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REPORT ON A PHASE 1 DESK STUDY
IVANDA NURSERY
MONKS HOUSE LANE
SPALDING
LINCOLNSHIRE

Report Reference C15847

On behalf of:

Seagate Homes
Holbeach Manor
Fleet Road
Holbeach
PE12 7AX

January 2023

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SEAGATE HOMES

REPORT ON A PHASE 1 DESK STUDY

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Report Reference No. C15847 **January 2023**

INTRODUCTION

Ground Engineering Limited was instructed by the client, Seagate Homes, to carry out a Phase 1 desk study to establish the site history and likely ground conditions beneath a plot of land known as Ivanda Nursery, Monks House Lane, Spalding, Lincolnshire. These works were scheduled, by the client, in advance of proposed residential development of the site.

The study has been compiled from historical map research and reference to geological and environmental database information.

This report summarises the findings of the desk study and develops a conceptual model with an evaluation relating to the likelihood of ground contamination being present together with comments relating to the ground conditions anticipated beneath the site.

LOCATION, TOPOGRAPHY AND GEOLOGY OF THE SITE

The site lies on western outskirts of Spalding, and is situated about 1km to the west of Spalding Railway Station as shown in Figure 1. The site is centred at National Grid Reference TF 2315 2277.

The site comprises a 50m wide by 400m long plot of land previously used by a horticultural nursery with two large glasshouses occupying the western half of the site and an overgrown grass field covering the eastern half. Access to the site was from the west via a drive off Monkôs House Lane, adjacent a detached dwelling within the south-western corner of the site. To the north, east and south, the site was surrounded by a residential housing estate. A drainage ditch called Edward Road Dyke runs along the southern site margin.

A pictorial summary of the site layout is provided in Figure 2, which cross-references Photographs 1 to 8. An unbunded surface mounted heating oil tank (Photograph 2) was located at the side of an outbuilding to the rear/east of the dwelling within the south-western corner. There was a set of surfaced mounted heating oil tanks, housed within a bunded area, (Photograph 1) situated directly to the north-west of the western greenhouse and is connected with a central heating boiler (Photograph 4) between the glasshouses. Two large cylindrical water tanks (Photograph 3) were located outside to the south of the boiler. Photograph 5 shows the open land/field to the west of the glasshouses (Photographs 7 and 8) and the yard area to the south-west of the water tanks is shown in Photograph 6. For the most part there were no trees on the site apart from within the western margin in the vicinity of the dwelling. Mature trees were observed around the perimeter of the site within neighbouring gardens. The trees are believed to include conifers, Ash, Beach, Oak, fruit and Monkey Puzzle.

The site was flat and level and stands at about 3mOD.

The geological map for the area, sheet 144 óSpalding' at 1:50,000 scale, and Geology of Britain online viewer, show the site to be covered by Tidal Flat Deposits. These comprise a thick superficial cover of clay, silt and sand tidal creek deposits of the Terrington Beds.

Older salt marsh and tidal creek deposits of the Barroway Drove Beds are indicated to underlie the Terrington Beds the boundary of which is often marked by the Nordelph Peat. The underlying solid geology is indicated to comprise the Oxford Clay at depth.

SITE HISTORY

Research into the site history involved reference to historical Ordnance Survey (OS) maps, aerial photographs, and internet research. Selected extracts are presented in Appendix 1 and described below:

OS Map Extract	*Description*
1887-89 OS County Series 134SW/142SE Scale 1:10,560 **Figure A** **1887-89** OS County Series 134.13/142.1 Scale 1:2500 **Figure B**	The undeveloped site, which lies within a field, is situated within fenland about 1km to the west of Spalding. Monkôs House Lane is located along the western edge of the elongate site, which is bounded by drainage ditches along the northern and southern site boundaries. Vernattôs Drain is located about 500m to the north-east of the site.
1904 OS County Series 134.13/142.1 Scale 1:2500 **Figure C**	The undeveloped fenland site remains as shown in the previous map.
1932 OS County Series 134.13/142.1 Scale 1:2500 **Figure D**	The site remains as shown in the previous map. About 150m to the south there is nursery, a housing estate and sewage pumping station.
1959 OS Sheet TF22SW Scale 1:10,560 **Figure E**	Apart from a building adjacent Monkôs House Lane, the site remains as shown in the previous map. The housing estate extends to the east and south-east joining Spalding.
1968 OS Sheets TF2322 Scale 1:2500 **Figure F**	The building adjacent Monkôs House Lane is denoted as a nursery and comprises a glasshouse and three buildings. The rest of the site remains undeveloped within a field. Directly to the south-east is a new housing estate along Chaucer Way and Pilgrimôs Way. Directly to the north are allotment gardens.

OS Map Extract	*Description*
1980 OS Sheet TF2322 Scale 1:2500 **Figure G** **1982** OS Sheet TF2222 & TF2322 Scale 1:2500 **Figure H**	The nursery, which is called Ivanda Nursery, has expanded with an additional four large glasshouses, and one movable greenhouse occupying the western third of the site. There is a circular tank denoted within this area. The remainder of the site remains undeveloped. The amount of housing along Chaucer Way and Pilgrimôs Way has increased two-fold.
1988 OS Sheet TF2222 & TF2322 Scale 1:2500 **Figure I**	Ivanda Nursery has expanded with an additional large glasshouse situated to the east of the existing glasshouses. The remainder of the site remains undeveloped. To the south-west there is a new housing development focussed around Meadway.
1995 OS Sheet TF2222 & TF2322 Scale 1:2500 **Figure J**	The site remains as shown in the previous map.
1999 Aerial Photograph On Page 12, Appendix 2	This photograph shows the glasshouses and nursery within the western half of the site with a grass covered field within the eastern half.
2001 OS Sheet TF22SW Scale 1:10,000 **Figure K** **2003** OS Sheet TF2222 & TF2322 Scale 1:2500 **Figure L**	The site remains as shown in the previous map.
2007 Aerial Photograph On Page 11 Appendix 2	The site appears unchanged.
2010 OS Sheet TF22SW Scale 1:10,000 **Figure M**	The site remains as shown in the previous map.

OS Map Extract	*Description*
2015 Aerial Photograph On Page 10 Appendix 2	The nursery appears unchanged. There is new housing development on the land to the north of the site. Some spoil from this development has encroached onto the field forming the eastern half of the site.
2018 Aerial Photograph On Page 9 Appendix 2	The nursery appears unchanged, the housing development completed and and the field reinstated as grass.
2021 Aerial Photograph On Page 8 Appendix 2	The site remains as shown in the previous photograph.
2022 OS Sheet TF2222 & TF2322 Scale 1:2500 **Figure N**	The site remains as shown in the previous map.

Historical Summary

In 1889 the fenland site was undeveloped and situated about 1km to the west of the market town of Spalding. Monkôs House Lane was located along the western edge of the relatively long and narrow site, which was bounded by drainage ditches along the northern and southern site boundaries. In the 1950s a small nursery had become established at the western end of the site, which otherwise remained as open land. The nursery appears to have remained fairly small until the 1970s when it expanded becoming the Ivanda Nursery, which included four large additional glasshouses located within the western third of the site. The addition of another glasshouse in the 1980s resulted in the western half of the site being mostly covered by horticultural buildings. The eastern half appears to have never been developed and has remained as a field, most probably used for growing crops. During 2015 a stockpile from construction works to the north was present within the field, although this appears to have been removed following completion of the housing development

The site has remained as a horticultural nursery through to the present time of investigation and is believed to have produced fresh fruit, vegetables, flowers and plants for wholesale distribution.

SUMMARY OF ENVIRONMENTAL DATA

Appendix 2 contains information derived from Environmental Databases for a radius of up to 2000m from the site. The information covers datasets held by the Groundsure with contributors including the local authority, the Environment Agency, British Geological Survey, Ordnance Survey and the Coal Authority and the results, within a radius of 250m, are summarised below:

Historical Industrial Sites	**On Site**	**0-50m**	**51 - 250m**
Historical Industrial Land Uses	3	3	5
Historical Tanks	1	0	4
Historical Energy Features Database	0	0	2
Historical Petrol and Fuel Site Database	0	0	0
Historical Garages	0	0	0
Historical Military Land	0	0	0
Landfill and Other Waste Sites	**On Site**	**0-50m**	**51 - 250m**
Landfill Sites	0	0	0
Waste Sites	0	0	0
Waste Exemptions	0	0	6
Current Industrial Land Uses	**On Site**	**0-50m**	**51 - 250m**
Recent Industrial Land Uses	0	2	7
Current or Recent Petrol Stations	0	0	0
Electricity Cables	0	0	0
Gas Pipelines	0	0	0
Sites Determined as Contaminated Land	0	0	0
Permits/Authorisations	0	0	0
Pollution Discharges	0	0	0
Dangerous Substances	0	0	0
Pollution Incidents	0	0	2
Pollutions Inventories	0	0	0
Hydrogeology	**On Site**	**0-50m**	**51 - 250m**
Superficial Aquifer	Identified (within 500m)		
Bedrock Aquifer	Identified (within 500m)		
Groundwater Vulnerability	Identified (within 50m)		
Groundwater Abstractions	0	0	0
Surface Water Abstractions	0	0	2
Potable Abstractions	0	0	0
Source Protection Zones	0	0	0
Hydrology	**On Site**	**0-50m**	**51 - 250m**
Water Network (OS MasterMap)	0	3	3
Surface Water Features	1	1	2

River and Coastal Flooding	On Site	0-50m	51 - 250m
Risk of Flooding from Rivers and Sea	Medium (within 50m)		
Historical Flood Events	0	0	0
Flood Defences	0	0	0
Areas Benefiting from Flood Defences	0	0	0
Flood storage areas	0	0	0
Flood Zone 2	Identified (within 50m)		
Flood Zone 3	Identified (within 50m)		
Surface Water Flooding			
Surface Water Flooding	1 in 30 year, 0.3m-1.0m (within 50m)		
Groundwater Flooding			
Groundwater Flooding	Negligible (within 50m)		
Designated Environmentally Sensitive Sites	**On Site**	**0-50m**	**51 - 250m**
Environmentally sensitive sites	2	0	0
Natural Hazards			
Hazard			
Shrinking or Swelling Clay	Low (within 50m)		
Running Sand	Moderate (within 50m)		
Compressible Ground	Moderate (within 50m)		
Collapsible Deposits	Negligible (within 50m)		
Landslides	Very Low (within 50m)		
Ground Dissolution of Soluble Rocks	Negligible (within 50m)		
Mining, Ground Workings & Natural Cavities	**On Site**	**0-50m**	**51 - 250m**
Natural Cavities	0	0	0
Surface Ground Workings	0	0	0
Underground Mining	0	0	0
Radon			
The property is not in a Radon Affected Area, as between less than 1% of properties are above the action level. The site lies within an area where No radon protection measures are necessary.			

Database Summary

There are 3 historical records relating to the nursery usage (1950-1990) on the site and a further 6 nursery references (1932-1990) within 250m. There are two records (dated 1903-1929) of an infectious diseases hospital situated 192m to the east of the site.

There is 1 unspecified tank record (1979) located on the site. There are a further 4 unspecified tanks (1932-1997) and two electricity substations within 250m of the site.

There are no landfill sites or waste sites within a 250m radius. There are six waste exemptions, relating to uses within construction, within 250m of the site.

There are 9 recent industrial uses, relating to electricity substations and a sewage pumping station, within 250m of the site.

There are two records (dated 2002) of a minor water pollution incident 253m to the east of the site.

The site is indicated to be directly underlain by superficial Tidal Flat Deposits with the underlying solid geology identified as the Oxford Clay Formation, which are both Unproductive in terms of aquifer classification.

There is a surface water abstraction point (for irrigation of farmland) located 228m to the north-west of the site.

There are 6 drains listed within 250m of the site including the Edwards Road Dyke, which runs along the southern site boundary.

The site lies within an area that has a low and medium risk of flooding and lies within an area that also has negligible risk below surface for groundwater flooding.

The property is in an area where less than 1% of properties are above the action level for radon. The site lies within an area where no radon protection measures are necessary.

PRELIMINARY RISK ASSESSMENT

Potential sources of contamination present on or beneath the site would relate primarily to; the historical use of the site; possible damaged drainage; the presence of contaminated soil; and the potential presence of soil gas beneath the site.

In order to assess the risks associated with the presence of ground contamination the linkages between the sources and potential receptors to contamination need to be established and evaluated. This is in accordance with the Environmental Protection Act 1990, which provides a statutory definition of Contaminated Land. To fall within this definition it is necessary that, as a result of the condition of the land, substances may be present on or under the land such that

- *Significant harm is being caused or there is a significant possibility of such harm being caused; or*
- *Pollution of controlled waters is being, or is likely to be, caused*

There are three principal factors that are assessed whilst undertaking a qualitative risk assessment for any site. These are the presence of a contamination source, the existence of migration pathways and the presence of a sensitive target(s). It should be noted that it is necessary for each element of source, pathway and target to be present in order for exposure of a human or environmental receptor to occur.

UK Government guidance on the assessment of contaminated land, requires risk to human health and the environment to be reviewed using source ï pathway ï target relationships. If each of these elements is present, the linkage provides a potential risk to the identified targets.

Contaminants or ***potential pollutants*** identified as ***sources*** in relation to the identified previous uses are listed overleaf in Table 1.

Table 1: Identified Potential Contaminant Sources

Contaminant Source	***Comments***
Drainage Beneath Site	Effluent from leaking drains would provide a contaminant source.
Heating Oil	Leaks and spills arising from the storage of heating oil on site.
Horticultural Chemicals	Chemicals (pesticides & herbicides) and fertilisers used within the Ivanda Nursery fruit and vegetable production.
Soil Beneath Site	Contamination may be present within any made ground materials on the site.
Soil Gas	Potential soil gas generated from any made ground present and underlying natural organic soil and peat Tidal Flat Deposits.
Ground Contamination Outside Site Boundary	Ground contamination migrating from adjoining sites.

A ***Pathway*** is defined as one or more routes through which a receptor is being, or could be, exposed to, or affected by, a given contaminant.

Potential ***Target or Receptors*** fall within the categories of Human Health, Water Environment, Flora and Fauna, and Building Materials.

There are a number of possible pathways for the contaminants identified on the site to impact human and/or environmental receptors and these are summarised in Tables 2 and 3.

Table 2: Human Receptors and Pathways

Human Receptor-Mechanism	***Typical Exposure Pathway***
Human Inhalation	Breathing Dust and Fumes Breathing Gas emissions
Human Ingestion	Eating -contaminated soil, for example by small children -produce grown on contaminated soil Ingesting dust or soil on vegetables Drinking contaminated water
Human Contact	Direct skin contact with contamination Direct skin contact with contaminated liquids

Table 3: Water Receptors and Pathways

Receptor-Water Environment	***Typical Exposure Pathway***
The site is indicated to be directly underlain by superficial Tidal Flat Deposits with the underlying solid geology identified as the Oxford Clay Formation, which are both Unproductive in terms of aquifer classification.	Surface infiltration of atmospheric waters into the soils beneath the site could wash or dissolve potential contaminants and migrate to underlying groundwater. Contamination leads to restriction/prevention of use as a resource, for example, drinking water, and can have secondary impacts on other resources, which depend on it.
There are 6 drains listed within 250m of the site including the Edwards Road Dyke, which runs along the southern site boundary.	Surface infiltration of atmospheric waters into the soils beneath the site could wash or dissolve potential contaminants and laterally migrate. Contamination leads to a restriction/prevention of use: -as drinking water resource -for amenity use Effects on aquatic life

Preliminary Conceptual Model

Assessment of the potential linkage between ground contamination sources, human and environmental receptors have been assessed based on the desk study research documented in the preceding sections of this report.

A generalised preliminary conceptual model is presented below in Table 4.

Table 4: Preliminary Conceptual Model Relative to Proposed Development

Receptors	Pathway	Estimated Potential for Linkage with Contaminant Sources					
		Contaminant Source **Drainage Beneath Site**	Contaminant Source **Heating Oil**	Contaminant Source **Horticultural Chemicals**	Contaminant Source **Soil Beneath Site**	Contaminant Source **Soil Gas**	Contaminant Source **Ground Outside Site Boundary**
Human Health ï site and ground workers	Ingestion and Inhalation of contaminated Soil, Dust and Vapour	Low likelihood	Likely	Low likelihood	Low likelihood	Likely	Low likelihood
Human Health ï users of completed development	Ingestion and Inhalation of contaminated Soil, Dust and Vapour	Low likelihood	Likely	Low likelihood	Low likelihood	Likely	Low likelihood
Water Environment	Migration through ground into surface water or surrounding groundwater	Low likelihood	Likely	Low likelihood	Low likelihood	Low likelihood	Low likelihood
Flora	Vegetation on site growing on contaminated soil	Low likelihood	Low likelihood	Low likelihood	Low likelihood	Unlikely	Unlikely
Building Materials	Contact with contaminated soil	Low likelihood	Low likelihood	Low likelihood	Low likelihood	Unlikely	Unlikely

Key to Table 4 **Estimated Potential for Linkage with Contaminant Source**	**Definition**
High likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage, and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such an event would take place and is less likely in the shorter term.
Unlikely	There is a pollution linkage, but circumstances are such that it is improbable that an event would occur even in the very long term.
NA	Not Applicable

CONCLUSIONS

In 1889 the site was undeveloped and situated within fenland off Monkôs House Lane. In the 1950s a small nursery was present at the western end of the site, which otherwise remained as open land. The nursery appears to have remained fairly small until the 1970s/80s when it became established as the Ivanda Nursery installed large glasshouses across the western half of the site and kept the eastern half as an open field possibly used for crops. The site has remained as a horticultural nursery through to the present time of investigation and is believed to have produced fresh fruit, vegetables, flowers and plants for wholesale distribution.

Anticipated Ground Conditions and Bearing Properties

The Tidal Flat Deposits are expected to have very poor bearing properties and high compressibility, which could cause unacceptable total and differential settlements beneath new buildings. Traditional shallow foundations may not satisfy modern building standards and it is likely that consideration should be given to adopting piled foundations.

A ground investigation in the form of deep cable percussion boreholes would be necessary to in order to provide information to inform the design of piled foundations.

Likelihood of Contamination - Drainage

When preparing for redevelopment redundant foul and surface water drain runs should be removed from beneath the site and precautions implemented to ensure that any remaining effluent is directly disposed of off-site. The integrity of existing drainage should be checked, and damaged sections replaced prior to re-use within the development. The latter measures should reduce the future likelihood of contaminants affecting human health and water environment to very low.

Likelihood of Contamination – Storage of Heating oil

It is considered that there is a likely likelihood that pollution could have been caused by leaks and spills arising from the storage of heating oil on site within the Ivander Nursery. The areas around the fuel tanks, fuel lines and central heating boiler, should be investigated to check whether the underlying soil or groundwater has been impacted.

Likelihood of Contamination – Horticultural Chemicals

It is considered that there is a low likelihood of pollution caused by chemicals (pesticides & herbicides) and fertilisers used within the Ivander Nursery.

Likelihood of Contamination - Soil beneath the Site

Any contaminated soil present beneath the site would be expected within the made ground, which is likely to have a thickness of less than 1m.

In view that the nursery produced fresh fruit, vegetables, flowers and plants for wholesale distribution, it is believed that there is a low likelihood that the cover layer of made ground would be considered unsuitable if exposed at the surface within a residential development.

Likelihood of Contamination - Soil outside the Site

It is unlikely that soils outside the site could detrimentally affect future development of the site.

Likelihood of Contamination - Water Environment

It is anticipated that contaminants, if present within the made ground, could migrate into the underlying natural ground, although it is unlikely that the Tidal Flat Deposits would be particularly transmissive as they are Unproductive in terms of aquifer classification. Any runoff from the site would most probably find its way into the Edward Road Dyke, which runs along the

southern site margin. It is noted that the database shows no historical pollution incidents registered against the site.

Likelihood of Contamination - Soil Gas

Whilst there are no landfills within 250m of the site, the likely presence of organic clay soils and peat means there could be a low hazard potential for methane or carbon dioxide soil gasses affecting the proposed development. A programme of soil gas monitoring should be considered in view that there is a possibility that gas precaution measures may be required for new dwellings.

Further Works

It would be prudent to carry out a ground investigation, which should determine the thickness and nature of made ground across the site, and check the near surface soil and water for potential contaminants and soil gas. The areas around the fuel tanks, fuel lines and central heating boiler should be investigated to check whether the underlying soil or groundwater has been impacted.

Selected soil and water samples should be screened for a wide range of potential contaminants outlined by the Environment Agency (EA) and National House Building Council (NHBC) document R&D 66; 2008 'Guidance for the Safe Development of Housing on Land Affected by Contamination'.

The investigation should also determine the geotechnical properties of the natural soil beneath the site and be sufficient to facilitate foundation design including piled foundations.

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Figures & Photographs

Figure 1: Site Location Plan

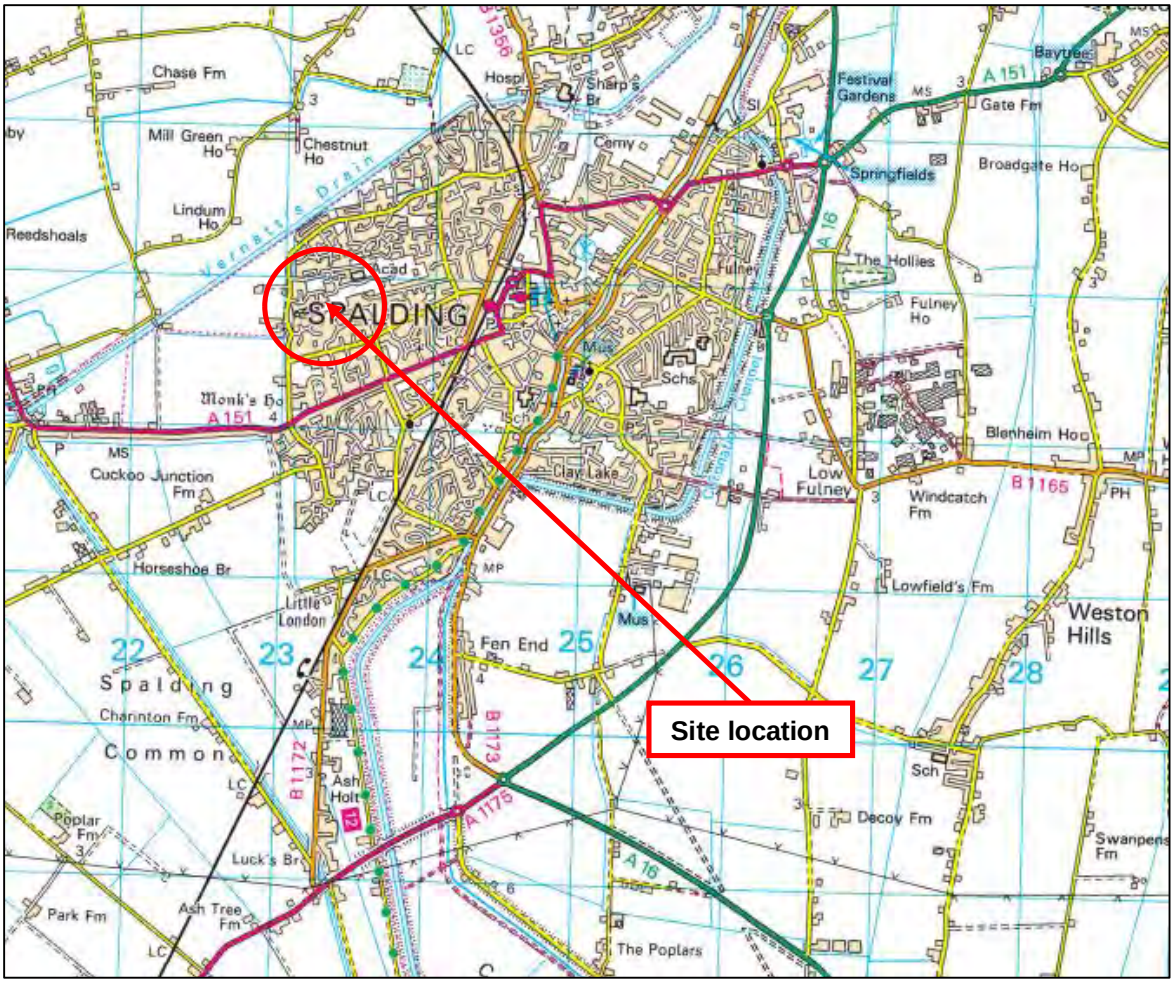
Figure 2: Site Plan

Site Photographs 1 to 8

Site Location Plan

Figure 1

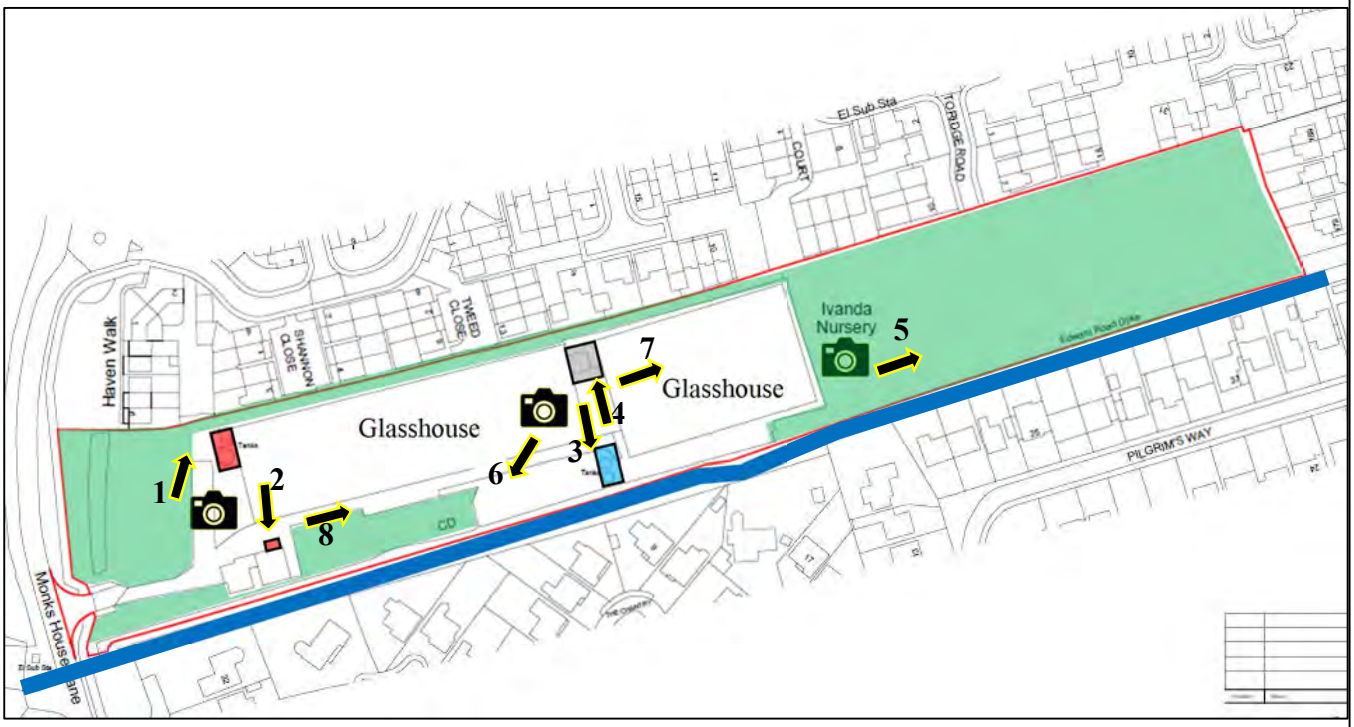
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Site Plan

Figure 2



Scale

100m

Heating Oil tanks

Water Tanks

Greenhouse Central Heating Boiler

Grass, Bushes and Brambles

Edward Road Dyke

Photographs 1 to 8

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Site Photographs

Photograph 1: Facing North Towards Bunded Heating Oil Tanks



Photograph 2: Facing South Towards Unbunded Heating Oil Tank



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Site Photographs

Photograph 3: Facing North-East Towards Water Tank



Photograph 4: Facing North Towards Central Heating Boiler



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Site Photographs

Photograph 5: Facing North-East Across Eastern Half of Site



Photograph 6: Facing Across Yard Adjacent Water Tanks



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Site Photographs

Photograph 7: View across Greenhouse



Photograph 8: Facing North-East Along Greenhouse Towards Water Tanks



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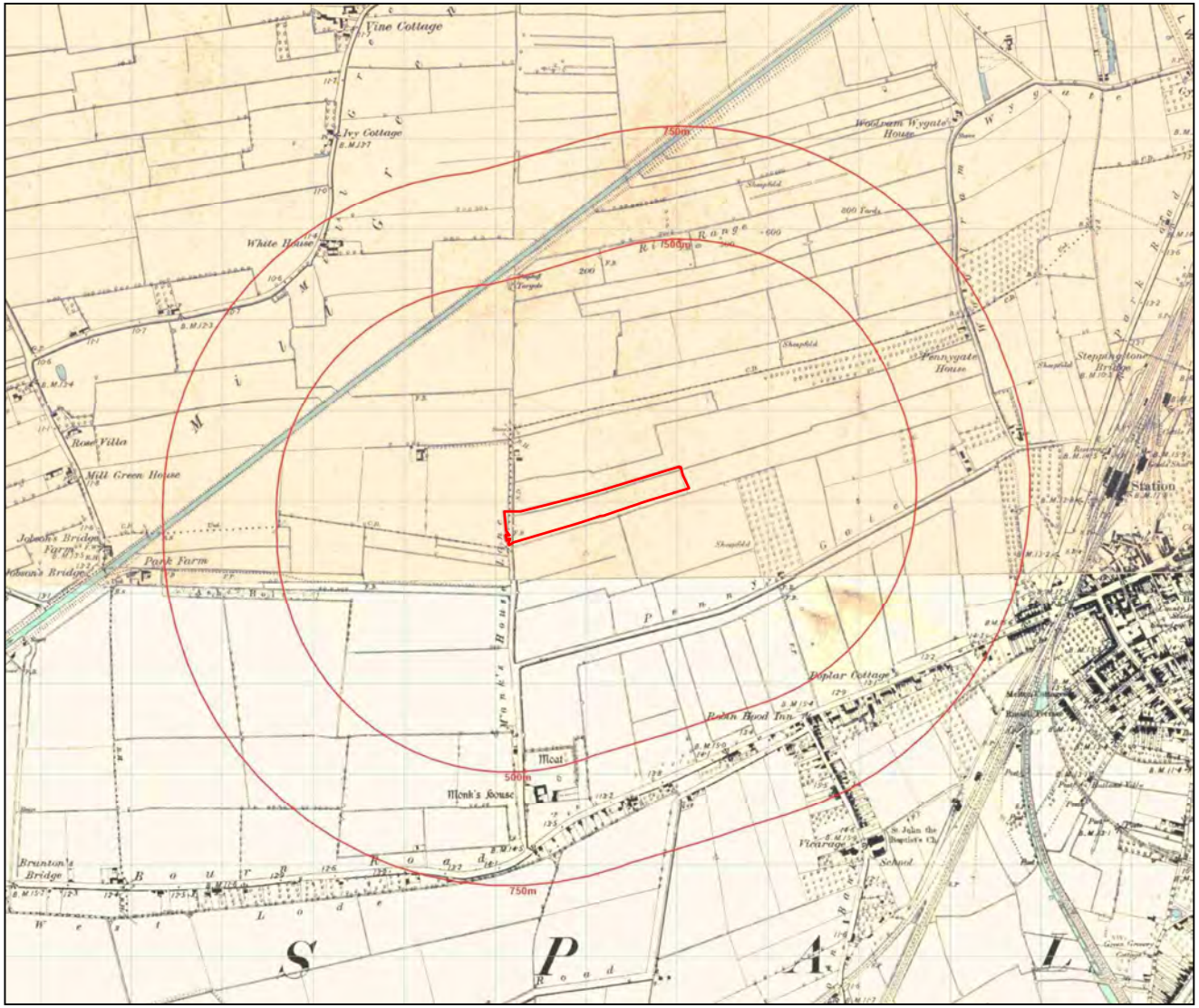
Appendix 1

Historical Map Extracts

Site History

Figure A

Reproduced from the **1887-89** edition Ordnance Survey sheets **Lincolnshire 134SW & 142NW Originally** at **1:10,560** scale



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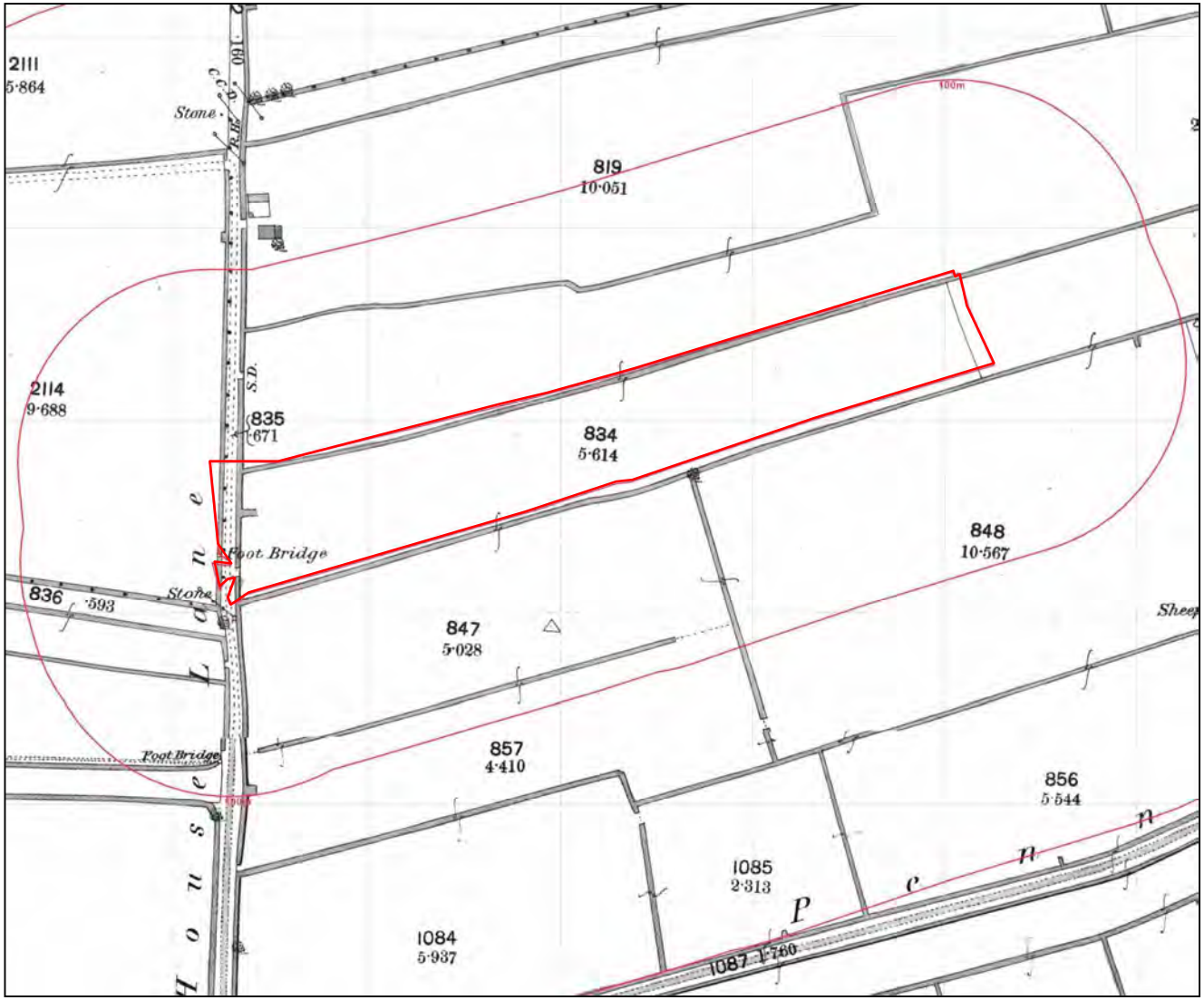
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Site History

Figure B

Reproduced from the **1887-89** edition Ordnance Survey sheets **Lincolnshire 134.13 & 142.1 Originally** at **1:2500** scale



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Client : Seagate Homes

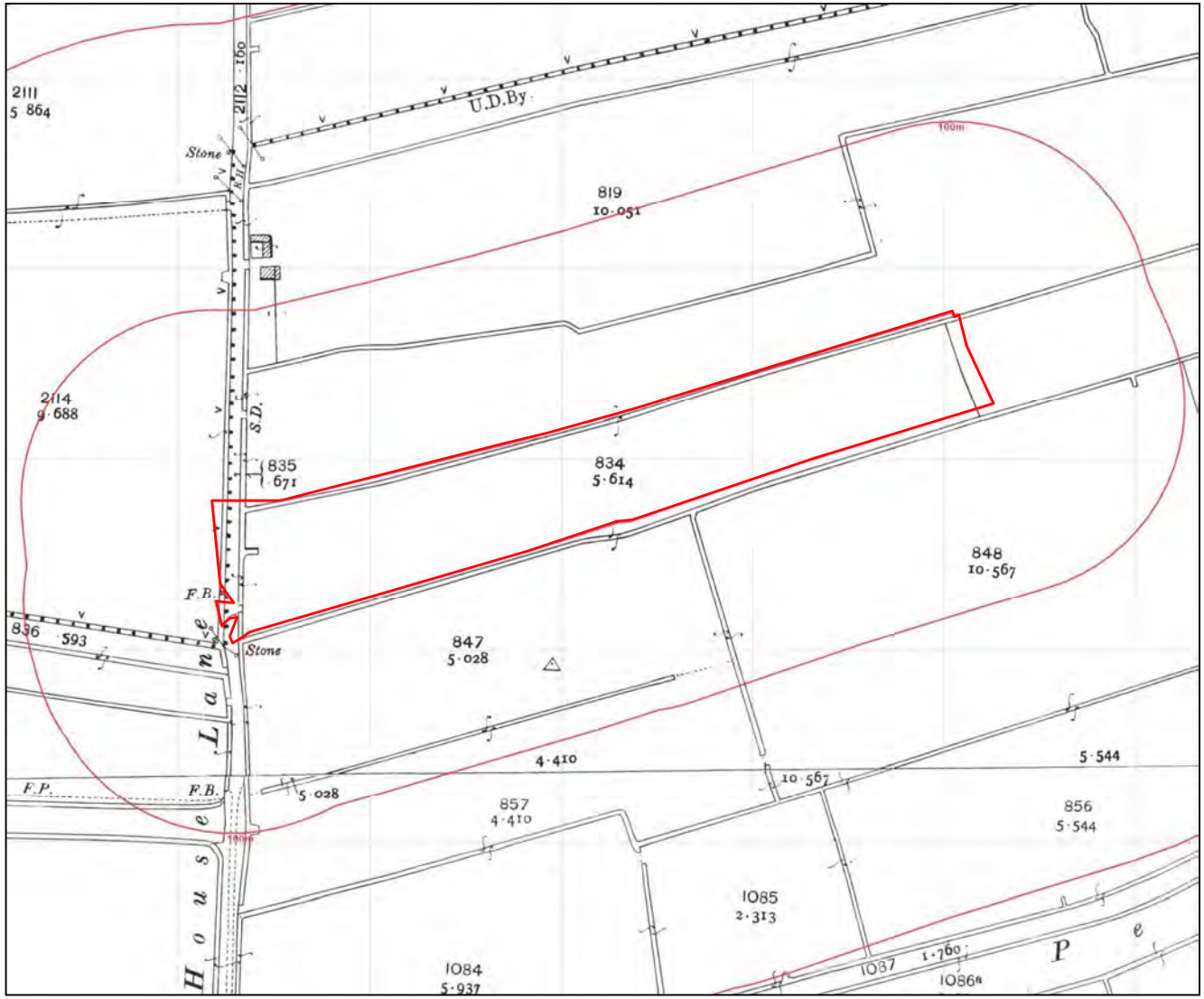
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Site History

Figure C

Reproduced from the **1904** edition Ordnance Survey sheets **Lincolnshire 134.13 & 142.1 Originally** at **1:2500** scale



Project : Ivanda Nursery, Monks House Lane, Spalding, Lincs

Client : Seagate Homes

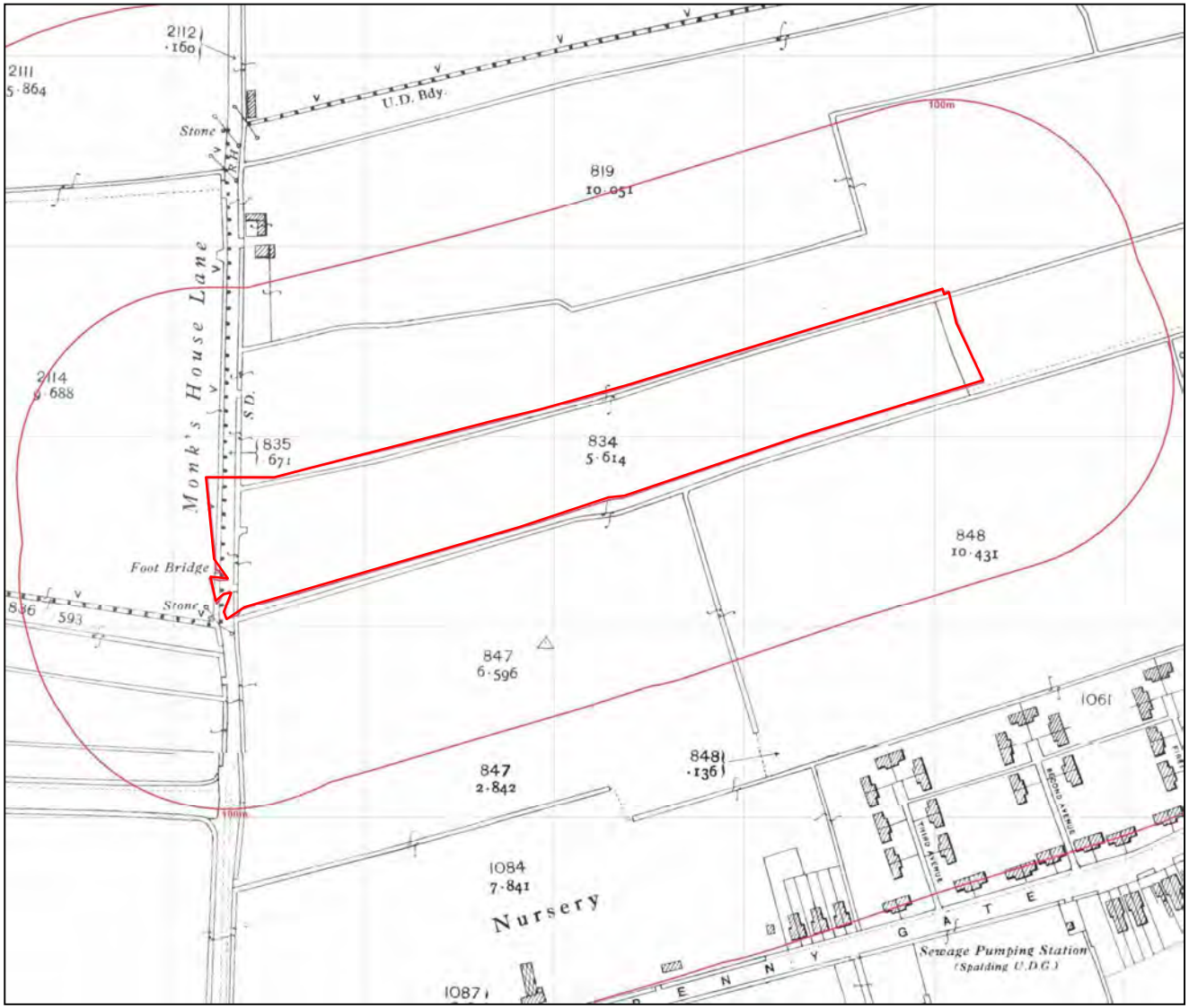
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Site History

Figure D

Reproduced from the **1932** edition Ordnance Survey sheets **Lincolnshire 134.13 & 142.1 Originally** at **1:2500** scale



Project : Ivanda Nursery, Monks House Lane, Spalding, Lincs

Client : Seagate Homes

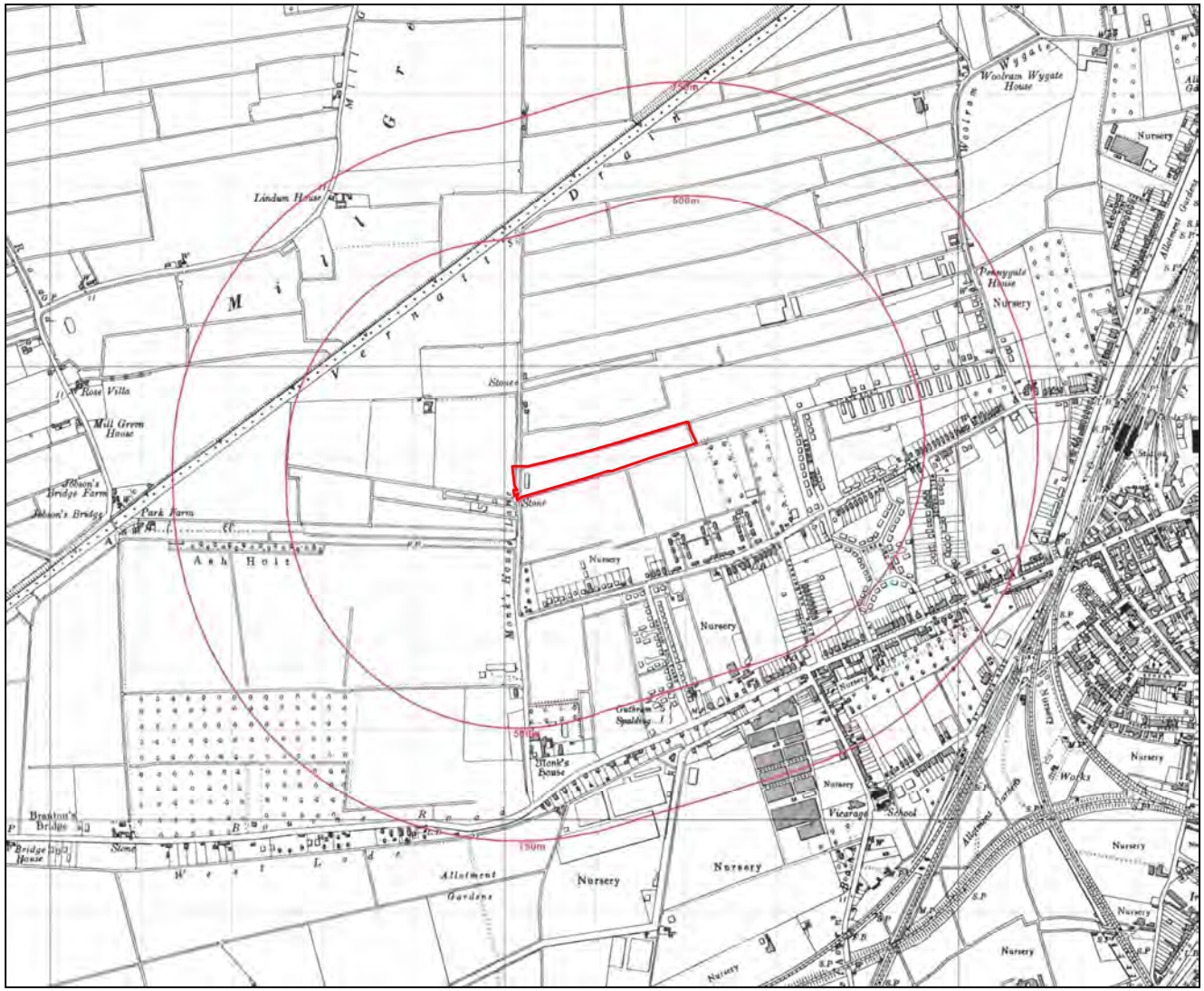
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Site History

Figure E

Reproduced from the **1959** edition Ordnance Survey sheet **TF22SW Originally** at **1:10,560** scale



Project : Ivanda Nursery, Monks House Lane, Spalding, Lincs

Client : Seagate Homes

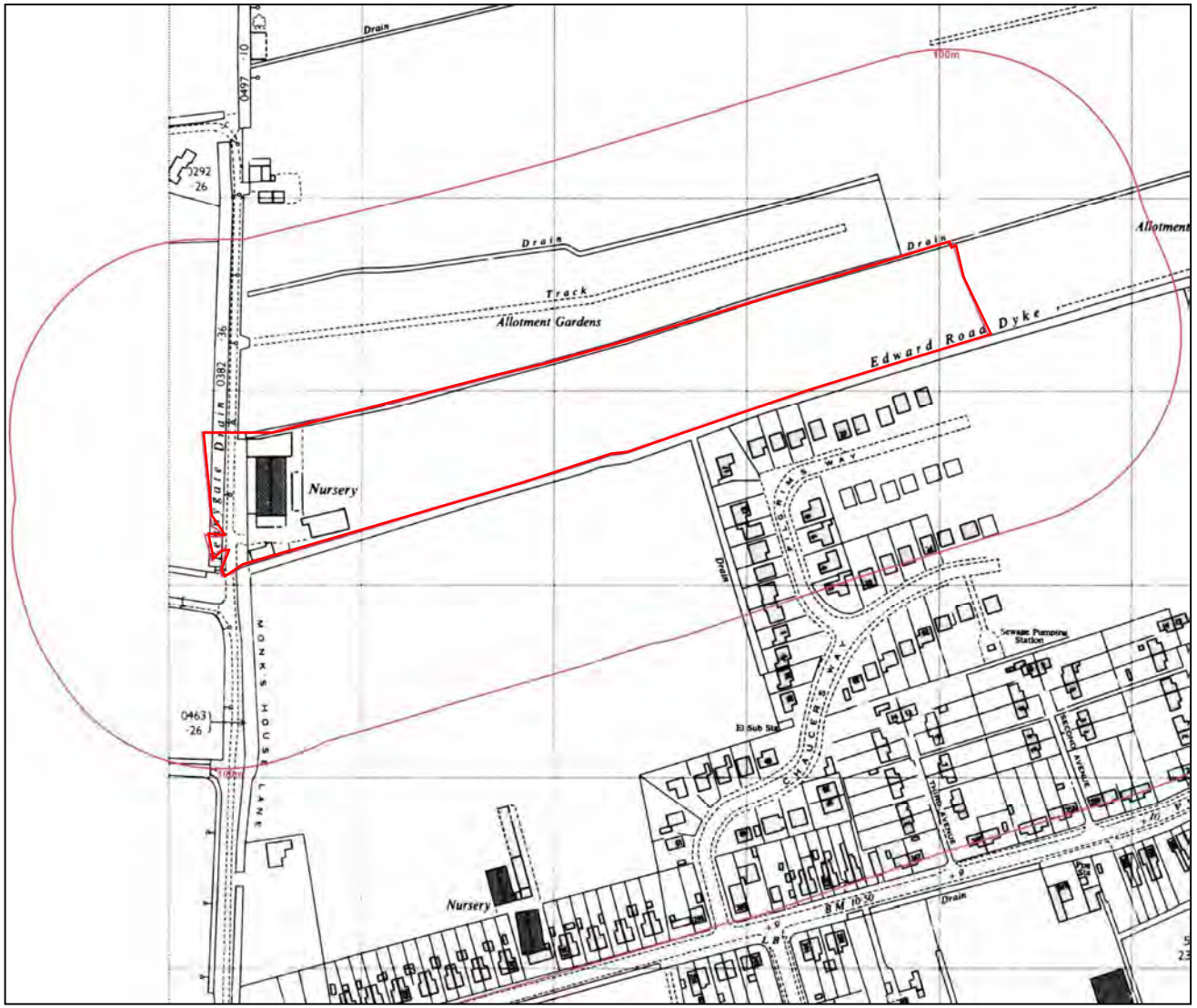
GROUND ENGINEERING LIMITED
Peterborough Tel: 01733 566566

Project No.
C15847

Site History

Figure F

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Project : Ivanda Nursery, Monks House Lane, Spalding, Lincs

Client : Seagate Homes

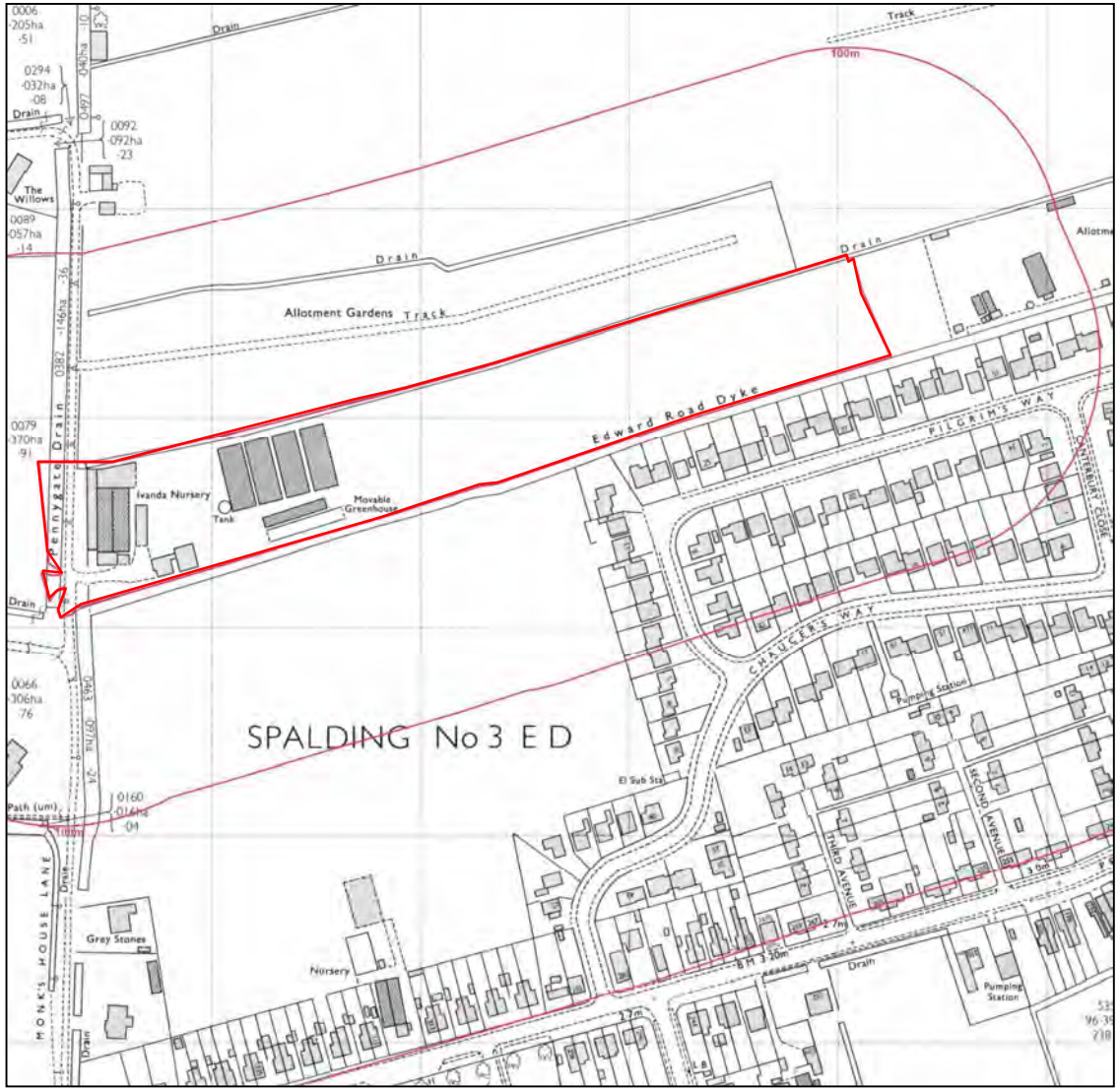
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Project No.
C15847

Site History

Figure G

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Client : Seagate Homes

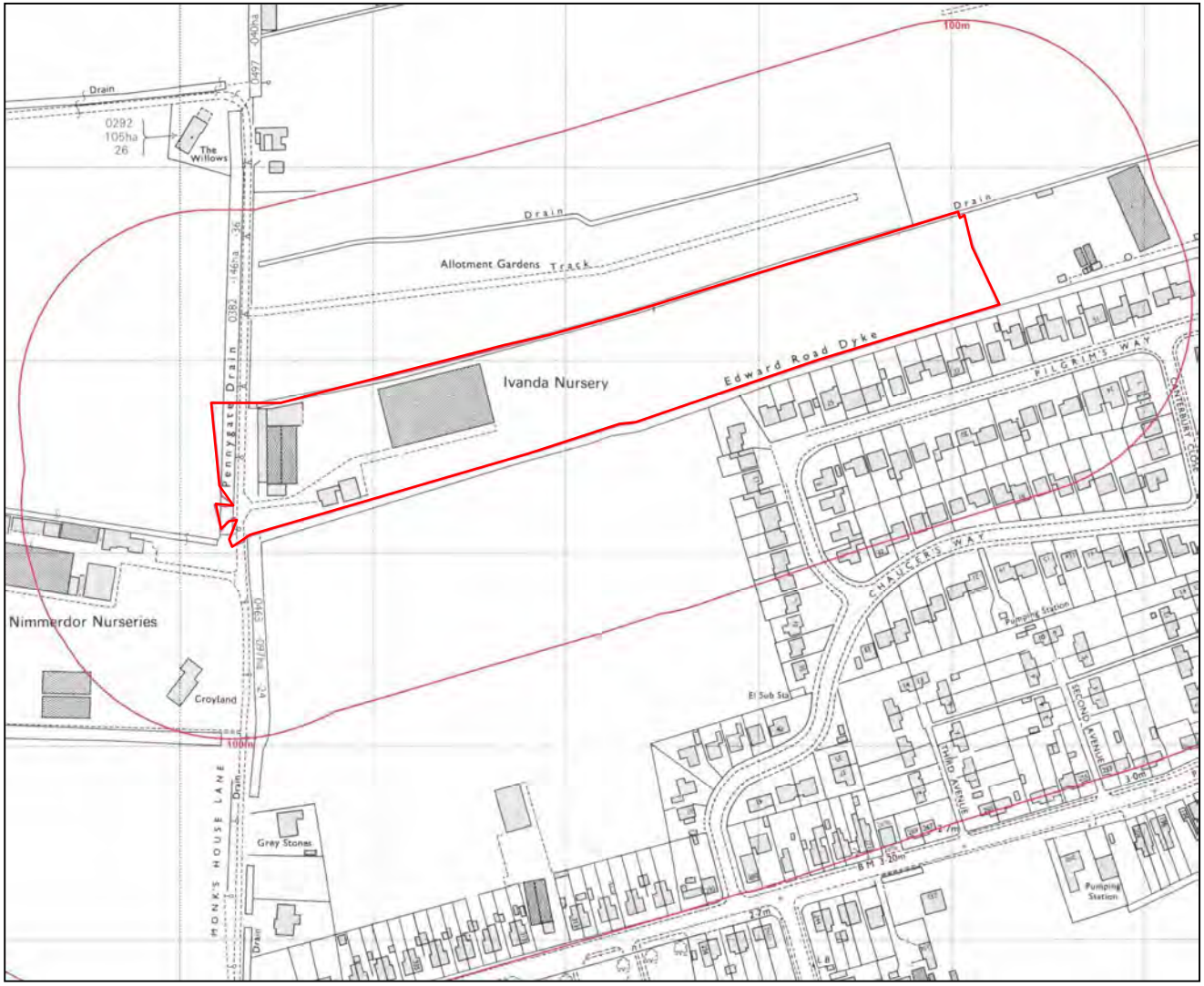
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Project No.
C15847

Site History

Figure H

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Client : Seagate Homes

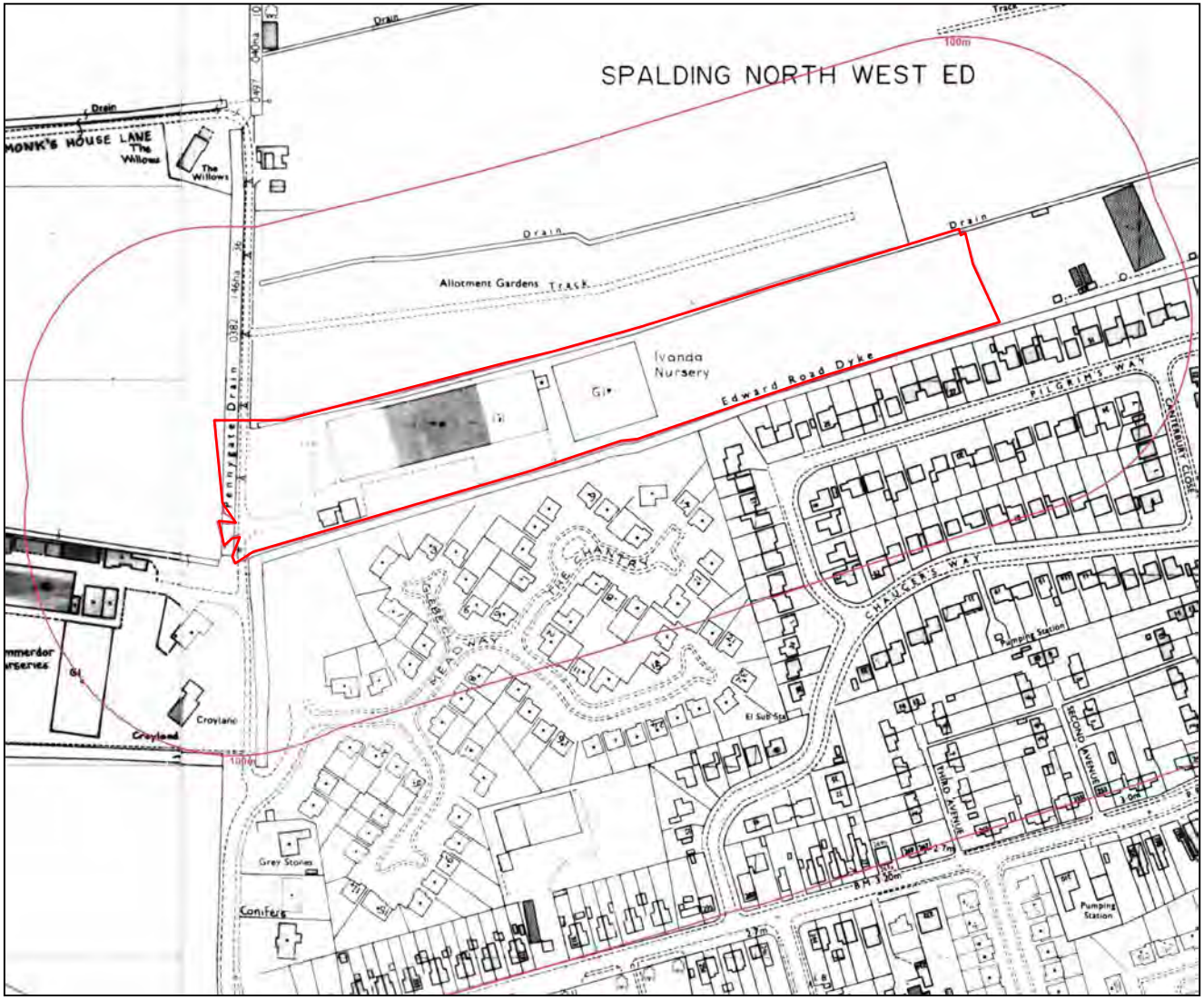
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Project No.
C15847

Site History

Figure I

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Site History

Figure J

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Client : Seagate Homes

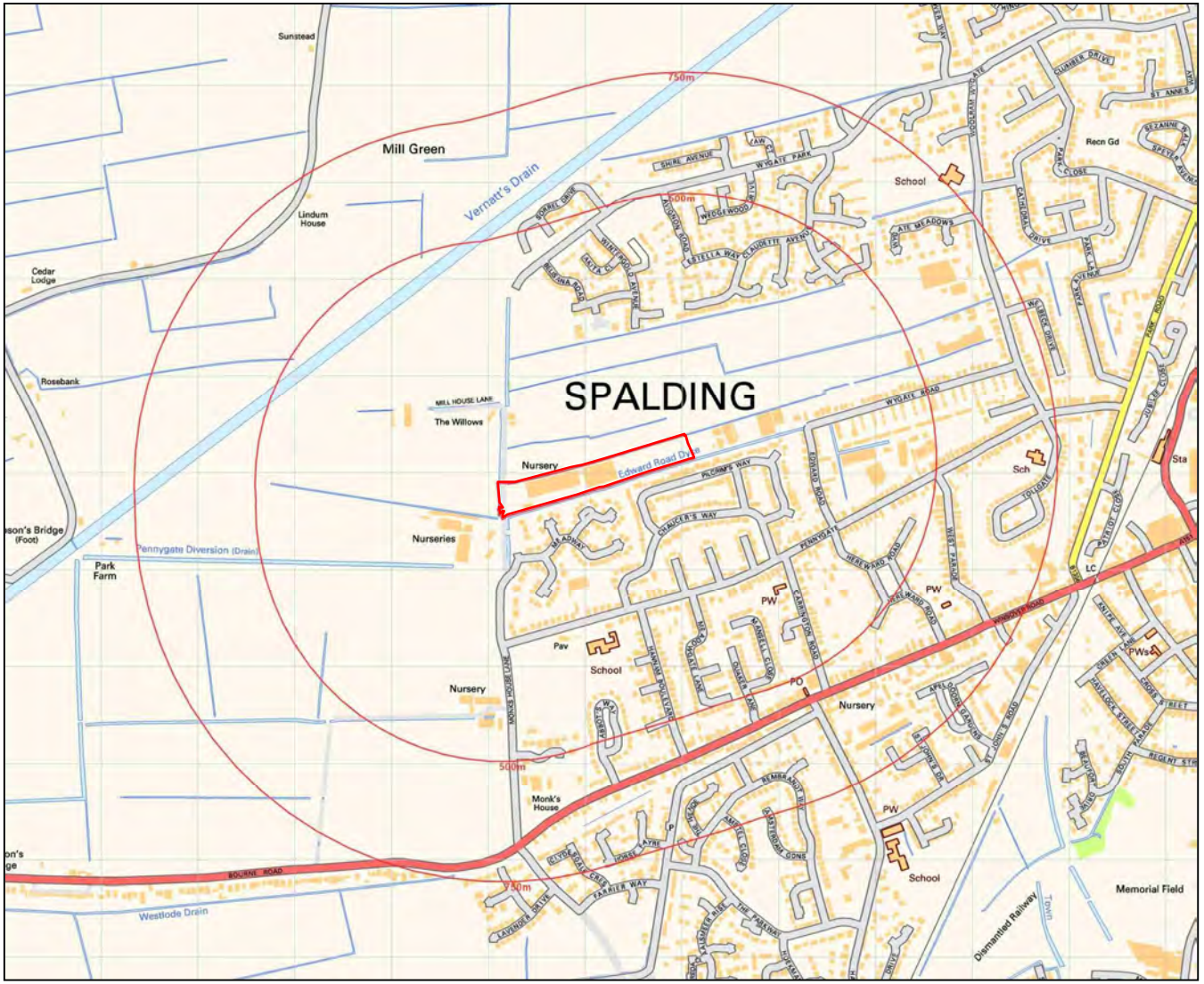
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Peterborough Tel: 01733 566566

Project No.
C15847

Site History

Figure K

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Client : Seagate Homes

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C15847

Site History

Figure L

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Client : Seagate Homes

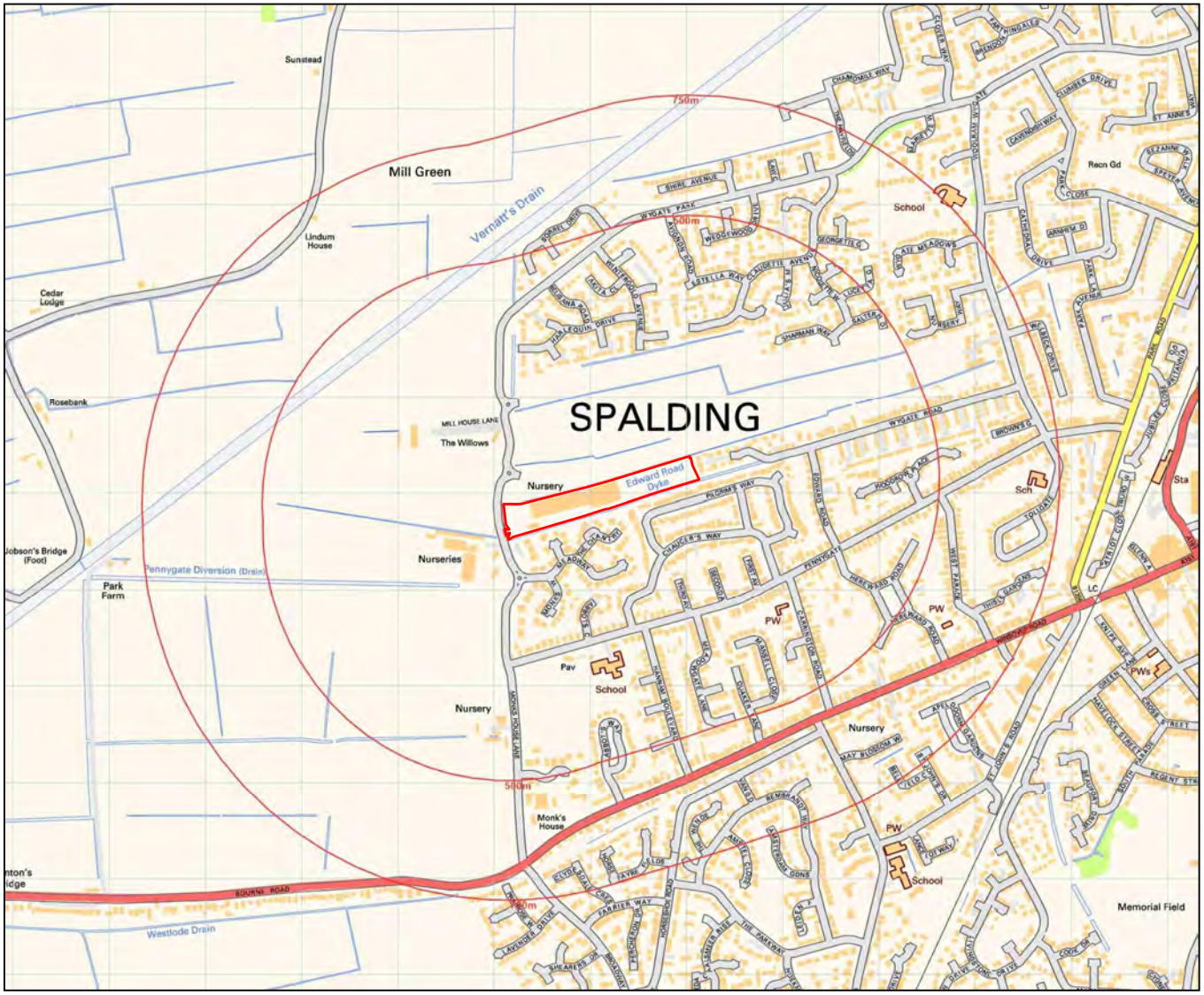
GROUND ENGINEERING LIMITED
Peterborough Tel: 01733 566566

Project No.
C15847

Site History

Figure M

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Project : Ivanda Nursery, Monks House Lane, Spalding, Lincs

Client : Seagate Homes

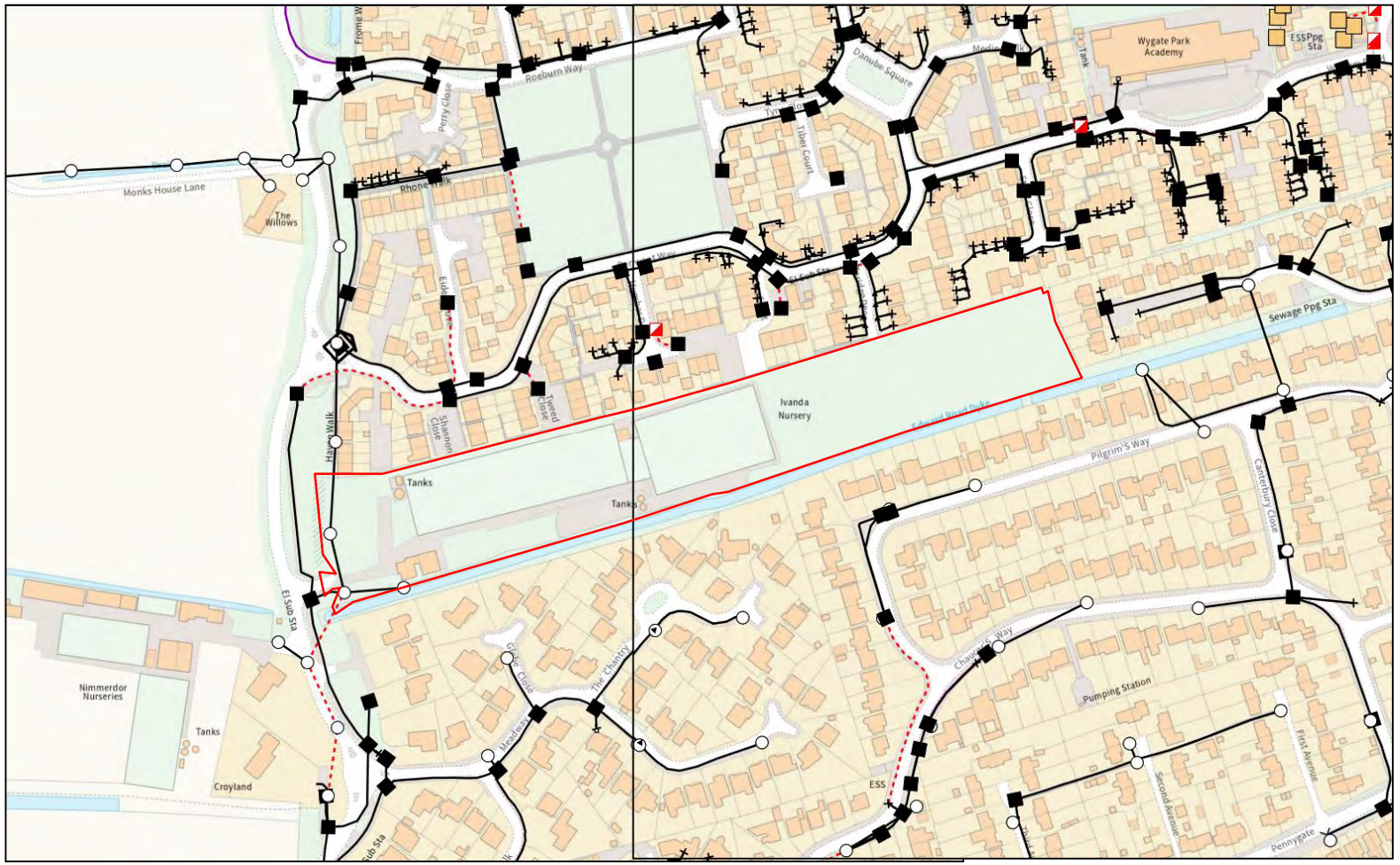
GROUND ENGINEERING LIMITED
Peterborough Tel: 01733 566566

Project No.
C15847

Site History

Figure N

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Project : Ivanda Nursery, Monks House Lane, Spalding, Lincs

Client : Seagate Homes

GROUND ENGINEERING LIMITED
Peterborough Tel: 01733 566566

Project No.
C15847

Appendix 2

Environmental Database Information

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

IVANDA NURSERY, MONKS HOUSE LANE, SPALDING, PE11 3LH

Order Details

Date: 16/12/2022

Your ref: SWC15847

Our Ref: HMD-9264016

Site Details

Location: 523158 322779

Area: 2.32 ha

Authority: South Holland District Council



Summary of findings p. 2

OS MasterMap site plan p.13

Aerial image p. 8

groundsure.com/insightuserguide

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

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	Historical industrial land uses	3	3	5	9	-
15	1.2	Historical tanks	1	0	4	4	-
16	1.3	Historical energy features	0	0	2	3	-
17	1.4	Historical petrol stations	0	0	0	0	-
17	1.5	Historical garages	0	0	0	0	-
17	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
18	2.1	Historical industrial land uses	3	3	7	17	-
20	2.2	Historical tanks	1	0	6	9	-
20	2.3	Historical energy features	0	0	9	7	-
21	2.4	Historical petrol stations	0	0	0	0	-
22	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
23	3.1	Active or recent landfill	0	0	0	0	-
23	3.2	Historical landfill (BGS records)	0	0	0	0	-
24	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
24	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
24	3.5	Historical waste sites	0	0	0	0	-
24	3.6	Licensed waste sites	0	0	0	0	-
24	3.7	Waste exemptions	0	0	6	2	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
26	4.1	Recent industrial land uses	0	2	7	-	-
27	4.2	Current or recent petrol stations	0	0	0	0	-
27	4.3	Electricity cables	0	0	0	0	-
27	4.4	Gas pipelines	0	0	0	0	-
28	4.5	Sites determined as Contaminated Land	0	0	0	0	-

28	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
28	4.7	Regulated explosive sites	0	0	0	0	-
28	4.8	Hazardous substance storage/usage	0	0	0	0	-
28	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
29	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
29	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
29	4.12	Radioactive Substance Authorisations	0	0	0	0	-
29	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
29	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
30	4.15	Pollutant release to public sewer	0	0	0	0	-
30	4.16	List 1 Dangerous Substances	0	0	0	0	-
30	4.17	List 2 Dangerous Substances	0	0	0	0	-
30	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	2	0	-
31	4.19	Pollution inventory substances	0	0	0	0	-
31	4.20	Pollution inventory waste transfers	0	0	0	0	-
31	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
32	**5.1**	**Superficial aquifer**	Identified (within 500m)				
33	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
34	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
35	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
35	5.5	Groundwater vulnerability- local information	None (within 0m)				
36	**5.6**	**Groundwater abstractions**	0	0	0	0	2
37	**5.7**	**Surface water abstractions**	0	0	2	1	5
39	5.8	Potable abstractions	0	0	0	0	0
39	5.9	Source Protection Zones	0	0	0	0	-
40	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
41	**6.1**	**Water Network (OS MasterMap)**	0	3	3	-	-

42	6.2	Surface water features	1	1	2	-	-
42	6.3	WFD Surface water body catchments	1	-	-	-	-
43	6.4	WFD Surface water bodies	0	0	0	-	-
43	6.5	WFD Groundwater bodies	0	-	-	-	-

Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
44	7.1	Risk of flooding from rivers and the sea	Medium (within 50m)				
45	7.2	Historical Flood Events	0	0	0	-	-
45	7.3	Flood Defences	0	0	0	-	-
45	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
45	7.5	Flood Storage Areas	0	0	0	-	-
46	7.6	Flood Zone 2	Identified (within 50m)				
47	7.7	Flood Zone 3	Identified (within 50m)				

Page	Section	Surface water flooding	
48	8.1	Surface water flooding	1 in 30 year, 0.3m - 1.0m (within 50m)

Page	Section	Groundwater flooding	
50	9.1	Groundwater flooding	Negligible (within 50m)

Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
51	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
52	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
52	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
52	10.4	Special Protection Areas (SPA)	0	0	0	0	0
52	10.5	National Nature Reserves (NNR)	0	0	0	0	0
53	10.6	Local Nature Reserves (LNR)	0	0	0	0	1
53	10.7	Designated Ancient Woodland	0	0	0	0	0
53	10.8	Biosphere Reserves	0	0	0	0	0
53	10.9	Forest Parks	0	0	0	0	0
54	10.10	Marine Conservation Zones	0	0	0	0	0
54	10.11	Green Belt	0	0	0	0	0
54	10.12	Proposed Ramsar sites	0	0	0	0	0

54	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
54	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
55	10.15	Nitrate Sensitive Areas	0	0	0	0	0
55	**10.16**	**Nitrate Vulnerable Zones**	1	0	0	0	5
56	**10.17**	**SSSI Impact Risk Zones**	1	-	-	-	-
57	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
58	11.1	World Heritage Sites	0	0	0	-	-
58	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
58	11.3	National Parks	0	0	0	-	-
58	11.4	Listed Buildings	0	0	0	-	-
59	11.5	Conservation Areas	0	0	0	-	-
59	11.6	Scheduled Ancient Monuments	0	0	0	-	-
59	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
60	**12.1**	**Agricultural Land Classification**	Grade 1 (within 250m)				
61	12.2	Open Access Land	0	0	0	-	-
61	12.3	Tree Felling Licences	0	0	0	-	-
62	12.4	Environmental Stewardship Schemes	0	0	0	-	-
62	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
63	13.1	Priority Habitat Inventory	0	0	0	-	-
63	13.2	Habitat Networks	0	0	0	-	-
63	13.3	Open Mosaic Habitat	0	0	0	-	-
63	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
64	**14.1**	**10k Availability**	Identified (within 500m)				
65	14.2	Artificial and made ground (10k)	0	0	0	0	-
66	14.3	Superficial geology (10k)	0	0	0	0	-

66	14.4	Landslip (10k)	0	0	0	0	-
67	14.5	Bedrock geology (10k)	0	0	0	0	-
67	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
68	**15.1**	**50k Availability**	Identified (within 500m)				
69	15.2	Artificial and made ground (50k)	0	0	0	0	-
69	15.3	Artificial ground permeability (50k)	0	0	-	-	-
70	**15.4**	**Superficial geology (50k)**	1	0	0	0	-
71	**15.5**	**Superficial permeability (50k)**	Identified (within 50m)				
71	15.6	Landslip (50k)	0	0	0	0	-
71	15.7	Landslip permeability (50k)	None (within 50m)				
72	**15.8**	**Bedrock geology (50k)**	1	0	0	0	-
73	**15.9**	**Bedrock permeability (50k)**	Identified (within 50m)				
73	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
74	**16.1**	**BGS Boreholes**	0	3	22	-	-
Page	Section	Natural ground subsidence					
76	**17.1**	**Shrink swell clays**	Low (within 50m)				
77	**17.2**	**Running sands**	Moderate (within 50m)				
78	**17.3**	**Compressible deposits**	Moderate (within 50m)				
79	**17.4**	**Collapsible deposits**	Negligible (within 50m)				
80	**17.5**	**Landslides**	Very low (within 50m)				
81	**17.6**	**Ground dissolution of soluble rocks**	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
82	18.1	Natural cavities	0	0	0	0	-
82	18.2	BritPits	0	0	0	0	-
82	18.3	Surface ground workings	0	0	0	-	-
82	18.4	Underground workings	0	0	0	0	0
83	18.5	Historical Mineral Planning Areas	0	0	0	0	-

83	18.6	Non-coal mining	0	0	0	0	0
83	18.7	Mining cavities	0	0	0	0	0
83	18.8	JPB mining areas	None (within 0m)				
83	18.9	Coal mining	None (within 0m)				
84	18.10	Brine areas	None (within 0m)				
84	18.11	Gypsum areas	None (within 0m)				
84	18.12	Tin mining	None (within 0m)				
84	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
85	**19.1**	**Radon**	Less than 1% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
87	**20.1**	**BGS Estimated Background Soil Chemistry**	1	1	-	-	-
87	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
87	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-

Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
88	21.1	Underground railways (London)	0	0	0	-	-
88	21.2	Underground railways (Non-London)	0	0	0	-	-
88	21.3	Railway tunnels	0	0	0	-	-
88	21.4	Historical railway and tunnel features	0	0	0	-	-
88	21.5	Royal Mail tunnels	0	0	0	-	-
89	21.6	Historical railways	0	0	0	-	-
89	21.7	Railways	0	0	0	-	-
89	21.8	Crossrail 1	0	0	0	0	-
89	21.9	Crossrail 2	0	0	0	0	-
89	21.10	HS2	0	0	0	0	-

Recent aerial photograph



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Capture Date: 29/05/2021

Site Area: 2.32ha

Recent site history - 2018 aerial photograph



Capture Date: 20/04/2018

Site Area: 2.32ha

Recent site history - 2015 aerial photograph



Capture Date: 06/04/2015

Site Area: 2.32ha

Recent site history - 2007 aerial photograph



Capture Date: 10/08/2007

Site Area: 2.32ha

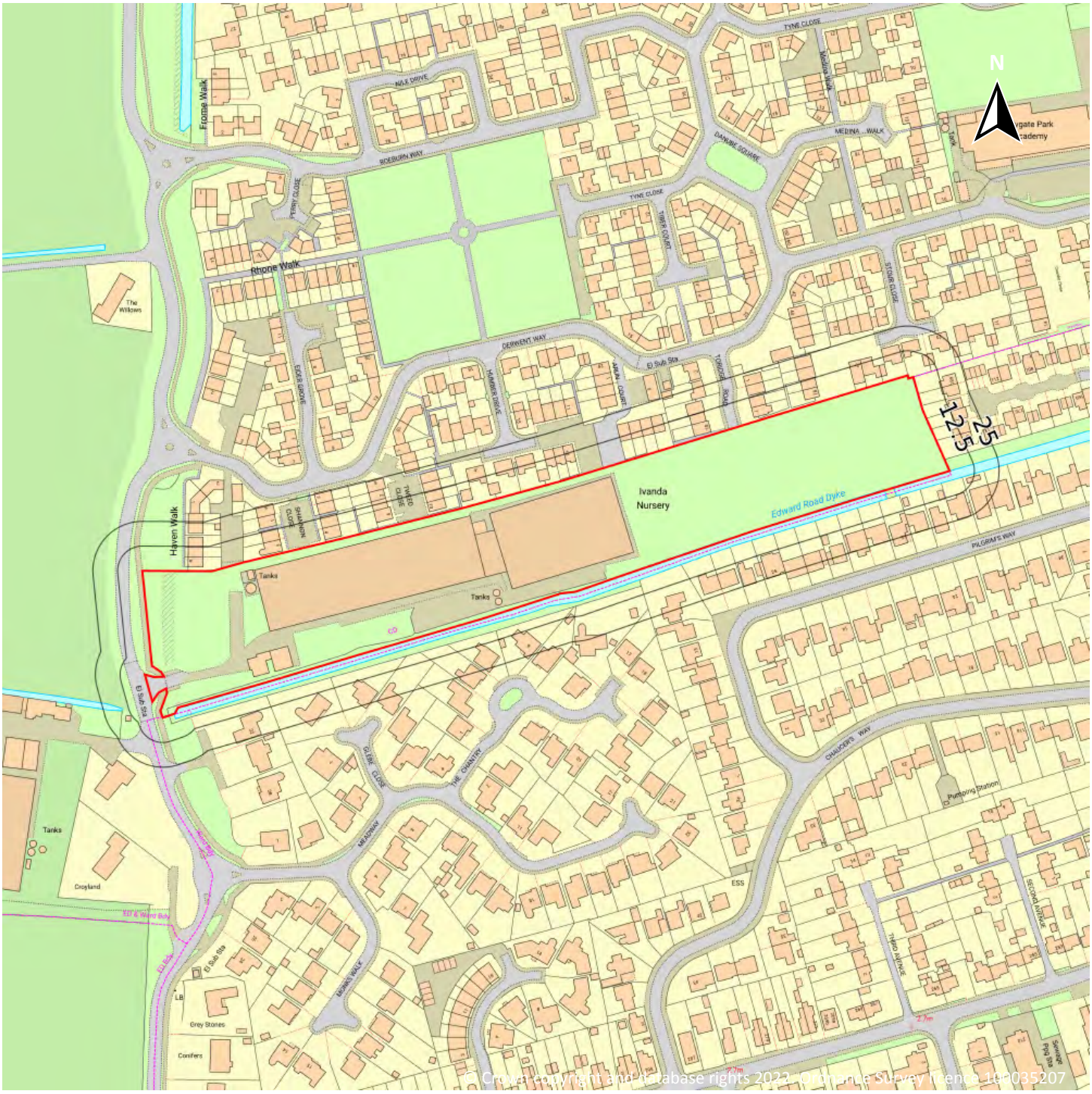
Recent site history - 1999 aerial photograph



Capture Date: 18/06/1999

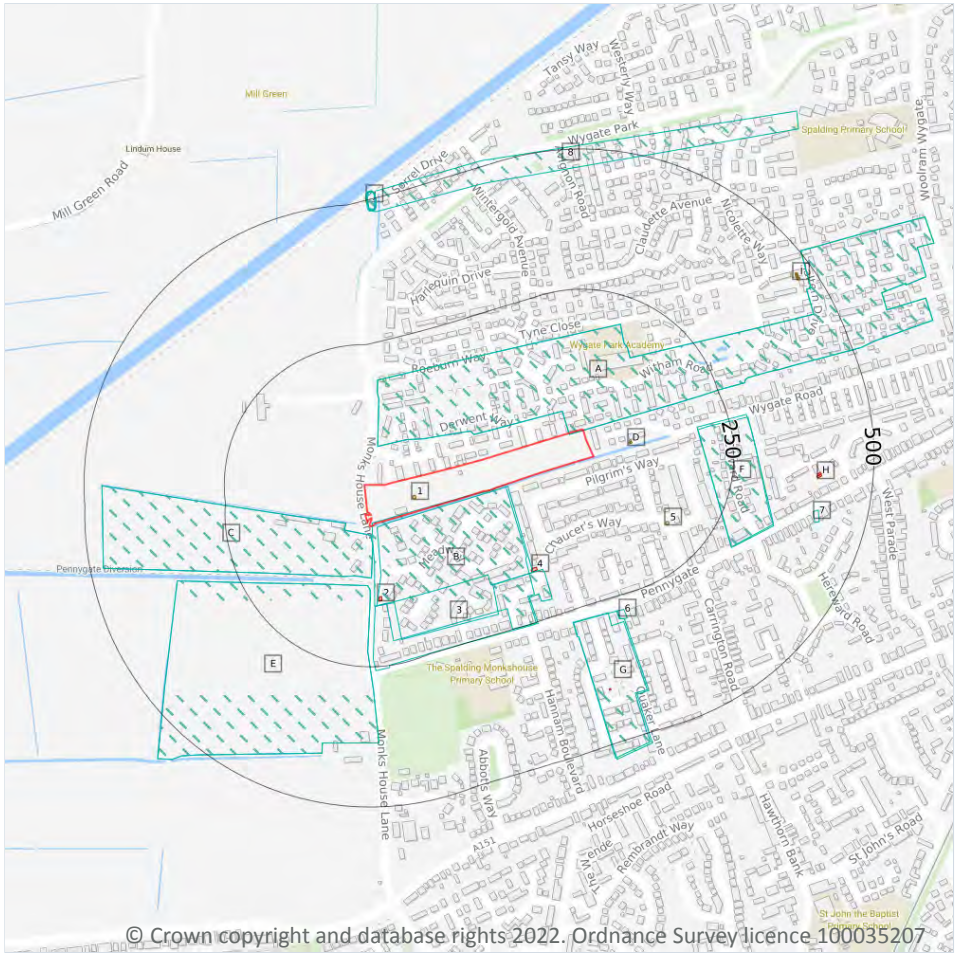
Site Area: 2.32ha

OS MasterMap site plan



Site Area: 2.32ha

1 Past land use



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1.1 Historical industrial land uses

Records within 500m	20

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

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

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Nursery**	**1980**	**2019188**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Nursery**	**1990**	**2022078**
B	**On site**	**Nursery**	**1950**	**2038588**
B	3m SE	Nursery	1980	2023671
C	15m SW	Nurseries	1990	2026640
C	15m SW	Nurseries	1980	2039710
E	105m SW	Nursery	1980	2016670
E	105m SW	Nursery	1990	2017126
3	140m SW	Nursery	1932 - 1938	2021650
F	192m E	Infectious Diseases Hospital	1903	2027526
F	192m E	Infectious Diseases Hospital	1929	2014778
G	271m SE	Nursery	1950	2016224
G	273m SE	Nursery	1932 - 1938	2012690
6	276m SE	Sewage Pumping Station	1932 - 1938	2038201
7	404m E	Sewage Pumping Station	1929	2024622
8	462m N	Rifle Ranges	1887	2009582
J	479m N	Unspecified Heap	1950	2015284
J	479m N	Unspecified Heap	1903 - 1929	2038896
J	481m N	Unspecified Heap	1950	2031844
J	481m N	Unspecified Heap	1938	2034322

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**9**

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

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

ID	Location	Land use	Dates present	Group ID
1	**On site**	**Unspecified Tank**	**1979**	**337922**
D	67m E	Unspecified Tank	1986 - 1992	341891
D	70m E	Unspecified Tank	1982	340632
D	70m E	Unspecified Tank	1997	341574
5	174m E	Unspecified Tank	1932	337910
I	466m NE	Unspecified Tank	1996 - 1998	340028
I	466m NE	Unspecified Tank	1988 - 1993	342167
I	468m NE	Unspecified Tank	1967	341947
I	469m NE	Unspecified Tank	1988	341065

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**5**

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

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

ID	Location	Land use	Dates present	Group ID
2	126m SW	Electricity Substation	1992 - 1997	223155
4	157m SE	Electricity Substation	1967 - 1997	222015
H	400m E	Electricity Substation	1982 - 1992	223640
H	401m E	Electricity Substation	1997	223641
G	404m SE	Electricity Substation	1986 - 1989	222251

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

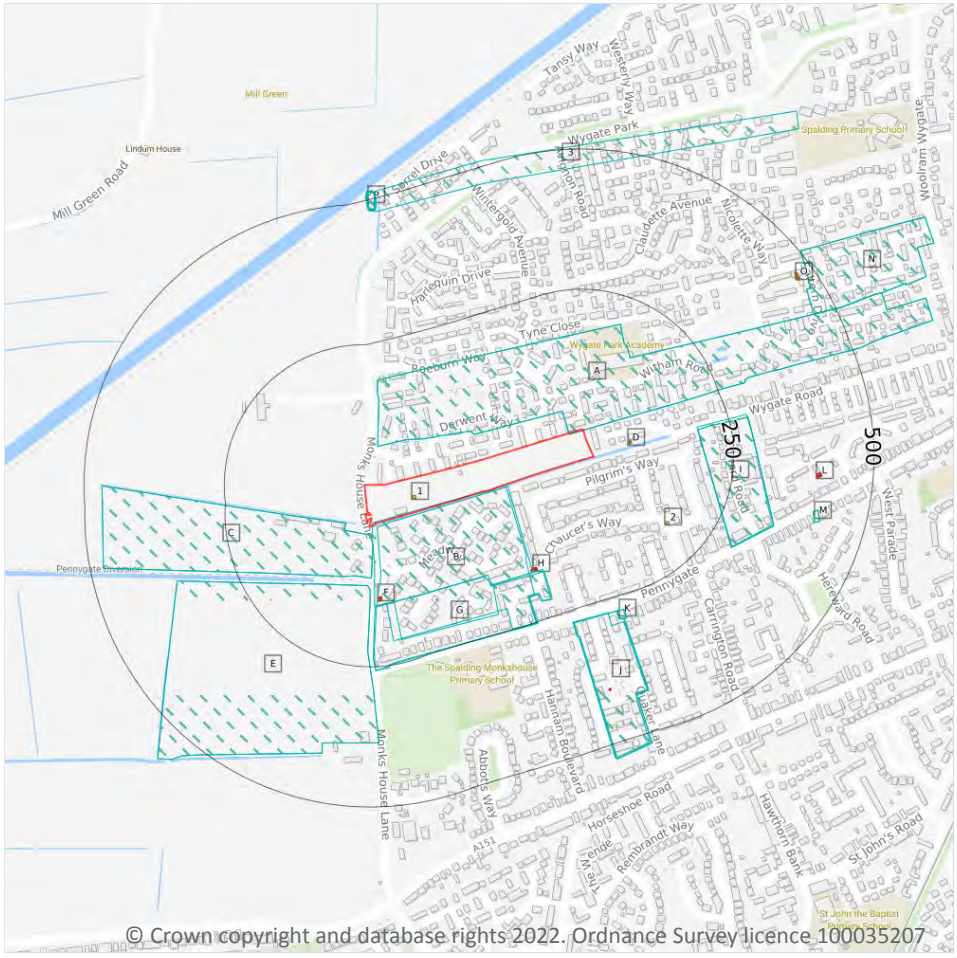
1.6 Historical military land

Records within 500m	0

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

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

2 Past land use - un-grouped



2.1 Historical industrial land uses

Records within 500m	30

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

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Nursery**	**1990**	**2022078**
A	**On site**	**Nursery**	**1980**	**2019188**
B	**On site**	**Nursery**	**1950**	**2038588**

ID	Location	Land Use	Date	Group ID
B	3m SE	Nursery	1980	2023671
C	15m SW	Nurseries	1990	2026640
C	15m SW	Nurseries	1980	2039710
E	105m SW	Nursery	1990	2017126
E	105m SW	Nursery	1980	2016670
G	140m SW	Nursery	1932	2021650
G	141m SW	Nursery	1938	2021650
I	192m E	Infectious Diseases Hospital	1903	2027526
I	192m E	Infectious Diseases Hospital	1929	2014778
I	192m E	Infectious Diseases Hospital	1929	2014778
J	271m SE	Nursery	1950	2016224
J	273m SE	Nursery	1932	2012690
J	273m SE	Nursery	1938	2012690
K	276m SE	Sewage Pumping Station	1932	2038201
K	276m SE	Sewage Pumping Station	1938	2038201
M	404m E	Sewage Pumping Station	1929	2024622
M	404m E	Sewage Pumping Station	1929	2024622
N	460m NE	Nursery	1990	2022078
N	460m NE	Nursery	1980	2019188
3	462m N	Rifle Ranges	1887	2009582
P	479m N	Unspecified Heap	1950	2015284
P	479m N	Unspecified Heap	1929	2038896
P	479m N	Unspecified Heap	1929	2038896
P	481m N	Unspecified Heap	1950	2031844
P	481m N	Unspecified Heap	1903	2038896
P	481m N	Unspecified Heap	1938	2034322
P	481m N	Unspecified Heap	1938	2034322

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	16

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

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
1	**On site**	**Unspecified Tank**	**1979**	**337922**
D	67m E	Unspecified Tank	1986	341891
D	67m E	Unspecified Tank	1989	341891
D	67m E	Unspecified Tank	1992	341891
D	70m E	Unspecified Tank	1982	340632
D	70m E	Unspecified Tank	1997	341574
2	174m E	Unspecified Tank	1932	337910
O	466m NE	Unspecified Tank	1996	340028
O	466m NE	Unspecified Tank	1996	340028
O	466m NE	Unspecified Tank	1996	340028
O	466m NE	Unspecified Tank	1998	340028
O	466m NE	Unspecified Tank	1988	342167
O	466m NE	Unspecified Tank	1993	342167
O	466m NE	Unspecified Tank	1993	342167
O	468m NE	Unspecified Tank	1967	341947
O	469m NE	Unspecified Tank	1988	341065

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	16

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

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
F	126m SW	Electricity Substation	1997	223155
F	128m SW	Electricity Substation	1992	223155
H	157m SE	Electricity Substation	1997	222015
H	158m SE	Electricity Substation	1982	222015
H	158m SE	Electricity Substation	1967	222015
H	158m SE	Electricity Substation	1979	222015
H	159m SE	Electricity Substation	1986	222015
H	159m SE	Electricity Substation	1989	222015
H	159m SE	Electricity Substation	1992	222015
L	400m E	Electricity Substation	1986	223640
L	400m E	Electricity Substation	1989	223640
L	400m E	Electricity Substation	1992	223640
L	401m E	Electricity Substation	1997	223641
L	402m E	Electricity Substation	1982	223640
J	404m SE	Electricity Substation	1986	222251
J	404m SE	Electricity Substation	1989	222251

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	**0**

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

This data is sourced from Ordnance Survey / Groundsure.

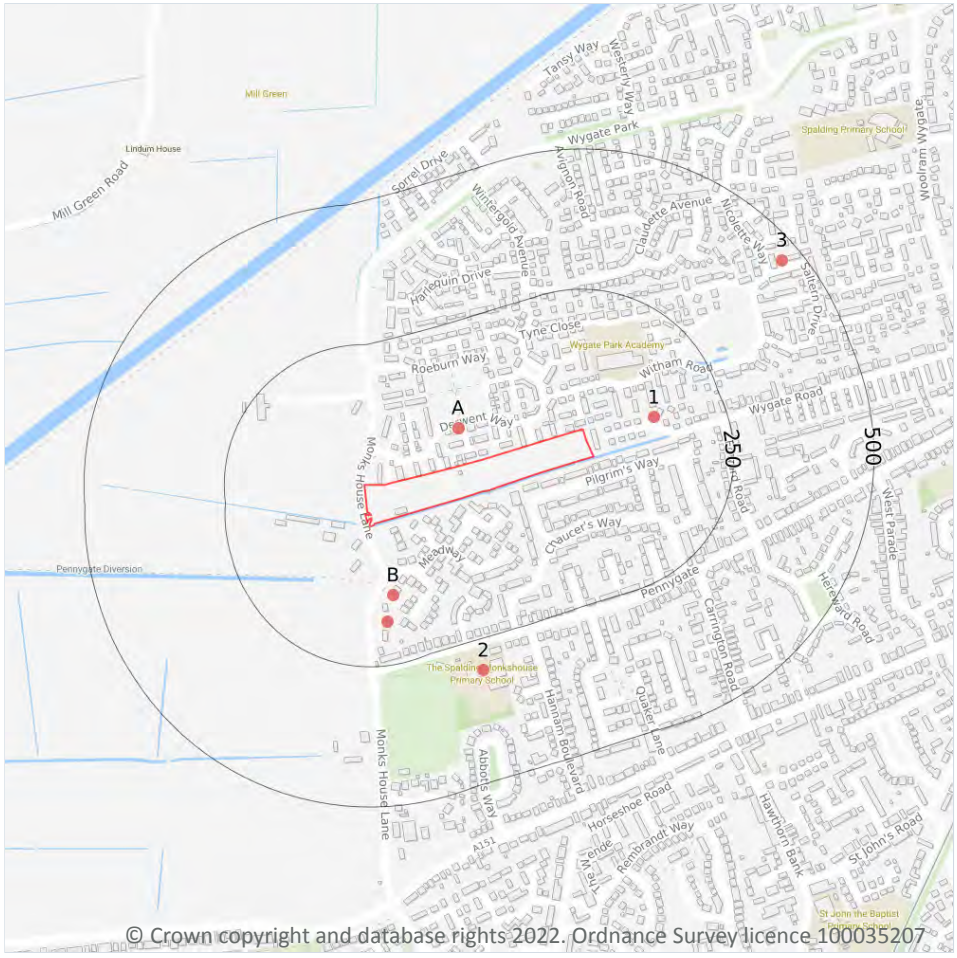
2.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



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3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

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

3.5 Historical waste sites

Records within 500m	0

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

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

3.6 Licensed waste sites

Records within 500m	0

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

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

3.7 Waste exemptions

Records within 500m	8

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

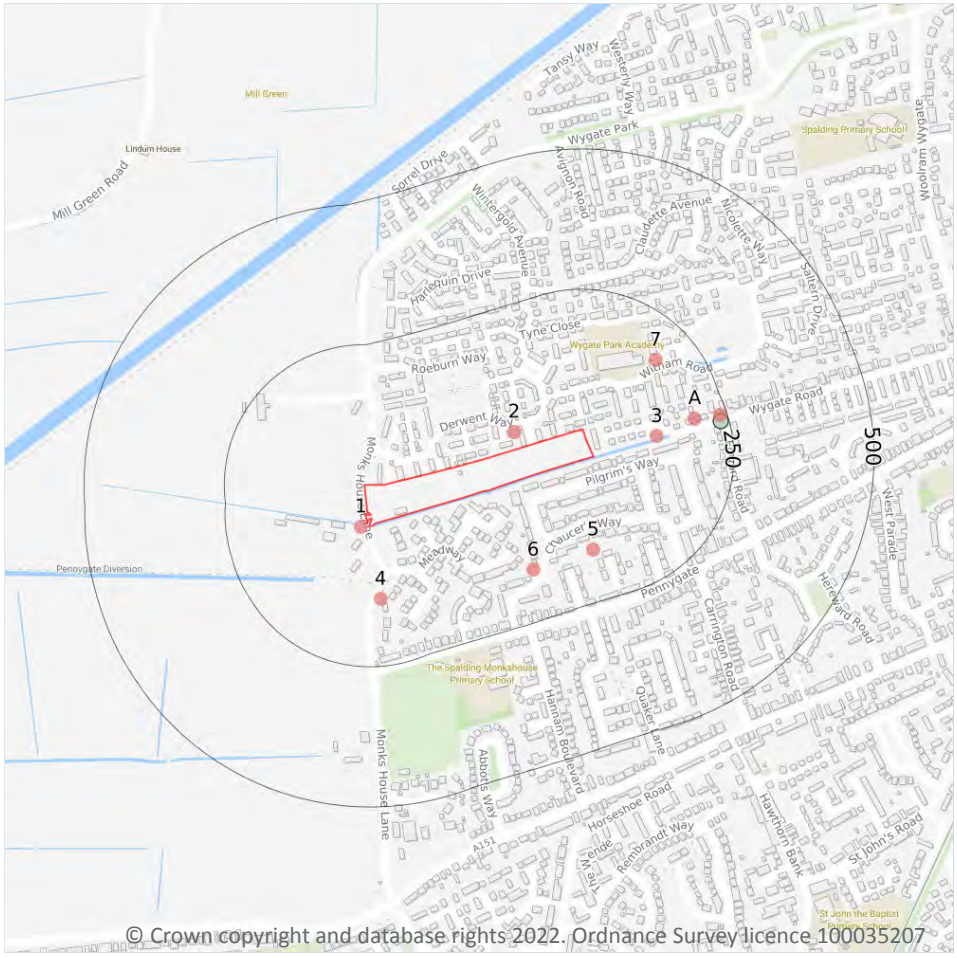
Features are displayed on the Waste and landfill map on **page 23**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	65m N	-	WEX185807	Treating waste exemption	Not on a farm	Screening and blending of waste

ID	Location	Site	Reference	Category	Sub-Category	Description
A	65m N	-	WEX167132	Using waste exemption	Not on a farm	Use of waste in construction
A	65m N	-	WEX023308	Treating waste exemption	Not on a farm	Screening and blending of waste
1	126m E	1, Witham Road, Wygate Park, Spalding, PE11 1NZ	WEX225947	Using waste exemption	Not on a farm	Use of waste in construction
B	130m SW	-	WEX269058	Using waste exemption	Not on a farm	Use of waste in construction
B	174m SW	Kingfisher Court, Monks House Lane, Wygate Park, Spalding, PE11 3LH	WEX128829	Using waste exemption	Not on a farm	Use of waste in construction
2	306m S	Spalding Monkshouse Primary School Pennygate SPALDING Lincolnshire PE11 1LG	EPR/ZH0475PL /A001	Treating waste exemption	Non-Agricultural Waste Only	Crushing waste fluorescent tubes
3	465m NE	Kier Living Development, Wygate Park Road, SPALDING, PE11 1UQ	WEX128798	Using waste exemption	Not on a farm	Use of waste in construction

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

4 Current industrial land use



4.1 Recent industrial land uses

Records within 250m	9

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 26**

ID	Location	Company	Address	Activity	Category
1	14m SW	Electricity Sub Station	Lincolnshire, PE11	Electrical Features	Infrastructure and Facilities
2	31m NE	Electricity Sub Station	Lincolnshire, PE11	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
3	118m E	Sewage Pumping Station	Lincolnshire, PE11	Waste Storage, Processing and Disposal	Infrastructure and Facilities
4	130m SW	Electricity Sub Station	Lincolnshire, PE11	Electrical Features	Infrastructure and Facilities
5	158m SE	Pumping Station	Lincolnshire, PE11	Water Pumping Stations	Industrial Features
6	160m SE	Electricity Sub Station	Lincolnshire, PE11	Electrical Features	Infrastructure and Facilities
7	179m NE	Electricity Sub Station	Lincolnshire, PE11	Electrical Features	Infrastructure and Facilities
A	193m E	Tank	Lincolnshire, PE11	Tanks (Generic)	Industrial Features
A	238m E	Electricity Sub Station	Lincolnshire, PE11	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	**0**

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	**0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

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

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

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

Records within 500m	0

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m	0

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

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

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

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

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	0

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

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

4.17 List 2 Dangerous Substances

Records within 500m	0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	2

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

Features are displayed on the Current industrial land use map on **page 26**

ID	Location	Details	
A	235m E	Incident Date: 01/07/2002 Incident Identification: 88530 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
A	235m E	Incident Date: 01/07/2002 Incident Identification: 88530 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m	0

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

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

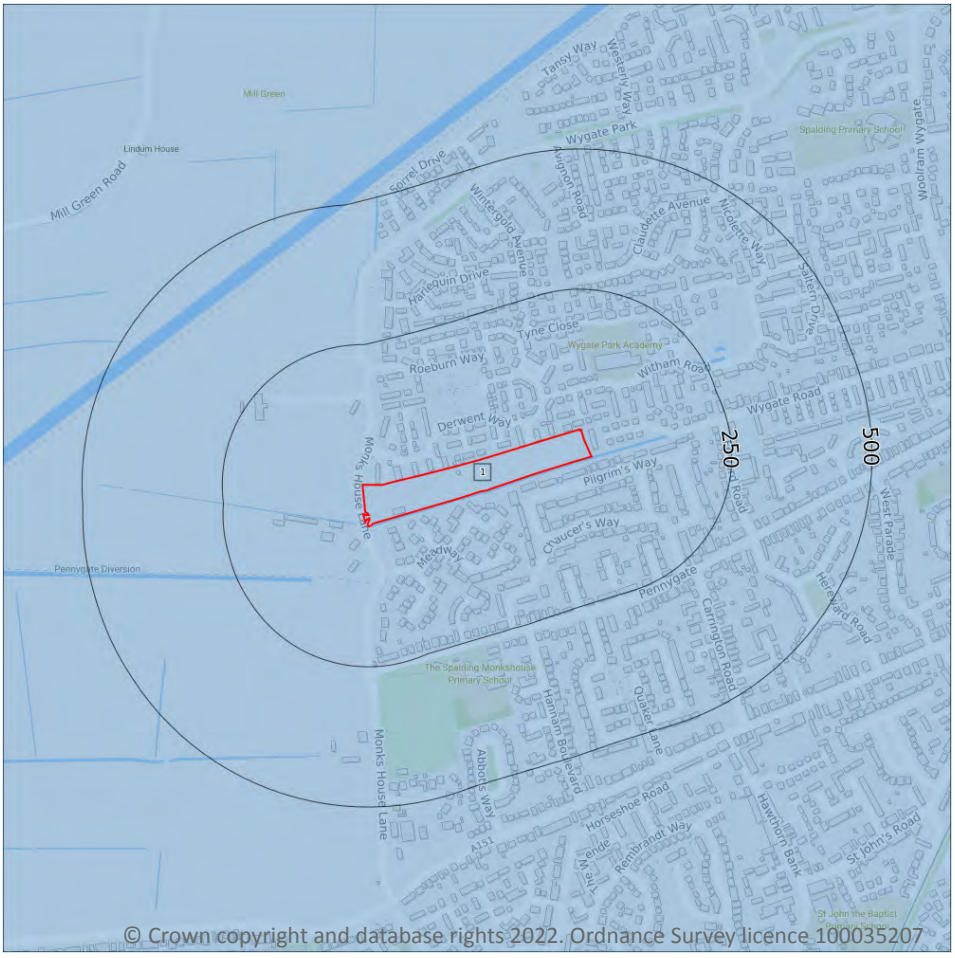
4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer



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5.1 Superficial aquifer

Records within 500m	1

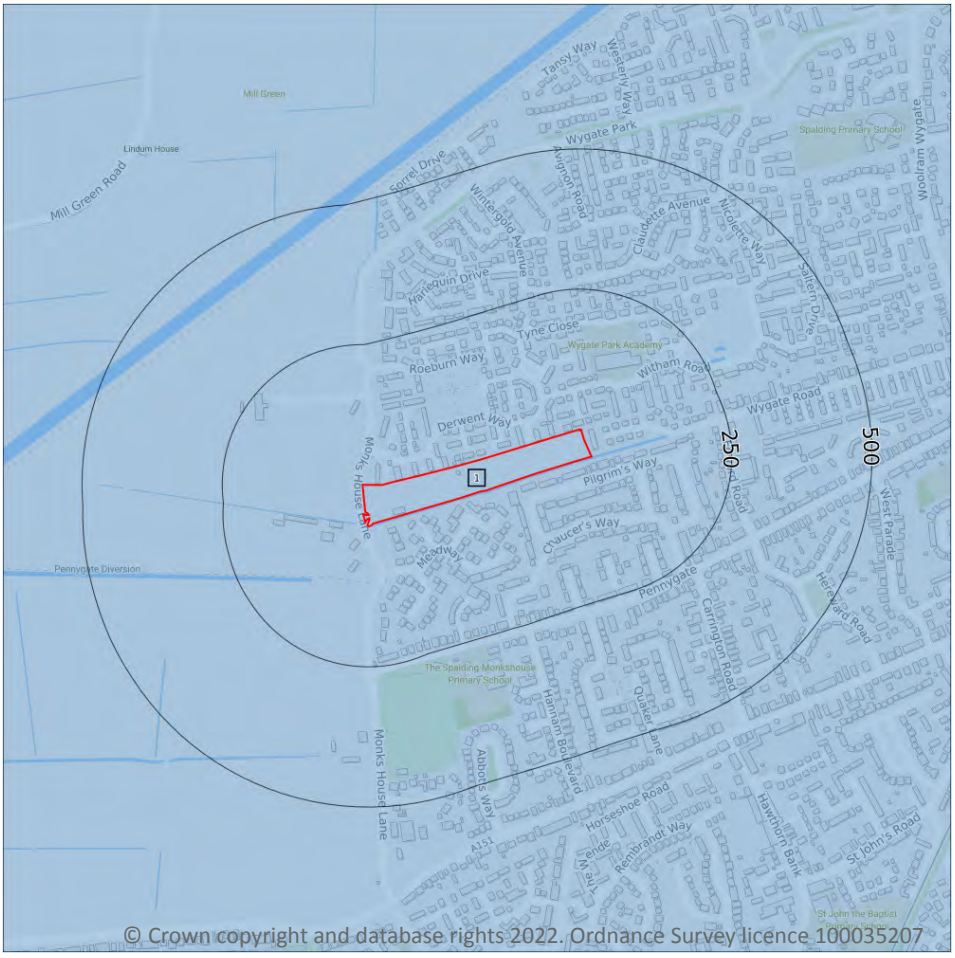
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 32**

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

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

Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m	1

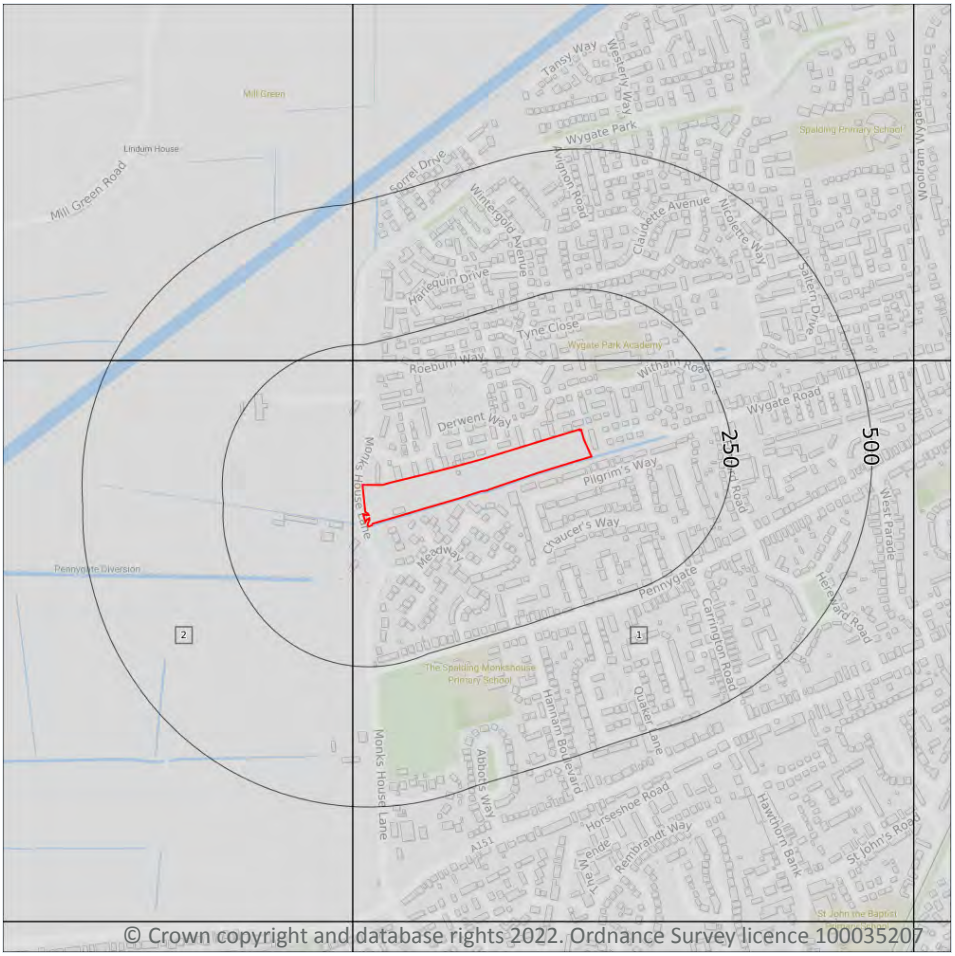
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 33**

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

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

Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m	2

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

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

Features are displayed on the Groundwater vulnerability map on **page 34**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	**On site**	**Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, Unproductive Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: <300mm/year**	**Vulnerability: Unproductive Aquifer type: Unproductive Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Well connected fractures**
2	17m W	Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: >10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	**0**

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

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

5.5 Groundwater vulnerability- local information

Records on site	**0**

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

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

Abstractions and Source Protection Zones



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5.6 Groundwater abstractions

Records within 2000m	2

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 36**

ID	Location	Details	
-	1750m NW	Status: Historical Licence No: 5/31/14/*G/0007 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE - CHASE FARM Data Type: Point Name: MOLSON Easting: 522070 Northing: 324250	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 23/08/1999 Version End Date: -
-	1775m NW	Status: Historical Licence No: 5/31/14/*G/0007 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BORE CHASE FARM PINCHBECK Data Type: Point Name: MOLSON Easting: 522070 Northing: 324280	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/02/1979 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	**8**

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 36**

ID	Location	Details	
A	228m NW	Status: Historical Licence No: 4/30/08/*S/0108 Details: Trickle Irrigation - Storage Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: UN-NAMED RIPARIAN DRAIN AT THIMBLEBY Data Type: Point Name: Dyson Farming Limited Easting: 523075 Northing: 323019	Annual Volume (m^3): 90,920 Max Daily Volume (m^3): 2,020 Original Application No: - Original Start Date: 17/12/2002 Expiry Date: 31/03/2022 Issue No: 7 Version Start Date: 23/04/2021 Version End Date: -

ID	Location	Details	
A	228m NW	Status: Historical Licence No: 4/30/08/*S/0108 Details: Spray Irrigation - Storage Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: UN-NAMED RIPARIAN DRAIN AT THIMBLEBY Data Type: Point Name: Dyson Farming Limited Easting: 523075 Northing: 323019	Annual Volume (m^3): 90,920 Max Daily Volume (m^3): 2,020 Original Application No: - Original Start Date: 17/12/2002 Expiry Date: 31/03/2022 Issue No: 7 Version Start Date: 23/04/2021 Version End Date: -
1	426m NW	Status: Active Licence No: 5/31/14/*S/0117 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: VERNATTS DRAINS - SOUTH HOLLAND Data Type: Line Name: C W DOBBS & SON LTD Easting: 523900 Northing: 324000	Annual Volume (m^3): 5,455 Max Daily Volume (m^3): 1,027.40 Original Application No: N1226 Original Start Date: 01/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2021 Version End Date: -
2	578m N	Status: Active Licence No: AN/031/0014/059 Details: Trickle Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: VERNATT'S DRAIN AT MILLGREEN Data Type: Point Name: W D Branton Easting: 523102 Northing: 323390	Annual Volume (m^3): 11,000 Max Daily Volume (m^3): 3,000 Original Application No: NPS/NA/001679 Original Start Date: 18/08/2021 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 18/08/2021 Version End Date: -
-	872m W	Status: Active Licence No: 5/31/14/*S/0117 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: VERNATTS DRAIN - SOUTH HOLLAND Data Type: Point Name: C W DOBBS & SON LTD Easting: 522150 Northing: 322650	Annual Volume (m^3): 5,455 Max Daily Volume (m^3): 1,027.40 Original Application No: N1226 Original Start Date: 01/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2021 Version End Date: -
-	919m W	Status: Historical Licence No: 5/31/14/*S/0117 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: VERNATT'S DRAIN-DEEPING FEN Data Type: Point Name: C W DOBBS & SON LTD Easting: 522100 Northing: 322700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/03/1995 Version End Date: -

ID	Location	Details	
5	996m NW	Status: Active Licence No: AN/031/0014/049 Details: Trickle Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: REACH - BLUE GOWT DRAIN IN WEELAND AND DEEPING IDB Data Type: Line Name: G & D Matthews Limited Easting: 523019 Northing: 324151	Annual Volume (m^3): 13,225 Max Daily Volume (m^3): 1,080 Original Application No: NPS/NA/001240 Original Start Date: 18/08/2021 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 18/08/2021 Version End Date: -
-	1629m SE	Status: Historical Licence No: 5/31/14/*S/0113 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: R WELLAND (CORONATION CHANNEL) Data Type: Point Name: C SLOOTEN LTD Easting: 524600 Northing: 321700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/02/1966 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	**0**

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

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

5.9 Source Protection Zones

Records within 500m	**0**

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

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

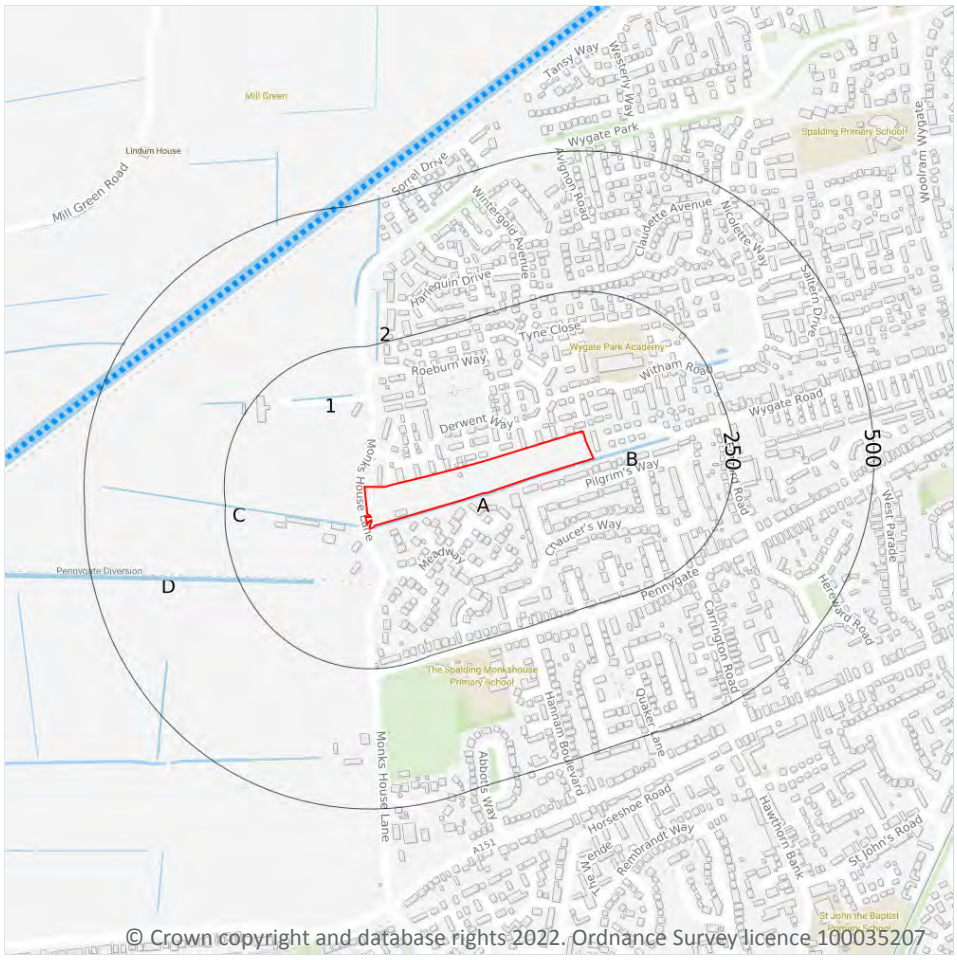
5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

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

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

6 Hydrology



6.1 Water Network (OS MasterMap)

Records within 250m	6

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

Features are displayed on the Hydrology map on **page 41**

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

ID	Location	Type of water feature	Ground level	Permanence	Name
B	2m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	15m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	139m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Pennygate Diversion
1	164m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
2	219m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	**4**

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

Features are displayed on the Hydrology map on **page 41**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	**1**

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

Features are displayed on the Hydrology map on **page 41**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River**	**Vernatt's Drain**	**GB205031050705**	**Welland Lower**	**Welland**

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

6.4 WFD Surface water bodies

Records identified	1

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

Features are displayed on the Hydrology map on **page 41**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
6	428m NW	River	Vernatt's Drain	GB205031050705	Moderate	Fail	Moderate	2019

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

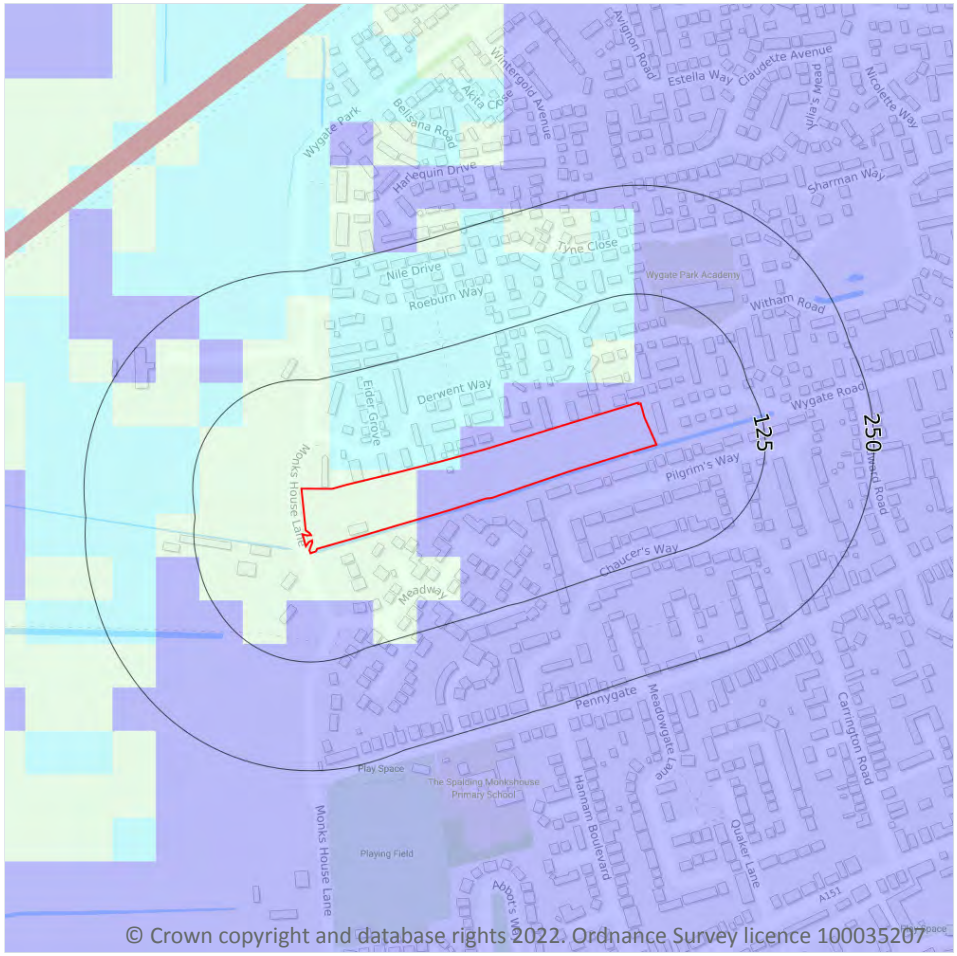
6.5 WFD Groundwater bodies

Records on site	0

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

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

7 River and coastal flooding



7.1 Risk of flooding from rivers and the sea

Records within 50m	4

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

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

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

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

7.2 Historical Flood Events

Records within 250m	**0**

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

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

7.3 Flood Defences

Records within 250m	**0**

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	**0**

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

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

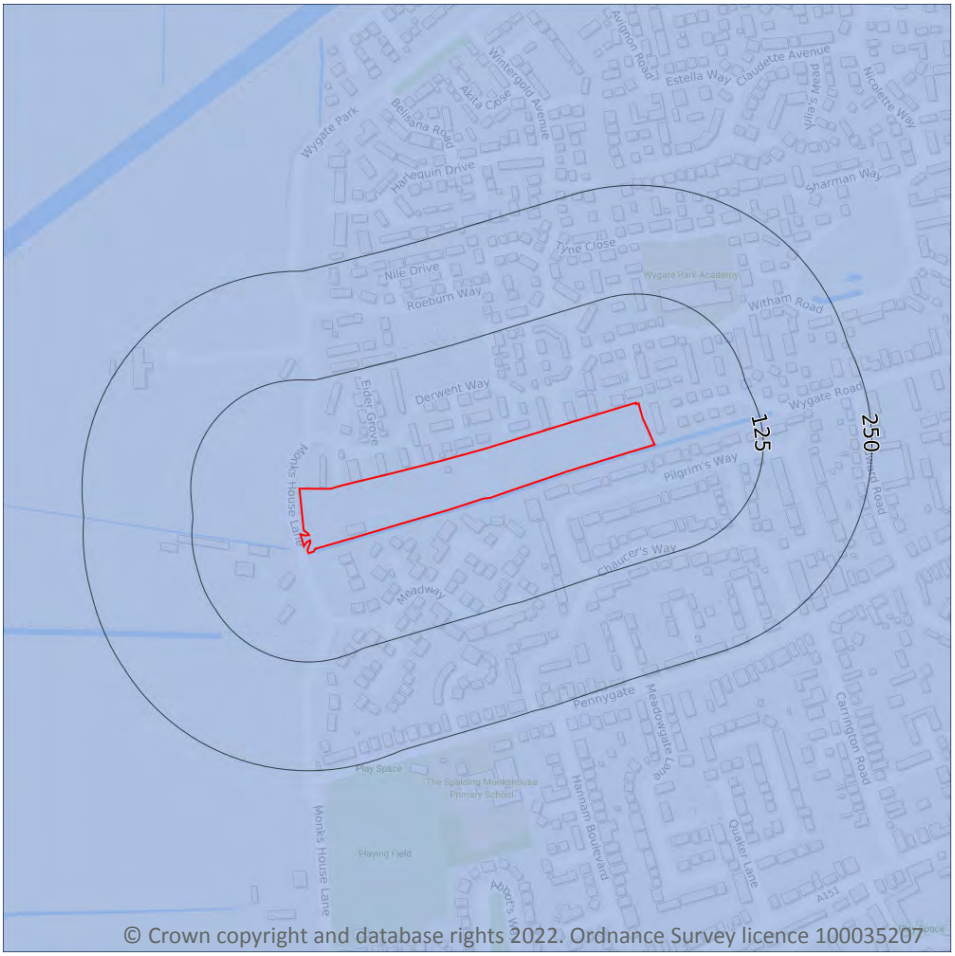
7.5 Flood Storage Areas

Records within 250m	**0**

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

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

River and coastal flooding - Flood Zones



7.6 Flood Zone 2

Records within 50m	1

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

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

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

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

7.7 Flood Zone 3

Records within 50m	1

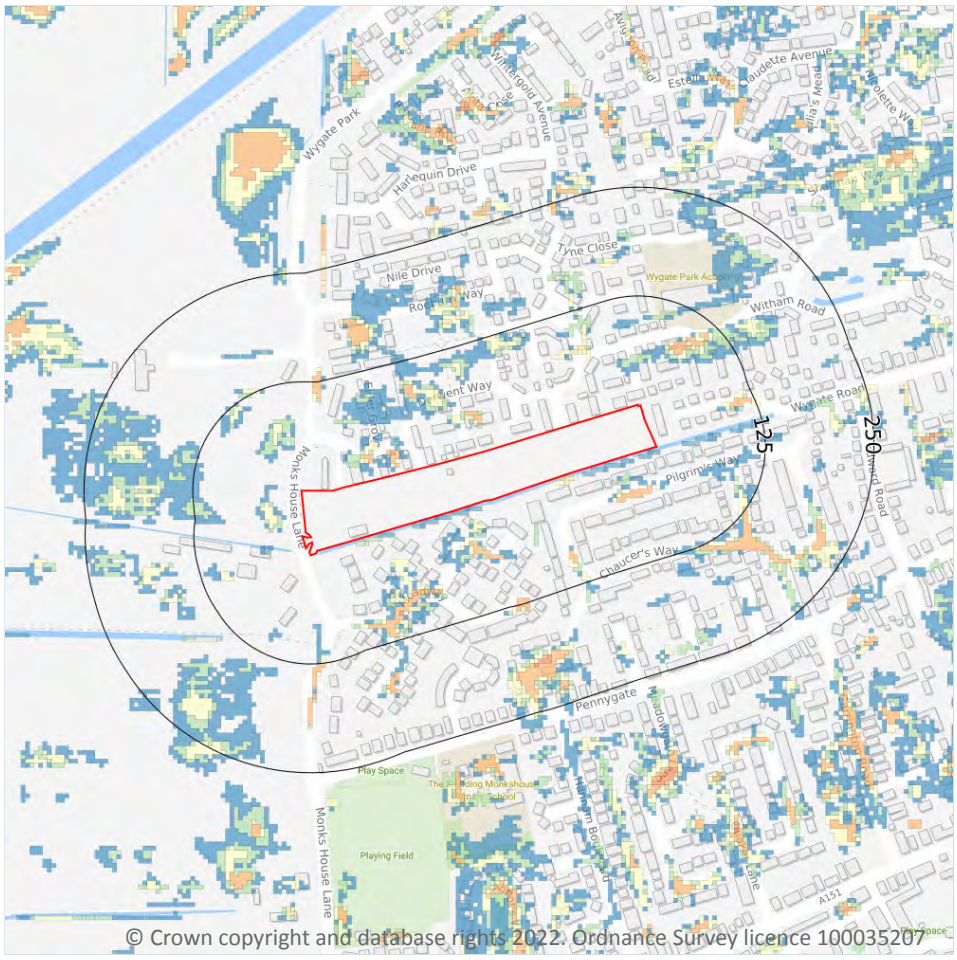
Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

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

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

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

8 Surface water flooding



Site Outline

Search buffers in metres (m)

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

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

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

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

8.1 Surface water flooding

Highest risk on site	**1 in 250 year, 0.3m - 1.0m**
Highest risk within 50m	**1 in 30 year, 0.3m - 1.0m**

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

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

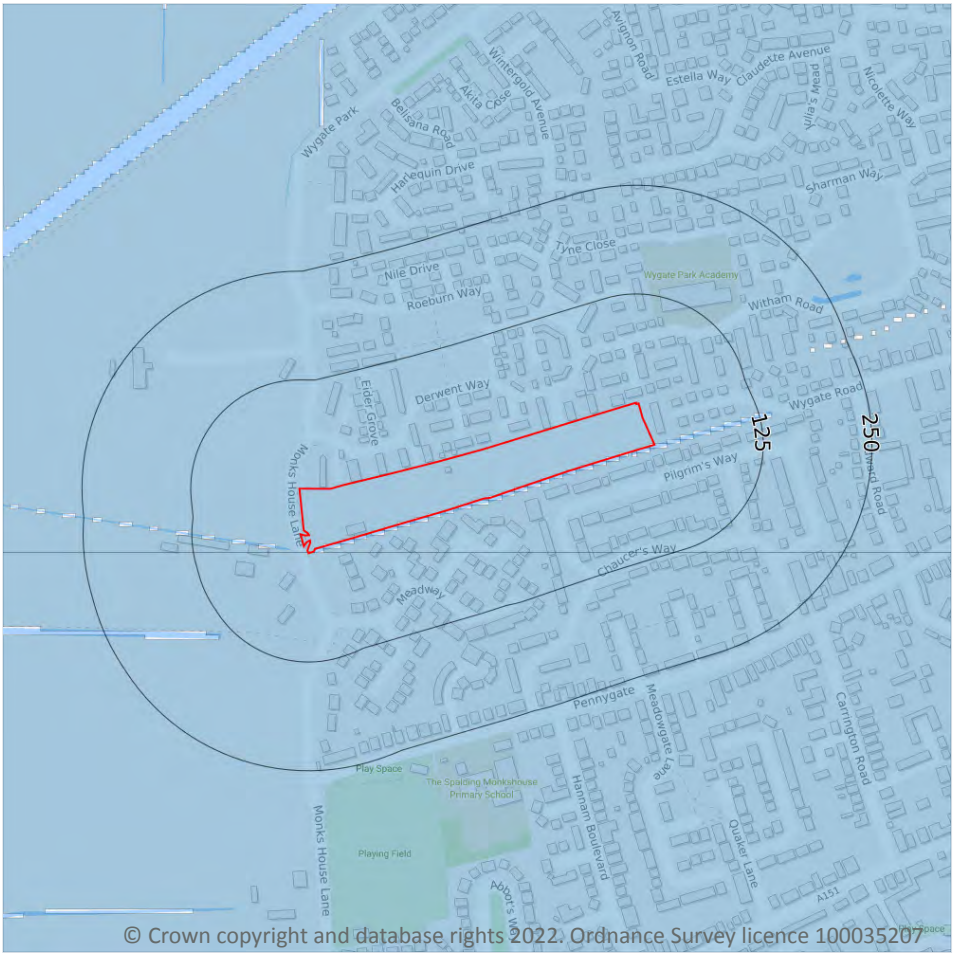
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.1m and 0.3m
1 in 30 year	Negligible

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



9.1 Groundwater flooding

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

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

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

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



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10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	1

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

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

ID	Location	Name	Data source
-	1833m NE	Vernatts	Natural England

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

10.7 Designated Ancient Woodland

Records within 2000m	0

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

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

10.8 Biosphere Reserves

Records within 2000m	0

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

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

10.9 Forest Parks

Records within 2000m	0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

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

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

10.11 Green Belt

Records within 2000m	0

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

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

10.12 Proposed Ramsar sites

Records within 2000m	0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

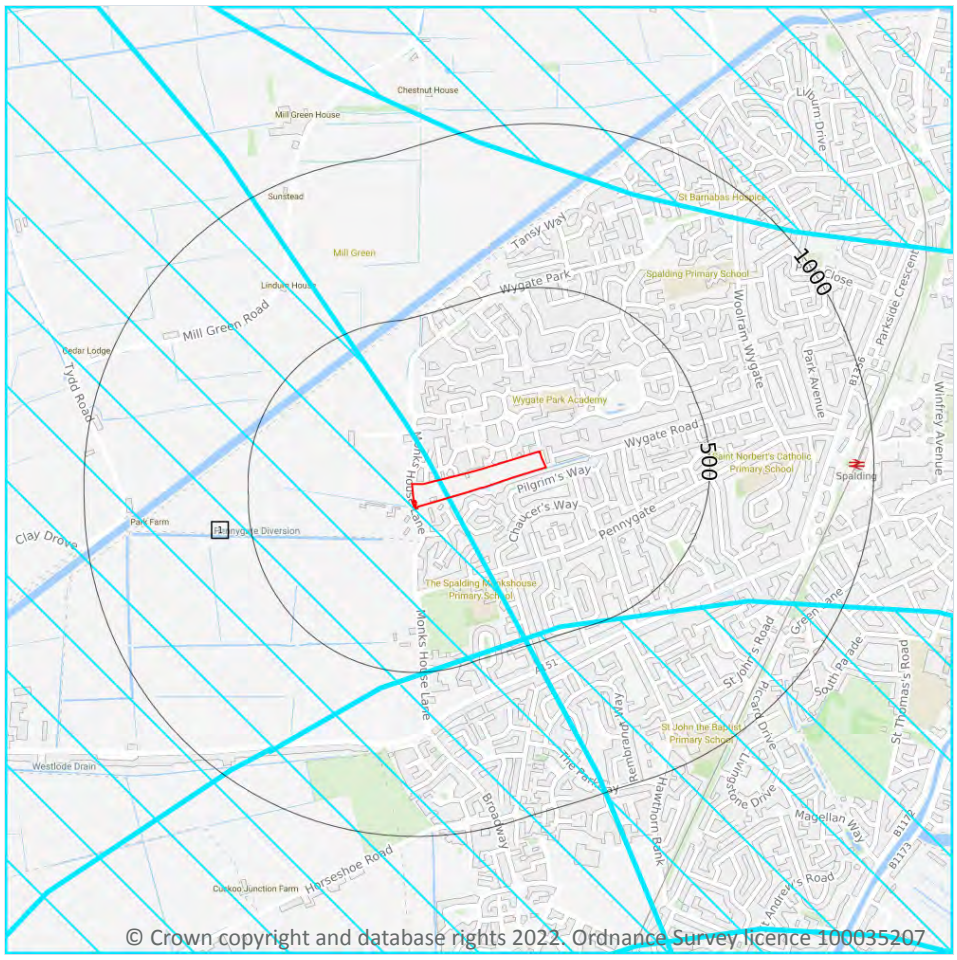
Records within 2000m	6

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

Location	Name	Type	NVZ ID	Status
On site	**Vernatt's Drain NVZ**	**Surface Water**	**379**	**Existing**
666m E	Vernatt's Drain NVZ	Surface Water	379	Existing
1452m E	River Welland NVZ	Surface Water	832	Existing
1593m NE	Glen NVZ	Surface Water	378	Existing
1716m NE	Glen NVZ	Surface Water	378	Existing
1899m SE	River Welland NVZ	Surface Water	832	Existing

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

SSSI Impact Zones and Units



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10.17 SSSI Impact Risk Zones

Records on site	1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 56**

ID	Location	Type of developments requiring consultation
1	On site	**Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 4000m². Combustion - General combustion processes >50mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0

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

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	0

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

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

11.5 Conservation Areas

Records within 250m	0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

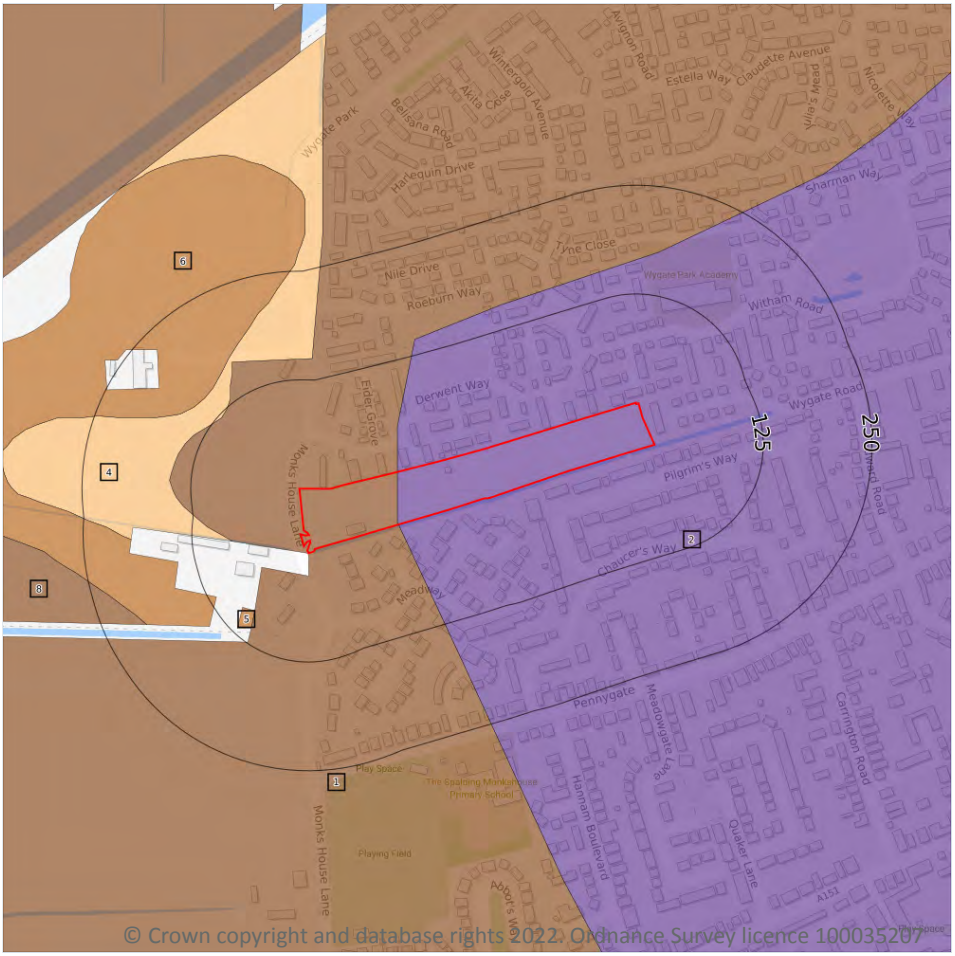
11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



12.1 Agricultural Land Classification

Records within 250m	6

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

Features are displayed on the Agricultural designations map on **page 60**

ID	Location	Classification	Description
1	On site	Grade 1	**Excellent quality agricultural land. Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.**
2	On site	Urban	-

ID	Location	Classification	Description
4	79m W	Grade 3a	Good quality agricultural land. Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.
5	91m SW	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
6	116m SW	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
8	202m SW	Grade 1	Excellent quality agricultural land. Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

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

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

12.3 Tree Felling Licences

Records within 250m	0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



14.1 10k Availability

Records within 500m	1

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

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 64**

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

This data is sourced from the British Geological Survey.

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

14.2 Artificial and made ground (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

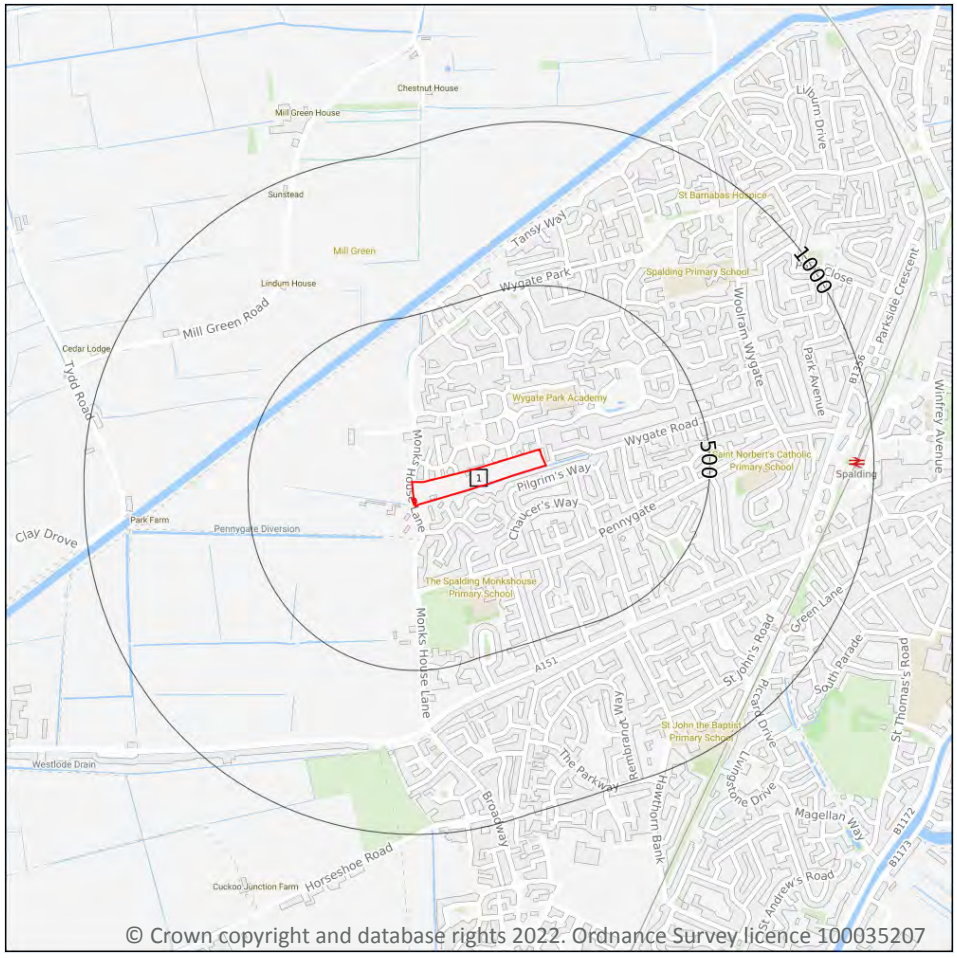
14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



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Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 68**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**EW144_spalding_v4**

This data is sourced from the British Geological Survey.

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

15.2 Artificial and made ground (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

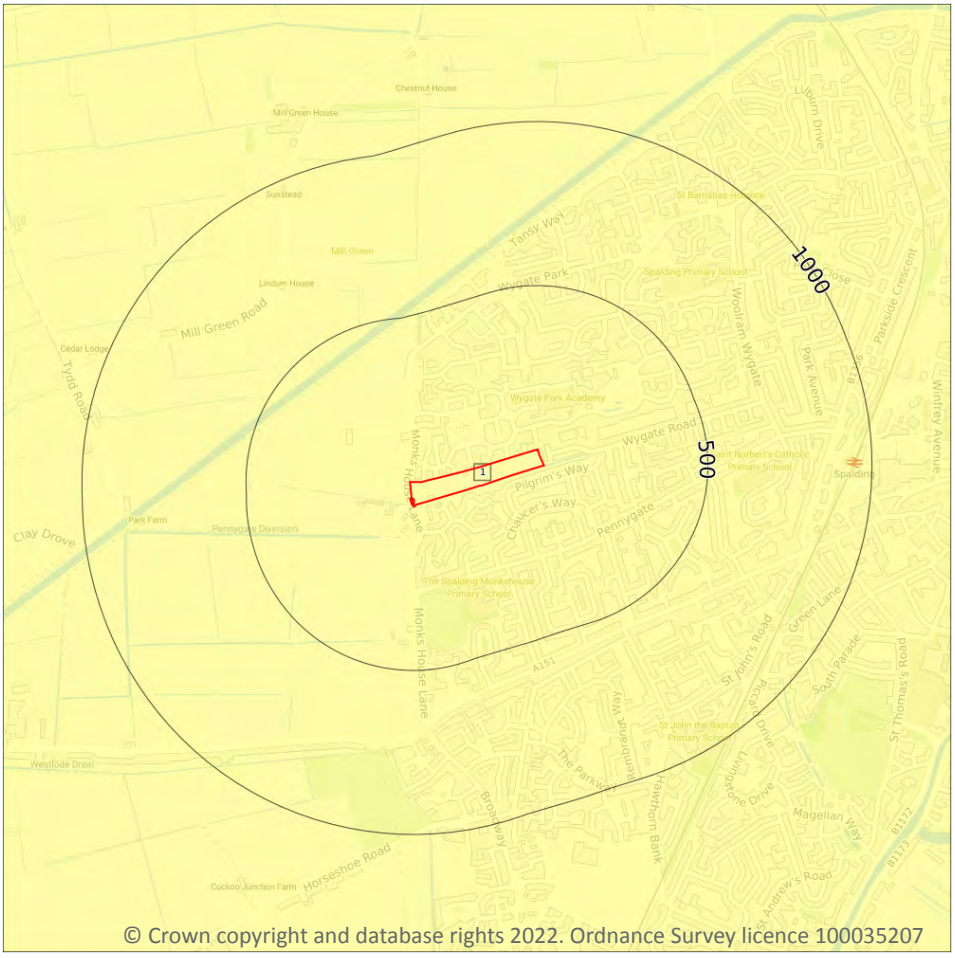
15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 70**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TFD-XCZ**	**TIDAL FLAT DEPOSITS**	**CLAY AND SILT**

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Intergranular**	**Low**	**Very Low**

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

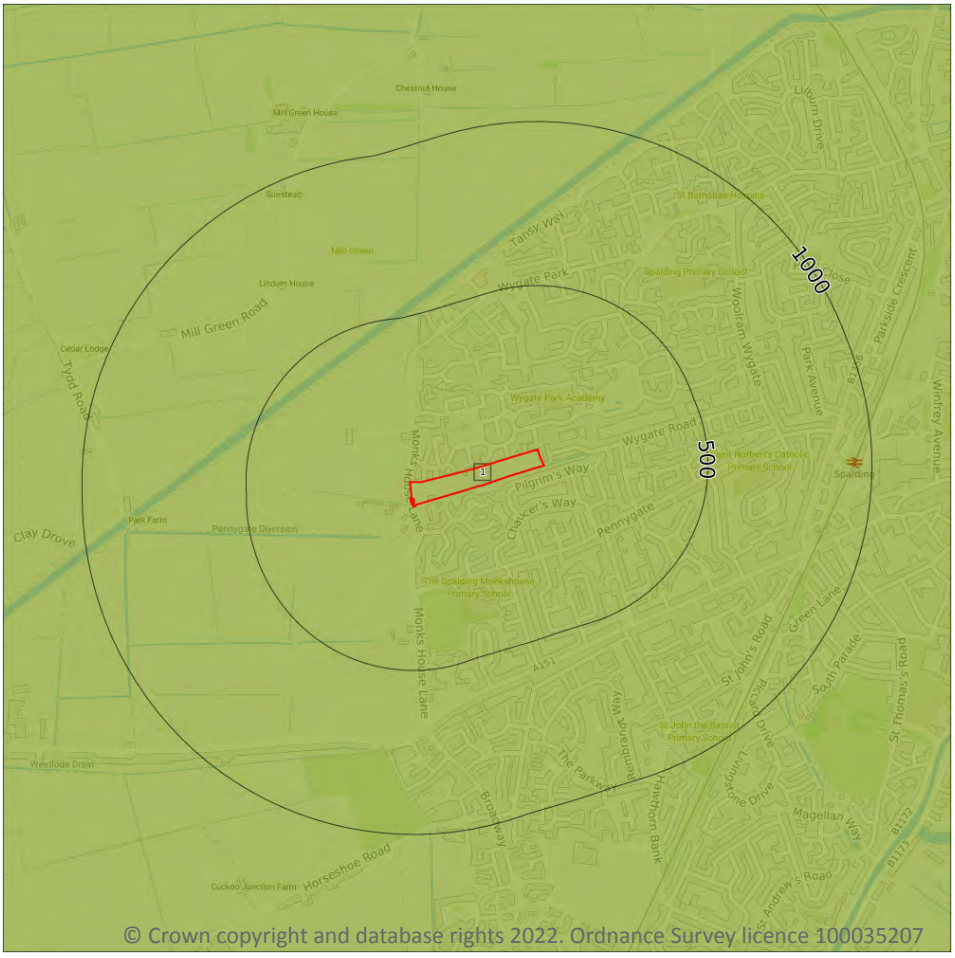
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 72**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**OXC-MDST**	**OXFORD CLAY FORMATION - MUDSTONE**	**CALLOVIAN**

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1

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

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

This data is sourced from the British Geological Survey.

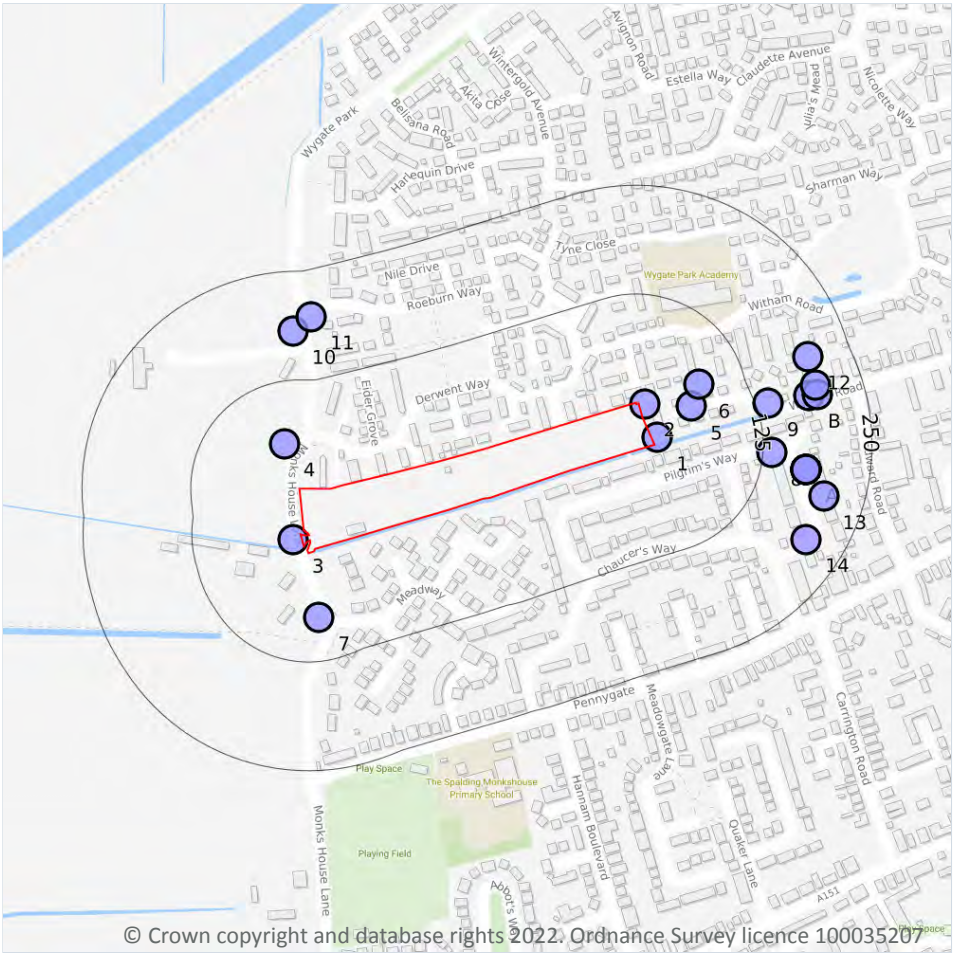
15.10 Bedrock faults and other linear features (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

16 Boreholes



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16.1 BGS Boreholes

Records within 250m	25

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

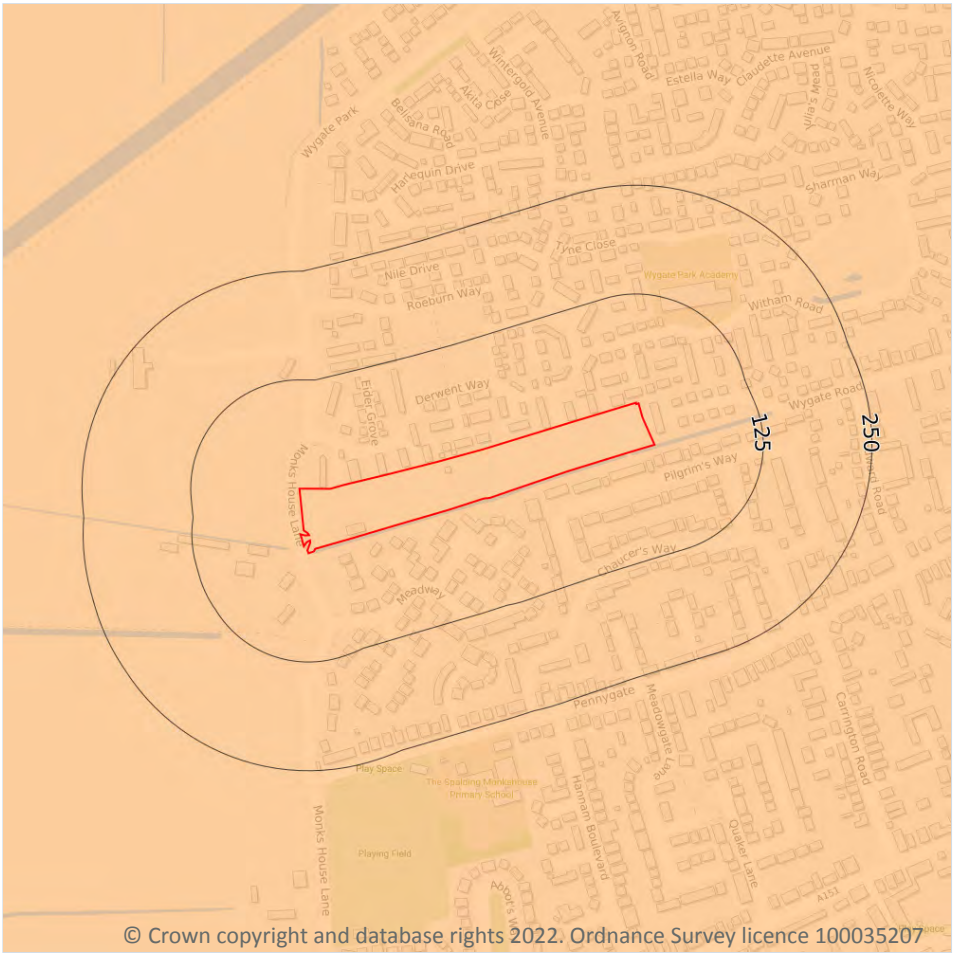
Features are displayed on the Boreholes map on **page 74**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	6m E	523429 322837	EDWARD ROAD SPALDING TP 4	3.7	N	16107764
2	7m NE	523414 322876	EDWARD ROAD SPALDING TP 5	1.8	N	16107765
3	10m W	523010 322720	WYGATE PARK RELIEF ROAD SPALDING TP3	1.6	N	18112267

ID	Location	Grid reference	Name	Length	Confidential	Web link
4	54m W	523000 322830	WYGATE PARK RELIEF ROAD SPALDING TP2	1.7	N	18112266
5	57m E	523468 322873	EDWARD ROAD SPALDING TP 6	1.8	N	16107766
6	73m E	523477 322898	EDWARD ROAD SPALDING TP 7	3.0	N	16107918
7	75m SW	523040 322630	WYGATE PARK RELIEF ROAD SPALDING TP4	1.5	N	18112268
8	135m E	523560 322820	SPALDING T/P 3	2.0	N	502704
9	139m E	523556 322877	EDWARD ROAD SPALDING TP 2	1.9	N	16107757
A	177m E	523600 322800	NO.61 PILGRIMS WAY,SPALDING 3	3.0	N	502728
A	177m E	523600 322800	NO.61 PILGRIMS WAY,SPALDING 5B	0.0	N	502732
A	177m E	523600 322800	NO.61 PILGRIMS WAY,SPALDING 5	0.0	N	502730
A	177m E	523600 322800	NO.61 PILGRIMS WAY,SPALDING 5C	2.0	N	502733
A	177m E	523600 322800	NO.61 PILGRIMS WAY,SPALDING 5A	0.0	N	502731
A	177m E	523600 322800	NO.61 PILGRIMS WAY,SPALDING 2	7.0	N	502727
A	177m E	523600 322800	NO.61 PILGRIMS WAY,SPALDING 4	2.0	N	502729
A	177m E	523600 322800	NO.61 PILGRIMS WAY,SPALDING 1	10.0	N	502726
10	182m NW	523010 322960	WYGATE PARK RELIEF ROAD SPALDING TP1	1.5	N	18112265
B	186m E	523603 322886	EDWARD ROAD SPALDING TP 1B	1.9	N	16107756
B	196m E	523613 322887	EDWARD ROAD SPALDING TP 1A	2.0	N	16107754
11	197m NW	523031 322976	WYGATE PARK SPALDING PHASE 9 TP 8	2.25	N	18113216
B	198m E	523611 322897	EDWARD ROAD SPALDING TP 3	2.1	N	16107758
12	202m E	523602 322930	EDWARD ROAD SPALDING TP 8	3.1	N	16107919
13	203m E	523620 322770	SPALDING T/P 2	2.0	N	502703
14	206m E	523600 322720	SPALDING T/P 1	1.0	N	502702

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m	1

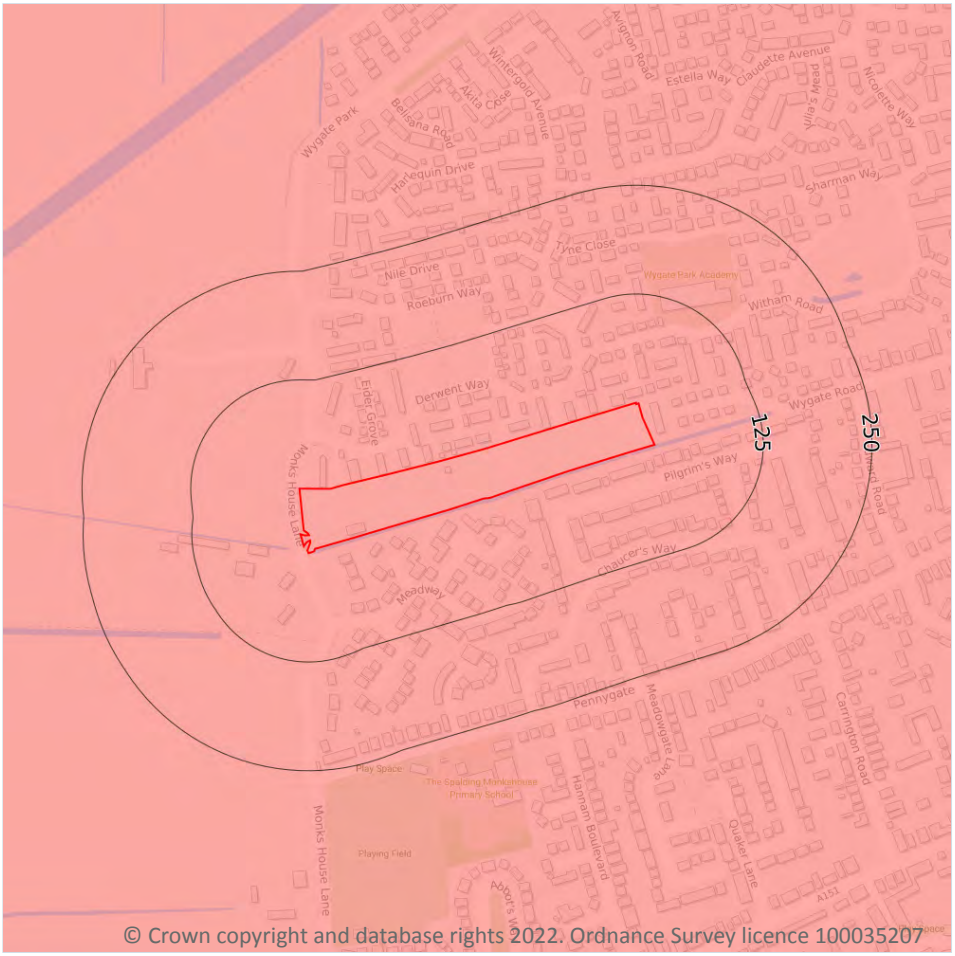
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 76**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



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17.2 Running sands

Records within 50m	1

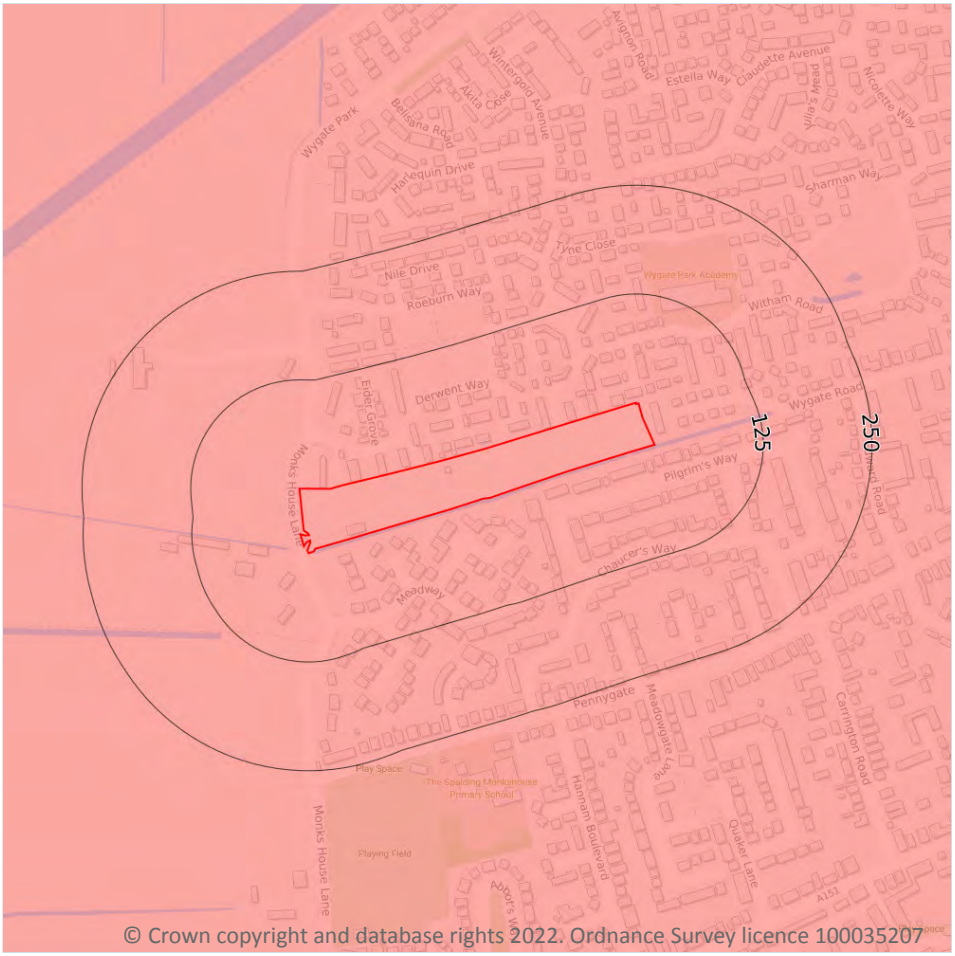
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 77**

Location	Hazard rating	Details
On site	**Moderate**	**Running sand conditions are probably present. Constraints may apply to land uses involving excavation or the addition or removal of water.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



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17.3 Compressible deposits

Records within 50m	1

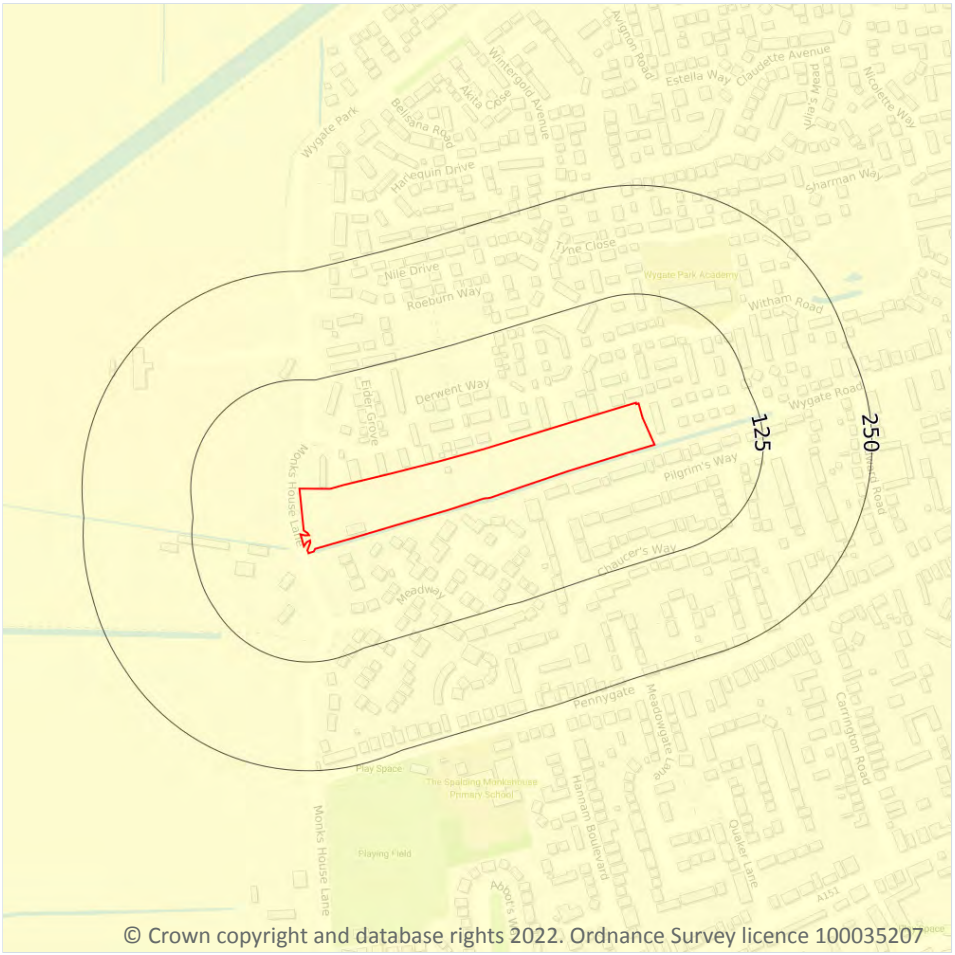
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 78**

Location	Hazard rating	Details
On site	**Moderate**	**Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



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Site Outline

Search buffers in metres (m)

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

17.4 Collapsible deposits

Records within 50m	1

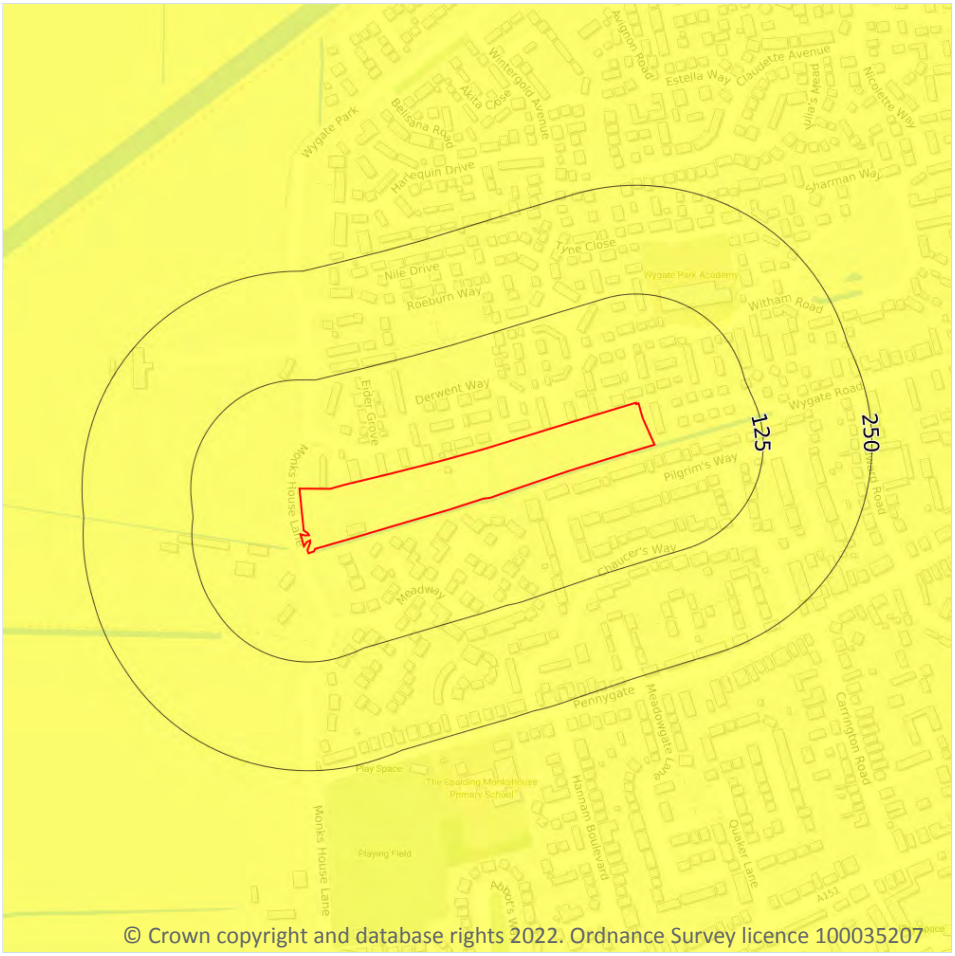
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 79**

Location	Hazard rating	Details
On site	**Negligible**	**Deposits with potential to collapse when loaded and saturated are believed not to be present.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



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17.5 Landslides

Records within 50m	1

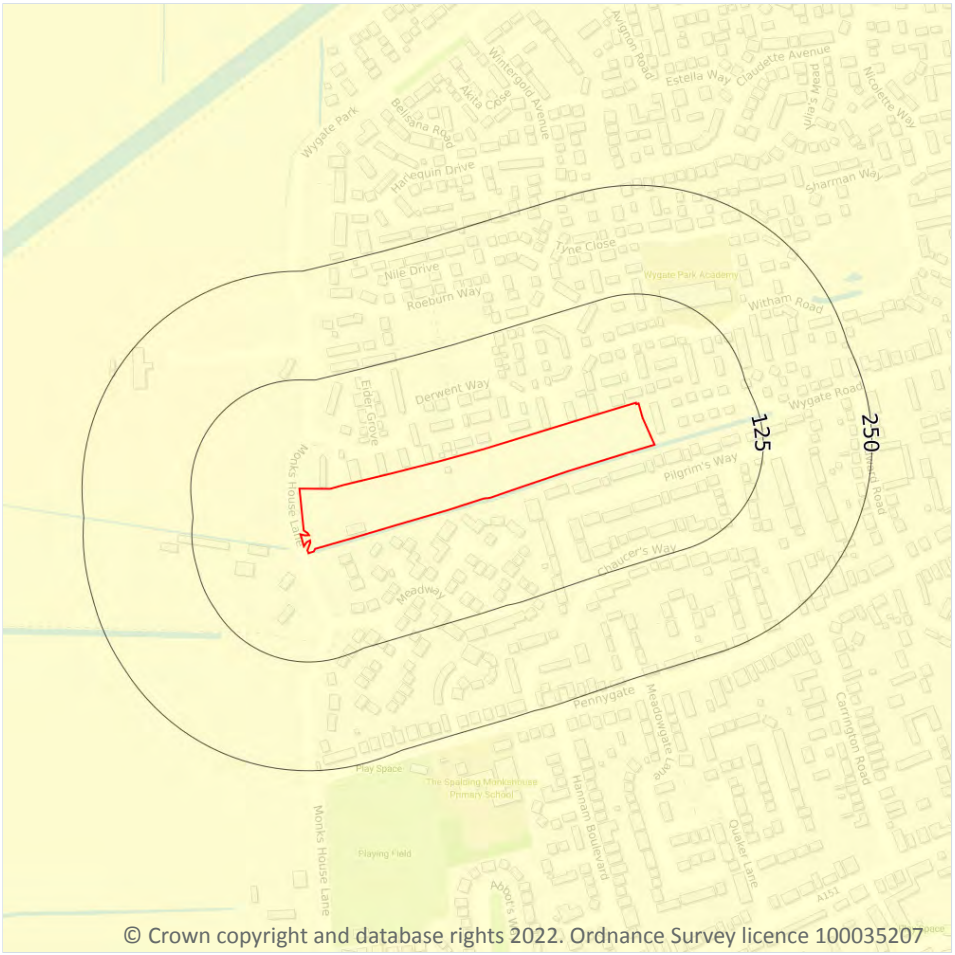
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 80**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

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

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 81**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities

18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

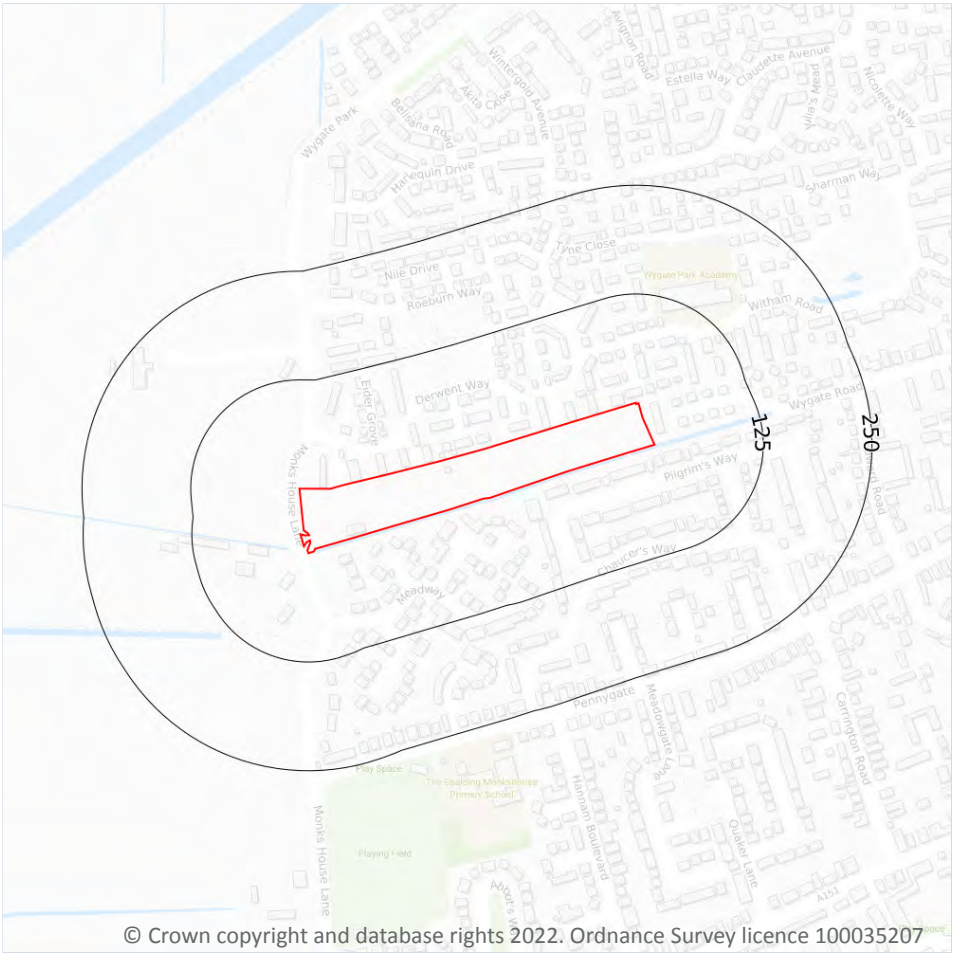
18.13 Clay mining

Records on site	0

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

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

19 Radon



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19.1 Radon

Records on site	1

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

Features are displayed on the Radon map on **page 85**

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

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

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	2

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
17m W	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

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

This data is sourced from HS2 ltd.

Data providers

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

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