

ENVIRONMENTAL DESK STUDY
AND
PRELIMINARY
RISK ASSESSMENT

Deer View Lodge
Cope Lane
Hayling Island
Hampshire
PO11 0QB



July 2019

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1 Introduction and objectives

1.1 Introduction

Apple Environmental Limited has been appointed to provide a Phase I environmental desk study report in support of a prior notification for the change of use of the existing building from office to residential.

1.2 Aim

The principal aim of a Phase I environmental report is to gather the information needed in order to be in a position to assess the presence and/or significance of any land contamination on this site. The resultant information then enables a preliminary risk assessment to be carried out to conclusions in which an acceptable degree of confidence can be placed. These conclusions form the basis of the conceptual site model (CSM). The CSM therefore highlights any potential pollutant linkages at the site based on current and historical use of the land and its immediate surroundings, and if appropriate, proposes further investigation. Any such further investigation will focus on areas currently and previously used for purposes that may give rise to contamination and will take account of land use in the proposed future development, one of the principal goals being the reduction of any uncertainty in the CSM (BSI 10175:2011+A2:2017).

1.3 Objectives

The broad objectives of this report are to obtain information in order to:

- provide information from which likely contaminant-pathway-receptor relationships can be identified;
- evaluate the environmental setting of the site and to identify sensitive receptors;
- assess the likelihood of finding contamination on site, its nature and extent; and
- determine the need or requirements for further investigation, by means of generic or detailed risk assessment.

2 Site history

2.1 Introduction

The site is located on Hayling Island, to the east of Portsmouth.

2.2 Historical maps

Historical mapping and other archive material has been consulted to ascertain the past use of the site.

1866 - 1867

The subject site is unoccupied and lies to the immediate west of a copse.

An unnamed road runs in a southwest to northeast direction along the southern boundary of the site.

1896 - 1898

No significant changes to the site or immediate surrounding area.

1907 - 1908

The site now has two small structures upon it, located towards the southern section of the site; the use of which is not clear.

To the immediate west of the site is a brick works. A dwelling has been constructed 10m to the east, along with other small structures between 10m and 90m to the southwest. The latter may be associated with the brickworks.

1911 - 1913

No significant changes to the site or immediate surrounding area.

1931 - 1932

The site now appears to have some defined plots aligning the northwestern section; the purpose of which is not clear.

The area generally has become noticeably more developed with detached dwellings now aligning the aforementioned unnamed road to the immediate south of the site; which is now referred to as Copse Lane. The aforementioned brick works to the immediate west also appears to have been redeveloped with housing, whereas another brickworks is now shown to be located around 60m to the west of the site at its closest. It is quite possible that these two brickworks are different sections of the same works.

1940

The larger of the structures on the southern section of the site (possibly a dwelling or similar) has been extended northwards. The aforementioned plots on the northwestern section are no longer shown.

1946

The bricks works to the west no longer appears to be present, although mapping still shows ground excavations.

1957

No significant changes to the site or immediate surrounding area.

1967 - 1972

The smaller building located on the southern section of the site appears to have been demolished, as has the aforementioned extension to the larger building.

1993

The structure located 10m to the east of the site has been transformed into a hotel known as Broad Oak Hotel.

2002

It appears that only one structure remains on the site.

2010 - 2014

No significant changes to the site or immediate surrounding area.

2.3 Archaeological and historical records

Hayling Island is an island located in the Borough of Havant, east of Portsmouth. Occupation of the island is known to date back to the Iron Age, whereupon a shrine was once located in the northern part. This subsequently became a Roman temple in the 1st Century BC.

Early industry on the island included salt production between the 11th and 19th Centuries, along with mackerel fishing, shellfish harvesting and farming.

In the 1820s, an attempt was made to turn the island into a seaside resort, but this was not successful. The island industry principally remained as farming and fishing until the early 20th Century. In 1824, a wooden bridge was constructed across the channel to Langstone, to connect the island to the mainland.

By the 20th Century the island also had a brick making industry, part of which was situated close to the subject site. The industry benefitted from numerous copses supplying kiln wood and inland waterways for barge transportation.

2.4 Identified historical commercial/industrial sites

Through reference to environmental datasheets, sites within 200m of the site with a potentially contaminative past land-use include;

- a brick works and associated ground workings - to the immediate west and 58m to the west of the site;
- a clay pit - 142m to the north;
- unspecified old beds - 158m to the southeast; and
- a nursery - 161m to the northwest.

There are no records of historical energy features located within 200m of the site, and no records of historical petrol or fuel sites operating within this distance. There are also no records of historical garages within this same distance.

3 Current setting

3.1 General

The area sited for development is the southern section of the site, accessed from Copse Lane. It is occupied by a former two-storey office building constructed from brick, with pitched tiled roofing and external staircase.

A soft landscaped area is present to the immediate south of the building, whilst to the immediate north is an area of compressed soil and scalplings. Several discarded/stored items are present on this section of the site including trailers, a skip, plant machinery, timber panels, metal pipework and other construction materials. A large plastic internally bunded oil tank is also present within this area, located upon a metal plinth.

On the far northern section of the site (which does form part of this planning application) there is a mobile home park comprising five mobile homes.

There does not appear to be any surface drainage on the subject site, however storm drains are present along Copse Lane. The site slopes gently southwards towards the aforementioned lane.

The former brickworks site to the immediate west is now dwellings and paddock areas.

Photographs 1 to 11 below show some of the features discussed above.

Photograph 1 Showing the subject building



Photograph 2 Showing the soft landscaped area to the south of the building



Photograph 3 Showing the area to the immediate north of the building



Photograph 4 Showing stored or discarded items to the north of the building



Photograph 5 Showing plant machinery to the north of the building



Photograph 6 Stored or discarded construction items to the north of the building



Photograph 7 Showing the plastic oil tank



Photograph 8 Showing the mobile home park on the northern section



Photograph 9 Showing the area of the former brickworks site



Photograph 10 Showing Copse Lane looking north eastwards



Photograph 11 Showing Copse Lane looking south westwards



3.2 Development surrounding the site

There are no commercial or industrial activities existing within 200m of the site.

There are no underground high pressure oil or gas pipes recorded within 500m of the site. There is also no activity occurring within 200m of the site which holds an Environmental Permit under PPC.

There are also no List 2 Dangerous Substance Inventory Sites within 500m of the site.

4 Environmental setting

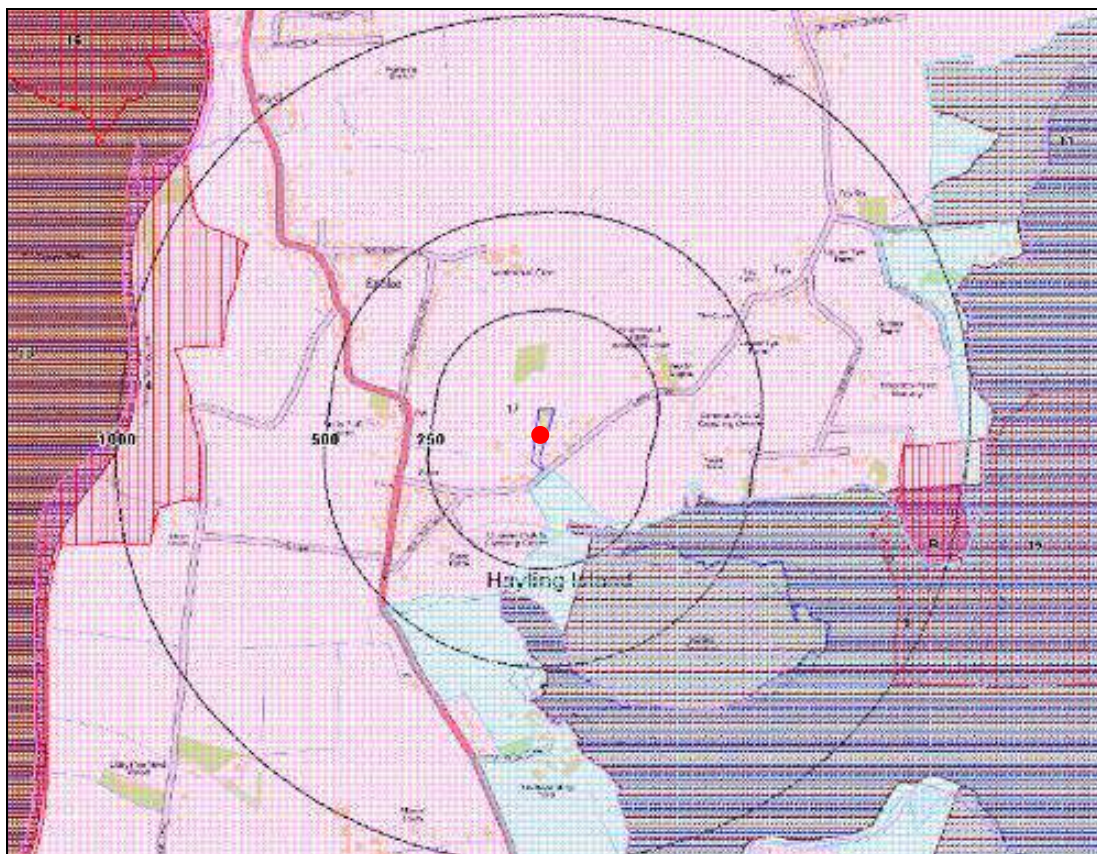
Ordnance Survey maps were used in conjunction with Natural England data in order to ascertain the location of sensitive habitat areas and other places of special or scientific interest within the vicinity of the site.

The site itself is not located within a designated environmentally sensitive area, however it does lie within an area surrounded by open land, and therefore the general ecological importance of the site and its immediate environs should be regarded as potentially sensitive.

Part of this includes Chichester Harbour Area of Outstanding Natural Beauty (AONB), which is located 10m to the southeast, beyond which is Chichester and Langstone Harbours Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI) 146m to the southwest.

Figure 1 below shows the general land-use characteristics of the site and surroundings.

Figure 1 Location of environmentally sensitive areas



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5 Geology

5.1 Bedrock

Geological data states that underlying geology upon which this site lies is of the Lambeth Group Formation (clay). This sedimentary bedrock was formed approximately 48 to 59 million years ago in the Palaeogene Period when the local environment was dominated by swamps, estuaries and deltas.

The thickness of this formation can be up to 39m, although the depth of the bedrock at this precise location has not been confirmed.

5.2 Superficial deposits

The bedrock is expected to be overlain by superficial River Terrace Deposits, formed up to 3 million years ago during the Quaternary Period.

Again the thickness of these deposits at the subject site has not been confirmed.

5.3 Artificial deposits

BGS mapping does not record any artificial deposits overlying the geological deposits at the proposal site location, although made-ground and possibly hardcore is expected to be present to some extent beneath the building and hard surfacing across the site.

5.4 Borehole data

British Geological Survey (BGS) borehole data, which is expected to share the same bedrock geology as the subject site, has also been consulted for this study.

Borehole Ref. SU70SW78 was located at Hayling Island Main Drain Borehole 62, 55m to the southwest of the site, and continued to a depth of 4.42m.

The log details 0.3m of topsoil, underlain by 0.8m of brown sandy clay. This was subsequently underlain by 0.8m of soft red/brown clay and gravel. From here to the base of the borehole hard red/grey clay was present. Groundwater was not recorded.

http://scans.bgs.ac.uk/sobi_scans/boreholes/425747/images/10758874.html

Borehole Ref. SU2SU70SW77 was located at Hayling Island Main Drain Borehole 61, 76m to the east of the site, and continued to a depth of 3.04m. The log details 0.9m of made-ground, underlain by 0.8m of soft brown clayey sand. This was subsequently underlain by 0.3m of red/brown sand and gravel. From here to the base of the borehole stiff red/grey clay was present. Groundwater was not recorded.

http://scans.bgs.ac.uk/sobi_scans/boreholes/425746/images/10758873.html

5.5 Soil chemistry

Through reference to available BGS data, the soil in the local area is expected to have an arsenic concentration of less than 15mg/kg, a cadmium concentration of less than 1.8mg/kg, a chromium concentration of 60-90mg/kg, a nickel concentration of 15-30mg/kg and a lead concentration of 100-200mg/kg.

5.6 Radon affected areas

According to the Health Protection Agency (HPA) mapping, the site is not located within a radon affected area as less than 1% of properties are expected to be above the 'Action Level'.

Through reference to BR211 therefore, radon protective measures are not deemed to be necessary for any new development in this area.

5.7 Non-coal mining

According to the Coal Authority the site is not located within an identified mining area.

6 Hydrogeology and hydrology

6.1 Groundwater

The expected geology for the specific area of the site is clay bedrock of the Lambeth Group Formation. This bedrock has been given 'Secondary A' aquifer status, which refers to rock with permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base-flow to rivers.

Through reference to the BGS borehole data detailed above it was noted that groundwater was not detected in this general area in a borehole of 4.4m depth. Its actual rest level is expected to be some distance below this due to the extensive clay deposits.

This belief is supported by the fact that the site does not lie within an Environment Agency designated Source Protection Zone (SPZ). Similarly there are no groundwater abstraction licences within 500m of the site.

6.2 Surface water

According to the Environment Agency there are three surface water features within 200m of the site; the closest of which is a land drain located 57m to the southwest.

With regards to the general movement of surface water at the subject site, it is expected that due to the asphalt driveway all run-off will migrate southwards, to be ultimately managed by the storm drainage network along Copse Lane.

6.3 Flooding

Through reference to Environment Agency flood data the site falls within a designated Flood Zone 1, hence the annual probability of flooding from rivers here overall is deemed to be 'low'.

Figure 2 below shows the presence of the nearest Flood Zones 2 and 3 located approximately 17m and 30m to the south respectively.

These have been designated due to possible flooding of the Sweare Deep.

Figure 2 Showing the flood risk at the site



— Flood Zone 2

— Flood Zone 3

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7 Waste and other infilled land

7.1 Landfill

Environment Agency data, environmental datasheets and historical maps referenced during the compiling of the report indicate that there have been three historical landfill sites within 1500m of the site.

The closest of these was located at Fleet Farm Caravan Park, 148m to the southwest of the site, where there was a licence to accept household waste. Other operational details of this facility are not known.

7.2 Infill

Environmental datasheets have indicated that land infilling may have occurred within the surrounding area, with a number of localised features reported within 200m of the site, according to environmental datasheets.

These include the former brickworks site to the immediate west, ponds and the former clay pit.

Through reference to the site walkover the area of the former brickworks currently exists as agricultural fields.

7.3 Other waste facilities

There are no recorded Environment Agency permitted waste, treatment, transfer or disposal sites within 250m of the site.

8 Available contaminated land information

8.1 Statutory contaminated land

Environmental datasheets state that there are no sites determined as Contaminated Land under Part 2A of the EPA 1990 within 500m of the site.

8.2 Planning search

Previous planning applications have been referred to for this area of Hayling Island in order to determine whether or not land contamination had been a material consideration in any corresponding decision notice, and if so, to consider any effect that these sites may have had on the subject site.

Through reference to Havant Borough Council planning records it was noted that there have been no requests for contamination reports in the vicinity of the subject site.

8.3 Environmental incidents

Environmental datasheets show that there has been one recorded environmental incident within 250m of the site.

This was on the 13th November 2003, where atmospheric pollutants (smoke), had a minor impact to air 190m to the southwest.

8.4 Discharge consents

There are no active discharge consents located within 250m of the site.

9 Conceptual site model

9.1 Sources

Through reference to available data, the subject site appears to have had structures upon it since at least 1907. These structures are presumed to have originally had an agricultural association, although the most recent use of the subject building has been as an office.

It is still quite possible therefore that agricultural machinery and/or fuels or other chemicals could have been stored within these buildings, and similarly, consideration should be given to the demolition of previous structures, which appeared to have occurred in or around the late 1960s.

To the immediate north of the subject building there is an area of compressed soil and scalping. During the site walkover it was noted that heavy machinery, construction waste and an oil tank were located upon this area; all of which have the potential to result in ground contamination.

With regards to off-site sources, it has been noted that brickworks had been present on land to the immediate west of the site and around 60m to the west, between the late 1900s and the early 1940s; in view of which it is presumed that some degree of excavation along with possible infilling could have occurred. It is also possible that processes associated with the brickworks could have occurred on the subject site itself during this early period when the works appeared to be immediately adjacent to the site.

In considering these features, potential contaminants would appear to include the following:

- heavy metals and other inorganics from general activities (on and off-site) and made-ground or hardcore deposits;
- hydrocarbon residue from the use or storage/use of vehicles, or possible small-scale oil and/or fuel leaks (on and off-site); and
- ground gases from any made-ground deposits on-site and infill off-site.

9.2 Receptors

The receptors that would need to be considered in this instance are:

- construction workers;

- future site occupiers; and
- buildings, structures and associated services.

It is not expected for groundwater to be present at a vulnerable depth in this location; and therefore it is considered to be neither a potential receptor nor pathway in this instance.

9.3 Pathways

The proposal is to convert the existing building for residential use with an associated soft landscaped garden area. In considering this, the potential contamination pathways to receptors would appear to include the following:

- direct and indirect ingestion of soil and soil dust during construction and occupation;
- direct dermal contact with soil and soil dust during construction and occupation;
- direct inhalation of soil dust during construction and occupation;
- consumption of home-grown vegetables or soil attached to vegetables;
- inhalation or ignition of gases and/or vapours; and
- direct contact with main services and building fabric below ground.

9.4 Possible pathway linkages

9.4.1 Heavy metals and other inorganics

- Direct and indirect ingestion of soil and dust - contaminated soil may be ingested by construction workers or future occupiers;
- dermal contact with soil and dust - contaminants may be absorbed through direct contact with contaminated soils by construction workers or future occupiers;
- inhalation of dust (indoors and outdoors) - airborne contaminated soil particles could be inhaled by construction workers or future occupiers;

- contact with building materials and services - some contaminants within the soil may affect the properties of either through direct contact; and
- contact with groundwater - some substances within the soil could be indirectly released thereby contaminating groundwater.

9.4.2 Hydrocarbons (petroleum and poly-aromatic)

- Direct and indirect ingestion of soil and dust - hydrocarbon contaminated soil may be ingested by construction workers or future occupiers;
- dermal contact with soil and dust - hydrocarbon contaminants may be absorbed through direct contact with contaminated soils by construction workers or future occupiers;
- inhalation of dust (indoors and outdoors) - airborne hydrocarbon contaminated soil particles could be inhaled by construction workers or future occupiers;
- inhalation of vapours (indoors and outdoors) - hydrocarbon vapours may be inhaled by construction workers or future occupiers;
- contact with building materials and services - hydrocarbons within soil may affect the properties of either through direct contact; and
- contact with groundwater - hydrocarbons within the soil could be indirectly released thereby contaminating groundwater.

9.4.3 Ground gases

- Inhalation - toxic ground gases may be present due to the possible breakdown of organic material within any made-ground present, and vapours could possibly be released by hydrocarbon residue, such that either could be inhaled by construction workers and/or future occupiers of the site indoors and outdoors; and
- ignition - explosive gases may be present due to the possible breakdown of organic material within any made-ground present, or due to hydrocarbon residue.

9.5 Assumptions and uncertainties

9.5.1 Site history

It has been assumed that all relevant potentially contaminating activities in the general locality have been identified. Where there is any uncertainty a precautionary approach will generally have been made.

9.5.2 Geology, surface water and groundwater

It has been assumed that the geological map is representative of the site location; however any unexpected variation could affect the risk to groundwater beneath the site (if present). This includes the presence, extent and nature of any made-ground at the site.

In addition to this, the groundwater characteristics beneath the site are also not fully known, including the normal rest level and flow direction. However through available information it is not expected to be present at a vulnerable depth; or at least protected by the clay bedrock.

9.5.3 Contaminants

Although the presence of contaminants at this site has been dismissed, it is still possible that unidentified substances could be present, including their nature, location, concentration and mobility, none of which would be known.

9.5.4 Pathways

The absence of preferential flow paths such as pipe work, drains and service runs has not been confirmed.

9.5.5 Future site use

The likelihood or details of any future alteration or redevelopment of the building is not known, hence risk can only be ascertained with regard to the proposed layout and use.

9.6 Assessment of risk

The perceived risk has been assessed below in Table 1 and the risk algorithm used has been shown below in Figure 3.

Risk has been assessed on the understanding that the site will be developed for residential use with soft landscaped gardens.

Figure 3 Risk assessment algorithm

Potential severity	Risk rating						Severity of hazard	Probability of hazard	Overall risk
	5	5	10	15	20	25	5 = Fatality	1 = Improbable	1 - 6 Low
	4	4	8	12	16	20	4 = Major	2 = Remote	8 - 12 Moderate
	3	3	6	9	12	15	3 = Minor	3 = Possible	15 - 25 High
	2	2	4	6	8	10	2 = Negligible	4 = Probable	
	1	1	2	3	4	5	1 = None	5 = Certainty	
		1	2	3	4	5			
	Probability						Severity of hazard x probability = risk rating		

Table 1 Perceived risk to receptors

Source(s) identified	Identified pathways	Overall risk	Comments
Possible heavy metals and other inorganics, hydrocarbons (including PAHs), and ground gases	Direct ingestion of soil and soil dust	12	The likelihood of ingesting soil during construction work, gardening or recreation is low. Ingestion is most likely to be limited to trace quantities through unwashed hands or ingesting airborne dusts etc. However the possibility exists for harmful contaminants to be present, therefore the corresponding risk must at least be considered moderate.
	Dermal contact with soil and soil dust	12	The potential for touching soil during construction work, gardening or recreation is high. It is also possible that some of the contaminants potentially present could exert a biological effect from absorption through the epidermis, or alternatively be transferred to the mouth. In either instance the extent of uptake is still expected to be low, although as the possibility exists for harmful contaminants to be present, the corresponding risk must at least be considered moderate.
	Inhalation of soil or soil-derived dust	12	The potential for inhaling soil or airborne soil-derived dust during construction work, gardening or recreation is high, although the extent of uptake is expected to be low. Despite this the corresponding risk must still be considered moderate due to unknowns.

Table 1 (Cont.) Perceived risk to receptors

Source(s) identified	Identified pathways	Overall risk	Comments
Possible heavy metals and other inorganics, hydrocarbons (including PAHs), and ground gases	Ingestion of soil attached to vegetables	12	The likelihood of ingesting harmful levels of contaminants from either home-grown vegetables or from soil attached to these vegetables is low. However as the possibility exists for harmful contaminants to be present, the corresponding risk must at least be considered moderate.
	Inhalation and/or ignition of gases and/or vapours	8	There is a possibility that made-ground deposits could exist at the site, or infill in neighbouring areas, such that these could be generating methane and carbon dioxide ground gases. It is also possible that hydrocarbon or other organic residue could be present in the ground, releasing vapours. In either instance these could become a hazard through inhalation or ignition. Despite there being little evidence to suggest that significant quantities of either will be present, the risk must still be considered low-moderate due to unknowns.
	Direct contact with buildings	8	Some of the substances potentially present could be a risk to building fabric or underground services. The likelihood of this occurring is expected to be low as if present, contamination is likely to be localised only. For precautionary reasons however the risk must at least be deemed to be low-moderate due to unknowns.

10 Summary and recommendations

10.1 Summary

This report has highlighted the fact that the subject building and the neighbouring land appear to have seen former agricultural use, albeit with more recent use as an office. As such it must be considered possible that associated historical activities could have occurred in such a way that they may have adversely affected the land to some degree.

This report has identified a potential contamination concern due mainly to on-site features, which principally include the possible presence of made-ground, the storage and use of heavy machinery, and the deposition of construction materials/waste.

In addition to the possibility of residual soil contamination, the conceptual model has also identified pathway linkages, suggesting that there could be some degree of unacceptable risk to receptors, namely: construction workers and future site occupiers, along with the proposed buildings and associated underground services.

A potential contamination concern has also been identified due to the former off-site brickworks to the west of the site, which has the potential to have adversely affected the site. In considering this, it is possible also that associated brickworks activities could have occurred on the subject site itself when it was located immediately adjacent to the subject site.

With regards to the subsequent infilling of any brickworks excavations and ground gas generation, again it is possible that these could have occurred, however, as this would have been around 80-100 years ago it is expected for gas generation to be largely exhausted by now. In addition to this, the presence of impermeable clay geology is likely to have restricted the migration of gases towards the subject site.

10.2 Recommendations

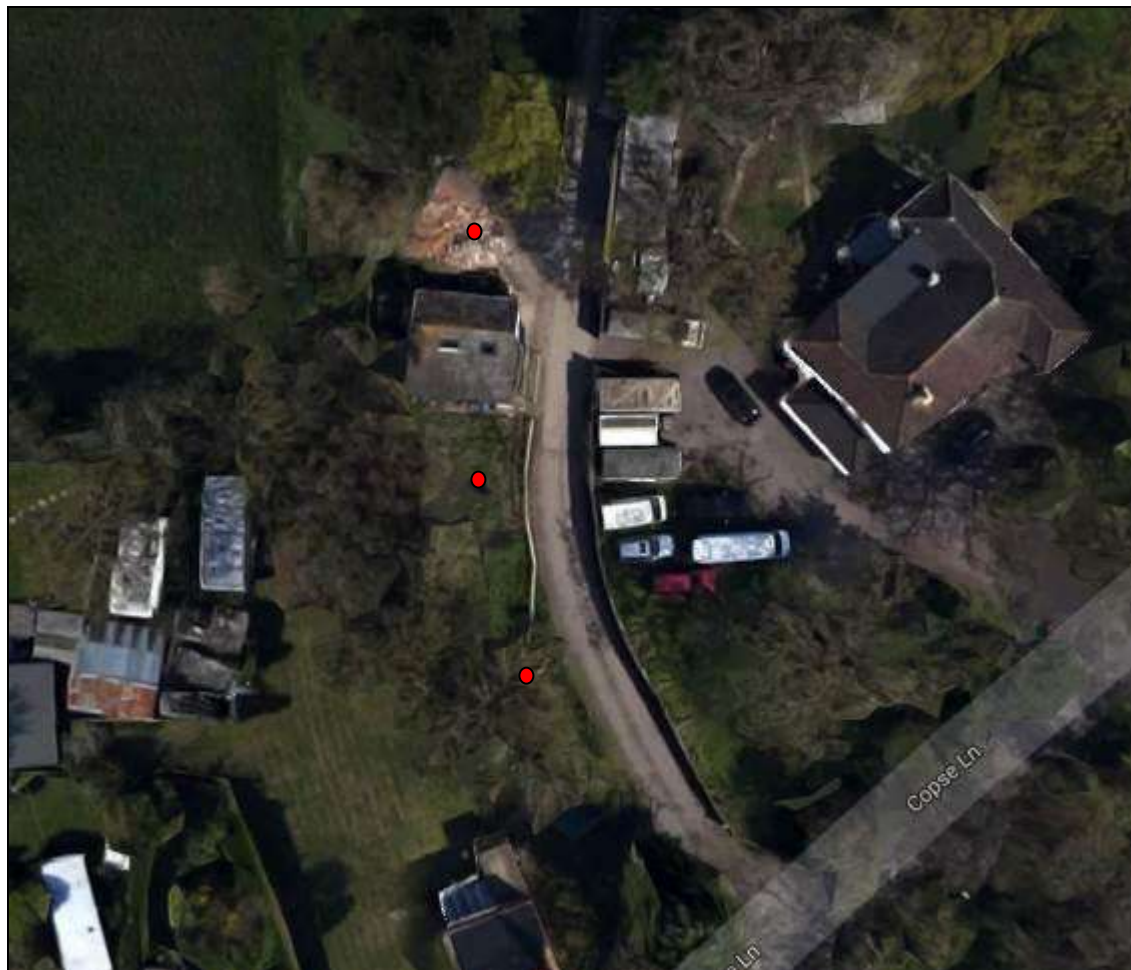
In view of the above conclusion, and through reference to Havant Borough Council memorandum, further assessment of risk is recommended, in the form of an intrusive site investigation. This should concentrate on areas where there is believed to be some potential for unacceptable risk. Hence, this should include proposed gardens areas, or where there could be made-ground deposits or other contamination hotspots.

In doing so, it is recommended that the sub-surface is physically characterised to a depth of at least 1000mm below the surface in a minimum of 3 locations, at the approximate locations suggested below in Figure 4, in order to determine the nature of the sub-surface material and presence of made-ground.

Representative soil samples should (at least) be obtained from each of these locations at depths of 100 - 200mm and 500 - 600mm below the surface; thereby assessing both the direct and indirect soil contact zones.

The samples should be analysed for the determinands highlighted in the conceptual site model.

Figure 4 Proposed soil sampling locations



● Proposed intrusive sampling locations

In characterising the nature of the ground beneath the surface; more specifically the presence and depth of any made-ground or hardcore deposits, the conceptual site model (CSM) and perceived risk should be reviewed, in order to determine whether or not additional soil sampling may be required, or whether ground gas sampling should be considered.

The need for ground gas monitoring would principally depend upon the detected presence of organic residue.

As the concrete slab of the proposed building is to remain intact it is also recommended that an internal monitoring exercise within all ground floor areas is undertaken by means of photo-ionisation detection and direct methane detection. The instruments should be used to assess locations where there could be a path of low resistance for migrating volatiles or gases; namely, where services enter (or exit) the existing building through the concrete floor slab, or where the walls might join the floor slab, or where there may be joins in the floor slab.

Finally it is recommended that an informal observation strategy should be put in place during all ground-works that may take place as part of this redevelopment. Care should be taken during the working of the site to investigate any soils, which are suspected by sight, odour or suspicion, to be contaminated.

In the event of any discovery of potentially contaminated soils or materials, the location, type and quantity should be recorded, and the contaminated land officer at Havant Borough Council notified immediately. Approval should be sought prior to continuing groundworks or implementing any mitigation.

The findings from such an investigation should allow any uncertainties or presumptions within the conceptual site model to be readdressed, and the risk reassessed accordingly.

11 Limitations

The results, comments and recommendations within this report are based upon the information made available at the time of undertaking this work, and relate to this specific work only. They must not be used to assess similar concerns at any other time, or at any other location.

Furthermore it should be pointed out that Apple Environmental Limited has been contracted to provide an objective preliminary risk assessment only, and as such has made every effort to achieve this aim.

Apple Environmental Limited will not be held responsible for the accuracy of information quoted from third party sources, and furthermore will not be held responsible for any subsequent outcomes arising from the implementation of recommendations herein based on this information.

12 References and other sources of information

1. Investigation of potentially contaminated sites - code of practice (BSI 10175:2011+A2:2017)
2. Groundsure EnviroInsight - historical mapping and environmental data report.
3. Natural England Nature on the map:
<http://www.natureonthemap.naturalengland.org.uk/MagicMap.aspx>.
4. British Geological Survey website: <http://www.bgs.ac.uk>.
5. Environment Agency website:
<http://apps.environment-agency.gov.uk/wiyby/default.aspx>.
- 6 <https://en.wikipedia.org/wiki/haylingisland>
7. <http://www.localhistories.org/hayling.html>
8. <https://haylingu3a.org.uk/hayling-in-prehistory-and-early-history-to-domesday/>

APPENDIX I

Historical maps

Site Details:

DEER VIEW LODGE, COPSE
LANE, HAYLING ISLAND, PO11
0QB

Client Ref: CL-2746-DV
Report Ref: GS-6116051
Grid Ref: 472532, 101949

Map Name: County Series

Map date: 1867

Scale: 1:2,500

Printed at: 1:2,500



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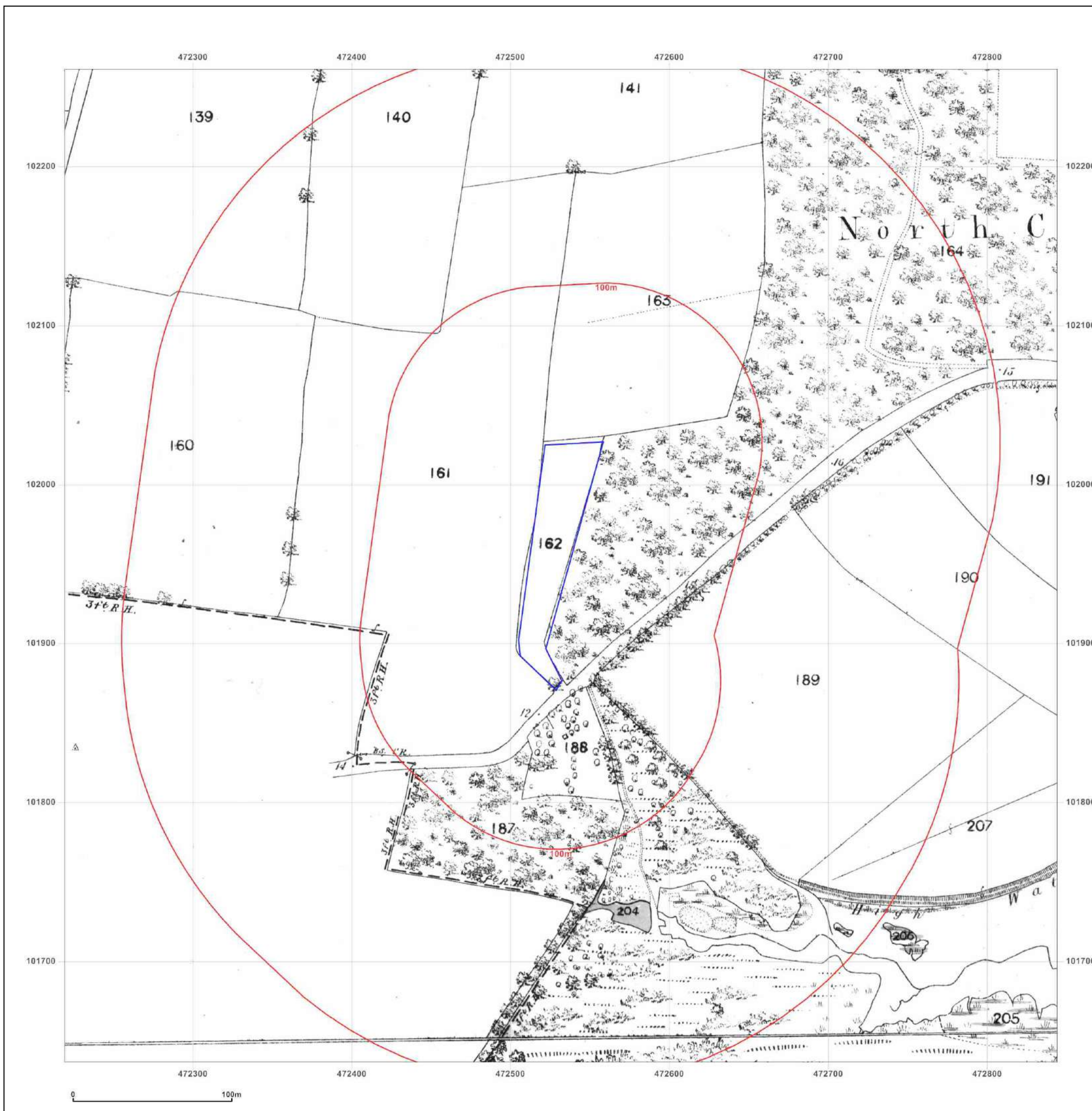


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Site Details:

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0QB

Client Ref: CL-2746-DV
Report Ref: GS-6116051
Grid Ref: 472532, 101949

Map Name: County Series

Map date: 1897-1898

Scale: 1:2,500

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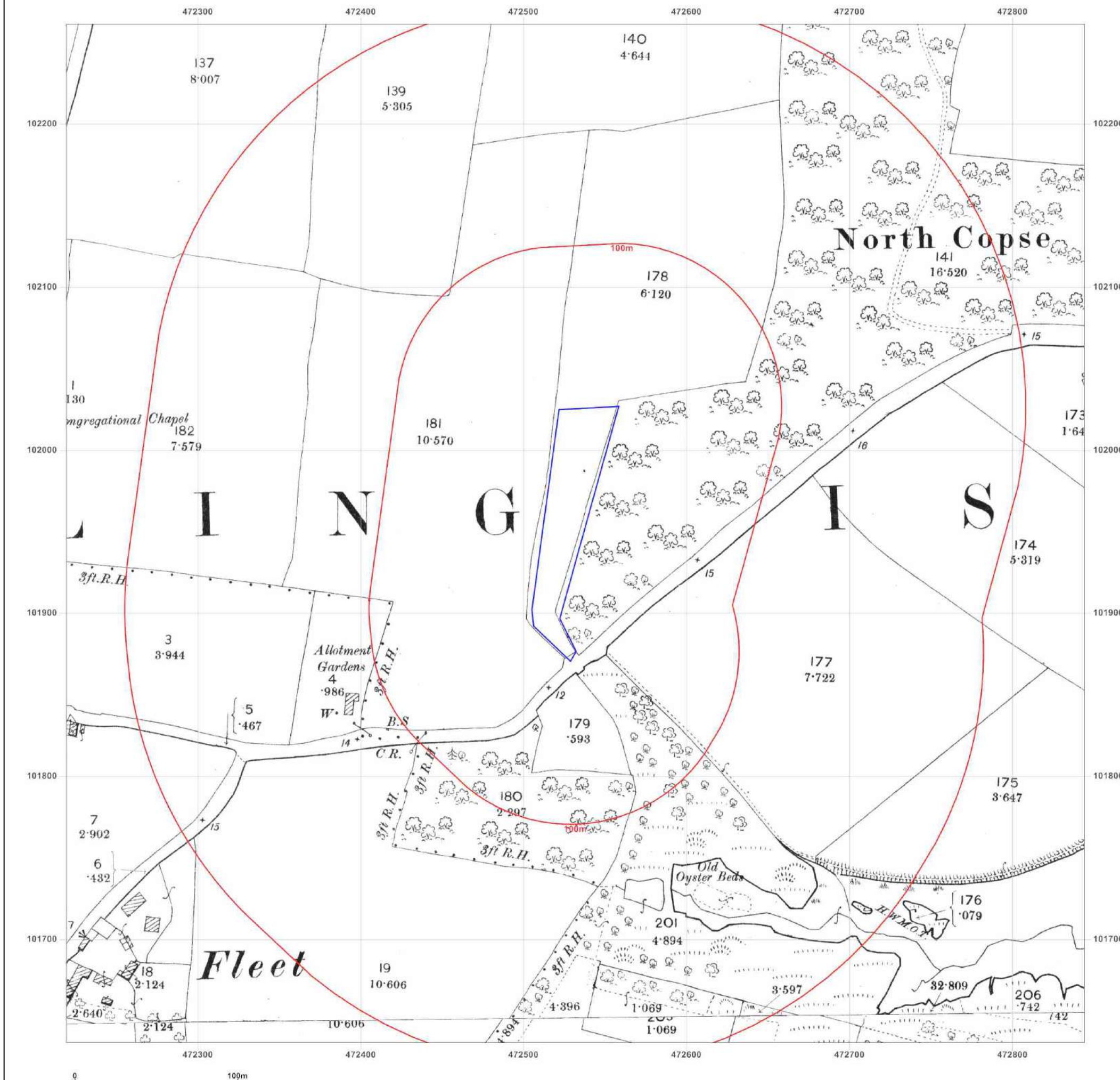


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Client Ref: CL-2746-DV
Report Ref: GS-6116051
Grid Ref: 472532, 101949

Map Name: County Series

Map date: 1908

Scale: 1:2,500

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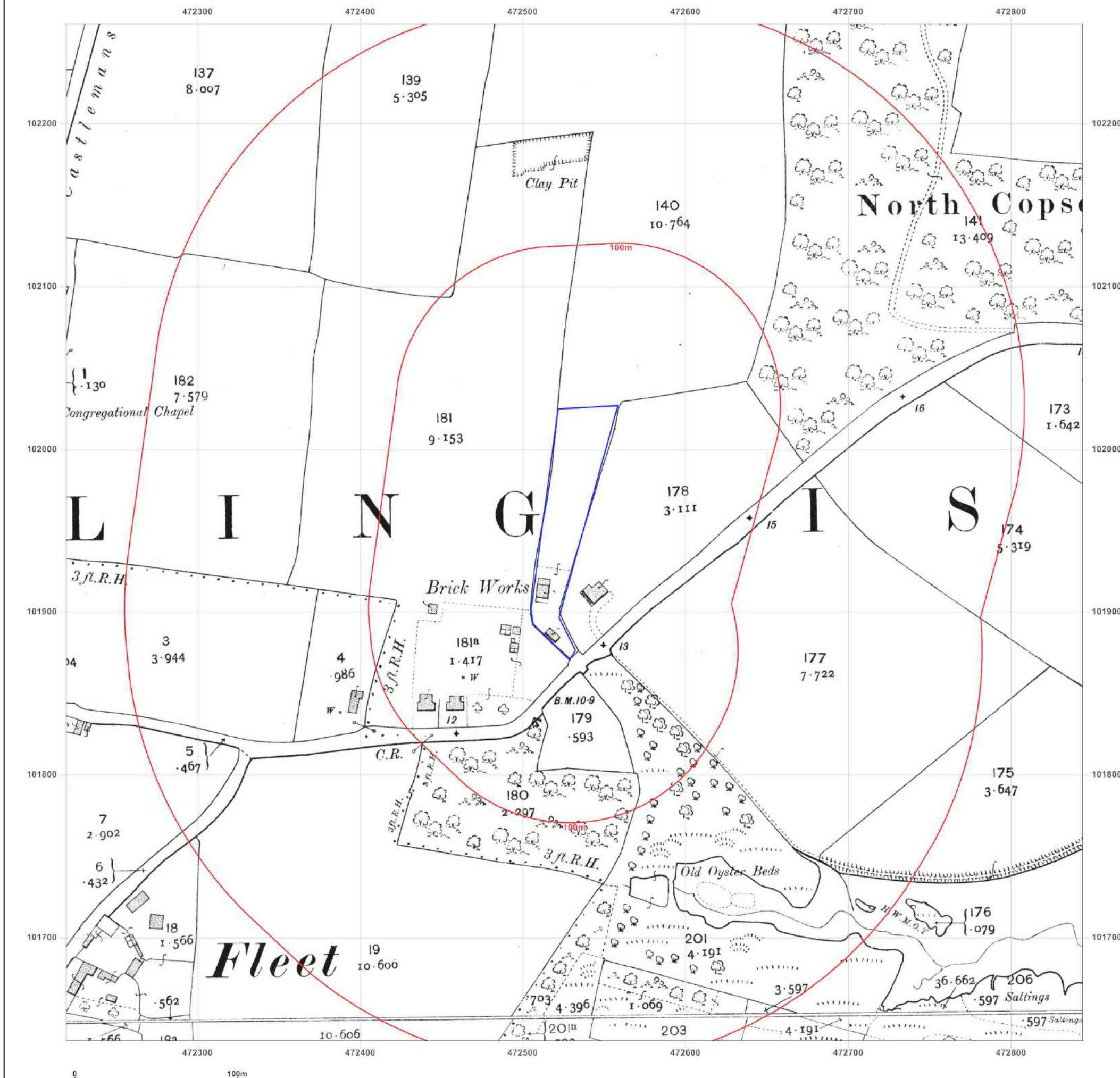


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Client Ref: CL-2746-DV
Report Ref: GS-6116051
Grid Ref: 472532, 101949

Map Name: County Series

Map date: 1932

Scale: 1:2,500

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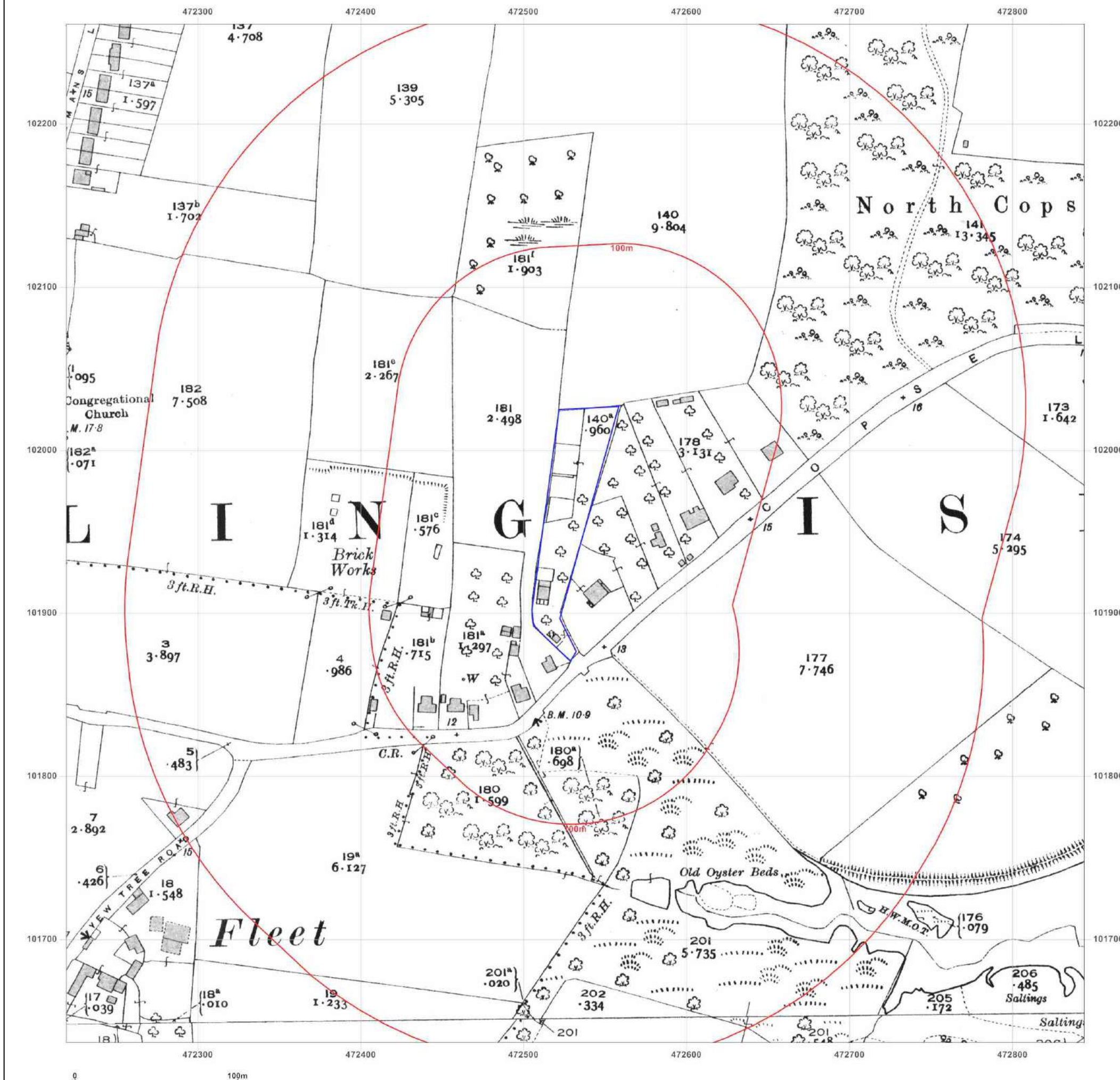


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Client Ref: CL-2746-DV
Report Ref: GS-6116051
Grid Ref: 472532, 101949

Map Name: County Series

Map date: 1940

Scale: 1:2,500

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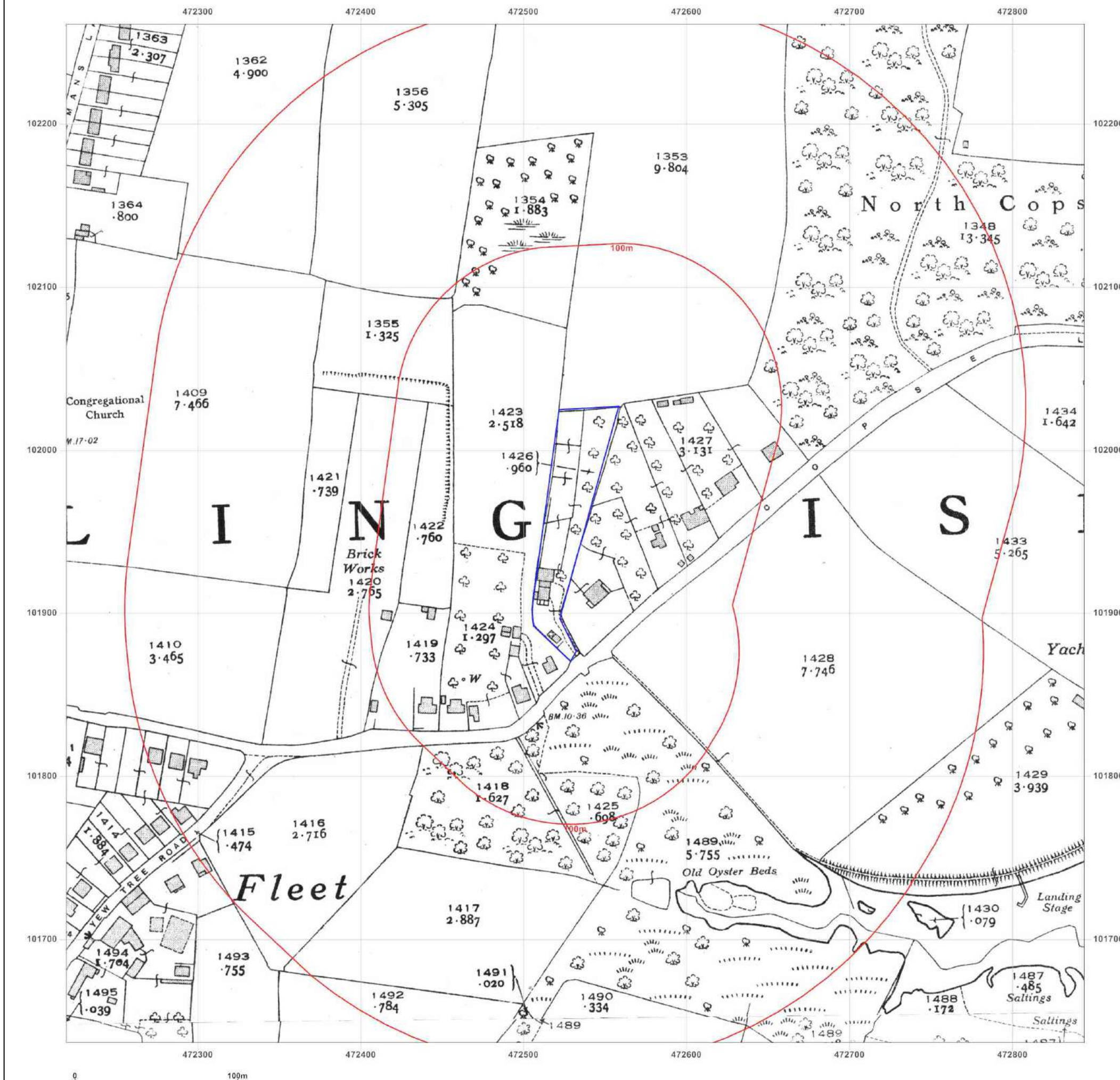


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Client Ref: CL-2746-DV
Report Ref: GS-6116051
Grid Ref: 472532, 101949

Map Name: National Grid

Map date: 1967

Scale: 1:2,500

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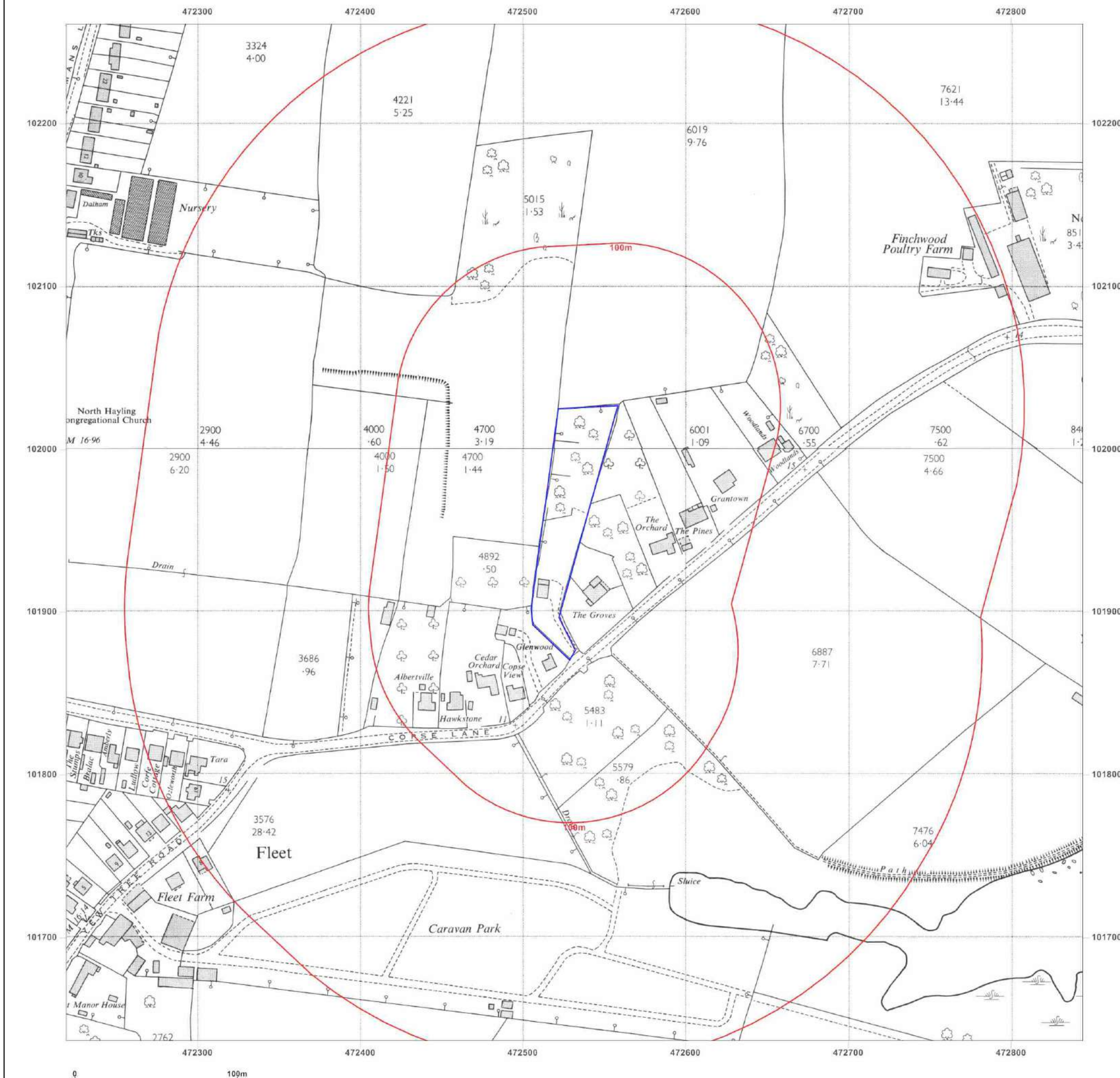


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Client Ref: CL-2746-DV
Report Ref: GS-6116051
Grid Ref: 472532, 101949

Map Name: National Grid

Map date: 1969

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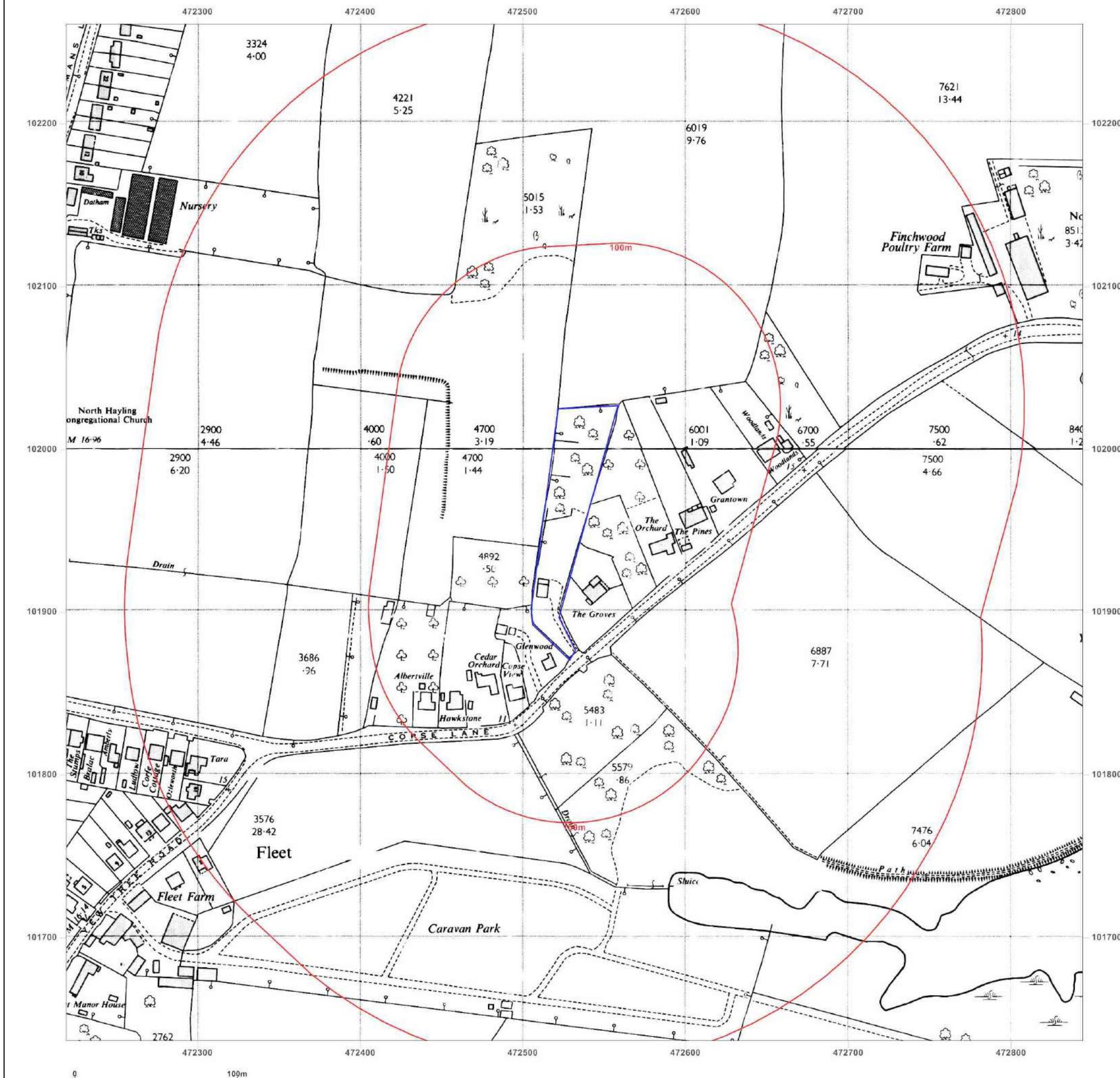


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Site Details:

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LANE, HAYLING ISLAND, PO11
0QB

Client Ref: CL-2746-DV
Report Ref: GS-6116051
Grid Ref: 472532, 101949

Map Name: National Grid

Map date: 1993

Scale: 1:2,500

Printed at: 1:2,500



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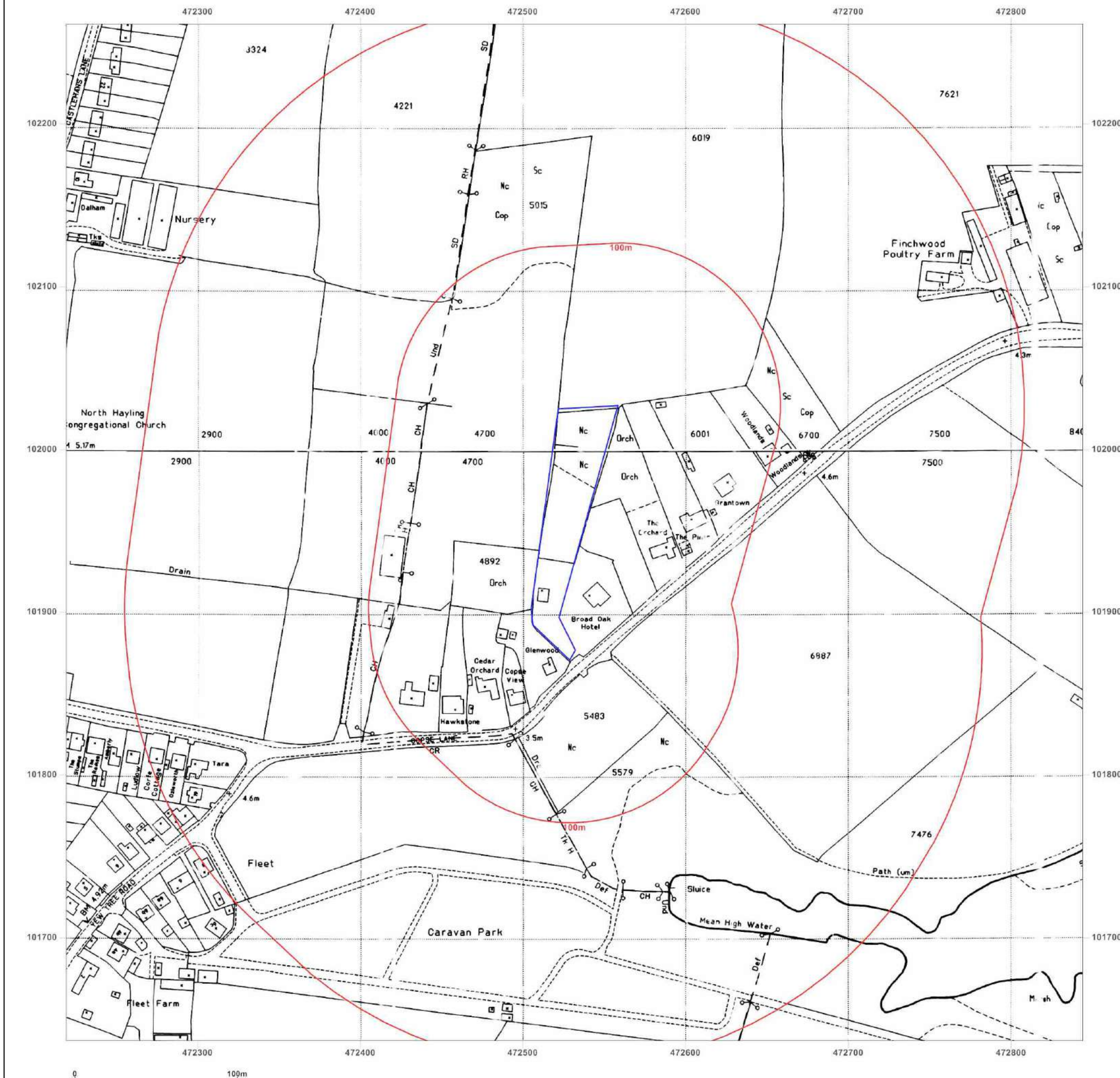


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Site Details:

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0QB

Client Ref: CL-2746-DV
Report Ref: GS-6116051
Grid Ref: 472532, 101949

Map Name: National Grid

Map date: 1994

Scale: 1:2,500

Printed at: 1:2,500



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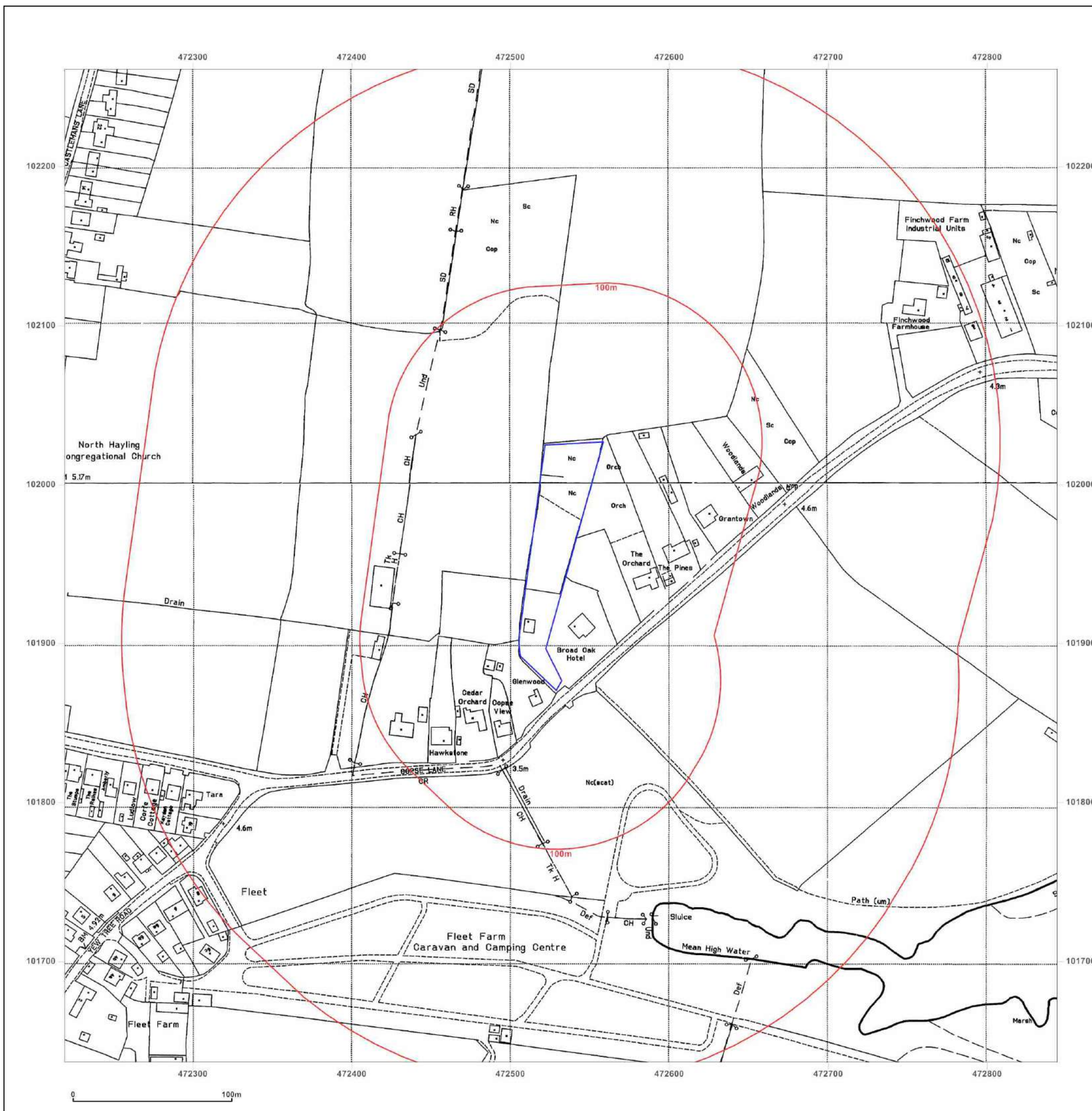


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APPENDIX II

Environmental datasheets

Address: DEER VIEW LODGE, COPSE LANE, HAYLING ISLAND, PO11 0QB
Date: 20 Jun 2019
Reference: GS-6116049
Client: Apple Environmental Ltd

NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 23-Jul-2018
Grid Reference: 472535,101977
Site Size: 0.3822ha

Report Reference: GS-6116049
Client Reference: CL-2746-DV

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Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	1	3	9	19
1.2 Additional Information – Historical Tank Database	0	0	0	7
1.3 Additional Information – Historical Energy Features Database	0	0	0	0
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	1	3	12	16
Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	0
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	1
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	1	0
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	1	1	0	1
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	1
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	3	3

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	0	2	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Records of Artificial Ground and Made Ground present beneath the study site	None identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	Identified
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology				0-500m		
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site				Identified		
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site				Identified		
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	1
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	1	0	2	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

0-500m

	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	No	No	No
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	0	0	8	18	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Environment Agency Zone 2 floodplains within 250m of the study site	Identified					
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	Identified					
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Very Low					
7.4 Flood Defences within 250m of the study site	None identified					
7.5 Areas benefiting from Flood Defences within 250m of the study site	Identified					
7.6 Areas used for Flood Storage within 250m of the study site	None identified					
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Potential at Surface					
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Moderate					

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	1	0	1	1
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	1	0	1	0
8.4 Records of Special Protection Areas (SPA)	0	0	1	0	1	1
8.5 Records of Ramsar sites	0	0	1	0	1	3
8.6 Records of Ancient Woodlands	0	0	0	0	0	0
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	2	1
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	1	0	0	0	1
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	1	0	0	0	0	1
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards	
9.1 Maximum risk of natural ground subsidence	Moderate
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Moderate
9.1.2 Maximum Landslides hazard rating identified on the study site	Very Low
9.1.3 Maximum Soluble Rocks hazard rating identified on the study site	Negligible
9.1.4 Maximum Compressible Ground hazard rating identified on the study site	Negligible
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	Low
9.1.6 Maximum Running Sand hazard rating identified on the study site	Low
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining	
10.1 Coal mining areas within 75m of the study site	None identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	None identified
10.3 Brine affected areas within 75m of the study site	None identified

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licences, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

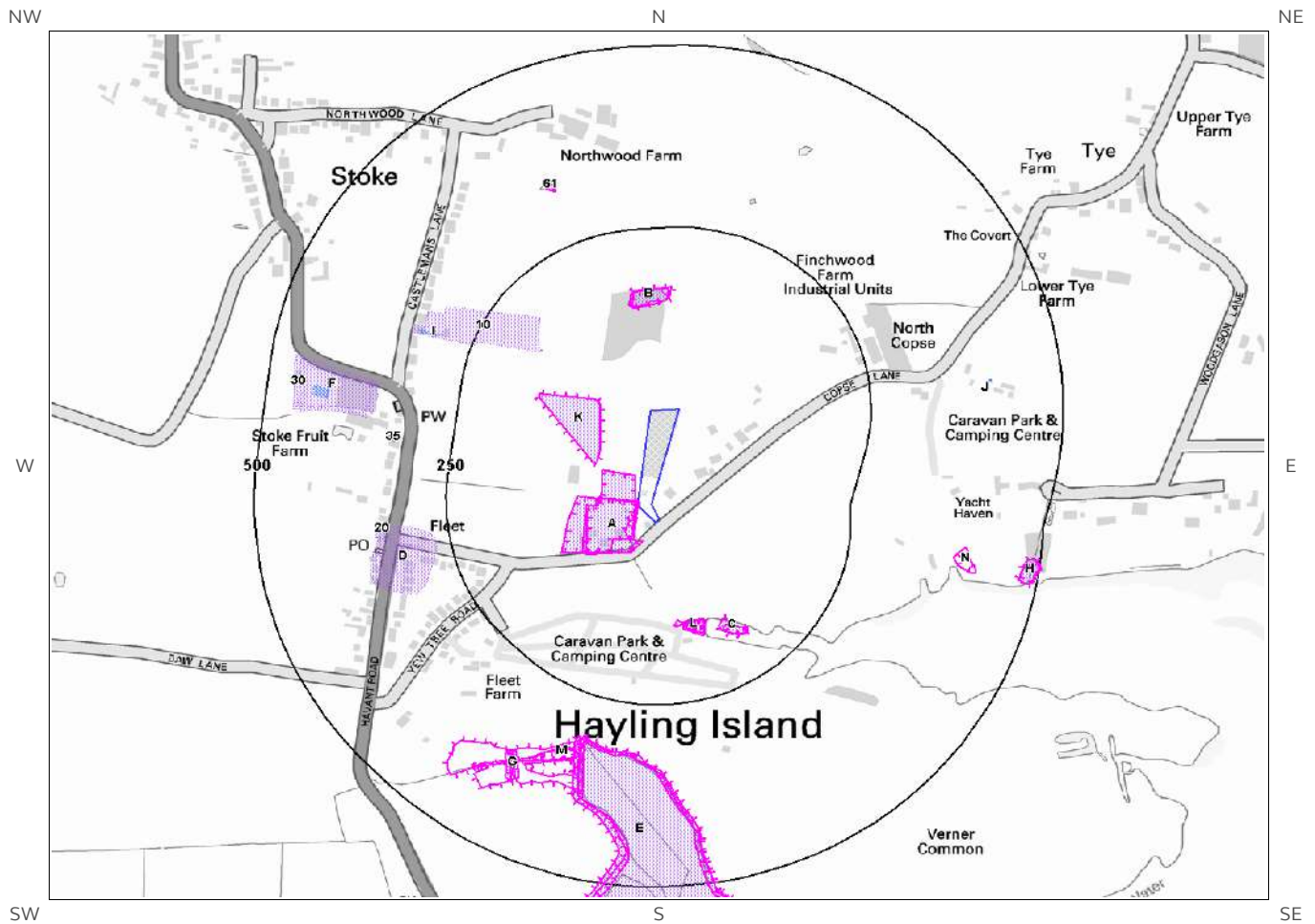
Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

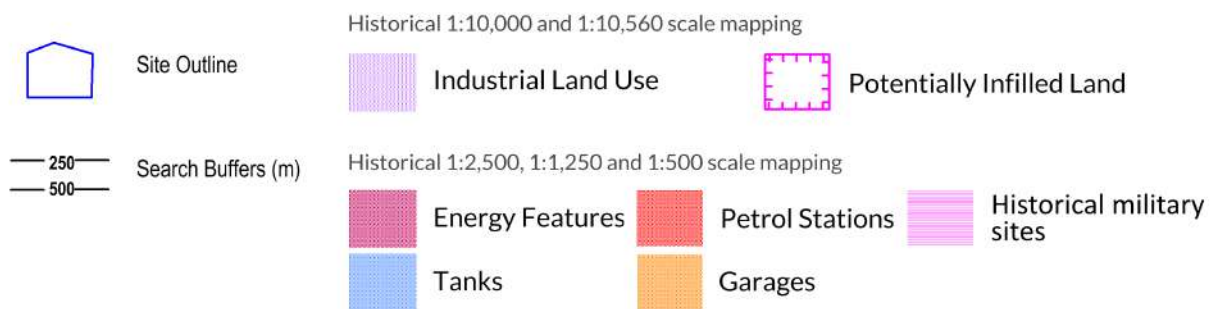
Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use



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1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 32

ID	Distance [m]	Direction	Use	Date
1A	0	On Site	Brick Works	1909
2A	3	W	Brick Works	1907
3A	3	W	Brick Works	1931
4A	4	W	Brick Works	1938
5K	58	W	Unspecified Ground Workings	1957
6B	142	N	Clay Pit	1907
7B	143	N	Clay Pit	1909
8C	158	SE	Unspecified Old Beds	1909
9C	158	SE	Unspecified Old Beds	1946
10	161	NW	Nursery	1970
11C	166	SE	Unspecified Beds	1938
12C	166	SE	Unspecified Beds	1931
13C	166	SE	Unspecified Beds	1907
14D	268	W	Smithy	1896
15D	290	W	Smithy	1909
16D	294	W	Smithy	1866
17D	301	W	Smithy	1896
18E	310	S	Mill Pond	1896
19E	311	S	Mill Pond	1866
20	328	W	Smithy	1907
21F	354	W	Old Water Works	1938
22F	354	W	Water Works	1907
23F	354	W	Old Water Works	1931
24G	363	SW	Unspecified Ground Workings	1907
25G	363	SW	Unspecified Ground Workings	1938
26G	363	SW	Unspecified Ground Workings	1931
27F	364	W	Unspecified Commercial/Industrial	1896
28F	364	W	Water Works	1909
29F	364	W	Unspecified Commercial/Industrial	1946
30	451	W	Fire Engine Station	1946

31H	476	E	Unspecified Heap	1938
32H	476	E	Unspecified Heap	1931

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary:

7

ID	Distance (m)	Direction	Use	Date
33I	298	W	Tanks	1967
34I	308	W	Tanks	1967
35	326	W	Unspecified Tank	1940
36J	398	E	Unspecified Tank	1994
37J	405	E	Unspecified Tank	1994
38J	407	E	Unspecified Tank	1967
39F	418	W	Unspecified Tank	1967

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary:

0

Database searched and no data found.

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary:

0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 0

Database searched and no data found.

1.6 Historical military sites

Certain military installations were not noted on historic mapping for security reasons. Whilst not all military land is necessarily of concern, Groundsure has researched and digitised a number of Ordnance Factories and other military industrial features (e.g. Ordnance Depots, Munitions Testing Grounds) which may be of contaminative concern. This research was drawn from a number of different sources, and should not be regarded as a definitive or exhaustive database of potentially contaminative military installations. The boundaries of sites within this database have been estimated from the best evidence available to Groundsure at the time of compilation.

Records of historical military sites within 500m of the search boundary: 0

Database searched and no data found.

1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 32

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
40A	0	On Site	Brick Works	1909
41A	3	W	Brick Works	1931
42A	3	W	Brick Works	1907
43A	4	W	Brick Works	1938
44K	58	W	Unspecified Ground Workings	1957
45L	136	S	Pond	1866
46L	140	S	Pond	1907
47L	140	S	Pond	1931
48L	140	S	Pond	1938
49B	142	N	Clay Pit	1907
50B	143	N	Clay Pit	1909
51C	158	SE	Unspecified Old Beds	1909
52C	158	SE	Unspecified Old Beds	1946
53C	166	SE	Unspecified Beds	1931
54C	166	SE	Unspecified Beds	1938
55C	166	SE	Unspecified Beds	1907
56E	308	S	Pond	1896
57E	310	S	Mill Pond	1896
58E	311	S	Mill Pond	1866
59G	316	S	Pond	1866
60M	319	S	Pond	1931
61	326	N	Pond	1931

62M	327	S	Pond	1896
63G	363	SW	Unspecified Ground Workings	1907
64G	363	SW	Unspecified Ground Workings	1931
65G	363	SW	Unspecified Ground Workings	1938
66N	387	E	Pond	1866
67N	387	E	Pond	1938
68N	387	E	Pond	1907
69N	387	E	Pond	1931
70H	476	E	Unspecified Heap	1938
71H	476	E	Unspecified Heap	1931

2. Environmental Permits, Incidents and Registers Map



- | | | |
|-------------------------------|---|--|
| Site Outline | Recorded Pollution Incident | RAS 3 & 4 Authorisations |
| Dangerous Substances (List 1) | Dangerous Substances (List 2) | Part A(1) Authorised Processes and Historic IPC Authorisations |
| Water Industry Referrals | Licenced Discharge Consents | Part A(2) and Part B Authorised Processes |
| Red List Discharge Consents | Sites Determined as Contaminated Land | COMAH / NIHHS Sites |
| | Hazardous Substance Consents and Enforcements | |

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

0

Database searched and no data found.

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

1

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
2	392	N	472450 102410	Address: NORTHNEY FARM, ST.PETERS ROAD, NORTH HAYLING HAMPSHIRE Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: H00060 Permit Version: 1 Receiving Water: FRESHWATER RIVER Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 22/01/1965 Effective Date: 22-Jan-1965 Revocation Date: 31/03/1997

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site:

0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

1

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
1	190	SW	472340.0 101799.0	Incident Date: 13-Nov-2003 Incident Identification: 201503.0 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

Database searched and no data found.

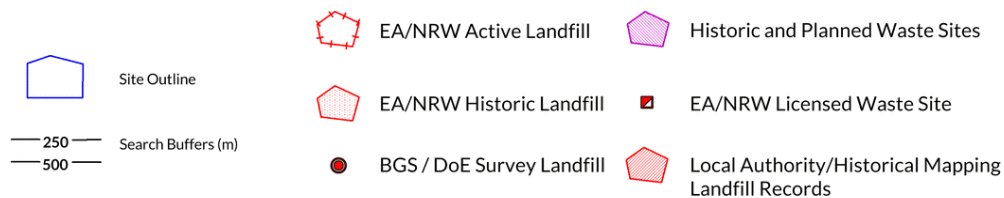
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site

0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

3

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
1	148	SW	Site Address: Fleet Farm Caravan Park, Yew Tree Road, Hayling Island, Hampshire Waste Licence: - Site Reference: FHA14, HAV 8 Waste Type: Household Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
2	369	E	Site Address: Yachthaven, Copse Lane, Hayling Island, Hampshire Waste Licence: Yes Site Reference: 13/15, FHA2 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 19-Dec-1984 Licence Surrendered: Licence Holder Address: 1 Whitchersgate, Rowlands Castle, Hampshire Operator: - Licence Holder: Wal-Leisure Limited First Recorded: - Last Recorded: -
Not shown	1233	NW	Site Address: Land West Of Old Railway, Hayling Island, Hampshire Waste Licence: - Site Reference: FHA9, HAV 3 Waste Type: Household Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

1

The following landfill records are represented as points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
Not shown	1268	NW	471599 103341	Refuse Tip	1967 mapping	Polygon

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

0

Database searched and no data found.

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

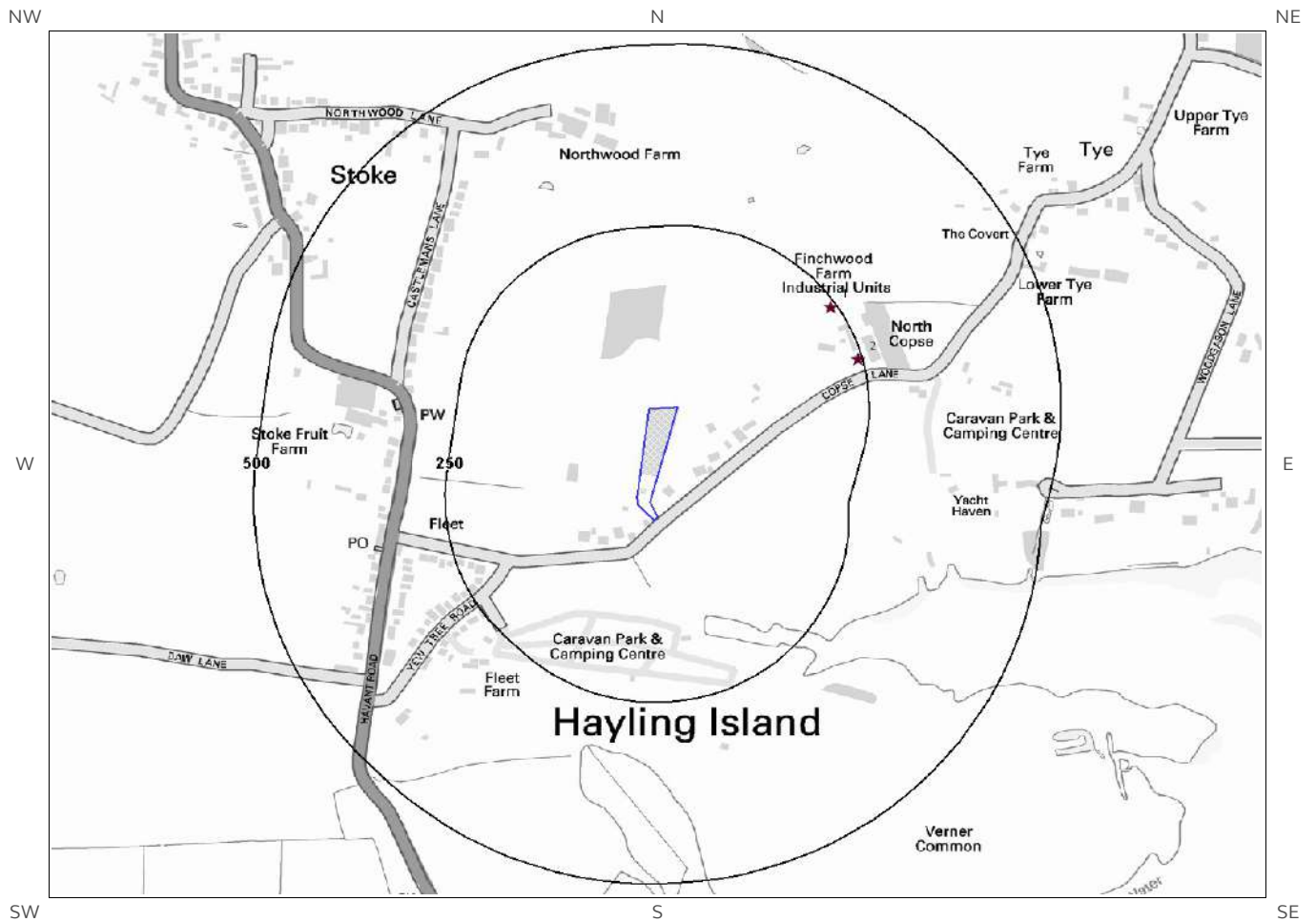
6

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
Not shown	618	S	472510 101253	Site Address: Land / Premises At, Mill Rythe Lane, Hayling Island, Hampshire, PO11 0QG Type: ELV Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HOW007 EPR reference: EA/EPR/YP3195HT/S002 Operator: Howards Car Spares Waste Management licence No: 10241 Annual Tonnage: 0.0 Issue Date: 24/05/2004 Effective Date: - Modified: - Surrendered Date: 24/03/2015 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Howards Car Spares Correspondence Address: -
Not shown	618	S	472510 101253	Site Address: Land / Premises At, Mill Rythe Lane, Hayling Island, Hampshire, PO11 0QG Type: ELV Facility Size: < 25000 tonnes Issue Date: 24/05/2004 Effective Date: - Modified: - Surrendered Date: Mar 24 2015 12:00AM Expiry Date: -

ID	Distance (m)	Direction	NGR	Details	
				Environmental Permitting Regulations (Waste) Licence Number: HOW007 EPR reference: EA/EPR/YP3195HT/S002 Operator: Howards Car Spares Waste Management licence No: 10241 Annual Tonnage: 0.0	Cancelled Date: - Status: Surrendered Site Name: Howards Car Spares Correspondence Address: -
Not shown	647	S	472526 101224	Site Address: Freezer Boat Yard, Mill Rythe Lane, Hayling Island, Hampshire, PO11 0QG Type: ELV Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HMS003 EPR reference: EA/EPR/JP3295HD/S002 Operator: H M S Total Vehicle Recovery Ltd Waste Management licence No: 10250 Annual Tonnage: 0.0	Issue Date: 22/10/2004 Effective Date: - Modified: - Surrendered Date: May 2 2012 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Hms Total Vehicle Recovery Ltd Correspondence Address: -
Not shown	1063	SW	472000 100948	Site Address: Manor Farm, Manor Road, Hayling Island, Hampshire, PO11 0QW Type: Composting Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TWG001 EPR reference: EA/EPR/EB3300GW/V002 Operator: Woodhorn Group Limited Waste Management licence No: 100006 Annual Tonnage: 8999.0	Issue Date: 28/11/2007 Effective Date: 12/10/2016 Modified: 07/02/2018 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Manor Farm Correspondence Address: -
Not shown	1123	SW	472060 100850	Site Address: Osier Dell, Manor Farm, Manor Road, Hayling Island, Hampshire, PO11 0QW Type: Composting Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FIE012 EPR reference: EA/EPR/KP3395ED/A001 Operator: Fieldfare U K Limited Waste Management licence No: 100006 Annual Tonnage: 7999.0	Issue Date: 28/11/2007 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Fieldfare Uk Limited Correspondence Address: -
Not shown	1123	SW	472060 100850	Site Address: Osier Dell, Manor Farm, Manor Road, Hayling Island, Hampshire, PO11 0QW Type: Composting Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TWG001 EPR reference: EA/EPR/EB3300GW/T001 Operator: The Woodhorn Group Ltd Waste Management licence No: 100006 Annual Tonnage: 7999.0	Issue Date: 28/11/2007 Effective Date: 12/10/2016 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Manor Farm Correspondence Address: -

4. Current Land Use Map



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4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 2

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	243	NE	Finchwood Farm Industrial Units	472758 102166	Hampshire, PO11	Business Parks and Industrial Estates	Industrial Features
2	244	E	Prep N Paint	472793 102094	Unit 6 Finchwood Farm, Copse Lane, Hayling Island, Hampshire, PO11 0QB	Vehicle Repair, Testing and Servicing	Repair and Servicing

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 0

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
RTDU-XSZC	RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)	SAND, SILT AND CLAY

5.3 Bedrock and Solid Geology

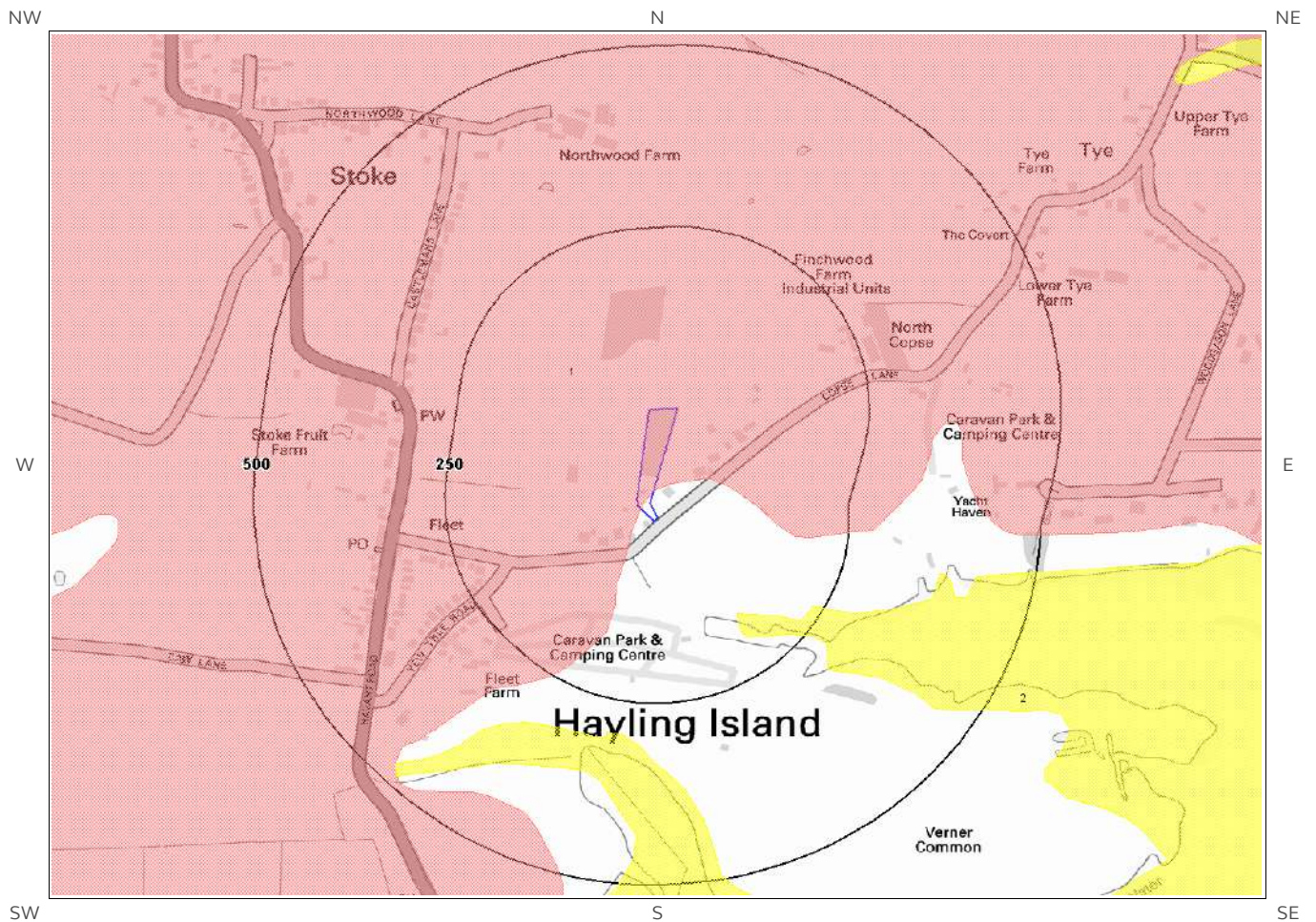
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
LMBE-XCZS	LAMBETH GROUP	CLAY, SILT AND SAND

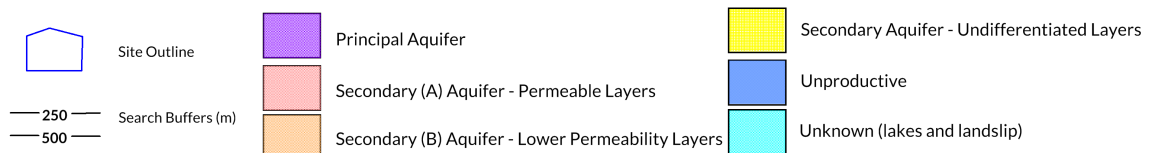
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

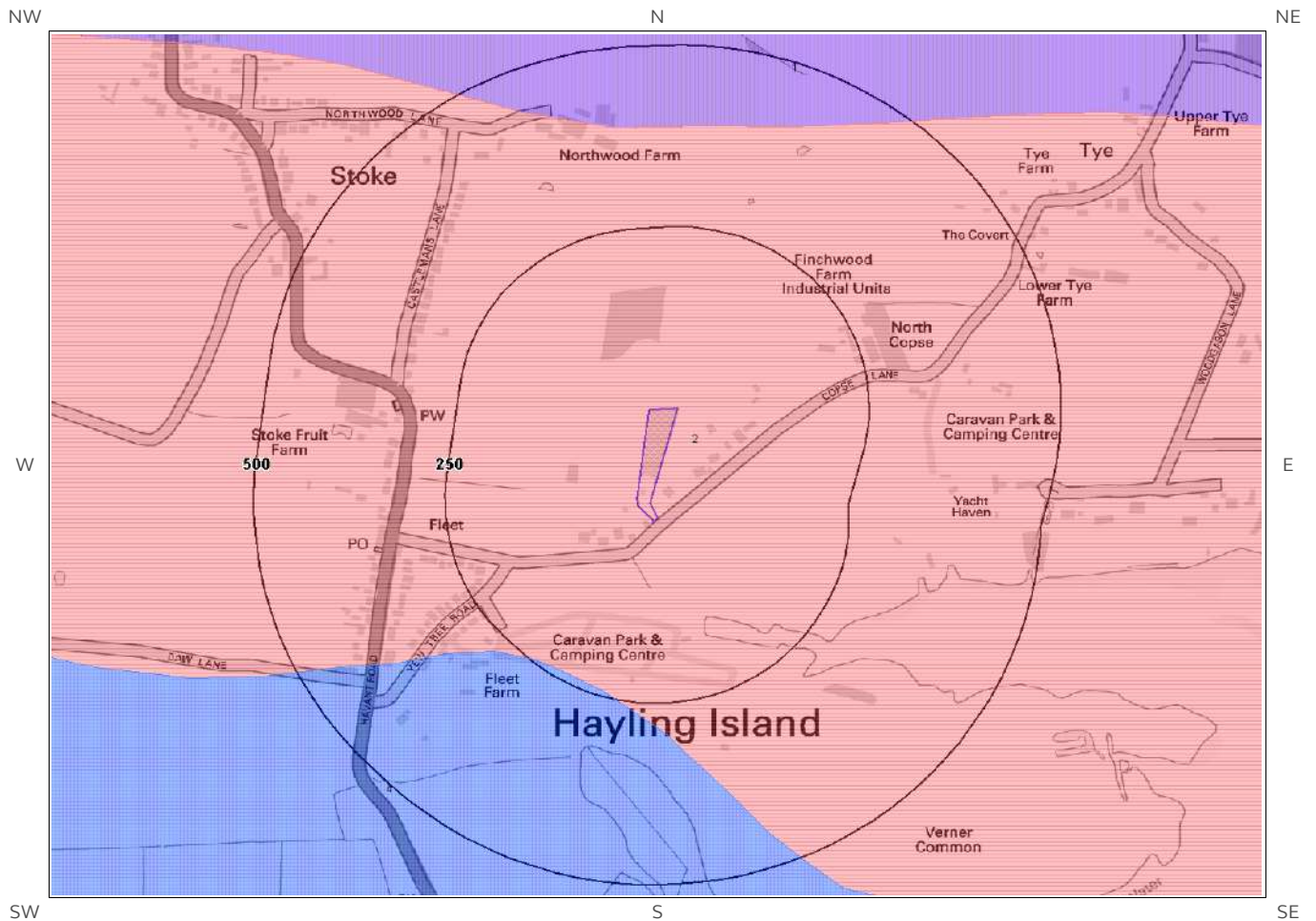
6a. Aquifer Within Superficial Geology



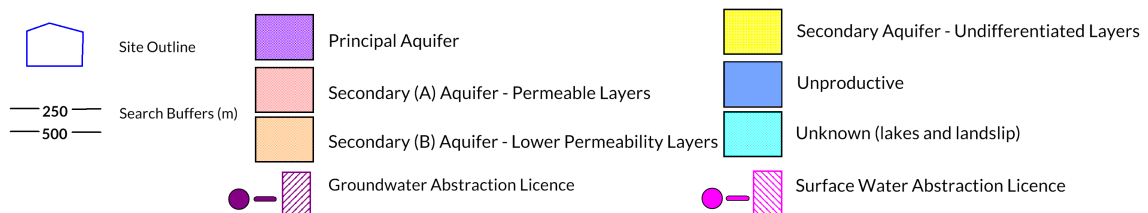
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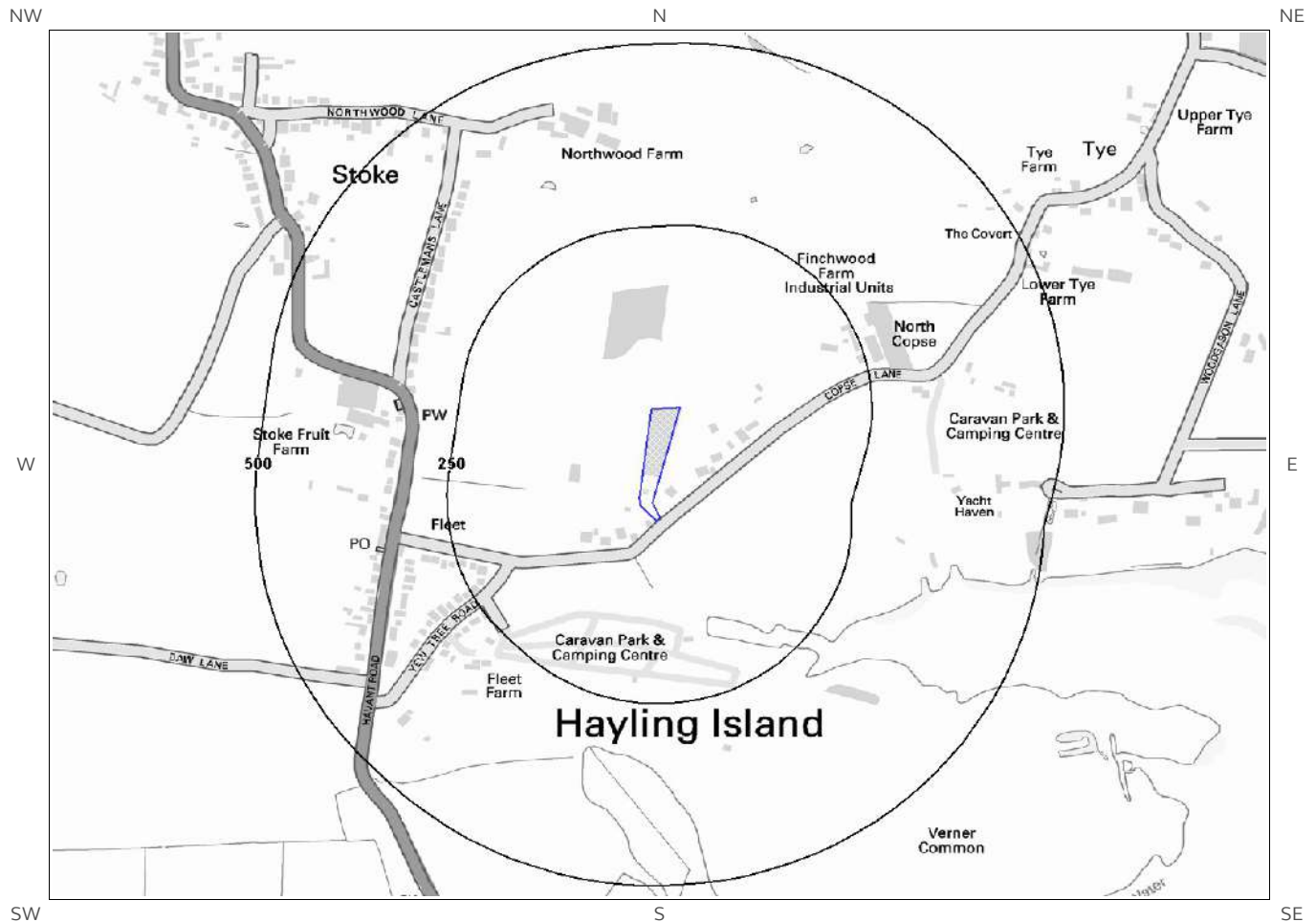
6b. Aquifer Within Bedrock Geology and Abstraction Licences



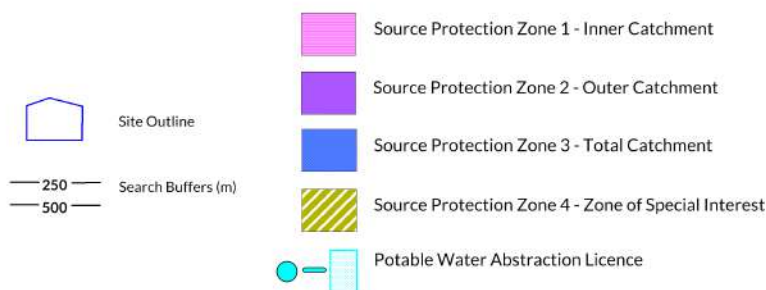
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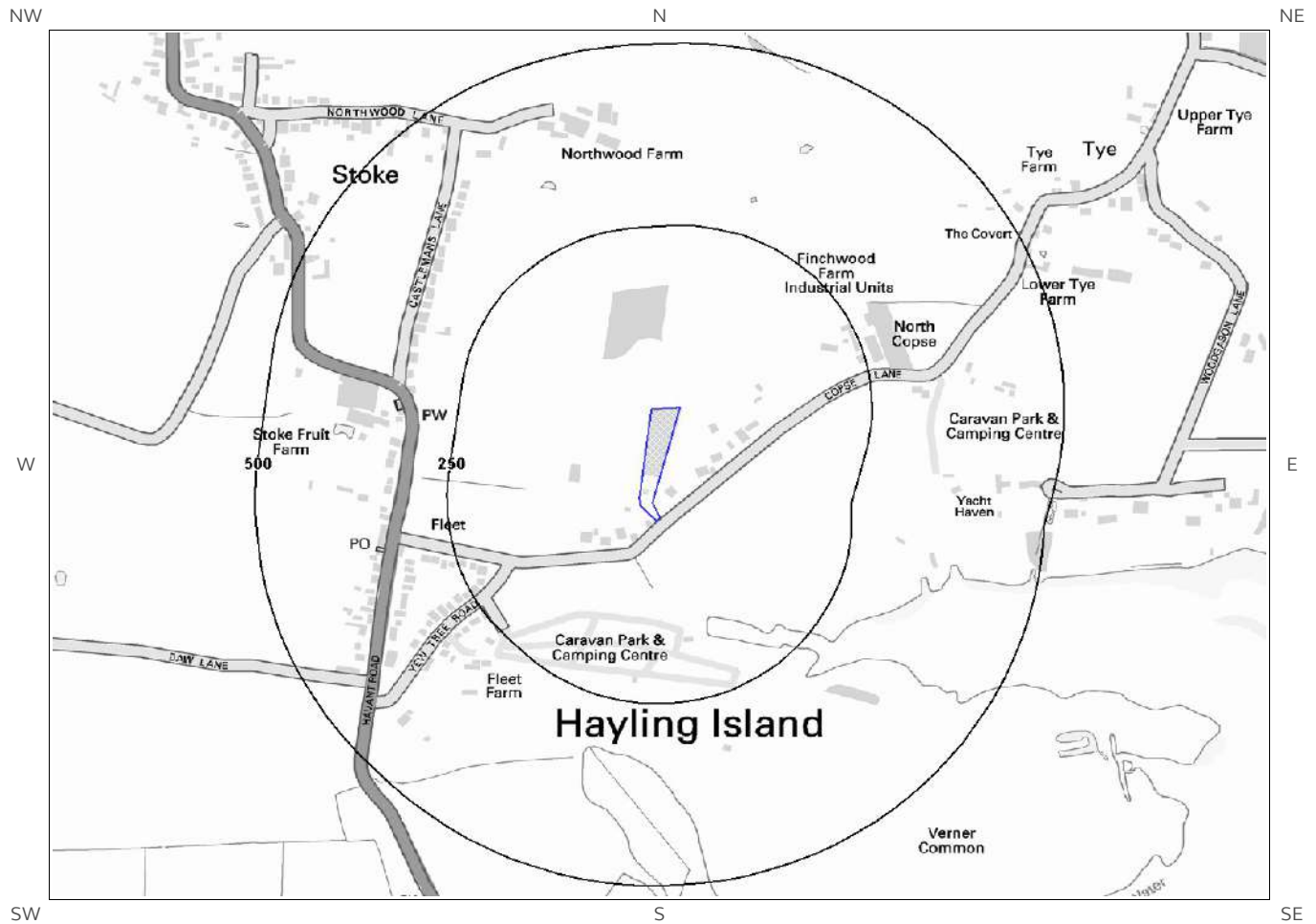
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



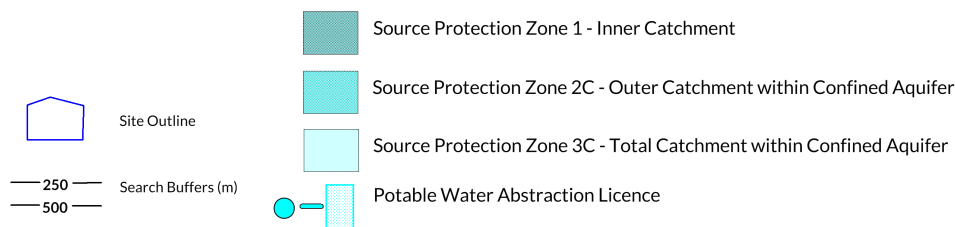
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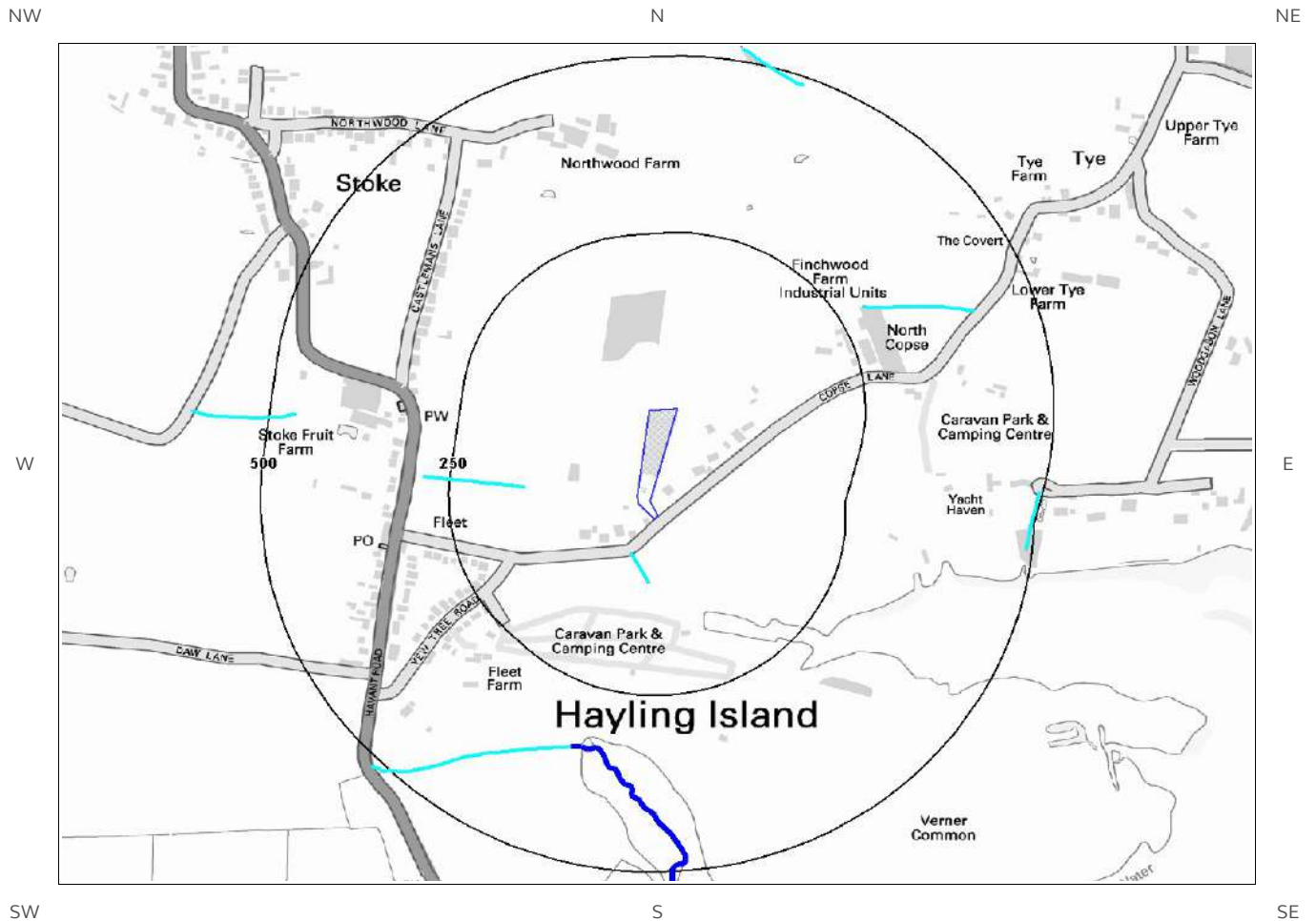
6d. Hydrogeology – Source Protection Zones within confined aquifer



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6e. Hydrology – Watercourse Network and River Quality



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6. Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	165	SE	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

6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
2	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	238	SW	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
1	388	N	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

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site

Identified

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details
Not shown	1961	S	473010 99970	Status: Active Licence No: 28/038CA Details: Spray Irrigation - Storage Direct Source: Southern Region Surface Waters Point: UNNAMED WATERCOUSE AT TURNERBURY FARM, HAYLING ISLAND Data Type: Line Name: A G Phillips & Son Ltd Annual Volume (m³): 12000 Max Daily Volume (m³): 110 Application No: - Original Start Date: 15/11/1993 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2016 Version End Date:

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site

None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site None identified

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/High Leaching Potential	H1	Soils which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.
39	SW	Minor Aquifer/Low Leaching Potential	L	Soils in which pollutants are unlikely to penetrate the soil layer because either water movement is largely horizontal, or they have the ability to attenuate diffuse pollutants.
460	SE	Minor Aquifer/High Leaching Potential	H1	Soils which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.
475	N	Major Aquifer/High Leaching Potential	H1	Soils which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site None identified

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
1	57 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
3	57 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
2	149 W	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
4	149 W	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
3	153 W	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
5	153 W	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
4	154 W	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
6	154 W	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				conditions) Average Width in Watercourse Section (m): Not Provided
5	285 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
7	285 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
6	333 S	-	Tidal river or stream.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	333 S	-	Tidal river or stream.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
7	337 S	-	Tidal river or stream.	Catchment Area: East Hampshire Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	337 S	-	Tidal river or stream.	Catchment Area: East Hampshire Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
8	341 S	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	341 S	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
9	393 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	393 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
10	397 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	397 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
11	465 W	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	465 W	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
12	488 N	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	488 N	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
13	491 E	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	491 E	-	Inland river not influenced by normal tidal action.	Catchment Area: East Hampshire Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

6.11 Surface Water Features

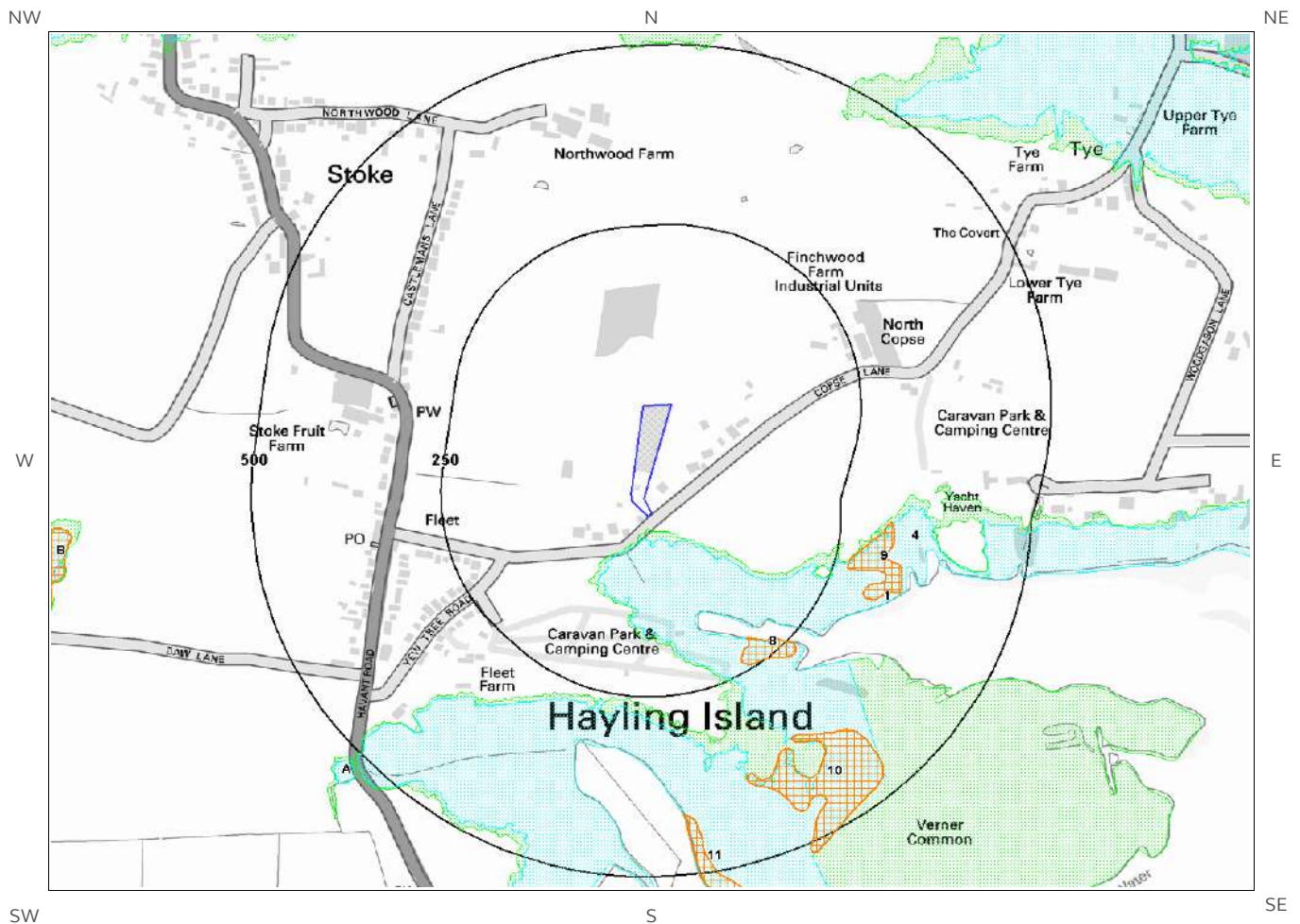
Surface water features within 250m of the study site

Identified

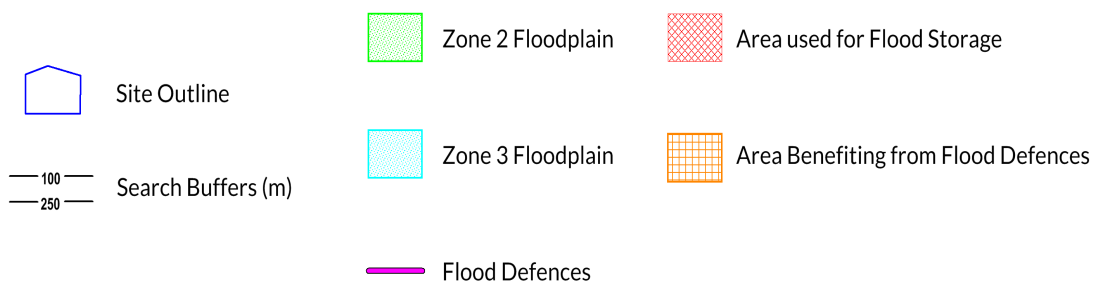
The following surface water records are not represented on mapping:

Distance (m)	Direction
152	SE
57	SW
149	W

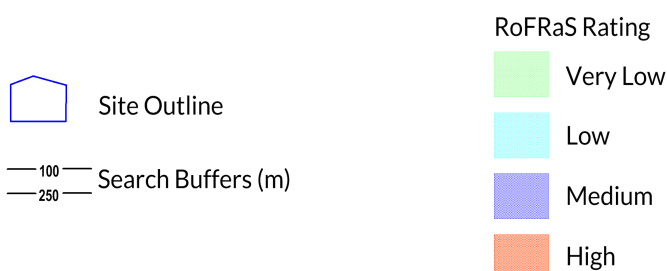
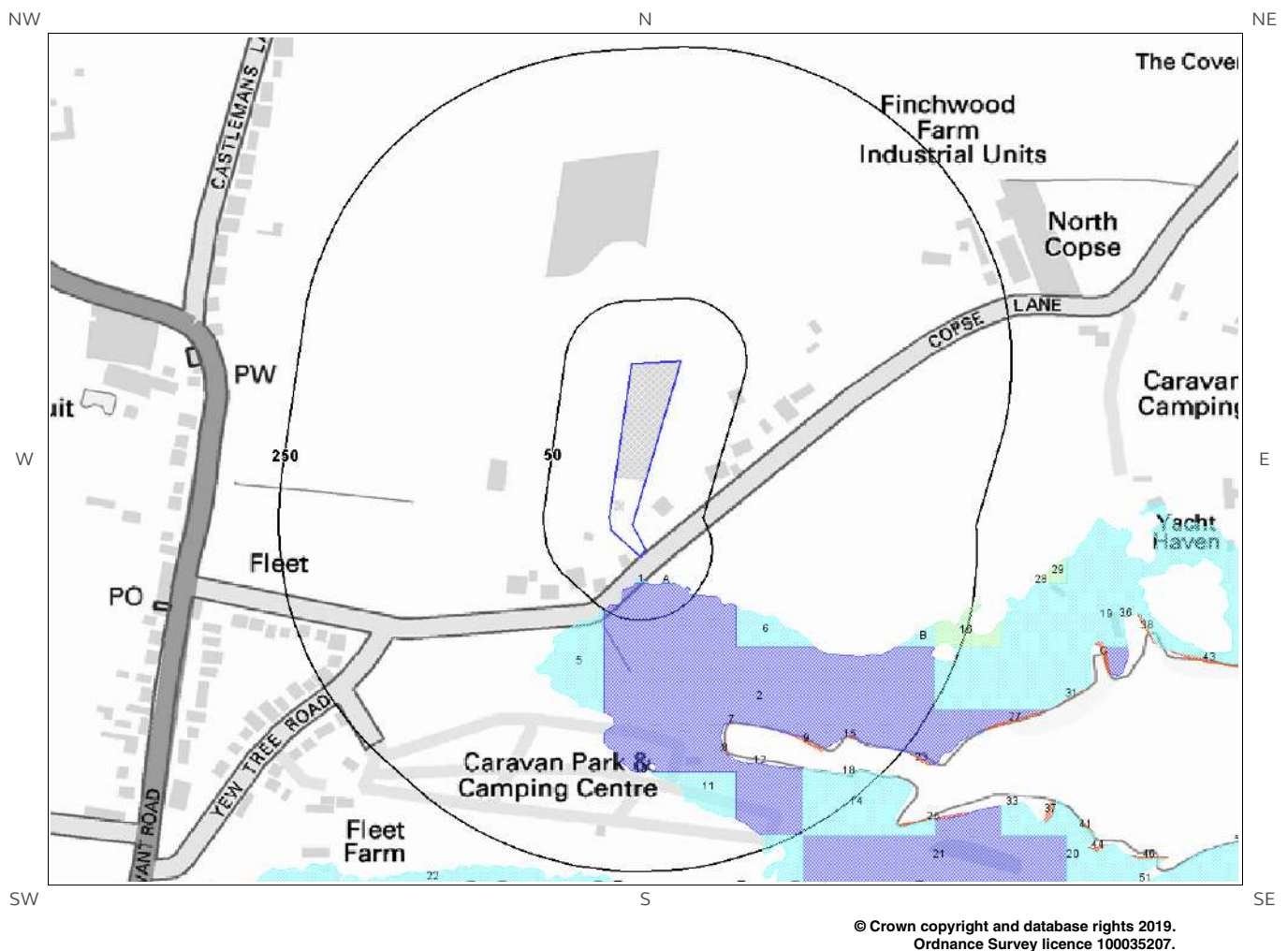
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



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7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m

Identified

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

ID	Distance (m)	Direction	Update	Type
1	17	S	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m

Identified

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

ID	Distance (m)	Direction	Update	Type
1	30	S	20-Jun-2019	Zone 3 - (Fluvial Models)

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

Highest risk of flooding onsite

Very Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

Any relevant data within 250m is represented on the RoFRaS Flood map. Data to 50m is reported in the table below.

ID	Distance (m)	Direction	RoFRaS flood Risk
1	17.0	S	Low
2	21.0	S	Medium

3A	26.0	SE	Low
4A	31.0	SE	Low
5	50.0	SW	Low

7.4 Flood Defences

Flood Defences within 250m of the study site None identified
Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site Identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site None identified

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site Identified

Clearwater Flooding or Superficial Deposits Flooding Superficial Deposits Flooding

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Potential at Surface

Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

7.8 Groundwater Flooding Confidence Areas

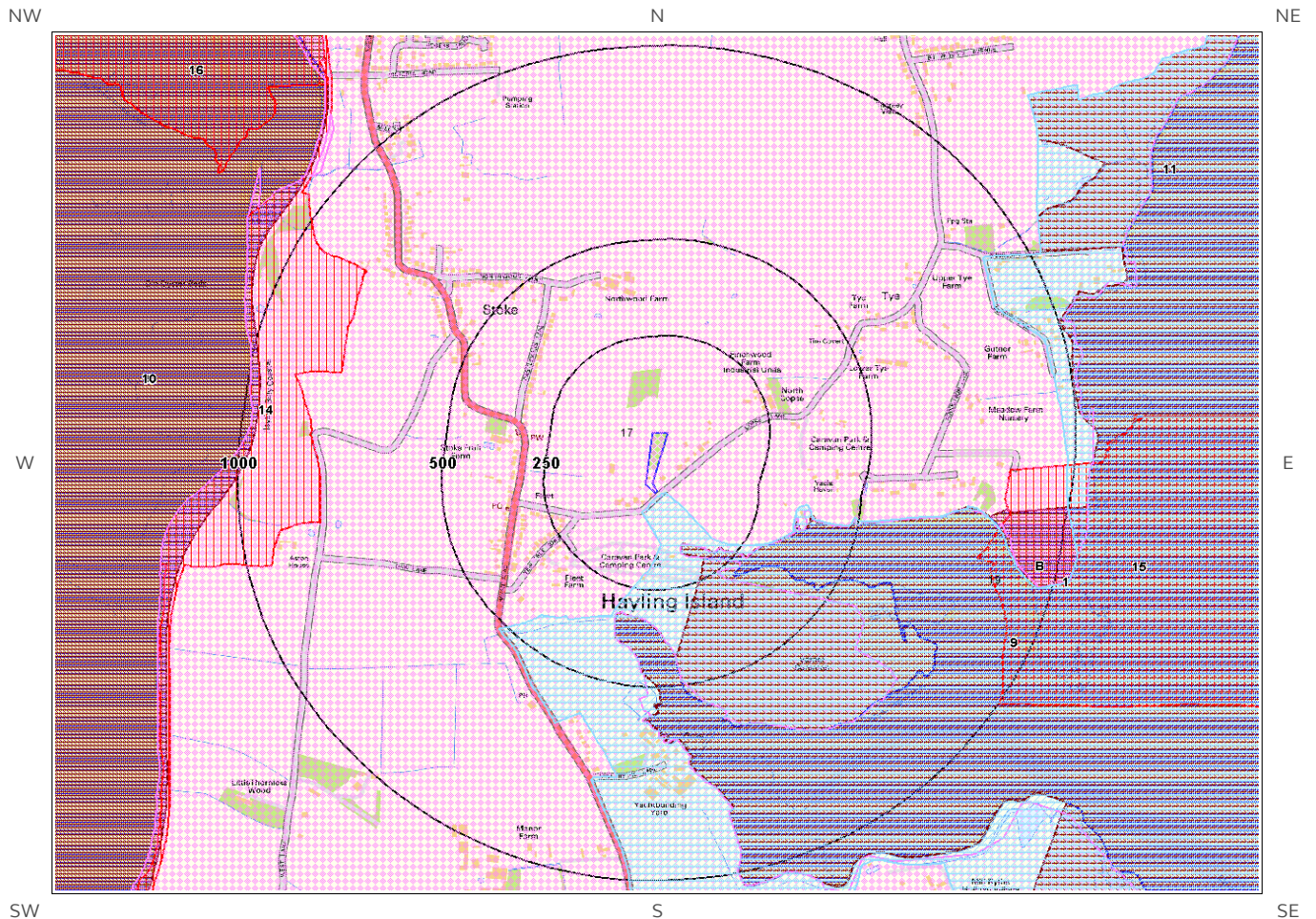
British Geological Survey confidence rating in this result

Moderate

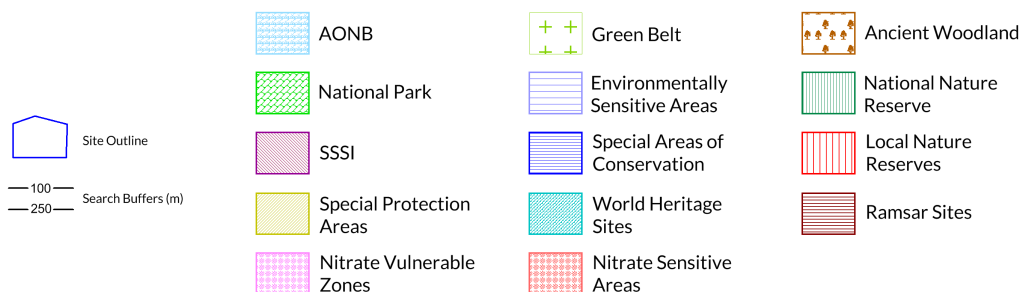
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map



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8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site

Identified

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

3

The following Site of Special Scientific Interest (SSSI) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SSSI Name	Data Source
6B	146	SE	Chichester Harbour	Natural England
7A	964	W	Langstone Harbour	Natural England
Not shown	1928	S	Chichester Harbour	Natural England

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

2

The following Special Area of Conservation (SAC) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SAC Name	Data Source
1	146	SE	Solent Maritime	Natural England
2A	964	W	Solent Maritime	Natural England

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

3

The following Special Protection Area (SPA) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SPA Name	Data Source
3B	146	SE	Chichester and Langstone Harbours	Natural England
4A	964	W	Chichester and Langstone Harbours	Natural England
Not shown	1928	S	Chichester and Langstone Harbours	Natural England

8.5 Records of Ramsar sites within 2000m of the study site:

5

The following Ramsar records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ramsar Site Name	Ramsar Site Status	Data Source
9	146	SE	Chichester and Langstone Harbours	Listed	Natural England
10	964	W	Chichester and Langstone Harbours	Listed	Natural England
11	1026	NE	Chichester and Langstone Harbours	Listed	Natural England
Not shown	1718	E	Chichester and Langstone Harbours	Listed	Natural England
Not shown	1752	E	Chichester and Langstone Harbours	Listed	Natural England

8.6 Records of Ancient Woodland within 2000m of the study site:

0

Database searched and no data found.

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

3

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
14	778	W	Hayling Billy	Natural England
15	803	E	Gutner Point	Natural England
16	1206	NW	West Hayling	Natural England

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

2

The following Area of Outstanding Natural Beauty (AONB) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	AONB/NSA Name	Data Source
19	10	SE	Chichester Harbour	Natural England
Not shown	1927	S	Chichester Harbour	Natural England

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

2

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
17	0	On Site	Existing	DEFRA
Not shown	1871	S	Existing	DEFRA

8.14 Records of Green Belt land within 2000m of the study site:

0

Database searched and no data found.

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a **Groundsure Geo Insight**, available from our **website**. The following information has been found:

9.1.1 Shrink Swell

Maximum Shrink-Swell** hazard rating identified on the study site Moderate

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly high plasticity. Do not plant or remove trees or shrubs near to buildings without expert advice about their effect and management. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a probable increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a probable increase in insurance risk during droughts or where vegetation with high moisture demands is present.

9.1.2 Landslides

Maximum Landslide* hazard rating identified on the study site Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

9.1.3 Soluble Rocks

Maximum Soluble Rocks* hazard rating identified on the study site Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site

Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site

Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slight possibility for collapsible deposit problems after major changes in loading or groundwater conditions. Normal maintenance to avoid large amounts of water entering the ground through pipe leakage or soak-aways should reduce the likelihood of problems due to collapsible deposits. For new build, assess the possibility of collapsible (loessic) deposits in ground investigation. For existing property, no significant increase in insurance risk from collapsible deposits is likely.

9.1.6 Running Sand

Maximum Running Sand** hazard rating identified on the study site

Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Possibility of running sand problems after major changes in ground conditions. Normal maintenance to avoid leakage of water-bearing services or water bodies (ponds, swimming pools) should reduce likelihood of problems due to running sand. For new build consider possibility of running sand into trenches or excavations if water table is high or sandy strata are exposed to water. Avoid concentrated water inputs to site. Unlikely to be an increase in construction costs due to potential for running sand. For existing property no significant increase in insurance risk due to running sand problems is likely.

* This indicates an automatically generated 50m buffer and site.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site

None identified

Database searched and no data found.

10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary

None identified

Database searched and no data found.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site

None identified

Guidance: No Guidance Required.

Contact Details

Groundsure Helpline
Telephone: 08444 159 000
info@groundsure.com

British Geological Survey Enquiries

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:

Web: www.bgs.ac.uk

BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Environment Agency

National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 03708 506 506

Web: www.environment-agency.gov.uk

Email: enquiries@environment-agency.gov.uk

Public Health England

Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe

Email: enquiries@phe.gov.uk
Main switchboard: 020 7654 8000

The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey

Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority

Authority: Havant Borough Council
Phone: 023 9244 6019

Web: <http://www.havant.gov.uk/>

Address: Civic Centre, Civic Centre Road, Havant, Hampshire, PO9

Gemapping PLC

Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444



APPENDIX III

Geological datasheets

Address: DEER VIEW LODGE, COPSE LANE, HAYLING ISLAND, PO11 0QB
Date: 20 Jun 2019
Reference: GS-6116050
Client: Apple Environmental Ltd



Aerial Photograph Capture date: 23-Jul-2018
Grid Reference: 472535,101977
Site Size: 0.3822ha

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Overview of Findings

The Groundsure Geo Insight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 and 1:10,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Non-coal mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Geology 1:10,000 Scale

1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	Yes
	1.2.2 Are there any records of landslide within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	No

Section 2: Geology 1:50,000 Scale

2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	Yes
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	Yes
	2.2.3 Are there any records of landslide within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features

2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.

2.3.2 Are there any records relating to permeability of bedrock ground within the study site boundary?

Yes

2.3.3 Are there any records of linear features within 500m of the study site boundary?

No

Section 3: Radon

3. Radon

3.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?

The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

3.2 Radon Protection

No radon protective measures are necessary.

Section 4: Ground Workings

	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	1	3	12	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	1	1	0	0

Section 5: Mining, Extraction & Natural Cavities

	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	0
5.2 Coal Mining	0	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	0	0	0	0	0
5.5 Non-Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	0

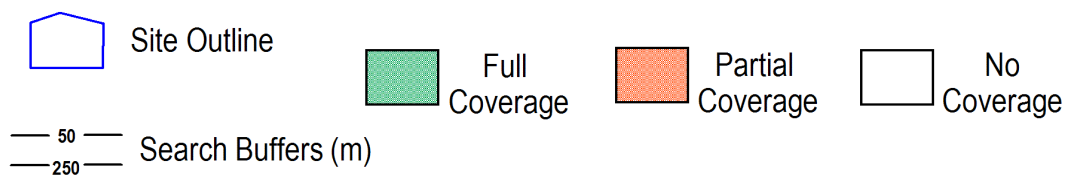
Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Cornwall and Devon Metalliferous Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0
Section 6: Natural Ground Subsidence	On-site				
6.1 Shrink-Swell Clay	Moderate				
6.2 Landslides	Very Low				
6.3 Ground Dissolution of Soluble Rocks	Negligible				
6.4 Compressible Deposits	Negligible				
6.5 Collapsible Deposits	Low				
6.5 Running Sand	Low				
Section 7: Borehole Records	On-site	0-50m	51-250		
7 BGS Recorded Boreholes	0	0	5		
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
8 Records of Background Soil Chemistry	3	3	0		
Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500	
9.1 Tunnels	0	0	0	Not Searched	
9.2 Historical Railway and Tunnel Features	0	0	0	Not Searched	
9.3 Historical Railways	0	0	0	Not Searched	
9.4 Active Railways	0	0	0	Not Searched	
9.5 Railway Projects	0	0	0	0	

1:10,000 Scale Availability



1_10,000 Availability Legend

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Availability of 1:10,000 Scale Geology Mapping

The following information represents the availability of the key components of the 1:10,000 scale geological data.

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	Some deposits are mapped	Full	Full	No coverage
N2	1871.0	Some deposits are mapped	Full	Full	No coverage

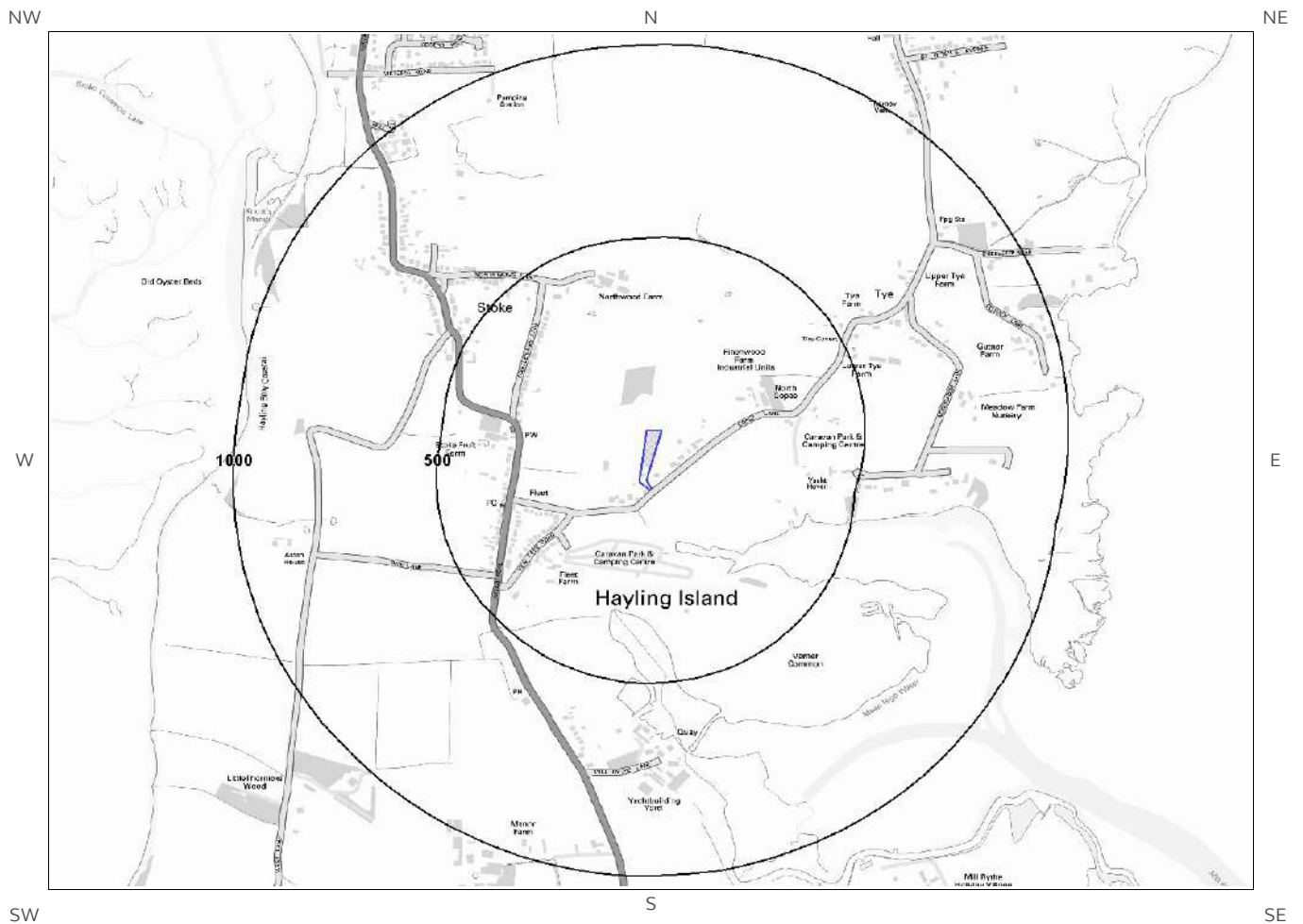
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not all themes are mapped or available on every map sheet. Therefore a coverage layer showing the availability of the four themes is presented above.

The definitions of coverage are as follows:

Geology	Full Coverage	Partial Coverage	No Coverage
Bedrock	The whole tile has been mapped	Some but not all the tile has been mapped	No coverage
Superficial	The whole tile has been mapped	Some but not all of the tile has been mapped	No coverage
Artificial	Some deposits are mapped on this tile	-	No deposits are mapped
Mass Movement	Some deposits are mapped on this tile	-	No coverage

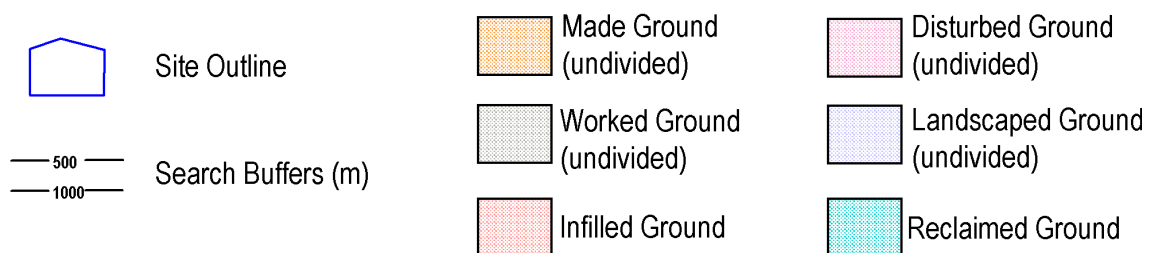
1 Geology (1:10,000 scale).

1.1 Artificial Ground map (1:10,000 scale)



Artificial Ground Legend

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1. Geology 1:10,000 scale

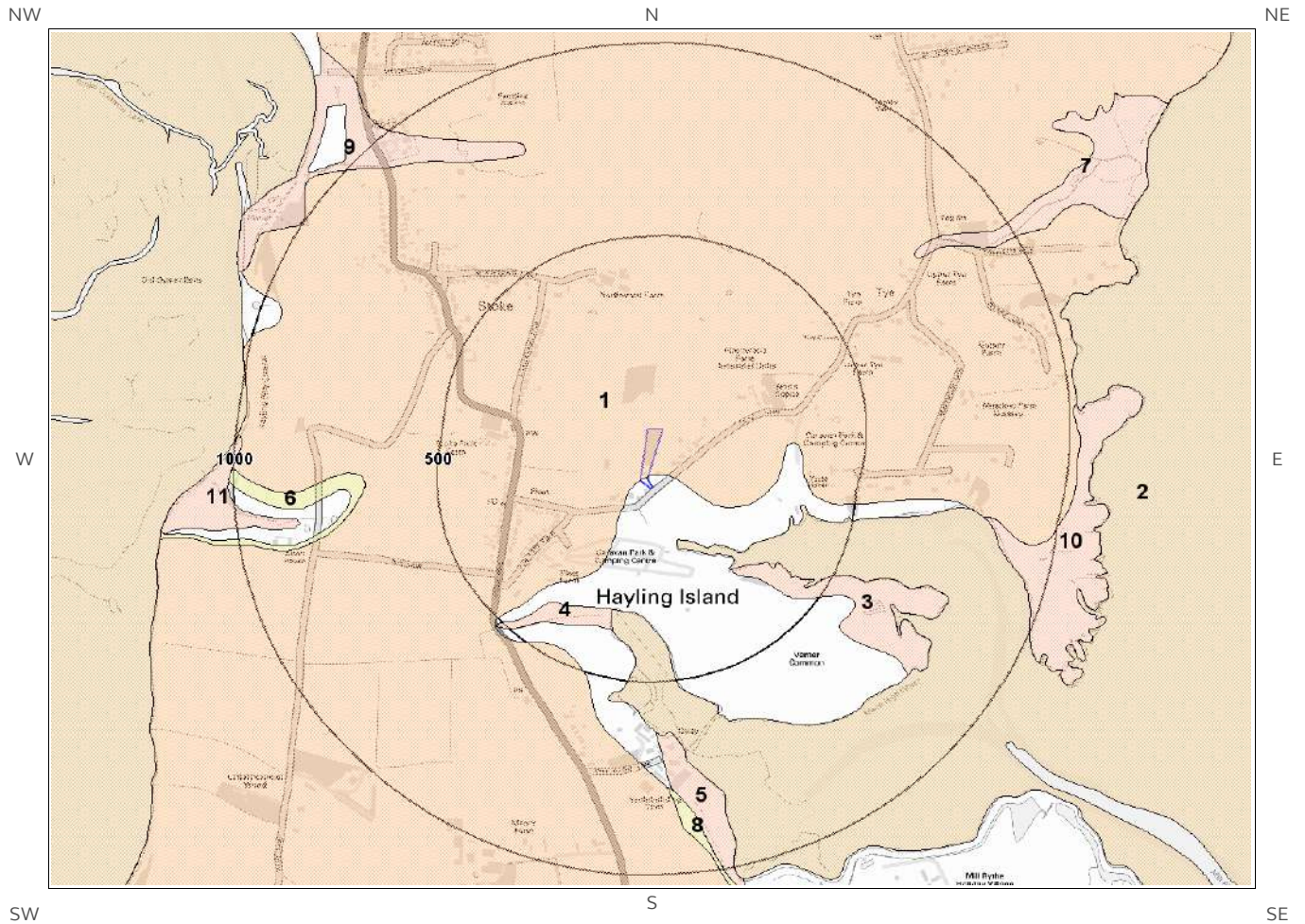
1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? No

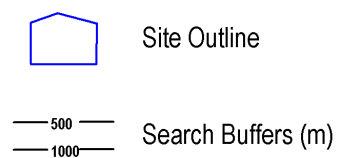
Database searched and no data found.

1.2 Superficial Deposits and Landslips map (1:10,000 scale)



Artificial Ground Legend

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1.2 Superficial Deposits and Landslips

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	RTDU-CZ	River Terrace Deposits (undifferentiated) - Silty Clay	Clay, Silty
2	147.0	SE	BTFU-XCZSV	Beach And Tidal Flat Deposits (undifferentiated) - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
3	287.0	SE	RMD-CZ	Raised Marine Deposits - Silty Clay	Clay, Silty
4	324.0	S	RMD-CZ	Raised Marine Deposits - Silty Clay	Clay, Silty

1.2.2 Landslip

Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale?

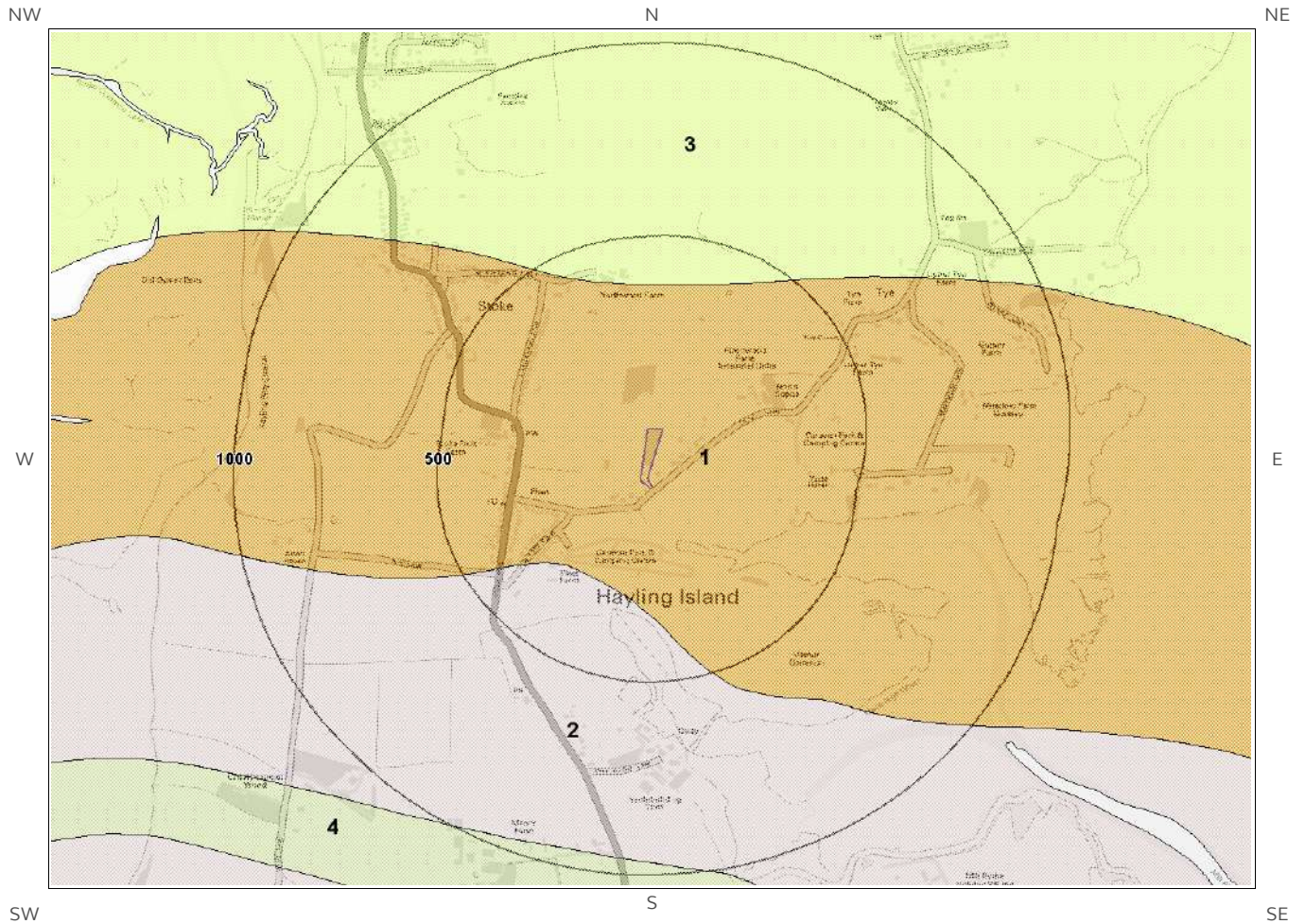
No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:10,000 scale

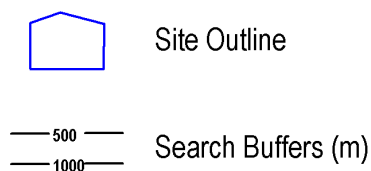
This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3 Bedrock and linear features map (1:10,000 scale)



Bedrock and linear features Legend

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1.3 Bedrock and linear features

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary at 1:10,000 scale.

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	LMBE-CLAY	Lambeth Group - Clay	Paleocene Epoch
2	268.0	SW	LC-CLSISA	London Clay Formation - Clay, Silt And Sand	Eocene Epoch
3	373.0	N	LPCK-CHLK	Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culver Chalk Formation And Portsdown Chalk Formation (undifferentiated) - Chalk	Campanian Age - Turonian Age

1.3.2 Linear features

Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale? No

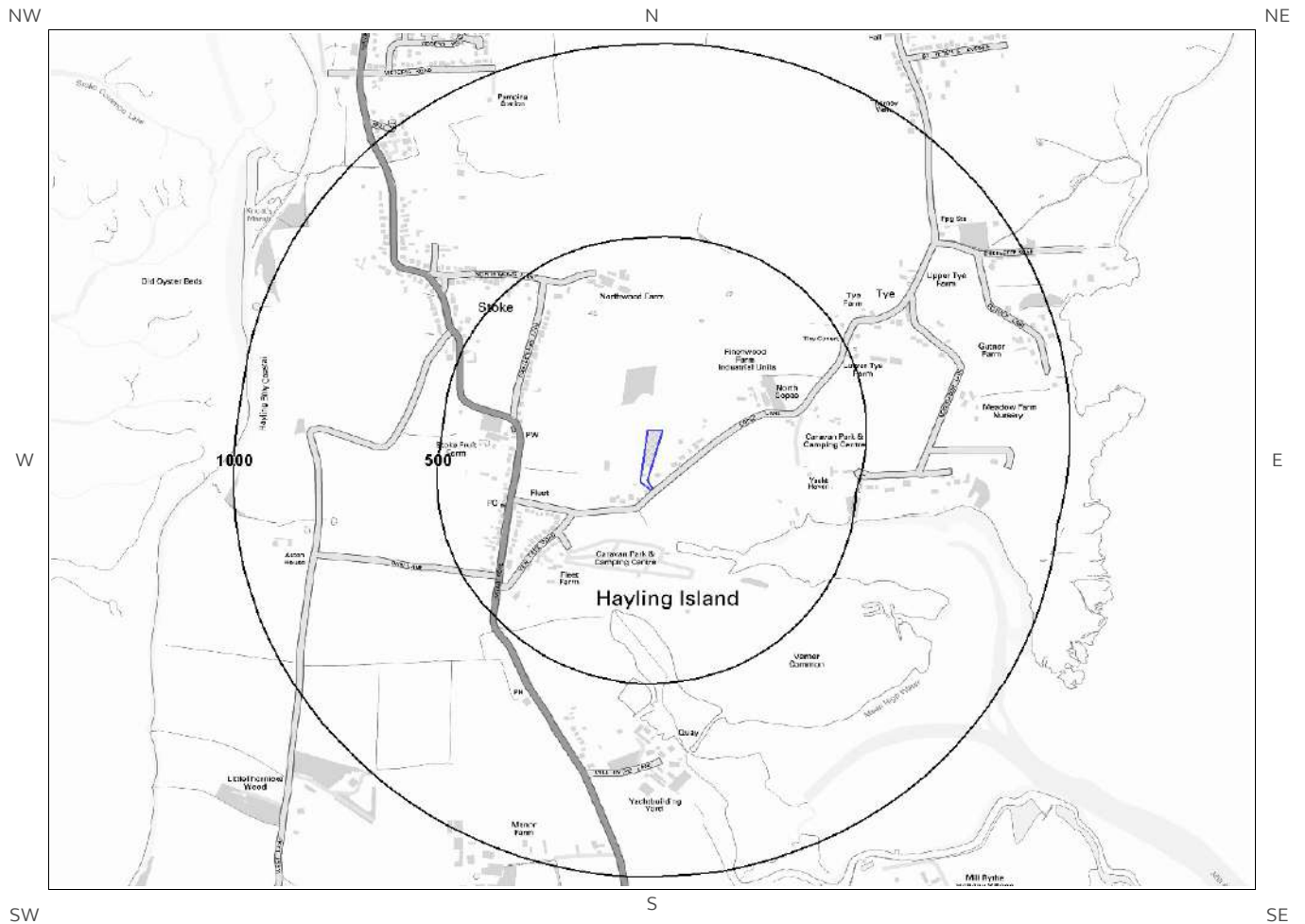
Database searched and no data found at this scale.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

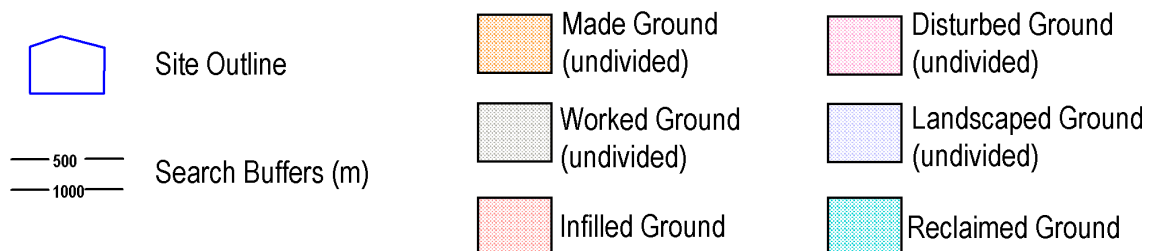
This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



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2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 331

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? No

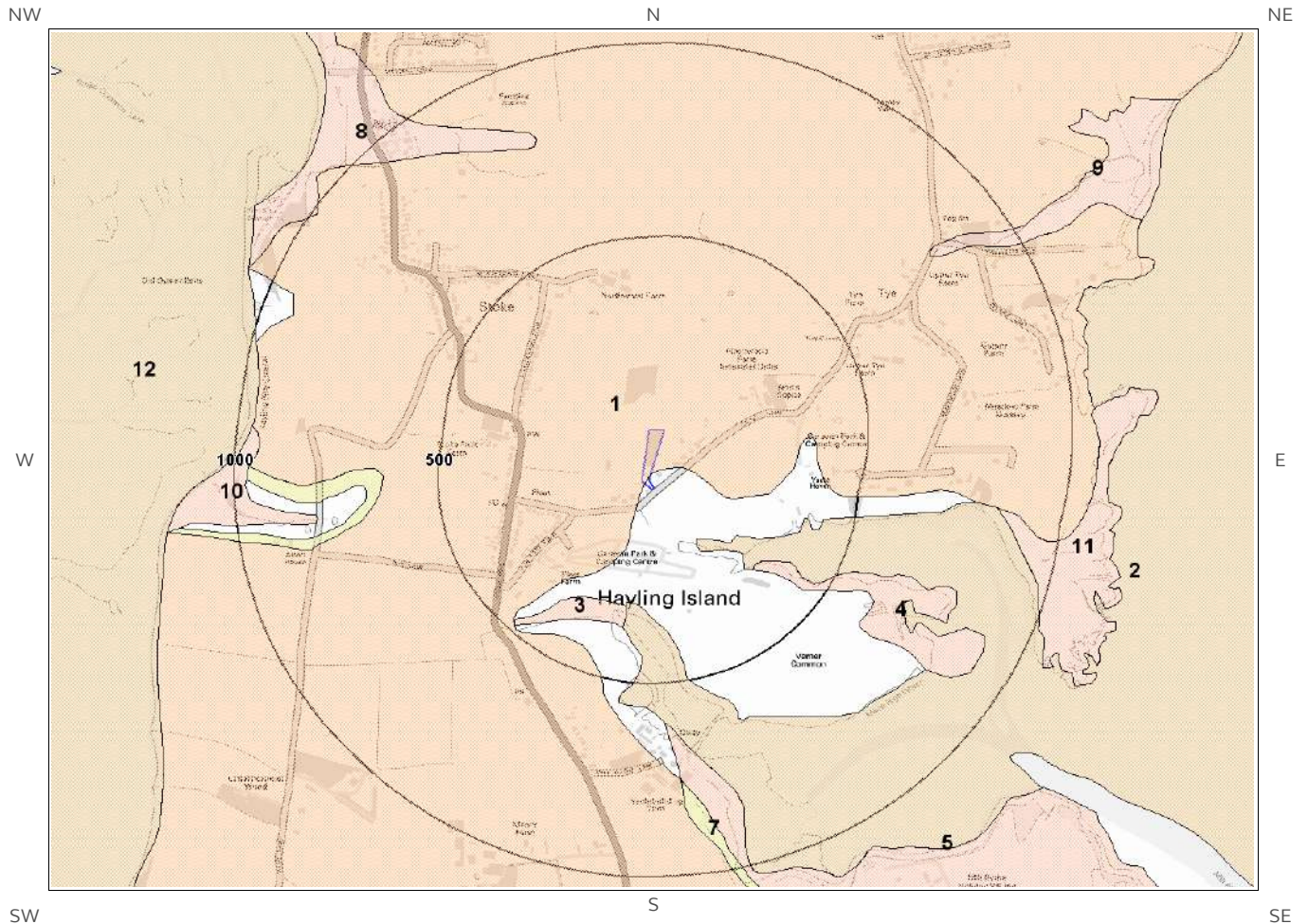
Database searched and no data found.

2.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

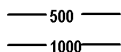
2.2 Superficial Deposits and Landslips map (1:50,000 scale)



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Site Outline



Search Buffers (m)

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	RTDU-XSZC	RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)	SAND, SILT AND CLAY
2	165.0	SE	BTFU-XCZSV	BEACH AND TIDAL FLAT DEPOSITS (UNDIFFERENTIATED)	CLAY, SILT, SAND AND GRAVEL
3	305.0	S	RMD-XSV	RAISED MARINE DEPOSITS	SAND AND GRAVEL
4	316.0	SE	RMD-XSV	RAISED MARINE DEPOSITS	SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Intergranular	High	Low

2.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

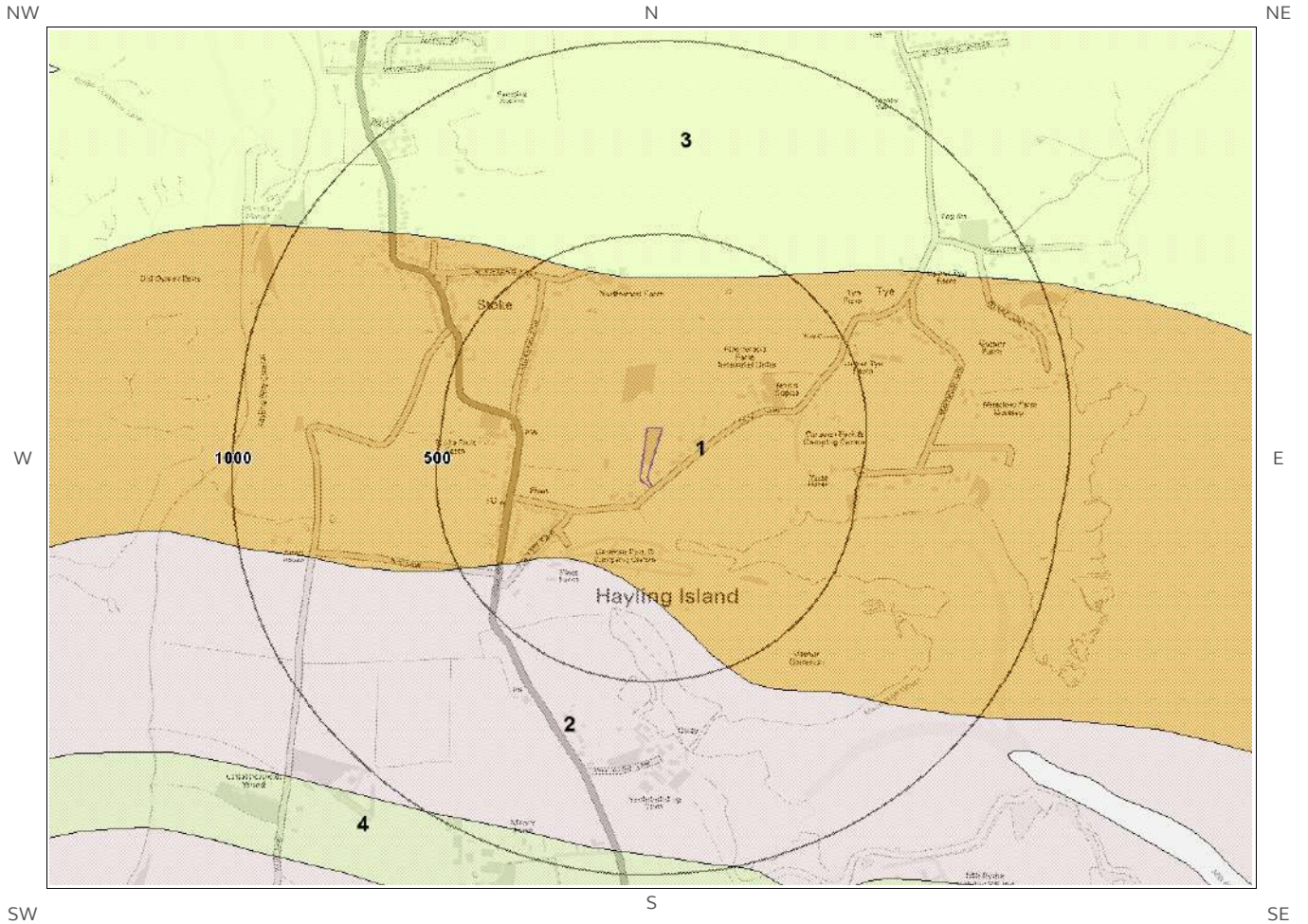
2.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site boundary?

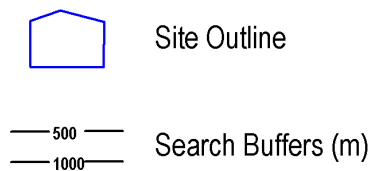
No

Database searched and no data found.

2.3 Bedrock and linear features map (1:50,000 scale)



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2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 331

2.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	LMBE-XCZS	LAMBETH GROUP - CLAY, SILT AND SAND	THANETIAN
2	238.0	SW	LC-XCZS	LONDON CLAY FORMATION - CLAY, SILT AND SAND	YPRESIAN
3	388.0	N	LPCK-CHLK	LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION, NEWHAVEN CHALK FORMATION, CULVER CHALK FORMATION AND PORTSDOWN CHALK FORMATION (UNDIFFERENTIATED) - CHALK	TURONIAN

2.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site boundary? Yes

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	Moderate	Very Low

2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nation wide coverage.

3 Radon Data

3.1 Radon Affected Areas

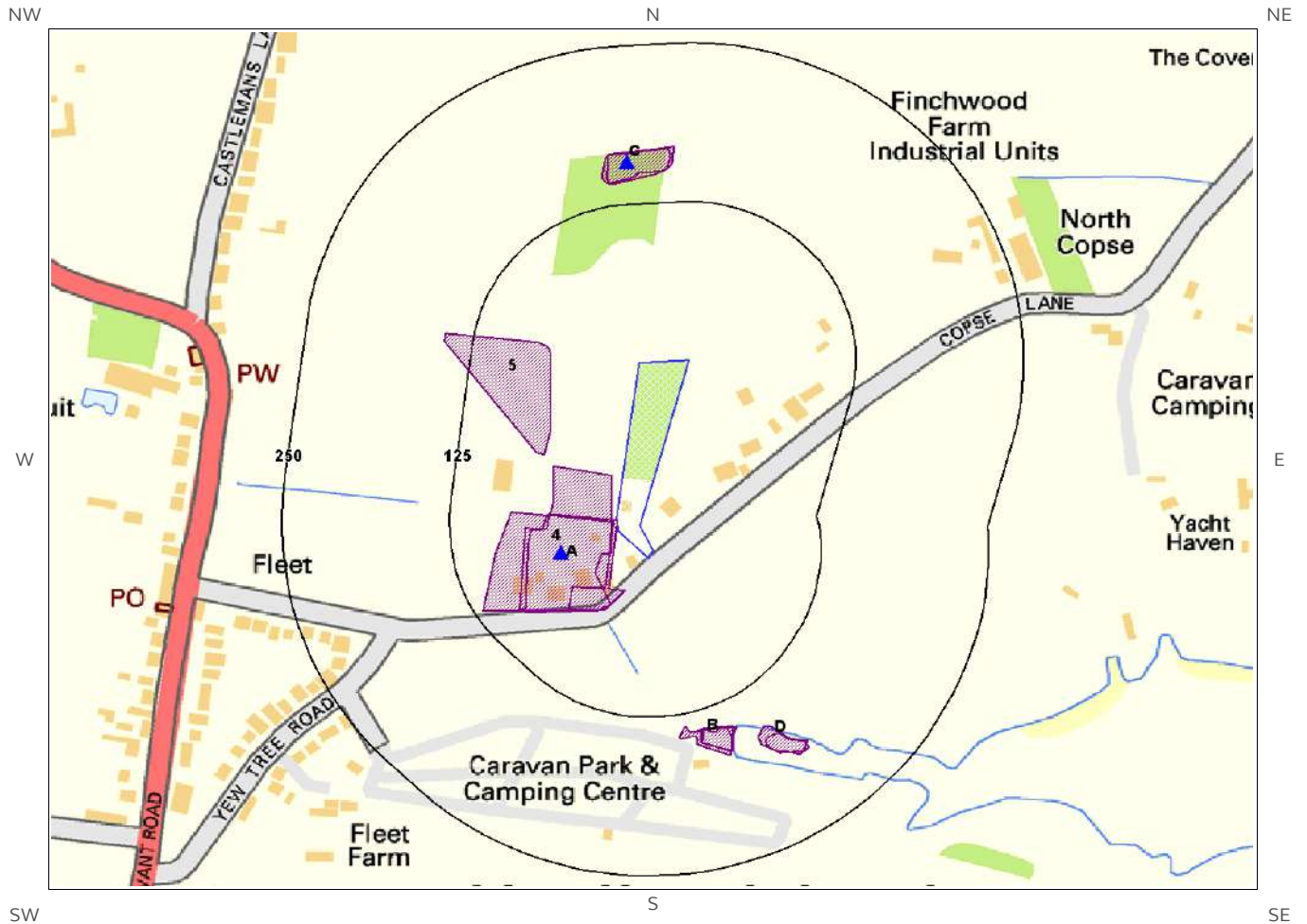
Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

3.2 Radon Protection

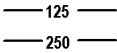
Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

4 Ground Workings map



Ground Workings Legend

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- | | | | |
|---|--------------------|---|----------------------------------|
|  | Site Outline |  | Historic Surface Ground Workings |
|  | Search Buffers (m) |  | Historic Underground Workings |
| | |  | Current Ground Workings |

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Use	Date
1A	0.0	On Site	472474 101867	Brick Works	1909
2A	3.0	W	472467 101867	Brick Works	1907
3A	3.0	W	472467 101867	Brick Works	1931
4	4.0	W	472453 101886	Brick Works	1938
5	58.0	W	472416 102001	Unspecified Ground Workings	1957
6B	136.0	S	472571 101727	Pond	1866
7B	140.0	S	472580 101729	Pond	1907
8B	140.0	S	472580 101729	Pond	1931
9B	140.0	S	472581 101728	Pond	1938
10C	142.0	N	472519 102180	Clay Pit	1907
11C	143.0	N	472522 102181	Clay Pit	1909
12D	158.0	SE	472628 101727	Unspecified Old Beds	1946
13D	158.0	SE	472628 101727	Unspecified Old Beds	1909
14D	166.0	SE	472632 101726	Unspecified Beds	1907
15D	166.0	SE	472632 101726	Unspecified Beds	1931
16D	166.0	SE	472632 101726	Unspecified Beds	1938

4.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? No

Database searched and no data found.

4.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
17A	46.0	W	472463 101875	Clay & Shale	Stoke Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
18C	158.0	N	472512 102183	Clay & Shale	Stoke Clay Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

5 Mining, Extraction & Natural Cavities map



5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

5.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled “Review of mining instability in Great Britain, 1990” PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.6 Natural Cavities

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.9 Cornwall and Devon Metalliferous Mining

This dataset provides information on metalliferous mining areas in Cornwall/Devon and is derived from records held by Mining Searches UK.

Are there any Cornwall and Devon Metalliferous Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.10 Clay Mining

This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

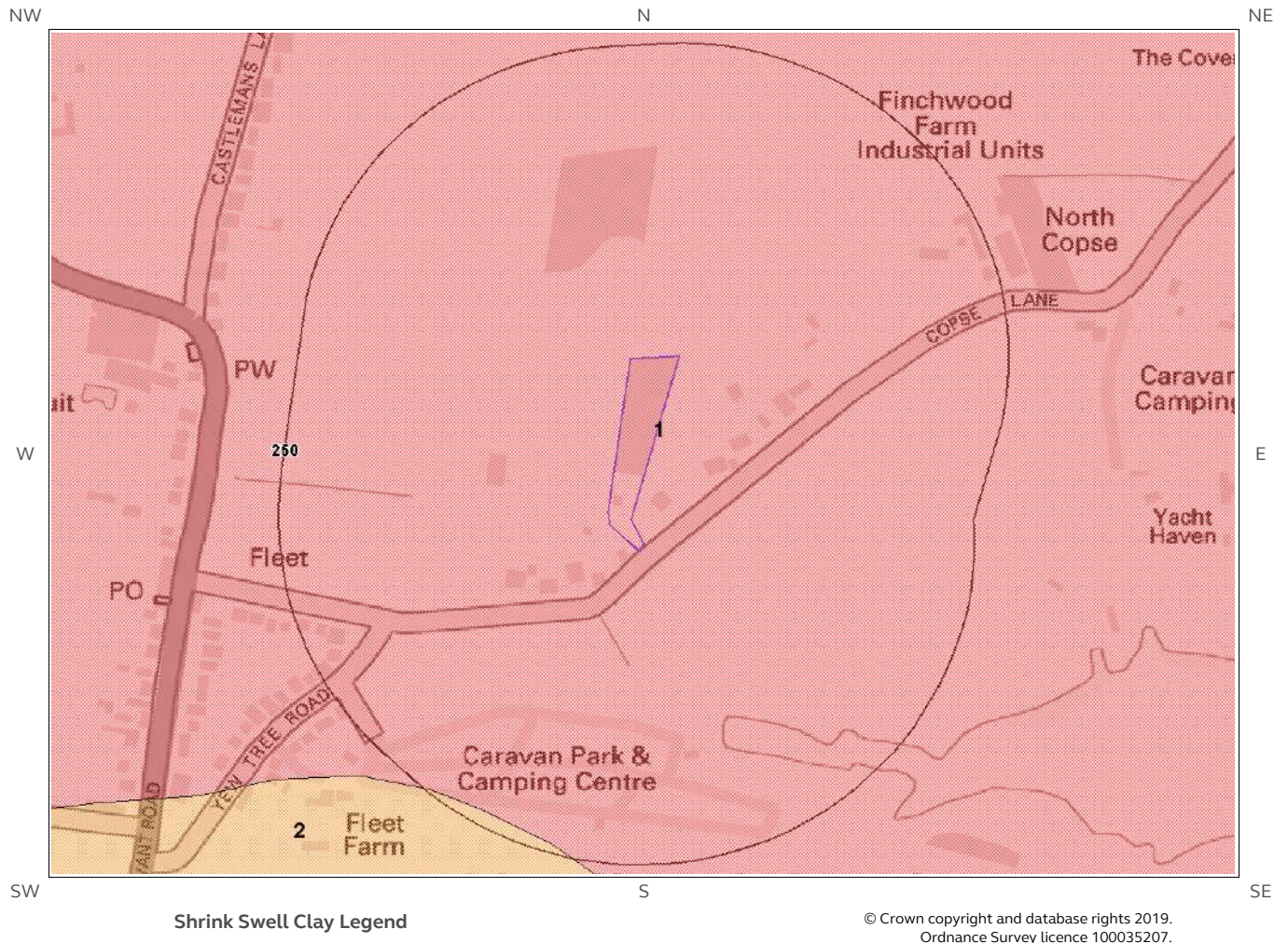
Are there any Clay Mining areas within 1000m of the study site boundary?

No

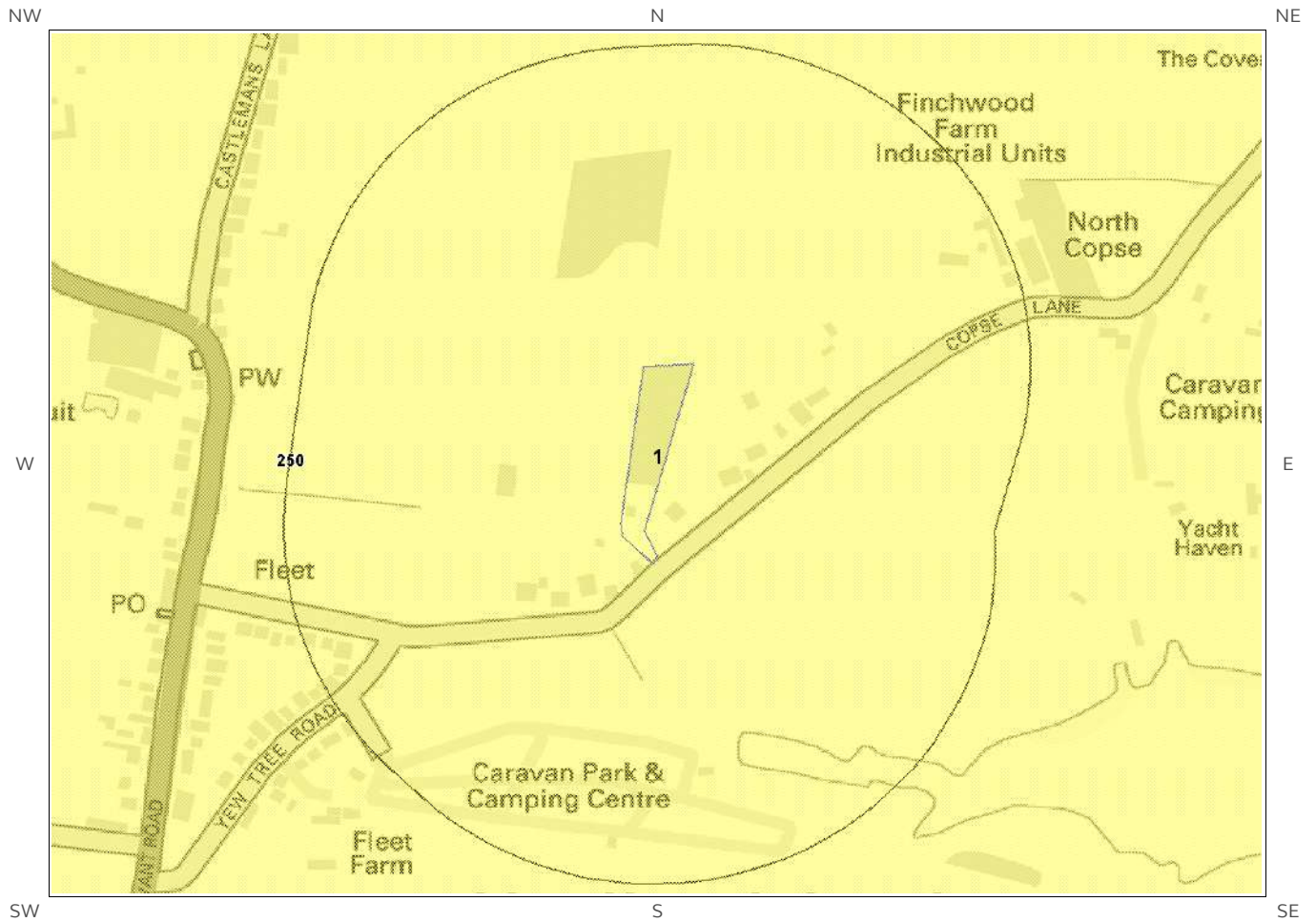
Database searched and no data found.

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map



6.2 Landslides map

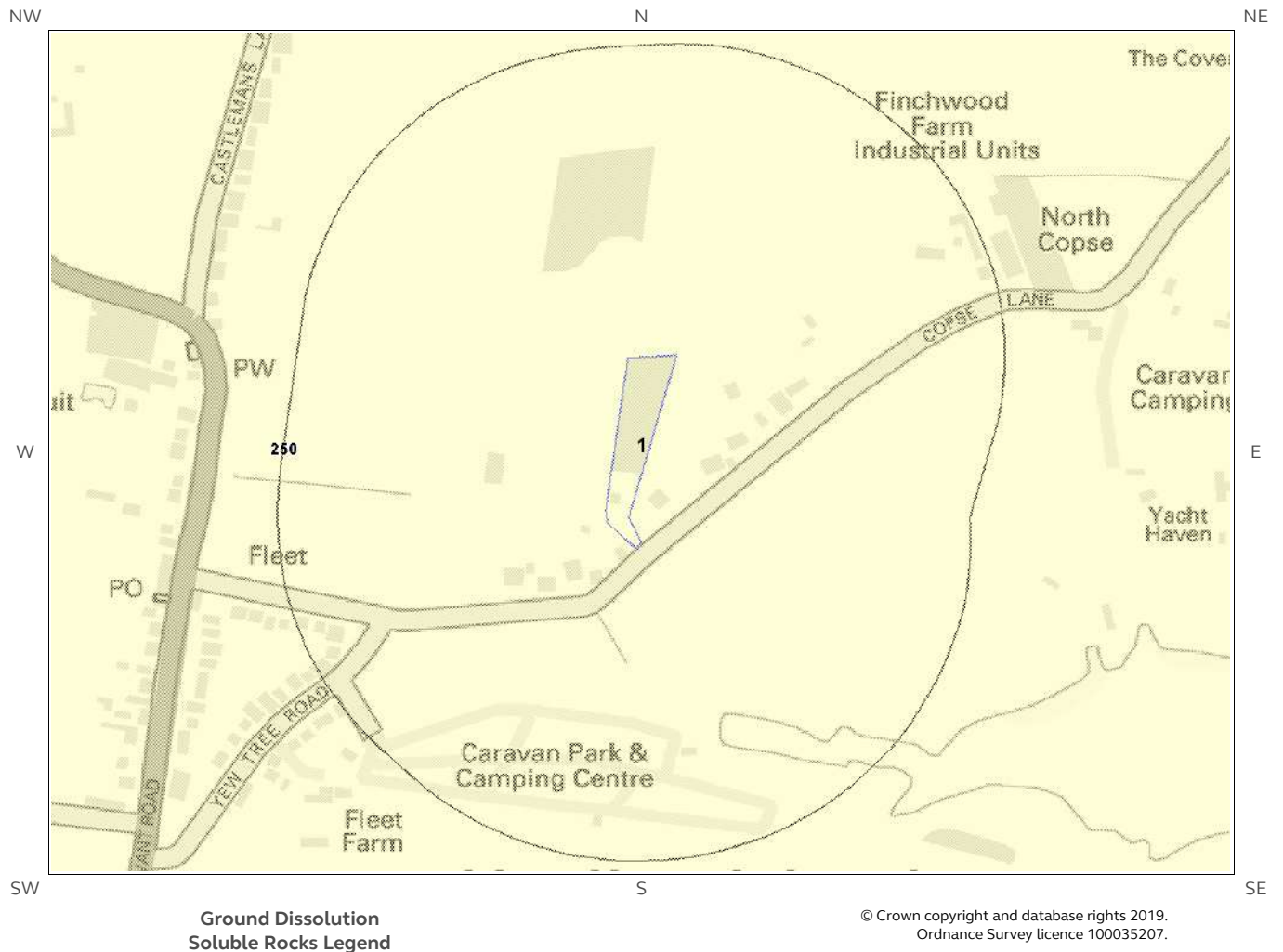


Landslides Legend

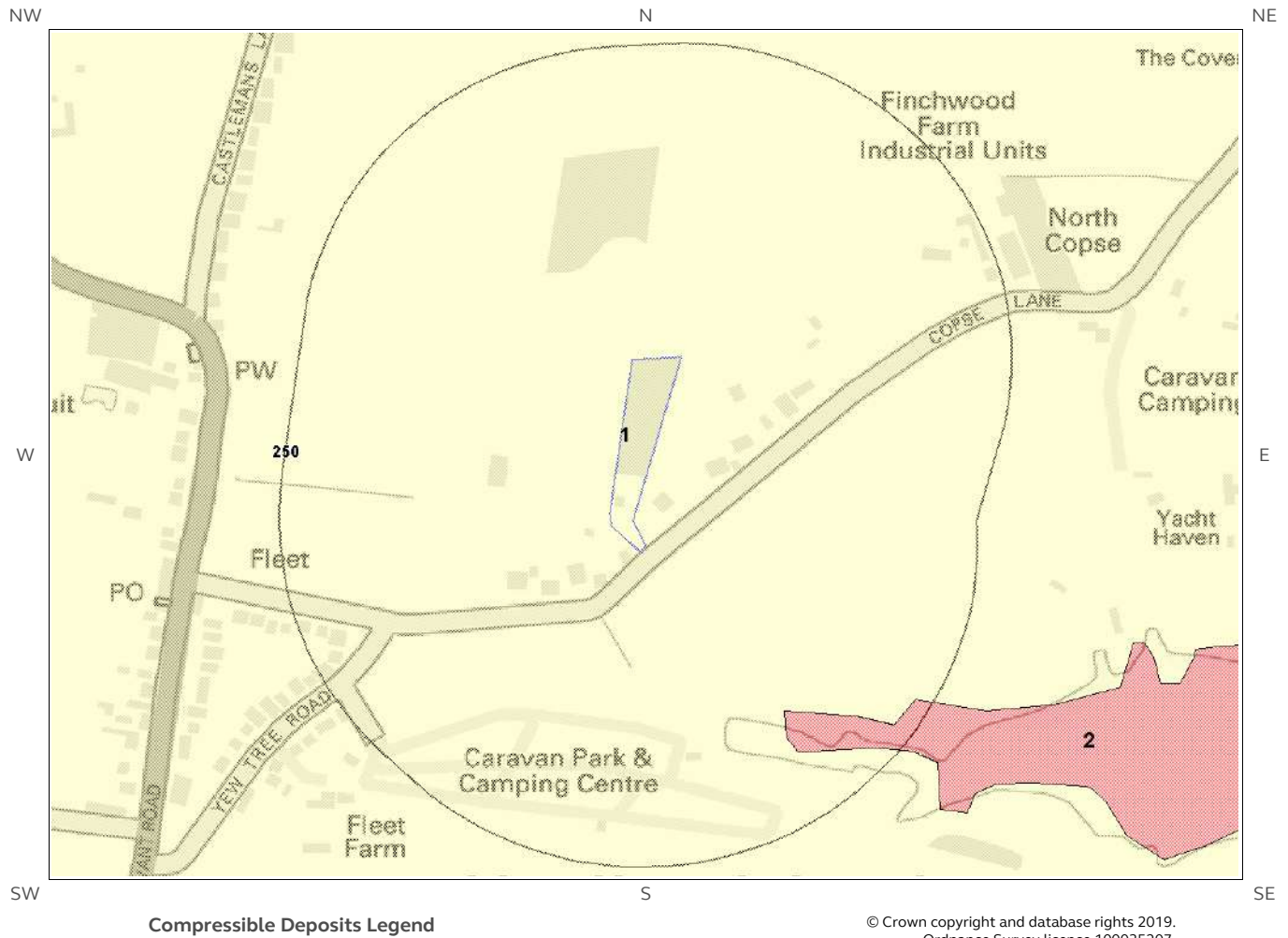
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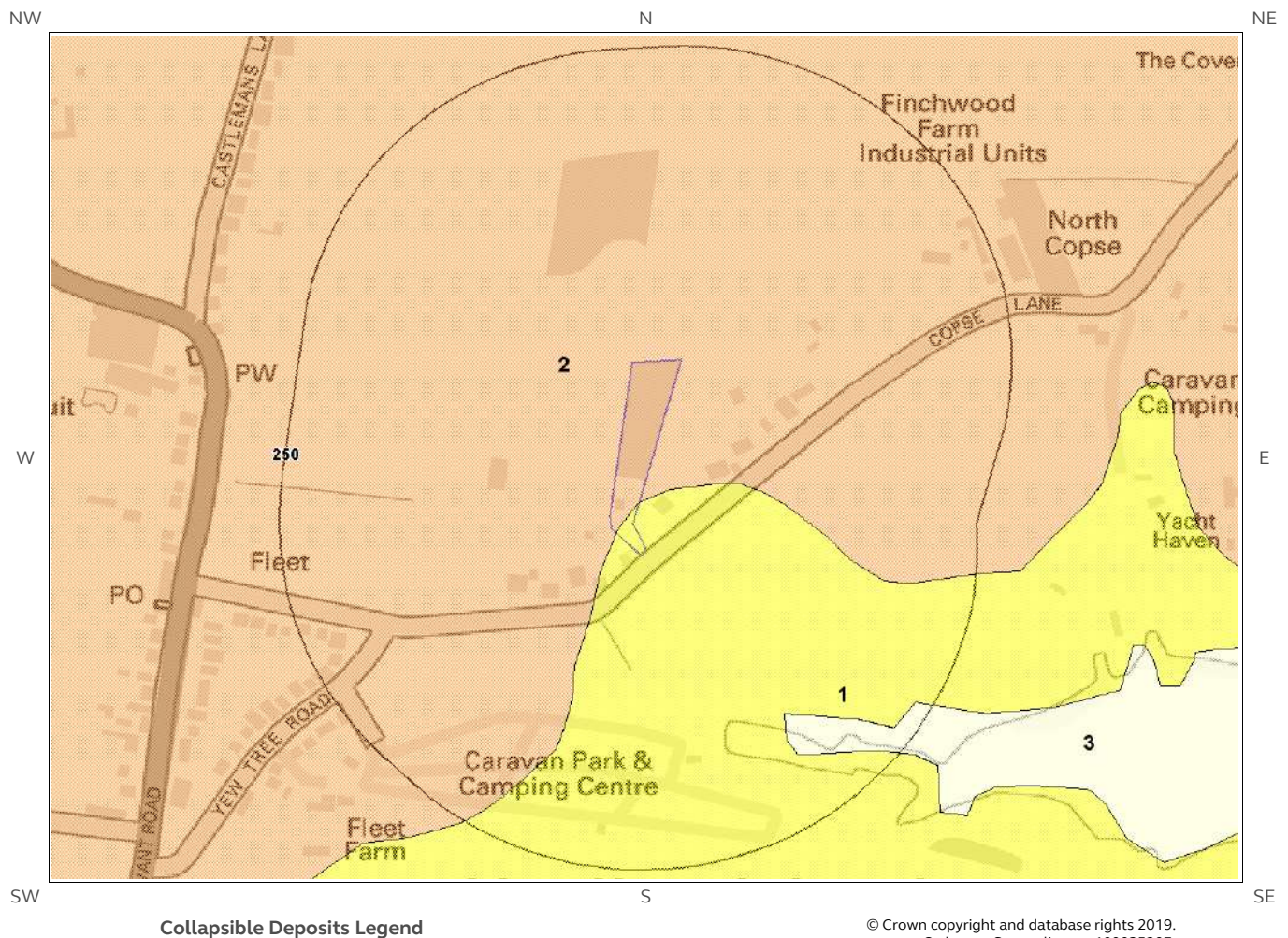
6.3 Ground Dissolution of Soluble Rocks map



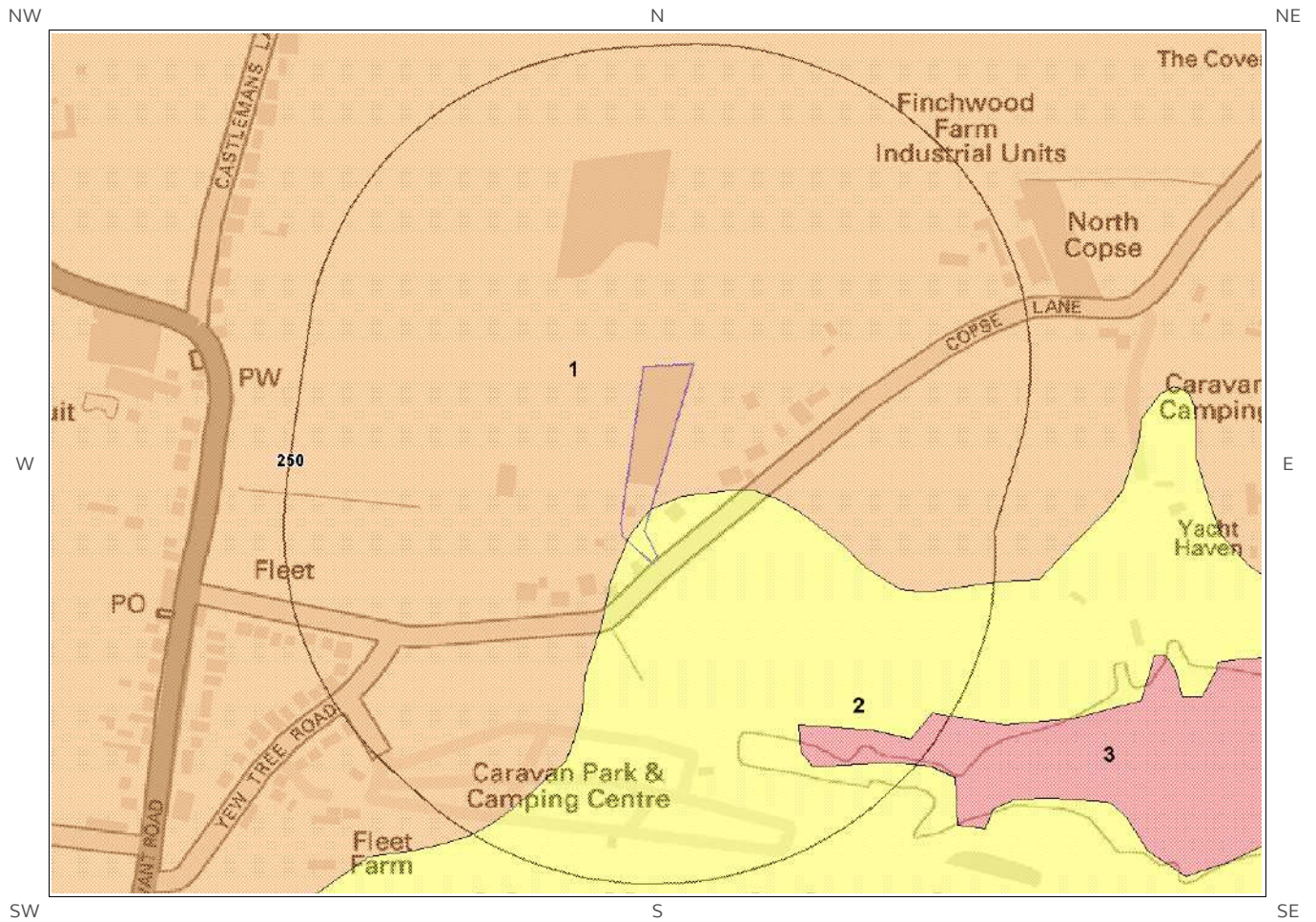
6.4 Compressible Deposits map



6.5 Collapsible Deposits map



6.6 Running Sand map



Running Sand Legend

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6 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site* boundary? Moderate

6.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Moderate	Ground conditions predominantly high plasticity. Do not plant or remove trees or shrubs near to buildings without expert advice about their effect and management. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a probable increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a probable increase in insurance risk during droughts or where vegetation with high moisture demands is present.

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

* This includes an automatically generated 50m buffer zone around the site

6.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

6.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

6.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
2	0.0	On Site	Low	Slight possibility for collapsible deposit problems after major changes in loading or groundwater conditions. Normal maintenance to avoid large amounts of water entering the ground through pipe leakage or soak-aways should reduce the likelihood of problems due to collapsible deposits. For new build, assess the possibility of collapsible (loessic) deposits in ground investigation. For existing property, no significant increase in insurance risk from collapsible deposits is likely.

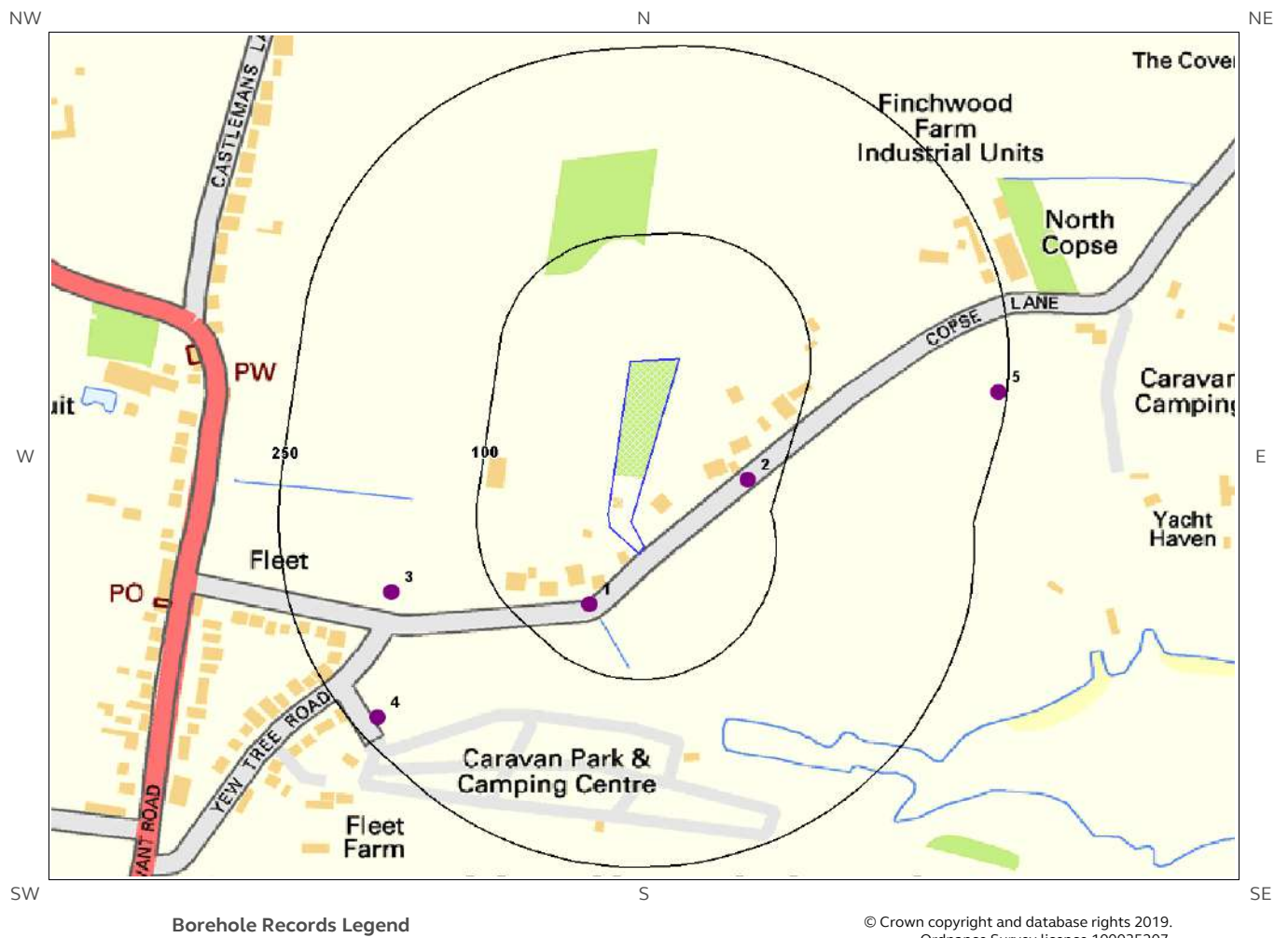
6.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Low	Possibility of running sand problems after major changes in ground conditions. Normal maintenance to avoid leakage of water-bearing services or water bodies (ponds, swimming pools) should reduce likelihood of problems due to running sand. For new build - consider possibility of running sand into trenches or excavations if water table is high or sandy strata are exposed to water. Avoid concentrated water inputs to site. Unlikely to be an increase in construction costs due to potential for running sand. For existing property - no significant increase in insurance risk due to running sand problems is likely.

ID	Distance (m)	Direction	Hazard Rating	Details
2	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

7 Borehole Records map



7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary:

5

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	56.0	SW	472490 101830	SU70SW78	4	HAYLING ISLAND MAIN DRAIN BH2
2	76.0	E	472610 101930	SU70SW77	3	HAYLING ISLAND MAIN DRAIN BH61
3	174.0	W	472340 101840	SU70SW85	5	HAYLING ISLAND MAIN DRAIN BH70
4	233.0	SW	472330 101740	SU70SW86	4	HAYLING ISLAND MAIN DRAIN BH71
5	243.0	E	472800 102000	SU70SW112	66	COPSE COTTAGE HAYLING

The borehole records are available using the hyperlinks below: Please note that if the donor of the borehole record has requested the information be held as commercial-in-confidence, the additional data will be held separately by the BGS and a formal request must be made for its release.

- #1: scans.bgs.ac.uk/sobi_scans/boreholes/425747
- #2: scans.bgs.ac.uk/sobi_scans/boreholes/425746
- #3: scans.bgs.ac.uk/sobi_scans/boreholes/425754
- #4: scans.bgs.ac.uk/sobi_scans/boreholes/425755
- #5: scans.bgs.ac.uk/sobi_scans/boreholes/425781

8 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary:

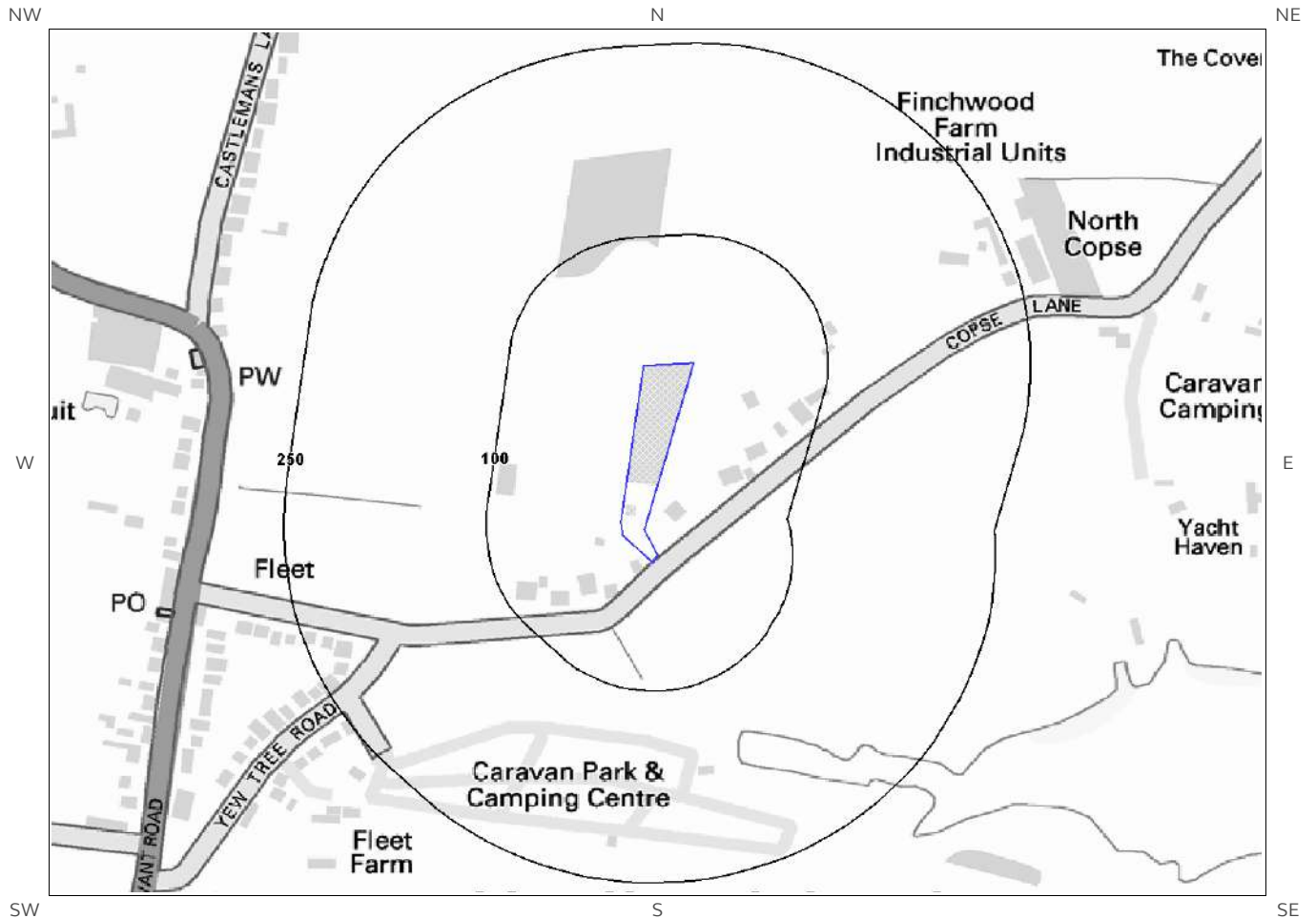
6

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
5.0	W	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
18.0	W	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
24.0	SW	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg

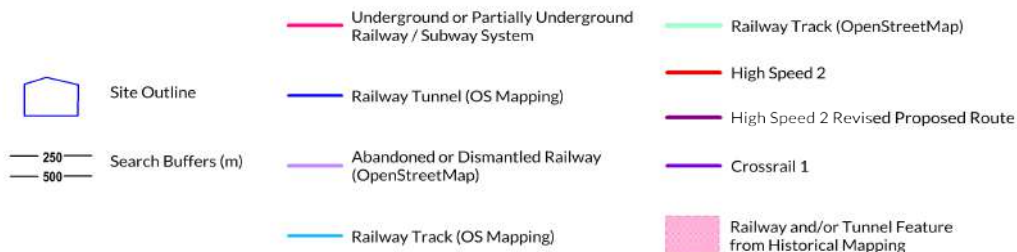
*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels map



Railways and Tunnels Legend

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9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary? No

Have any underground railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary? No

Have any other railway tunnels been identified within 250m of the site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? No

Have any historical railway or tunnel features been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No

Have any historical railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No

Have any active railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project? No

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

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