PROPOSED ANAEROBIC DIGESTION FACILITY AT SPRING GROVE FARM, WITHERSFIELD, NORTHWEST OF HAVERHILL, CB9 7SW

Preliminary Land Quality Risk Assessment

Prepared for: Acorn Bioenergy Limited

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SLR Consulting was commissioned by Acorn Bioenergy Limited to carry out a Preliminary Land Quality Risk Assessment (PLQRA) of the proposed development located at Land to the North of Spring Grove Farm, Withersfield, northwest of Haverhill, CB9 7SW.

The purpose of the PLQRA is to demonstrate whether the Site is suitable for its proposed development taking account of potential contamination related risks. The PLQRA, comprised a desk top study of published information including site history and environmental setting which was used to develop a Conceptual Site Model (CSM) risk assessment. Walkovers were undertaken at the site in March and November 2022.

The proposed development would accept in the region of 92,000 tonnes per annum of feedstock per annum from the applicant's landholding and local farms, which would undergo a process of controlled decomposition (anaerobic digestion) within the Anaerobic Digestion (AD) facility. This anaerobic digestion generates biogas which is upgraded on site into biomethane, before being removed by tanker to a central facility for injection into the national grid.

The AD process also produces a nutrient rich solid fertiliser and soil conditioner and a liquid fertiliser (digestate), which would be used on local farms in place of raw manures and artificial fertilisers. The digestate would be transported via an approximately 3.5km pipeline to a storage lagoon on land near Skippers Lane, Withersfield.

The proposed digestate lagoon is located on land formerly comprising the ordnance storage area of RAF Wratting Common, operational during World War II. Potential impacts to shallow soils arising from the historical land use and demolition of former storage buildings was identified as a potentially significant source of contamination. There was no other evidence of potentially significant sources of contamination identified on site during the walkover or from published information.

Groundwater is of moderately high sensitivity at the site given the presence of a principal chalk aquifer and a groundwater protection zone beneath the site, albeit afforded some protection by the presence of approximately 30m thick superficial deposits of variable permeability and the distance to the nearest abstractions. Surface water sensitivity is moderately high given the on-site and adjacent ditches and Stour Brook adjacent to the south and east of the site.

Qualitative risk assessment indicates that the northern extent of the site represents a moderate/low risk of contamination impacts to human health associated with the former RAF use. Qualitative risk assessment indicates the remainder of the site represents a low risk to human health and controlled waters associated with the proposed development as no potentially significant sources have been identified.

Given the lack of potential contamination sources it is likely that on site soils can be excavated and reused as part of the proposed development, excluding the northern extent of the pipeline in the former RAF area. We recommend that any soil reuse is covered by a Materials Management Plan.

An investigation in the former RAF/proposed digestate lagoon area is recommended to assess if there is a risk to construction and future site workers from potential contaminants in shallow soils. No further investigation or remediation is considered necessary for remainder of the proposed development. A watching brief should be maintained for potentially unexpected contamination during development.

A high pressure gas main and overhead powerlines were observed crossing the proposed pipeline route, which could present potential constraints to development.

1.0 Introduction

1.1 Appointment

SLR Consulting was commissioned by Acorn Bioenergy Limited to carry out a Preliminary Land Quality Risk Assessment (PLQRA) of the proposed development known as Spring Grove Green Power located at Land to the North of Spring Grove Farm, Withersfield, northwest of Haverhill, CB9 7SW.

A PLQRA has been requested to inform the planning process in respect of the proposed development of the application site. The proposed development would involve installation of an anaerobic digestion facility, digestate pipeline and satellite storage lagoon. Further details of the proposed development are provided below in Section 1.2.

1.2 Proposed Development

The proposed development would accept in the region of 92,000 tonnes per annum of feedstock per annum from the applicant's landholding and local farms, which would undergo a process of controlled decomposition (anaerobic digestion) within the Anaerobic Digestion (AD) facility. This anaerobic digestion generates biogas which is upgraded on site into biomethane, before being removed by tanker to a central facility for injection into the national grid.

In addition to the biomethane, the AD process also produces a nutrient rich solid fertiliser and soil conditioner and a liquid fertiliser (digestate), which would be used on local farms in place of raw manures and artificial fertilisers. The proposed development includes an approximately 3.5km long below-ground pipeline to transport the digestate to a storage lagoon located on land near Skippers Lane, Withersfield.

The proposed digestate pipeline and storage lagoon were added to the proposed development design in November 2022.

It is understood that the access to the AD facility would be via the A1307. Proposals can be seen in Appendix 01.

1.3 Background and Objectives

The PLQRA was commissioned following a screening report by SLR. The purpose of the assessment is to demonstrate whether the site is suitable for its proposed development taking account of potential contamination related risks.

This report assesses the potential for contamination risk and is based upon details of the development proposals provided to SLR by Acorn. The proposed site layout and development plan with red line boundary is provided as Appendix 01. This report provides details of the findings of the PLQRA, comprising a desk top study of published information walkovers undertaken at the site in March and November 2022.

Figure 1-1 Site Location Plan (Main Site and Pipeline Route)

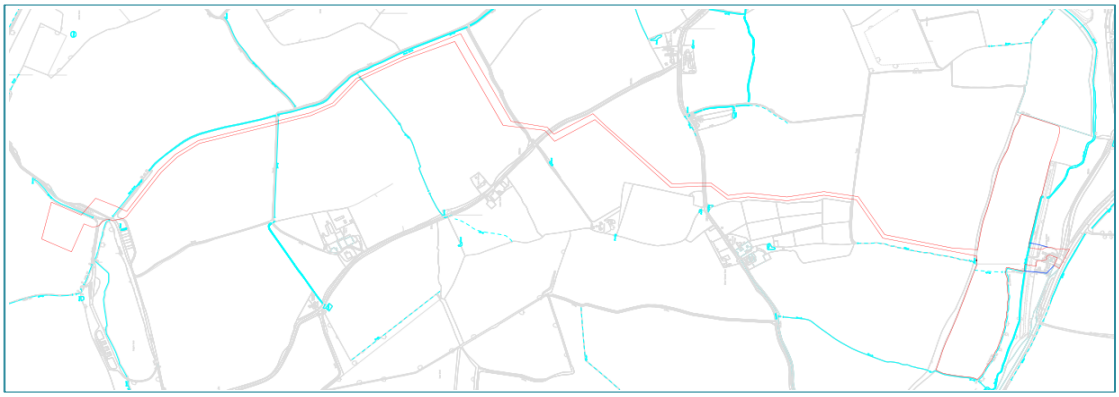


Figure 1-2 Site Location Plan – Anaerobic Digestion Facility (Main Site)

1.4 Scope of Works

The PLQRA scope of work comprised the following tasks:

- Two site walkovers to:
  - Assess visual evidence of contamination and identify potential sources of contamination.
  - Review the potential for pollution to have occurred at the site.
  - Identify the surrounding land use.
- Review of land use history using available historical maps. Extracts of the maps are used to illustrate the historical land use of the site and surrounding area.
- Assessment of site sensitivity and environmental setting including a review of geological and hydrogeological records (e.g. geological maps, groundwater sensitivity and vulnerability maps etc). The quality of nearby surface waters and underlying groundwater is assessed, as well as any data available on pollution incidents, abstractions and discharges.
- Collection of information from public registers and regulators that is available via the GroundSure database, which can be obtained more quickly than through direct contact with the regulators and other public bodies.
- Data assimilation and risk assessment involving an assessment of potential sources (e.g. chemical storage, spillages etc), pathways (e.g. surface water drainage) and receptors (e.g. controlled surface watercourse) at or adjacent to the site. A conceptual site model (CSM) and the level of risk associated with identified potential pollutant linkages (PPLs) is determined qualitatively from the model.
- There were no previous contamination or ground investigation reports provided for review.

1.5 Sources of Information

SLR has collected and reviewed various reports and maps to characterise the site and its surrounds. These sources comprise:

- MAGIC website (www.magic.defra.gov.uk).
- British Geological Survey website (www.bgs.ac.uk).
- Groundsure EnviroGeoInsight reports on site conditions dated March 2022 and November 2022 (Appendices 02 and 03).
- Historical Ordnance Survey Mapping (Appendices 04 and 05).
- Google Earth/Streetview.
- Review of the West Suffolk Council planning portal.

The information from the above sources is included within the following sections of this report.

2.0 Site Description

2.1 Summary Site Details

A summary of site details based on Groundsure reports and the site walkovers is provided in Table 2-1 below. For clarity of discussion in the following sections, the site has been divided into two areas:

- the main anaerobic digestion facility (main site) shown within the boundary on Figure 1-2; and
- the remainder of the site as shown on Figure 1-1 comprising the proposed digestate pipeline route and storage lagoon (pipeline route).

The main site is located in an agricultural area approximately 2km northwest of Haverhill town centre. The pipeline route extends from the main site approximately 2.5km north to the location of the former RAF Wratting Common, east of Skippers Lane at Withersfield. The site lies just within the Suffolk county boundary. The eastern and southern boundaries of the main site, and the northern terminus of the pipeline route are adjacent to the Cambridgeshire county border.

Table 2-1 – Site Details

Site Details	Spring Grove Farm, Haverhill, South Cambridgeshire CB9 7SW	
National Grid Reference	Main site -- 564167 246912 Pipeline Route mid-point - 564759 248581 Pipeline route northern terminus - 564460 249249	
Site Areas	The main site is approximately 12.5 hectares. The pipeline route length is approximately 3.5km.	
Surrounding Land Use - Main Site	North	A strip of woodland containing thick mature trees runs along the site's northern boundary beyond which are arable fields.
	East	Ploughed arable fields
	South	Stour Brook runs immediately adjacent to the south boundary of the site. An embankment covered with overgrown bushes and mature trees is formed by a disused railway line which roughly follows the same route along the southern boundary of the eastern part of the site. The A1307 Cambridge Road also runs adjacent to the south boundary, at a proximity of around 90m, connecting Haverhill to Linton in the west (approximately 7km).
	West	Grassed arable fields
Surrounding Land Use – Pipeline Route	The pipeline route is surrounded by arable fields and occasional pockets of woodland. One woodland named Cadge's Wood is located west of the northern terminus near the proposed storage lagoon and extends partially into the site. The pipeline route passes by occasional residential dwellings and farmhouse buildings within 250m. The Stour Brook River runs through the central part of the pipeline in a north south direction, with smaller tributaries cross cutting the site in an east west direction. A single track road crosses the site in an approximate east-west direction near the northern terminus, immediately south of Cadge's Wood, connecting Skippers Lane across the northern area of the site which connects Skippers Lane and West End lane.	

2.2 Site Walkover

The site was inspected by a representative of SLR's Land Quality and Remediation team on 28th March and 29th November 2022. Site photographs are provided in Appendix 06.

The main site includes two adjoining arable fields. Bowsey Field in the west was covered with dead crop stubble and Spring Grove Field in the east was open and ploughed. A high pressure gas pipeline was noted to run along the northern boundary of Bowsey Field. A ditch runs in a southerly direction between the two fields.

Spring Grove Farm buildings are in the southern part of the main site and include a farmhouse and various outbuildings and barns. The barns are mixed timber and brick construction in various states of repair. An integrally bunded domestic oil tank was noted in the garden of the farmhouse. Various materials such as wood, paving slabs and various containers were noted on the ground next to an open sided barn. The fields are accessed by a path in a gap in the former railway embankment along the southern boundary of the fields.

The pipeline route mainly follows field boundaries in the south before crossing Horseheath Road, a field and Skippers Lane and then following the route of the Stour Brook River and adjacent public footpath in its northern section. It crosses underneath power lines in the southern section and runs parallel to an oil pipeline to the east of the road in its central section. At the northern most end the route is under a concrete access road associated with a former airfield. The road was slightly degraded and overgrown in places. Three brick structures with curved corrugated roofs are adjacent to the path at the northern end. One was empty, one was used to store pipes and flagstones for construction purposes (both had concrete floors) and the third was closed.

The proposed lagoon at the northern end of the pipeline is located within an open field which slopes towards the south. There were no structures within the field but two further brick stores were located on the access road to the east of the lagoon. A scaffold structure was noted in the overgrown woodland to the south of the lagoon but there was no further evidence of former airfield structures.

There was no evidence of any made ground or potentially significant contamination sources noted on site during the site visit. Water within the Stour Brook River was clear and free flowing within a well maintained ditch.

3.0 Site History

3.1 Review of Historical Maps and Photographs

The site history is based on a review of historical maps (Appendices 04 and 05).

3.1.1 Main Site

From first available maps dated 1886 onwards the site is undeveloped land with field boundaries. A footpath runs centrally across the site from north to south until the 1951 map. Spring Grove Farm is present within the plot of land in the southern part of the site including various small buildings, some of which are demolished between the 1999 and 2007 edition maps. A strip of woodland and a footpath labelled Roman Road runs along the northern site boundary until the 1926 map. A drain is noted running north south across the site between the two fields from 1972.

Off site land to the north, west and east is similar open undeveloped agricultural land from first available maps. A railway line on an embankment runs along the southern boundary of the eastern part of the site. By 1972 the railway line is noted as a Dismantled Railway although the embankment remains in place where it runs adjacent to the south of the eastern part of the site. The embankment is no longer present beyond the south east of the site and to the south of the far western part of the site where the route of the A604 has been straightened and improved. The Stour Brook runs in an easterly direction parallel to the southern boundary from the 1800s. A road (labelled as A604 by 1960) crosses under the railway line beyond the Stour Brook approximately 80m south of the site from 1972.

3.1.2 Pipeline Route & Lagoon

The pipeline route crosses undeveloped agricultural land, crosscut by footpaths, which has remained relatively unchanged since the earliest historical mapping dated 1884. The pipeline route is shown crossing Skippers Lane and Silver Street and running adjacent to Stour Brook in the approximate northern half of the site. Silverstreet Farm, Exhibition Farm and Blackstreet Farm are all shown within 250m of the pipeline route. Several pockets of woodland including Cadge's Wood and Littley Wood are shown within 250m, which remain present.

Approximatively 20m north of Silverstreet farm there are various small buildings located around a crossroads in 1885 which are later demolished and no longer present in 1903. The Silverstreet Farm includes various small to medium sized buildings some of which are demolished and relocated across a road which runs east to west through the farm in 1903. The farm remained relatively unchanged until 1994. The southern section of the pipeline runs though arable fields until 1903 whereby the eastern boundary of the site runs through newly constructed allotments up until 1926.

1945 aerial imagery and 1959/1960 mapping shows the area surrounding the proposed lagoon at the northern terminus of the route had been partially developed with several small structures connected by roadways. This area was located within the southern portion of the former RAF Wratting Common airfield which is understood to have been constructed around 1943. The structures present within and in the immediate vicinity of the site boundary were fusing point buildings and Nissan huts used for bomb and other ordnance storage, as well as general storage. Most of the buildings are no longer shown on 1984 mapping and aerial imagery shows that by 2000 the area had reverted to agricultural use. Two fusing point buildings remain present at the northeast boundary and three general storage buildings remain present at the eastern boundary, southeast of Cadge's Wood.

A drain is noted running north-south across the southern-most field of the pipeline route from 1994 mapping.

3.2 Previous Planning Permissions

There are no records of any planning applications for the site on the West Suffolk Council planning portal.

Approximately 100m to the southeast of the site at Land West of Three Counties Way, Withersfield, Suffolk a planning application was submitted in August 2019 for the development of up to 155no. dwellings, associated infrastructure, and open space (DC/19/1711/OUT). The application was refused in February 2020, however an appeal was submitted (AP/20/0043/STAND) and the application was granted in April 2021.

3.3 Summary

The main site has a continuous history of being open fields with a central drain running through them and farm buildings in the south. A railway line ran along the southern boundary until it was dismantled around 1971. An embankment associated with the former railway line remains present and overgrown adjacent to the south-eastern boundary.

The pipeline route has typically comprised undeveloped land since the earliest mapping records.

The northern part of the site around the proposed digestate lagoon formed the southern extent of RAF Wratting Common airfield from around 1943. Several small buildings and Nissan huts were constructed on-site and in the immediate vicinity which were primarily used for bomb storage. SLR understands the airfield was disused shortly after the end of the war and by 1984 most of the structures were no longer present and the area had reverted to agricultural use.

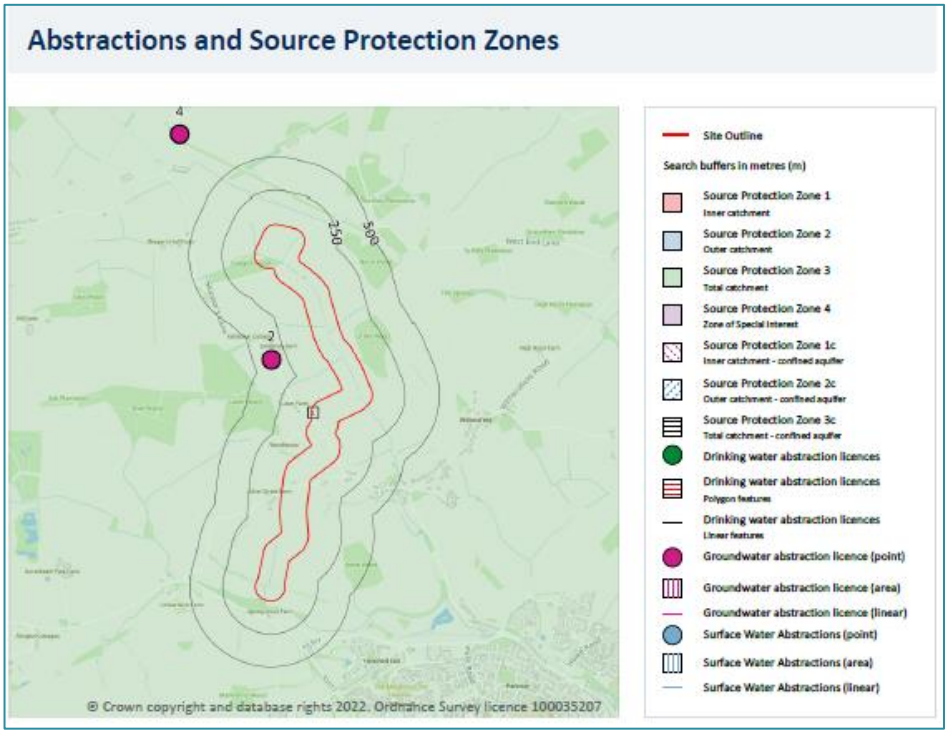
4.0 Site Environmental Setting

4.1 Geography and Geology

The site setting including geography, geology, hydrogeology and hydrology based on information from Groundsure, MAGIC and BGS is summarised in Table 4-1.

Table 4-1 – Site Setting

Setting	Details	
Geography and Hydrology	Topography, Elevation and Gradient	The main site is undulating with the local topography generally sloping down in a south easterly direction. The north-western corner of the site is at the highest elevation of 90m AOD and the south-eastern corner is at 83m AOD. Both fields also slope down towards the Stour Brook to the south and dip towards the ditch which separates them. The pipeline route is also undulating, with the local topography sloping down from the north and west at an elevation of approximately 125m AOD towards the south east at an elevation of approximately 101m AOD.
	Surface Water	The Stour Brook flows in an easterly direction adjacent to the southern boundary of the main site before it turns south and away from the site approximately halfway along Spring Grove Field. A ditch runs in a southerly direction through the centre of the main site between the two fields. Ditches also form the western boundary and run through the woodland along the northern boundary. A separate arm of Stour Brook also flows east-west along the southern boundary of the proposed digestate lagoon adjacent Cadge's Wood before turning south and flowing immediately east and parallel with the approximate northern half of the pipeline route in a southeast direction.
Geology and Hydrogeology	Geology	Made Ground associated with the former railway line embankment is mapped adjacent to the southern boundary of the eastern part of the main site. The site and surrounding areas are underlain by superficial deposits comprising Lowestoft Formation - Diamicton (clay, silt, sand and gravel). Bedrock geology comprises Lewes Nodular Chalk Formation (chalk). There are no BGS borehole records within 250m of the main site. The nearest record is approximately 750m to the south but at a similar ground elevation which records approximately 30m of boulder clay (diamicton) over the chalk. There are two BGS borehole records within 250m of the pipeline route. The nearest record is 174m southeast of the approximate mid-point and records approximately 32m of boulder clay (diamicton) over the chalk.
	Natural Ground Risks	The site is reported to be at low risk from shrink swell clays, very low risks from running sands, collapsible deposits, landslides and negligible risk from compressible deposits. The risk of ground dissolution of soluble rocks is very low as while soluble rocks are present few dissolution features are likely to be present and there are no records of natural cavities in the area. Sporadic underground mining of restricted extent may have occurred although there are no records of mineral workings. Site buildings are at low risk from radon and radon protection measures are not required within buildings.

Setting	Details	
	Aquifer status	Superficial deposits are defined as a secondary undifferentiated aquifer (variable in nature) and the bedrock aquifer (chalk) is a principal aquifer (high level of water storage and may provide water supply for rivers on a strategic scale). Groundwater flow in the chalk is likely to be through well connected fissures. The site is located within a total catchment groundwater source protection zone, SPZ 3.
	Abstractions	There are four recorded groundwater abstractions within 2km of the site all dating from 1966 with no end date for farming and domestic use. They are located 840m to the south of the main site, 362m west of the northern part of the pipeline route and 962m and 1.2km northwest of the pipeline. The extract below (from Appendix 03) shows the western and northern abstraction locations. The are no recorded surface water abstractions within 2km of the site. 
Sensitivity	Groundwater	Groundwater is sensitive within the area given the presence of a principal chalk aquifer beneath the site and the groundwater source protection zone. The sensitivity is mitigated by the presence of approximately 30m thick superficial deposits of variable permeability and the distance to the nearest abstractions. Therefore, overall, groundwater is considered to be of moderately high sensitivity at the site.
	Surface Water	Surface water sensitivity is considered to be moderately high given the on-site and adjacent ditches and the adjacent Stour Brook.

4.2 Regulatory Searches

The Groundsure Enviroinsight report provided information on historical industrial activities in the vicinity of the site, pollution incidents and on activities that required environmental regulatory permitting in order to indicate the nature of surrounding site operations and identify those permitted activities that might be a source of soil or groundwater contaminant impact with respect to the site. The resulting detail on relevant permits, licenses and designations within 500m of the site is summarised below.

Historical industrial land use records include an airfield 91m north of the northern lagoon (referring to RAF Wratting Common which extended into the lagoon site boundary), a smithy 464m east of the centre of the pipeline route, unspecified ground workings 248m east of the centre of the pipeline route and cuttings, embankments and railway sidings associated with the former railway line to the south of the main site.

There are no active or historical landfills within 500m of the site. There are records of waste exemptions associated with storage of sludge on a farm located near to the centre of the pipeline route and three other locations between 160m to 390m of the site in all directions indicating the agricultural nature of the area.

There is one record of a pollution incident within 500m of the site which occurred in 2002 approximately 130m west of the main site including diesel with no impact to water, land or air.

There are four licensed discharge to controlled waters records within 500m relating to sewage discharges to tributaries of the River Stour/Stour Brook.

There are no records of any of the following within 500m of the site: current or recent petrol stations, electricity cables, gas pipelines, sites determined as Contaminated Land, Control of Major Accident Hazards (COMAH) sites, regulated explosive sites, hazardous substance storage / usage, historical licensed industrial activities (IPC, Part A(1), Part A(2)/B), radioactive substance authorisations, pollutant release to surface waters (red List), pollutant release to public sewer, List 1 and 2 dangerous substances, pollution inventory substances, pollution inventory waste transfers and pollution inventory radioactive waste.

The Over and Lawn Woods site of special scientific interest (SSSI) is present c.200m west of the pipeline route mid-point and the site is within an SSSI impact risk zone. There are six records of designated Ancient Woodland within 500m including Cadge's Wood present immediately adjacent to the northern terminus of the pipeline route. Refer to separate SLR Ecological report for further details.

4.3 Unexploded Ordnance Risk

Given the history of the northern part of the pipeline route as a World War 2 airfield a review of potential unexploded ordnance risk was undertaken. The site is within an area which Zetica classify as low risk of "the potential for Unexploded Bombs to be present as a result of World War Two bombing" (Appendix 07). Given the historical storage of ordnance on site local investigation and further assessment may be necessary.

5.0 Conceptual Site Model and Preliminary Qualitative Risk Assessment

5.1 Conceptual Site Model

This report section uses the information gathered in previous sections and aims to identify potential contaminant sources at the site and sensitive receptors which may be impacted by them. Consideration of viable pathways which may link a source and receptor can then enable an assessment of Potential Pollutant Linkages (PPLs).

When identifying the PPLs relevant to this site, SLR has considered the proposed redevelopment of site as an anaerobic digestion facility.

5.1.1 Sources

UK contaminated land statutory guidance[1], defines a Contaminant as:

"a substance which is in, on or under the land and which has the potential to cause significant harm to a relevant receptor, or to cause significant pollution of Controlled Waters".

Activities associated with the former World War 2 RAF Wratting Common in the very northern extent of the pipeline route and lagoon could be a potential source of contamination. Nissan huts were located on-site and immediately adjacent to the area around the proposed digestate lagoon which are known to have comprised the airfield bomb stores and fusing point buildings. Most of the former storage huts are no longer present.

There is the potential for former RAF activities and later demolition works to have impacted shallow soils on-site in the area of the northern lagoon and pipeline.

Given the history of the remainder of the site as agricultural fields with residential farm buildings and storage we have not identified any other significant potential sources of contamination on site. Fuel stored at the farmhouse was contained within an integrally bunded tank and there was no evidence of bulk storage of oils, fuels or chemicals in the outbuildings.

Made ground associated with the former railway embankment adjacent to the south of the main site is not considered as a potential significant off-site source of contamination given its age since construction (1800s) and last use as a railway line (1960s) and that it is covered with well established trees and bushes.

5.1.2 Receptors

UK contaminated land statutory guidance defines a Receptor as:

"something that could be adversely affected by a contaminant, for example a person, an organism, an ecosystem, property, or Controlled Waters." Under the proposed commercial/industrial end use the following potentially sensitive receptors have been identified:

- R1 – Human Health (future site users and construction workers).
- R2 – Controlled Waters (surface water drains crossing site and Stour Brook adjacent to the east and south).
- R3 – Controlled Waters (groundwater within principal aquifer beneath superficial deposits).

5.1.3 Pathways

UK contaminated land statutory guidance defines a Pathway as:

[1] DEFRA; 2012; EPA 1990: Part2A, Contaminated Land Statutory Guidance, PB13735; April 2012

"a route by which a receptor is or might be affected by a contaminant".

The following potential pathways have been identified:

- P1 – Direct contact, inhalation and ingestion of contaminated soils and soil dust;
- P2 – Surface water runoff; and
- P3 – Leaching of contaminants from the vadose zone to groundwater; and
- P4 - Vertical and lateral migration of contaminants in groundwater.

5.2 Qualitative Risk Assessment

UK contaminated land statutory guidance and associated supporting guidance documents including LCRM[2]and R&D66[3] recommend that a qualitative assessment of risk should be provided for each identified PPL to determine any risk management actions.

Risk is based on a consideration of both:

- the likelihood of an event (probability); [takes into account both the presence of the hazard and receptor and the integrity of the pathway].
- The severity of the potential consequence [takes into account both the potential severity of the hazard and the sensitivity of the receptor].

To then determine the risk to the identified receptor, both the likelihood and severity of the potential hazard is considered in line with the matrix in Annex 4 of R&D66.

[2] Land Contamination Risk Management (LCRM), EA 2020.
[3] Guidance for the Safe Development of Housing, R&D66, DEFRA, EA, CIEH 2008

Source	Pathway to Hazard	Receptor	Consequence	Likelihood	Risk
S1 – Former airfield activities and bomb storage	P1 – Direct contact, inhalation and ingestion of contaminated soils and soil dust	R1 – Human Health (future site users and construction workers)	Health Impact – Medium	Low	**Moderate/Low Risk** There is the potential for shallow soils to have been impacted by historical RAF use and demolition of former structures, although most of the on-site area wasn't developed and the area has since reverted to agricultural use. Potential contaminants could include metals, asbestos, explosive powders and residues, hydrocarbons, solvents and other chemicals. Construction and maintenance workers could be exposed to potential contaminants in soils, although the exposure period will be short. Future site users (site workers) during normal operation are likely to only have a limited exposure to on-site soils. **Investigation of shallow soils recommended in the vicinity of former RAF operational area.**
	P2 – Surface water runoff	R2 – Controlled Waters (surface water drains crossing site and Stour Brook adjacent to the east and south).	Controlled Waters Impact - Mild	Low	**Low Risk** During lagoon and pipeline construction there is the potential that surface water runoff from the excavations or soil stockpiles to the adjacent Stour Brook could contain potentially impacted soils, dissolved contaminants or suspended sediments. The volume and impact of potential contaminants in such runoff is likely to be limited, and can be mitigated against by correct soil and stockpile handling techniques during construction. There are unlikely to be ongoing risks to surface water from historic land contamination post-development.

Source	Pathway to Hazard	Receptor	Consequence	Likelihood	Risk
					No further action required.
	P3 – Leaching of contaminants from the vadose zone to groundwater P4 - Vertical and lateral migration of contaminants in groundwater.	R3 – Controlled Waters (groundwater within principal aquifer beneath superficial deposits).	Controlled Waters Impact - Medium	Unlikely	**Low Risk** The sensitive principal aquifer is overlain by approximately 30m of variably permeable superficial deposits, which are likely to mitigate against vertical leaching of contaminants in shallow soils. **No further action required.**

6.0 Summary and Recommendations

6.1 Findings

The main site is located in an agricultural area approximately 2km northwest of Haverhill town centre. The pipeline route extends from the main site approximately 2.5km north to the location of the former RAF Wratting Common, east of Skippers Lane at Withersfield.

The main site consists of arable fields with a farmhouse and associated barns in the south and the pipeline route crosses several arable fields. An embankment associated with a former railway line is located along the southern boundary of the eastern part of the main site and divides the fields in the north from the farm buildings in the south. The railway line was constructed in the 1800s and dismantled in the late 1960s and since then it has become overgrown with well established trees and bushes.

Historically there have been no different site uses, except at the northern terminus of the pipeline route which historically comprised the ordnance storage area of RAF Wratting Common during World War II. Several Nissan huts were historically present on-site or in the immediate vicinity, in-use as bomb stores and fusing point buildings, connected by single-track roadways. Most of the huts were no longer present by the 1980s and the area has reverted to agricultural use.

The former RAF use in the north of the site has been identified as a potentially significant source of contamination, but there was no other evidence of potentially significant sources of contamination identified on site during the walkover or from published information.

Groundwater is of moderately high sensitivity at the site given the presence of a principal chalk aquifer and a groundwater protection zone beneath the site, albeit afforded some protection by the presence of approximately 30m thick superficial deposits of variable permeability and the distance to the nearest abstractions.

Surface water sensitivity is moderately high given the on-site and adjacent ditches and Stour Brook adjacent to the south of the site and the northern part of the pipeline route.

Qualitative risk assessment indicates that the northern extent of the site represents a moderate/low risk of contamination impacts to human health associated with the former RAF use.

Qualitative risk assessment indicates the remainder of the site represents a low risk to human health and controlled waters associated with the proposed development as no potentially significant sources have been identified.

Given the lack of potential contamination sources it is likely that on site soils can be excavated and reused as part of the proposed development, excluding the northern extent of site in the former RAF area.

6.2 Recommendations

6.2.1 Land Quality

A shallow ground investigation is recommended in the former RAF area in the north of site to assess potential contamination impacts to shallow soils resulting from historic land use. An assessment of potential unexploded ordnance may be required. The purpose of the investigation would primarily be to assess if there is a potential risk to workers during the pipeline and digestate lagoon construction, but also to assess potential ongoing risks to future site workers.

No further investigation or remediation is considered necessary for the proposed development across the remainder of the site. A watching brief should be maintained for potentially unexpected contamination during

development. If any geotechnical investigations are proposed for foundation design then consideration should be given to chemical analysis of made ground if it is encountered on site.

6.2.2 Soil Materials Management

It is the responsibility of a holder of material to form their own view on whether that material is waste or not. Given the proposed reuse of natural occurring material within the same site boundary and lack of potential contamination sources it is possible that excavated soils reused as part of the proposed development would not be considered waste. However, we would recommend that any soil reuse is covered by a Materials Management Plan in accordance with the CLAIRE Definition of Waste Code of Practice (DoWCoP).

6.2.3 Potential development constraints

During SLR's walkover of the pipeline route in November 2022, an underground oil pipeline and overhead power lines were observed crossing the pipeline route at the approximate mid-point near Skippers Lane.

APPENDIX 01

Proposed Development

AS NOTED ON A1 FRAME

Redline Boundary Plan
Scale: 1:5000 @ A1

NOTES:-

1. All dimensions must be checked on site and not scaled from this drawing.
2. The Contractor shall make a survey of the site and shall be responsible for obtaining all dimensions and levels necessary for the proper fabrication of the structure as indicated.
3. All levels shown on this drawing are relative to Agreed Topographic survey
4. This drawing is to be read in conjunction with 29351/1000 Series Drawings.
5. All existing invert levels are to be confirmed by contractor prior to construction. Connection subject to approval.

Red Line Boundary

0 50m 100m 150m 200m 250m
Scale 1:5000 @ A1

Rev	Date	Description	DR	CH
J	16/08/23	Redline Updated	JHC	JHC
I	08/03/23	Redline Updated	WG	JHC
H	08/03/23	Redline Updated	WG	JHC
G	02/03/23	Blueline Updated	WG	JHC
F	01/03/23	Redline Updated	WG	JHC
E	28/02/23	Redline Updated	JHC	JHC
D	22/02/23	Redline Updated	JHC	JHC
C	06/02/23	Blue line Added	JHC	JHC
B	26/01/23	Issued for Planning	JHC	JHC
A	26/01/23	Issued for Planning	JHC	JHC

UVDB empowered by Achilles Registered
Link-up empowered by Achilles Qualified via Audit

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Client: acorn BIOENERGY

Job Title: Spring Grove Green Power

Drawing Title: Redline Boundary Plan

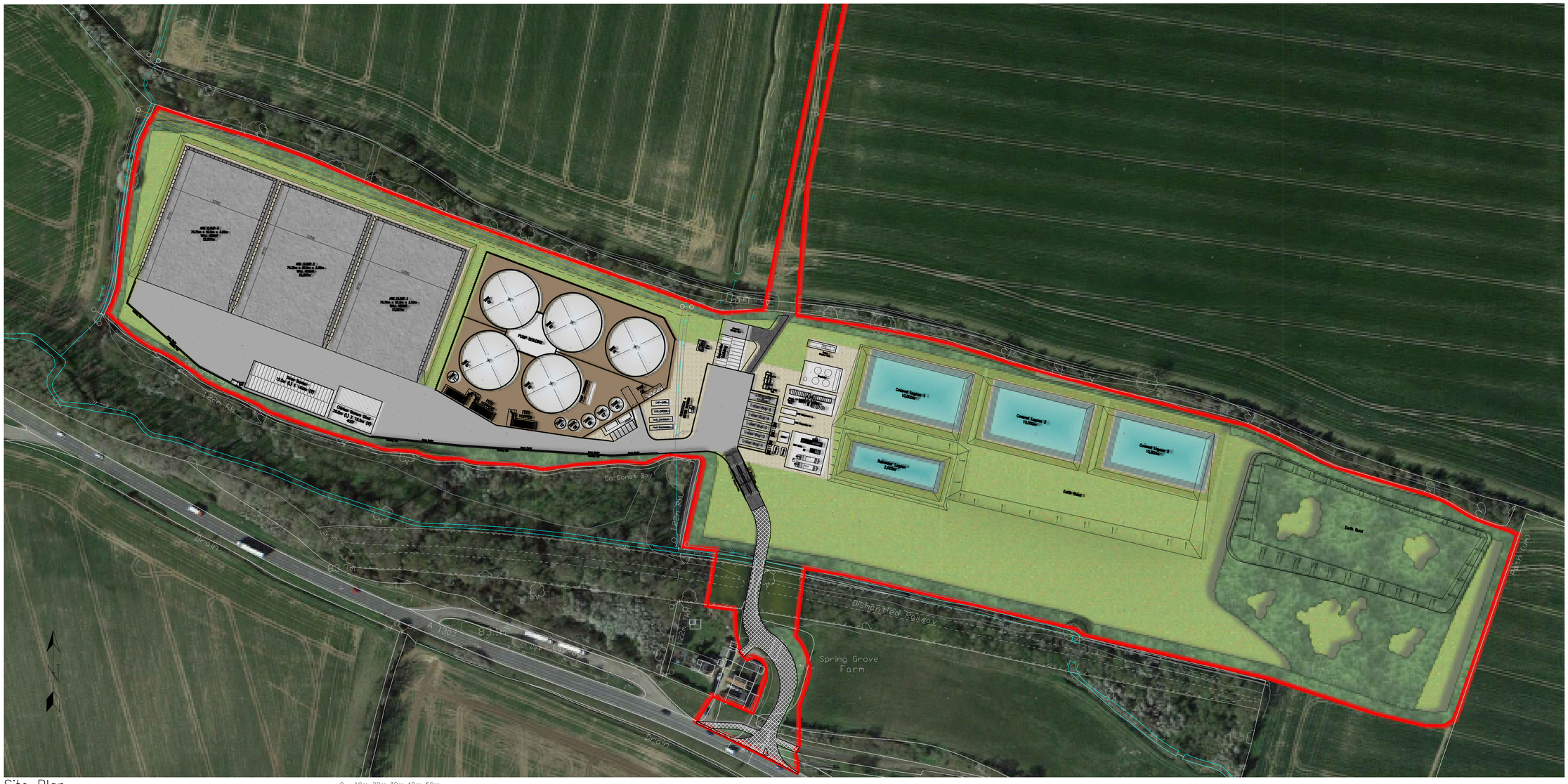
Status: Approval

Scale: 1:7500 @ A1
Date: Jan '23

Drawn By: J. Collins
Checked: JHC
Approved: JHC

Drg. No.: 29351-P-9001
Rev: J

NOT FOR CONSTRUCTION



AS NOTED ON A1 FRAME

Site Plan.
Scale: 1:1250 @ A1.

0 10m 20m 30m 40m 50m
Scale 1:1250 @ A1

Site Location Plan.
Scale: 1:5000 @ A1.

0 50m 100m 150m 200m 250m
Scale 1:5000 @ A1

NOT FOR CONSTRUCTION

NOTES:-

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2. The Contractor shall make a survey of the site and shall be responsible for obtaining all dimensions and levels necessary for the proper fabrication of the structure as indicated.
3. All levels shown on this drawing are relative to Agreed Topographic survey
4. This drawing is to be read in conjunction with 29351/100 Series Drawings.
5. All existing invert levels are to be confirmed by contractor prior to construction. Connection subject to approval.

🟦	Existing Watercourse
🟨	Gas Line with Easement Offset
🟥	Site Red Line Boundary (16.17Ha)

Rev	Date	Description	DR	CH
U	30/08/23	Landscaping Image Updated	WG	JHC
T	17/08/23	Redline & Entrance Updated	JHC	JHC
S	31/05/23	Layout Amendments	WG	JHC
R	20/04/23	Layout Amendments	JH	JHC
Q	19/04/23	Layout Amendments	JHC	JHC
P	09/03/23	Layout Amendments	WG	JHC
N	08/03/23	Redline Updated	WG	JHC
M	08/03/23	Redline Updated	WG	JHC
L	01/03/23	Redline Updated	WG	JHC
K	28/02/23	Redline Updated	JHC	JHC
J	22/02/23	Redline Updated	JHC	JHC
i	26/01/23	Redline Updated	JHC	JHC
H	23/08/22	Bund updated	JR	JHC
G	15/08/22	SLR Flood Extent Added	JHC	JHC
F	10/08/22	Draft–Lagoon Update	JHC	JHC
E	02/08/22	Draft Layout	DJC	JHC
D	13/06/22	LAYOUT AMENDED	DJC	JHC
C	05/04/22	CONCEPT LAYOUT	DJC	JHC
B	04/03/22	CONCEPT LAYOUT	JHC	JHC
A	24/02/22	CONCEPT LAYOUT	JHC	JHC

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Client
acorn BIOENERGY

Job Title
AD Plant.
Spring Grove.

Drawing Title
Site Layout.

Status
Planning

Scale
As Shown

Date
Jan' '22

Drawn By
J. Collins

Checked
JHC

Approved
JHC

Drg. No.
29351/P/101

Rev
U

AS NOTED ON A1 FRAME

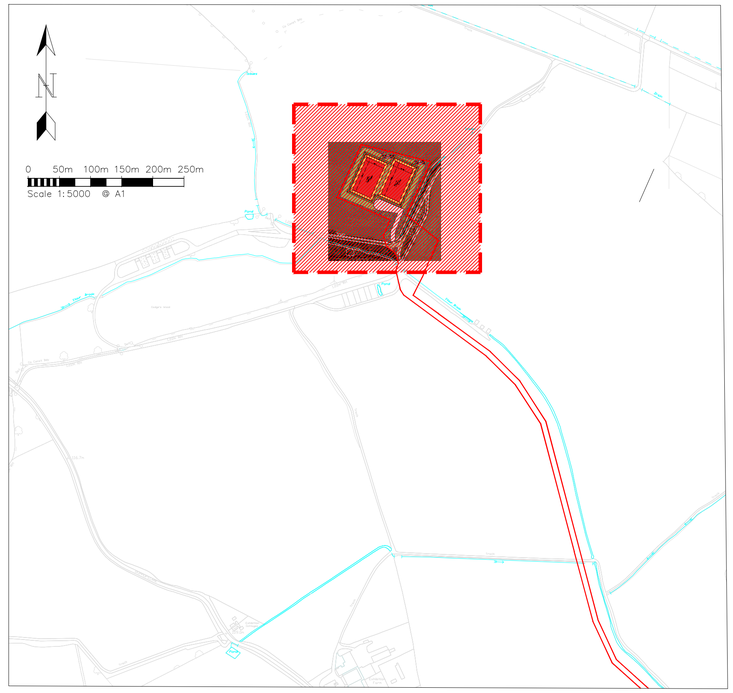
0 5m 10m 15m 20m 25m
Scale 1:200 @ A1

PROPOSED PLAN OF LAGOON
Scale: 1:500 @ A1

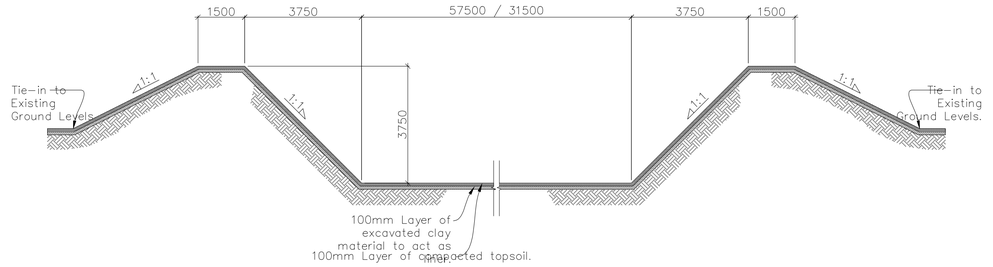
AREA = (2 x 723.75) = 1,447.50 m²

AREA = (2 x 1,811.25) = 3,622.50 m²

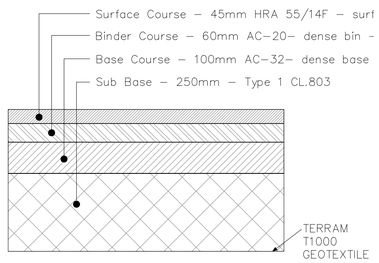
AREA = 1010 m²



SITE LOCATION PLAN
Scale: 1:5000 @ A1



TYPICAL SECTION THROUGH LAGOON
Scale: 1:100 @ A1



Proposed Road Build Up
SCALE: 1:10 @ A1

NOTES:-

1. All dimensions must be checked on site and not scaled from this drawing.
2. The Contractor shall make a survey of the site and shall be responsible for obtaining all dimensions and levels necessary for the proper fabrication of the structure as indicated.
3. All levels shown on this drawing are relative to Agreed Topographic survey
4. This drawing is to be read in conjunction with 29351/1000 Series Drawings.
5. All existing invert levels are to be confirmed by contractor prior to construction. Connection subject to approval.

Site Red Line Boundary

Rev	Date	Description	DR	CH
H	01/06/23	Issued for Planning	WG	JHC
G	19/04/23	Redline Boundary Updated	WG	JHC
F	22/02/23	Paving Buildup added	MK	JHC
E	10/02/23	Issued For Planning	MK	JHC
D	26/01/23	Redline Updated	JHC	JHC
C	08/12/22	Redline Updated	JHC	JHC
B	02/12/22	Lagoon Capacity Updated	JHC	JHC
A	02/12/22	Issued For Approval	JHC	JHC

UVDB Registered
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Client: acorn

Job Title: Spring Grove Green Power

Drawing Title: Remote Lagoon Proposed Layout

Status: Planning

Scale: As Noted @ A1 | Date: Nov '22

Drawn By: J. Collins | Checked: JHC | Approved: JHC

Drg. No.: 29351–P–600 | Rev: H

NOT FOR CONSTRUCTION

APPENDIX 02

EnviroGeoInsight Report

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

Thurlow 2, Haverhill, CB9 7SW

Order Details

Date: 16/03/2022

Your ref: EMS_767085_954607

Our Ref: EMS-767085_992350

Client: emapsite

Site Details

Location: 564167 246912

Area: 9.82 ha

Authority: South Cambridgeshire District Council, West Suffolk

Contact us with any questions at:
info@groundsure.com
08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	**1.1**	**Historical industrial land uses**	0	1	9	8	-
15	1.2	Historical tanks	0	0	0	0	-
16	1.3	Historical energy features	0	0	0	0	-
16	1.4	Historical petrol stations	0	0	0	0	-
16	1.5	Historical garages	0	0	0	0	-
16	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
17	**2.1**	**Historical industrial land uses**	0	1	10	11	-
18	2.2	Historical tanks	0	0	0	0	-
19	2.3	Historical energy features	0	0	0	0	-
19	2.4	Historical petrol stations	0	0	0	0	-
19	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
20	3.1	Active or recent landfill	0	0	0	0	-
20	3.2	Historical landfill (BGS records)	0	0	0	0	-
21	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
21	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
21	3.5	Historical waste sites	0	0	0	0	-
21	3.6	Licensed waste sites	0	0	0	0	-
21	**3.7**	**Waste exemptions**	0	0	2	2	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
23	**4.1**	**Recent industrial land uses**	0	0	1	-	-
24	4.2	Current or recent petrol stations	0	0	0	0	-
24	4.3	Electricity cables	0	0	0	0	-
24	4.4	Gas pipelines	0	0	0	0	-
24	4.5	Sites determined as Contaminated Land	0	0	0	0	-

24	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
25	4.7	Regulated explosive sites	0	0	0	0	-
25	4.8	Hazardous substance storage/usage	0	0	0	0	-
25	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
25	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
25	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
26	4.12	Radioactive Substance Authorisations	0	0	0	0	-
26	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
26	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
26	4.15	Pollutant release to public sewer	0	0	0	0	-
26	4.16	List 1 Dangerous Substances	0	0	0	0	-
27	4.17	List 2 Dangerous Substances	0	0	0	0	-
27	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	1	0	-
27	4.19	Pollution inventory substances	0	0	0	0	-
27	4.20	Pollution inventory waste transfers	0	0	0	0	-
28	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
29	**5.1**	**Superficial aquifer**	Identified (within 500m)				
31	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
33	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
34	**5.4**	**Groundwater vulnerability- soluble rock risk**	Identified (within 0m)				
35	5.5	Groundwater vulnerability- local information	None (within 0m)				
36	**5.6**	**Groundwater abstractions**	0	0	0	0	2
37	5.7	Surface water abstractions	0	0	0	0	0
37	5.8	Potable abstractions	0	0	0	0	0
38	**5.9**	**Source Protection Zones**	1	0	0	0	-
38	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
39	**6.1**	**Water Network (OS MasterMap)**	9	12	12	-	-

42	6.2	Surface water features	1	7	6	-	-
42	6.3	WFD Surface water body catchments	1	-	-	-	-
43	6.4	WFD Surface water bodies	0	0	0	-	-
43	6.5	WFD Groundwater bodies	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
44	7.1	Risk of flooding from rivers and the sea	High (within 50m)				
45	7.2	Historical Flood Events	0	0	0	-	-
45	7.3	Flood Defences	0	0	0	-	-
45	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
45	7.5	Flood Storage Areas	0	0	0	-	-
46	7.6	Flood Zone 2	Identified (within 50m)				
47	7.7	Flood Zone 3	Identified (within 50m)				
Page	Section	Surface water flooding					
48	8.1	Surface water flooding	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding					
50	9.1	Groundwater flooding	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
51	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	2
52	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
52	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
52	10.4	Special Protection Areas (SPA)	0	0	0	0	0
52	10.5	National Nature Reserves (NNR)	0	0	0	0	0
53	10.6	Local Nature Reserves (LNR)	0	0	0	0	1
53	10.7	Designated Ancient Woodland	0	0	0	1	7
54	10.8	Biosphere Reserves	0	0	0	0	0
54	10.9	Forest Parks	0	0	0	0	0
54	10.10	Marine Conservation Zones	0	0	0	0	0
54	10.11	Green Belt	0	0	0	0	0
54	10.12	Proposed Ramsar sites	0	0	0	0	0

55	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
55	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
55	10.15	Nitrate Sensitive Areas	0	0	0	0	0
55	**10.16**	**Nitrate Vulnerable Zones**	4	0	0	0	7
57	**10.17**	**SSSI Impact Risk Zones**	1	-	-	-	-
58	**10.18**	**SSSI Units**	0	0	0	0	2
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
60	11.1	World Heritage Sites	0	0	0	-	-
60	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
60	11.3	National Parks	0	0	0	-	-
60	11.4	Listed Buildings	0	0	0	-	-
61	11.5	Conservation Areas	0	0	0	-	-
61	11.6	Scheduled Ancient Monuments	0	0	0	-	-
61	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
62	**12.1**	**Agricultural Land Classification**	Grade 2 (within 250m)				
63	12.2	Open Access Land	0	0	0	-	-
63	12.3	Tree Felling Licences	0	0	0	-	-
63	12.4	Environmental Stewardship Schemes	0	0	0	-	-
64	**12.5**	**Countryside Stewardship Schemes**	3	0	2	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
65	**13.1**	**Priority Habitat Inventory**	3	1	2	-	-
66	13.2	Habitat Networks	0	0	0	-	-
66	13.3	Open Mosaic Habitat	0	0	0	-	-
66	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
67	**14.1**	**10k Availability**	Identified (within 500m)				
68	**14.2**	**Artificial and made ground (10k)**	1	0	1	1	-
69	**14.3**	**Superficial geology (10k)**	1	0	0	1	-

70	14.4	Landslip (10k)	0	0	0	0	-
71	**14.5**	**Bedrock geology (10k)**	1	0	0	1	-
72	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
73	**15.1**	**50k Availability**	Identified (within 500m)				
74	15.2	Artificial and made ground (50k)	0	0	0	0	-
74	15.3	Artificial ground permeability (50k)	0	0	-	-	-
75	**15.4**	**Superficial geology (50k)**	1	0	0	0	-
76	**15.5**	**Superficial permeability (50k)**	Identified (within 50m)				
76	15.6	Landslip (50k)	0	0	0	0	-
76	15.7	Landslip permeability (50k)	None (within 50m)				
77	**15.8**	**Bedrock geology (50k)**	1	0	0	0	-
78	**15.9**	**Bedrock permeability (50k)**	Identified (within 50m)				
78	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
79	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence					
80	**17.1**	**Shrink swell clays**	Low (within 50m)				
81	**17.2**	**Running sands**	Very low (within 50m)				
82	**17.3**	**Compressible deposits**	Negligible (within 50m)				
83	**17.4**	**Collapsible deposits**	Very low (within 50m)				
84	**17.5**	**Landslides**	Very low (within 50m)				
85	**17.6**	**Ground dissolution of soluble rocks**	Very low (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
87	18.1	Natural cavities	0	0	0	0	-
88	18.2	BritPits	0	0	0	0	-
88	**18.3**	**Surface ground workings**	0	1	9	-	-
88	18.4	Underground workings	0	0	0	0	0
89	18.5	Historical Mineral Planning Areas	0	0	0	0	-

89	**18.6**	**Non-coal mining**	1	0	0	1	0
89	18.7	Mining cavities	0	0	0	0	0
90	18.8	JPB mining areas	None (within 0m)				
90	18.9	Coal mining	None (within 0m)				
90	18.10	Brine areas	None (within 0m)				
90	18.11	Gypsum areas	None (within 0m)				
90	18.12	Tin mining	None (within 0m)				
91	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
92	**19.1**	**Radon**	Less than 1% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
93	**20.1**	**BGS Estimated Background Soil Chemistry**	5	0	-	-	-
93	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
94	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
95	21.1	Underground railways (London)	0	0	0	-	-
95	21.2	Underground railways (Non-London)	0	0	0	-	-
96	21.3	Railway tunnels	0	0	0	-	-
96	**21.4**	**Historical railway and tunnel features**	0	0	5	-	-
96	21.5	Royal Mail tunnels	0	0	0	-	-
97	**21.6**	**Historical railways**	1	0	0	-	-
97	21.7	Railways	0	0	0	-	-
97	21.8	Crossrail 1	0	0	0	0	-
97	21.9	Crossrail 2	0	0	0	0	-
97	21.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 05/04/2020

Site Area: 9.82ha

Recent site history - 2017 aerial photograph

Capture Date: 09/04/2017

Site Area: 9.82ha

Recent site history - 2013 aerial photograph

Capture Date: 01/08/2013

Site Area: 9.82ha

Recent site history - 2007 aerial photograph

Capture Date: 22/05/2007

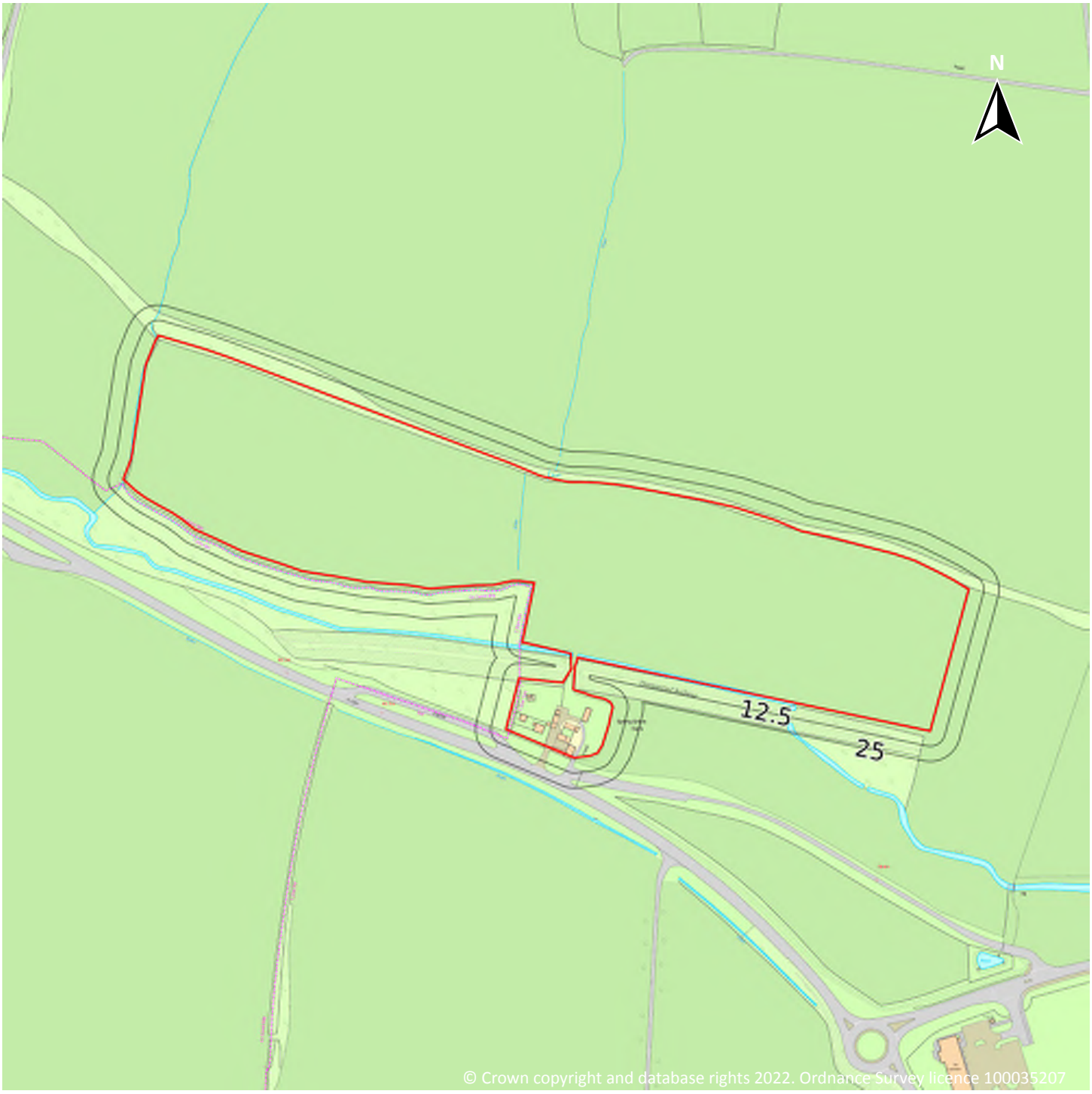
Site Area: 9.82ha

Recent site history - 1999 aerial photograph

Capture Date: 18/07/1999

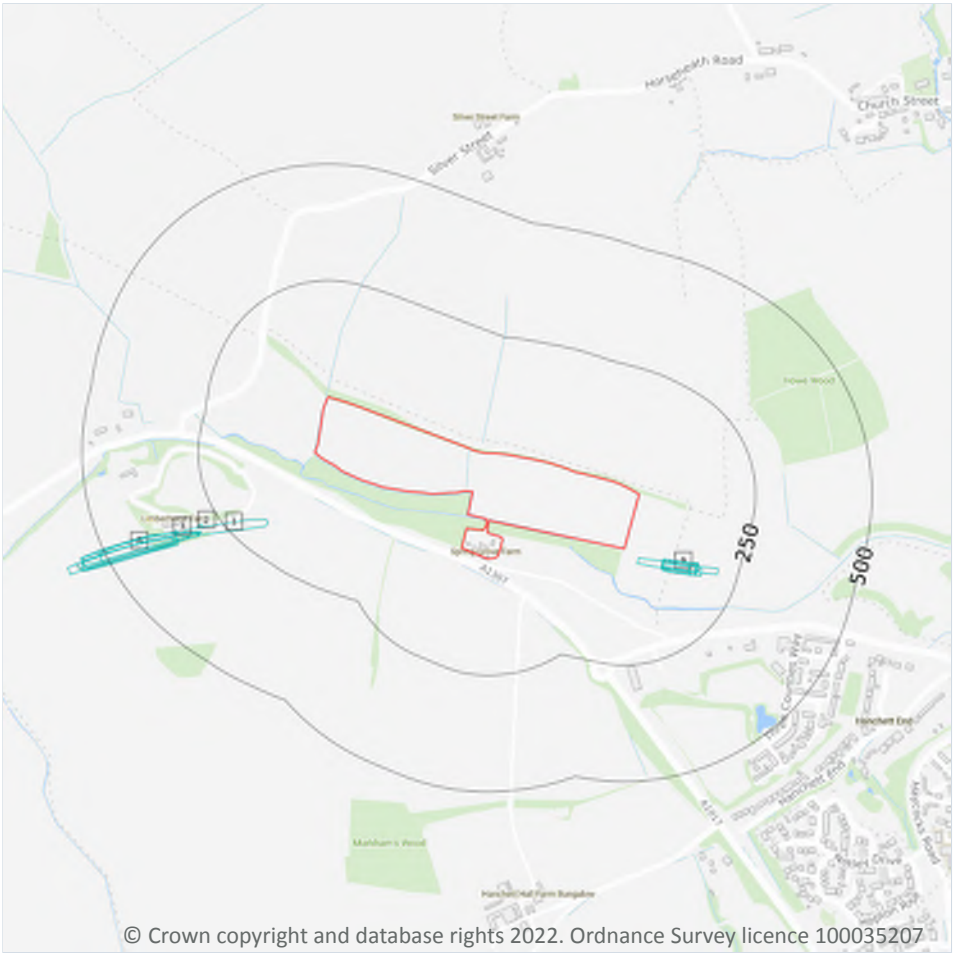
Site Area: 9.82ha

OS MasterMap site plan



Site Area: 9.82ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

1.1 Historical industrial land uses

Records within 500m	18

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
A	37m SE	Cuttings	1885	2091658

ID	Location	Land use	Dates present	Group ID
A	87m E	Cuttings	1924	2117467
A	88m E	Cuttings	1901	2077648
A	88m E	Cuttings	1949 - 1970	2091950
A	88m E	Cuttings	1924	2111365
A	89m E	Cuttings	1919	2088561
A	89m E	Cuttings	1949	2112175
A	144m E	Cuttings	1946	2071169
A	144m E	Cuttings	1924	2114558
1	177m SW	Railway Sidings	1885	2062244
2	288m SW	Railway Building	1949	2051994
B	299m SW	Cuttings	1924 - 1949	2091695
B	299m SW	Cuttings	1901	2099928
B	325m SW	Cuttings	1885	2085250
3	340m SW	Railway Building	1949	2051995
B	348m SW	Cuttings	1982	2078292
B	351m SW	Cuttings	1949 - 1970	2065921
B	356m SW	Cuttings	1919	2120092

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**0**

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 un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	0

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 un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

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 un-grouped 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 un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

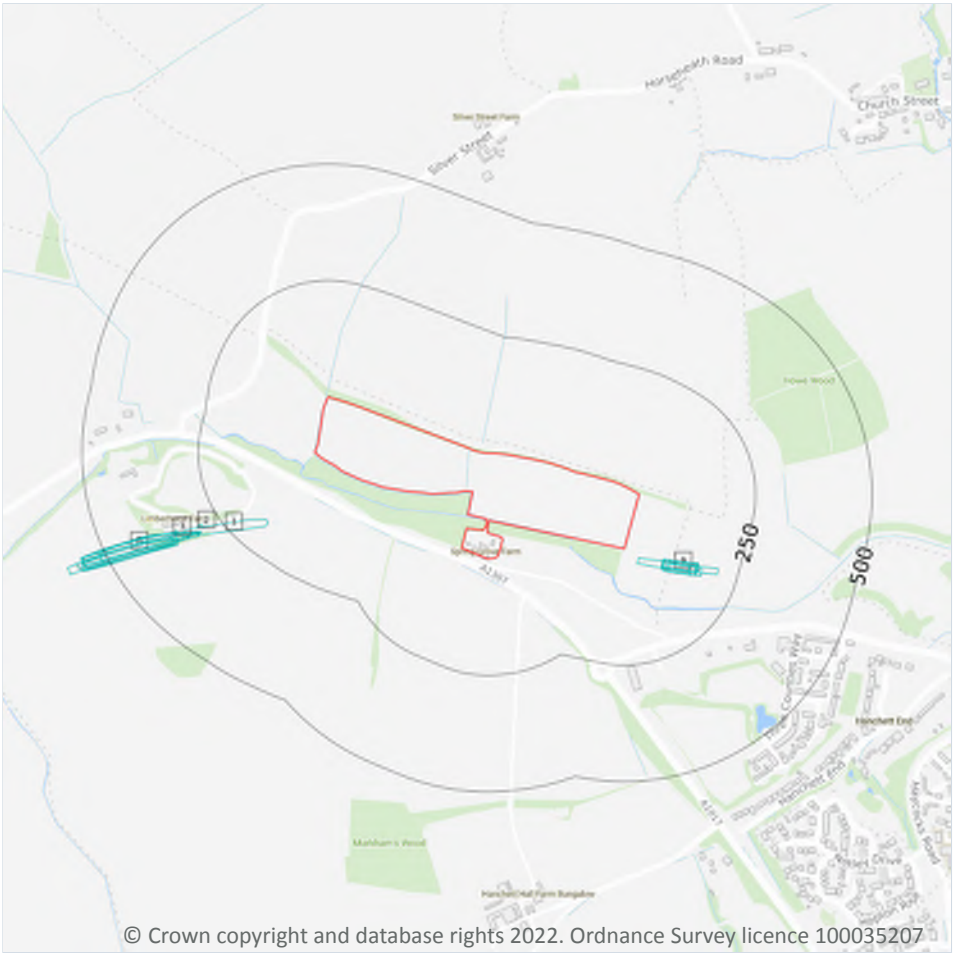
1.6 Historical military land

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



Site Outline

Search buffers in metres (m)

Historical industrial land uses

2.1 Historical industrial land uses

Records within 500m	22

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 17**

ID	Location	Land Use	Date	Group ID
A	37m SE	Cuttings	1885	2091658
A	87m E	Cuttings	1924	2117467
A	88m E	Cuttings	1949	2091950

ID	Location	Land Use	Date	Group ID
A	88m E	Cuttings	1924	2111365
A	88m E	Cuttings	1901	2077648
A	89m E	Cuttings	1949	2112175
A	89m E	Cuttings	1919	2088561
A	100m E	Cuttings	1970	2091950
A	144m E	Cuttings	1946	2071169
A	144m E	Cuttings	1924	2114558
1	177m SW	Railway Sidings	1885	2062244
2	288m SW	Railway Building	1949	2051994
B	299m SW	Cuttings	1949	2091695
B	299m SW	Cuttings	1924	2091695
B	299m SW	Cuttings	1901	2099928
B	307m SW	Cuttings	1924	2091695
B	325m SW	Cuttings	1885	2085250
3	340m SW	Railway Building	1949	2051995
B	348m SW	Cuttings	1982	2078292
B	351m SW	Cuttings	1970	2065921
B	356m SW	Cuttings	1949	2065921
B	356m SW	Cuttings	1919	2120092

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**0**

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'.

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	0

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'.

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.

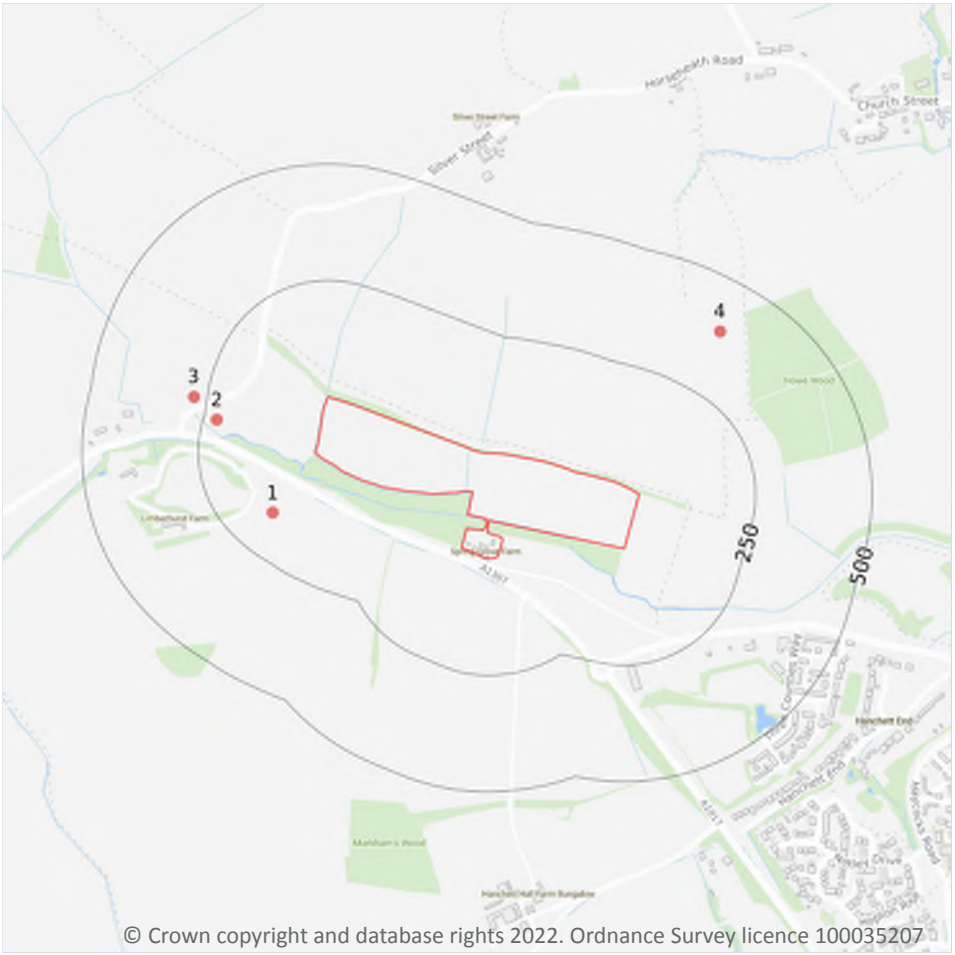
2.5 Historical garages

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



Site Outline

Search buffers in metres (m)

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

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

3.5 Historical waste sites

Records within 500m	0

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

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

3.6 Licensed waste sites

Records within 500m	0

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

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

3.7 Waste exemptions

Records within 500m	4

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.

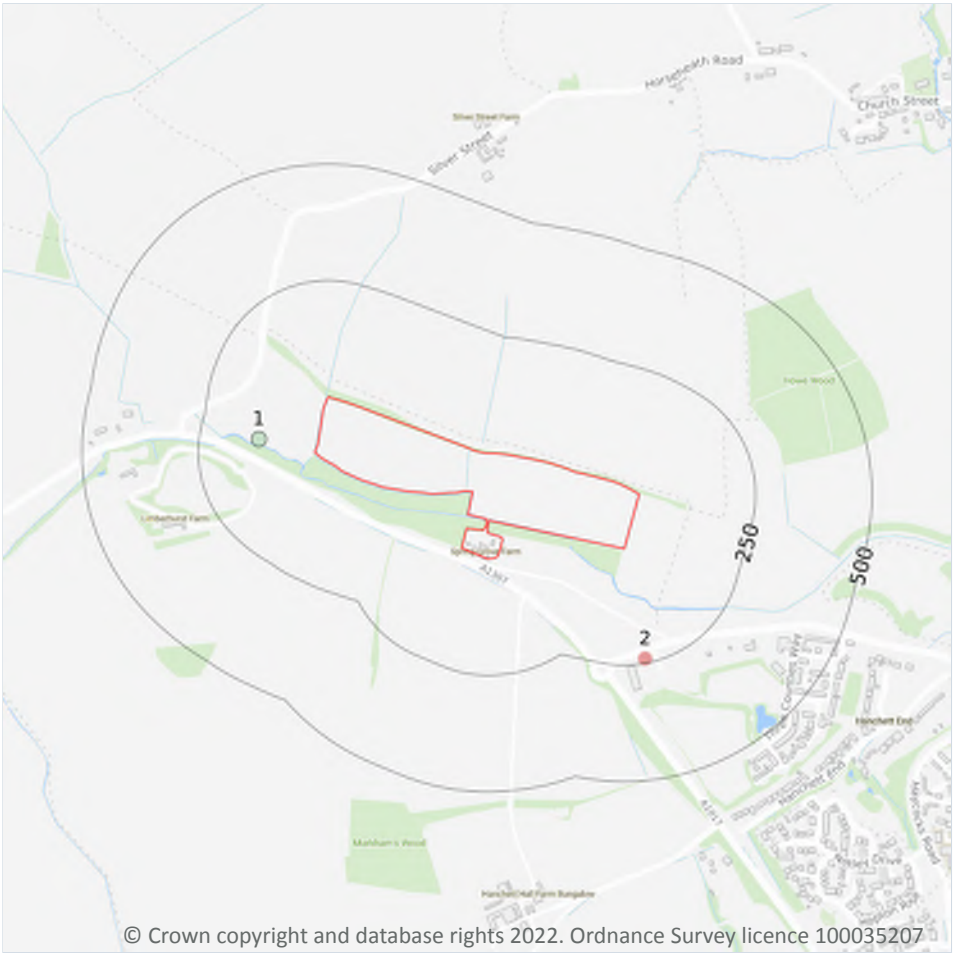
Features are displayed on the Waste and landfill map on **page 20**

ID	Location	Site	Reference	Category	Sub-Category	Description
1	159m SW	-	WEX290264	Storing waste exemption	On a farm	Storage of sludge

ID	Location	Site	Reference	Category	Sub-Category	Description
2	222m W	-	WEX131335	Storing waste exemption	On a farm	Storage of sludge
3	280m W	-	WEX131373	Storing waste exemption	On a farm	Storage of sludge
4	389m NE	-	WEX227669	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

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	1

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 23**

ID	Location	Company	Address	Activity	Category
2	241m S	Electricity Sub Station	Suffolk, CB9	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	0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

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

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

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

Records within 500m	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 23**

ID	Location	Details	
1	124m W	Incident Date: 27/10/2002 Incident Identification: 116933 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m	0

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

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

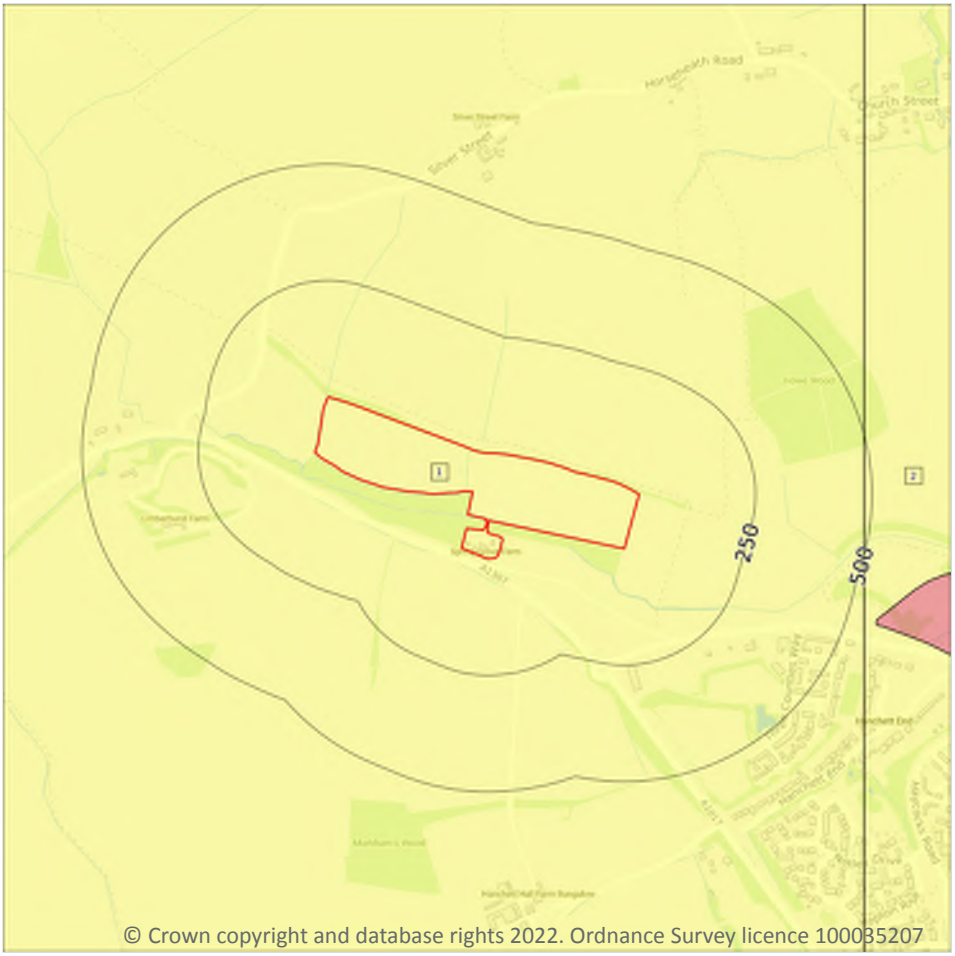
4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive
- Unknown

5.1 Superficial aquifer

Records within 500m	2

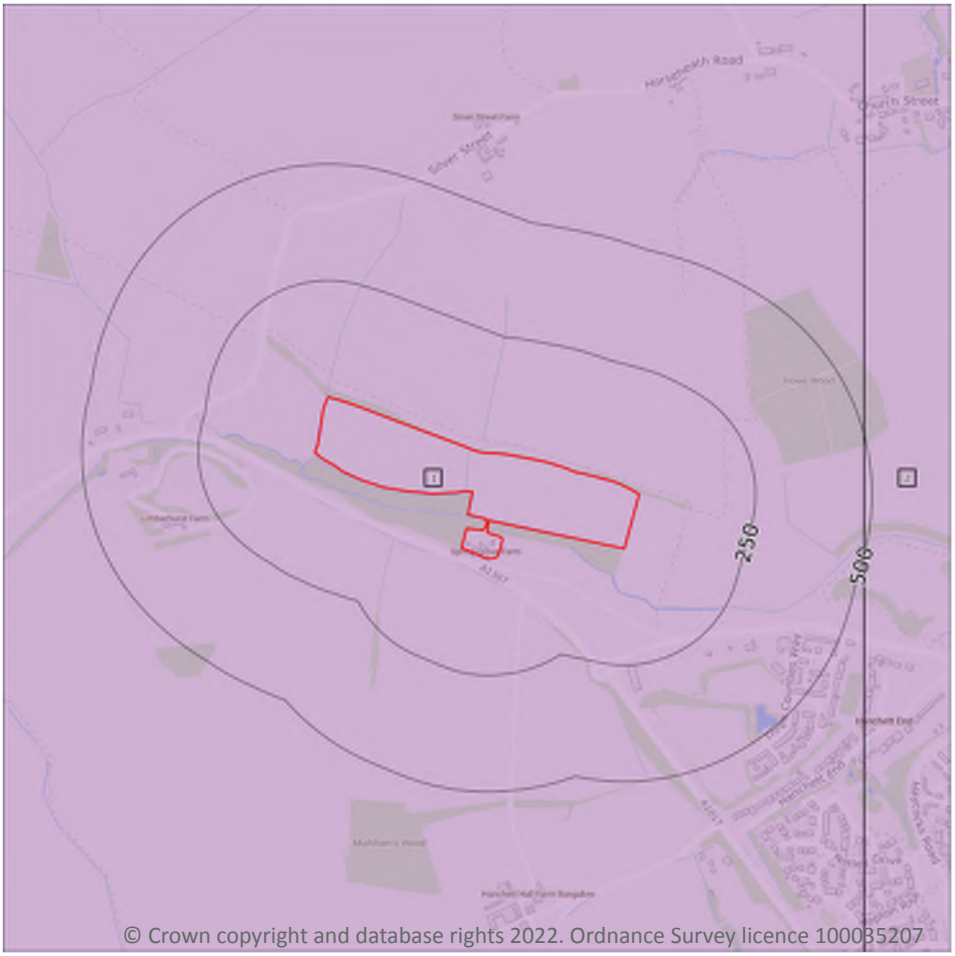
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 29**

ID	Location	Designation	Description
1	**On site**	**Secondary Undifferentiated**	**Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type**
2	483m E	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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

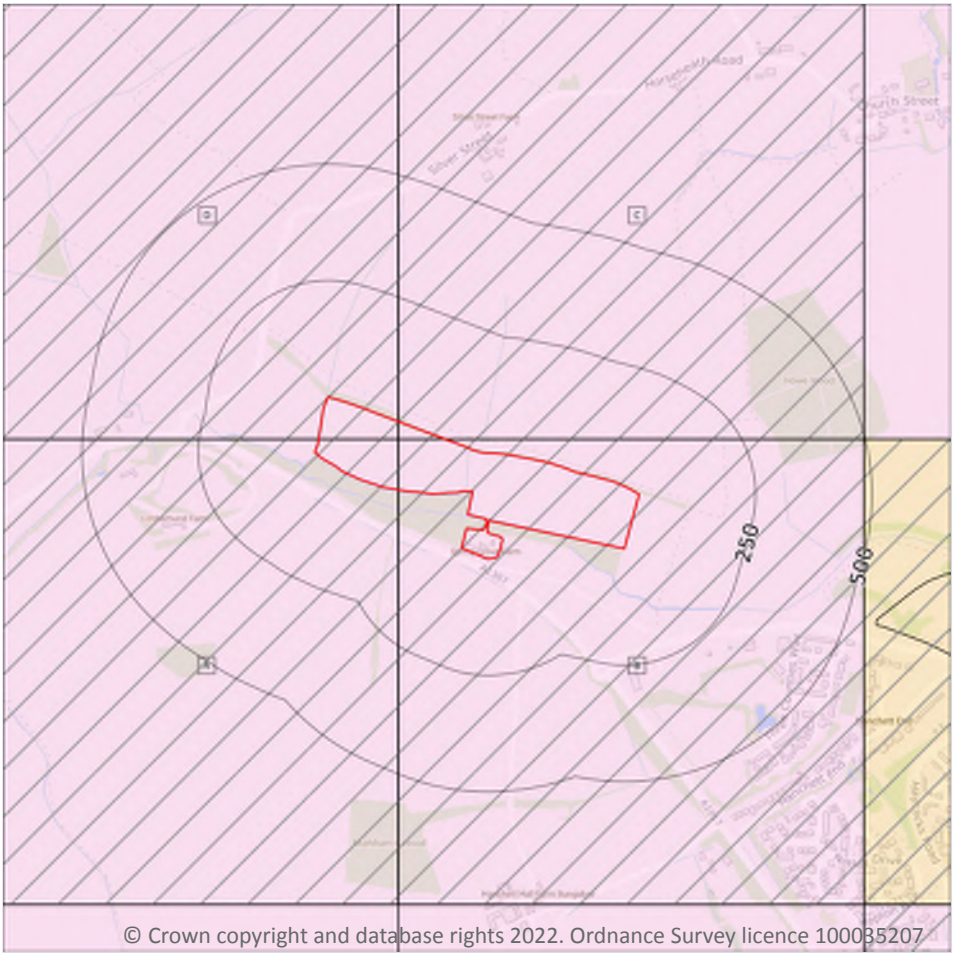
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 31**

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	483m E	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

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

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability

- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	4

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 33**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
A	**On site**	**Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Intermediate Infiltration value: 40-70% Dilution value: <300mm/year**	**Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures**
B	**On site**	**Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Intermediate Infiltration value: 40-70% Dilution value: <300mm/year**	**Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures**
C	**On site**	**Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Intermediate Infiltration value: 40-70% Dilution value: <300mm/year**	**Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures**
D	**On site**	**Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Intermediate Infiltration value: 40-70% Dilution value: <300mm/year**	**Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low 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	**4**

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
A	**Significant soluble rocks are likely to be present. Problems unlikely except with considerable surface or subsurface water flow.**	**25.0%**

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
B	**Significant soluble rocks are likely to be present. Problems unlikely except with considerable surface or subsurface water flow.**	**36.0%**
C	**Significant soluble rocks are likely to be present. Problems unlikely except with considerable surface or subsurface water flow.**	**1.0%**
D	**Significant soluble rocks are likely to be present. Problems unlikely except with considerable surface or subsurface water flow.**	**28.000000000000004%**

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

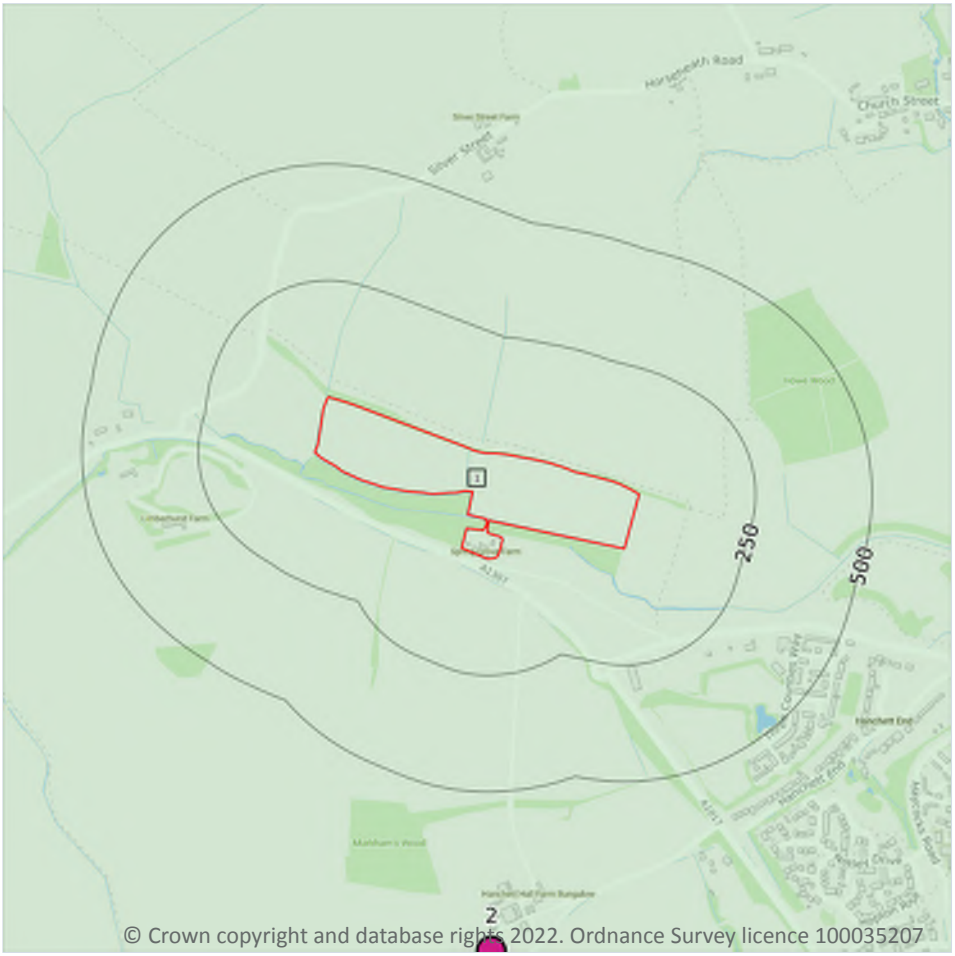
5.5 Groundwater vulnerability- local information

Records on site	**0**

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



Site Outline

Search buffers in metres (m)

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

5.6 Groundwater abstractions

Records within 2000m	2

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 36**

ID	Location	Details	
2	842m S	Status: Historical Licence No: 8/36/11/*G/0039 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: HANCHETT HALL, WITHERSFIELD. Data Type: Point Name: HAYLOCK Easting: 564200 Northing: 245900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/03/1966 Version End Date: -
-	1647m N	Status: Historical Licence No: 8/36/11/*G/0045 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: EXHIBITION FARM, WITHERSFIELD. Data Type: Point Name: RICKETT Easting: 564200 Northing: 248700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/03/1966 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	0

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.

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

5.9 Source Protection Zones

Records within 500m	1

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 36**

ID	Location	Type	Description
1	**On site**	**3**	**Total catchment**

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

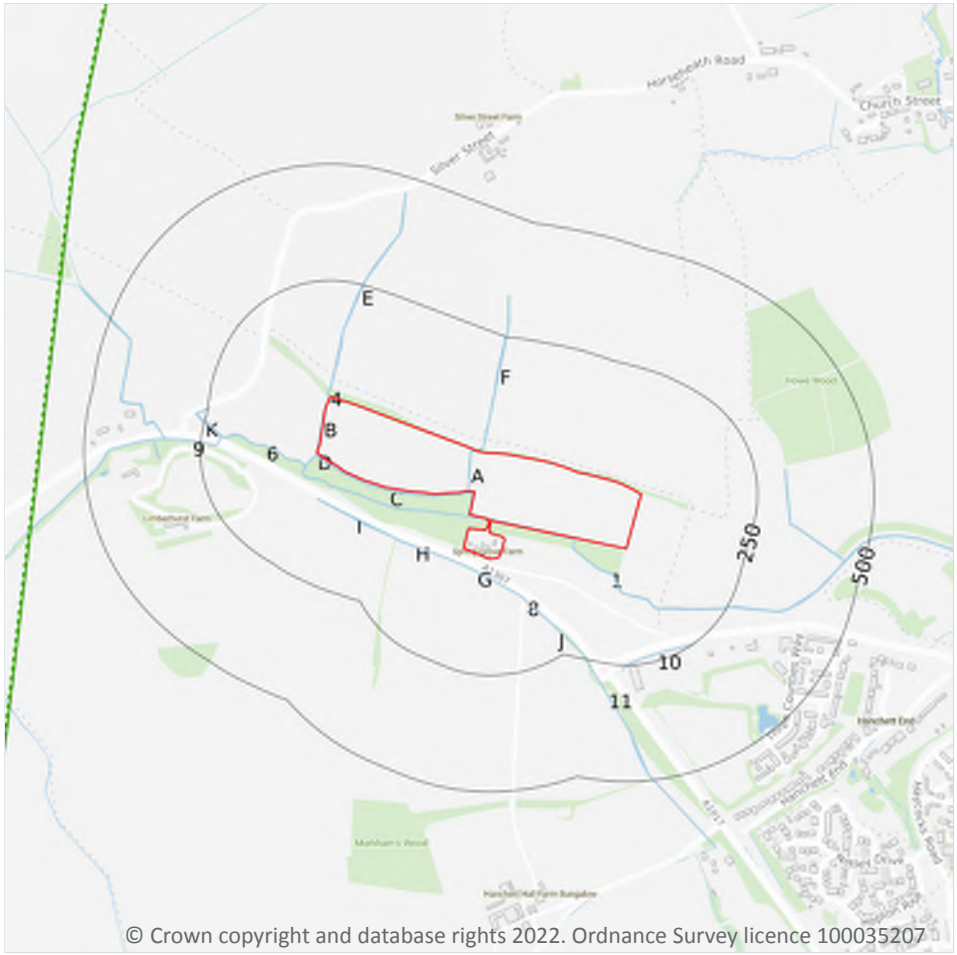
5.10 Source Protection Zones (confined aquifer)

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	**33**

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

Features are displayed on the Hydrology map on **page 39**

ID	Location	Type of water feature	Ground level	Permanence	Name
1	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
A	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
A	**On site**	**Inland river not influenced by normal tidal action.**	**Underground**	**Watercourse contains water year round (in normal circumstances)**	**-**
A	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
A	**On site**	**Inland river not influenced by normal tidal action.**	**Underground**	**Watercourse contains water year round (in normal circumstances)**	**-**
A	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
A	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
B	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
A	1m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	3m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	3m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	5m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	9m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
4	11m NW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
E	13m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	14m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	15m N	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
F	19m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	34m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
6	38m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
H	76m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
I	79m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
8	96m SE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
H	102m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
J	123m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
K	206m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
K	206m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
9	214m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
10	234m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
11	240m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
K	243m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
K	246m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	14

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

Features are displayed on the Hydrology map on **page 39**

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 39**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River**	**Stour Brook**	**GB105036040950**	**Stour OC**	**Essex Combined**

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

6.4 WFD Surface water bodies

Records identified	**1**

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

Features are displayed on the Hydrology map on **page 39**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	941m E	River	Stour Brook	GB105036040950	Moderate	Fail	Moderate	2019

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

6.5 WFD Groundwater bodies

Records on site	**1**

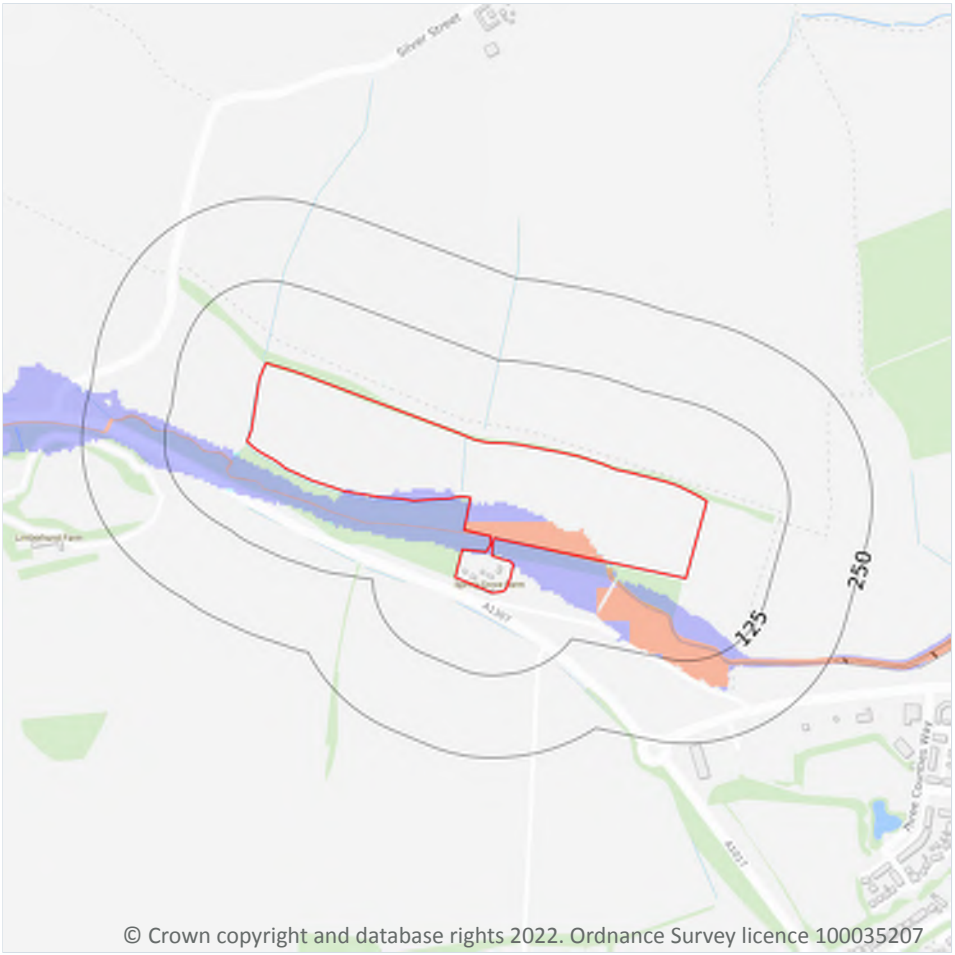
Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on **page 39**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**North Essex Chalk**	**GB40501G400700**	**Poor**	**Poor**	**Poor**	**2019**

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

7 River and coastal flooding



Site Outline

Search buffers in metres (m)

River and coastal flooding:

- High
- Medium
- Low
- Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m	12

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

Features are displayed on the River and coastal flooding map on **page 44**

Distance	Flood risk category
On site	**High**
0 - 50m	High

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.

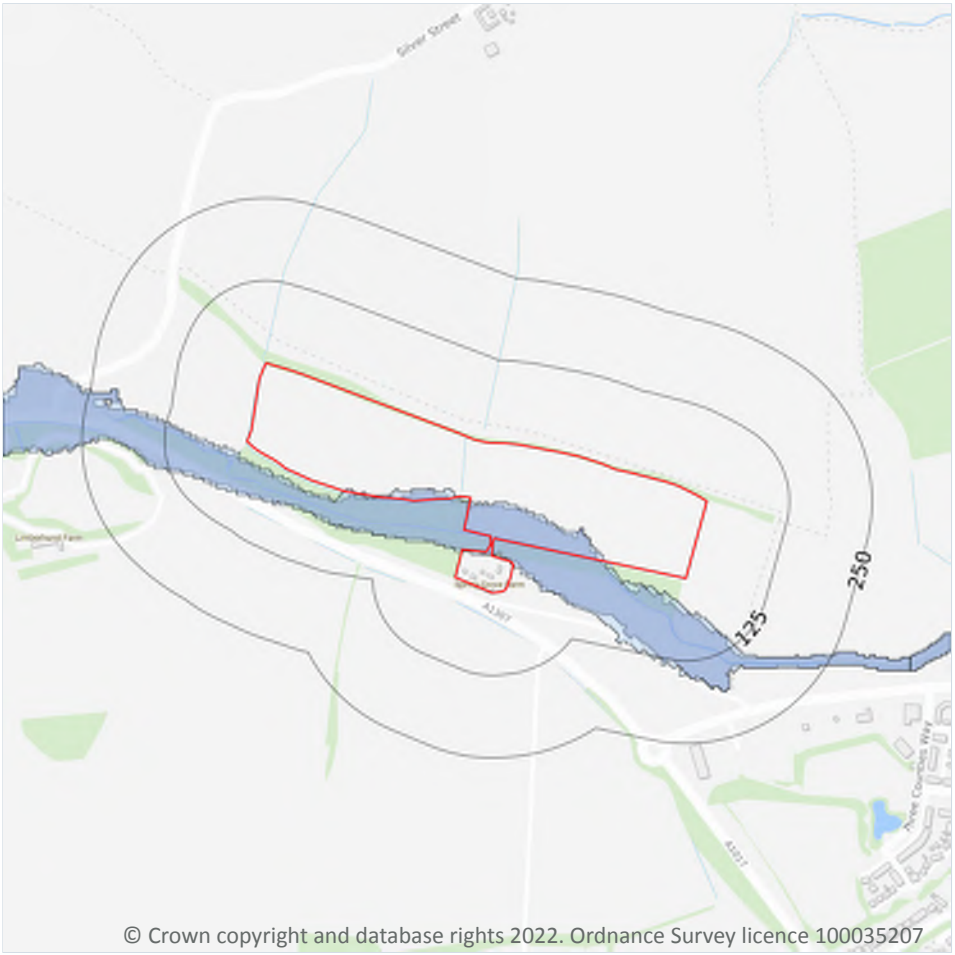
7.5 Flood Storage Areas

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



Site Outline

Search buffers in metres (m)

Flood zone 2

Flood zone 3

7.6 Flood Zone 2

Records within 50m	1

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.

Features are displayed on the River and coastal flooding map on **page 44**

Location	Type
On site	**Zone 2 - (Fluvial /Tidal Models)**

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

7.7 Flood Zone 3

Records within 50m	1

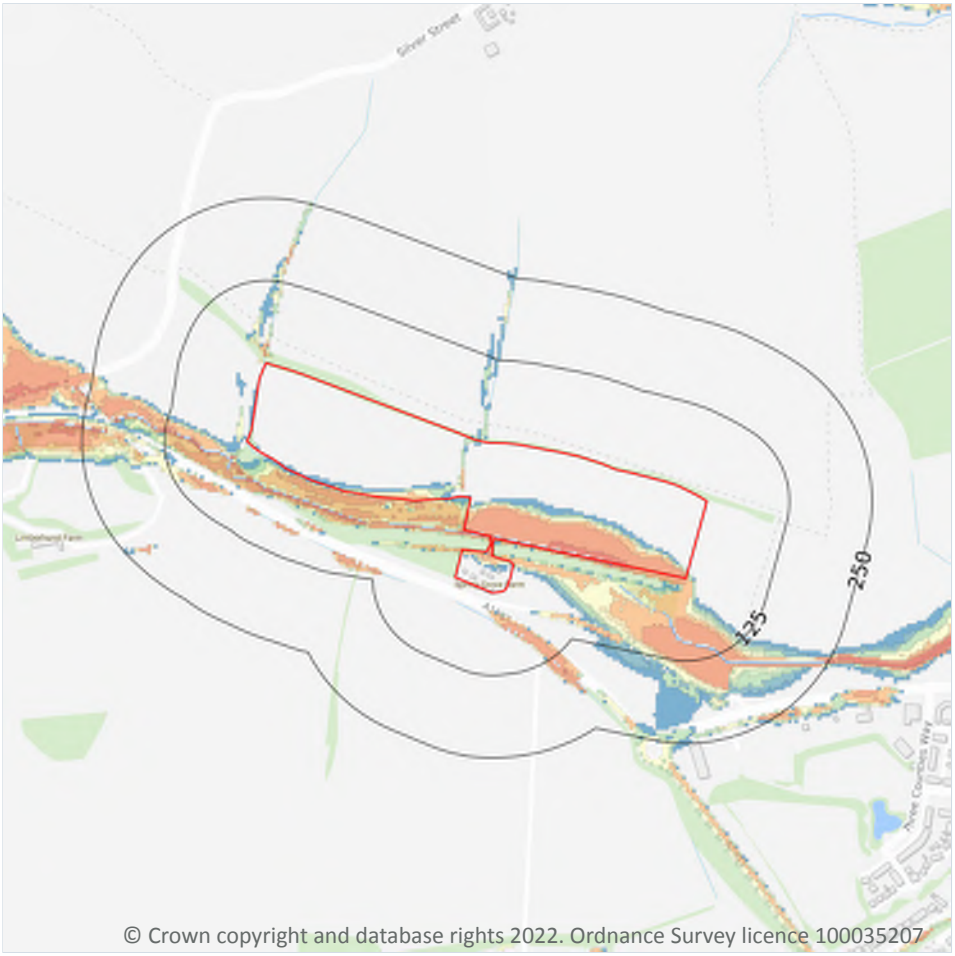
Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

Features are displayed on the River and coastal flooding map on **page 44**

Location	Type
On site	**Zone 3 - (Fluvial Models)**

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

8 Surface water flooding



Site Outline

Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site	**1 in 30 year, Greater than 1.0m**
Highest risk within 50m	**1 in 30 year, Greater than 1.0m**

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

Features are displayed on the Surface water flooding map on **page 48**

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	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Greater than 1.0m
1 in 30 year	Greater than 1.0m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding

Site Outline

Search buffers in metres (m)

High

Moderate - High

Moderate

Low

Negligible

9.1 Groundwater flooding

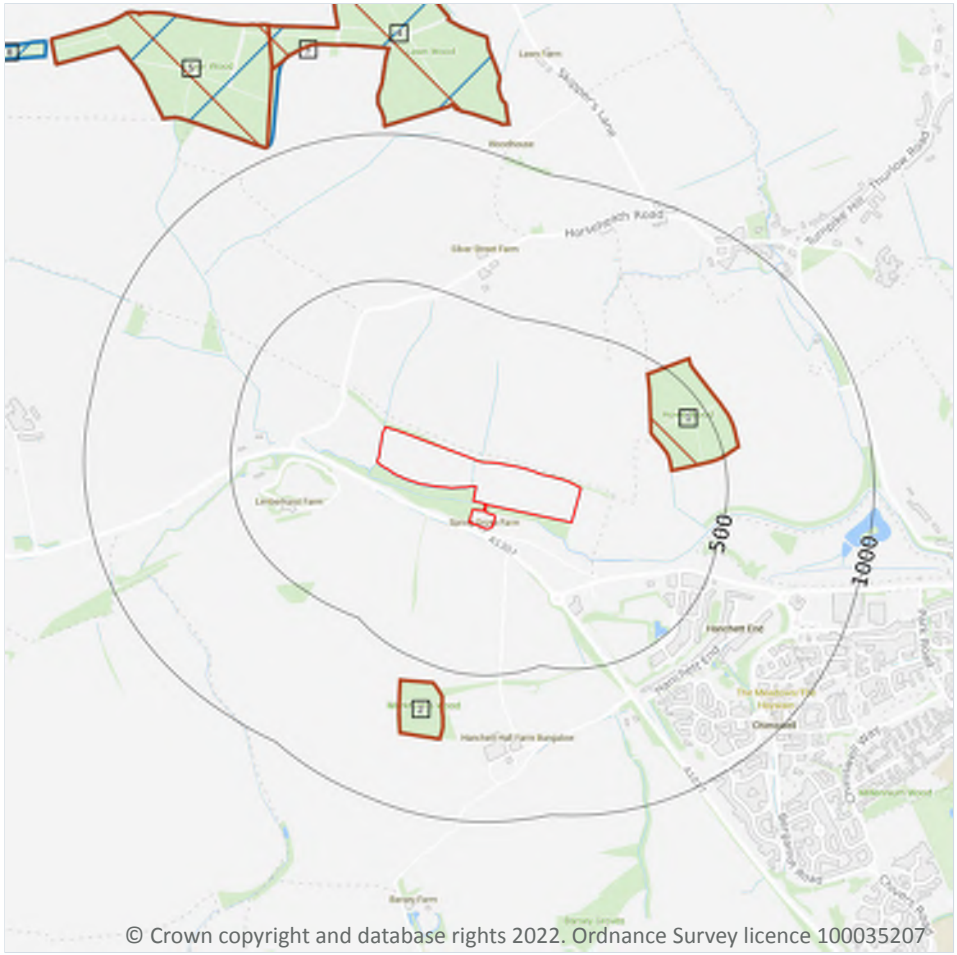
Highest risk on site	**Low**
Highest risk within 50m	**Low**

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

Features are displayed on the Groundwater flooding map on **page 50**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

Sites of Special Scientific Interest (SSSI)

Local Nature Reserves (LNR)

Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	2

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

Features are displayed on the Environmental designations map on **page 51**

ID	Location	Name	Data source
3	1027m N	Over and Lawn Woods	Natural England

ID	Location	Name	Data source
8	1717m NW	Over and Lawn Woods	Natural England

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	1

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

Features are displayed on the Environmental designations map on **page 51**

ID	Location	Name	Data source
-	1708m E	Haverhill Railway Walks	Natural England

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

10.7 Designated Ancient Woodland

Records within 2000m	8

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 51**

ID	Location	Name	Woodland Type
1	304m NE	Howe Wood	Ancient & Semi-Natural Woodland
2	555m S	Markhams Wood	Ancient & Semi-Natural Woodland
4	1027m N	Lawn Wood	Ancient & Semi-Natural Woodland
5	1037m NW	Over Wood	Ancient & Semi-Natural Woodland
-	1535m W	Hare Wood	Ancient & Semi-Natural Woodland
-	1593m NW	Hare Wood	Ancient Replanted Woodland
-	1750m N	Littley Wood	Ancient Replanted Woodland
-	1788m NW	Hare Wood	Ancient Replanted Woodland

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

10.8 Biosphere Reserves

Records within 2000m	0

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

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

10.9 Forest Parks

Records within 2000m	0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

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

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

10.11 Green Belt

Records within 2000m	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	11

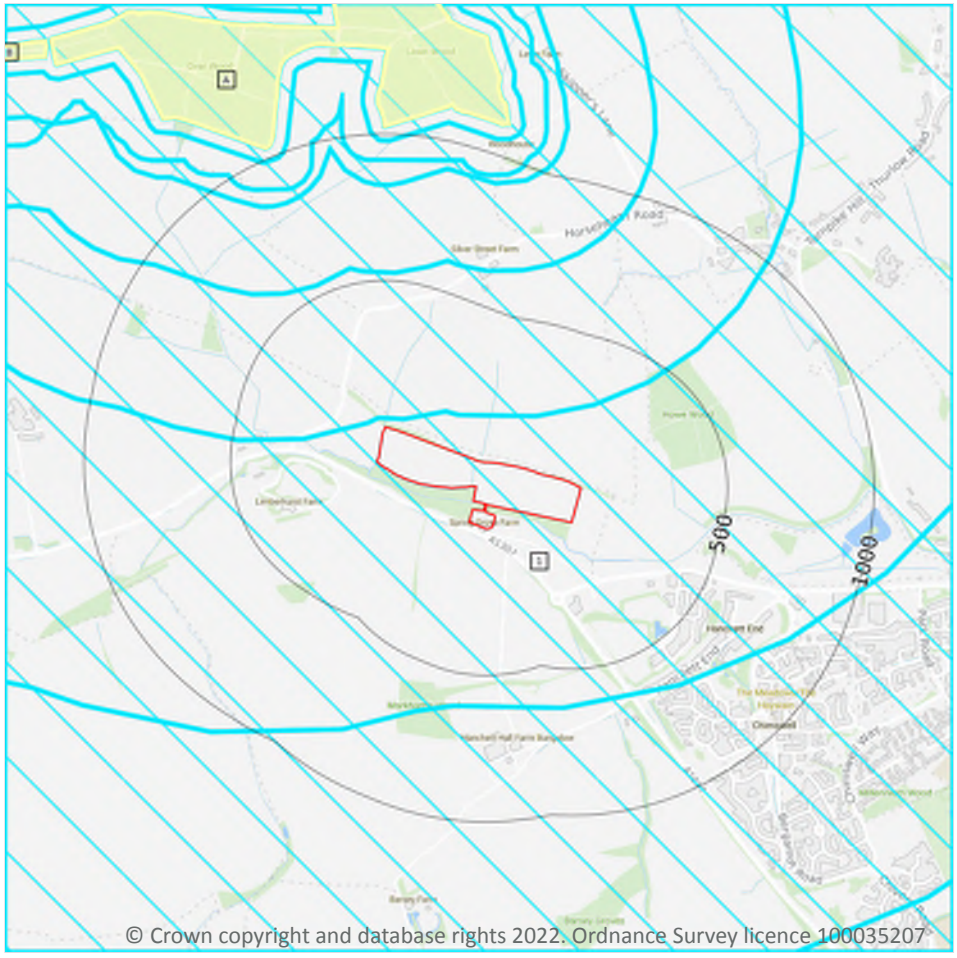
Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	**Sandlings and Chelmsford**	**Groundwater**	**78**	**Existing**

Location	Name	Type	NVZ ID	Status
On site	**Lower Stour NVZ**	**Surface Water**	**424**	**Existing**
On site	**Sandlings and Chelmsford**	**Groundwater**	**78**	**Existing**
On site	**Lower Stour NVZ**	**Surface Water**	**424**	**Existing**
760m SE	Lower Stour NVZ	Surface Water	424	Existing
760m SE	Sandlings and Chelmsford	Groundwater	78	Existing
767m S	Lower Stour NVZ	Surface Water	424	Existing
767m S	Sandlings and Chelmsford	Groundwater	78	Existing
1139m NW	Anglian Chalk	Groundwater	71	Existing
1139m NW	Ely Ouse and Cut-off channel NVZ	Surface Water	390	Existing
1975m SW	Anglian Chalk	Groundwater	71	Existing

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site	1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 57**

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

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	**2**

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

Features are displayed on the SSSI Impact Zones and Units map on **page 57**

ID: A
Location: 1027m N
SSSI name: Over and Lawn Woods
Unit name: Wood
Broad habitat: Broadleaved, Mixed And Yew Woodland - Lowland
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Lowland mixed deciduous woodland	Unfavourable - Recovering	07/06/2011

ID: B
Location: 1717m NW
SSSI name: Over and Lawn Woods
Unit name: Wood
Broad habitat: Broadleaved, Mixed And Yew Woodland - Lowland
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Lowland mixed deciduous woodland	Unfavourable - Recovering	07/06/2011

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	0

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.

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

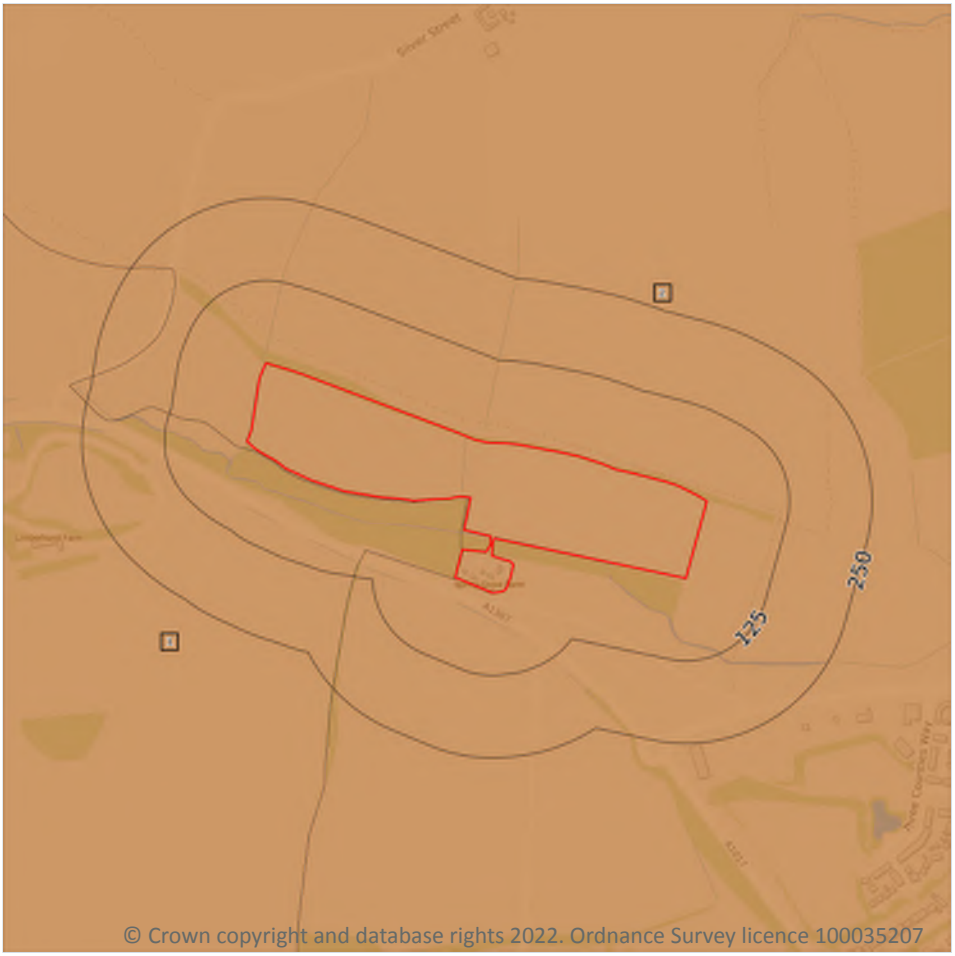
11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	2

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 62**

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 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.

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

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

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

12.3 Tree Felling Licences

Records within 250m	0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	**5**

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.

Location	Reference	Scheme	Start Date	End Date
On site	**497081**	**Countryside Stewardship (Middle Tier)**	**01/01/2018**	**31/12/2022**
On site	**355743**	**Countryside Stewardship (Middle Tier)**	**01/01/2017**	**31/12/2021**
On site	**497081**	**Countryside Stewardship (Middle Tier)**	**01/01/2018**	**31/12/2022**
74m SW	355743	Countryside Stewardship (Middle Tier)	01/01/2017	31/12/2021
168m W	355743	Countryside Stewardship (Middle Tier)	01/01/2017	31/12/2021

This data is sourced from Natural England.

13 Habitat designations

Site Outline

Search buffers in metres (m)

Priority Habitat Inventory
Open Mosaic Habitat
Limestone Pavement Orders

Habitat Networks

Primary Habitat
Restorable Habitat
Associated Habitats
Habitat Restoration-Creation
Network Enhancement Zone 1
Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m	**6**

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 65**

ID	Location	Main Habitat	Other habitats
1	**On site**	**Deciduous woodland**	**Main habitat: DWOOD (INV > 50%)**
2	**On site**	**Deciduous woodland**	**Main habitat: DWOOD (INV > 50%)**
3	**On site**	**Deciduous woodland**	**Main habitat: DWOOD (INV > 50%)**
4	22m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

ID	Location	Main Habitat	Other habitats
5	127m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
6	247m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

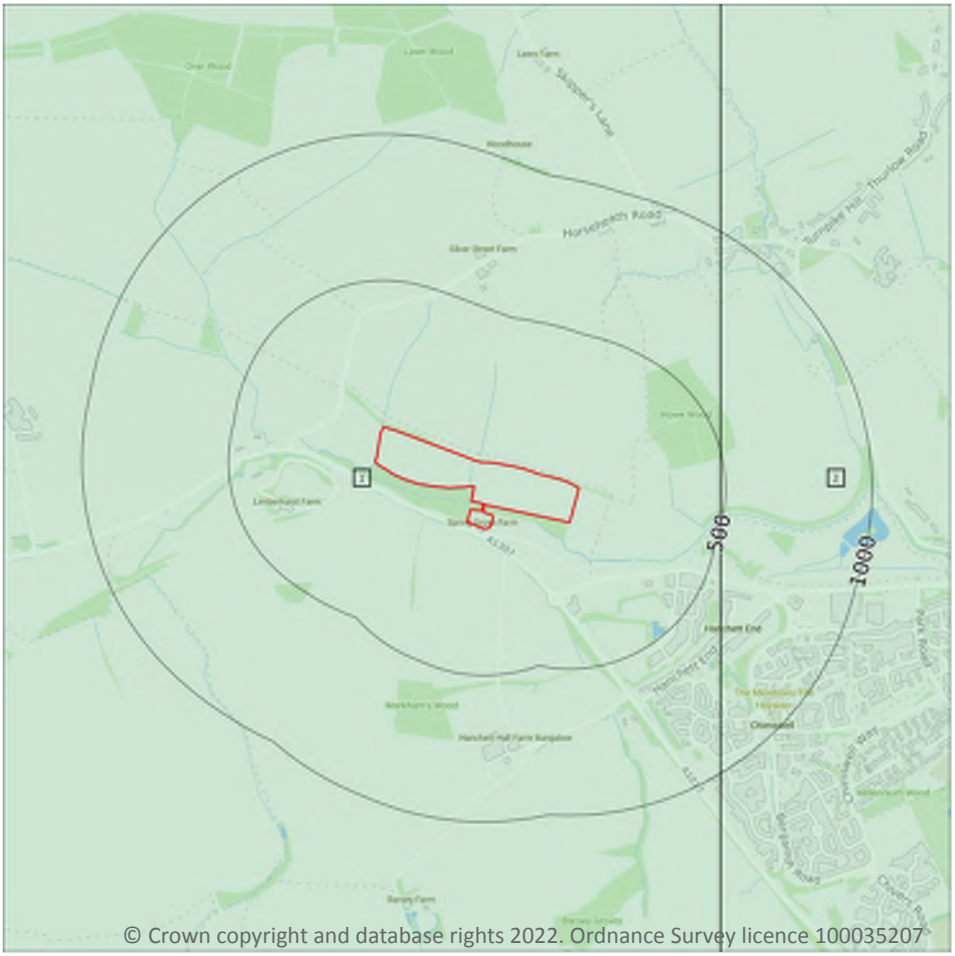
13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	2

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 67**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**TL64NW**
2	483m E	Full	Full	Full	No coverage	TL64NE

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 **3**

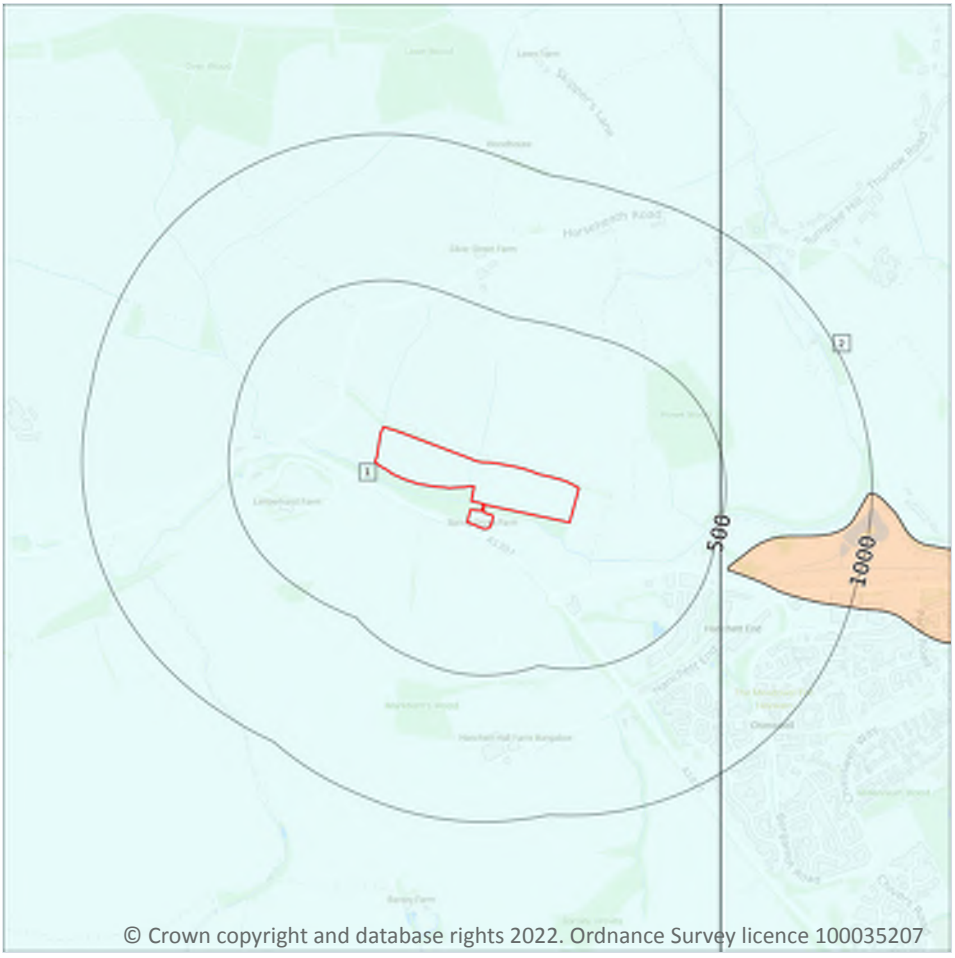
Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 68**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**MGR-ARTDP**	**Made Ground (Undivided)**	**Artificial Deposit**
2	216m SW	WGR-VOID	Worked Ground (Undivided)	Void
3	296m S	WGR-VOID	Worked Ground (Undivided)	Void

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m	2

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 69**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**LOFT-DMTN**	**Lowestoft Formation - Diamicton**	**Diamicton**
2	483m E	LOFT-DMTN	Lowestoft Formation - Diamicton	Diamicton

This data is sourced from the British Geological Survey.

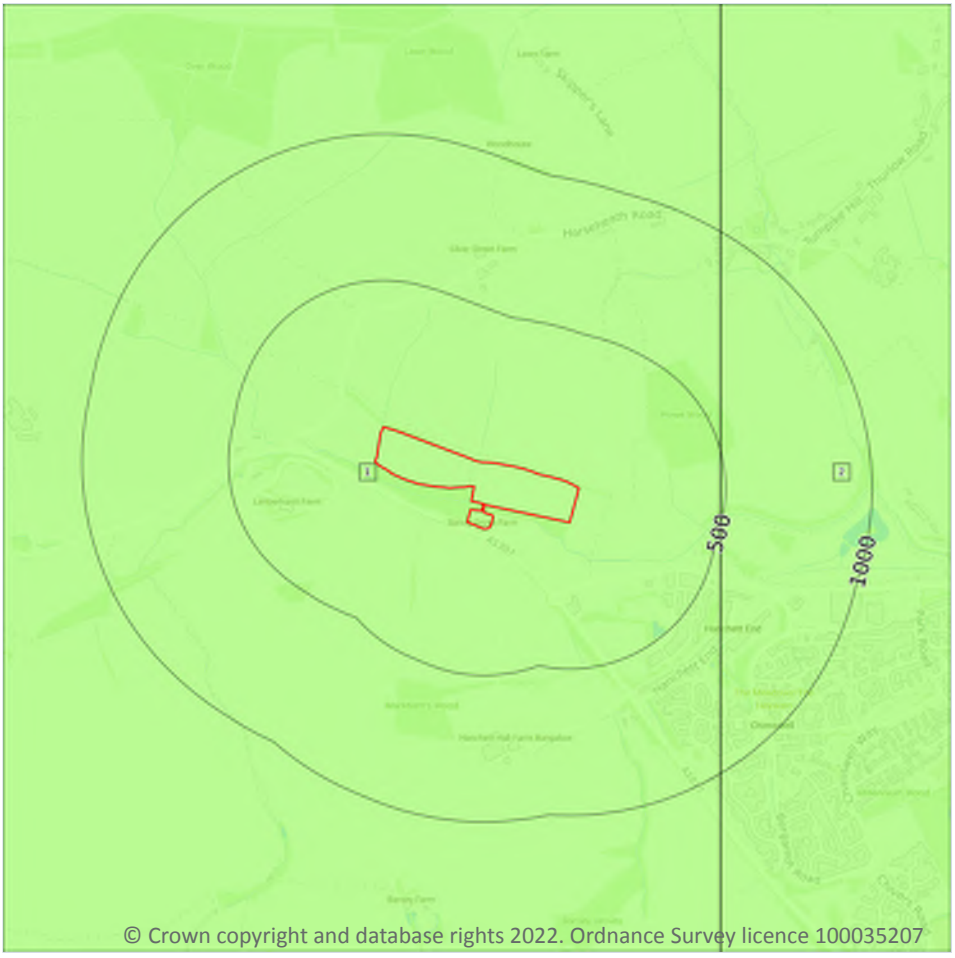
14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m **2**

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 71**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**LESE-CHLK**	**Lewes Nodular Chalk Formation And Seaford Chalk Formation (undifferentiated) - Chalk**	**Santonian Age - Turonian Age**
2	483m E	LESE-CHLK	Lewes Nodular Chalk Formation And Seaford Chalk Formation (undifferentiated) - Chalk	Santonian Age - Turonian Age

This data is sourced from the British Geological Survey.

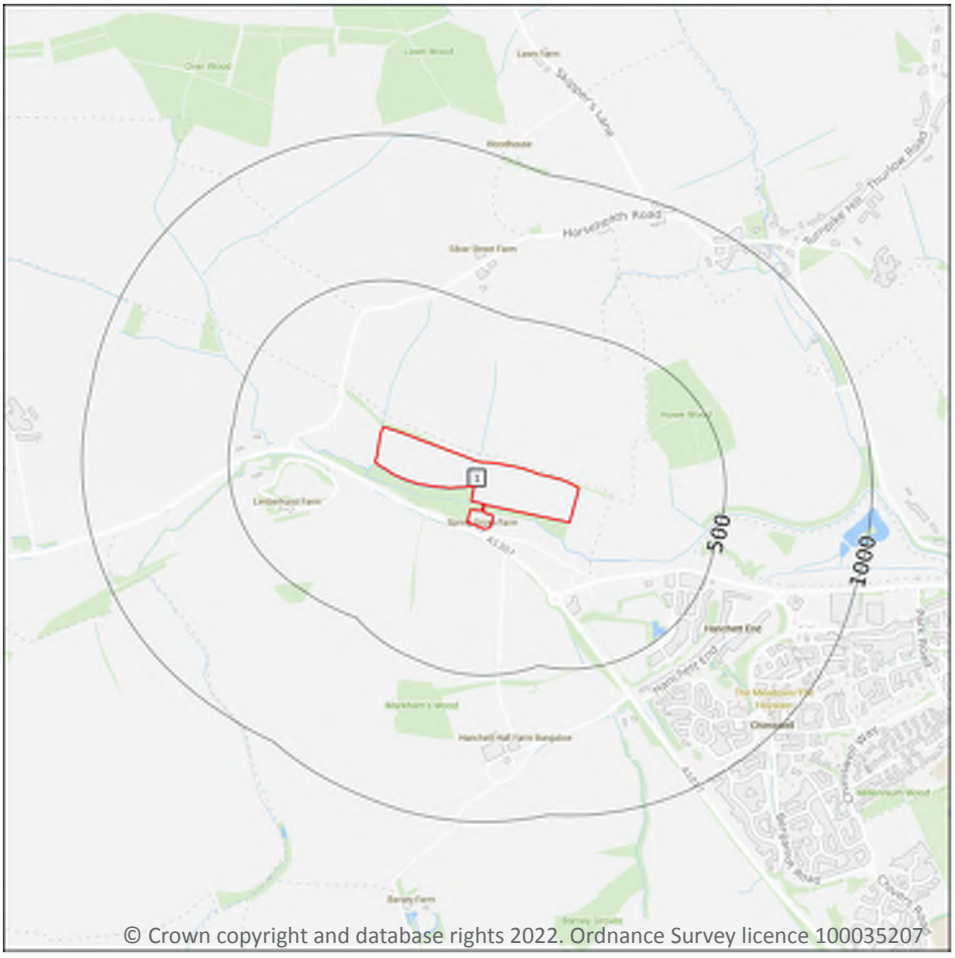
14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 73**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**EW205_saffron_walden_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.

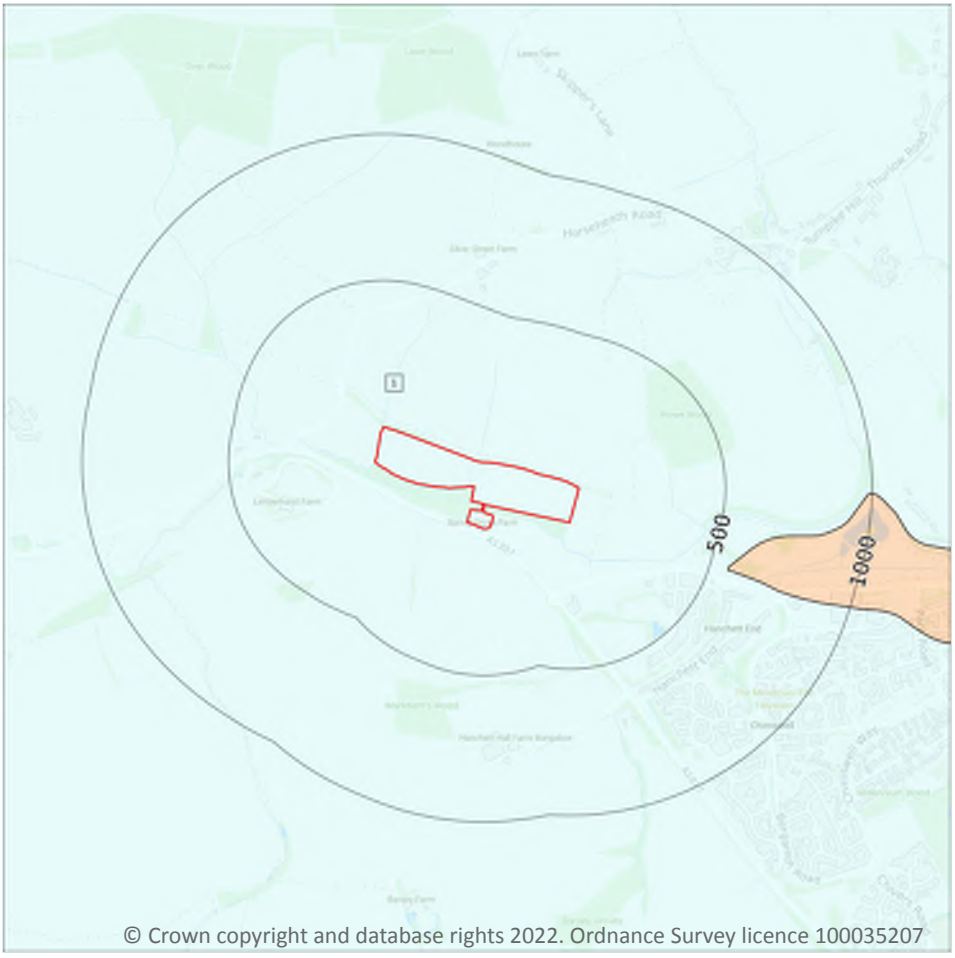
15.3 Artificial ground permeability (50k)

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	1

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 75**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**LOFT-DMTN**	**LOWESTOFT FORMATION**	**DIAMICTON**

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Mixed**	**Moderate**	**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.

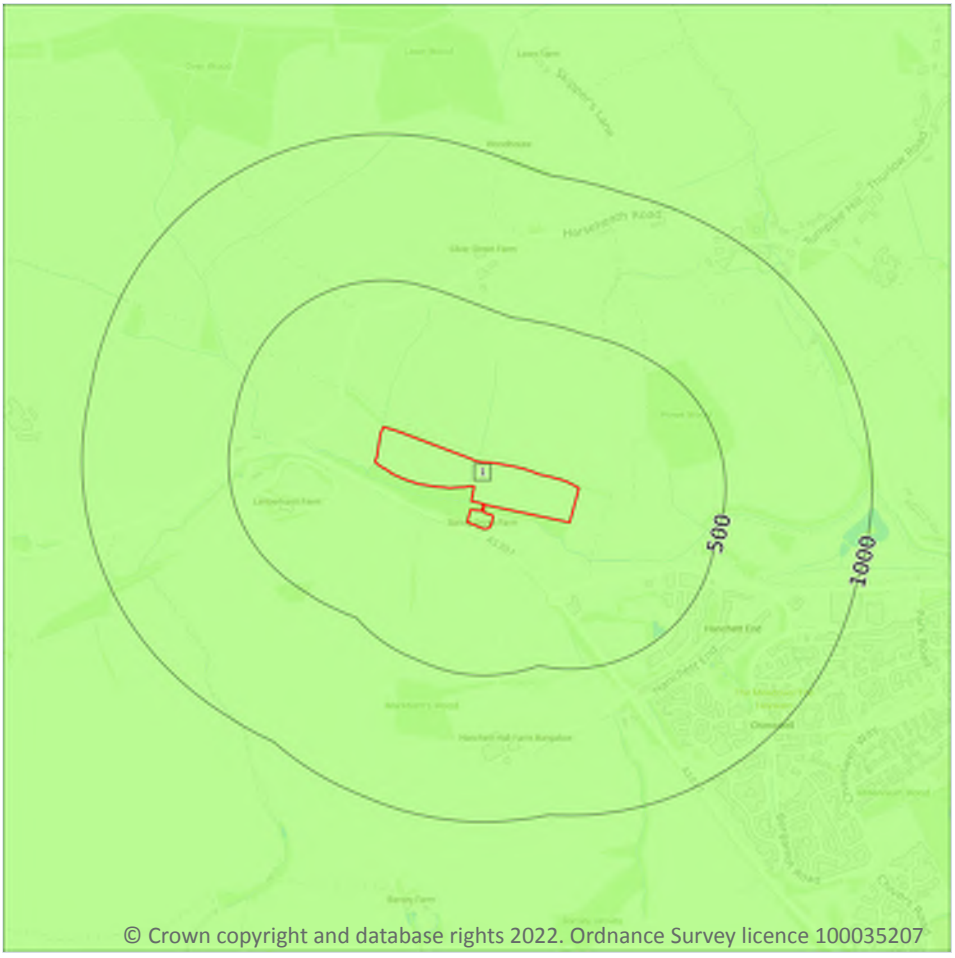
15.7 Landslip permeability (50k)

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	1

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 77**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**LESE-CHLK**	**LEWES NODULAR CHALK FORMATION AND SEAFORD CHALK FORMATION (UNDIFFERENTIATED) - CHALK**	**TURONIAN**

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**Very High**	**Very High**

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

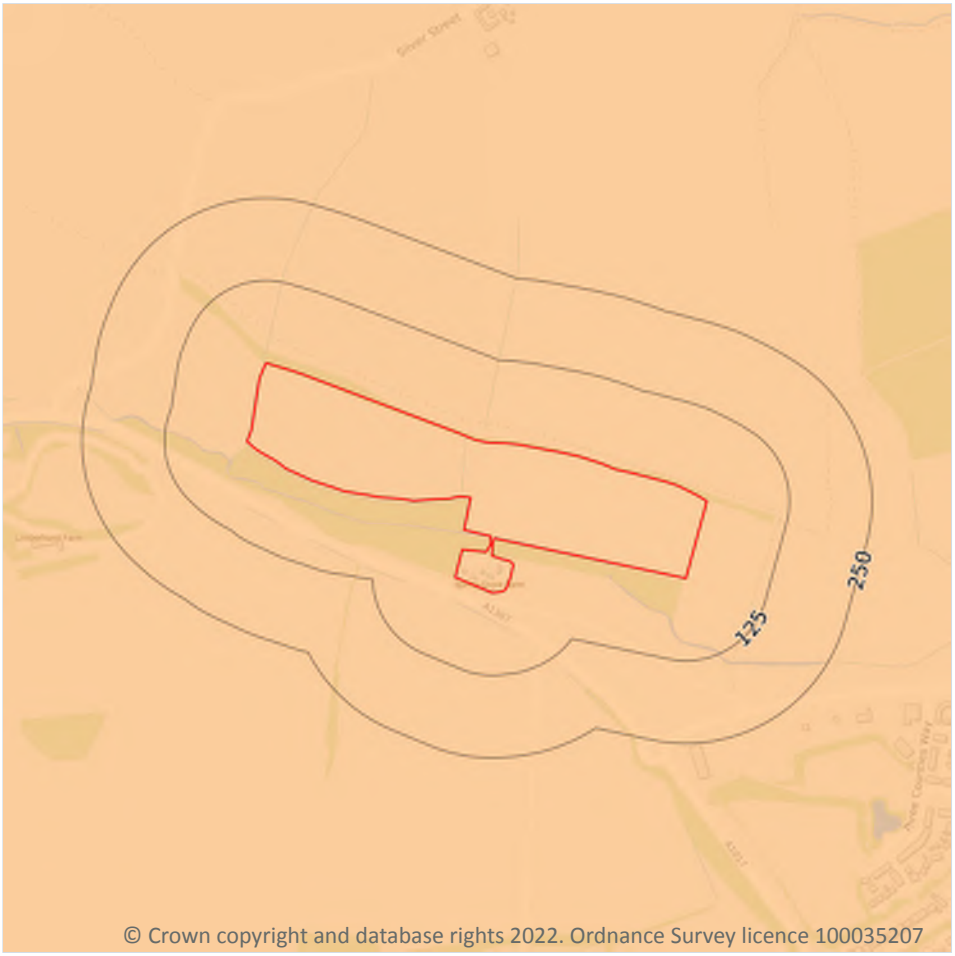
16.1 BGS Boreholes

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	1

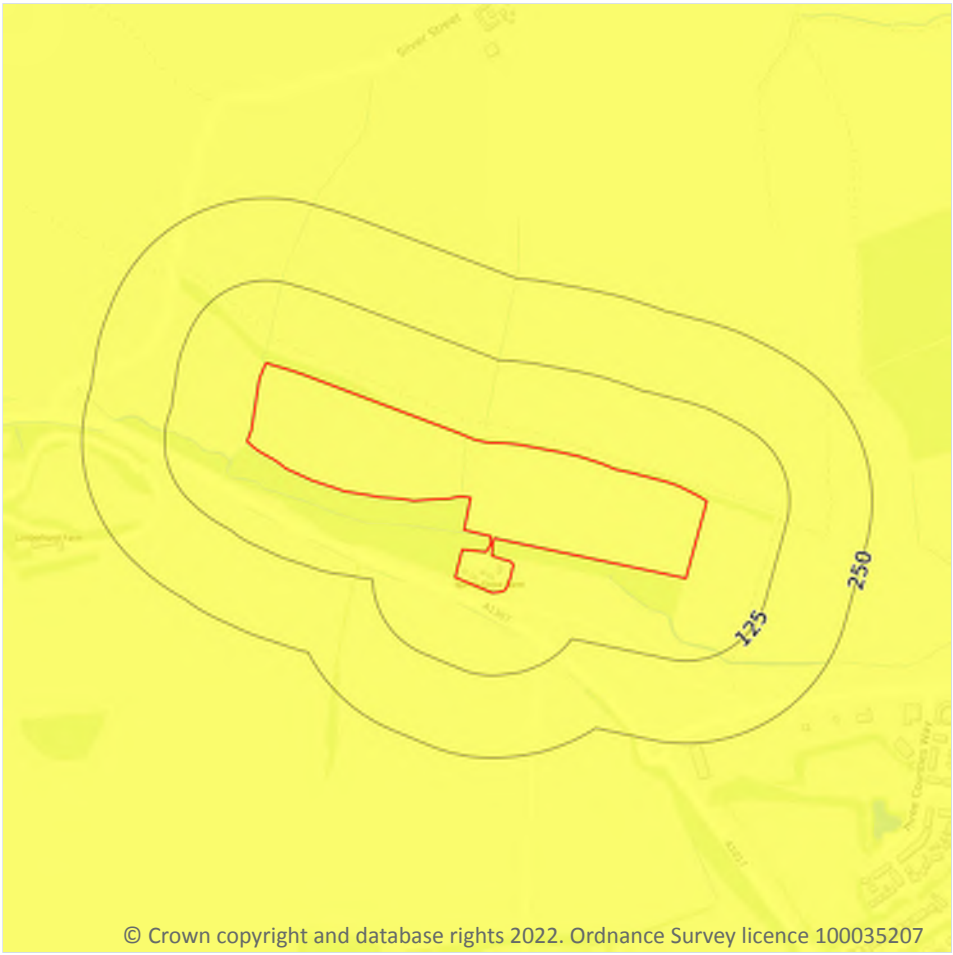
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 80**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	1

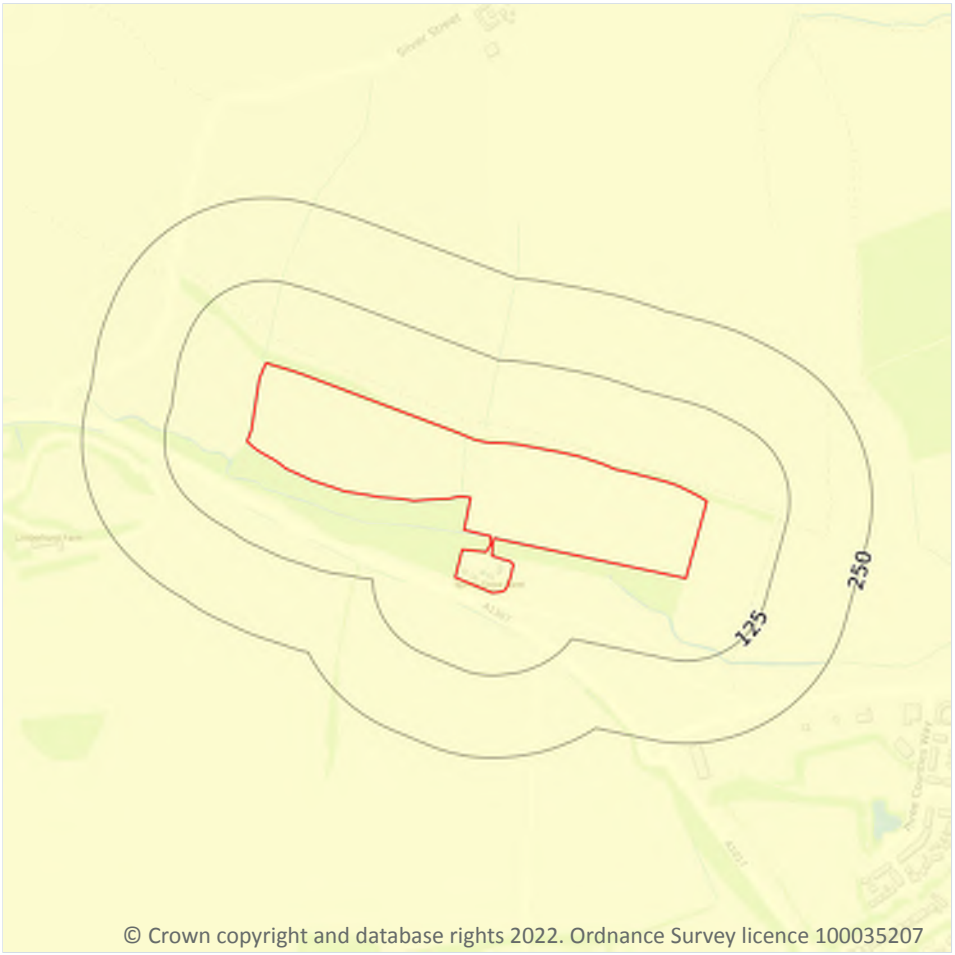
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 81**

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

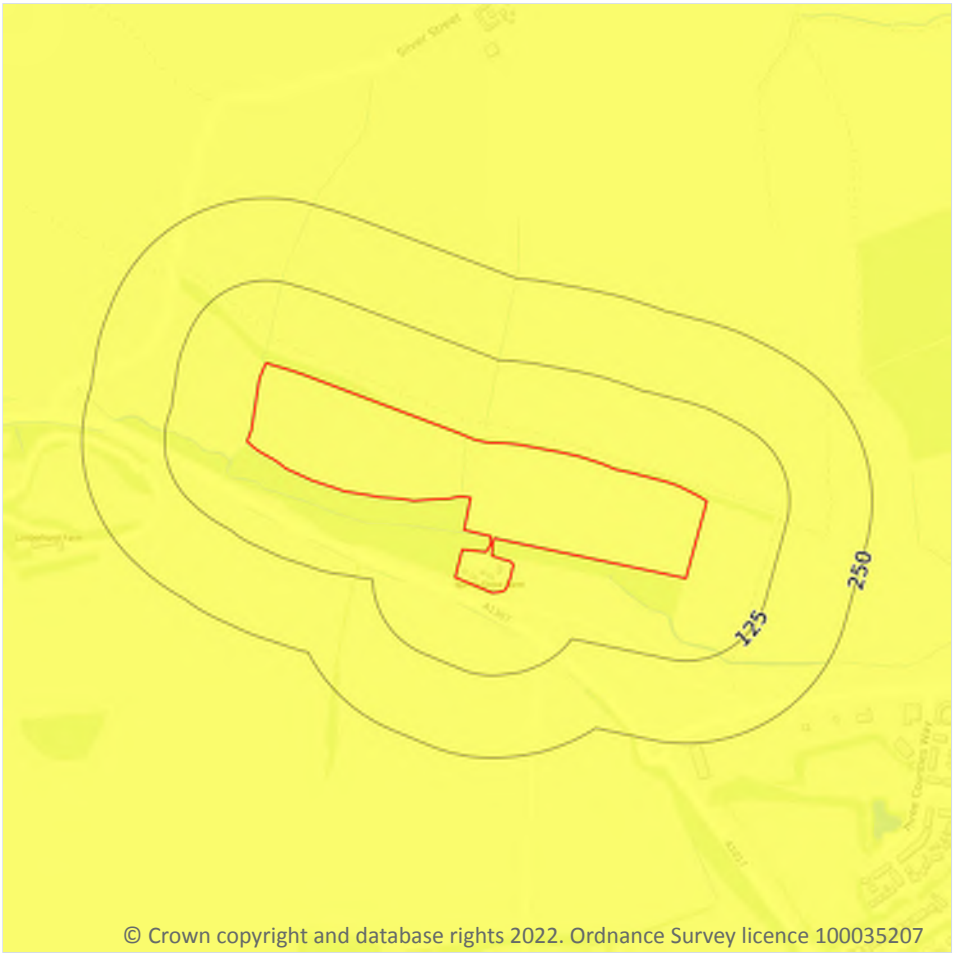
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 82**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

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

17.4 Collapsible deposits

Records within 50m	1

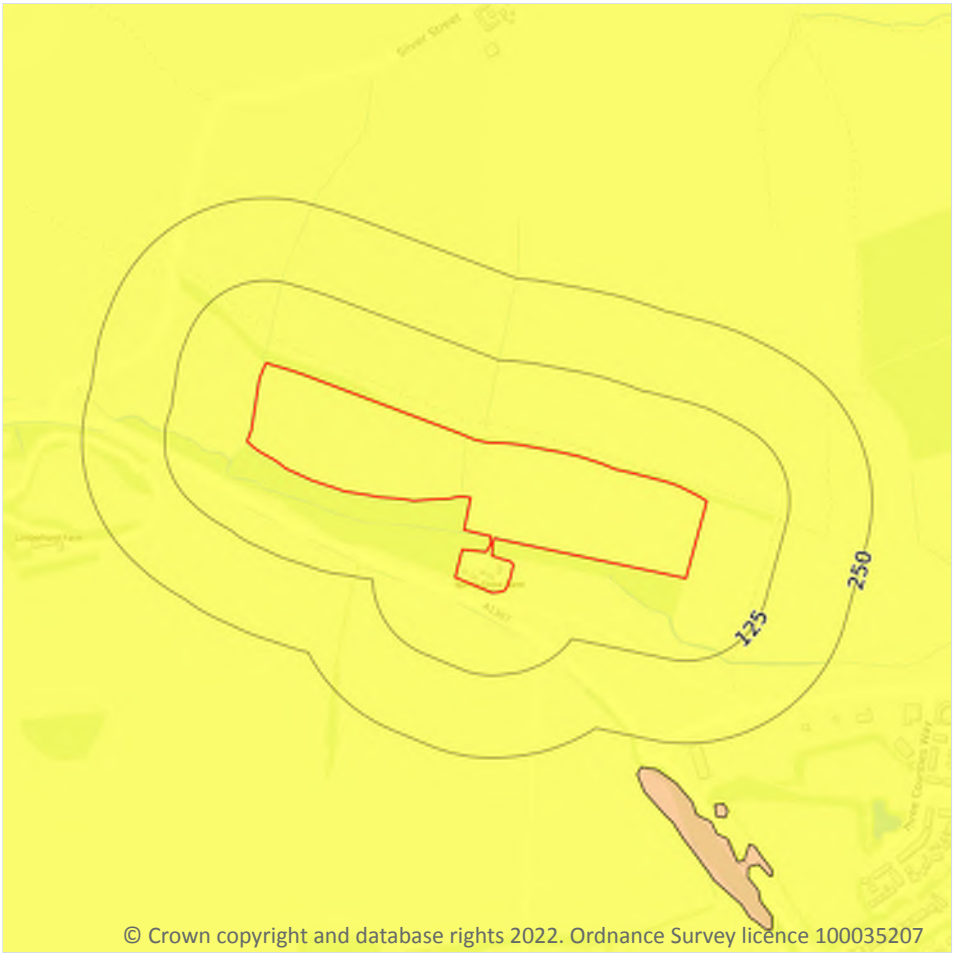
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 83**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

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

17.5 Landslides

Records within 50m	1

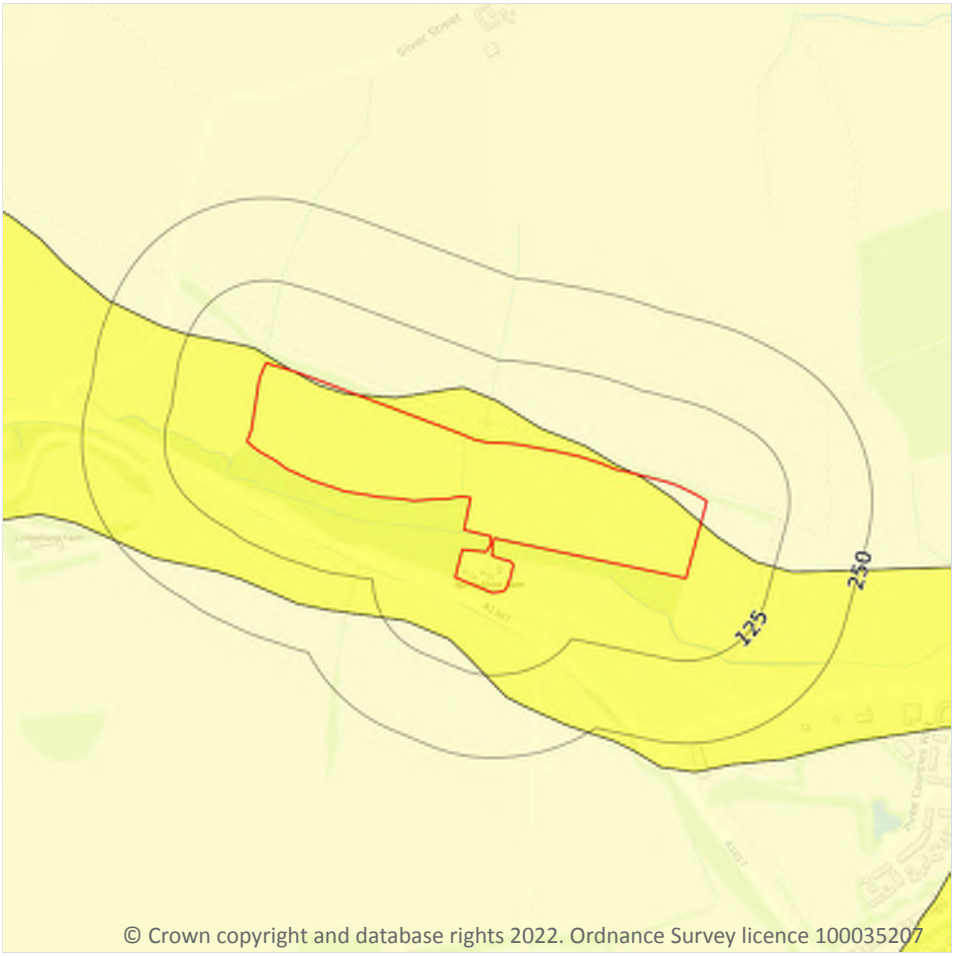
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 84**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	2

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.

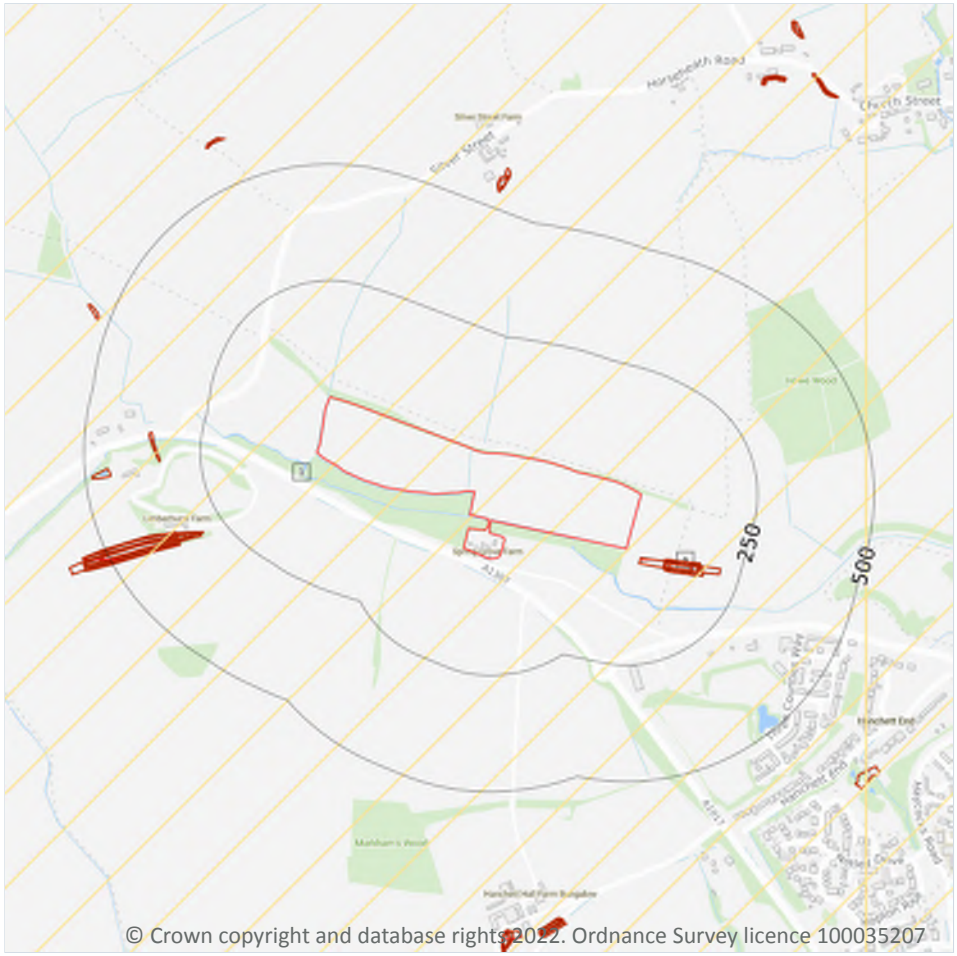
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 85**

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

Location	Hazard rating	Details
On site	**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



Site Outline

Search buffers in metres (m)

Natural cavities (Area)

Natural cavities (Point)

BritPits

Surface ground workings

Underground workings

Historical Mineral Planning Areas

Mining Cavities

Non Coal Mining

Sporadic underground mining of restricted extent possible

Localised small scale underground mining possible

Small scale mining possible

Underground mining known or likely within or in close proximity

Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	0

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.

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	10

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 87**

ID	Location	Land Use	Year of mapping	Mapping scale
A	37m SE	Cuttings	1885	1:10560
A	87m E	Cuttings	1924	1:10560
A	88m E	Cuttings	1949	1:10560
A	88m E	Cuttings	1924	1:10560
A	88m E	Cuttings	1901	1:10560
A	89m E	Cuttings	1949	1:10560
A	89m E	Cuttings	1919	1:10560
A	100m E	Cuttings	1970	1:10560
A	144m E	Cuttings	1946	1:10560
A	144m E	Cuttings	1924	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	2

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 87**

ID	Location	Name	Commodity	Class	Likelihood
1	**On site**	**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**
4	483m E	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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

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

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.13 Clay mining

Records on site	0

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

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

19 Radon

Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

19.1 Radon

Records on site	1

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 92**

Location	Estimated properties affected	Radon Protection Measures required
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 **5**

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 km^2. 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 km^2; 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 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 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 km^2).

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 km^2.

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

Site Outline

Search buffers in metres (m)

- Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 1 Worksites
- Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

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	5

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 95**

Location	Land Use	Year of mapping	Mapping scale
177m SW	Railway Sidings	1959	2500
177m SW	Railway Sidings	1885	10560
185m SW	Railway Sidings	1903	2500
185m SW	Railway Sidings	1926	2500
185m SW	Railway Sidings	1885	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	1

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

Features are displayed on the Railway infrastructure and projects map on **page 95**

Location	Description
On site	**Abandoned**

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

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: https://www.groundsure.com/terms-and-conditions-jan-2020/.

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo
Insight

Order Details

Date: 29/11/2022

Your ref: EMS_827983_1024367

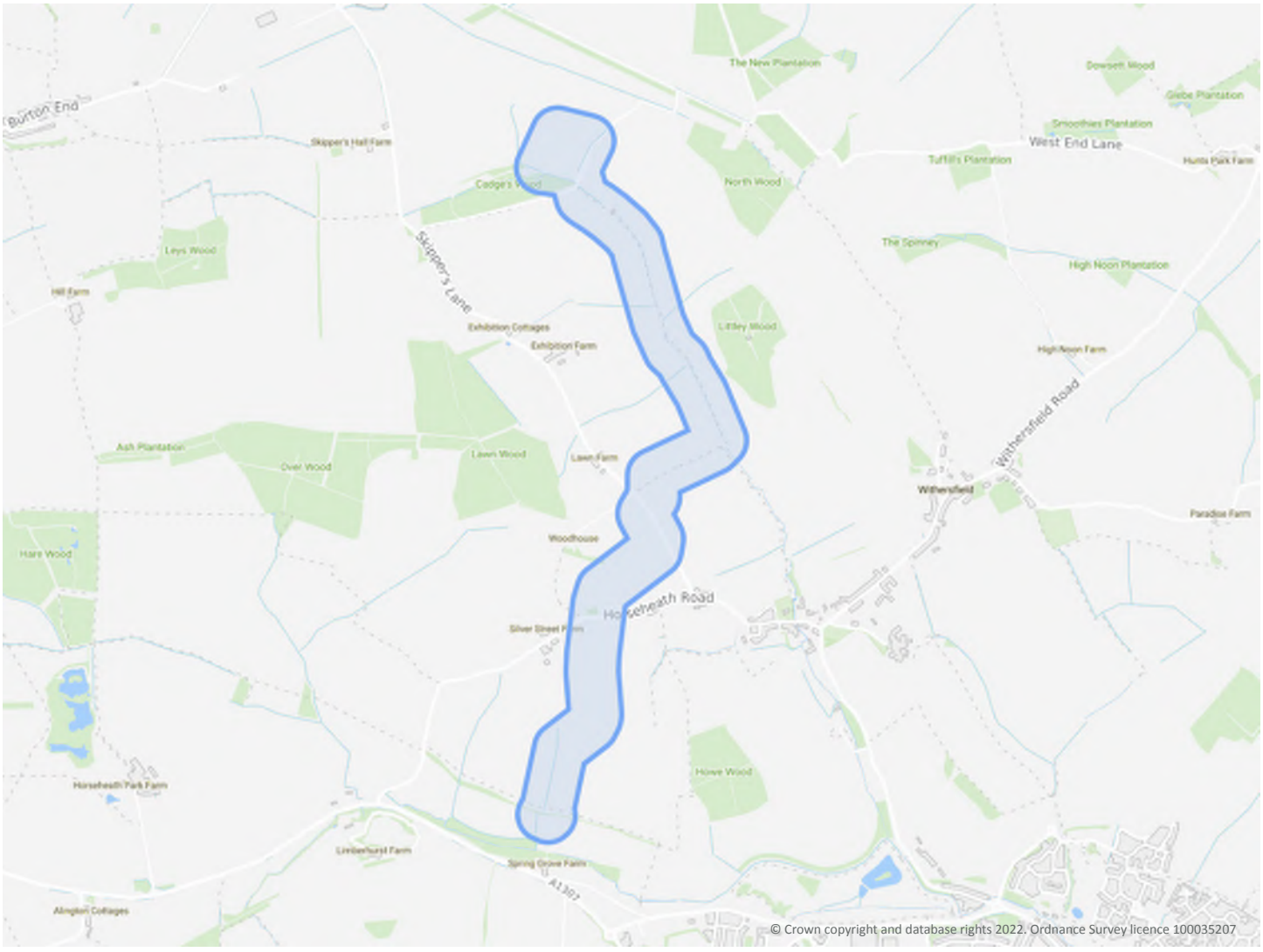
Our Ref: EMS-827983_1064634

Site Details

Location: 564478 248367

Area: 72.4 ha

Authority: South Cambridgeshire District Council, West Suffolk



Contact us with any questions at:
info@groundsure.com
08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	**1.1**	**Historical industrial land uses**	0	0	4	11	-
14	1.2	Historical tanks	0	0	0	0	-
14	1.3	Historical energy features	0	0	0	0	-
15	1.4	Historical petrol stations	0	0	0	0	-
15	1.5	Historical garages	0	0	0	0	-
15	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
16	**2.1**	**Historical industrial land uses**	0	0	4	13	-
17	2.2	Historical tanks	0	0	0	0	-
17	2.3	Historical energy features	0	0	0	0	-
18	2.4	Historical petrol stations	0	0	0	0	-
18	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
19	3.1	Active or recent landfill	0	0	0	0	-
19	3.2	Historical landfill (BGS records)	0	0	0	0	-
20	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
20	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
20	3.5	Historical waste sites	0	0	0	0	-
20	3.6	Licensed waste sites	0	0	0	0	-
20	**3.7**	**Waste exemptions**	1	0	1	2	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
22	4.1	Recent industrial land uses	0	0	0	-	-
22	4.2	Current or recent petrol stations	0	0	0	0	-
23	4.3	Electricity cables	0	0	0	0	-
23	4.4	Gas pipelines	0	0	0	0	-
23	4.5	Sites determined as Contaminated Land	0	0	0	0	-

23	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
23	4.7	Regulated explosive sites	0	0	0	0	-
24	4.8	Hazardous substance storage/usage	0	0	0	0	-
24	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
24	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
24	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
24	4.12	Radioactive Substance Authorisations	0	0	0	0	-
25	**4.13**	**Licensed Discharges to controlled waters**	0	0	2	2	-
25	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
26	4.15	Pollutant release to public sewer	0	0	0	0	-
26	4.16	List 1 Dangerous Substances	0	0	0	0	-
26	4.17	List 2 Dangerous Substances	0	0	0	0	-
26	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	0	1	-
27	4.19	Pollution inventory substances	0	0	0	0	-
27	4.20	Pollution inventory waste transfers	0	0	0	0	-
27	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
28	**5.1**	**Superficial aquifer**	Identified (within 500m)				
30	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
32	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
34	**5.4**	**Groundwater vulnerability- soluble rock risk**	Identified (within 0m)				
34	5.5	Groundwater vulnerability- local information	None (within 0m)				
35	**5.6**	**Groundwater abstractions**	0	0	0	1	3
36	5.7	Surface water abstractions	0	0	0	0	0
37	5.8	Potable abstractions	0	0	0	0	0
37	**5.9**	**Source Protection Zones**	1	0	0	0	-
37	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
38	**6.1**	**Water Network (OS MasterMap)**	35	5	38	-	-

45	6.2	Surface water features	1	3	19	-	-
45	6.3	WFD Surface water body catchments	1	-	-	-	-
45	6.4	WFD Surface water bodies	1	0	0	-	-
46	6.5	WFD Groundwater bodies	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
47	7.1	Risk of flooding from rivers and the sea	High (within 50m)				
48	7.2	Historical Flood Events	0	0	0	-	-
48	7.3	Flood Defences	0	0	0	-	-
48	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
48	7.5	Flood Storage Areas	0	0	0	-	-
49	7.6	Flood Zone 2	Identified (within 50m)				
50	7.7	Flood Zone 3	Identified (within 50m)				
Page	Section	Surface water flooding					
51	8.1	Surface water flooding	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding					
53	9.1	Groundwater flooding	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
54	10.1	Sites of Special Scientific Interest (SSSI)	0	0	1	0	1
55	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
55	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
55	10.4	Special Protection Areas (SPA)	0	0	0	0	0
55	10.5	National Nature Reserves (NNR)	0	0	0	0	0
56	10.6	Local Nature Reserves (LNR)	0	0	0	0	1
56	10.7	Designated Ancient Woodland	1	1	1	3	10
57	10.8	Biosphere Reserves	0	0	0	0	0
57	10.9	Forest Parks	0	0	0	0	0
57	10.10	Marine Conservation Zones	0	0	0	0	0
57	10.11	Green Belt	0	0	0	0	0
58	10.12	Proposed Ramsar sites	0	0	0	0	0

58	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
58	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
58	10.15	Nitrate Sensitive Areas	0	0	0	0	0
59	10.16	Nitrate Vulnerable Zones	4	0	0	0	6
60	10.17	SSSI Impact Risk Zones	4	-	-	-	-
62	10.18	SSSI Units	0	0	1	0	1
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
64	11.1	World Heritage Sites	0	0	0	-	-
65	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
65	11.3	National Parks	0	0	0	-	-
65	11.4	Listed Buildings	0	1	3	-	-
66	11.5	Conservation Areas	0	0	1	-	-
66	11.6	Scheduled Ancient Monuments	0	0	0	-	-
66	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
67	12.1	Agricultural Land Classification	Grade 2 (within 250m)				
68	12.2	Open Access Land	0	0	0	-	-
68	12.3	Tree Felling Licences	0	0	2	-	-
69	12.4	Environmental Stewardship Schemes	0	0	0	-	-
69	12.5	Countryside Stewardship Schemes	7	1	6	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
71	13.1	Priority Habitat Inventory	8	6	7	-	-
72	13.2	Habitat Networks	0	0	0	-	-
73	13.3	Open Mosaic Habitat	0	0	0	-	-
73	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
74	14.1	10k Availability	Identified (within 500m)				
75	14.2	Artificial and made ground (10k)	0	1	0	2	-
76	14.3	Superficial geology (10k)	1	1	0	1	-

77	14.4	Landslip (10k)	0	0	0	0	-
78	**14.5**	**Bedrock geology (10k)**	1	1	0	1	-
79	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
80	**15.1**	**50k Availability**	Identified (within 500m)				
81	15.2	Artificial and made ground (50k)	0	0	0	0	-
81	15.3	Artificial ground permeability (50k)	0	0	-	-	-
82	**15.4**	**Superficial geology (50k)**	1	0	0	0	-
83	**15.5**	**Superficial permeability (50k)**	Identified (within 50m)				
83	15.6	Landslip (50k)	0	0	0	0	-
83	15.7	Landslip permeability (50k)	None (within 50m)				
84	**15.8**	**Bedrock geology (50k)**	1	0	0	0	-
85	**15.9**	**Bedrock permeability (50k)**	Identified (within 50m)				
85	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
86	**16.1**	**BGS Boreholes**	0	0	2	-	-
Page	Section	Natural ground subsidence					
87	**17.1**	**Shrink swell clays**	Low (within 50m)				
88	**17.2**	**Running sands**	Very low (within 50m)				
90	**17.3**	**Compressible deposits**	Negligible (within 50m)				
91	**17.4**	**Collapsible deposits**	Very low (within 50m)				
92	**17.5**	**Landslides**	Very low (within 50m)				
94	**17.6**	**Ground dissolution of soluble rocks**	Very low (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
96	18.1	Natural cavities	0	0	0	0	-
97	18.2	BritPits	0	0	0	0	-
97	**18.3**	**Surface ground workings**	0	2	8	-	-
97	18.4	Underground workings	0	0	0	0	0
98	18.5	Historical Mineral Planning Areas	0	0	0	0	-

98	**18.6**	**Non-coal mining**	1	1	0	1	1
99	18.7	Mining cavities	0	0	0	0	0
99	18.8	JPB mining areas	None (within 0m)				
99	18.9	Coal mining	None (within 0m)				
99	18.10	Brine areas	None (within 0m)				
99	18.11	Gypsum areas	None (within 0m)				
100	18.12	Tin mining	None (within 0m)				
100	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
101	**19.1**	**Radon**	Less than 1% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
102	**20.1**	**BGS Estimated Background Soil Chemistry**	15	6	-	-	-
103	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
103	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
104	21.1	Underground railways (London)	0	0	0	-	-
104	21.2	Underground railways (Non-London)	0	0	0	-	-
105	21.3	Railway tunnels	0	0	0	-	-
105	21.4	Historical railway and tunnel features	0	0	0	-	-
105	21.5	Royal Mail tunnels	0	0	0	-	-
105	**21.6**	**Historical railways**	0	1	0	-	-
106	21.7	Railways	0	0	0	-	-
106	21.8	Crossrail 1	0	0	0	0	-
106	21.9	Crossrail 2	0	0	0	0	-
106	21.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 05/04/2020

Site Area: 72.4ha

Recent site history - 2017 aerial photograph

Capture Date: 09/04/2017

Site Area: 72.4ha

Recent site history - 2009 aerial photograph

Capture Date: 24/05/2009

Site Area: 72.4ha

Recent site history - 2007 aerial photograph

Capture Date: 26/03/2007

Site Area: 72.4ha