



Phase I Geo-Environmental Report

Swanstree Avenue, Sittingbourne

Gladman Developments Ltd

SHF.1132.260.HY.R.002.A

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Phase I Geo-Environmental Report for Swanstree Avenue, Sittingbourne

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1.0 INTRODUCTION

1.1 Background

1.1.1 Enzygo Limited was commissioned by Gladman Developments Limited [the client] to prepare a Phase 1 Geoenvironmental Report for a site, located on land south of Swanstree Avenue, Sittingbourne, ME9 0AA ('the Site').

1.2 Proposed Development

1.2.1 The proposed development is for residential dwellings. At the time of writing a development layout was not available.

1.3 Objectives

1.3.1 The objectives of the study were to:

- Review historical plans, geology, hydrogeology, and sensitivity information to complete a phase 1 geoenvironmental desk study. A Groundsure geoenvironmental data report was obtained (Appendix 1);
- Assess the implications of potential environmental risks, liabilities and development constraints in relation to the future on-site use and to off-site receptors;
- Provide a factual and interpretative report of the desk study; and
- Provide preliminary recommendations on environmental risk, potential remedial options; and to indicate any initial geotechnical constraints.

1.4 Methodology

1.4.1 The assessment of land quality for the Site involved the review of published information on the current condition of the soils and groundwater to develop an understanding of the prevailing baseline conditions.

1.5 Risk Classification

1.5.1 Enzygo used the available information to assess the likely risks to development from land quality issues. Definitions of the risk terms used are provided in Table 1.4 and Identified adverse risks are discussed in the report.

Table 1.4 Enzygo Qualitative Geo-environmental Risk Classification

Risk	Description
Dismissed	No risk
Negligible	No contamination risk has been identified which is likely to affect development
Low	No significant contaminated land risks have been encountered affecting development and a low risk that remediation will be required
Low-Moderate	There are unlikely to be significant contaminated land issue associated with the Site which will adversely affect its re-development. However, minor or localised contamination may be present requiring remediation. Remediation should be possible under a discovery strategy and with a call out service
Moderate	Some potential contaminated land risks have been encountered or identified which may affect re- development. The risks identified are unlikely to affect the entire Site or preclude development. Remediation is considered feasible as part of the development process and no further investigation is considered necessary.
Moderate-High	Some potentially significant contaminated land risks have been identified at the property that requires remediation. It is recommended that a separate remedial methodology is prepared supported by a Site-specific risk assessment
High	Significant potential contaminated land risks have been identified and remediation is required supported by further intrusive ground investigation, risk assessment and remedial design

2.0 SITE SETTING

Table 2.0 Site Description

Item	Description
Site Address	Swanstree Avenue, Sittingbourne
National Grid Reference	591192, 162573

2.1 Baseline Site Description

2.1.1 The Site is currently comprised of agricultural (arable) land.

2.1.2 Vehicular access is through Chilton Manor Farm via Highsted Road to the western boundary of the Site. There are two points of gated access off Swanstree Avenue, along the northern boundary.

Figure 2.1 Aerial Photograph



2.1.3 The detailed topographic survey shows the Site falls north from 36.22 metres Above Ordnance Datum (m AOD) (located in the southern corner) to 28.5m AOD (located along the northern boundary). The fall of approximately 7.72m over 275m gives a gradient of 1:36.

2.2 Surrounding Area

2.2.1 Land uses surrounding the Site are summarised in Table 2.2.

Table 2.2 Land Use Surrounding the Site

Direction	Land Use
North	Swanstree Avenue with residential properties beyond
East	Agricultural (arable) land
South	Agricultural (arable) land
West	Chilton Manor Farm with Highsted Road and residential properties beyond

3.0 SITE HISTORY

3.1 Historical Maps

3.1.1 A review was undertaken of the historical Ordnance Survey maps and information for the Site within a 250m radius included in Appendix 1. The review is summarised in Table 3.1.

Table 3.1 Historical Maps

Potentially Contaminative Historical Land Use		
Map Edition	Site	Area Surrounding the Site
1866	Orchard in west area of Site.	Chilton Farm located approximately 250m north Fullson Manor located approximately 300m Brick Field located approximately 300m east Rectory located approximately 400m north-east
1896	Roman Site of Cemetery encroaching on south-west extent	Roman Site of Cemetery 12m north-west Clay Pit located 116m north Tramway Sidings 220m north Chalk Pit approximately 400m south-west Urbanisation and expansion of Sittingbourne
1906	No significant change	Clay Pit infilled and excavated Tramway Sidings removed
1938-1947	Orchard expansion	Pug Washing Mill 320m north Urbanisation and expansion of Sittingbourne north east and west of the Site Expansion of Chalk Pit south-west
1961	No significant change	Unspecified Pit 6m north Tramway Sidings located 31m north Expansion of Chalk Pit south-west
1967-1973	No significant change	Tramway Sidings removed Expansion and Urbanisation of Sittingbourne north-east
1977-1979	Chilton Manor Farm House built on western extent	Expansion and Urbanisation of Sittingbourne north Residential dwellings approximately 15m north
2001	No significant change	Expansion and Urbanisation of Sittingbourne north-east
2010	No significant change	Expansion and Urbanisation of Sittingbourne east Residential dwellings approximately 15m east
2021	No significant change	Expansion and Urbanisation of Sittingbourne south east

3.1.2 There are potential risks associated with the infilled clay / chalk pits, located within the vicinity of Site, from metals/metalloids, PAH and asbestos depending on what the pits were filled with however given the distance from the Site and the age the risk is considered low.

3.1.3 In summary, no significant risks are identified.

4.0 ENVIRONMENTAL SETTING

4.1 Ground Conditions

4.1.1 British Geological Survey (BGS) geological mapping indicates that the Site is underlain by the geological sequence summarised in Table 4.1:

Table 4.1 Geological Sequence

Geological Unit	Type	Descriptions	Aquifer Classification
Superficial	Head	Clay and Silt	Unproductive
Bedrock	Seaford Chalk Formation	Chalk	Principal
	Thanet Formation	Sand, Silt and Clay	Secondary A

4.1.2 There are no faults recorded within 500m of the Site.

4.1.3 There are no records of made ground located within 500m of the Site

4.1.4 There are no records of landslips within 500m of Site.

4.1.5 There are no records of boreholes within the Site. There are 6 borehole records within the vicinity of the Site but the logs are incomplete.

4.2 Groundwater

4.2.1 The permeability of the superficial geology is recorded as low across the Site.

4.2.2 The permeability of the bedrock (Seaford Chalk Formation & Thanet Formation) is recorded as low to very high across the Site.

4.2.3 The Site is within Source Protection Zone 2 (Outer Catchment) (SPZ).

4.2.4 There are no current groundwater abstraction licenses within 250m of the Site.

4.3 Soakaway Testing

4.3.1 Enzygo Ltd conducted a ground investigation comprising of soakaway pits and borehole soakaways was undertaken between 26/07/2021 and 28/07/2021. Location and results of soakaway testing is included in Appendix 3.

4.3.2 Three soakaway pits (SA1 - SA3) were established and infiltration testing was undertaken in accordance with BRE 365 'Soakaway Design' guidance, 2016. The test pits were excavated to a depth of between 2.80 and 3.10m below existing ground level (begl).

4.3.3 Infiltration rates were not shown to be favourable at the shallow soakaway locations as they did not achieve the require '25% effective depth' within an appropriate timescale.

4.3.4 Three cable percussive borehole (BH1 to BH3) were advanced to a depth of 10m begl. Falling head tests were undertaken during the drilling works, between depths of approximately 5.0m and 10.0m begl. Groundwater was not encountered within any of the boreholes prior to testing.

4.3.5 Infiltration rates were shown to be more favourable within deeper boreholes as they did achieve a 25% effective depth within an appropriate timescale.

4.4 Coal Mining

4.4.1 The Site is not located in a Coal Authority Reporting Area and there are no coal mining areas within 250m.

4.5 Non-Coal Mining and Cavities

4.5.1 There are two records of a non-coal (chalk) mining activity onsite where small-scale underground mining may have occurred. A further record within 500m of the Site relates to chalk mining. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered.

4.5.2 There are no natural cavities identified on or within 500m of the Site.

4.6 Ground Workings

4.6.1 Seven reports of historic surface ground workings are identified within the Site referring to; a cemetery, a burial ground and an unspecified pit. An additional 17 surface ground workings were identified within 250m of the Site including cemetery sites, burial grounds, disused pits, quarries and ground workings, associated with clay mineral mining.

4.6.2 There are no underground ground working within 250m of the Site, and one within 1000m of the Site.

4.6.3 There is a potential risk for ground gas generation associated with the potential biodegradable infill of pits.

4.7 Hydrology

4.7.1 There are no identified surface water bodies or watercourses within 250m of the Site.

4.7.2 A flood risk assessment undertaken by Enzygo Ltd is reported under separate cover (Report SHF.1132.260.HY.001.A).

4.8 Radon Risk Potential

4.8.1 The Groundsure Geo Insight report indicates that approximately two-thirds of the Site is located in a Radon Affected Area, estimated between 1% and 3% of properties affected. A third of the Site estimated at less than 1% of properties affect. No radon protective measures are considered necessary by the British Geological Survey.

4.9 Natural Hazards Finding

4.9.1 BGS information presented within the Groundsure report (Appendix 1) identified the following ground conditions (Table 4.8). Natural ground hazards represent a negligible to high risk.

Table 4.8 Natural Hazards

Hazard	Risk Designation (Groundsure)
Collapsible Ground	Very Low - Moderate
Compressible Ground	Negligible
Ground Dissolution	Low - High
Landslide	Negligible - Very Low
Running Sand	Negligible - Very Low
Swelling / Shrinking Clay	Negligible - Low

4.10 Unexploded Ordnance (UXO)

4.10.1 The UXO map (Appendix 2) indicates that the Site is within a moderate-risk area, due to two unexploded bombs within 250m of the Site.

4.11 Environmental Sensitivity

4.11.1 Overall, the Site is currently of moderate environmental sensitivity due to:

- Underlying Secondary, Secondary A and Unproductive Aquifers;
- There is one surface water feature within 250m of site; and
- The site is not located within a groundwater SPZ;

4.11.2 The proposed end use of the Site is residential development and so the future sensitivity of end-users is high.

4.12 Industrial Land Uses

4.12.1 There are four recent industrial land uses within 250m of the Site, listed as electrical features.

4.12.2 There are no records of historic fuel stations within 250m of the Site.

4.12.3 There are no records of National Grid High Voltage Underground Electricity Transmission Cables within 500m of the Site.

4.12.4 There are no records of National Grid high pressure gas transmission pipelines within 500m of the Site.

4.12.5 No new risks are identified from the register of industrial land uses.

4.13 Regulatory Database

4.13.1 The following information is summarised from the Groundsure Enviro Insight report (Appendix 1).

Table 4.13 Regulatory Database (continues over page)

Environmental Permits, Incidents and Registers	0-250m	251-500m	Details
Site determined as contaminated land	0	0	Not Applicable
Authorised industrial processes	0	3	Local paper and cardboard manufacturing business (387m SE)

Environmental Permits, Incidents and Registers	0-250m	251-500m	Details
Registered radioactive substances	0	0	Not Applicable
Records of Part A (2) and Part B Activities	0	0	Not Applicable
Enforcements, prohibitions or prosecutions	0	0	Not Applicable
Pollution Incidents	1	0	Crude sewage pollutant (24/03/2002). Category 3 (Minor) Impact on water and land (225m N).
List 1 Dangerous Substance Inventory Sites	0	0	Not Applicable
List 2 Dangerous Substance Inventory Sites	0	0	Not Applicable
Consents issued under the Planning (Hazardous Substances) Act 1990	0	0	Not Applicable
Control of Major Accident Hazard (COMAH)/ Notification of Installations Handling Hazardous Substances (NIHHS) Sites	0	0	Not Applicable
Records of Licensed Discharge Consents	0	0	Not Applicable

4.13.2 No new risks are identified from the regulatory database, which have not been previously discussed in this report.

4.14 Landfill Sites and Waste Treatment Sites

4.14.1 There are no historic landfills identified within 250m of the Site.

4.14.2 No current landfills are identified within 250m of the Site.

4.14.3 There are no records of active licensed waste sites or waste treatment, transfer or disposal sites within 250m of the Site.

4.15 Railway and Tunnels

4.15.1 There are no listed historical railway feature on Site. There are three historical railways located within 250m of the Site, which are defined as a tramway sidings.

4.15.2 There are no active railways within 250m of the Site.

4.15.3 There are no tunnels located within 250m of the Site.

5.0 PRELIMINARY ASSESSMENT

5.1 Preliminary Conceptual Model

5.1.1 Based on the information obtained the following Preliminary Conceptual Model has been prepared:

Table 5.1 Preliminary Conceptual Model

Source	Location	Exposure Pathway	Potential Receptor	Probability of Exposure	Details
Human Health					
Asbestos, metals and hydrocarbons	Unforeseen Contamination	Ingestion dermal and inhalation	Construction Workers	Dismissed	Standard construction PPE will address risk under CDM 2015 Regulations
			Site users	Negligible	Discovery strategy
Asbestos, metals and hydrocarbons	On-site sources	Ingestion dermal and inhalation	Construction Workers	Moderate	Potential Contamination associated with pit/quarry backfill
			Site users		
Hydrocarbons and metals	Migration from off-site sources	Ingestion dermal and inhalation	Construction Workers	Low to Moderate	Contamination likely to be localised
			Site users		
Ground Gas	Made Ground/Potentially Infilled Ground	Asphyxiant, Toxic & Explosive	Construction Workers	Low to Moderate	Potential risks can be mitigated through adequate ground investigation
			Site users		
Radon	Natural Soils	Inhalation	Construction Workers	Dismissed	No radon protective measures are considered necessary by the British Geological Survey; therefore, the risk is dismissed
			Site Users		
Groundwater					
Hydrocarbon and metals	Unforeseen Contamination	Vertical Migration	Groundwater	Low	Significant widespread impact to soil unlikely
Surface Water					
Hydrocarbon and metals	Unforeseen Contamination	Horizontal Migration	River Network	Dismissed	No receptor
Environmental Receptors					
Onsite contaminants		Ingestion dermal and inhalation	Ecology	Dismissed	No receptor
		Direct	Archaeology	Dismissed	No Receptor
		Direct	Geology	Dismissed	No receptor
		Phytotoxic	Woodland	Dismissed	No receptor
		Phytotoxic	Crops	Dismissed	No receptor
		Ingestion dermal and inhalation	Livestock	Dismissed	No receptor
Building Services					
Onsite contaminants		Direct.	Historic Buildings.	Dismissed	No sources identified
		Direct	Proposed Buildings	Dismissed	No sources identified
		Permeate into pipework	Water Pipes	Dismissed	No sources identified

6.0 DISCUSSION AND RECOMMENDATIONS

- 6.1.1 The site is considered to present a negligible to low contamination risk associated with current land-use.
- 6.1.2 Conventional foundations founding within the natural strata may be suitable for residential properties over most of the site to be confirmed by ground investigation.
- 6.1.3 A Phase 2 ground investigation should be undertaken to provide design information for future development works and to also assess land quality issues and remediation requirements if necessary.
- 6.1.4 A Phase 2 ground investigation should be undertaken to provide design information for future development works and to also assess land quality issues and remediation requirements if necessary.
- 6.1.5 Natural soils and superficial deposits on site make it unsuitable for soakaway drainage, however, borehole soakaway into the chalk bedrock has been demonstrated to be suitable.

Appendix 1 – Emapsite Dataset

Swanstree Avenue, Sittingbourne, ME9 0AA

Order Details

Date: 22/03/2021
Your ref: EMS_679024_892675
Our Ref: EMS-679024_892675
Client: emapsite

Site Details

Location: 591203 162560
Area: 7.12 ha
Authority: [Swale Borough Council](#)



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Summary of findings

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Aerial image

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OS MasterMap site plan

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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>	4	11	7	24	-
16	1.2	<u>Historical tanks</u>	0	0	2	9	-
17	1.3	<u>Historical energy features</u>	0	0	4	11	-
18	1.4	Historical petrol stations	0	0	0	0	-
18	1.5	Historical garages	0	0	0	0	-
18	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
19	2.1	<u>Historical industrial land uses</u>	7	11	8	34	-
22	2.2	<u>Historical tanks</u>	0	0	2	13	-
23	2.3	<u>Historical energy features</u>	0	0	8	18	-
24	2.4	Historical petrol stations	0	0	0	0	-
24	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
25	3.1	Active or recent landfill	0	0	0	0	-
25	3.2	Historical landfill (BGS records)	0	0	0	0	-
26	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
26	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
26	3.5	Historical waste sites	0	0	0	0	-
26	3.6	Licensed waste sites	0	0	0	0	-
26	3.7	<u>Waste exemptions</u>	2	0	0	1	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
28	4.1	<u>Recent industrial land uses</u>	0	0	4	-	-
29	4.2	Current or recent petrol stations	0	0	0	0	-
29	4.3	Electricity cables	0	0	0	0	-
29	4.4	Gas pipelines	0	0	0	0	-
29	4.5	Sites determined as Contaminated Land	0	0	0	0	-



29	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
30	4.7	Regulated explosive sites	0	0	0	0	-
30	4.8	Hazardous substance storage/usage	0	0	0	0	-
30	4.9	<u>Historical licensed industrial activities (IPC)</u>	0	0	0	4	-
31	4.10	<u>Licensed industrial activities (Part A(1))</u>	0	0	0	3	-
32	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
32	4.12	Radioactive Substance Authorisations	0	0	0	0	-
32	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
32	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
32	4.15	Pollutant release to public sewer	0	0	0	0	-
33	4.16	List 1 Dangerous Substances	0	0	0	0	-
33	4.17	List 2 Dangerous Substances	0	0	0	0	-
33	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	0	1	0	-
33	4.19	Pollution inventory substances	0	0	0	0	-
34	4.20	Pollution inventory waste transfers	0	0	0	0	-
34	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
35	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
37	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
39	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
41	5.4	<u>Groundwater vulnerability- soluble rock risk</u>	Identified (within 0m)				
41	5.5	Groundwater vulnerability- local information	None (within 0m)				
42	5.6	<u>Groundwater abstractions</u>	0	0	0	4	15
47	5.7	Surface water abstractions	0	0	0	0	0
47	5.8	<u>Potable abstractions</u>	0	0	0	0	6
48	5.9	<u>Source Protection Zones</u>	1	0	1	0	-
49	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
50	6.1	Water Network (OS MasterMap)	0	0	0	-	-



50	6.2	Surface water features	0	0	0	-	-
51	6.3	<u>WFD Surface water body catchments</u>	1	-	-	-	-
51	6.4	WFD Surface water bodies	0	0	0	-	-
51	6.5	<u>WFD Groundwater bodies</u>	2	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
53	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
53	7.2	Historical Flood Events	0	0	0	-	-
53	7.3	Flood Defences	0	0	0	-	-
53	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
54	7.5	Flood Storage Areas	0	0	0	-	-
55	7.6	Flood Zone 2	None (within 50m)				
55	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
56	8.1	<u>Surface water flooding</u>	1 in 1000 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding					
58	9.1	<u>Groundwater flooding</u>	High (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
59	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
60	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
60	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
60	10.4	Special Protection Areas (SPA)	0	0	0	0	0
60	10.5	National Nature Reserves (NNR)	0	0	0	0	0
61	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
61	10.7	<u>Designated Ancient Woodland</u>	0	0	0	0	4
61	10.8	Biosphere Reserves	0	0	0	0	0
62	10.9	Forest Parks	0	0	0	0	0
62	10.10	<u>Marine Conservation Zones</u>	0	0	0	0	2
62	10.11	Green Belt	0	0	0	0	0
62	10.12	Proposed Ramsar sites	0	0	0	0	0



63	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
63	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
63	10.15	Nitrate Sensitive Areas	0	0	0	0	0
63	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
64	10.17	<u>SSSI Impact Risk Zones</u>	1	-	-	-	-
65	10.18	SSSI Units	0	0	0	0	0

Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
66	11.1	World Heritage Sites	0	0	0	-	-
67	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
67	11.3	National Parks	0	0	0	-	-
67	11.4	<u>Listed Buildings</u>	0	0	1	-	-
68	11.5	Conservation Areas	0	0	0	-	-
68	11.6	Scheduled Ancient Monuments	0	0	0	-	-
68	11.7	Registered Parks and Gardens	0	0	0	-	-

Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
69	12.1	<u>Agricultural Land Classification</u>	Not Surveyed (within 250m)				
71	12.2	Open Access Land	0	0	0	-	-
72	12.3	Tree Felling Licences	0	0	0	-	-
72	12.4	<u>Environmental Stewardship Schemes</u>	1	0	1	-	-
72	12.5	Countryside Stewardship Schemes	0	0	0	-	-

Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
73	13.1	<u>Priority Habitat Inventory</u>	0	0	1	-	-
74	13.2	Habitat Networks	0	0	0	-	-
74	13.3	Open Mosaic Habitat	0	0	0	-	-
74	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
75	14.1	<u>10k Availability</u>	Identified (within 500m)				
76	14.2	Artificial and made ground (10k)	0	0	0	0	-
77	14.3	Superficial geology (10k)	0	0	0	0	-



77	14.4	Landslip (10k)	0	0	0	0	-
78	14.5	Bedrock geology (10k)	0	0	0	0	-
78	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
79	15.1	<u>50k Availability</u>	Identified (within 500m)				
80	15.2	Artificial and made ground (50k)	0	0	0	0	-
80	15.3	Artificial ground permeability (50k)	0	0	-	-	-
81	15.4	<u>Superficial geology (50k)</u>	2	0	0	3	-
82	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
82	15.6	Landslip (50k)	0	0	0	0	-
82	15.7	Landslip permeability (50k)	None (within 50m)				
83	15.8	<u>Bedrock geology (50k)</u>	2	0	0	0	-
84	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
84	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
85	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence					
86	17.1	<u>Shrink swell clays</u>	Low (within 50m)				
87	17.2	<u>Running sands</u>	Very low (within 50m)				
89	17.3	<u>Compressible deposits</u>	Negligible (within 50m)				
90	17.4	<u>Collapsible deposits</u>	Moderate (within 50m)				
91	17.5	<u>Landslides</u>	Very low (within 50m)				
93	17.6	<u>Ground dissolution of soluble rocks</u>	High (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
95	18.1	Natural cavities	0	0	0	0	-
96	18.2	<u>BritPits</u>	0	0	1	6	-
97	18.3	<u>Surface ground workings</u>	7	10	7	-	-
98	18.4	<u>Underground workings</u>	0	0	0	0	2
98	18.5	<u>Historical Mineral Planning Areas</u>	2	2	2	2	-



99	18.6	<u>Non-coal mining</u>		2	0	0	1	1
100	18.7	Mining cavities		0	0	0	0	0
100	18.8	JPB mining areas		None (within 0m)				
100	18.9	Coal mining		None (within 0m)				
100	18.10	Brine areas		None (within 0m)				
101	18.11	Gypsum areas		None (within 0m)				
101	18.12	Tin mining		None (within 0m)				
101	18.13	Clay mining		None (within 0m)				
Page	Section	Radon						
102	19.1	<u>Radon</u>	Between 1% and 3% (within 0m)					
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m	
104	20.1	<u>BGS Estimated Background Soil Chemistry</u>	8	5	-	-	-	
105	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-	
105	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	
106	21.1	Underground railways (London)	0	0	0	-	-	
106	21.2	Underground railways (Non-London)	0	0	0	-	-	
107	21.3	Railway tunnels	0	0	0	-	-	
107	21.4	<u>Historical railway and tunnel features</u>	0	1	2	-	-	
107	21.5	Royal Mail tunnels	0	0	0	-	-	
107	21.6	Historical railways	0	0	0	-	-	
108	21.7	Railways	0	0	0	-	-	
108	21.8	Crossrail 1	0	0	0	0	-	
108	21.9	Crossrail 2	0	0	0	0	-	
108	21.10	HS2	0	0	0	0	-	

Recent aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2021. All Rights Reserved.

Capture Date: 21/10/2018

Site Area: 7.12ha



Recent site history - 2015 aerial photograph



Capture Date: 14/04/2015

Site Area: 7.12ha



Recent site history - 2012 aerial photograph



Capture Date: 25/05/2012

Site Area: 7.12ha



Recent site history - 2008 aerial photograph



Capture Date: 20/09/2008

Site Area: 7.12ha



Recent site history - 1999 aerial photograph



Capture Date: 26/06/1999

Site Area: 7.12ha



OS MasterMap site plan

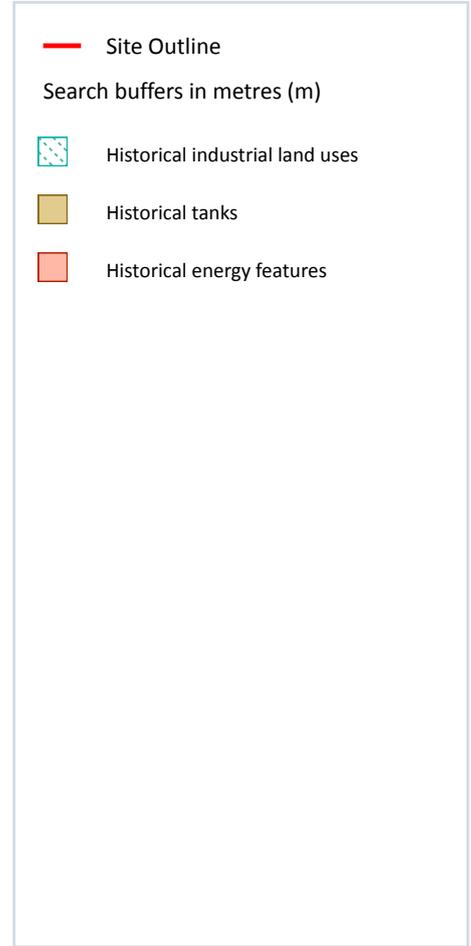
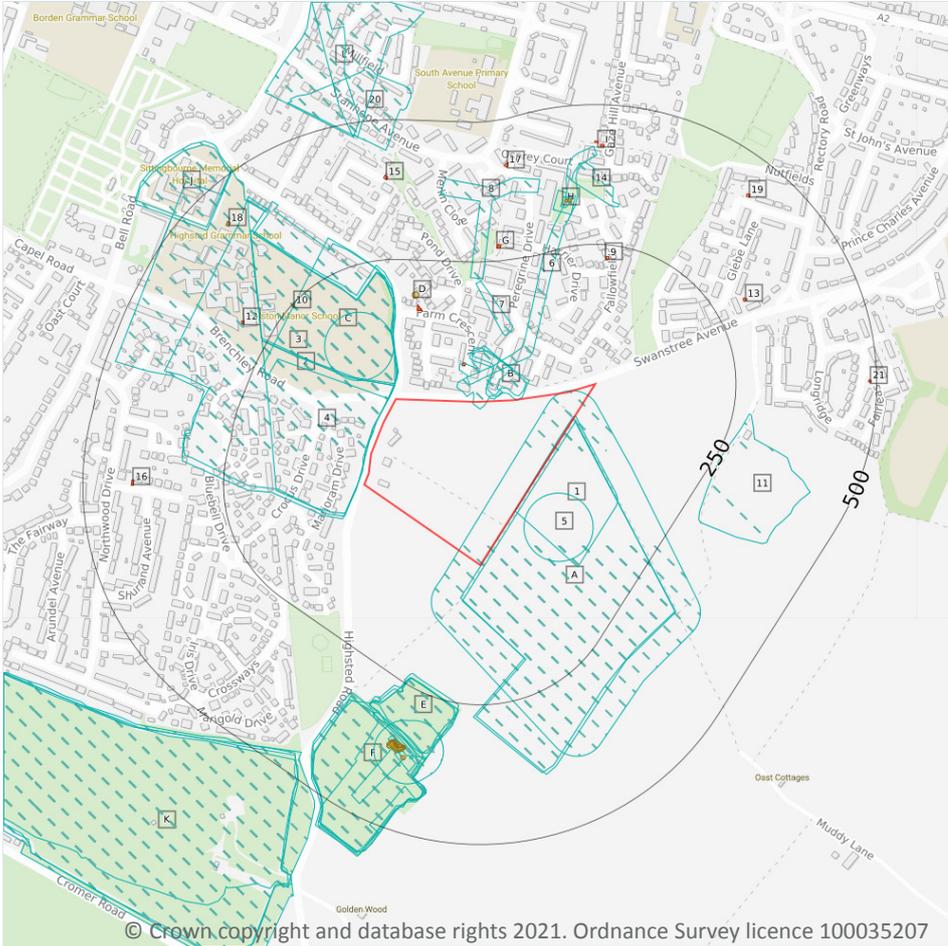


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Site Area: 7.12ha



1 Past land use



1.1 Historical industrial land uses

Records within 500m **46**

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	Burial Ground	1961 - 1973	2241977



ID	Location	Land use	Dates present	Group ID
A	On site	Site of Cemetery	1896	2209614
B	On site	Unspecified Pit	1947	2283271
B	On site	Unspecified Pit	1967 - 1973	2294753
A	0m SE	Site of Cemetery	1938	2280821
A	6m SE	Burial Ground	1979	2175160
B	6m N	Unspecified Pit	1961	2217037
2	9m W	Burial Ground	1961	2284885
3	10m W	Site of Cemetery	1938	2211733
4	11m W	Burial Ground	1973	2174966
C	12m NW	Site of Cemetery	1896	2225812
5	20m SE	Site of Cemetery	1906	2220023
C	24m N	Burial Ground	1967	2178521
C	28m N	Burial Ground	1979	2185785
6	31m N	Tramway Sidings	1961	2151195
C	53m NW	Site of Cemetery	1906	2244266
7	116m N	Clay Pit	1896	2158168
8	220m N	Tramway Sidings	1896	2151194
E	228m SW	Old Chalk Pit	1961	2225112
E	236m SW	Old Chalk Pit	1947	2282295
F	236m SW	Unspecified Quarries	1967 - 1973	2264004
E	237m SW	Unspecified Disused Pit	1979	2152189
11	259m SE	Brick Field	1866	2146780
F	299m S	Unspecified Mill	1896	2140686
H	307m N	Unspecified Mill	1967	2140689
F	317m SW	Old Chalk Pit	1961	2214544
14	320m N	Unspecified Pit	1967 - 1973	2222295
H	320m N	Pug Washing Mill	1947	2142574
F	321m SW	Chalk Pit	1906 - 1938	2285039



ID	Location	Land use	Dates present	Group ID
F	323m SW	Old Chalk Pit	1947	2238402
F	324m SW	Unspecified Disused Pit	1979	2152190
F	341m SW	Unspecified Tanks	1961	2213089
F	352m SW	Unspecified Tanks	1973 - 1979	2195436
F	354m SW	Unspecified Tanks	1938	2247793
F	360m SW	Chalk Pit	1896	2243158
F	362m SW	Railway Sidings	1906 - 1938	2289662
F	362m S	Unspecified Tank	1961	2156019
20	446m N	Clay Pit	1947 - 1961	2198428
J	451m NW	Hospital	1947	2286824
J	456m NW	Hospital	1961 - 1979	2232859
K	456m SW	Burial Ground	1973	2142036
K	464m SW	Chalk Pit	1947 - 1961	2200434
K	467m SW	Unspecified Disused Pit	1973 - 1979	2231456
L	473m N	Brick Works	1896 - 1906	2190173
K	475m SW	Unspecified Quarry	1967	2145199
L	475m N	Tramway Sidings	1896	2151196

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

11

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
D	182m N	Unspecified Tank	1908	369761



ID	Location	Land use	Dates present	Group ID
10	246m NW	Unspecified Tank	1938	369759
H	328m N	Unspecified Tank	1957 - 1973	384867
H	329m N	Unspecified Tank	1938	398163
F	348m SW	Tanks	1960	383397
F	348m SW	Tanks	1968 - 1991	389961
F	348m SW	Tanks	1990	382946
F	349m SW	Tanks	1908	396059
F	351m SW	Tanks	1938	385329
F	367m S	Unspecified Tank	1896	369767
18	430m NW	Tanks	1991	377925

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	15
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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
B	64m N	Electricity Substation	1984 - 1993	275329
D	159m N	Electricity Substation	1984	265269
D	160m N	Electricity Substation	1993	279723
9	223m N	Electricity Substation	1984 - 1993	262408
G	273m N	Electricity Substation	1984	273292
G	273m N	Electricity Substation	1993	272410
12	302m NW	Electricity Substation	1991	247641
13	303m NE	Electricity Substation	1976	247638



ID	Location	Land use	Dates present	Group ID
15	393m N	Electricity Substation	1973 - 1990	257320
16	409m W	Electricity Substation	1991	249654
17	415m N	Electricity Substation	1973 - 1990	271879
I	425m N	Electricity Substation	1973	247639
19	430m NE	Electricity Substation	1971 - 1988	263318
I	432m N	Electricity Substation	1978 - 1990	282846
21	485m E	Electricity Substation	1976	249655

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

0

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'.

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

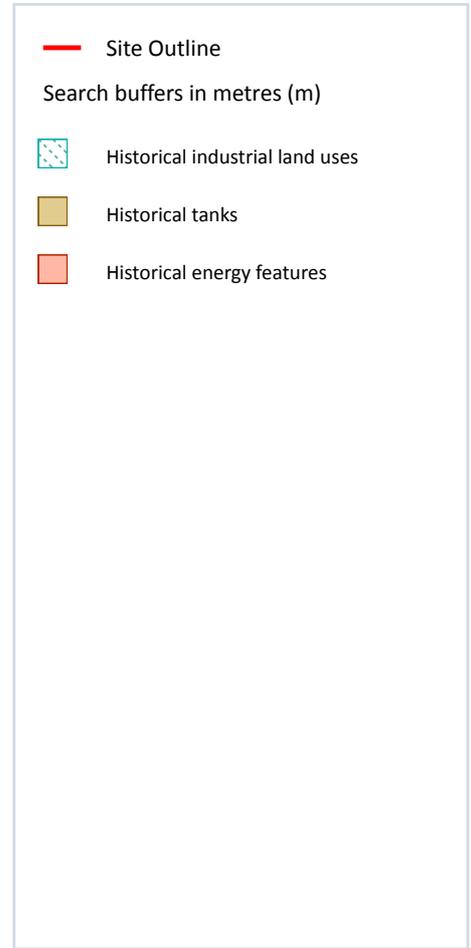
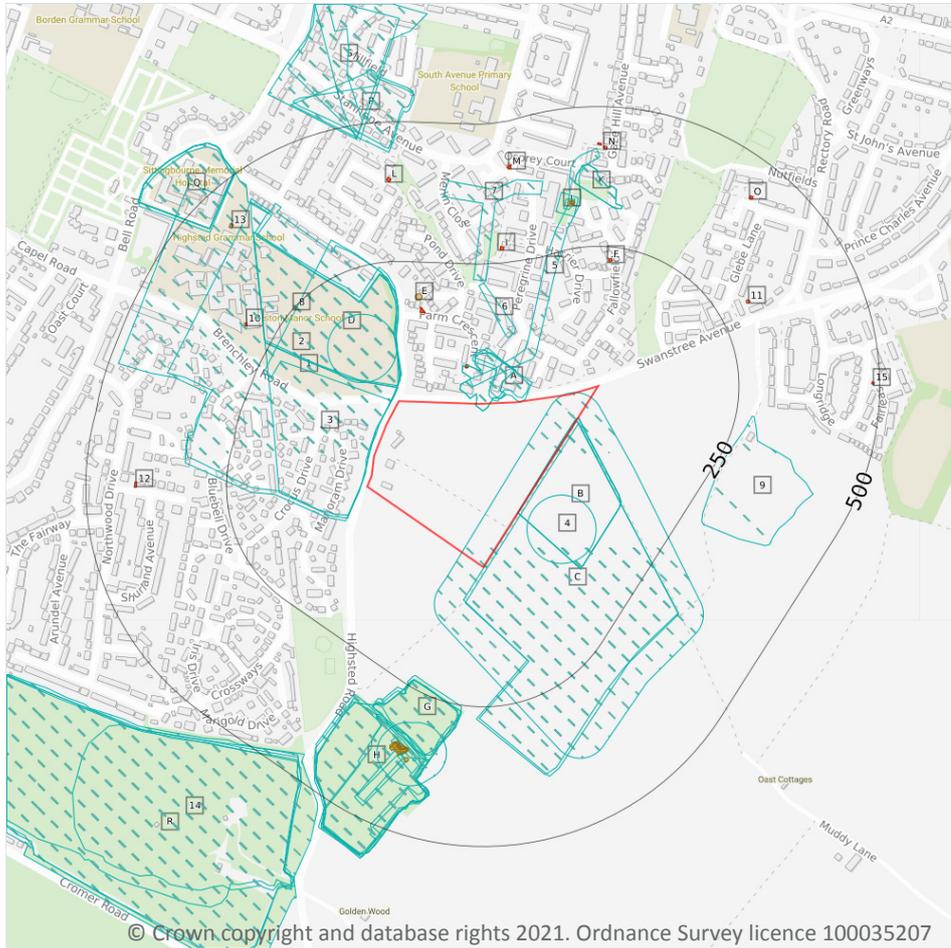
0

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



2.1 Historical industrial land uses

Records within 500m **60**

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 19**

ID	Location	Land Use	Date	Group ID
A	On site	Unspecified Pit	1947	2283271
A	On site	Unspecified Pit	1973	2294753
A	On site	Unspecified Pit	1967	2294753

ID	Location	Land Use	Date	Group ID
B	On site	Burial Ground	1973	2241977
B	On site	Burial Ground	1967	2241977
B	On site	Burial Ground	1961	2241977
C	On site	Site of Cemetery	1896	2209614
C	0m SE	Site of Cemetery	1938	2280821
C	6m SE	Burial Ground	1979	2175160
A	6m N	Unspecified Pit	1961	2217037
1	9m W	Burial Ground	1961	2284885
2	10m W	Site of Cemetery	1938	2211733
3	11m W	Burial Ground	1973	2174966
D	12m NW	Site of Cemetery	1896	2225812
4	20m SE	Site of Cemetery	1906	2220023
D	24m N	Burial Ground	1967	2178521
D	28m N	Burial Ground	1979	2185785
5	31m N	Tramway Sidings	1961	2151195
D	53m NW	Site of Cemetery	1906	2244266
6	116m N	Clay Pit	1896	2158168
7	220m N	Tramway Sidings	1896	2151194
G	228m SW	Old Chalk Pit	1961	2225112
G	236m SW	Old Chalk Pit	1947	2282295
H	236m SW	Unspecified Quarries	1973	2264004
H	236m SW	Unspecified Quarries	1967	2264004
G	237m SW	Unspecified Disused Pit	1979	2152189
9	259m SE	Brick Field	1866	2146780
H	299m S	Unspecified Mill	1896	2140686
J	307m N	Unspecified Mill	1967	2140689
H	317m SW	Old Chalk Pit	1961	2214544
K	320m N	Unspecified Pit	1973	2222295



ID	Location	Land Use	Date	Group ID
K	320m N	Unspecified Pit	1967	2222295
J	320m N	Pug Washing Mill	1947	2142574
H	321m SW	Chalk Pit	1938	2285039
H	323m SW	Old Chalk Pit	1947	2238402
H	324m SW	Chalk Pit	1906	2285039
H	324m SW	Unspecified Disused Pit	1979	2152190
H	341m SW	Unspecified Tanks	1961	2213089
H	352m SW	Unspecified Tanks	1979	2195436
H	352m SW	Unspecified Tanks	1973	2195436
H	354m SW	Unspecified Tanks	1938	2247793
H	360m SW	Chalk Pit	1896	2243158
H	362m SW	Railway Sidings	1906	2289662
H	362m S	Unspecified Tank	1961	2156019
H	364m SW	Railway Sidings	1938	2289662
P	446m N	Clay Pit	1947	2198428
Q	451m NW	Hospital	1947	2286824
P	453m N	Clay Pit	1961	2198428
Q	456m NW	Hospital	1979	2232859
Q	456m NW	Hospital	1973	2232859
Q	456m NW	Hospital	1967	2232859
Q	456m NW	Hospital	1961	2232859
R	456m SW	Burial Ground	1973	2142036
R	464m SW	Chalk Pit	1961	2200434
R	467m SW	Unspecified Disused Pit	1979	2231456
14	472m SW	Chalk Pit	1947	2200434
S	473m N	Brick Works	1906	2190173
R	475m SW	Unspecified Quarry	1967	2145199
S	475m N	Brick Works	1896	2190173



ID	Location	Land Use	Date	Group ID
S	475m N	Tramway Sidings	1896	2151196

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	15
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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 19**

ID	Location	Land Use	Date	Group ID
E	182m N	Unspecified Tank	1908	369761
8	246m NW	Unspecified Tank	1938	369759
J	328m N	Unspecified Tank	1973	384867
J	328m N	Unspecified Tank	1957	384867
J	328m N	Unspecified Tank	1962	384867
J	329m N	Unspecified Tank	1957	384867
J	329m N	Unspecified Tank	1938	398163
H	348m SW	Tanks	1960	383397
H	348m SW	Tanks	1968	389961
H	348m SW	Tanks	1991	389961
H	348m SW	Tanks	1990	382946
H	349m SW	Tanks	1908	396059
H	351m SW	Tanks	1938	385329
H	367m S	Unspecified Tank	1896	369767
13	430m NW	Tanks	1991	377925

This data is sourced from Ordnance Survey / Groundsure.



2.3 Historical energy features

Records within 500m

26

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 19**

ID	Location	Land Use	Date	Group ID
A	64m N	Electricity Substation	1993	275329
A	64m N	Electricity Substation	1984	275329
A	65m N	Electricity Substation	1984	275329
E	159m N	Electricity Substation	1984	265269
E	160m N	Electricity Substation	1984	265269
E	160m N	Electricity Substation	1993	279723
F	223m N	Electricity Substation	1984	262408
F	224m N	Electricity Substation	1993	262408
I	273m N	Electricity Substation	1984	273292
I	273m N	Electricity Substation	1984	273292
I	273m N	Electricity Substation	1993	272410
10	302m NW	Electricity Substation	1991	247641
11	303m NE	Electricity Substation	1976	247638
L	393m N	Electricity Substation	1973	257320
L	393m N	Electricity Substation	1978	257320
L	393m N	Electricity Substation	1990	257320
12	409m W	Electricity Substation	1991	249654
M	415m N	Electricity Substation	1973	271879
M	415m N	Electricity Substation	1978	271879
M	415m N	Electricity Substation	1990	271879
N	425m N	Electricity Substation	1973	247639
O	430m NE	Electricity Substation	1971	263318
O	431m NE	Electricity Substation	1988	263318



ID	Location	Land Use	Date	Group ID
N	432m N	Electricity Substation	1978	282846
N	432m N	Electricity Substation	1990	282846
15	485m E	Electricity Substation	1976	249655

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

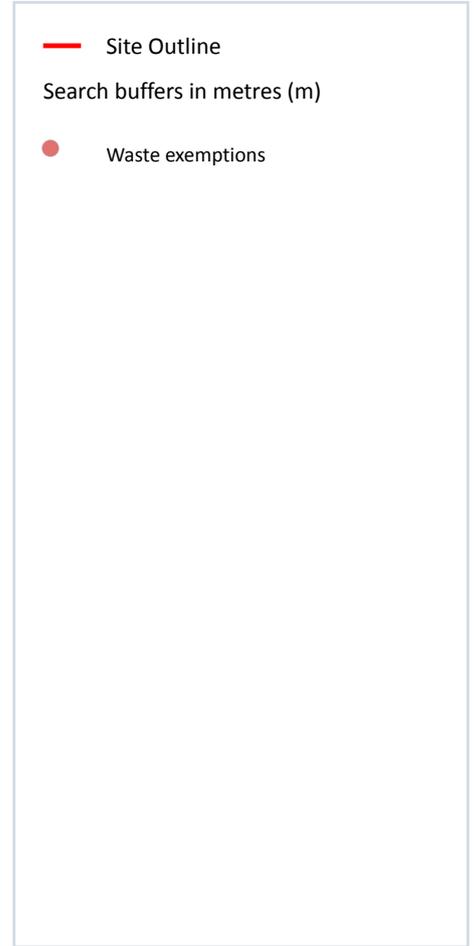
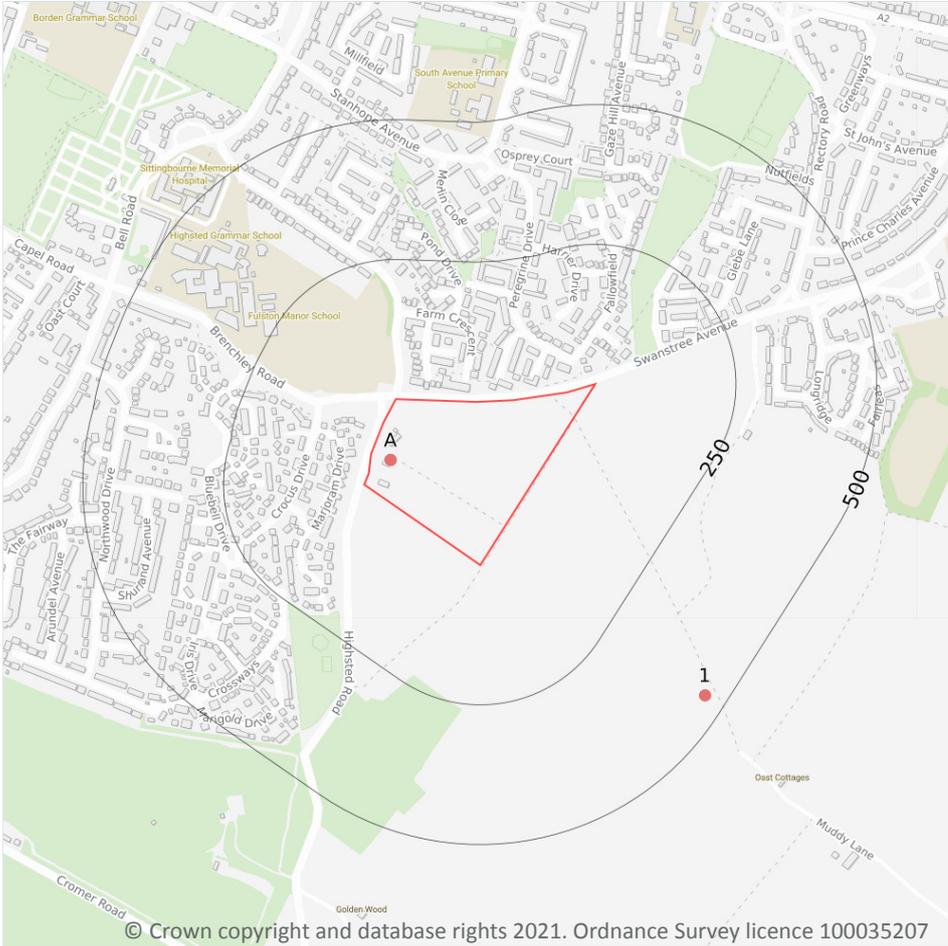
Records within 500m

0

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'.

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



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

3

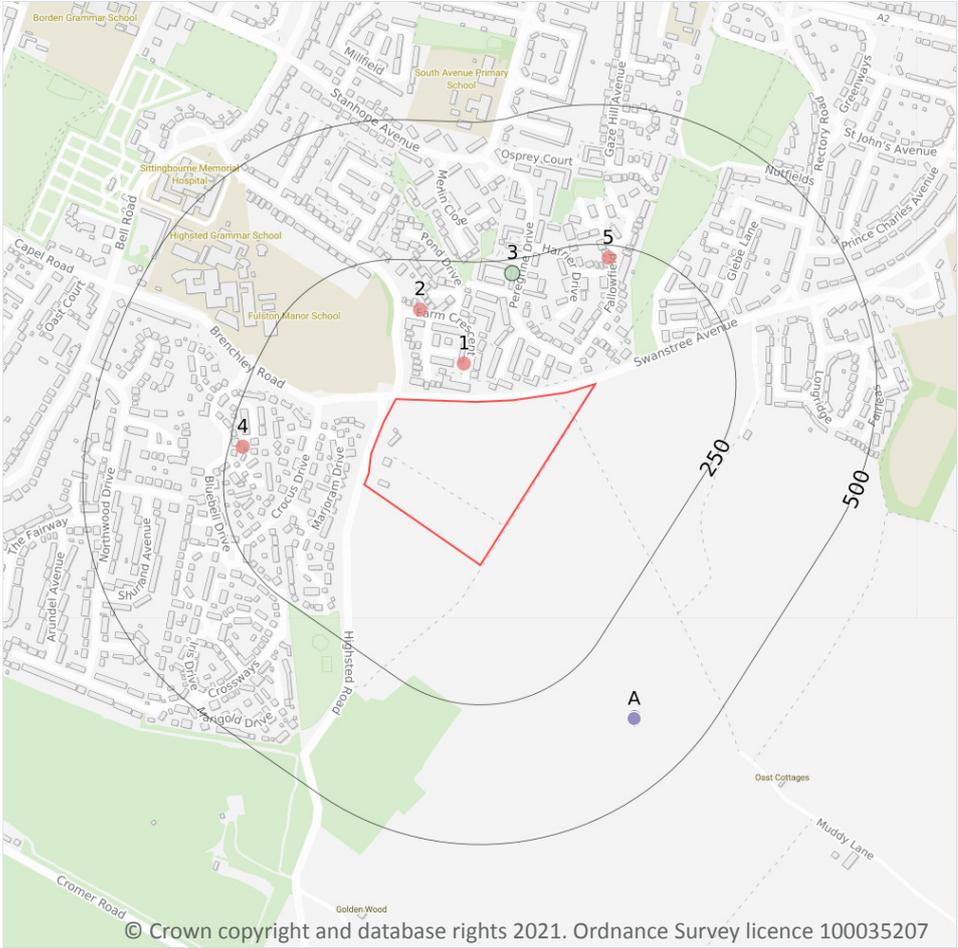
Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 25**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	On site	Chilton Manor Farm Highsted Road SITTINGBOURNE Kent ME9 0AA	EPR/JF0839KN /A001	Disposing of waste exemption	Agricultur al Waste Only	Burning waste in the open
A	On site	Chilton Manor Farm Highsted Road SITTINGBOURNE Kent ME9 0AA	EPR/JF0839KN /A001	Treating waste exemption	Agricultur al Waste Only	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
1	462m SE	-	WEX035581	Storing waste exemption	On a farm	Storage of sludge

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
- Historical licensed industrial activities
- Ⓧ Part A(1) industrial activities
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m **4**

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 28**

ID	Location	Company	Address	Activity	Category
1	68m N	Electricity Sub Station	Kent, ME10	Electrical Features	Infrastructure and Facilities
2	162m N	Electricity Sub Station	Kent, ME10	Electrical Features	Infrastructure and Facilities
4	226m W	Electricity Sub Station	Kent, ME10	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
5	227m N	Electricity Sub Station	Kent, ME10	Electrical Features	Infrastructure and Facilities

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

4

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.

Features are displayed on the Current industrial land use map on **page 28**

ID	Location	Details	
A	387m SE	Operator: M-real New Thames Ltd Address: Uk Paper, Ridham Avenue, Kemsley, Sittingbourne, Kent, ME10 2GT Process: Paper And Pulp Manufacturing Processes Permit Number: AT6417	Original Permit Number: IPCAPP Date Approved: 22-1-1996 Effective Date: 29-1-1996 Status: Superseded By Variation
A	387m SE	Operator: M-real New Thames Ltd Address: Uk Paper, Ridham Avenue, Kemsley, Sittingbourne, Kent, ME10 2GT Process: Paper And Pulp Manufacturing Processes Permit Number: BD3051	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
A	387m SE	Operator: M-real New Thames Ltd Address: Uk Paper, Ridham Avenue, Kemsley, Sittingbourne, Kent, ME10 2GT Process: Paper And Pulp Manufacturing Processes Permit Number: BG9757	Original Permit Number: IPCMINVAR Date Approved: 28-10-1999 Effective Date: 2-11-1999 Status: Superseded By Variation

ID	Location	Details	
A	387m SE	Operator: M-real New Thames Ltd Address: Uk Paper, Ridham Avenue, Kemsley, Sittingbourne, Kent, ME10 2GT Process: Paper And Pulp Manufacturing Processes Permit Number: BL1355	Original Permit Number: IPCMINVAR Date Approved: 21-6-2001 Effective Date: 28-6-2001 Status: Revoked - Now Ippc

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	3
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Records of Part A(1) 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 28**

ID	Location	Details	
A	387m SE	Operator: M-REAL NEW THAMES LTD Installation Name: - Process: PAPER, PULP & BOARD; PRODUCING PAPER/BOARD >20T/D Permit Number: BX1080 Original Permit Number: BJ7387	EPR Reference: - Issue Date: 23/03/2004 Effective Date: 23/03/2004 Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
A	387m SE	Operator: M-REAL NEW THAMES LTD Installation Name: - Process: PAPER, PULP & BOARD; PRODUCING PAPER/BOARD >20T/D Permit Number: BJ7387 Original Permit Number: BJ7387	EPR Reference: - Issue Date: - Effective Date: 28/05/2002 Last date noted as effective: 03/10/2005 Status: SUPERSEDED BY VARIATION
A	387m SE	Operator: M-REAL NEW THAMES LIMITED Installation Name: NEW THAMES PAPER MILL Process: PAPER, PULP AND BOARD; PRODUCING PAPER/BOARD >20T/D Permit Number: BJ7387IH Original Permit Number: BJ7387IH	EPR Reference: - Issue Date: 28/05/2002 Effective Date: 28/05/2002 Last date noted as effective: 26/10/2020 Status: SUPERCEDED

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



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

Records within 500m 0

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.

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 0

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

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 28**

ID	Location	Details	
3	225m N	Incident Date: 24/03/2002 Incident Identification: 66204 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) 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

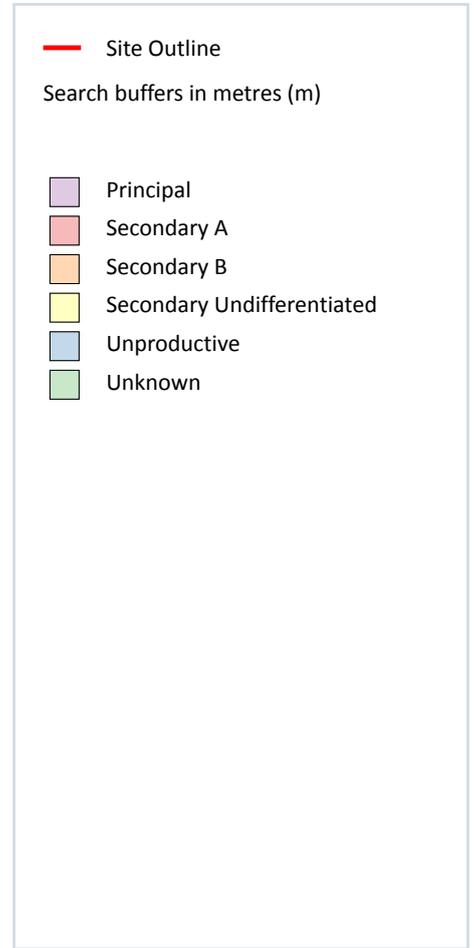
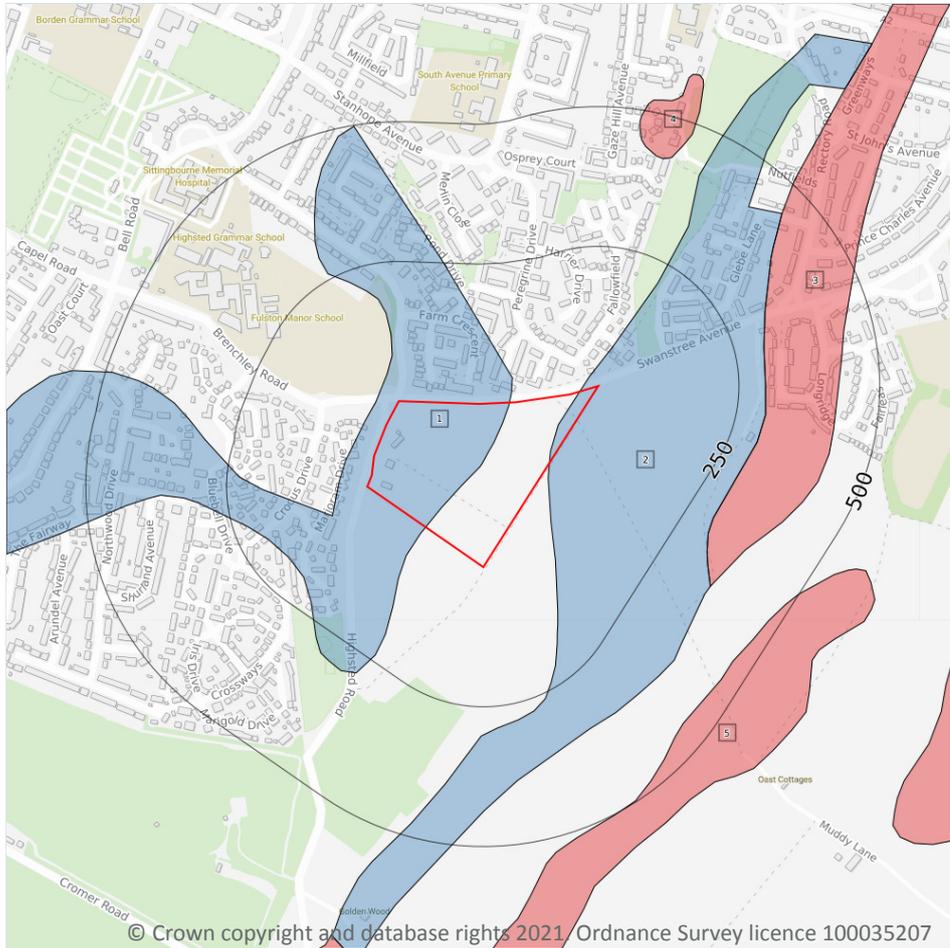
0

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

5

Aquifer status of groundwater held within superficial geology.

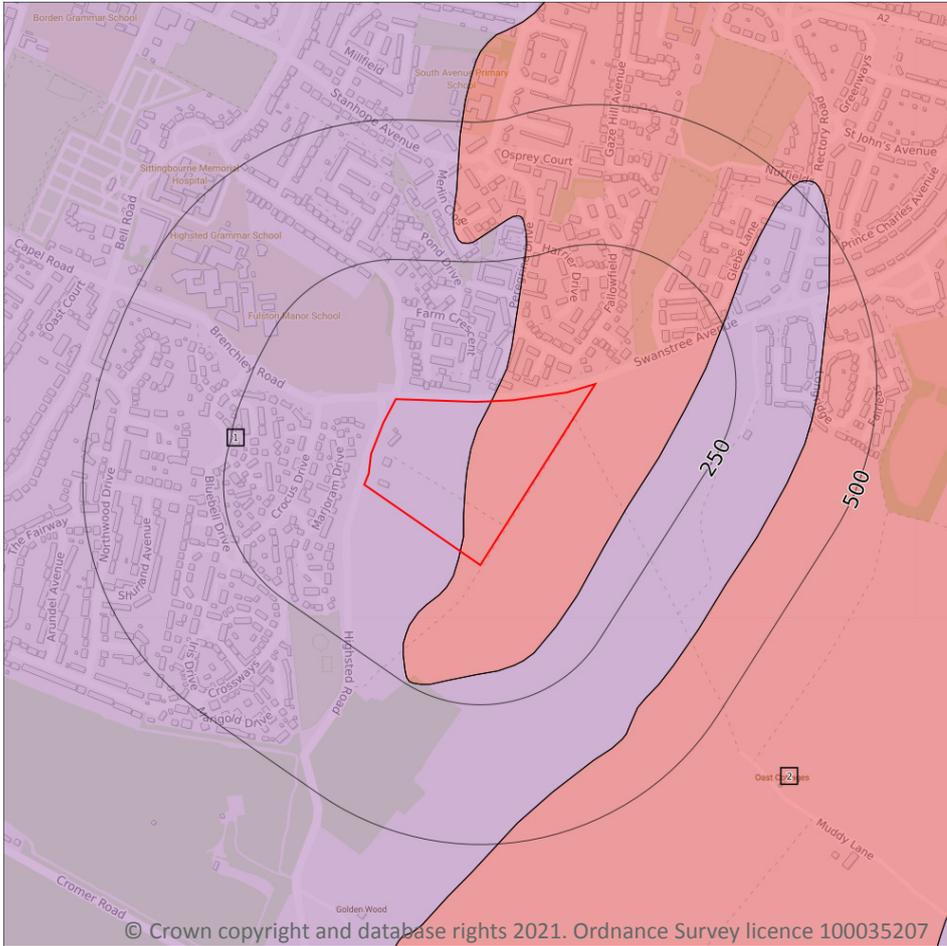
Features are displayed on the Hydrogeology map on **page 35**

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
2	On site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

ID	Location	Designation	Description
3	295m SE	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
4	423m 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
5	452m SE	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

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

2

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 37**

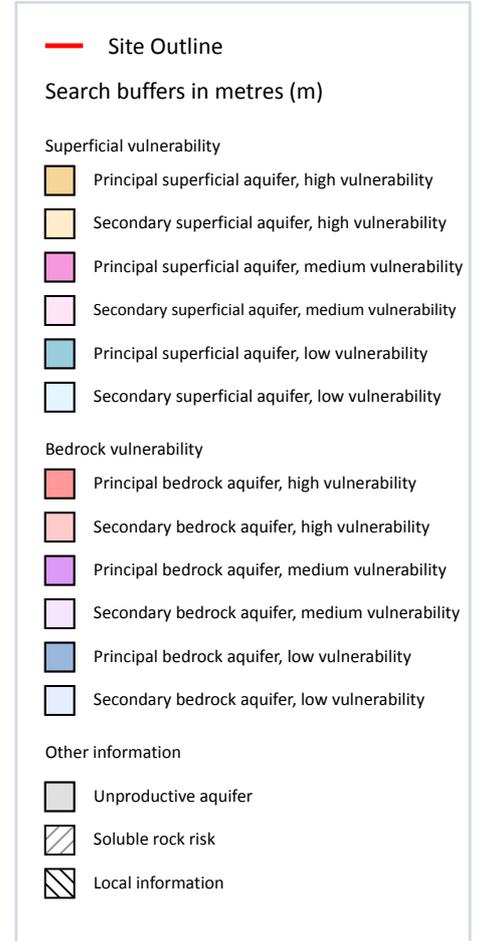
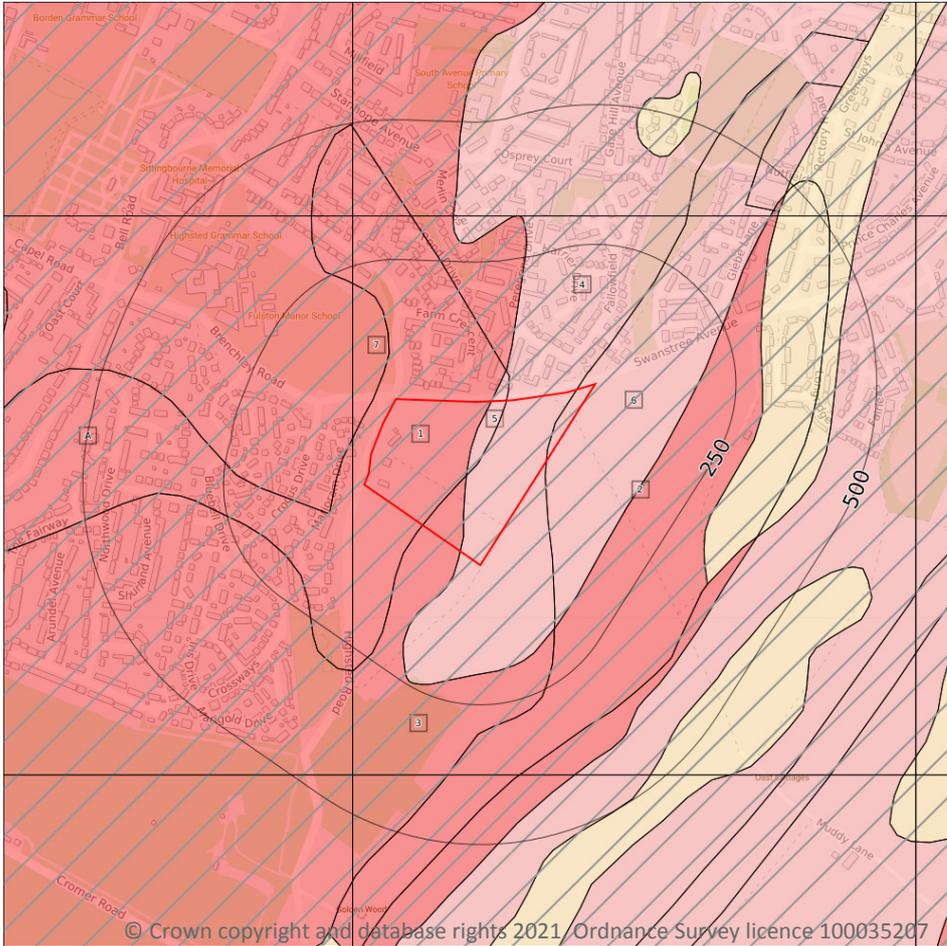
ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	On site	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



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 39**



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
3	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
4	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
5	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
6	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
A	20m W	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: <3m Patchiness value: <90% Recharge potential: High	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
7	35m NW	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
A	40m W	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: High	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures

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	1
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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.

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
2	Very significant soluble rocks are likely to be present with a high possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, especially in adverse conditions such as concentrated surface or subsurface water flow.	23.0%

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

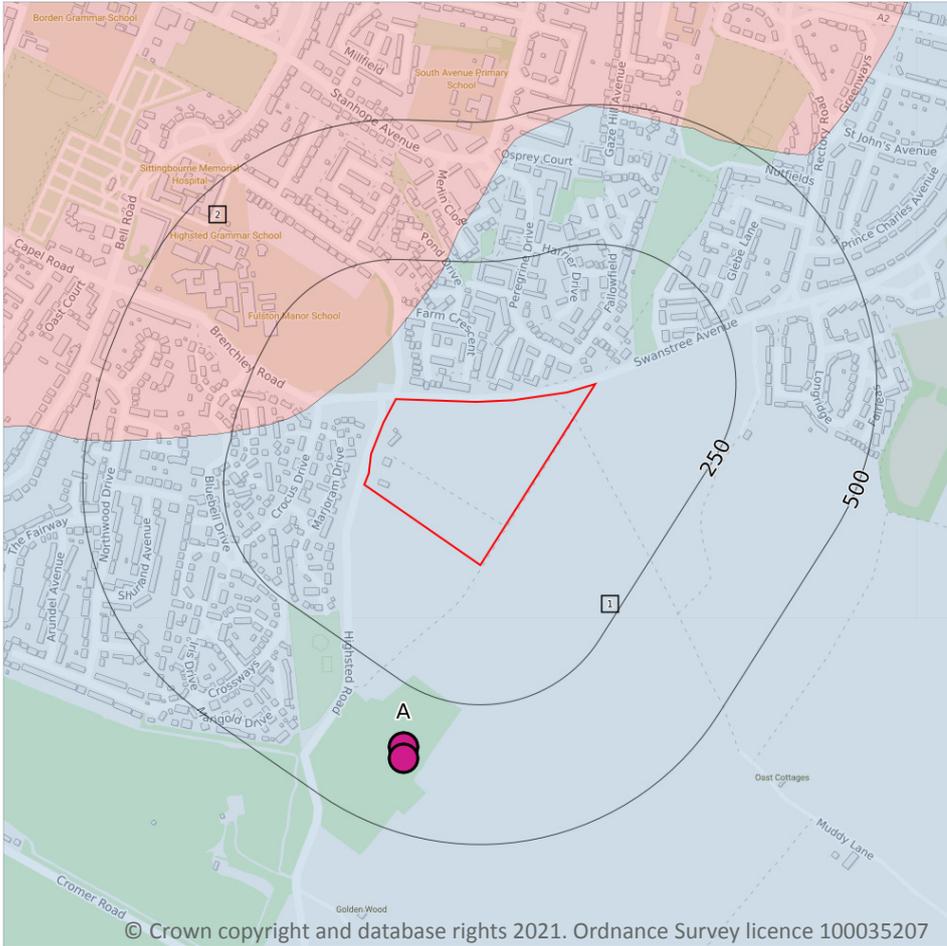
5.5 Groundwater vulnerability- local information

Records on site	0
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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.

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

Abstractions and Source Protection Zones



5.6 Groundwater abstractions

Records within 2000m

19

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 42**

ID	Location	Details	
A	352m SW	Status: Historical Licence No: 08/113 Details: Process water Direct Source: Southern Region Groundwater Point: POINT B, BOREHOLE AT HIGHSTED QUARRY, SITTINGBOURNE Data Type: Point Name: Blue Circle Industries Plc Easting: 591090 Northing: 162050	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 18/05/1998 Version End Date: -
A	352m SW	Status: Historical Licence No: 08/113 Details: Non-Evaporative Cooling Direct Source: Southern Region Groundwater Point: POINT B, BOREHOLE AT HIGHSTED QUARRY, SITTINGBOURNE Data Type: Point Name: Blue Circle Industries Plc Easting: 591090 Northing: 162050	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 18/05/1998 Version End Date: -
A	371m S	Status: Historical Licence No: 08/113 Details: Non-Evaporative Cooling Direct Source: Southern Region Groundwater Point: POINT A, BOREHOLE AT HIGHSTED QUARRY, SITTINGBOURNE Data Type: Point Name: Blue Circle Industries Plc Easting: 591090 Northing: 162030	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 18/05/1998 Version End Date: -
A	371m S	Status: Historical Licence No: 08/113 Details: Process water Direct Source: Southern Region Groundwater Point: POINT A, BOREHOLE AT HIGHSTED QUARRY, SITTINGBOURNE Data Type: Point Name: Blue Circle Industries Plc Easting: 591090 Northing: 162030	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 18/05/1998 Version End Date: -



ID	Location	Details	
-	1501m E	Status: Historical Licence No: 08/103 Details: Make-Up Or Top Up Water Direct Source: Southern Region Groundwater Point: POINT A, BOREHOLE AT FOX HILL, BAPCHILD Data Type: Point Name: The Environment Agency Easting: 592850 Northing: 163190	Annual Volume (m ³): 210000 Max Daily Volume (m ³): 700 Original Application No: - Original Start Date: - Expiry Date: 31/03/2017 Issue No: 101 Version Start Date: 14/10/2007 Version End Date: -
-	1511m NW	Status: Active Licence No: 9/40/02/0021/GR Details: Process Water Direct Source: Southern Region Groundwater Point: BH1A AT KEMSLEY MILL, SITTINGBOURNE Data Type: Point Name: DS Smith Paper Limited Easting: 590270 Northing: 163950	Annual Volume (m ³): 14,102,547 Max Daily Volume (m ³): 45,096.30 Original Application No: - Original Start Date: 11/08/1975 Expiry Date: - Issue No: 101 Version Start Date: 15/07/2014 Version End Date: -
-	1511m NW	Status: Active Licence No: 9/40/02/0021/GR Details: Process Water Direct Source: Southern Region Groundwater Point: BH2A AT KEMSLEY MILL, SITTINGBOURNE Data Type: Point Name: DS Smith Paper Limited Easting: 590270 Northing: 163950	Annual Volume (m ³): 14,102,547 Max Daily Volume (m ³): 45,096.30 Original Application No: - Original Start Date: 11/08/1975 Expiry Date: - Issue No: 101 Version Start Date: 15/07/2014 Version End Date: -
-	1529m NE	Status: Historical Licence No: 9/40/02/0237/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLES AT LOMAS RD PS Data Type: Poly4 Name: Southern Water Services Plc Easting: 592500 Northing: 163870	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 15/05/2001 Version End Date: -
-	1529m NE	Status: Historical Licence No: 9/40/02/0237/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLES AT LOMAS RD PS Data Type: Poly4 Name: Southern Water Services Ltd Easting: 592500 Northing: 163870	Annual Volume (m ³): - Max Daily Volume (m ³): 80500 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 29/11/2006 Version End Date: -

ID	Location	Details	
-	1576m S	Status: Historical Licence No: 9/40/02/0237/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLES AT HIGHSTED PS Data Type: Poly4 Name: Southern Water Services Plc Easting: 591010 Northing: 160810	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 15/05/2001 Version End Date: -
-	1576m S	Status: Historical Licence No: 9/40/02/0237/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLES AT HIGHSTED PS Data Type: Poly4 Name: Southern Water Services Ltd Easting: 591010 Northing: 160810	Annual Volume (m ³): - Max Daily Volume (m ³): 80500 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 29/11/2006 Version End Date: -
-	1595m N	Status: Historical Licence No: 9/40/02/0021/GR Details: Process Water Direct Source: Southern Region Groundwater Point: BH5A AT KEMSLEY MILL AT SITTINGBOURNE Data Type: Point Name: Grovehurst Energy Limited Easting: 590500 Northing: 164160	Annual Volume (m ³): 21,370,183 Max Daily Volume (m ³): 67462.6 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 27/11/2006 Version End Date: -
-	1650m NW	Status: Historical Licence No: 9/40/02/0021/GR Details: Process Water Direct Source: Southern Region Groundwater Point: BH4A AT KEMSLEY MILL, SITTINGBOURNE Data Type: Point Name: Grovehurst Energy Limited Easting: 590200 Northing: 164070	Annual Volume (m ³): 21,370,183 Max Daily Volume (m ³): 67462.6 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 27/11/2006 Version End Date: -
-	1664m S	Status: Active Licence No: 9/40/02/0237/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE AT HIGHSTEAD Data Type: Point Name: Southern Water Services Ltd Easting: 591048 Northing: 160720	Annual Volume (m ³): 14,963,000 Max Daily Volume (m ³): 68,000 Original Application No: - Original Start Date: 24/03/1986 Expiry Date: - Issue No: 102 Version Start Date: 17/10/2016 Version End Date: -



ID	Location	Details	
-	1666m NW	Status: Historical Licence No: 9/40/02/0021/GR Details: Process Water Direct Source: Southern Region Groundwater Point: BH3A AT KEMSLEY MILL, SITTINGBOURNE Data Type: Point Name: Grovehurst Energy Limited Easting: 590170 Northing: 164070	Annual Volume (m ³): 21,370,183 Max Daily Volume (m ³): 67462.6 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 27/11/2006 Version End Date: -
-	1666m S	Status: Active Licence No: 9/40/02/0237/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE AT HIGHSTEAD Data Type: Point Name: Southern Water Services Ltd Easting: 591048 Northing: 160718	Annual Volume (m ³): 14,963,000 Max Daily Volume (m ³): 68,000 Original Application No: - Original Start Date: 24/03/1986 Expiry Date: - Issue No: 102 Version Start Date: 17/10/2016 Version End Date: -
-	1833m NW	Status: Active Licence No: 9/40/02/0022/GR Details: Evaporative Cooling Direct Source: Southern Region Groundwater Point: POINT 1AT BENNETT OPIE PREMISES Data Type: Point Name: Bennett Opie (MFG) Ltd Easting: 590110 Northing: 164230	Annual Volume (m ³): 49,687 Max Daily Volume (m ³): 136.40 Original Application No: - Original Start Date: 04/05/1966 Expiry Date: - Issue No: 100 Version Start Date: 04/05/1966 Version End Date: -
-	1833m NW	Status: Active Licence No: 9/40/02/0022/GR Details: Process Water Direct Source: Southern Region Groundwater Point: POINT 1AT BENNETT OPIE PREMISES Data Type: Point Name: Bennett Opie (MFG) Ltd Easting: 590110 Northing: 164230	Annual Volume (m ³): 49,687 Max Daily Volume (m ³): 136.40 Original Application No: - Original Start Date: 04/05/1966 Expiry Date: - Issue No: 100 Version Start Date: 04/05/1966 Version End Date: -
-	1859m N	Status: Historical Licence No: 9/40/02/0021/GR Details: Process Water Direct Source: Southern Region Groundwater Point: BH6A AT KEMSLEY MILL, SITTINGBOURNE Data Type: Point Name: Grovehurst Energy Limited Easting: 590600 Northing: 164470	Annual Volume (m ³): 21,370,183 Max Daily Volume (m ³): 67462.6 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 27/11/2006 Version End Date: -

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



5.7 Surface water abstractions

Records within 2000m

0

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.

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

5.8 Potable abstractions

Records within 2000m

6

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 42**

ID	Location	Details	
-	1529m NE	Status: Historical Licence No: 9/40/02/0237/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLES AT LOMAS RD PS Data Type: Poly4 Name: Southern Water Services Plc Easting: 592500 Northing: 163870	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 15/05/2001 Version End Date: -
-	1529m NE	Status: Historical Licence No: 9/40/02/0237/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLES AT LOMAS RD PS Data Type: Poly4 Name: Southern Water Services Ltd Easting: 592500 Northing: 163870	Annual Volume (m ³): - Max Daily Volume (m ³): 80500 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 29/11/2006 Version End Date: -
-	1576m S	Status: Historical Licence No: 9/40/02/0237/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLES AT HIGHSTED PS Data Type: Poly4 Name: Southern Water Services Plc Easting: 591010 Northing: 160810	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 15/05/2001 Version End Date: -



ID	Location	Details	
-	1576m S	Status: Historical Licence No: 9/40/02/0237/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLES AT HIGHSTED PS Data Type: Poly4 Name: Southern Water Services Ltd Easting: 591010 Northing: 160810	Annual Volume (m ³): - Max Daily Volume (m ³): 80500 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 101 Version Start Date: 29/11/2006 Version End Date: -
-	1664m S	Status: Active Licence No: 9/40/02/0237/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE AT HIGHSTEAD Data Type: Point Name: Southern Water Services Ltd Easting: 591048 Northing: 160720	Annual Volume (m ³): 14,963,000 Max Daily Volume (m ³): 68,000 Original Application No: - Original Start Date: 24/03/1986 Expiry Date: - Issue No: 102 Version Start Date: 17/10/2016 Version End Date: -
-	1666m S	Status: Active Licence No: 9/40/02/0237/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLE AT HIGHSTEAD Data Type: Point Name: Southern Water Services Ltd Easting: 591048 Northing: 160718	Annual Volume (m ³): 14,963,000 Max Daily Volume (m ³): 68,000 Original Application No: - Original Start Date: 24/03/1986 Expiry Date: - Issue No: 102 Version Start Date: 17/10/2016 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	2
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Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination. Features are displayed on the Abstractions and Source Protection Zones map on **page 42**

ID	Location	Type	Description
1	On site	2	Outer catchment
2	83m NW	1	Inner catchment

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m

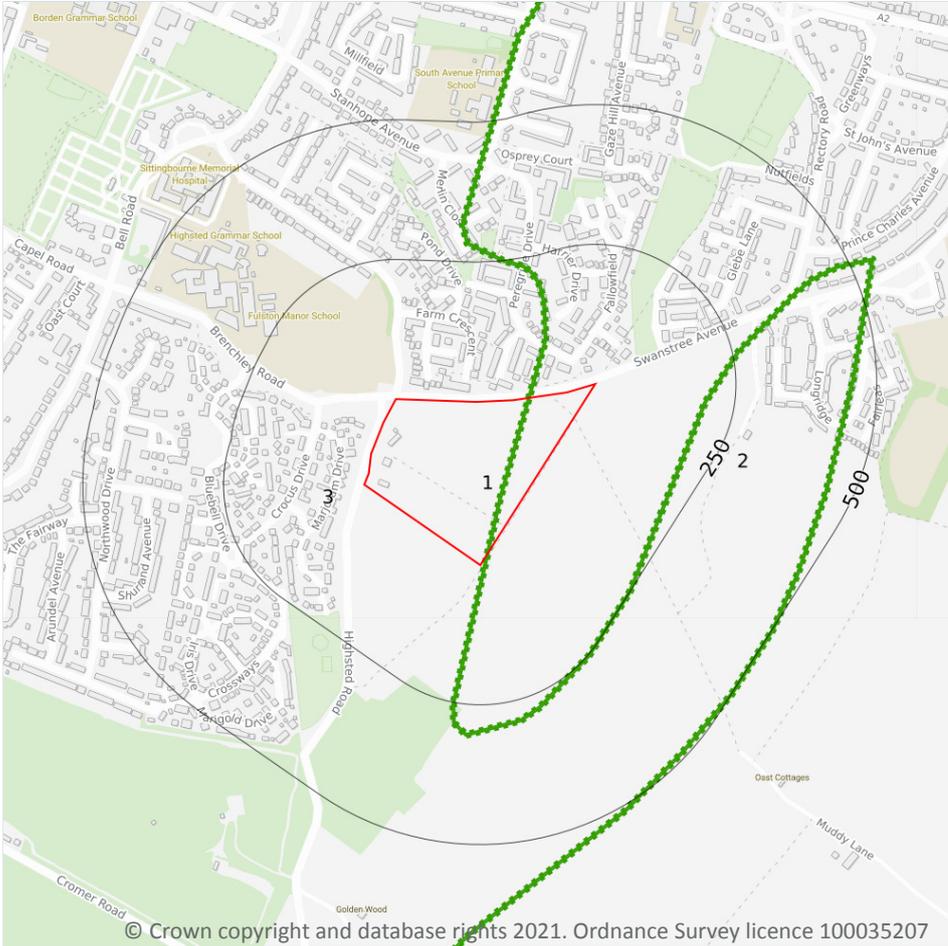
0

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

0

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

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

0

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.

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1
------------------------	----------

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 50**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	Coastal Catchment	Not part of a river WB catchment	134	White Drain and Lakes	North Kent

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

6.4 WFD Surface water bodies

Records identified	0
---------------------------	----------

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.

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

6.5 WFD Groundwater bodies

Records on site	2
------------------------	----------

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.

Features are displayed on the Hydrology map on **page 50**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	On site	North Kent Tertiaries	<u>GB40602G500200</u>	Poor	Good	Poor	2015



ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
3	On site	North Kent Swale Chalk	<u>GB40601G501700</u>	Poor	Poor	Poor	2015

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 Sea (RoFRaS)

Records within 50m

0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; 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).

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

7.2 Historical Flood Events

Records within 250m

0

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.

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

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

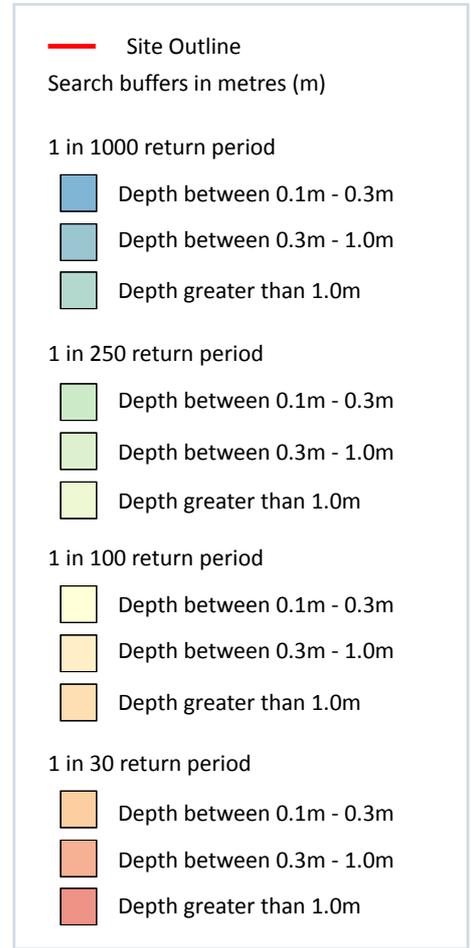
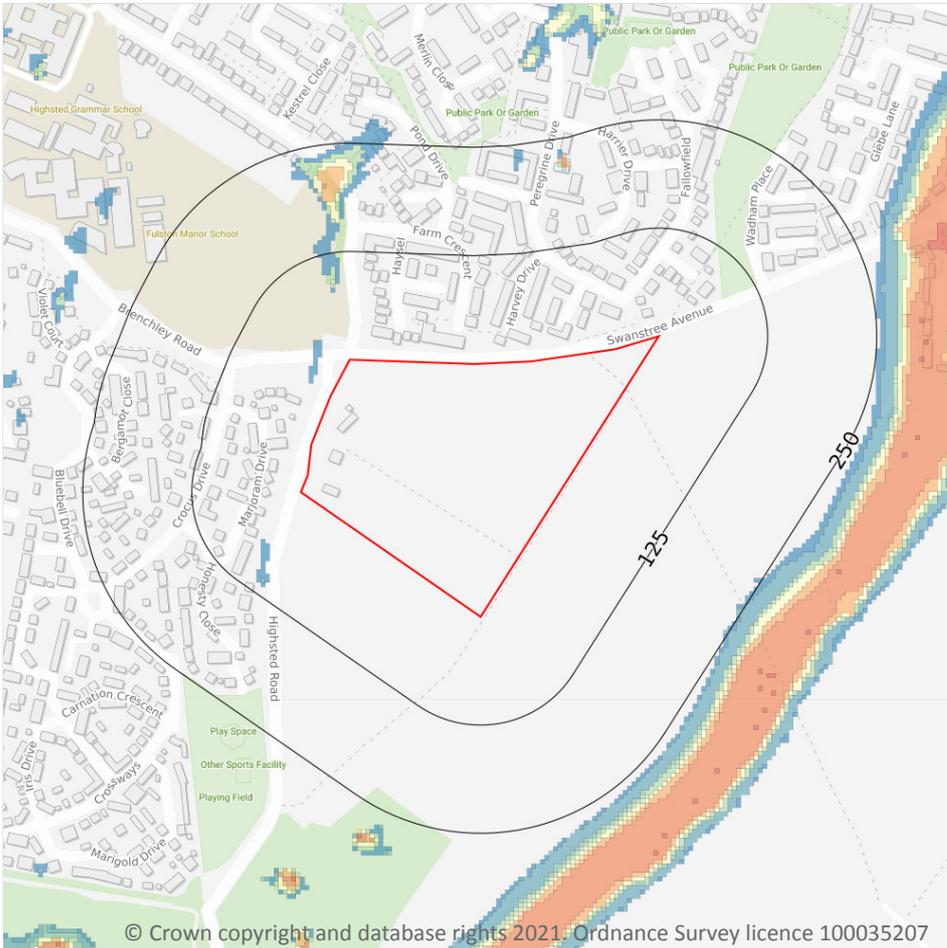
0

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



8.1 Surface water flooding

Highest risk on site

Negligible

Highest risk within 50m

1 in 1000 year, 0.1m - 0.3m

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 56**

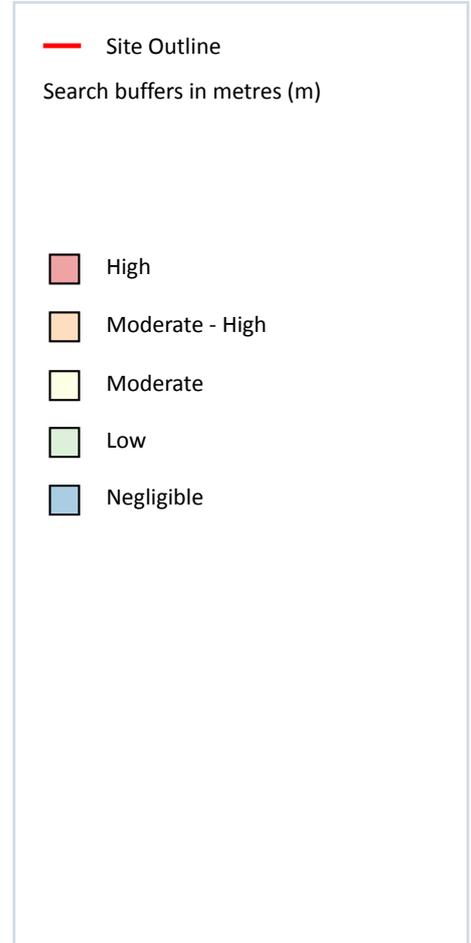
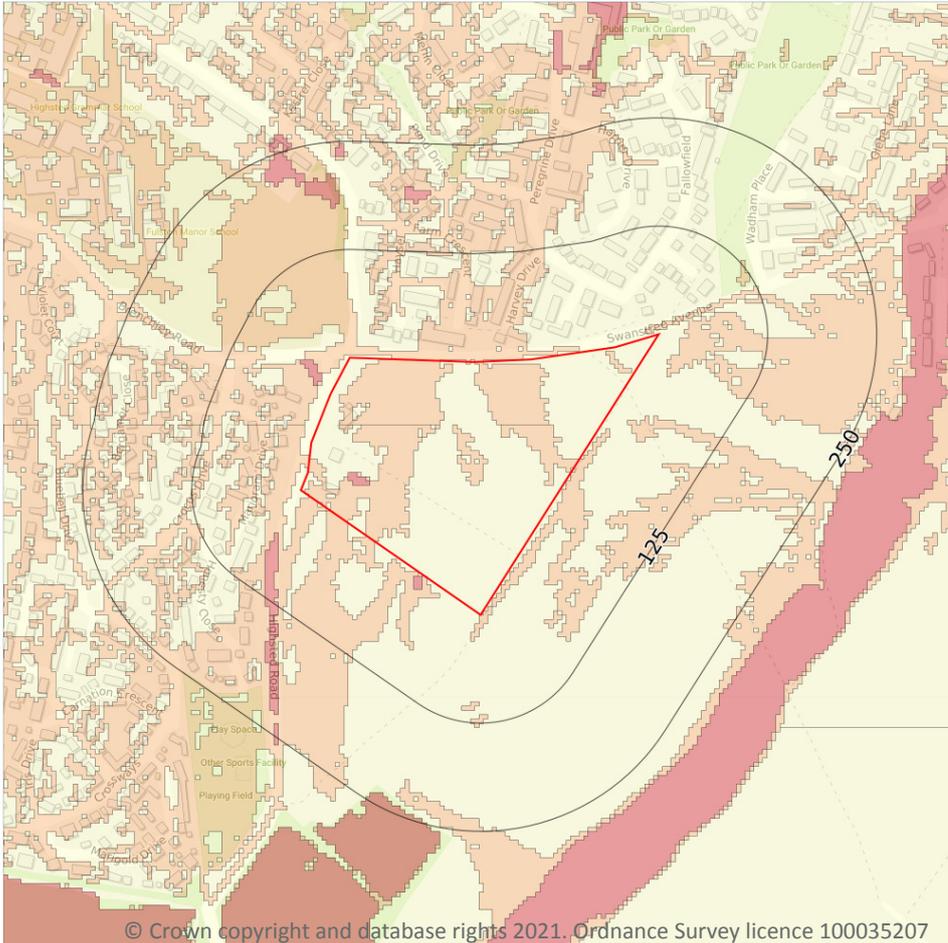
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



9.1 Groundwater flooding

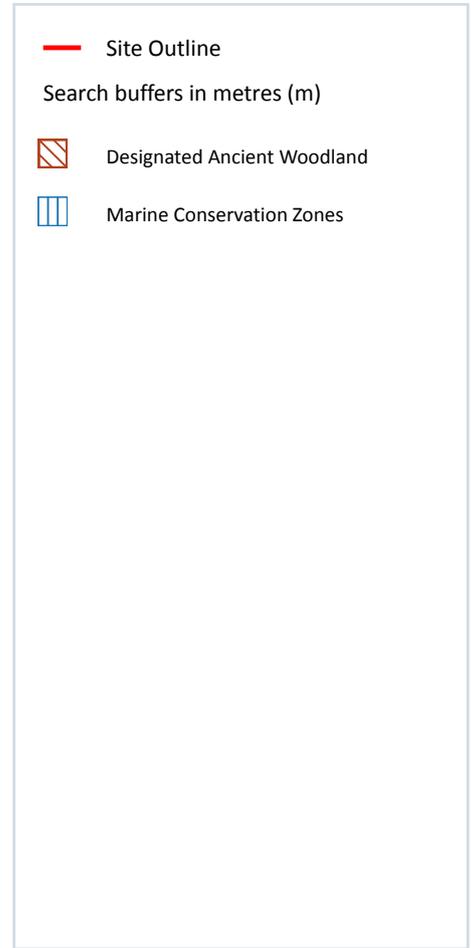
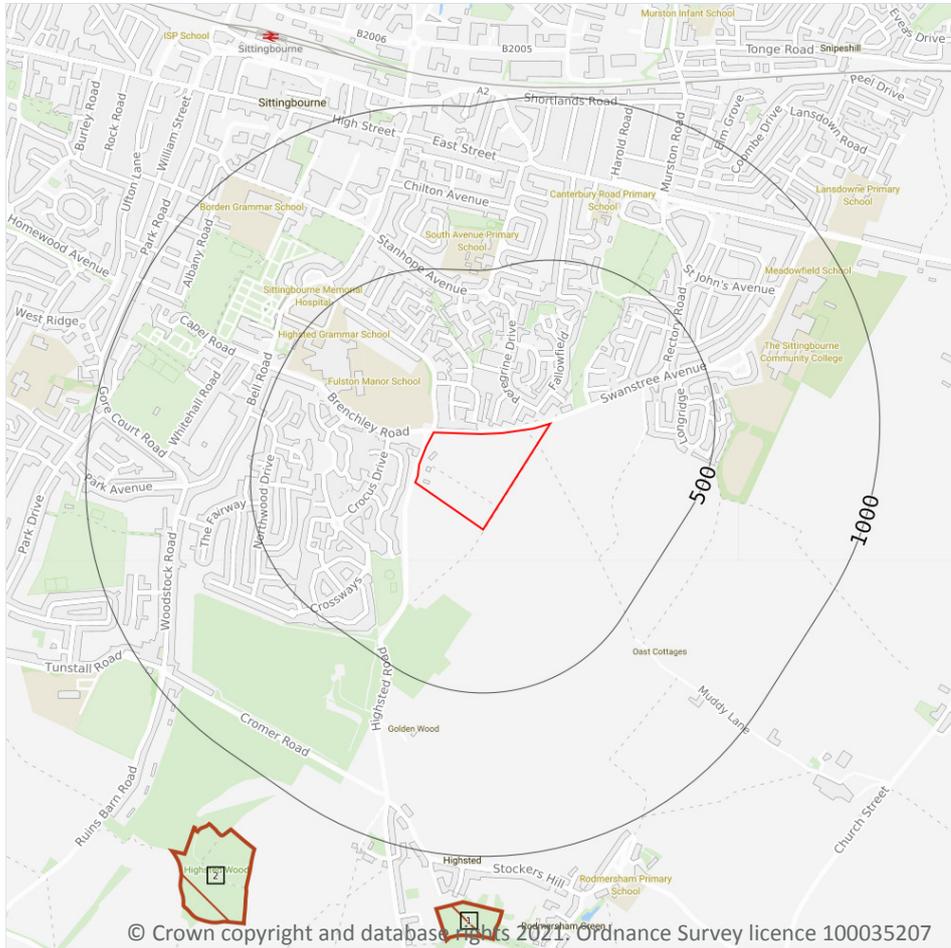
Highest risk on site	High
Highest risk within 50m	High

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 58**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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.

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

0

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.

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

10.7 Designated Ancient Woodland

Records within 2000m

4

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 59**

ID	Location	Name	Woodland Type
1	1141m S	Cheney Hill Wood	Ancient & Semi-Natural Woodland
2	1190m SW	Highsted Wood	Ancient & Semi-Natural Woodland
-	1581m S	Cromers Wood	Ancient & Semi-Natural Woodland
-	1657m S	Cheney Wood	Ancient & Semi-Natural 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

2

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.

Features are displayed on the Environmental designations map on **page 59**

ID	Location	Name	Status
-	1548m N	The Swale Estuary	Designated
-	1625m N	The Swale Estuary	Designated

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

10.11 Green Belt

Records within 2000m

0

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

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

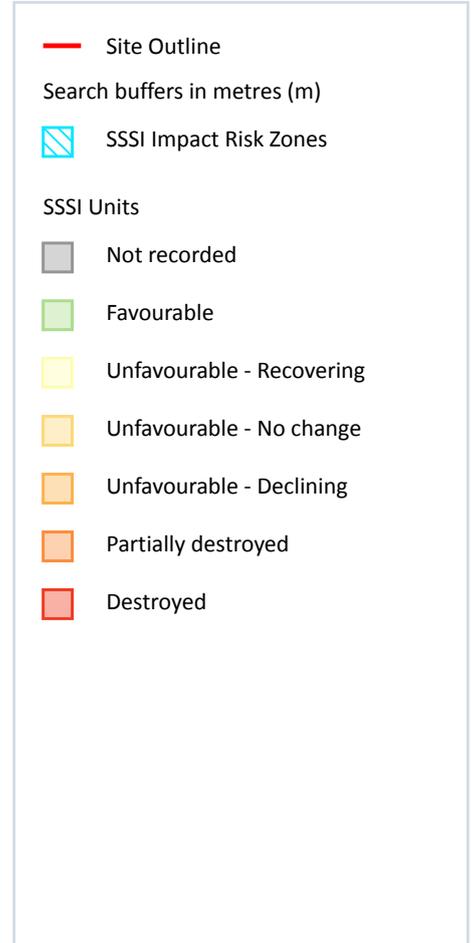
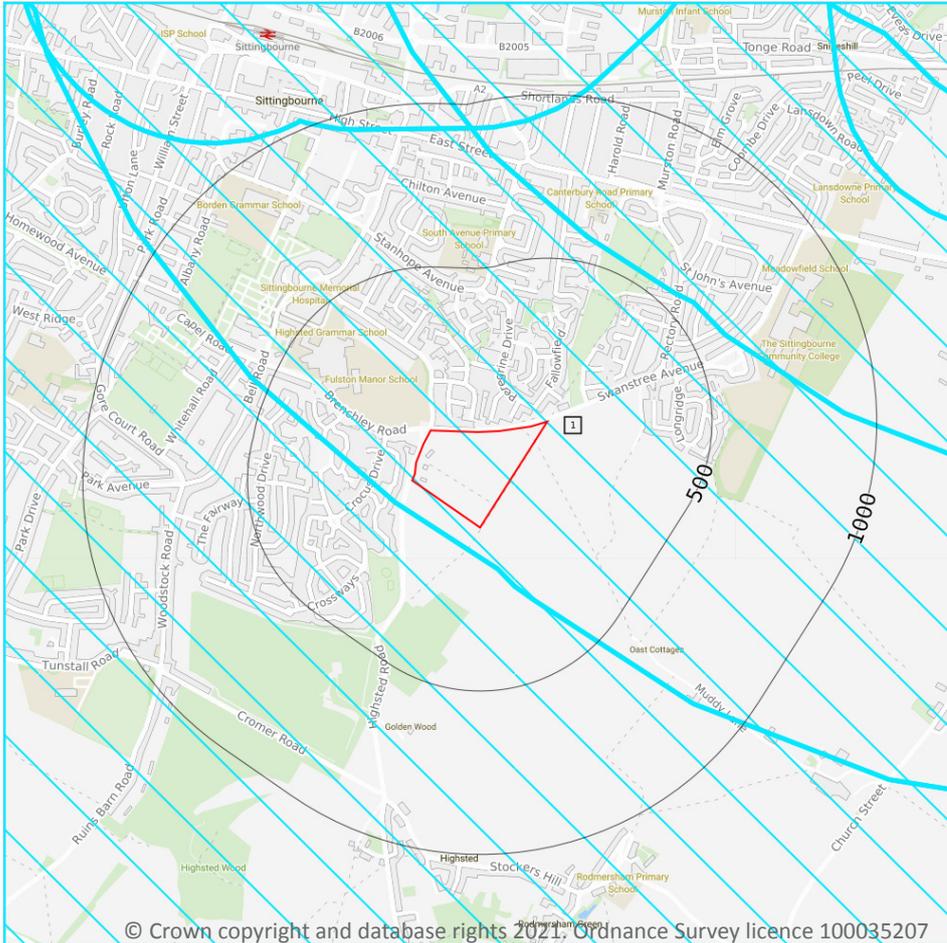
0

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



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 64**

ID	Location	Type of developments requiring consultation
1	On site	<p>Infrastructure - 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>Residential - Residential development of 500 units or more.</p> <p>Rural residential - Any residential development of 500 or more houses outside existing settlements/urban areas.</p> <p>Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons > 4000m².</p> <p>Combustion - General combustion processes >50MW 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>Discharges - Any discharge of water or liquid waste of more than 5m³/day to ground (ie to seep away) or to surface water, such as a beck or stream (NB This does not include discharges to mains sewer which are unlikely to pose a risk at this location).</p> <p>Notes: For new residential development in this area financial contributions are required to mitigate increased recreational disturbance on coastal SPAs and Ramsar Sites. Check with Local Planning Authority.</p>

This data is sourced from Natural England.

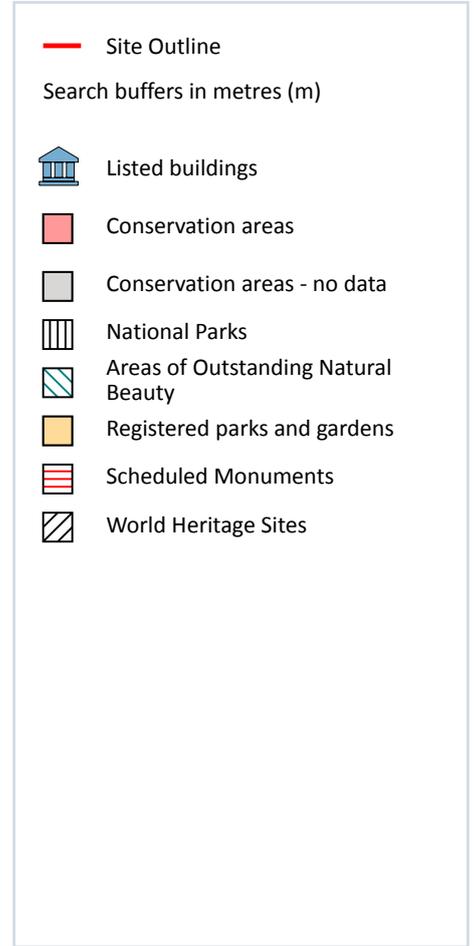
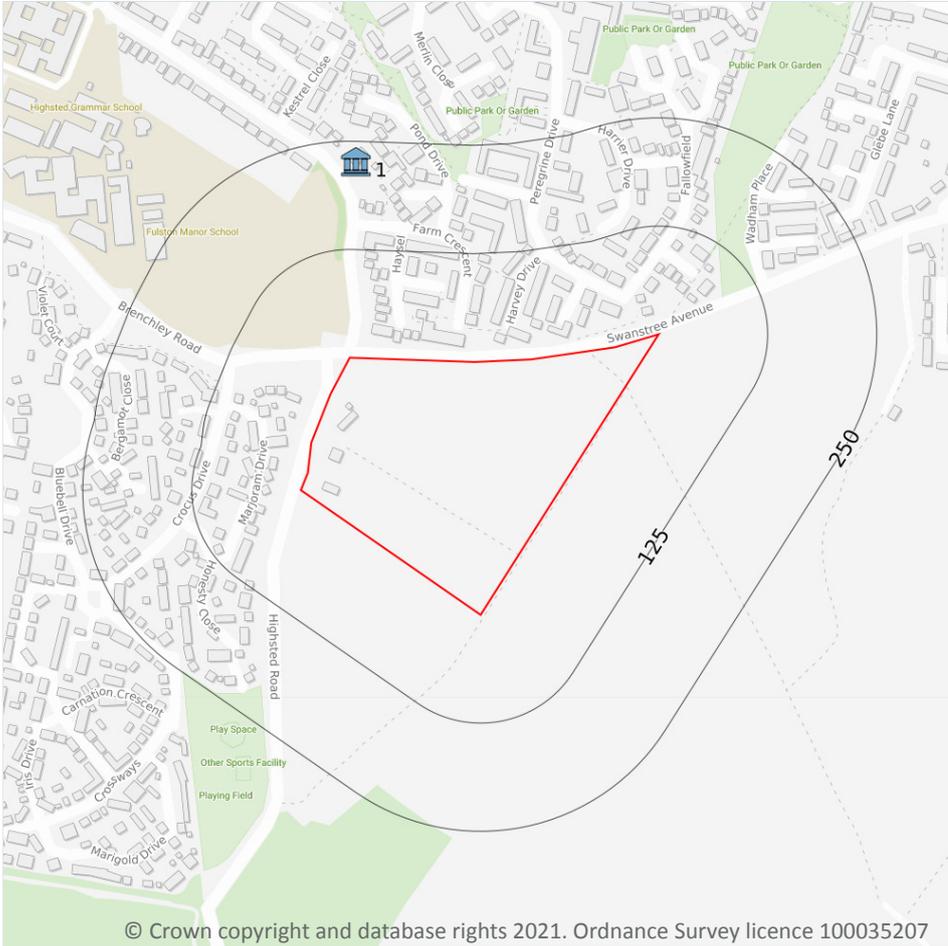
10.18 SSSI Units

Records within 2000m	0
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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.

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

11 Visual and cultural designations



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

1

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 66**

ID	Location	Name	Grade	Reference Number	Listed date
1	226m N	Chilton Manor, Woodstock, Swale, Kent, ME10	II	1031372	13/12/1974

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

11.5 Conservation Areas

Records within 250m

0

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.

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

11.7 Registered Parks and Gardens

Records within 250m

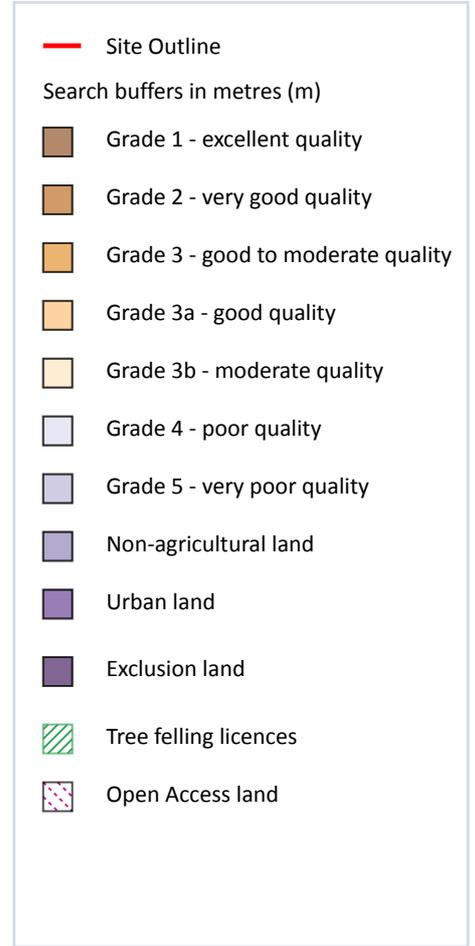
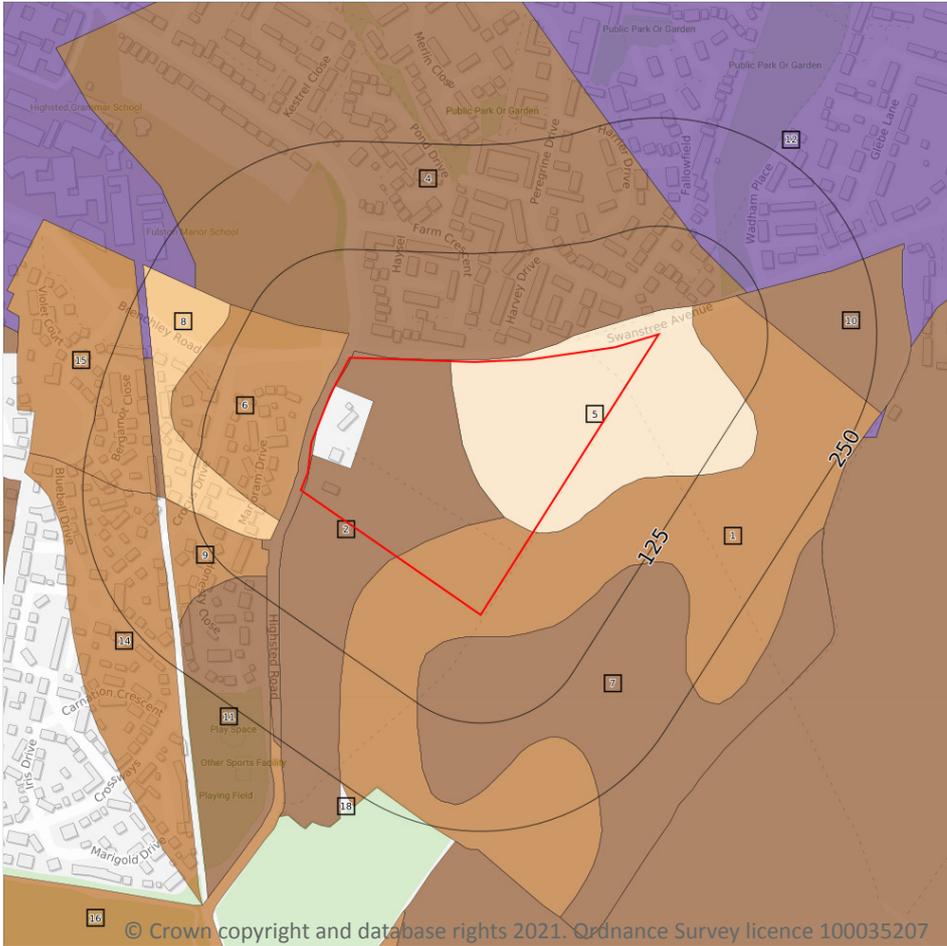
0

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 English Heritage, Cadw and Historic Environment Scotland.



12 Agricultural designations



12.1 Agricultural Land Classification

Records within 250m

15

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 69**

ID	Location	Classification	Description
1	On site	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
2	On site	Grade 1	Excellent quality agricultural land. Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.
4	On site	Grade 1	Excellent quality agricultural land. Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.
5	On site	Grade 3b	Moderate quality agricultural land. Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.
6	9m W	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
7	25m S	Grade 1	Excellent quality agricultural land. Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.
8	43m SW	Grade 3a	Good quality agricultural land. Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.
9	73m SW	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
10	100m NE	Grade 1	Excellent quality agricultural land. Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.



ID	Location	Classification	Description
11	104m SW	Grade 1	Excellent quality agricultural land. Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.
12	106m NE	Urban	-
14	165m W	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
15	165m W	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
16	218m SW	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
18	249m SW	Not Surveyed	-

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

2

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment.

Location	Reference	Scheme	Start Date	End date
On site	AG00290554	Entry Level plus Higher Level Stewardship	01/07/2009	30/06/2021
67m SE	AG00290554	Entry Level plus Higher Level Stewardship	01/07/2009	30/06/2021

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

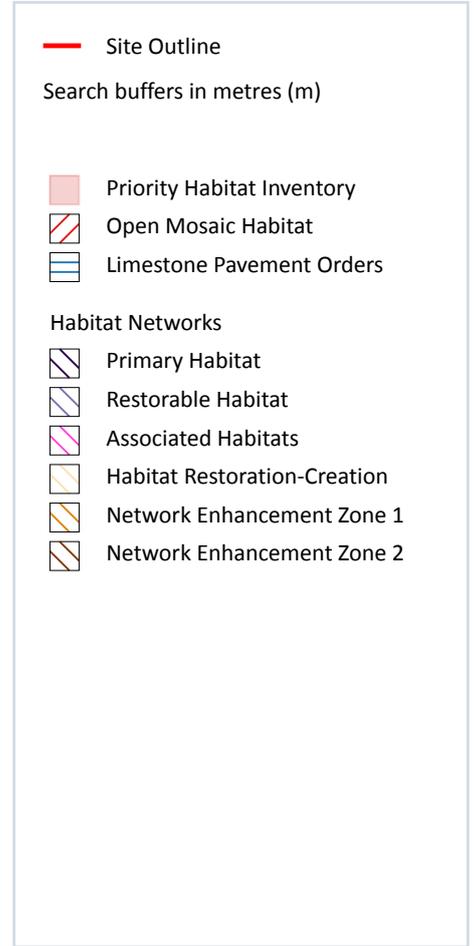
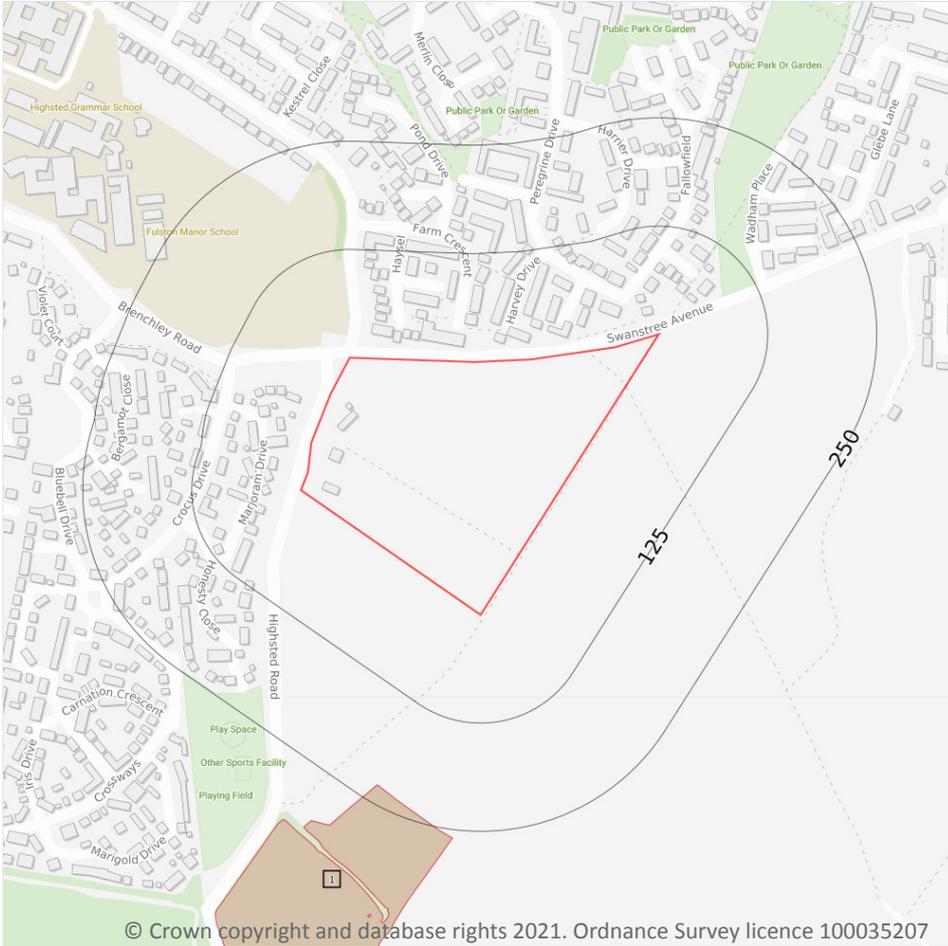
Records within 250m

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



13.1 Priority Habitat Inventory

Records within 250m

1

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 73**

ID	Location	Main Habitat	Other habitats
1	229m SW	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

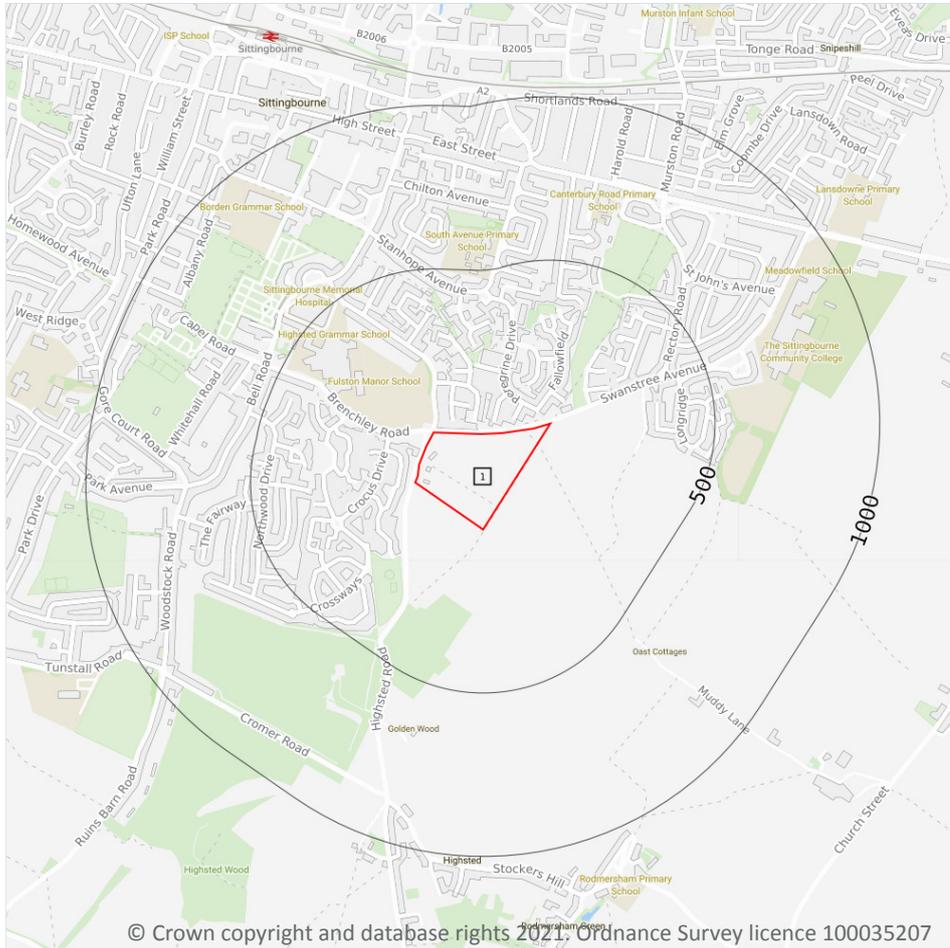
0

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

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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 75](#)

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

This data is sourced from the British Geological Survey.

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

14.2 Artificial and made ground (10k)

Records within 500m

0

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.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m

0

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.

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

14.5 Bedrock geology (10k)

Records within 500m

0

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.

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

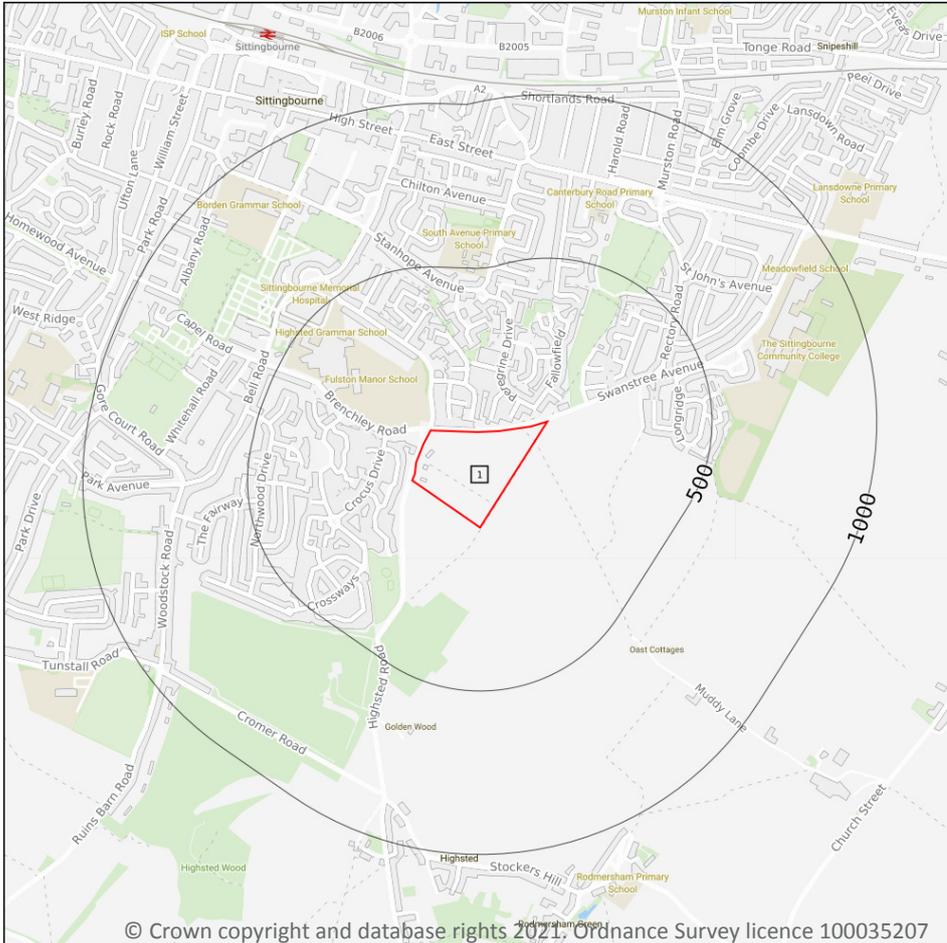
0

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)

□ Geographical 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 79**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW272_chatham_v4

This data is sourced from the British Geological Survey.



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

15.2 Artificial and made ground (50k)

Records within 500m

0

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.

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

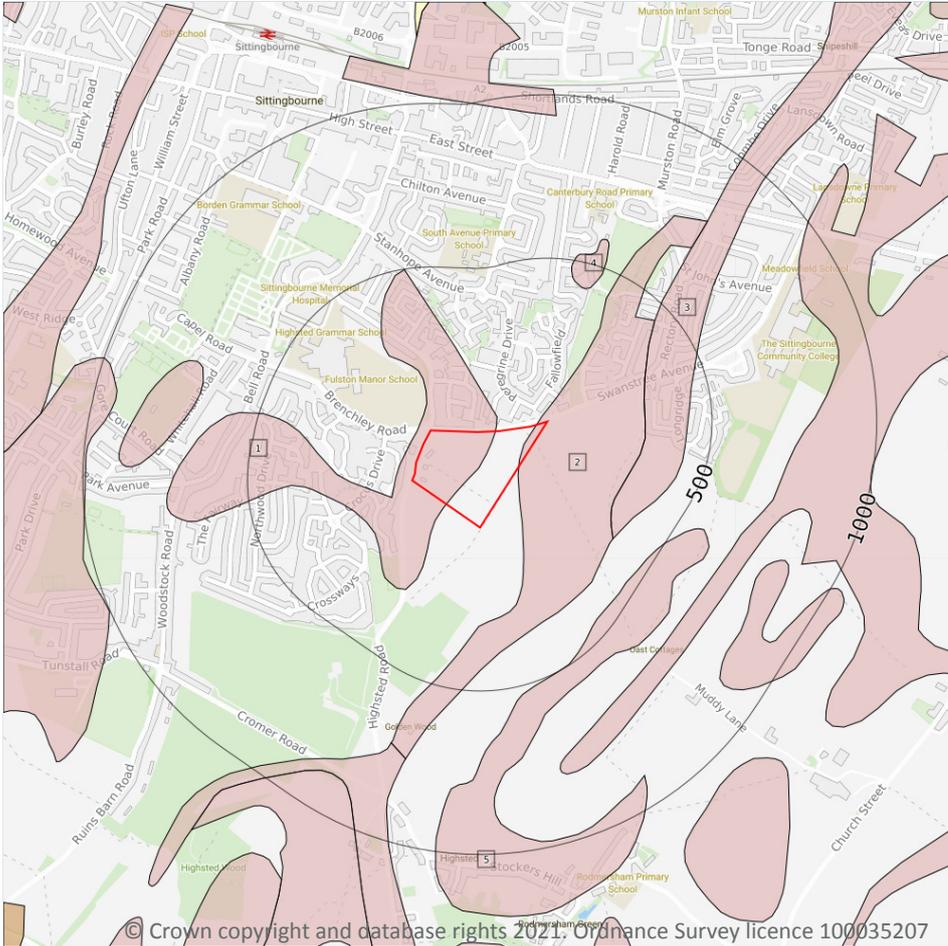
Records within 50m

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

5

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 81**

ID	Location	LEX Code	Description	Rock description
1	On site	HEAD-XCZ	HEAD	CLAY AND SILT
2	On site	HEAD-XCZ	HEAD	CLAY AND SILT
3	295m SE	HEAD-XVSZC	HEAD	GRAVEL, SAND, SILT AND CLAY



ID	Location	LEX Code	Description	Rock description
4	423m N	HEAD-XVSZC	HEAD	GRAVEL, SAND, SILT AND CLAY
5	452m SE	HEAD-XVSZC	HEAD	GRAVEL, SAND, SILT AND CLAY

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m

2

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	Mixed	Low	Very Low
On site	Mixed	Low	Very Low

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)

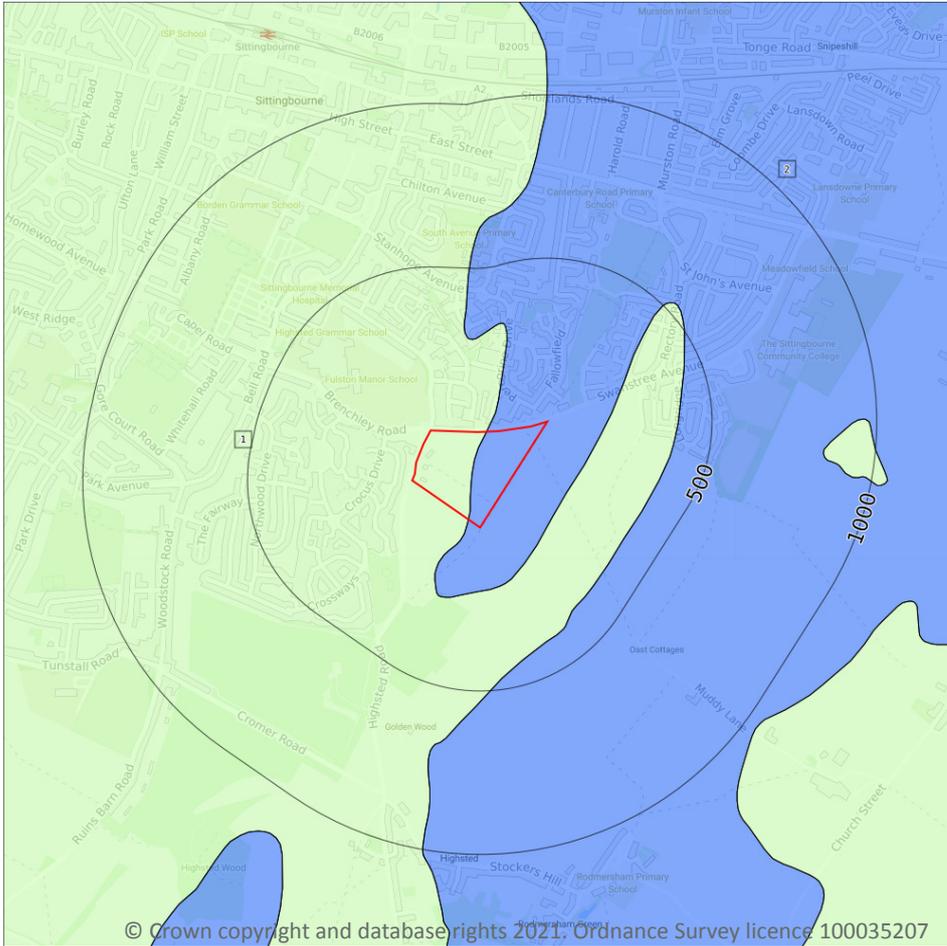
Records within 50m

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	2
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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 83**

ID	Location	LEX Code	Description	Rock age
1	On site	SECK-CHLK	SEAFORD CHALK FORMATION - CHALK	CONIACIAN
2	On site	TAB-XSZC	THANET FORMATION - SAND, SILT AND CLAY	THANETIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m

2

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	Fracture	Very High	Very High
On site	Intergranular	High	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

16.1 BGS Boreholes

Records within 250m

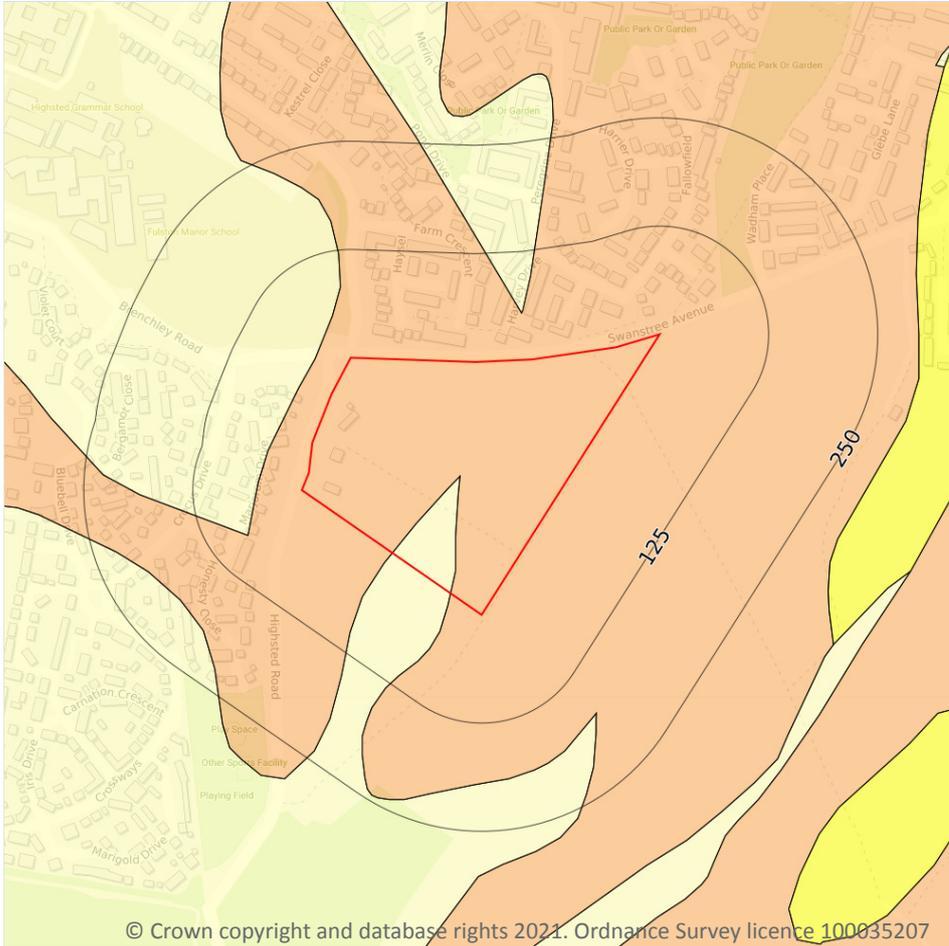
0

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.

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

17.1 Shrink swell clays

Records within 50m

2

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).

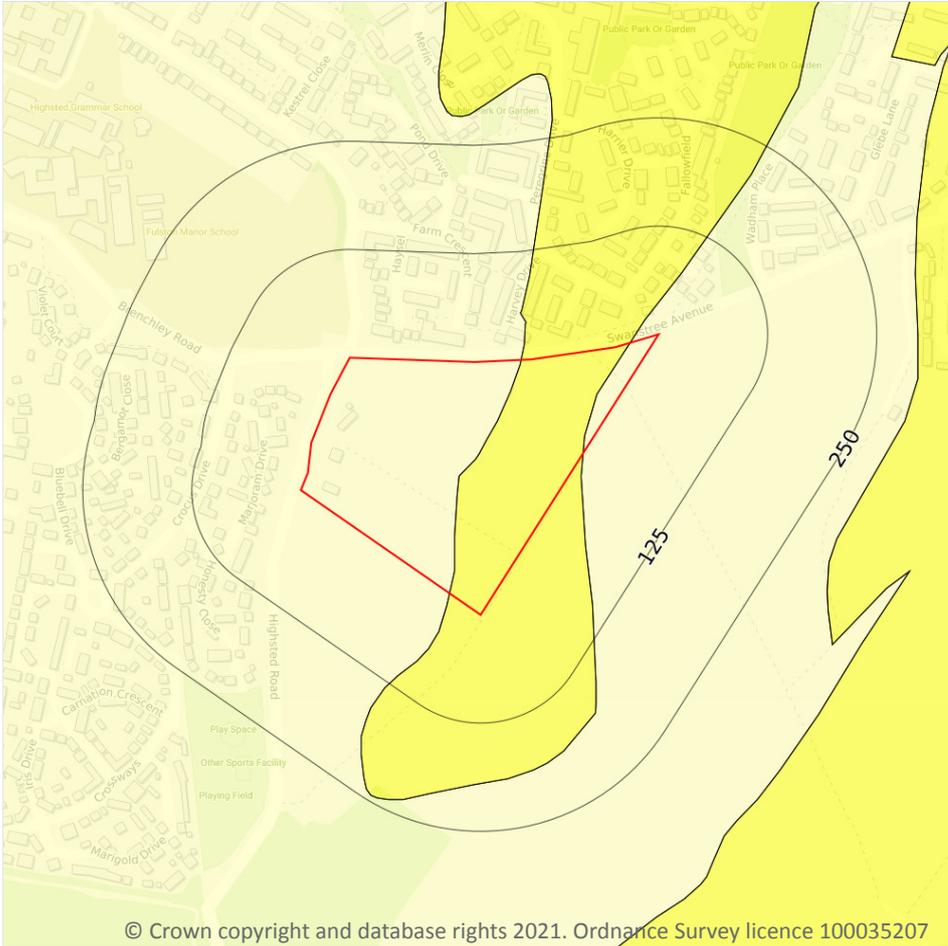
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 86**

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.
On site	Low	Ground conditions predominantly medium plasticity.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



— Site Outline
Search buffers in metres (m)

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

17.2 Running sands

Records within 50m

2

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 87**

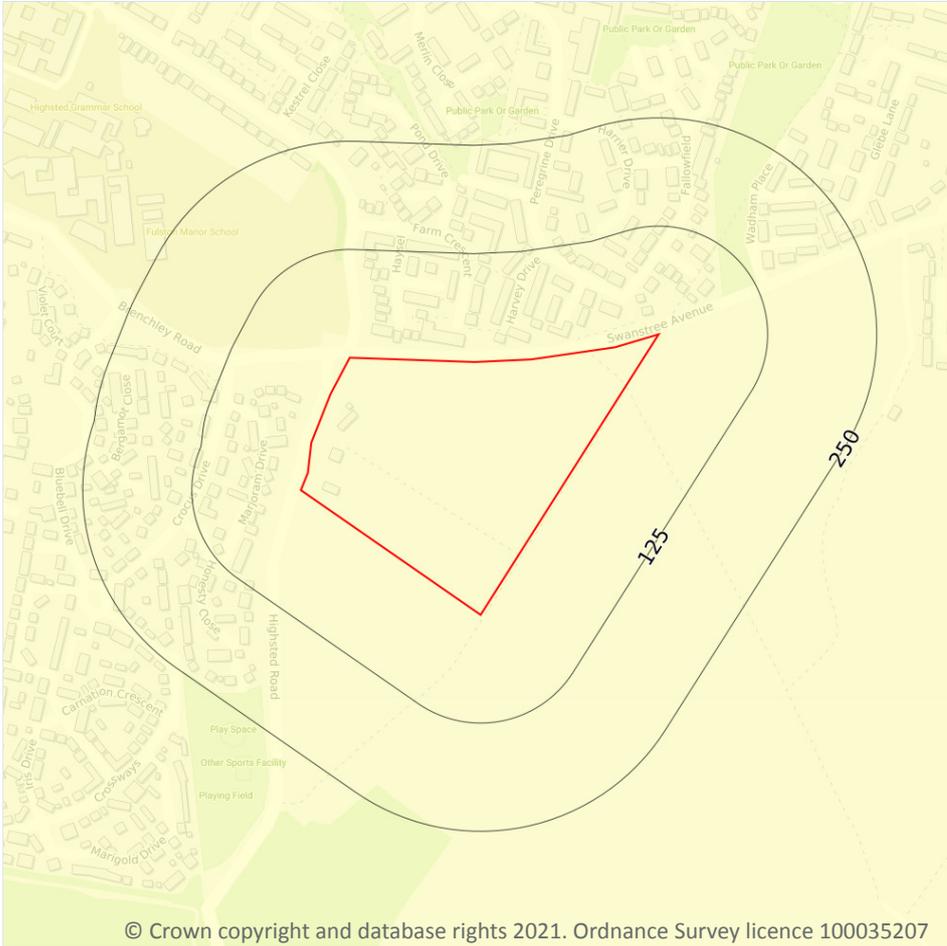
Location	Hazard rating	Details
On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

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



— Site Outline
Search buffers in metres (m)

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

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.

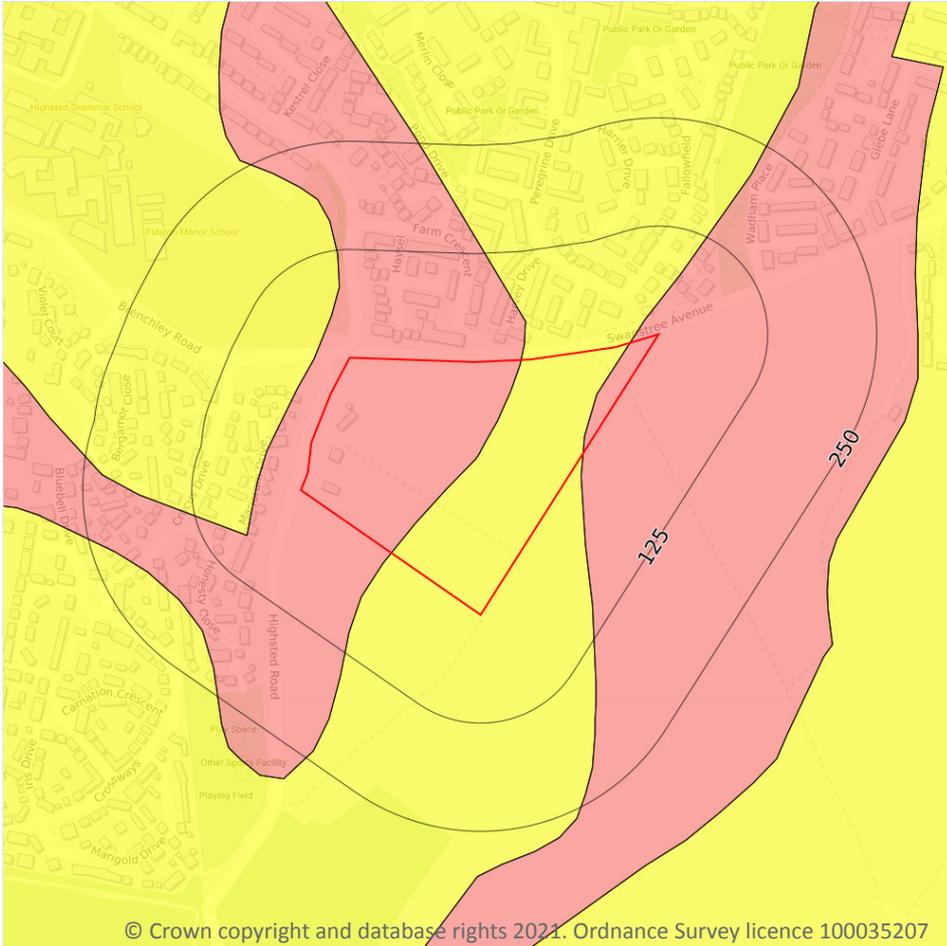
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 89**

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

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17.4 Collapsible deposits

Records within 50m

2

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.

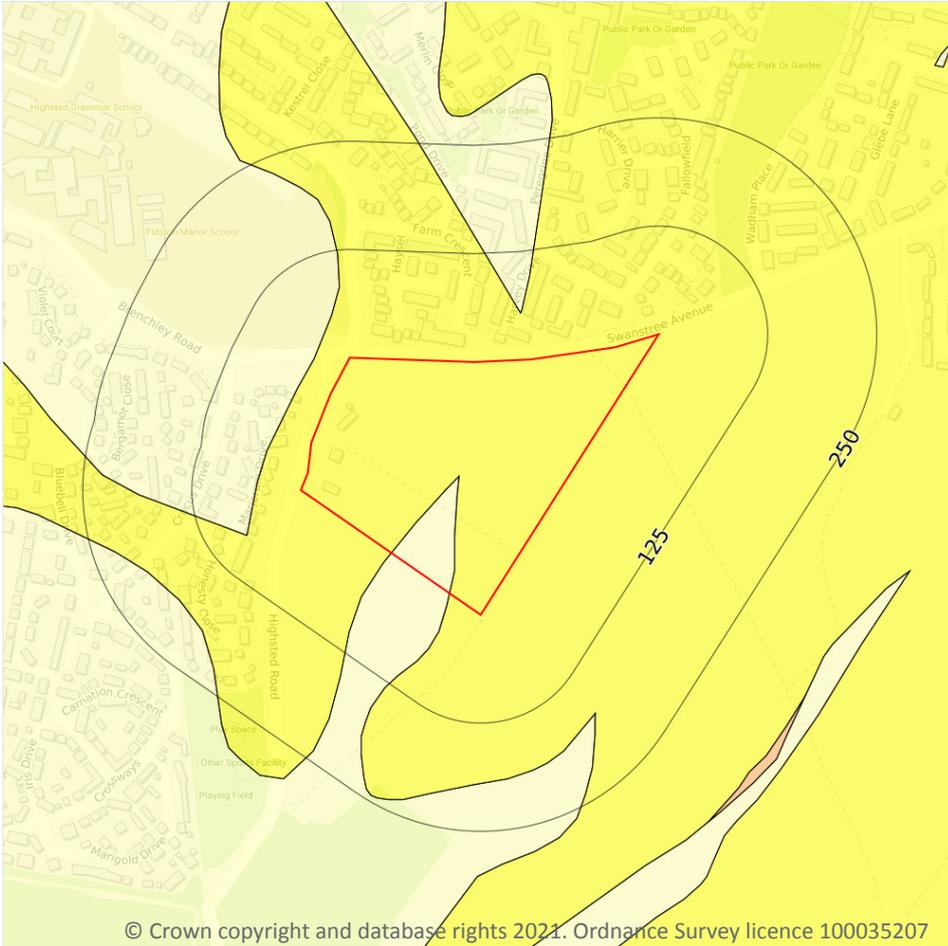
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 90**

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



— Site Outline
Search buffers in metres (m)

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

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17.5 Landslides

Records within 50m

2

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 91**

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

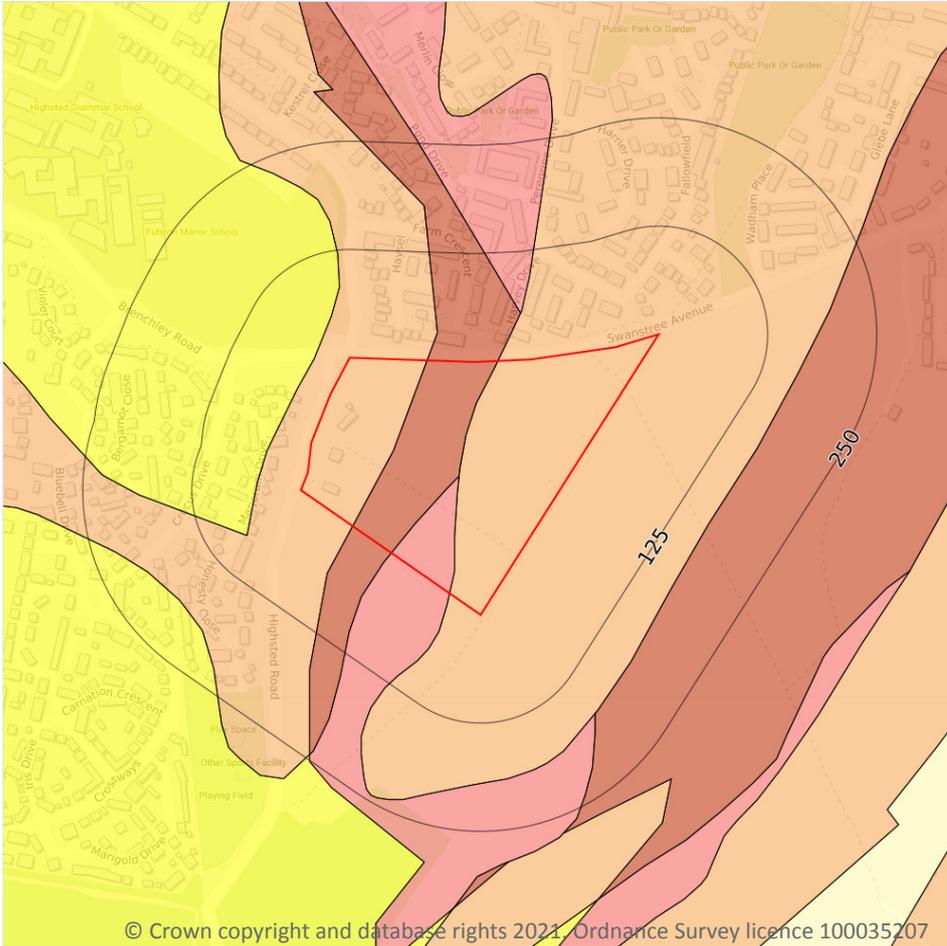


Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

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

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17.6 Ground dissolution of soluble rocks

Records within 50m

4

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.

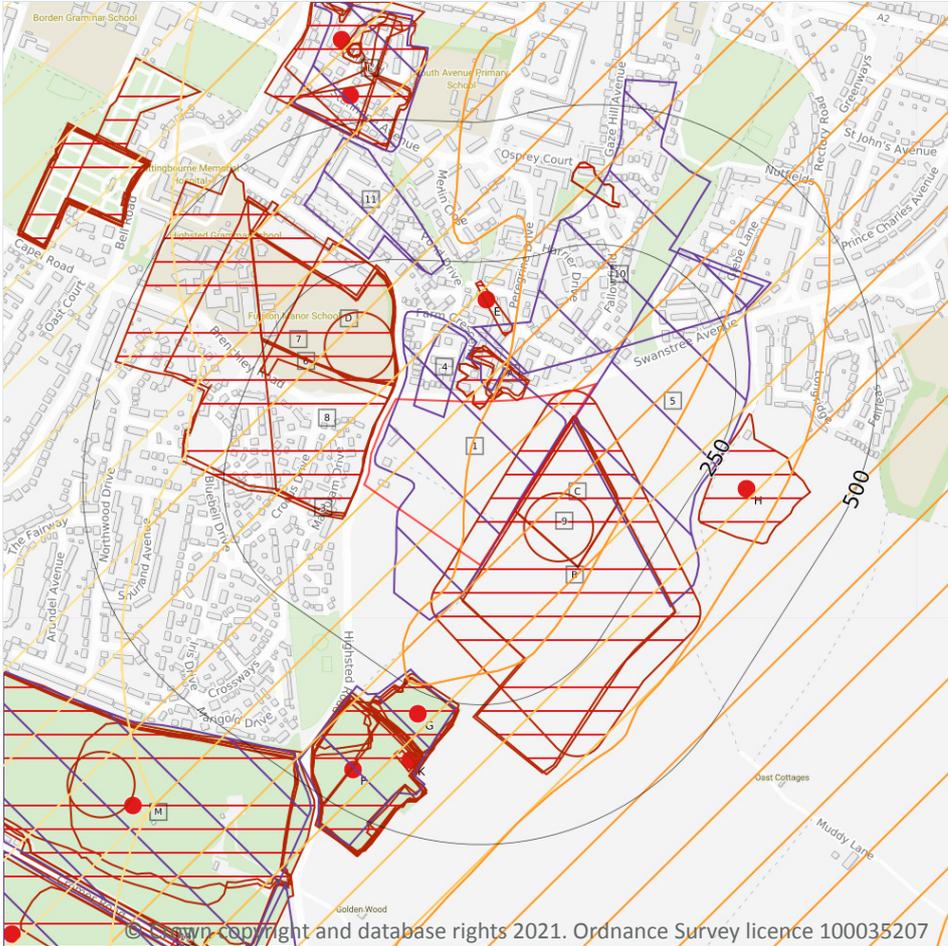
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 93**

Location	Hazard rating	Details
On site	Low	Soluble rocks are present within the ground. Some dissolution features may be present. Potential for difficult ground conditions are at a level where they may be considered, localised subsidence need not be considered except in exceptional circumstances.

Location	Hazard rating	Details
On site	Moderate	Soluble rocks are present within the ground. Many dissolution features may be present. Potential for difficult ground conditions are at a level where they should be considered. Potential for subsidence is at a level where it may need to be considered.
On site	High	Soluble rocks are present within the ground. Numerous dissolution features may be present. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered.
36m NW	Very low	Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered.

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



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 Peter Brett Associates (PBA).

18.2 BritPits

Records within 500m

7

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 95**

ID	Location	Details	Description
E	181m N	Name: Chilton Chalk Pit Address: Bapchild, SITTINGBOURNE, Kent Commodity: Chalk 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
G	287m SW	Name: Highstead Quarries Address: Tunstall, SITTINGBOURNE, Kent Commodity: Chalk 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
G	287m SW	Name: Highstead Quarries Address: Tunstall, SITTINGBOURNE, Kent Commodity: Sandstone 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
H	326m SE	Name: Bapchild Brick Field Address: Bapchild, SITTINGBOURNE, Kent Commodity: Clay & Shale 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
K	370m S	Name: Highstead Chalk Pit Address: Tunstall, SITTINGBOURNE, Kent Commodity: Chalk 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



ID	Location	Details	Description
F	430m SW	Name: Highstead Quarries Address: Tunstall, SITTINGBOURNE, Kent Commodity: Chalk 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
F	430m SW	Name: Highstead Quarries Address: Tunstall, SITTINGBOURNE, Kent Commodity: Sandstone 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	24
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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.

Features are displayed on the Mining, ground workings and natural cavities map on **page 95**

ID	Location	Land Use	Year of mapping	Mapping scale
A	On site	Unspecified Pit	1947	1:10560
A	On site	Unspecified Pit	1973	1:10000
A	On site	Unspecified Pit	1967	1:10560
B	On site	Site of Cemetery	1896	1:10560
C	On site	Burial Ground	1973	1:10000
C	On site	Burial Ground	1967	1:10560
C	On site	Burial Ground	1961	1:10560
B	0m SE	Site of Cemetery	1938	1:10560
B	6m SE	Burial Ground	1979	1:10000
A	6m N	Unspecified Pit	1961	1:10560
6	9m W	Burial Ground	1961	1:10560
7	10m W	Site of Cemetery	1938	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
8	11m W	Burial Ground	1973	1:10000
D	12m NW	Site of Cemetery	1896	1:10560
9	20m SE	Site of Cemetery	1906	1:10560
D	24m N	Burial Ground	1967	1:10560
D	28m N	Burial Ground	1979	1:10000
D	53m NW	Site of Cemetery	1906	1:10560
E	116m N	Clay Pit	1896	1:10560
G	228m SW	Old Chalk Pit	1961	1:10560
G	236m SW	Old Chalk Pit	1947	1:10560
F	236m SW	Unspecified Quarries	1973	1:10000
F	236m SW	Unspecified Quarries	1967	1:10560
G	237m SW	Unspecified Disused Pit	1979	1:10000

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m

2

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 95**

ID	Location	Land Use	Year of mapping	Mapping scale
19	846m SW	Tunnel	1979	1:10000
-	861m SW	Tunnel	1967	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

8

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.



Features are displayed on the Mining, ground workings and natural cavities map on **page 95**

ID	Location	Site Name	Mineral	Type	Planning Status	Planning Status Date
1	On site	Sittingbourne	Clay	Surface mineral working	Withdrawn	Not available
4	On site	Sittingbourne	Clay	Surface mineral working	Valid	22/4/76
5	2m SE	Sittingbourne	Clay	Surface mineral working	Withdrawn	Not available
10	44m N	Sittingbourne	Clay	Surface mineral working	Withdrawn	Not available
F	224m SW	Highstead	Chalk, flint	Surface mineral working	Refused	Not available
11	225m N	Sittingbourne	Clay	Surface mineral working	Withdrawn	Not available
L	443m N	Bell Field	Chalk	Surface mineral working	Valid	1951
M	465m SW	Highstead	Chalk, flint	Surface mineral working	Valid	19/8/50

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	4
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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 95**

ID	Location	Name	Commodity	Class	Likelihood
2	On site	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
3	On site	Not available	Chalk	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
12	322m W	Not available	Chalk	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered



ID	Location	Name	Commodity	Class	Likelihood
-	844m E	Not available	Chalk	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not 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 Peter Brett Associates (PBA).

18.8 JPB mining areas

Records on site

0

Areas which could be affected by former coal 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

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
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Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.

18.13 Clay mining

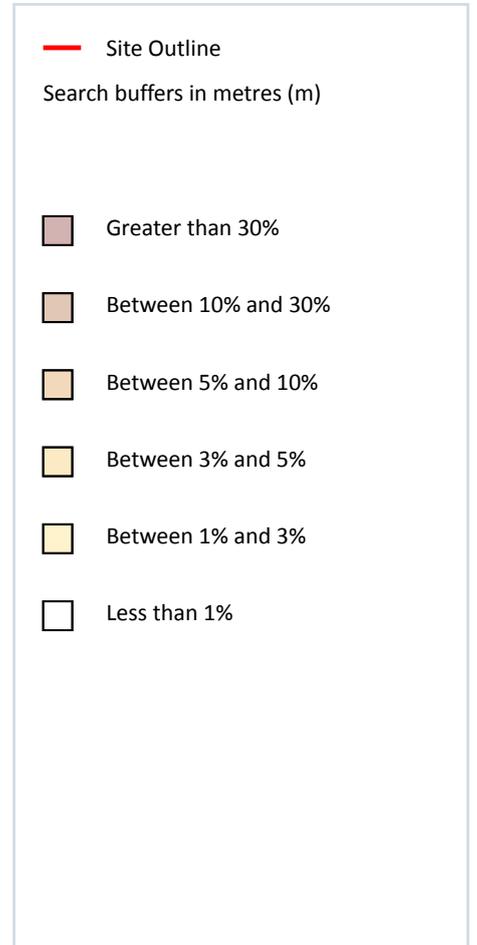
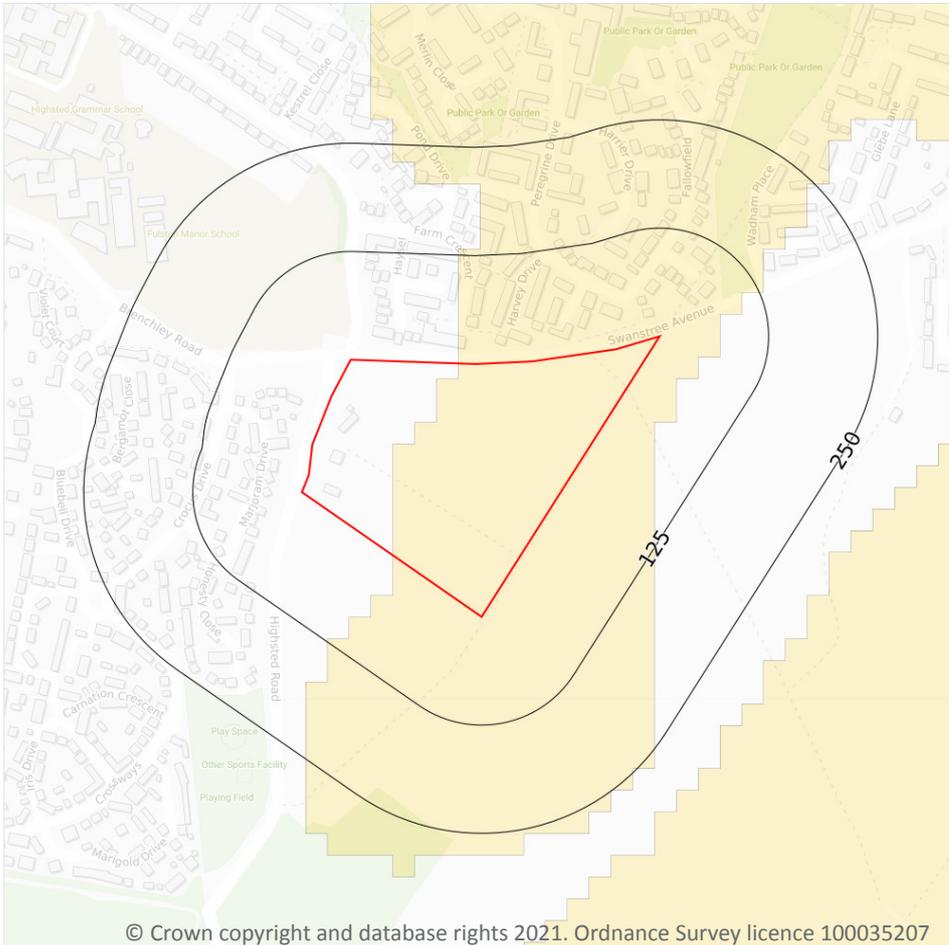
Records on site	0
-----------------	---

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



19.1 Radon

Records on site

2

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 102**

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 1% and 3%	None
On site	Less than 1%	None**



This data is sourced from the British Geological Survey and Public Health England.



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

13

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	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
21m W	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
28m SW	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
33m SE	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
36m NW	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg



Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
41m NW	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0
---------------------------	----------

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).

This data is sourced from the British Geological Survey.

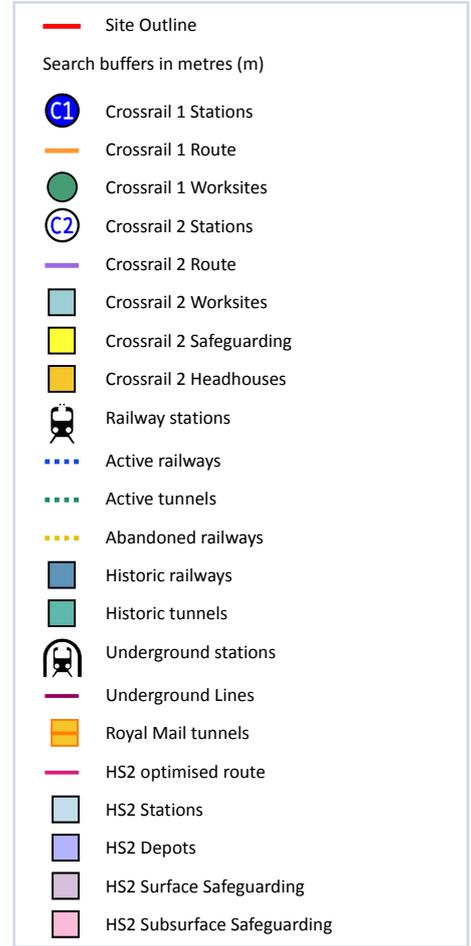
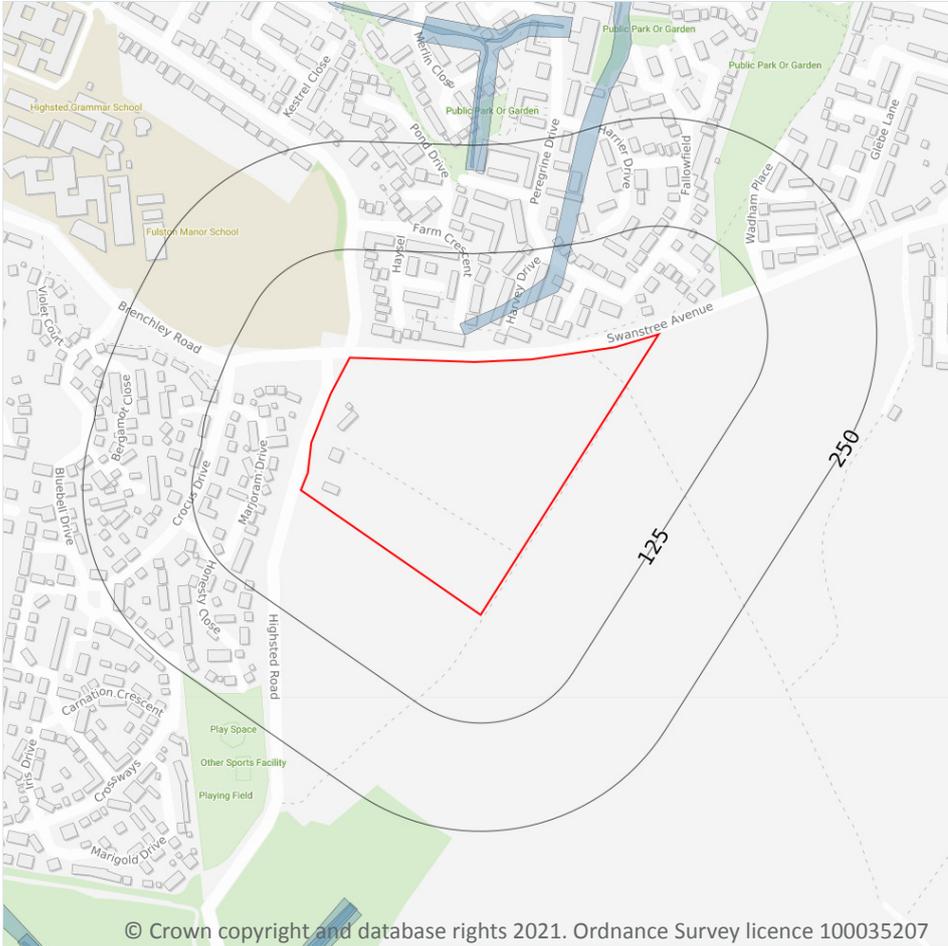
20.3 BGS Measured Urban Soil Chemistry

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

3

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.

Features are displayed on the Railway infrastructure and projects map on **page 106**

Location	Land Use	Year of mapping	Mapping scale
31m N	Tramway Sidings	1961	10560
220m N	Tramway Sidings	1896	10560
224m N	Tramway Sidings	1897	2500

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.

Data providers

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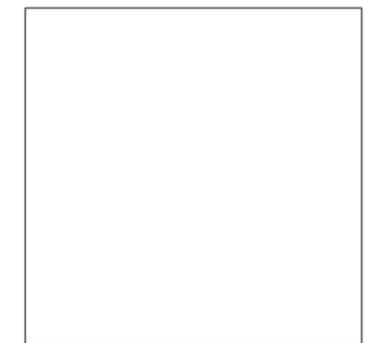
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Report Ref: EMS-679024_892674
Grid Ref: 591226, 162537

Map Name: County Series

Map date: 1866

Scale: 1:10,560

Printed at: 1:10,560



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Edition N/A
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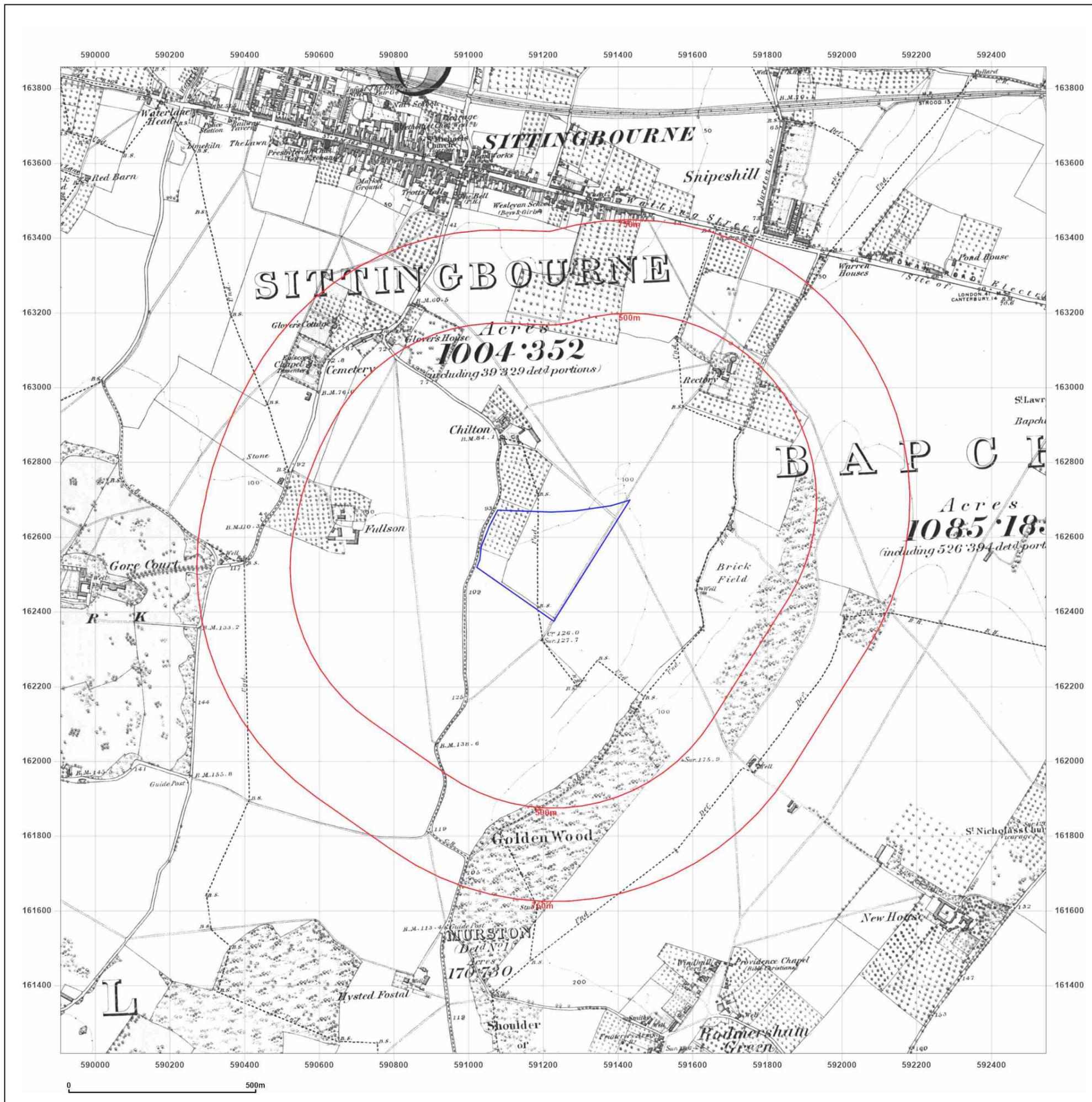


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Grid Ref: 591226, 162537

Map Name: County Series

Map date: 1896

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1896
Edition N/A
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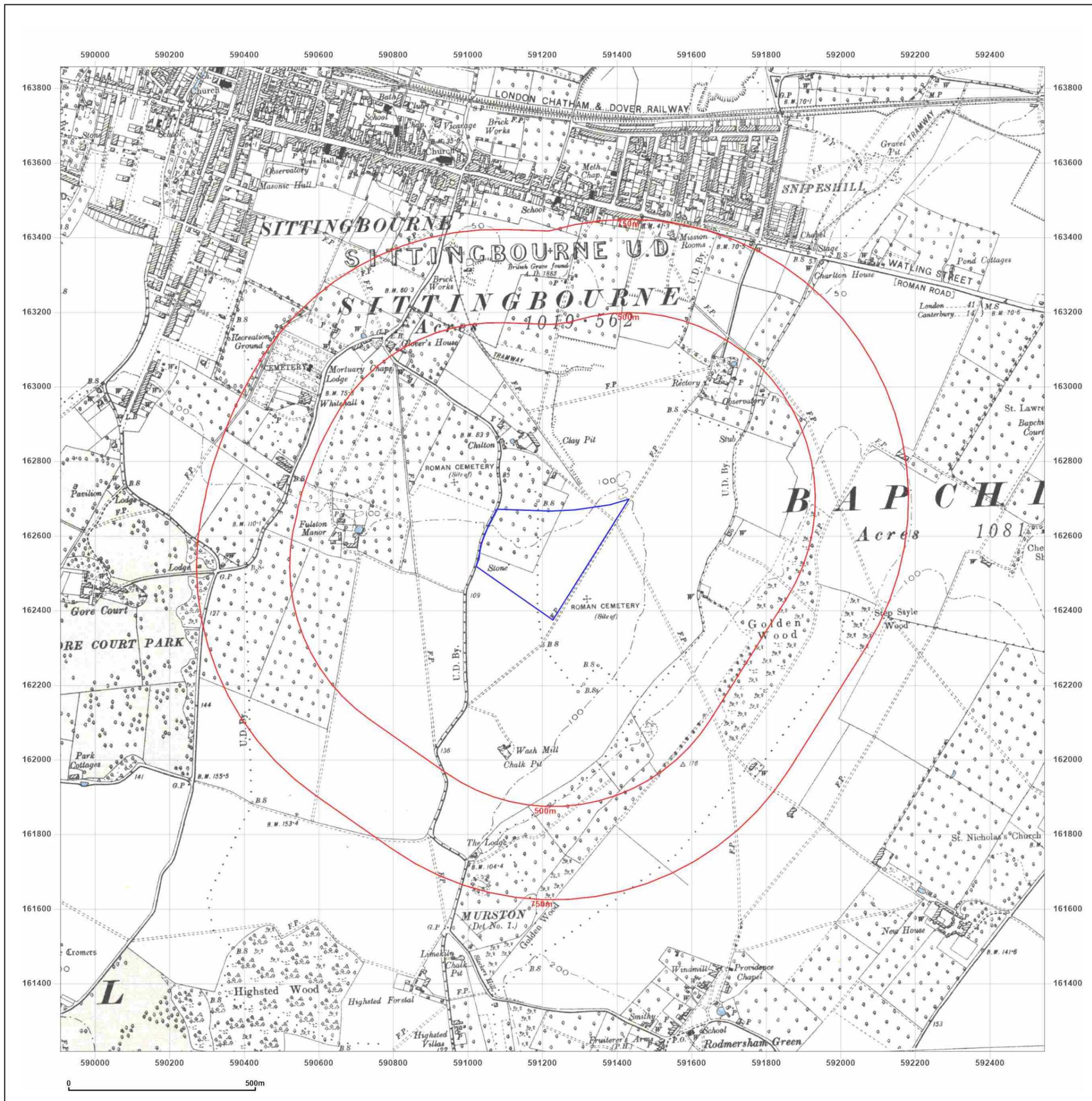


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Map Name: County Series

Map date: 1906

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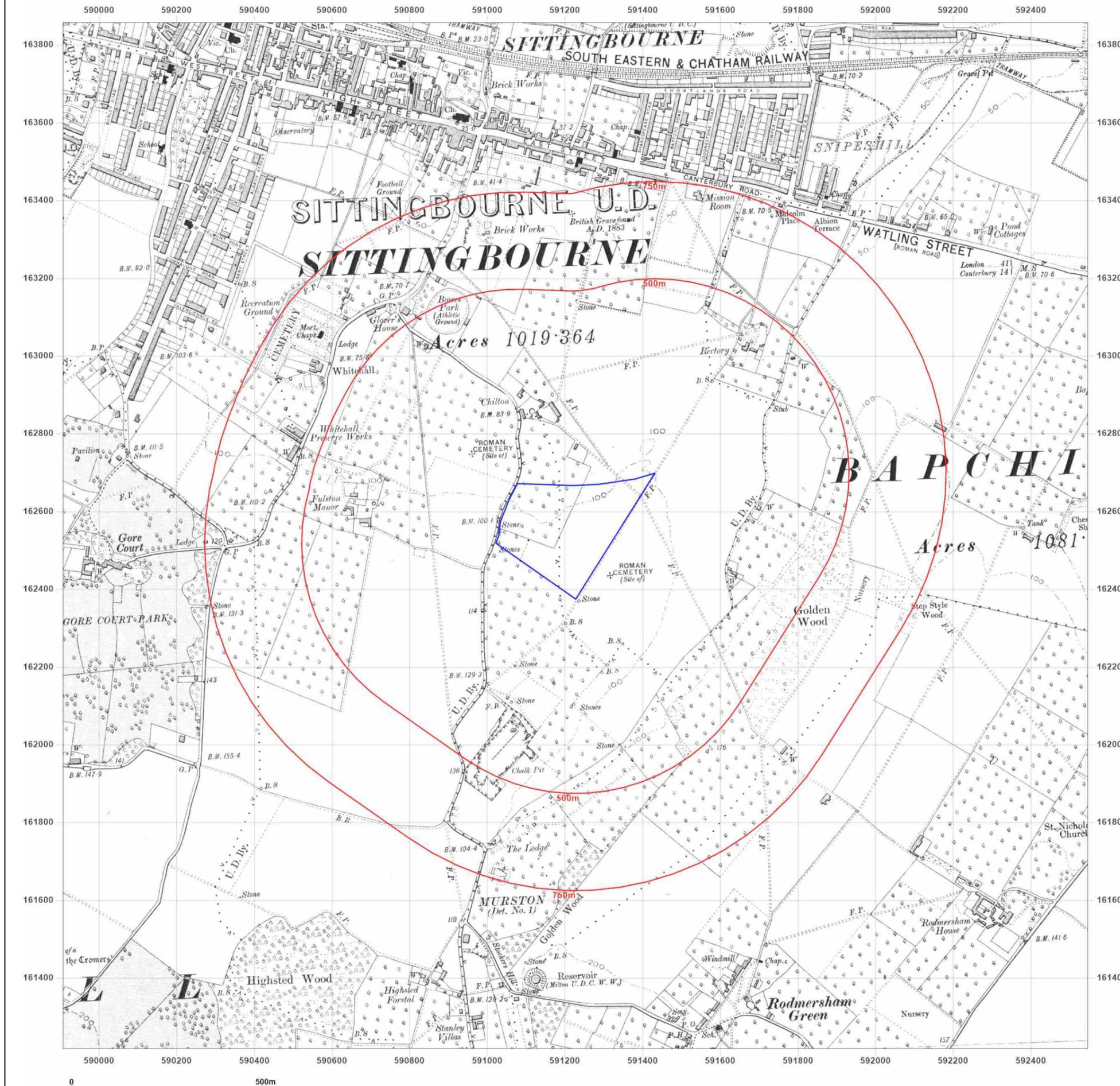


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Map Name: County Series

Map date: 1938

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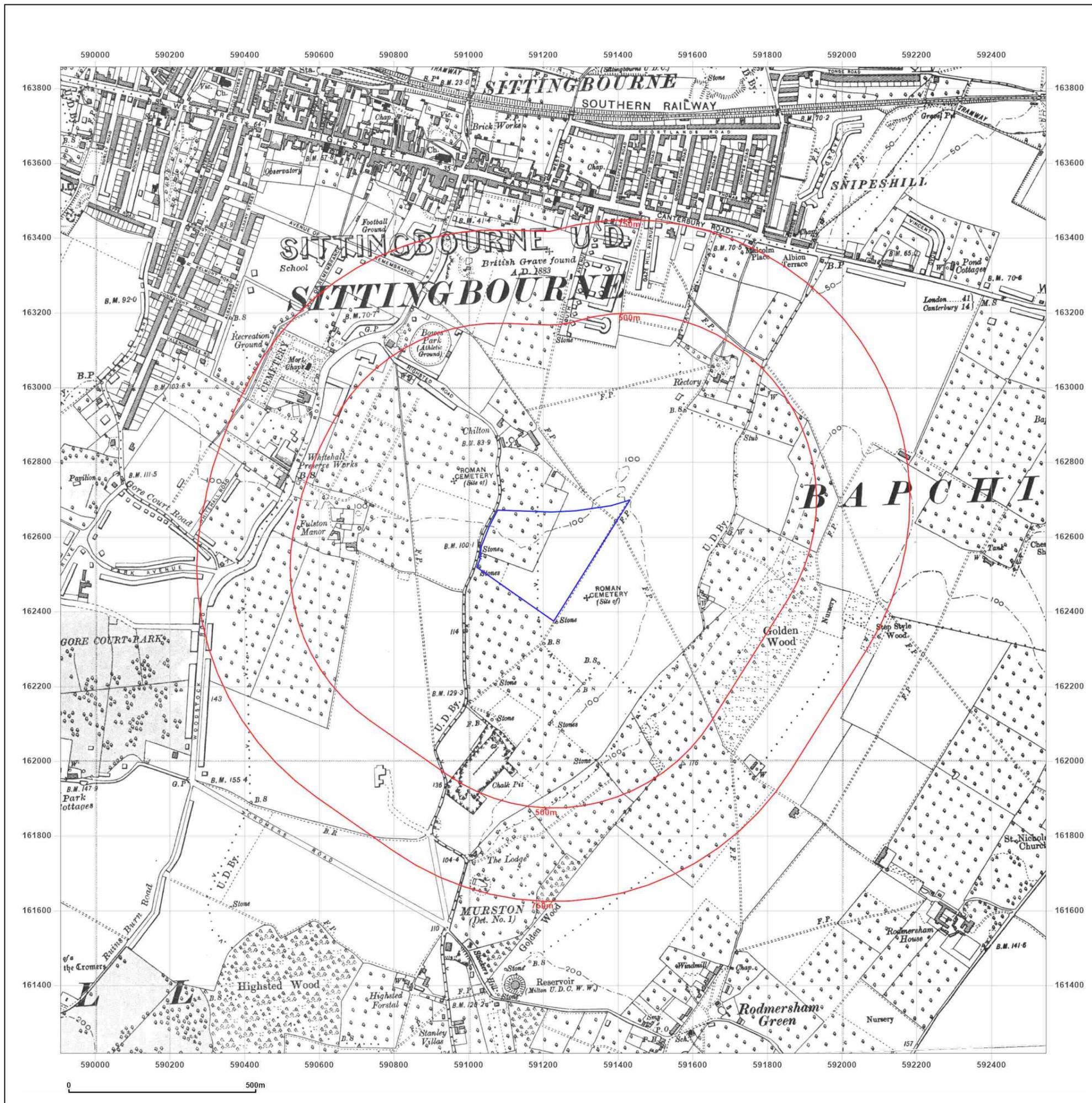


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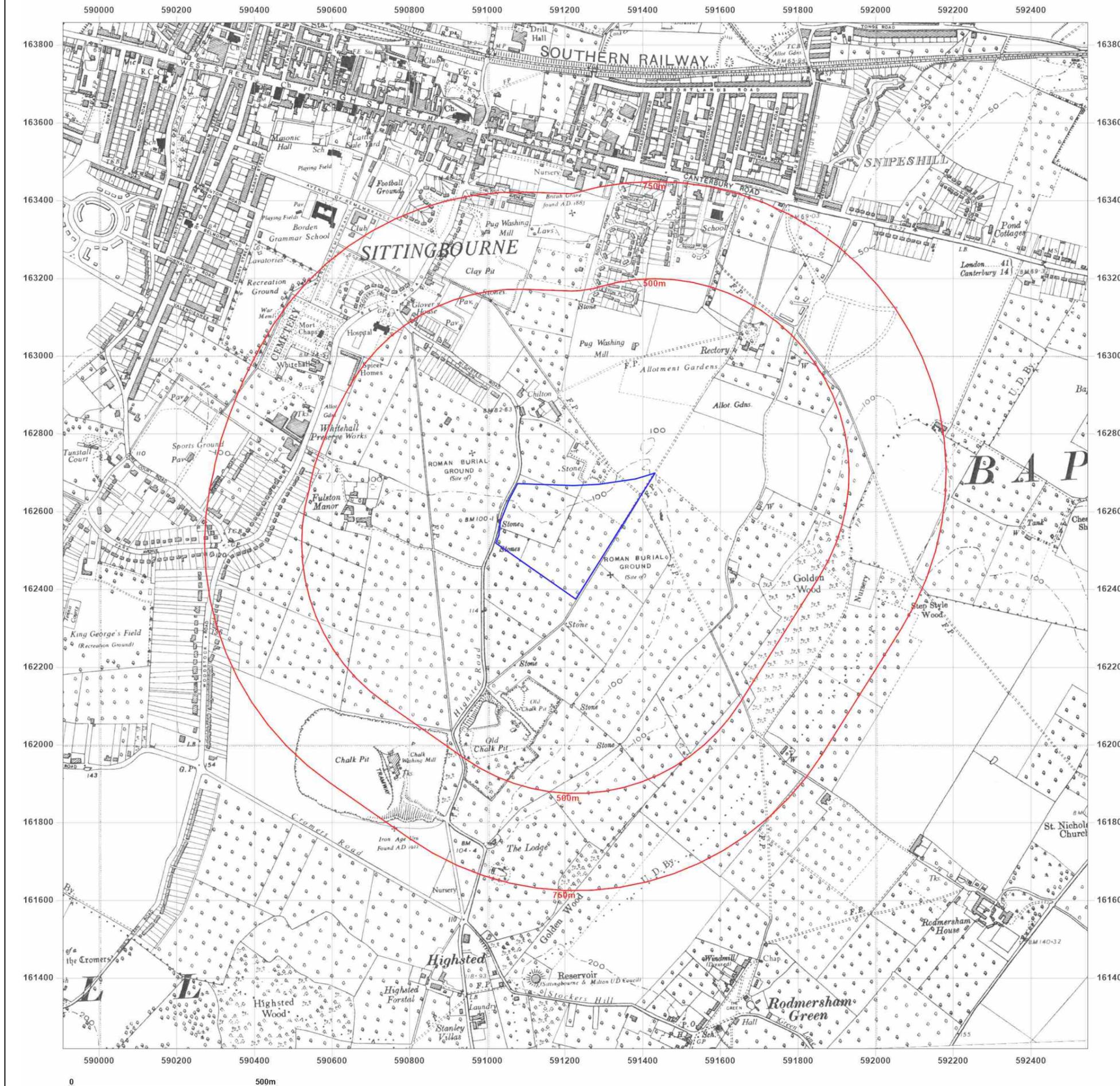


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Map Name: Provisional

Map date: 1961

Scale: 1:10,560

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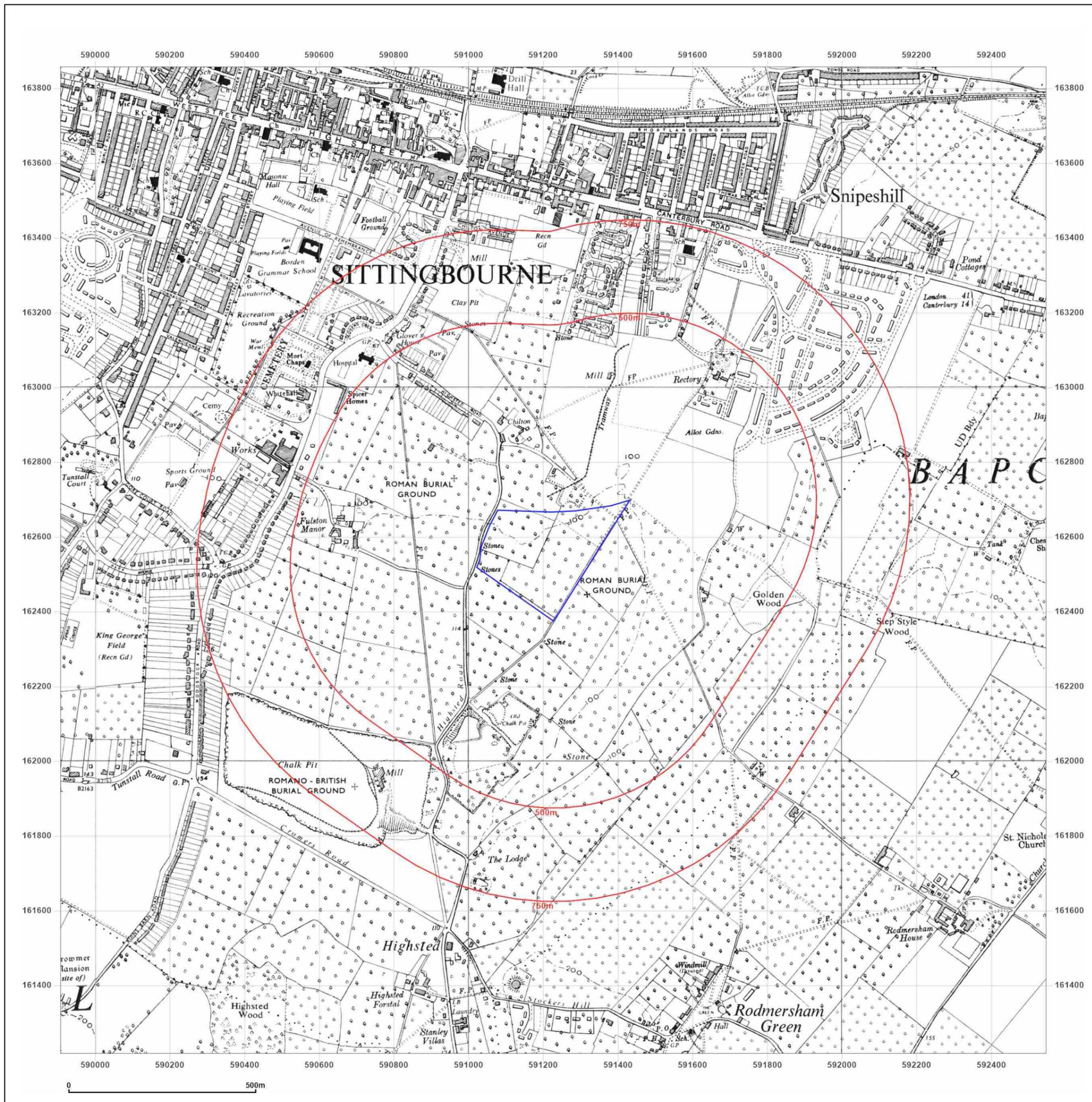


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Map Name: Provisional

Map date: 1967-1969

Scale: 1:10,560

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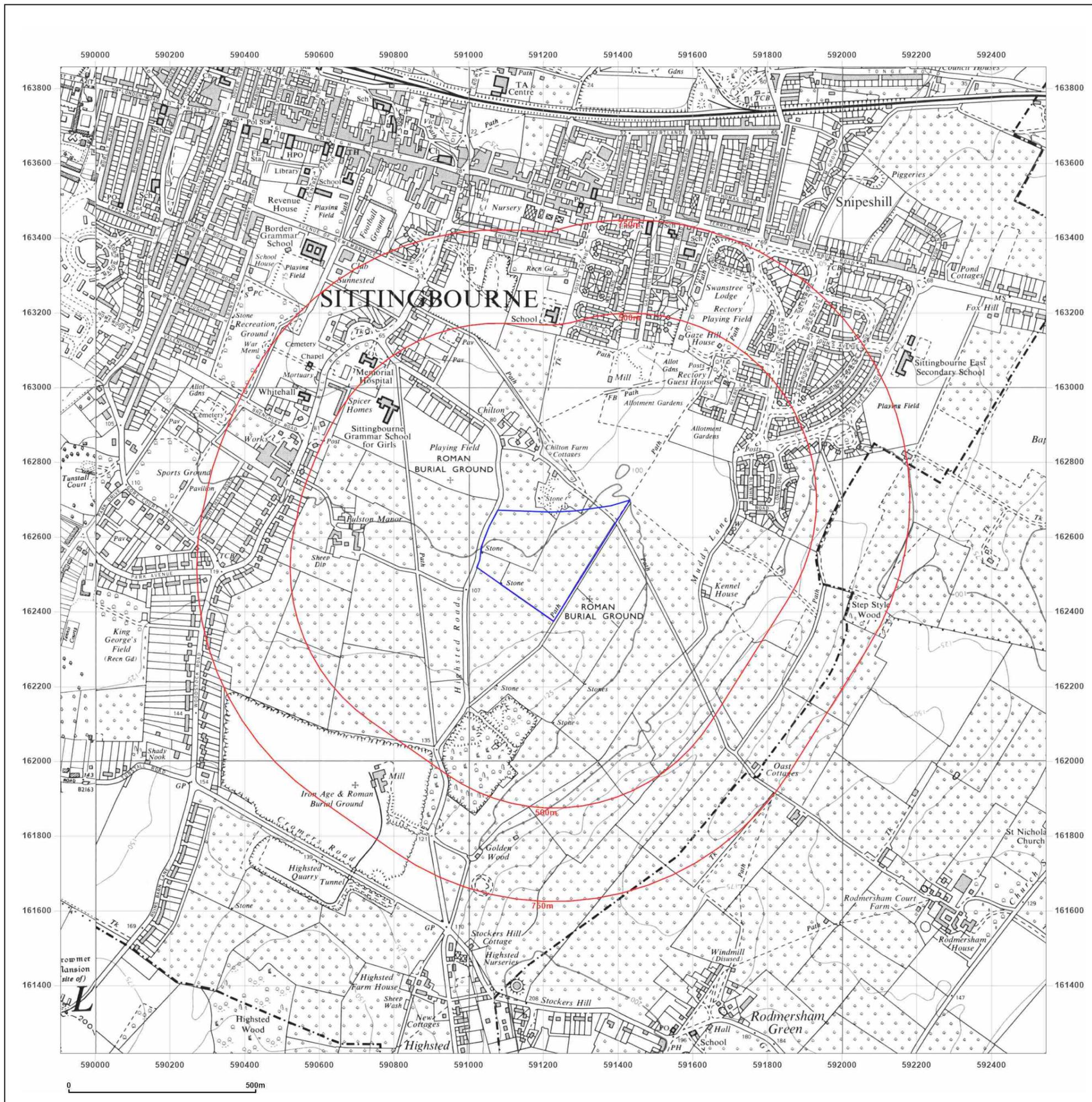


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Report Ref: EMS-679024_892674
Grid Ref: 591226, 162537

Map Name: National Grid

Map date: 1971-1973

Scale: 1:10,000

Printed at: 1:10,000



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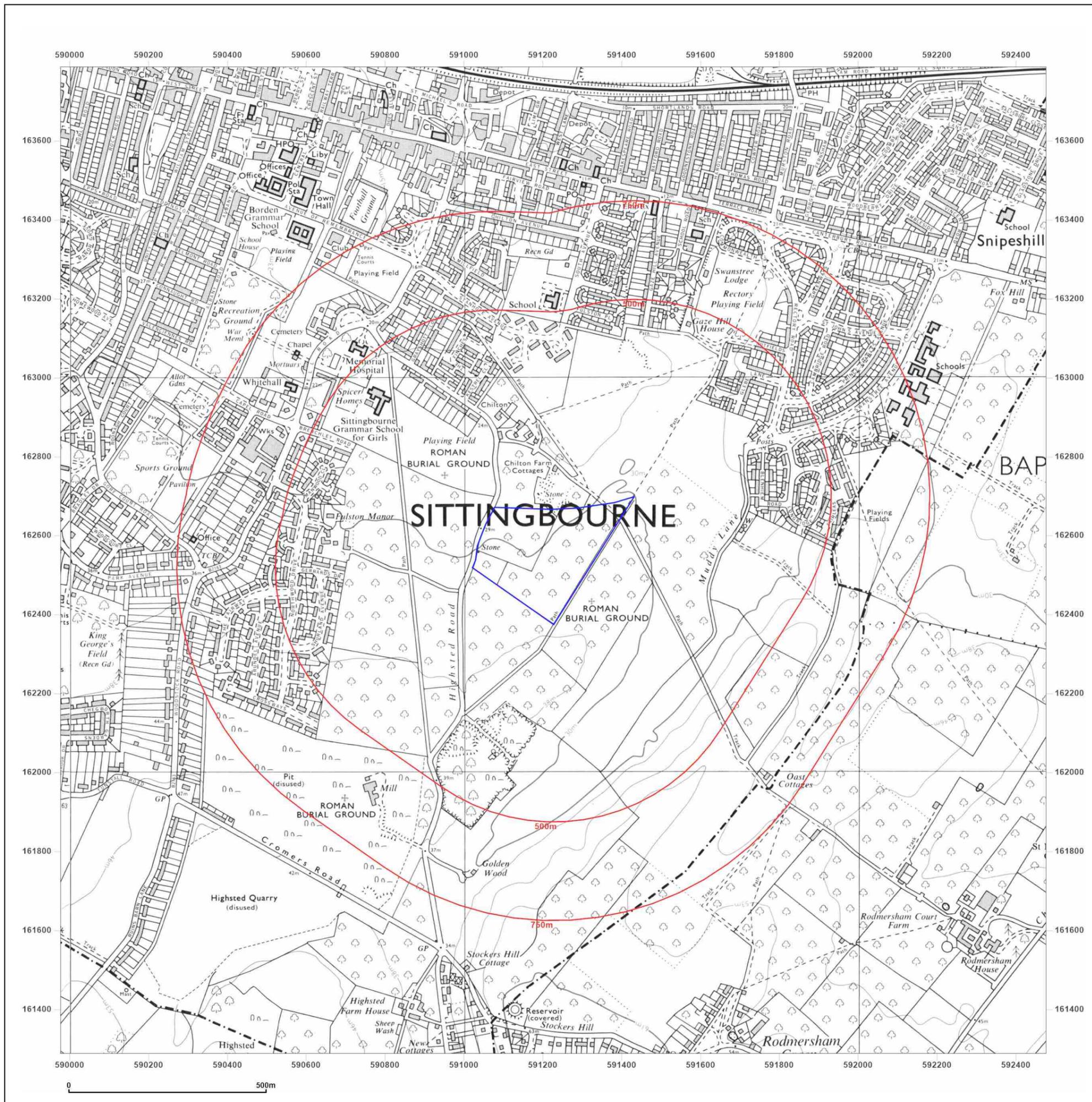


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Grid Ref: 591226, 162537

Map Name: National Grid

Map date: 1977-1979

Scale: 1:10,000

Printed at: 1:10,000



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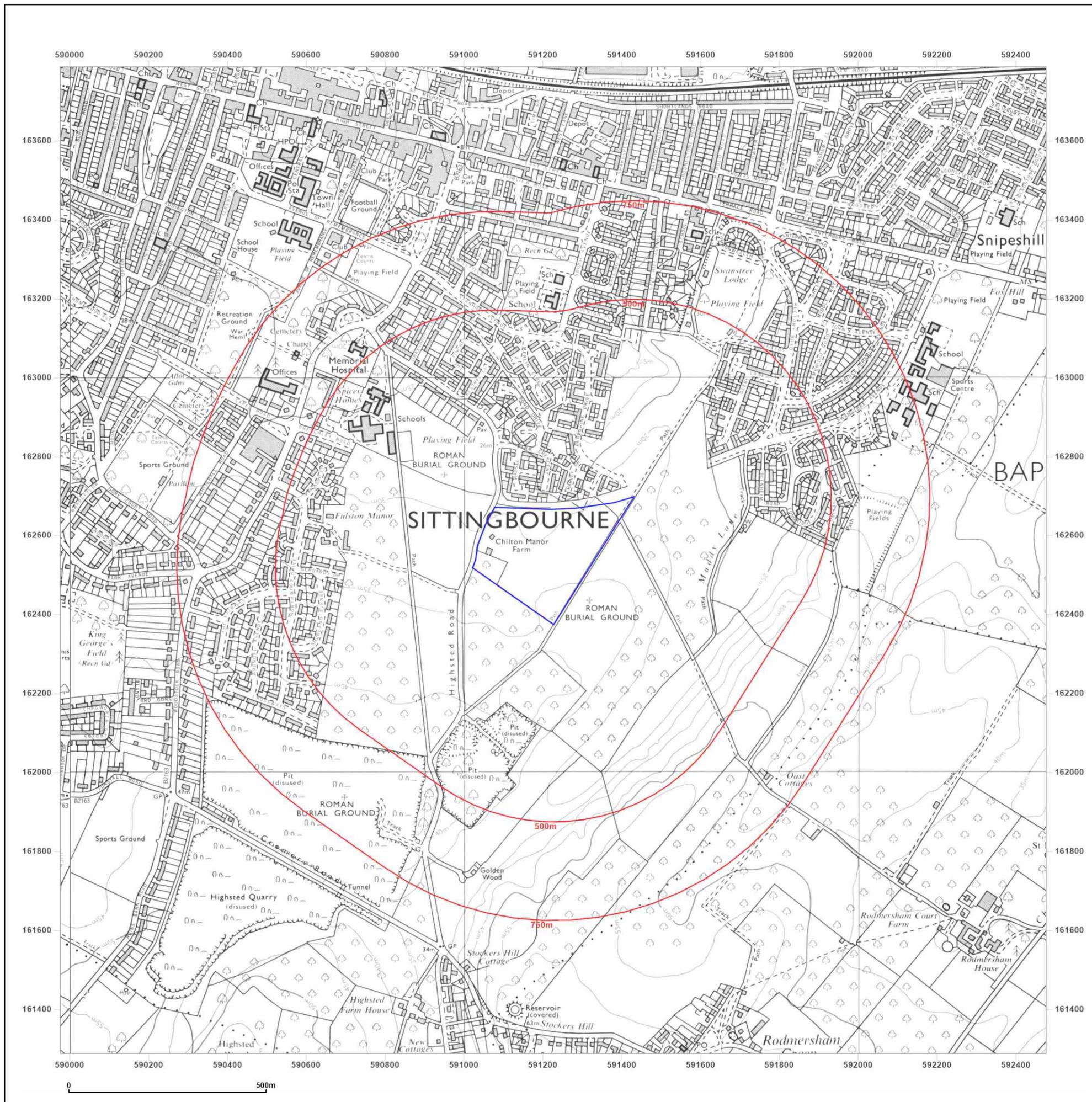


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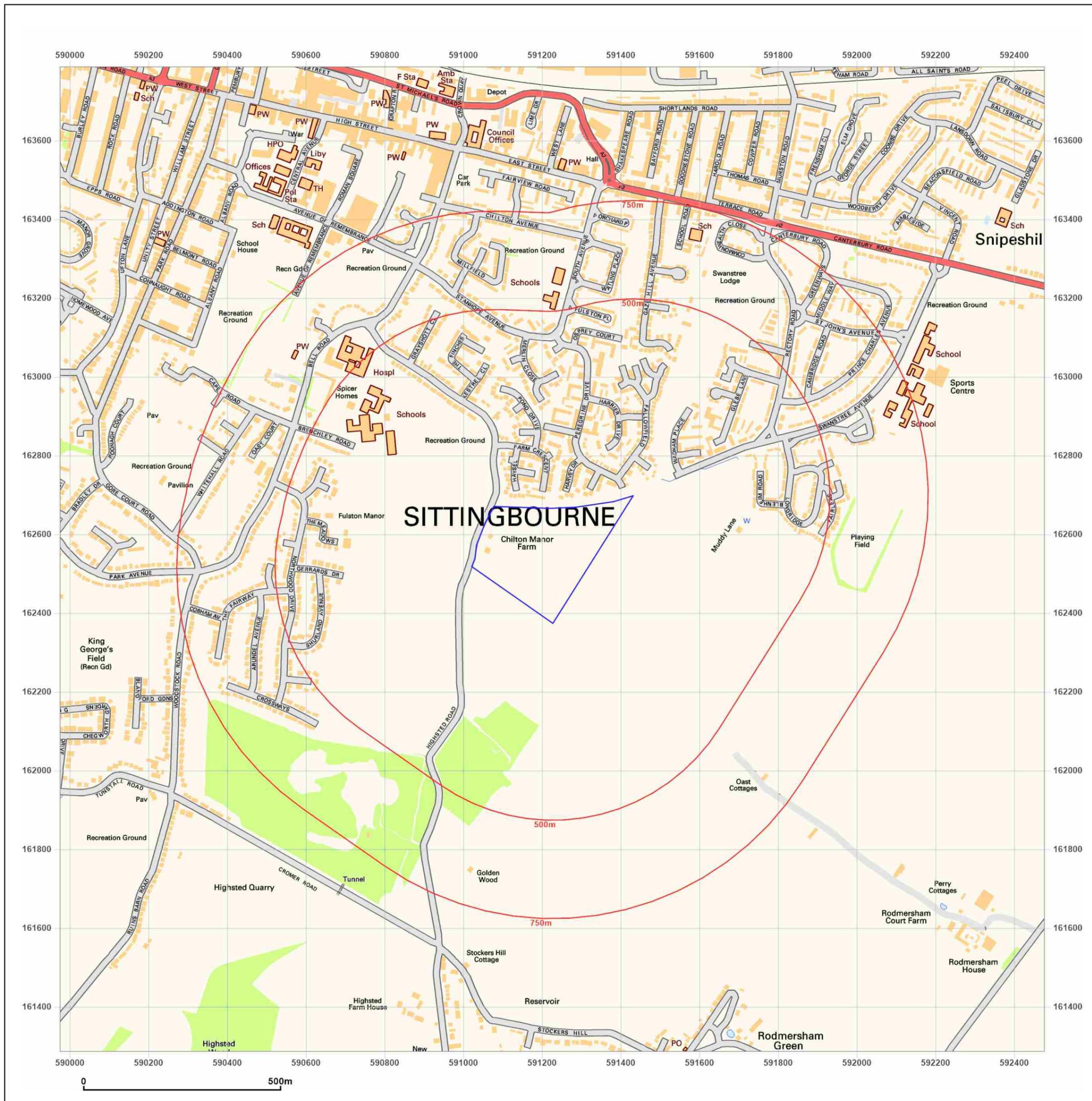
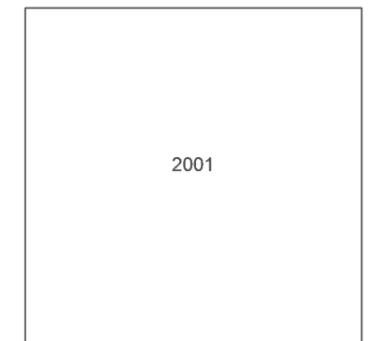
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Report Ref: EMS-679024_892674
Grid Ref: 591226, 162537

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

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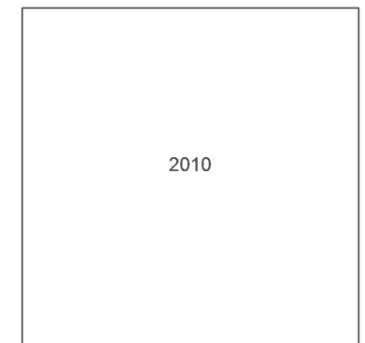
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Grid Ref: 591226, 162537

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



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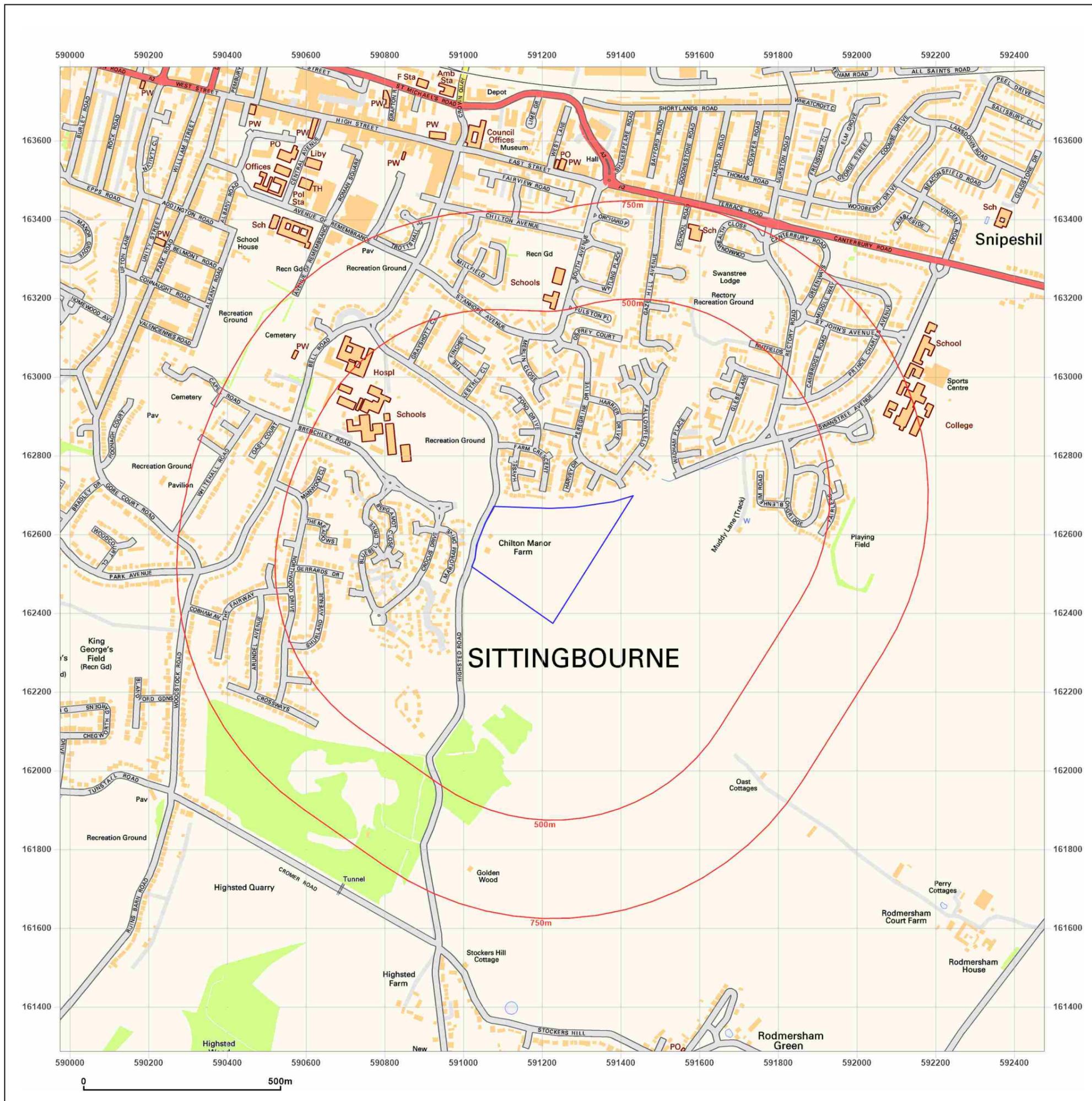


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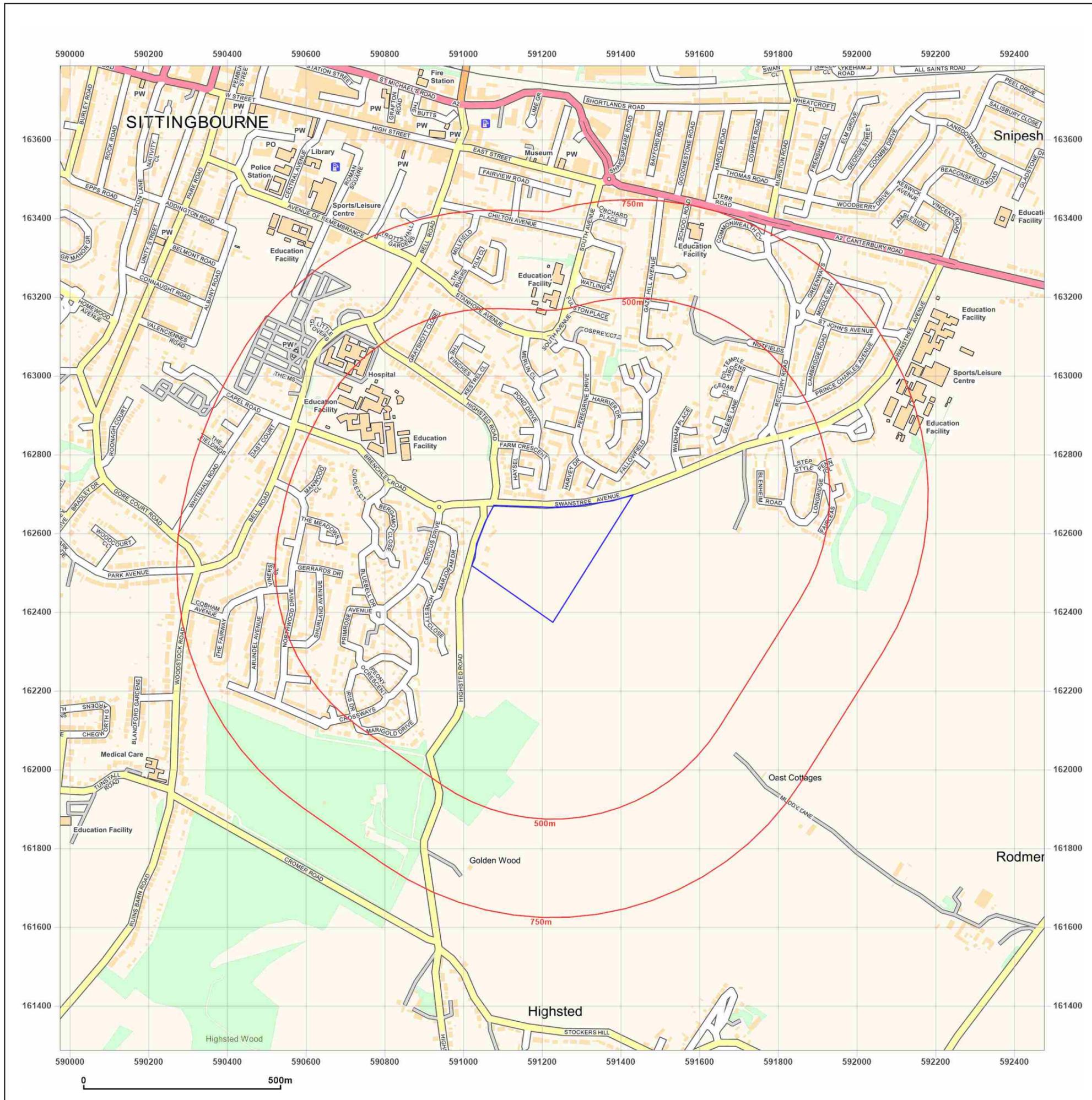
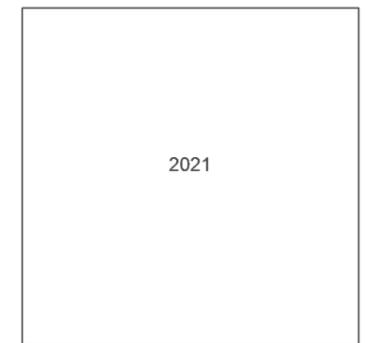
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Report Ref: EMS-679024_892674
Grid Ref: 591226, 162537

Map Name: National Grid

Map date: 2021

Scale: 1:10,000

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UNEXPLODED BOMB RISK MAP



SITE LOCATION

Map Centre: 591206,162539



LEGEND

- High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- Low:** Areas indicated as having 15 bombs per 1000acre or less.

- military
- industry
- UXO find
- transport
- dock
- Luftwaffe targets
- utilities
- Bombing decoy
- other

How to use your Unexploded Bomb (UXB) risk map?

The map indicates the potential for Unexploded Bombs (UXB) to be present as a result of World War Two (WWII) bombing.

You can incorporate the map into your preliminary risk assessment* for potential Unexploded Ordnance (UXO) for a site. Using this map, you can make an informed decision as to whether more in-depth detailed risk assessment* is necessary.

What do I do if my site is in a moderate or high risk area?

Generally, we recommend that a detailed UXO desk study and risk assessment is undertaken for sites in a moderate or high UXB risk area.

Similarly, if your site is near to a designated Luftwaffe target or bombing decoy then additional detailed research is recommended.

More often than not, this further detailed research will conclude that the potential for a significant UXO hazard to be present on your site is actually low.

Never plan site work or undertake a risk assessment using these maps alone. More detail is required, particularly where there may be a source of UXO from other military operations which are not reflected on these maps.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirms that there is a low potential for UXO to be present on your site then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

A low risk really means that there is no greater probability of encountering UXO than anywhere else in the UK.

If you are unsure whether other sources of UXO may be present, you can ask for one of our **pre-desk study assessments (PDSA)**

If I have any questions, who do I contact?

tel: **+44 (0) 1993 886682**

email: **uxo@zetica.com**

web: **www.zeticauxo.com**

The information in this UXB risk map is derived from a number of sources and should be used in conjunction with the accompanying notes on our website: (<https://zeticauxo.com/downloads-and-resources/risk-maps/>)

Zetica cannot guarantee the accuracy or completeness of the information or data used and cannot accept any liability for any use of the maps. These maps can be used as part of a technical report or similar publication, subject to acknowledgment. The copyright remains with Zetica Ltd.

It is important to note that this map is not a UXO risk assessment and should not be reported as such when reproduced.

*Preliminary and detailed UXO risk assessments are advocated as good practice by industry guidance such as CIRIA C681 'Unexploded Ordnance (UXO), a guide for the construction industry'.

Appendix 3 - Soakaway Testing Locations and Results

FAO: Mike Heming,
Gladman Developments
Gladman House
Alexandria Way
Congleton
Cheshire
CW12 1LB

Date: 6th August 2021
Your Ref:
Our Ref: MAN.1132.260.GE.L.001
Email: m.heming@gladman.co.uk

Dear Mike,

SWANSTREE AVENUE, SITTINGBOURNE – INFILTRATION TESTING REPORT

Introduction

We are pleased to report the results of the infiltration testing undertaken at the above site.

Anticipated Geology

The British Geological Survey (BGS) Geology of Britain viewer indicates the site is underlain by the Head deposits [Clay and Silt] followed by the solid geology recorded as the Seaford Chalk Formation [Chalk].

Fieldwork

A Ground Investigation was undertaken at the above-named site between Monday 26th July and Wednesday 28th July 2021, comprising three soakaway pits [SA1 – SA3] and three boreholes [BH1 – BH3], with associated soakaway testing.

Trial Pit Soakaway Testing

Three soakaway test pits (SA1 – SA3) were established, and infiltration testing was undertaken in accordance with BRE 365 “Soakaway Design” guidance, 2016. The test pits were excavated to a depth deemed sufficient to ‘represent’ a section of the design soakaway. The soakaway pits were established to a maximum depth of 3.10m below existing ground level (begl) to represent infiltration for conventional soakaway assets inclusive of chambers and infiltration trenches. The soakaways were excavated using a JCB 3CX backhoe excavator with locations available in the drawings section. Weather was sunny with occasional heavy downpours, damp, with a light breeze. Once the soakaway test pits had been excavated, a tractor towed water bowser was used to rapidly fill the pits and the fall in water levels recorded.

Table 1: Pit Specifications

Pit Reference	Dimensions (m)		
	Width	Length	Depth
SA1	0.60	2.20	3.10
SA2	0.60	2.60	2.80
SA3	0.60	3.00	3.00

All soakaways were filled with water to the depths indicated in the appended results, and the subsequent fall in water level was recorded against time.

Borehole Permeability Testing

Three cable percussive boreholes (BH1 to BH3) were advanced to a depth of 10m begl. Falling head tests were undertaken during the drilling works, between depths of approximately 5.00m and 10.00m begl. One cycle of testing was attempted at each test location depth. Groundwater was not encountered within any of the boreholes prior to commencement of the falling head tests. The results are summarised in Table 3 overleaf, with results, exploratory hole logs and a soakaway location plan are included within the appendices.

Ground Conditions

Ground conditions typically comprised [up to 400mm] Topsoil; typically overlying sandy gravelly Clay, fine to medium Sand or silty Sand and Gravel of flint [Head]; this in turn overlies the solid geology of the Seaford Chalk Formation encountered at depths between 4.50m [BH1] and 9.20m [BH2] begl. Groundwater was not encountered, however, all three boreholes were installed with a 50mm pipe to carry out future groundwater monitoring, should this be required.

Results and Conclusions

Infiltration rates were not shown to be favorable at the shallow soakaway locations [SA1 – SA3] as they did not achieve the required '25% effective depth' within an appropriate timescale and consequently results were required to be extrapolated.

Infiltration rates were shown to be more favourable within the deeper boreholes [BH1 – BH3] as they did achieve a 25% effective depth within an appropriate time scale. Infiltration rates are given in Table 2 & 3 below and included within the appendices.

Table 2: Soakaway Infiltration Rates

Test Pit	Soakaway Infiltration Rate (m/s)			Worst case Infiltration rate (m/s)
	Test 1	Test 2	Test 3	
SA1	1.44E-06	1.30E-06	1.59E-06	1.30E-06
SA2	Insufficient Uptake	Insufficient Uptake	Insufficient Uptake	N/A
SA3	1.63E-06	1.36E-06	2.20E-06	1.36E-06

Table 3: Borehole Soakaway Infiltration Rates

Exploratory Hole	Depths (m begl)	Soakaway Infiltration Rate (m/s)	Worst case Infiltration rate (m/s)
		Test 1	
BH1	4.00 – 5.00	2.92E-05	2.92E-05
	7.00 – 8.00	1.70E-04	1.70E-04
	9.00 – 10.00	4.30E-04	4.30E-04
BH2	5.00 – 7.00	3.07E-05	3.07E-05
	7.50 – 9.50	2.97E-04	2.97E-04
BH3	5.50 – 7.50	2.30E-03	2.30E-03
	8.50 – 10.00	3.76E-03	3.76E-03

Please note that borehole permeability testing is likely to give more conservative full scale soakage tests.

Recommendation

Based upon the available data, shallow soakaways did not yield good infiltration rates, however, deeper borehole permeability testing did. This indicates that a deep soakage solution should be feasible for the proposed development, with appropriate consents and permits from EA and / or other require regulatory bodies as required.

Yours sincerely,



Nigel Ramsumair
Senior Engineer

Enc. *Exploratory Hole Plan*
Soakaway Test Results



Key

-  Site Boundary
-  Borehole Location (BH)
(BH1 - BH3)
-  Soakaway Location (SA)
(SA1 - SA3)



Samuel House, 5 Fox Valley Way, Stocksbridge, Sheffield, S36 2AA

CLIENT:
Gladman Developments Ltd

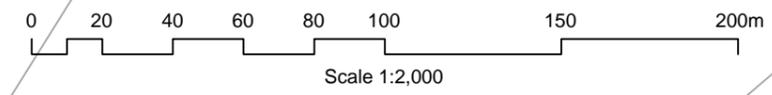
SCALE: **1:2,000@A3** PROJECT REF: **SHF.1132.260**

DRAWN: **MG** CHECKED: **EO'C** DATE: **July 2021**

PROJECT:
Swanstree Avenue, Sittingbourne

TITLE:
Location Plan

DRAWING NO:
SHF.1132.260.HY.D.010





Site Sittingbourne			BH1
Job No SHF.1132.260	Dates Start 26-07-21 Finish 26-07-21	Ground Level (m) Co-Ordinates	

Client Gladman Developments	Sheet 1 of 1
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Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
					0.30			Brown sandy TOPSOIL. Sand is fine to coarse	0
								Very soft brown slightly silty sandy CLAY. Sand is fine to medium. [Head]	
			1.20	SPT	N=6				1
			2.00	SPT	N=6				2
			3.00	SPT	N=4				3
			3.50						
			4.00	SPT	N=13			Medium dense grey and brown silty fine to medium SAND. [Head]	4
			4.50						
			5.00	SPT	N=10			White Structureless CHALK composed of slightly sandy silty, angular to subrounded GRAVEL. Clasts are very weak and weak, low to medium density, with occasional black specks. Cream matrix. Occasional subangular to subrounded, fine to coarse gravels of flint. (Dc) [Seaford Chalk Formation]	5
			6.50	SPT	N=17				6
		8.00	SPT	N=11				7	
		9.50	SPT	N=25				8	
					10.00				9
					{10.50}				10
Borehole completed at 10.00m.									

General Remarks

- Hand excavated inspection pit from ground level to 1.20m begl.
- Densities and soil consistencies are based on insitu tests.
- No visual or olfactory evidence of contamination observed.
- Groundwater was not encountered.
- SPT - Standard Penetration Test; N - Number of blows.
- Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.10m begl; Bentonite seal between 0.10m begl to 1.00m begl; 50mm slotted pipe with gravel between 1.00m begl to 10.00m begl.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

1.0 ENZYGO.WS.LOG GINT STD.AGS.3.1 ENZYGO.GPJ SHF.1132.260 - SITTINGBOURNE.GPJ 29/7/21



Enzygo Ltd
 Tel: 01454 269237
 Fax: 01454 269760
 Web: www.enzygo.com

Site Sittingbourne			BH2
Job No SHF.1132.260	Dates Start 27-07-21 Finish 27-07-21	Ground Level (m)	

Client Gladman Developments	Sheet 1 of 1
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Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
							Brown sandy TOPSOIL. Sand is fine to coarse	0	
					0.80				
		1.50	SPT	N=20	1.50		Soft brown slightly silty sandy CLAY. Sand is fine to medium. [Head]	1	
					2.50		Medium dense brown silty SAND and GRAVEL. Gravel is angular to subrounded, fine to coarse flint. Sand is fine to coarse. [Head]	2	
		3.00	SPT	N=10			Medium dense grey and brown silty fine to medium SAND. [Head]	3	
		4.50	SPT	N=14				4	
		6.50	SPT	N=15				5	
		8.00	SPT	N=12				6	
		9.50	SPT	N=8	9.20			7	
					10.00		White Structureless CHALK composed of slightly sandy silty, angular to subrounded GRAVEL. Clasts are very weak and weak, low to medium density, with occasional black specks. Cream matrix. Occasional subangular to subrounded, fine to coarse gravels of flint. (Dc) [Seaford Chalk Formation]	8	
					{10.50}		Borehole completed at 10.00m.	9	
								10	

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. Densities and soil consistencies are based on insitu tests.
3. No visual or olfactory evidence of contamination observed.
4. Groundwater was not encountered.
5. SPT - Standard Penetration Test; N - Number of blows.
6. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.10m begl; Bentonite seal between 0.10m begl to 1.00m begl; 50mm slotted pipe with gravel between 1.00m begl to 10.00m begl.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

All dimensions in metres
 Scale 1:65.625

Logged By
NR

1.0 ENZYGO WS LOG GINT STD AGS 3.1 ENZYGO.GPJ SHF.1132.260 - SITTINGBOURNE.GPJ 29/7/21

Site Sittingbourne			BH3
Job No SHF.1132.260	Dates Start 28-07-21 Finish 28-07-21	Ground Level (m) Co-Ordinates	

Client Gladman Developments	Sheet 1 of 1
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Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
					0.40		Brown sandy TOPSOIL. Sand is fine to coarse.	0	
							Firm brown slightly silty sandy CLAY. Sand is fine to medium. [Head]	1	
		1.50	SPT	N=7	2.10		Brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of flint. Sand is fine to coarse. [Head]	2	
		3.00	SPT	N=32	3.80		Dense grey and brown silty fine to medium SAND. [Head]	3	
		4.50	SPT	N=17	5.30		White Structureless CHALK composed of slightly sandy silty, angular to subrounded GRAVEL. Clasts are very weak and weak, low to medium density, with occasional black specks. Cream matrix. Occasional subangular to subrounded, fine to coarse gravels of flint. (Dc) [Seaford Chalk Formation]	4	
		6.50	SPT	N=9				5	
		8.00	SPT	N=19				6	
		9.50	SPT	N=21				7	
					10.00			8	
					{10.50}		Borehole completed at 10.00m.	9	
								10	

General Remarks

1. Hand excavated inspection pit from ground level to 1.20m begl.
2. Densities and soil consistencies are based on insitu tests.
3. No visual or olfactory evidence of contamination observed.
4. Groundwater was not encountered.
5. SPT - Standard Penetration Test; N - Number of blows.
6. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 0.10m begl; Bentonite seal between 0.10m begl to 1.00m begl; 50mm slotted pipe with gravel between 1.00m begl to 10.00m begl.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)

1.0 ENZYGO WS LOG GINT STD AGS 3.1 ENZYGO.GPJ SHF.1132.260 - SITTINGBOURNE.GPJ 29/7/21



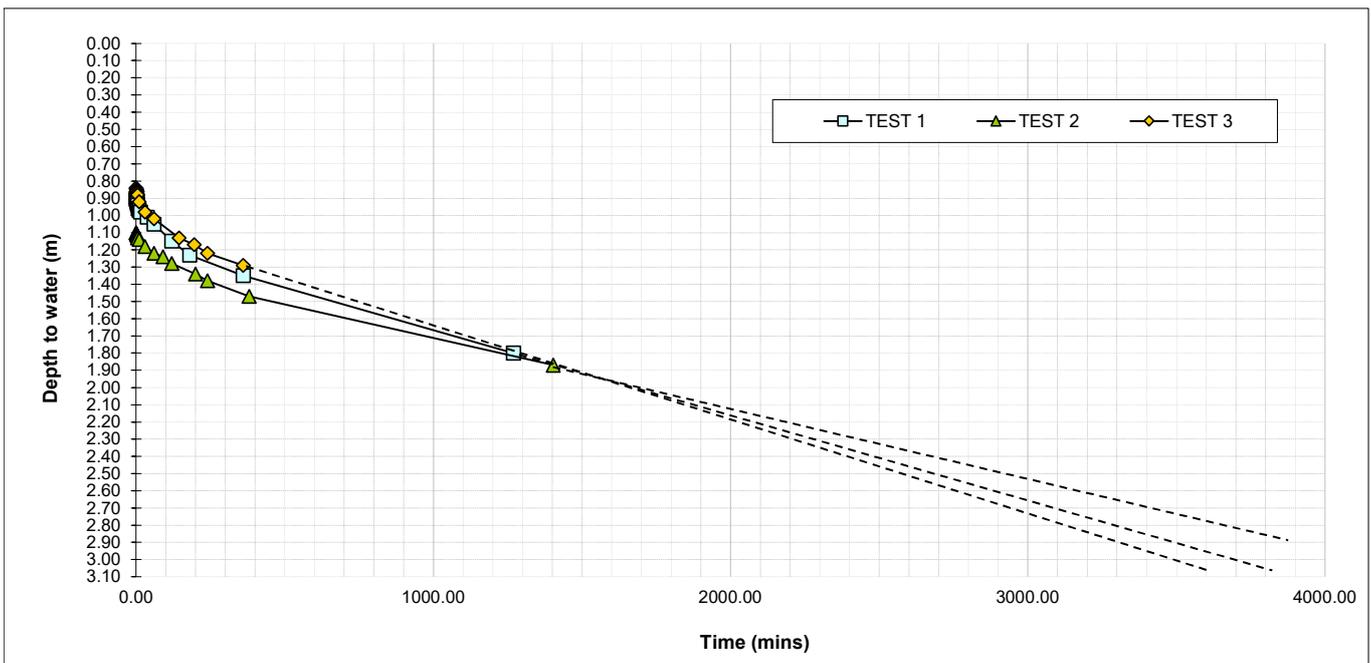
Site..... Swanstree Avenue, Sittin
 Job Number..... SHF.1132.260
 Date of Test..... 28/07/2021

Trial Pit Number..... SA1
 Length..... 2.20 m
 Width..... 0.60 m
 Depth..... 3.10 m
 Groundwater Level..... Dry m

SOIL INFILTRATION RATE TEST
 See B.R.E. Digest 365, 1991, Soakaway Design.

Remarks -	TEST 1		TEST 2		TEST 3	
	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)
0.00 - 0.40 Brown silty sandy TOPSOIL. Sand is fine to coarse.	0.00	0.90	0.00	1.10	0.00	0.84
0.40 - 2.10 Firm brown silty slightly sandy CLAY. Sand is fine. [Head]	1.00	0.91	1.00	1.10	1.00	0.85
2.10 - 2.70 Brown silty SAND & GRAVEL. Gravel is angular to subrounded, fine to coarse flint. Sand is fine to coarse. [Head]	2.00	0.91	2.00	1.11	2.00	0.85
2.70 - 3.10 Grey silty fine to medium SAND. Stable side walls.	3.00	0.92	3.00	1.11	3.00	0.86
	4.00	0.93	4.00	1.12	4.00	0.87
	5.00	0.94	5.00	1.13	5.00	0.88
	7.00	0.96	10.00	1.14	10.00	0.92
	10.00	0.97	30.00	1.18	30.00	0.98
	15.00	0.98	60.00	1.22	60.00	1.02
	37.00	1.01	90.00	1.24	145.00	1.13
	60.00	1.05	120.00	1.28	195.00	1.17
	120.00	1.15	200.00	1.34	240.00	1.22
	180.00	1.23	240.00	1.38	360.00	1.29
	360.00	1.35	380.00	1.47		
	1270.00	1.80	1403.00	1.87		
			0.00	0.00		
Effective Storage Depth	m	2.20	2.00	2.26		
75% Effective Storage Depth	m	1.65	1.50	1.70		
(i.e. depth below GL)	m	1.45	1.60	1.41		
25% Effective Storage Depth	m	0.55	0.50	0.57		
(i.e. depth below GL)	m	2.55	2.60	2.54		
Effective Storage Depth 75%-25%	m	1.10	1.00	1.13		
Time to fall to 75% effective depth	mins	550.00	700.00	600.00		
Time to fall to 25% effective depth	mins	2800.00	3150.00	2650.00		
V (75%-25%)	m3	1.45	1.32	1.49		
a (50%)	m2	7.48	6.92	7.65		
t (75%-25%)	mins	2250.00	2450.00	2050.00		
SOIL INFILTRATION RATE	m/s	1.44E-06	1.30E-06	1.59E-06		

DESIGN SOIL INFILTRATION RATE, f **1.30E-06** m/s





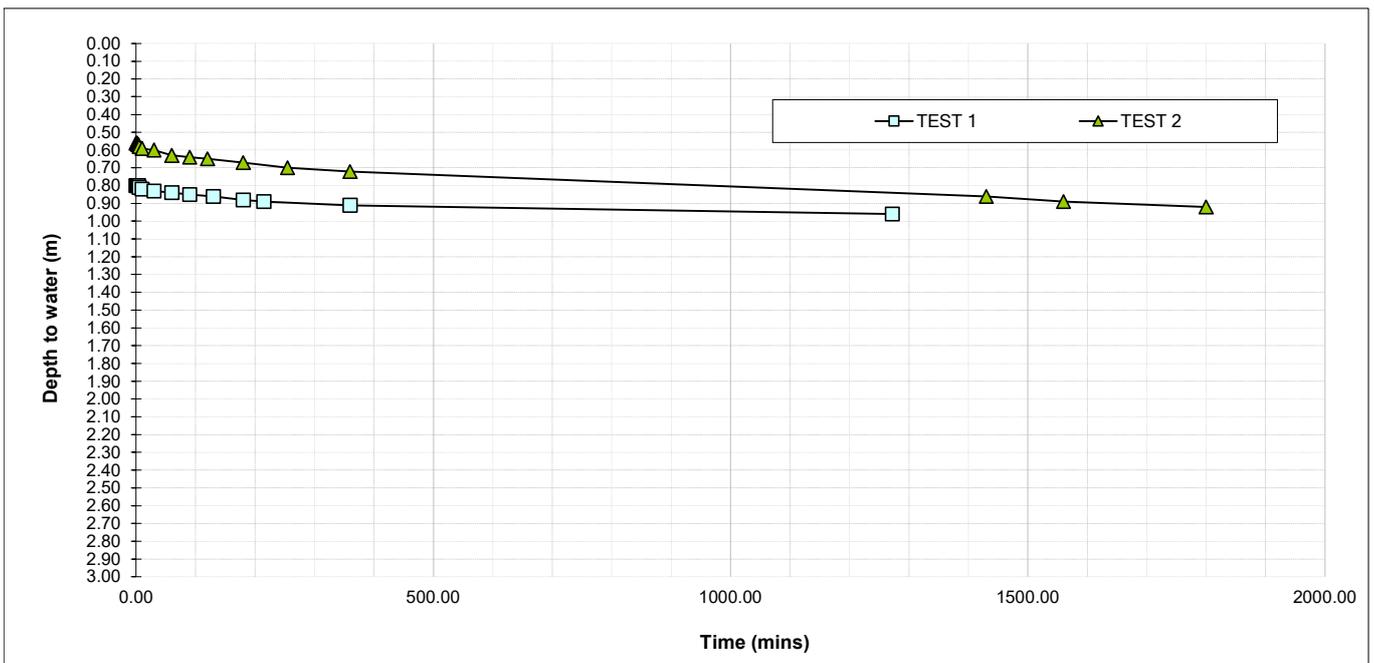
Site..... Swanstree Avenue, Sittin
 Job Number..... SHF.1132.260
 Date of Test..... 28/07/2021

Trial Pit Number..... SA2
 Length..... 2.60 m
 Width..... 0.60 m
 Depth..... 2.80 m
 Groundwater Level..... Dry m

SOIL INFILTRATION RATE TEST
 See B.R.E. Digest 365, 1991, Soakaway Design.

Remarks - 0.00 - 2.10 Brown silty SAND & GRAVEL. Gravel is angular to subrounded, fine to coarse flint. Sand is fine to coarse. [Head] 2.10 - 2.80 Firm brown silty slightly sandy CLAY. Sand is fine. [Head] Stable side walls.	TEST 1		TEST 2		TEST 3	
	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)
	0.00	0.80	0.00	0.56		
	1.00	0.80	1.00	0.56		
	2.00	0.80	2.00	0.56		
	3.00	2.30	3.00	0.57		
	4.00	3.30	4.00	0.57		
	5.00	4.30	5.00	0.58		
	10.00	5.30	10.00	0.59		
	30.00	6.30	30.00	0.60		
	60.00	7.30	60.00	0.63		
	90.00	8.30	90.00	0.64		
	130.00	9.30	120.00	0.65		
	180.00	10.30	180.00	0.67		
	215.00	11.30	255.00	0.70		
	360.00	12.30	360.00	0.72		
	1272.00	13.30	1430.00	0.86		
			1560.00	0.89		
			1800.00	0.92		
Effective Storage Depth	m	2.00		2.24		
75% Effective Storage Depth	m	1.50		1.68		
(i.e. depth below GL)	m	1.30		1.12		
25% Effective Storage Depth	m	0.50		0.56		
(i.e. depth below GL)	m	2.30		2.24		
Effective Storage Depth 75%-25%	m	1.00		1.12		
Time to fall to 75% effective depth	mins	insufficient uptake		insufficient uptake		
Time to fall to 25% effective depth	mins	insufficient uptake		insufficient uptake		
V (75%-25%)	m ³	1.56		1.75		
a (50%)	m ²	7.96		8.73		
t (75%-25%)	mins	insufficient uptake		insufficient uptake		
SOIL INFILTRATION RATE	m/s	N/A		N/A		

DESIGN SOIL INFILTRATION RATE, f **N/A** m/s





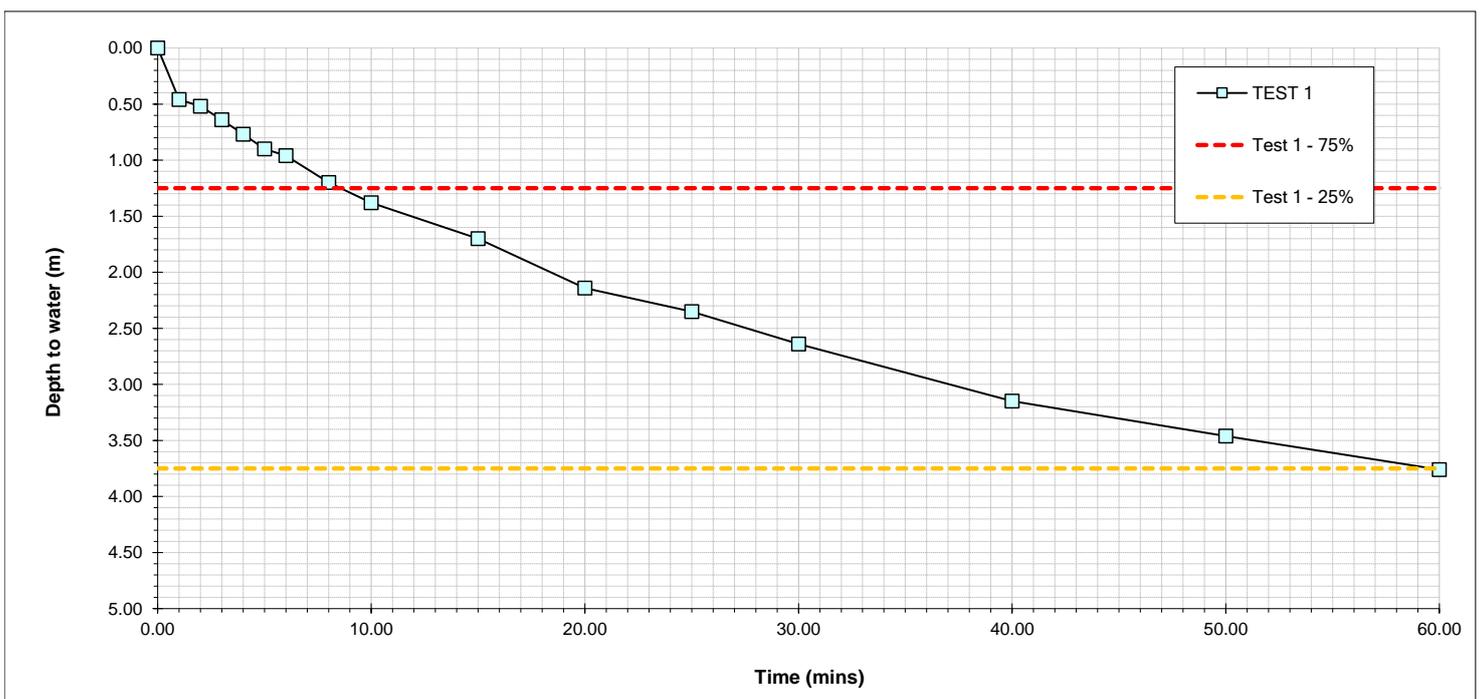
Site..... Swanstree Avenue
 Job Number..... SHF.1132.260
 Date of Test..... 26/07/2021

Soakaway Number..... BH1-1
 Diameter 0.15 m
 Casing Depth 4.00 m
 Borehole Depth..... 5.00 m
 Groundwater Level..... Dry m

BOREHOLE SOIL INFILTRATION RATE TEST
 See B.R.E. Digest 365, 1991, Soakaway Design.

Remarks - Please refer to BH1 log for ground conditions.	TEST 1		TEST 2		TEST 3	
	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)
	0.0	0.00				
	1.0	0.46				
	2.0	0.52				
	3.0	0.64				
	4.0	0.77				
	5.0	0.90				
	6.0	0.96				
	8.0	1.20				
	10.0	1.38				
	15.0	1.70				
	20.0	2.14				
	25.0	2.35				
	30.0	2.64				
	40.0	3.15				
	50.0	3.46				
	60.0	3.76				
Effective Storage Depth	m	5.00				
75% Effective Storage Depth (i.e. depth below GL)	m	3.75				
25% Effective Storage Depth (i.e. depth below GL)	m	1.25				
Effective Storage Depth 75%-25%	m	2.50				
Time to fall to 75% effective depth	mins	8.50				
Time to fall to 25% effective depth	mins	60.00				
V (75%-25%)	m3	0.04				
a	m2	0.49				
t (75%-25%)	mins	51.50				
SOIL INFILTRATION RATE	m/s	2.92E-05				

DESIGN SOIL INFILTRATION RATE, f	n/a	m/s
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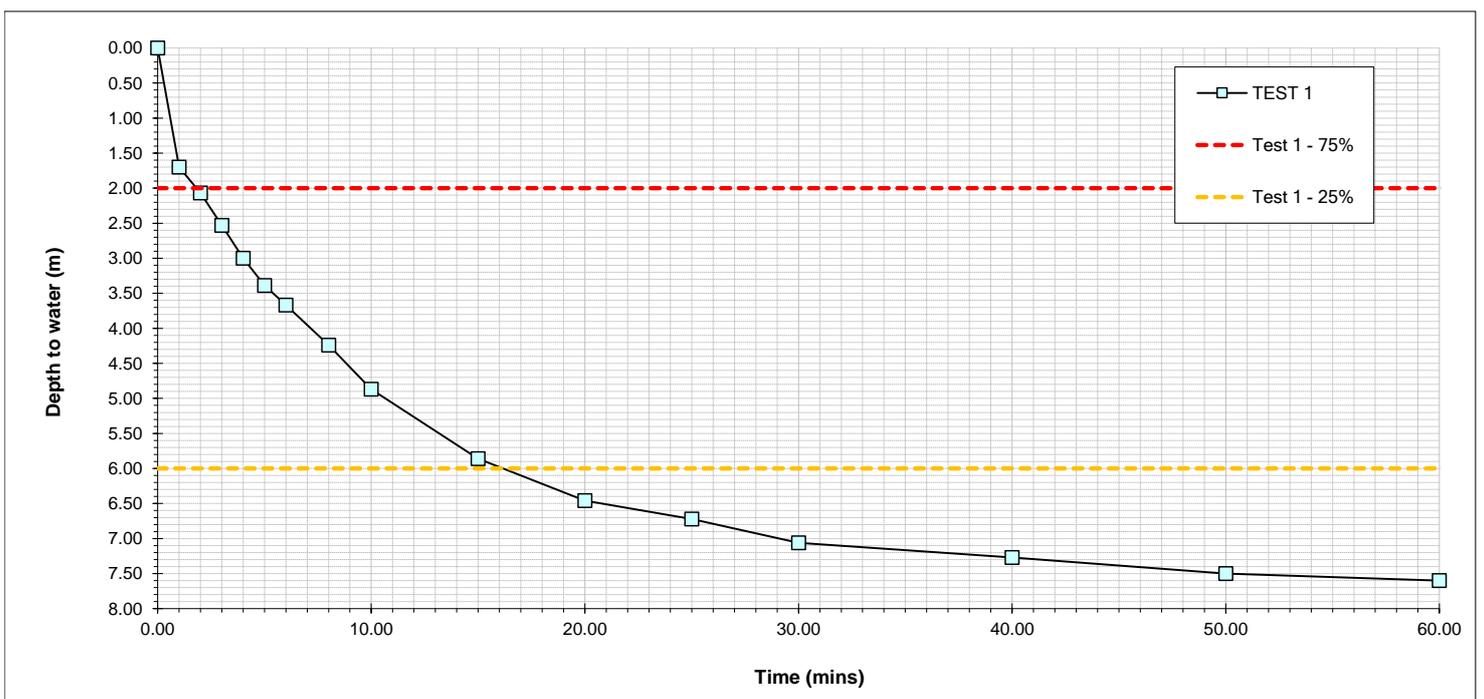
Site..... Swanstree Avenue
 Job Number..... SHF.1132.260
 Date of Test..... 26/07/2021

Soakaway Number..... BH1-2
 Diameter..... 0.15 m
 Casing Depth..... 7.00 m
 Borehole Depth..... 8.00 m
 Groundwater Level..... Dry m

BOREHOLE SOIL INFILTRATION RATE TEST
 See B.R.E. Digest 365, 1991, Soakaway Design.

Remarks - Please refer to BH1 log for ground conditions.	TEST 1		TEST 2		TEST 3	
	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)
	0.0	0.00				
	1.0	1.70				
	2.0	2.07				
	3.0	2.53				
	4.0	3.00				
	5.0	3.39				
	6.0	3.67				
	8.0	4.24				
	10.0	4.87				
	15.0	5.86				
	20.0	6.46				
	25.0	6.72				
	30.0	7.06				
	40.0	7.27				
	50.0	7.50				
	60.0	7.60				
Effective Storage Depth	m	8.00				
75% Effective Storage Depth (i.e. depth below GL)	m	6.00				
25% Effective Storage Depth (i.e. depth below GL)	m	2.00				
Effective Storage Depth 75%-25%	m	2.00				
Effective Storage Depth 75%-25%	m	6.00				
Time to fall to 75% effective depth	mins	1.80				
Time to fall to 25% effective depth	mins	16.00				
V (75%-25%)	m3	0.07				
a	m2	0.49				
t (75%-25%)	mins	14.20				
SOIL INFILTRATION RATE	m/s	1.70E-04				

DESIGN SOIL INFILTRATION RATE, f	n/a	m/s
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Site..... Swanstree Avenue
 Job Number..... SHF.1132.260
 Date of Test..... 26/07/2021

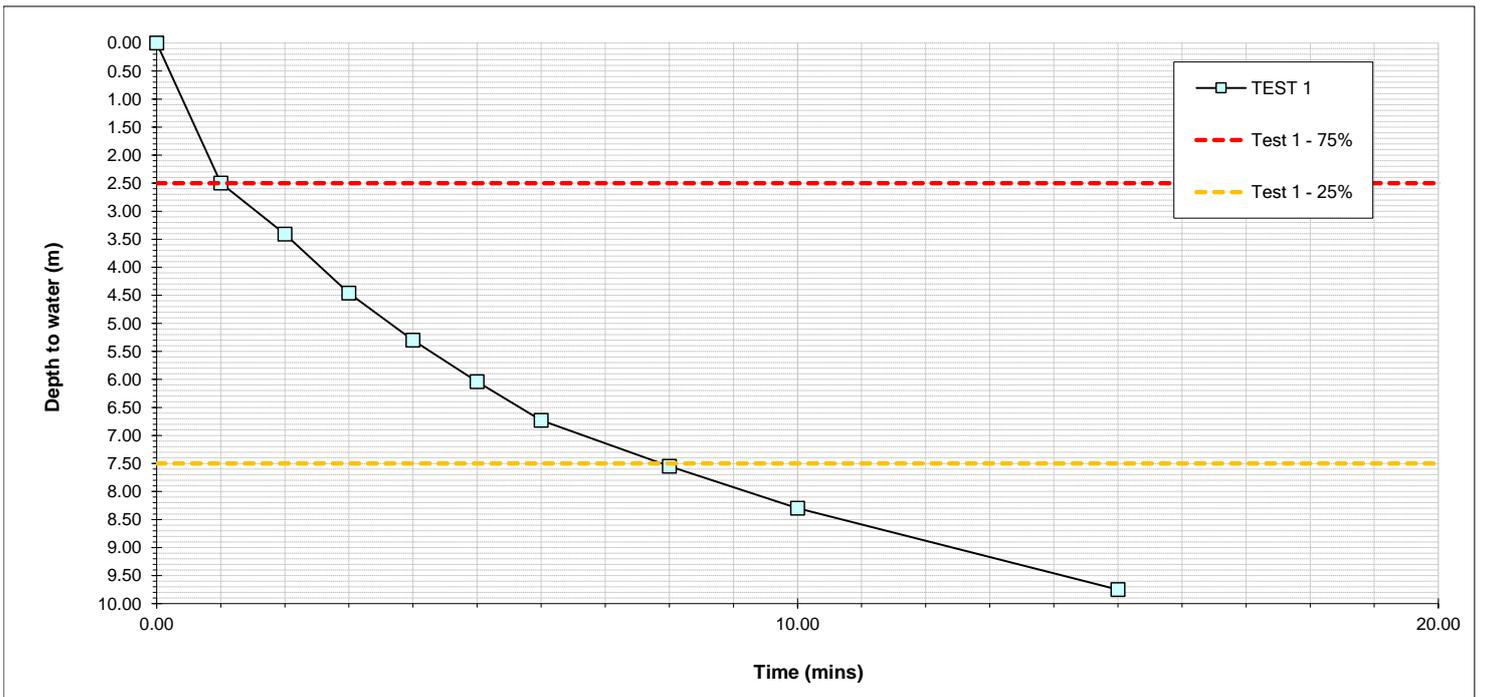
Soakaway Number..... BH1-3
 Diameter 0.15 m
 Casing Depth 9.00 m
 Borehole Depth..... 10.00 m
 Groundwater Level..... Dry m

BOREHOLE SOIL INFILTRATION RATE TEST
 See B.R.E. Digest 365, 1991, Soakaway Design.

Remarks -
 Please refer to BH1 log for ground conditions.

	TEST 1		TEST 2		TEST 3	
	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)
	0.0	0.00				
	1.0	2.50				
	2.0	3.41				
	3.0	4.46				
	4.0	5.30				
	5.0	6.04				
	6.0	6.73				
	8.0	7.55				
	10.0	8.30				
	15.0	9.75				
Effective Storage Depth	m	10.00				
75% Effective Storage Depth (i.e. depth below GL)	m	7.50				
25% Effective Storage Depth (i.e. depth below GL)	m	2.50				
Effective Storage Depth 75%-25%	m	2.50				
Effective Storage Depth 75%-25%	m	7.50				
Effective Storage Depth 75%-25%	m	5.00				
Time to fall to 75% effective depth	mins	1.00				
Time to fall to 25% effective depth	mins	8.00				
V (75%-25%)	m3	0.09				
a	m2	0.49				
t (75%-25%)	mins	7.00				
SOIL INFILTRATION RATE	m/s	4.30E-04				

DESIGN SOIL INFILTRATION RATE, f	n/a	m/s
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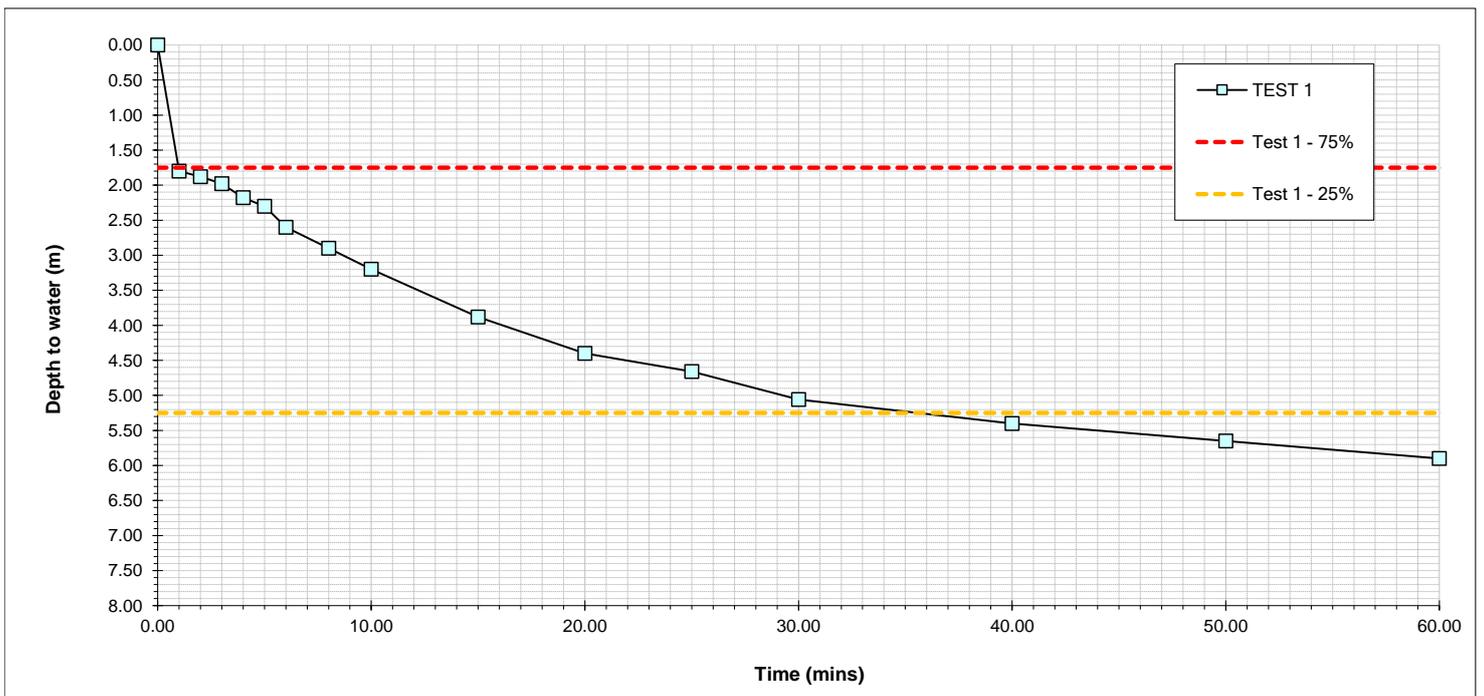
Site..... Swanstree Avenue
 Job Number..... SHF.1132.260
 Date of Test..... 26/07/2021

Soakaway Number..... BH2-1
 Diameter..... 0.15 m
 Casing Depth..... 5.00 m
 Borehole Depth..... 7.00 m
 Groundwater Level..... Dry m

BOREHOLE SOIL INFILTRATION RATE TEST
 See B.R.E. Digest 365, 1991, Soakaway Design.

Remarks - Please refer to BH2 log for ground conditions.	TEST 1		TEST 2		TEST 3	
	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)
	0.0	0.00				
	1.0	1.80				
	2.0	1.88				
	3.0	1.98				
	4.0	2.18				
	5.0	2.30				
	6.0	2.60				
	8.0	2.90				
	10.0	3.20				
	15.0	3.88				
	20.0	4.40				
	25.0	4.66				
	30.0	5.06				
	40.0	5.40				
	50.0	5.65				
	60.0	5.90				
Effective Storage Depth	m	7.00				
75% Effective Storage Depth (i.e. depth below GL)	m	5.25				
25% Effective Storage Depth (i.e. depth below GL)	m	1.75				
Effective Storage Depth 75%-25%	m	3.50				
Time to fall to 75% effective depth	mins	1.00				
Time to fall to 25% effective depth	mins	36.00				
V (75%-25%)	m3	0.06				
a	m2	0.96				
t (75%-25%)	mins	35.00				
SOIL INFILTRATION RATE	m/s	3.07E-05				

DESIGN SOIL INFILTRATION RATE, f	n/a	m/s
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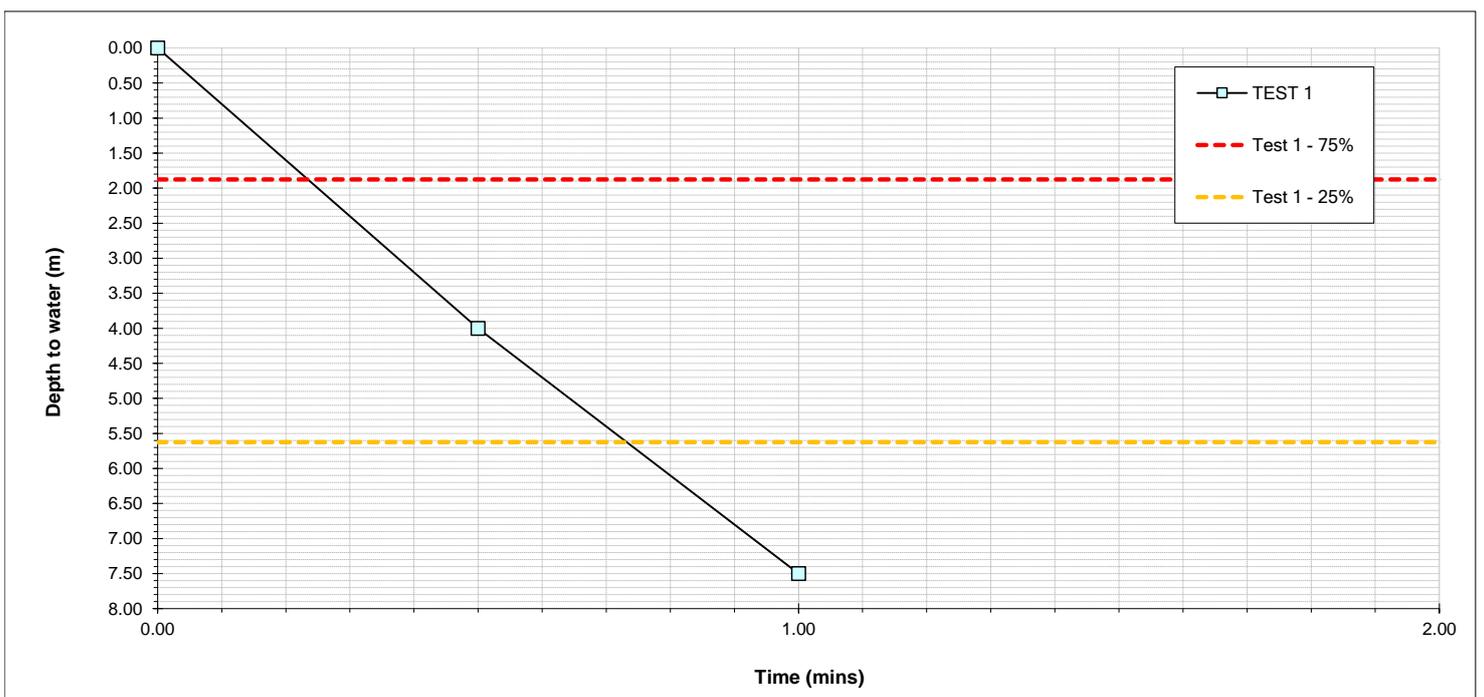
Site..... Swanstree Avenue
 Job Number..... SHF.1132.260
 Date of Test..... 26/07/2021

Soakaway Number..... BH3-1
 Diameter 0.15 m
 Casing Depth 5.50 m
 Borehole Depth..... 7.50 m
 Groundwater Level..... Dry m

BOREHOLE SOIL INFILTRATION RATE TEST
 See B.R.E. Digest 365, 1991, Soakaway Design.

Remarks - Please refer to BH3 log for ground conditions.	TEST 1		TEST 2		TEST 3	
	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)
	0.0	0.00				
	0.5	4.00				
	1.0	7.50				
Effective Storage Depth	m	7.50				
75% Effective Storage Depth (i.e. depth below GL)	m	5.63				
25% Effective Storage Depth (i.e. depth below GL)	m	1.88				
Effective Storage Depth 75%-25%	m	3.75				
Time to fall to 75% effective depth	mins	0.24				
Time to fall to 25% effective depth	mins	0.74				
V (75%-25%)	m3	0.07				
a	m2	0.96				
t (75%-25%)	mins	0.50				
SOIL INFILTRATION RATE	m/s	2.30E-03				

DESIGN SOIL INFILTRATION RATE, f	n/a	m/s
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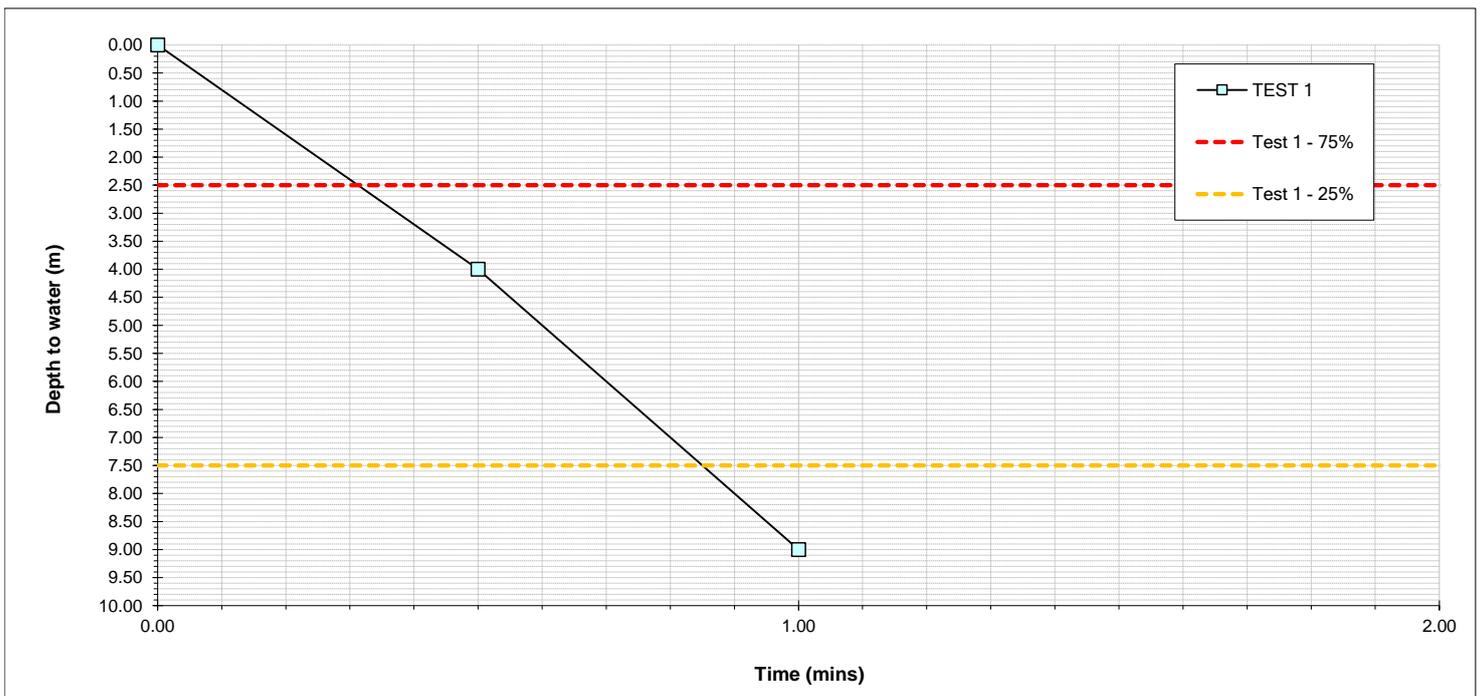
Site..... Swanstree Avenue
 Job Number..... SHF.1132.260
 Date of Test..... 26/07/2021

Soakaway Number..... BH3-2
 Diameter..... 0.15 m
 Casing Depth..... 8.50 m
 Borehole Depth..... 10.00 m
 Groundwater Level..... Dry m

BOREHOLE SOIL INFILTRATION RATE TEST
 See B.R.E. Digest 365, 1991, Soakaway Design.

Remarks - Please refer to BH3 log for ground conditions.	TEST 1		TEST 2		TEST 3	
	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)
	0.0	0.00				
	0.5	4.00				
	1.0	9.00				
Effective Storage Depth	m	10.00				
75% Effective Storage Depth (i.e. depth below GL)	m	7.50				
25% Effective Storage Depth (i.e. depth below GL)	m	2.50				
Effective Storage Depth 75%-25%	m	2.50				
Time to fall to 75% effective depth	mins	0.31				
Time to fall to 25% effective depth	mins	0.85				
V (75%-25%)	m3	0.09				
a	m2	0.72				
t (75%-25%)	mins	0.54				
SOIL INFILTRATION RATE	m/s	3.76E-03				

DESIGN SOIL INFILTRATION RATE, f	n/a	m/s
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