Gedney, Oliver

From: Grant, David
Sent: 02 November 2021 16:53
To: _planningadvice
Subject: FW: FW: H17-1016-21 Beech House 20 Gosberton Road Surfleet Spalding PE11 4AB
Attachments: We sent you safe versions of your files; EAL.63.21 Gosberton Road, Surfleet - Phase I 10.08.2021.pdf

Please add this email and attachment to the DIP under 6SUP – Phase 1 Geo-Environmental Assessment.

Many thanks,

David Grant | Senior Planning Officer | **South Holland District Council**
Direct Dial: 01775 764472
www.sholland.gov.uk
Please note that any informal officer opinion expressed by this email is without prejudice and is not binding on the Council during the consideration of any formal application.

served by One Team

From: G R MERCHANT LTD <grmerchant.arch.cons@gmail.com>
Sent: 02 November 2021 15:57
To: Armour, Susan <Susan.Armour@sholland.gov.uk>
Cc: Grant, David <dgrant@sholland.gov.uk>
Subject: Re: FW: H17-1016-21 Beech House 20 Gosberton Road Surfleet Spalding PE11 4AB

Mimecast Attachment Protection has deemed this file to be safe, but always exercise caution when opening files.

This message originated from outside your organization

Dear Sue,

Document attached as requested.

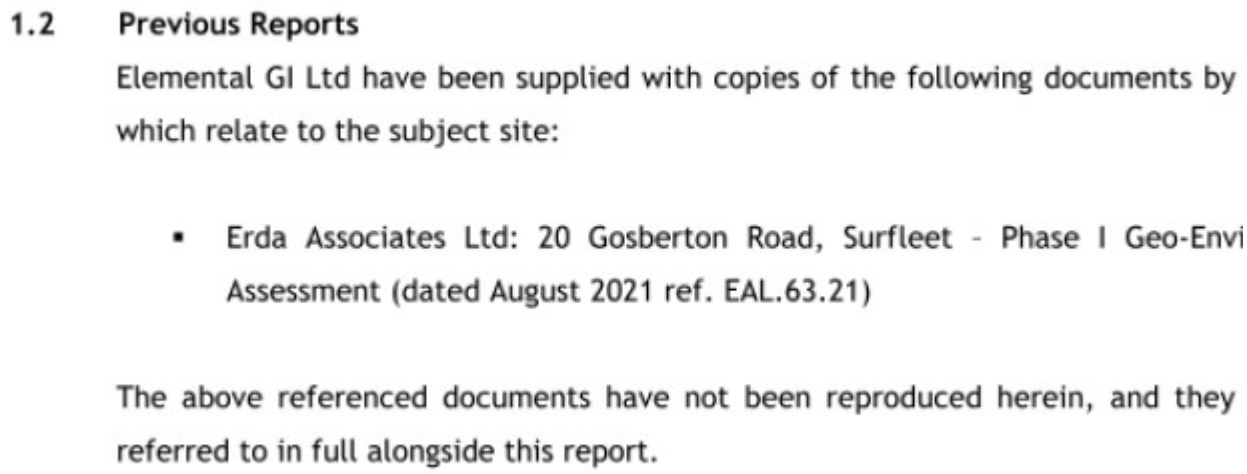
Regards
Sarah

G R Merchant Ltd
01406 490800
www.grmerchantltd.com

On Tue, 2 Nov 2021 at 14:25, Armour, Susan <Susan.Armour@sholland.gov.uk> wrote:

> Dear David,

No, that's the report that has been submitted with the application. Section 1.2 of that report says that the phase 1 was undertaken by others and should be read before this report. Its also required as part I of our standard condition.



1.2 **Previous Reports**

Elemental GI Ltd have been supplied with copies of the following documents by which relate to the subject site:

- Erda Associates Ltd: 20 Gosberton Road, Surfleet - Phase I Geo-Envi Assessment (dated August 2021 ref. EAL.63.21)

The above referenced documents have not been reproduced herein, and they referred to in full alongside this report.

Its quite recent, so I imagine they'll be able to get a copy easily.

Thanks,

Sue

From: Grant, David <dgrant@sholland.gov.uk>
Sent: 02 November 2021 12:36
To: Armour, Susan <Susan.Armour@sholland.gov.uk>
Cc: grmerchant.arch.cons@gmail.com
Subject: FW: FW: H17-1016-21 Beech House 20 Gosberton Road Surfleet Spalding PE11 4AB

Dear Susan,

Sarah Darlow at Merchants has sent the above report. Is the attached document the one your require? I recognise it says Phase 2 rather than Phase 1.

Many thanks,

David Grant | Senior Planning Officer | **South Holland District Council**
Direct Dial: 01775 764472
www.sholland.gov.uk

Please note that any informal officer opinion expressed by this email is without prejudice and is not binding on the Council during the consideration of any formal application.

From: G R MERCHANT LTD <grmerchant.arch.cons@gmail.com>
Sent: 01 November 2021 21:19
To: Grant, David <dgrant@sholland.gov.uk>
Subject: Re: FW: H17-1016-21 Beech House 20 Gosberton Road Surfleet Spalding PE11 4AB

Mimecast Attachment Protection has deemed this file to be safe, but always exercise caution when opening files.

This message originated from outside your organization

Dear David,

The document is listed on the planning application page as supporting documents, however I have attached it here for easy forwarding.

Regards

Sarah

G R Merchant Ltd

01406 490800

www.grmerchantltd.com

On Mon, 1 Nov 2021 at 16:11, Grant, David <dgrant@sholland.gov.uk> wrote:

Dear Sarah,

Can you please supply the requested document? It does not appear to have been submitted to support the application.

Kind regards,

David Grant | Senior Planning Officer | **South Holland District Council**
Direct Dial: 01775 764472
www.sholland.gov.uk

Please note that any informal officer opinion expressed by this email is without prejudice and is not binding on the Council during the consideration of any formal application.

From: Armour, Susan <Susan.Armour@sholland.gov.uk>
Sent: 01 November 2021 13:02
To: Grant, David <dgrant@sholland.gov.uk>
Subject: H17-1016-21 Beech House 20 Gosberton Road Surfleet Spalding PE11 4AB

David,

Please could I have a copy of the following document, which is referred to in the submitted doccuments?

Erda Associates Ltd: 20 Gosberton Road, Surfleet – Phase I Geo-Environmental Assessment (dated August 2021 ref. EAL.63.21)

Thanks,

Sue

Sue Armour | Environmental Protection Officer |**South Holland District Council**

Telephone : 01775 764738

www.sholland.gov.uk

Term time office hours – Monday 9.15am-5.45pm, Tuesday-Thursday 9.15am-2.45pm

School holiday office hours - Monday & Tuesday 9.15am-5.45pm



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20 GOSBERTON ROAD, SURFLEET

PHASE I GEO-ENVIRONMENTAL ASSESSMENT FOR SCOTT PARK DEVELOPMENTS LTD.

Project Ref:
EAL.63.21

Date:
August 2021

Prepared for:
Scott Park Developments Ltd.
Office 10
Welland Workspace
10 Pinchbeck Road
Spalding
Lincolnshire
PE11 1QD

Prepared and Authorised by:	P. Devitt	Phil Devitt BSc MSc MRICS *Director*
Date:	August 2021	
Version:	1.1	

Executive Summary

This presents the salient points of the report and should not be referred to in isolation. The conclusions and recommendations presented below are considered reasonable based on the findings of the Phase I Geo-Environmental Assessment. However, these cannot be guaranteed to gain regulatory approval and therefore copies of this report should be sent to the appropriate Regulatory Authorities and / or other organisations (as appropriate) by the Client for their comments and approval prior to undertaking any irrecoverable works associated with the subject site.

SUMMARY TABLE: PHASE I GEO-ENVIRONMENTAL ASSESSMENT	
SITE:	20 Gosberton Road, Surfleet
CLIENT:	Scott Park Developments Ltd.
DATE:	August 2021
REFERENCE	EAL.63.21
DEVELOPMENT PROPOSAL:	Ten residential dwellings with associated private gardens and garages.
HUMAN HEALTH:	Low to moderate risk - Phase II investigation is recommended.
CONTROLLED WATERS:	Low to moderate risk - Phase II investigation is recommended.
GAS RISK:	No significant risk of ground gas (methane and carbon dioxide) identified.
RADON GAS:	No significant risk identified.
COMMENTS:	Further works - Phase II investigation is recommended.

The executive summary given above is an overview of the key findings and conclusions of the report. There may be other information contained in the body of the report which puts into context the findings of the executive summary. No reliance should be placed on the executive summary until the whole report has been read in full.

CONTENTS

1.0 INTRODUCTION **1**

2.0 DESK STUDY AND SITE OBSERVATIONS **2**

3.0 PHASE I CONCEPTUAL MODEL **5**

4.0 RECOMMENDATIONS **7**

5.0 CONCLUSION **7**

APPENDICES

Appendix A — Site Plans
Appendix B — Historical OS Maps
Appendix C — Environmental Data Summary

1.0 INTRODUCTION

1.1 PREAMBLE

This Phase I Geo-Environmental Assessment has been produced for Scott Park Developments Ltd. (hereafter referred to as 'the client') to provide a pre-development contamination and geotechnical assessment of the site known as *20 Gosberton Road, Surfleet* Site location and boundary plans are included in **Appendix A**.

1.2 PROJECT BRIEF

The brief for the Phase I Geo-Environmental Assessment incorporates:

- A review and assessment of the site history, with reference to potentially contaminative uses.
- A review of regulatory authority and environmental data relating to the site and its environs.
- A site inspection.
- An appraisal of potential environmental risks.
- Development of a Phase 1 Conceptual Model

1.3 DATA REFERENCES

- Environmental Search Data (Supplied by Groundsure).
- Historical Ordnance Survey (OS) Mapping (Supplied by Emapsite Ltd).
- British Geological Survey Online Geological Mapping.
- BSI (2015), BS 5930:2015 Code of practice for ground investigations.
- PHE-BGS (2011), Joint Indicative Atlas of Radon in Great Britain.

1.4 LIMITATIONS

This report has been produced in accordance with industry best practice at the time of writing.

In the production of this report, Erda Associates Ltd. (hereafter referred to as Erda), has relied upon information provided by third parties. Erda cannot accept responsibility for the reliability and authenticity of this information. Erda will not be responsible for any opinions which it has expressed, or conclusions which it has drawn, in reliance upon information which is subsequently proven to be inaccurate.

This report has been prepared for the sole use of the client and shall not be relied upon or transferred to third parties without the express written consent of Erda. Unauthorised third parties rely upon the information contained within this report at their own risk.

1.5 PROPOSED DEVELOPMENT

It is understood that the client proposes to develop the site with ten residential dwellings with associated private gardens and garages. A proposed development plan is included in **Appendix A**, for reference.

2.0 PHASE I DESK STUDY AND SITE OBSERVATIONS

2.1 GEOGRAPHICAL SETTING

The site is located centrally within Surfleet village centre and situated within a semi-rural/semi-urban area. The site is accessed directly via Gosberton Road. The site is roughly centred at national grid reference TF 2505 2829. Site location and boundary plans are presented in **Appendix A**.

2.2 SITE DESCRIPTION

The site presently comprises a gravel hardcore and tarmacadam hardstanding car parking area to the southern portion. A residential dwelling and its associated garden form the northern part of the site. An above ground old heating oil tank was also noted in the garden in the northern part of the site. The site is generally flat lying, although a moderate slope was noted adjacent the western boundary.

The site is situated within a predominantly rural/residential area. A café building was observed immediately adjacent the southern boundary of the site. A garage was noted approximately 10m to the south of the site. A works was also observed approximately 10m to the east, on the opposite side of Gosberton road .

Significant Features identified during site inspection:
Old above ground oil tank – potential risk of contamination.
Former car parking – potential source of contamination.

2.3 HISTORICAL REVIEW: SITE DEVELOPMENT

Ordnance Survey maps have been reviewed for the years 1887 - 2021. The OS maps are contained in **Appendix B**, for reference.

The summary below identifies the historical features identified on the historical mapping data considered likely to have the potential to affect the site.

Date	Identified On-site Hazard	Identified Off-site Hazard
1881	The site comprises part of a larger single agricultural field.	Gosberton Road is situated adjacent the eastern boundary of the site. A small brewery is located approximately 10m to the east on the opposite side of Gosberton Road. A lime kiln is located approximately 50m to the east. Another brewery is situated approximately 125m to the south of the site.
1904	No significant changes to the site identified.	A gasometer is recorded approximately 50m to the south-east of the site.
1947	A small unidentified building is recorded to be present in the north-eastern portion of the site.	The small brewery (10m to the east), lime kiln and gasometer are no longer recorded.
1955	No significant changes to the site identified.	The brewery 150m to the south is no longer recorded.
1971	A residential dwelling and its associated private garden is recorded in the northern part of the site. The southern part of the site appears to now be utilised as a car park.	An agricultural engineering works is located approximately 10m to the east of the site. A number of barns / commercial units have been constructed adjacent the southern boundary of the site. A sewage works is recorded approximately 25m to the north-east.
1985	No significant changes to the site identified.	The barns / commercial units immediately to the south of the site are recorded to be a depot.
2021	No significant changes to the site	No significant changes identified.

	identified.	

Significant Features identified on OS Maps:	
On-site hazard	-Former car park – potential risk of contamination (e.g. TPH).
Off-site Hazard	-Agricultural engineering works, sewage works and depot – potential risk of contamination (e.g. Heavy metals, PAHs, TPH and VOC/SVOC). -Brewery, lime kilns and gasometer – negligible risk of contamination due to age.

2.4 ANTICIPATED GEOLOGY

The BGS geological 1:50,000 scale data (Sheet 144 – Spalding) for this area illustrates;

- Made ground is not recorded to be present on site.
- Superficial tidal flat deposits comprising clay and silt are recorded to be present beneath the site. These deposits have been classified as potentially posing a moderate risk of compressibility and running sands.
- A solid geology of the Oxford Clay Formation comprising mudstone is recorded to underlie the superficial deposits.

The site is not indicated to be directly affected by faulting, and no faults are recorded to be present within 500m radius of the site.

Significant Features identified from geological data:
Superficial Tidal Deposits – potential risk of shrink/heave in conjunction with vegetation. Superficial tidal deposits – potential poor bearing stratum for foundations.

2.5 HYDROGEOLOGY & HYDROLOGY

2.5.1 Hydrogeology

Both the superficial tidal flat deposits and solid Oxford Clay Formation have been classified as unproductive. These are layers with low permeability that have a negligible significance for water supply.

There are no licensed groundwater abstraction licences within 2000m of the site.

The site is not located within a groundwater Source Protection Zone (SPZ).

Significant Features identified from hydrogeological data:
No significant risk identified.

2.5.2 Hydrology

There are multiple inland rivers recorded in close proximity to the site. The closest is situated adjacent the northern boundary of the site.

Environment Agency data suggests that the site does partly lie within an indicative fluvial floodplain in its northernmost section.

There are no licensed surface water abstraction licenses recorded within 500m of the site.

Significant Features identified from hydrological data:
Inland rivers – potential receptors. Partly within an indicative fluvial floodplain – further assessment may be required.

2.6 MINING

2.6.1 Coal

The site is not within an area that is identified as being at risk from potential historic coal mining legacy issues. Therefore, the risk is assessed as being negligible.

2.6.2 Non-Coal Extraction

No other no non coal extraction is recorded within 500m of the site.

Significant Mining Risks:
No significant risk identified.

2.7 POTENTIALLY CONTAMINATIVE LAND USES

Environmental search data supplied by Groundsure (**Appendix C**) states that:

- There are no active or historic landfill sites recorded within 500m of the site.
- There are ten records relating potentially contaminative historical land uses within 250m of the site. These relate to the previous brewery, unspecified works and sewage works.
- There are four current potentially contaminative land uses recorded between 19m and 162m of the site. These relate to a vehicle repair and testing centre, an unspecified works, a vehicle breakdown and recovery centre and boat mooring and unloading facility.
- There are three discharge consents within 250m of the site. Two of these are located 115m to the east of the site and are for discharge of sewer storm overflow into Fen Drain. A third discharge consent relates to The Mermaid Inn located 132m to the south-east of the site. However, this is recorded to have been revoked in 1997.
- There are no hazardous substance or IPC consents located within 500m of the site.
- There are no recorded pollution incidents recorded within 500m of the site.
- There is are no current or historical petrol station sites situated within 500m of the site.

Significant Features identified from Environmental Data:
Potentially contaminative historic and current land uses – potential risk contamination.

2.8 RADON GAS ASSESSMENT

The site has been assessed in accordance with the guidelines in "Radon: guidance on protective measures for new buildings" (BR 211 - BRE, 2015).

The site is not within a Radon Affected Area as less than 1% of properties are above the action level. Therefore, the report indicates that radon protective measures are not necessary for the proposed development.

Radon Gas Hazard:
No significant risk identified.

3.0 PHASE I CONCEPTUAL MODEL

3.1 SOURCE-PATHWAY-RECEPTOR

The conceptual model for the site considers the development proposal for residential dwellings with private gardens and garages along with the preceding information.

The site's former uses as a residential dwelling (including the above ground oil tank) and car parking are considered in respect to potential contaminative sources. In addition, historic and current surrounding potentially contaminative land uses including the vehicle repair and testing centre, agricultural engineering works and unspecified depot are also considered.

Significant made ground is not anticipated on site at this stage. However, as a precautionary measure, it is recommended that all shallow soils are analysed for; Heavy metals, speciated polycyclic aromatic hydrocarbons (PAHs), asbestos, Total Petroleum Hydrocarbons (TPH) and Volatile Organic Compounds (VOC/SVOC).

Pathways for the end user of the site include direct contact (dermal) with potentially contaminated soil dust; ingestion and inhalation of potentially contaminated soil dust; ingestion of vegetables which have taken up the contamination and inhalation of potential vapours and fibres.

The primary receptors for the site are construction workers and end users of the site (residents).

No significant potential sources of ground gas (e.g., methane and carbon dioxide) have been identified. Therefore, the risk of these is assessed as being negligible and gas monitoring is not considered to be required.

For the controlled waters environment the primary receptors are the inland rivers in close proximity to the site. No significant receptors with regard to groundwater have been identified beneath the site.

Potential contaminants of concern include; Heavy metals, speciated polycyclic aromatic hydrocarbons (PAHs), Total Petroleum Hydrocarbons (TPH) and Volatile Organic Compounds (VOC/SVOC).

The primary pathway for controlled waters is the leaching and horizontal migration of potential contaminants through the vadose zone to the saturated zone.

The development of the conceptual model is illustrated on Figure 3.1.

Figure 3.1: Conceptual Site Model

HUMAN HEALTH			
Source	**Pathway**	**Receptor**	**Level of Risk/Recommended Action**
Potentially contaminated made ground / natural strata associated with previous site use and surrounding uses.	Indoor and outdoor inhalation of soil dust and asbestos fibres, the ingestion of, and dermal contact with, contaminated soil and soil dust, ingestion of vegetables that have taken up contamination and contaminated soil attached to vegetables.	End users.	Low to moderate risk – Phase II investigation recommended.
		Construction and Maintenance Workers.	
Historic made ground associated with engineering works, colliery sites and backfilled clay pits.	Potential inhalation of vapours	End users.	Low risk – Phase II investigation recommended.
Potentially contaminated made ground / natural strata associated with previous site use and surrounding uses.	Water pipes.	End users.	Low risk – Phase II investigation recommended.

CONTROLLED WATERS			
Potentially contaminated made ground / natural strata associated with previous site use and surrounding historic and current site use.	Leaching of contaminants and vertical migration to the groundwater. May be inhibited by shallow cohesive deposits underlying the site.	No significant receptors identified.	Negligible risk.
	Leaching of contaminants and lateral migration to surface waters.	Inland rivers.	Low to moderate risk.

4.0 RECOMMENDATIONS

A Phase II ground investigation is recommended to determine more accurately the effect of the identified hazards on the development. Initially, this should include:

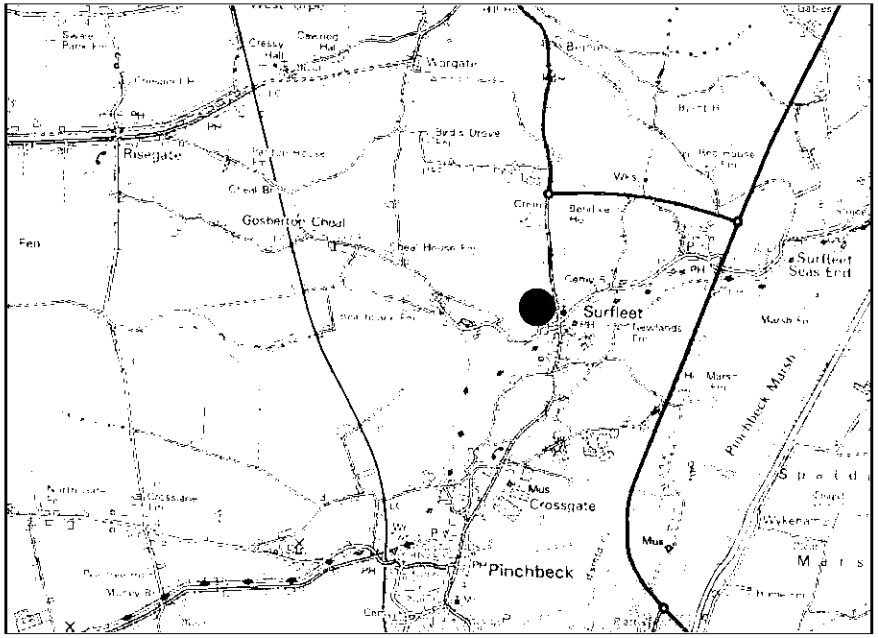
- A ground investigation designed to BS5930:2015 and comprising trial pits to confirm ground conditions and collect samples for analysis.
- Chemical analysis of soils followed by risk assessment so that the risk to human health and controlled waters can be determined.
- Geotechnical soils testing of the founding strata to assess its character and suitable grades of buried concrete and assist with foundation design.

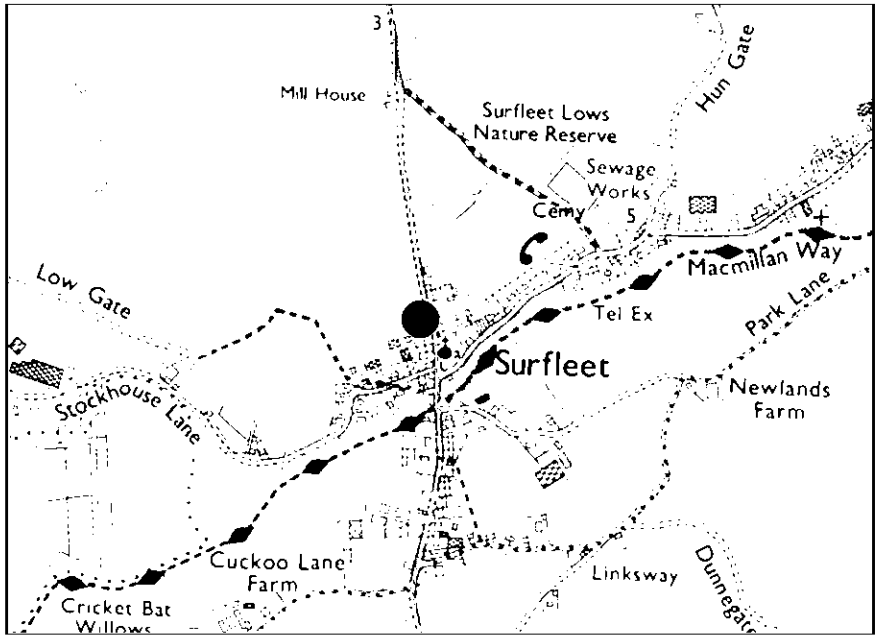
It is considered that the above recommendations with regard to a Phase II ground investigation can be secured by the imposition of an appropriate planning condition when full planning permission is granted for the subject property. The above recommendations should not supersede the granting of permission in principle or similar.

Following your review of this document, a copy of it should be submitted to the Planning Department of the Local Authority for comment and approval prior to any ground investigation works being undertaken.

5.0 CONCLUSION

This Phase I Site Appraisal has shown the site is potentially suitable for the proposed development. However, a Phase II investigation will be required in order to assess and quantify the potential risk identified in this appraisal.





KEY:

● Approximate Site Location

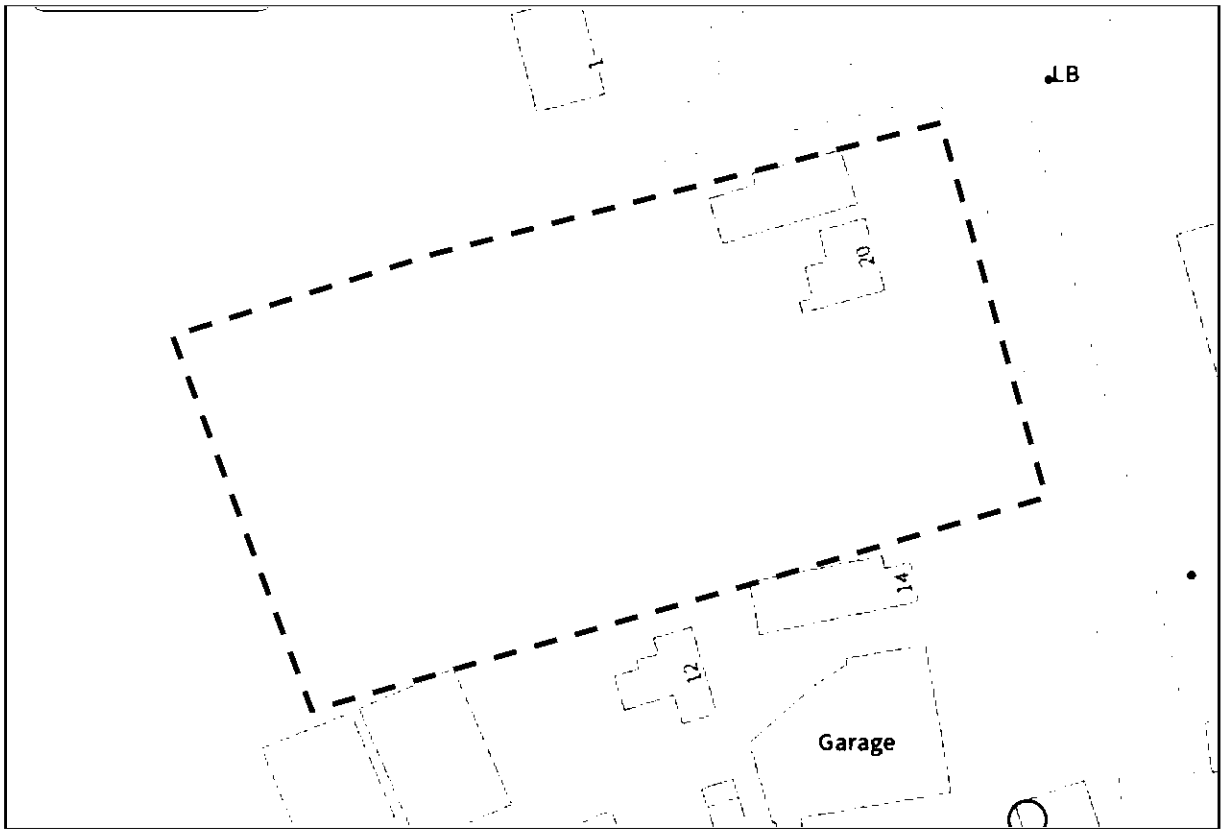
DO NOT SCALE

TITLE: Site Location Plan

PROJECT: 20 Gosberton Road, Surfleet

PROJECT No:	DATE:
EAL.63.21	08/2021

SCALE:	DRAWN:	DWG No:
NTS	PD	Figure 1



KEY:

Site Boundary

DO NOT SCALE

TITLE:

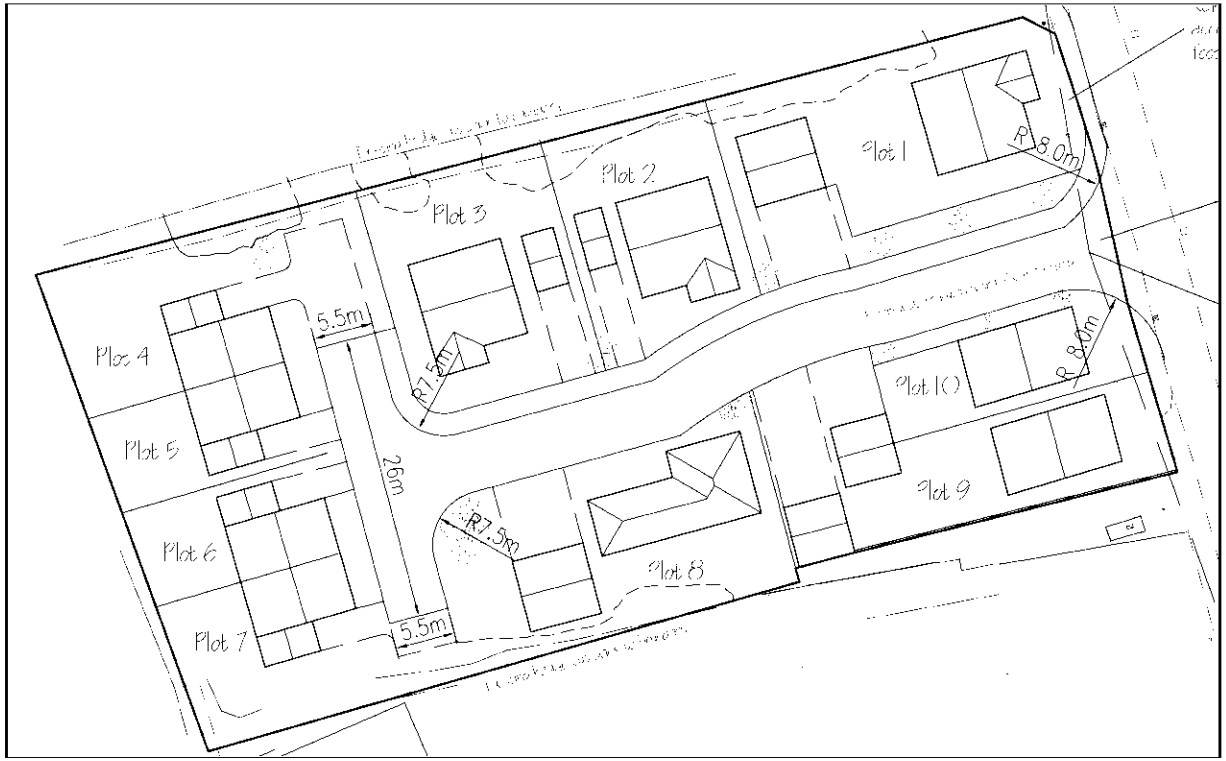
Site Layout

PROJECT:

20 Gosberton Road, Surfleet

PROJECT No:	DATE:
EAL.63.21	08/2021

SCALE :	DRAWN :	DWG No:
NTS	PD	Figure 2



KEY:

DO NOT SCALE

TITLE:

Development Proposal

PROJECT:

20 Gosberton Road, Surfleet

PROJECT No:	DATE:	
EAL.63.21	08/2021	
SCALE : NTS	DRAWN : PD	DWG No: Figure 3





KEY:

DO NOT SCALE

TITLE:
Site Inspection Photographs

PROJECT:
20 Gosberton Road, Surfleet

PROJECT No:	DATE:
EAL.63.21	08/2021

SCALE :	DRAWN :	DWG No:
NTS	PD	Figure 4A





KEY:

DO NOT SCALE

TITLE:
Site Inspection Photographs

PROJECT:
20 Gosberton Road, Surfleet

PROJECT No:	DATE:
EAL.63.21	08/2021

SCALE :	DRAWN :	DWG No:
NTS	PD	Figure 4B





KEY:

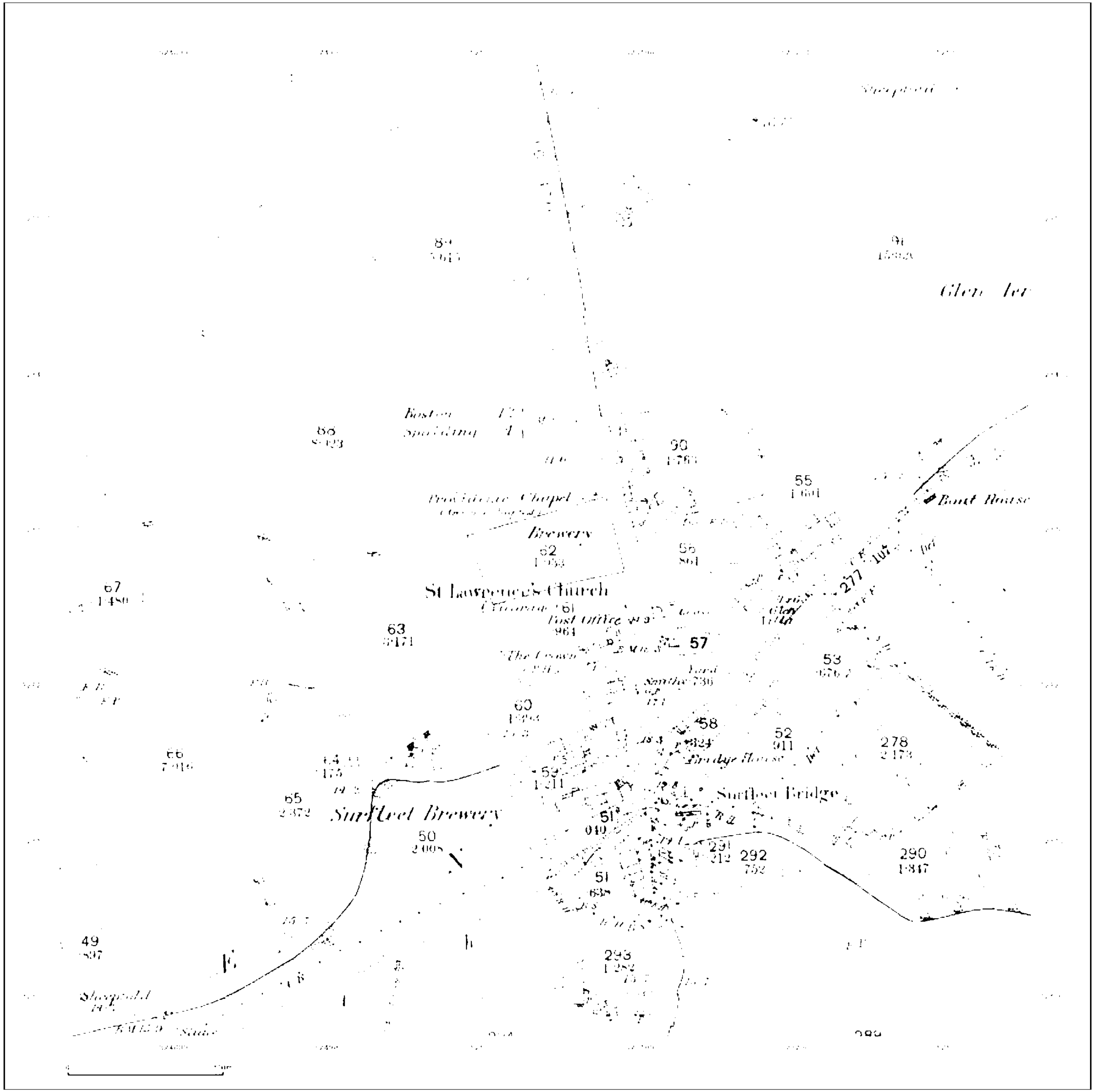
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TITLE:
Site Inspection Photographs

PROJECT:
20 Gosberton Road, Surfleet

PROJECT No:	DATE:
EAL.63.21	08/2021

SCALE :	DRAWN :	DWG No:
NTS	PD	Figure 4C



emapsite

Site Details:

20 Gosberton Road,Surfleet,Spalding,PE11 4AB

Client Ref: EMS_713345_931773
Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: County Series

Map date: **1888**

Scale: 1:2,500

Printed at: 1:2,500

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W E
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Groundsure

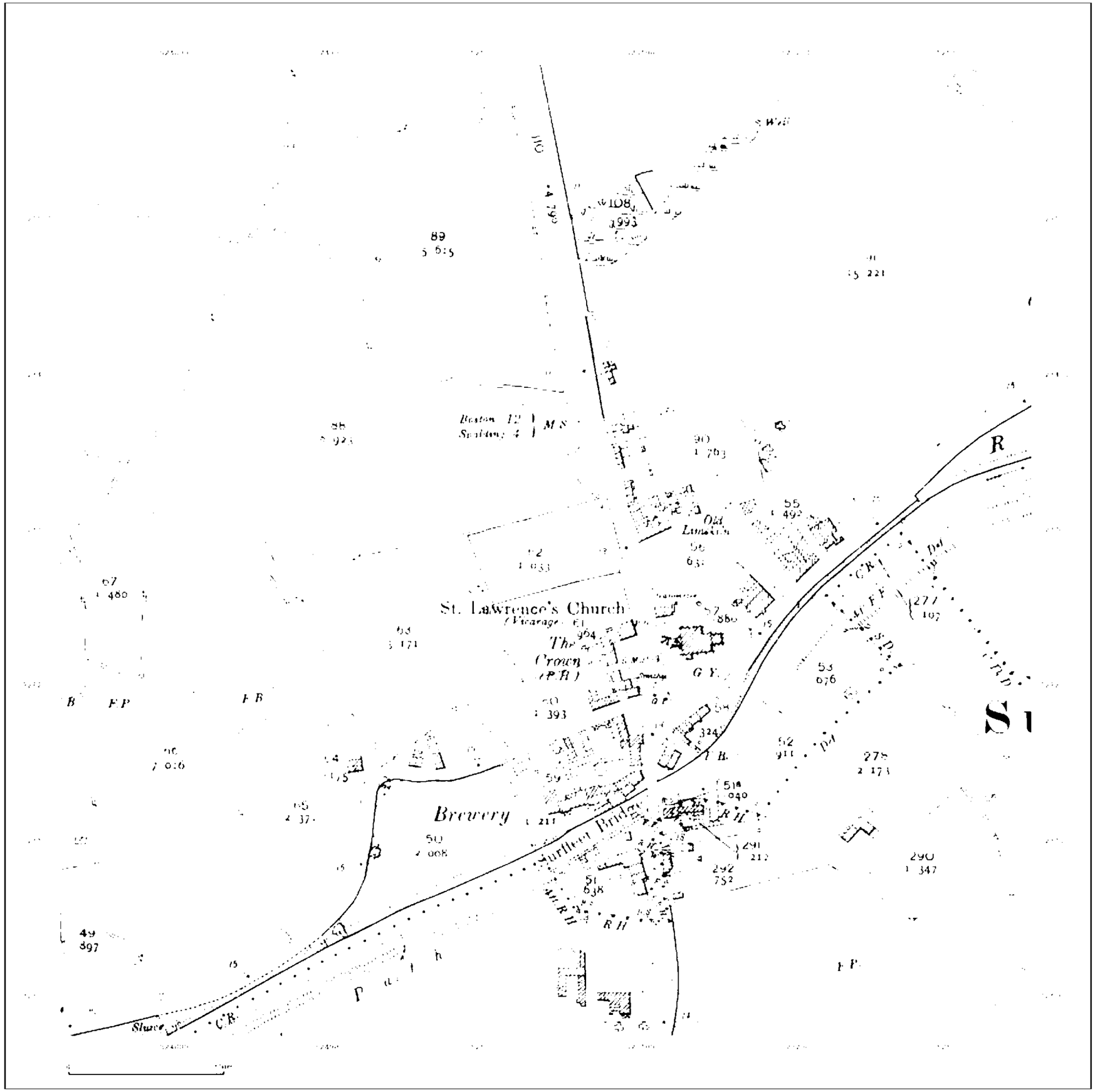
Produced by
Groundsure Insights
www.groundsure.com

Supplied by:
www.emapsite.com
sales@emapsite.com

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Production date: 03 August 2021

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



emapsite

Site Details:

20 Gosberton Road,Surfleet,Spalding,PE11 4AB

Client Ref: EMS_713345_931773
Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: County Series
Map date: 1904
Scale: 1:2,500
Printed at: 1:2,500

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Groundsure

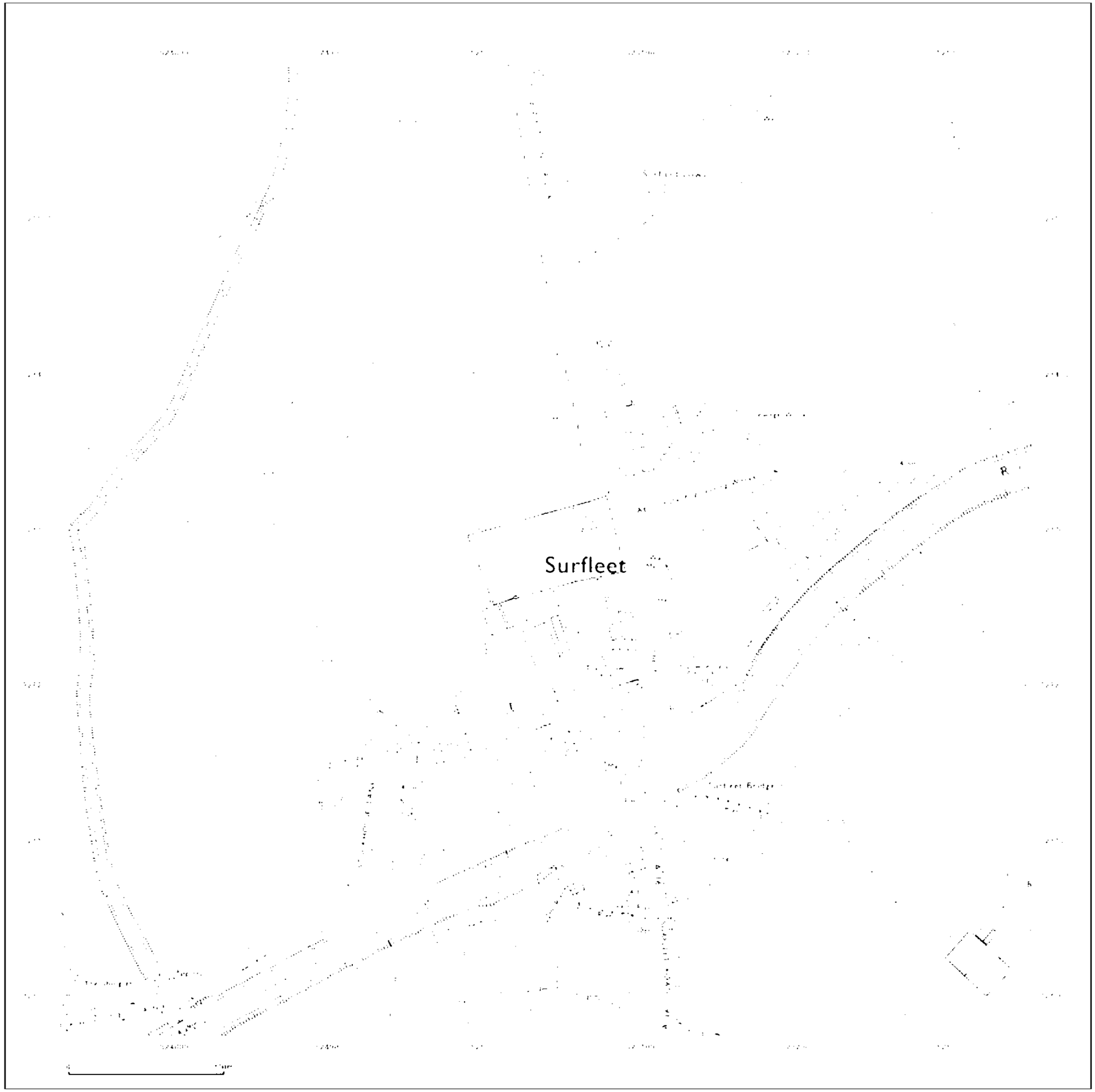
Produced by
Groundsure Insights
www.groundsure.com

Supplied by:
www.emapsite.com
sales@emapsite.com

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Production date: 03 August 2021

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



emapsite

Site Details:

20 Gosberton Road,Surfleet,Spalding,PE11 4AB

Client Ref: EMS_713345_931773
Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: National Grid

Map date: **1971-1972**

Scale: 1:2,500

Printed at: 1:2,500

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Groundsure

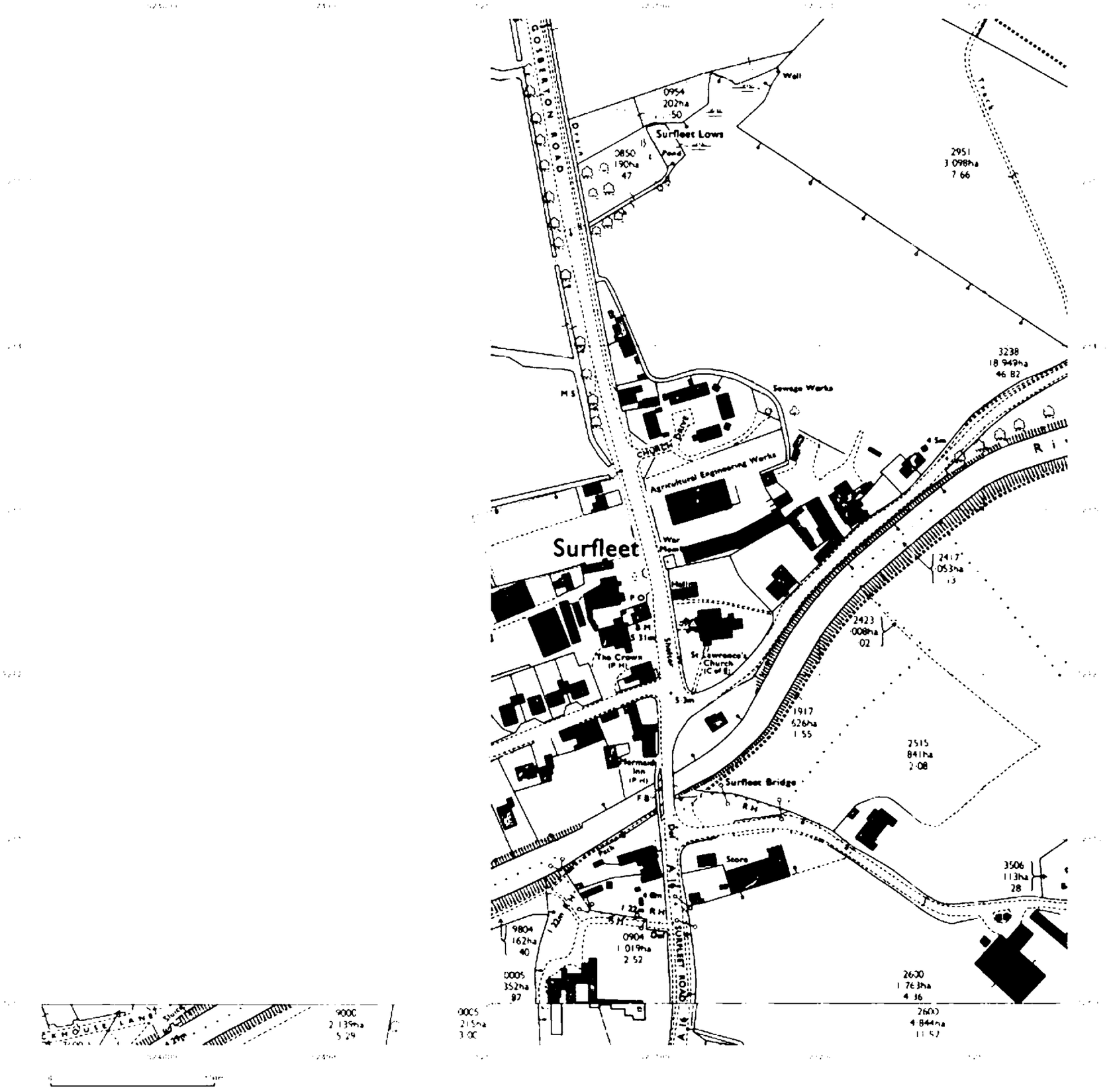
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Production date: 03 August 2021

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



emapsite

Site Details:

20 Gosberton Road,Surfleet,Spalding,PE11 4AB

Client Ref: EMS_713345_931773
Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: National Grid
Map date: **1973**
Scale: 1:2,500
Printed at: 1:2,500

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W E
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Groundsure

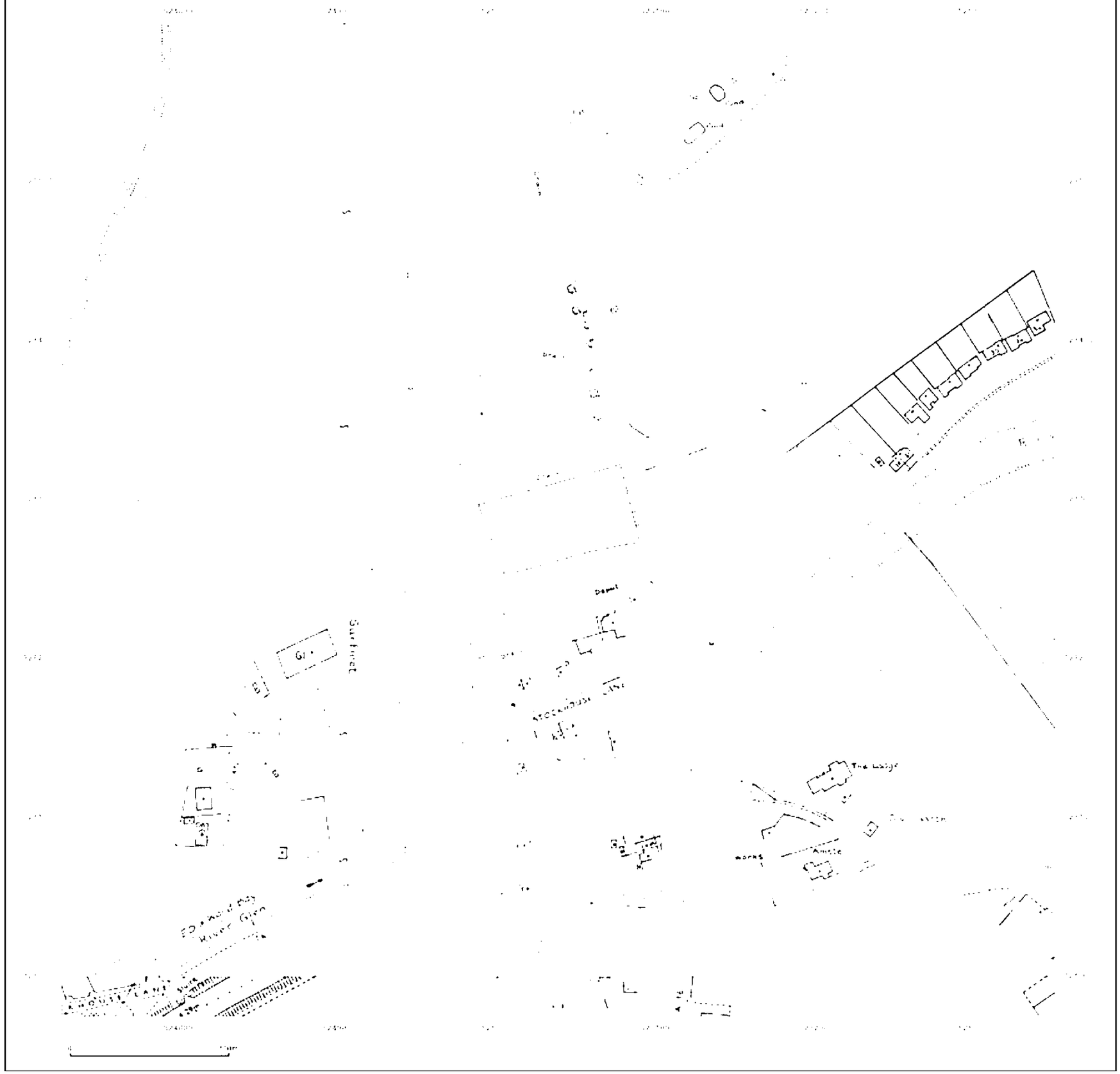
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emapsite

Site Details:

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Client Ref: EMS_713345_931773
Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: National Grid
Map date: 1985
Scale: 1:2,500
Printed at: 1:2,500

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Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: National Grid
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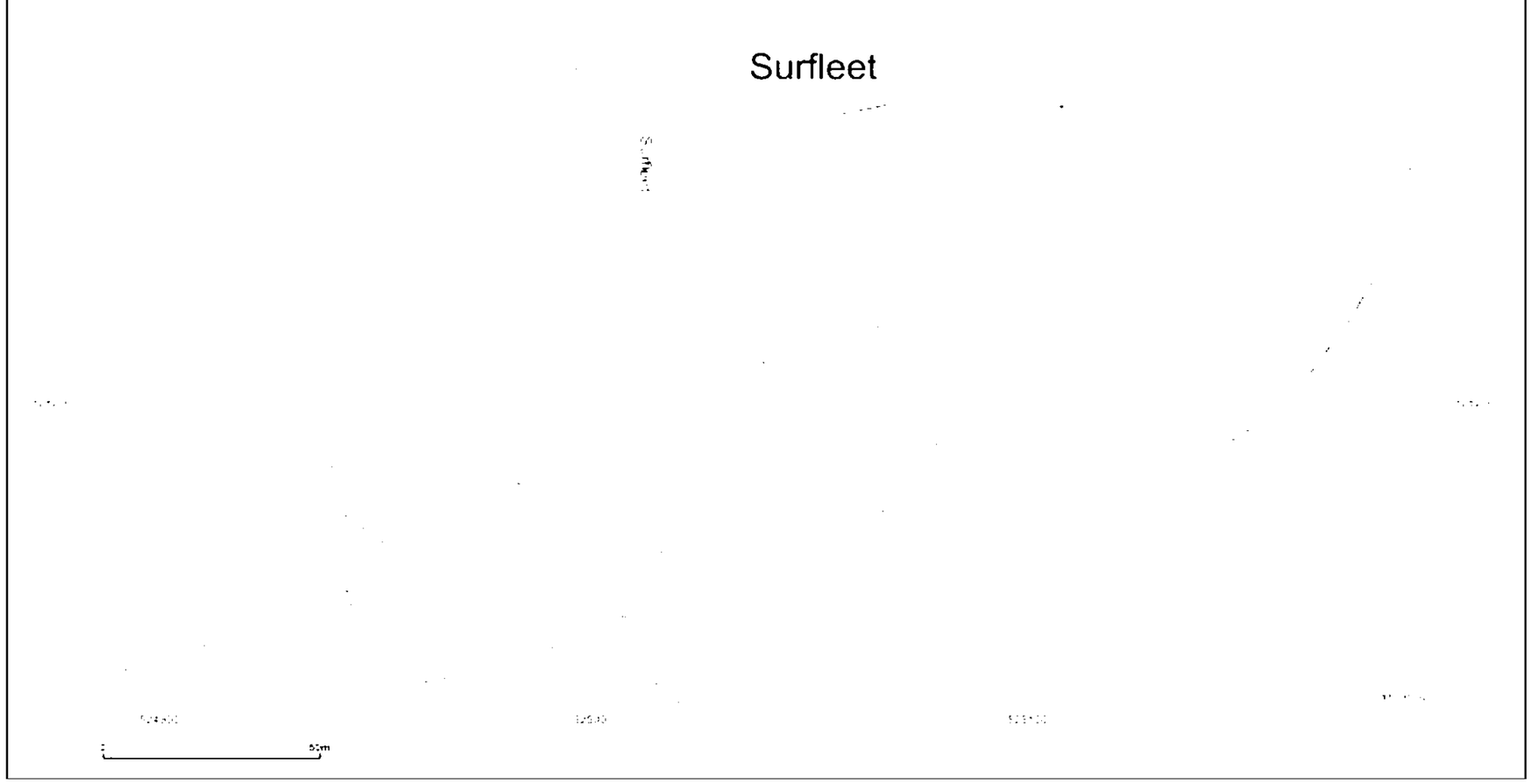
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4AB

Client Ref: EMS_713345_931773
Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: LandLine
Map date: 2003
Scale: 1:1,250
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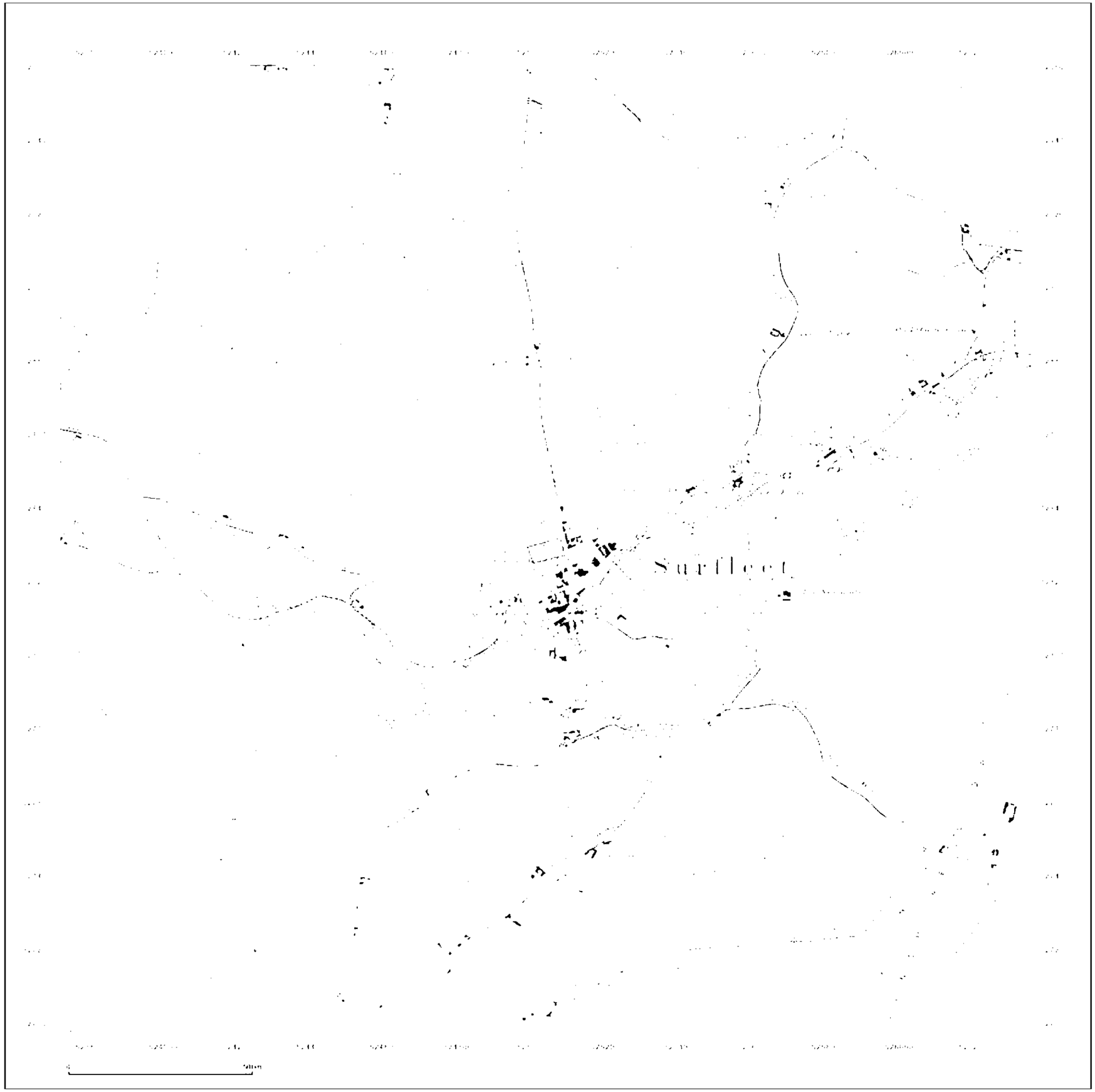
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Client Ref: EMS_713345_931773
Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: County Series
Map date: **1887**
Scale: 1:10,560
Printed at: 1:10,560

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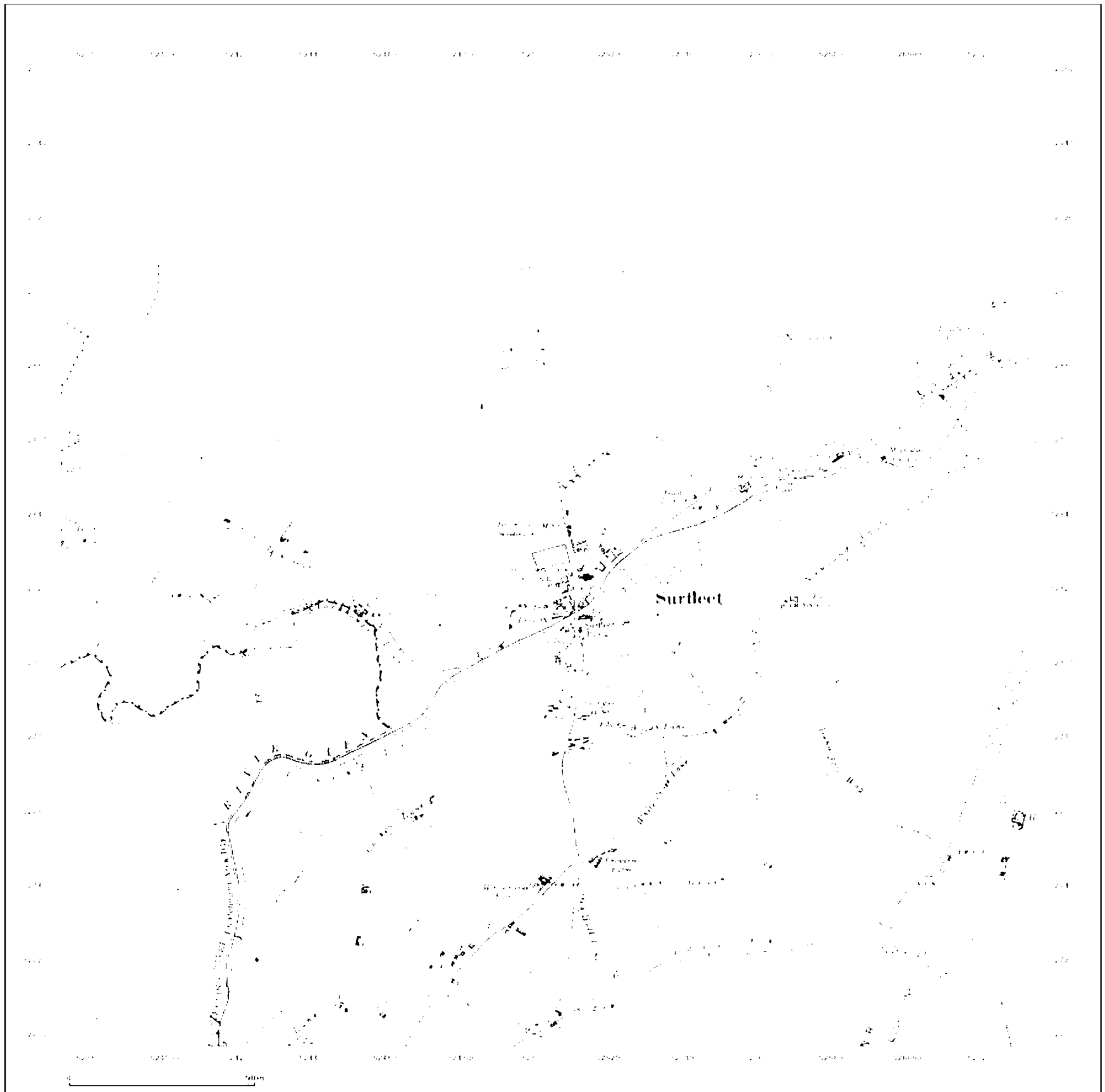
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Site Details:

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Client Ref: EMS_713345_931773
Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: County Series
Map date: **1903**
Scale: 1:10,560
Printed at: 1:10,560

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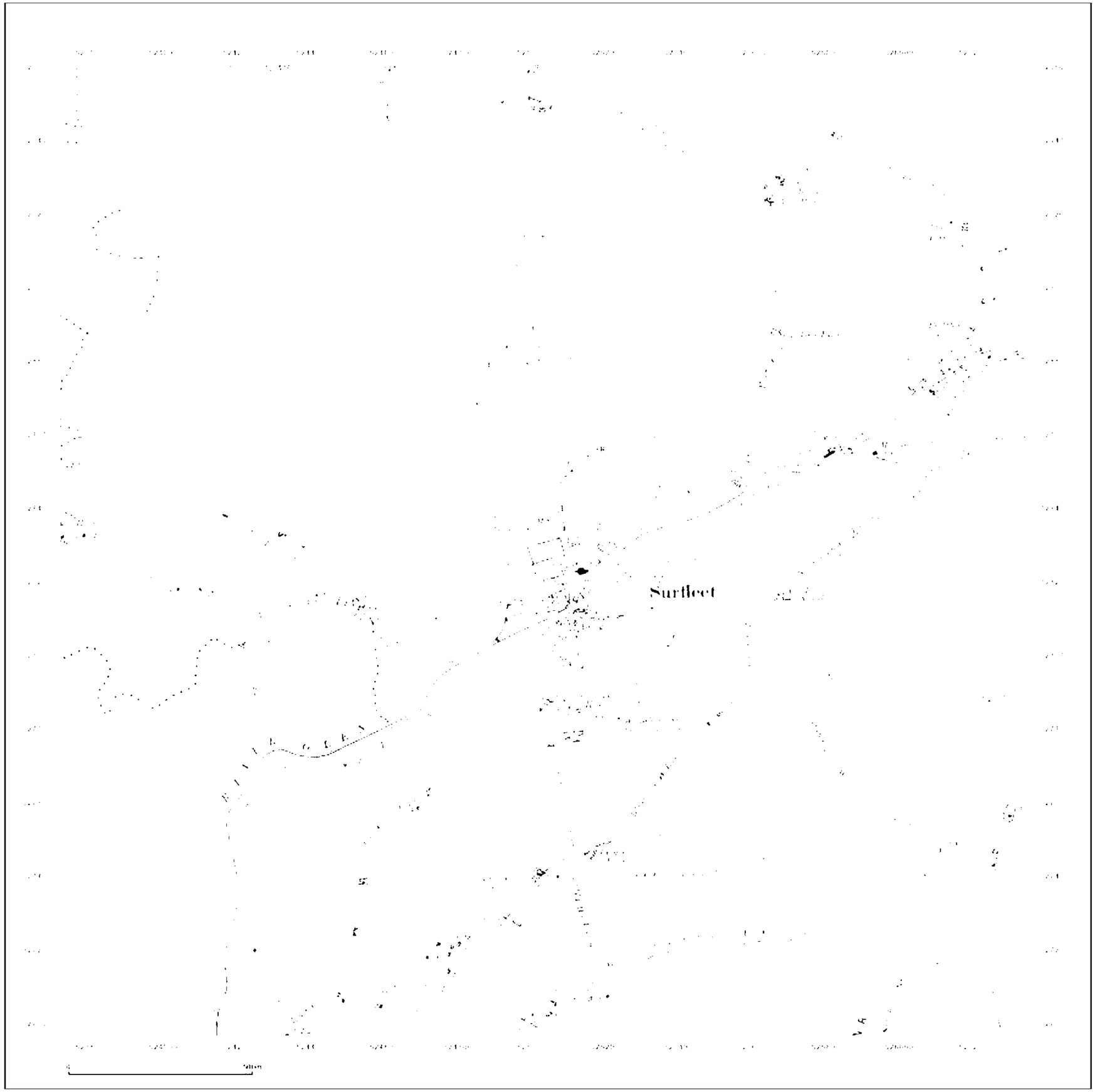
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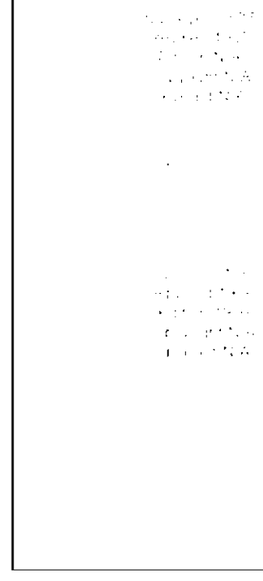
Site Details:

20 Gosberton Road,Surfleet,Spalding,PE11 4AB

Client Ref: EMS_713345_931773
Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: County Series
Map date: **1903-1906**
Scale: 1:10,560
Printed at: 1:10,560

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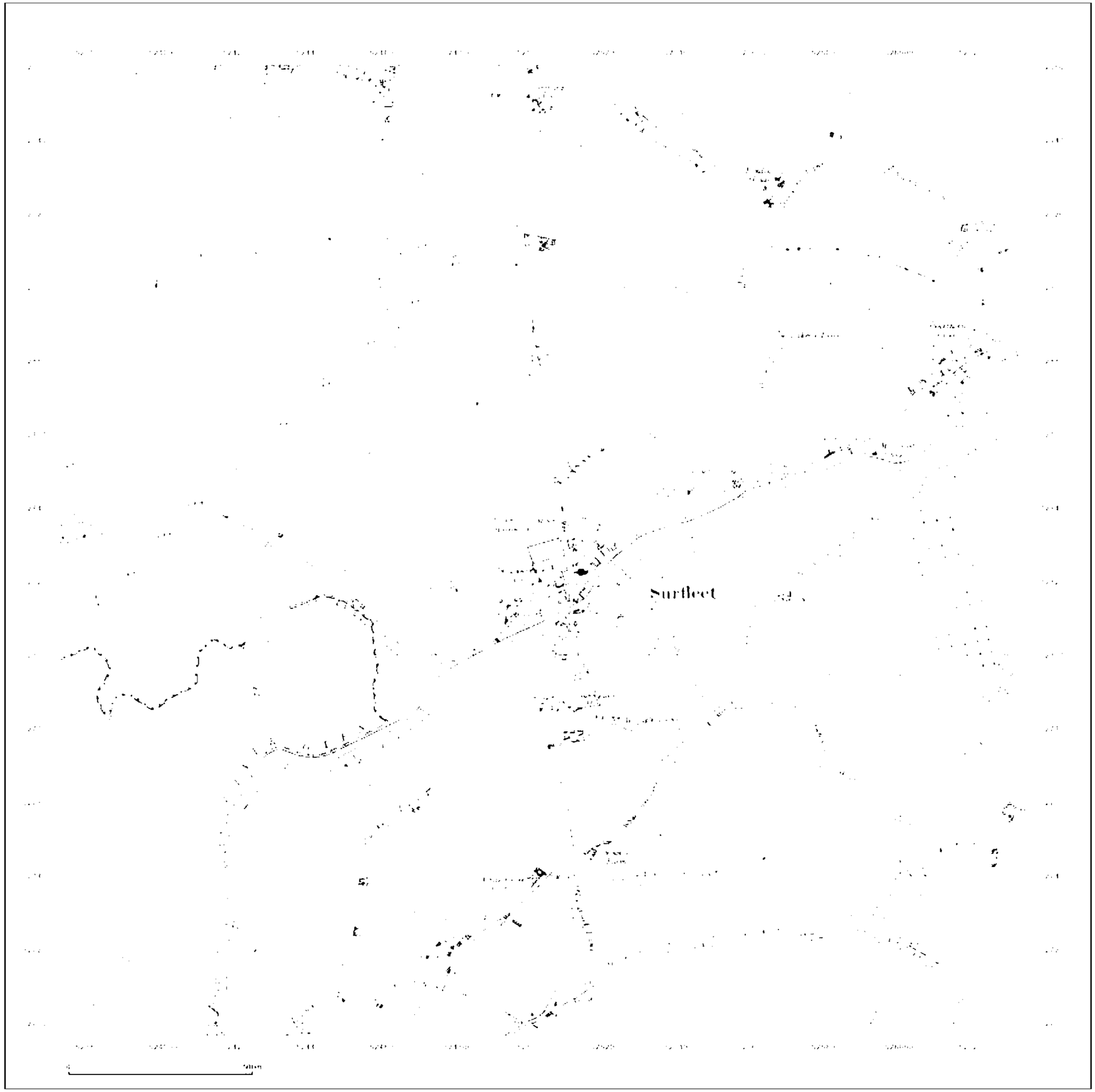
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Client Ref: EMS_713345_931773
Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: County Series
Map date: **1947-1950**
Scale: 1:10,560
Printed at: 1:10,560

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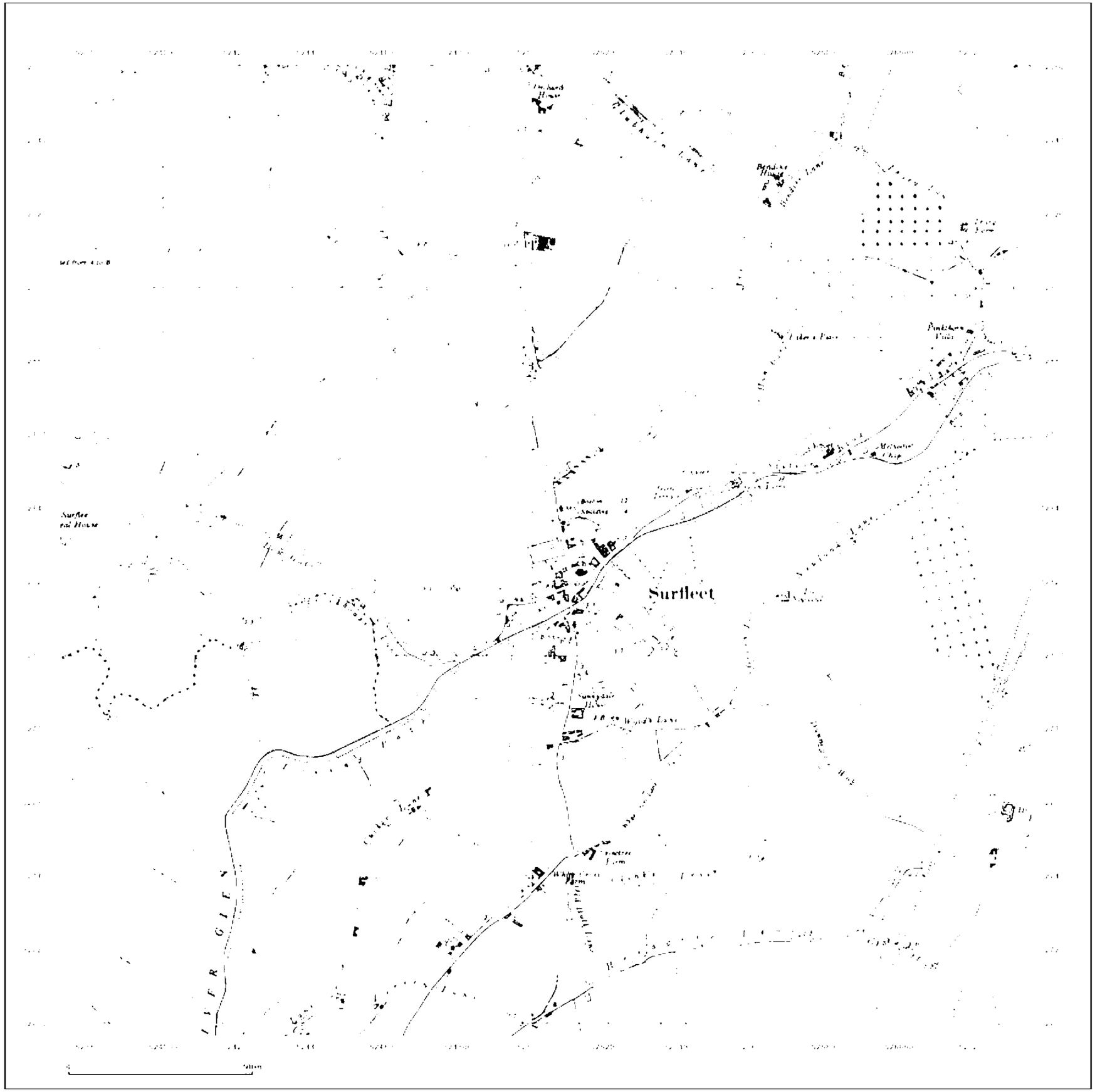
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Client Ref: EMS_713345_931773
Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: Provisional
Map date: **1955-1956**
Scale: 1:10,560
Printed at: 1:10,560

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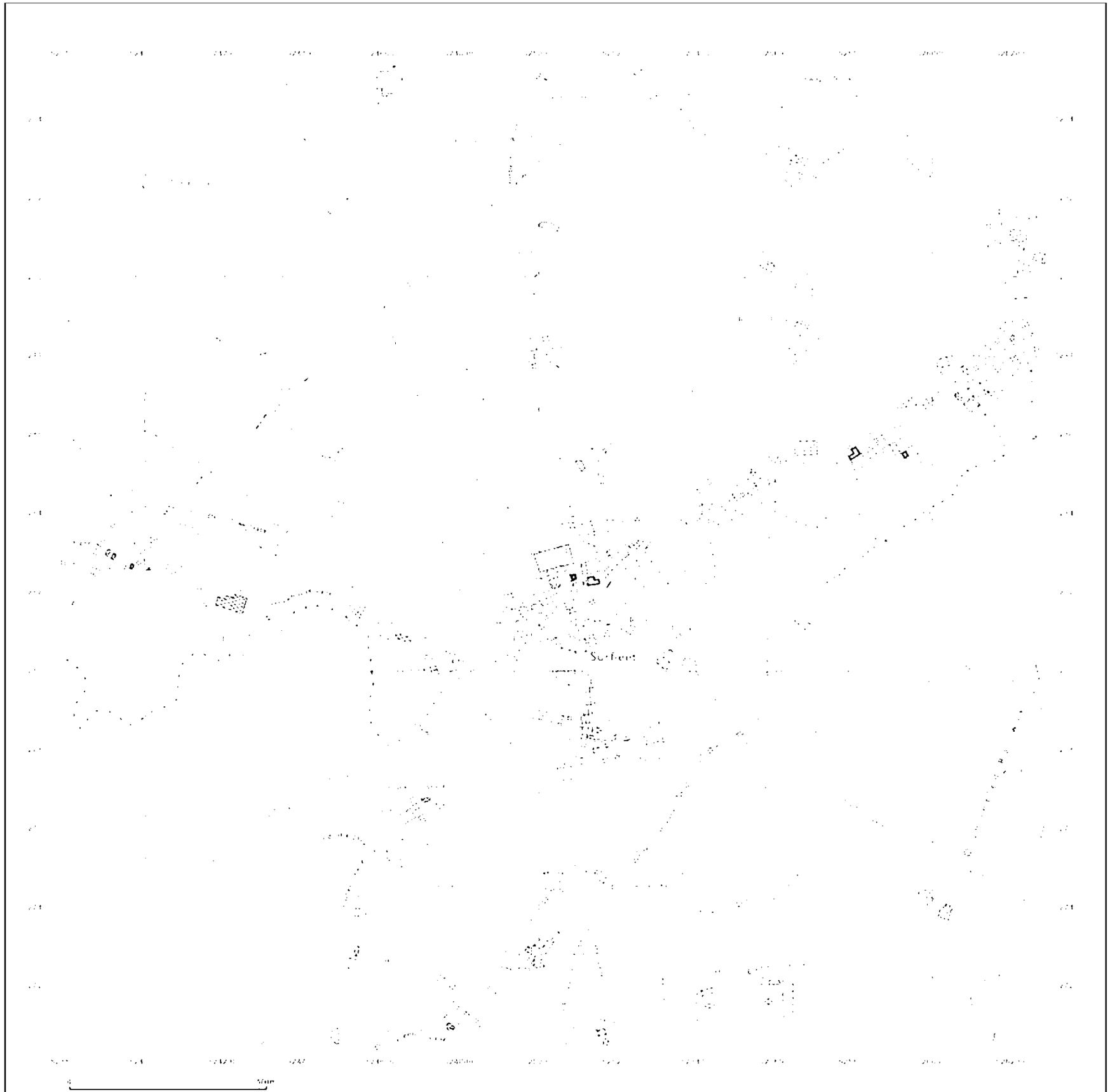
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Client Ref: EMS_713345_931773
Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: National Grid
Map date: 1975
Scale: 1:10,000
Printed at: 1:10,000

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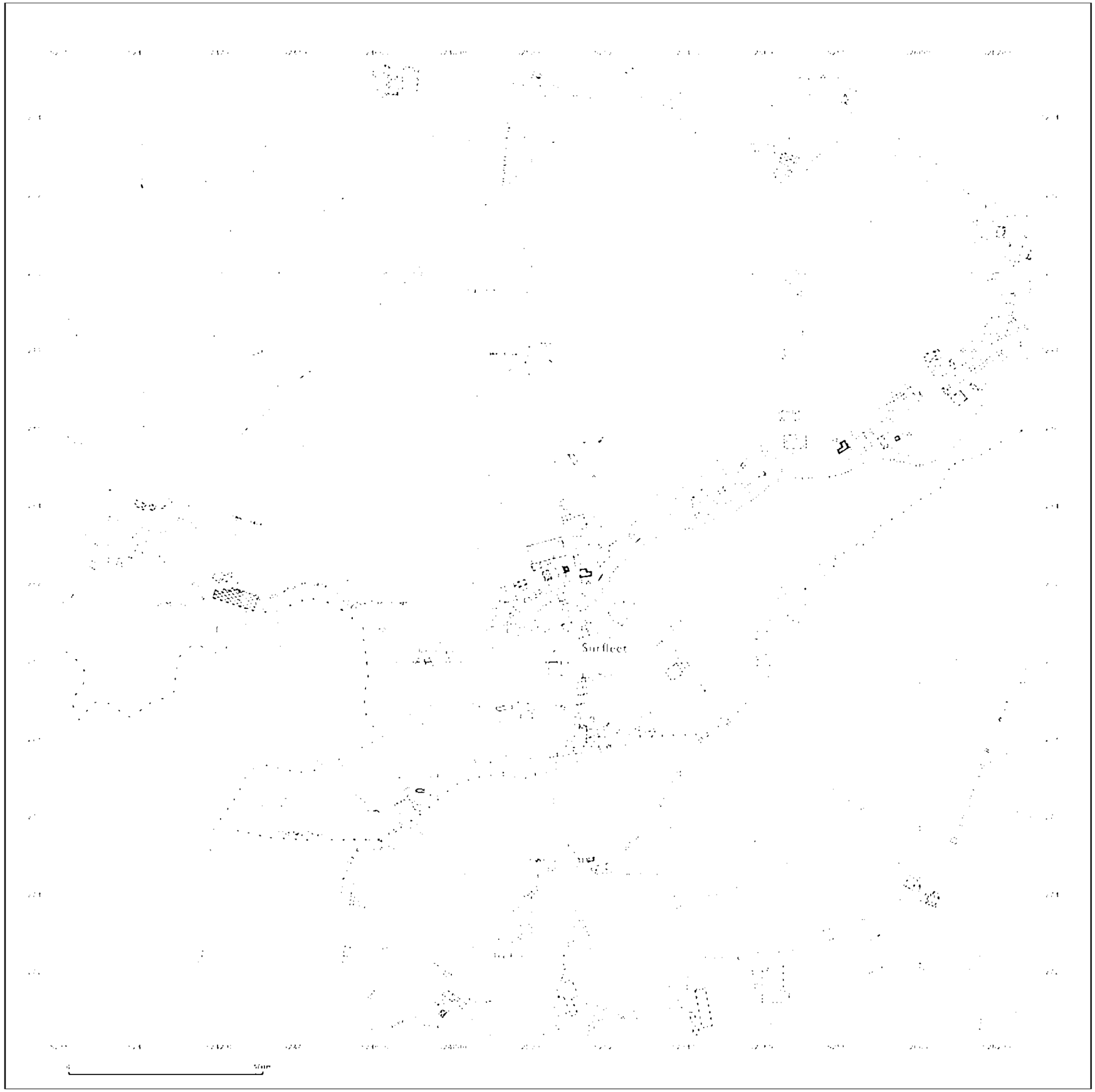
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Client Ref: EMS_713345_931773
Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: National Grid
Map date: 1989
Scale: 1:10,000
Printed at: 1:10,000

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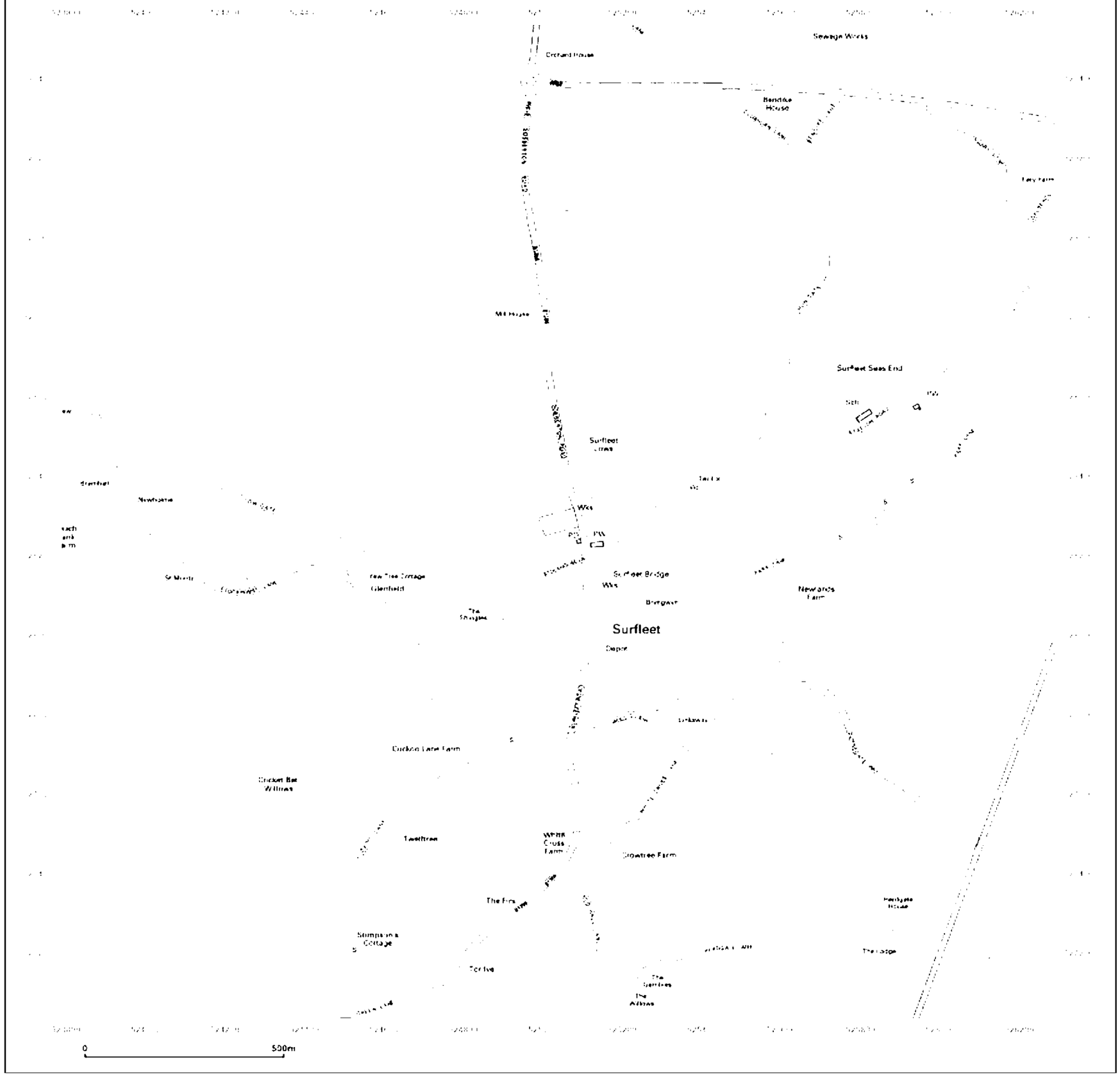
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Client Ref: EMS_713345_931773
Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: National Grid
Map date: 2001
Scale: 1:10,000
Printed at: 1:10,000

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Client Ref: EMS_713345_931773
Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: National Grid
Map date: 2010
Scale: 1:10,000
Printed at: 1:10,000

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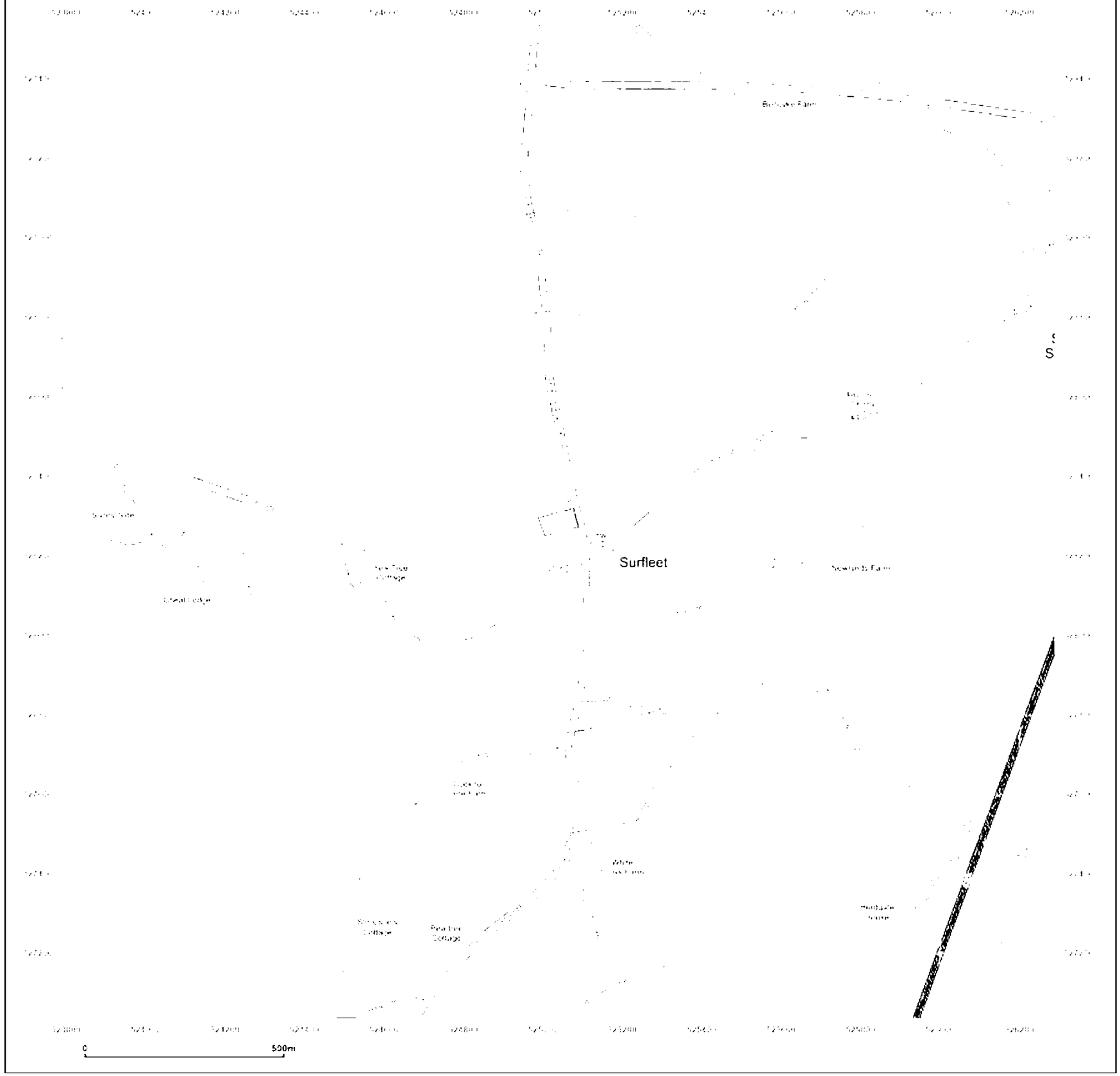
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Site Details:

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Client Ref: EMS_713345_931773
Report Ref: EMS-713345_931773
Grid Ref: 525039, 328287

Map Name: National Grid
Map date: 2021
Scale: 1:10,000
Printed at: 1:10,000

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Groundsure Enviro+Geo Insight

20 Gosberton Road,Surfleet,Spalding,PE11 4AB

Order Details

Date: 03/08/2021

Your ref: EMS_713345_931774

Our Ref: EMS-713345_931774

Client: emapsite

Site Details

Location: 525040 328286

Area: 0.43 ha

Authority: South Holland District Council

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Summary of findings p. 2

OS MasterMap site plan p.13

Aerial image p. 8

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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		4	5	11	
15	1.2	Historical tanks			1	1	
16	1.3	Historical energy features				1	

Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
18	2.1	Historical industrial land uses		4	6	12	
19	2.2	Historical tanks			1	1	
20	2.3	Historical energy features				2	

Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
22	3.7	Waste exemptions				13	

Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
24	4.1	Recent industrial land uses		3	1		

27	**4.13**	**Licensed Discharges to controlled waters**	3	3

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
30	**5.1**	**Superficial aquifer**	Identified (within 500m)				
31	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
32	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				

35	**5.7**	**Surface water abstractions**					22

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
41	**6.1**	**Water Network (OS MasterMap)**	1	5	18		

43	6.2	Surface water features	1	2	8		
44	6.3	WFD Surface water body catchments	1				
44	6.4	WFD Surface water bodies			1		

Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
46	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	Medium (within 50m)				
47	7.3	Flood Defences			3		
49	7.6	Flood Zone 2	Identified (within 50m)				
50	7.7	Flood Zone 3	Identified (within 50m)				

Page	Section	Surface water flooding	
51	8.1	Surface water flooding	1 in 30 year, 0.1m - 0.3m (within 50m)

Page	Section	Groundwater flooding	
53	9.1	Groundwater flooding	Negligible (within 50m)

Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
54	10.1	Sites of Special Scientific Interest (SSSI)			1		

58	10.16	Nitrate Vulnerable Zones	1				4
59	10.17	SSSI Impact Risk Zones	2				
61	10.18	SSSI Units			1		

Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
63	11.4	Listed Buildings			1		

Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
65	12.1	Agricultural Land Classification	Grade 1 (within 250m)				
66	12.4	Environmental Stewardship Schemes			1		
66	12.5	Countryside Stewardship Schemes			1		

Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
68	13.1	Priority Habitat Inventory		1	8		

Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
71	14.1	10k Availability	Identified (within 500m)				

Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
75	15.1	50k Availability	Identified (within 500m)				
77	15.4	Superficial geology (50k)	1				
78	15.5	Superficial permeability (50k)	Identified (within 50m)				
79	15.8	Bedrock geology (50k)	1				
80	15.9	Bedrock permeability (50k)	Identified (within 50m)				

Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m

Page	Section	Natural ground subsidence	
82	17.1	Shrink swell clays	Low (within 50m)
83	17.2	Running sands	Moderate (within 50m)
84	17.3	Compressible deposits	Moderate (within 50m)
85	17.4	Collapsible deposits	Negligible (within 50m)
86	17.5	Landslides	Very low (within 50m)
87	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
89	18.3	Surface ground workings		1	1		

Page	Section	Radon					
92	**19.1**	**Radon**	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
93	**20.1**	**BGS Estimated Background Soil Chemistry**	3				

Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m

Recent aerial photograph



Capture Date: 20/04/2018

Site Area: 0.43ha

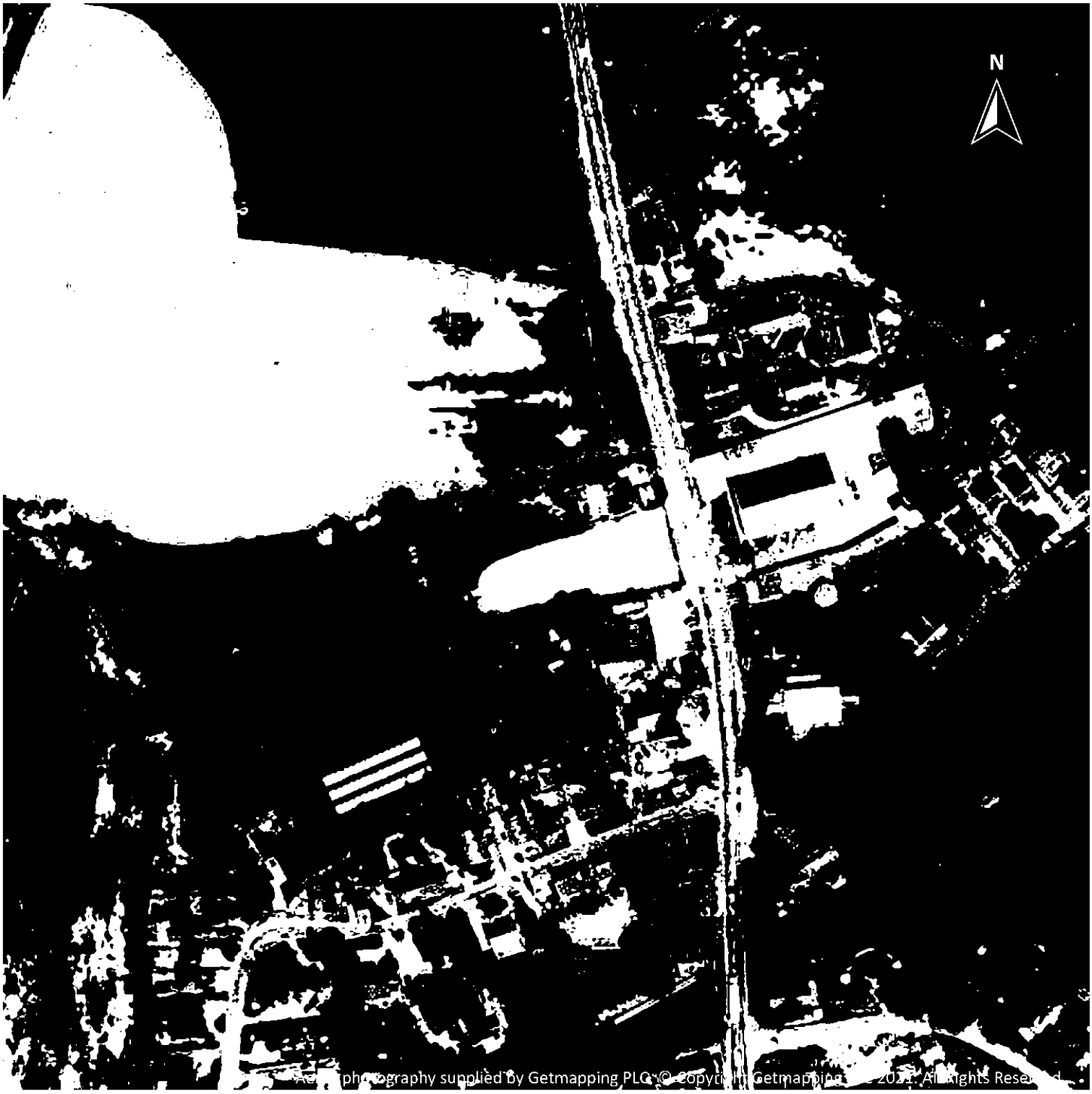
Recent site history - 2015 aerial photograph



Capture Date: 18/07/2015

Site Area: 0.43ha

Recent site history - 2010 aerial photograph



Capture Date: 23/05/2010

Site Area: 0.43ha

Recent site history - 2007 aerial photograph



Capture Date: 12/09/2007

Site Area: 0.43ha

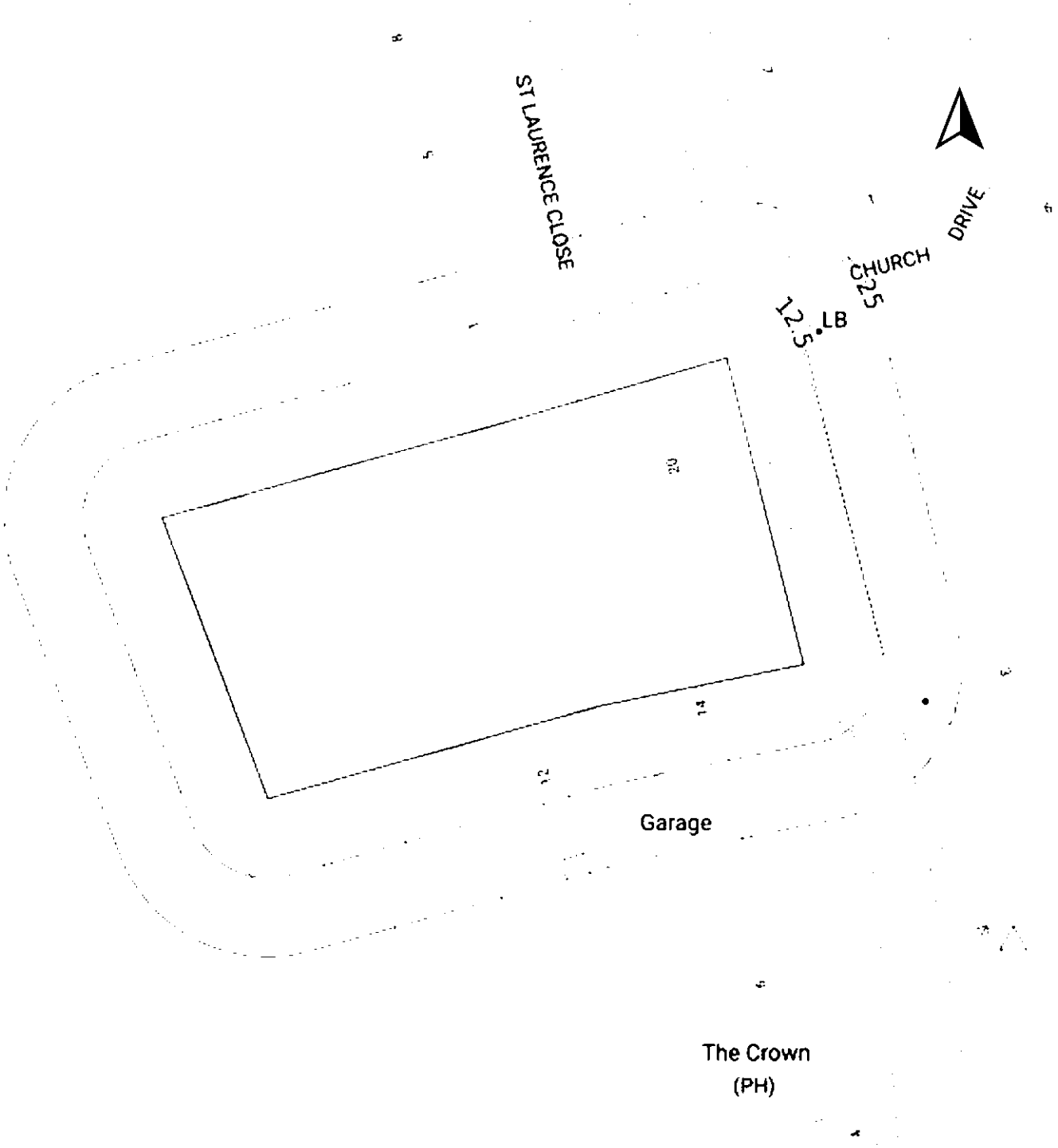
Recent site history - 1999 aerial photograph



Capture Date: 18/06/1999

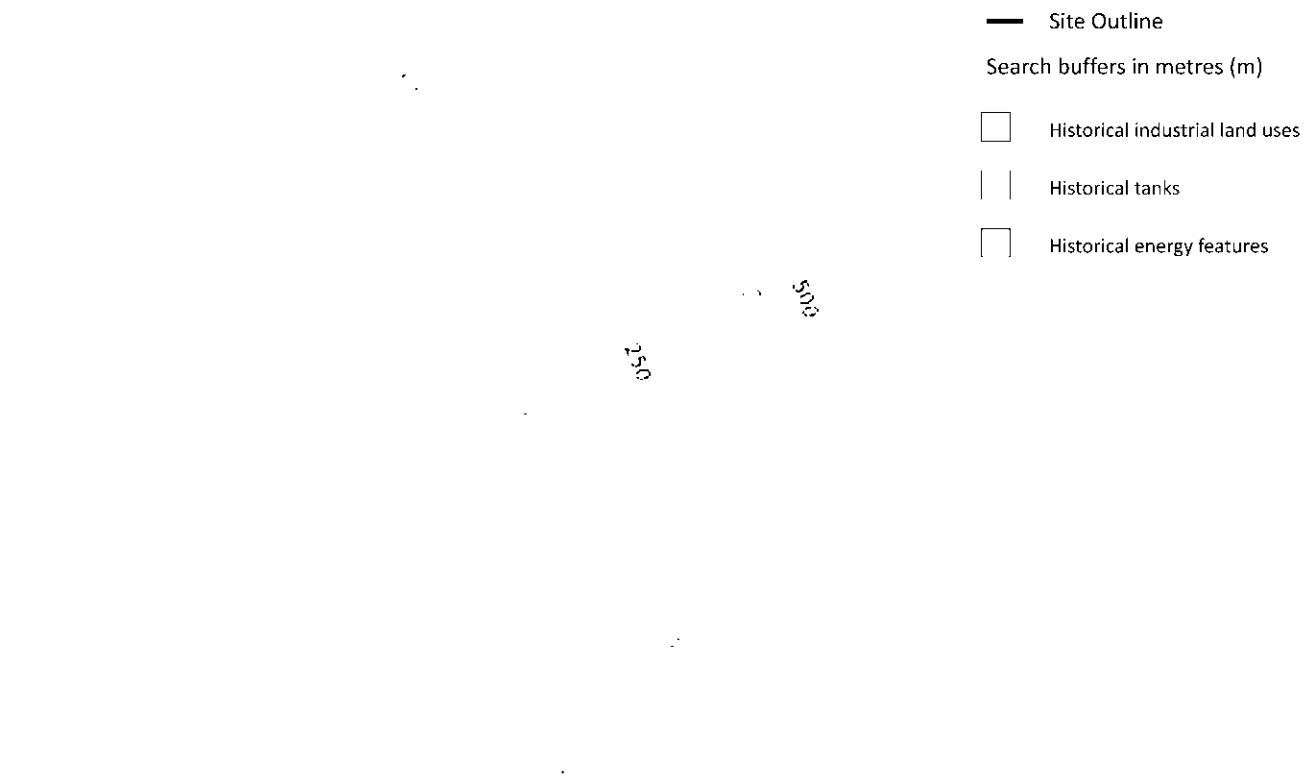
Site Area: 0.43ha

OS MasterMap site plan



Site Area: 0.43ha

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

ID	Location	Land use	Dates present	Group ID

1.2 Historical tanks

Records within 500m **2**

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

1.3 Historical energy features

Records within 500m **1**

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

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'.

1.5 Historical garages

Records within 500m **0**

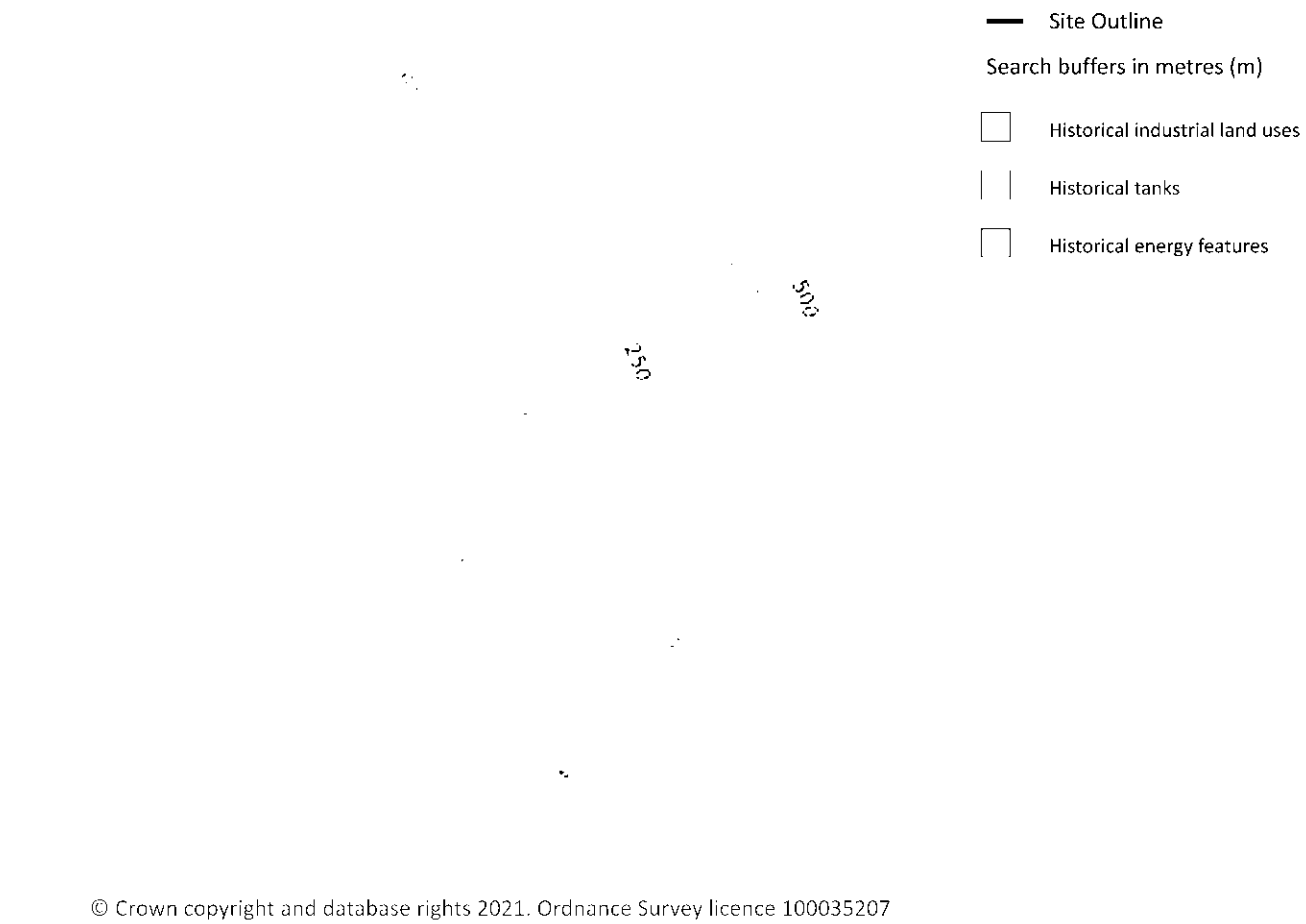
Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately 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'.

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.

2 Past land use - un-grouped



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2.1 Historical industrial land uses

Records within 500m **22**

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

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

ID	Location	Land Use	Date	Group ID

ID	Location	Land Use	Date	Group ID

2.2 Historical tanks

Records within 500m **2**

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

ID	Location	Land Use	Date	Group ID

2.3 Historical energy features

Records within 500m **2**

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

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'.

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'.

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.

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.

3.3 Historical landfill (LA/mapping records)

Records within 500m	**0**

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

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.

3.5 Historical waste sites

Records within 500m	**0**

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

3.6 Licensed waste sites

Records within 500m	**0**

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

3.7 Waste exemptions

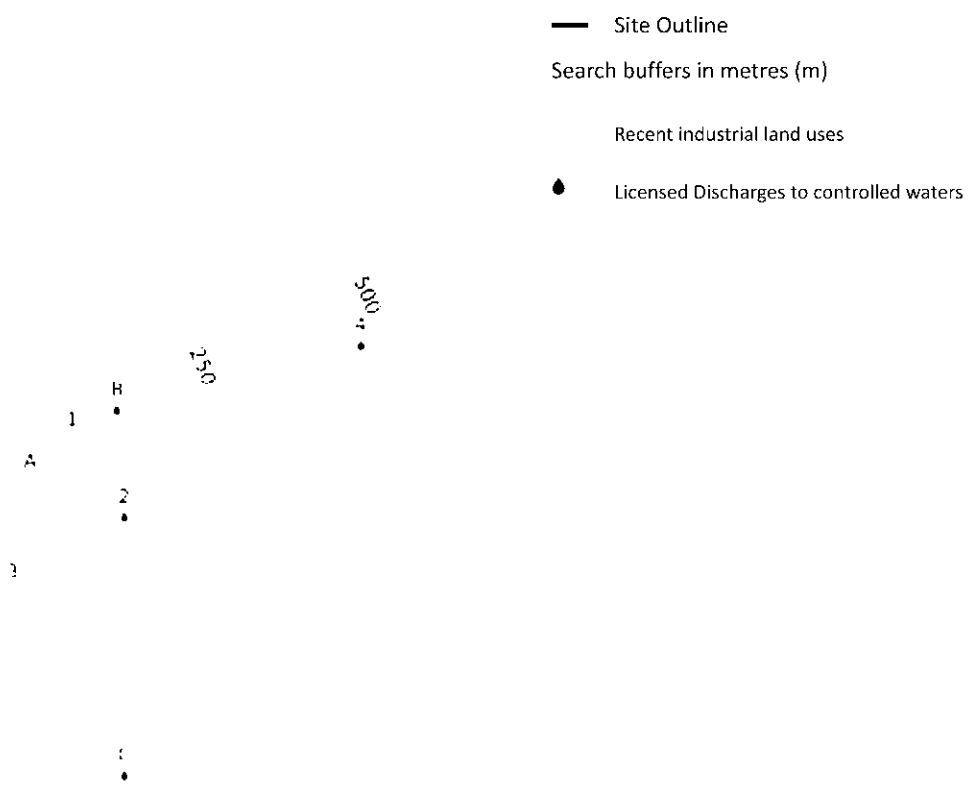
Records within 500m	**13**

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 21**

ID	Location	Site	Reference	Category	Sub-Category	Description

4 Current industrial land use



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4.1 Recent industrial land uses

Records within 250m **4**

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 24**

ID	Location	Company	Address	Activity	Category

ID	Location	Company	Address	Activity	Category

4.2 Current or recent petrol stations

Records within 500m **0**

Open, closed, under development and obsolete petrol stations.

4.3 Electricity cables

Records within 500m **0**

High voltage underground electricity transmission cables.

4.4 Gas pipelines

Records within 500m **0**

High pressure underground gas transmission pipelines.

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.

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.

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.

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.

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.

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.

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.

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.

4.13 Licensed Discharges to controlled waters

Records within 500m **6**

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

Features are displayed on the Current industrial land use map on **page 24**

ID	Location	Address	Details

ID	Location	Address	Details

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.

4.15 Pollutant release to public sewer

Records within 500m **0**

Discharges of Special Category Effluents to the public sewer.

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.

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.

4.18 Pollution Incidents (EA/NRW)

Records within 500m **0**

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

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.

4.20 Pollution inventory waste transfers

Records within 500m **0**

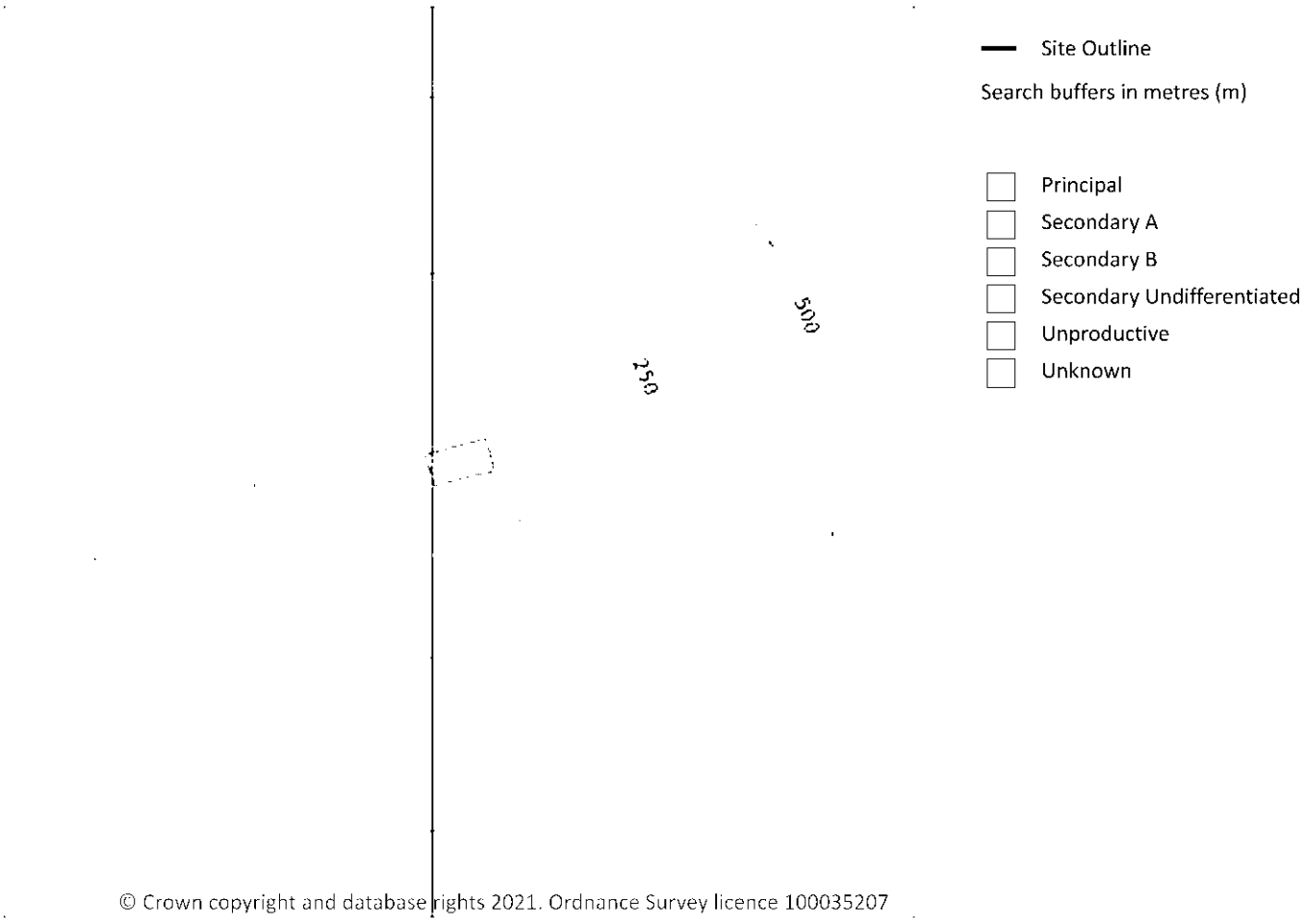
The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most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

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.

5 Hydrogeology - Superficial aquifer



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5.1 Superficial aquifer

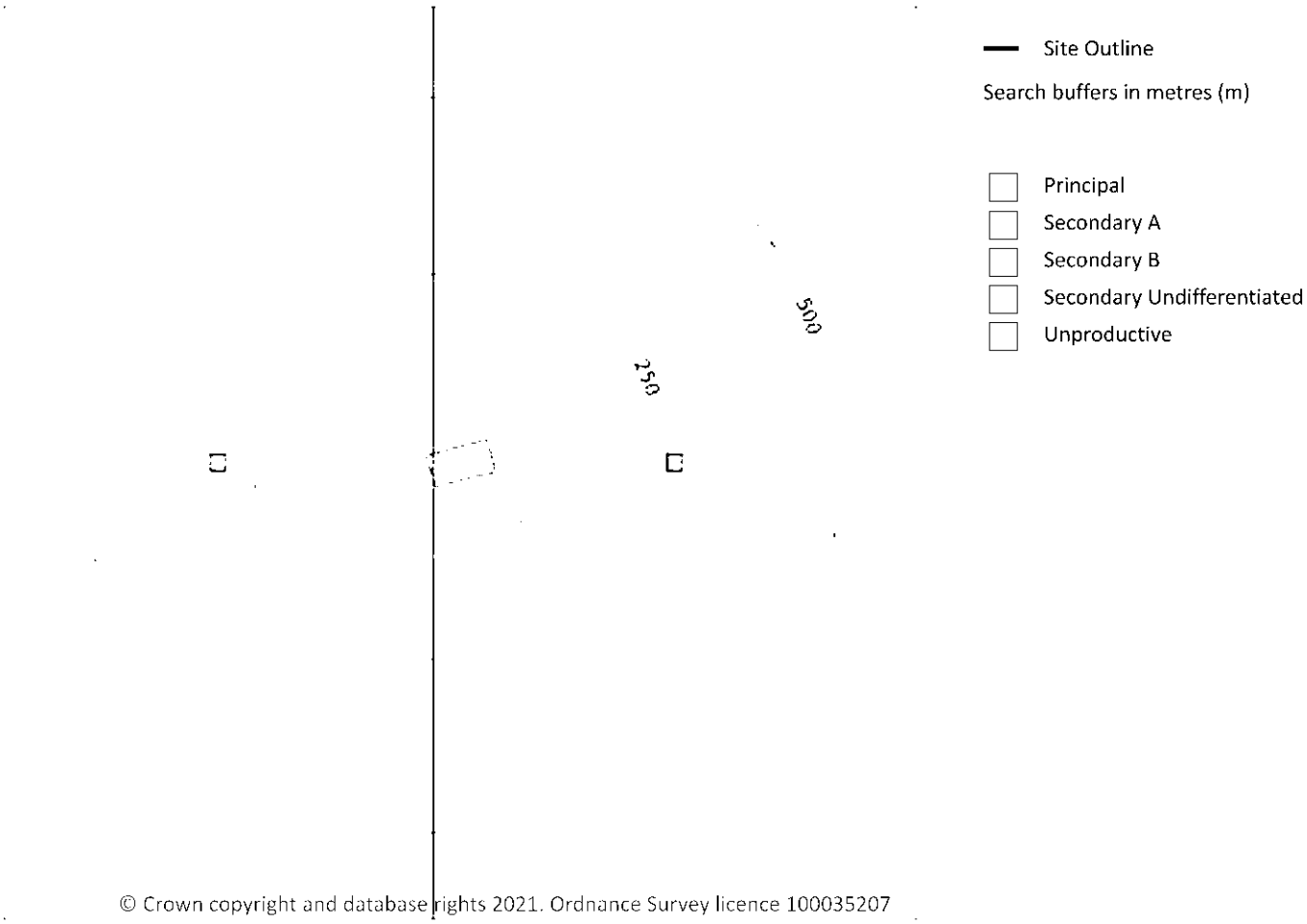
Records within 500m **2**

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 30**

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

Bedrock aquifer



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5.2 Bedrock aquifer

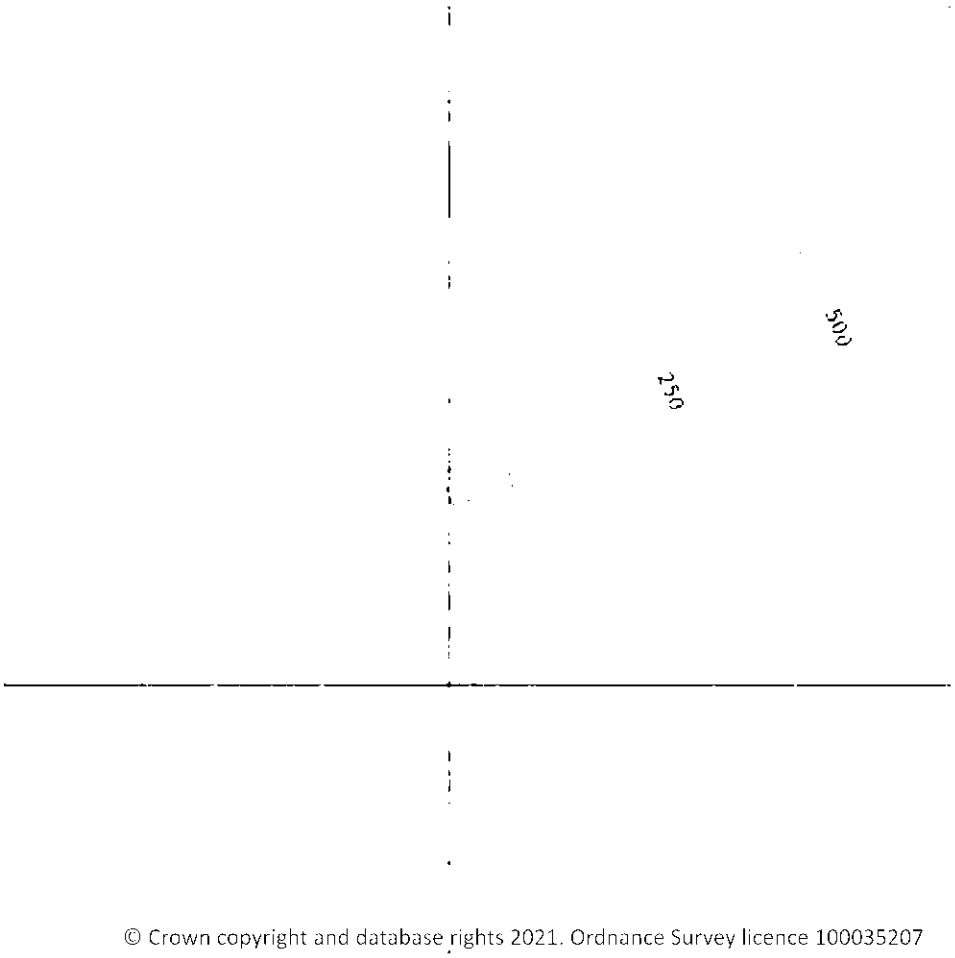
Records within 500m **2**

Aquifer status of groundwater held within bedrock geology.

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

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

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

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

Bedrock vulnerability

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

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

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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 32**

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	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**

5.4 Groundwater vulnerability- soluble rock risk

Records on site **0**

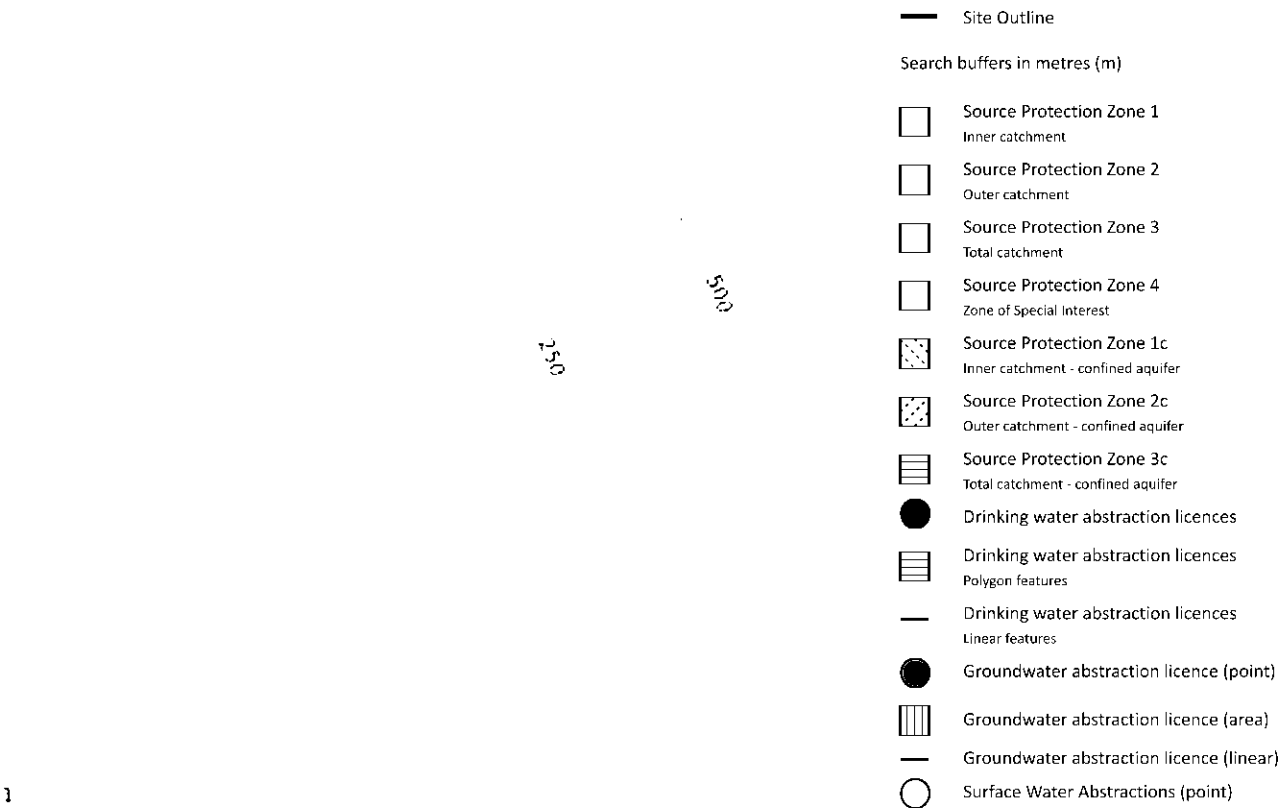
This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

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.

Abstractions and Source Protection Zones



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5.6 Groundwater abstractions

Records within 2000m **0**

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.

5.7 Surface water abstractions

Records within 2000m **22**

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 34**

ID	Location	Details

ID Location Details

ID	Location	Details

ID	Location	Details

ID Location Details

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.

5.9 Source Protection Zones

Records within 500m	**0**

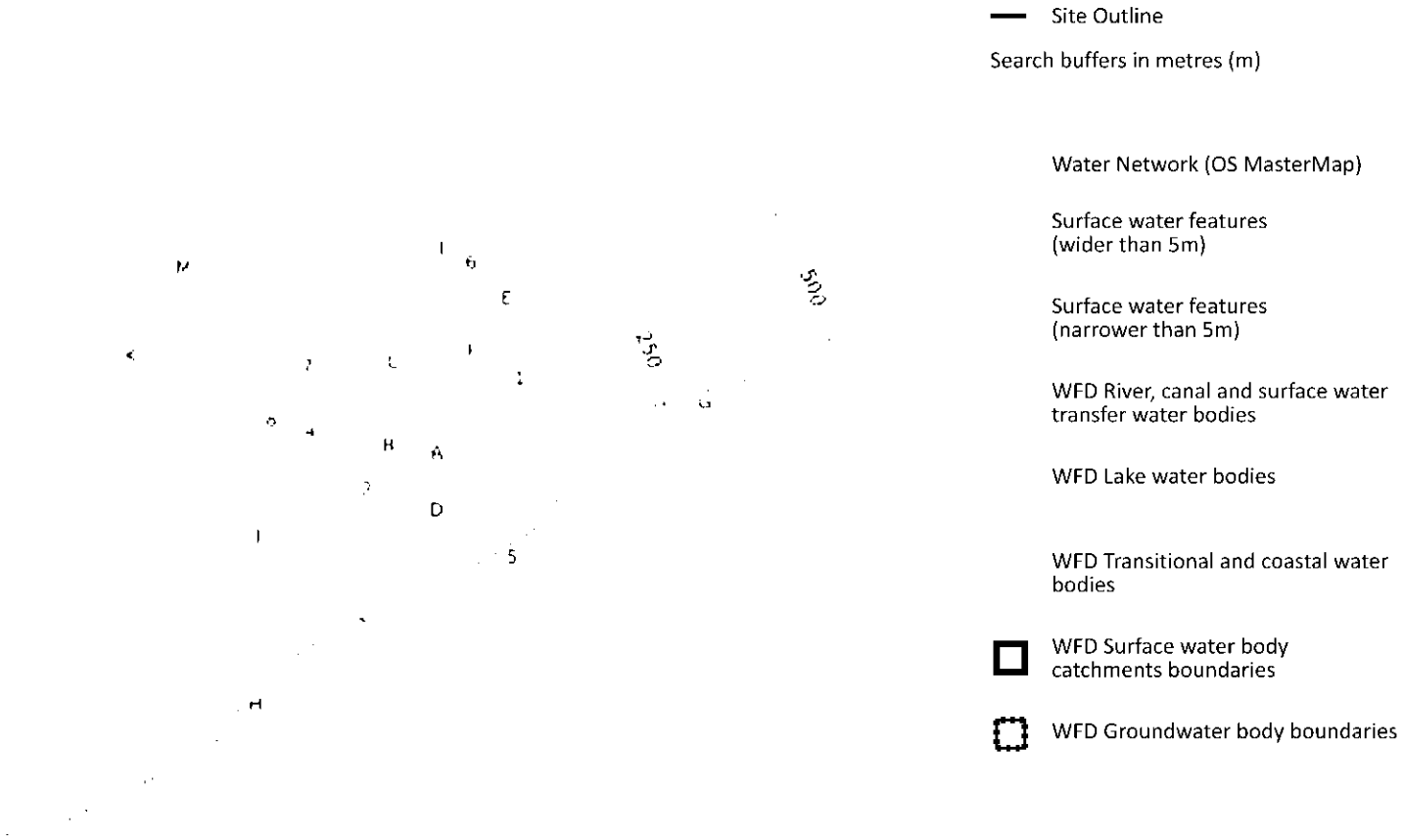
Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

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.

6 Hydrology



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6.1 Water Network (OS MasterMap)

Records within 250m **24**

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)**	-

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

ID	Location	Type of water feature	Ground level	Permanence	Name

6.2 Surface water features

Records within 250m **11**

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**

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 WB catchment**	**Glen**	**GB105031050720**	**Glens**	**Welland**

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**

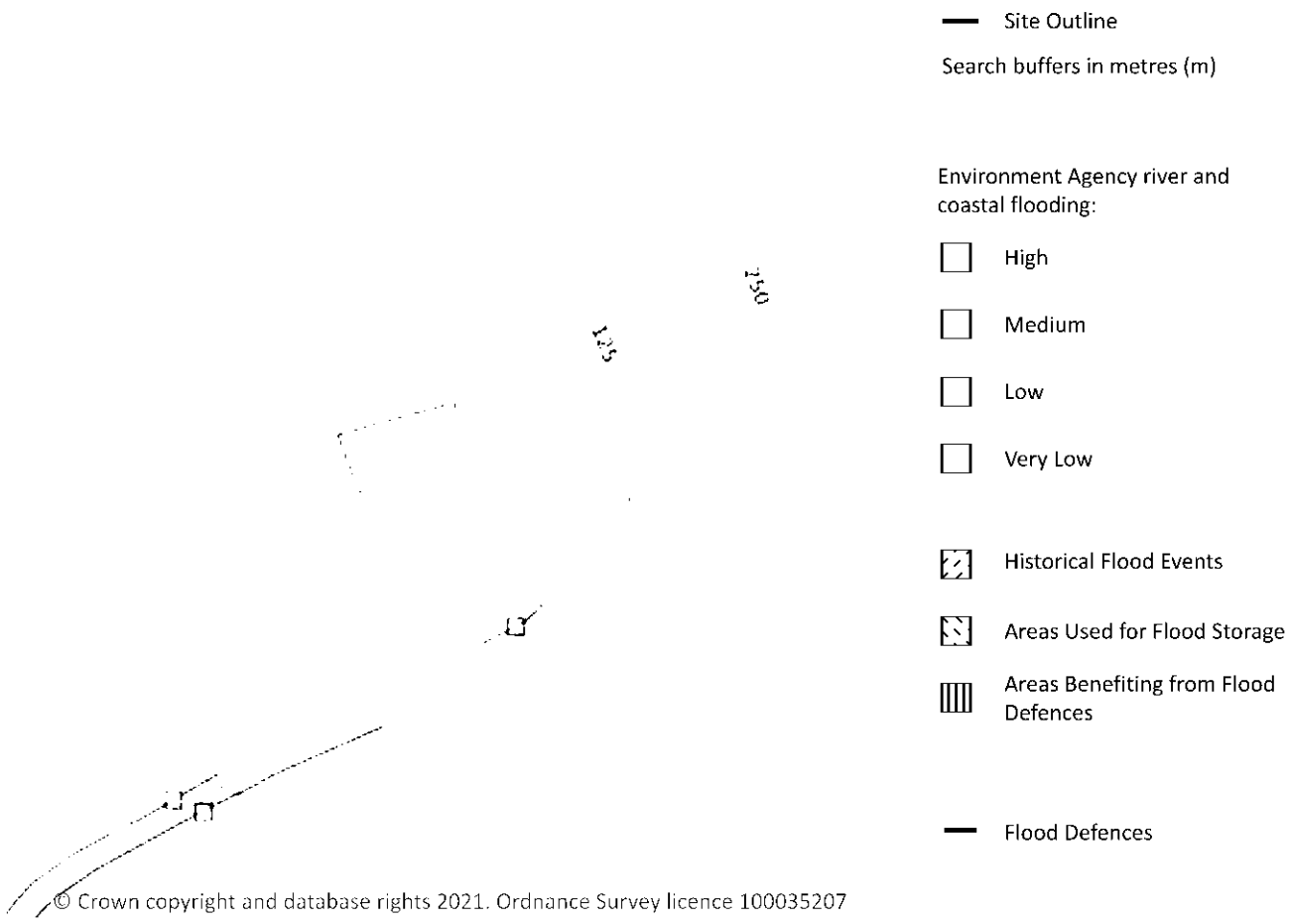
ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year

6.5 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.

7 River and coastal flooding



7.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m **3**

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance).

Features are displayed on the River and coastal flooding map on **page 46**

Distance	RoFRaS flood risk
On site	**Medium**

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.

7.3 Flood Defences

Records within 250m **3**

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.

Features are displayed on the River and coastal flooding map on **page 46**

ID	Location	Update

7.4 Areas Benefiting from Flood Defences

Records within 250m **0**

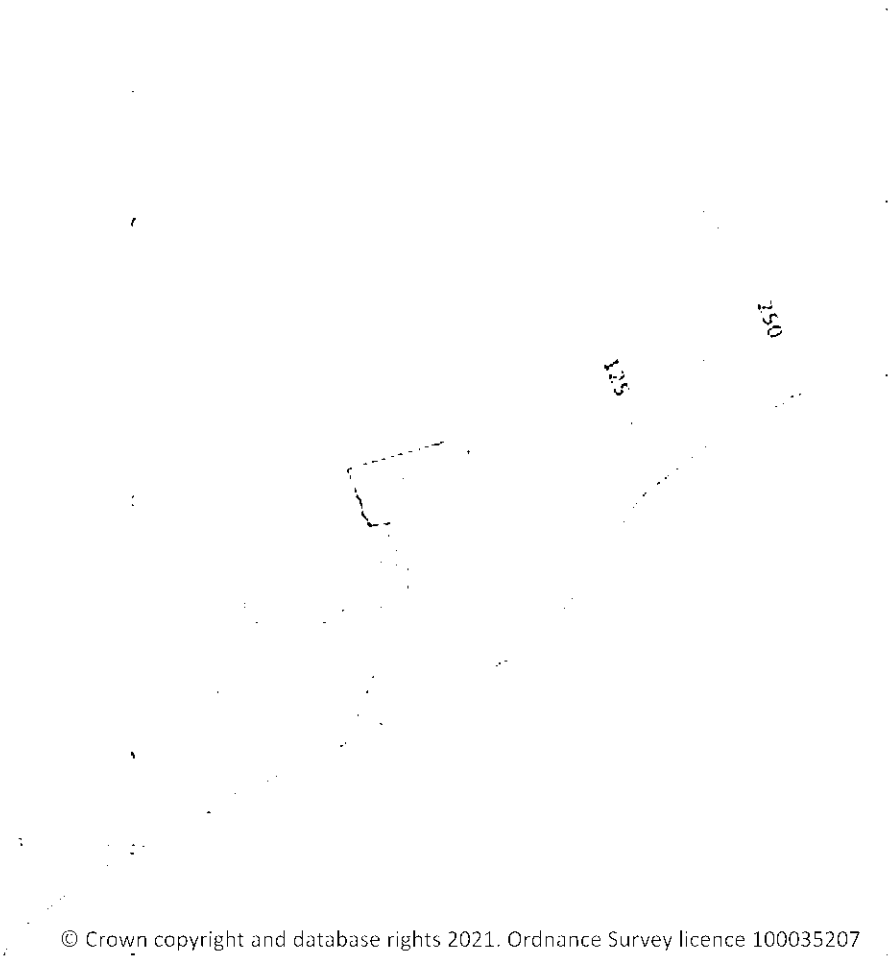
Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

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.

River and coastal flooding - Flood Zones



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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 46**

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

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 46**

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

8 Surface water flooding



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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	**Negligible**
Highest risk within 50m	**1 in 30 year, 0.1m - 0.3m**

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

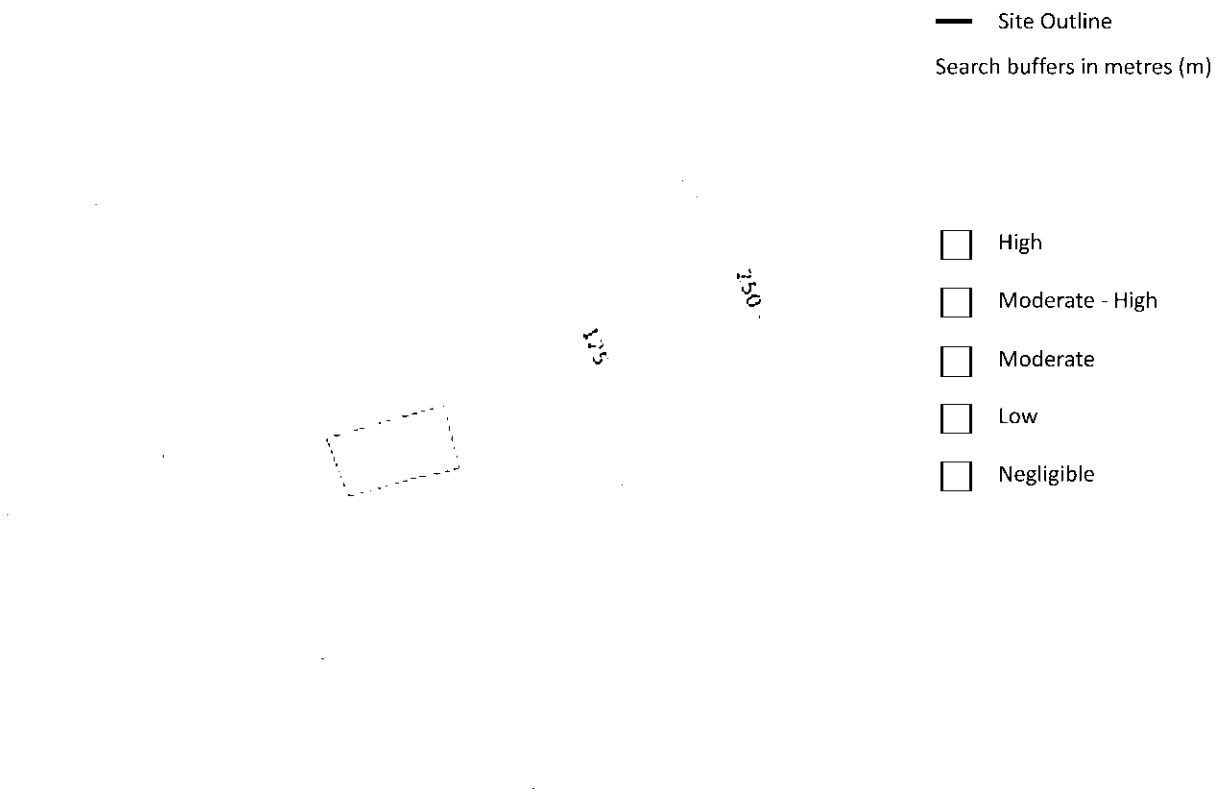
Features are displayed on the Surface water flooding map on **page 51**

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

9 Groundwater flooding



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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 53**

10 Environmental designations



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10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m **1**

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

Features are displayed on the Environmental designations map on **page 54**

ID	Location	Name	Data source

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.

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.

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.

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.

10.6 Local Nature Reserves (LNR)

Records within 2000m **0**

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

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.

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.

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.

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.

10.11 Green Belt

Records within 2000m **0**

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

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.

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.

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.

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).

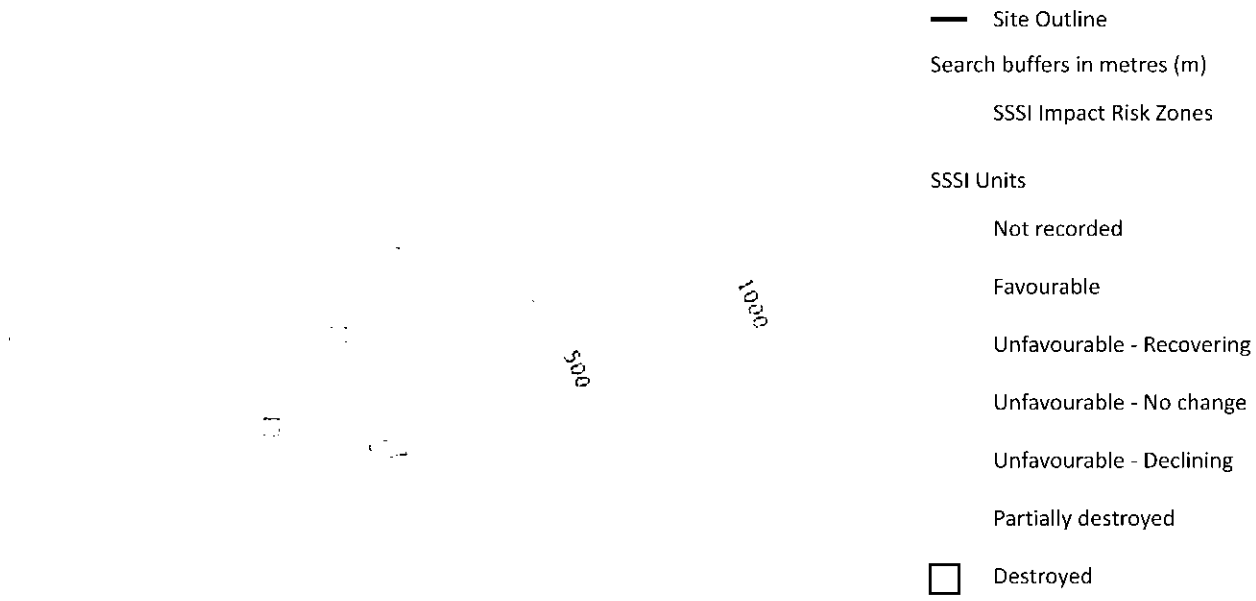
10.16 Nitrate Vulnerable Zones

Records within 2000m **5**

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	**Glen NVZ**	**Surface Water**	**S378**	**Existing**

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

Not recorded

Favourable

Unfavourable - Recovering

Unfavourable - No change

Unfavourable - Declining

Partially destroyed

Destroyed

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10.17 SSSI Impact Risk Zones

Records on site **2**

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 59**

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where net additional gross internal floorspace is > 1,000m² or footprint exceeds 0.2ha Residential - Residential development of 100 units or more. Rural residential - Any residential development of 50 or more houses outside existing settlements/urban areas. Air pollution - Any development that could cause AIR POLLUTION (incl: industrial/commercial processes, livestock & poultry units, slurry lagoons/manure stores). Combustion - All general combustion processes. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Mechanical and biological waste treatment, inert landfill, non-hazardous landfill, hazardous landfill, household civic amenity recycling facilities construction, demolition and excavation waste, other waste management Composting - Any composting proposal. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Discharges - Any discharge of water or liquid waste that is discharged to ground (ie to seep away) or to surface water, such as a beck or stream (NB this does not include discharges to mains sewer which are unlikely to pose a risk at this location). Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply
A	On site	Infrastructure - Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where net additional gross internal floorspace is > 1,000m² or footprint exceeds 0.2ha Residential - Residential development of 50 units or more. Rural residential - Any residential development of 10 or more houses outside existing settlements/urban areas. Air pollution - Any development that could cause AIR POLLUTION or DUST either in its construction or operation (incl: industrial/commercial processes, livestock & poultry units, slurry lagoons/manure stores). Combustion - All general combustion processes. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Mechanical and biological waste treatment, inert landfill, non-hazardous landfill, hazardous landfill, household civic amenity recycling facilities construction, demolition and excavation waste, other waste management Composting - Any composting proposal. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Discharges - Any discharge of water or liquid waste that is discharged to ground (ie to seep away) or to surface water, such as a beck or stream (NB this does not include discharges to mains sewer which are unlikely to pose a risk at this location). Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply

10.18 SSSI Units

Records within 2000m **1**

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

Features are displayed on the SSSI Impact Zones and Units map on **page 59**

ID:	A
Location:	151m N
SSSI name:	Surfleet Lows
Unit name:	Surfleet Lows
Broad habitat:	Neutral Grassland - Lowland
Condition:	Favourable
Reportable features:	

Feature name	Feature condition	Date of assessment

11 Visual and cultural designations



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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.

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.

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.

11.4 Listed Buildings

Records within 250m **1**

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

Features are displayed on the Visual and cultural designations map on **page 62**

ID	Location	Name	Grade	Reference Number	Listed date

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.

11.6 Scheduled Ancient Monuments

Records within 250m	**0**

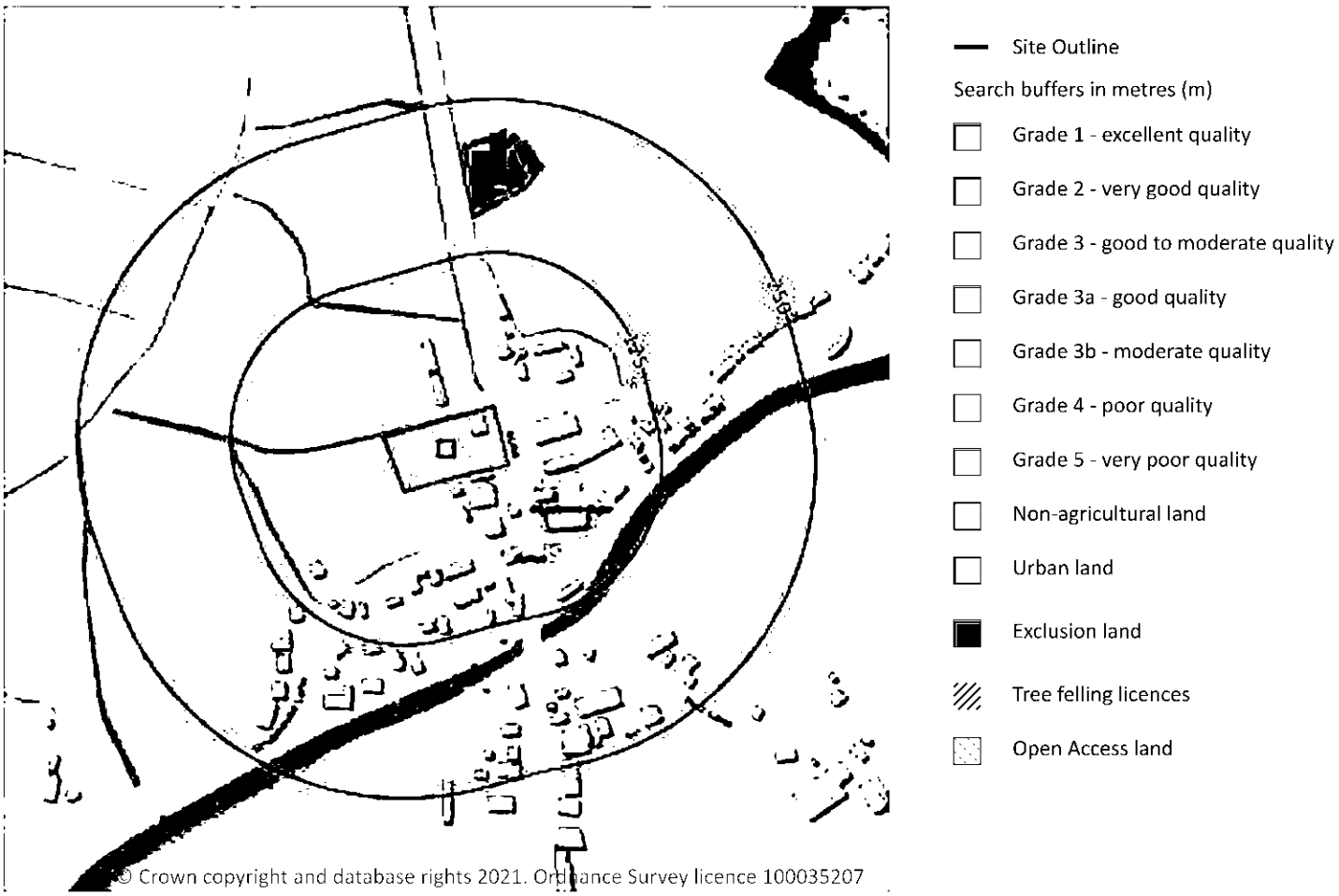
A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and 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.

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.

12 Agricultural designations



12.1 Agricultural Land Classification

Records within 250m **1**

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

Features are displayed on the Agricultural designations map on **page 65**

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.**

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.

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.

12.4 Environmental Stewardship Schemes

Records within 250m **1**

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.

Location	Reference	Scheme	Start Date	End date

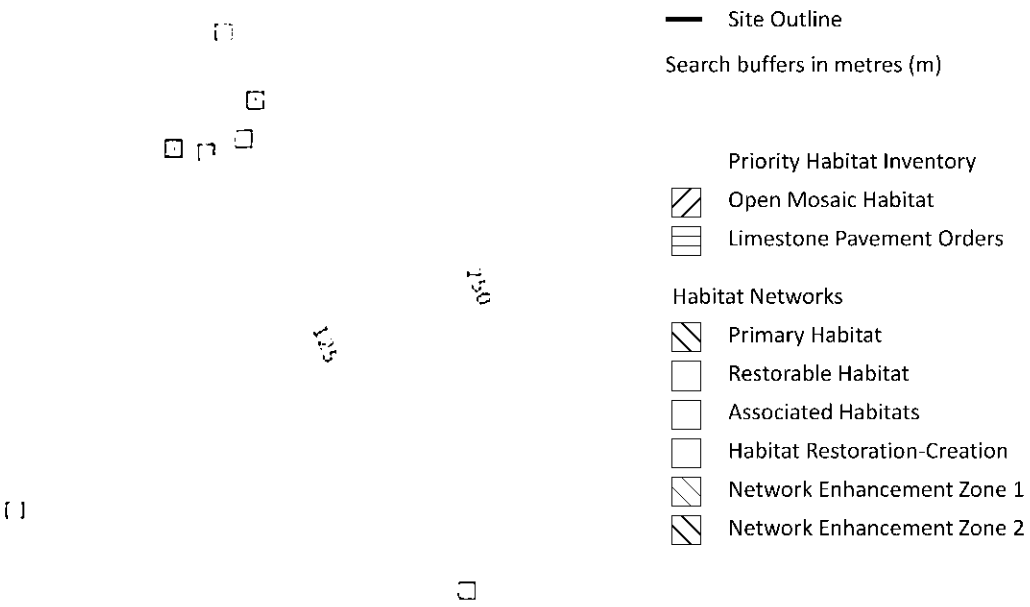
12.5 Countryside Stewardship Schemes

Records within 250m **1**

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

Location	Reference	Scheme	Start Date	End Date

13 Habitat designations



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13.1 Priority Habitat Inventory

Records within 250m **9**

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

Features are displayed on the Habitat designations map on **page 68**

ID	Location	Main Habitat	Other habitats

ID	Location	Main Habitat	Other habitats

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.

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.

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.

14 Geology 1:10,000 scale - Availability



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14.1 10k Availability

Records within 500m **1**

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

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

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

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.

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.

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.

Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m **0**

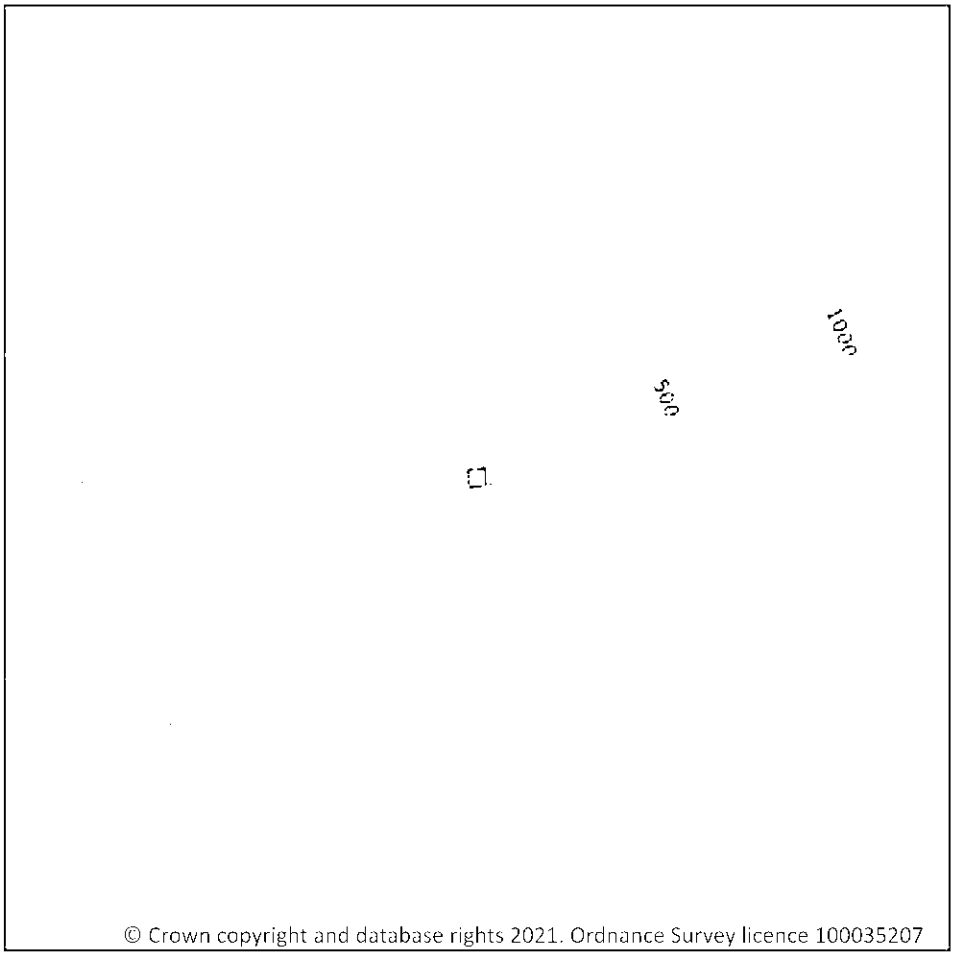
Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

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.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m **1**

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

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 75**

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

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.

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).

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

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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 77**

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

15.5 Superficial permeability (50k)

Records within 50m **2**

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

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

15.6 Landslip (50k)

Records within 500m **0**

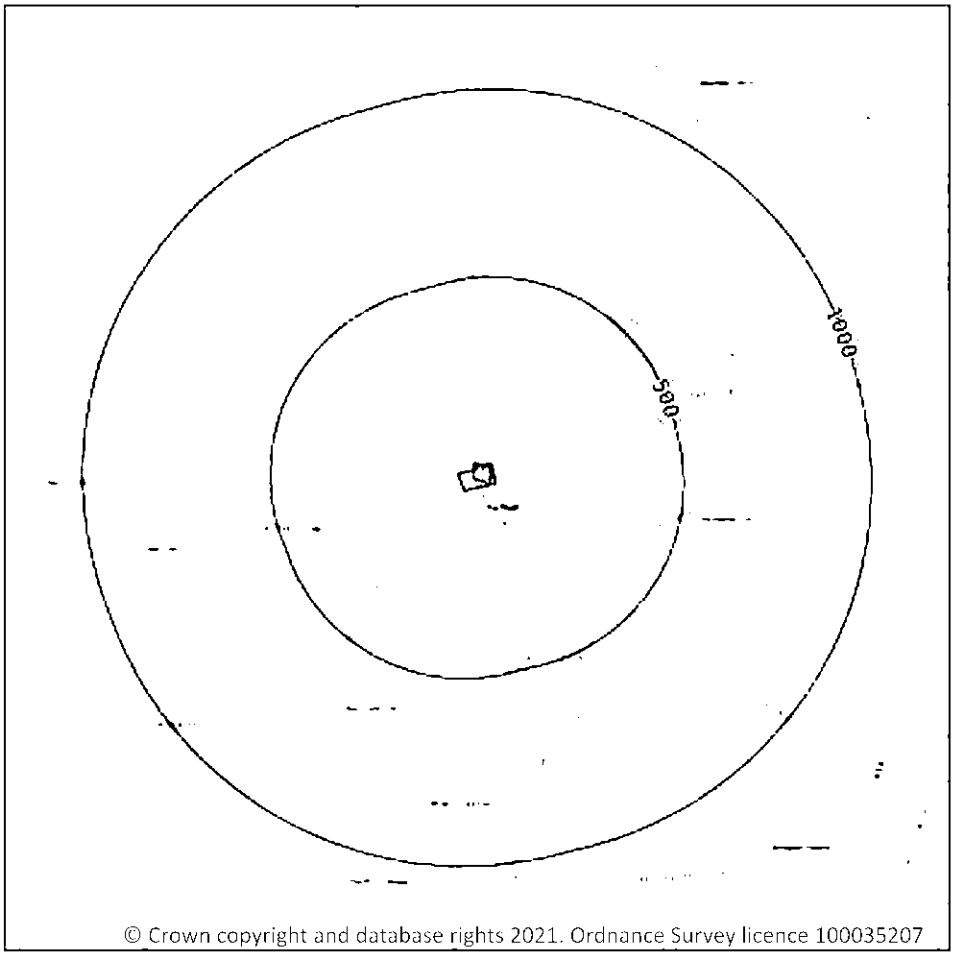
Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

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).

Geology 1:50,000 scale - Bedrock



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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 79**

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

15.9 Bedrock permeability (50k)

Records within 50m **2**

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

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

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.

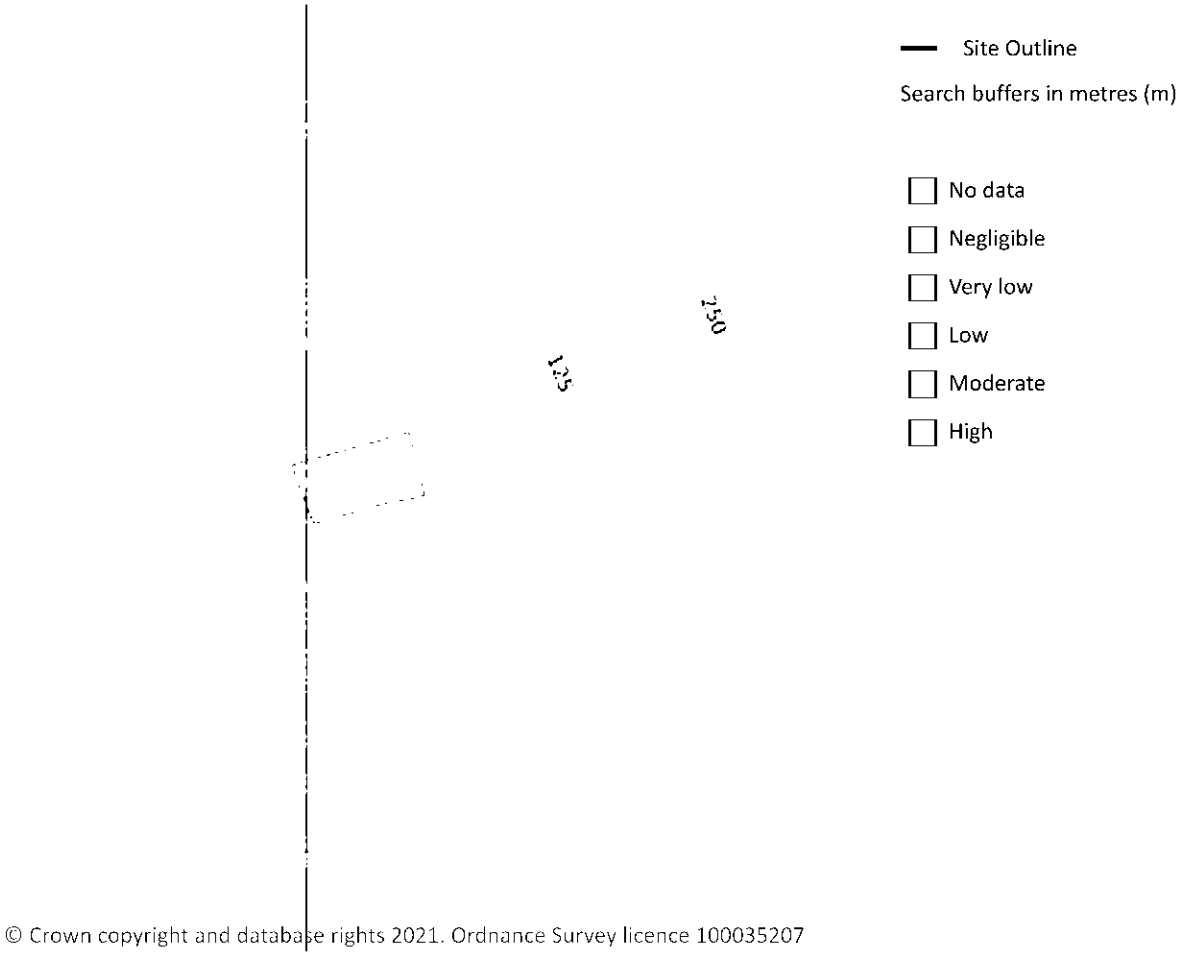
16 Boreholes

16.1 BGS Boreholes

Records within 250m	**0**

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

17 Natural ground subsidence - Shrink swell clays



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17.1 Shrink swell clays

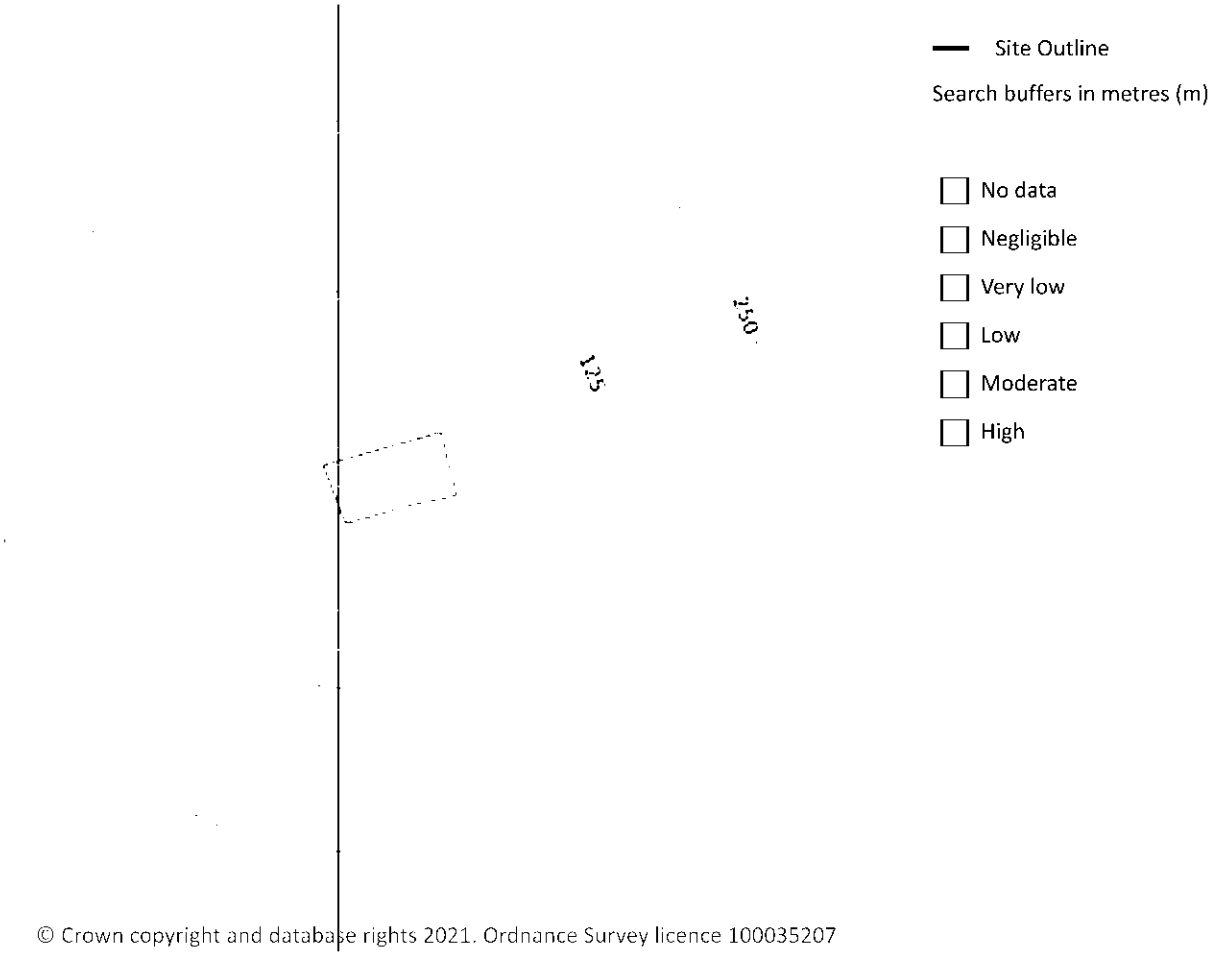
Records within 50m **1**

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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 82**

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

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 83**

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.**

Natural ground subsidence - Compressible deposits



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17.3 Compressible deposits

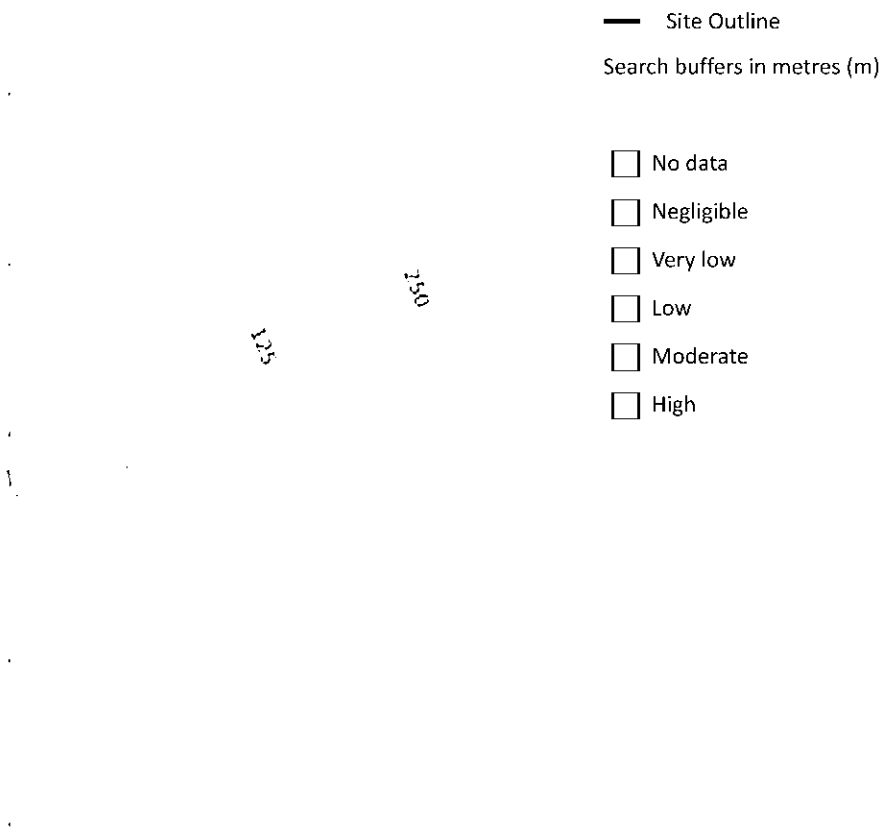
Records within 50m **1**

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 84**

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.**

Natural ground subsidence - Collapsible deposits



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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 85**

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

Natural ground subsidence - Landslides



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17.5 Landslides

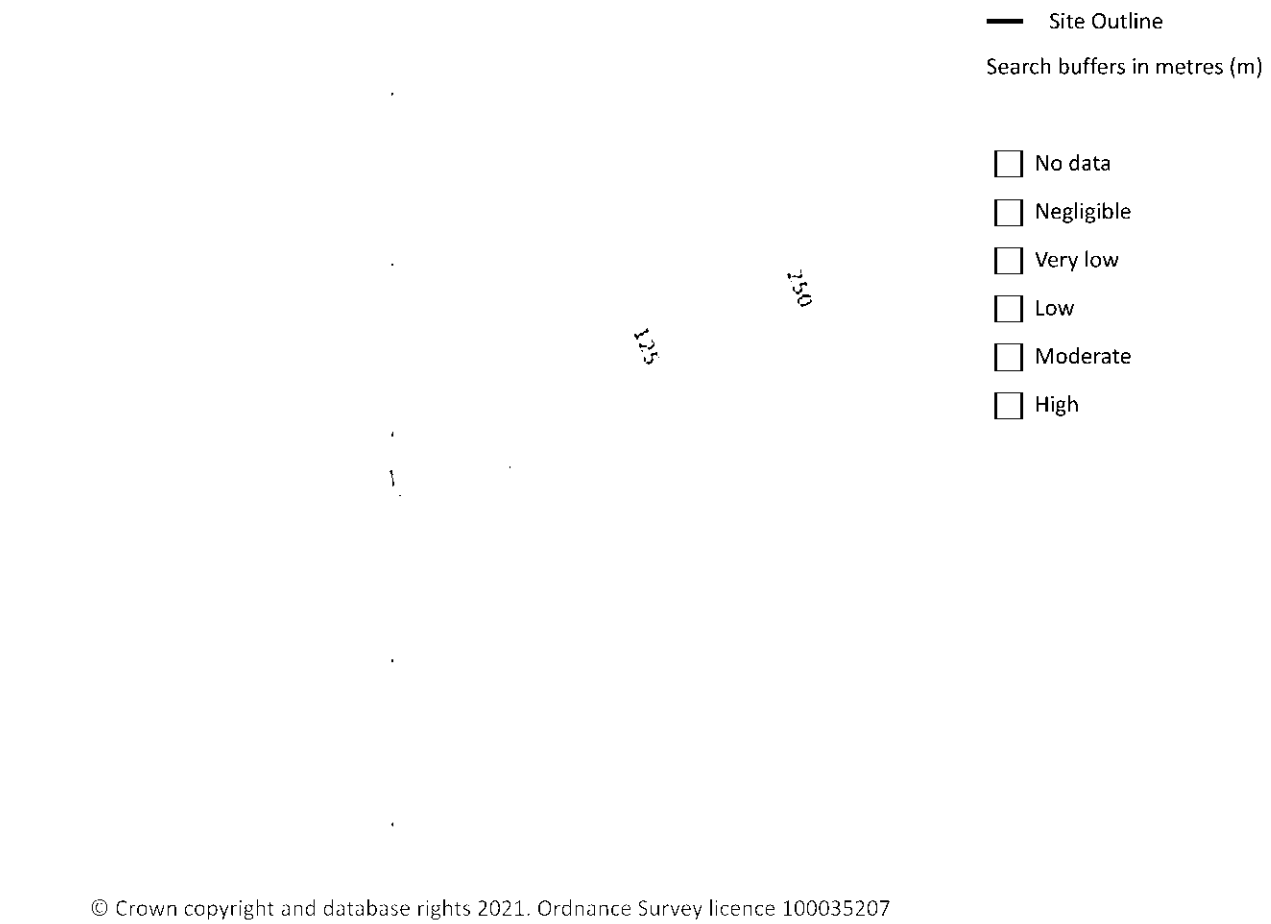
Records within 50m **1**

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 86**

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.**

Natural ground subsidence - Ground dissolution of soluble rocks



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17.6 Ground dissolution of soluble rocks

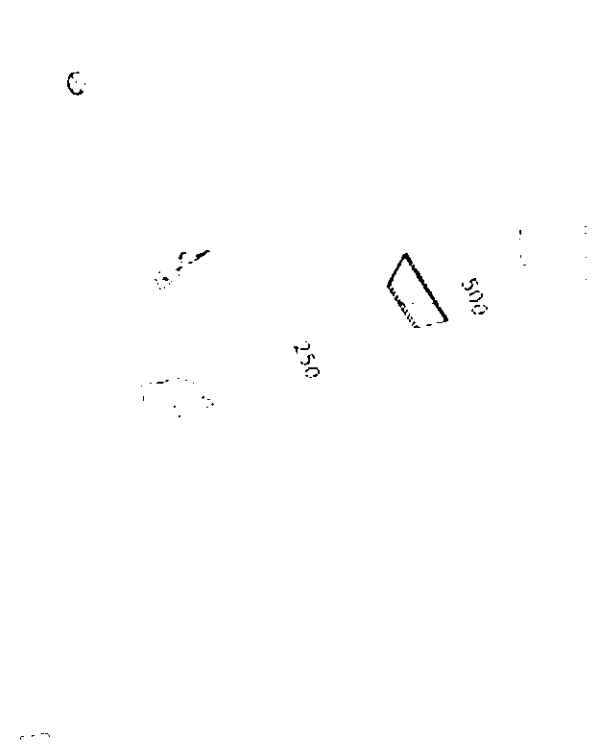
Records within 50m **1**

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 87**

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.**

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

Natural cavities (Area)

Natural cavities (Point)

BritPits

Surface ground workings

Underground workings

Historical Mineral Planning Areas

Mining Cavities

Non Coal Mining

Sporadic underground mining of restricted extent possible

Localised small scale underground mining possible

Small scale mining possible

Underground mining known or likely within or in close proximity

Underground mining known within or in very close proximity

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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.

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.

18.3 Surface ground workings

Records within 250m **2**

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 88**

ID	Location	Land Use	Year of mapping	Mapping scale

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.

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.

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).

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.

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.

18.9 Coal mining

Records on site	0

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

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.

18.11 Gypsum areas

Records on site	**0**

Generalised areas that may be affected by gypsum extraction.

18.12 Tin mining

Records on site	**0**

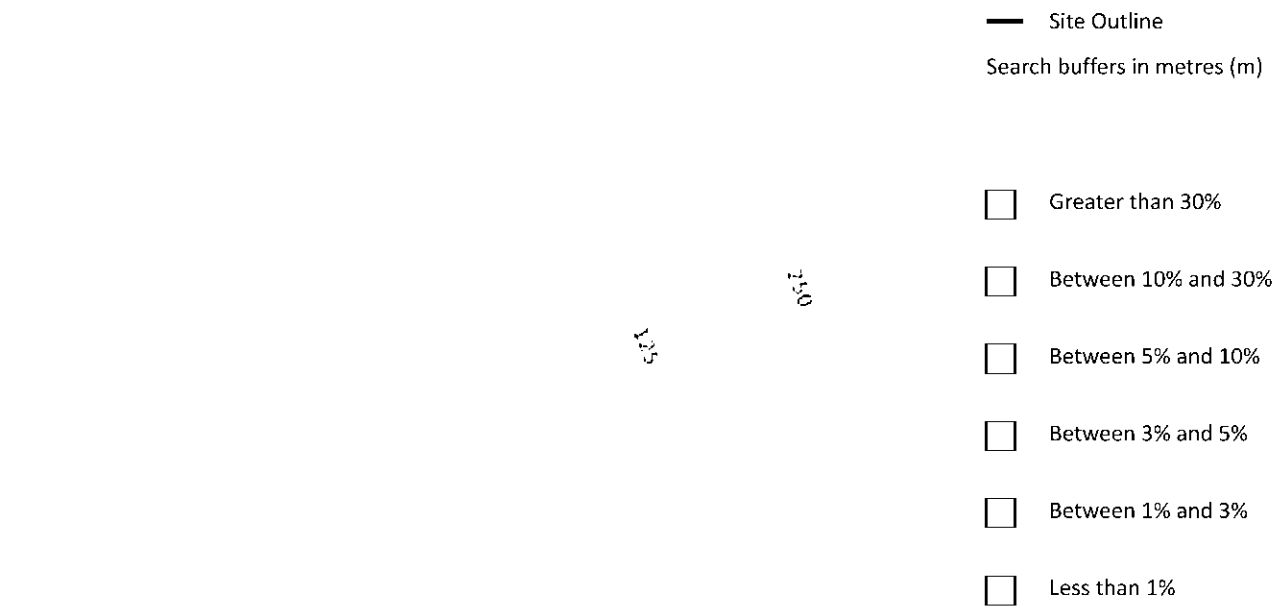
Generalised areas that may be affected by historical tin mining.

18.13 Clay mining

Records on site	**0**

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

19 Radon



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19.1 Radon

Records on site **1**

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

Features are displayed on the Radon map on **page 92**

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

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m **3**

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**
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**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**15 - 30 mg/kg**

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).

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.

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.

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.

21.3 Railway tunnels

Records within 250m **0**

Railway tunnels taken from contemporary Ordnance Survey mapping.

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.

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.

21.6 Historical railways

Records within 250m **0**

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

21.7 Railways

Records within 250m **0**

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

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.

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.

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.

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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