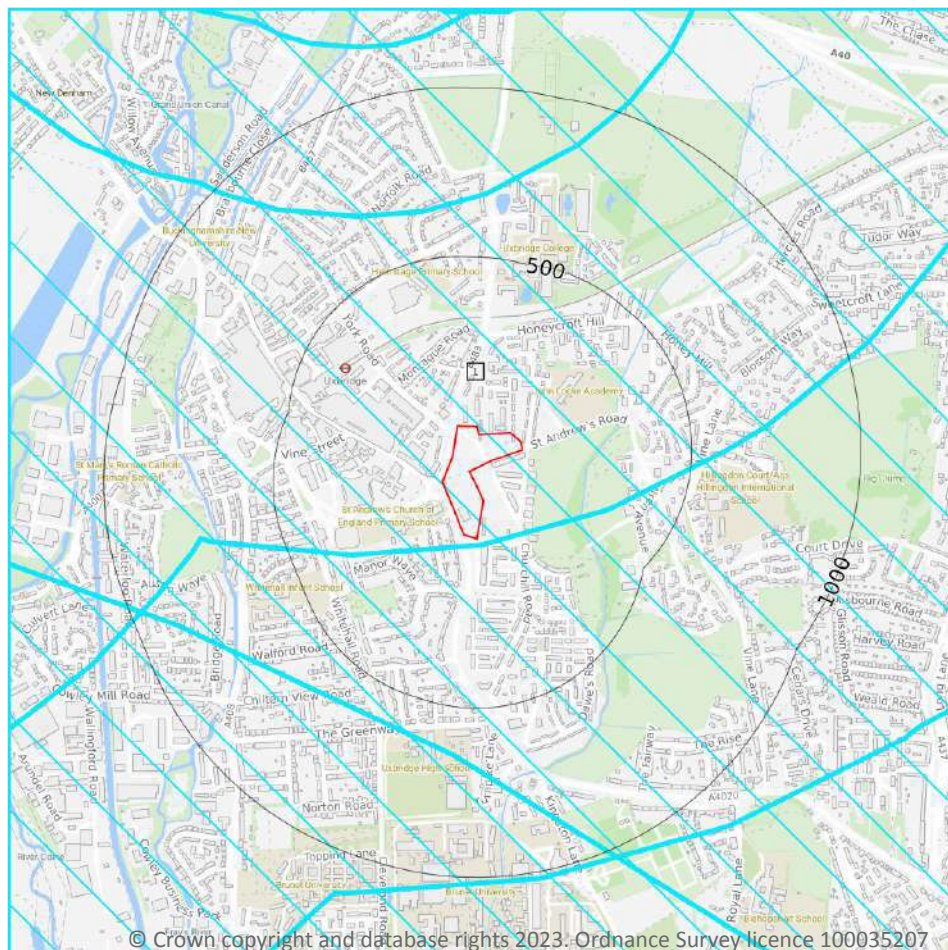
0

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

This data is sourced from Natural England and Natural Resources Wales.



SSSI Impact Zones and Units



- Site Outline
- Search buffers in metres (m)
- SSSI Impact Risk Zones
- SSSI Units
- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site

1

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on **page 83**

ID	Location	Type of developments requiring consultation
1	On site	<p>Infrastructure - Pipelines, pylons and overhead cables. any transport proposal including road, rail and by water (excluding routine maintenance). airports, helipads and other aviation proposals.</p> <p>Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, review of minerals permissions (romp), extensions, variations to conditions etc. oil & gas exploration/extraction.</p> <p>Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t).</p> <p>Combustion - General combustion processes >20mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.</p> <p>Waste - Landfill. incl: inert landfill, non-hazardous landfill, hazardous landfill.</p> <p>Composting - Any composting proposal with more than 75000 tonnes maximum annual operational throughput. incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management.</p> <p>Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.</p>

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	2
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Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

Features are displayed on the SSSI Impact Zones and Units map on **page 83**

ID: -
 Location: 1645m N
 SSSI name: Fray's Farm Meadows
 Unit name: 2
 Broad habitat: Neutral Grassland - Lowland
 Condition: Unfavourable - Declining
 Reportable features:

Feature name	Feature condition	Date of assessment
Floodplain fen (lowland)	Unfavourable - Declining	01/10/2010



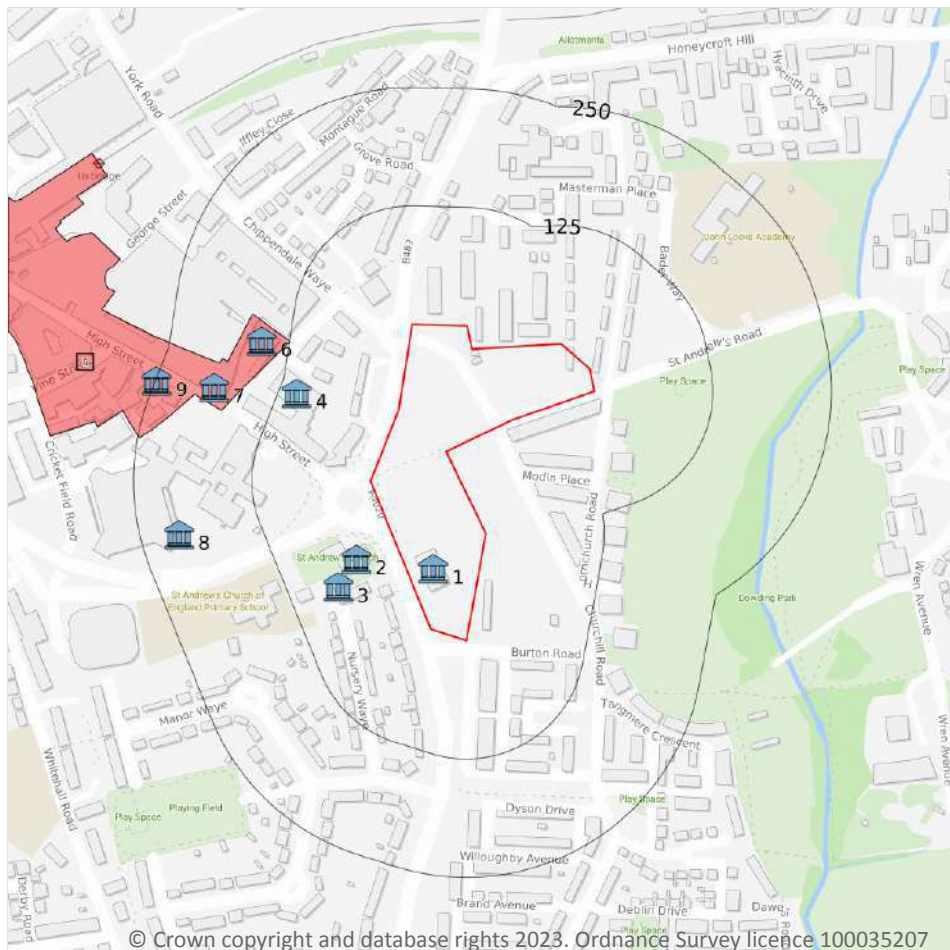
ID: -
Location: 1674m N
SSSI name: Fray's Farm Meadows
Unit name: 1
Broad habitat: Neutral Grassland - Lowland
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Floodplain fen (lowland)	Favourable	01/10/2010

This data is sourced from Natural England and Natural Resources Wales.



11 Visual and cultural designations



- Site Outline
- Search buffers in metres (m)
- Listed buildings
- Conservation areas
- Conservation areas - no data
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites

11.1 World Heritage Sites

Records within 250m

0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m

0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m

8

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

Features are displayed on the Visual and cultural designations map on **page 86**

ID	Location	Name	Grade	Reference Number	Listed date
1	On site	Cinema, Uxbridge, Hillingdon, London, UB10	II	1392376	24/01/2008
2	45m SW	Church of St andrew, Uxbridge, Hillingdon, London, UB10	II	1080183	08/05/1950
3	74m SW	Church Cottage Precinct House St andrew's Vicarage, Uxbridge, Hillingdon, London, UB10	II	1180809	06/09/1974
4	107m W	Discotheque Royle, Uxbridge, Hillingdon, London, UB8	II*	1080111	15/11/1976
6	155m NW	The Shrubbery, Uxbridge, Hillingdon, London, UB8	II	1080174	06/09/1974



ID	Location	Name	Grade	Reference Number	Listed date
7	190m W	Norman Reeves Motors, Uxbridge, Hillingdon, London, UB8	II	1080173	06/09/1974
8	210m W	Hillingdon Civic Centre and integrated Hard Landscaping, including Paving, Planters, Steps and Walls, Uxbridge, Hillingdon, London, UB8	II	1451218	18/04/2018
9	249m W	274, High Street, Uxbridge, Hillingdon, London, UB8	II	1180711	06/09/1974

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m

1

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

Features are displayed on the Visual and cultural designations map on **page 86**

ID	Location	Name	District	Date of designation
5	125m NW	Old Uxbridge and Windsor Street	Hillingdon	1970

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m

0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.



11.7 Registered Parks and Gardens

Records within 250m

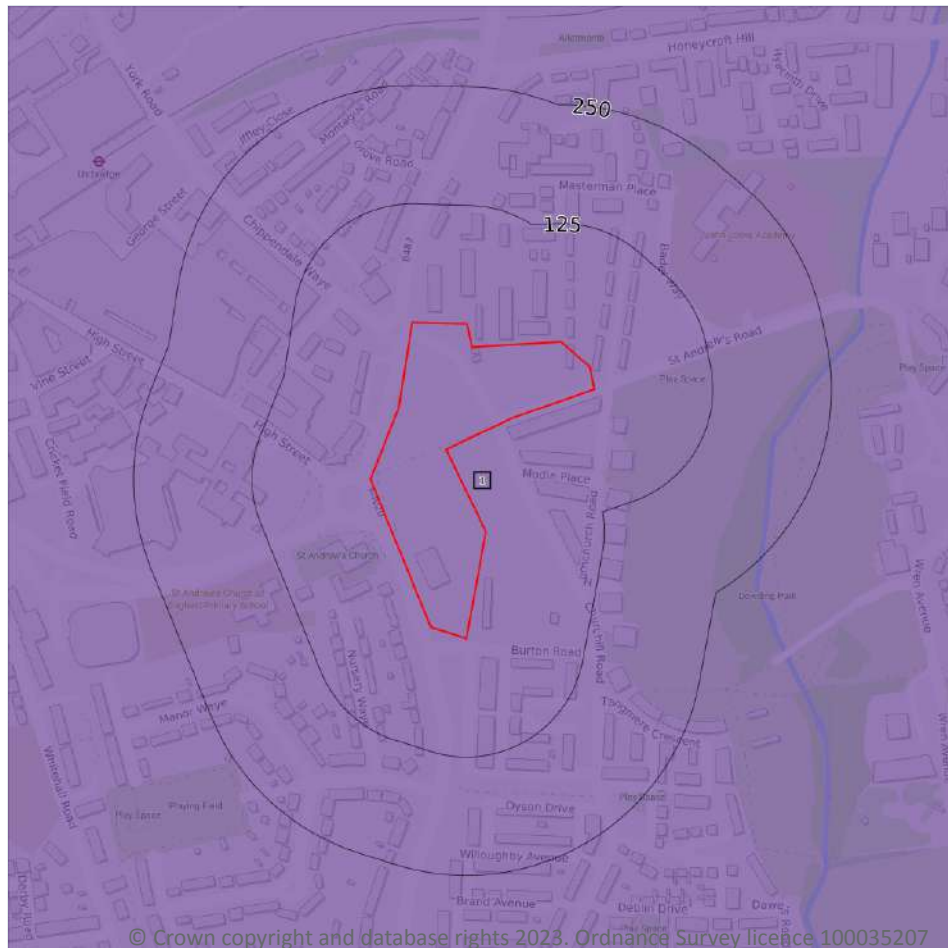
0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.



12 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m

1

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 90**

ID	Location	Classification	Description
1	On site	Urban	-

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m

0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m

0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

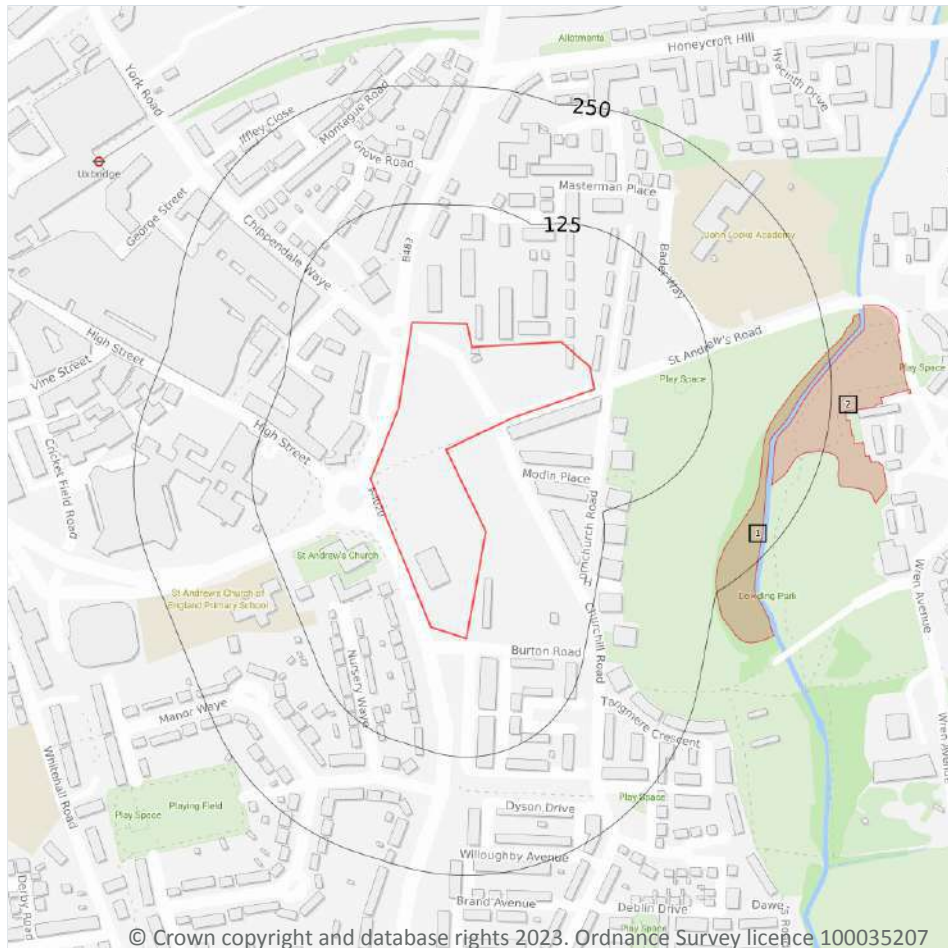
Records within 250m

0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.

13 Habitat designations



- Site Outline
- Search buffers in metres (m)
- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders
- Habitat Networks
- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m

2

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

Features are displayed on the Habitat designations map on **page 92**

ID	Location	Main Habitat	Other habitats
1	187m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	199m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.



13.2 Habitat Networks

Records within 250m

0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m

0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

1

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

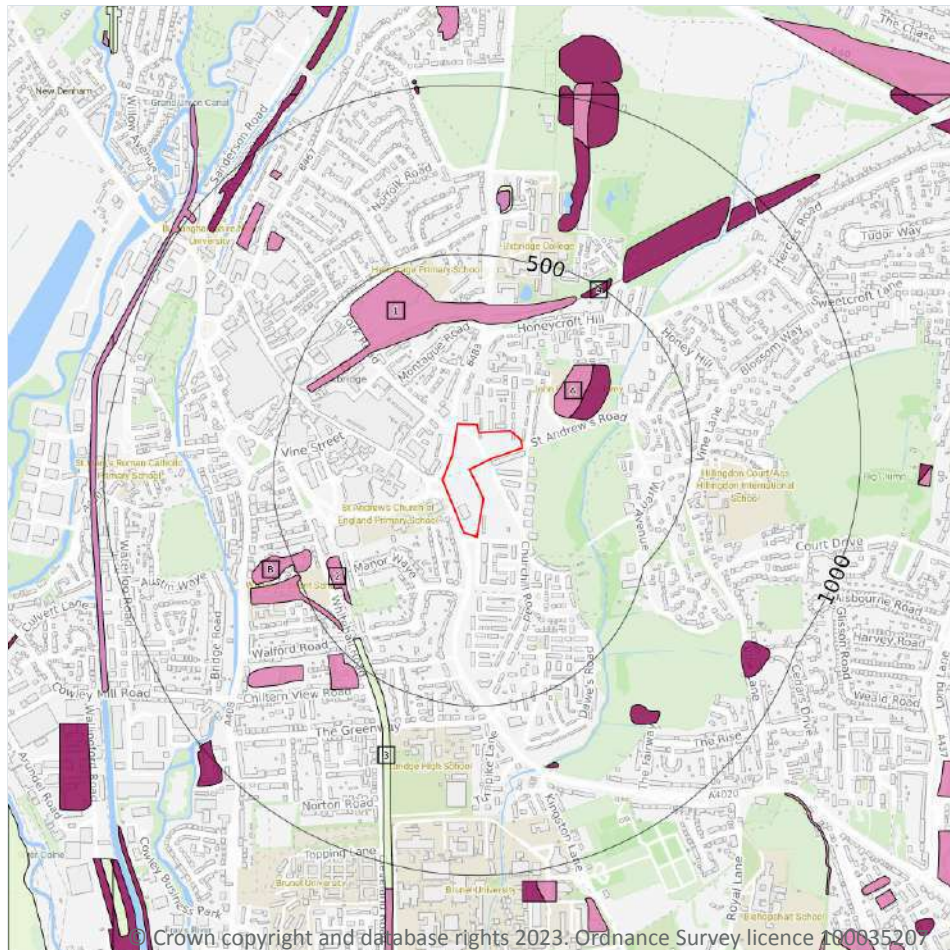
Features are displayed on the Geology 1:10,000 scale - Availability map on **page 94**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	TQ08SE

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Artificial and made ground



— Site Outline
Search buffers in metres (m)

- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m

8

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 95**

ID	Location	LEX Code	Description	Rock description
A	131m NE	WGR-VOID	Worked Ground (Undivided)	Void
A	155m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
1	285m N	WGR-VOID	Worked Ground (Undivided)	Void
2	369m SW	WGR-VOID	Worked Ground (Undivided)	Void

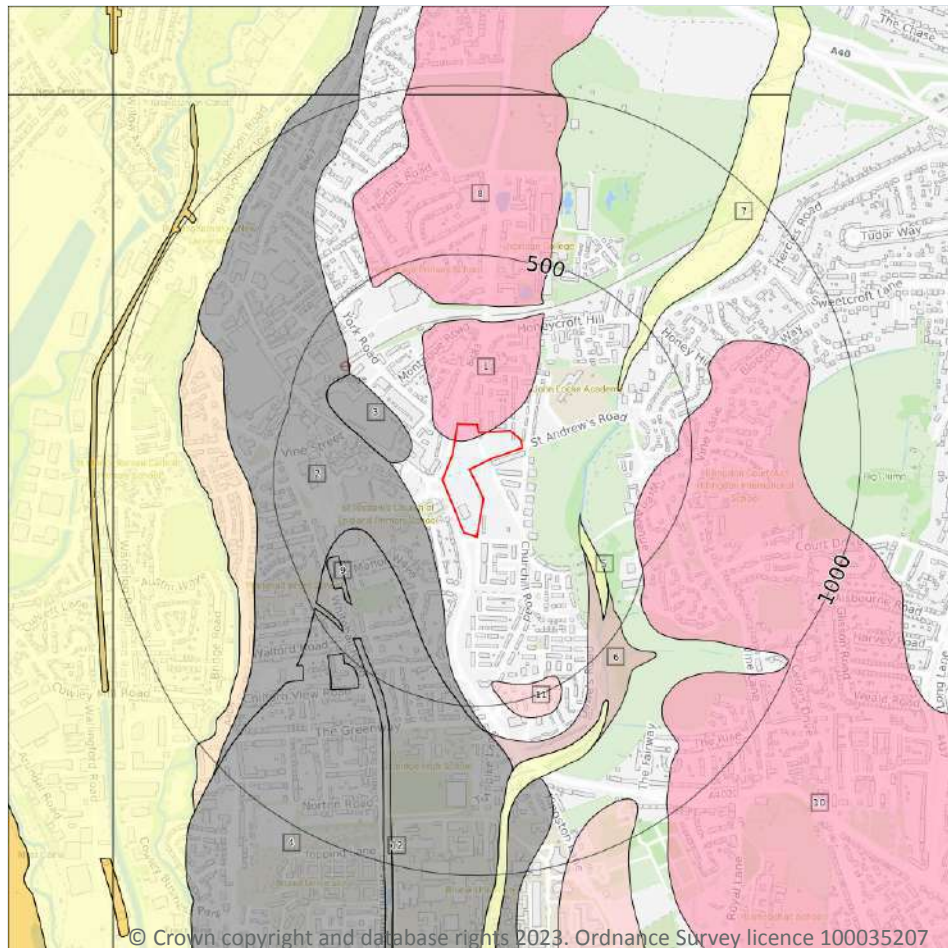


ID	Location	LEX Code	Description	Rock description
3	437m SW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
B	442m SW	WGR-VOID	Worked Ground (Undivided)	Void
4	448m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
B	452m SW	WGR-VOID	Worked Ground (Undivided)	Void

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



- Site Outline
- Search buffers in metres (m)
- Landslip (10k)
- Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m

12

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 97**

ID	Location	LEX Code	Description	Rock description
1	On site	BPGR-XSV	Black Park Gravel Member - Sand And Gravel	Sand And Gravel
2	99m SW	LHGR-V	Lynch Hill Gravel Member - Gravel (unlithified Deposits Coding Scheme)	Gravel
3	118m W	LASI-Z	Langley Silt Member - Silt (unlithified Deposits Coding Scheme)	Silt



ID	Location	LEX Code	Description	Rock description
4	235m SW	LASI-Z	Langley Silt Member - Silt (unlithified Deposits Coding Scheme)	Silt
5	261m E	ALV-XZC	Alluvium - Silt And Clay	Silt And Clay
6	315m SE	HEAD-XCZ	Head - Clay And Silt	Clay And Silt
7	323m NE	ALV-XZC	Alluvium - Silt And Clay	Silt And Clay
8	352m N	BPGR-XSV	Black Park Gravel Member - Sand And Gravel	Sand And Gravel
9	369m SW	LHGR-V	Lynch Hill Gravel Member - Gravel (unlithified Deposits Coding Scheme)	Gravel
10	376m E	BPGR-XSV	Black Park Gravel Member - Sand And Gravel	Sand And Gravel
11	430m S	BHT-XSV	Boyn Hill Gravel Member - Sand And Gravel	Sand And Gravel
12	437m SW	LHGR-V	Lynch Hill Gravel Member - Gravel (unlithified Deposits Coding Scheme)	Gravel

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

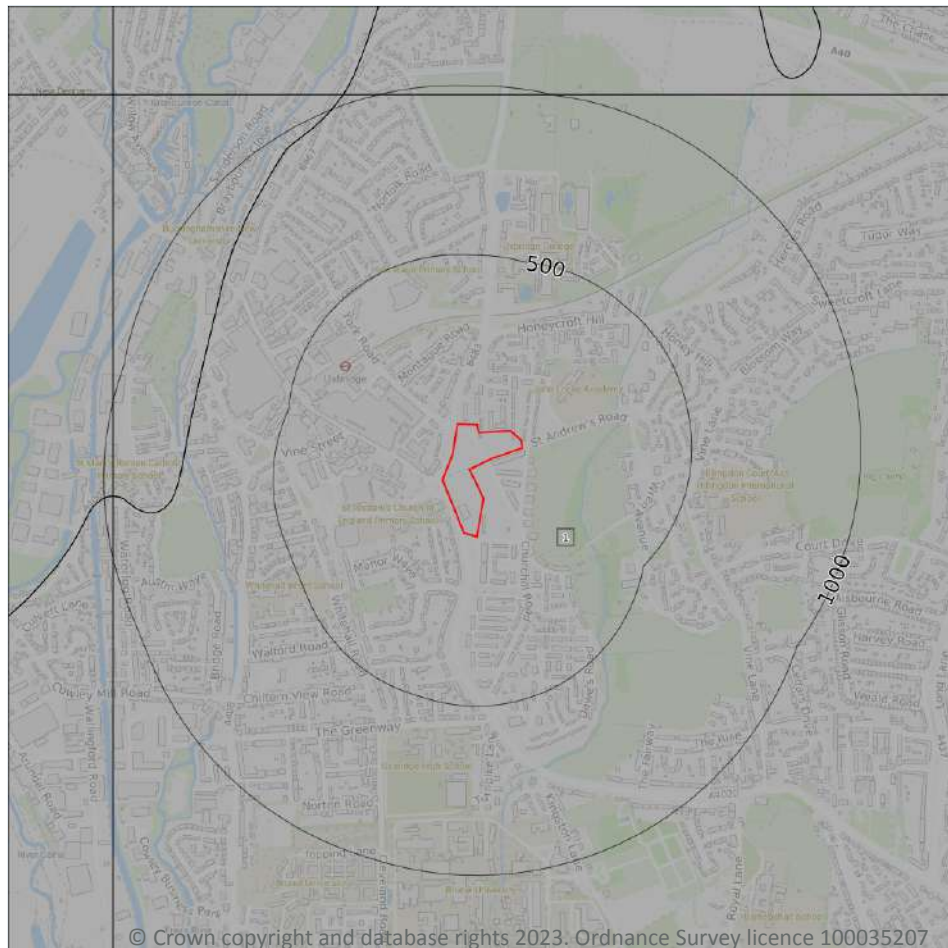
0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



- Site Outline
- Search buffers in metres (m)
- Bedrock faults and other linear features (10k)
- Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m

1

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 99**

ID	Location	LEX Code	Description	Rock age
1	On site	LC-CLSISA	London Clay Formation - Clay, Silt And Sand	Eocene Epoch

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

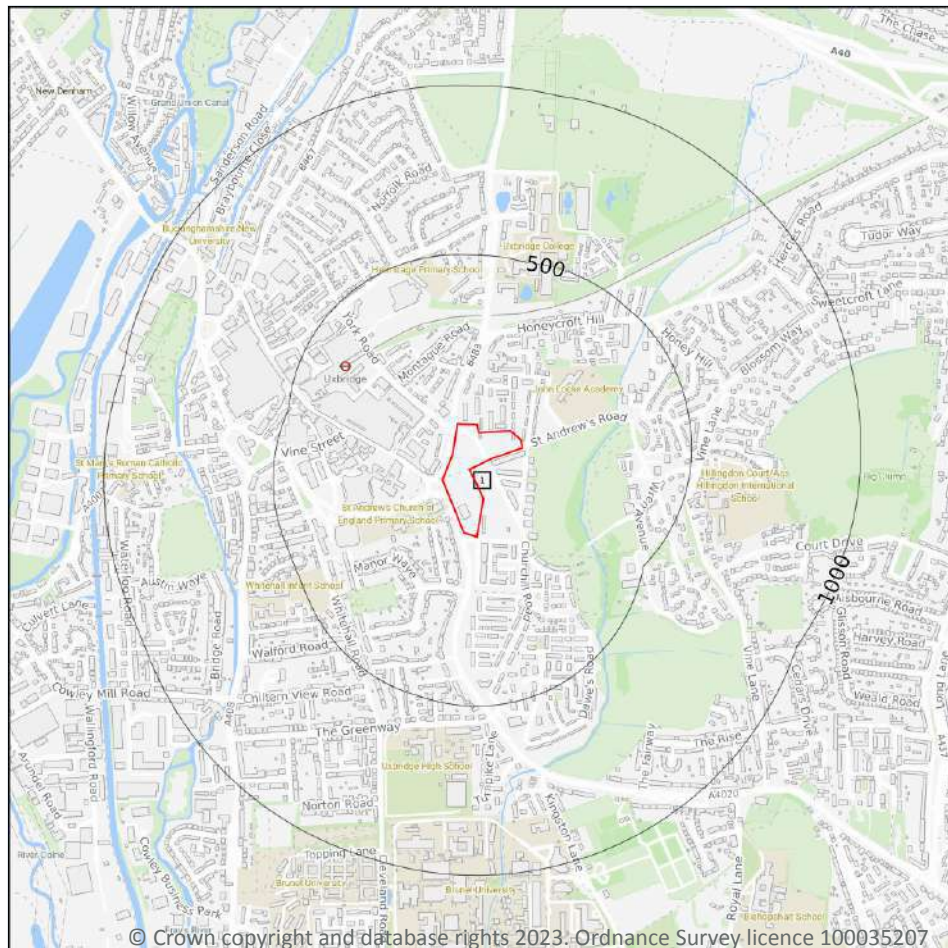
0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline
Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

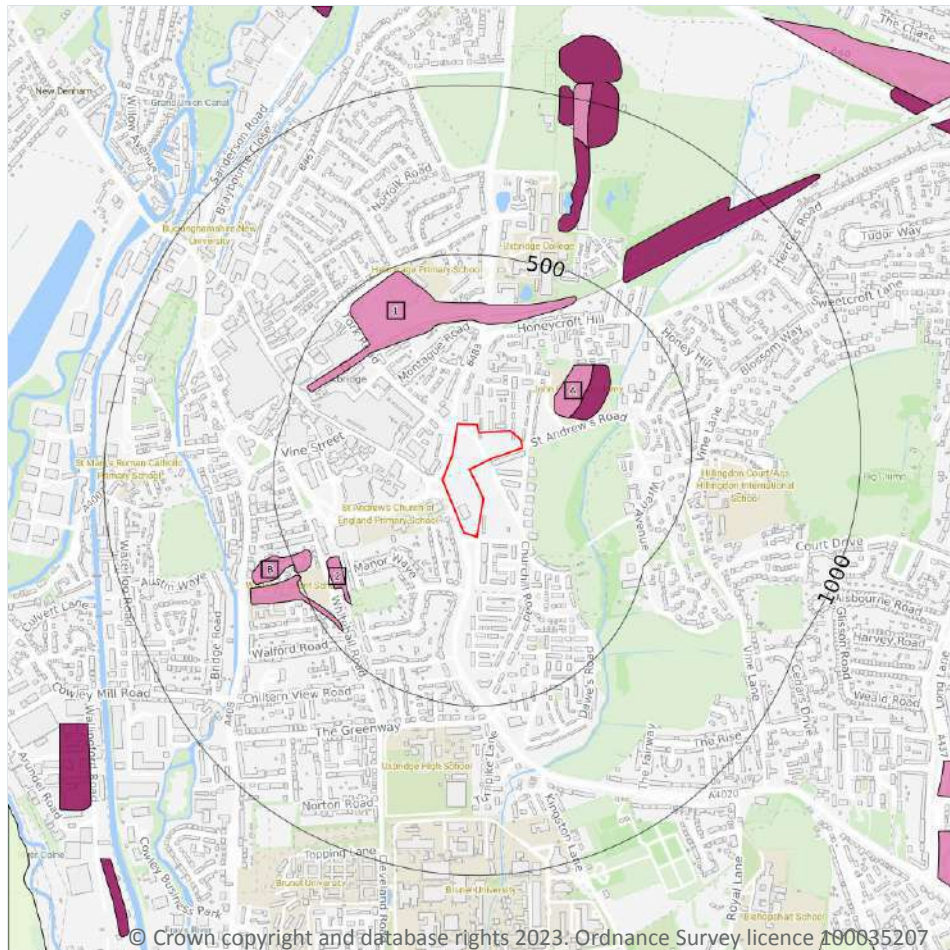
Features are displayed on the Geology 1:50,000 scale - Availability map on **page 101**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW255_beaconsfield_v4

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Artificial and made ground



- Site Outline
- Search buffers in metres (m)
- Made ground
 - Worked ground
 - Infilled ground
 - Disturbed ground
 - Landscaped ground

15.2 Artificial and made ground (50k)

Records within 500m

6

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 102**

ID	Location	LEX Code	Description	Rock description
A	131m NE	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
A	155m NE	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
1	285m N	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
2	369m SW	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID



ID	Location	LEX Code	Description	Rock description
B	442m SW	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
B	452m SW	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

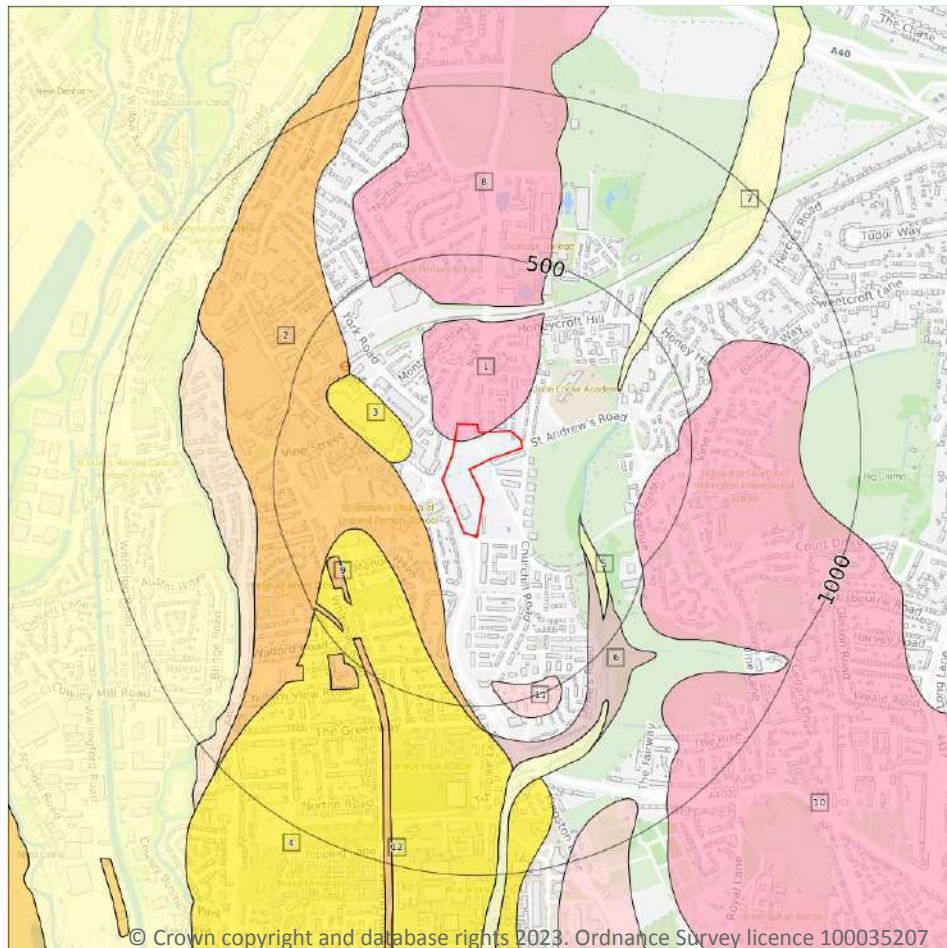
0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.




Geology 1:50,000 scale - Superficial



— Site Outline

Search buffers in metres (m)

 Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

12

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 104**

ID	Location	LEX Code	Description	Rock description
1	On site	BPGR-XSV	BLACK PARK GRAVEL MEMBER	SAND AND GRAVEL
2	99m SW	LHGR-XSV	LYNCH HILL GRAVEL MEMBER	SAND AND GRAVEL
3	118m W	LASI-XCZ	LANGLEY SILT MEMBER	CLAY AND SILT
4	236m SW	LASI-XCZ	LANGLEY SILT MEMBER	CLAY AND SILT

ID	Location	LEX Code	Description	Rock description
5	261m E	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
6	315m SE	HEAD-XCZ	HEAD	CLAY AND SILT
7	323m NE	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
8	352m N	BPGR-XSV	BLACK PARK GRAVEL MEMBER	SAND AND GRAVEL
9	369m SW	LHGR-XSV	LYNCH HILL GRAVEL MEMBER	SAND AND GRAVEL
10	377m E	BPGR-XSV	BLACK PARK GRAVEL MEMBER	SAND AND GRAVEL
11	430m S	BHT-XSV	BOYN HILL GRAVEL MEMBER	SAND AND GRAVEL
12	437m SW	LHGR-XSV	LYNCH HILL GRAVEL MEMBER	SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m

1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	Very High	High

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m

0

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.



15.7 Landslip permeability (50k)

Records within 50m

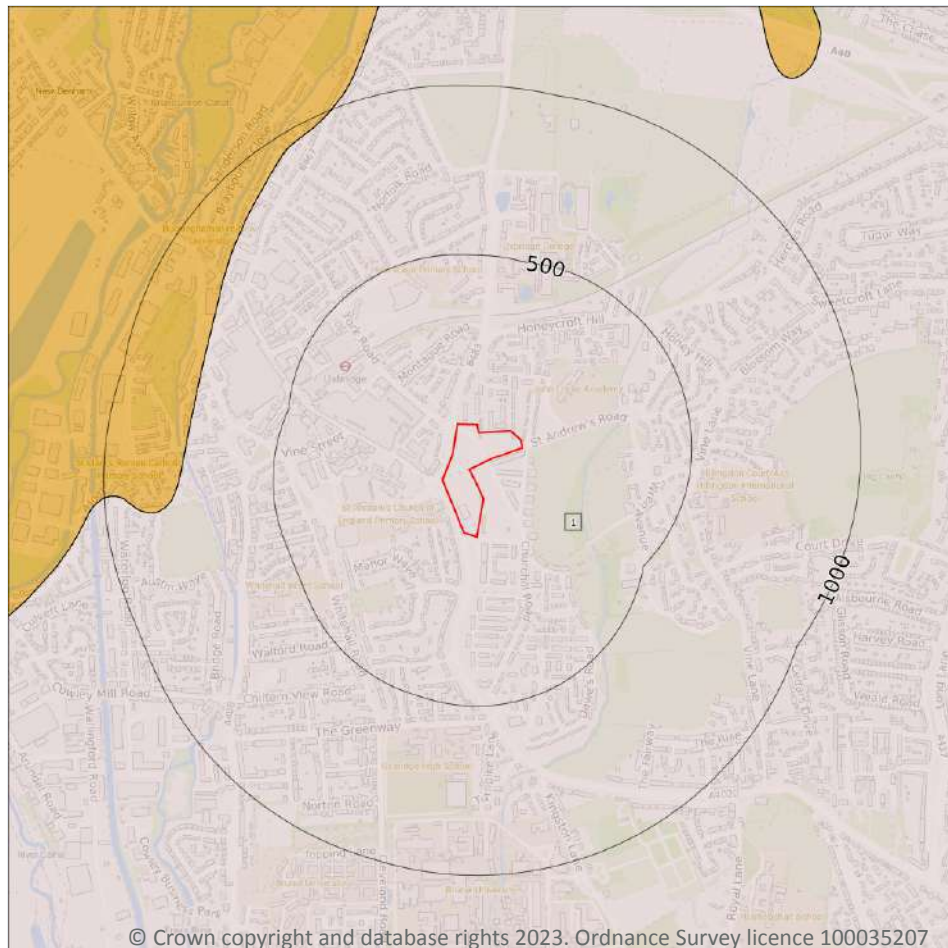
0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



- Site Outline
- Search buffers in metres (m)
- Bedrock faults and other linear features (50k)
- Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m

1

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 107**

ID	Location	LEX Code	Description	Rock age
1	On site	LC-XCZS	LONDON CLAY FORMATION - CLAY, SILT AND SAND	YPRESIAN

This data is sourced from the British Geological Survey.



15.9 Bedrock permeability (50k)

Records within 50m**1**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	Moderate	Very Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

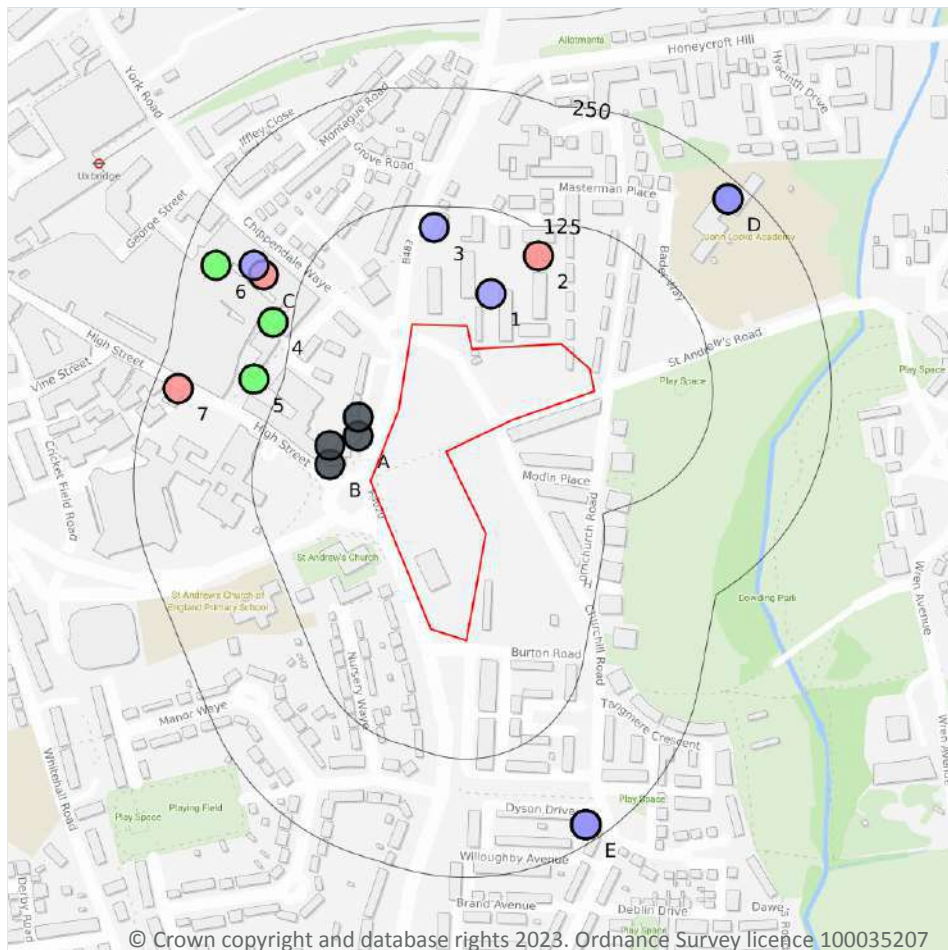
Records within 500m**0**

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m

28

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on **page 109**

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	30m W	505960 183910	PARK ROAD UXBRIDGE 2	-	Y	N/A
A	37m W	505960 183930	PARK ROAD UXBRIDGE 1	-	Y	N/A
1	42m N	506100 184060	MARRIED QUARTERS SITE A. R.A.F. UXBRIDGE	6.09	N	576373

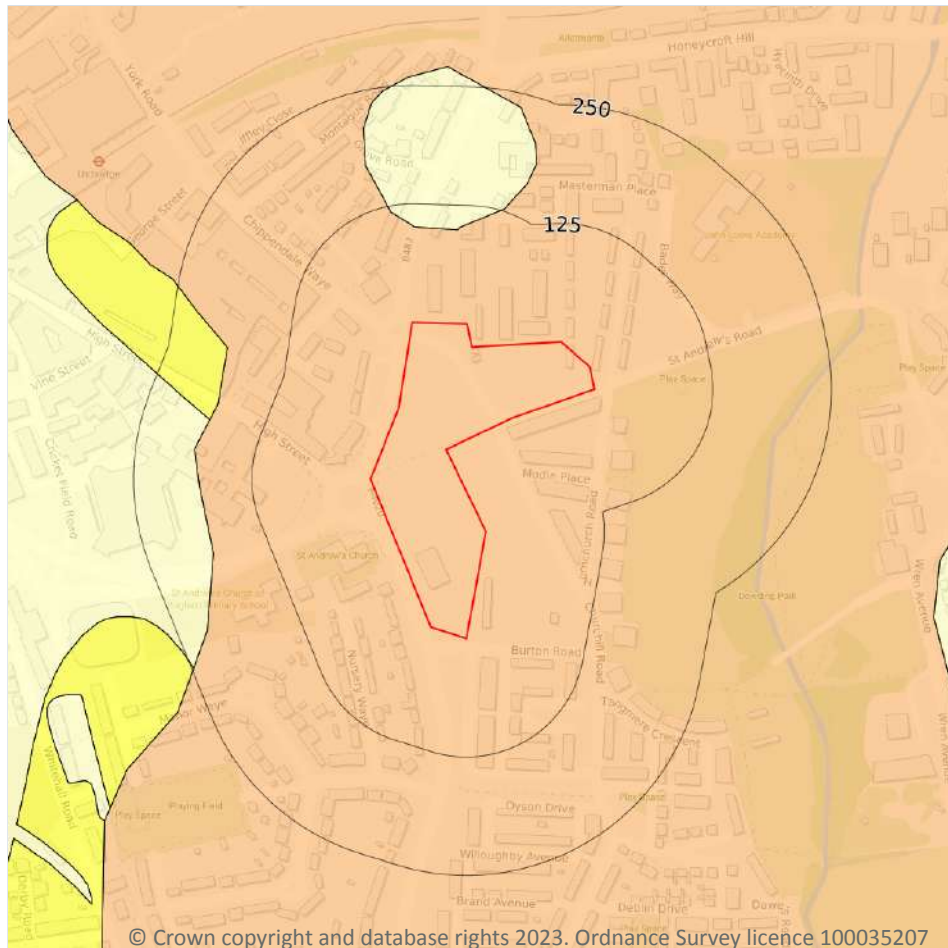


ID	Location	Grid reference	Name	Length	Confidential	Web link
B	47m W	505930 183880	PARK ROAD UXBRIDGE 4	-	Y	N/A
B	54m W	505930 183900	PARK ROAD UXBRIDGE 3	-	Y	N/A
2	94m N	506150 184100	R A F UXBRIDGE	101.0	N	576567
3	103m N	506040 184130	R.A.F. UXBRIDGE-SITE C-PARK ROAD	10.0	N	576379
4	146m NW	505870 184030	UXBRIDGE SHOPPING CENTRE 5	29.2	N	576415
5	154m W	505850 183970	UXBRIDGE SHOPPING CENTRE 6	25.31	N	576416
C	166m NW	505860 184080	UXBRIDGE SHOPPING CENTRE 7	45.45	N	576417
C	179m NW	505850 184090	UXBRIDGE SHOPPING CENTRE 4	6.45	N	576414
6	216m NW	505810 184090	UXBRIDGE SHOPPING CENTRE 3	24.11	N	576413
7	225m W	505770 183960	TOWN WELL UXBRIDGE	42.36	N	576367
D	231m NE	506350 184160	RAF UXBRIDGE P/RTC BH1	10.0	N	576471
D	231m NE	506350 184160	RAF UXBRIDGE P/RTC BH3	7.0	N	576473
D	231m NE	506350 184160	RAF UXBRIDGE P/RTC BH2	10.0	N	576472
E	231m S	506200 183500	INVEST' OF STRUCTURAL DEF BH2	6.0	N	576437
E	231m S	506200 183500	INVEST' OF STRUCTURAL DEF TP5	1.0	N	576443
E	231m S	506200 183500	INVEST' OF STRUCTURAL DEF TP3	1.0	N	576441
E	231m S	506200 183500	INVEST' OF STRUCTURAL DEF TP6	1.0	N	576444
E	231m S	506200 183500	INVEST' OF STRUCTURAL DEF TP2	1.0	N	576440
E	231m S	506200 183500	INVEST' OF STRUCTURAL DEF TP7	1.0	N	576445
E	231m S	506200 183500	INVEST' OF STRUCTURAL DEF TP8	1.0	N	576446
E	231m S	506200 183500	INVEST' OF STRUCTURAL DEF BH1	6.0	N	576436
E	231m S	506200 183500	INVEST' OF STRUCTURAL DEF TP4	1.0	N	576442
E	231m S	506200 183500	INVEST' OF STRUCTURAL DEF TP9	1.0	N	576447
E	231m S	506200 183500	INVEST' OF STRUCTURAL DEF TP1	1.0	N	576439
E	231m S	506200 183500	INVEST' OF STRUCTURAL DEF BH3	6.0	N	576438

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



— Site Outline
Search buffers in metres (m)

- ☐ No data
- ☐ Negligible
- ☐ Very low
- ☐ Low
- ☐ Moderate
- ☐ High

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17.1 Shrink swell clays

Records within 50m

1

The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

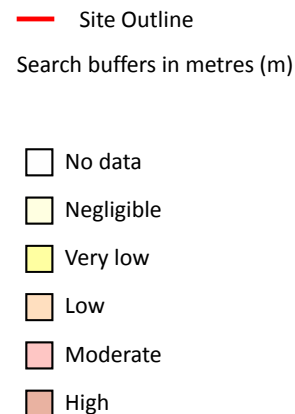
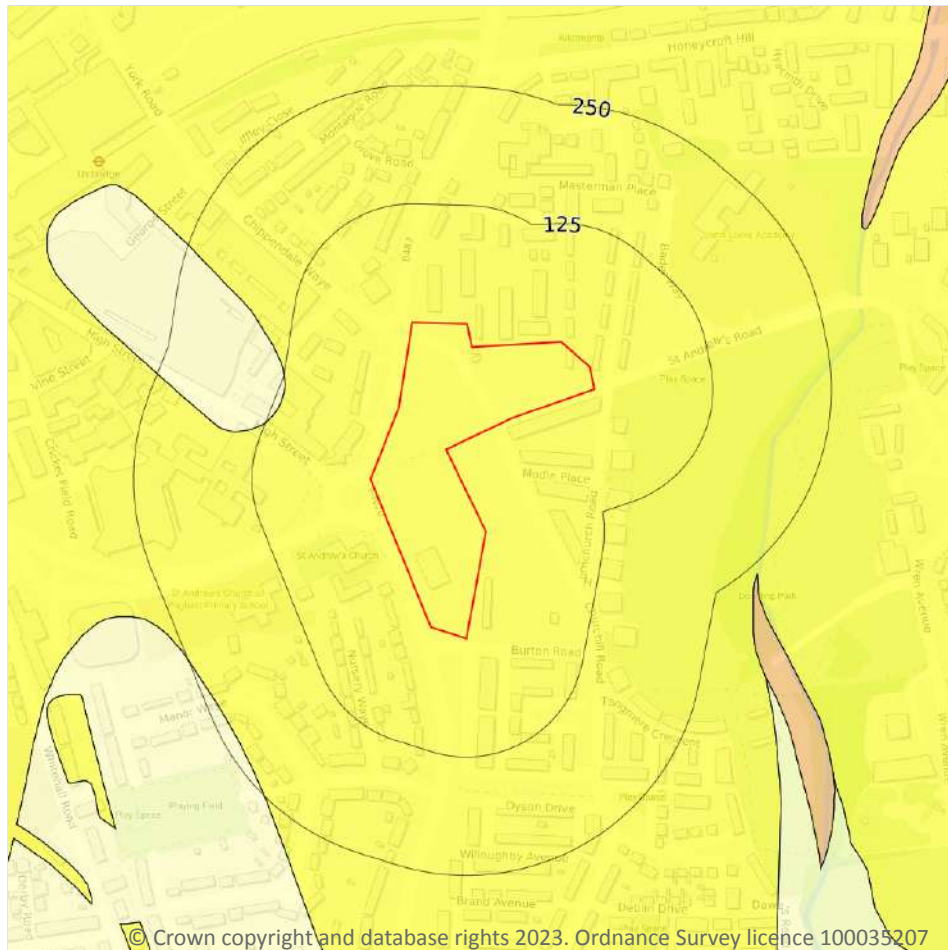
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 111**

Location	Hazard rating	Details
On site	Low	Ground conditions predominantly medium plasticity.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



17.2 Running sands

Records within 50m

1

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

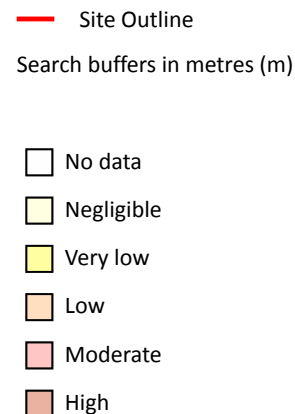
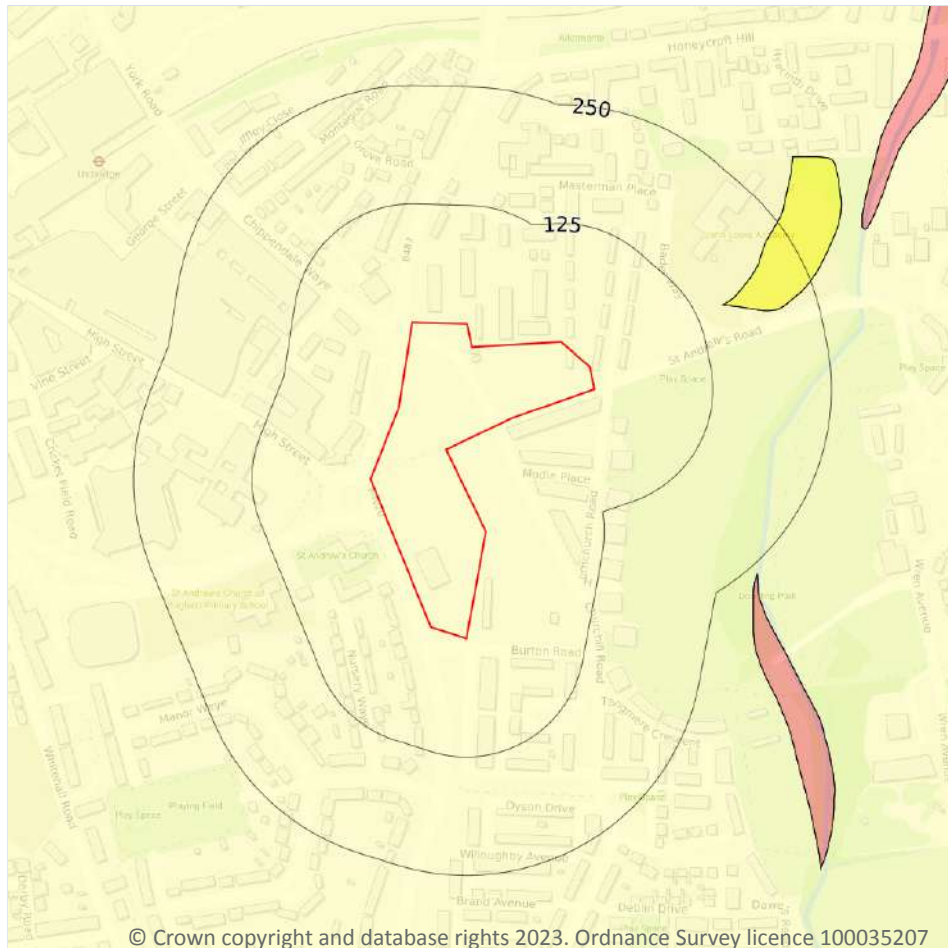
Features are displayed on the Natural ground subsidence - Running sands map on **page 112**

Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



17.3 Compressible deposits

Records within 50m

1

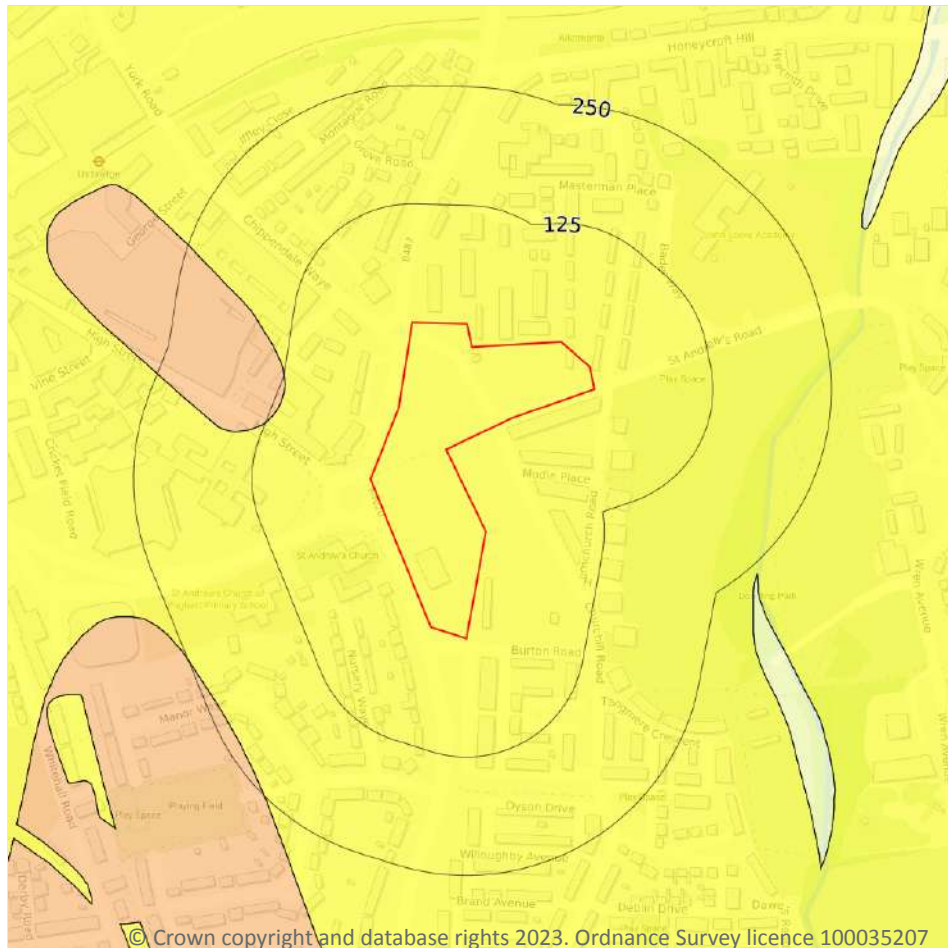
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 113**

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



- Site Outline**
- Search buffers in metres (m)**
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.4 Collapsible deposits

Records within 50m

1

The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

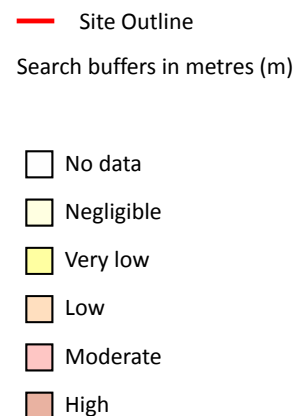
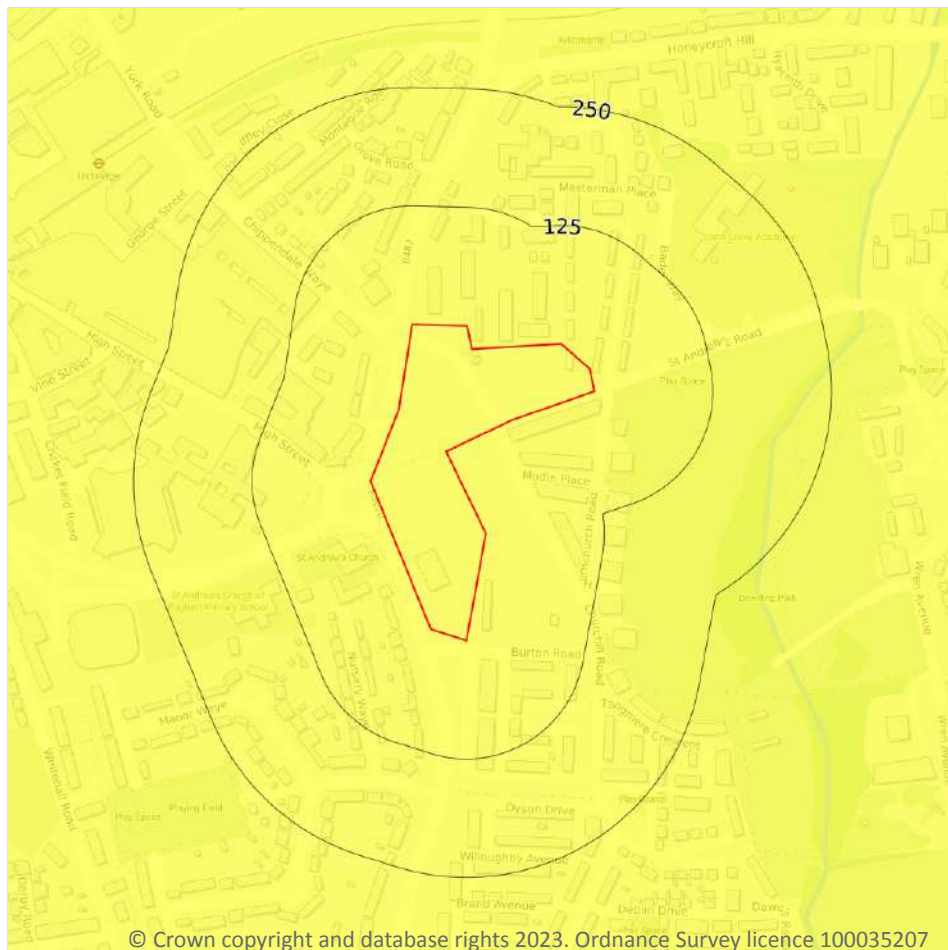
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 114**

Location	Hazard rating	Details
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



17.5 Landslides

Records within 50m

1

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

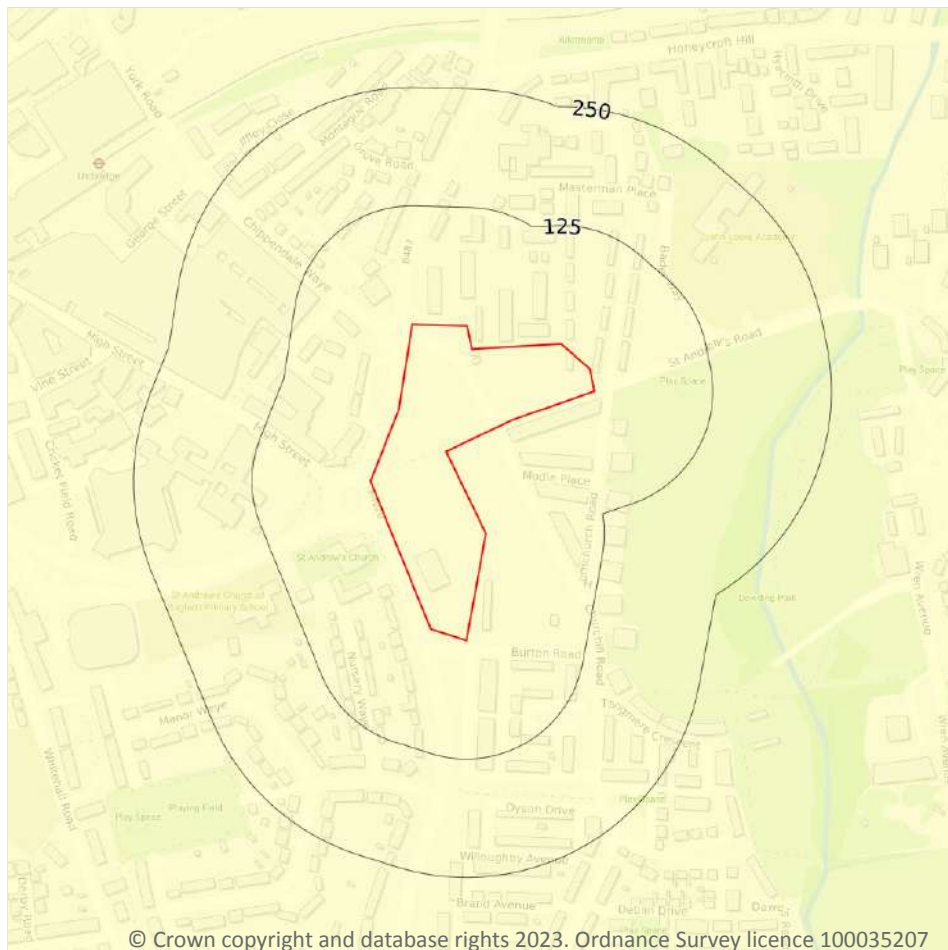
Features are displayed on the Natural ground subsidence - Landslides map on **page 115**

Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.6 Ground dissolution of soluble rocks

Records within 50m

1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 116**

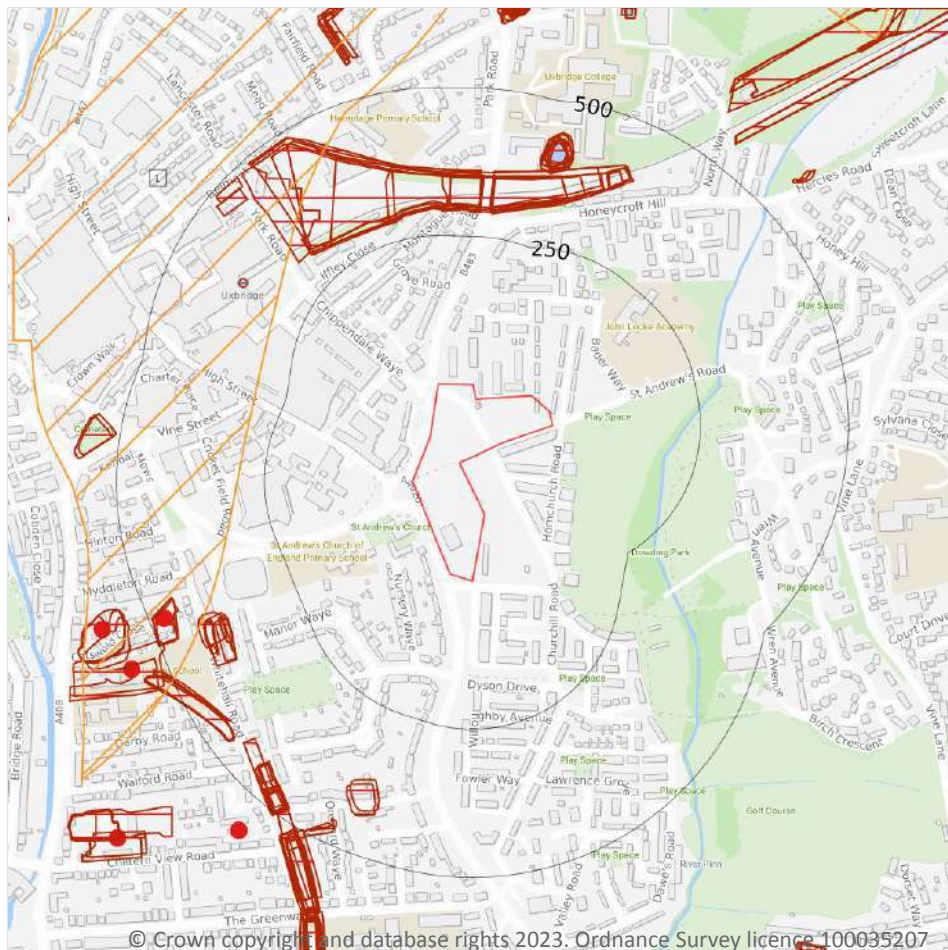
Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.



This data is sourced from the British Geological Survey.



18 Mining, ground workings and natural cavities



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m

1

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

Features are displayed on the Mining, ground workings and natural cavities map on **page 118**

ID	Location	Details	Description
I	475m SW	Name: Cowley Road Gravel Pits Address: UXBRIDGE, Middlesex Commodity: Sand & Gravel Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

0

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m

0

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

This data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.



18.6 Non-coal mining

Records within 1000m

4

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

Features are displayed on the Mining, ground workings and natural cavities map on **page 118**

ID	Location	Name	Commodity	Class	Likelihood
1	291m W	Not available	Chalk	C	Small scale underground mining may have occurred; mine adits, shafts and tunnels may be present. Potential for localised difficult ground conditions are at a level where they should be considered
4	824m NE	Not available	Chalk	C	Small scale underground mining may have occurred; mine adits, shafts and tunnels may be present. Potential for localised difficult ground conditions are at a level where they should be considered
5	898m NE	Not available	Chalk	C	Small scale underground mining may have occurred; mine adits, shafts and tunnels may be present. Potential for localised difficult ground conditions are at a level where they should be considered
-	973m N	Not available	Chalk	C	Small scale underground mining may have occurred; mine adits, shafts and tunnels may be present. Potential for localised difficult ground conditions are at a level where they should be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m

0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.



18.8 JPB mining areas

Records on site	0
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Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0
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Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0
-----------------	---

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.11 Gypsum areas

Records on site	0
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Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0
-----------------	---

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.



18.13 Clay mining

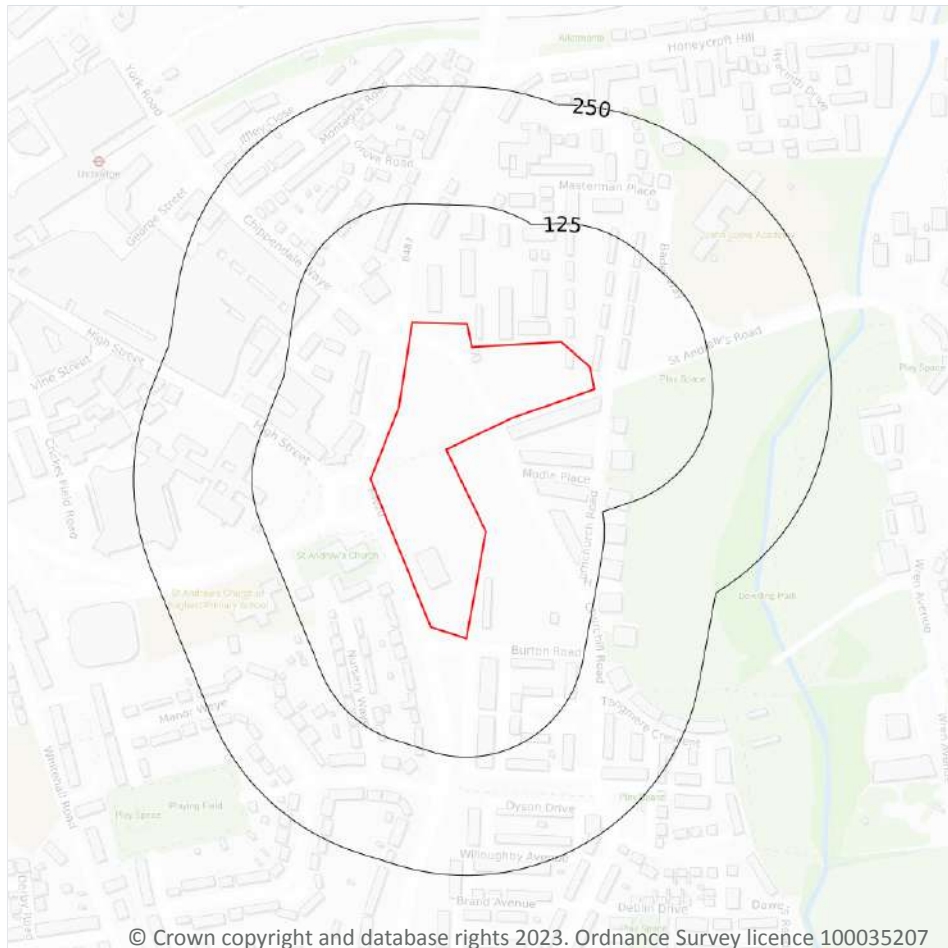
Records on site	0
-----------------	---

Generalised areas that may be affected by kaolin and ball clay extraction.

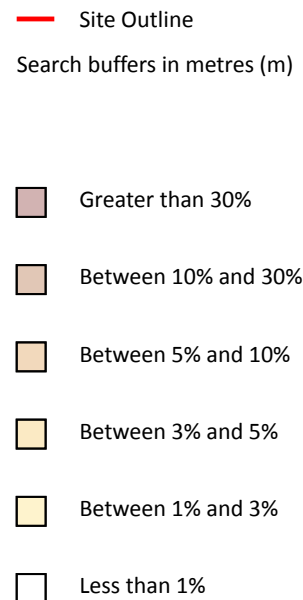
This data is sourced from the Kaolin and Ball Clay Association (UK).



19 Radon



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19.1 Radon

Records on site

1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on **page 123**

Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None



This data is sourced from the British Geological Survey and UK Health Security Agency.



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

16

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	No data	No data	No data	No data	No data	No data	No data
On site	No data	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	No data	No data
On site	No data	No data	No data	No data	No data	No data	No data
On site	No data	No data	No data	No data	No data	No data	No data
On site	No data	No data	No data	No data	No data	No data	No data
On site	No data	No data	No data	No data	No data	No data	No data
On site	No data	No data	No data	No data	No data	No data	No data
On site	No data	No data	No data	No data	No data	No data	No data
10m NW	No data	No data	No data	No data	No data	No data	No data
10m NW	No data	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	No data	No data
13m NW	No data	No data	No data	No data	No data	No data	No data
13m NW	No data	No data	No data	No data	No data	No data	No data
13m NW	No data	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	No data	No data
13m NW	No data	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	No data	No data
45m NW	No data	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	No data	No data
45m NW	No data	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	No data	No data

This data is sourced from the British Geological Survey.



20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	17
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Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
On site	17	3	179	123	1.1	84	68	32	15
On site	17	3	165	113	1	83	62	32	14
On site	17	3	238	164	0.6	75	57	29	14
On site	18	3.2	129	89	1.4	88	55	31	13
On site	18	3.2	136	93	1.4	87	55	30	13
On site	18	3.2	150	103	1.3	84	54	29	15
On site	18	3.2	167	115	1.1	85	60	31	15
On site	18	3.2	175	120	1.1	83	58	29	15
On site	18	3.2	191	131	1.1	82	56	28	16
On site	18	3.2	200	137	0.9	83	62	30	16
On site	18	3.2	219	150	1	82	59	28	17
5m SE	17	3	208	143	0.8	80	62	31	14
6m S	17	3	209	144	0.7	79	67	32	14
12m NE	17	3	250	172	0.7	76	54	27	15
13m NW	18	3.2	164	113	1.2	81	53	28	16
24m S	17	3	214	147	0.7	78	68	32	15
36m S	17	3	142	98	1.5	88	61	32	14

This data is sourced from the British Geological Survey.



20.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m**0**

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m**0**

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m**0**

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m**0**

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m**0**

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.



This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m

0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m

0

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m

0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m

0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m

0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 Ltd.



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Reports prepared by others

- » Ian Farmer Associates April 2015. 'ST ANDREW'S PARK PHASES 5, 6 & RIFLE RANGE UXBRIDGE– Factual Ground Investigation Report', Ref: 21311);
- » Atkins. June 2015. 'St Andrew's Park - Phase 6 – Remediation and Reclamation Strategy',); and

VSM ESTATES (UXBRIDGE) LIMITED

**ST ANDREWS PARK PHASES 5, 6 & RIFLE RANGE
UXBRIDGE**

FACTUAL GROUND INVESTIGATION REPORT

Contract: 21311

Date: April 2015

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FACTUAL GROUND INVESTIGATION REPORT

Carried out at

ST ANDREWS PARK PHASES 5, 6 & RIFLE RANGE

UXBRIDGE

Prepared for

**VSM ESTATES (UXBRIDGE) LIMITED
180 Great Portland Street
LONDON
W1W 5QZ**

Contract No: 21311

Date: April 2015

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EXECUTIVE SUMMARY

On the instructions of Atkins Limited, consulting engineers to VSM Estates (Uxbridge) Limited, an investigation was undertaken to determine ground conditions, the groundwater, soil-borne gases, chemical contamination and ground abnormalities to inform the remediation / reclamation strategy for the site. Within the Rifle Range areas the investigation is to confirm the remediation that has already taken place.

The site is situated within the former RAF Uxbridge site, approximately 1 km to the southeast of the town centre of Uxbridge and may be located by Landranger Grid Reference TQ060836.

The information indicates the northern and eastern parts of the site to be covered by superficial deposits of the Black Park Gravel Member, with the central part by Alluvium associated with the River Pinn and Head deposits. The majority of the site is indicated to be free from superficial deposits. The site and superficial deposits are underlain by the London Clay, described as 'stiff, bluish grey clay'. This is indicated to be in the region of 8m to 10m thick, and overlies the Lambeth Group. Previous investigations indicate Made Ground exists on site.

Site work comprised the sinking of 7 cable percussive boreholes and 14 window sample boreholes, along with the excavation of 122 machine excavated trial pits and 13 hand dug pits. Gas and groundwater monitoring standpipes were installed in each of the boreholes and subsequently monitored and sampled.

Selected samples from the exploratory holes were dispatched to appropriate laboratories for geotechnical and geoenvironmental analysis.

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Fellows Report FIL 1.5/1310-15	-	Munitions Contamination Survey

1.0 INTRODUCTION

- 1.1 On the instructions of Atkins Limited (Atkins), consulting engineers to VSM Estates (Uxbridge) Limited, an investigation was undertaken to determine ground conditions, the groundwater, soil-borne gases, chemical contamination and ground abnormalities to inform the remediation / reclamation strategy for the site. Within the Rifle Range areas the investigation is to confirm the remediation that has already taken place.
- 1.2 It is recommended that a copy of this report be submitted to the relevant authorities to enable them to carry out their own site assessments and provide any comments.
- 1.3 This report has been prepared for the sole use of the Client for the purpose described and no extended duty of care to any third party is implied or offered. Third parties using any information contained within this report do so at their own risk.
- 1.4 The comments given in this report and the opinions expressed herein are based on the information received, the conditions encountered during site works, and on the results of tests made in the field and laboratory. However, there may be conditions prevailing at the site which have not been disclosed by the investigation and which have not been taken into account in the report.
- 1.5 The comments on groundwater conditions are based on observations made at the time the site work was carried out. It should be noted that groundwater levels vary owing to seasonal or other effects.

2.0 SITE SETTING

2.1 Site Location

2.1.1 The site is situated within the former RAF Uxbridge site, approximately 1 km to the southeast of the town centre of Uxbridge and may be located by Landranger Grid Reference TQ060836.

2.1.2 A site location plan is included in Appendix 1, Figure A1.1.

2.2 Site Description

2.2.1 The site is irregular in shape and forms part of St Andrews Park which covers approximately 47 hectares, and comprises of a disused site containing a number of building, some of which were in the process of being demolished. Earthworks were also being carried out during the time of the investigation.

2.2.2 The site was bounded to the northwest by Uxbridge town centre, to the southwest by Hillingdon Road and to the southeast by the River Pinn and golf course.

2.2.3 The site was undulating, with ground levels ranging from 32mAOD to 47mAOD.

2.2.4 An exploratory hole location plan is given in Appendix 1, Drawing No.1215/2043/4B.

2.3 Geological Setting

2.3.1 Details of the geology underlying the site have been obtained from BGS Sheet 255, ref. 5.1, from information provided by Atkins, and from data gathered during previous investigation work at the site.

2.3.2 The information indicates the northern and eastern parts of the site to be covered by superficial deposits of the Black Park Gravel Member, with the central part by Alluvium associated with the River Pinn and Head deposits. The majority of the site is indicated to be free from superficial deposits.

2.3.3 The site and superficial deposits are underlain by the London Clay, described as 'stiff, bluish grey clay'. This is indicated to be in the region of 8m to 10m thick, and overlies the Lambeth Group.

2.3.4 Although not indicated as present on the site from the geological maps, previous investigations have indicated that Made Ground exists on the site.

3.0 SITE WORK

- 3.1 The site work was carried out between the 13th and 24th October 2014 and between the 19th and 27th of January 2015. The locations of the exploratory holes have been stipulated by Atkins.
- 3.2 The site work has been carried out on the basis of the practices set out in BS 10175:2011, ref. 5.2, BS 5930:1999 ref. 5.3 and BS EN 1997-2:2007, ref 5.4. Additional references are noted within the table.

Exploratory Hole Type	Quantity	Hole Reference	Depths	Notes
Cable percussive boreholes	7	CP801 to CP807	20.0m to 20.45m	Plus one redrill (CP802A) due to concrete obstruction in CP802.
Window sample boreholes	14	WS801, 802, 804-812, 814, 903, 904	2.50m to 5.00m	
Trial pits – machine excavated	121	TP801-850, 901-968	0.60m to 4.3m	
Hand dug pits	13	HP801-813	0.35m to 0.8m	
Slotted standpipe installations – cable percussion boreholes	7	CP801 to CP807	2.00m to 20.00m	Installed to monitor groundwater and gas levels, each with gas valve.
Slotted standpipe installations – window sample boreholes	14	WS802, 804, 805, 810-812, 814, 903, 904	0.50m to 5.0m	Installed to monitor groundwater and gas levels, each with gas valve.

- 3.3 The positions of the above are shown on the exploratory hole location plan, Appendix 1, Drawing No.1215/2043/4B.
- 3.4 The depths of the exploratory holes, descriptions of strata encountered and comments on groundwater conditions are given in the site work records in Appendix 2.
- 3.5 Photographic records of the trial pits are also given in Appendix 2.
- 3.6 Representative disturbed and ‘undisturbed’ samples were taken, ref.5.6, at the depths shown on the exploratory hole records and dispatched to the laboratory. Samples for environmental purposes were collected in appropriate containers and retained in cool boxes.
- 3.7 Standard (split-barrel and cone) penetration tests (SPT), ref.5.5, were carried out in the boreholes in the various strata to assess the relative density or consistency. The values of penetration resistance are given in the borehole records.
- 3.8 An approximate assessment of soil strengths was made by undertaking hand-held vane tests in the trial pits. The results of these tests are included in the trial pit records.

- 3.9 Samples recovered during the boring and trial pitting works were screened for volatile organic compounds (VOC's) using a photo ionisation detector (PID). The results of these tests are included in the exploratory hole records.
- 3.10 The coordinates and ground levels at the exploratory hole locations, reported on the records, were surveyed in by MSURV, based on OS National Grid.
- 3.11 Unexploded ordnance (UXO) clearance of all intrusive locations on the Rifle Range area was carried out by Fellows International Limited. The findings are included in Report FIL 1.5/1310-15, Appendix 6.
- 3.12 Upon completion of the siteworks, the boreholes instrumented with standpipes were monitored at intervals specified by Atkins for groundwater and gas levels. The gas levels monitored were oxygen, carbon dioxide, methane, carbon monoxide and hydrogen sulphide. The flow rate of each borehole was also monitored. The results are given in Appendix 5.
- 3.13 Groundwater samples from the borehole instruments were recovered and dispatched for testing, the results of which are presented in Appendix 4. Groundwater quality measurements were taken as the groundwater was being purged, the results of which are given in Appendix 5.

4.0 LABORATORY TESTS

4.1 Geotechnical Testing

- 4.1.1 The suite of geotechnical analyses has been scheduled by Atkins.
- 4.1.2 All soil samples were prepared in accordance with BS1377: Part One: 1990 ref. 5.8 and representative sub-samples were taken for testing. The following tests were carried out:
- 96 No. Moisture contents
 - 70 No. Plasticity indices
 - 43 No. Particle size distributions by wet sieving
 - 38 No. Sedimentation by pipette
 - 37 No. 2.5kg compactions
 - 37 No. 2.5kg California bearing ratios (CBR)
 - 13 No. Oedometer Consolidations
 - 1 No. Single stage undrained triaxials (100mm)
 - 1 No. Single stage undrained triaxials (38mm)
 - 14 No. Multistage undrained triaxials
 - 3 No. Drained small shearboxes
 - 21 No. Hand vanes
 - 28 No. BRE SD1 Suite A
 - 29 No. BRE SD1 Suite C
- 4.1.3 The results of the testing are given in Appendix 3, Test Reports PSL6002, 21311A, 21311AB, 14-20675, 15-26959 and 15-28107.
- 4.1.4 In addition, eleven BRE SD1 Suite C tests were carried out on the groundwaters recovered from the standpipes. These are reported within the chemical testing results in Appendix 4, Test Report 14-63465.

4.2 Chemical Testing

- 4.2.1 The suite of chemical analyses has been scheduled by Atkins. The chemical analyses were carried out on one hundred and forty two samples of soil, eighty one leachate samples prepared from soils and eleven groundwater samples.
- 4.2.2 The nature of the soil analyses is detailed below:
- 198 No. Metals suites:
 - Arsenic, Cadmium, Chromium (total), Lead, Mercury, Selenium, Copper, Nickel, Zinc
 - 137 No. Chromium (hexavalent)
 - 128 No. Cyanide contents – total
 - 103 No. Phenols – total monohydric
 - 86 No. Sulphate contents – water soluble

- 116 No. pH values
- 103 No. Total petroleum hydrocarbons (TPH) – CWG bandings
- 109 No. Polycyclic aromatic hydrocarbons (PAH) – USEPA 16 suite
- 100 No. Asbestos screens
- 26 No. Asbestos identifications
- 19 No. Asbestos quantifications
- 77 No. Organic matter contents
- 3 No. Polychlorinated biphenyls (PCB)

4.2.3 The nature of the leachate analyses is detailed below:

- 115 No. Metals suites:
 - Arsenic, Cadmium, Chromium (total & hexavalent), Lead, Mercury, Selenium, Copper, Nickel, Zinc

4.2.4 The nature of the groundwater analyses is detailed below:

- 17 No. Metals suites:
 - Arsenic, Cadmium, Chromium (total & hexavalent), Lead, Mercury, Selenium, Boron (water soluble), Copper, Nickel, Zinc
- 17 No. Cyanide contents – total
- 17 No. Phenols – total monohydric
- 17 No. pH values
- 17 No. Total petroleum hydrocarbons (TPH) – CWG bandings
- 17 No. Polycyclic aromatic hydrocarbons (PAH) – USEPA 16 suite
- 17 No. Chloride contents
- 17 No. Ammoniacal nitrogen contents
- 17 No. Nitrate contents
- 17 No. Chemical oxygen demand
- 17 No. Biological oxygen demand
- 17 No. Total organic carbon
- 17 No. BRE SD1 Suite C

4.2.5 The soil testing was carried out in accordance with the MCERTS performance standard, ref. 5.9, and the results are shown in Appendix 4, Test Reports 14-61517, 14-62467, 14-62782, 14-63465, 15-66395 and 15-67733.

5.0 REFERENCES

- 5.1 BGS Sheet No. 255, '*Beaconsfield*', solid and drift edition, 1:50000 scale. British Geological Survey, 1974.
- 5.2 BS 10175: 2011 '*Investigation of potentially contaminated sites. Code of practice*', British Standards Institute, 2011
- 5.3 BS 5930:1999+A2:2010 '*Code of practice for site investigations*', British Standards Institute, 2010
- 5.4 BS EN 1997, Part 2:2007, '*Eurocode 7 – Geotechnical Design – Part 2, Ground Investigation and Design*' British Standards Institute, 2007
- 5.5 BS EN ISO 22476 – 3:2005, '*Geotechnical Investigation and Testing – Field Testing - Part 3: Standard Penetration Test*', British Standards Institute, 2005
- 5.6 BS EN ISO 22475-1:2006, '*Geotechnical Investigation and Testing – Sampling Methods and Groundwater Measurements*' Part 1: *Technical Principles for Execution*', British Standards Institute, 2006
- 5.7 BS EN ISO 14688 Part 1:2002 and Part 2:2004, '*Geotechnical Investigation and Testing – Identification and Classification of Soil*', British Standards Institute, 2004
- 5.8 BS 1377:1990, Part 9, '*Methods of Test for Soils for Civil Engineering Purposes*' British Standards Institute, 1990
- 5.9 MCERTS '*Performance Standard for Laboratories Undertaking Chemical Testing of Soil*' v3, Environment Agency, 2006.
- 5.10 HSG 185, '*Health and Safety in Excavations*', Health and Safety Executive, 1999
- 5.11 BRE Special Digest 1, '*Concrete in Aggressive Ground*', Building Research Establishment, 2005.

For and on behalf of Ian Farmer Associates (1998) Limited



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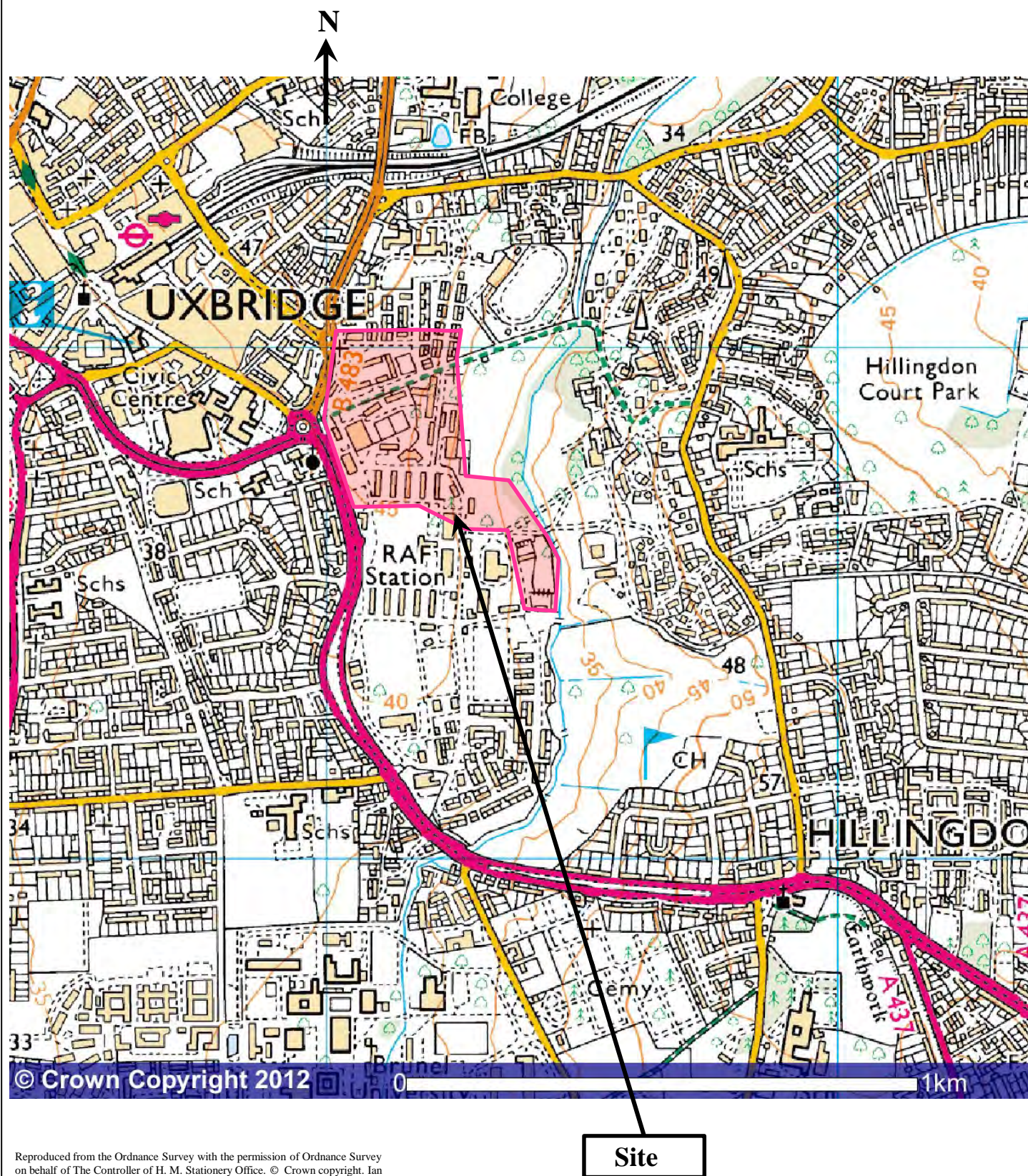


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APPENDIX 1
DRAWINGS

21311

St Andrew's Park, Phases 5, 6 & Rifle Range



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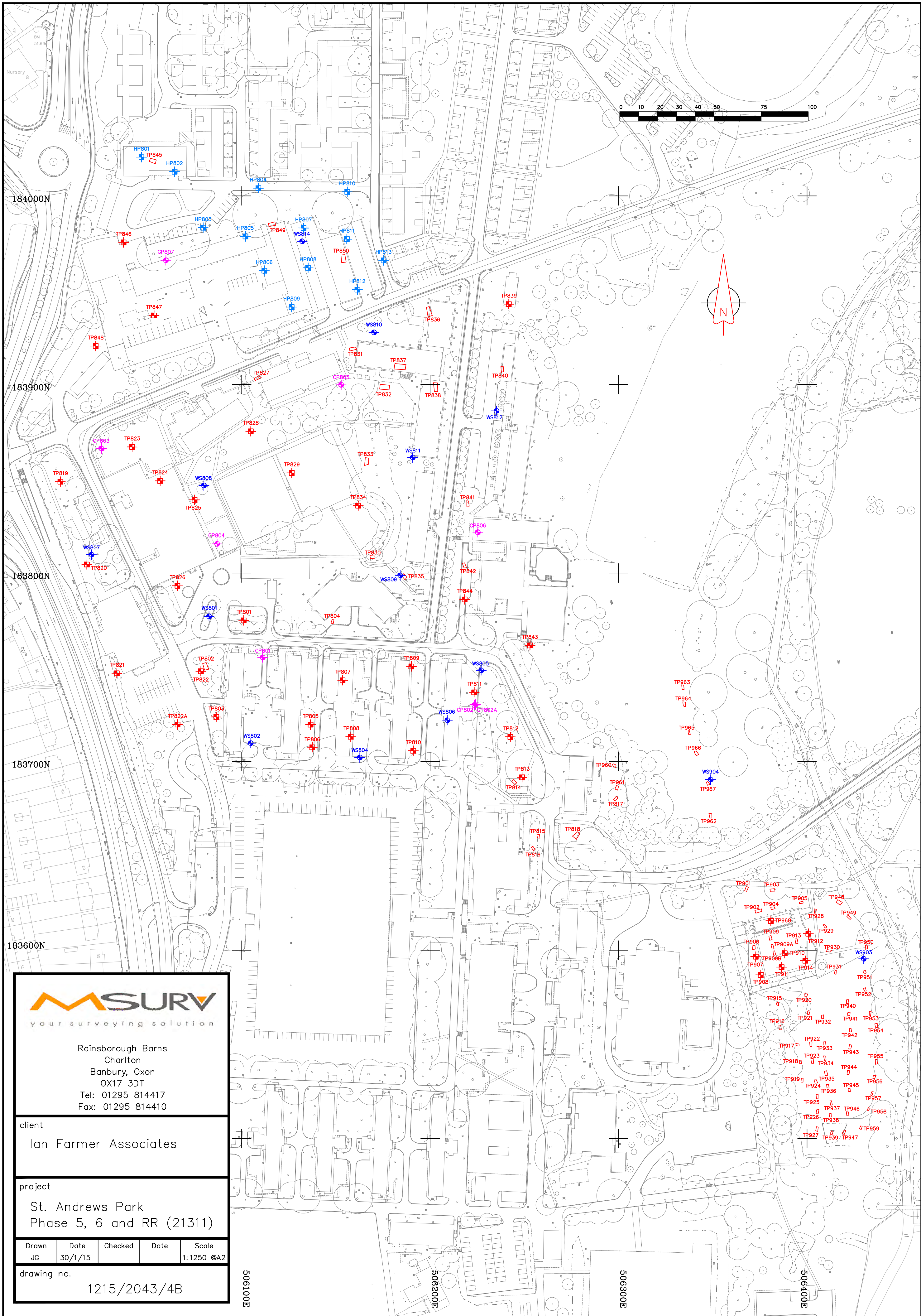
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Site Location Plan

Scale: NTS

Figure
A1.1





APPENDIX 2

SITE WORK

APPENDIX 2

GENERAL NOTES ON SITE WORKS

A2.1 SITE WORK

A2.1.1 General

Site work is carried out in general accordance with the guidelines given in BS EN 1997, 5.4 and BS 5930, ref 5.3, and BS 10175, ref.5.2.

A2.1.2 Trial Pits

Shallow trial pits are generally dug by mechanical excavator, however, in difficult access locations or adjacent to structures, such pits may be hand dug. Pits are best used where the ground will stand unsupported and generally, the maximum depth of machine dug pits is 4m to 5m. Where personnel are required to enter pits, it is essential that side support is provided. Entry by personnel into unsupported pits deeper than 1.2m is not allowed for health and safety reasons.

Trial pits allow the in-situ condition of the ground to be examined both laterally and vertically and also allow discontinuities to be recorded. The field record should give the orientation of the pit with details of which face was logged, assessment of stability of sides of pit and groundwater as well as the strata encountered. Photographs of the pit may also be taken.

In-situ testing, such as hand penetrometer, hand vane, Macintosh probe, or similar, can be undertaken in the sides or base of pits while both disturbed and undisturbed samples may be recovered.

It is generally advisable to backfill the pits as soon as possible, open pits should not be left unattended.

A2.1.3 Light Cable Percussion Boring

The light cable percussion rig is generally employed for boring through soils and weak rocks, ref 5.3. It consists of a powered winch and tripod frame, with running wheels that are permanently attached so that the rig may be towed behind a suitable vehicle. The rig is towed into position and set up using its own winching system.

The locations of services are checked to make sure the borehole is not situated unacceptably near any services. Regardless of the proximity of services, a CAT scan is undertaken at the borehole location and an inspection pit dug to 1.20m by hand.

Boreholes are advanced in soil by the percussive action of the cable tool. The force of the cylindrical tool as it is dropped a short distance cuts a plug of cohesive soil that is removed by the tool.

In non-cohesive soils, the borehole is advanced by a 'shell', otherwise known as a 'bailer' or 'sand pump', which incorporates a clack valve. Material is transferred into the shell and retained by the clack valve. The water level in a borehole is maintained above that in the surrounding granular soil to allow for temporary reductions in the head of water as the shell is withdrawn from the borehole. Water should flow from the borehole into the surrounding soil at all times to prevent 'piping' and loosening the soil at the base of the hole. The casing is always advanced with the borehole in granular soil so that material is drawn from the base rather than the borehole sides.

Obstructions to boring are overcome by fitting a serrated chiselling ring to the base of the percussion tool. For large obstructions, a heavy chisel with a hardened cutting edge may have to be used.

Disturbed samples are taken in polythene bags, jars or tubs that are sealed against air or water loss.

Undisturbed samples are generally taken in cohesive materials at changes in strata and at one metre intervals to 5 metres then at 1.5 metre intervals to the full depths of the borehole. The open-tube sampler is suitable for firm to stiff clays, but is often used to retrieve disturbed samples of weak rocks, soft or hard clay and also clayey sand or silts. This has been adopted for routine use, and usually consists of a 100mm internal diameter tube (U100), which is capable of taking soil samples up to 450mm in length. The undisturbed samples are sealed at each end using micro-crystalline wax to prevent drying.

Standard penetration tests are generally carried out at frequencies similar to that of undisturbed sampling.

A2.1.4 Drive-in Window Sampler

The drive-in window sampler, ref 5.6, consists generally of a track mounted window sampler and a series of cylindrical sample tubes, generally varying in diameter from 98mm to 35mm. A cutting shoe is fitted to the bottom of each tube, while a window, representing about a quarter of the circumference, is cut along the length of the tube. Soil samples are extracted through the window of the tube.

The borehole is extended by using progressively smaller diameter tubes.

Alternatively, samples may be collected in plastic liners, known as *windowless sampling*.

A2.2 IN-SITU TESTS

A2.2.1 Standard Penetration Test

The Standard Penetration Test is carried out in accordance with the proposals recommended by BS EN ISO 22476-3 ref 5.5.

The standard penetration test, **SPT**, covers the determination of the resistance of soils to the penetration of a split barrel sampler. A 50mm diameter split barrel sampler is driven 450mm into the soil using a 63.5kg hammer with a 760mm drop. The penetration resistance is expressed as the number of blows required to obtain 300mm penetration below an initial seating drive of 150mm through any disturbed ground at the bottom of the borehole. The number of blows to achieve the standard penetration of 300mm is reported as the 'N' value.

The test is generally carried out in fine soils, however, it may also be carried out in coarse granular soils, weak rocks and glacial tills using the same procedure as for the SPT but with a 50mm diameter, 60° apex solid cone replacing the split spoon sampler, **CPT**.

When attempting the standard penetration test in very dense material or weathered rocks it may be necessary to terminate the test before completion to prevent damage to the equipment. In these circumstances it is important to distinguish how the blow count relates to the penetration of the sampler. This may be achieved in the following manner:

- Where the seating drive has been completed, the test drive is terminated if 50 blows are reached before the full penetration of 300mm is achieved. The penetration for 50 blows is recorded and an approximate N value obtained by linear extrapolation of the number of blows for the partial test drive.
- If the seating drive of 150mm is not achieved within the first 25 blows, the penetration after 25 blows is recorded and the test drive then commenced.

- For tests in soft rocks, the test drive should be terminated after 100 blows where the penetration of 300mm has not been achieved.

The N-value obtained from the Standard Penetration Test may be used to assess the relative density of sands and gravels with the general descriptions as follows:

Term	SPT N-Value : Blows/300mm Penetration
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Over 50

A2.2.2 Hand Vane (HV)

The hand vane is intended to be used as a tool to provide a crude assessment of the shear strength of a particular soil.

The hand vane gives a direct reading of approximate shear strength, with three different diameter vanes for materials of increasing consistency. The vane measures the intact shear strength of only a small portion of the soil, and therefore readings in relation to the mass characteristics of the soil should be treated with caution, particularly where there is a proportion of granular material or where there is fissuring present.

A2.3 SAMPLES / TESTS

U represents undisturbed 100mm diameter sample, the number of blows to obtain the sample also recorded.

U (NR) indicates undisturbed sample not recovered

HV represents Hand Vane test with equivalent undrained shear strength in kPa.

B represents large bulk disturbed samples

D represents small disturbed sample

E represents environmental sample, consisting of amber jar, vial and plastic tub

W represents water sample

▽ represents water strike

▼ represents level to which water rose

A2.4 DESCRIPTION OF SOILS

A2.4.1 General

The procedures and principles given in BS EN ISO 14688 Parts 1 and 2, ref 5.7, supplemented by section 6 of BS 5930, ref. 5.3 have been used in the soil descriptions contained within this report.



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number**

CP801

Boring Method

Cable Percussion

Casing Diameter

150mm cased to 2.50m

Ground Level (mOD)

45.73

Client

VSM Estates

**Job
Number**

21311

Location

506111.1 E 183755.3 N

Dates

24/10/2014

Engineer

Atkins Limited

Sheet

1/3

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20	E1 PID = 0.2ppm				45.53	(0.20) 0.20	MADE GROUND: Brown and red, brick fill.			
0.50-1.00	B1					(0.90)	MADE GROUND: Grey, silty, very clayey, gravelly fine to coarse sand. Gravel is fine to coarse, angular to rounded quartzite and charcoal. Occasional quartzite cobble, some ash.			
1.20-1.32	SPT 25*/120			25/	44.63	1.10 (1.00)	Very dense, brown, silty fine to coarse SAND and GRAVEL. Gravel is fine to coarse, angular to subrounded quartzite and flint.			
2.00-2.45 2.00-2.45 2.10	SPT N=11 D1 E2 PID = 0.0ppm			6,5/2,3,3,3	43.63	2.10	Firm, dark grey and orange brown, silty CLAY.			
2.50	D2									
3.00-3.45 3.00-3.45	SPT N=11 D3			2,2/2,3,3,3						
4.00-4.45 4.00-4.45	SPT N=15 D4			3,3/3,4,4,4						
4.50-5.00	B2									
5.00-5.45 5.00-5.45	SPT N=14 D5			2,2/3,4,3,4						
6.50	U1 100%	2.50		90 blows						
8.00-8.45 8.00-8.45	SPT N=20 D6			2,3/4,5,5,6						
9.50 9.50 9.50	B3 D7 U2 100%	2.50		118 blows						

Remarks

Water added from 1.10m to 20.00m. Excavating from 0.00m to 1.20m.

**Scale
(approx)**

1:50

**Logged
By**

OG

Figure No.

21311.CP801



**IAN FARMER
ASSOCIATES**

Site
St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number**
CP801

Boring Method Cable Percussion	Casing Diameter 150mm cased to 2.50m	Ground Level (mOD) 45.73	Client VSM Estates	Job Number 21311
	Location 506111.1 E 183755.3 N	Dates 24/10/2014	Engineer Atkins Limited	Sheet 2/3



Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
11.00-11.45 11.00-11.45	SPT N=28 D8			3,4/6,6,7,9		(18.35)				
12.50 12.50	D9 U3 100%	2.50		130 blows						
14.00-14.45 14.00-14.45	SPT N=34 D10			4,4/7,9,9,9			Below 14.00m: Very stiff			
14.50-15.00	B4									
15.50	U4 100%	2.50		136 blows						
17.00-17.45 17.00-17.45	SPT N=31 D11			4,4/6,8,8,9						
17.50	D12									
18.50	U5 100%	2.50		149 blows						
19.50-20.00	B5									
24/10/2014:										




Remarks

**Scale
(approx)**
1:50

**Logged
By**
OG

Figure No.
21311.CP801

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Borehole Number CP801		
Boring Method Cable Percussion		Casing Diameter 150mm cased to 2.50m		Ground Level (mOD) 45.73		Client VSM Estates		Job Number 21311		
		Location 506111.1 E 183755.3 N		Dates 24/10/2014		Engineer Atkins Limited		Sheet 3/3		
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
20.00-20.45 20.00-20.45	SPT N=33 D13			4,4/7,8,8,10	25.28	20.45	Complete at 20.45m			
<div> <div>Remarks</div> <div> <div>Scale (approx)</div> <div>1:50</div> </div> <div> <div>Logged By</div> <div>OG</div> </div> <div> <div>Figure No.</div> <div>21311.CP801</div> </div> </div>										

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Borehole Number CP802	
Boring Method Cable Percussion		Casing Diameter Pit to 1.20m		Ground Level (mOD) 41.63		Client VSM Estates		Job Number 21311	
		Location 506224.1 E 183730.3 N		Dates 20/01/2015- 20/02/2015		Engineer Atkins Limited		Sheet 1/1	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					41.43	(0.20) 0.20 (1.00) 40.43 1.20	MADE GROUND: Soft, brown, slightly fine, sandy, slightly gravelly clay. Gravel is fine to coarse, very angular to angular, mixed brick, concrete, flint and quartzite. MADE GROUND: Concrete base. Below 0.20m: Firm, dark grey.	 	
							Abandoned at 1.20m		
Remarks Dropped rig and moved location due to poor set up. Hit concrete at 0.80m, JCB was required to dig out - 4.5 hours day works.								Scale (approx) 1:50	Logged By OG
								Figure No. 21311A.CP802	



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number**

CP802A

Boring Method

Cable Percussion

Casing Diameter

Pit to 1.20m
150mm cased to 3.00m

Ground Level (mOD)

41.60

Client

VSM Estates

**Job
Number**

21311

Location

506223.5 E 183730 N

Dates

21/01/2015

Engineer

Atkins Limited

Sheet

1/3

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.50	E1					(1.50)	MADE GROUND: Firm, brown, slightly sandy, gravelly clay. Gravel is fine to coarse, angular to subangular flint and occasional concrete			
1.00	E2									
1.50-1.95 1.50-1.95	SPT N=11 D1	1.20	DRY	2,2/2,3,3,3	40.10	1.50	Firm, brown mottled light grey, slightly sandy, slightly gravelly CLAY.			
2.00-2.45 2.00-2.45 2.00-3.00	SPT N=11 D2 B1	2.00	DRY	2,2/2,3,3,3						
3.00-3.45 3.00-3.45	SPT N=12 D3	3.00	DRY	2,3/3,3,3,3		(3.00)				
4.00-4.45 4.00-4.45	SPT N=14 D4	3.00	DRY	3,3/3,3,4,4						
5.00-5.45 5.00-5.45	SPT N=15 D5	3.00	DRY	3,3/3,3,4,5	37.10	4.50	Firm to stiff, grey, fissured, silty CLAY with occasional silt partings, increasing in frequency with depth. (London Clay Formation)			
6.00-6.45 6.00-6.45	SPT N=19 D6	3.00	DRY	3,3/4,4,5,6			Below 6.00m: Stiff.			
7.50-7.95	U1 100%	3.00	DRY	33 blows						
8.00-9.00	B2						At 8.00m: Selenite crystals			
9.00-9.45	SPT N=20	3.00	DRY	3,4/4,5,5,6			Below 9.00m: Blueish grey			

Remarks

**Scale
(approx)**










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By**

HP

Figure No.

21311A.CP802A

IAN FARMER ASSOCIATES							Site St Andrews Park, Phase 5, 6 and Rifle Range		Borehole Number CP802A	
Boring Method Cable Percussion		Casing Diameter Pit to 1.20m 150mm cased to 3.00m			Ground Level (mOD) 41.60		Client VSM Estates		Job Number 21311	
		Location 506223.5 E 183730 N			Dates 21/01/2015		Engineer Atkins Limited		Sheet 2/3	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
10.00	D7									
10.50-10.95	U2 100%	3.00	DRY	37 blows		(13.50)				
12.00-12.45 12.00-12.45	SPT N=30 D8	3.00	DRY	5,5/6,7,8,9			Below 12.00m: Very stiff.			
13.00-13.50	B3									
13.50-13.95	U3 NR	3.00	DRY	39 blows						
15.00-15.45 15.00-15.45	SPT N=34 D9	3.00	DRY	5,6/7,9,9,9						
16.50-16.95	U4 100%	3.00	DRY	40 blows						
18.00-18.45 18.00-18.45	SPT N=46 D10	3.00	DRY	7,9/10,12,12,12	23.60	18.00	Stiff, multicoloured (purple, light blue, grey, yellow brown) slightly fissured CLAY (Lambeth Group)			
19.50-19.95	U5 100%	3.00	DRY	60 blows		(2.50)				
Remarks								Scale (approx) 1:50	Logged By HP	
								Figure No. 21311A.CP802A		

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Borehole Number CP802A		
Boring Method Cable Percussion		Casing Diameter Pit to 1.20m 150mm cased to 3.00m		Ground Level (mOD) 41.60		Client VSM Estates		Job Number 21311		
		Location 506223.5 E 183730 N		Dates 21/01/2015		Engineer Atkins Limited		Sheet 3/3		
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
20.00	D11				21.10	20.50	Complete at 20.50m			
Remarks								Scale (approx) 1:50	Logged By HP	
								Figure No. 21311A.CP802A		



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number**

CP803

Boring Method Cable Percussion	Casing Diameter 150mm cased to 3.00m	Ground Level (mOD) 47.57	Client VSM Estates	Job Number 21311
	Location 506025.6 E 183866 N	Dates 23/10/2014	Engineer Atkins Limited	Sheet 1/3

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20	E1 PID=0.2ppm					(0.50)	MADE GROUND: Dark brown very silty very sandy gravel. Gravel is fine to coarse angular to subrounded of brick, plastic, charcoal and concrete.			
0.50-1.00	B1				47.07	0.50	MADE GROUND: Firm orange-brown slightly silty gravelly clay. Gravel is fine to coarse angular to subrounded of chalk, brick and flint.			
1.00	E2 PID=0.1ppm				46.57	1.00	Firm orange-brown silty slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded of chalk and flint.			
1.20-1.65	SPT N=10 D1			3,4/4,2,2,2						
2.00-2.45	SPT N=14 D1			2,1/3,4,3,4						
2.50	D3						By 2.50m: Grey mottling.			
3.00-3.45	SPT N=13 D4			2,2/3,3,3,4						
4.00-4.45	SPT N=13 D5			2,3/3,4,3,3		(6.00)				
4.50-5.00	B2									
5.00-5.45	SPT N=15 D6			3,3/3,4,4,4			By 5.00m: Slightly sandy. No grey mottling.			
6.50-6.95	U1 100%	3.00		100 blows						
7.50	D7				40.57	7.00	Stiff dark grey slightly silty CLAY.			
8.00-8.45	SPT N=17 D8			3,3/4,3,4,6						
9.50-9.95	U2 100%	3.00		118 blows			By 9.50m: Silty.			
9.50-10.00	B3									

Remarks

Water added from 1.80m to 20.00m. Excavating from 0.00m to 1.20m.

Scale (approx)

1:50

Logged By

OG

Figure No.

21311.CP803

Logged in accordance BS5930:1999 A2



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number**

CP803

Boring Method

Cable Percussion

Casing Diameter

150mm cased to 3.00m

Ground Level (mOD)

47.57

Client

VSM Estates

**Job
Number**

21311

Location

506025.6 E 183866 N

Dates

23/10/2014

Engineer

Atkins Limited

Sheet

2/3

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
11.00-11.45 11.00-11.45	SPT N=31 D9			4,4/6,7,9,9						
12.50 12.50-12.95	D10 U3 100%	3.00		127 blows		(13.00)				
14.00-14.45 14.00-14.45	SPT N=31 D11			4,4/7,8,8,8						
14.50-15.50	B4						By 14.50m: Thickly laminated with interbedded silt.			
15.50-15.95	U4 100%	3.00		133 blows						
17.00-17.45 17.00-17.45	SPT N=32 D12			5,4/6,8,9,9						
17.50	D13									
18.50-18.95	U5 100%	3.00		135 blows						
19.50-20.00	B5									
				23/10/2014:DRY	27.57	20.00				

Remarks

**Scale
(approx)**

1:50

**Logged
By**

OG

Figure No.

21311.CP803

Logged in accordance BS5930:1999 A2



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number
CP803**

Boring Method

Cable Percussion

Casing Diameter

150mm cased to 3.00m

Ground Level (mOD)

47.57

Client

VSM Estates

**Job
Number
21311**

Location

506025.6 E 183866 N


Dates

23/10/2014

Engineer

Atkins Limited

**Sheet
3/3**

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
20.00-20.45 20.00-20.45	SPT N=35 D14			5,5/8,9,9,9						

Remarks

**Scale
(approx)**

1:50

**Logged
By**

OG

Figure No.

21311.CP803

Logged in accordance BS5930:1999 A2



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number**

CP804

Boring Method

Cable Percussion

Casing Diameter

Pit to 1.20m
150mm cased to 3.00m

Ground Level (mOD)

47.12

Client

VSM Estates

**Job
Number**

21311

Location

506086.9 E 183815.5 N

Dates

22/01/2015

Engineer

Atkins Limited

Sheet

1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.50	E1 PID=0.0ppm				47.02	0.10	TOPSOIL.			
						(0.70)	MADE GROUND: Soft brown, slightly sandy, slightly gravelly clay. Gravel is fine to coarse, very angular to subrounded, flint, brick and quartzite.			
1.00	E2 PID=0.0ppm				46.32	0.80				
1.20-1.65	SPT N=8					(0.70)	MADE GROUND: Firm, brown, silty, gravelly clay. Gravel is fine to coarse, angular to subrounded of mainly flint.			
1.20-1.65	D1		DRY	2,2/2,2,2,2	45.62	1.50	Firm, brown, silty CLAY. (London Clay Formation)			
2.00-2.45	SPT N=12	2.00	DRY	2,2/3,3,3,3						
2.00-2.45	D2									
3.00-3.45	SPT N=20	3.00	DRY	2,3/4,5,5,6			Below 3.00m: Stiff.			
3.00-3.45	D3									
4.00-4.45	SPT N=18	3.00	DRY	3,3/3,4,5,6		(5.20)				
4.00-4.45	D4									
5.00-5.45	SPT N=13	3.00	DRY	3,3/3,3,3,4			Below 5.00m: Occasional orange mottling, slightly sandy.			
5.00-5.45	D5									
6.00-6.45	SPT N=18	3.00	DRY	3,2/4,4,5,5						
6.00-6.45	D6									
6.80	D7				40.42	6.70	Stiff, grey with occasional orange brown mottling, silty CLAY. (London Clay Formation)			
7.50-7.95	U1 100%	3.00	DRY	33 blows						
8.00-9.00	B1						Below 8.00m: No mottling.			
9.00-9.45	SPT N=22	3.00	DRY	3,4/5,5,6,6						
9.00-9.45	D8						Below 9.50m: With occasional fine selenite crystals.			

Remarks

**Scale
(approx)**

1:50

**Logged
By**

OG

Figure No.

21311A.CP804



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number**

CP804

Boring Method

Cable Percussion

Casing Diameter

Pit to 1.20m
150mm cased to 3.00m

Ground Level (mOD)

47.12

Client

VSM Estates

**Job
Number**

21311

Location

506086.9 E 183815.5 N

Dates

22/01/2015

Engineer

Atkins Limited

Sheet

2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
10.50-10.95	U2 NR	3.00	DRY	37 blows						
12.00-12.45 12.00-12.45	SPT N=29 D9	3.00	DRY	3,5/7,7,7,8			Below 12.00m: Stiff to very stiff, with occasional interbedding of thin siltbeds.			
13.50-13.95	U3 NR	3.00	DRY	40 blows		(13.30)				
14.00-15.00	B2									
15.00-15.45 15.00-15.45	SPT N=31 D10	3.00	DRY	3,5/7,8,8,8						
16.00	D11									
16.50-16.95	U4 100%	3.00	DRY	39 blows						
17.50	D12						Below 17.50m: Very silty.			
18.00-18.45 18.00-18.45	SPT N=34 D13	3.00	DRY	5,6/7,8,9,10						
19.50-19.95	U5 100%	3.00	DRY	42 blows			Below 19.50m: Silty.			
20.00	D14				27.12	20.00				

Remarks

**Scale
(approx)**

1:50














**Logged
By**

OG

Figure No.

21311A.CP804

IAN FARMER ASSOCIATES							Site St Andrews Park, Phase 5, 6 and Rifle Range		Borehole Number CP805								
Boring Method Cable Percussion		Casing Diameter 150mm cased to 1.50m			Ground Level (mOD) 46.24		Client VSM Estates		Job Number 21311								
		Location 506152.8 E 183899.8 N			Dates 21/10/2014- 22/10/2014		Engineer Atkins Limited		Sheet 1/3								
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr							
0.30	E1 PID=0.0ppm	1.50		2,2/3,3,3,4	45.74	(0.50)	MADE GROUND: Soft, dark brown silty slightly fine to medium sandy gravelly clay. Gravel is fine to coarse angular to subangular of brick, plastic, flint, concrete and limestone with frequent cobbles.										
0.50 0.50-1.00	D1 B1					0.50											
1.00	E2 PID=0.3ppm					(0.70)	MADE GROUND: Soft to firm, dark orange brown silty slightly gravelly clay. Gravel is fine to coarse angular to subrounded of flint, coal and brick.										
1.20-1.65 1.20 1.50	SPT N=13 D2 D3					1.20											
2.00-2.45 2.00	SPT N=14 D4					45.04		1,1/3,3,4,4		Firm orange brown mottled grey very silty slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded of flint. Below 1.50m: Occasional gravel of chalk with rootlets.							
2.50	D5																
3.00-3.45 3.00	SPT N=15 D6													2,2/3,4,4,4			
3.50	D7																
4.00-4.45 4.00	SPT N=14 D8													2,3/3,3,4,4			
4.50-5.00	B2																
5.00-5.45 5.00 5.00	SPT N=19 D10 D9	2,2/3,4,6,6															
6.00	D11																
6.50 6.50-6.95	D12 U1 100%	100 blows		3,3/4,6,7,8										Below 3.00m: Gravel is fine			
7.50	D13																
8.00-8.45 8.00	SPT N=25 D14																
9.00	D15																
9.50 9.50-9.45 9.50-10.00	D16 U2 100% B3					21/10/2014:DRY 118 blows 22/10/2014:DRY											
Remarks Water added from 5.50m to 10.00m. Water added from 10.00m to 20.00m. Excavating from 0.00m to 1.20m.								Scale (approx) 1:50	Logged By OG								
Figure No. 21311.CP805																	

 IAN FARMER ASSOCIATES							Site St Andrews Park, Phase 5, 6 and Rifle Range		Borehole Number CP805	
Boring Method Cable Percussion		Casing Diameter 150mm cased to 1.50m			Ground Level (mOD) 46.24		Client VSM Estates		Job Number 21311	
		Location 506152.8 E 183899.8 N			Dates 21/10/2014- 22/10/2014		Engineer Atkins Limited		Sheet 2/3	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
10.50	D17	1.50		3,4/5,6,8,10		(18.80)	Below 11.00m: Dark grey brown no sand			
11.00-11.45 11.00	SPT N=29 D18									
12.00	D19									
12.50 12.50-12.95	D20 U13 100%									
13.50	D21	1.50		125 blows			Below 16.00m: Very stiff			
14.00-14.45 14.00	SPT N=30 D22									
14.50	B5									
15.00	D23									
15.50 15.50-15.95	D24 U14 100%	1.50		128 blows			Below 17.00m: Inter bedded with very clayey silt			
16.50	D25									
17.00-17.45 17.00	SPT N=31 D26									
18.00	D27									
18.50 18.50-18.95	D28 U15 100%	1.50		193 blows			At base: Grading in to dark grey very clayey slightly sandy SILT			
19.50 19.50-20.00	D29 B2									
20.00	D30									
22/10/2014:DRY										
						26.24	20.00			
Remarks Water added from 10.00m to 20.00m.								Scale (approx)	Logged By	
								1:50	OG	
								Figure No. 21311.CP805		



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number
CP805**

Boring Method

Cable Percussion

Casing Diameter

150mm cased to 1.50m

Ground Level (mOD)

46.24

Client

VSM Estates

**Job
Number
21311**

Location

506152.8 E 183899.8 N

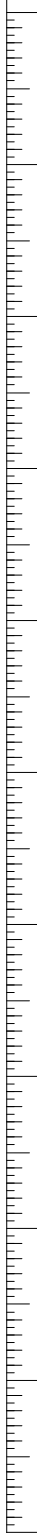
Dates

21/10/2014-
22/10/2014

Engineer

Atkins Limited

**Sheet
3/3**

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
20.00-20.45	SPT N=33			4,5/7,8,9,9						
Remarks								Scale (approx)	Logged By	
								1:50	OG	
								Figure No. 21311.CP805		



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number**

CP806

Boring Method

Cable Percussion

Casing Diameter

150mm cased to 3.00m

Ground Level (mOD)

41.18

Client

VSM Estates

**Job
Number**

21311

Location

506225.3 E 183821.7 N

Dates

20/10/2014

Engineer

Atkins Limited

Sheet

1/3

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.50 0.50-1.00	D1 B1				40.58	(0.60) 0.60	MADE GROUND: Soft mottled brown and grey-brown slightly sandy slightly gravelly clay with occasional roots and rootlets and low cobble content of concrete and flint. Gravel is fine to coarse angular to rounded of flint, concrete, slate, glass, limestone, chalk, brick, sandstone and clinker.			
1.00	E1									
1.20	D2			Slow(1) at 1.20m, sealed at 1.50m. 7/2,1,1,1			MADE GROUND: Soft mottled brown, black and grey slightly sandy slightly gravelly clay with occasional sand lenses and occasional roots and rootlets. Gravel is fine to coarse angular to rounded of chalk, flint, mudstone, quartz and concrete.			
1.20-1.65 1.50	SPT N=5 D3					(2.40)				
2.00-2.45 2.00	SPT N=4 D4			3/1,1,1,1			By 2.50m: Gravelly.			
2.50	D5									
3.00-3.45 3.00 3.00	SPT N=10 D6 E2			5/3,3,2,2	38.18	3.00	Firm brown locally thinly laminated slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to medium subangular to rounded of flint, chalk and siltstone.			
3.50	D7									
4.00-4.45 4.00	SPT N=14 D8			5/3,4,3,4		(2.00)	By 4.20m: Becoming grey. Gravel is fine to coarse. Low cobble content of siltstone.			
4.50 4.50-5.00	D9 B2									
5.00-5.45 5.00	SPT N=17 D10			5/3,5,5,4	36.18	5.00	Stiff grey slightly silty slightly sandy slightly gravelly locally thinly laminated CLAY with occasional silt and fine sand lenses. Gravel is fine to coarse subangular to subrounded of siltstone.			
5.50	D11									
6.00	D12									
6.50 6.50-6.95	D13 U1 100%	3.00		107 blows						
7.00	D14									
7.50	D15									
8.00-8.45 8.00	SPT N=21 D16			6/4,5,6,6						
8.50	D17									
9.00	D18									
9.50 9.50-9.95 9.50-10.00	D19 U2 100% B3	3.00		115 blows						

Remarks

Water added from 3.00m to 18.00m. Excavating from 0.00m to 1.20m.

**Scale
(approx)**

1:50

**Logged
By**

CH

Figure No.

21311.CP806

Logged in accordance BS5930:1999 A2



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number
CP806**

Boring Method

Cable Percussion

Casing Diameter

150mm cased to 3.00m

Ground Level (mOD)

41.18

Client

VSM Estates

**Job
Number
21311**

Location

506225.3 E 183821.7 N

Dates

20/10/2014

Engineer

Atkins Limited

**Sheet
2/3**

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
10.00	D20									
10.50	D21									
11.00 11.00-11.45	D22 U3 100%	3.00		120 blows						
12.00	D23									
12.50 12.50-12.95	D24 U4 100%	3.00		127 blows		(15.45)				
13.50	D25									
14.00 14.00-14.45	D26 U5 100%	3.00		150 blows						
14.50-15.00	B4									
15.00	D27									
15.50 15.50-15.45	D28 U6 100%	3.00		157 blows			By 15.50m: Thinly to thickly laminated. Locally silty.			
16.50	D29									
17.00 17.00-17.45	D30 U7 100%	3.00		140 blows						
18.00	D31						By 18.00m: Sandy.			
18.50 18.50-18.45	D32 U8 100%	3.00		150 blows			At 18.50m: Lens of grey very clayey very silty fine SAND.			
19.00-20.00	B5									
19.50	D33						By 19.50m: Additional purple mudstone and green-blue siltstone gravel.			

Remarks

**Scale
(approx)**

1:50

**Logged
By**

CH

Figure No.

21311.CP806

Logged in accordance BS5930:1999 A2



St Andrews Park, Phase 5, 6 and Rifle Range

Borehole
Number
CP806

Boring Method
Cable Percussion

Casing Diameter
150mm cased to 3.00m

Ground Level (mOD)	41.18
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Client	VSM Estates
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**Job
Number**
21311

Location	506225.3 E 183821.7 N
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Dates	20/10/2014
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Engineer
Atkins Limited

Sheet
3/3

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
20.00 20.00-20.45	D34 U9 100%	3.00		60 blows	20.73	20.45	Complete at 20.45m			

Remarks

Scale (approx)	1:50
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Logged
By

CH

Figure No.
21311.CP806

Logged in accordance BS5930:1999 A2



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number**

CP807

Boring Method

Cable Percussion

Casing Diameter

Pit to 1.20m
150mm cased to 3.00m

Ground Level (mOD)

49.17

Client

VSM Estates

**Job
Number**

21311

Location

506059.8 E 183965.9 N

Dates

19/01/2015-
20/01/2015

Engineer

Atkins Limited

Sheet

1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.50	E1 PID=0.0ppm						MADE GROUND: Brown, clayey, silty, fine to coarse sand and gravel. Gravel is fine to coarse, angular to subangular brick, concrete, limestone and quartzite. Frequent concrete cobbles.			
1.00	E2 PID=0.0ppm					(2.00)				
1.20-1.65	SPT(C) N=8		DRY	2,2/2,2,2,2						
2.00-2.45	SPT(C) N=12	2.00	DRY	2,3/3,3,3,3	47.17	2.00	Soft, orange brown, silty, slightly gravelly CLAY. Gravel is fine to coarse, subangular to subrounded flint and chalk.			
2.00-3.00	B1					(1.40)				
3.50	D1				45.77	3.40	Firm to stiff, light orange brown, very silty CLAY. (London Clay Formation)			
4.00-4.45	SPT(C) N=15	3.00	DRY	2,3/3,4,4,4						
5.00-5.45	U1 90%	3.00	DRY	40 blows		(3.60)				
6.00-6.45	SPT(C) N=24	3.00	DRY	4,5/5,6,6,7						
7.50-7.95	U2 90%	3.00	DRY	30 blows	42.17	7.00	Stiff, grey, silty CLAY. (London Clay Formation)			
9.00-9.45	SPT(C) N=29	3.00	DRY	5,6/7,7,7,8			Below 8.00m: With occasional fine selenite crystals. Below 9.00m: Stiff to very stiff.			
Remarks								Scale (approx)	Logged By	
								1:50	OG	
								Figure No. 21311A.CP807		



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number**

CP807

Boring Method

Cable Percussion

Casing Diameter

Pit to 1.20m
150mm cased to 3.00m

Ground Level (mOD)

49.17

Client

VSM Estates

**Job
Number**

21311

Location

506059.8 E 183965.9 N

Dates

19/01/2015-
20/01/2015

Engineer

Atkins Limited

Sheet

2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
10.50-10.95	U3 100%	3.00	DRY	47 blows			Below 10.00m: Slightly silty.			
12.00-12.45	SPT(C) N=25	3.00	DRY	3,4/5,6,7,7						
12.50	D2						Below 12.50m: With occasional interbedding of clayey silt.			
13.50-13.95	U4 100%	3.00	DRY	46 blows		(13.00)				
15.00-15.45 15.00-16.00	SPT(C) N=26 B2	3.00	DRY	4,5/6,6,7,7						
16.50-16.95	U5 100%	3.00	DRY	47 blows						
18.00-18.45	SPT(C) N=30	3.00	DRY	5,6/7,7,8,8						
19.00-19.50	B3									
19.50-19.95	U6 100%	3.00	DRY	50 blows			From 19.20 to 19.40m: Grey claystone nodule/band.			
20.00	D3				29.17	20.00				

Remarks

**Scale
(approx)**

1:50

**Logged
By**

OG

Figure No.

21311A.CP807



St Andrews Park, Phase 5, 6 and Rifle Range

Borehole
Number
CP801

Installation Type
Standpipe

Internal Diameter of Tube [A] = 50 mm
Diameter of Filter Zone = 150 mm

VSM Estates

Job Number
21311

506111.1 E 183755.3 N

45 73

Atkins Limited

Sheet
1/1

Remarks
Gas valve fitted.



St Andrews Park, Phase 5, 6 and Rifle Range

Borehole
Number
CP802A

Installation Type
Standpipe

Internal Diameter of Tube [A] = 50 mm
Diameter of Filter Zone = 150 mm

VSM Estates

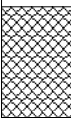
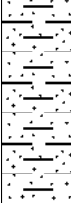
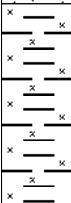
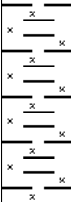


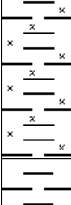

Job Number	21311
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506223.5 E 183730 N


41 60

Atkins Limited

Sheet
1/1


Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling								
        														

Gas valve fitted.

 IAN FARMER ASSOCIATES					Site St Andrews Park, Phase 5, 6 and Rifle Range					Borehole Number CP803	
Installation Type Standpipe		Dimensions Internal Diameter of Tube [A] = 50 mm Diameter of Filter Zone = 150 mm			Client VSM Estates					Job Number 21311	
		Location 506025.6 E 183866 N		Ground Level (mOD) 47.57		Engineer Atkins Limited					Sheet 1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling											
						Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)		
			47.37	0.20	Concrete												
			45.57	2.00	Bentonite Seal												
					Slotted Standpipe	Groundwater Observations During Drilling											
						Date	Start of Shift					End of Shift					
							Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	
						23/10/14						20.00	3.00	DRY			
			40.07	7.50		Instrument Groundwater Observations											
					Inst. [A] Type : Slotted Standpipe												
					Date	Instrument [A]			Remarks								
						Time	Depth (m)	Level (mOD)									
			27.12	20.45	Bentonite Seal												

Remarks Gas valve fitted.



IAN FARMER

ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Borehole Number

CP804

Installation Type

Standpipe

Dimensions

Internal Diameter of Tube [A] = 50 mm

Diameter of Filter Zone = 150 mm

Client

VSM Estates

Job Number

21311

Location

506086.9 E 183815.5 N

Ground Level (mOD)

47.12

Engineer

Atkins Limited

Sheet

1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling										
						Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)	
											5 min	10 min	15 min	20 min		
			46.92	0.20	Concrete											
					Bentonite Seal											
						Groundwater Observations During Drilling										
						Date	Start of Shift					End of Shift				
							Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)
			39.12	8.00	Slotted Standpipe											
						Instrument Groundwater Observations										
						Inst. [A] Type : Slotted Standpipe										
						Date	Instrument [A]			Remarks						
							Time	Depth (m)	Level (mOD)							
			35.12	12.00	Bentonite Seal											
			34.12	13.00												
					General Backfill											
			27.12	20.00												

Remarks

Gas valve fitted.



St Andrews Park, Phase 5, 6 and Rifle Range

Borehole
Number
CP805

Installation Type
Standpipe

Internal Diameter of Tube [A] = 50 mm
Diameter of Filter Zone = 150 mm

VSM Estates

Job Number
21311

506152.8 E 183899.8 N

46 24

Atkins Limited

Sheet
1/1

Remarks
Gas valve fitted.



St Andrews Park, Phase 5, 6 and Rifle Range

Borehole
Number
CP806

Installation Type
Standpipe

Internal Diameter of Tube [A] = 50 mm
Diameter of Filter Zone = 150 mm

VSM Estates

Job Number
21311

506225.3 E 183821.7 N

41 18

Atkins Limited

Sheet
1/1

Remarks
Gas valve fitted.



St Andrews Park, Phase 5, 6 and Rifle Range

Borehole
Number
CP807

Installation Type
Standpipe

Internal Diameter of Tube [A] = 50 mm
Diameter of Filter Zone = 150 mm

VSM Estates

**Job
Number**
21311

506059.8 E 183965.9 N

49 17

Atkins Limited

Sheet
1/1

[illegible]

Remarks
Gas valve fitted.

**Standard Penetration Test Results****Site** : St Andrews Park, Phase 5, 6 and Rifle Range**Client** : VSM Estates**Engineer** : Atkins Limited**Job Number**
21311**Sheet**
1 / 2

Borehole Number	Base of Borehole (m)	End of Seating Drive (m)	End of Test Drive (m)	Test Type	Seating Blows per 75mm		Blows for each 75mm penetration				Result	Comments
					1	2	1	2	3	4		
CP801	1.20	1.32	1.32	SPT	25						25*/120mm	
CP801	2.00	2.15	2.45	SPT	6	5	2	3	3	3	N=11	
CP801	3.00	3.15	3.45	SPT	2	2	2	3	3	3	N=11	
CP801	4.00	4.15	4.45	SPT	3	3	3	4	4	4	N=15	
CP801	5.00	5.15	5.45	SPT	2	2	3	4	3	4	N=14	
CP801	8.00	8.15	8.45	SPT	2	3	4	5	5	6	N=20	
CP801	11.00	11.15	11.45	SPT	3	4	6	6	7	9	N=28	
CP801	14.00	14.15	14.45	SPT	4	4	7	9	9	9	N=34	
CP801	17.00	17.15	17.45	SPT	4	4	6	8	8	9	N=31	
CP801	20.00	20.15	20.45	SPT	4	4	7	8	8	10	N=33	
CP802A	1.50	1.65	1.95	SPT	2	2	2	3	3	3	N=11	NR
CP802A	2.00	2.15	2.45	SPT	2	2	2	3	3	3	N=11	
CP802A	3.00	3.15	3.45	SPT	2	3	3	3	3	3	N=12	
CP802A	4.00	4.15	4.45	SPT	3	3	3	3	4	4	N=14	
CP802A	5.00	5.15	5.45	SPT	3	3	3	3	4	5	N=15	
CP802A	6.00	6.15	6.45	SPT	3	3	4	4	5	6	N=19	
CP802A	9.00	9.15	9.45	SPT	3	4	4	5	5	6	N=20	
CP802A	12.00	12.15	12.45	SPT	5	5	6	7	8	9	N=30	
CP802A	15.00	15.15	15.45	SPT	5	6	7	9	9	9	N=34	
CP802A	18.00	18.15	18.45	SPT	7	9	10	12	12	12	N=46	
CP803	1.20	1.35	1.65	SPT	3	4	4	2	2	2	N=10	
CP803	2.00	2.15	2.45	SPT	2	1	3	4	3	4	N=14	
CP803	3.00	3.15	3.45	SPT	2	2	3	3	3	4	N=13	
CP803	4.00	4.15	4.45	SPT	2	3	3	4	3	3	N=13	
CP803	5.00	5.15	5.45	SPT	3	3	3	4	4	4	N=15	
CP803	8.00	8.15	8.45	SPT	3	3	4	3	4	6	N=17	
CP803	11.00	11.15	11.45	SPT	4	4	6	7	9	9	N=31	
CP803	14.00	14.15	14.45	SPT	4	4	7	8	8	8	N=31	
CP803	17.00	17.15	17.45	SPT	5	4	6	8	9	9	N=32	
CP803	20.00	20.15	20.45	SPT	5	5	8	9	9	9	N=35	
CP804	1.20	1.35	1.65	SPT	2	2	2	2	2	2	N=8	
CP804	2.00	2.15	2.45	SPT	2	2	3	3	3	3	N=12	
CP804	3.00	3.15	3.45	SPT	2	3	4	5	5	6	N=20	
CP804	4.00	4.15	4.45	SPT	3	3	3	4	5	6	N=18	
CP804	5.00	5.15	5.45	SPT	3	3	3	3	3	4	N=13	
CP804	6.00	6.15	6.45	SPT	3	2	4	4	5	5	N=18	
CP804	9.00	9.15	9.45	SPT	3	4	5	5	6	6	N=22	
CP804	12.00	12.15	12.45	SPT	3	5	7	7	7	8	N=29	
CP804	15.00	15.15	15.45	SPT	3	5	7	8	8	8	N=31	
CP804	18.00	18.15	18.45	SPT	5	6	7	8	9	10	N=34	
CP805	1.20	1.35	1.65	SPT	2	2	3	3	3	4	N=13	
CP805	2.00	2.15	2.45	SPT	1	1	3	3	4	4	N=14	



Standard Penetration Test Results

Site : St Andrews Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

Engineer : Atkins Limited

Job Number
21311

Sheet
2 / 2

Borehole Number	Base of Borehole (m)	End of Seating Drive (m)	End of Test Drive (m)	Test Type	Seating Blows per 75mm		Blows for each 75mm penetration				Result	Comments
					1	2	1	2	3	4		
CP805	3.00	3.15	3.45	SPT	2	2	3	4	4	4	N=15	
CP805	4.00	4.15	4.45	SPT	2	3	3	3	4	4	N=14	
CP805	5.00	5.15	5.45	SPT	2	2	3	4	6	6	N=19	
CP805	8.00	8.15	8.45	SPT	3	3	4	6	7	8	N=25	
CP805	11.00	11.15	11.45	SPT	3	4	5	6	8	10	N=29	
CP805	14.00	14.15	14.45	SPT	3	4	7	7	7	9	N=30	
CP805	17.00	17.15	17.45	SPT	4	4	6	7	9	9	N=31	
CP805	20.00	20.15	20.45	SPT	4	5	7	8	9	9	N=33	
CP806	1.20	1.35	1.65	SPT	7		2	1	1	1	N=5	
CP806	2.00	2.15	2.45	SPT	3		1	1	1	1	N=4	
CP806	3.00	3.15	3.45	SPT	5		3	3	2	2	N=10	
CP806	4.00	4.15	4.45	SPT	5		3	4	3	4	N=14	
CP806	5.00	5.15	5.45	SPT	5		3	5	5	4	N=17	
CP806	8.00	8.15	8.45	SPT	6		4	5	6	6	N=21	
CP807	1.20	1.35	1.65	CPT	2	2	2	2	2	2	N=8	
CP807	2.00	2.15	2.45	CPT	2	3	3	3	3	3	N=12	
CP807	4.00	4.15	4.45	CPT	2	3	3	4	4	4	N=15	
CP807	6.00	6.15	6.45	CPT	4	5	5	6	6	7	N=24	
CP807	9.00	9.15	9.45	CPT	5	6	7	7	7	8	N=29	
CP807	12.00	12.15	12.45	CPT	3	4	5	6	7	7	N=25	
CP807	15.00	15.15	15.45	CPT	4	5	6	6	7	7	N=26	
CP807	18.00	18.15	18.45	CPT	5	6	7	7	8	8	N=30	



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Number
WS801**

Excavation Method

Drive-in Window Sampler

Dimensions

Pit to 1.10m
102mm to 2.00m
81mm to 3.00m

Ground Level (mOD)

46.68

Client

VSM Estates

**Job
Number
21311**

Location

506082.7 E 183777 N

Dates

26/01/2015

Engineer

Atkins Limited

**Sheet
1/1**

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.70	E1 PID=0.0ppm			46.28	(0.40) 0.40	MADE GROUND: Grey, silty, slightly gravelly, fine to coarse sand. Gravel is fine to coarse, subangular to subrounded, flint, tar and occasional rootlets. Below 0.30m: Very clayey.			
1.10-1.55	SPT(C) N=11		1,1/2,3,3,3		(1.40)	Firm, pale brown, slightly fine to medium, sandy, slightly gravelly CLAY. Gravel is fine to medium, subangular to subrounded, flint and chalk, quartzite. Below 1.20m: Sand and occasional fine rootlets.			
2.00-2.45 2.00-2.45	SPT N=21 D1		1,3/3,5,6,7	44.88	1.80 (1.20)	Pale brown yellow, very sandy, fine to medium sandstone GRAVEL. Below 2.00m: Lense of orange, fine to medium sand, no gravel. Below 2.30m: No sand lenses.			
3.00-3.45 3.00-3.45	SPT N=24 D2		Seepage(1) at 2.80m. 2,4/4,6,7,7	43.68	3.00	Stiff, brown mottled grey, silty CLAY. (London Clay Formation)			
3.80-3.90 4.00-4.45 4.00-4.45	D3 SPT N=24 D4		2,2/4,6,6,8		(2.45)	Below 3.70m: Very silty. At 4.00m: Some white sand sized selenite crystals. Below 4.20m: Slightly sandy.			
5.00-5.45 5.00-5.45	SPT N=24 D5		2,3/4,5,7,8	41.23	5.45	Complete at 5.45m			
Remarks							Scale (approx)	Logged By	
							1:50		
							Figure No.		
							21311A.WS801		



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Number
WS802**

Excavation Method

Drive-in Window Sampler

Dimensions

Pit to 1.20m

Ground Level (mOD)

45.62

Client

VSM Estates

**Job
Number
21311**

Location

506104.8 E 183709.8 N

Dates

23/10/2014

Engineer

Atkins Limited

**Sheet
1/1**

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20	C1 PID=0.0ppm				(0.40)	MADE GROUND: Dark brown silty very clayey gravelly fine to coarse sand. Gravel if fine to coarse angular to subangular of brick, charcoal and flint. Cobble of concrete at 0.30m .			
0.60	C2 PID=0.0ppm			45.22	0.40 (0.40)	MADE GROUND: Soft to firm dark orange brown silty slightly sandy slightly gravelly clay. Gravel is fine to medium subangular to subrounded of charcoal and flint, with some rootlets.			
1.20-1.65 1.20-1.65	SPT N=18 D1		2,3/3,4,5,6	44.82	0.80 (1.80)	Firm orange brown silty slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded of chalk and flint. Below 1.00m: no gravel Below 1.30m: slightly gravelly fine to medium subangular to subrounded of chalk Below 1.50m: pockets of fine sand with fine to medium angular to subangular sandstone gravel Below 1.80m: mottled orange slightly fine sand Below 2.00m: no sand			
2.00-2.45 2.00-2.45	SPT N=56 D2		5,9/11,14,14,17						
2.60	D3			43.02	2.60	Complete at 2.60m			

Remarks

Slotted standpipe installed to 2.00m

**Scale
(approx)**

1:25

**Logged
By**

OG

Figure No.

21311.WS802



St Andrews Park, Phase 5, 6 and Rifle Range

Number
WS804

Excavation Method
Drive-in Window Sampler

Dimensions

Ground Level (mOD)	44.09
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Client	VSM Estates
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**Job
Number**
21311

Location	506162.7 E 183702.2 N
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Dates	23/10/2014
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Engineer
Atkins Limited

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.10	C1 PID=0.0ppm					MADE GROUND: Dark brown very clayey fine to medium sandy slightly gravelly silt. Gravel is fine to coarse angular to subangular of brick, wood, slate and flint.			
				43.39	0.70	Firm, dark brown friable silty slightly gravelly CLAY. Gravel is fine to medium of flint and occasional rootlets.			
1.00-1.45 1.00-1.45	SPT N=15 D1		1,2/3,3,4,5			At 1.00m: Stiff no gravel no rootlets			
1.20	C2 PID=0.0ppm								
						Below 1.50m: slightly gravelly fine to coarse angular to subrounded of chalk			
						Below 1.70m: slightly fine sand			
2.00-2.45 2.00-2.45	SPT N=25 D2		3,4/5,6,7,7		(2.75)	Below 2.00m: slightly grey mottled			
						Below 2.40m: no gravel			
2.60	D3								
3.00-3.45 3.00-3.45	SPT N=52 D4		3,4/6,10,18,18			Below 3.00m: Very stiff			
				40.64	3.45	Below 3.40m: With abundant orange brown fine sand			
						Complete at 3.45m			

Remarks

Scale (approx)

1:25

Logged
By

OG

Figure No.

21311.WS804



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Number
WS805**

Excavation Method

Drive-in Window Sampler

Dimensions

Location

506227.1 E 183748.4 N

Ground Level (mOD)

41.25

Client

VSM Estates

**Job
Number
21311**

Dates

23/10/2014

Engineer

Atkins Limited

**Sheet
1/1**

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20	C1 PID=0.2ppm				(1.10)	MADE GROUND: Dark brown slightly silty slightly sandy slightly gravelly clay. Gravel is fine to coarse angular to subangular of brick, charcoal, flint and chalk.			
0.90	C2 PID=0.0ppm								
1.00-1.45	SPT N=5		1,1/1,1,1,2	40.15	1.10	Soft, dark orange brown grey mottled silty CLAY.			
1.00-1.45	D1								
2.00-2.45	SPT N=19		2,3/4,5,5,5			Below 1.60m: slightly gravelly fine to medium subangular to subrounded of chalk, flint, with black organic fleck.			
2.00-2.45	D2					Below 2.00m: Stiff.			
2.70	D3				(3.35)	At 2.60m: lens of fine to coarse flint gravel Below 2.70m: no gravel			
3.00-3.45	SPT N=19		4,4/4,4,5,6			Below 3.10m; light yellow brown very fine sand At 3.20m: yellow fine sand pocket.			
3.00-3.45	D4								
4.00-4.45	SPT N=57		10,9/11,14,16,16			Below 4.00m: Very stiff.			
4.00-4.45	D5			36.80	4.45	Complete at 4.45m			

Remarks

Scale (approx)

1:25

Logged By

OG

Figure No.

21311.WS805



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Number
WS806**

Excavation Method

Drive-in Window Sampler

Dimensions

102mm to 1.00m
87mm to 2.00m
77mm to 3.00m

Ground Level (mOD)

42.37

Client

VSM Estates

**Job
Number
21311**

Location

506209.1 E 183722 N

Dates

26/01/2015

Engineer

Atkins Limited

**Sheet
1/1**

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.40	E1 PID=0.0ppm			41.97	(0.40) 0.40	MADE GROUND: Grey, silty, fine to coarse sand and gravel. Gravel is fine to coarse, very angular to angular, concrete, brick, clinker.			
1.00-1.45 1.00-1.45	SPT N=7 D1		1,1/2,1,2,2		(1.80)	MADE GROUND: Soft, yellow brown, silty, slightly sandy, slightly gravelly clay. Gravel is fine to coarse, angular to subrounded, flint, chalk, brick, clinker. Below 0.60m: Brown mottled black.			
2.00-2.45 2.00-2.45	SPT N=14 D2		1,1/2,3,4,5	40.17	2.20	Below 1.20m: No brick.			
2.50	D3					Firm, orange brown, slightly silty, slightly sandy CLAY. (London Clay Formation)			
3.00-3.45 3.00-3.45	SPT N=22 D4		2,3/4,6,6,6			At 2.20m: Occasional rootlet fissures. Below 2.60m: With occasional lenses of fine sand.			
			Slight seepage(1) at 3.40m.		(3.25)	Below 3.00m: Stiff.			
4.00-4.45 4.00-4.45	SPT N=16 D5		2,2/3,4,4,5			At 3.40m: Pocket of fine to medium sandstone gravel. Below 3.50m: Grey brown, no sand.			
5.00-5.45 5.00-5.45	SPT N=19 D6		1,3/3,5,5,6	36.92	5.45	Below 4.40m: Dark grey, silty with occasional lenses of fine sand.			
						Complete at 5.45m			

Remarks

Scale (approx)

1:50

Logged By

OG

Figure No.

21311A.WS806



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Number
WS807**

Excavation Method

Drive-in Window Sampler

Dimensions

Location

506020.3 E 183809.8 N

Ground Level (mOD)

46.67

Client

VSM Estates

**Job
Number
21311**

Dates

23/10/2014

Engineer

Atkins Limited

**Sheet
1/1**

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.40-0.50	C1 PID=0.0ppm			46.32	(0.35) 0.35	MADE GROUND: Grass over dark brown slightly sandy slightly gravelly very clayey topsoil with some roots and rootlets. Gravel is fine to coarse angular to subrounded of flint, chalk, brick, limestone, sandstone, concrete and glass.			
0.90-1.00	C2 PID=0.0ppm			45.92	(0.40) 0.75	MADE GROUND: Firm mottled brown, grey and dark brown slightly sandy slightly gravelly clay with occasional roots and rootlets. Gravel is fine to coarse angular to subrounded of chalk, flint, brick, clinker, concrete and wood. Potentially reworked natural ground.			
1.00-1.45	SPT N=6 D1		1,1/1,1,2,2	45.47	(0.45) 1.20	Firm mottled orange-brown, brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional silt and sand lenses and occasional roots and rootlets. Gravel is fine to coarse angular to rounded of flint and chalk.			
1.65-1.75	D2					Firm mottled brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional silt and sand lenses and occasional roots and rootlets. Gravel is fine to coarse angular to rounded of flint, chalk and siltstone. From 1.30 to 1.45m: Blue-grey.			
2.00-2.45	D3		Water strike(1) at 2.00m, rose to 0.60m in 20 mins. 1,1/4,5,7,7						
2.00-2.45	SPT N=23					By 2.20m: No roots or rootlets.			
3.00-3.45	SPT N=24 D4		3,3/5,6,6,7		(3.80)				
4.00-4.45	SPT N=25 D5	DRY	3,4/5,6,6,8			By 4.10m: Stiff. Brown.			
			23/10/2014:DRY	41.67	5.00				

Remarks

Slotted standpipe installed to 5.00m

Scale (approx)

1:25


Logged By

CH

Figure No.

21311.WS807

Logged in accordance BS5930:1999 A2

 IAN FARMER ASSOCIATES					Site St Andrews Park, Phase 5, 6 and Rifle Range			Number WS808	
Excavation Method Drive-in Window Sampler		Dimensions 102mm to 1.00m 87mm to 2.00m 77mm to 3.00m		Ground Level (mOD) 47.40		Client VSM Estates		Job Number 21311	
		Location 506079.9 E 183846.4 N		Dates 26/01/2015		Engineer Atkins Limited		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.60	E1 PID=0.0ppm		Water strike(1) at 0.20m.	46.80	0.60	MADE GROUND: Soft to firm, brown, slightly sandy, gravelly clay. Gravel is fine to coarse, very angular to angular, brick, timber, slate . Below 0.50m: Brick cobbles.		▽1	
1.00-1.45 1.00 1.00-1.45	SPT N=8 E2 PID=0.0ppm D1		0,1/2,2,2,2	46.60 46.20	0.20 0.80 (0.40) 1.20	MADE GROUND: Black, grey, silty, fine to coarse, sandy gravel. Gravel is fine to coarse, coal, brick and clinker. MADE GROUND: Firm, orange brown, silty clay. Frequent rootlets.			
2.00-2.45 2.00-2.45	SPT N=15 D2		3,1/2,4,4,5			Firm, orange brown, silty CLAY. (London Clay Formation) Below 1.50m: Slightly gravelly, fine to medium, subrounded chalk. Below 1.80m: Slightly sandy, no gravel. Below 2.00m: Mottled grey, with orange fine to medium sand pockets. Below 2.40m: Stiff.			
3.00-3.45 3.00-3.45	SPT N=18 D3		2,2/3,4,5,6		(4.25)	Below 2.90m: No sand pockets. Below 3.00m: Slightly sandy.			
4.00-4.45 4.00-4.45	SPT N=19 D4		1,2/3,4,6,6			Below 3.60m: No sand. Below 3.80m: Slightly sandy.			
4.90 5.00-5.45 5.00-5.45	D5 SPT N=20 D6		2,2/3,5,6,6	41.95	5.45	Below 4.40m: Orange/red brown with occasional fine to medium sand lenses. Below 4.60m: Pale yellow brown, very silty, no sand lenses.			
						Complete at 5.45m			
Remarks Pit collapse.							Scale (approx) 1:50	Logged By OG	
							Figure No. 21311A.WS808		



Site

St Andrews Park, Phase 5, 6 and Rifle Range

Number
WS809

Excavation Method

Drive-in Window Sampler

Dimensions

102mm to 1.00m
87mm to 2.00m
77mm to 3.00m

Ground Level (mOD)

44.23

Client

VSM Estates

Job
Number
21311

Location

506184.1 E 183798.8 N

Dates

26/01/2015

Engineer

Atkins Limited

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.70	E1 PID=0.0ppm				(0.70)	MADE GROUND: Grey brown, clayey, fine to coarse sand and gravel. Gravel is fine to coarse, very angular to angular, concrete, slate, brick and flint. Below 0.50m: Concrete cobbles.			
1.00-1.45	SPT N=10		1,2/2,3,3,2	43.53	0.70				
1.00	E2 PID=0.0ppm			43.43	0.80				
1.00-1.45	D1			43.13	1.10	MADE GROUND: Red and grey, very clayey, slightly gravelly, slightly sandy silt. Gravel is fine to coarse, angular to subangular, flint, clinker, chalk and brick.			
						MADE GROUND: Soft to firm, pale brown, slightly gravelly clay. Gravel is fine to coarse, very angular to subangular, brick, flint, chalk, and rootlets.			
2.00-2.45	SPT N=20		1,2/3,4,6,7			Firm, orange brown, slightly silty, slightly sandy, slightly gravelly CLAY. Gravel is fine to coarse, subangular to subrounded, chalk and flint. Below 1.60m: Gravel is fine to medium, flint. Occasional fine rootlets. Below 1.70m: Silty, no sand. Below 2.10m: Stiff, brown, no gravel. Below 2.40m: Pockets of fine to medium sand.			
2.00-2.45	D2					At 2.90m: Pocket of chalk gravel. Below 3.00m: Mottled grey.			
3.00-3.45	SPT N=25		3,4/5,6,6,8		(4.35)	Below 3.40m: No sand pockets. Below 3.60m: Slightly silty.			
3.00-3.45	D3					At 4.20m: Pocket of fine to medium sand.			
4.00-4.45	SPT N=25		2,2/6,5,7,7			Below 4.70m: Slightly silty.			
4.00-4.45	D4								
5.00-5.45	SPT N=23		2,2/4,6,6,7						
5.00-5.45	D5			38.78	5.45	Complete at 5.45m			
Remarks							Scale (approx)	Logged By	
							1:50	OG	
							Figure No. 21311A.WS809		



Site

St Andrews Park, Phase 5, 6 and Rifle Range

Number
WS810

Excavation Method

Drive-in Window Sampler

Dimensions

Pit to 0.40m

Ground Level (mOD)

45.96

Client

VSM Estates

Job
Number
21311

Location

506170.2 E 183927.6 N

Dates

23/10/2014

Engineer

Atkins Limited

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.50	C1 PID=0.0ppm			45.76	(0.20)	MADE GROUND: Dark brown fine to coarse sandy gravelly clay. Gravel is fine to coarse angular to subangular of concrete, limestone, brick and flint.			
				45.56	(0.20)	MADE GROUND: Brown yellow gravelly fine to coarse sand. Gravel is fine to coarse angular to subangular of brick, sandstone and concrete.			
				45.36	(0.20)	MADE GROUND: Black very silty gravelly fine to coarse sand. Gravel is fine to coarse angular to subrounded flint, charcoal, brick and ash.			
0.90	C2 PID=0.0ppm				(0.40)	MADE GROUND: Soft to firm brown very clayey slightly sandy gravelly clay. Gravel is fine to coarse angular to subrounded of flint, metal, chalk and brick.			
1.00-1.45	SPT N=9		1,1/1,2,2,4	44.96	1.00	Firm, dark orange brown silty slightly gravelly CLAY. Gravel is fine to coarse subangular to subrounded of flint.			
1.00-1.45	D1				(0.50)	Below 1.20m: slightly gravelly			
				44.46	1.50	Orange brown very clayey fine to coarse SAND and GRAVEL.			
					(1.00)	Below 2.00m: Dense			
2.00-2.45	SPT N=59		8,11/14,14,14,17						
2.00-2.45	D2			43.46	2.50	Complete at 2.50m			

Remarks

Scale (approx)

1:25

Logged By

OG

Figure No.

21311.WS810



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Number
WS811**

Excavation Method

Drive-in Window Sampler

Dimensions

Location

506190.8 E 183861.2 N

Ground Level (mOD)

44.10

Client

VSM Estates

**Job
Number
21311**

Dates

23/10/2014

Engineer

Atkins Limited

**Sheet
1/1**

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.30	C1 PID=0.0ppm				(0.70)	MADE GROUND: Brown and red silty fine to coarse sandy gravel. Gravel is fine to coarse angular to subangular of sandstone, brick charcoal and limestone. Frequent cobbles. Below 0.30m: dark grey			
1.00 1.00-1.45 1.00-1.45	C2 PID=0.0ppm SPT N=9 D1		Water strike(1) at 1.00m. 1,1/2,2,3,2	43.40	0.70	MADE GROUND: Soft to firm, dark orange brown slightly sandy slightly gravelly clay. Gravel is fine to coarse angular to subrounded of chalk, flint, wood and charcoal.		Σ1	
2.00-2.45 2.00-2.45	SPT N=26 D2		3,3/4,6,8,8	42.00	2.10	Below 1.50m: Firm, dark grey			
2.90 3.00-3.45 3.00-3.45	D3 SPT N=52 D4		3,4/8,12,16,16	40.65	3.45	Stiff, orange brown mottled grey silty CLAY.			
						At base of borehole: Very stiff with a little fine sand.			
						Complete at 3.45m			

Remarks

Scale (approx)

1:25

Logged By

OG

Figure No.

21311.WS811



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Number
WS812**

Excavation Method

Drive-in Window Sampler

Dimensions

Pit to 0.70m

Ground Level (mOD)

42.26

Client

VSM Estates

**Job
Number
21311**

Location

506235.2 E 183886 N

Dates

23/10/2014

Engineer

Atkins Limited

**Sheet
1/1**

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20	C1 PID=0.0ppm				(0.60)	MADE GROUND: Dark brown very clayey sand and gravel. Gravel is fine to coarse angular to subrounded of brick, charcoal, limestone and concrete.			
0.80	C2 PID=0.0ppm			41.66	0.60 (0.40)	MADE GROUND: Dark grey and blue silty clayey sandy fine to coarse gravel. Gravel is fine to coarse angular to subangular of brick, tar, charcoal, limestone, flint and brick. with cobbles.			
1.00-1.45 1.00-1.45	SPT N=16 D1		3/6,4,3,3	41.26	1.00 (0.70)	MADE GROUND: Soft orange brown silty slightly sandy slightly gravelly clay. Gravel is fine to coarse angular to subangular of brick, charcoal and flint. At 1.40m: Pocket of fine to coarse sand with ash.			
2.00-2.45 2.00-2.45	SPT N=11 D2		2,3/2,2,3,4	40.56	1.70	Firm dark orange brown with mottled grey slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular to rounded of flint, and chalk. Below 2.00m: silty no sand Below 2.20m: no gravel			
2.70	D3								
3.00-3.45 3.00-3.45	SPT N=17 D4		2,3/3,4,5,5		(3.30)	Below 3.00m: Stiff Below 3.20m: With a little fine sand Below 3.60m: yellow orange dark brown with pockets of fine sand slightly gravelly fine to medium angular to subrounded sandstone Below 3.90m: large lenses of fine to coarse sand Below 4.50m: mottled blue pockets of fine sand			
4.00-4.45 4.00-4.45	SPT N=19 D5		2,3/4,4,5,6						
4.80	D6			37.26	5.00				

Remarks

**Scale
(approx)**


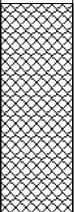
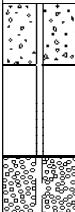
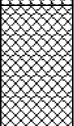

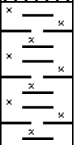
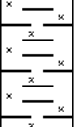

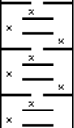
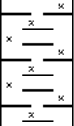
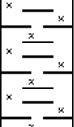



1:25

**Logged
By**

OG

Figure No.

21311.WS812

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Number WS814	
Excavation Method Drive-in Window Sampler		Dimensions		Ground Level (mOD) 48.10		Client VSM Estates		Job Number 21311	
		Location 506132 E 183975.9 N		Dates 24/10/2014		Engineer Atkins Limited		Sheet 1/2	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20	C1				(0.70)	MADE GROUND: Soft, dark brown fine to coarse sandy gravelly clay. Gravel is fine to coarse angular to subangular of flint, brick, quartzite and charcoal. Frequent flint cobbles.			
0.80	C2			47.40	0.70 (0.40)	MADE GROUND: Dark brown silty fine to coarse sand and gravel. Gravel is fine to coarse angular to of brick, tar, concrete and flint.			
1.00-1.45 1.00-1.45	SPT N=5 D1		1,1/1,1,1,2	47.00	1.10	Soft, light brown with grey mottling silty CLAY.			
2.00-2.45 2.00-2.45	SPT N=14 D2		1,2/2,3,4,5			Below 1.60m: Firm, slightly gravelly fine to coarse angular to subrounded of chalk			
						Below 2.10m: no gravel			
						Below 2.50m: occasional rootlets			
						Below 2.70m: orange mottling			
3.00-3.45 3.00-3.50	SPT N=16 D3		1,2/3,4,4,5		(4.35)	Below 3.00m: Firm to stiff.			
3.60	D4					At 3.60m: pocket of orange fine to coarse sand			
4.00-4.45 4.00-4.45	SPT N=16 D5		1,2/3,4,4,5			Below 4.20m: very silty			
5.00-5.45	SPT N=38		4,7/7,10,10,11						
Remarks							Scale (approx) 1:25	Logged By OG	
							Figure No. 21311.WS814		



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Number
WS814**

Excavation Method

Drive-in Window Sampler

Dimensions

Ground Level (mOD)

48.10

Client

VSM Estates

**Job
Number
21311**

Location

506132 E 183975.9 N

Dates

24/10/2014

Engineer

Atkins Limited

**Sheet
2/2**

**Depth
(m)**

Sample / Tests

**Water
Depth
(m)**

Field Records

**Level
(mOD)**

**Depth
(m)
(Thickness)**

Description

Legend

Water

Instr

5.00-5.45

D6

At base of borehole: Very stiff.

x
x
x
x
x
x
x
x

42.65

5.45

Complete at 5.45m

Remarks

**Scale
(approx)**

1:25

**Logged
By**

OG

Figure No.

21311.WS814



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number**

WS801

Installation Type
Standpipe

Dimensions

Internal Diameter of Tube [A] = 35 mm
Diameter of Filter Zone = 102 mm

Client

VSM Estates

**Job
Number**

21311

Location

506082.7 E 183777 N

Ground Level (mOD)












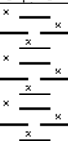
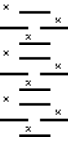
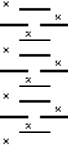
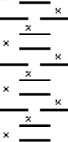
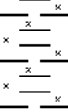
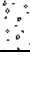















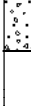















46.68


Engineer

Atkins Limited

Sheet

1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling										
               	               	               	46.48	0.20	Concrete	Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)	
			5 min	10 min	15 min	20 min	26/01/15		2.80		Seepage					
		45.68	1.00	Bentonite Seal	Groundwater Observations During Drilling											
		Date	Start of Shift					End of Shift								
			Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)				
		44.18	2.50	Slotted Standpipe	Instrument Groundwater Observations											
		Inst. [A] Type : Slotted Standpipe														
		Date	Instrument [A]			Remarks										
			Time	Depth (m)	Level (mOD)											



IAN FARMER

ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Borehole Number

WS802

Installation Type

Standpipe

Dimensions

Internal Diameter of Tube [A] = 35 mm

Diameter of Filter Zone = 102 mm

Client

VSM Estates

Job Number

21311

Location

506104.8 E 183709.8 N

Ground Level (mOD)

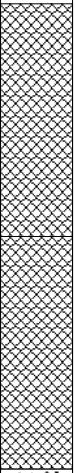
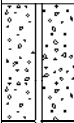
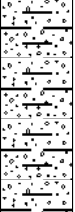
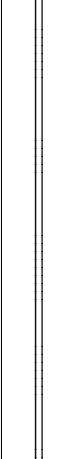


45.62

Engineer

Atkins Limited

Sheet

1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling									
						Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)
											5 min	10 min	15 min	20 min	
			45.42	0.20	Concrete										
			44.62	1.00	Bentonite Seal	Groundwater Observations During Drilling									
			43.62	2.00	Slotted Standpipe	Instrument Groundwater Observations									
Inst. [A] Type : Slotted Standpipe															
						Instrument [A]		Remarks							
						Date	Time	Depth (m)	Level (mOD)						

Remarks

Gas valve fitted.

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St Andrews Park, Phase 5, 6 and Rifle Range

Borehole
Number
WS804

Installation Type
Standpipe

Internal Diameter of Tube [A] = 35 mm
Diameter of Filter Zone = 102 mm

VSM Estates

Job Number	21311
------------	-------

506162.7 E 183702.2 N

44 09

Atkins Limited

Sheet
1/1

Remarks
Gas valve fitted.



St Andrews Park, Phase 5, 6 and Rifle Range

Borehole
Number
WS805

Installation Type	Standpipe
-------------------	-----------

Internal Diameter of Tube [A] = 35 mm
Diameter of Filter Zone = 87 mm

VSM Estates

Job Number 21311


506227.1 E 183748.4 N

41 25

Atkins Limited

Sheet
1/1

Remarks
Gas valve fitted.



IAN FARMER

ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Borehole Number

WS806

Installation Type

Standpipe

Dimensions

Internal Diameter of Tube [A] = 35 mm

Diameter of Filter Zone = 77 mm

Client

VSM Estates

Job Number

21311

Location

506209.1 E 183722 N

Ground Level (mOD)

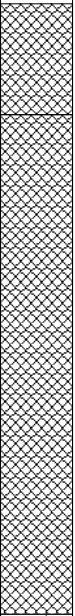

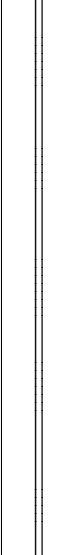
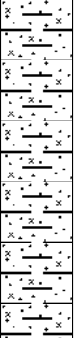


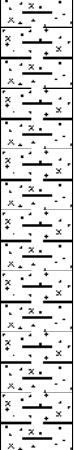


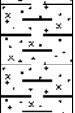


42.37

Engineer

Atkins Limited

Sheet


1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling										
			42.17	0.20	Concrete	Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)	
											5 min	10 min	15 min	20 min		
						26/01/15		3.40		Slight seepage						
			39.87	2.50	Bentonite Seal	Groundwater Observations During Drilling										
						Date	Start of Shift					End of Shift				
							Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)
			37.37	5.00	Slotted Standpipe	Instrument Groundwater Observations										
						Inst. [A] Type : Slotted Standpipe										
						Date	Instrument [A]			Remarks						
Time	Depth (m)	Level (mOD)														
			36.92	5.45	Bentonite Seal											

Remarks

Gas valve fitted.

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IAN FARMER

ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Borehole Number

WS807

Installation Type

Standpipe

Dimensions

Internal Diameter of Tube [A] = 35 mm

Diameter of Filter Zone = 87 mm

Client

VSM Estates

Job Number

21311

Location

506020.3 E 183809.8 N

Ground Level (mOD)

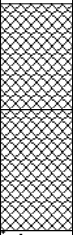

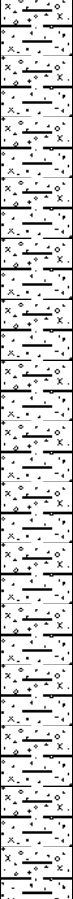


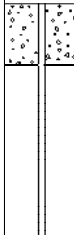


46.67

Engineer

Atkins Limited

Sheet

1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling										
  	 	  	46.47	0.20	Concrete	Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)	
								5 min	10 min	15 min	20 min					
					Bentonite Seal	24/10/14		2.00						0.60		
			45.67	1.00	Slotted Standpipe	Groundwater Observations During Drilling										
						Date	Start of Shift					End of Shift				
							Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)
						23/10/14				DRY			5.00		DRY	
						Instrument Groundwater Observations										
						Inst. [A] Type : Slotted Standpipe										
						Date	Instrument [A]			Remarks						
							Time	Depth (m)	Level (mOD)							
			41.67	5.00												

Remarks

Gas valve fitted.

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St Andrews Park, Phase 5, 6 and Rifle Range

Borehole
Number
WS808

Installation Type
Standpipe

Internal Diameter of Tube [A] = 35 mm
Diameter of Filter Zone = 102 mm

VSM Estates

Job Number
21311

506079.9 E 183846.4 N

47 40

Atkins Limited

Sheet
1/1

Remarks
Gas valve fitted.



St Andrews Park, Phase 5, 6 and Rifle Range

Borehole
Number
WS809

Installation Type	Standpipe
-------------------	-----------

Internal Diameter of Tube [A] = 35 mm
Diameter of Filter Zone = 77 mm

VSM Estates

Job Number
21311

506184.1 E 183798.8 N

44 23

Atkins Limited

Sheet
1/1

Remarks
Gas valve fitted.



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number**

WS810

Installation Type
Standpipe

Dimensions

Internal Diameter of Tube [A] = 35 mm
Diameter of Filter Zone = 102 mm

Client

VSM Estates

**Job
Number**
21311

Location

506170.2 E 183927.6 N

Ground Level (mOD)

45.96

Engineer

Atkins Limited

Sheet
1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling										
						Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)	
											5 min	10 min	15 min	20 min		
			45.76	0.20	Concrete											
						45.46	0.50	Bentonite Seal								
						44.76	1.20	Slotted Standpipe	Groundwater Observations During Drilling							
			Date	Start of Shift					End of Shift							
Time	Depth Hole (m)	Casing Depth (m)		Water Depth (m)	Water Level (mOD)				Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)			
			43.46	2.50	Bentonite Seal				Instrument Groundwater Observations							
						Inst. [A] Type : Slotted Standpipe										
						Date	Instrument [A]			Remarks						
							Time	Depth (m)	Level (mOD)							

Remarks

Gas valve fitted.



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number**

WS811

Installation Type
Standpipe

Dimensions

Internal Diameter of Tube [A] = 35 mm
Diameter of Filter Zone = 102 mm

Client

VSM Estates

**Job
Number**

21311

Location

506190.8 E 183861.2 N

Ground Level (mOD)




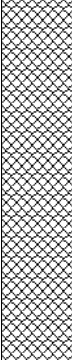





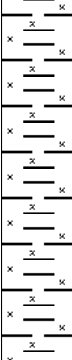


44.10

Engineer

Atkins Limited

Sheet

1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling															
			43.90	0.20	Concrete	Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)						
						23/10/14		1.00			5 min	10 min	15 min	20 min							
						Groundwater Observations During Drilling															
						Date	Start of Shift					End of Shift									
							Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)					
						Instrument Groundwater Observations															
						Inst. [A] Type : Slotted Standpipe															
						Date	Instrument [A]			Remarks											
Time	Depth (m)	Level (mOD)																			
			43.10	1.00	Slotted Standpipe																
						Instrument Groundwater Observations															
						Inst. [A] Type : Slotted Standpipe															
						Date	Instrument [A]			Remarks											
							Time	Depth (m)	Level (mOD)												
									42.10	2.00	Bentonite Seal										
												Instrument Groundwater Observations									
												Inst. [A] Type : Slotted Standpipe									
												Date	Instrument [A]			Remarks					
Time	Depth (m)	Level (mOD)																			
			40.65	3.45	Bentonite Seal																
												Instrument Groundwater Observations									
												Inst. [A] Type : Slotted Standpipe									
												Date	Instrument [A]			Remarks					
						Time	Depth (m)	Level (mOD)													

Remarks

Gas valve fitted.



Site

St Andrews Park, Phase 5, 6 and Rifle Range

Borehole
Number

WS812

Installation Type
Standpipe

Dimensions

Internal Diameter of Tube [A] = 35 mm
Diameter of Filter Zone = 102 mm

Client

VSM Estates

Job
Number

21311

Location

506235.2 E 183886 N

Ground Level (mOD)

42.26


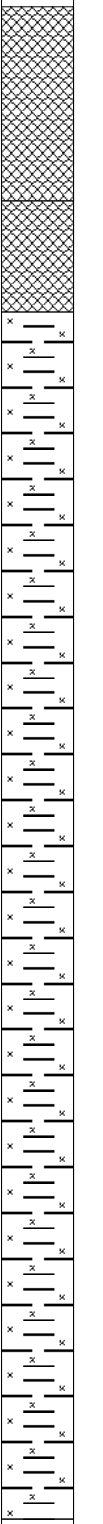
Engineer

Atkins Limited

Sheet

1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling									
						Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)
											5 min	10 min	15 min	20 min	
			42.06	0.20	Concrete										
					Bentonite Seal										
			41.56	0.70											
					Slotted Standpipe	Groundwater Observations During Drilling									
			Date	Start of Shift					End of Shift						
Time	Depth Hole (m)	Casing Depth (m)		Water Depth (m)	Water Level (mOD)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)					
			40.56	1.70											
						Instrument Groundwater Observations									
			Inst. [A] Type : Slotted Standpipe												
						Date	Instrument [A]			Remarks					
			Time	Depth (m)	Level (mOD)										
					Bentonite Seal										
													</		

 IAN FARMER ASSOCIATES					Site St Andrews Park, Phase 5, 6 and Rifle Range					Borehole Number WS814						
Installation Type Standpipe		Dimensions Internal Diameter of Tube [A] = 35 mm Diameter of Filter Zone = 300 mm			Client VSM Estates					Job Number 21311						
												Location 506132 E 183975.9 N		Ground Level (mOD) 48.10		Engineer Atkins Limited			Sheet 1/1
Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling										
			47.90	0.20	Concrete	Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)	
			47.60	0.50	Bentonite Seal											
			47.00	1.10	Slotted Standpipe	Groundwater Observations During Drilling										
						Date	Start of Shift					End of Shift				
						Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	
						Instrument Groundwater Observations										
						Inst. [A] Type : Slotted Standpipe										
						Date	Instrument [A]			Remarks						
						Time	Depth (m)	Level (mOD)								
			43.10	5.00	Bentonite Seal											

Remarks
 Gas valve fitted.



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Number
WS903**

Excavation Method

Drive-in Window Sampler

Dimensions

Ground Level (mOD)

33.16

Client

VSM Estates

**Job
Number
21311**

Location

506430 E 183595.4 N

Dates

24/10/2014

Engineer

Atkins Limited

**Sheet
1/1**

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.30	C1			32.96	(0.20) 0.20	MADE GROUND: Grass over dark grey very clayey slightly gravelly silt. Gravel is fine to coarse angular to angular of flint and quartzite.			
					(0.40)	MADE GROUND: Light brown silty fine to coarse sand and gravel. Gravel is fine to coarse angular to subrounded of concrete, flint and quartzite.			
0.90	C2 PID=0.2ppm			32.56	0.60 (0.40)	Firm dark grey very silty slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded of quartzite and flint.			
				32.16	1.00	Firm mottled orange and orange / grey very silty CLAY.			
					(1.60)	Below 1.50m: occasional rootlets			
2.70	D1			30.56	2.60	Firm dark grey with orange mottled very silty CLAY with occasional rootlet.			
					(1.40)				
				29.16	4.00	Complete at 4.00m			

Remarks

**Scale
(approx)**

1:25

**Logged
By**

OG

Figure No.

21311.WS903



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Number
WS904**

Excavation Method

Drive-in Window Sampler

Dimensions

Location

506348.8 E 183690.5 N

Ground Level (mOD)

33.80

Client

VSM Estates

**Job
Number
21311**

Dates

23/10/2014

Engineer

Atkins Limited

**Sheet
1/1**

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.30	C1 PID=0.2ppm			33.60	(0.20) 0.20	MADE GROUND: Soft dark brown fine to coarse sandy gravelly clay. Gravel is fine to coarse angular to subangular of brick and flint.			
0.60	C2 PID=0.1ppm				(1.00)	MADE GROUND: Light brown slightly clayey fine to coarse sand and gravel. Gravel is fine to coarse angular to subangular of concrete, brick, flint, and slate.			
1.40	C3 PID=0.0ppm			32.60	1.20	At 1.20m: MEMBRANE			
					(1.50)	Firm orange mottled grey silty slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded of chalk and flint, with occasional rootlets.			
				31.10	2.70 (0.30)	Blue grey silty fine to coarse SAND.			
				30.80	3.00	Complete at 3.00m			

Water strike(1) at 3.00m,
rose to 1.90m in 20 mins.

Remarks

**Scale
(approx)**

1:25

**Logged
By**

OG

Figure No.

21311.WS904



St Andrews Park, Phase 5, 6 and Rifle Range

Borehole
Number
WS903

Installation Type	Standpipe
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Internal Diameter of Tube [A] = 35 mm
Diameter of Filter Zone = 87 mm

VSM Estates

Job Number	21311
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506430 E 183595.4 N

33 16

Atkins Limited

Sheet
1/1

Remarks
Gas valve fitted.



St Andrews Park, Phase 5, 6 and Rifle Range

**Borehole
Number**
WS904

Installation Type
Standpipe

Internal Diameter of Tube [A] = 35 mm
Diameter of Filter Zone = 102 mm

VSM Estates

Job Number 21311

506348.8 E 183690.5 N

33 80

Atkins Limited

Sheet
1/1

Remarks
Gas valve fitted.

**Standard Penetration Test Results****Site** : St Andrews Park, Phase 5, 6 and Rifle Range**Client** : VSM Estates**Engineer** : Atkins Limited**Job Number**
21311**Sheet**
1 / 2

Borehole Number	Base of Borehole (m)	End of Seating Drive (m)	End of Test Drive (m)	Test Type	Seating Blows per 75mm		Blows for each 75mm penetration				Result	Comments
					1	2	1	2	3	4		
WS801	1.10	1.25	1.55	CPT	1	1	2	3	3	3	N=11	
WS801	2.00	2.15	2.45	SPT	1	3	3	5	6	7	N=21	
WS801	3.00	3.15	3.45	SPT	2	4	4	6	7	7	N=24	
WS801	4.00	4.15	4.45	SPT	2	2	4	6	6	8	N=24	
WS801	5.00	5.15	5.45	SPT	2	3	4	5	7	8	N=24	
WS802	1.20	1.35	1.65	SPT	2	3	3	4	5	6	N=18	
WS802	2.00	2.15	2.45	SPT	5	9	11	14	14	17	N=56	
WS804	1.00	1.15	1.45	SPT	1	2	3	3	4	5	N=15	
WS804	2.00	2.15	2.45	SPT	3	4	5	6	7	7	N=25	
WS804	3.00	3.15	3.45	SPT	3	4	6	10	18	18	N=52	
WS805	1.00	1.15	1.45	SPT	1	1	1	1	1	2	N=5	
WS805	2.00	2.15	2.45	SPT	2	3	4	5	5	5	N=19	
WS805	3.00	3.15	3.45	SPT	4	4	4	4	5	6	N=19	
WS805	4.00	4.15	4.45	SPT	10	9	11	14	16	16	N=57	
WS806	1.00	1.15	1.45	SPT	1	1	2	1	2	2	N=7	
WS806	2.00	2.15	2.45	SPT	1	1	2	3	4	5	N=14	
WS806	3.00	3.15	3.45	SPT	2	3	4	6	6	6	N=22	
WS806	4.00	4.15	4.45	SPT	2	2	3	4	4	5	N=16	
WS806	5.00	5.15	5.45	SPT	1	3	3	5	5	6	N=19	
WS807	1.00	1.15	1.45	SPT	1	1	1	1	2	2	N=6	
WS807	2.00	2.15	2.45	SPT	1	1	4	5	7	7	N=23	
WS807	3.00	3.15	3.45	SPT	3	3	5	6	6	7	N=24	
WS807	4.00	4.15	4.45	SPT	3	4	5	6	6	8	N=25	
WS808	1.00	1.15	1.45	SPT	0	1	2	2	2	2	N=8	
WS808	2.00	2.15	2.45	SPT	3	1	2	4	4	5	N=15	
WS808	3.00	3.15	3.45	SPT	2	2	3	4	5	6	N=18	
WS808	4.00	4.15	4.45	SPT	1	2	3	4	6	6	N=19	
WS808	5.00	5.15	5.45	SPT	2	2	3	5	6	6	N=20	
WS809	1.00	1.15	1.45	SPT	1	2	2	3	3	2	N=10	
WS809	2.00	2.15	2.45	SPT	1	2	3	4	6	7	N=20	
WS809	3.00	3.15	3.45	SPT	3	4	5	6	6	8	N=25	
WS809	4.00	4.15	4.45	SPT	2	2	6	5	7	7	N=25	
WS809	5.00	5.15	5.45	SPT	2	2	4	6	6	7	N=23	
WS810	1.00	1.15	1.45	SPT	1	1	1	2	2	4	N=9	
WS810	2.00	2.15	2.45	SPT	8	11	14	14	14	17	N=59	
WS811	1.00	1.15	1.45	SPT	1	1	2	2	3	2	N=9	
WS811	2.00	2.15	2.45	SPT	3	3	4	6	8	8	N=26	
WS811	3.00	3.15	3.45	SPT	3	4	8	12	16	16	N=52	
WS812	1.00	1.15	1.45	SPT	3		6	4	3	3	N=16	



Site : St Andrews Park, Phase 5, 6 and Rifle Range

Client : VSM Estates

Engineer : Atkins Limited

Job Number
21311

Sheet
2 / 2

Borehole Number	Base of Borehole (m)	End of Seating Drive (m)	End of Test Drive (m)	Test Type	Seating Blows per 75mm		Blows for each 75mm penetration				Result	Comments
					1	2	1	2	3	4		
WS812	2.00	2.15	2.45	SPT	2	3	2	2	3	4	N=11	
WS812	3.00	3.15	3.45	SPT	2	3	3	4	5	5	N=17	
WS812	4.00	4.15	4.45	SPT	2	3	4	4	5	6	N=19	
WS814	1.00	1.15	1.45	SPT	1	1	1	1	1	2	N=5	
WS814	2.00	2.15	2.45	SPT	1	2	2	3	4	5	N=14	
WS814	3.00	3.15	3.45	SPT	1	2	3	4	4	5	N=16	
WS814	4.00	4.15	4.45	SPT	1	2	3	4	4	5	N=16	
WS814	5.00	5.15	5.45	SPT	4	7	7	10	10	11	N=38	



St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
HP801

Trial Pit

Dimensions	0.50 x 0.50m
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Ground Level (mOD)	50.38
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VSM Estates

Job Number
21311

Location	506046.8 E 184020.5 N
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Dates	27/01/2015
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Atkins Limited

Sheet
1/1

Depth
(m)

Sample / Tests

Water
Depth
(m)

Field Records

Level
(mOD)Depth
(m)
(Thickness)

Description

Legend

Water

0.50

E1 PID=3.1ppm

49.88

49.78

(0.50)

0.50

(0.10)
0.60

MADE GROUND: Soft, brown, fine to coarse sandy, slightly gravelly clay. Gravel is fine to coarse, very angular to subrounded, flint, clinker, brick, concrete, timber.

Below 0.40m: Frequent concrete and brick cobbles.

MADE GROUND: Soft to firm, orange brown, and grey, slightly fine to medium sandy, slightly gravelly clay. Gravel is fine to coarse, angular to subrounded. brick, flint, quartzite, clinker.

Complete at 0.60m

Plan

Remarks

Scale (approx)

1:20

Logged By

OG

Figure No.

21311A-HP801



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number
HP802

Excavation Method

Trial Pit

Dimensions

0.50 x 0.50m

Ground Level (mOD)

50.25

Client

VSM Estates

Job
Number
21311

Location

506064.4 E 184012.9 N

Dates

27/01/2015

Engineer

Atkins Limited

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.40	E1 PID=0.2ppm					MADE GROUND: Soft, brown, silty, slightly fine to medium sandy, gravelly clay. Gravel is fine to coarse, very angular to subrounded, flint, quartzite, slate, brick, concrete. Below 0.50m: Very silty with concrete cobbles.		
				49.65	0.60 (0.20)	MADE GROUND: Soft to firm, pale orange brown, silty, slightly gravelly clay. Gravel is fine to medium, angular to subrounded, flint, sandstone and brick.		
				49.45	0.80	Complete at 0.80m		

Plan

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Remarks

Scale (approx)

1:20

Logged By

OG

Figure No.

21311A.HP802



Excavation Method Trial Pit	Dimensions 0.50 x 0.50m	Ground Level (mOD) 49.03	Client VSM Estates	Job Number 21311
	Location 506108.8 E 184004.1 N	Dates 27/01/2015	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20	E1 PID=0.0ppm					MADE GROUND: Dark grey, slightly clayey, fine to coarse sand and gravel. Gravel is fine to coarse, very angular to subrounded, sandstone, brick, slate, concrete. Below 0.30m: Grey, very silty, fine to coarse sand. Below 0.60m: Slightly clayey.		
				48.33	0.70 (0.10)	MADE GROUND: Soft to firm, brown, silty, slightly gravelly clay. Gravel is fine to medium, brick and flint.		
				48.23	0.80	Complete at 0.80m		

Plan	Remarks						
	Scale (approx) 1:20			Logged By OG		Figure No. 21311A.HP804	



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number
HP806**

Excavation Method

Trial Pit

Dimensions

0.50 x 0.50m

Ground Level (mOD)

48.51

Client

VSM Estates

**Job
Number
21311**

Location

506112.1 E 183960.3 N

Dates

27/01/2015

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	E1 PID=0.1ppm			48.21	(0.30)	MADE GROUND: Soft, brown, slightly sandy, slightly gravelly clay. Gravel is fine to coarse, very angular to subangular, brick, timber, sandstone, flint.		
					0.30	MADE GROUND: Soft to firm, orange brown, silty, slightly gravelly clay. Gravel is fine to coarse, angular to subangular, flint, brick, clinker, timber.		
					(0.50)	Below 0.60m: Blue grey, slightly sandy, no brick, clinker or timber.		
					0.80	Complete at 0.80m		

Plan

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Remarks

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Scale (approx)

1:20

Logged By

OG

Figure No.

21311A.HP806



St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
HP807

Trial Pit

Dimensions
0.50 x 0.50m

Ground Level (mOD)	48.21
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VSM Estates

Job Number
21311

Location	506132.8 E 183983 N
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Dates	27/01/2015
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Atkins Limited

Sheet
1/1

Depth
(m)

Sample / Tests

Water
Depth
(m)

Field Records

Level
(mOD)Depth
(m)
(Thickness)

Description

Legend

Water

0.30

E1 PID=0.0ppm

47.71

47 41

(0.50)

0.50

(0.30)

0.80

MADE GROUND: Soft to firm, brown, slightly sandy, slightly gravelly clay. Gravel is fine to coarse, very angular to subangular, flint, brick, concrete.

MADE GROUND: Soft to firm, orange brown, slightly sandy, slightly gravelly clay. Gravel is fine to medium, subrounded, chalk with black mottling, organic.

Complete at 0.80m

Plan

Remarks

Scale (approx)

1:20

Logged By

OG

Figure No.

21311A-HP807



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number
HP808**

Excavation Method

Trial Pit

Dimensions

0.50 x 0.50m

Ground Level (mOD)

47.88

Client

VSM Estates

**Job
Number
21311**

Location

506135.3 E 183961.9 N

Dates

27/01/2015

Engineer

Atkins Limited

**Sheet
1/1**

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	E1 PID=0.0ppm					MADE GROUND: Soft, brown, slightly sandy, slightly gravelly clay. Gravel is fine to coarse, angular to subangular, flint, sandstone, concrete, brick.		
				47.38	0.50 (0.20)	MADE GROUND: Soft to firm, blue grey, silty, slightly gravelly clay. Gravel is fine to coarse, subangular to subrounded, flint, chalk.		
				47.18	0.70	At 0.70m: Concrete.		
						Complete at 0.70m		

Plan

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Remarks

Scale (approx)





1:20

Logged By

OG

Figure No.

21311A.HP808

						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number HP810	
Excavation Method Trial Pit		Dimensions 0.50 x 0.50m		Ground Level (mOD) 47.71		Client VSM Estates		Job Number 21311	
		Location 506156.1 E 184002.2 N		Dates 27/01/2015		Engineer Atkins Limited		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.20 0.20	E1 PID=0.0ppm E1 PID=0.0ppm			47.51 47.51	(0.20) 0.20 0.20	MADE GROUND: Soft to firm, brown, slightly sandy, slightly gravelly clay. Gravel is fine to coarse, very angular to subangular, brick, flint, chalk and sandstone.			
				47.51 47.51	(0.30)	MADE GROUND: Soft to firm, brown, slightly sandy, slightly gravelly clay. Gravel is fine to coarse, very angular to subangular, brick, flint, chalk and sandstone.			
				47.21 47.21	0.50 0.50 (0.20)	MADE GROUND: Dark grey, clayey, silty, slightly gravelly, fine to coarse sand. Gravel is fine to coarse, angular to subangular, brick, quartzite, slate. Below 0.40m: Pale grey, slightly clayey. Below 0.40m: Pale grey, slightly clayey.			
				47.01 47.01	0.70 0.70	MADE GROUND: Dark grey, clayey, silty, slightly gravelly, fine to coarse sand. Gravel is fine to coarse, angular to subangular, brick, quartzite, slate.			
						MADE GROUND: Soft to firm, dark grey, very silty, slightly sandy, slightly gravelly clay. Gravel is fine to medium, subrounded, chalk and flint.			
						MADE GROUND: Soft to firm, dark grey, very silty, slightly sandy, slightly gravelly clay. Gravel is fine to medium, subrounded, chalk and flint.			
						Complete at 0.70m			
Plan						Remarks			
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						Scale (approx) 1:20	Logged By OG	Figure No. 21311A.HP810	



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number

HP811

Excavation Method

Trial Pit

Dimensions

0.50 x 0.50m

Ground Level (mOD)

47.33

Client

VSM Estates

Job
Number

21311

Location

506155.8 E 183977.1 N

Dates

27/01/2015

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20	E1 PID=0.0ppm				(0.50)	MADE GROUND: Soft to firm, brown, slightly sandy, gravelly clay. Gravel is very angular to subrounded, brick, concrete, flint. Below 0.20m: Dark grey.		
				46.83	0.50 (0.15)	MADE GROUND: Soft to firm, orange brown, slightly sandy, slightly gravelly clay. Gravel is fine to coarse, very angular to subrounded, flint, clinker.		
				46.68	0.65	At 0.55m: Fabric material. Below 0.60m: Bits of fabric in clay.		
						Complete at 0.65m		

Plan

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Remarks

Scale (approx)

1:20

Logged By

OG

Figure No.

21311A.HP811



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number
HP812

Excavation Method

Trial Pit

Dimensions

0.50 x 0.50m

Ground Level (mOD)

46.58

Client

VSM Estates

Job
Number
21311

Location

506161.4 E 183950.3 N


Dates

27/01/2015

Engineer

Atkins Limited

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.30	E1 PID=0.0ppm			46.23	(0.35) 0.35	MADE GROUND: Soft, brown, silty, slightly sandy, slightly gravelly clay. Gravel is fine to coarse, very angular to angular, mixed flint, sandstone, sandstone, brick, concrete, slate. Below 0.20m: Blue grey, no sand. At 0.35m: Concrete crush (6F2) Complete at 0.35m		

Plan

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Remarks

Scale (approx)

1:20

Logged By

OG

Figure No.

21311A.HP812



St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit Number
HP813

Trial Pit

Dimensions
0.50 x 0.50m

Ground Level (mOD)	46.23
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VSM Estates

Job Number
21311

Location	506175.3 E 183965.8 N
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Dates	27/01/2015
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Atkins Limited

Sheet
1/1

Depth
(m)

Sample / Tests

Water
Depth
(m)

Field Records

Level
(mOD)Depth
(m)
(Thickness)

Description

Legend

Water

0.40

E1 PID=0.0ppm

45.93

(0.30)

0.30

(0 30)

45.63

0.60

MADE GROUND: Soft, brown and grey, silty, slightly sandy, slightly gravelly clay. Gravel is fine to coarse, angular, clinker, brick, flint and quartzite.

MADE GROUND: Dark grey, silty, sandy gravel. Gravel is fine to coarse, very angular to subangular, tarmac, concrete, brick, sandstone.

Complete at 0.60m

Plan

Remarks

Scale (approx)

1:20

Logged By













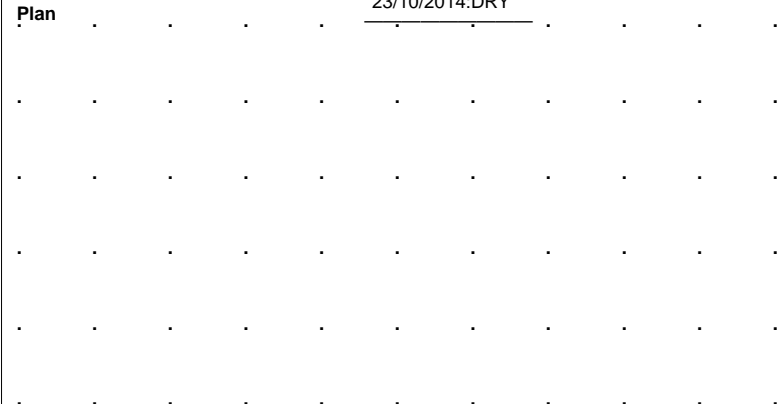
OG

Figure No.

21311A-HP813

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20	E1 PID=0.0ppm				(0.60)	MADE GROUND: Brown, silty, very clayey, slightly gravelly, fine to coarse sand. Gravel is fine to coarse, angular to subangular tile and clinker. Frequent rootlets.		
				45.78	0.60 (0.20)	MADE GROUND: Soft to firm, brown, slightly sandy, slightly gravelly clay. Gravel is fine to coarse, angular to subrounded flint, brick and clinker.		
				45.58	0.80	Firm, silty, slightly sandy, slightly gravelly CLAY. Gravel is fine to coarse, angular to subrounded chalk and flint.		
						Below 1.40m: No sand. Below 1.50m: Gravel is fine to medium.		
1.80	D1				(3.20)	Below 2.40m: Blue mottling, slightly silty with occasional sandstone gravel pocket. No roots.		
						Below 2.70m: Silty pockets of fine to medium sand.		
2.70	B1					Below 3.60m: Oxidised sand. Below 3.70m: Slightly gravelly. Gravel is fine to medium, subangular chalk.		
3.90	D2			42.38	4.00	Complete at 4.00m		

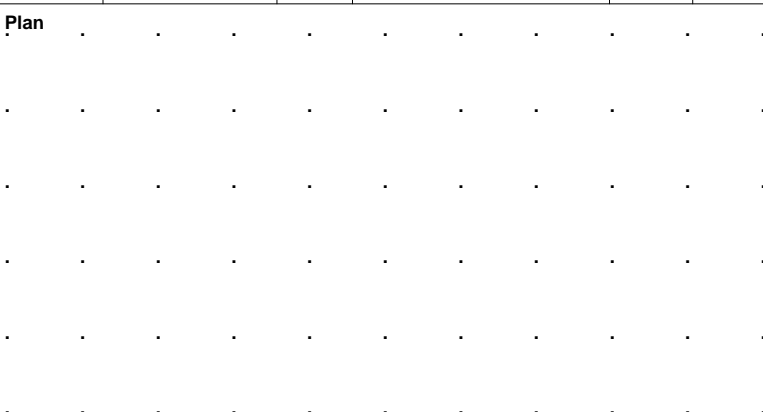
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 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP802
Excavation Method Trial pit		Dimensions 0.70 x 2.90m		Ground Level (mOD) 46.16		Client VSM Estates		Job Number 21311
		Location 506081.1 E 183752.5 N		Dates 23/10/2014		Engineer Atkins Limited		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.55	C1 PID=0.0ppm			45.91	(0.25) 0.25	MADE GROUND: Grass over dark brown slightly sandy slightly gravelly very clayey topsoil with many roots and rootlets. Gravel is fine to coarse angular to rounded of glass, slate, plastic, flint, chalk, wood and brick.		
				45.56	(0.35) 0.60	MADE GROUND: Firm friable mottled brown and grey slightly silty slightly sandy slightly gravelly clay with occasional roots and rootlets and low cobble content of flint. Gravel is fine to coarse angular to rounded of chalk, flint, wood and brick.		
1.00	C2 PID=0.0ppm			45.36	(0.20) 0.80	Firm mottled orange-brown, grey and brown slightly sandy gravelly CLAY with occasional sand lenses and low cobble content of flint. Gravel is fine to coarse angular to rounded of flint, chalk and siltstone.		
				44.86	(0.50) 1.30	Mottled orange-brown, grey and brown very clayey sandy GRAVEL with some clay and sand lenses and low cobble content of flint. Gravel is fine to coarse angular to rounded of flint, chalk and siltstone.		
1.70	B1				(0.90)	Mottled orange-brown and grey very clayey SAND AND GRAVEL with low cobble content of flint. Sand is fine to coarse. Gravel is fine to coarse angular to rounded of flint and chalk.		
				43.96	(0.10) 2.20	By 1.70m: Dense.		
				43.86	2.30	Grey very clayey sandy GRAVEL. Gravel is fine to coarse angular to rounded of flint and chalk.		
2.50	HV 138kPa		136, 140, 138/Av. 138.00			Stiff mottled brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional silt and fine sand lenses. Gravel is fine to coarse subangular to rounded of flint and siltstone. By 2.60m: Low cobble content of siltstone.		
3.00	HV 142kPa		130, 152, 144/Av. 142.00		(1.70)			
3.50	HV 139kPa		132, 136, 150/Av. 139.33					
4.00	D1 HV 140kPa	DRY	128, 132, 160/Av. 140.00	42.16	4.00	By 3.70m: Very stiff.		
Plan 						Remarks Pit oriented N-S Pit walls stable from GL to base Logged in accordance BS5930:1999 A2		
						Scale (approx) 1:25	Logged By CH	Figure No. 21311.TP802

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.40	E1 PID=0.0ppm			45.93	0.05 (0.25)	Grass over TOPSOIL.		
				45.68	0.30 (0.30)	MADE GROUND: Brown, silty, slightly clayey, slightly gravelly, fine to coarse sand. Gravel is fine to medium, angular to subangular mixed including quartzite and brick.		
				45.38	0.60	MADE GROUND: Dark grey, very silty, gravelly ash sand. Gravel is fine to coarse, angular tarmac and brick. At 0.50m: Rootlets.		
1.50	B1					Firm, orange brown, silty, slightly gravelly CLAY. Gravel is fine to coarse, angular to subrounded flint and chalk.		
2.00 2.10	HV 89kPa D1		91,80,96/Av. 89.00		(3.50)	Below 1.90m: Stiff, slightly silty, no gravel. At 2.00m: Pocket of fine sand. Below 2.10m: Pockets of orange sand.		
						Below 3.00m: Blue, silty.		
						At 3.30m: Pockets of orange, fine to medium sand, with some cobbles of white chalk.		
3.90	D2			41.88	4.10	Complete at 4.10m		

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	C1 PID=0.2ppm			44.96	0.50	MADE GROUND: Brown clayey sand and gravel with medium cobble content of brick, concrete, metal, clinker, wood and plastic. Sand is fine to coarse. Gravel is fine to coarse angular to subrounded of brick, concrete, wood, flint, sandstone, limestone, tile, glass, metal, fabric, polystyrene, plastic, clinker and terracotta. By 0.30m: Grey-brown. Very dense.		
0.90	C2 PID=0.0ppm			44.61	0.85	MADE GROUND: Brown clayey very gravelly fine to coarse sand with medium cobble content of brick, concrete, metal, clinker, wood and plastic. Gravel is fine to coarse angular to subrounded of brick, concrete, wood, flint, sandstone, limestone, tile, glass, metal, fabric, polystyrene, plastic, clinker and terracotta.		
1.50	HV 39kPa		32, 36, 48/Av. 38.67	43.86	1.60	MADE GROUND: Firm mottled orange-brown, brown and grey slightly silty slightly sandy gravelly clay with occasional sand lenses and low cobble content of brick, metal and glass. Gravel is fine to coarse angular to rounded of flint, glass, chalk, siltstone, metal, plastic, wood and brick. By 1.20m: Dark grey. Slightly gravelly.		
2.00	HV 92kPa		96, 84, 96/Av. 92.00			Firm mottled brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional silt and sand lenses and low cobble content of siltstone. Gravel is fine to coarse subangular to rounded of flint, chalk and siltstone.		
2.20	B1					By 2.20m: Stiff. No chalk gravel.		
2.50	HV 135kPa		116, 124, 166/Av. 135.33		(2.00)			
3.00	HV 157kPa		148, 162, 162/Av. 157.33			By 3.00m: Very stiff.		
3.60	D1	DRY	23/10/2014:DRY	41.86	3.60	Complete at 3.60m		











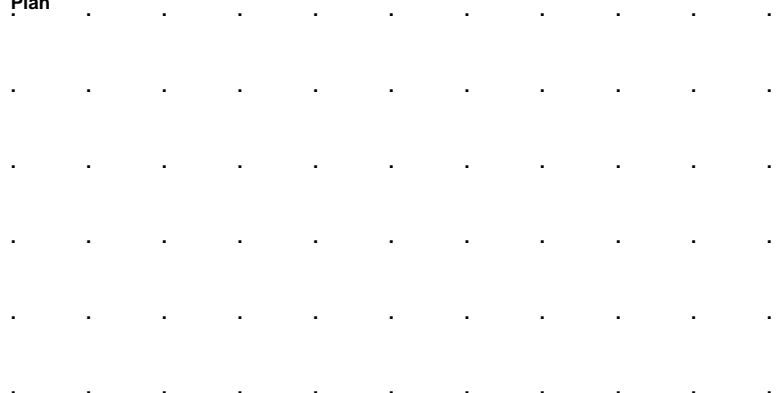
<div>Plan</div> 	Remarks		
	Pit oriented NE-SW Pit walls stable from GL to base Groundwater not observed		
	Logged in accordance BS5930:1999 A2		
Scale (approx)	Logged By	Figure No.	
1:25	CH	21311.TP804	



Excavation Method Trial Pit	Dimensions 0.80 x 2.70m	Ground Level (mOD) 45.28	Client VSM Estates	Job Number 21311
	Location 506136.5 E 183719.6 N	Dates 22/01/2015	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20	E1 PID=0.0ppm			44.88	(0.40) 0.40	MADE GROUND: Pale brown, fine to coarse sand and gravel. Gravel is fine to coarse, very angular to subangular mixed brick, timber, concrete, plastic and quartzite. Frequent brick cobbles.		
				44.28	(0.60) 1.00	MADE GROUND: Dark grey and brown, ashy, very clayey, fine to coarse sand and gravel. Gravel is fine to coarse, very angular to subrounded rebar, brick, sandstone, concrete and clay pot. At 0.90m: Old clay 12" drain pipe.		
				43.38	(0.90) 1.90	MADE GROUND: Orange brown, slightly fine sandy, slightly gravelly clay. Gravel is fine to coarse, angular to subrounded mixed flint and brick. At 1.70m: Clay pipe - with copper wire - dead. Below 1.80m: Timber.		
2.60	D1		Seepage(1) at 2.70m.		(2.20)	Stiff, orange brown, silty, slightly sandy CLAY with occ. pockets of fine to medium sand. Below 2.10m: With a little blue mottling. At 2.60m: Band of orange, fine to medium sandstone gravel. At 2.70m: Stiff, brown, slightly sandy clay.		▽1
3.40 3.50	HV 118kPa B1		120,118,116/Av. 118.00			Below 3.20m: Occasional sandstone gravel pockets. Below 3.60m: No sandstone gravel.		
4.10	D2			41.18	4.10	Complete at 4.10m		

Plan	Remarks Groundwater not encountered. Pit stable.							
	Scale (approx) 1:40			Logged By OG		Figure No. 21311A.TP805		

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP806					
Excavation Method Trial Pit		Dimensions 0.80 x 3.90m		Ground Level (mOD) 45.35		Client VSM Estates		Job Number 21311					
		Location 506137.4 E 183707.6 N		Dates 22/01/2015		Engineer Atkins Limited		Sheet 1/1					
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water				
0.20	E1 PID=0.0ppm				(0.60)	MADE GROUND: Brown, silty, fine to coarse sand and gravel. Gravel is fine to coarse, angular of mixed concrete, pipe, brick, rebar, metal and flint. Some concrete and brick cobbles.							
				44.75	0.60 (0.20)	MADE GROUND: Orange brown, very clayey, gravelly, fine to coarse sand. Gravel is fine to coarse, angular to subrounded flint and brick with many rootlets.							
				44.55	0.80								
					(0.60)	MADE GROUND: Firm, orange brown, silty, slightly sandy, slightly gravelly clay. Gravel is fine to coarse, angular to subrounded flint, chalk and tile.							
				43.95	1.40	Firm, orange brown, silty, slightly gravelly CLAY. Gravel is fine to medium, subrounded chalk. Below 1.40m: No roots.							
2.00	D1					Below 1.90m: Fine, sandy, with occasional pockets of yellow, fine sandstone gravel.							
2.20	HV 68kPa		70,66,68/Av. 68.00			Below 2.20m: No sandstone.							
					(2.60)								
2.80	B1					Below 3.00m: No fine sand.							
3.20	D2					Below 3.20m: Friable.							
3.70	HV 67kPa		66,68,68/Av. 67.33										
				41.35	4.00	Complete at 4.00m							
Plan 						Remarks Groundwater not encountered. Pit was stable.							
												Scale (approx) 1:40	Logged By OG


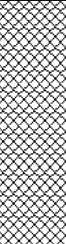

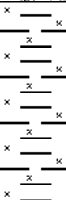
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Excavation Method Trial Pit	Dimensions 1.10 x 3.90m	Ground Level (mOD) 45.01	Client VSM Estates	Job Number 21311
	Location 506157.9 E 183713.2 N	Dates 22/01/2015	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.20	B1 E1 PID=0.0ppm				(0.80)	MADE GROUND: Brown, silty, very gravelly, fine to coarse sand. Gravel is fine to coarse, angular to subangular brick, ceramic, concrete, tile, timber and plastic. Frequent cobbles of brick and concrete.		
1.20				44.21 44.11	0.80 0.90	MADE GROUND: Asphalt.		
				43.61	1.40 (0.30)	MADE GROUND: Brown and orange, very sandy, slightly gravelly clay. Gravel is fine to coarse, angular to subangular mixed flint, brick, clinker and glass.		
				43.31	1.70	MADE GROUND: Orange brown, sandy, slightly gravelly clay.		
2.30	D1				(0.90)	Orange and grey, clayey, fine to coarse SAND and GRAVEL. Gravel is fine to coarse, angular to subrounded of mixed flint, quartzite and chalk.		
				42.41	2.60	Firm, brown mottled grey, slightly sandy CLAY.		
					(1.40)	Below 3.30m: No sand. Below 3.50m: Silty.		
3.90	D2			41.01	4.00	Complete at 4.00m		

Plan	Remarks Groundwater not encountered. Pit was stable.							
	Scale (approx) 1:40			Logged By OG		Figure No. 21311A.TP808		

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.60	E1 PID=0.6ppm			43.14	0.50	MADE GROUND: Brown, silty, fine to coarse, sandy gravel. Gravel is fine to coarse, very angular, mixed brick, concrete, timber, plastic cobble.		
					(1.30)	MADE GROUND: Dark grey, slightly fine sandy, slightly gravelly clay. Gravel is fine to coarse, very angular to angular, brick, concrete, glass, plastic, foam and wood. Occasional cobbles. Rotting timber odour. Below 0.80m: Grey and orange brick.		
1.90	D1			41.84	1.80	Orange brown, clayey, fine to coarse SAND and GRAVEL. Gravel is fine to coarse, subangular to subrounded, chalk, flint and quartzite.		
2.60	B1			40.74	2.90	Firm, brown with grey mottling, very silty CLAY with occ. pockets of orange, fine to medium sand. Below 3.10m: No sand.		
3.40	HV 123kPa		120,120,128/Av. 122.67		(1.10)			
3.70	D2			39.64	4.00	Below 3.70m: Pockets of fine to medium sand.		
						Complete at 4.00m		

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Excavation Method Trial Pit	Dimensions	Ground Level (mOD) 43.37	Client VSM Estates	Job Number 21311
	Location 506191.1 E 183705.8 N	Dates 19/01/2015	Engineer Atkins Limited	Sheet 1/1

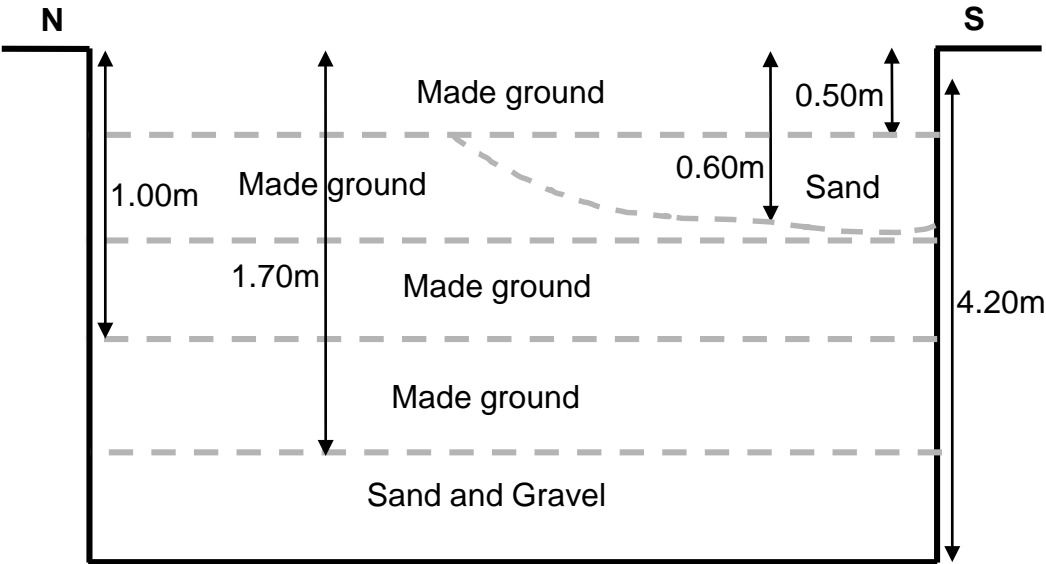
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	E1 PID=0.0ppm			42.77	0.60	MADE GROUND: Brown, silty, gravelly, fine to coarse, sand. Gravel is fine to coarse, very angular to subangular, brick, wire, concrete, quartzite, slate, tile, roots. Below 0.50m: Concrete block (East) Very dark, lense of dark grey ashy, fine to coarse sand (South side of pit)		
0.80	E2 PID=0.0ppm			42.37	1.00	MADE GROUND: Soft to firm, orange brown, slightly fine, sandy, slightly gravelly clay. Gravel includes brick, clinker.		
					0.70	MADE GROUND: Pale orange brown, clayey, fine to coarse sand and gravel. Gravel is fine to coarse, subangular to subrounded, brick, clinker, roots and rootlets.		
2.00	B1			41.67	1.70	Orange brown, clayey, fine to coarse SAND and GRAVEL. Gravel is fine to coarse, subangular to rounded, quartzite and flint. Pockets of fine to coarse sand.		
					1.10	Below 2.20m: Very sandy gravel.		
3.00	7.33kPa		7.2,7.4,7.4/Av. 7.33	40.57	2.80	Stiff, orange brown, slightly sandy CLAY. Below 3.00m: No sand, slightly silty.		
3.40	D1				1.40	Below 3.40m: Silty.		
				39.17	4.20	Complete at 4.20m		

Plan	Remarks							
	Scale (approx) 1:40				Logged By OG		Figure No. 21311A.TP810	

Plan



Section



TP810










Scale: NTS

Figure 21311.TP810





Excavation Method Trial Pit	Dimensions 0.70 x 3.00m	Ground Level (mOD) 41.65	Client VSM Estates	Job Number 21311
	Location 506223.4 E 183736.8 N	Dates 20/01/2015	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20	E1 PID=0.0ppm			41.40 41.35 41.25	(0.25) 0.25 0.30 0.40	MADE GROUND: Soft to firm, brown, sandy, gravelly, clay. Gravel is fine to coarse, angular to subangular brick, flint, concrete and wood. MADE GROUND: Black, fine to coarse, limestone gravel.	 	
1.50	D1			40.65	(0.60) 1.00	MADE GROUND: Brown, clayey, gravelly, fine to coarse sand. Gravel is fine to coarse, angular to subangular of mixed brick, clinker, concrete, ceramic, and sandstone. MADE GROUND: Soft to firm, brown, clayey, slightly sandy, slightly gravelly clay. Gravel is fine to coarse, brick, clinker and slate.	 	
2.40	B1			39.45	2.20 (0.50)	Soft, orange brown, silty, slightly sandy, slightly gravelly CLAY. Gravel is fine to coarse, subangular to rounded flint. Orange brown, very clayey, fine to coarse SAND and GRAVEL. Gravel is fine to coarse, angular to subrounded flint.	 	
2.90	HV 67kPa		72,70,59/Av. 67.00	38.95	2.70 (0.90)	Firm, orange brown, silty, slightly gravelly CLAY. Gravel is fine to coarse, subangular to subrounded quartz and flint. Below 3.10m: Pockets of fine to medium sand.	 	
3.30	D2			38.05	3.60	Complete at 3.60m		

Plan	Remarks Groundwater not encountered. Brick wall on western edge of pit.							
	Scale (approx) 1:40			Logged By OG		Figure No. 21311A.TP811		



St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
TP812

Trial Pit

Dimensions
0.60m x 3.60m

Ground Level (mOD)	40.30
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VSM Estates

Job Number	21311
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Location	506242.6 E 183713.1 N
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Dates	20/01/2015
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Atkins Limited

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.30	E1 PID=0.0ppm			40.25	0.05	Grass over topsoil.		
					(1.00)	MADE GROUND: Orange brown, clayey, gravelly, fine to coarse sand. Gravel is fine to coarse, very angular to angular, mixed brick, clinker, tile, quartzite and concrete. Frequent concrete cobbles, polystyrene , brick and tarmac.		
				39.25	1.05			
				39.20	1.10	MADE GROUND: Tarmac.		
				39.10	1.20			
					(0.30)	MADE GROUND: Concrete.		
1.70	D1			38.80	1.50	MADE GROUND: Orange brown, fine to coarse, sandy gravel. Gravel is fine to coarse, angular to subrounded quartzite, flint, concrete and tile.		
						Soft, orange brown, silty, slightly, sandy CLAY.		
2.40	B1					Below 2.00m: Slightly gravelly. Gravel includes fine to coarse, subangular to subrounded quartzite and chalk.		
					(2.60)			
						Below 3.00m: With occasional sandstone cobbles.		
						Below 3.50m: Very silty, no sand.		
				36.20	4.10	Below 3.90m: With occasional pockets of orange, fine to medium sand.		
						Complete at 4.10m		

Pit stable.
Groundwater not encountered.

1.40

OG

21311A TP812



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number

TP813

Excavation Method

Trial Pit

Dimensions

0.80m x 3.70m

Ground Level (mOD)

39.69

Client

VSM Estates

Job
Number

21311

Location

506248.8 E 183691.7 N

Dates

20/01/2015

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.30	E1 PID=0.0ppm				(0.45)	MADE GROUND: Soft to firm, red brown, silty, gravelly, slightly sandy, clay. Gravel is fine to coarse, very angular to subangular, brick, flint, quartzite, clinker. Frequent brick and concrete cobbles,		
0.50	E2 PID=0.1ppm			39.24	0.45			
0.60	E3 PID=0.0ppm				(0.65)	MADE GROUND: Dark grey, slightly, sandy, slightly gravelly, clay. Gravel is fine to coarse, flint, brick, plant cable. Below 0.50m On East side of pit: Pocket of gravel with black hydrocarbon liquid and strong odour.		
				38.59	1.10	Soft, orange brown, silty, slightly, sandy, CLAY. Hydrocarbon odour, frequent small rootlets.		▽1
1.40	E4 PID=0.0ppm		Seepage(1) at 1.20m.					
					(3.10)	Below 2.60m: Slight gravelly with fine to coarse, subangular to subrounded, flint and quartzite.		
						Below 3.50m: Firm, no sand.		
						Below 3.90m: Gravel includes sandstone.		
4.00	B1			35.49	4.20	Complete at 4.20m		

Plan

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Remarks

Scale (approx)

1:40

Logged By

OG

Figure No.

21311A.TP813

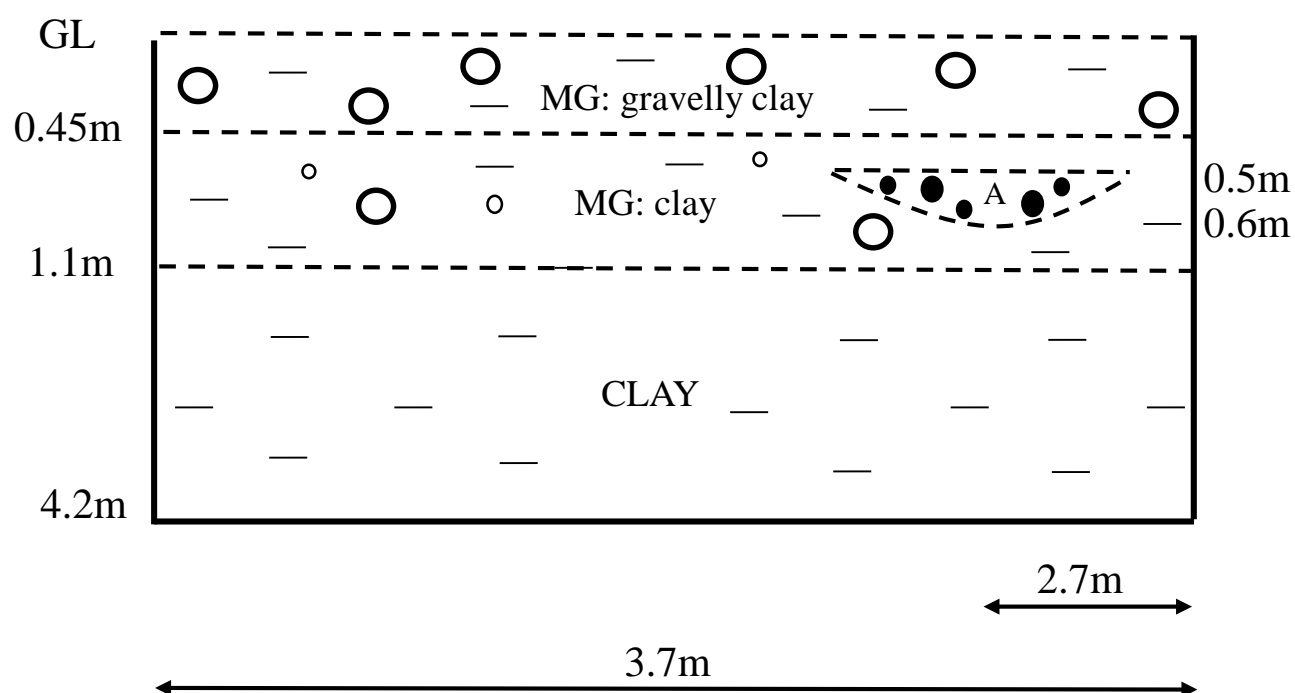
21311

St Andrews Park, Phase 5, 6 and Rifle Range

TP813

S

N



A: Pocket of dark grey gravel with a black liquid and a strong hydrocarbon odour



TP813


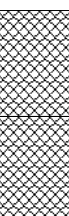
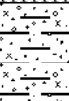
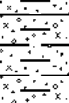
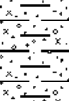
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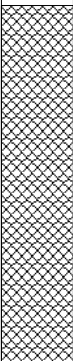

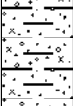
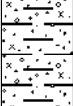

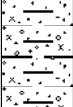
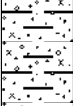
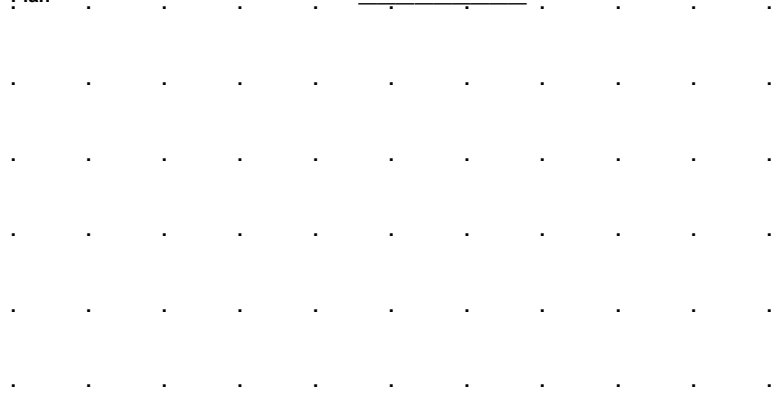
Figure 21311.TP813



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 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP815																																																												
Excavation Method Trial Pit		Dimensions 0.70m x 2.95m		Ground Level (mOD) 39.29		Client VSM Estates		Job Number 21311																																																												
		Location 506258 E 183661.4 N		Dates 22/10/2014		Engineer Atkins Limited		Sheet 2/2																																																												
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water																																																											
4.20	D2			35.09	4.20	Complete at 4.20m																																																														
Plan <table border="1"> <tr><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td></tr> <tr><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td></tr> <tr><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td></tr> <tr><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td></tr> <tr><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td></tr> <tr><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td></tr> </table>						Remarks		
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<table border="1"> <tr> <td>Scale (approx) 1:25</td> <td>Logged By CH</td> <td>Figure No. 21311.TP815</td> </tr> </table>						Scale (approx) 1:25	Logged By CH	Figure No. 21311.TP815																																																												
Scale (approx) 1:25	Logged By CH	Figure No. 21311.TP815																																																																		

<div> IAN FARMER ASSOCIATES</div>						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP816			
Excavation Method Trial pit		Dimensions 0.90 x 2.90m		Ground Level (mOD) 38.36		Client VSM Estates		Job Number 21311			
		Location 506275.5 E 183660.5 N		Dates 23/10/2014		Engineer Atkins Limited		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water			
0.50	C1 PID=0.0ppm	2.60	70, 64, 42/Av. 58.67	37.66	(0.70)	MADE GROUND: Firm mottled brown and dark grey slightly sandy slightly gravelly clay with occasional roots and rootlets, low cobble content of brick, wood and concrete and low boulder content of wood and rebarred concrete. Gravel is fine to coarse angular to rounded of flint, concrete, fabric, brick, plastic, wood, metal, chalk, glass, bone, limestone and sandstone. By 0.40m: Additional cobbles of plastic. From 0.45 to 0.60m: Misaligned slabs of rebarred concrete.					
0.70	C2 PID=0.0ppm				0.70						
1.00	HV 59kPa				(0.75)						
1.50	HV 59kPa B1		58, 44, 76/Av. 59.33	36.91	1.45	MADE GROUND: Firm mottled orange-brown, brown and dark grey slightly sandy slightly gravelly clay with low cobble content of brick. Gravel is fine to coarse angular to rounded of brick, concrete, plastic, glass, flint, limestone, sandstone, chalk, metal and fabric. Potentially reworked natural ground.					
1.50					(0.80)						
2.00	HV 73kPa		74, 54, 92/Av. 73.33	36.11	2.25	Firm friable mottled orange-brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk. By 2.05m: Additional siltstone gravel. Low cobble content of siltstone.		V1			
2.50	HV 118kPa		118, 120, 116/Av. 118.00 Water strike(1) at 2.60m.								
3.00	HV 113kPa		108, 106, 124/Av. 112.67		(1.75)	Stiff mottled brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional silt and fine sand lenses. Gravel is fine to coarse angular to subrounded of flint, siltstone and mudstone. By 3.35m: Becoming very stiff.					
3.50	HV 128kPa		126, 130, 128/Av. 128.00								
4.00	D1		23/10/2014:2.60m	34.36	4.00	Complete at 4.00m					
4.00	HV 138kPa	132, 136, 146/Av. 138.00									
Plan						Remarks					
						Pit oriented NW-SE Pit walls stable from GL to base					
						Logged in accordance BS5930:1999 A2					
						Scale (approx)		Logged By		Figure No.	
						1:50		CH		21311.BH816	

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP817
Excavation Method Trial pit		Dimensions 0.65 x 2.70m		Ground Level (mOD) 36.34		Client VSM Estates		Job Number 21311
		Location 506298.8 E 183681.7 N		Dates 21/10/2014		Engineer Atkins Limited		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.30	C1 PID=0.0ppm					MADE GROUND: Grass over dark brown slightly sandy slightly gravelly very clayey topsoil with occasional roots and rootlets and low cobble content of brick. Gravel is fine to coarse angular to rounded of tile, brick, concrete, ceramic, flint, terracotta and clinker.		
0.50	C2 PID=0.0ppm				(1.20)			
1.50	D1			35.14	1.20	MADE GROUND: Firm friable mottled orange-brown and brown slightly sandy slightly gravelly clay with occasional sand lenses, occasional roots and rootlets and low cobble content of terracotta. Gravel is fine to coarse angular to rounded of flint, chalk and terracotta.		
				34.89	(0.25)			
					1.45	Soft friable mottled orange-brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk.		
2.00	HV 31kPa		28, 34, 32/Av. 31.33					
2.50	HV 23kPa		18, 24, 28/Av. 23.33			By 2.60m: Firm. No longer friable.		
3.00	HV 18kPa		18, 16, 20/Av. 18.00			By 3.40m: Soft. Silty.		
3.00	D2							
3.50	HV 4kPa		6, 4, 2/Av. 4.00					
4.00	D3	DAMP		32.34	4.00			
Plan 						Remarks Pit oriented E-W Pit walls stable from GL to base Groundwater not observed, though pit is damp from 1.45m to base At 1.30m: Fractured and infilled terracotta drainage pipe approximately 150mm in diameter trending N-S along the western pit wall Logged in accordance BS5930:1999 A2		
						Scale (approx) 1:25	Logged By CH	Figure No. 21311.TP817



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number
TP818**

Excavation Method

Trial Pit

Dimensions

1.15m x 2.65m

Ground Level (mOD)

Client

VSM Estates

**Job
Number
21311**

Location

Dates

20/10/2014

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.25) 0.25	MADE GROUND: Grass over dark brown slightly sandy slightly gravelly very clayey topsoil with many roots and rootlets. Gravel is fine to coarse angular to rounded of brick, concrete, flint and wood.		
					(0.50) 0.50	MADE GROUND: Brown dark brown and dark grey mottled very clayey very gravelly sand. Gravel is fine to coarse angular to subrounded of brick, concrete, flint, sandstone, limestone and metal.		
					0.75	Terminated on possible concrete foundation. Complete at 0.75m		

Plan

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Remarks

Pit walls stable
Water not encountered
Terminated on possible concrete foundation.

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP818



**IAN FARMER
ASSOCIATES**

Site
St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit Number
TP818A

Excavation Method Trial Pit	Dimensions 0.65m x 3.40m	Ground Level (mOD) 38.15	Client VSM Estates	Job Number 21311
	Location 506278.3 E 183662.8 N	Dates 20/10/2014	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.30	C1			37.90	(0.25)	MADE GROUND: Grass over dark brown slightly sandy slightly gravelly very clayey topsoil with many roots and rootlets. Gravel is fine to coarse angular to rounded of brick, concrete, flint and wood.		
0.50	C2 PID=0.0ppm				0.25			
					(0.65)	MADE GROUND: Brown dark brown and dark grey mottled clayey gravelly sand. Gravel if fine to coarse angular to subrounded of brick, concrete, flint, clinker, sandstone, limestone and metal.		
				37.25	0.90			
					(0.20)	MADE GROUND: Stiff friable sandy slightly gravelly light brown clay with some roots and rootlets and some sand lenses. Gravel is fine to coarse subangular to subrounded flint, brick and wood.		
				37.05	1.10			
1.30	C3 PID=0.0ppm					Very stiff friable sandy slightly gravelly light brown CLAY with roots and rootlets and some sand lenses. Gravel is fine to coarse subangular to rounded of flint.		
			Water strike(1) at 1.55m.					
					(1.50)			
2.00	B1							
				35.55	2.60	Firm mottled orange brown, brown and grey slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk.		
3.00	HV 71kPa		64,70,78/Av. 70.67					
					(1.40)			
3.50	HV 67kPa		66,60,76/Av. 67.33					
4.00	D1							
4.00	HV 108kPa		112,110,102/Av. 108.00	34.15	4.00			

Plan					Remarks			
.	Pit walls stable.			
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					Scale (approx)	Logged By	Figure No.	
					1:25	CH	21311.TP818A	



St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
TP819

Trial Pit

0.60m X 2.50m

47.15

VSM Estates































Job Number	21311
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506003 8 F 183848 5 N

19/01/2015

Atkins Limited

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend		
0.20	E1 PID=0.0ppm		148,144,120/Av. 137.33	47.05	0.10 (0.20)	Grass over TOPSOIL.			
				46.85	0.30	MADE GROUND: Dark grey, silty, fine to coarse sand. Occasional rootlets.			
	(0.60)			MADE GROUND: (to 0.50mbgl at North end) Orange brown, very clayey, fine to coarse sand and gravel. Gravel is fine to coarse, angular to subrounded, quartzite, flint and chalk, roots and rootlets.					
0.80	E 2 PID=0.0ppm			46.25	0.90	At 0.50m: Black plastic, 15mm cable. Below 0.50m: Occasional brick cobble. Below 0.60m: Orange brown, fine sandy clay (south of pit)			
				1.40	B1		(1.00)	(North) MADE GROUND: Firm, orange brown, silty, slightly fine, sandy, slightly gravelly clay. Gravel is fine to medium, subangular to subrounded, chalk and flint. At 1.50m: Land drain.	
45.25	1.90					Firm, orange brown, silty, slightly fine sandy, slightly gravelly CLAY. Gravel is fine to medium, subangular to subrounded, chalk and flint. (Begins at 1.00m at North end)			
2.30	HV 137kPa D1								
2.30									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
3.80	D2			43.35	3.80	Complete at 3.80m			

Groundwater not encountered.
Trial pit was stable.

1.40

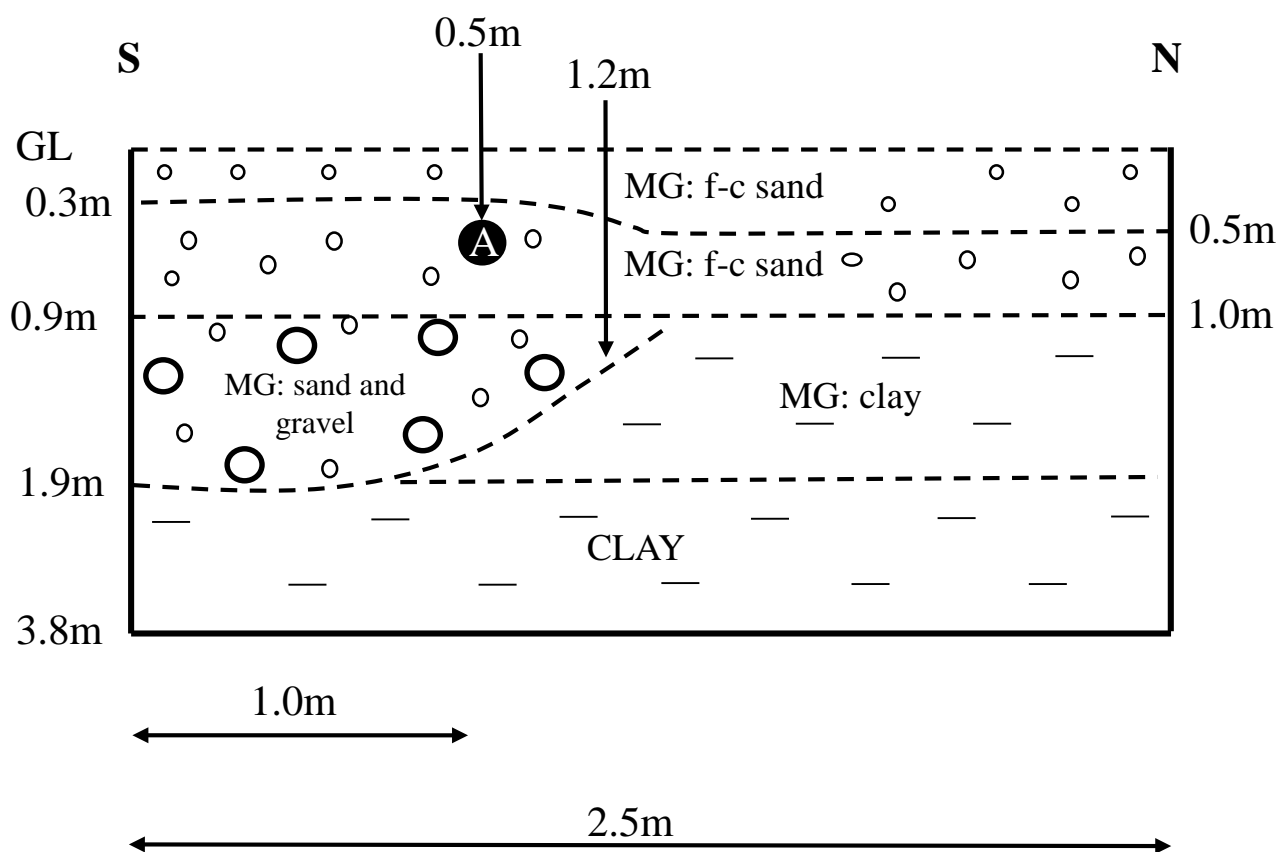
OG

21311A TP819

21311

St Andrews Park, Phase 5, 6 and Rifle Range

TP819







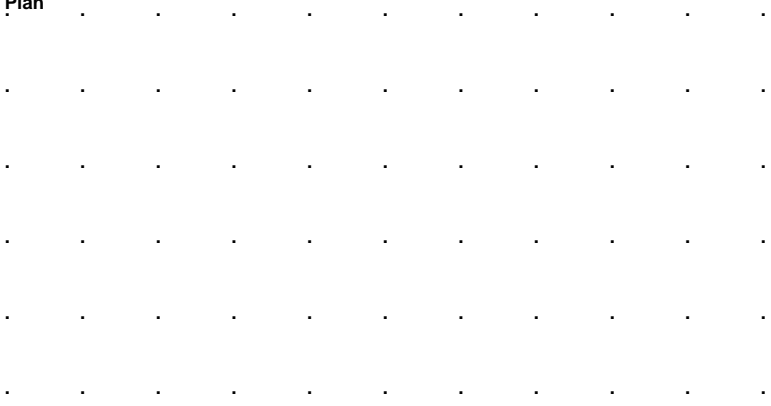
A: Black, plastic, 1.5cm cable

TP819

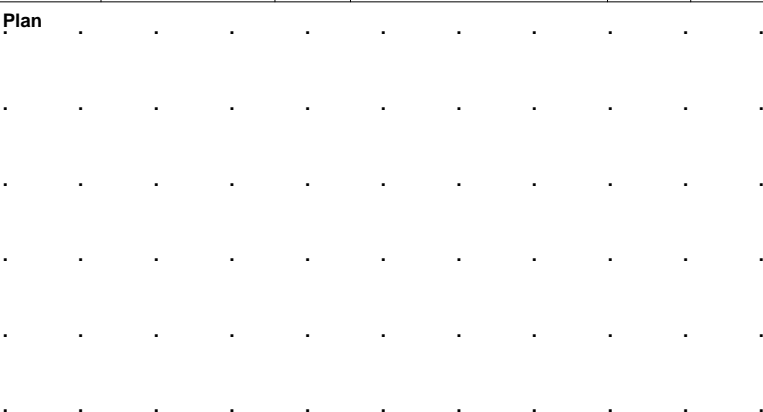
Scale: NTS

Figure 21311.TP819



 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP820	
Excavation Method Trial Pit		Dimensions 3.40 x 0.70m		Ground Level (mOD) 46.79		Client VSM Estates		Job Number 21311	
		Location 506017.9 E 183804.6 N		Dates 19/01/2015		Engineer Atkins Limited		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.30	E1 PID=0.0ppm			46.74	0.05 (0.30)	MADE GROUND: Asphalt.			
0.50	E2 PID=0.1ppm			46.44	0.35 (0.75)	MADE GROUND: Red brown, silty, gravelly, fine to coarse sand. Gravel is fine to coarse, angular, brick, flint, glass, tile and chalk.			
0.90	D1			45.69	1.10 (0.50)	MADE GROUND: Soft, grey, very silty clay. Below 0.80m: Blue grey, slightly gravelly. Gravel is fine to coarse, angular to subrounded, quartzite, flint, brick.			
2.50	HV 48.33kPa		46,51,48/Av. 48.33	45.19	1.60 (2.10)	Orange brown, very clayey, fine to medium sand and gravel. Gravel is fine to coarse, subangular to subrounded flint and quartzite.			
3.20	B1			43.09	3.70	Firm, orange brown, silty, slightly sandy CLAY.			
						Below 2.60m: White, irregular cobbles of siltstone.			
						Between 3.20m and 3.40m: A band of weak, grey SILTSTONE.			
						Complete at 3.70m			
Plan 						Remarks Groundwater not encountered. Pit was stable.			
						Scale (approx) 1:40		Logged By OG	
								Figure No. 21311A.TP820	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	E1 PID=0.0ppm					MADE GROUND: Grey brown, slightly clayey, gravelly, fine to coarse sand. Gravel is fine to coarse, angular to subrounded mixed chalk, brick, quartzite and sandstone. Concrete cobbles. Below 0.30m: Brown, clayey, slightly gravelly.		
1.10	HV 38kPa		40,35,39/Av. 38.00	45.53	0.70	Firm ,orange brown, silty, slightly sandy, slightly gravelly CLAY. Gravel is fine to coarse, subangular to subrounded flint. Below 1.00m: No sand. Gravel is fine to medium, subangular to rounded chalk.		
1.80	D1							
2.10	HV 63kPa		64,60,64/Av. 62.67		(3.40)	Below 1.80m: With occasional pockets of fine to medium sand. At 2.00m: On northern side, pocket of yellow, fine grained sandstone gravel. Below 2.10m: No sand and gravel.		
3.00	D2					Below 2.80m: With occasional pockets of fine to medium sand.		
3.50	HV 53kPa		50,59,50/Av. 53.00			Below 3.50m: Stiff, friable and silty.		
3.90	B1			42.13	4.10	Complete at 4.10m		

<div>Plan</div> 	<div>Remarks</div> <div>Groundwater was not encountered. Pit was stable.</div>		
	<div>Scale (approx)</div> <div>1:40</div>	<div>Logged By</div> <div>OG</div>	<div>Figure No.</div> <div>21311A.TP822</div>





IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number
TP822A

Excavation Method Trial Pit	Dimensions	Ground Level (mOD) 45.89	Client VSM Estates	Job Number 21311
	Location 506066 E 183719.7 N	Dates 21/01/2015	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	E1 PID=0.0ppm			45.84 45.19 45.09	0.05 (0.65) 0.70 0.80	<div>Grass over TOPSOIL.</div> <div>MADE GROUND: Brown, silty, gravelly, fine to coarse sand. Gravel is fine to coarse, angular brick, concrete, tree roots and slate. Frequent brick cobbles. At 0.40m: 2 blue, plastic, 4". At 0.50m: Concrete slab. (Cover of service)</div> <div>MADE GROUND: Grey, very clayey, very sandy gravel. Gravel is fine to coarse, angular to subrounded, flint, quartzite, and brick.</div> <div>Complete at 0.80m</div>	 	

Plan

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Remarks

Pit was stable
Pit terminated at 0.80m due to services.
1.3m from the southern edge was a concrete slab at 0.5m. 3.6m from the southern edge was 2x blue, plastic, dead fibrotic cables at 0.3m.
Groundwater not encountered.

Scale (approx)




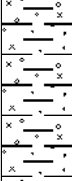

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Logged By

OG

Figure No.

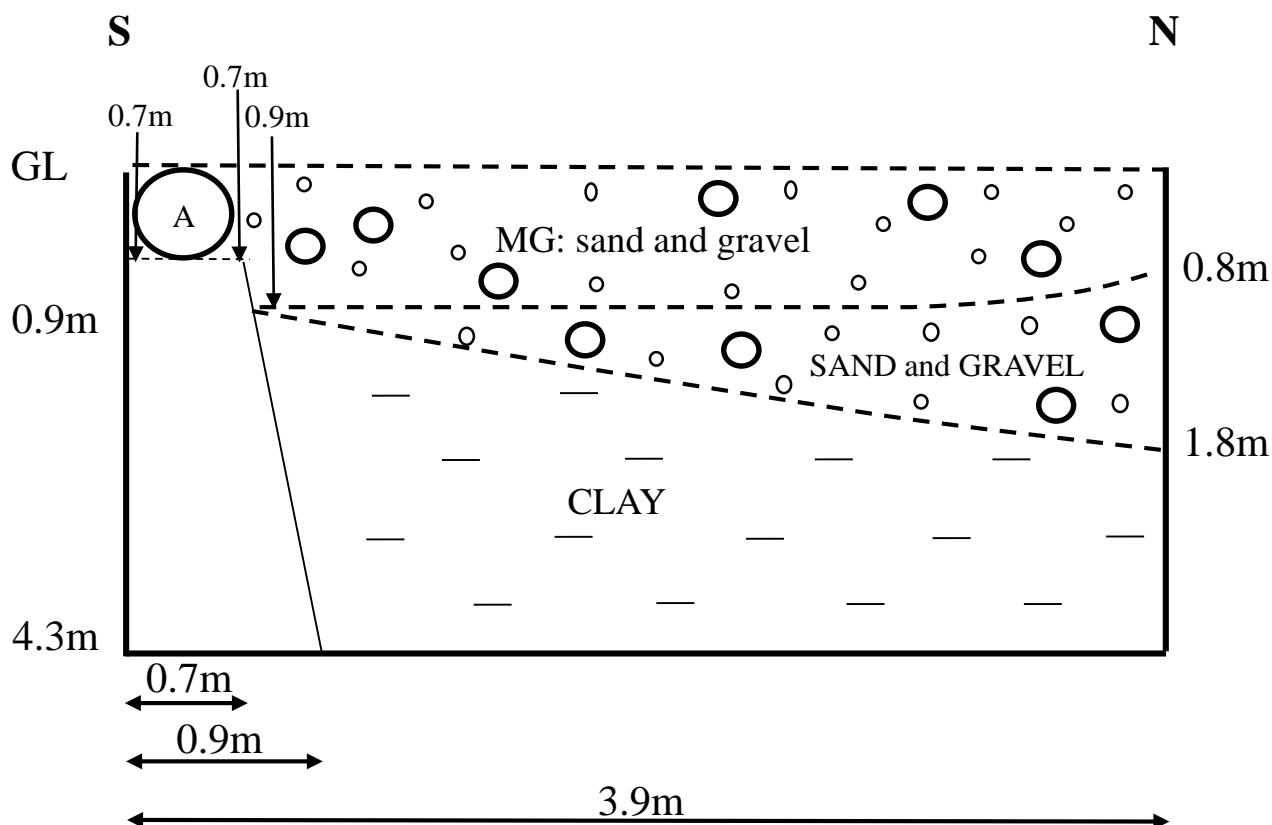
21311A.TP822A

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP823							
Excavation Method Trial Pit		Dimensions 0.70m x 3.90m		Ground Level (mOD) 47.78		Client VSM Estates		Job Number 21311							
		Location 506041.9 E 183866.8 N		Dates 19/01/2015		Engineer Atkins Limited		Sheet 1/1							
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water							
0.60	E1 PID=0.0ppm		Seepage(1) at 0.50m.	46.98	(0.80)	MADE GROUND: Brown, silty, fine to coarse sand and gravel. Gravel is fine to coarse, very angular to subangular mixed wood, brick, flint with frequent cobbles.		▽1							
					0.80	(North) Orange brown, very clayey, fine to coarse SAND and GRAVEL. Gravel is fine to coarse, angular to subangular, flint, quartzite.									
					(1.00)										
2.10	B1			45.98	1.80	(From 0.90mbgl at South end of pit): Firm, orange brown, silty, slightly gravelly CLAY. Gravel is fine to coarse, angular to subrounded chalk and flint.									
						Below 2.80m: No gravel.									
3.00	HV 118kPa D1		124,118,112/Av. 118.00		(2.50)										
3.00															
3.90	D2			43.48	4.30	Complete at 4.30m									
Plan .						Remarks Pit stable. See separate drawing for pit details.									
										Scale (approx)		Logged By		Figure No.	
										1:40		OG		21311A.TP823	

21311

St Andrews Park, Phase 5, 6 and Rifle Range

TP823



A: Brown and black, metal pipe

TP823

Scale: NTS

Figure 21311.TP823





St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
TP824

Trial Pit

Dimensions
0.70m x 3.50m

Ground Level (mOD)	47.38
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VSM Estates
















Job Number 21311

Location	506056.8 E 183848.9 N
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Dates	23/01/2015
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Atkins Limited

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.40	E1 PID=0.0ppm			47.28	0.10	MADE GROUND: Concrete. MADE GROUND: Brick wall. MADE GROUND: Brown, very clayey, slightly gravelly, fine to medium sand. Gravel is fine to coarse, very angular to subangular, brick and concrete, with frequent cobbles. Firm, orange brown, silty, slightly sandy CLAY.		
				47.18	0.20 (0.30)			
				46.88	0.50			
1.20	B1							
								
								
								
								
2.70	HV 119kPa		120,118,120/Av. 119.33			At 1.60m: Pocket of sandstone gravel. Below 1.70m: Slightly sandy.		
								
								
								
								
								
								
								
								
4.10	D2			43.28	4.10	Complete at 4.10m		

Pit stable.
Groundwater not encountered.








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OG

21311A TP824


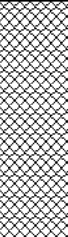
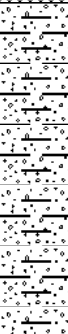

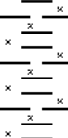


Excavation Method Trial Pit	Dimensions 0.60m x 3.50m	Ground Level (mOD) 47.45	Client VSM Estates	Job Number 21311
	Location 506075 E 183838.8 N	Dates 23/01/2015	Engineer Atkins Limited	Sheet 1/1





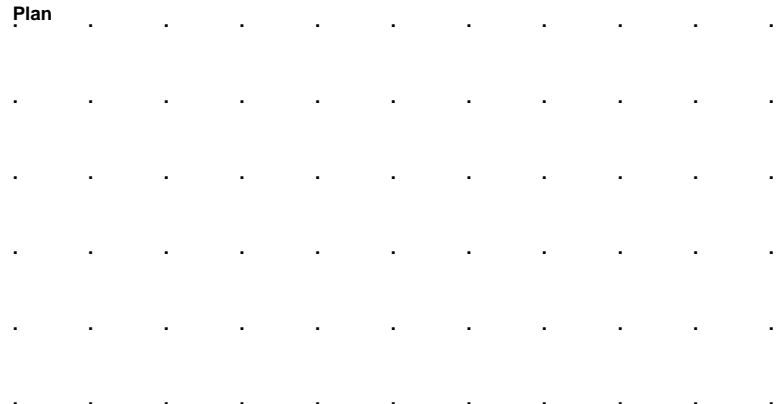
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.70 0.70	B1 E1 PID=0.0ppm			47.10 46.80	(0.35) 0.35 (0.30) 0.65	MADE GROUND: Concrete. MADE GROUND: Dark grey and red, silty, fine to coarse sand and gravel. Gravel is fine to coarse, very angular to angular, mixed tarmac, ash, brick and concrete. Frequent cobbles.	 	
1.80	D1			46.20 45.70	(0.60) 1.25 (0.50) 1.75	MADE GROUND: Firm, orange brown, silty, slightly gravelly clay. Gravel is fine to coarse, mixed flint, chalk and concrete. Orange and grey, fine to coarse SAND and GRAVEL. Gravel is fine to coarse, angular to subrounded, flint, quartzite, chalk (Possible reworked)	 	
2.60	HV 111kPa		120,110,102/Av. 110.67		(2.40)	At 2.55m: Band of fine to medium sandstone gravel. Below 2.60m: Friable, no sand or gravel.		
3.20 3.30	D2 HV 112kPa		120,108,108/Av. 112.00	43.30 43.30	4.15 4.15	Below 3.10m: With occ. pockets of orange, fine to medium sand. Band of medium dense, fine to medium SANDSTONE. Complete at 4.15m	 	

Plan	Remarks Groundwater not encountered. Pit stable.		
	Scale (approx) 1:40	Logged By OG	Figure No. 21311A.TP825

Client VSM Estates	Job Number 21311
Engineer Atkins Limited	Sheet 1/1

Description	Legend	Marker
MADE GROUND: Soft to firm, dark brown very silty fine to coarse sandy gravelly clay. Gravel is fine to coarse angular to subangular of brick, wood, cobbles concrete with frequent cobbles.		
MADE GROUND: Firm, orange brown with black streaks silty gravelly clay with high cobble content. Gravel is fine to coarse angular to subangular of brick, flint, metal and concrete.		
At 1.20m: Clay land drain.		
Stiff dark orange brown silty slightly gravelly CLAY. Gravel is fine to coarse subangular to subrounded of flint and chalk with rootlets.		
Below 1.70m: no gravel		
Blue grey yellow SILTSTONE with pockets of yellow clayey fine to coarse sand.		
Dark orange brown silty CLAY. Below 2.6m: mottled grey and friable		
Complete at 3.00m		

Remarks		
Pit walls stable Water noted from land drain		
Scale (approx)	Logged By	Figure No.
1:25	OG	21311.TP827

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP828	
Excavation Method Trial Pit		Dimensions 0.60m x 3.80m		Ground Level (mOD) 47.24		Client VSM Estates		Job Number 21311	
		Location 506104.8 E 183875.2 N		Dates 20/01/2015		Engineer Atkins Limited		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.60	E1 PID=0.1ppm				(1.40)	MADE GROUND: Dark brown, silty, slightly gravelly, fine to coarse, sand. Gravel includes brick and quartzite. Below 1.00m: Chalk.			
1.60	D1			45.84	1.40 (0.30)	MADE GROUND: Brown/grey, very clayey, fine to coarse sandy, gravel. Gravel is fine to coarse, angular to subrounded, flint, quartzite and brick. Below 1.40m: Pocket of grey, silty, clay.			
1.90	HV 7kPa		6.4,6.4,7.0/Av. 6.60			Firm, orange brown, silty, slightly gravelly, CLAY. Gravel is fine to medium, angular to subrounded, quartzite, flint and chalk. Below 2.00m: Stiff, no gravel, occasional rootlets. Below 2.30m: Cobbles of white irregular shaped siltstone.			
2.30	B1					Below 2.70m: Slightly sandy, no rootlets. No cobbles of siltstone.			
2.50	HV 7kPa		7.8,7.0,7.4/Av. 7.40		(2.40)	Below 3.20m: No sand.			
3.50	D2					Complete at 4.10m			
Plan 						Remarks Groundwater not encountered. Pit stable.			
						Scale (approx) 1:40		Logged By OG	
						Figure No. 21311A.TP828			



St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
TP829

Trial Pit

Dimensions
0.80m x 3.40m

Ground Level (mOD)	47.11
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VSM Estates
















**Job
Number**
21311

Location	506126.6 E 183853.1 N
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Dates	20/01/2015
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Atkins Limited

Sheet
1/1


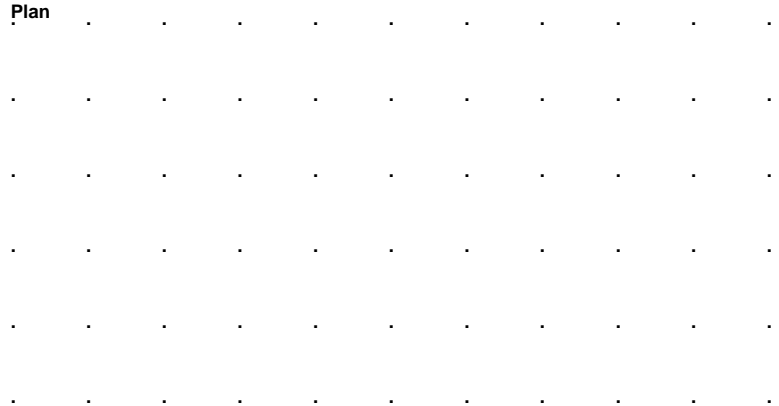
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.40	E1 PID=0.1ppm			47.06	0.05 (0.25)	MADE GROUND: Asphalt.		
0.60	E2 PID=0.2ppm			46.81	0.30 (0.30)	MADE GROUND: Dark grey, silty, sandy, asphalt gravel.		
				46.51	0.60 (0.30)	MADE GROUND: Soft to firm, blue grey, slightly silty, slightly gravelly clay. Gravel is fine to coarse, very angular to subangular, brick sandstone, timber.		
				46.21	0.90 (0.40)	MADE GROUND: Soft, dark grey, silty, slightly gravelly clay. Gravel is fine to coarse, angular to subangular glass, chalk and flint. Organic odour		
				45.81	1.30	MADE GROUND: Firm, blue, silty, slightly gravelly clay. Gravel includes clinker.		
2.10	HV 53kPa D1		54,48,57/Av. 53.00			Firm, orange brown, slightly silty CLAY with some rootlets. Below 1.50m: Slightly gravelly. Gravel includes fine to medium, subangular to subrounded chalk.		
2.10						Below 2.00m: Sandy pocket.		
						Below 2.40m: No sand and gravel.		
					(2.90)			
3.00	HV 64kPa		61,63,68/Av. 64.00			Below 2.90m: Silty.		
3.30	B1							
						Below 3.50m: With occasional selenite crystals, fine grained.		
								
4.20	D2			42.91	4.20	Below 4.00m: With occasional pockets of fine sand.		
						Complete at 4.20m		

Groundwater not encountered.

1.40

OG

21311A TP829

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP830
Excavation Method Trial pit		Dimensions 0.80 x 3.00m		Ground Level (mOD) 44.90		Client VSM Estates		Job Number 21311
		Location 506170.8 E 183807.9 N		Dates 23/10/2014		Engineer Atkins Limited		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	C1 PID=0.0ppm				(0.30)	MADE GROUND: Brown very sandy gravel with medium cobble content of brick, concrete and wood and low boulder content of concrete. Gravel is fine to coarse angular to rounded of concrete, brick, flint, wood, metal, terracotta and limestone.		
				44.60	0.30			
					(0.35)	MADE GROUND: Mottled black and dark grey slightly sandy gravelly clay with many roots and rootlets and high organic content. Gravel is fine to coarse angular to subangular of wood, plant matter, brick, concrete, flint and terracotta. Strong organic odour.		
0.80	C2 PID=0.0ppm			44.25	0.65			
					(0.25)	MADE GROUND: Firm friable mottled brown and grey sandy slightly gravelly clay with many roots and rootlets. Gravel is fine to coarse angular to rounded of brick, wood, concrete, flint and chalk. Faint organic odour. Potentially reworked natural ground.		
1.00	HV 103kPa		98, 116, 96/Av. 103.33	44.00	0.90			
					(0.50)	MADE GROUND: Firm mottled orange-brown, brown and grey slightly silty slightly sandy slightly gravelly clay with occasional silt and fine sand lenses, occasional roots and rootlets and low cobble content of wood. Gravel is fine to coarse subangular to rounded of flint, chalk and wood. Potentially reworked natural ground.		
1.50	HV 145kPa		146, 148, 142/Av. 145.33	43.50	1.40	By 1.35m: Stiff. No roots, rootlets or wood gravel.		
					(0.90)	Stiff mottled brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional silt and fine sand lenses. Gravel is fine to coarse angular to rounded of flint and siltstone. By 1.85m: Very stiff. Low cobble content of siltstone.		
1.85	D1							
2.00	HV 163kPa		176, 162, 150/Av. 162.67					
2.30	D2	DRY	23/10/2014:DRY	42.60	2.30	Complete at 2.30m		
Plan 						Remarks Pit oriented E-W Pit walls stable from GL to base At 1.35m: Fractured and infilled terracotta drainage pipe approximately 100mm in diameter trending N-S directly along the eastern pit wall. Logged in accordance BS5930:1999 A2		
						Scale (approx) 1:25	Logged By CH	Figure No. 21311.TP830



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP831

Excavation Method

Trial Pit

Dimensions

0.6m x 2.2m

Ground Level (mOD)

45.97

Client

VSM Estates

**Job
Number**

21311

Location

506161.1 E 183918.7 N

Dates

21/10/2014

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1					MADE GROUND: Soft to firm, dark brown silty fine to coarse sandy gravelly clay. Gravel is fine to coarse angular to subrounded of brick and concrete with metal and cable noted.		
0.85	C1				(1.60)	Below 0.80m: black ash fine to coarse sand Below 0.90m: polystyrene Below 1.00m: stiff dark orange and grey mottling silty clay (reworked with cable)		
1.60	C2			44.37	1.60	Dark orange brown and grey silty slightly gravelly CLAY with rootlets. Gravel is fine to coarse subangular to subrounded of flint and chalk.		
2.00	HV 142kPa		138,148,140/Av. 142.00			Below 2.40m: friable gravel is fine to medium		
3.30	D2			42.37	3.60	Below 3.20m: bright blue grey and orange brown Below 3.30m: no gravel		
						Complete at 3.60m		

Plan

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Remarks

Pit walls stable
Water not encountered

Scale (approx)

1:25

Logged By

OG

Figure No.

21311.TP831



Excavation Method Trial Pit	Dimensions 0.60m x 3.00m	Ground Level (mOD) 46.02	Client VSM Estates	Job Number 21311
	Location 506175.8 E 183898.6 N	Dates 21/10/2014	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	C1			45.87	(0.15) 0.15	MADE GROUND: Grass over soft to firm brown slightly sandy slightly gravelly clay with some roots and rootlets. Gravel is fine to coarse angular to subrounded of flint, wood, concrete and metal . Low cobble content of wood.		
0.70	C2			45.47	(0.40) 0.55	MADE GROUND: Soft to firm, brown friable slightly sandy slightly gravelly clay with occasional roots and rootlets. Gravel is fine to coarse angular to rounded of brick, concrete, metal, flint, wood, chalk and clinker. Low cobble content of brick.		
					(0.65)	MADE GROUND: Firm, mottled brown and grey slightly sandy slightly gravelly clay. Gravel is fine to coarse angular to rounded of flint, chalk and sandstone. At 0.90m: Terracotta 100mm diameter field drain noted trending SE-NW directly from the SE corner of the pit to 0.80m from the E along the northern face.		
1.50	HV 134kPa B1		132, 132, 138/Av. 134.00	44.82	1.20	Stiff mottled brown grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint, chalk, siltstone. Low cobble content of siltstone.		
2.00	HV 128kPa		128, 128, 128/Av. 128.00		(1.75)			
2.50	HV 134kPa		124, 134, 144/Av. 134.00					
3.00	HV 151kPa		154, 152, 148/Av. 151.33	43.07 42.97	2.95 (0.10) 3.05	Weak SILTSTONE recovered as clayey slightly cobbly gravel. Gravel is fine to coarse angular to subrounded of siltstone.		
3.50	HV 157kPa D1		154, 158, 158/Av. 156.67	42.52	(0.45) 3.50	Stiff mottled brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses and low cobble content. Gravel is fine to coarse angular to rounded of flint, chalk and siltstone.		
						Complete at 3.50m		

Plan					Remarks			
.	Water not encountered			
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.	Logged in accordance BS5930:1999 A2			
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					Scale (approx)	Logged By	Figure No.	
					1:25	CH	21311.TP832	

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Client VSM Estates	Job Number 21311
Engineer Atkins Limited	Sheet 1/1

Description	Legend	Water
MADE GROUND: Dark brown, very clayey, silty, gravelly fine sand. Gravel is fine to coarse, very angular to subangular, concrete rebar, brick, quartzite, plastic clay with frequent cobbles.		
Orange brown and grey, clayey, fine to coarse SAND and GRAVEL. Gravel is fine to coarse, angular to subangular, chalk, flint and quartzite. At 0.80m: Yellow plastic, water pipe. Below 1.00m: Pockets of grey, very silty clay.		
Firm, orange brown, silty, slightly gravelly CLAY. Gravel is fine to coarse, subangular, chalk.		
Below 2.10m: No gravel.		
Below 2.70m: Occasional chalk and siltstone cobbles.		
Below 3.10m: No chalk or siltstone, but pocket of sandstone cobbles.		
Below 3.20m: No sandstone.		
Below 3.80m: Sandstone band.		
Below 3.90m: No sandstone.		
Complete at 4.10m		

Remarks Groundwater not encountered. East side, yellow, plastic water pipe at 0.8m		
Scale (approx) 1:50	Logged By OG	Figure No. 21311A.TP834



Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP835

Excavation Method

Trial pit

Dimensions

0.80 x 2.80m

Ground Level (mOD)

44.22

Client

VSM Estates

**Job
Number**

21311

Location

506185 E 183798.5 N

Dates

23/10/2014

Engineer

Atkins Limited

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.70	C1 PID=0.0ppm				(0.35)	MADE GROUND: Light grey-brown very sandy gravel with medium cobble content of concrete, brick, metal and wood. Gravel is fine to coarse angular to rounded of metal, flint, wood, concrete, brick, clinker, limestone, sandstone, plastic, tile and terracotta.		
1.00	HV 75kPa		82, 72, 70/Av. 74.67	43.87	0.35	MADE GROUND: Firm dark grey slightly sandy gravelly clay with occasional roots and rootlets and medium cobble content of concrete, brick and wood. Gravel is fine to coarse angular to rounded of flint, brick, concrete, metal, limestone, sandstone and wood. Foul odour.		
1.00	C2 PID=0.0ppm			43.42	0.80	MADE GROUND: Firm mottled orange-brown, brown and grey slightly sandy gravelly clay with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint, chalk and siltstone.		
1.50	HV 88kPa		92, 100, 72/Av. 88.00	42.82	1.40	Firm to stiff mottled orange-brown, brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional silt and sand lenses. Gravel is fine to coarse subangular to rounded of flint and chalk.		
2.00	HV 96kPa		82, 104, 102/Av. 96.00			By 2.10m: Stiff.		
2.50	HV 129kPa		120, 150, 118/Av. 129.33			By 2.40m: Becoming very stiff. Additional siltstone gravel.		
2.50	B1				(2.60)	By 2.70m: Very stiff. Low cobble content of siltstone.		
3.00	HV 135kPa		152, 132, 120/Av. 134.67					
3.50	HV 122kPa		118, 124, 124/Av. 122.00					
4.00	D1	DRY	144, 148, 148/Av. 146.67	40.22	4.00			
4.00	HV 147kPa		23/10/2014:DRY					

Plan







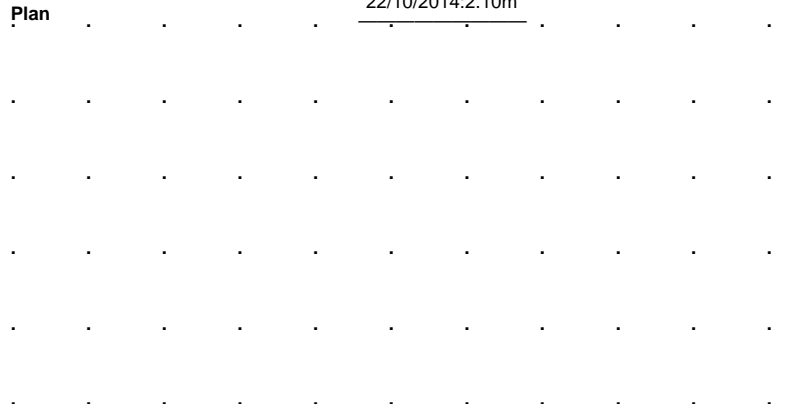
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Remarks

Pit oriented N-S
Pit walls stable from GL to base
At 1.40m: Fractured and infilled terracotta drainage pipe approximately 100mm in diameter trending E-W directly along the northern pit wall.

Logged in accordance BS5930:1999 A2

Scale (approx)	Logged By	Figure No.
1:25	CH	21311.TP835

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range	Trial Pit Number TP836	
Excavation Method Trial Pit		Dimensions 3.20 x 4.10m		Ground Level (mOD) 44.17		Client VSM Estates	Job Number 21311	
		Location 506201.1 E 183936.6 N		Dates 22/10/2014		Engineer Atkins Limited	Sheet 1/2	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	C1 PID=0.0ppm		Slow seepage(1) at 0.60m.	44.07	(0.10) 0.10	MADE GROUND: Dark brown, very clayey, gravelly, fine to coarse sand. Gravel is fine to coarse, angular of mixed brick, plastic, pipe and quartzite.		
					(0.50)	MADE GROUND: Weak, grey concrete.		
				43.57	0.60			
0.90	E1 PID=0.0ppm		Water strike(2) at 2.10m.	43.37	(0.20) 0.80	MADE GROUND: Dark brown very clayey sand and gravel with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded of mixed lithologies including quartzite, flint, brick, concrete and plastic.		▽1
				43.17	(0.20) 1.00	MADE GROUND: Orange. brown and grey, fine to coarse, sandy gravel. Gravel is fine to coarse, angular concrete, brick and flint.		
					(0.70)	MADE GROUND: Dark grey, clayey, gravelly, fine to coarse sand. Gravel is fine to coarse, angular to subrounded mixed brick, concrete, chalk, flint and quartzite. Pockets of slightly gravelly clay.		
1.40	B1		182,198,192/Av. 190.67	42.47	1.70	MADE GROUND: Firm dark orange-brown silty slightly gravelly clay with some roots and rootlets and low cobble content of plastic. Gravel is coarse angular to subangular plastic and metal cables.		▽2
1.70	HV 131kPa				(0.40)	Below 2.00m: Rootlets in grey, silty clay.		
1.80	C2 PID=0.0ppm			42.07	2.10	Mottled orange-brown and grey clayey SAND and GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded of quartzite and flint.		
2.20	D1		158,152,168/Av. 159.33	41.67	(0.40) 2.50	Firm mottled dark orange-brown and grey silty CLAY.		
2.50	B1				(0.80)	Below 2.70m: Stiff.		
2.90	HV 191kPa				(0.10) 3.30	Below 2.90m: No gravel.		
3.10	D1	2.10		40.87	(0.10) 3.40	Very weak blue-grey SILTSTONE recovered as slightly sandy cobbly gravel.		
3.70	HV 159kPa			40.77	(0.60)	Stiff orange-brown silty slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded of flint.		
3.70	D2					Below 3.60m: With frequent thin bands of slightly gravelly, fine to medium sand.		
				40.17	4.00			
Plan 						Remarks Pit was stable. Pit oriented N-S Pit walls stable from GL to base At 0.60m: Disused plastic-insulated BT cable approximately 50mm in diameter trending N-S before curving to the west 1.40m from the south of the pit. Logged in accordance BS5930:1999 A2		
						Scale (approx) 1:25	Logged By OG	Figure No. 21311.TP836



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number
TP836

Excavation Method

Trial Pit

Dimensions

3.20 x 4.10m

Ground Level (mOD)

44.17

Client

VSM Estates

Job
Number
21311

Location

506201.1 E 183936.6 N

Dates

22/10/2014

Engineer

Atkins Limited

Sheet

2/2

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				40.17	4.00	Firm, orange grey, silty, slightly gravelly CLAY. Gravel is fine to medium, angular to subrounded chalk and flint. Complete at 4.00m		

Plan

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Remarks

Logged in accordance BS5930:1999 A2

Scale (approx)

1:25

Logged By

OG

Figure No.

21311.TP836



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP837

Excavation Method

Trial pit

Dimensions

2.30 x 3.50m

Ground Level (mOD)

44.87

Client

VSM Estates

**Job
Number**

21311

Location

506181.3 E 183911.1 N

Dates

22/10/2014

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.10 1.10	B1 C1 PID=0.0ppm			44.67	(0.20) 0.20	MADE GROUND: Dark brown clayey sandy gravel with medium cobble content. Gravel is fine to coarse angular to subrounded of mixed lithologies including brick, concrete, plastic and metal. MADE GROUND: Firm dark orange-brown slightly silty slightly sandy slightly gravelly clay with medium cobble content. Gravel is fine to coarse angular to subrounded of mixed lithologies including polystyrene, brick and limestone.		
					(1.60)			
				43.07	1.80	Firm orange-brown mottled grey silty slightly gravelly CLAY. Gravel is fine to coarse subangular to subrounded of flint and chalk.		
2.90	C2 PID=0.0ppm		Water strike(1) at 2.90m.		(2.10)			
3.90	D1	2.90	22/10/2014:2.90m	40.97	3.90	Complete at 3.90m		

Plan

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Remarks

Pit oriented E-W
Pit walls stable from GL to base
At 3.00m: Concrete pile uncovered extending 0.90m from the east of the pit.

Logged in accordance BS5930:1999 A2

Scale (approx)


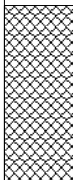


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







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OG

Figure No.

21311.TP837

<div> IAN FARMER ASSOCIATES</div>						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP838	
Excavation Method Trial pit		Dimensions 2.20 x 4.50m		Ground Level (mOD) 43.80		Client VSM Estates		Job Number 21311	
		Location 506202.3 E 183896.2 N		Dates 22/10/2014		Engineer Atkins Limited		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	C1 PID=0.0ppm			43.20	(0.60)	MADE GROUND: Dark brown silty sand and gravel with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse angular to subrounded of mixed lithologies including brick, flint, concrete and plastic.			
					0.60	MADE GROUND: Firm mottled orange-brown and black silty slightly sandy slightly gravelly clay. Gravel is fine to coarse angular to subrounded of quartz, polystyrene, wood, chalk and flint. Strong organic odour.			
2.40	C2 PID=0.0ppm			42.20	(1.00)				
					1.60	Firm mottled orange-brown and grey silty slightly gravelly CLAY. Gravel is fine to coarse angular to rounded of flint and chalk.			
3.50	D1	DRY	22/10/2014:DRY	40.40 40.35 40.30	(1.80)				
					3.40	By 3.30m: Slightly silty. Sandy.			
					3.45	Very weak mottled grey and yellow SILTSTONE recovered as slightly sandy cobbly gravel.			
					3.50	Stiff, mottled dark orange-brown and grey silty CLAY.			
						Complete at 3.50m			
Plan						Remarks			
						Pit oriented N-S			
						Pit walls stable from GL to base			
						At 3.40m: Concrete pile with rebar uncovered along the eastern pit wall 2.30m from the south of the pit.			
						Logged in accordance BS5930:1999 A2			
						Scale (approx)		Logged By	
						1:25		OG	
								Figure No.	
								21311.TP838	

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP839	
Excavation Method Trial Pit		Dimensions 2.5m x 0.60m		Ground Level (mOD) 42.05		Client VSM Estates		Job Number 21311	
		Location 506241.2 E 183915.8 N		Dates 20/10/2014		Engineer Atkins Limited		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	C1 PID=0.2ppm			41.50	(0.55)	MADE GROUND: Firm dark brown fine to coarse sandy gravelly clay. Gravel is fine to coarse.			
0.60	C2 PID=0.0ppm			41.40	0.55 (0.10) 0.65	MADE GROUND: Firm orange brown silt sandy clay. Gravel is fine to coarse subangular of brick. Firm orange brown friable CLAY.			
1.20	HV 64kPa		60, 64, 68/Av. 64.00						
1.20	B1								
1.65	HV 25kPa		20, 28, 26/Av. 24.67						
2.00	HV 101kPa		100, 110, 94/Av. 101.33						
2.50	D1				(2.95)	Between 1.80m and 2.00m: becoming very sandy and gravelly, gravel is fine to coarse subangular to subrounded of flint. Below 2.20m: stiff grey and orange brown slightly gravelly clay. Gravel is fine to medium subangular to subrounded of flint. Below 2.50m: no gravel and occasional rootlets.			
						Below 3.10m: Dark grey / orange brown			
						At base of pit: Grey mottled silty clay with occasional mudstone fragments.			
3.60	HV 143kPa		140, 140, 148/Av. 142.67	38.45	3.60	Complete at 3.60m			
Plan .						Remarks Pit walls stable. Water not encountered Logged in accordance BS5930:1999 A2			
						Scale (approx) 1:25		Logged By OG	
								Figure No. 21311.TP839	



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number
TP840**

Excavation Method

Trial Pit

Dimensions

2.50m x 0.60m

Ground Level (mOD)

42.13

Client

VSM Estates

**Job
Number
21311**

Location

506237.8 E 183906.5 N

Dates

20/10/2014

Engineer

Atkins Limited

**Sheet
1/1**

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	C1 PID=0.0ppm			41.78	0.35 (0.35)	MADE GROUND: Firm dark brown sandy slightly gravelly clay. Gravel is fine to coarse angular to subrounded of mixed lithologies including brick and concrete. Occasional cobbles.		
				41.43	0.70 (0.35)	MADE GROUND; Dark brown silty very gravelly fine to coarse sand. Gravel is fine to coarse angular to subrounded of concrete, glass and brick.		
				40.93	1.20 (0.50)	MADE GROUND: Firm dark orange brown sandy gravelly clay. Gravel is fine to coarse angular to subrounded of brick, plastic flint and concrete. Below 0.80m: Pocket of ashy gravelly sand.		
1.55	C2 PID=0.0ppm				(2.00)	MADE GROUND: Stiff orange brown and grey silty slightly gravelly clay. Gravel is fine to coarse subangular to subrounded of flint and brick. Below 1.60m: Occasional cobbles of concrete.		
2.80	B1		Water seepage at 2.90m.	38.93	3.20	At 2.90m: grey brown silty slightly gravelly clay. Gravel is fine to medium subangular to subrounded of flint. At 3.10m: Pile encountered Complete at 3.20m		

Plan

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Remarks

Pit walls stable

Scale (approx)

1:25

Logged By

OG

Figure No.























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


Excavation Method Trial pit	Dimensions 0.60 x 2.70m	Ground Level (mOD) 42.28	Client VSM Estates	Job Number 21311
	Location 506220.4 E 183838.3 N	Dates 20/10/2014	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.30	C1 PID=0.0ppm			41.88	(0.40)	MADE GROUND: Firm dark brown silty slightly sandy slightly gravelly clay. Gravel is fine to coarse angular to rounded of mixed lithologies including chert, brick, slate, concrete rebar and glass.		
				41.73	(0.15)	MADE GROUND: Dark brown silty very gravelly fine to coarse sand. Gravel is fine to coarse angular to subrounded of mixed lithologies including brick, chert, metal and plastic.		
1.10	C2 PID=0.0ppm B1				(1.55)	MADE GROUND: Firm orange-brown silty slightly sandy slightly gravelly clay with occasional sandy clay lenses and occasional rootlets. Gravel is fine to medium subangular to subrounded of flint. By 1.00m: Friable.		
1.20						By 1.60m: Stiff. Black mottling. By 1.70m: Slightly silty. Sandy.		
				40.18	2.10	Orange-brown clayey SAND and GRAVEL with low cobble content of flint. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded of flint.		
				39.78	2.50	Firm mottled orange-brown and grey slightly silty slightly gravelly CLAY. Gravel is fine to coarse subangular to subrounded of flint.		
2.70	HV 200kPa		214, 198, 188/Av. 200.00	39.48	2.80	Orange-brown very clayey silty SAND and GRAVEL with occasional silty clay lenses. Sand is fine to coarse. Gravel is fine to coarse subangular to subrounded of flint.		
				39.18	3.10	Very stiff mottled orange-brown and grey slightly silty slightly gravelly CLAY. Gravel is fine to coarse angular to rounded of flint and chalk.		
3.20	HV 175kPa D1	DRY	174, 164, 188/Av. 175.33	38.88	3.40	Complete at 3.40m		
3.20			20/10/2014: DRY					

Plan					Remarks		
.	.	.	.	.	Pit oriented N-S		
.	.	.	.	.	Pit walls stable from GL to base		
.	.	.	.	.	Groundwater not observed		
.	.	.	.	.	At 1.30m: Fractured and infilled clay drainage pipe approximately 100mm in diameter trending E-W 0.70m from the north of the pit.		
.	.	.	.	.	Logged in accordance BS5930:1999 A2		
.	.	.	.	.	Scale (approx)	Logged By	Figure No.
.	.	.	.	.	1:25	OG	21311.TP841

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP842	
Excavation Method Trial pit		Dimensions 2.80m x 0.60m		Ground Level (mOD) 41.30		Client VSM Estates		Job Number 21311	
		Location 506217.2 E 183805.2 N		Dates 20/10/2014		Engineer Atkins Limited		Sheet 1/2	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.70	C1 PID=0.0ppm				(0.90)	MADE GROUND: Firm dark brown fine to coarse sandy gravelly clay. Gravel is fine to coarse angular to subrounded of mixed lithology including brick, concrete, wood and cables. Occasional cobbles. At 0.90m: SOUTH OF PIT : MADE GROUND: pocket of clayey sand and gravel. Gravel is fine to coarse angular to subrounded of flint, brick and safety tape noted.			
				40.40 40.20	0.90 (0.20) 1.10	MADE GROUND: Firm dark orange brown silty sandy slightly gravelly clay. Gravel is fine to coarse angular to subangular of mixed lithologies including brick, metal and cables. Stiff dark orange brown slightly silty CLAY.			
1.70	C2 PID=0.0ppm								
2.00	HV 175kPa		168, 172, 184/Av. 174.67						
2.20	D1					At 2.10m: Grey blue mottled At 2.20m Pocket of weak grey SILTSTONE.			
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
Plan .						Remarks Groundwater not observed Pit walls stable			
						Scale (approx) 1:25		Logged By OG	

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP842	
Excavation Method Trial pit		Dimensions 2.80m x 0.60m		Ground Level (mOD) 41.30		Client VSM Estates		Job Number 21311	
		Location 506217.2 E 183805.2 N		Dates 20/10/2014		Engineer Atkins Limited		Sheet 2/2	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
4.10 4.20	D2 HV 149kPa		152, 148, 148/Av. 149.33	37.10	4.20	Complete at 4.20m			
Plan						Remarks			
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.						Scale (approx) 1:25		Logged By OG	
								Figure No. 21311.TP842	



Excavation Method Trial pit	Dimensions 1.05 x 2.90m	Ground Level (mOD) 39.08	Client VSM Estates	Job Number 21311
	Location 506253 E 183761.6 N	Dates 22/10/2014	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	C1 PID=0.0ppm		22/10/2014:2.00m		(0.25)	MADE GROUND: Grass over dark brown slightly sandy slightly gravelly very clayey topsoil with many roots and rootlets. Gravel is fine to coarse subangular to rounded of flint, plastic, brick, concrete, wood and metal.		
0.70	C2 PID=0.0ppm			38.83	0.25			
					(0.30)	MADE GROUND: Soft to firm, friable mottled brown and grey slightly sandy slightly gravelly clay with occasional roots and rootlets. Gravel is fine to coarse angular to subrounded of flint, chalk and brick.		
				38.53	0.55			
1.00	HV 57kPa		62, 50, 58/Av. 56.67		(0.35)	Firm friable orange-brown slightly sandy slightly gravelly CLAY with occasional sand lenses and occasional roots and rootlets. Gravel is fine to coarse angular to rounded of flint and chalk.		
				38.18	0.90			
1.50	HV 22kPa		22, 26, 18/Av. 22.00			Firm mottled orange-brown and grey slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk. By 1.15m: Locally soft.		
2.00					(1.85)			
2.00	B1 PID=0.0ppm HV 27kPa		Water strike(1) at 2.00m. 22, 32, 28/Av. 27.33					
2.50	HV 31kPa		30, 32, 30/Av. 30.67					
				36.33	2.75			
3.00	HV 125kPa		112, 124, 140/Av. 125.33		(0.85)	Stiff mottled brown and grey slightly silty slightly sandy slightly gravelly locally thinly laminated CLAY. Gravel is fine to coarse angular to rounded of flint, chalk and siltstone.		
3.50	HV 147kPa		132, 156, 152/Av. 146.67					
3.60	D1 PID=0.0ppm	2.00		35.48	3.60	Complete at 3.60m		


Plan										Remarks		
.	Pit oriented N-S Major spalling from GL to base Logged in accordance BS5930:1999 A2		
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										Scale (approx)	Logged By	Figure No.
										1:25	CH	21311.TP843



Excavation Method Trial pit	Dimensions 1.10 x 3.60m	Ground Level (mOD) 41.58	Client VSM Estates	Job Number 21311
	Location 506218.3 E 183786 N	Dates 22/10/2014	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.60	C1 PID=0.0ppm			41.23	(0.35) 0.35	MADE GROUND: Grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets and low cobble content of brick. Gravel is fine to coarse angular to rounded of brick, plastic, flint, concrete, wood, chalk, sandstone and glass.		
1.20	C2 PID=0.0ppm			40.48	(0.75) 1.10	MADE GROUND: Firm friable brown sandy slightly gravelly clay with occasional sand lenses, some roots and rootlets and low cobble content of terracotta, brick and clinker. Gravel is fine to coarse angular to rounded of flint, brick, glass, terracotta, chalk and clinker. By 0.75m: Stiff. Orange-brown.		
1.50	B1 PID=0.0ppm				(0.85)	Stiff friable mottled orange-brown, grey and brown slightly sandy slightly gravelly CLAY with occasional sand lenses and occasional roots and rootlets. Gravel is fine to coarse subangular to rounded of flint, chalk and mudstone. By 1.40m: Firm. Damp.		
2.00	HV 143kPa		142, 142, 144/Av. 142.67	39.63	1.95	Stiff orange-brown slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk.		
				39.43	2.15	Stiff mottled grey and brown slightly silty slightly sandy slightly gravelly locally thinly laminated CLAY with low cobble content of siltstone. Gravel is fine to coarse angular to rounded of flint and siltstone.		
2.50	HV 137kPa		132, 152, 128/Av. 137.33		(1.30)			
3.00	HV 121kPa		118, 116, 128/Av. 120.67					
3.00	D1 PID=0.0ppm							
3.45	D2	DRY	22/10/2014:DRY	38.13	3.45	Complete at 3.45m		

Plan					Remarks			
.	.	.	.	.	Pit oriented E-W			
.	.	.	.	.	Pit walls stable from GL to base			
.	.	.	.	.	Groundwater not observed			
.	.	.	.	.	At 0.90m: Fractured and infilled terracotta drainage pipe approximately 100mm in diameter trending NE-SW 1.15m from the west of the pit.			
.	.	.	.	.	Logged in accordance BS5930:1999 A2			
.	.	.	.	.	Scale (approx)	Logged By	Figure No.	
.	.	.	.	.	1:25	CH	21311.TP844	

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP845
Excavation Method Trial pit		Dimensions 0.75 x 2.90m		Ground Level (mOD) 50.25		Client VSM Estates		Job Number 21311
		Location 506054.7 E 184019.1 N		Dates 22/10/2014		Engineer Atkins Limited		Sheet 1/2
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.50)	MADE GROUND: Firm brown slightly sandy slightly gravelly clay with low cobble content of brick and concrete. Gravel is fine to coarse angular to rounded of brick, concrete, metal, flint, chalk, wood, clinker, terracotta and tile. By 0.15m: Grey. Gravelly.		
0.90	C1			49.75	0.50	MADE GROUND: Firm mottled brown and grey slightly silty slightly sandy slightly gravelly clay with low cobble content of brick and concrete. Gravel is fine to coarse angular to subrounded of flint, chalk, brick and concrete.		
1.00	HV 39kPa		36, 46, 36/Av. 39.33		(0.90)			
				48.85	1.40	Mottled orange-brown and grey very clayey very sandy GRAVEL with occasional clay lenses and low cobble content of flint. Gravel is fine to coarse angular to rounded of flint, chalk and siltstone.		
1.50	B1				(0.55)			
2.00	HV 105kPa		104, 96, 116/Av. 105.33	48.30	1.95	Stiff mottled brown and blue-grey slightly silty slightly sandy slightly gravelly CLAY with occasional silt and orange-brown fine to medium sand lenses. Gravel is fine to coarse angular to rounded of flint, chalk and siltstone.		
2.00	C3							
2.50	HV 167kPa		174, 166, 162/Av. 167.33		(1.70)			
3.00	HV 157kPa		166, 152, 154/Av. 157.33					
3.50	HV 167kPa		166, 166, 170/Av. 167.33			By 3.40m: Locally very stiff.		
				46.60	3.65 (0.15)	Weak to very weak siltstone bedrock recovered as slightly clayey, silty GRAVEL with medium cobble content of siltstone. Gravel is fine to coarse, angular to subrounded siltstone.		
				46.45	3.80			
4.00	HV 158kPa		164, 158, 152/Av. 158.00			Stiff locally very stiff mottled brown and blue-grey slightly		
Plan .						Remarks Pit oriented E-W. Groundwater not observed. Pit sides stable. Logged in accordance BS5930:1999 A2		
						Scale (approx) 1:25	Logged By CH	Figure No. 21311.TP845



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number

TP845

Excavation Method

Trial pit

Dimensions

0.75 x 2.90m

Ground Level (mOD)

50.25

Client

VSM Estates

Job
Number

21311

Location

506054.7 E 184019.1 N

Dates

22/10/2014

Engineer

Atkins Limited

Sheet

2/2

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
4.20	D1	DRY	22/10/2014:DRY	46.05	(0.40) 4.20	silty slightly sandy CLAY with occasional silt and fine sand lenses. Complete at 4.20m		

Plan

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Remarks

Logged in accordance BS5930:1999 A2

Scale (approx)

1:25

Logged By

CH





















Figure No.

21311.TP845

Client VSM Estates	Job Number 21311
Engineer Atkins Limited	Sheet 1/1

Description	Legend
MADE GROUND: Dark brown, very clayey, gravelly, fine to coarse sand. Gravel is fine to coarse, angular of mixed brick, plastic, pipe and quartzite.	
MADE GROUND: Weak, grey concrete.	
MADE GROUND: Orange. brown and grey, fine to coarse, sandy gravel. Gravel is fine to coarse, angular concrete, brick and flint.	
MADE GROUND: Dark grey, clayey, gravelly, fine to coarse sand. Gravel is fine to coarse, angular to subrounded mixed brick, concrete, chalk, flint and quartzite. Pockets of slightly gravelly clay.	
Firm, orange grey, silty, slightly gravelly CLAY. Gravel is fine to medium, angular to subrounded chalk and flint.	
Below 2.00m: Rootlets in grey, silty clay.	
Below 2.70m: Stiff.	
Below 2.90m: No gravel.	
Below 3.60m: With frequent thin bands of slightly gravelly, fine to medium sand.	
Complete at 4.00m	

Remarks		
Pit was stable.		
Scale (approx)	Logged By	Figure No.
1:40	OG	21311A.TP846

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP848NW	
Excavation Method Trial Pit		Dimensions		Ground Level (mOD) 48.21		Client VSM Estates		Job Number 21311	
		Location 506021.5 E 183921 N		Dates 19/01/2015		Engineer Atkins Limited		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
3.10	HV 75kPa		Water strike(1) at 0.10m.	47.71	0.50	MADE GROUND: Brown, silty, fine to coarse sand and gravel. Gravel is fine to coarse, angular to subangular concrete, brick, quartzite and limestone.			▽1
					0.30	MADE GROUND: Black, gravelly, fine to coarse, ash sand. Gravel is fine to coarse, angular mixed quartzite and concrete.			
				47.41	0.80	MADE GROUND: Orange clay pipe in orange, fine to medium sandy clay.			
				47.31	0.90	Firm, orange brown and grey, silty, slightly gravelly CLAY. Gravel is fine to coarse, angular to subangular flint, quartzite and chalk.			
					(3.30)	Below 2.70m: Slightly silty. No gravel.			
									
									
									
									
									
									
									
									
									
									
									
									
									
									
Plan .						Remarks This is the NW end of TP848, the SE end, and the pit samples are logged as TP848SE. Pit was stable.			
						Scale (approx) 1:40		Logged By OG		Figure No. 21311A.TP848NW

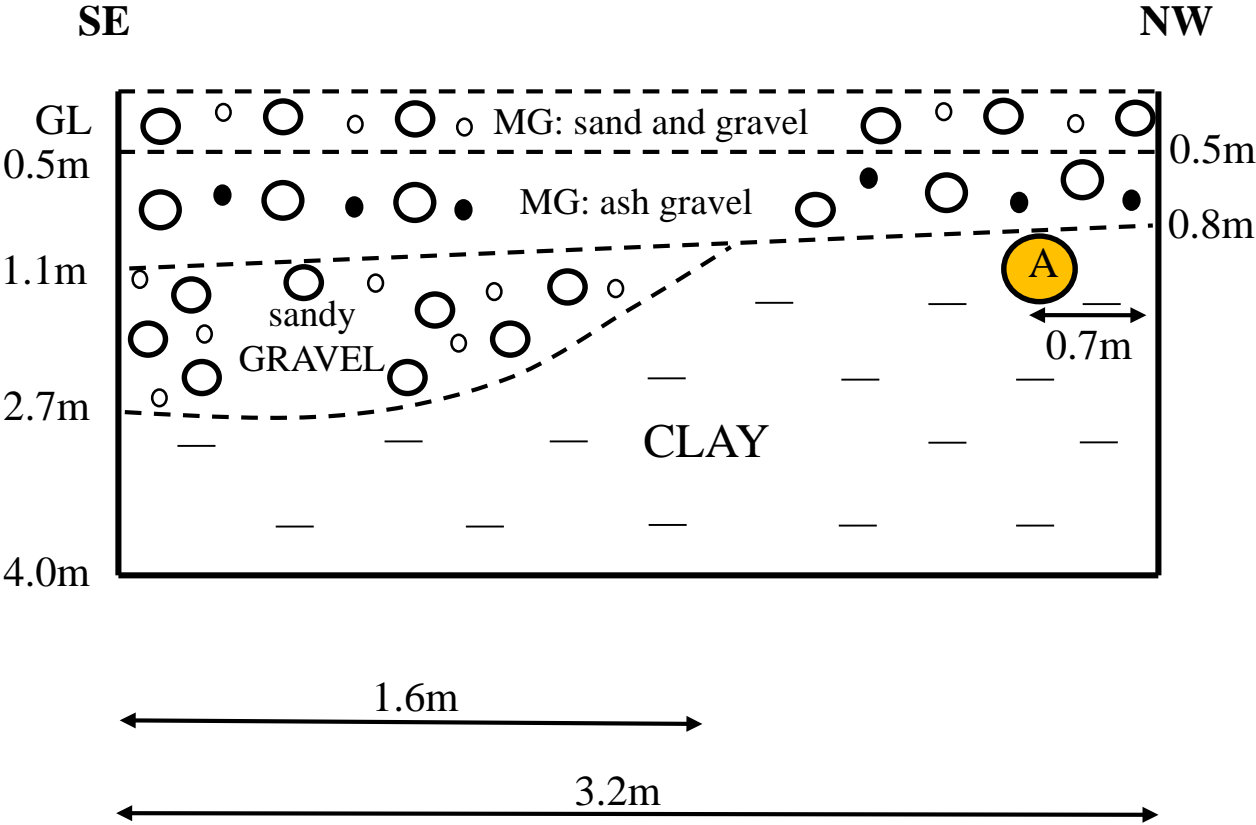


Excavation Method Trial Pit	Dimensions	Ground Level (mOD) 48.21	Client VSM Estates	Job Number 21311
	Location 506023.5 E 183919.5 N	Dates 19/01/2015	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water			
0.30	E1 PID=0.0ppm		Water strike(1) at 0.10m.	47.71	(0.50)	MADE GROUND: Brown, silty, fine to coarse sand and gravel. Gravel is fine to coarse, angular to subangular concrete, brick, quartzite and limestone.		▽1			
0.70	E2 PID=0.0ppm				0.50 (0.60)	MADE GROUND: Black, gravelly, fine to course, ash sand. Gravel is fine to coarse, angular of mixed quartzite and concrete.					
					47.11	1.10	Orange brown and grey, very clayey, sandy GRAVEL. Gravel is fine to coarse, angular to subangular flint, chalk and quartzite.				
						(1.60)					
2.20	B1					45.51	2.70		Stiff, orange brown and grey, slightly silty CLAY.		
							(1.50)				
3.10	D1			44.01	4.20	Complete at 4.20m					
4.20	D2										

Plan	Remarks This is the SE end of TP848, the NW end is logged as TP848NW. Pit was stable.		
	Scale (approx) 1:40	Logged By OG	Figure No. 21311A.TP848

TP848



A: Orange, clay drainage pipe

TP848

Scale: NTS

Figure 21311.TP848



Client VSM Estates	Job Number 21311
Engineer Atkins Limited	Sheet 1/2

Description	Legend	Water
MADE GROUND: Firm brown slightly sandy gravelly clay with low cobble content of brick and concrete. Gravel is fine to coarse angular to rounded of flint, glass, brick, concrete, wood, metal, plastic, sandstone and limestone.		
MADE GROUND: Firm mottled brown and grey slightly sandy slightly gravelly clay. Gravel is fine to coarse angular to rounded of flint, brick, concrete, wood, metal, plastic and sandstone.		
MADE GROUND: Soft black slightly sandy slightly gravelly clay with many roots and rootlets and high organic content. Gravel is fine to medium angular to subrounded of wood, slate and glass. Strong organic odour.		
Firm locally soft mottled brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional silt and fine sand lenses. Gravel is fine to coarse subangular to rounded of flint, siltstone and mudstone. By 1.20m: Firm.		
By 2.30m: Stiff. Low cobble content of siltstone.		
Very weak pale grey SILTSTONE recovered as slightly clayey slightly silty gravel and cobbles content of siltstone. Gravel is fine to coarse subangular to subrounded of siltstone.		
Stiff mottled brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional silt and orange fine sand lenses and low cobble content of siltstone. Gravel is fine to coarse subangular to rounded and siltstone.		
By 3.80m: Locally very stiff. Low boulder content of siltstone.		

<p>Remarks</p> <p>Pit oriented E-W Pit walls stable from GL to base</p>		
<p>Logged in accordance BS5930:1999 A2</p>		
<p>Scale (approx)</p> <p>1:25</p>	<p>Logged By</p> <p>CH</p>	<p>Figure No.</p> <p>21311.TP849</p>



St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit Number
TP849

Trial pit

Dimensions
0.80 x 3.05m

Ground Level (mOD)	48.77
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VSM Estates

**Job
Number**
21311

Location	506114.6 E 183983.7 N
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Dates	22/10/2014
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Atkins Limited

Sheet
2/2

Dept
(m)

Sample / Tests

Water
Depth
(m)

Field Records

Level
(mOD)Depth
(m)
(Thickness)

Description

Legend

Water

4.10

D1

1.85

22/10/2014:1.85m

44.67

4.10

Complete at 4.10m

Plan

Remarks

Logged in accordance BS5930:1999 A2

Scale (approx)

1:25

Logged By

CH

Figure No.











































21311.TP849



Excavation Method Trial pit	Dimensions 0.75 x 3.40m	Ground Level (mOD) 47.33	Client VSM Estates	Job Number 21311
	Location 506152.7 E 183968.7 N	Dates 22/10/2014	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.80	C1 PID=0.0ppm				(0.45)	MADE GROUND: Firm brown slightly sandy slightly gravelly clay. Gravel is fine to coarse angular to rounded of metal, terracotta, flint, concrete, brick, chalk, sandstone, plastic and wood.		
				46.88	0.45	MADE GROUND: Light grey-brown very sandy gravel with medium cobble content of brick and concrete and low boulder content of concrete. Gravel is fine to coarse angular to rounded of brick, metal, limestone, concrete, chalk, flint, sandstone, terracotta, tile, clinker and plastic.		
					(0.65)			
				46.23	1.10	MADE GROUND: Reinforced concrete.		
				46.13	(0.10)			
					1.20			
1.50	HV 83kPa		82, 90, 78/Av. 83.33			Stiff mottled brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional silt and fine sand lenses. Gravel is fine to coarse subangular to rounded of flint, chalk and siltstone.		
1.50	C2 PID=0.0ppm				(1.00)			
2.00	HV 104kPa		118, 98, 96/Av. 104.00			By 2.00m: Low cobble content of siltstone.		
2.00	B1			45.13	2.20			
					(0.15)	Very weak pale grey SILTSTONE recovered as slightly clayey slightly silty gravel and cobbles.		
				44.98	2.35			
2.50	HV 106kPa		108, 104, 106/Av. 106.00			Stiff mottled brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional silt and fine sand lenses. Gravel is fine to coarse subangular to rounded of siltstone.		
3.00	HV 162kPa		168, 158, 160/Av. 162.00		(1.65)			
3.50	HV 155kPa		164, 148, 152/Av. 154.67					
4.00	D1					By 3.80m: Brown.		
4.00	HV 164kPa	DRY	162, 164, 166/Av. 164.00	43.33	4.00			

Plan					Remarks			
.	Pit oriented E-W			
.	Pit walls stable from GL to base			
.	Groundwater not observed			
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.	Logged in accordance BS5930:1999 A2			
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					Scale (approx)	Logged By	Figure No.	
					1:25	CH	21311.TP850	

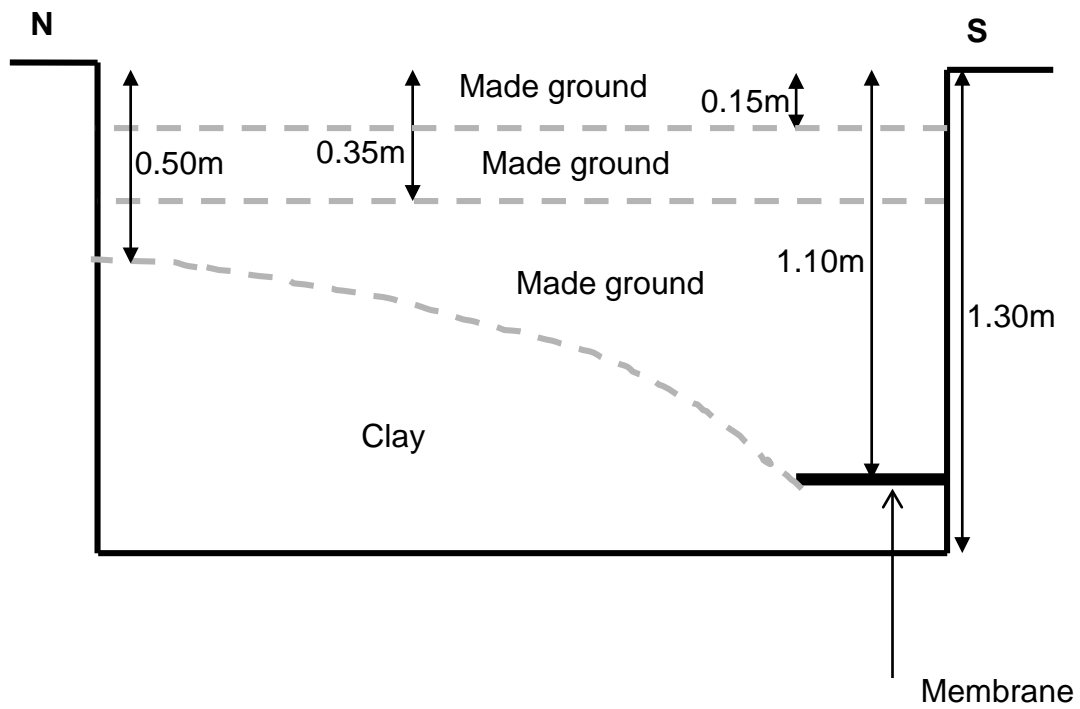
 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP901	
Excavation Method Trial Pit		Dimensions 0.65m x 2.70m		Ground Level (mOD) 33.68		Client VSM Estates		Job Number 21311	
		Location 506366.9 E 183631.5 N		Dates 13/10/2014		Engineer Atkins Limited		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.60	C1		Water strike(1) at 0.80m.	33.53	(0.15)	MADE GROUND: Grass over dark brown slightly sandy slightly gravelly clayey topsoil with some roots and rootlets. Gravel is fine to medium angular to subrounded of brick, metal, concrete and sandstone.		                                       	
1.00	C2			33.33	(0.20)	MADE GROUND: Light brown very gravelly fine to coarse sand. Gravel is fine to coarse angular to rounded of flint, concrete, sandstone, brick and rubber.			
1.20	C3				(0.95)	MADE GROUND: Light brown clayey very sandy gravel. Gravel is fine to coarse angular to rounded of flint, concrete, sandstone, brick and rubber.			
						North of pit: Mottled orange brown and grey thickly laminated slightly sandy slightly gravelly CLAY. Gravel is fine to coarse angular to rounded of flint and chalk South of pit: membrane over clay 1.00m			
				32.38	1.30	Complete at 1.30m			
Plan .						Remarks Minor spalling from GL to natural			
						Scale (approx) 1:25		Logged By CH	
								Figure No. 21311.TP901	

21311

Plan



Section



TP901

Scale: NTS

Figure 21311.TP901





**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number
TP902**

Excavation Method

Trial Pit

Dimensions

0.65m x 2.30

Ground Level (mOD)

33.63

Client

VSM Estates

**Job
Number
21311**

Location

506372.3 E 183621.1 N

Dates

13/10/2014

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.55	C1		Water strike(1) at 0.35m.	33.33	(0.30) 0.30	MADE GROUND: Soft to firm dark brown and brown mottled slightly sandy slightly gravelly clay. Gravel is fine to coarse angular to subangular of brick, metal, concrete, sandstone siltstone and tile.		
					(1.00)	MADE GROUND: Brown and light brown mottled very gravelly fine to coarse sand. Gravel is fine to coarse angular to rounded of flint, concrete, sandstone, chalk and tarmac.		✓1
						At 1.30m: MEMBRANE		
1.50	C2			32.33	1.30 (0.25)	Firm mottled orange brown and grey thinly laminated firm slightly sandy slightly gravelly clay. Gravel is fine to coarse angular to rounded of flint and chalk.		
				32.08	1.55	Complete at 1.55m		

Plan

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Remarks

Pit walls spalling from GL to 1.30m.

Scale (approx)



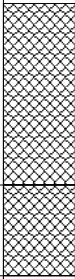
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Logged By

CH

Figure No.

21311.TP902

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP903	
Excavation Method Trial Pit		Dimensions 0.70 x 2.50m		Ground Level (mOD) 33.47		Client VSM Estates		Job Number 21311	
		Location 506380.6 E 183631.3 N		Dates 13/10/2014		Engineer Atkins Limited		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.80 0.90 0.90	C1 HV 8kPa C2		Slow seepage(1) at 0.60m. 4,8,12/Av. 8.00	32.87 32.57 32.55	 (0.60) 0.60 (0.30) 0.90 0.92	MADE GROUND: Dark brown, silty, fine to coarse sand and gravel and weak concrete. Gravel is fine to coarse, angular to subrounded of mixed lithologies including brick and chert. MADE GROUND: Dark brown, very sandy gravel. Gravel is fine to coarse, angular to subrounded of mixed lithologies including charcoal, coal, chert, brick and quartzite. At 0.88m: Black membrane. Blue grey, silty CLAY. Occasional rootlets with slight organic odour. Complete at 0.92m			V1
Plan						Remarks			
. .						Pit terminated at 0.92m due to water.			
						Scale (approx) 1:25		Logged By OG	
						Figure No. 21311.TP903			



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP904

Excavation Method

Trial Pit

Dimensions

0.80 x 2.20m

Ground Level (mOD)

33.32

Client

VSM Estates

**Job
Number**

21311

Location

506380.7 E 183622.8 N

Dates

13/10/2014

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	B1			33.16	(0.16) 0.16	MADE GROUND: Firm, dark brown, silty, slightly gravelly clay. Gravel is fine to coarse, angular to subangular of mixed lithologies including brick, chert, quartzite and some rootlets.		
0.60	C1		Slow seepage(1) at 0.70m.	32.72	(0.44) 0.60	MADE GROUND: Pale brown, slightly silty, fine to coarse sand and gravel. Gravel is fine to coarse, angular to subrounded of mixed lithologies of brick, flint and glass. Below 0.20m: Concrete. Same lithology just compacted.		
1.00	HV 14kPa C2		Water strike(2) at 0.90m. 16,16,10/Av. 14.00	32.37 32.32	(0.35) 0.95 1.00	MADE GROUND: Brown, very silty, very sandy gravel. Gravel is fine to coarse, angular to subangular of mixed lithologies including brick, flint, concrete and quartzite. Soft, orange brown, slightly gravelly, slightly silty CLAY. Gravel is fine to medium, angular to subrounded flint. At 0.95m: Black membrane. Complete at 1.00m		▽1 ▽2

Plan

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Remarks

Terminated at 1.00m due to groundwater.
Pit was stable.

Scale (approx)

1:25


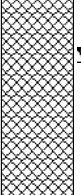

Logged By

OG

Figure No.

21311.TP904

Client VSM Estates	Job Number 21311
Engineer Atkins Limited	Sheet 1/1

Description	Legend
<p>MADE GROUND: Dark brown, slightly silty, slightly gravelly clay. Gravel is fine to coarse, angular to subrounded of mixed lithologies including quartzite, brick and glass.</p> <p>MADE GROUND: Pale brown, slightly silty, fine to coarse sand and gravel. Gravel is fine to coarse, angular to subrounded of mixed lithologies including brick, glass and chert.</p> <p>Soft to firm, grey mottled black, silty CLAY with rootlets. Organic odour. At 0.90m: Black sheet membrane</p>	  
Complete at 1.10m	

Remarks		
Pit terminated at 1.10m due to water. Pit was stable.		
Scale (approx)	Logged By	Figure No.
1:25	OG	21311.TP905



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP906

Excavation Method

Trial Pit

Dimensions

0.70m x 2.55m

Ground Level (mOD)

33.71

Client

VSM Estates

**Job
Number**

21311

Location

506371 E 183600.4 N

Dates

13/10/2014

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.30	C1			33.36	0.35 (0.35)	MADE GROUND: Soft to firm mottled brown and light brown slightly sandy slightly gravelly clay with occasional sand lenses. Gravel is fine to coarse angular to rounded of concrete, flint, slag, clinker, metal, brick and sandstone.		
0.95	C2		Water strike(1) at 0.80m.		(1.10)	Firm orange brown sandy slightly gravelly CLAY with some sand lenses. Gravel is fine to coarse subangular to rounded of flint and charcoal. Some roots and rootlets noted.		▽1
1.50	C3			32.26 32.16	1.45 (0.10) 1.55	Orange brown very clayey gravelly fine to coarse SAND. Gravel is fine to coarse subangular to rounded of flint and charcoal. Complete at 1.55m		

Plan

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Remarks

Pit walls generally stable

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP906



Excavation Method Trial Pit	Dimensions	Ground Level (mOD) 33.57	Client VSM Estates	Job Number 21311
	Location 506372.8 E 183596.6 N	Dates 21/01/2015	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	E1 PID=0.0ppm			32.97	0.60 (0.60)	MADE GROUND: Pale brown, silty, slightly sandy, gravelly clay. Gravel is fine to coarse, angular chalk, flint and brick. Some brick cobbles. Pocket of dark, ash sand with slight hydrocarbon odour.		
					0.60 (0.60)	MADE GROUND: Soft, orange brown, slightly sandy clay.		
				32.37	1.20 (0.60)	At 1.00m: Orange drain pipe. Firm, orange brown, very silty, slightly sandy CLAY.		
1.80	E2 PID=0.0ppm			31.77	1.80	Complete at 1.80m		

Plan	Remarks Groundwater not encountered - water from drain. 0.5m from northern edge was a clay drainage pipe at 1.0m							

Scale (approx) 1:40			Logged By OG			Figure No. 21311A.TP907		



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number
TP908

Excavation Method

Trial Pit

Dimensions

0.70 x 2.70m

Ground Level (mOD)

33.63

Client

VSM Estates

Job
Number
21311

Location

506375.4 E 183586.8 N

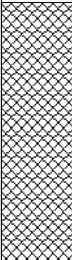

Dates

21/01/2015

Engineer

Atkins Limited

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.70	E1 PID=0.0ppm					MADE GROUND: Soft to firm, brown, silty, sandy, gravelly clay. Gravel is fine to coarse, angular to subangular, mixed chalk, brick, ceramic and wires with some concrete cobbles. At 0.60m: Partial membrane at southern end of pit. Below 0.80m: Darker grey, with some silty, fine to coarse sand.		
				32.23	1.40 (0.40)	Soft, orange brown, very silty, slightly sandy CLAY, with occasional interbedding of clayey, fine to medium sand.		
				31.83	1.80	Complete at 1.80m		

Plan

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Remarks

Groundwater not encountered.

Scale (approx)



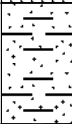
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Logged By

OG

Figure No.

21311A.TP908

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP909		
Excavation Method Trial Pit		Dimensions 0.70 x 2.50 x 1.00m		Ground Level (mOD) 33.10		Client VSM Estates		Job Number 21311		
		Location 506379.7 E 183607.4 N		Dates 13/10/2014		Engineer Atkins Limited		Sheet 1/1		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water	
						MADE GROUND: Firm mottled brown and light brown slightly sandy slightly gravelly clay. Gravel is fine to coarse angular to rounded of concrete, flint, slag, metal, brick sandstone and plastic.				
				32.50	0.60 (0.40)	Firm mottled dark grey and brown slightly sandy CLAY. Possibly reworked natural				
				32.10	1.00	Complete at 1.00m				
Plan .						Remarks Pit walls stable. Water not encountered At 0.60m: Cracked infilled plastic drainage pipe approximately 200mm in diameter running E-W 0.90m from the north of the pit. At 1.00m: Cracked infilled plastic drainage pipe approximately 100mm in diameter running E-W at 1.50m from the north of the pit				
						Scale (approx) 1:25		Logged By CH		Figure No. 21311.TP909



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
TP909A

Excavation Method Trial Pit	Dimensions 0.70 x 3.50	Ground Level (mOD) 33.08	Client VSM Estates	Job Number 21311
	Location 506381.8 E 183603.1 N	Dates 13/10/2014	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.00	C1			32.28 32.08	(0.80)	MADE GROUND: Firm mottled brown and light brown slightly sandy slightly gravelly clay with low cobble content. Gravel is fine to coarse angular to rounded concrete, flint, slag, clinker, metal, brick, sandstone, terracotta and plastic. Cobbles are of brick.		
					0.80 (0.20) 1.00	MADE GROUND: Firm mottled dark grey and grey mottled slightly sandy slightly gravelly clay. Gravel is fine to coarse angular to rounded of flint, chalk, wood, slag and clinker. Potentially reworked natural ground. Dark grey with faint odour of contamination, sample taken at 1.00m Complete at 1.00m		

Plan

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Remarks

Pit walls stable
Pit extended to collect sample
Groundwater not encountered
At 1.00m: Disintegrated shattered terracotta pipe pieces running E-W at 1.25m from the north of the pit, pit moved back 1.00m

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP909A



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP909B

Excavation Method Trial Pit	Dimensions 2.90m x 0.70m	Ground Level (mOD) 33.19	Client VSM Estates	Job Number 21311
	Location 506382.8 E 183599.7 N	Dates 13/10/2014	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.10	C1			32.49	0.70	MADE GROUND: Firm mottled brown and light brown slightly sandy slightly gravelly clay. Gravel is fine to coarse angular to rounded of concrete, flint, slag, clinker, metal, brick, sandstone, plastic and terracotta.		
						Firm mottled black and dark grey/grey slightly silty slightly sandy slightly gravelly CLAY. Gravel is fine to coarse angular to rounded of flint and wood. Faint odour of hydrocarbons and occasional sand lenses.		
					(1.10)	From 1.10m to 1.20m: Black spongy pseudo fibrous peat. Contains large amount of bullet casings and unspent bullets.		
1.80	C2		Water strike(1) at 1.95m.	31.39	1.80	Mottled brown and orange brown clayey very sandy GRAVEL. Gravel is fine to coarse angular to rounded of flint, sandstone, limestone and chalk.		Σ1
				31.19	2.00	Complete at 2.00m		

Plan

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Remarks

Pit walls stable

Scale (approx)

1:25

Logged By



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Figure No.

21311.TP909B



Excavation Method Trial Pit	Dimensions	Ground Level (mOD) 32.90	Client VSM Estates	Job Number 21311
	Location 506386 E 183596 N	Dates 21/01/2015	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.40	E1 PID=0.1ppm			32.55 32.30	(0.35) 0.35 (0.25) 0.60	MADE GROUND: Brown, very clayey, gravelly, fine to coarse sand. Gravel is fine to coarse, very angular to subangular, brick, clay pipe, flint, tile. MADE GROUND: Dark grey, very silty, slightly gravelly, fine to coarse sand. Gravel is fine to coarse, very angular to subangular, tree roots, brick. At 0.6m: Land drain. Complete at 0.60m	 	

Plan	Remarks Pit relocated due to too much water.		
	Scale (approx) 1:40	Logged By OG	Figure No. 21311A.TP910



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
TP910A

Excavation Method

Trial Pit

Dimensions

3.60m x 0.70m

Ground Level (mOD)

32.97

Client

VSM Estates

**Job
Number**
21311

Location

506388.1 E 183598.4 N

Dates

21/01/2015

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.70	E1 PID=5.2ppm		Water strike(1) at 0.80m.	32.67	(0.30) 0.30	MADE GROUND: Brown, very clayey, gravelly, fine to coarse sand. Gravel is fine to coarse, very angular to subangular, brick, wood, slate, and concrete. Frequent cobbles.		
				32.27	(0.40) 0.70	MADE GROUND: Orange brown, silty, slightly gravelly, fine to coarse sand. Gravel is fine to coarse, very angular to subrounded, flint, wood, and brick.		▽1
				31.97	(0.30) 1.00	MADE GROUND: (South side of pit only) Pocket of dark grey, silty, fine to coarse, ash sand. Strong hydrocarbon odour.		
1.20	E2 PID=0.0ppm			31.67	(0.30) 1.30	Firm, blue grey, very silty CLAY. Complete at 1.30m		

Plan

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Remarks

Pit was stable.

Scale (approx)

1:40

Logged By

OG

Figure No.

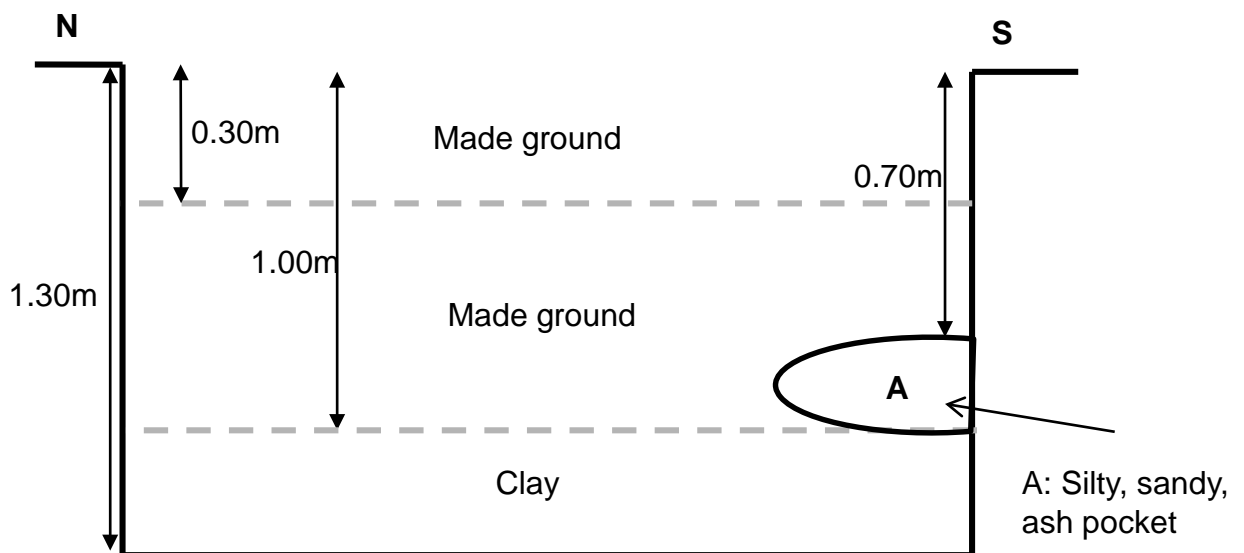
21311A.TP910A

21311A

Plan



Section



TP910A

Scale: NTS

Figure 21311.TP910A





St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
TP911

Trial Pit

Dimensions
0.70 x 2.90m

Ground Level (mOD)	32.98
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VSM Estates





Job Number
21311

Location	506386.5 E 183591 N
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Dates	21/01/2015
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Atkins Limited

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend
0.30	E1 PID=0.0ppm				(0.50)	MADE GROUND: Soft, brown, sandy, gravelly clay. Gravel includes brick, plastic, wood, quartzite and glass. Some concrete cobbles.	
				32.48	0.50 (0.20)	MADE GROUND: Soft, orange brown, silty, slightly gravelly clay. Gravel is fine to coarse, angular, brick and quartzite.	
				32.28	0.70 (0.40)	Firm, blue grey, silty, slightly sandy, slightly gravelly CLAY. Gravel is fine to coarse, subangular to subrounded flint.	
1.00	E2 PID=0.0ppm			31.88	1.10	Complete at 1.10m	

Groundwater not encountered.
Pit was dry and stable.

1:40

OG

21311A TP911



St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
TP912

Trial Pit

ation

506400 7 F 183608 8 N

32.97

Dates

21/01/2015

VSM Estates

Atkins Limited

Job Number
21311

Sheet
1/1

Depth
(m)

Sample / Tests

Water
Depth
(m)

Field Records

Level
(mOD)Depth
(m)
(Thickness)

Description

Legend

Water

1.30

E1 PID=0.0ppm

Water strike(1) at 1.20m.

31 67

F (0.60)

32.37

(0.60)

0.60

(0.70)

130

MADE GROUND: Dark grey, silty, clayey, gravelly, fine to coarse sand. Gravel is fine to coarse, angular to subangular wood, brick and flint. Some concrete cobbles and rootlets.

Stiff, pale, orange brown, silty CLAY.

Below 1.00m: Blue grey, slightly gravelly. Gravel is subangular, fine to medium flint.

Complete at 1.30m

Plan

Remarks

Scale (approx)

1:40

Logged By

OG

Figure No.

21311A.TP912



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number

TP913

Excavation Method

Trial Pit

Dimensions

2.50m x 0.65m

Ground Level (mOD)

33.01

Client

VSM Estates

Job
Number

21311

Location

506394.1 E 183603.3 N

Dates

13/10/2014

Engineer

Atkins Limited

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.85	C1		Water strike(1) at 0.75m.		(0.55)	MADE GROUND: Soft to firm brown slightly sandy slightly gravelly clay with medium cobble content. Gravel is fine to coarse angular to rounded of concrete, flint, slag, clinker, metal, brick, terracotta and sandstone. Cobbles are of brick with wood noted.		
				32.46	0.55 (0.30)	Firm orange brown sandy slightly gravelly CLAY with some sand lenses. Gravel is fine to coarse subangular to rounded of flint, chalk, and limestone.		▽1
				32.16	0.85	Complete at 0.85m		

Plan

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Remarks

Pit walls stable.
Pit terminated due to presence of bullet casing and unspent bullets.
At 0.65m: Pipe of unknown material running NE-SW
at 0.70m: Pipe of unknown material running E-W

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP913



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number
TP914

Excavation Method

Trial Pit

Dimensions

0.70 x 4.00m

Ground Level (mOD)

32.93

Client

VSM Estates

Job
Number
21311

Location

506399.1 E 183594.4 N

Dates

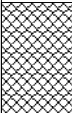



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Engineer

Atkins Limited

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.80	E1 PID=0.0ppm			32.33 32.13 31.83	(0.60) 0.60 (0.20) 0.80 (0.30) 1.10	MADE GROUND: Dark, silty, clayey, slightly gravelly, fine to coarse sand. Gravel is fine to coarse tile, brick and quartzite. Some concrete cobbles. MADE GROUND: Firm, blue grey, silty clay. At 0.7m: Drainage pipe Firm, blue grey, silty CLAY. Complete at 1.10m	   	

Plan

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Remarks

1.0m from the western edge of the pit was a drainage pipe at 0.70m.

Scale (approx)

1:40

Logged By

OG

Figure No.

21311A.TP914



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number
TP915**

Excavation Method

Trial Pit

Dimensions

0.70m x 2.10m

Ground Level (mOD)

33.30

Client

VSM Estates

**Job
Number
21311**

Location

506384.8 E 183572.3 N

Dates

16/10/2014

Engineer

Atkins Limited

**Sheet
1/1**

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.70	C1				(1.00)	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse angular to rounded of flint and sandstone. By 0.70m: Dark grey with occasional roots and rootlets		
1.20	C2		Water strike(1) at 1.40m.	32.30	1.00 (0.50)	MADE GROUND: Grey brown clayey sandy gravel. Gravel is fine to coarse angular to rounded of flint, concrete, limestone, plastic, tile, sandstone, wood, metal and brick. Low cobble content of concrete.		V1
1.60	C3			31.80	1.50 (0.30)	Firm mottled orange brown brown grey and black sandy slightly gravelly CLAY with some sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk.		
				31.50	1.80	Complete at 1.80m		

Plan

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Remarks

Minor spalling to natural ground
No membrane observed.

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP915



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit Number

TP916

Excavation Method

Trial Pit

Dimensions

1.05m x 2.50m

Ground Level (mOD)

33.18

Client

VSM Estates

Job Number

21311

Location

506386.1 E 183560 N

Dates

16/10/2014

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.60	C1		Water strike(1) at 0.40m.	32.48	(0.70)	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse angular to rounded of flint, plastic, wood, brick, concrete, limestone and tile. Low cobble content of brick. By 0.50m: occasional roots and rootlets		▽1
				31.68	0.70 (0.80)	MADE GROUND: Grey brown clayey sandy gravel. Gravel is fine to coarse angular to rounded of flint, concrete, brick, plastic, tile, terracotta, limestone and wood with low cobble content of brick and concrete. At 1.50m: MEMBRANE.		
				31.38	1.50 (0.30)	Soft mottled orange brown and brown slightly silty sandy slightly gravelly CLAY with some sand lenses. Gravel is fine to coarse subangular to rounded of flint and chalk.		
					1.80	Complete at 1.80m		

Plan

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Remarks

Major spalling to natural ground

Scale (approx)




1:25

Logged By

CH

Figure No.

21311.TP916

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP917	
Excavation Method Trial Pit		Dimensions 0.65m x 2.00m		Ground Level (mOD) 32.98		Client VSM Estates		Job Number 21311	
		Location 506394.3 E 183549.3 N		Dates 16/10/2014		Engineer Atkins Limited		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.70	C1		Water strike(1) at 0.50m.	32.73	(0.25) 0.25	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse angular to rounded of plastic, wood, flint and concrete.			
				32.33	(0.40) 0.65	MADE GROUND: Light grey brown very sandy gravel. Gravel is fine to coarse angular to rounded of flint, concrete, limestone, plastic, brick, metal and chalk. Low cobble content of concrete. At 0.65m: MEMBRANE.			
				32.08	(0.25) 0.90	Firm mottled brown and grey occasionally orange brown slightly silty slightly sandy slightly gravelly CLAY with occasional sand lens. Gravel is fine to coarse angular to rounded of flint and chalk, Some roots and rootlets.			
						Complete at 0.90m			
Plan <div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div>						Remarks Pit walls stable.			
						Scale (approx) 1:25		Logged By CH	
						Figure No. 21311.TP917			



St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit Number
TP918

Machine Trial Pit

0.75m x 2.05m

33.01

VSM Estates

**Job
Number**
21311

506396 1 F 183541 6 N

16/10/2014

Atkins Limited

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.40	C1		Water strike(1) at 0.30m.	32.71	0.30	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with many roots and rootlets. Gravel is fine to coarse angular to subrounded flint, concrete, wood, sandstone and brick.		▽
				32.41	0.60	MADE GROUND: Light grey brown very sandy gravel. Gravel is fine to coarse angular to rounded of flint, brick concrete, tile, limestone, slag, clinker, quartz and chalk. Low cobble content of concrete. Membrane at base.		
0.80	C2			32.21	0.80	Firm mottled brown and grey occasionally orange brown slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse subangular to rounded of flint, chalk and mudstone.		
						Complete at 0.80m		

Pit walls stable.

1.25

CH

21311 TP918



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP919

Excavation Method

Trial Pit

Dimensions

0.90m x 2.30m

Ground Level (mOD)

33.08

Client

VSM Estates

**Job
Number**

21311

Location

506397 E 183532.1 N

Dates

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Engineer

Atkins Limited

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.00	C1		Water strike(1) at 0.80m.	32.83	(0.25) 0.25	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with many roots and rootlets . Gravel is fine to coarse angular to subrounded of flint, sandstone, wood and tile.		
					(0.65)	MADE GROUND: Light grey brown very sandy gravel. Gravel is fine to coarse angular to rounded of concrete, flint, limestone, chalk, brick, tile, terracotta, clinker, plastic, wood, and metal. Low cobble content of concrete.		
				32.18	0.90	At 0.90m: MEMBRANE.		▽1
				31.98	(0.20) 1.10	Firm mottled orange brown and grey slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk.		
						Complete at 1.10m		

Plan

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Remarks

Pit walls stable

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP919



St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
TP920

Trial Pit

0.55m x 2.00m

32.90

VSM Estates

Number

506399 8 F 183575 2 N

17/10/2014

Atkins Limited

1/1

Depth
(m)

Sample / Tests

Water
Depth
(m)

Field Records

Level
(mOD)Depth
(m)
(Thickness)

Description

Legend

Water

1.00

C1

Water strike(1) at 0.65m.

32.50

F (0.40)

0.40

F (0.50)

32.00

31.85

(0.13)
1.05

MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with many roots and rootlets. Gravel is fine to coarse angular to rounded of flint, concrete, wood and plastic.

MADE GROUND: Brown clayey very sandy gravel. Gravel is fine to coarse angular to rounded of flint, concrete, brick, limestone, sandstone, chalk, tile and clinker with low cobble content.

At 0.90m: MEMBRANE.

Firm mottled orange brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk. Slight foul odour.

Complete at 1.05m

Plan

Remarks

Pit walls stable

Scale (approx)

1.25

Logged By

CH

Figure No.

21311 TP920



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP921

Excavation Method

Trial Pit

Dimensions

0.50m x 1.95m

Ground Level (mOD)

32.69

Client

VSM Estates

**Job
Number**

21311

Location

506400.4 E 183565.7 N

Dates

17/10/2014

Engineer

Atkins Limited

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	C1		Water strike(1) at 0.40m.	32.39	(0.30)	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with many roots and rootlets. Gravel is fine to coarse subangular to rounded of flint, sandstone and concrete.		
				32.09	(0.30)	MADE GROUND: Light grey brown very sandy gravel. Gravel is fine to coarse angular to rounded of flint, concrete, limestone, brick, metal, ceramic, terracotta and clinker. Medium cobble content of concrete.		
					0.60	At 0.60m: MEMBRANE		
0.80	C2			31.74	(0.35)	Firm pale grey silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk.		
					0.95	Complete at 0.95m		

Plan

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Remarks

Pit walls stable

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP921



St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
TP922

Trial Pit

0.65m x 2.30m

32.72

VSM Estates

**Job
Number**
21311

506402 6 F 183548 9 N

16/10/2014

Atkins Limited

Sheet
1/1

Sample / Tests

Field Records

Depth
(m)
(Thickness)

Description

Legend

Water

0.90

C1

Water strike(1) at 0.50m.

325

32 1

318

10

0

10

0

10

0

MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with many roots and rootlets. Gravel is fine to coarse angular to rounded of flint, concrete, wood, brick and plastic.

MADE GROUND: Light brown very sandy gravel. Gravel is fine to coarse angular to rounded of concrete, flint, brick, sandstone, limestone, clinker, metal, chalk and plastic. Medium cobble content of concrete.
At 0.50m: MEMBRANE

Firm mottled orange brown, brown and grey sandy slightly gravelly CLAY with some sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk.

Complete at 0.90m

Plan

Remarks

Pit walls stable

Scale (approx)

1.25

Logged By

Ch

Figure No.

21311 TP922



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number

TP923

Excavation Method

Trial Pit

Dimensions

0.75m x 2.10m

Ground Level (mOD)

32.78

Client

VSM Estates

Job
Number

21311

Location

506402.4 E 183539.9 N

Dates

16/10/2014

Engineer

Atkins Limited

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.60	C1			32.58	(0.20) 0.20	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with many roots and rootlets. Gravel is fine to coarse angular to rounded of flint, concrete, wood and brick.		
					(0.45)	MADE GROUND: Light brown sand and gravel. Sand is fine to coarse. Gravel is fine to coarse angular to rounded of concrete, flint, brick, glass, sandstone, limestone, clinker and slag. Low cobble content of concrete.		
				32.13	0.65	At 0.65m: MEMBRANE.		
0.80	C2			31.98	(0.15) 0.80	Firm mottled orange brown, brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse subangular to rounded of flint and chalk.		
						Complete at 0.80m		

Plan

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Remarks

Pit walls stable.
Water not encountered

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP923



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number
TP924**

Excavation Method Trial Pit	Dimensions 0.80m x 2.10m	Ground Level (mOD) 32.93	Client VSM Estates	Job Number 21311
	Location 506404.3 E 183529.4 N	Dates 16/10/2014	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.90	C1		Water strike(1) at 0.40m.	32.78	(0.15) 0.15	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with many roots and rootlets. Gravel is fine to coarse subangular to rounded of flint and concrete.		V1
					(0.65)	MADE GROUND: Brown clayey very sandy gravel Gravel is fine to coarse angular to rounded of flint, concrete, limestone, brick, chalk, wood, sandstone and tile. Low cobble content of concrete. South side of pit the stratum extends to 1.20m At 0.80m: MEMBRANE.		
				32.13	0.80 (0.15)	Firm mottled grey dark grey sightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint, chalk and red sandstone.		
1.00	C2			31.98 31.83	0.95 (0.15) 1.10	Firm mottled orange brown, brown and grey sandy slightly gravelly CLAY with some sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk. Complete at 1.10m		

Plan

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Remarks

Pit walls stable

Scale (approx)

1:25

Logged By

CH

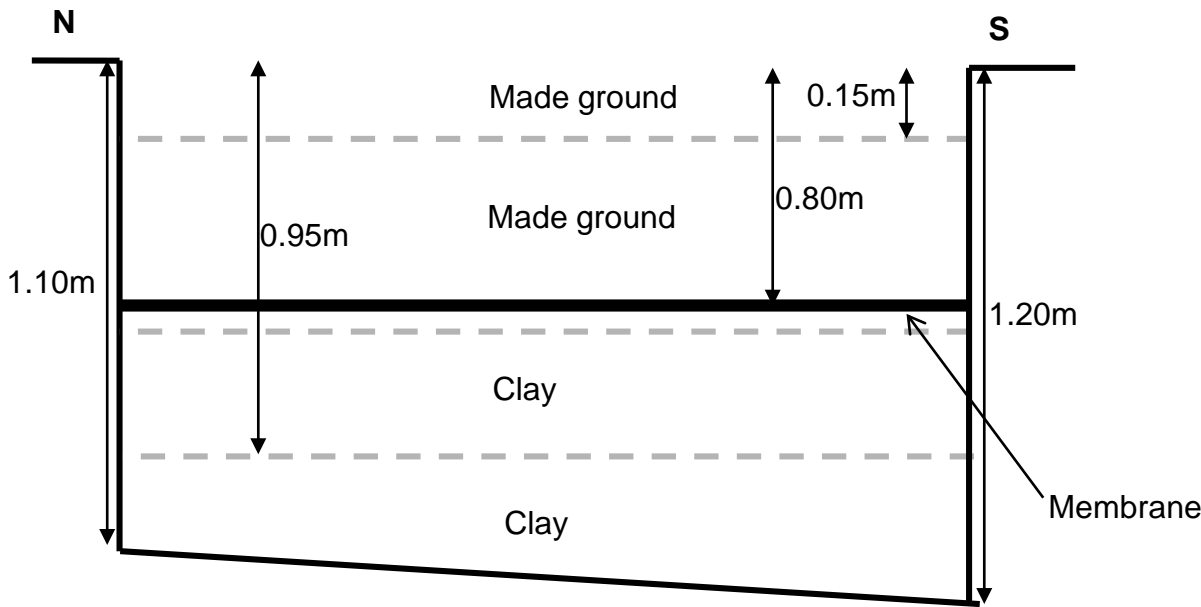
Figure No.

21311.TP924

Plan



Section




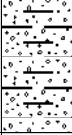


TP924

Scale: NTS

Figure 21311.TP924



 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP925	
Excavation Method Trial Pit		Dimensions 0.65m x 2.30m		Ground Level (mOD) 33.13		Client VSM Estates		Job Number 21311	
		Location 506405 E 183521.1 N		Dates 16/10/2014		Engineer Atkins Limited		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	C1		Water strike(1) at 0.40m.	32.93	(0.20) 0.20	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with many roots and rootlets. Gravel is fine to coarse angular to rounded of flint, brick, wood, concrete and sandstone. Low cobble content of brick.			
					(0.60)	MADE GROUND: Light brown clayey very sandy gravel. Gravel is fine to coarse angular to rounded of concrete, flint, brick, limestone, chalk and metal. Low cobble content of brick.			
0.90	C2			32.33	0.80	From 0.50m: grey brown and clayey At 0.80m: MEMBRANE.			
					(0.45)	Firm mottled orange brown, brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint, chalk and mudstone.			
				31.88	1.25	Complete at 1.25m			
Plan .						Remarks Minor spalling to clay			
						Scale (approx) 1:25		Logged By CH	
								Figure No. 21311.TP925	



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP926

Excavation Method

Trial Pit

Dimensions

0.70m x 2.05m

Ground Level (mOD)

33.12

Client

VSM Estates

**Job
Number**

21311

Location

506404.8 E 183513.2 N

Dates

16/10/2014

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.80	C1			32.92	(0.20) 0.20	MADE GROUND: Grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse angular to rounded of flint, wood, concrete and brick.		
				32.52	(0.40) 0.60	MADE GROUND: Grey brown clayey very sandy gravel. Gravel is fine to coarse angular to rounded of flint, concrete, brick, limestone, sandstone, chalk, clinker, plastic and tile. Low cobble content of concrete. At 0.60m: MEMBRANE		
				31.97	(0.55) 1.15	Firm green grey and blue grey mottled slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse subangular to rounded of flint, chalk and red sandstone.		
						Complete at 1.15m		

Plan

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Remarks

Pit walls stable.
Water inflow from ground level. No observable strike.

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP926



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP927

Excavation Method

Trial Pit

Dimensions

0.70m x 2.55m

Ground Level (mOD)

33.22

Client

VSM Estates

**Job
Number**

21311

Location

506405 E 183506.3 N

Dates

16/10/2014

Engineer

Atkins Limited

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.70	C1		Water strike(1) at 0.95m.	32.97	(0.25) 0.25	MADE GROUND: Grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with many roots and rootlets. Gravel is fine to coarse angular to rounded of brick, flint, concrete and wood. MADE GROUND: Grey brown sand and gravel. Sand is fine to coarse. Gravel is fine to coarse angular to rounded flint, concrete, brick, limestone, chalk, clinker and metal. Low cobble content of concrete.		
					(1.25)	At 1.10m: MEMBRANE		▽1
1.50	C2			31.72	1.50	MADE GROUND: Soft black and dark grey mottled slightly sandy gravelly clay. Gravel is fine to coarse subangular to subrounded of wood, plant matter, concrete, flint and brick. High organic content.		
1.60	C3			31.67 31.62	1.55 1.60	Firm mottled orange brown, brown grey sandy slightly gravelly CLAY with some sand lenses. Gravel is fine to coarse angular to rounded flint, chalk with occasional roots and rootlets. Complete at 1.60m		

Plan

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Remarks

Pit walls stable

Scale (approx)

1:25


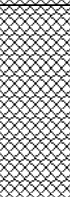


Logged By

1.60

Figure No.

21311.TP927

Client VSM Estates	Job Number 21311
Engineer Atkins Limited	Sheet 1/1

Description	Legend	Water
MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with many roots and rootlets. Gravel is fine to coarse angular to rounded of flint, concrete, wood, terracotta and metal.		▽
MADE GROUND: Grey brown clayey sand and gravel. Sand is fine to coarse. Gravel is fine to coarse angular to rounded of flint, concrete, sandstone, limestone, brick and tile.		
At 0.95m: MEMBRANE		
Firm mottled orange brown, brown grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk.		
Complete at 1.05m		

Remarks		
Pit walls stable		
Scale (approx)	Logged By	Figure No.
1:25	CH	21311.TP928



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP929

Excavation Method

Trial Pit

Dimensions

0.65m x 2.25m

Ground Level (mOD)

32.91

Client

VSM Estates

**Job
Number**

21311

Location

506408.5 E 183613.5 N

Dates


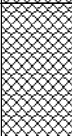


16/10/2014

Engineer

Atkins Limited

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.00	C1		Water strike(1) at 0.80m.	32.61	(0.30) 0.30 (0.65) 0.95 (0.15) 31.81 1.10	MADE GROUND: Dark brown slightly sandy slightly gravelly very clayey TOPSOIL with high cobble content and some roots and rootlets. Gravel is fine to coarse angular to rounded of plastic, metal, wood, concrete, flint and brick. Cobbles are of concrete, wood and plastic. MADE GROUND: Brown sand and gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete, brick, chalk, limestone, tile and quartz. Cobbles are of concrete. At 0.95m: MEMBRANE Firm mottled orange brown, brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint, chalk and mudstone. Complete at 1.10m	  	

Plan

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Remarks

Pit walls stable.

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP929



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number
TP930**

Excavation Method Trial Pit	Dimensions 0.65m x 2.00m	Ground Level (mOD) 32.82	Client VSM Estates	Job Number 21311
	Location 506413.2 E 183599.9 N	Dates 15/10/2014	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.20	C1		Water strike(1) at 0.15m.	32.67	(0.15) 0.15	MADE GROUND: Grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with low cobble content. Gravel is fine to coarse angular to rounded of terracotta, tile, wood, plastic, flint and sandstone. Cobbles are of terracotta, plastic and wood.		▽1
					(1.25)	MADE GROUND: Brown clayey very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete, plastic, tile, limestone, clinker and slag. Cobbles are of concrete and plastic. Below 0.45m: Grey brown clayey sand and gravel.		
1.60	C2			31.42	1.40 (0.40)	Firm mottled orange brown green grey sandy slightly gravelly CLAY with some sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk.		
				31.02	1.80	Complete at 1.80m		

Plan

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Remarks

Pit walls stable
No membrane observed

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP930



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP931

Excavation Method

Machine Trial Pit

Dimensions

0.70m x 2.50m

Ground Level (mOD)

33.02

Client

VSM Estates

**Job
Number**

21311

Location

506414.8 E 183589.2 N

Dates

14/10/2014

Engineer

Atkins Limited

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	C1			32.57	0.45 (0.45)	MADE GROUND: Brown slightly sandy slightly gravelly very clayey TOPSOIL with medium cobble content. Gravel is fine to coarse angular to subangular of plastic, concrete, brick, polystyrene, flint, wood, sandstone and metal. Cobbles are of wood, brick, concrete and plastic.		
				32.27	0.75 (0.30)	MADE GROUND: Brown clayey very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete, brick and sandstone. At 0.75m: MEMBRANE		
1.00	C2		Water strike(1) at 1.10m.	31.92	1.10 (0.35)	Firm mottled light brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses and occasional roots and rootlets. Gravel is fine to coarse subangular to rounded of flint and chalk. Occasionally mottled orange brown.		1
						Complete at 1.10m		

Plan

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Remarks

Pit walls stable.

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP931



St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit Number
TP932

Trial Pit

Dimensions
0.70 x 3.10m

Ground Level (mOD)	32.62
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VSM Estates






Job Number
21311

Location	506407.8 E 183563.6 N
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Dates	15/10/2014
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Atkins Limited

Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.40	C1		Water strike(1) at 0.15m.	32.47	(0.15) 0.15	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse subangular to rounded of flint, concrete and wood.		▽
					(0.45)	MADE GROUND: Grey brown clayey very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of concrete, brick, terracotta, tile and limestone.		
				32.02	0.60	At 0.60m: MEMBRANE		
0.80	C2				(0.40)	Firm mottled brown and grey slightly silty slightly sandy slightly gravelly CLAY. Gravel is fine to coarse angular to rounded of flint and chalk.		
				31.62	1.00	Complete at 1.00m		

Pit walls stable
At 0.65m: A previously damaged terracotta field drain 100mm diameter noted at 0.65m bgl at 0.75m from the north pit face. Noted as fractured, segmented and infilled.

1.25

CH

21311 TP932



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP933

Excavation Method

Trial Pit

Dimensions

0.75m x 2.20m

Ground Level (mOD)

32.65

Client

VSM Estates

**Job
Number**

21311

Location

506408.5 E 183549.7 N

Dates

15/10/2014

Engineer

Atkins Limited

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.70	C1		Water strike(1) at 0.55m.	32.45	(0.20) 0.20	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with many roots and rootlets. Gravel is fine to coarse angular to rounded of flint, wood, plastic, brick, sandstone and concrete.		
					(0.45)	MADE GROUND: Grey brown very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete, brick, limestone, metal, tile and plastic.		
				32.00	0.65	At 0.65m: MEMBRANE		
				31.85	(0.15) 0.80	Firm mottled orange brown and brown grey sandy slightly gravelly CLAY. Gravel if fine to coarse angular to rounded of flint, chalk and occasional roots and rootlets.		
						Complete at 0.80m		

Plan

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Remarks

Pit walls stable

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP933



St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit Number
TP934

Trial Pit

Dimensions
0.85m x 2.15m

Ground Level (mOD)	32.66
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VSM Estates





Job Number
21311

Location	506409 2 E 183541 5 N
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Dates	15/10/2014
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Atkins Limited

Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.50	C1		Water strike(1) at 0.55m.	32.46	(0.20) 0.20	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is angular to rounded fine to coarse of flint, concrete, wood and brick.			
						(0.40) 0.60	MADE GROUND: Light brown very sandy gravel with low cobble content. Gravel is angular to rounded fine to coarse of flint, concrete, brick, terracotta and limestone. Cobbles are of concrete. At 0.60m: MEMBRANE		
0.70	C2				32.06				
					31.71	(0.35) 0.95	Firm mottled orange brown and brown grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel if fine to coarse subangular to rounded of flint and chalk. Occasional roots and rootlets noted. Complete at 0.95m		

Pit walls stable

1.25

CH

21311 TP934



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number
TP935

Excavation Method

Trial Pit

Dimensions

0.75m x 1.90m

Ground Level (mOD)

32.68

Client

VSM Estates

Job
Number
21311

Location

506409.7 E 183533.4 N

Dates




15/10/2014

Engineer

Atkins Limited

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.70	C1			32.38	(0.30) 0.30	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly clay with some roots and rootlets. Gravel is fine to coarse angular to rounded of flint, concrete, plastic and wood.		
				32.08	(0.30) 0.60	MADE GROUND: Brown clayey very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete, brick, terracotta, limestone and tile. Cobbles are of concrete and brick.		
				31.88	(0.20) 0.80	At 0.60m: MEMBRANE Firm mottled orange brown and grey brown sandy slightly gravelly CLAY with occasional clay lenses. Gravel is fine to coarse subangular to rounded of flint and chalk. Occasional roots and rootlets noted.		
						Complete at 0.80m		

Plan

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Remarks

Pit walls stable
Water inflow from ground level. No observable strike.

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP935



St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
TP936

Trial Pit

Dimensions
0.85m x 2.10m

Ground Level (mOD)	33.00
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VSM Estates

Job Number 21311

Location	506410.6 E 183526.9 N
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Dates	15/10/2014
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Atkins Limited

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse angular to rounded of flint, wood, concrete and brick.		
			Water strike(1) at 0.55m.	32.70	0.30	MADE GROUND: Light brown clayey very sandy gravel. Gravel is fine to coarse angular to rounded of concrete, flint, limestone and brick.		
						At 0.65m: Grey brown		
						At 0.80m: MEMBRANE		
1.30	C1			31.50	1.50			
					(0.10)			
1.60	C2			31.40	1.60	Firm mottled orange brown, brown grey sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk.		
						Complete at 1.60m		

Minor spalling up to clay horizon

1.25

CH

21311 TP936



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number
TP937**

Excavation Method

Trial Pit

Dimensions

0.65 m x 2.10m

Ground Level (mOD)

33.15

Client

VSM Estates

**Job
Number
21311**

Location

506412.5 E 183517.7 N

Dates

15/10/2014

Engineer

Atkins Limited

**Sheet
1/1**

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.90	C1			32.90	(0.25) 0.25	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse angular to rounded of flint, wood, concrete and plastic.		
					(0.50)	MADE GROUND: Damp brown very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of concrete, brick, tile, sandstone and limestone. Cobbles are of concrete.		
				32.40	0.75	At 0.75m: MEMBRANE		
				32.15	(0.25) 1.00	Firm mottled orange brown, brown grey slightly silty, slightly sandy, slightly gravelly CLAY with occasional sand lenses, roots and rootlets. Gravel is fine to coarse angular to rounded of flint and chalk. Low organic content noted.		
						Complete at 1.00m		

Plan

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Remarks

Pit walls stable
Water seepage noted in the gravel (damp)

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP937



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number

TP938

Excavation Method

Trial Pit

Dimensions

0.65m x 2.00m

Ground Level (mOD)

33.23

Client

VSM Estates

Job
Number

21311

Location

506412.8 E 183513.3 N

Dates


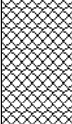


15/10/2014

Engineer

Atkins Limited

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.60	C1		Water strike(1) at 0.50m.	32.98	(0.25) 0.25	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with many roots and rootlets. Gravel is fine to coarse subangular to rounded of flint, wood and concrete.	   	V1
					(0.45)	MADE GROUND: Grey brown very sandy gravel with medium cobble content of concrete and low boulder content. Gravel is fine to coarse angular to rounded of flint, concrete, brick, terracotta, tile, and sandstone.		
				32.53	0.70 (0.15)	At 0.70m: MEMBRANE		
0.80	C2			32.38	0.85	Firm mottled brown and grey occasionally orange brown slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse subangular to rounded of flint and chalk. occasional roots and rootlets.		
						Complete at 0.85m		

Plan

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Remarks

Pit walls stable

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP938



Excavation Method Trial Pit	Dimensions 0.70m x 1.90m	Ground Level (mOD) 33.31	Client VSM Estates	Job Number 21311
	Location 506413 E 183504.1 N	Dates 15/10/2014	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.05	C1		Water strike(1) at 1.00m.	33.06	(0.25) 0.25	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey topsoil with many roots and rootlets. Gravel is fine to coarse angular to rounded of flint, wood and sandstone.		▽1
					(1.10)	MADE GROUND: Grey brown very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete, brick, limestone, terracotta, tile and plastic. Cobbles are of concrete and brick.		
1.50	C2			31.96 31.91 31.81	1.35 1.40 (0.10) 1.50	MADE GROUND: Soft mottled black dark grey slightly sandy slightly gravelly clay. Gravel is angular to rounded fine to coarse of wood, plant matter, flint, concrete, terracotta and limestone. Organic rich (odour) Firm mottled orange brown, brown grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse subangular to rounded of flint and chalk with occasional roots and rootlets. Complete at 1.50m		

Plan	Remarks Pit walls stable							

Scale (approx) 1:25				Logged By CH		Figure No. 21311.TP939		

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
1.00	C1		Water strike(1) at 0.35m.						
					(0.25)	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse angular to rounded of flint, wood, concrete and plastic.			
					32.45	0.25			
					(0.35)	MADE GROUND: Grey brown clayey very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete, plastic brick and limestone. Cobbles are of concrete and plastic.			
					32.10	0.60	At 0.60m: MEMBRANE		
					(0.40)	Firm green grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse subangular to rounded of flint, chalk and mudstone.			
					31.70	1.00			
						Complete at 1.00m			

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**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP941

Excavation Method

Trial Pit

Dimensions

0.70m x 2.45m

Ground Level (mOD)

32.52

Client

VSM Estates

**Job
Number**

21311

Location

506422.8 E 183565.3 N

Dates

15/10/2014

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	C1			32.22	0.30	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. gravel is fine to coarse angular to rounded of flint, wood and concrete.		
					0.40	MADE GROUND: Grey brown very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete, brick, limestone and plastic. Cobbles are of concrete.		
				31.82	0.70	At 0.60m: MEMBRANE		
0.90	C2			31.52	1.00	Firm mottled brown orange brown grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse subangular to rounded of flint, chalk and mudstone.		
						Complete at 1.00m		

Plan

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Remarks

Pit walls stable.
Water inflow from ground level. No observable strike.

Scale (approx)

1:25

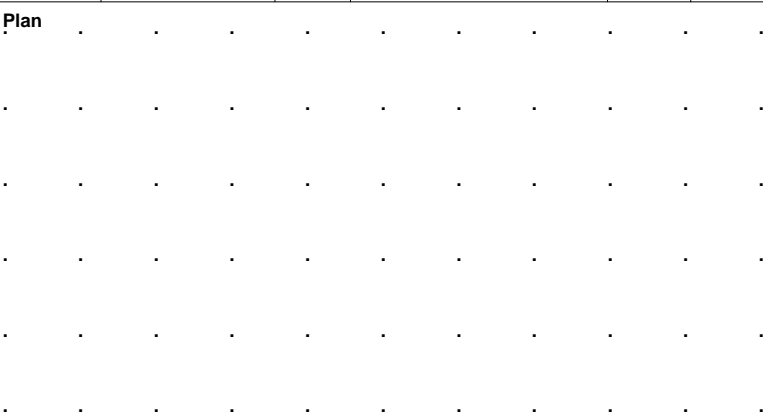
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Figure No.

21311.TP941

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.70	C1		Water strike(1) at 0.35m.					
					(0.25)	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse subangular to rounded of flint, concrete and wood.		▽
					32.36		0.25	
					(0.30)	MADE GROUND: Grey brown very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete, limestone and sandstone. Membrane at base.		
					32.06		0.55	
					(0.25)	Firm mottled brown and grey occasionally orange brown slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse subangular to rounded of flint and chalk.		
					31.81		0.80	
						Complete at 0.80m		

<div>Plan</div> 	Remarks		
	Pit walls stable. At 0.65m: terracotta drainage pipe (previously fractured), 100mm diameter and running E-W at 0.90m from the southern face of pit		
Scale (approx)		Logged By	Figure No.
1:25		CH	21311.TP942



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number

TP943

Excavation Method

Trial Pit

Dimensions

0.70m x 2.00m

Ground Level (mOD)

32.56

Client

VSM Estates

Job
Number

21311

Location

506423.2 E 183547.5 N

Dates

15/10/2014

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.40	C1		Water strike(1) at 0.25m.	32.41	(0.15) 0.15	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL. Gravel is fine to coarse angular to rounded of flint, concrete and brick. Many roots and rootlets noted.		▽1
0.65	C2			31.96 31.86	(0.45) (0.60) (0.10) 0.70	MADE GROUND: Grey brown clayey very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete, brick and limestone. At 0.60m: MEMBRANE Firm mottled orange brown, brown grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse, angular to rounded of flint, chalk and mudstone. Complete at 0.70m	 	

Plan

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Remarks

Pit walls stable

Scale (approx)

1:25


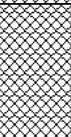


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Figure No.

21311.TP943

Client VSM Estates	Job Number 21311
Engineer Atkins Limited	Sheet 1/1

Description	Legend	Marker
MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse angular to rounded of brick, concrete, wood, flint and terracotta.		
MADE GROUND: Light grey brown very sandy gravel with low cobble content of concrete. Gravel is fine to coarse angular to rounded of flint, concrete, limestone, wood, brick and terracotta.		
At 0.65m: MEMBRANE		▽
Firm mottled orange brown, brown grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse subangular to rounded of flint, chalk and mudstone.		
Complete at 0.95m		

Remarks Minor spalling in pit walls from 0.20m to 0.65m.		
Scale (approx) 1:25	Logged By CH	Figure No. 21311.TP944



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP945

Excavation Method

Trial Pit

Dimensions

0.65m x 2.10m

Ground Level (mOD)

32.96

Client

VSM Estates

**Job
Number**

21311

Location

506421.9 E 183525 N

Dates

14/10/2014

Engineer

Atkins Limited

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.60	C1		Water strike(1) at 0.65m.	32.76	(0.20) 0.20	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL. Gravel is fine to coarse angular to rounded of brick, concrete, wood, flint, limestone and terracotta.		
					(0.80)	MADE GROUND: Light grey brown clayey very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete, limestone, brick and wood. Cobbles are of concrete and wood.		
						At 1.00m: MEMBRANE		
1.10	C2			31.96	1.00	Firm mottled brown and grey occasionally orange brown. slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse subangular to rounded of flint and chalk.		
				31.66	1.30	Complete at 1.30m		

Plan

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Remarks

Pit walls stable

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP945




IAN FARMER
ASSOCIATES

Site
St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number
TP946

Excavation Method Trial Pit	Dimensions 0.70m x 1.80m	Ground Level (mOD) 33.12	Client VSM Estates	Job Number 21311
	Location 506421.1 E 183512.1 N	Dates 14/10/2014	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.80	C1		Water strike(1) at 0.65m.	32.87	(0.25) 0.25	MADE GROUND: Grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse angular to rounded of brick, concrete, flint, limestone and terracotta.		V1
					(0.55)	MADE GROUND: Light grey brown very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete, limestone, brick and terracotta.		
				32.32	0.80 (0.30)	At 0.80m: MEMBRANE Firm mottled grey and dark grey slightly silty slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular to rounded of flint and chalk. Occasional small sand lenses.		
				32.02	1.10	Complete at 1.10m		

Plan	Remarks Pit walls stable.		
	Scale (approx) 1:25	Logged By CH	Figure No. 21311.TP946



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number
TP947

Excavation Method

Trial Pit

Dimensions

0.70m x 2.00m

Ground Level (mOD)

33.26

Client

VSM Estates

Job
Number
21311

Location

506419.6 E 183504.5 N

Dates


14/10/2014

Engineer

Atkins Limited

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.90	C1		Water strike(1) at 0.65m.	33.01	(0.25) 0.25	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL some roots and rootlets. Gravel is fine to coarse angular to rounded of brick, concrete, flint and limestone.		V1
					(0.75)	MADE GROUND: Light grey brown very sandy gravel with medium cobble content. Gravel is fine to coarse angular to rounded of flint, concrete, limestone and brick. Cobbles are of concrete.		
				32.26	1.00	At 1.00m: MEMBRANE		
1.20	C2			31.96	(0.30) 1.30	Firm mottled orange brown, brown grey slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk.		
						Complete at 1.30m		

Plan

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Remarks

Pit walls stable.

Scale (approx)





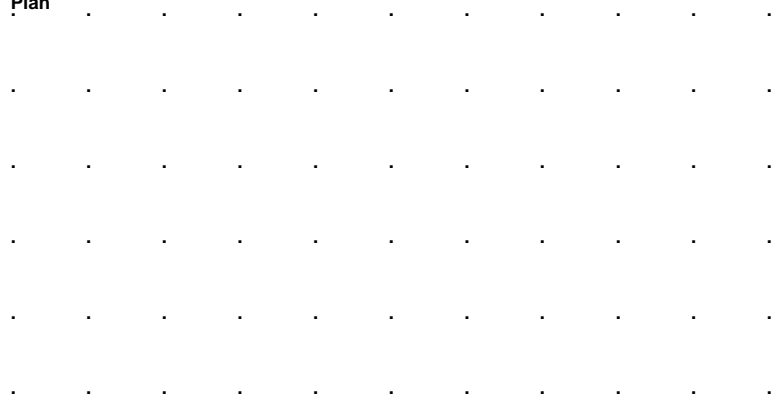
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Figure No.

21311.TP947

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP948					
Excavation Method Trial Pit		Dimensions 0.70m x 2.40m		Ground Level (mOD) 33.17		Client VSM Estates		Job Number 21311					
		Location 506415.5 E 183625.5 N		Dates 16/10/2014		Engineer Atkins Limited		Sheet 1/1					
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water				
0.40	C1		Water strike(1) at 0.60m.	32.97	(0.20) 0.20	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse angular to subrounded flint, concrete, wood and brick.			V1				
				32.72	(0.25) 0.45	MADE GROUND: Grey brown very gravelly fine to coarse sand. Gravel is fine to coarse angular to rounded of flint, concrete, brick and limestone.							
					(0.50)	MADE GROUND: Grey brown very sandy gravel. Gravel is fine to coarse angular to rounded of flint, concrete, brick and limestone.							
				32.22	0.95	At 0.95m: MEMBRANE							
1.10	C2			32.07	(0.15) 1.10	Firm mottled orange brown and brown grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse subangular to rounded of flint, chalk and mudstone.							
						Complete at 1.10m							
Plan 						Remarks Pit walls stable							
												Scale (approx) 1:25	Logged By CH	Figure No. 21311.TP948



Excavation Method Trial Pit	Dimensions 0.70m x 2.35m	Ground Level (mOD) 33.14	Client VSM Estates	Job Number 21311
	Location 506421.9 E 183618.5 N	Dates 16/10/2014	Engineer Atkins Limited	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.20	C1		Water strike(1) at 0.55m.	32.94	(0.20) 0.20	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with many roots and rootlets. Gravel is fine to coarse angular to rounded of tile, brick, concrete, flint, sandstone, limestone and wood.		
				32.59	(0.35) 0.55	MADE GROUND: Grey brown very gravelly fine to coarse sand with low cobble content. Gravel is fine to coarse angular to rounded of flint, brick, slag, clinker, concrete, terracotta, chalk and limestone.		▽1
				32.24	(0.35) 0.90	MADE GROUND: Dark grey brown very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, brick, slag, clinker, concrete, terracotta, chalk and limestone. Cobbles are of concrete. At 0.90m: MEMBRANE		
				31.89	(0.35) 1.25	Firm mottled orange brown grey and brown slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint, chalk and mudstone. Complete at 1.25m		

Plan	Remarks Pit walls stable.							
	Scale (approx) 1:25			Logged By CH		Figure No. 21311.TP949		



St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
TP950

Trial Pit

Dimensions
0.70m x 2.10m

Ground Level (mOD)	33.13
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VSM Estates


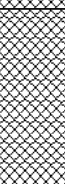

Job Number
21311

Location	506431 E 183602.6 N
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Dates	15/10/2014
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Atkins Limited

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water				
1.00	C1		Water strike(1) at 0.75m.	32.93	(0.20)	MADE GROUND: Dark brown slightly sandy slightly gravelly very clayey TOPSOIL. Gravel is angular to rounded fine to coarse of flint, concrete, wood, plastic, tile and brick.						
					0.20							
					(0.60)	MADE GROUND: Brown very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete, sandstone, limestone, brick and tile.						
					32.33				0.80	At 0.80m: MEMBRANE		
					32.03	(0.30)	Firm mottled brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses, roots and rootlets. Gravel is fine to coarse subangular to rounded of flint, shale, mudstone and occasionally mottled orange brown.					
					1.10							
					Complete at 1.10m							

Pit wall stable

1.25

CH

21311 TP950



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number

TP951

Excavation Method

Trial Pit

Dimensions

0.70m x 2.40m

Ground Level (mOD)

33.00

Client

VSM Estates

Job
Number

21311

Location

506430.4 E 183587.3 N

Dates

14/10/2014

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.35	C1		Water strike(1) at 0.45m.	32.80	(0.20) 0.20	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL. Gravel is fine to coarse angular to subangular of brick, flint, concrete and wood. Some roots and rootlets.		
					(0.45)	MADE GROUND: Grey brown clayey very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete and limestone. Below 0.35m: No clay or cobble content.		
				32.35	0.65	At 0.65m: MEMBRANE		
0.80	C2			32.20	(0.15) 0.80	Firm mottled orange brown brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse subangular to rounded of flint and chalk.		
						Complete at 0.80m		

Plan

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Remarks

Pit walls stable

Scale (approx)





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Logged By

CH

Figure No.

21311.TP951

 IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP952	
Excavation Method Trial Pit		Dimensions 0.70m x 2.05m		Ground Level (mOD) 32.80		Client VSM Estates		Job Number 21311	
		Location 506430.5 E 183578.3 N		Dates 14/10/2014		Engineer Atkins Limited		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.70	C1		Water strike(1) at 0.70m.	32.55	(0.25) 0.25	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse angular to subangular of wood, brick and flint.			
				32.25	(0.30) 0.55	MADE GROUND: Grey brown clayey very sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete and limestone. Cobbles are of concrete.			
				32.05	(0.20) 0.75	From 0.30m: Sandy, absence of clay and cobbles. At 0.55m: MEMBRANE			▽1
						Firm mottled orange brown., brown, dark grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses, roots and rootlets. Faint odour of uncertain derivative. Gravel is fine to coarse angular to rounded of flint and chalk,			
						Complete at 0.75m			
Plan .						Remarks Pit walls stable Terracotta field drainage pipe noted previously fractures at 0.70m running E-W approximately 100mm in diameter.			
						Scale (approx) 1:25		Logged By CH	
						Figure No. 21311.TP952			



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number

TP953

Excavation Method

Trial Pit

Dimensions

0.70m x 1.90m

Ground Level (mOD)

32.59

Client

VSM Estates

Job
Number

21311

Location

506433.7 E 183565.4 N

Dates

14/10/2014

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.60	C1			32.39	(0.20) 0.20	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. gravel is fine to coarse angular to subrounded of flint, wood, brick and sandstone.		
				32.04	(0.35) 0.35	MADE GROUND: Grey brown very sandy gravel with low cobble content of concrete. Gravel is fine to coarse angular to rounded of flint, concrete and limestone.		
				31.94	0.55 (0.10) 0.65	At 0.55m: MEMBRANE		
						Mottled orange brown grey slightly silty slightly gravelly slightly sandy CLAY with occasional sand lenses, roots and rootlets. Gravel is fine to coarse angular to rounded of flint and chalk.		
						Complete at 0.65m		

Plan

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Remarks

Pit walls stable.
Water not encountered

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP953



IAN FARMER
ASSOCIATES

Site

St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit
Number

TP954

Excavation Method

Trial Pit

Dimensions

0.70m x 1.65m

Ground Level (mOD)

32.59

Client

VSM Estates

Job
Number

21311

Location

506436.3 E 183559 N

Dates

14/10/2014

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.40 0.40	C 1(NE) C2			32.39	(0.20) 0.20	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse angular to rounded of flint, wood, brick and sandstone.		
				32.04	(0.35) 0.55	MADE GROUND: Grey brown very clayey sandy gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete and limestone. At 0.55m: MEMBRANE	 	
0.70	C3			31.79	(0.25) 0.80	Firm mottled orange brown and brown grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse subangular to rounded of flint, chalk, mudstone and siltstone. Complete at 0.80m		

Plan

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Remarks

Pit walls stable
Water inflow from ground level. No observable strike.
To the north east of the pit the natural clay starts from just beneath the topsoil. Sample C2 collected from within this natural clay.

Scale (approx)

1:25

Logged By

CH

Figure No.

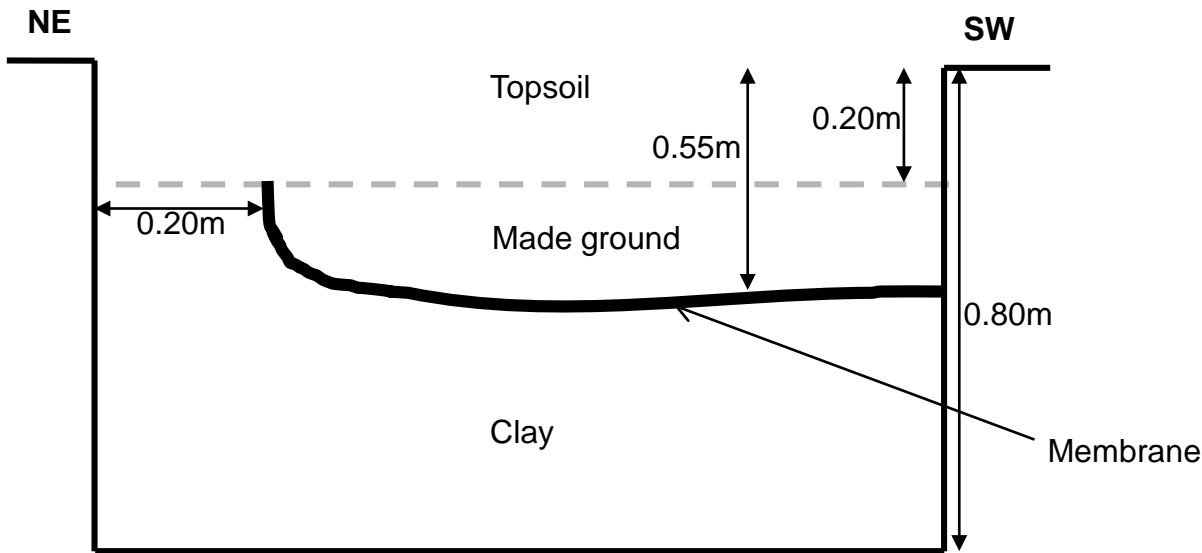
21311.TP954

21311

Plan



Section








TP954

Scale: NTS

Figure 21311.TP954



Client VSM Estates	Job Number 21311
Engineer Atkins Limited	Sheet 1/1

Description	Legend	Water
MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse angular to rounded of flint, wood, sandstone and concrete.		
MADE GROUND: Brown clayey very sandy gravel. Gravel is fine to coarse of flint, concrete, limestone and brick. Cobbles are of concrete.		
MADE GROUND: Grey brown very gravelly fine to coarse sand. Gravel is fine to coarse of flint, concrete, limestone and brick. Cobbles are of concrete.		
At 0.85m: MEMBRANE		
Firm mottled brown and grey slightly silty slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular to rounded of flint, chalk and mudstone. Low organic content of wood and plant matter.		
Complete at 1.10m		

Remarks Pit walls stable		
Scale (approx) 1:25	Logged By CH	Figure No. 21311.TP956



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number
TP957**

Excavation Method

Trial Pit

Dimensions

0.65m x 2.00m

Ground Level (mOD)

32.87

Client

VSM Estates

**Job
Number
21311**

Location

506434.5 E 183522.9 N

Dates

14/10/2014

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.80	C1		Water strike(1) at 0.75m.	32.67	(0.20) 0.20	MADE GROUND: Long grass over brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse angular to rounded of flint, wood and brick.		
					(0.70)	MADE GROUND: Grey brown sand and gravel with low cobble content. Sand is fine to coarse. Gravel is fine to coarse angular to rounded of flint, concrete, limestone, brick, terracotta and metal. By 0.60m: very sandy gravel.		
				31.97	0.90	By 0.90m: MEMBRANE		
1.10	C2			31.72	(0.25) 1.15	Firm brown mottled orange brown and grey slightly silty slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular to rounded of flint and chalk.		
						Complete at 1.15m		

Plan

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Remarks

Pit walls stable.

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP957



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number
TP958**

Excavation Method

Trial Pit

Dimensions

0.70m x 1.80m

Ground Level (mOD)

32.94

Client

VSM Estates

**Job
Number
21311**

Location

506432.4 E 183514.8 N



Dates

14/10/2014

Engineer

Atkins Limited

**Sheet
1/1**

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.75	C1		Water strike(1) at 0.65m.	32.74	(0.20) 0.20	MADE GROUND: Long grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse angular to rounded of flint, wood and brick.		
					(0.55)	MADE GROUND: Grey brown sand and gravel with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete, limestone, brick and concrete. Cobbles are of concrete.		
0.90	C2			32.19 32.14	0.75 0.80	MADE GROUND: Soft dark grey slightly sandy very gravelly clay slightly organic. Gravel is fine to coarse angular to rounded of flint, concrete, limestone, brick, concrete, terracotta, tile and plastic.		
				31.94	(0.20) 1.00	At 0.80m: MEMBRANE Firm mottled orange brown to brown and grey slightly silty slightly sandy gravelly CLAY with occasional sand lenses. Gravel is fine to coarse subangular to rounded of flint and chalk with occasional rootlets. Complete at 1.00m		

Plan

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Remarks

Pit wall stable.

Scale (approx)

1:25






Logged By

CH

Figure No.

21311.TP958

Client VSM Estates	Job Number 21311
Engineer Atkins Limited	Sheet 1/1

Description	Legend	Water
MADE GROUND: Grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with many roots and rootlets. Gravel is fine to coarse angular to rounded of flint and wood.		
MADE GROUND: Grey brown very gravelly fine to coarse sand with low cobble content. Gravel is fine to coarse angular to rounded of flint, concrete, limestone, brick and terracotta. Cobbles are of concrete.		
AT 0.90m: MEMBRANE		
Firm mottled grey and orange brown slightly silty slightly sandy slightly gravelly CLAY with occasional roots and rootlets. Gravel is fine to coarse subangular to rounded of flint and chalk. Low organic content of plant matter.		
Complete at 1.10m		

Remarks Pit walls stable		
Scale (approx) 1:25	Logged By CH	Figure No. 21311.TP959



St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
TP960

Trial Pit

Dimensions
0.55m x 1.90m

Ground Level (mOD)	36.12
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VSM Estates

**Job
Number**
21311

Location	506298 4 E 183696 9 N
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Dates	17/10/2014
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Atkins Limited

Sheet
1/1

Depth
(m)

Sample / Tests

Water
Depth
(m)

Field Records

Level
(mOD)Depth
(m)
(Thickness)

Description

Legend

Water

0.40

C1

130

C2

35.97

(0.15)
0.15

MADE GROUND: Grass over dark brown slightly sandy slightly gravelly very clayey TOPSOIL with many roots and rootlets. Gravel is fine to coarse angular to rounded of concrete, flint, plastic, brick and tile. Low cobble content of plastic.

(0.95)

MADE GROUND: Grey brown very clayey very gravelly sand. Sand is fine to coarse. Gravel is fine to coarse angular to rounded of concrete, flint, brick, terracotta, plastic, tile, limestone, sandstone, wood, chalk, clinker and slag. Low cobble content of brick and concrete.

35.02

1.10

Firm friable orange brown, brown mottled slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of chalk and flint.

34.67

1.45

Complete at 1.45m

Plan

Remarks

Pit walls stable
Groundwater not encountered
No membrane present

Scale (approx)

1.25

Logged By

CH

Figure No.

21311 TP960



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP961

Excavation Method

Trial Pit

Dimensions

0.50m x 1.95m

Ground Level (mOD)

36.41

Client

VSM Estates

**Job
Number**

21311

Location

506299.4 E 183684.8 N

Dates

17/10/2014

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.70	C1				(1.10)	MADE GROUND: Soft to firm dark brown sandy slightly gravelly clay. Gravel is fine to coarse angular to rounded of brick, tile, terracotta, flint, wood, plastic, metal, glass, concrete and sandstone with low cobble content of brick.		
				35.31	1.10			
				35.11	(0.20) 1.30	MADE GROUND: Firm friable mottled orange brown, brown and grey silty sandy gravelly clay with occasional sand lenses and occasional roots and rootlets. Gravel is fine to coarse angular to rounded of flint, chalk, glass, brick, wood .		
1.50	C2				(0.45)	Firm friable mottled orange brown, brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk. Occasional roots and rootlets.		
				34.66	1.75	Complete at 1.75m		

Plan

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Remarks

Pit wall stable
Groundwater not encountered

Scale (approx)







1:25

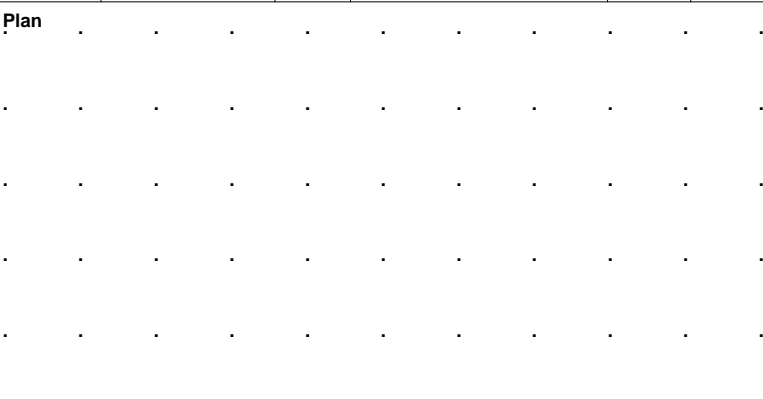
Logged By

CH

Figure No.

21311.TP961

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.70	C1		Water strike(1) at 0.35m.	33.86	(0.15)	MADE GROUND: Firm brown slightly sandy slightly gravelly clay. Gravel is fine to coarse angular to rounded of flint, chalk, limestone and concrete.		
					0.15			
33.41	(0.45)			MADE GROUND: Light brown very sandy gravel. Gravel is fine to coarse angular to rounded of flint, concrete, terracotta, tile, ceramic, brick, limestone, sandstone and clinker with low cobble content of concrete.				
	0.60							
33.21	At 0.60m: MEMBRANE							
	(0.20)							
1.00	C2			33.21	0.80	Firm dark grey sandy slightly gravelly CLAY. Gravel is fine to coarse angular to rounded of flint, chalk, wood, mudstone and siltstone. Medium organic content.		
				32.91	(0.30)	Firm friable mottled orange brown, brown and grey sandy slightly gravelly CLAY with some sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk.		
1.10								
Complete at 1.10m								

<div>Plan</div> <div></div>	<div>Remarks</div> <div>Pit walls stable</div>		
	<div>Scale (approx)</div> <div>1:25</div>	<div>Logged By</div> <div>CH</div>	<div>Figure No.</div> <div>21311.TP968</div>



St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
TP963

Trial Pit

Dimensions
0.55m x 2.25m

Ground Level (mOD)	34.10
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VSM Estates


**Job
Number**
21311

Location	506333 7 E 183738 2 N
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Dates	17/10/2014
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Atkins Limited

Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.60	C1			33.65	0.45 (0.45)	MADE GROUND: Dark grey clayey very sandy gravel. Gravel is fine to coarse angular to rounded of brick, flint, concrete fabric, wood, plastic, metal, limestone, sandstone, rubber, tile, terracotta, foam, polystyrene and clinker. medium cobble content of brick, concrete and plastic.		
					33.40	0.45 (0.25) 0.70	Firm mottled brown and grey occasionally red brown silty slightly sandy slightly gravelly friable CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint, chalk and mudstone. Occasional roots and rootlets. By 0.55m: becoming stiff	
						Complete at 0.70m		

Plan

Remarks

Mminor spalling to base
Groundwater not encountered
No membrane present

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP963



St Andrews Park, Phase 5, 6 and Rifle Range

Trial Pit Number
TP964

Trial Pit

Dimensions
0.50m x 1.65m

Ground Level (mOD)	33.99
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VSM Estates




Job Number
21311

Location	506334.3 E 183729.5 N
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Dates	17/10/2014
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Atkins Limited

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	C1			33.74	(0.25)	MADE GROUND: Dark brown slightly sandy slightly gravelly very clayey TOPSOIL with occasional roots and rootlets. Gravel is fine to coarse angular to rounded of flint, brick, plastic, concrete, tile, clinker, wood and ceramic. At 0.15m: Dark grey		
					0.25			
					(0.55)	Firm mottled orange brown and grey slightly silty sandy slightly gravelly CLAY with some fine sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk. Occasional roots and rootlets.		
					33.19		0.80	
						Complete at 0.80m		

Remarks

Minor spalling to natural clay
Groundwater not encountered
No membrane encountered

Scale (approx)

1:25

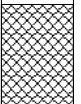
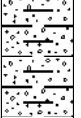
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Figure No.

21311.TP964

Client VSM Estates	Job Number 21311
Engineer Atkins Limited	Sheet 1/1

Description	Legend
<p>MADE GROUND: Firm dark brown slightly sandy slightly gravelly clay with occasional roots and rootlets. Gravel is fine to coarse angular to rounded of flint, limestone, plastic, clinker, tile, ceramic, brick and wood.</p>	
<p>Firm friable mottled orange - brown, brown and grey sandy slightly gravelly CLAY with some sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk, Occasional roots and rootlets. From 0.40 to 0.55m: Potentially reworked appears brown in colour but no man made gravel.</p>	
<p>Complete at 0.85m</p>	

Remarks		
Minor spalling to natural clay Groundwater not encountered No membrane present		
Scale (approx)	Logged By	Figure No.
1:25	CH	21311.TP965



**IAN FARMER
ASSOCIATES**

Site

St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**

TP966

Excavation Method

Trial Pit

Dimensions

1.85m x 0.50m

Ground Level (mOD)

33.83

Client

VSM Estates

**Job
Number**

21311

Location

506341.1 E 183705.7 N

Dates


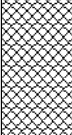

17/10/2014

Engineer

Atkins Limited

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.80 0.90 1.10	C1 C2 C3		Water strike(1) at 0.75m.	33.63 32.93 32.53	(0.20) 0.20 (0.70) 0.90 (0.40) 1.30	<p>MADE GROUND: Dark brown slightly sandy slightly gravelly very clayey TOPSOIL with some roots and rootlets. Gravel is fine to coarse angular to subrounded of brick, concrete, flint, wood, plastic, clinker and limestone.</p> <p>MADE GROUND: Light brown sand and gravel. Sand is fine to coarse. Gravel is fine to coarse angular to rounded of flint, concrete, plastic limestone, brick, clinker, sandstone and chalk. Low cobble content of concrete and low boulder content of concrete.</p> <p>At 0.90m: MEMBRANE</p> <p>Firm grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk. By 0.95m: Mottled orange brown and brown.</p> <p>Complete at 1.30m</p>	  	▽1

Plan

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Remarks

Pit walls stable

Scale (approx)

1:25

Logged By

CH

Figure No.

21311.TP966



St Andrews Park, Phase 5, 6 and Rifle Range

**Trial Pit
Number**
TP967

Trial Pit

Dimensions
0.55m x 2.00m

Ground Level (mOD)	33.87
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VSM Estates



Job Number
21311

Location	506346.5 E 183689.2 N
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Dates	17/10/2014
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Atkins Limited

Sheet
1/1










Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water		
1.20	C1		Water strike(1) at 1.05m.		33.72	(0.15) 0.15	MADE GROUND: Soft to firm brown slightly sandy slightly gravelly clay with occasional roots and rootlets. Gravel is fine to coarse angular to rounded of flint, chalk, limestone, wood, metal, sandstone and concrete.		▽1	
					33.52	(0.20) 0.35				
							MADE GROUND: Soft dark grey slightly sandy slightly gravelly clay with some roots and rootlets. Gravel is fine to coarse angular to rounded of flint, chalk, limestone, wood, metal, sandstone and concrete.			
						(0.80)				
							MADE GROUND: Grey brown very sandy gravel. Gravel is fine to coarse angular to rounded of flint, brick, concrete, clinker, plastic and metal with low cobble content of concrete.			
							At 1.15m: MEMBRANE			
					32.72	1.15	Firm mottled orange brown, brown and grey slightly silty slightly sandy slightly gravelly CLAY with occasional sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk.			
					32.47	(0.25) 1.40				
							Complete at 1.40m			

Pit walls stable.

1:25

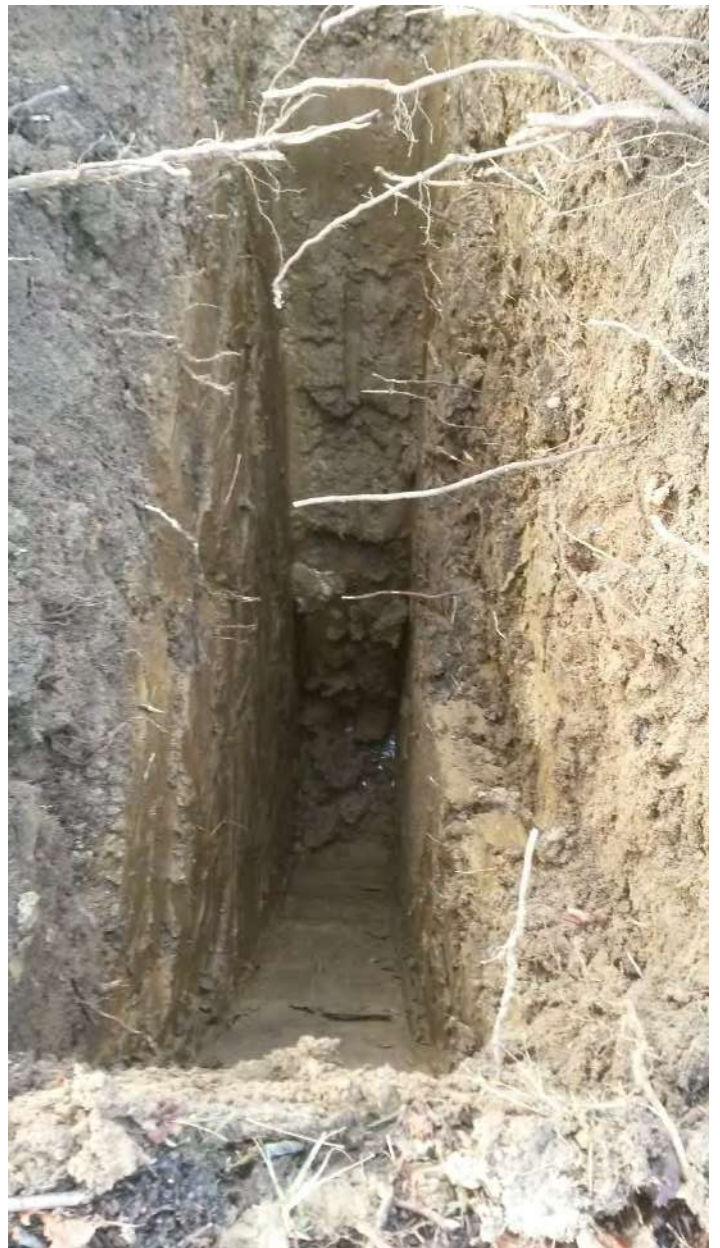
CH

21311.TP967

IAN FARMER ASSOCIATES						Site St Andrews Park, Phase 5, 6 and Rifle Range		Trial Pit Number TP968								
Excavation Method Trial Pit		Dimensions 0.50m x 2.25m		Ground Level (mOD) 33.25		Client VSM Estates		Job Number 21311								
		Location 506380.8 E 183615.6 N		Dates 16/10/2014		Engineer Atkins Limited		Sheet 1/1								
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water								
0.70	C1	Water strike(1) at 0.35m.		33.10	(0.15)	MADE GROUND: Brown slightly sandy slightly gravelly clay. Gravel is fine to coarse, angular to rounded of flint, chalk, limestone and concrete.		V1								
				32.95	(0.15)	MADE GROUND: Soft. dark brown, silty, slightly gravelly clay. Gravel is fine to coarse.										
					(0.30)	MADE GROUND: Orange brown, silty, fine to coarse sand.										
				32.65	0.60	At 0.60m: MEMBRANE.										
				32.65	(0.20)	MADE GROUND: Light brown very sandy gravel. Gravel is fine to coarse angular to rounded of flint, concrete, terracotta, tile, ceramic, brick, limestone, sandstone and clinker with low cobble content of concrete.										
				32.45	0.80	Firm dark grey sandy slightly gravelly CLAY. Gravel is fine to coarse angular to rounded of flint, chalk, wood, mudstone and siltstone. Medium organic content.										
1.00	C2				(0.30)	Firm friable mottled orange brown, brown and grey sandy slightly gravelly CLAY with some sand lenses. Gravel is fine to coarse angular to rounded of flint and chalk.										
				32.15	1.10	Below 1.70m: Stiff, blue grey, slightly gravelly. Gravel is fine to coarse, subangular to rounded chalk and quartzite.										
					(0.90)	Soft, orange brown, silty, slightly sandy CLAY.										
1.90	E1 PID=0.0ppm					Complete at 2.00m										

21311

St Andrews Park Phases 5, 6 and Rifle Range



TP801

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP802

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP803

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP804

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



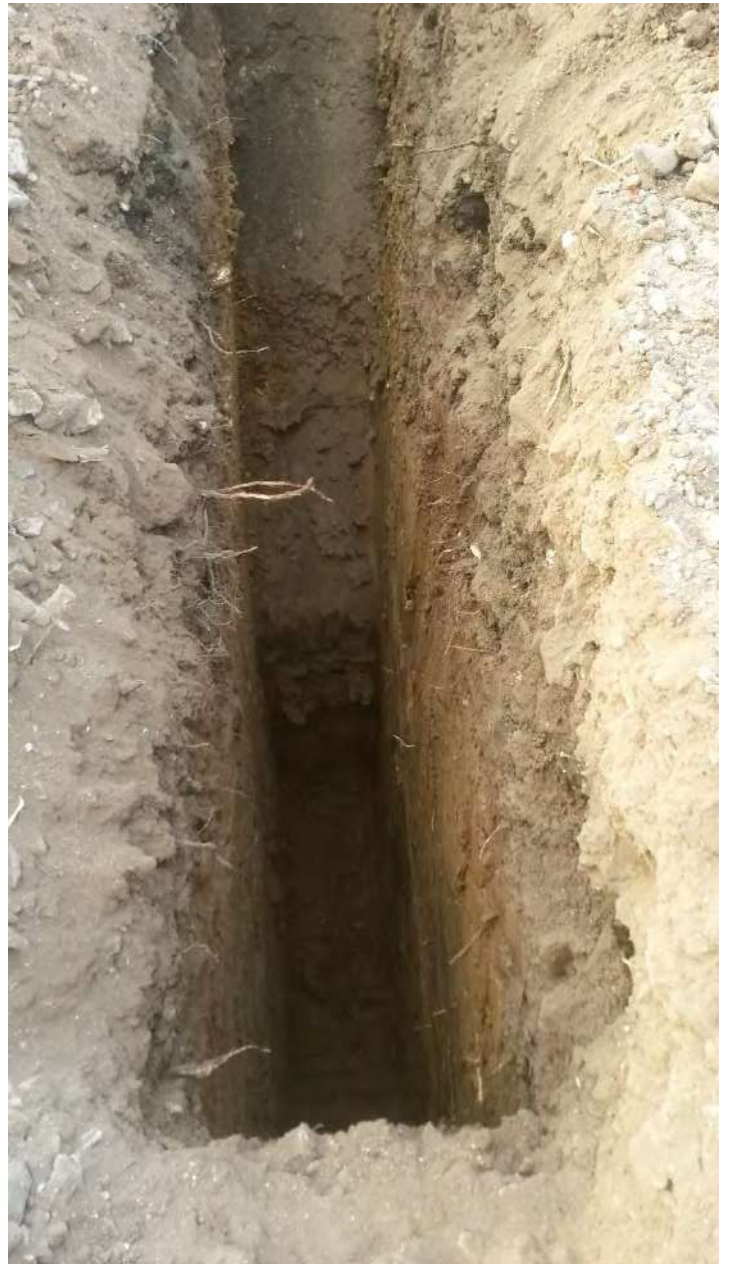
TP805

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP806

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP807

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP808

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP809

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP810

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP811

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP812

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP812 (20.01.15)

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP813

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP813 (20.01.15)

Scale: NTS



21311

St Andrews Park Phases 5, 6 and Rifle Range



TP815

Scale: NTS

