

# **LONDON BOROUGH OF HOUNSLOW SMALL SITES SMALL BUILDERS PROGRAMME**

## **GARAGE BLOCK AT OXFORD COURT, CHISWICK, W4 4DJ**

### **Geotechnical and Geo-Environmental Desk Study**

APRIL 2019



# Garage Block at Oxford Court, Chiswick, W4 4DJ

## Geotechnical and Geo-Environmental Desk Study

Author

Jay Hall



Checker

Andrew Watts



Approver

Jayne Donnelly



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## VERSION CONTROL

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# 1 INTRODUCTION

## 1.1 Terms of Reference

Arcadis Consulting (UK) Limited (Arcadis) has been commissioned by London Borough of Hounslow (LBH) 'the Client' to undertake a number of technical surveys for a garage block at Oxford Court, Chiswick, London ('the Site').

London Borough of Hounslow is aiming to divest a number of small sites, no fixed development plans are currently available for the Site. However, for the purpose of this assessment a residential end-use has been utilised. The objectives of this review are to:

- Review geo-environmental information regarding the Site and its surrounding area;
- Provide outline information on potential geo-environmental and geotechnical constraints which may impact on the land value or redevelopment potential for the site; and
- Identify potential development constraints due to geotechnical and geo-environmental conditions on Site.

The site location is shown in Figure 1 below (area within red line boundary).



Figure 1: Site Location Plan (red line boundary) provided by LBH

## 1.2 Sources of Information

As part of this desk study report various sources of information have been used and are detailed below:

- The on-line British Geological Survey (BGS) Geology of Britain Map Viewer (Ref. 1);
- Historical borehole records available through BGS website (above) (Ref.1);
- Historical Ordnance Survey maps obtained from Groundsure (included in Appendix A);
- Environmental Information from Groundsure (Appendix B);
- Current publicly available aerial images and maps from Google maps (Ref. 2);
- Zetica Regional Unexploded Ordnance Map & Pre-Desk Study Assessment report (contained within the Arcadis UXO Assessment report for this site), 10030793-ARC-19-XX-RP-YY-00020-01-UXO Report; and
- Department for Environment, Food and Rural Affairs "Magic" website (Ref. 7).

## 1.3 Limitations and Expectations

This report has been prepared for the Client in accordance with the terms and conditions of appointment. Arcadis cannot accept any responsibility for any use of or reliance on the contents of this report by any third party. The copyright of this document, including the electronic format shall remain the property of Arcadis.

This report has been compiled from a number of sources, which Arcadis believes to be trustworthy. However, Arcadis is unable to guarantee the accuracy of information provided by others. The report is based on information available at the time. Consequently, there is a potential for further information to become available, which may change this report's conclusion and for which Arcadis cannot be responsible.

## 2 SITE SETTING AND HISTORY

### 2.1 Site Location

Table 2.1: Details relating to Site Location

Site Location / Address	Oxford Court, Chiswick, London, W4 4DJ
National Grid Reference	519684,178325
Approximate Site Area	The site is roughly rectangular in shape and covers an area of approximately 0.1428 hectares
Description of Site	<p>The site comprises garages and car parking for the adjacent Oxford Court apartment buildings. It consists of an area of parking spaces on concrete hardstanding flanked by verges to the north and south, both are planted with grass and a few mature trees. A metal barrier separates the open air parking spaces from an area of 23 parking garages arranged in two blocks within the eastern section of the site. This area is entirely covered by concrete hardstanding with brick drainage channels leading to a central grate drain.</p> <p>To the south of the garages, the site also includes an alleyway and storage units along the southern border of the site. This alleyway opens into a courtyard which contains the metal waste and recycling bins for the apartment complex and is entirely covered by concrete hardstanding.</p> <p>There is a small brick building located in the northwest corner of the Site which is understood to house an electrical substation. Vehicle and pedestrian access is possible from Oxford Road North to the west.</p> <p>Site photographs are included in Appendix C.</p>
Topography	The topography of the Site is generally flat at approximately 10 m Above Ordnance Datum (AOD). The immediate surrounding area is also generally flat.
Surrounding Area	<p>The Site lies within a largely residential area with apartment buildings and houses with gardens in all directions. High-rise office buildings are located approximately 100m to the north and east while some light commercial activities are present approximately 100m to the south.</p> <p>Gunnarsbury train station is located 90m east and a vehicle repair garage is present approximately 90m southwest.</p>

### 2.2 Site History

A review of the available historical Ordnance Survey maps (Appendix A) has been undertaken to assess the historical development of the Site and surrounding areas.

It is not the intention of this report to provide a full history, but to identify those past uses on and within the vicinity of the Site that could have resulted in contamination of the soils and/or waters. Significant changes to the land use of the Site and surrounding areas are summarised in Table 2.2 below.

Table 2.2 History of Site and Surrounding Area

Date	Historical Development (Site and Surrounding Area)
1867	The site is undeveloped and is occupied by woodland. A small footpath runs through the south and western portions of the site.

Date	Historical Development (Site and Surrounding Area)
	The site is bordered by woodland on all sides. Residential buildings are located approximately 70m north along the south side of High Road
1873	Brentford Road railway station, along with the associated railway lines have been constructed approximately 50m east of site.
1893	<p>The woodland is no longer recorded. The western and central part of the site is occupied by a residential dwelling and garden with an outbuilding located centrally onsite.</p> <p>The surrounding area is largely residential with gardens. Brentford Road Station is renamed Gunnersbury Station approximately 50m east of site and a tramway has been added along High Road 100m north.</p>
1935	<p>An unidentified building is present and is adjacent to the north and east.</p> <p>Several works are indicated between 200-350m northeast. These include factories producing wadding, electric switches, sterilising apparatus and water softeners. Two Engineering works are also recorded.</p>
1938 - 1960	The tramway is no longer indicated along High Road (now Chiswick High Road). More works and factories are indicated on land between 150 and 500m northwest and north of site. The nature of these are not known.
1960 - 1965	The previously unidentified building bordering site is now indicated as a factory. A smaller unidentified works is located 17m north of the site boundary.
1971 - 1974	<p>The former residential building located within the western section of the site, is no longer recorded and is presumed to have been demolished. The site is now recorded in its current configuration, with 2 blocks of garage buildings for the newly built apartments immediately south of the site and an electricity substation is recorded in the west part of site.</p> <p>Several other electrical substations are also indicated within 200m of the site including an electrical cooling station 150m south.</p>
1985 - 1988	The factory next to the site is demolished.
1987 - 1991	The former factory adjacent to the site is redeveloped into residential apartment blocks.
2002	One of the former factory complexes approximately 250m northeast of site is demolished and replaced by Chiswick Park

### 2.2.1 Summary of Site History

The site was initially undeveloped woodland which was later developed as an unspecified building (likely to be residential housing) circa 1893 which were later cleared and redeveloped into the current configuration as garages and car parking associated with the adjacent Oxford Court complex between 1960 and 1974. As a result, there is potential for Made Ground to be present onsite. An electricity substation has also been present on site since its redevelopment between 1960 and 1974, and therefore could be a viable source of PCB contamination. Furthermore, the sites usage as garages may be a potential source of hydrocarbon, lubricants or solvents should any spills or leakages have occurred.

Limited offsite sources have been identified within the historical mapping review. A factory was present adjacent to the north and east between circa 1935 and 1985, and a works was recorded 17m north of the site. There is little information available about the historical nature of the factory and the works, aside from



the factory being labelled as “soft drinks” between 1971 – 1974. There is potential for contamination to be present from the activities associated with the works and the factory, and the surrounding re-development and urbanisation may also be sources of Made Ground deposits.

## **2.3 Unexploded Ordnance**

An Unexploded Ordnance assessment has been undertaken for the Site, the findings of which are detailed in the Arcadis report; 10030793-ARC-19-XX-RP-YY-0020-01-UXO Report.

The Preliminary Desk Study Assessment (PDSA) from Zetica referenced within the Arcadis Report, recommends that a detailed desk study needs to be commissioned to assess, and potentially zone, the UXO hazard level on the Site. The detailed desk study provides an in-depth review of a site’s history with respect to UXO, and each hazard zone will detail the potential type/depth of UXO which could be encountered. This will ultimately help inform proposed construction techniques and for the selection of appropriate mitigation measures during intrusive works.

### 3 PHYSICAL AND ENVIRONMENTAL SETTING

#### 3.1 Published Geology, Hydrogeology and Hydrology

With reference to the sources of information detailed in section 1.2, the following information has been obtained.

Table 3.1 Information Regarding Geology, Hydrogeology and Hydrology

Geology / Aquifer Status	<p>Made Ground is likely to be present and is associated with the current and historic site development.</p> <p>Superficial Deposits: Kempton Park Gravel Member - Sand and Gravel, which is designated as a Secondary A aquifer</p> <p>Solid Geology: London Clay Formation - Clay and Silt, which is designated as Unproductive Strata.</p>
BGS Boreholes (within 250m of the site)	<p>There are ten BGS boreholes within approximately 250m of the site. The nearest borehole (TQ17NE52 dated 1967) was identified approximately 35m north of the Site boundary and is summarised below.</p> <p>The borehole record indicates Made Ground to a depth of 1.00m bgl, followed by sandy clay to a depth of 2.25m, underlain by gravel and sand of the Kempton Park Gravel Member to a depth of 4.75m bgl. The basal unit encountered was stiff London Clay to at least 10.50m bgl.</p> <p>Groundwater strikes were not encountered in this borehole but were encountered at depths of between 5.0 and 5.5m within the Kempton Park Gravel Member in adjacent boreholes.</p>
Within a Source Protection Zone	Not recorded within 500m of the Site boundary.
Licensed Groundwater Abstraction Points	There is one active licenced water abstraction present within 1km of the site. It is located 476m north and used for top-up water and spray irrigation. The target strata is not supplied.
Surface Water Feature	No significant surface water features are recorded within 250 m of the site. The River Thames is located approximately 580m southwest of the site (at its nearest point).
Likely Groundwater Flow Direction	<p>Significant groundwater flow within the London Clay bedrock is not expected to be present. The Kempton Park Gravel Member is designated as a Secondary A Aquifer – Permeable Layers, and is likely to contain groundwater at shallow depths within granular material (sands and gravels).</p> <p>Based on the local topography, groundwater flow within the Kempton Park Gravel Member is expected to flow south towards the River Thames. Perched pockets of groundwater may also be present within or at the base of the Made Ground.</p>

#### 3.2 Environmental Public Registers

Public register information from the Groundsure Report (Appendix B) for the Site and the surrounding area (within 250m radius) has been summarised in Table 3.2 below.

## Geotechnical and Geo-Environmental Desk Study

Table 3.2. Environmental Data

Data type	Description	Distance (m) and Direction
Radon	The site is in a lower probability radon area as less than 1% of properties are above the Action Level.	N/A
Discharge Consents	None recorded within a 250m radius of the site.	N/A
Pollution Incident to controlled waters	No incidents are recorded within 250m of the site.	N/A
Landfill sites (current and historical)	No current or historic landfill sites are recorded within 250m of the site.	N/A
Potentially Infilled Land	Thirty-three areas of potentially infilled land are recorded within 250m of the site, dating from 1893.-1974 These relate to railway cuttings.	48m – 248m surrounding the Site
Local Authority pollution prevention and controls	Dry cleaners (current permit)	99m NE
Contemporary Trade Directory	Unspecified works	17m N 101m NE 177m NW 228m NW 240m NW 246m N
	Horticultural equipment	52m SW
	Vehicle retail, repair, testing and servicing	111m S 181m NW
	Electrical Substations A further entry is located onsite – but is not included within the Groundsure Report.	119m NE 126m SE 129m S 151m N 162m N 196m SE 206m NW 212m NE 242m NW
	Rail Infrastructure – Gunnersbury Station	144m NE
	Pharmaceuticals/Medical Supplies	167m NE
Fuel Station Entries	Chiswick High Road (Obsolete)	61m E

Data type	Description	Distance (m) and Direction
	Great West Road (Esso)	344m W

The electrical substation onsite, former factory building adjacent to the northeast, current unspecified works 17m north, and the former petrol station recorded 61m east could have impacted the site due to their close proximity, if a viable contamination pathway is present. The site has also been previously developed, with the former buildings being demolished, therefore Made Ground is anticipated to be present which could contain contaminants.

The majority of the above Contemporary Trade Directory Entries are unlikely to have impacted upon the site due to their relative distances from the site.

## 4 PRELIMINARY CONCEPTUAL MODEL

Geo-environmental assessments are required in accordance with current regulatory guidance (CIRIA C552 - Ref. 4 and CLR11 – Ref. 5) to consider the significance of potential contamination in terms of plausible source-pathway-receptor pollutant linkages. As part of this process, it is necessary to develop a conceptual model of these potential pollutant linkages by identifying the potential contamination sources, sensitive receptors and any potential exposure pathways. A risk assessment is then undertaken to determine the likelihood that these potential linkages are complete.

### 4.1 Potential Contaminant Sources

Based on the information obtained from the historical and environmental research, the following potential sources of contamination have been identified on site and within the surrounding area (Table 4.1).

It should be noted that it is considered unlikely that all these substances would be present at significant concentrations within the site.

Table 4.1: Potential sources of contamination on site

Source	Potential Contaminants
<b>On Site</b>	
Made Ground is likely to be present on the site from previous development and demolition.	Asbestos, metals, Polycyclic Aromatic Hydrocarbons (PAH), hydrocarbons, ground gas
London Clay	Sulphates
Electrical Substation	Polychlorinated Biphenyls (PCBs)
Parking/Garages	Hydrocarbons, lubricants and solvents from potential spills/leaks from vehicle maintenance activities.
<b>Off Site</b>	
Unidentified factory and works	Metals, Polycyclic Aromatic Hydrocarbons (PAH), Hydrocarbons.

### 4.2 Potential Receptors

The proposed form of the development is currently unknown, however for the purpose of this assessment a residential end-use is assumed. As a precautionary approach the potential receptors detailed below take into consideration the proposed future land use as residential properties with private gardens and landscaped areas. It is considered possible that any potential contamination within the soils may be disturbed during the construction phase, or during gardening or landscaping undertaken by any future site users.

#### 4.2.1 Human Health

- Future site users (residents, visitors, maintenance workers and contractors)

Contamination risks to construction workers are not appraised by chronic (long term) exposure human health risk assessments. There are no appropriate published criteria applicable to the assessment of potential risks to construction workers. The potential risks should be addressed by a site-specific construction workers risk assessment and implementation of appropriate health and safety measures, to adequately mitigate any potential risks. All works should be conducted in accordance with the CDM regulations 2015 (Ref. 6) or any other relevant guidance. Construction workers are not considered further as human health receptors.

## 4.2.2 Controlled Waters

- Secondary A Aquifer within superficial deposits.

## 4.2.3 Buildings

- Underground/ structures/services (water pipes, concrete, foundations).
- Proposed buildings.

## 4.3 Potential Pathways

Potential pathways are the routes that link the receptor to the contamination. The potential pathways for this site are summarised in the table below.

Table 4.2: Potential Contaminative Pathways

Receptor	Description
Human health (future site users/residentials, visitors, maintenance workers and contractors)	<p>Accidental ingestion of contaminants within soil, water and dust.</p> <p>Inhalation of dust, vapours and ground gases</p> <p>Dermal contact with contaminants within soil, water and dust.</p> <p>Ingestion of contaminated vegetables and soil attached to vegetables.</p>
Controlled Waters (Secondary A Aquifer)	<p>Leaching of potential contaminants in soil or Made Ground into groundwater.</p> <p>Vertical migration of contaminants through the unsaturated zone into groundwater beneath the site.</p>
Buildings	<p>Direct contact of building services or foundations with contaminants in the soil and Made Ground.</p> <p>Gas and / or vapour accumulation in confined and poorly ventilated spaces.</p> <p>Sulphate attack on buried concrete (direct contact).</p>

## 4.4 Preliminary Qualitative Risk Assessment

Potential sources of on-site contamination are considered to be associated with the on-site electrical substation. Development and demolition has been undertaken at the site, therefore there is the potential for Made Ground to be present which could contain contaminants. Furthermore, potential spillages/leaks of hydrocarbons could have occurred given the site's current usage as parking garages. Off-site potential sources of contamination are primarily associated with adjacent historical factory building and unspecified works to the north which are a potential source of contamination that could have migrated beneath the site.

The degree of risk will need to be assessed prior to redevelopment, as such ground investigation and assessment is recommended. From experience, the potential for the need to undertake remediation should be limited given that the Site has not previously been extensively used for industrial or commercial use. However, thus the need for remediation, cannot be ruled out. If the Site is found to be contaminated, mitigation measures will be required to break the source-pathway-receptor linkages.

The following potential environmental conditions have been identified that will warrant further consideration and/or implementation:

- Excavation and replacement of upper part of Made Ground to support topsoil and/ or foundations;
- Asbestos protection measures during disturbance of Made Ground (depending on the findings of the ground investigation);
- Provision of gas protection measures (depending on the findings of the ground investigation);

- Provision of contaminant resistant water supply pipes (depending on the findings of the ground investigation);
- Provision of clean cover system and a suitable growing medium in garden areas and public open space;
- Potential further investigation and consultancy advice to support planning obligations.

## **5 Waste Management and Potential Development Constraints**

### **5.1 Waste Management**

Consideration should be given to the disposal of waste soils/Made Ground which are likely to be generated by the development. Chemical testing of soils/Made Ground is likely to be required to inform a waste classification assessment and determine the potential disposal options. It should be noted that the waste contractor may require testing of the actual material to be disposal prior to acceptance, and there is no obligation on a landfill operator to accept the waste.

Soils suspected of being contaminated should be segregated from soils which appear to be 'clean' and should not be used elsewhere on the site as fill or landscaping unless they can be proven to be fit for purpose.

Imported topsoil for gardens and landscaped areas should be clean, fit for purpose and validated as necessary.

### **5.2 Potential Development Constraints**

Below ground services are understood to be present along the western boundary of the site associated with the electrical substation which may need to be retained, it is unknown whether additional underground services are also present. It is understood that the existing hardstanding and buildings will need to be demolished which could expose workers to contaminants in the underlying Made Ground. Asbestos may be present given the age of the garage buildings and an asbestos survey should be considered prior to any demolition works.



## 6 Geotechnical Considerations

### 6.1 General Comments

Ground conditions anticipated at the site are likely to comprise Made Ground as the site has previously been developed. In the nearby historical borehole log (Ref. 1) (approximately 35m north), Made Ground is encountered at shallow depths (to 1m bgl), followed by a sandy clay layer to a depth of 2.25m, underlain by gravel and sand of the Kempton Park Gravel Member to a depth of 4.75m bgl, followed by stiff London Clay bedrock to at least 10.50m bgl.

The National Ground Subsidence rating (provided by Groundsure) is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS). The GeoSure data is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale. The maximum hazard rating of natural subsidence within the study site boundary is classified as “moderate” due to shrink-swell clays.

Based upon the information provided and reviewed as part of this report the following potential geotechnical constraints should be considered.

- **Made Ground** - The nature and thickness of the Made Ground (if present) is unknown. The likely engineering performance of the Made Ground is not known.
- **Ground Gas** - Future development may need to be designed to mitigate against soils borne ground gas.
- **Shrinkable Clays** – Consideration will need to be given to the presence of existing trees that are removed, retained or the planting of future trees when considering the depths of the foundations. In addition, the risks associated with the London Clay include high plasticity clay which are subject to shrinkage and swelling, sulphate attack and should be considered during the investigation / design.
- **Underground Structures** - Below ground structures and services associated with previous structures may be present and will require removal prior to redevelopment. Ground disturbance caused by the removal of historical structures may increase the thickness of Made Ground already present beneath the Site locally.
- **Shallow Groundwater** - Should shallow groundwater be present dewatering measures and excavation support would be required (depending on the findings of the ground investigation). This may also have implication upon the foundation design.
- **Contamination** – Potential contamination may require mitigation for future development, site users and controlled waters.
- **Sulphates** – Buried concrete may need to be designed to mitigate against natural adverse chemical conditions – especially given the presence of the underlying London Clay.
- **Underground Services** - Provision of contaminant resistant water supply pipes maybe required (depending on the findings of the ground investigation).
- **Excavations / Support** - The consequences of trench stability can vary, but usually pose a problem to the Contractor either by collapse into an already excavated trench or by the removal of support to plant, equipment or materials located adjacent to the excavation. The need to ensure stability and limit ground movements is of prime importance where excavations are adjacent to structures, roads, and public utilities or where man entry is envisaged. The suitability of the Contractor's proposals for ground support will be particularly important in such areas.

It is anticipated that excavations within the Made Ground and superficial deposits should be achievable using a suitable size of conventional excavation plant. Excavations within these materials are unlikely to remain stable even in the short term and close lateral support will be required at all times or the sides of the excavation battered back to a safe angle above groundwater seepages.

The potential impacts of instability in excavations should be considered where adjacent buildings are present, and future works need to ensure that ground movements and vibrations do not affect existing structures.

## **6.2 Foundations**

At this stage no intrusive ground investigation has been completed. Potential founding solutions will be dependent on the thickness of Made Ground and the geotechnical properties of the natural deposits. Made Ground is generally considered unsuitable for foundations due to its variable composition and its potential for high total and differential settlement.

At this stage it is envisaged that the Kempton Park Gravel Member comprising sands and gravels should be suitable for shallow foundations for light weight structures but will need to be confirmed via an appropriate ground investigation. Deeper trench fill may be possible although the maximum practical extent of this type of foundation is in the region of 2-2.5 m.

In areas of deeper Made Ground, or where deeper soft compressible material is present (the depth of which would need to be determined) deeper foundation options or ground improvement methods maybe required e.g. vibro-stone columns should provide a suitable foundation solution. The advice of a specialist ground improvement contractor should be sought to verify the suitability of the ground for treatment.

## 7 Conclusions and Recommendations

### 7.1 Design Considerations

The site is currently used as a car parking area and vehicle garages for the nearby residential buildings, the site also houses an electricity substation. An intrusive site investigation has not been undertaken at this stage. The site was previously developed from circa 1893 which was demolished and redeveloped for its current use between 1960 and 1974, therefore Made Ground is anticipated to be present. There was a historical factory bordering the site to the northwest which is a potential source of contamination that could have impacted the site. Furthermore, potential spillages/leaks of hydrocarbons could have occurred given the site's current usage as parking garages.

Without mitigation, future site users may be at risk from contaminants that may have been present on Site. Exposure could occur in gardens or soft landscaped areas, especially if soils are disturbed by activities such as digging / gardening.

Contamination could be mobilised or disturbed by the works. Rainfall derived leaching could be exacerbated causing contamination of the underlying Secondary A Aquifer. This risk is especially prevalent if intrusive construction methods or piling create a preferential pathway for contaminants in the Made Ground to enter the underlying aquifer.

Made Ground is likely to be present on the Site from former development and demolition of buildings. If significant depths of Made Ground are present, and this contains putrescible matter, ground gas / vapours could be generated which could accumulate in confined spaces and pose risk to future site users.

Potential receptors are considered to be future Site users, proposed buildings and underground structures / services and groundwater beneath the Site (Secondary A Aquifer identified within the underlying Kempton Park Gravel Member). Whilst contamination may be present within the underlying soils, mitigation of risks to Site end users may be delivered by the appropriate design of the development itself (i.e. the use of hardstanding to limit the pathway for human exposure) or a clean cover system within soft-standing areas rather than large scale removal of materials.

It is recommended that an intrusive site investigation should be undertaken prior to redevelopment to quantify these risks. This should include for chemical testing of soils, groundwater monitoring (if present) and gas monitoring in accordance with the recommendations in CIRIA C665 (Ref. 7) and CLR 11 (Ref. 5).

### 7.2 Construction Considerations

During construction, a watching brief should be undertaken to identify the presence of any unforeseen contamination. If contamination is encountered, all works should cease until the advice of a suitably qualified professional can be sought.

Construction / demolition workers should use appropriate PPE and follow the site-specific contractors risk assessment which should include risks to human health from potential contamination. Due to the historic phases of development and demolition consideration should be given to the potential presence of asbestos within the Made Ground, and the potential for hydrocarbon contamination and vapour to be present from the adjacent former factory.

Good site management practices should be adopted during the construction phase such as covering stockpiles to minimise surface runoff/dust creation.

A foundation works risk assessment may be required to assess the risk to the underlying Secondary A Aquifer if foundations or piling which penetrate the base of the Made Ground are proposed.

According to the Arcadis Unexploded Ordnance assessment has been undertaken for the Site, the report recommends that a detailed desk study needs to be commissioned to assess, and potentially zone, the UXO hazard level on the Site.

## 8 References

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4. DEFRA and the Environment Agency, 2004. Model Procedures for the Management of Land Contamination, Guidelines for Environmental Risk Assessment and Management, Contaminated Land Report 11 (CLR11).
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6. CIRIA C665 (2007) Assessing risks posed by hazardous ground gases to buildings (revised).
7. Department for Environment, Food and Rural Affairs "Magic" website. Available at (<http://magic.defra.gov.uk/MagicMap.aspx>) Accessed March 2019
8. Unexploded Ordnance Survey (Arcadis Ref: [10030793-ARC-19-XX-RP-YY-0001-01](#))

## **APPENDIX A**

### **Historical Ordnance Survey Maps**

#### Site Details:

OXFORD COURT, LONDON,  
W4 4DJ

**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** County Series

**Map date:** 1840

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1840  
Revised 1840  
Edition N/A  
Copyright N/A  
Levelled N/A

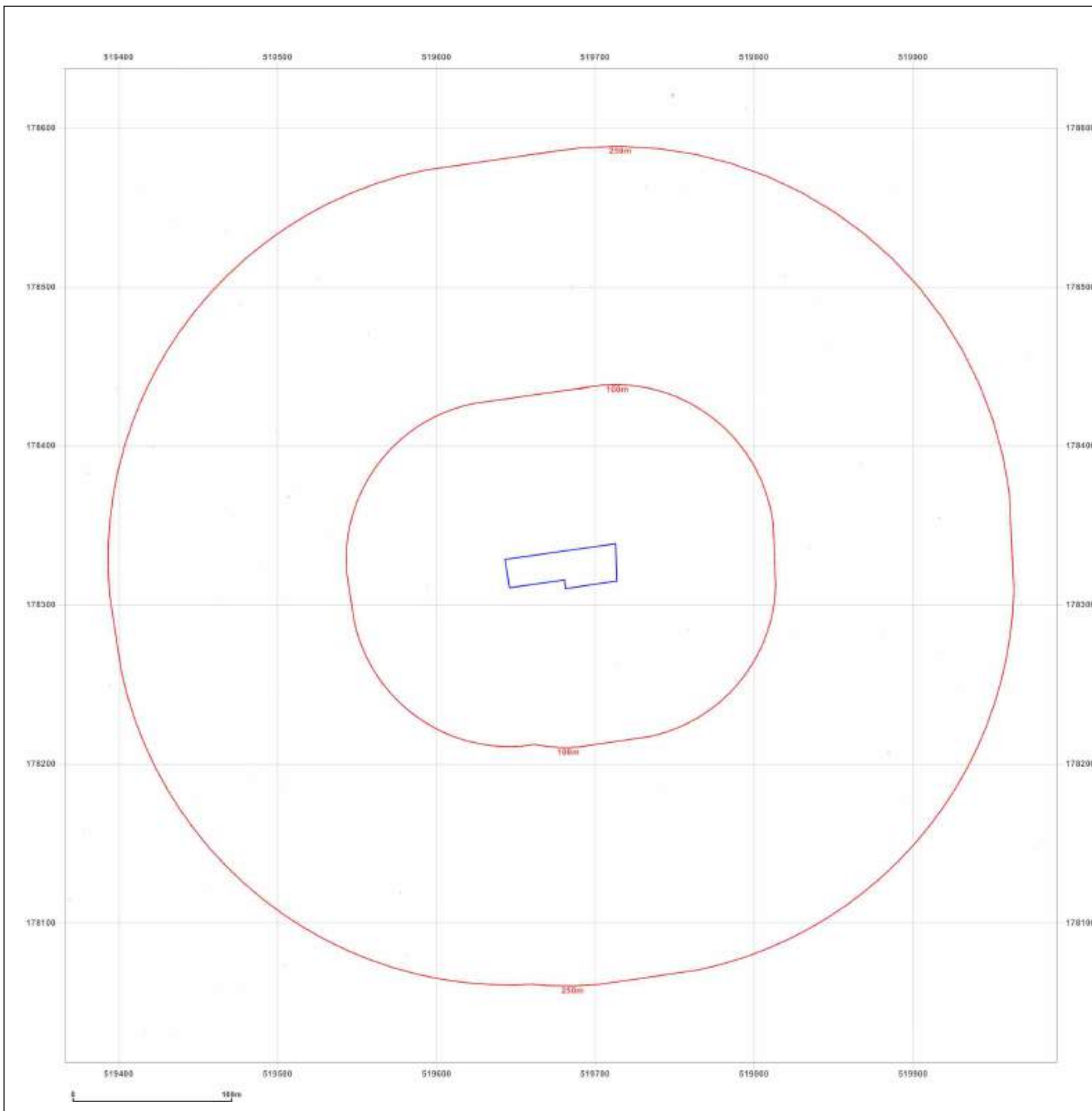


Produced by  
Groundsure Insights  
T: 08444 159000  
E: [info@groundsure.com](mailto:info@groundsure.com)  
W: [www.groundsure.com](http://www.groundsure.com)

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Production date: 29 March 2019

Map legend available at:  
[www.groundsure.com/sites/default/files/groundsure\\_legend.pdf](http://www.groundsure.com/sites/default/files/groundsure_legend.pdf)





#### Site Details:

OXFORD COURT, LONDON,  
W4 4DJ

**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** County Series

**Map date:** 1867

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised 1867  
Edition N/A  
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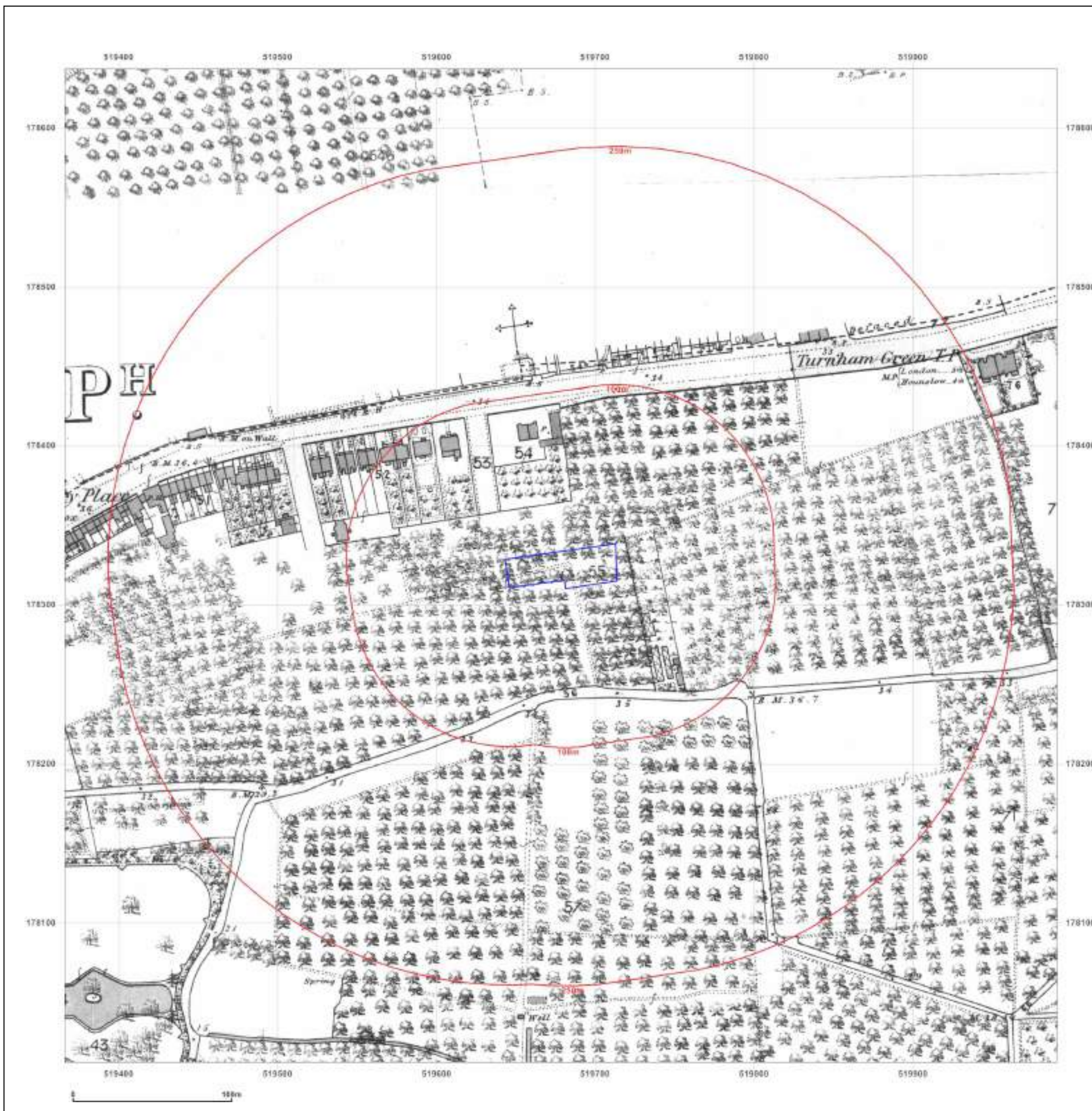


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#### Site Details:

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W4 4DJ

**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** County Series

**Map date:** 1867

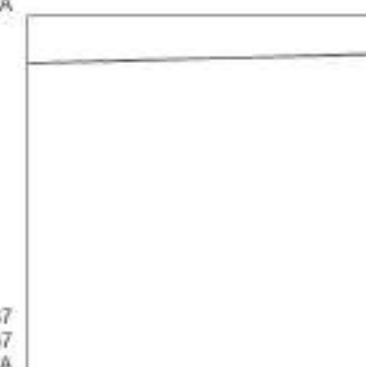
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Edition N/A  
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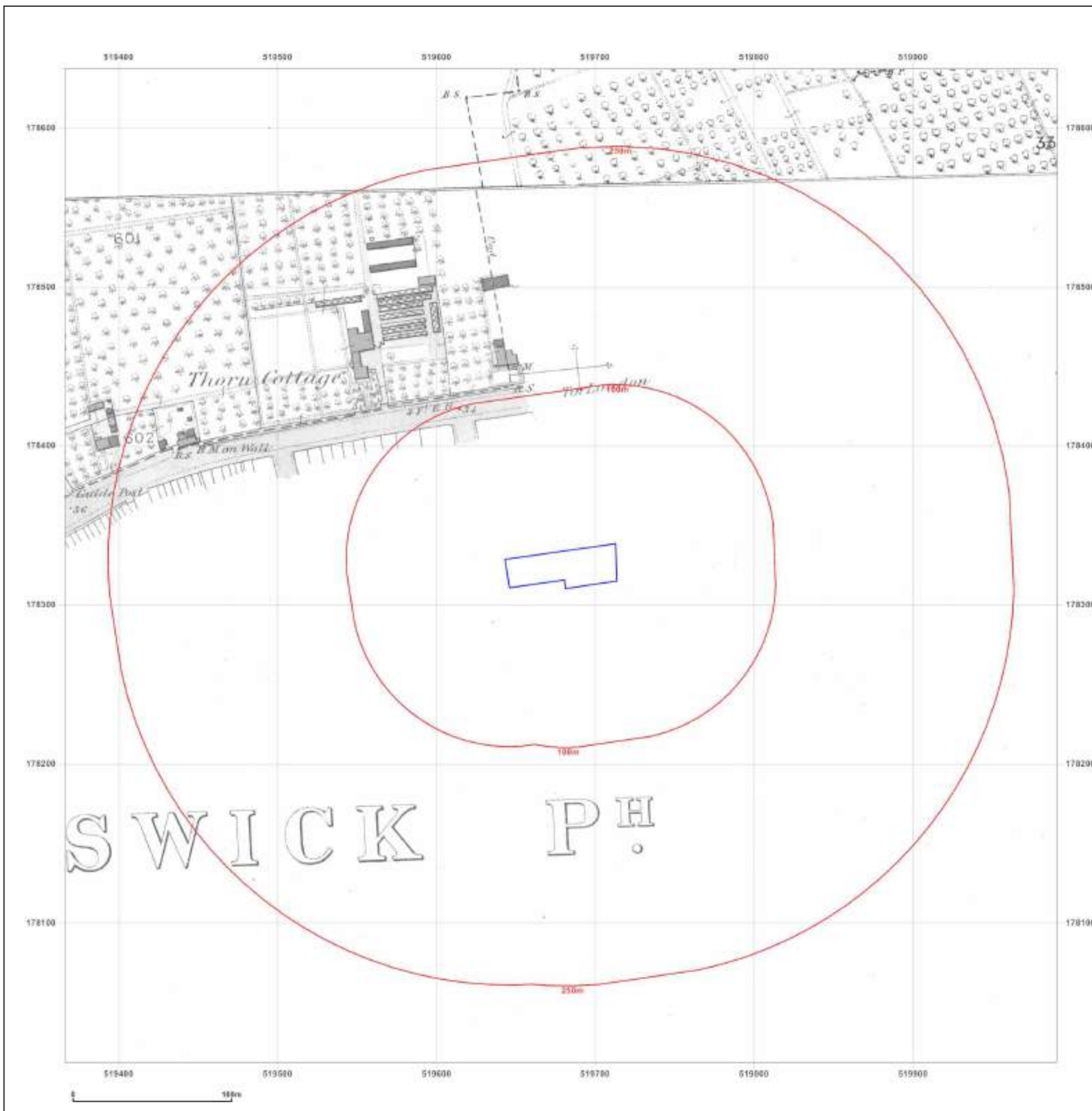


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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** County Series

**Map date:** 1868

**Scale:** 1:2,500

**Printed at:** 1:2,500



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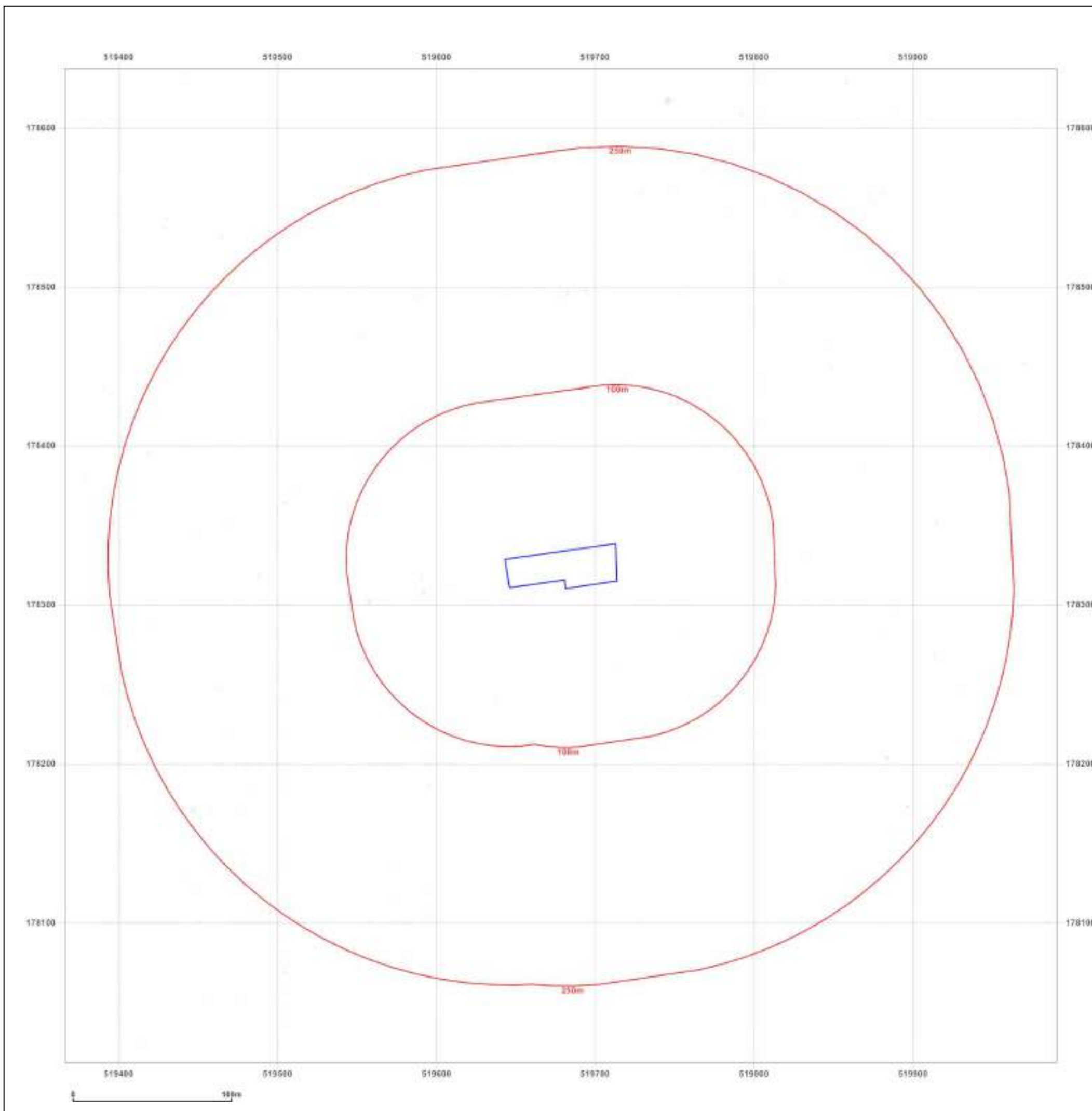


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W4 4DJ

Client Ref: 14023929  
Report Ref: GS-5911324  
Grid Ref: 519678, 178325

Map Name: County Series

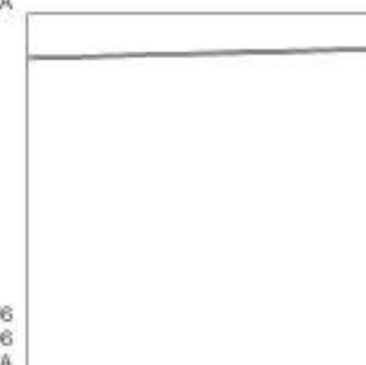
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Scale: 1:2,500

Printed at: 1:2,500



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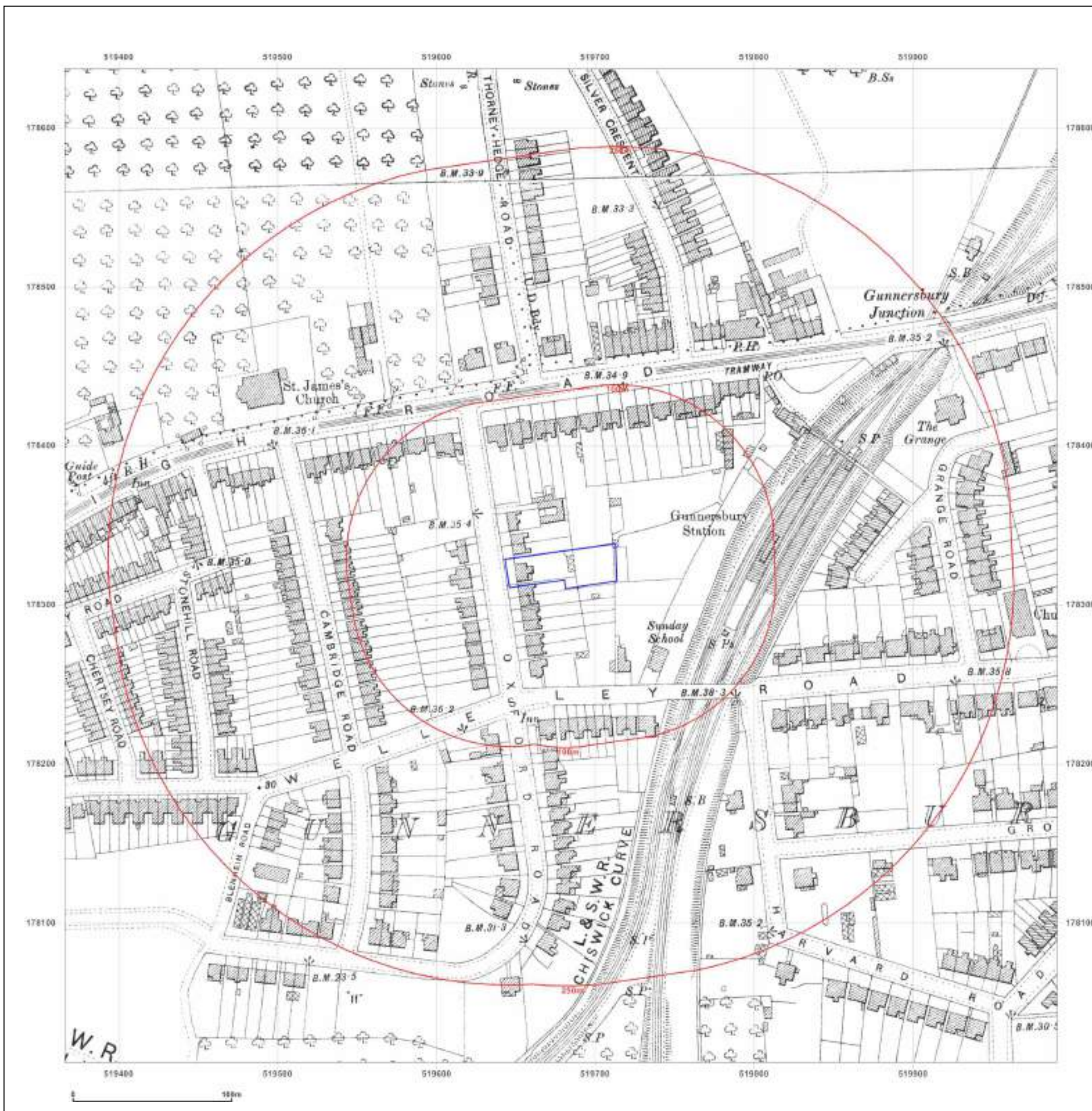


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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** County Series

**Map date:** 1913

**Scale:** 1:2,500

**Printed at:** 1:2,500



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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** County Series

**Map date:** 1915

**Scale:** 1:2,500

**Printed at:** 1:2,500



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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** County Series

**Map date:** 1933

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1933  
Revised 1933  
Edition N/A  
Copyright N/A  
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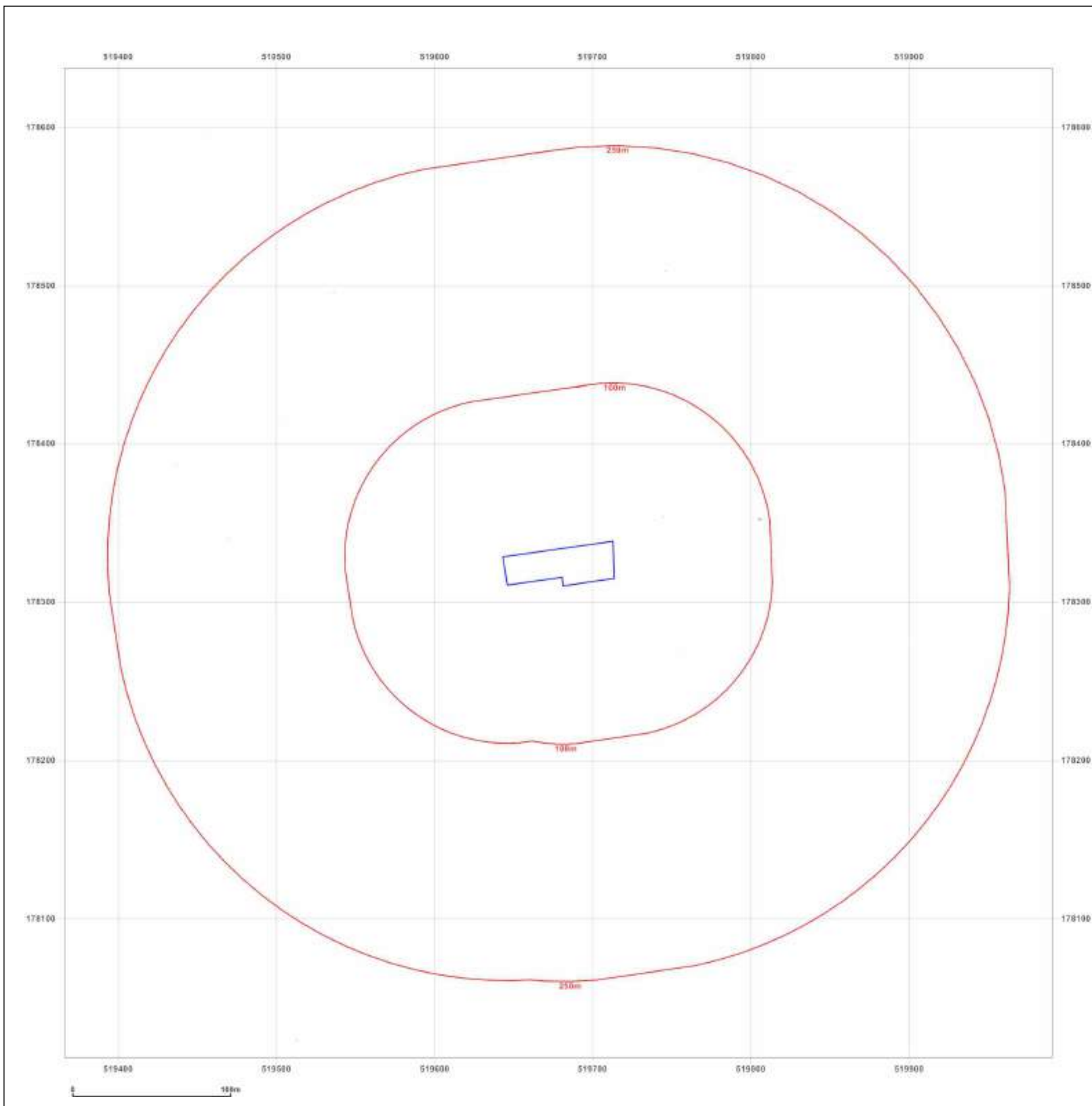


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**Client Ref:** 14023929  
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**Map Name:** County Series

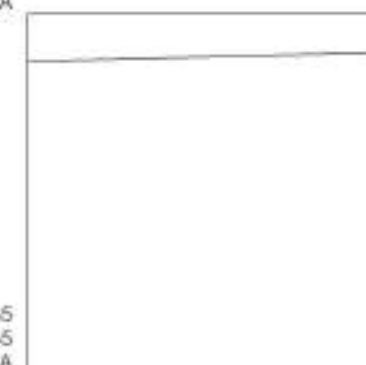
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**Printed at:** 1:2,500



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Revised 1935  
Edition N/A  
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Revised 1935  
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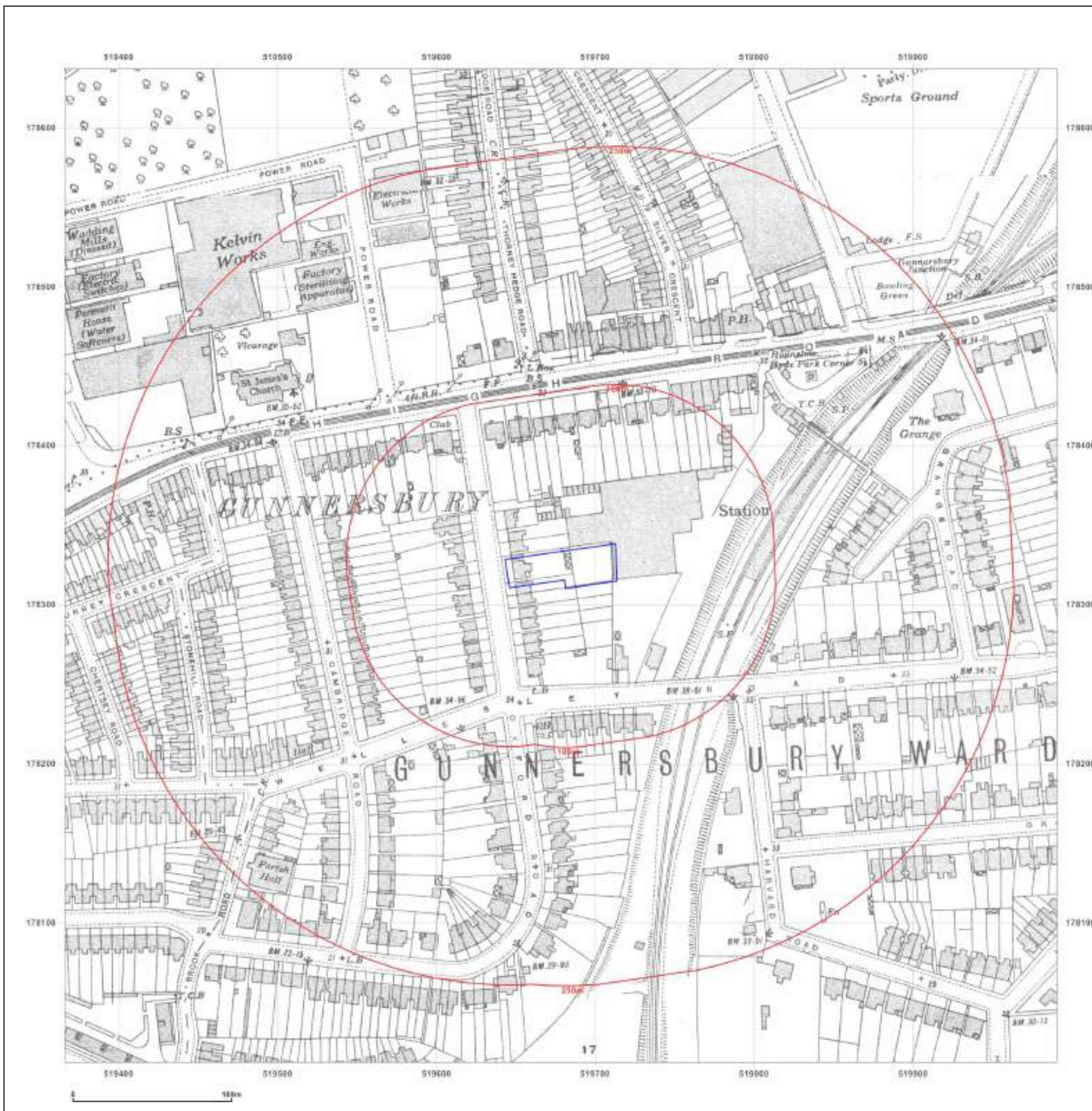


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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** County Series

**Map date:** 1940

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1940  
Revised 1940  
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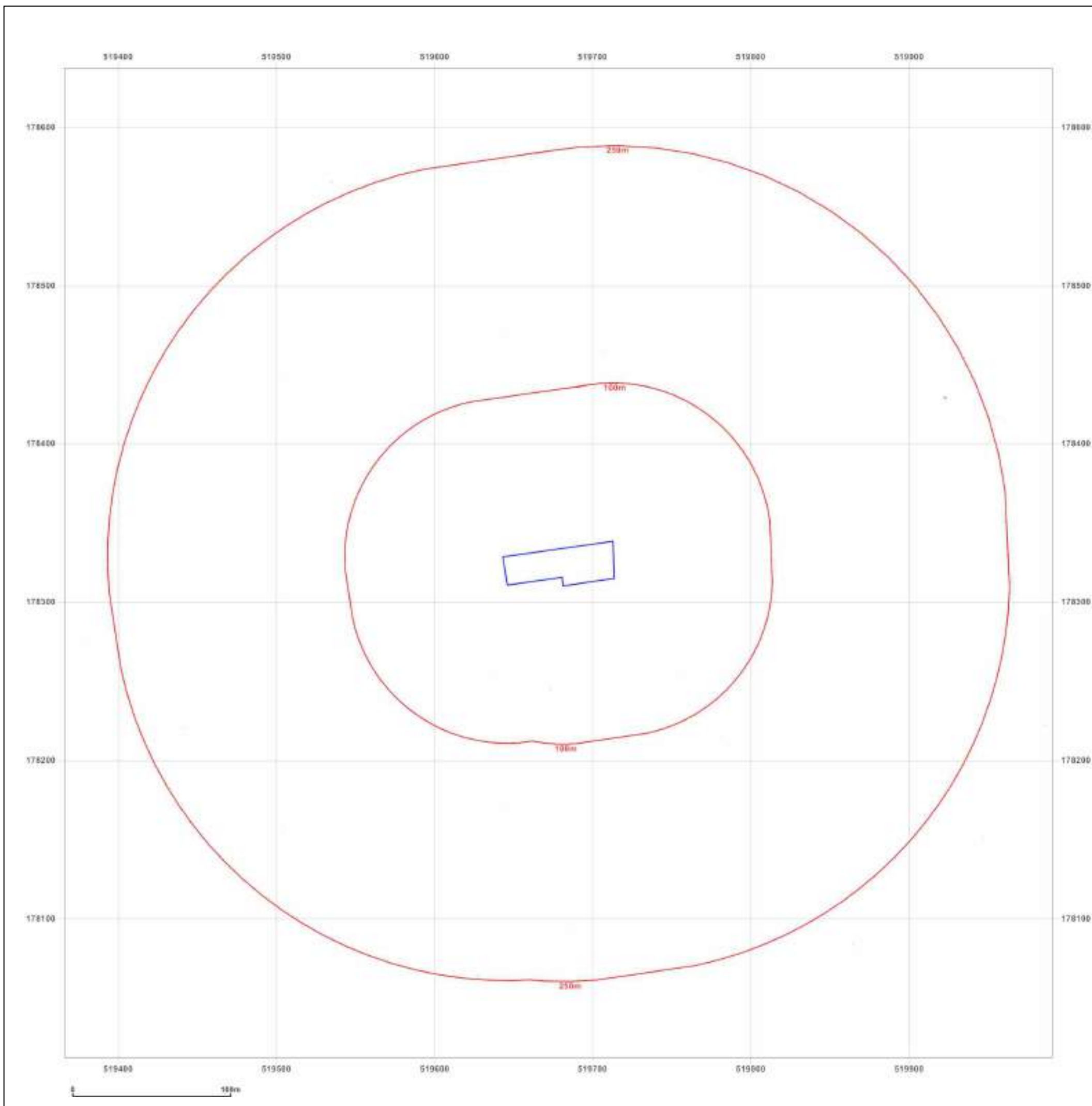


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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** National Grid

**Map date:** 1960

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Edition 1962  
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Levelled 1957

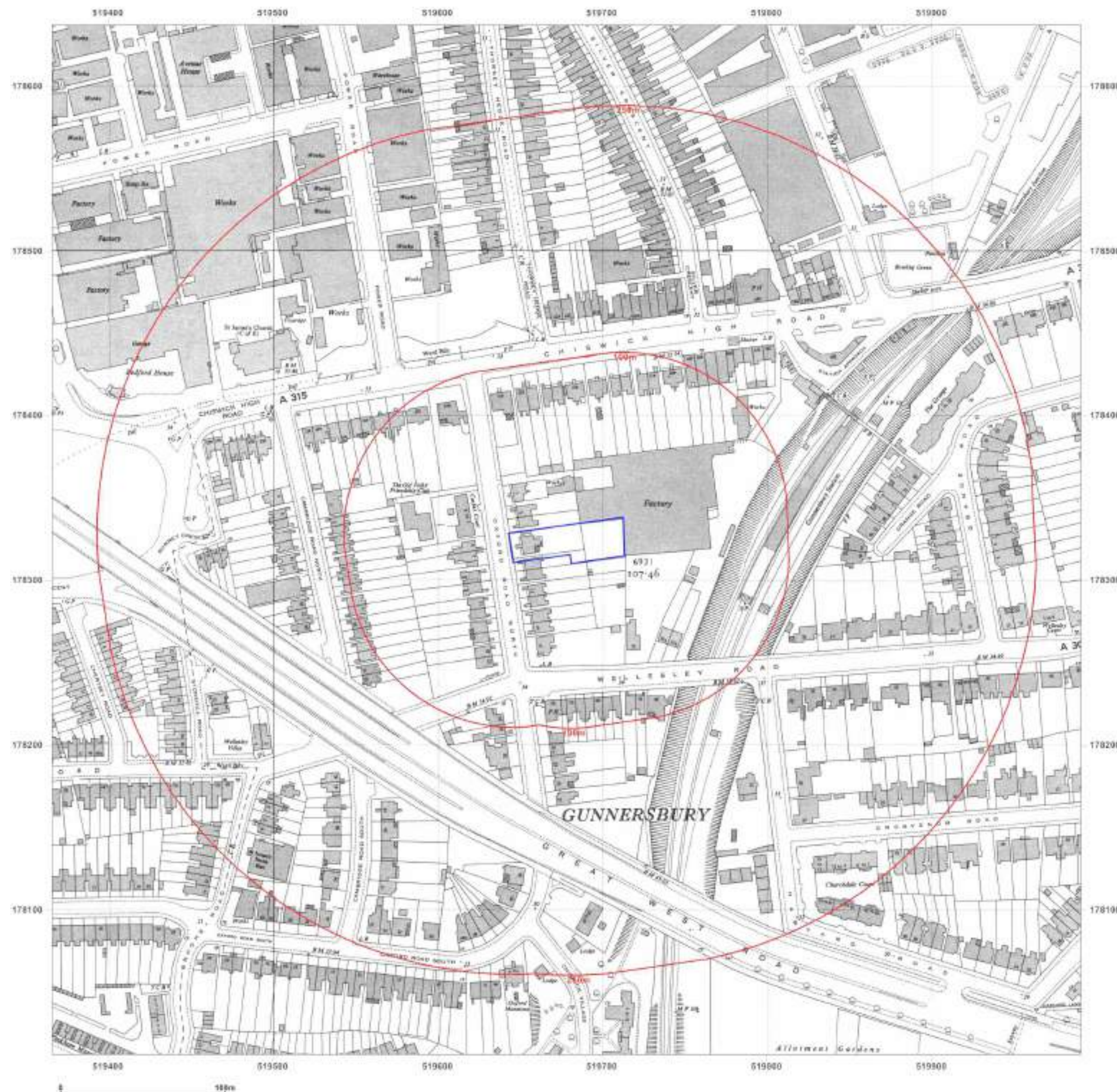


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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** National Grid

**Map date:** 1961

**Scale:** 1:1,250

**Printed at:** 1:2,000



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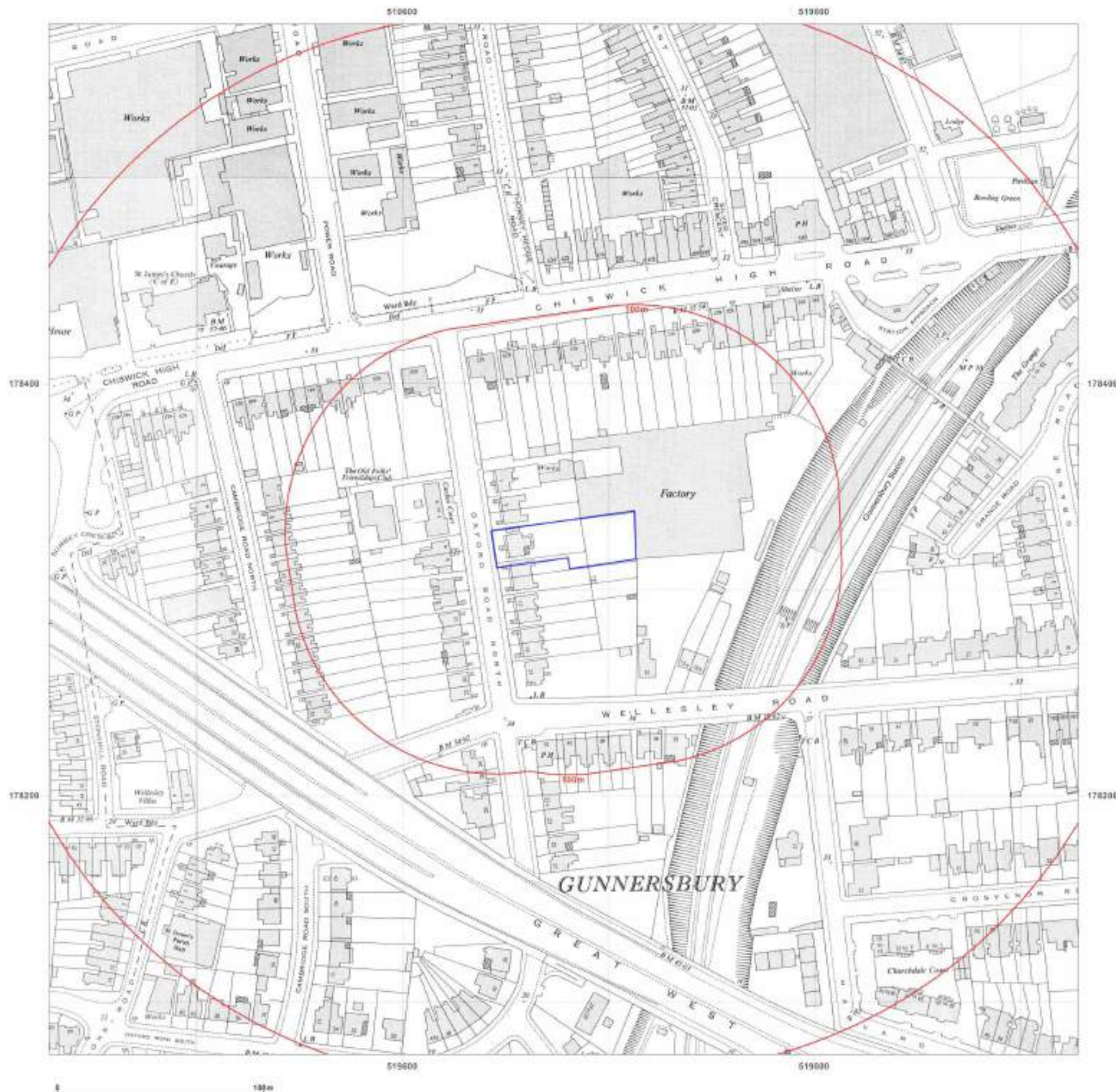


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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** National Grid

**Map date:** 1962

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed N/A  
Revised N/A  
Edition 1962  
Copyright 1962  
Levelled 1957

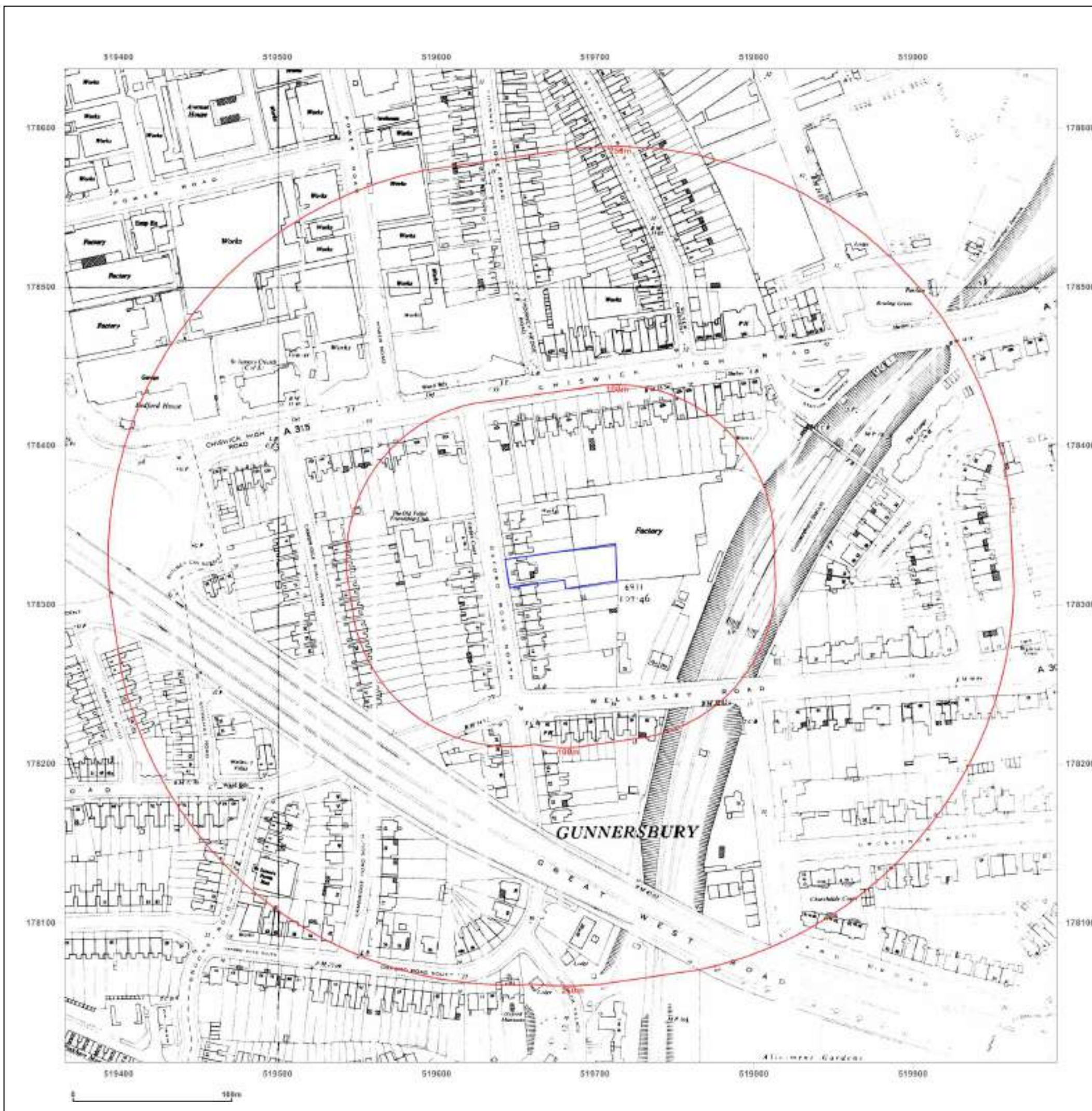


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Client Ref: 14023929  
Report Ref: GS-5911324  
Grid Ref: 519678, 178325

Map Name: National Grid

Map date: 1962

Scale: 1:2,500

Printed at: 1:2,500



Surveyed N/A  
Revised 1965  
Edition 1962  
Copyright 1962  
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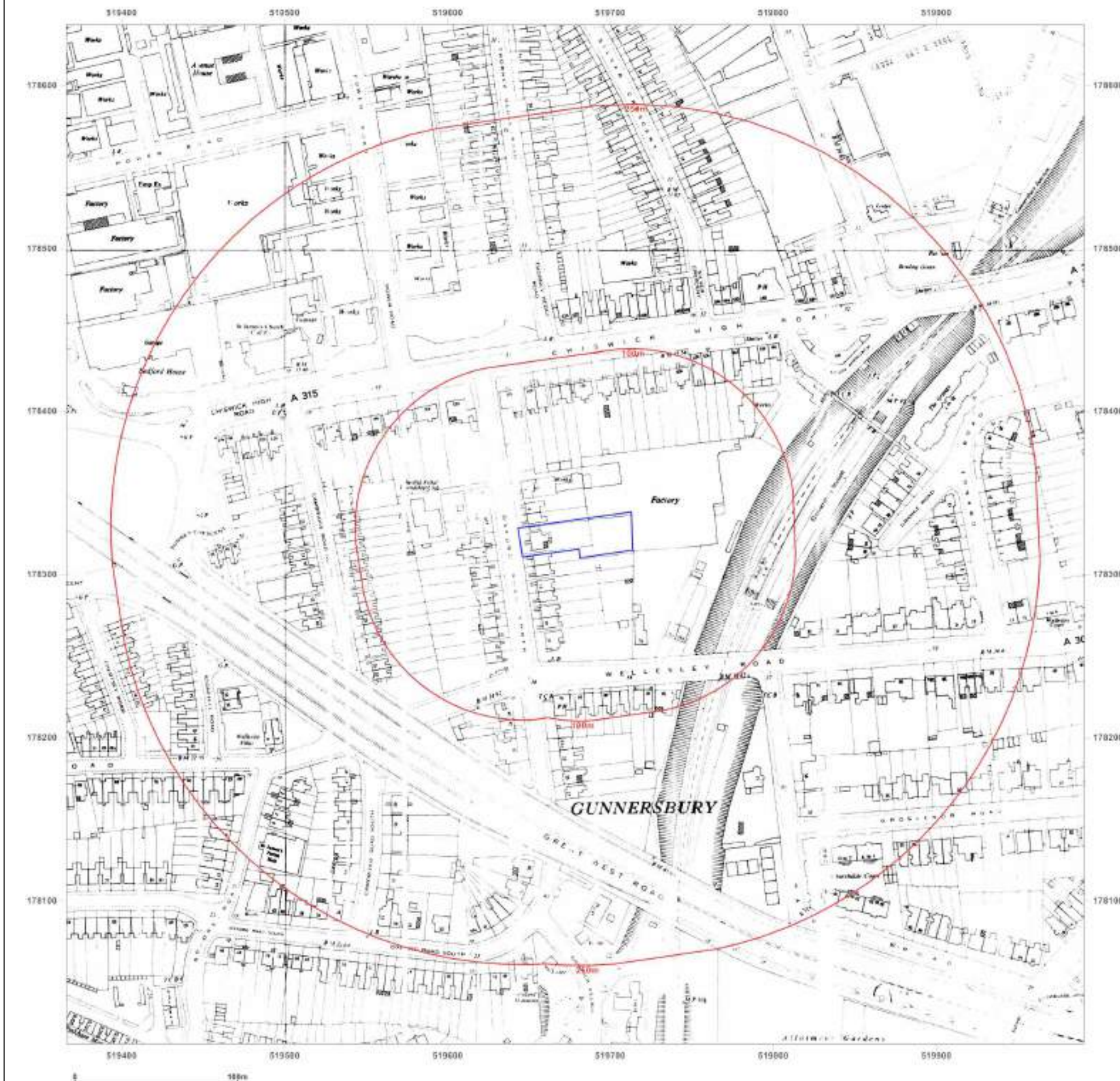


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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** National Grid

**Map date:** 1971-1974

**Scale:** 1:1,250

**Printed at:** 1:2,000



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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** National Grid

**Map date:** 1972-1977

**Scale:** 1:1,250

**Printed at:** 1:2,000



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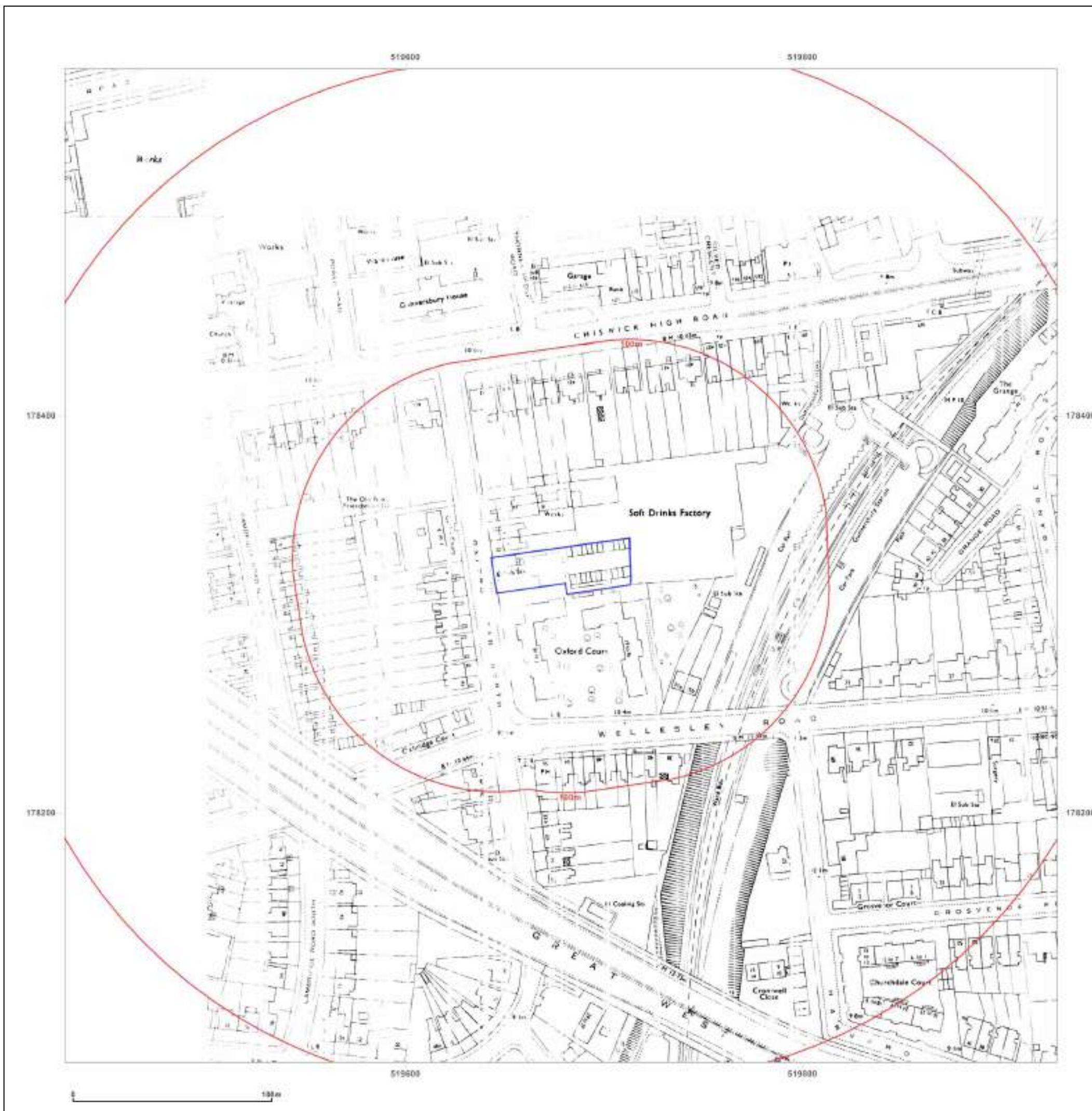


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Client Ref: 14023929  
Report Ref: GS-5911324  
Grid Ref: 519678, 178325

Map Name: National Grid

Map date: 1974-1978

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: 14023929  
Report Ref: GS-5911324  
Grid Ref: 519678, 178325

Map Name: National Grid

Map date: 1985-1988

Scale: 1:1,250

Printed at: 1:2,000



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Surveyed 1970  
Revised 1988  
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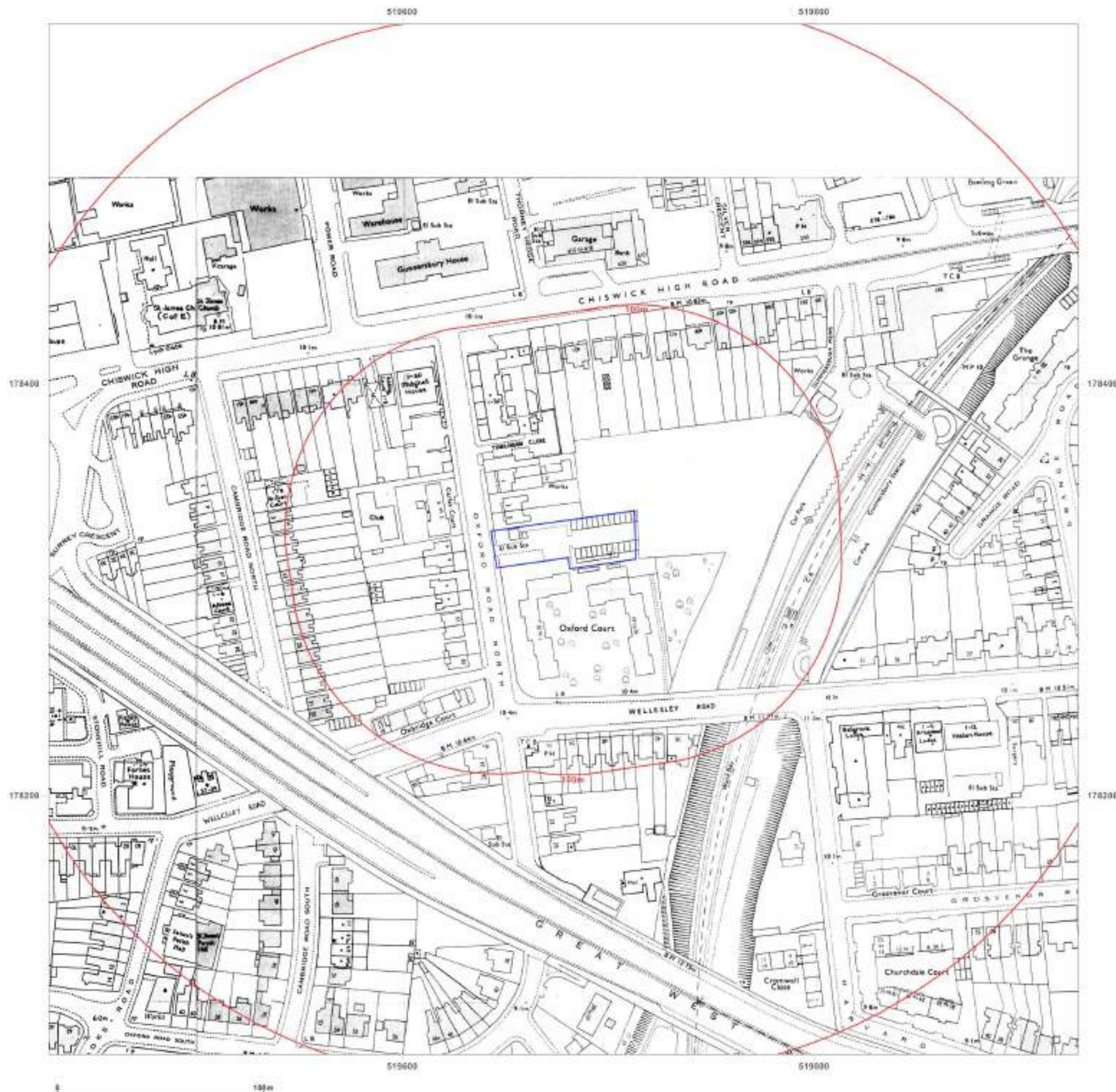


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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** National Grid

**Map date:** 1987-1991

**Scale:** 1:1,250

**Printed at:** 1:2,000



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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** County Series

**Map date:** 1866-1867

**Scale:** 1:10,560

**Printed at:** 1:10,560



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Revised 1867  
Edition N/A  
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Revised 1866  
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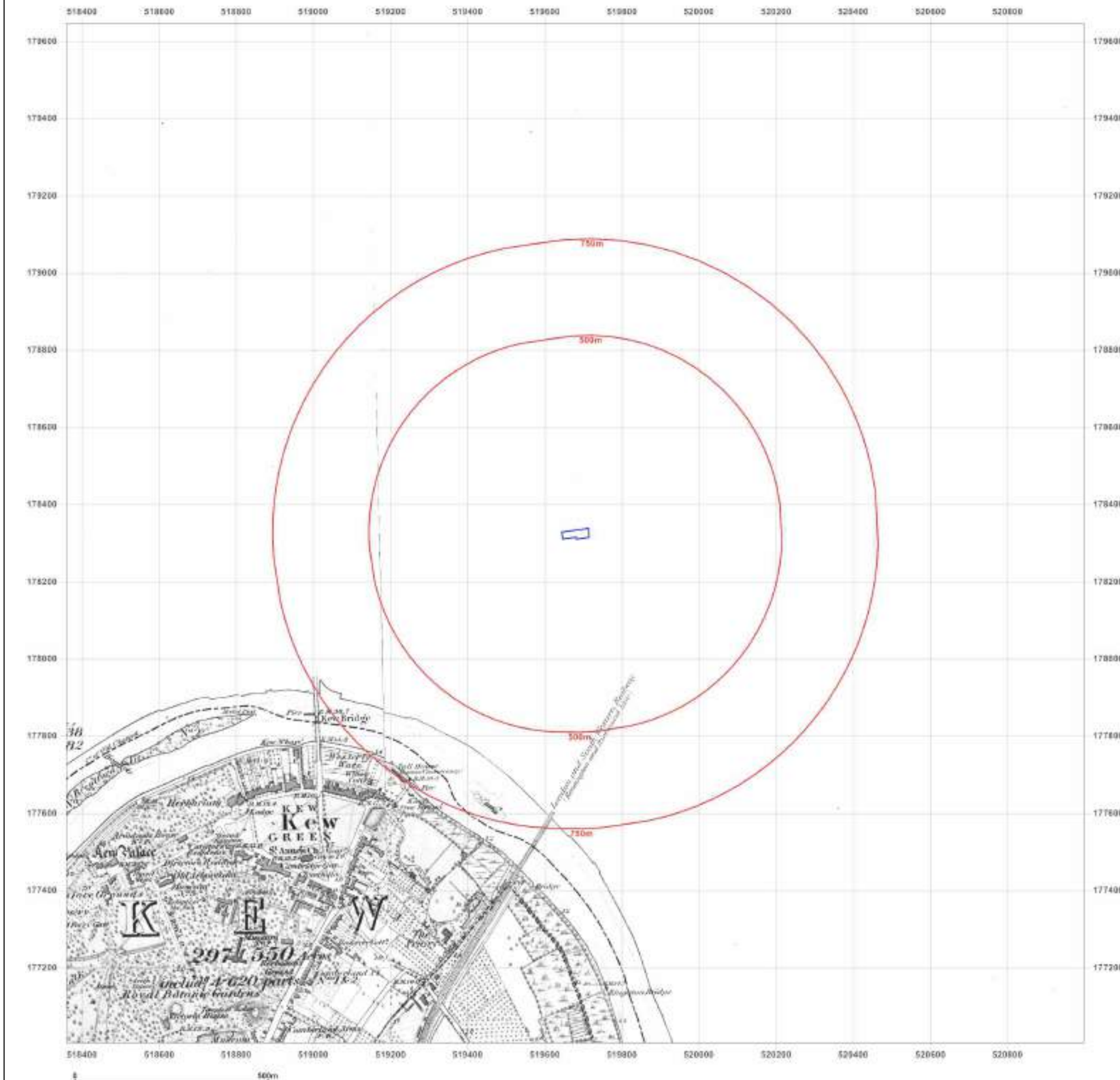


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Client Ref: 14023929  
Report Ref: GS-5911324  
Grid Ref: 519678, 178325

Map Name: County Series

Map date: 1873-1874

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1873  
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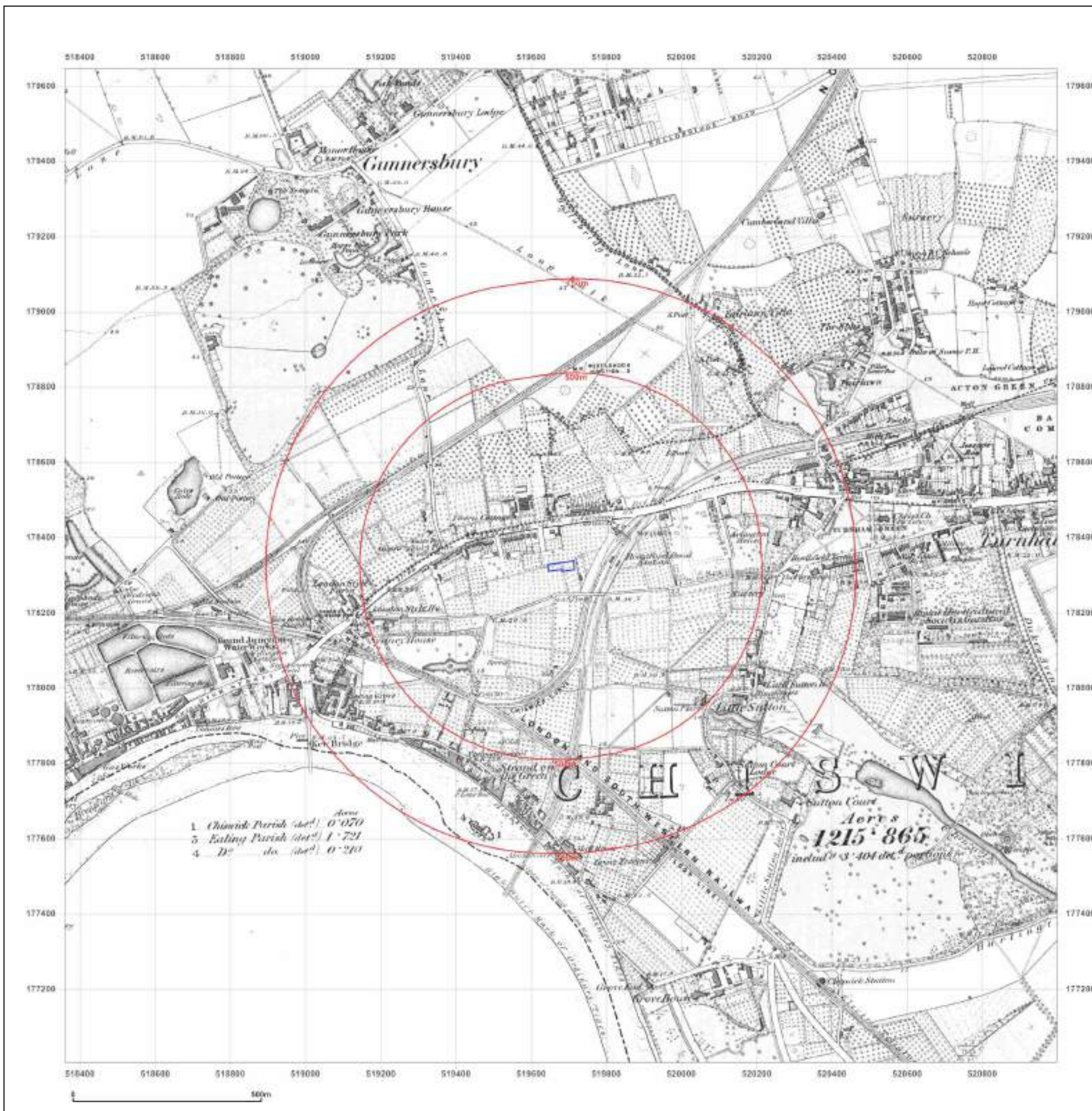


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Client Ref: 14023929  
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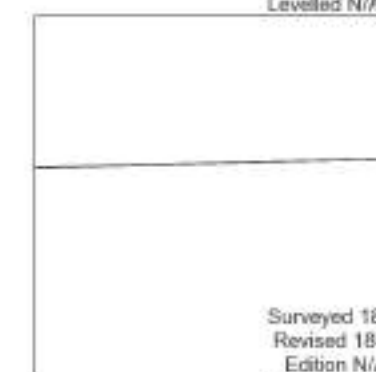
Map date: 1893-1894

Scale: 1:10,560

Printed at: 1:10,560



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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** County Series

**Map date:** 1894

**Scale:** 1:10,560

**Printed at:** 1:10,560



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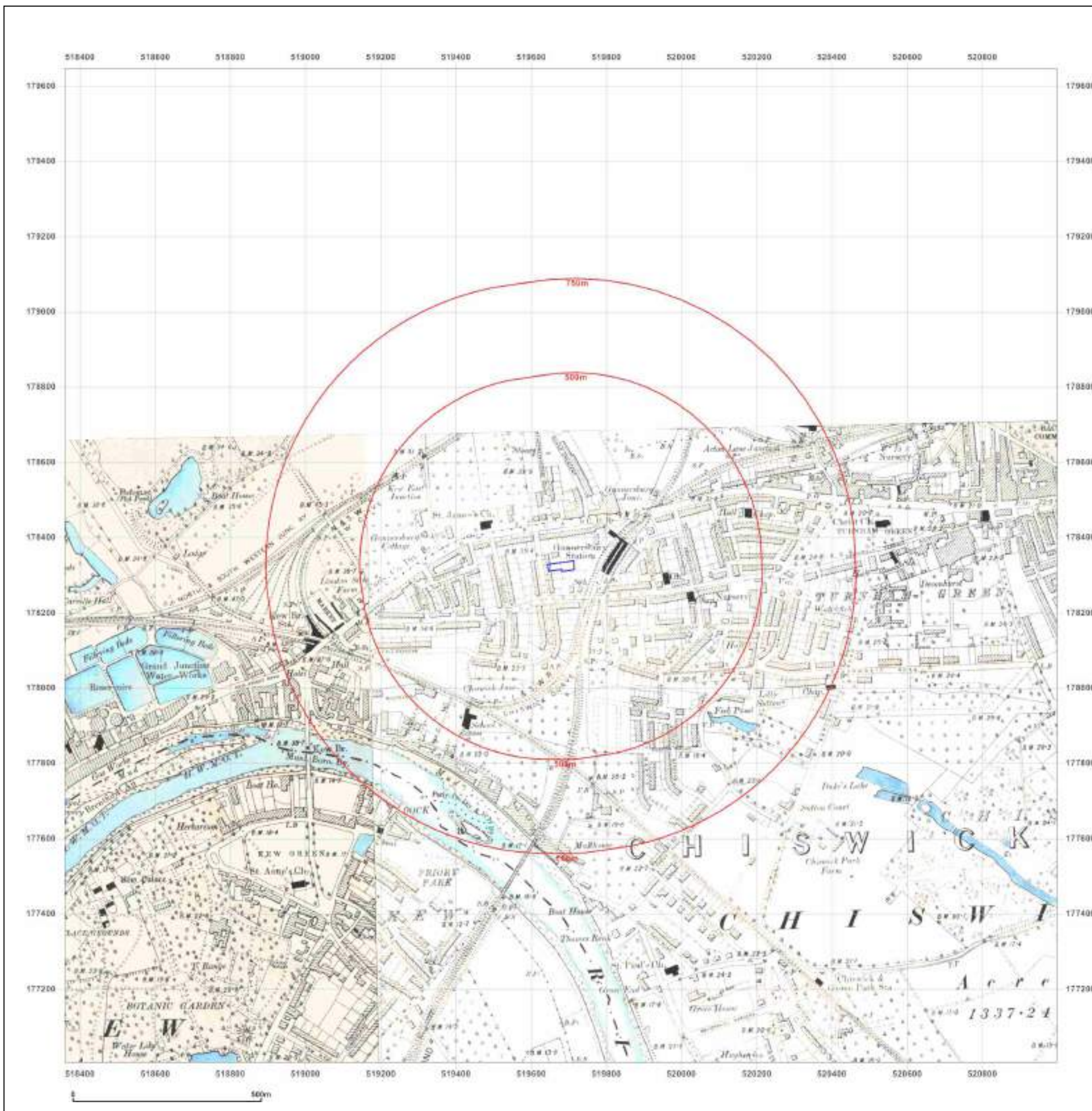


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#### Site Details:

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W4 4DJ

Client Ref: 14023929  
Report Ref: GS-5911324  
Grid Ref: 519678, 178325

Map Name: County Series

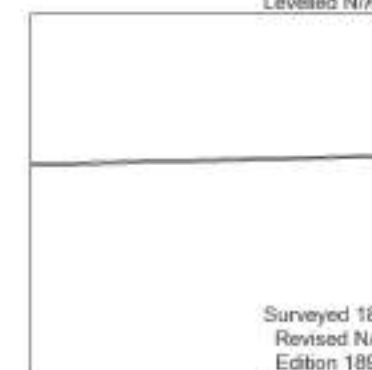
Map date: 1896

Scale: 1:10,560

Printed at: 1:10,560



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Edition 1896  
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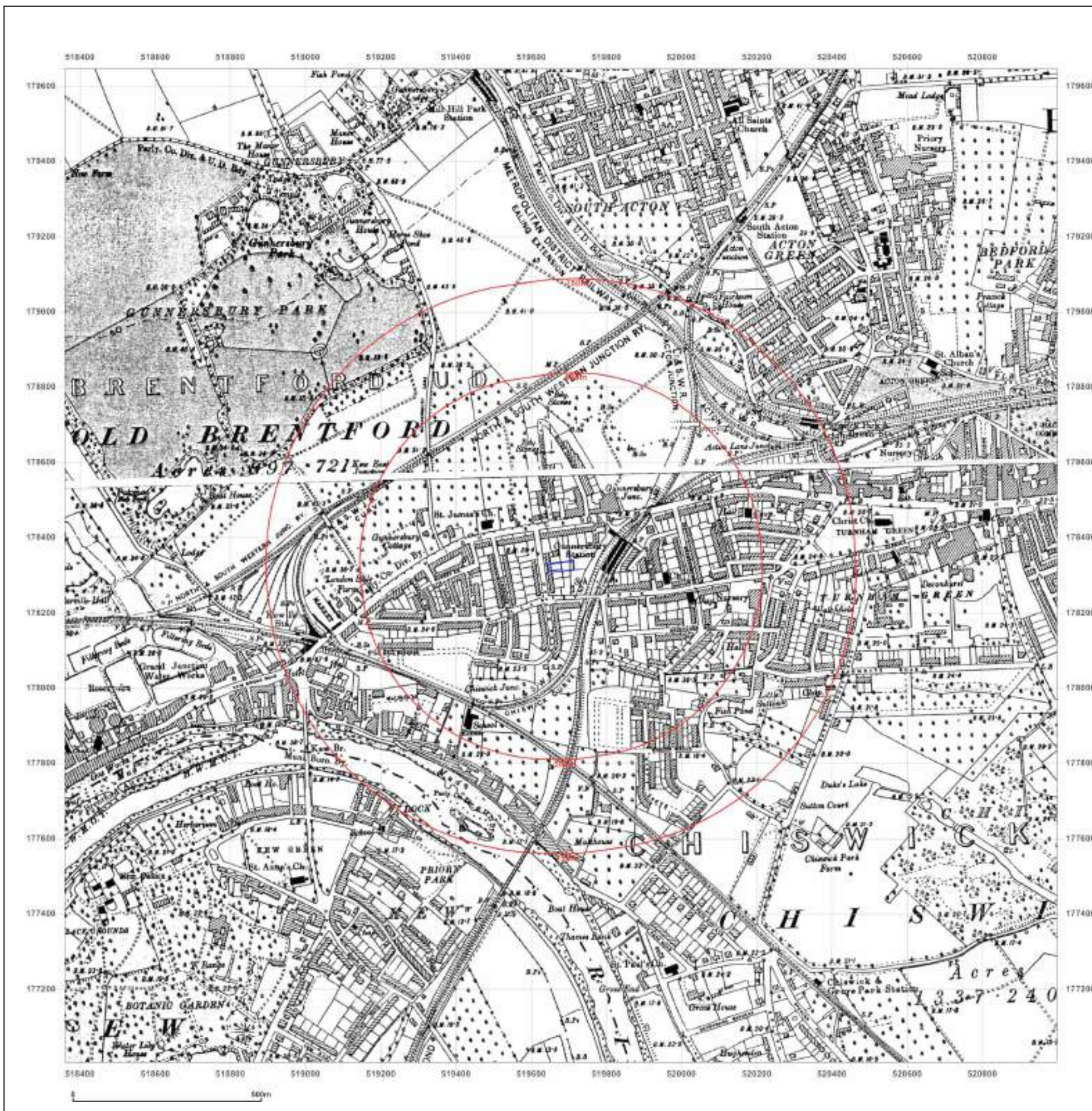


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**Grid Ref:** 519678, 178325

**Map Name:** County Series

**Map date:** 1894-1898

**Scale:** 1:10,560

**Printed at:** 1:10,560



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Revised 1894  
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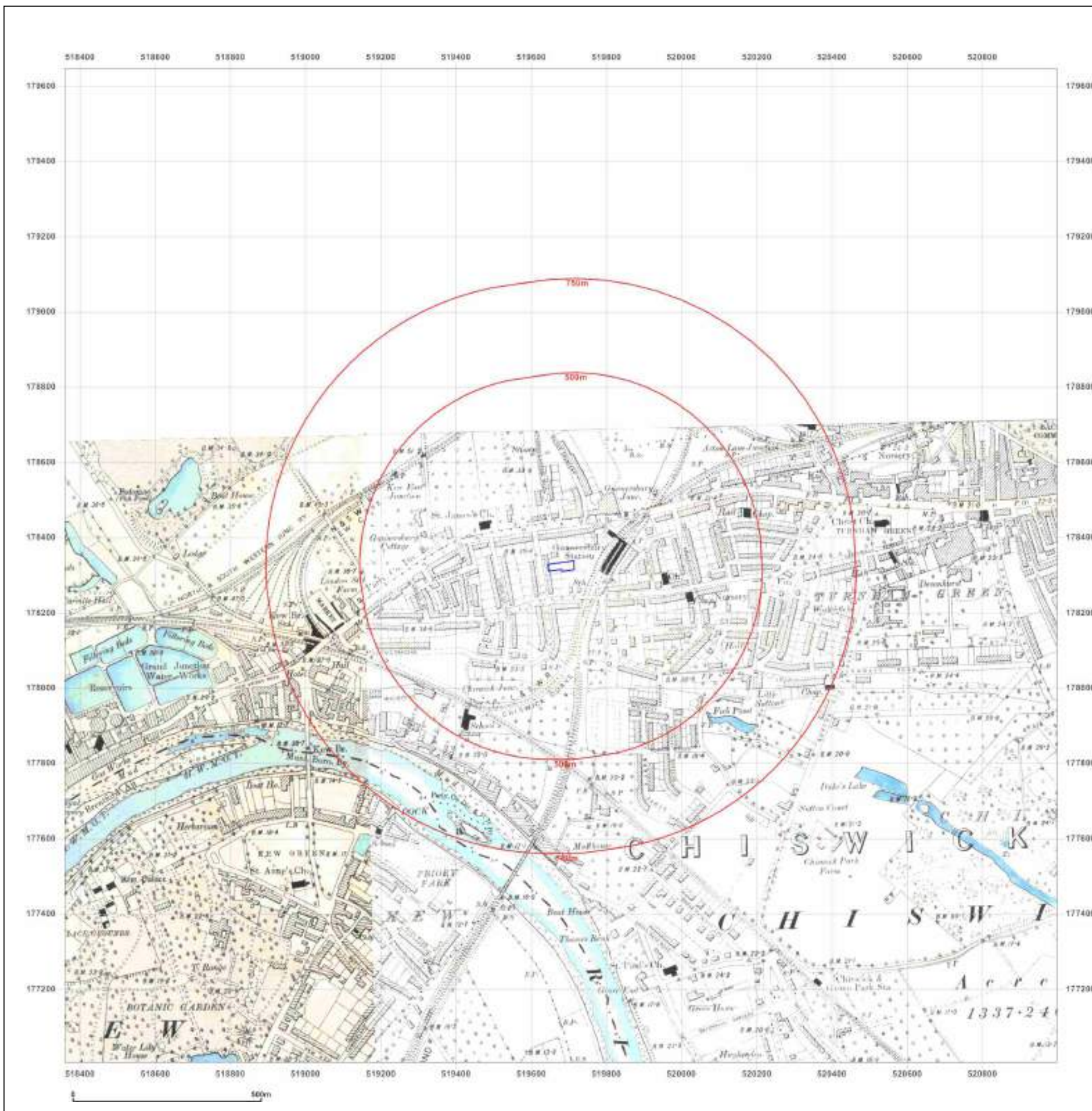


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**Grid Ref:** 519678, 178325

**Map Name:** County Series

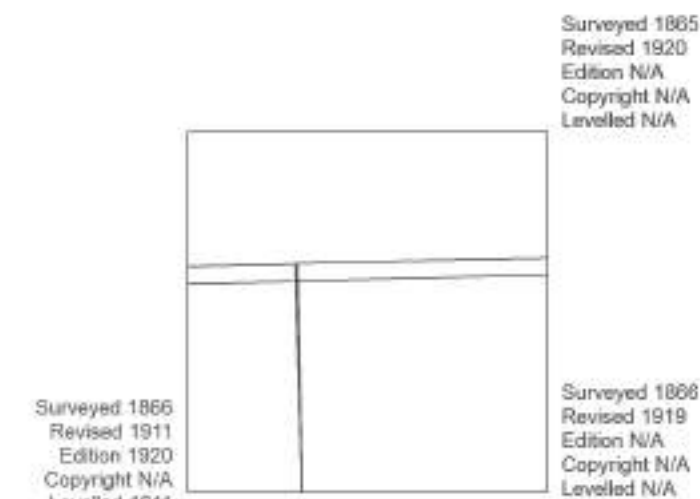
**Map date:** 1919-1920

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1865  
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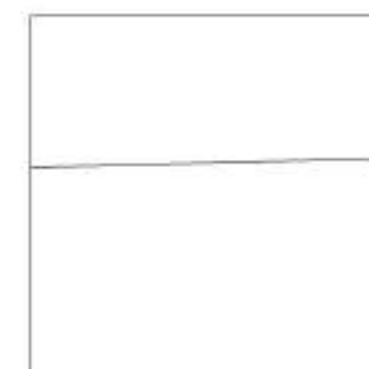
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**Grid Ref:** 519678, 178325

**Map Name:** County Series

**Map date:** 1920

**Scale:** 1:10,560

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Surveyed 1867  
Revised 1920  
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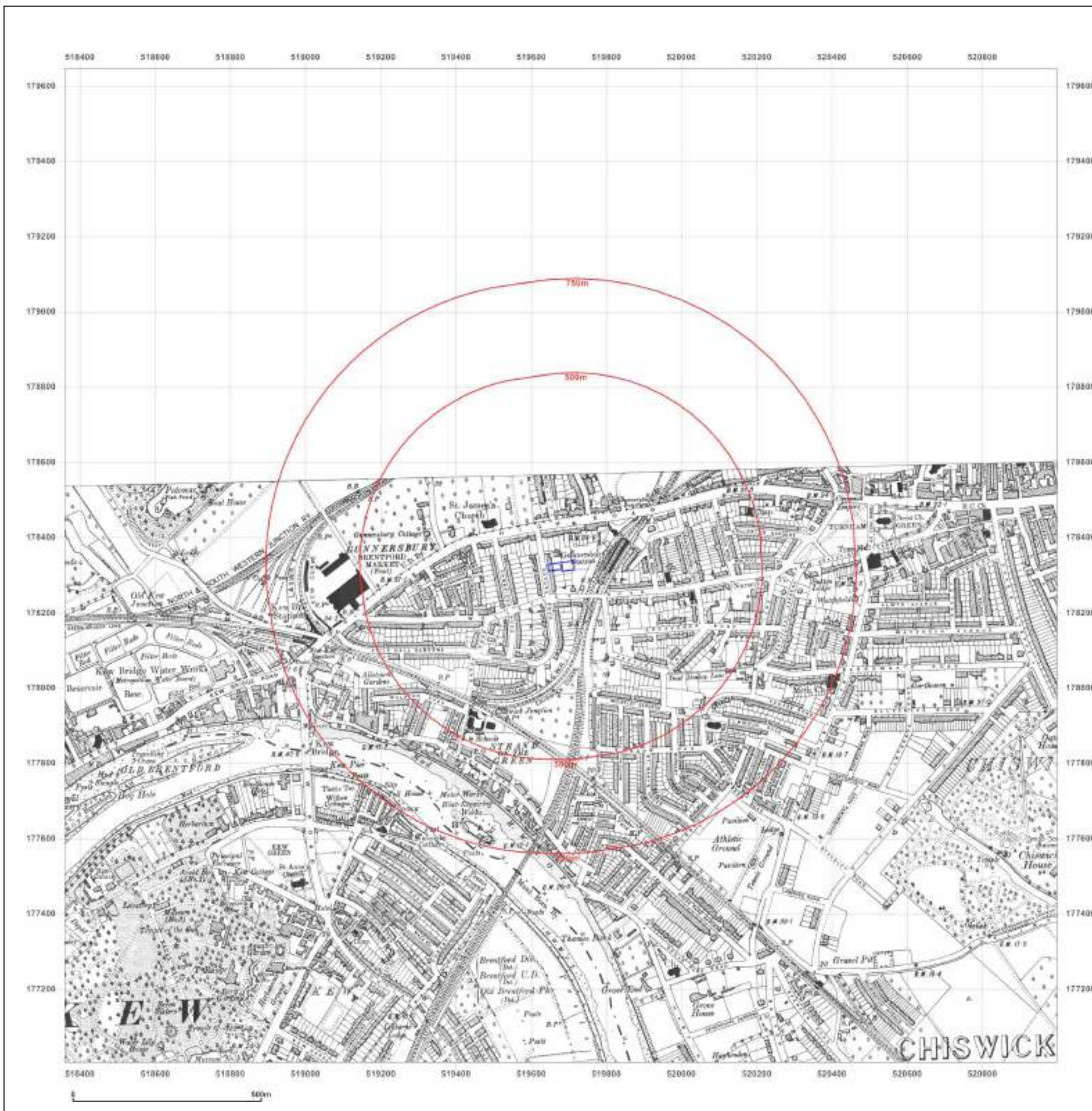


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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** County Series

**Map date:** 1933

**Scale:** 1:10,560

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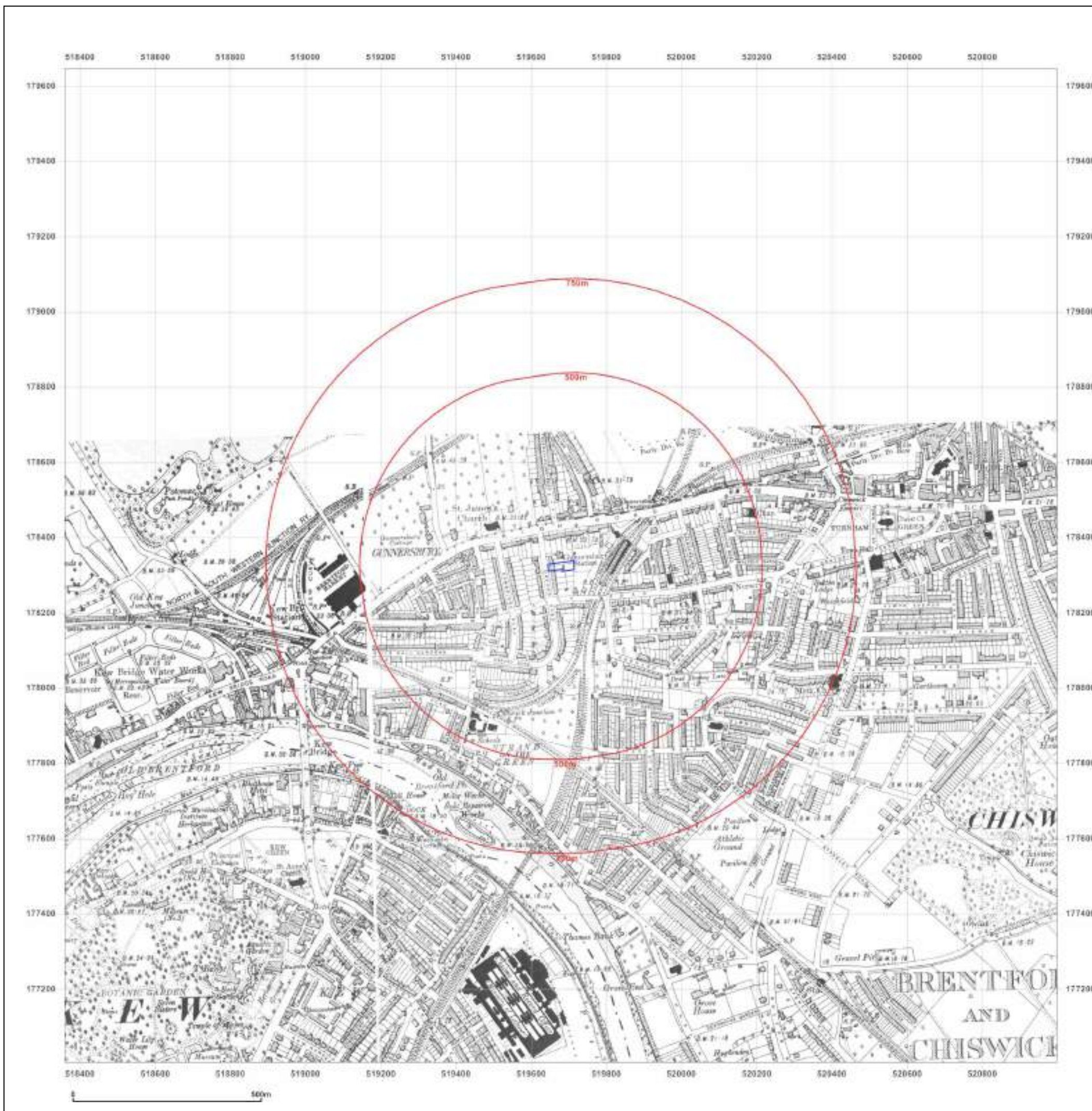


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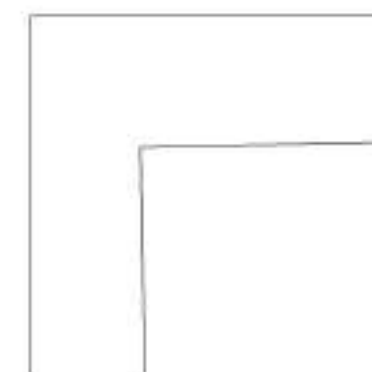
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**Grid Ref:** 519678, 178325

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**Map date:** 1933

**Scale:** 1:10,560

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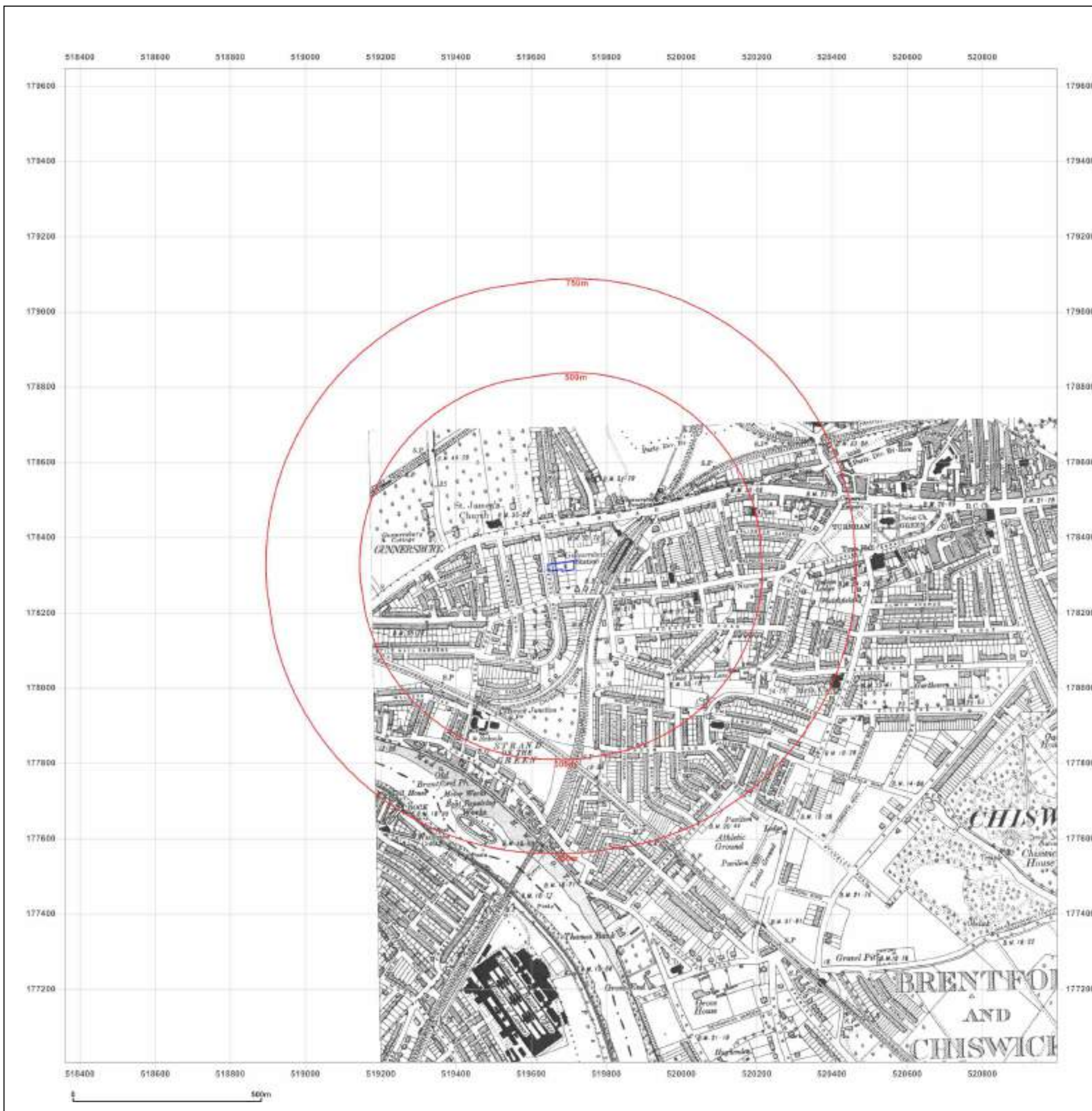


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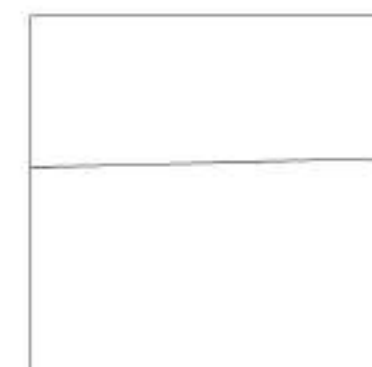
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**Map date:** 1938

**Scale:** 1:10,560

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Surveyed 1867  
Revised 1938  
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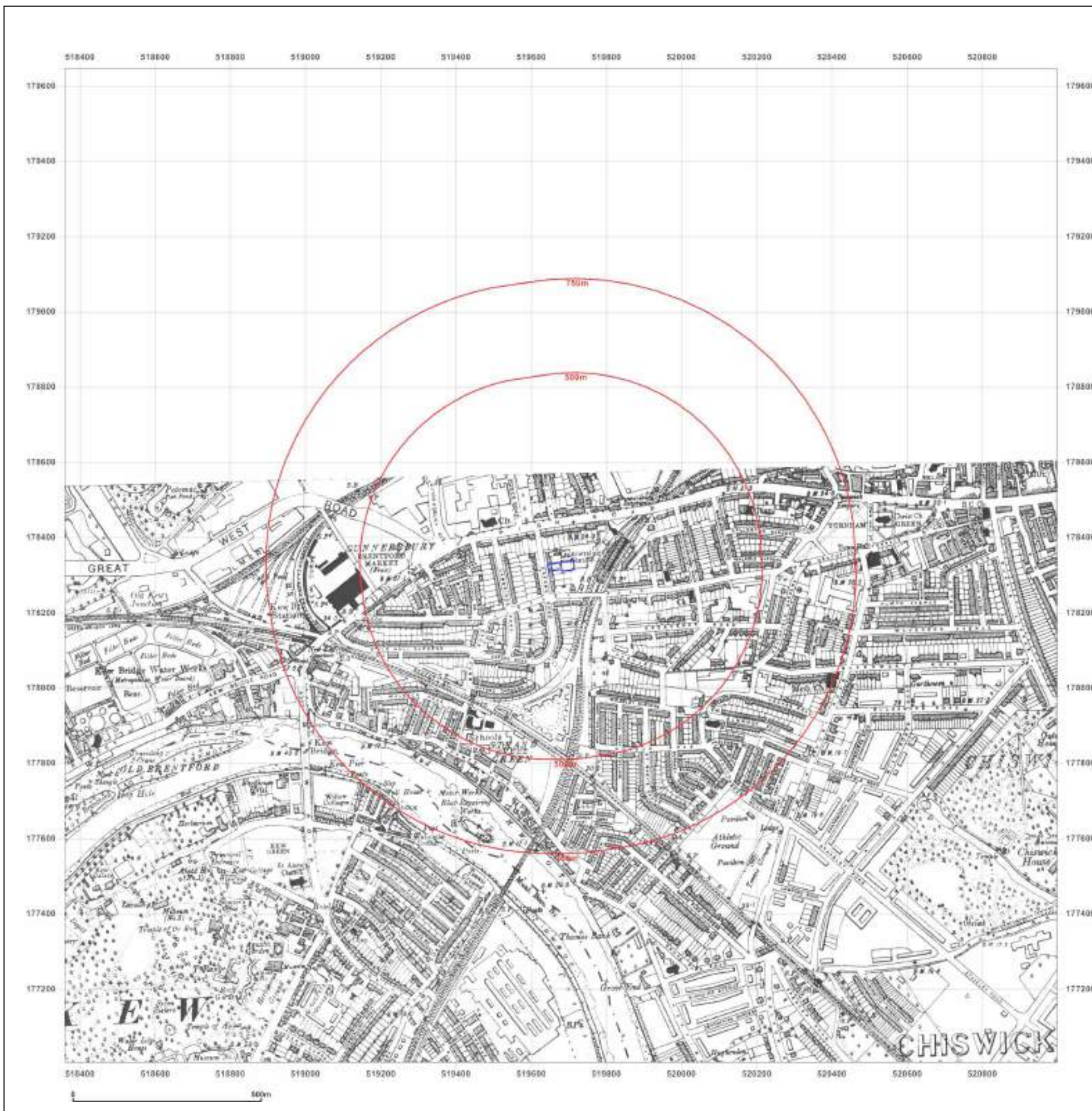


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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** Provisional

**Map date:** 1947-1948

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1940  
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Revised 1947  
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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** Provisional

**Map date:** 1948

**Scale:** 1:10,560

**Printed at:** 1:10,560



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**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** Provisional

**Map date:** 1962-1966

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1966  
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Surveyed 1958  
Revised 1962  
Edition 1958  
Copyright 1958  
Levelled N/A

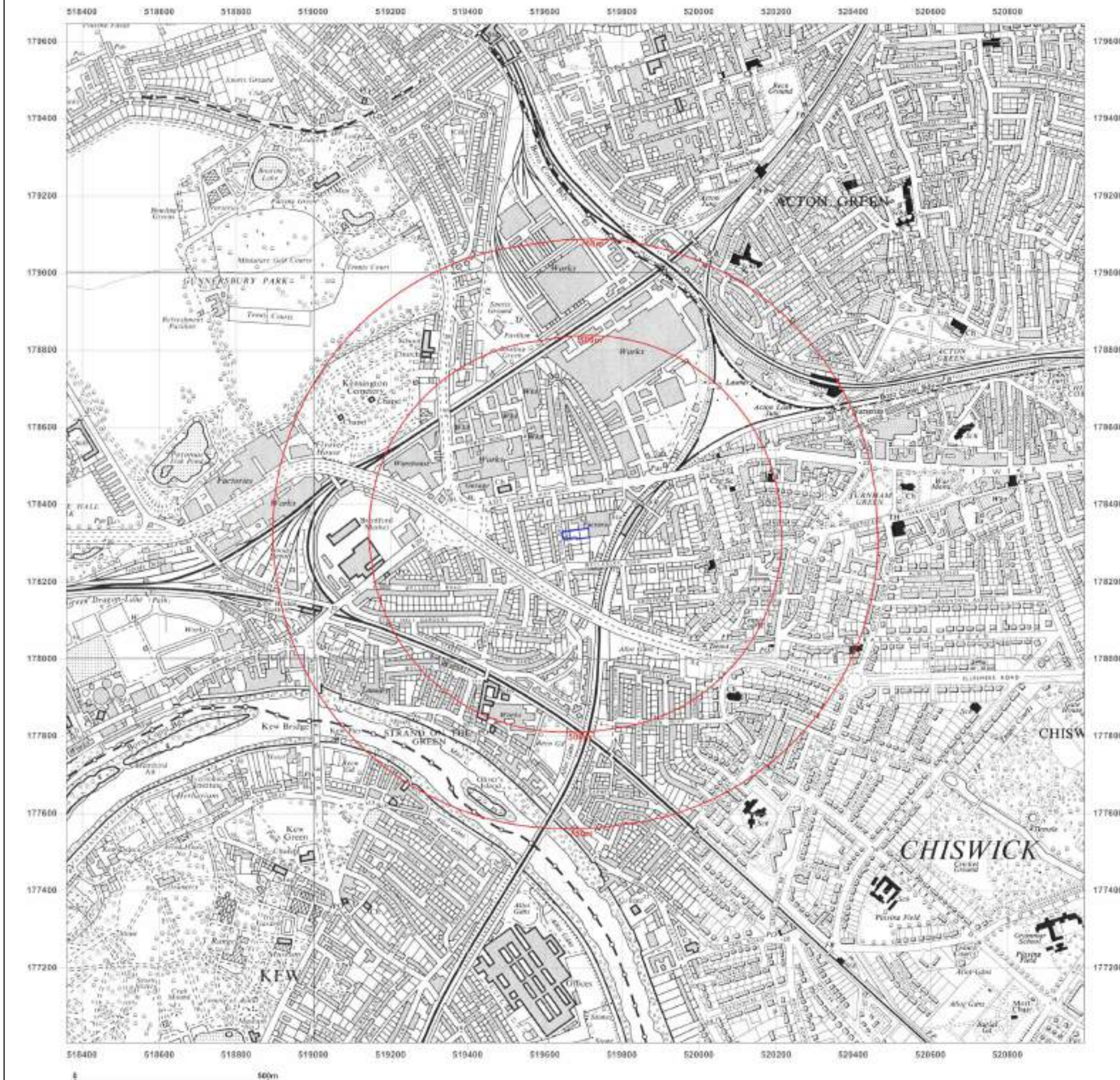


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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** Provisional

**Map date:** 1967

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1967  
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Edition N/A  
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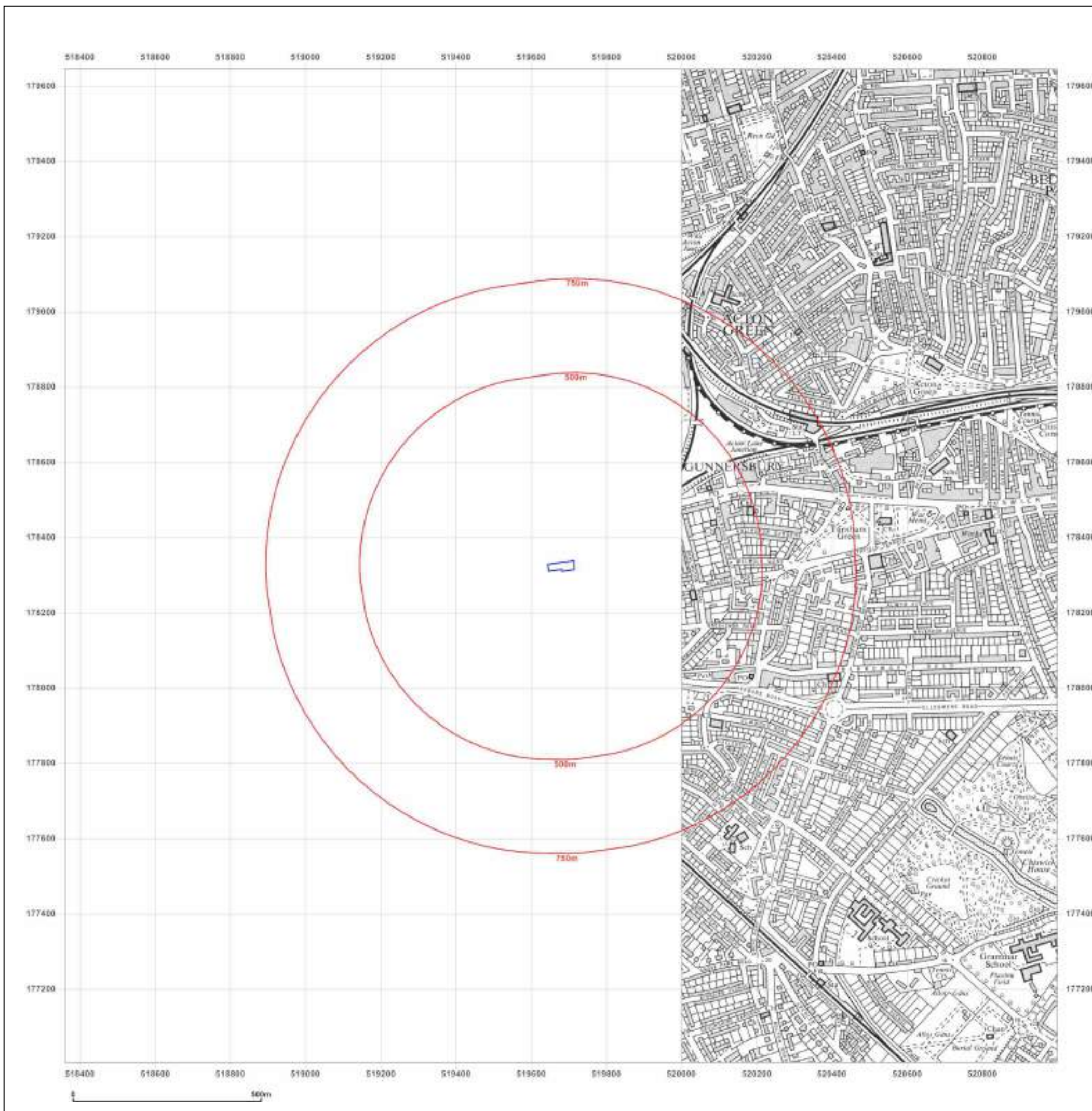


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**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** National Grid

**Map date:** 1974

**Scale:** 1:10,000

**Printed at:** 1:10,000



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Revised 1974  
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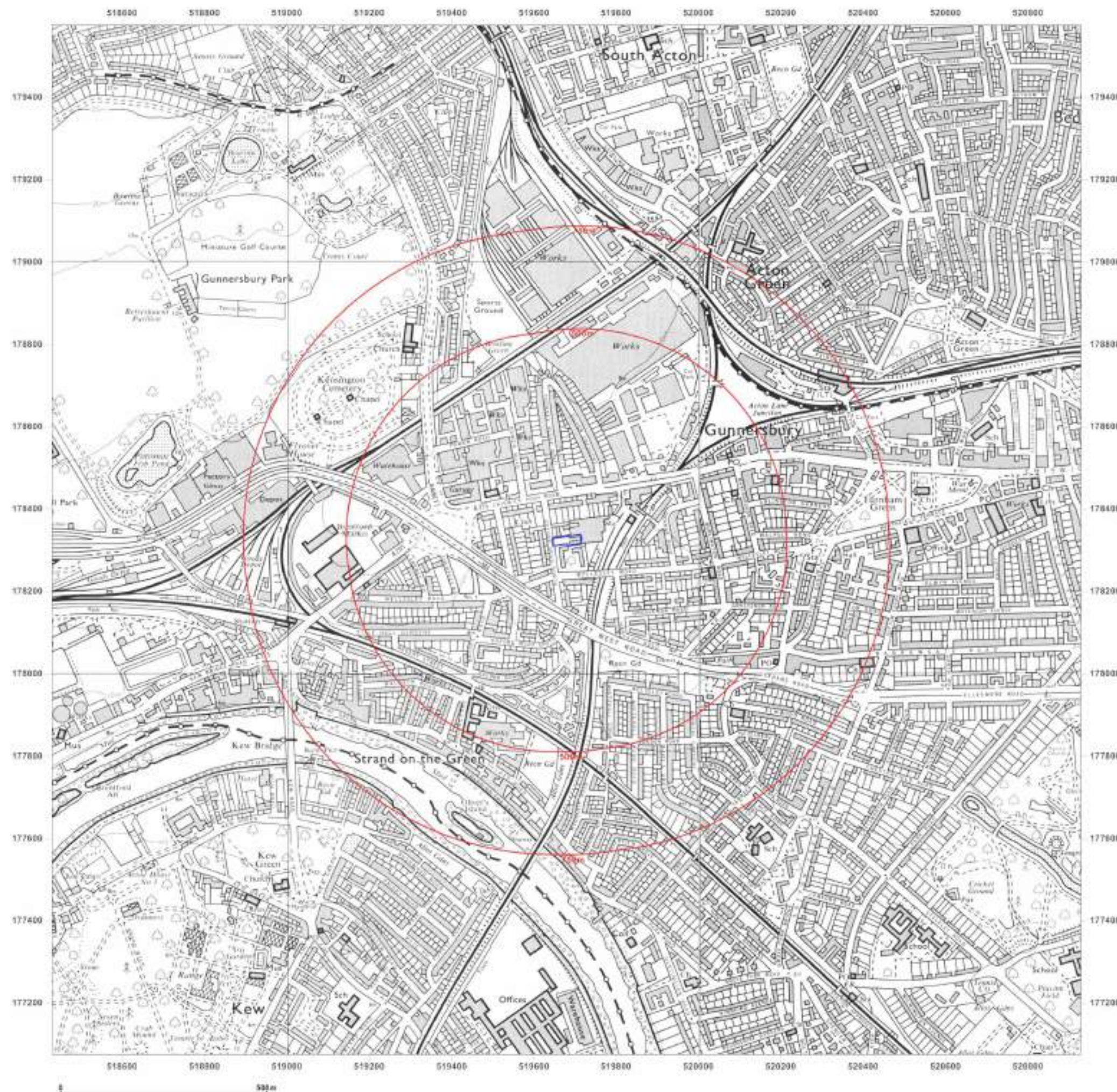


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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** National Grid

**Map date:** 1987

**Scale:** 1:10,000

**Printed at:** 1:10,000



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Surveyed 1981  
Revised 1987  
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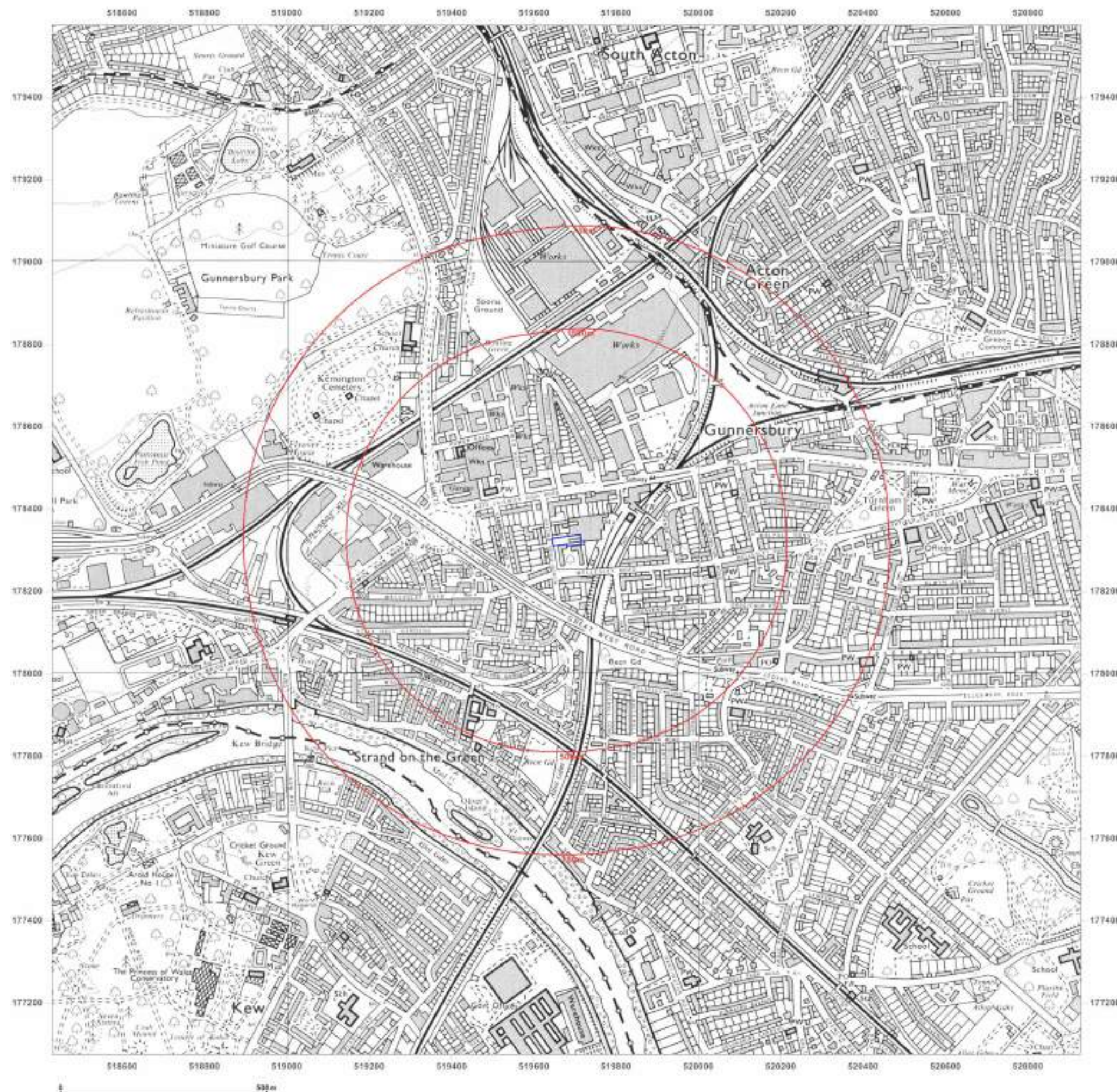


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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** 1:10,000 Raster

**Map date:** 2002

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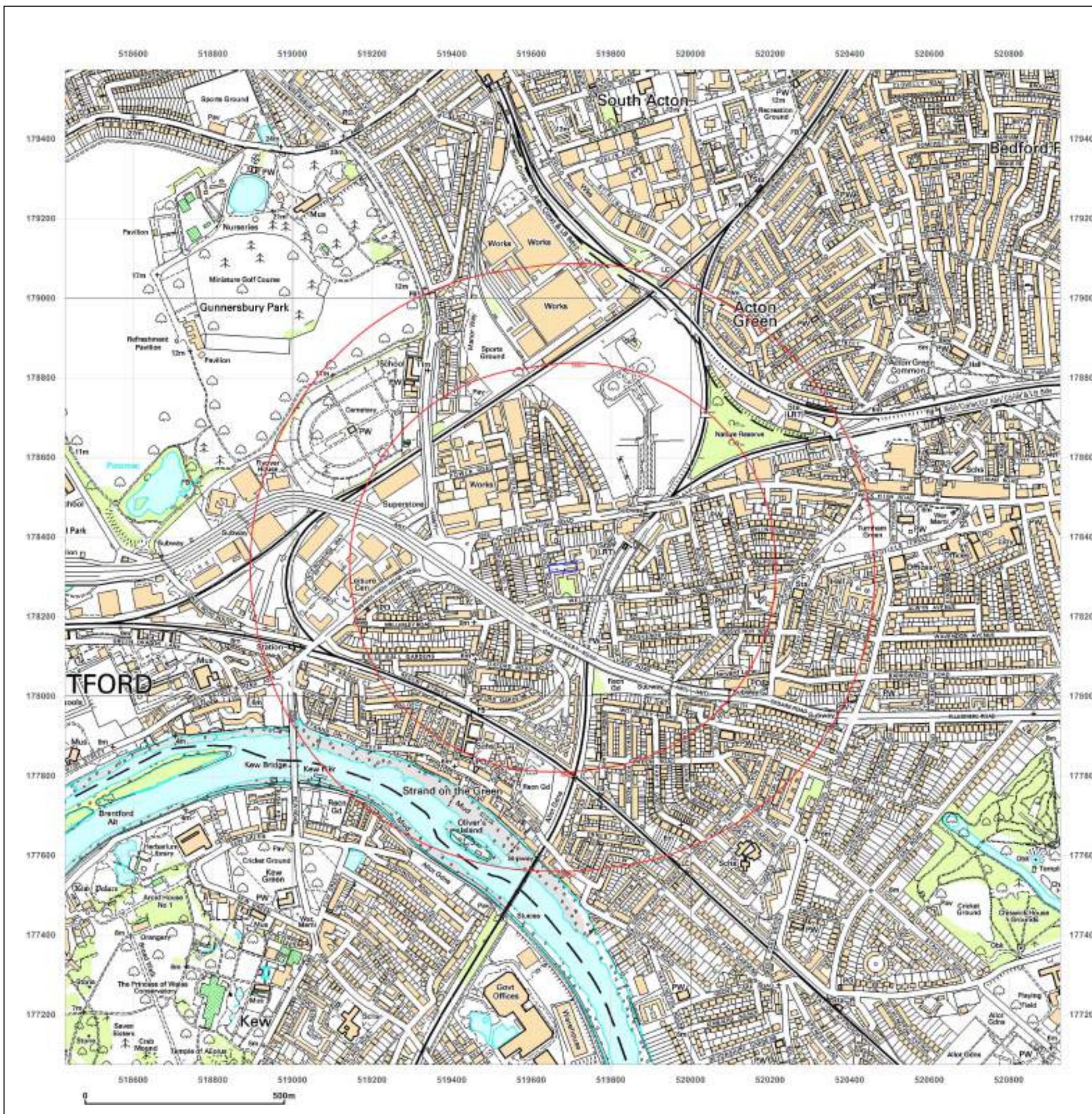


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Client Ref: 14023929  
Report Ref: GS-5911324  
Grid Ref: 519678, 178325

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000

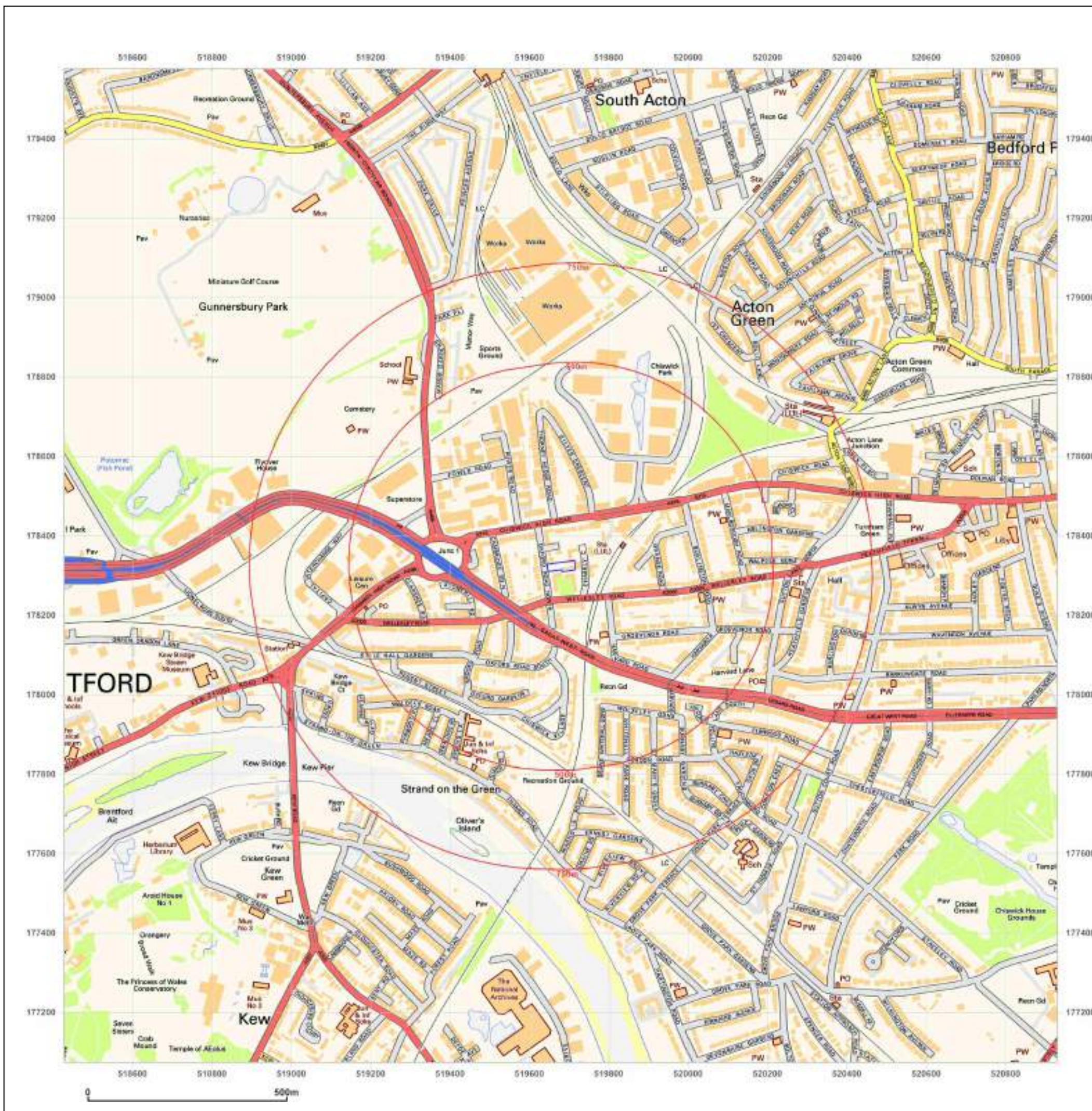


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**Client Ref:** 14023929  
**Report Ref:** GS-5911324  
**Grid Ref:** 519678, 178325

**Map Name:** National Grid

**Map date:** 2014

**Scale:** 1:10,000

**Printed at:** 1:10,000

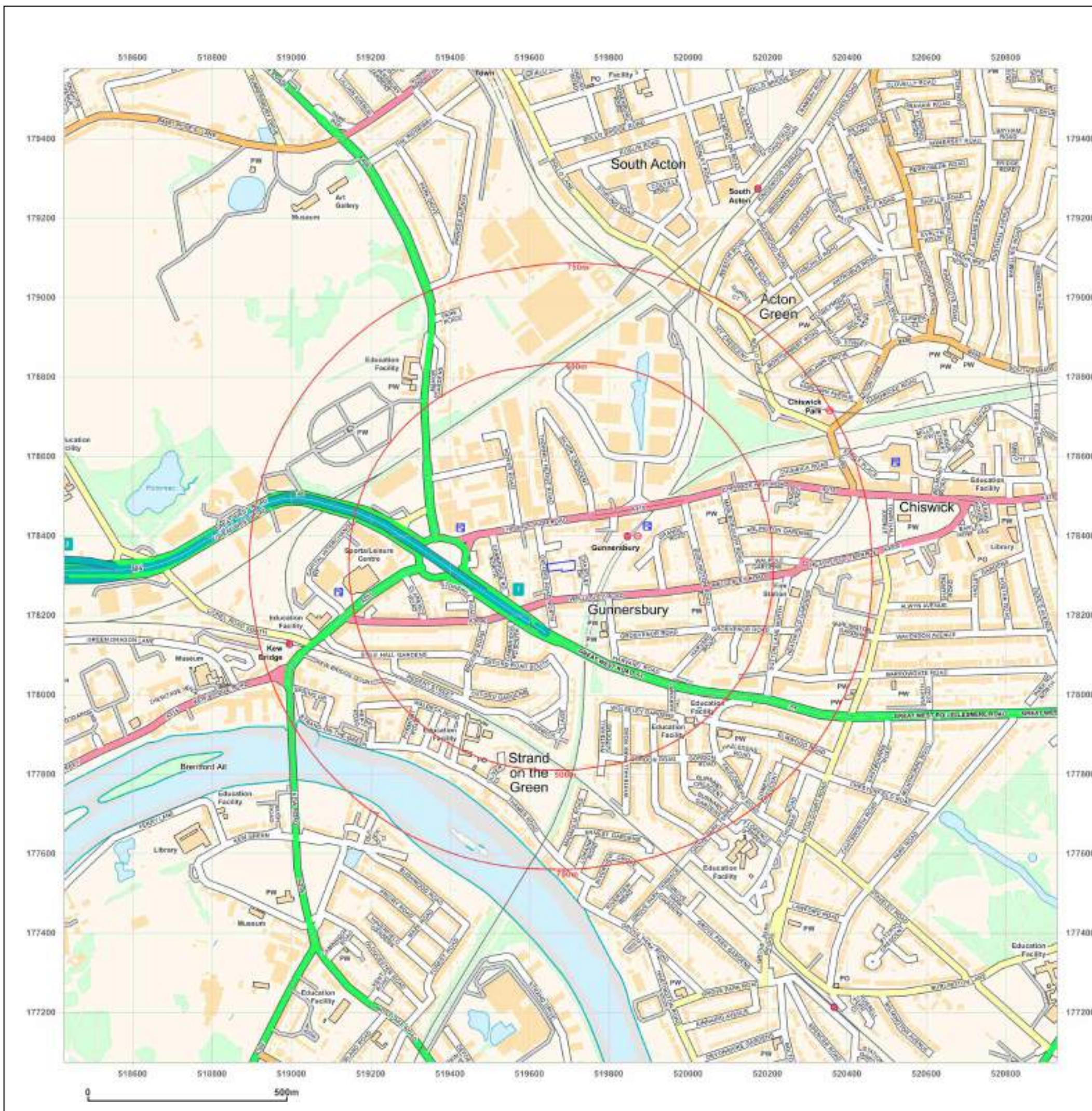


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## **APPENDIX B**

### **Groundsure Data Sheets and Site Sensitivity Maps**





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MANCHESTER, M60 3NT

Groundsure Reference: GS-5911322

Your Reference: 14023929

Report Date 29 Mar 2019

Report Delivery Method: Email - pdf

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Yours faithfully,

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Managing Director  
Groundsure Limited

Enc.  
Groundsure Enviroinsight



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Date: 29 Mar 2019

Reference: GS-5911322

Client: Arcadis Consulting UK Ltd

NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 20-Apr-2015

Grid Reference: 519684,178325

Site Size: 0.1428ha

Report Reference: GS-5911322

Client Reference: 14023929



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# Overview of Findings

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

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	4	2	74	103
1.2 Additional Information – Historical Tank Database	0	0	0	3
1.3 Additional Information – Historical Energy Features Database	3	1	21	7
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	1
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	10	11
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	2	31	55
Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	1	3
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	2
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	0
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0



Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	1	2	3
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	1
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	9	0

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	1	25	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	1	1
4.3 National Grid Underground Electricity Cables	1	2	9	6
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

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

Section 6: Hydrogeology and Hydrology	0-500m					
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified					
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified					
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	6	0	11
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	1	Not searched	Not searched



## Section 6: Hydrogeology and Hydrology

0-500m

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

## Section 7: Flooding

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

## Section 8: Designated Environmentally Sensitive Sites

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



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

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

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



# Using this report

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

## 1. Historical Industrial Sites

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

## 2. Environmental Permits, Incidents and Registers

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

## 3. Landfills and Other Waste Sites

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

## 4. Current Land Uses

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

## 5. Geology

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

## 6. Hydrogeology and Hydrology

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

## 7. Flooding

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

## 8. Designated Environmentally Sensitive Sites

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

## 9. Natural Hazards

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

## 10. Mining

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

## 11. Contacts

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

## Note: Maps

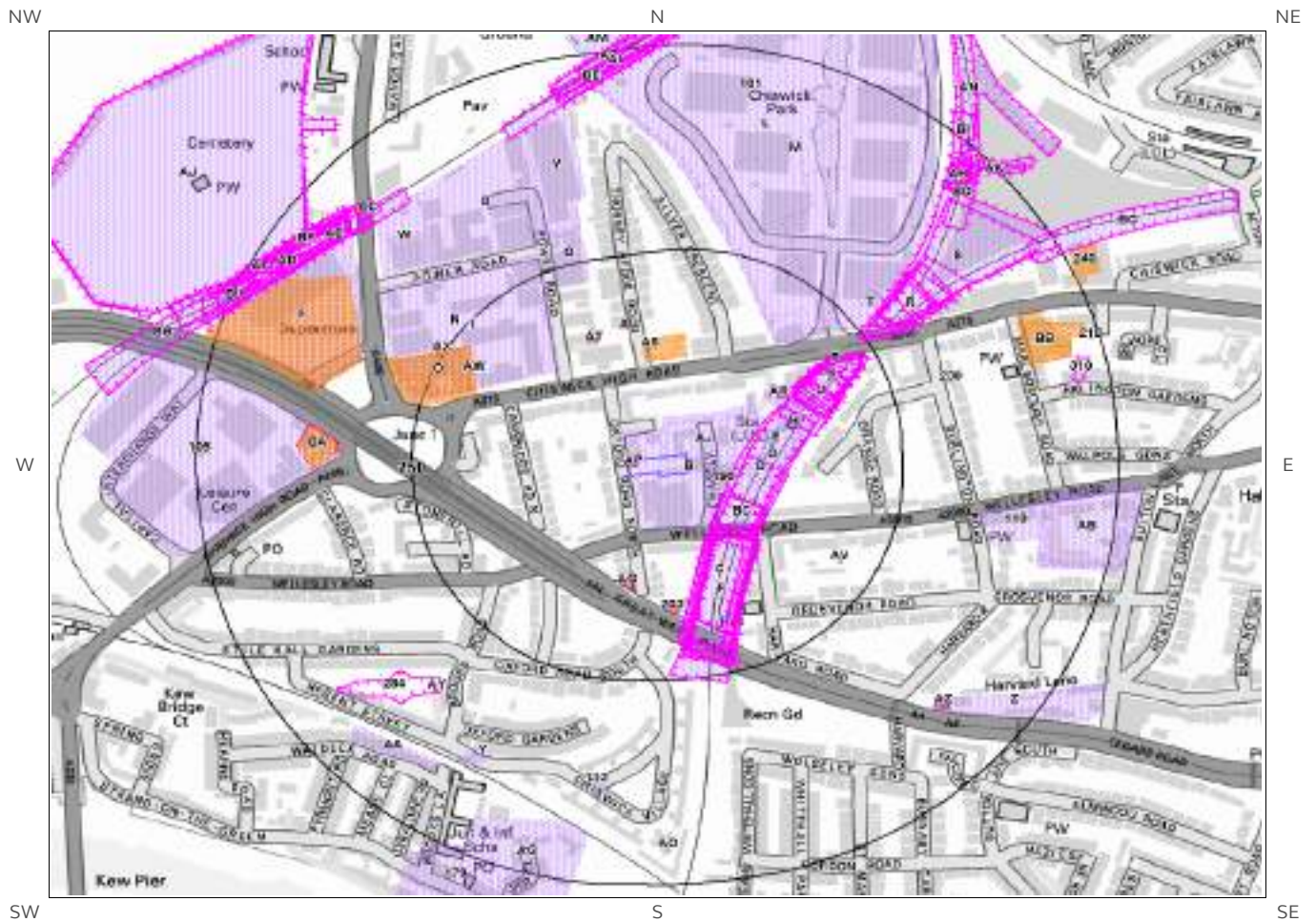
Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes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

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

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



# 1. Historical Land Use



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# 1. Historical Industrial Sites

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

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

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 183

ID	Distance [m]	Direction	Use	Date
1A	0	On Site	Unspecified Factory	1966
2A	0	On Site	Unspecified Commercial/Industrial	1961
3B	0	On Site	Unspecified Commercial/Industrial	1987
4B	0	On Site	Unspecified Commercial/Industrial	1974
5D	48	SE	Cuttings	1894
6C	50	SE	Cuttings	1898
7C	56	SE	Cuttings	1866
8G	56	SE	Cuttings	1966
9BC	56	SE	Cuttings	1893
10D	57	E	Railway Sidings	1938
11D	57	E	Railway Sidings	1920
12E	69	E	Railway Station	1894
13E	70	E	Railway Station	1898
14E	72	SE	Railway Station	1933
15E	72	E	Railway Station	1911
16E	75	E	Railway Station	1893
17F	77	SE	Cuttings	1948
18F	77	SE	Cuttings	1948
19E	79	E	Railway Station	1966
20F	79	SE	Cuttings	1910
21F	79	SE	Cuttings	1933
22F	79	SE	Cuttings	1961
23E	80	E	Railway Sidings	1948
24E	80	E	Railway Station	1948
25E	82	E	Railway Station	1961
26E	82	E	Railway Station	1938
27E	82	E	Railway Station	1920
28F	82	S	Cuttings	1893
29F	82	S	Cuttings	1894
30F	84	S	Cuttings	1920
31F	84	S	Cuttings	1938
32E	85	E	Railway Station	1933



33E	85	E	Railway Station	1910
34F	86	S	Cuttings	1933
35F	89	S	Cuttings	1974
36F	89	S	Cuttings	1987
37F	89	S	Cuttings	1966
38G	90	E	Railway Station	1866
39H	117	E	Railway Station	1987
40H	117	E	Railway Station	1974
41J	118	NE	Cuttings	1866
42I	135	NW	Unspecified Works	1987
43I	135	NW	Unspecified Works	1966
44I	135	NW	Unspecified Works	1961
45I	135	NW	Unspecified Works	1974
46J	141	NE	Cuttings	1933
47J	144	NE	Cuttings	1938
48J	144	NE	Cuttings	1920
49J	148	NE	Cuttings	1948
50J	148	NE	Cuttings	1948
51J	149	NE	Cuttings	1933
52J	149	NE	Cuttings	1910
53J	153	NE	Cuttings	1961
54K	162	NE	Cuttings	1894
55K	163	NE	Cuttings	1898
56M	166	NE	Unspecified Works	1966
57J	168	NE	Cuttings	1966
58J	170	NE	Cuttings	1893
59L	173	NE	Unspecified Works	1961
60L	180	NE	Works	1948
61L	180	NE	Works	1948
62M	183	NE	Unspecified Works	1987
63K	189	NE	Railway Building	1893
64N	193	NW	Works	1948
65N	193	NW	Works	1948
66K	194	NE	Junction Station	1938
67K	194	NE	Junction Station	1920
68P	196	NE	Railway Building	1966
69O	199	NW	Garage	1974
70O	199	NW	Garage	1987
71O	199	NW	Garage	1966
72P	199	NE	Railway Building	1910
73P	199	NE	Railway Building	1933
74P	200	NE	Railway Building	1948
75P	200	NE	Railway Building	1948
76Q	227	N	Unspecified Works	1974
77Q	227	N	Unspecified Works	1966
78Q	227	N	Unspecified Works	1987



79S	244	NE	Cuttings	1894
80R	248	NE	Cuttings	1898
81R	258	NE	Cuttings	1866
82T	258	NE	Railway Building	1894
83R	264	NE	Cuttings	1987
84S	265	NE	Cuttings	1910
85S	265	NE	Cuttings	1933
86R	274	NE	Cuttings	1961
87R	274	NE	Cuttings	1966
88R	274	NE	Cuttings	1974
89T	279	NE	Junction Station	1893
90R	281	NE	Cuttings	1893
91U	287	N	Unspecified Works	1974
92U	287	N	Unspecified Works	1987
93U	287	N	Unspecified Works	1966
94T	291	NE	Railway Building	1933
95T	291	NE	Railway Building	1910
96V	293	N	Unspecified Works	1974
97V	293	N	Unspecified Works	1966
98V	293	N	Unspecified Works	1987
99R	308	NE	Cuttings	1948
100R	308	NE	Cuttings	1948
101	324	N	Unspecified Works	1974
102W	326	NW	Unspecified Works	1966
103W	326	NW	Unspecified Commercial/Industrial	1987
104W	326	NW	Unspecified Commercial/Industrial	1974
105	329	W	Unspecified Commercial/Industrial	1987
106X	333	NW	Unspecified Works	1961
107X	333	NW	Unspecified Warehouse	1987
108X	333	NW	Unspecified Warehouse	1974
109X	333	NW	Unspecified Warehouse	1966
110	336	E	Nursery	1893
111X	336	NW	Motor Works	1948
112X	336	NW	Works	1948
113	367	S	Junction Station	1920
114Y	376	SW	Railway Building	1910
115Y	376	SW	Railway Building	1933
116Y	381	SW	Junction Station	1893
117Y	390	SW	Railway Building	1894
118Z	398	SE	Unspecified Depot	1958
119AE	406	NW	Cuttings	1866
120BD	407	NE	Cuttings	1866
121Z	411	SE	Unspecified Depot	1962
122AA	414	SW	Unspecified Works	1974



123AA	414	SW	Unspecified Works	1987
124AA	414	SW	Unspecified Works	1966
125AB	414	E	Nursery	1894
126AB	414	E	Nursery	1910
127AB	414	E	Nursery	1933
128AD	416	NW	Cuttings	1898
129AB	417	E	Nursery	1911
130AB	417	E	Nursery	1898
131BE	418	N	Cuttings	1866
132AC	419	NW	Cuttings	1894
133AC	422	NW	Cuttings	1894
134AB	422	E	Nursery	1866
135AB	424	E	Nursery	1920
136AB	424	E	Nursery	1933
137AD	425	NW	Cuttings	1910
138AD	425	NW	Cuttings	1933
139AD	427	NW	Cuttings	1933
140AE	428	NW	Cuttings	1894
141AD	428	NW	Cuttings	1920
142AG	428	S	Unspecified Commercial/Industrial	1961
143BF	430	NW	Cuttings	1896
144AF	431	NW	Cuttings	1961
145AD	432	NW	Cuttings	1894
146AF	434	NW	Cuttings	1948
147AF	434	NW	Cuttings	1948
148AG	438	S	Unspecified Works	1966
149AG	438	S	Unspecified Works	1974
150AH	442	NE	Cuttings	1898
151AI	442	N	Cuttings	1920
152AH	446	NE	Cuttings	1894
153AH	450	NE	Cuttings	1920
154AI	451	N	Cuttings	1948
155AI	451	N	Cuttings	1948
156AL	453	N	Cuttings	1961
157AH	454	NE	Cuttings	1947
158AH	456	NE	Cuttings	1896
159AK	459	NE	Unspecified Ground Workings	1894
160AH	464	NE	Cuttings	1910
161AH	464	NE	Cuttings	1933
162AI	465	N	Cuttings	1896
163AJ	465	NW	Cemetery	1987
164AJ	465	NW	Cemetery	1974
165AJ	465	NW	Cemetery	1961
166AJ	465	NW	Cemetery	1966



167BG	466	NE	Cuttings	1866
168AJ	468	NW	Cemetery	1948
169AJ	468	NW	Cemetery	1948
170AK	469	NE	Unspecified Ground Workings	1896
171AL	469	N	Cuttings	1894
172BH	479	NW	Cuttings	1866
173BI	480	NE	Cuttings	1920
174BJ	481	NW	Cuttings	1933
175AM	486	N	Unspecified Works	1974
176AM	486	N	Unspecified Works	1966
177AM	486	N	Unspecified Works	1987
178AN	487	NE	Cuttings	1866
179	494	SW	Unspecified Works	1961
180AN	498	NE	Cuttings	1894
181AM	500	N	Railway Sidings	1974
182AM	500	N	Railway Sidings	1987
183AM	500	N	Railway Sidings	1966

## 1.2 Additional Information – Historical Tank Database

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

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

3

ID	Distance (m)	Direction	Use	Date
184AO	448	S	Tanks	1985
185AO	448	S	Tanks	1994
186AO	449	S	Tanks	1972

## 1.3 Additional Information – Historical Energy Features Database

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

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

32

ID	Distance (m)	Direction	Use	Date
187AP	0	On Site	Electricity Substation	1971
188AP	0	On Site	Electricity Substation	1988
189AP	0	On Site	Electricity Substation	1996
190	40	E	Electricity Substation	1971

191AQ	123	S	Electricity Substation	1996
192AR	124	NE	Electricity Substation	1971
193AQ	124	S	Electricity Substation	1971
194AQ	124	S	Electricity Substation	1988
195AR	125	NE	Electricity Substation	1988
196AR	125	NE	Electricity Substation	1996
197AS	133	N	Electricity Substation	1971
198AS	136	N	Electricity Substation	1996
199AS	140	N	Electricity Substation	1988
200AT	151	N	Electricity Substation	1996
201AT	151	N	Electricity Substation	1988
202AT	151	N	Electricity Substation	1971
203	153	S	Electricity Cooling Station	1971
204AU	160	N	Electricity Substation	1996
205AU	161	N	Electricity Substation	1988
206AU	161	N	Electricity Substation	1971
207AV	202	SE	Electricity Substation	1996
208AV	203	SE	Electricity Substation	1971
209AV	204	SE	Electricity Substation	1988
210AW	208	NW	Electricity Substation	1991
211AW	208	NW	Electricity Substation	1989
212AX	251	NW	Electricity Substation	1991
213AX	252	NW	Electricity Substation	1989
214AY	340	SW	Electricity Substation	1989
215AY	340	SW	Electricity Substation	1991
216AZ	397	SE	Electricity Substation	1950
217AZ	403	SE	Electricity Substation	1950
218	487	E	Electricity Substation	1991

## 1.4 Additional Information – Historical Petrol and Fuel Site Database

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

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

1

ID	Distance (m)	Direction	Use	Date
219BA	335	W	Filling Station	1987

## 1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

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



Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 21

ID	Distance (m)	Direction	Use	Date
220AS	117	N	Garage	1971
221AS	119	N	Garage	1996
222AS	123	N	Garage	1988
223O	192	NW	Garage	1989
224O	197	NW	Garage	1961
225O	201	NW	Garage	1960
226O	202	NW	Garage	1991
227O	203	NW	Garage	1985
228O	203	NW	Garage	1987
229O	203	NW	Garage	1974
230	312	E	Garage	1950
231X	332	W	Motor Works	1935
232BA	339	W	Garage	1974
233BB	412	E	Garage	1991
234BB	412	E	Garage	1983
235BB	412	E	Garage	1950
236BB	412	E	Garage	1962
237BB	413	E	Garage	1950
238BB	413	E	Garage	1950
239BB	413	E	Garage	1950
240	497	NE	Garage	

## 1.6 Historical military sites

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

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

Database searched and no data found.

## 1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 88

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

ID	Distance(m)	Direction	Use	Date
241G	48	SE	Cuttings	1894

242C	50	SE	Cuttings	1898
243C	56	SE	Cuttings	1866
244G	56	SE	Cuttings	1966
245BC	56	SE	Cuttings	1893
246F	77	SE	Cuttings	1948
247F	77	SE	Cuttings	1948
248F	79	SE	Cuttings	1933
249F	79	SE	Cuttings	1910
250F	79	SE	Cuttings	1961
251F	82	S	Cuttings	1893
252F	82	S	Cuttings	1894
253F	84	S	Cuttings	1920
254F	84	S	Cuttings	1938
255F	86	S	Cuttings	1933
256F	89	S	Cuttings	1966
257F	89	S	Cuttings	1987
258F	89	S	Cuttings	1974
259J	118	NE	Cuttings	1866
260J	141	NE	Cuttings	1933
261J	144	NE	Cuttings	1938
262J	144	NE	Cuttings	1920
263J	148	NE	Cuttings	1948
264J	148	NE	Cuttings	1948
265J	149	NE	Cuttings	1910
266J	149	NE	Cuttings	1933
267J	153	NE	Cuttings	1961
268K	162	NE	Cuttings	1894
269K	163	NE	Cuttings	1898
270J	168	NE	Cuttings	1966
271J	170	NE	Cuttings	1893
272S	244	NE	Cuttings	1894
273R	248	NE	Cuttings	1898
274R	258	NE	Cuttings	1866
275R	264	NE	Cuttings	1987
276S	265	NE	Cuttings	1933
277S	265	NE	Cuttings	1910
278R	274	NE	Cuttings	1974
279R	274	NE	Cuttings	1961
280R	274	NE	Cuttings	1966
281R	281	NE	Cuttings	1893
282R	308	NE	Cuttings	1948
283R	308	NE	Cuttings	1948
284	330	SW	Pond	1866
285AE	406	NW	Cuttings	1866
286BD	407	NE	Cuttings	1866
287AD	416	NW	Cuttings	1898
















288BE	418	N	Cuttings	1866
289AC	419	NW	Cuttings	1894
290AC	422	NW	Cuttings	1894
291AD	425	NW	Cuttings	1933
292AD	425	NW	Cuttings	1910
293AD	427	NW	Cuttings	1933
294BF	428	NW	Cuttings	1894
295AD	428	NW	Cuttings	1920
296BF	430	NW	Cuttings	1896
297AF	431	NW	Cuttings	1961
298AD	432	NW	Cuttings	1894
299AF	434	NW	Cuttings	1948
300AF	434	NW	Cuttings	1948
301AH	442	NE	Cuttings	1898
302AI	442	N	Cuttings	1920
303AH	446	NE	Cuttings	1894
304AH	450	NE	Cuttings	1920
305AL	451	N	Cuttings	1948
306AL	451	N	Cuttings	1948
307AL	453	N	Cuttings	1961
308AH	454	NE	Cuttings	1947
309AH	456	NE	Cuttings	1896
310	458	E	Pond	1866
311AK	459	NE	Unspecified Ground Workings	1894
312AK	464	NE	Cuttings	1910
313AK	464	NE	Cuttings	1933
314AL	465	N	Cuttings	1896
315AJ	465	NW	Cemetery	1987
316AJ	465	NW	Cemetery	1974
317AJ	465	NW	Cemetery	1966
318AJ	465	NW	Cemetery	1961
319BG	466	NE	Cuttings	1866
320AJ	468	NW	Cemetery	1948
321AJ	468	NW	Cemetery	1948
322AK	469	NE	Unspecified Ground Workings	1896
323AL	469	N	Cuttings	1894
324BH	479	NW	Cuttings	1866
325BI	480	NE	Cuttings	1920
326BJ	481	NW	Cuttings	1933
327AN	487	NE	Cuttings	1866
328AN	498	NE	Cuttings	1894

## 2. Environmental Permits, Incidents and Registers Map



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



## 2. Environmental Permits, Incidents and Registers

### 2.1 Industrial Sites Holding Licences and/or Authorisations

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

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

4

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
3	99	NE	519762 178425	Address: Ariana Dry Cleaners, 405 Chiswick High Road, London, W4 4AR Process: Dry Cleaning Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
4	369	W	519275 178349	Address: Cheswick Flyover Service Station, 1 Great West Road, Chiswick, London, W4 5QJ Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
5	391	E	520099 178401	Address: Exclusive Workshops, Marlborough Rd, W4 Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
6	443	W	519201 178301	Address: Esso Gt West Rd Process: Petrol Vapour Recovery Process Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

### 2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

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

2

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

ID	Distance (m)	Direction	NGR	Details
1A	374	N	519600 178700	Address: Thorney Hedge Road, Chiswick, Thorney Hedge Road, Chiswick Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.2104 Permit Version: 1 Receiving Water: TIDAL THAMES Status: TEMPORARY CONSENTS (WATER ACT 1989, SECTION 113) Issue date: 02/11/1989 Effective Date: 02-Nov-1989 Revocation Date: 02/09/2010
2A	374	N	519600 178700	Address: Thorney Hedge Road, Chiswick, Thorney Hedge Road, Chiswick Effluent Type: SEWAGE DISCHARGES - Receiving Water: THAMES Status: SURRENDERED UNDER EPR 2010 Issue date: 03/09/2010



ID	Distance (m)	Direction	NGR	Details
				<p>PUMPING STATION - WATER COMPANY</p> <p>Permit Number: TEMP.2104</p> <p>Permit Version: 2</p> <p>Effective Date: 03-Sep-2010</p> <p>Revocation Date: 13/10/2015</p>

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

0

Database searched and no data found.

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

0

Database searched and no data found.

## 2.2 Dangerous or Hazardous Sites

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

0

Database searched and no data found.

## 2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site 0

Database searched and no data found.

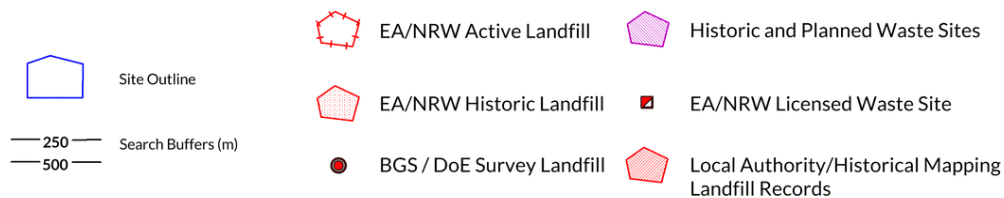
---



# 3. Landfill and Other Waste Sites Map



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# 3. Landfill and Other Waste Sites

## 3.1 Landfill Sites

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

0

Database searched and no data found.

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

6

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

ID	Distance (m)	Direction	NGR	Details
1	359	W		Site Address: Texas DIY, Ibis lane, Hartington Road Waste Licence: - Site Reference: 8HO064 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: 31-Dec-1935
Not shown	893	W		Site Address: Green Dragon Lane Flats, Green Dragon Lane Waste Licence: - Site Reference: 8HO065 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: 31-Dec-1964 Last Recorded: 31-Dec-1966
Not shown	946	W		Site Address: Old Thames Water Gas Works, Brentford, Hounslow, London Waste Licence: - Site Reference: 8HO082 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: 31-Dec-1960 Last Recorded: 31-Dec-1966
Not shown	1079	SW		Site Address: Watermans Park, High Street, Brentford Waste Licence: - Site Reference: 8HO066 Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: 31-Dec-1865
Not shown	1138	W		Site Address: Carville Hill Park North, Brentford, Hounslow, London Waste Licence: - Licence Issue: Licence Surrendered: Licence Holder Address: -



ID	Distance (m)	Direction	NGR	Details	
Not shown	1220	SE		Site Reference: 8HO042 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Operator: - Licence Holder: L B Hounslow First Recorded: - Last Recorded: 31-Dec-1951
				Site Address: Staveley Road, Grove Park, Chiswick, Hounslow, London Waste Licence: - Site Reference: 8HO062 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: 31-Dec-1913 Last Recorded: 31-Dec-1951

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

0

Database searched and no data found.

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

1

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

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
Not shown	1163	W	518533 177894	184 Holland Gardens, Brentford	Hounslow Borough Council	Point

## 3.2 Other Waste Sites

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

0

Database searched and no data found.

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

9

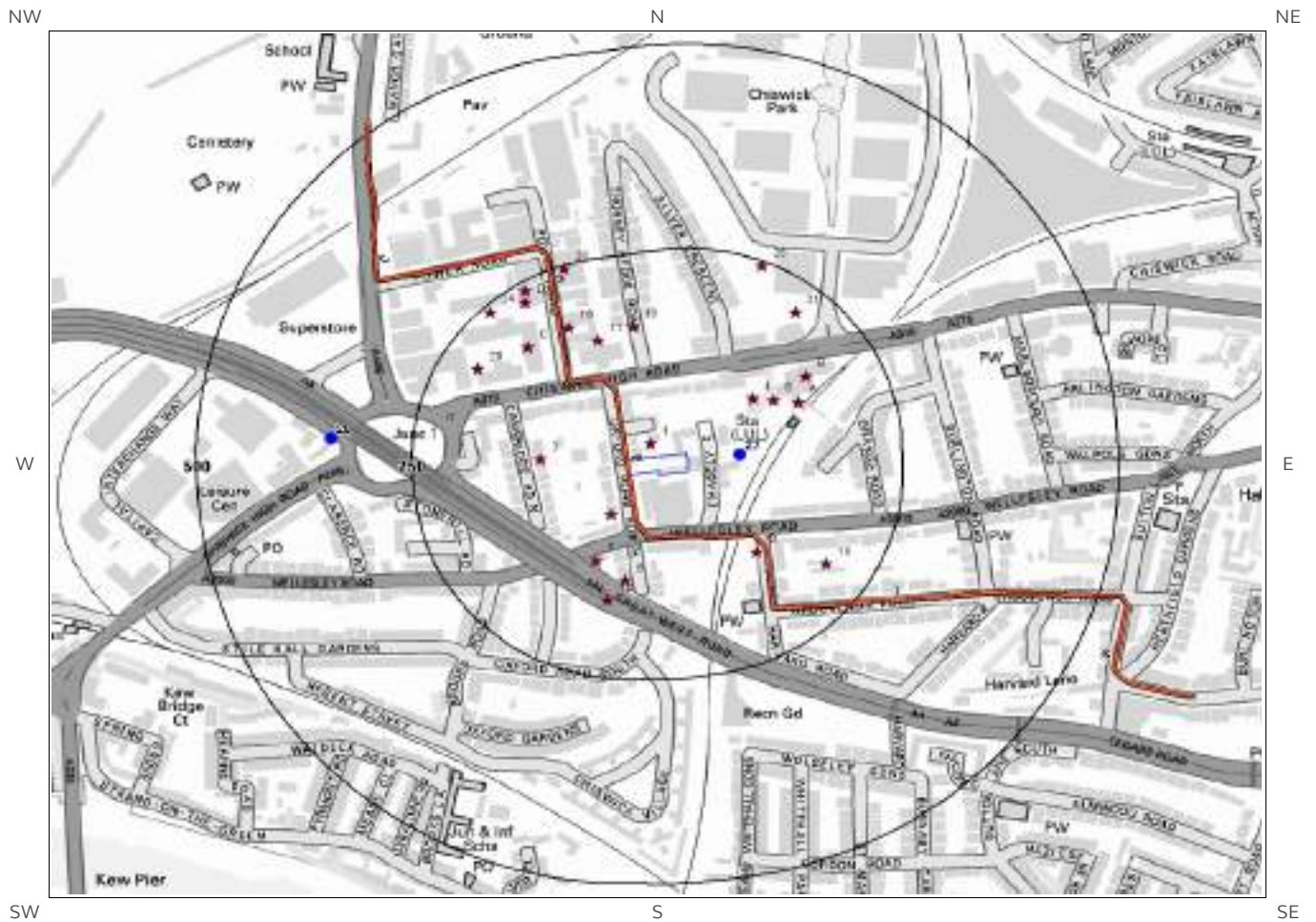
The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
Not shown	690	W	518953 178319	<p>Site Address: British Rail Goods Yard, Kew Bridge North, Lionel Road, Brentford, Middlesex, TW8 0JA</p> <p>Type: Household, Commercial &amp; Industrial Waste T Stn</p> <p>Size: &gt;= 75000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: QUA003</p> <p>EPR reference: EA/EPR/PP3993ET/A001</p> <p>Operator: Quattro ( U K ) Ltd</p> <p>Waste Management licence No: 80724</p> <p>Annual Tonnage: 912000.0</p> <p>Issue Date: 23/11/2007</p> <p>Effective Date: -</p> <p>Modified: -</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Issued</p> <p>Site Name: Quattro - Brentford</p> <p>Correspondence Address: -</p>
Not shown	716	W	518935 178224	<p>Site Address: Ward Ltd, British Rail Goods Yard North, Lionel Road, Kew Bridge, Brentford, Middlesex, TW8 0JA</p> <p>Type: Household, Commercial &amp; Industrial Waste T Stn</p> <p>Size: &gt;= 75000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: WAR001</p> <p>EPR reference: EA/EPR/RP3996NS/V002</p> <p>Operator: Ward Ltd</p> <p>Waste Management licence No: 80074</p> <p>Annual Tonnage: 165740.0</p> <p>Issue Date: 15/12/1992</p> <p>Effective Date: -</p> <p>Modified: 25/03/1997</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Expired</p> <p>Site Name: Br Goods Yard (north), Brentford</p> <p>Correspondence Address: -</p>
Not shown	719	W	518925 178286	<p>Site Address: Chiswick Skips Ltd, B R Goods Yard, Kew Bridge North, Lionel Road, Brentford, Middlesex, TW8 0JA</p> <p>Type: Household, Commercial &amp; Industrial Waste T Stn</p> <p>Size: &gt;= 25000 tonnes &lt; 75000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: QUA004</p> <p>EPR reference: -</p> <p>Operator: Quattro ( U K ) Limited</p> <p>Waste Management licence No: 80020</p> <p>Annual Tonnage: 0.0</p> <p>Issue Date: 04/12/1991</p> <p>Effective Date: 19/10/2006</p> <p>Modified: 05/03/1999</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Transferred</p> <p>Site Name: Quattro U K, Brentford</p> <p>Correspondence Address: Regency Street, Off Victoria Road, Park Royal, London, NW10 6NR</p>
Not shown	719	W	518925 178286	<p>Site Address: Chiswick Skips Ltd, BR Goods Yard, Kew Bridge North, Lionel Road, Brentford, Middlesex, TW8 0JA</p> <p>Type: Household, Commercial &amp; Industrial Waste T Stn</p> <p>Size: &gt;= 25000 tonnes &lt; 75000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: CHI001</p> <p>EPR reference: -</p> <p>Operator: Chiswick Skips Ltd</p> <p>Waste Management licence No: 80020</p> <p>Annual Tonnage: 0.0</p> <p>Issue Date: 04/12/1991</p> <p>Effective Date: -</p> <p>Modified: 05/03/1999</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Modified</p> <p>Site Name: Chiswick Skips, Brentford</p> <p>Correspondence Address: Chiswick Skips Ltd, BR Goods Yard, Kew Bridge North, Lionel Road, Brentford, Middlesex, TW8 0JA</p>
Not shown	719	W	518925 178286	<p>Site Address: Chiswick Skips Ltd, B R Goods Yard, Kew Bridge North, Lionel Road, Brentford, Middlesex, TW8 0JA</p> <p>Type: Household, Commercial &amp; Industrial Waste T Stn</p> <p>Size: &gt;= 25000 tonnes &lt; 75000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: QUA004</p> <p>Issue Date: 04/12/1991</p> <p>Effective Date: 19/10/2006</p> <p>Modified: 05/03/1999</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Revoked</p> <p>Site Name: Quattro U K, Brentford</p>



ID	Distance (m)	Direction	NGR	Details	
				EPR reference: EA/EPR/NP3996NJ/T004 Operator: Quattro ( U K ) Ltd Waste Management licence No: 80020 Annual Tonnage: 172200.0	Correspondence Address: -
Not shown	725	W	518920 178280	Site Address: Old British Rail Goods Yard, Lionel Road, Brentford, Brentford, Middlesex, TW8 0JA Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRE012 EPR reference: - Operator: Brentford Commercials Ltd Waste Management licence No: 80618 Annual Tonnage: 0.0	Issue Date: 15/11/2004 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Brentford Commercials (waste) Ltd Correspondence Address: Old British Rail Goods Yard, Lionel Road, Brentford, Middlesex, TW8 0JA
Not shown	747	W	518898 178281	Site Address: Old British Rail Goods Yard, Lionel Road, Brentford, Brentford, Middlesex, TW8 0JA Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRE012 EPR reference: EA/EPR/VP3097NN/A001 Operator: Brentford Commercials Ltd Waste Management licence No: 80618 Annual Tonnage: 74999.0	Issue Date: 15/11/2004 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Brentford Commercials ( Waste ) Ltd Correspondence Address: -
Not shown	898	N	519842 179227	Site Address: Ealing LB Council, Acton Waste & Recycling Centre, Stirling Road, Acton, London, W3 8DJ Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: EAL002 EPR reference: - Operator: Ealing London Borough Council Waste Management licence No: 80030 Annual Tonnage: 0.0	Issue Date: 15/11/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Acton Waste & Recycling Centre Correspondence Address: Ealing London Borough Council, Perceval House, 14-16, Uxbridge Road, Ealing, London, W5 2HL
Not shown	922	N	519830 179253	Site Address: Ealing London Borough Council, Acton Waste & Recycling Centre, Stirling Road, Acton, London, W3 8DJ Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: EAL002 EPR reference: EA/EPR/EP3996NZ/A001 Operator: Ealing London Borough Council Waste Management licence No: 80030 Annual Tonnage: 15330.0	Issue Date: 15/11/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Acton Waste & Recycling Centre Correspondence Address: -

# 4. Current Land Use Map



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## 4. Current Land Uses

### 4.1 Current Industrial Data

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

26

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	17	N	Works	519670 178350	Greater London, W4	Unspecified Works Or Factories	Industrial Features
2	52	SW	Applewoods Hydroponica	519624 178264	18, Oxford Road North, London, Greater London, W4 4DN	Horticultural Equipment	Industrial Products
3	101	W	Bang Curry	519542 178331	5, Cambridge Road North, London, Greater London, W4 4AA	Catering and Non Specific Food Products	Foodstuffs
4	101	NE	Works	519789 178405	Greater London, W4	Unspecified Works Or Factories	Industrial Features
5	111	S	West4autos	519607 178207	58a, Wellesley Road, London, Greater London, W4 4AD	Vehicle Repair, Testing and Servicing	Repair and Servicing
6	119	NE	Electricity Sub Station	519813 178403	Greater London, W4	Electrical Features	Infrastructure and Facilities
7G	126	SE	Electricity Sub Station	519793 178217	Greater London, W4	Electrical Features	Infrastructure and Facilities
8	129	S	Electricity Sub Station	519641 178182	Greater London, W4	Electrical Features	Infrastructure and Facilities
9A	144	NE	Gunnersbury	519842 178401	Gunnersbury Station Approach, Chiswick High Road, London, Greater London, W4 4AN	Underground Network Stations	Public Transport, Stations and Infrastructure
10A	144	NE	Gunnersbury Rail Station	519842 178401	Greater London, W4	Railway Stations, Junctions and Halts	Public Transport, Stations and Infrastructure
11	151	N	Electricity Sub Station	519609 178476	Greater London, W4	Electrical Features	Infrastructure and Facilities
12	155	S	Gantry	519620 178158	Greater London, W4	Travelling Cranes and Gentries	Industrial Features
13	162	N	Electricity Sub Station	519650 178493	Greater London, W4	Electrical Features	Infrastructure and Facilities
14B	167	NE	Actelion	519851 178433	389, Chiswick High Road, London, Greater London, W4 4AL	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products
15B	167	NE	Air China	519851 178433	389, Chiswick High Road, London, Greater London, W4 4AL	Airlines and Airline Services	Transport, Storage and Delivery
16	177	NW	Works	519575 178492	Greater London, W4	Unspecified Works Or Factories	Industrial Features
17C	181	NW	Chiswick	519528	4, Power Road, London,	New Vehicles	Motoring

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
			Honda	178468	Greater London, W4 5YT		
18C	181	NW	Infinity Motorcycles	519528 178468	4, Power Road, London, Greater London, W4 5YT	Vehicle Parts and Accessories	Motoring
19	196	SE	Electricity Sub Station	519874 178203	Greater London, W4	Electrical Features	Infrastructure and Facilities
20	206	NW	Electricity Sub Station	519470 178441	Greater London, W4	Electrical Features	Infrastructure and Facilities
21	212	NE	Electricity Sub Station	519838 178510	Greater London, W4	Electrical Features	Infrastructure and Facilities
22D	228	NW	Works	519524 178523	Greater London, W4	Unspecified Works Or Factories	Industrial Features
23D	240	NW	Works	519524 178537	Greater London, W4	Unspecified Works Or Factories	Industrial Features
24	242	NW	Electricity Sub Station	519484 178511	Greater London, W4	Electrical Features	Infrastructure and Facilities
25	245	N	Electricity Sub Station	519799 178568	Greater London, W4	Electrical Features	Infrastructure and Facilities
26	246	N	Works	519570 178564	Greater London, W4	Unspecified Works Or Factories	Industrial Features

## 4.2 Petrol and Fuel Sites

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

2

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
27	61	E	519774 178336	OBSOLETE	610-624, Chiswick High Road, Chiswick, London, Outer London, W4 5RU	Not Applicable	Obsolete
28	344	W	519300 178356	ESSO	1, Great West Road, Chiswick High Road, Brentford, Outer London, W4 5QJ	No	Open



### 4.3 National Grid High Voltage Underground Electricity Transmission Cables

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

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

18

The following Underground Electricity Transmission Cable records are represented as linear features on the Current Land Use map:

ID	Distance (m)	Direction	Details	
29E	0	W	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
30E	1	W	Cable Set: SOUTH (BICC) CABLE SECT 55 Cable Route: WIMBLEDON - WILLESSEN Cable Make: BICC 275KV OIL	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 1967 Cable in tunnel: N
31E	1	W	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
32F	75	S	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
33F	75	S	Cable Set: SOUTH (BICC) CABLE SECT 54 Cable Route: WIMBLEDON - WILLESSEN Cable Make: BICC 275KV OIL	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 1967 Cable in tunnel: N
34G	76	S	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
35H	130	NW	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
36H	132	NW	Cable Set: SOUTH (BICC) CABLE SECT 56 Cable Route: WIMBLEDON - WILLESSEN Cable Make: BICC 275KV OIL	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 1967 Cable in tunnel: N
37H	133	NW	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
38I	230	SE	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
39I	232	SE	Cable Set: SOUTH (BICC) CABLE SECT 53 Cable Route: WIMBLEDON - WILLESSEN Cable Make: BICC 275KV OIL	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 1967 Cable in tunnel: N

ID	Distance (m)	Direction	Details	
40I	233	SE	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
41J	315	NW	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
42J	317	NW	Cable Set: SOUTH (BICC) CABLE SECT 57 Cable Route: WIMBLEDON - WILLESSEN Cable Make: BICC 275KV OIL	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 1967 Cable in tunnel: N
43J	319	NW	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
44K	456	E	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
45K	458	E	Cable Set: SOUTH (BICC) CABLE SECT 52 Cable Route: WIMBLEDON - WILLESSEN Cable Make: BICC 275KV OIL	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 1967 Cable in tunnel: N
46K	461	E	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -

#### 4.4 National Grid High Pressure Gas Transmission Pipelines

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

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

Database searched and no data found.



# 5. Geology

## 5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

---

## 5.2 Superficial Ground and Drift Geology

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

Lex Code	Description	Rock Type
KPGR-XSV	KEMPTON PARK GRAVEL MEMBER	SAND AND GRAVEL

---

## 5.3 Bedrock and Solid Geology

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

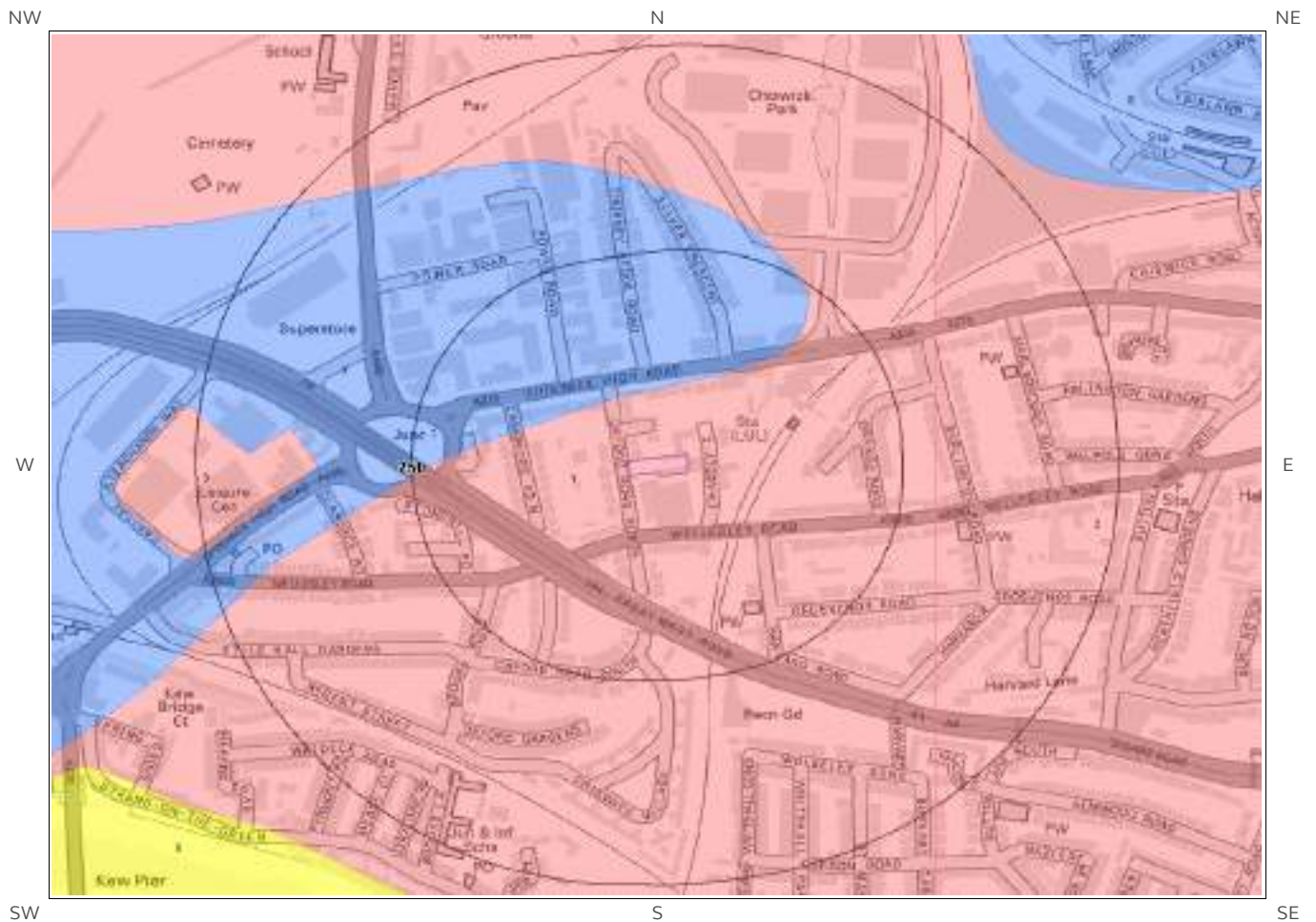
Lex Code	Description	Rock Type
LC-XCZ	LONDON CLAY FORMATION	CLAY AND SILT

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

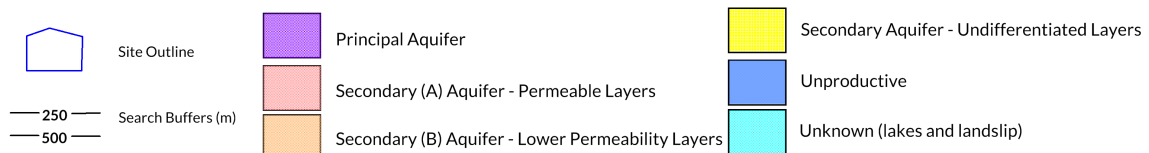
---

# 6 Hydrogeology and Hydrology

## 6a. Aquifer Within Superficial Geology

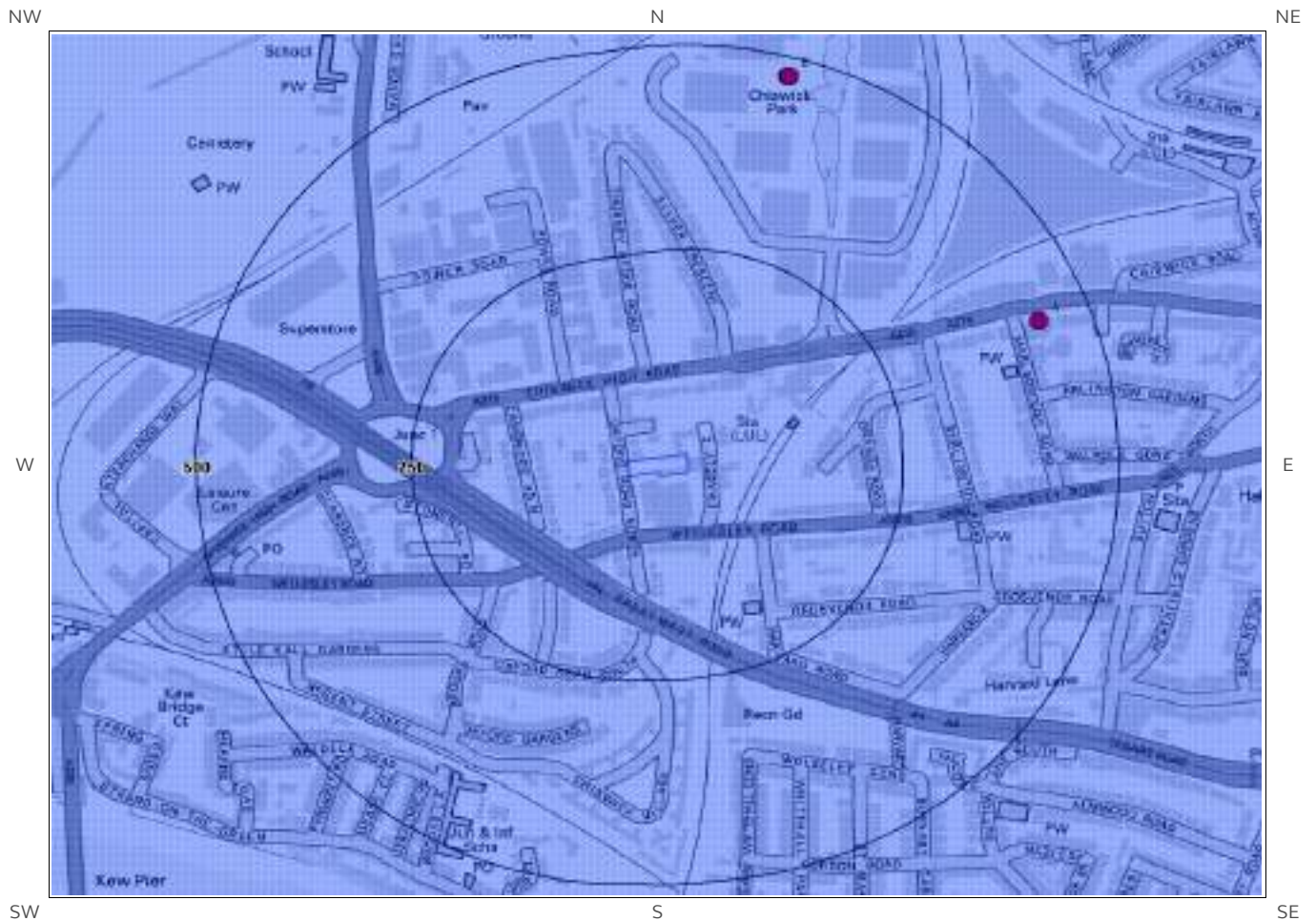


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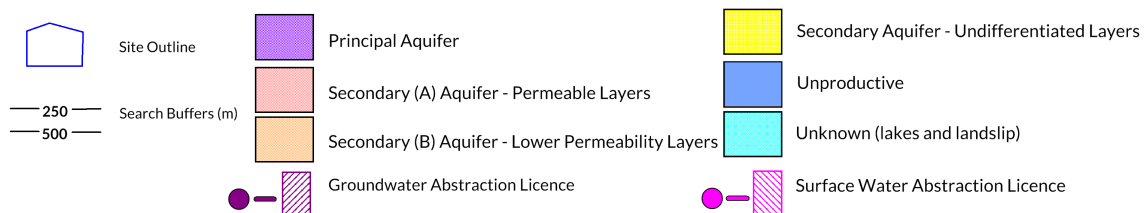




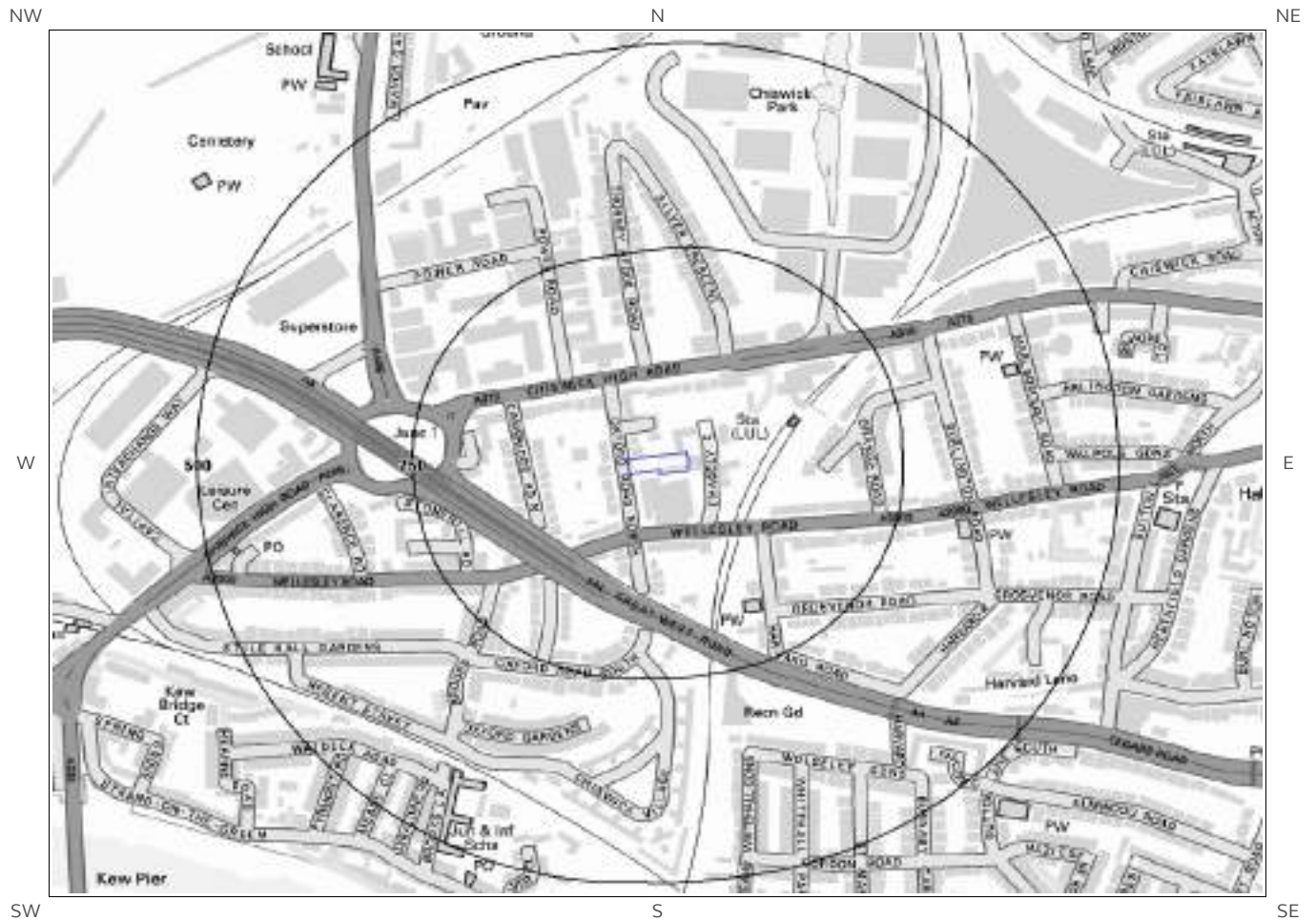
# 6b. Aquifer Within Bedrock Geology and Abstraction Licences



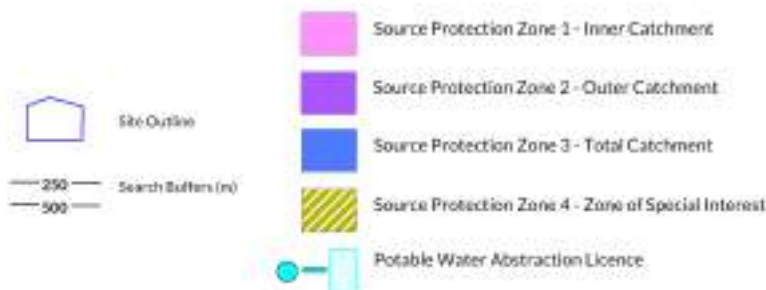
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# 6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences

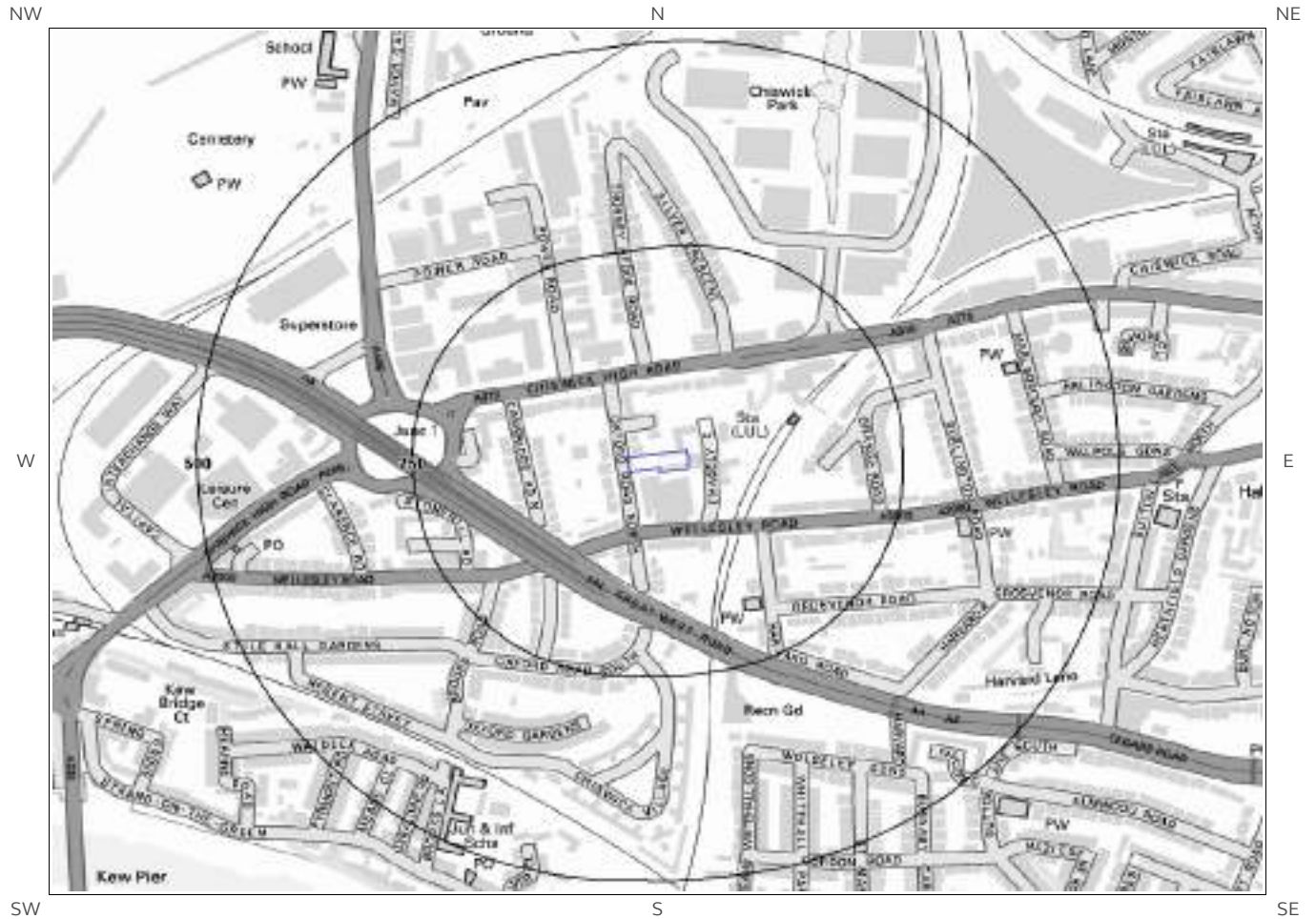


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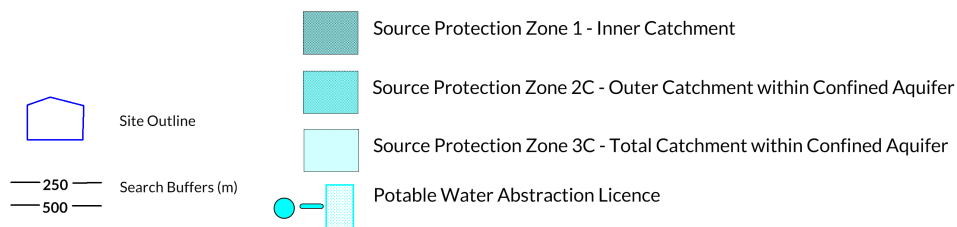




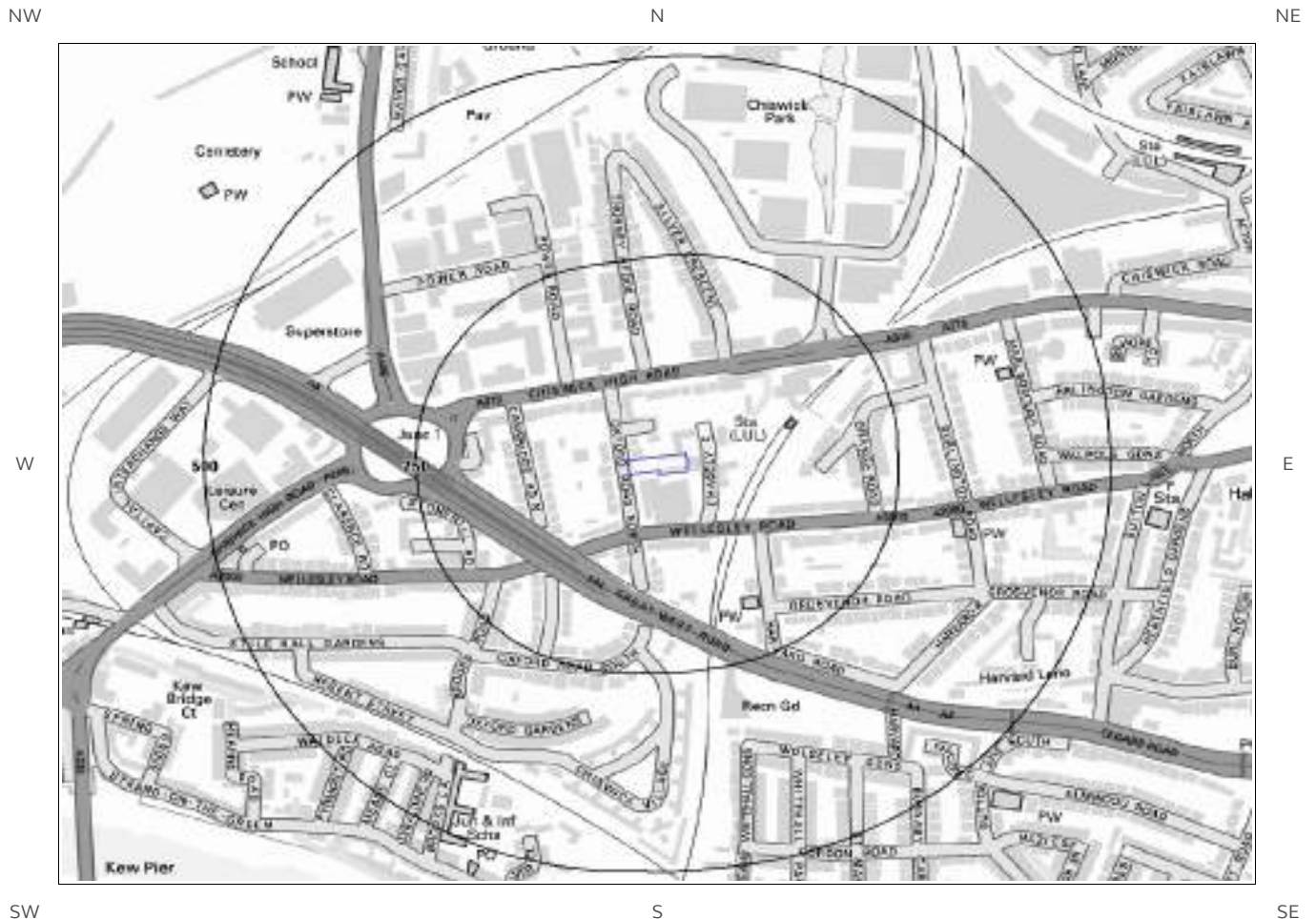
# 6d. Hydrogeology – Source Protection Zones within confined aquifer



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# 6e. Hydrology – Watercourse Network and River Quality



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# 6. Hydrogeology and Hydrology

## 6.1 Aquifer within Superficial Deposits

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

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

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

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
7	79	N	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
2	287	E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
3	361	W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

## 6.2 Aquifer within Bedrock Deposits

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

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

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

ID	Distance (m)	Direction	Designation	Description
1	0	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	287	E	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

## 6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site

Identified

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

ID	Distance (m)	Direction	NGR	Details
3A	438	E	520120 178500	Status: Historical Licence No: 28/39/39/0200 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: POINT 'A' AT CHISWICK SERVICE STATION, CHISWICK, LONDON W4. Data Type: Point Name: TOTALFINAELF UK LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 28/03/2002 Expiry Date: 31/01/2005 Issue No: 1 Version Start Date: 28/03/2002 Version End Date:
4A	438	E	520120 178500	Status: Historical Licence No: 28/39/39/0216 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: CHISWICK SERVICE STATION, CHISWICK, LONDON W4-POINT 'A'. Data Type: Point Name: TOTAL UK LIMITED Annual Volume (m³): 6935 Max Daily Volume (m³): 19 Original Application No: - Original Start Date: 10/03/2005 Expiry Date: 31/03/2013 Issue No: 1 Version Start Date: 10/03/2005 Version End Date:
5B	476	N	519830 178800	Status: Historical Licence No: 28/39/39/0197 Details: Make-Up Or Top Up Water Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT CHISWICK HIGH ROAD, LONDON Data Type: Point Name: CHISWICK PARK ESTATE MANAGEMENT LTD Annual Volume (m³): 19540 Max Daily Volume (m³): 294.1 Original Application No: - Original Start Date: 11/10/2000 Expiry Date: 31/12/2009 Issue No: 5 Version Start Date: 02/07/2007 Version End Date:
6B	476	N	519830 178800	Status: Historical Licence No: 28/39/39/0197 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT CHISWICK HIGH ROAD, LONDON Data Type: Point Name: CHISWICK PARK ESTATE MANAGEMENT LTD Annual Volume (m³): 19540 Max Daily Volume (m³): 294.1 Original Application No: - Original Start Date: 11/10/2000 Expiry Date: 31/12/2009 Issue No: 5 Version Start Date: 02/07/2007 Version End Date:
7B	476	N	519831 178800	Status: Active Licence No: TH/039/0039/030 Details: Make-Up Or Top Up Water Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT CHISWICK HIGH ROAD, LONDON Data Type: Point Name: CHISWICK PARK ESTATE MANAGEMENT LIMITED Annual Volume (m³): 19540 Max Daily Volume (m³): 588.2 Original Application No: - Original Start Date: 22/05/2010 Expiry Date: 31/03/2019 Issue No: 2 Version Start Date: 05/09/2014 Version End Date:
8B	476	N	519831 178800	Status: Active Licence No: TH/039/0039/030 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT CHISWICK HIGH ROAD, LONDON Data Type: Point Name: CHISWICK PARK ESTATE MANAGEMENT LIMITED Annual Volume (m³): 19540 Max Daily Volume (m³): 588.2 Original Application No: - Original Start Date: 22/05/2010 Expiry Date: 31/03/2019 Issue No: 2 Version Start Date: 05/09/2014 Version End Date:



ID	Distance (m)	Direction	NGR	Details	
Not shown	1064	S	519480 177260	Status: Active Licence No: TH/039/0035/002 Details: Make-Up Or Top Up Water Direct Source: THAMES GROUNDWATER Point: WELL 1 AT THE NATIONAL ARCHIVES. KEW, RICHMOND,SURREY Data Type: Point Name: The Secretary of State for Justice	Annual Volume (m³): 10000 Max Daily Volume (m³): 30 Original Application No: - Original Start Date: 23/06/2014 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 23/06/2014 Version End Date:
Not shown	1064	S	519480 177260	Status: Active Licence No: TH/039/0035/002 Details: Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: WELL 1 AT THE NATIONAL ARCHIVES. KEW, RICHMOND,SURREY Data Type: Point Name: The Secretary of State for Justice	Annual Volume (m³): 10000 Max Daily Volume (m³): 30 Original Application No: - Original Start Date: 23/06/2014 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 23/06/2014 Version End Date:
Not shown	1102	S	519490 177220	Status: Active Licence No: TH/039/0035/002 Details: Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: WELL 2 AT THE NATIONAL ARCHIVES, KEW, RICHMOND, SURREY Data Type: Point Name: The Secretary of State for Justice	Annual Volume (m³): 10000 Max Daily Volume (m³): 30 Original Application No: - Original Start Date: 23/06/2014 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 23/06/2014 Version End Date:
Not shown	1102	S	519490 177220	Status: Active Licence No: TH/039/0035/002 Details: Make-Up Or Top Up Water Direct Source: THAMES GROUNDWATER Point: WELL 2 AT THE NATIONAL ARCHIVES, KEW, RICHMOND, SURREY Data Type: Point Name: The Secretary of State for Justice	Annual Volume (m³): 10000 Max Daily Volume (m³): 30 Original Application No: - Original Start Date: 23/06/2014 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 23/06/2014 Version End Date:
Not shown	1166	SW	518665 177680	Status: Historical Licence No: TH/039/0035/001 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: KEW GARDENS, RICHMOND - BOREHOLE (1) Data Type: Point Name: THE BOARD OF TRUSTEES OF THE ROYAL BOTANIC GARDENS, KEW	Annual Volume (m³): 124300 Max Daily Volume (m³): 380 Original Application No: - Original Start Date: 26/05/2009 Expiry Date: 31/03/2016 Issue No: 1 Version Start Date: 10/07/2014 Version End Date:
Not shown	1166	SW	518665 177680	Status: Active Licence No: TH/039/0035/001/R01 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: KEW GARDENS, RICHMOND - BOREHOLE (1) Data Type: Point Name: THE BOARD OF TRUSTEES OF THE ROYAL BOTANIC GARDENS, KEW	Annual Volume (m³): 124300 Max Daily Volume (m³): 380 Original Application No: - Original Start Date: 19/05/2016 Expiry Date: 31/03/2022 Issue No: 1 Version Start Date: 19/05/2016 Version End Date:
Not shown	1185	SW	518649 177670	Status: Historical Licence No: TH/039/0035/001 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: KEW GARDENS, RICHMOND - BOREHOLE (2) Data Type: Point Name: THE BOARD OF TRUSTEES OF THE ROYAL BOTANIC GARDENS, KEW	Annual Volume (m³): 124300 Max Daily Volume (m³): 380 Original Application No: - Original Start Date: 26/05/2009 Expiry Date: 31/03/2016 Issue No: 1 Version Start Date: 10/07/2014 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1185	SW	518649 177670	Status: Active Licence No: TH/039/0035/001/R01 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: KEW GARDENS, RICHMOND - BOREHOLE (2) Data Type: Point Name: THE BOARD OF TRUSTEES OF THE ROYAL BOTANIC GARDENS, KEW Annual Volume (m³): 124300 Max Daily Volume (m³): 380 Original Application No: - Original Start Date: 19/05/2016 Expiry Date: 31/03/2022 Issue No: 1 Version Start Date: 19/05/2016 Version End Date:
Not shown	1191	SW	518643 177669	Status: Active Licence No: TH/039/0035/001/R01 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: KEW GARDENS, RICHMOND - BOREHOLE (3) Data Type: Point Name: THE BOARD OF TRUSTEES OF THE ROYAL BOTANIC GARDENS, KEW Annual Volume (m³): 124300 Max Daily Volume (m³): 380 Original Application No: - Original Start Date: 19/05/2016 Expiry Date: 31/03/2022 Issue No: 1 Version Start Date: 19/05/2016 Version End Date:
Not shown	1191	SW	518643 177669	Status: Historical Licence No: TH/039/0035/001 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: KEW GARDENS, RICHMOND - BOREHOLE (3) Data Type: Point Name: THE BOARD OF TRUSTEES OF THE ROYAL BOTANIC GARDENS, KEW Annual Volume (m³): 124300 Max Daily Volume (m³): 380 Original Application No: - Original Start Date: 26/05/2009 Expiry Date: 31/03/2016 Issue No: 1 Version Start Date: 10/07/2014 Version End Date:
Not shown	1932	E	521600 177900	Status: Historical Licence No: 28/39/39/0137 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: WELL AT GRIFFIN BREWERY, CHISWICK, LONDON W4 Data Type: Point Name: FULLER SMITH & TURNER LTD Annual Volume (m³): 81828 Max Daily Volume (m³): 327.3 Original Application No: - Original Start Date: 14/09/1970 Expiry Date: - Issue No: 100 Version Start Date: 14/09/1970 Version End Date:

## 6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

## 6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.



## 6.6 Source Protection Zones

Source Protection Zones within 500m of the study site

None identified

Database searched and no data found.

## 6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site

None identified

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

Database searched and no data found.

## 6.8 Groundwater Vulnerability and Soil Leaching Potential

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

Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
287	E	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.

## 6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site

None identified

### 6.9.1 Biological Quality:

Database searched and no data found.

### 6.9.2 Chemical Quality:

Database searched and no data found.

---

## 6.10 Ordnance Survey MasterMap Water Network

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

Database searched and no data found.

---

## 6.11 Surface Water Features

Surface water features within 250m of the study site

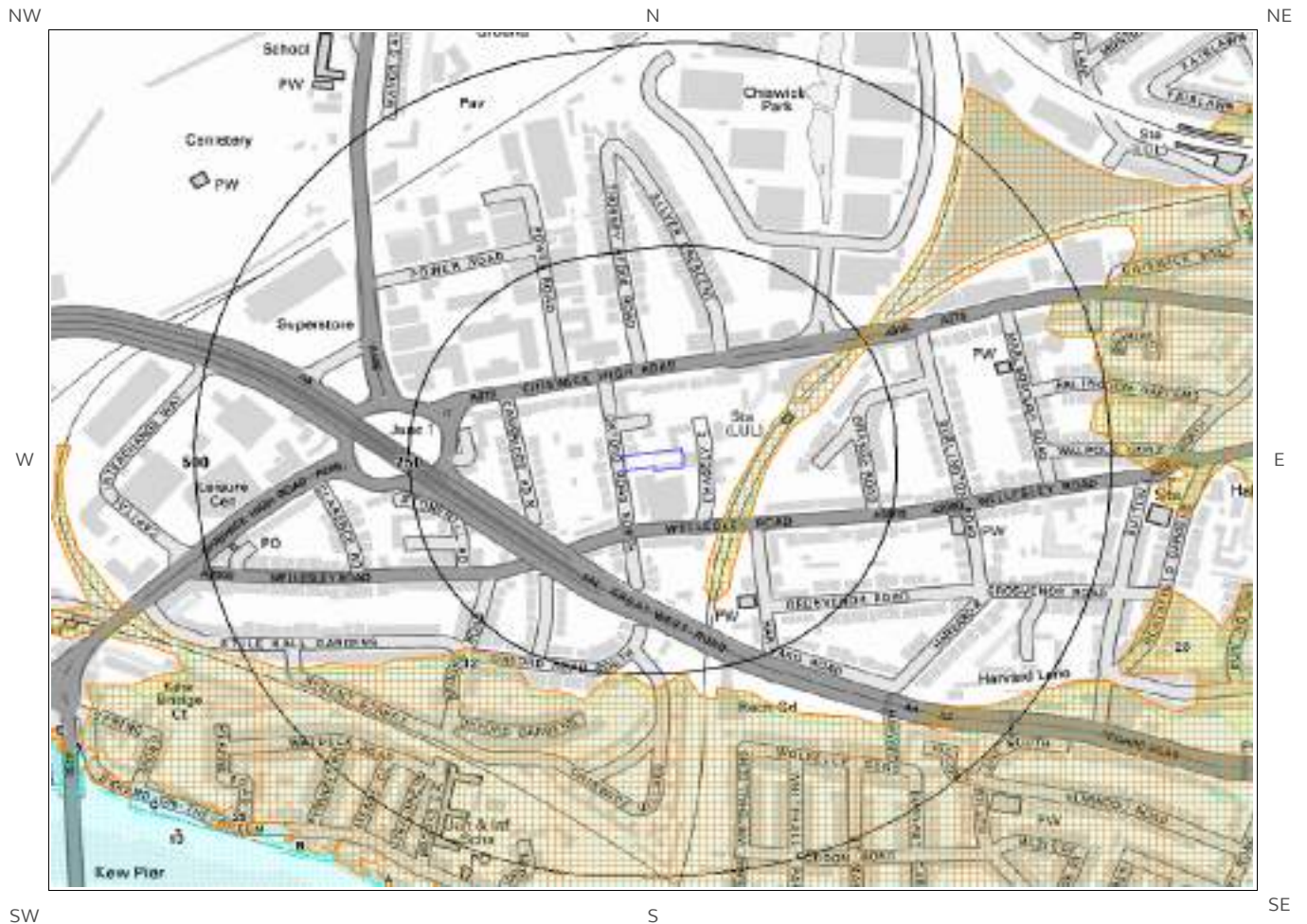
None identified

Database searched and no data found.

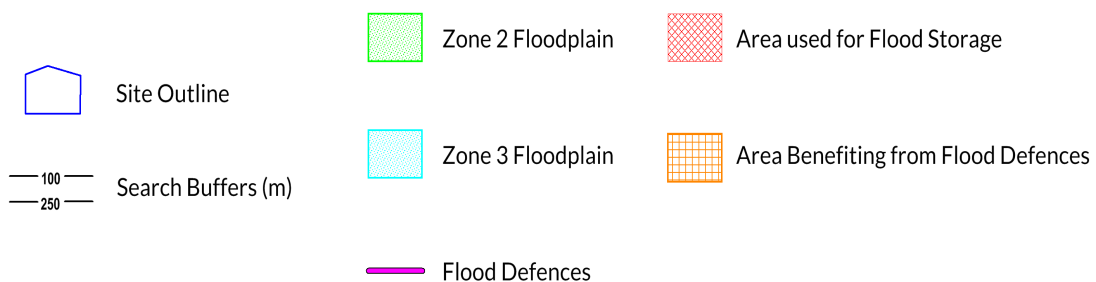
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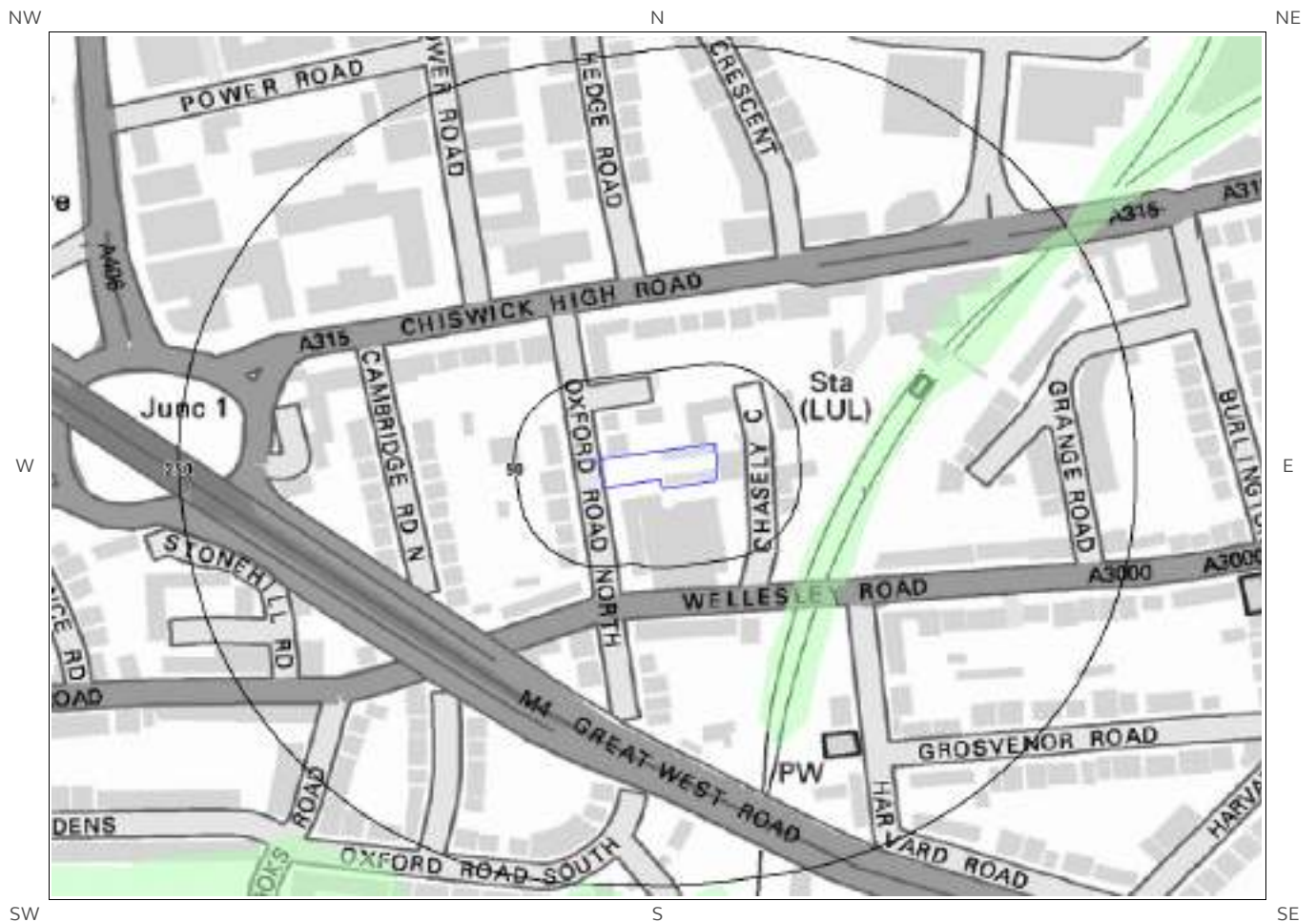
# 7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



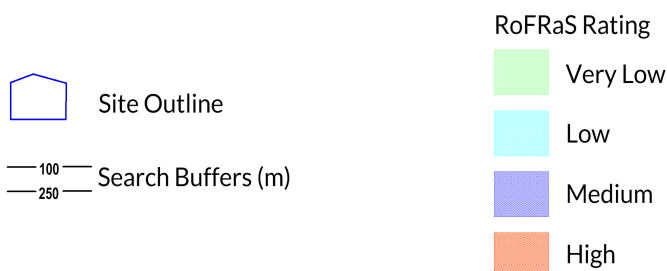
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# 7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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# 7 Flooding

## 7.1 River and Coastal Zone 2 Flooding

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

Identified

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

ID	Distance (m)	Direction	Update	Type
1	67	SE	21-Feb-2019	Zone 2 - (Fluvial /Tidal Models)

## 7.2 River and Coastal Zone 3 Flooding

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

Identified

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

ID	Distance (m)	Direction	Update	Type
1	68	E	21-Feb-2019	Zone 3 - (Fluvial /Tidal Models)

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

Highest risk of flooding onsite

Very Low

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

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

## 7.4 Flood Defences

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

---

## 7.5 Areas benefiting from Flood Defences

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

---

## 7.6 Areas benefiting from Flood Storage

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

---

## 7.7 Groundwater Flooding Susceptibility Areas

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

Clearwater Flooding or Superficial Deposits Flooding Superficial Deposits Flooding

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

---

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

Potential at Surface

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

---

## 7.8 Groundwater Flooding Confidence Areas

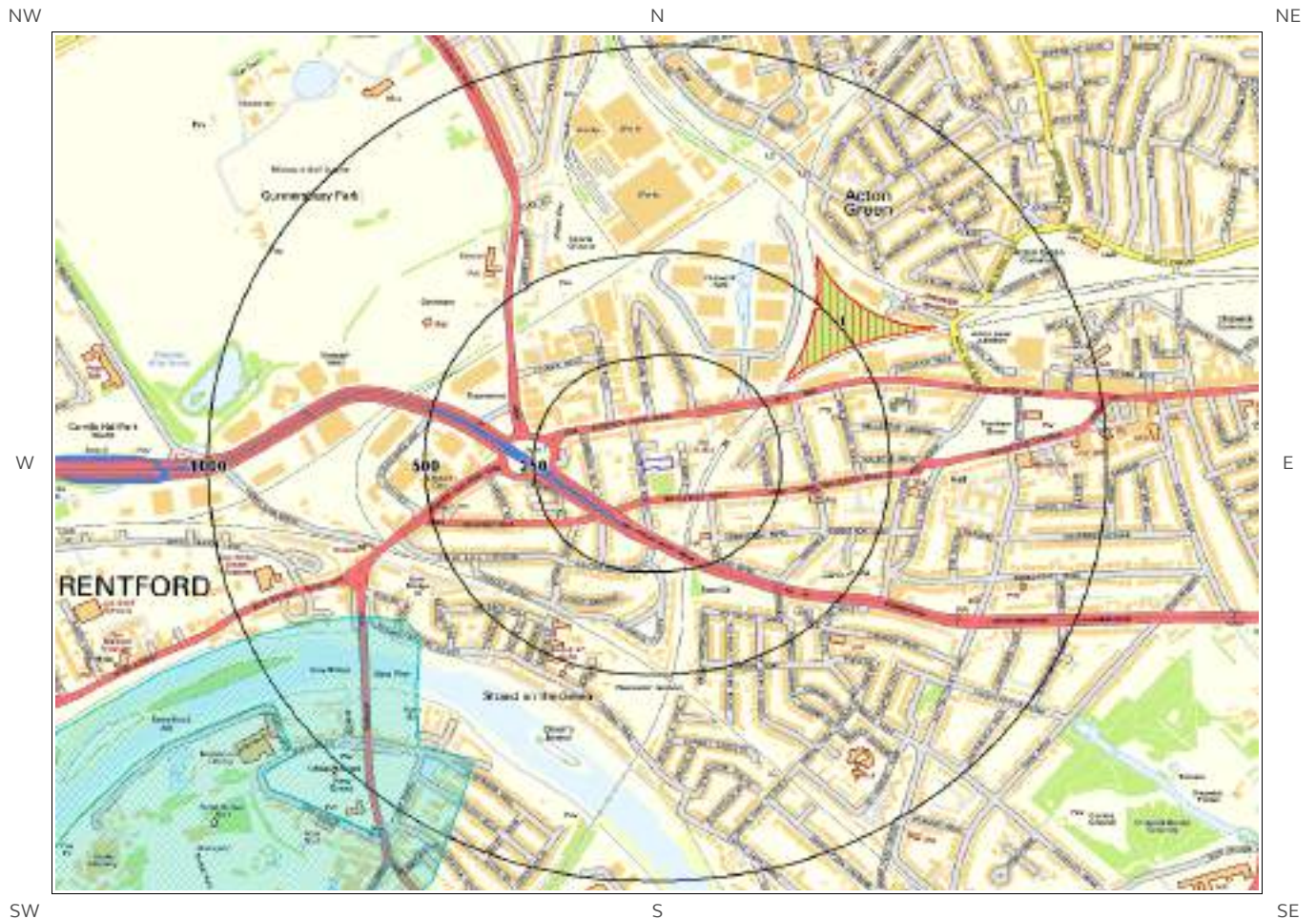
British Geological Survey confidence rating in this result Moderate

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

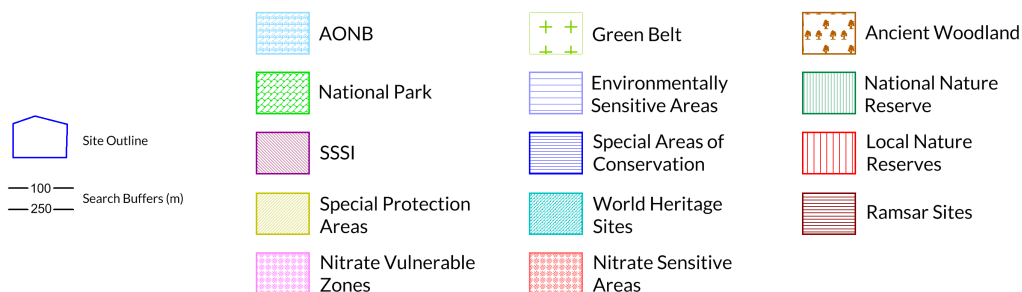
The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a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



# 8. Designated Environmentally Sensitive Sites Map



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# 8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site	Identified
---	------------

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---



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

0

Database searched and no data found.

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

1

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

ID	Distance (m)	Direction	LNR Name	Data Source
1	322	NE	Gunnersbury Triangle	Natural England

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

2

The following World Heritage Site records provided by English Heritage and Cadw are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	World Heritage Site Name	Data Source
2	655	SW	Royal Botanic Gardens, Kew Buffer Zone	Historic England
3	1026	SW	Royal Botanic Gardens, Kew	Historic England

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---



# 9. Natural Hazards Findings

## 9.1 Detailed BGS GeoSure Data

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

### 9.1.1 Shrink Swell

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

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

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

### 9.1.2 Landslides

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

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

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

### 9.1.3 Soluble Rocks

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

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

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

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

#### 9.1.4 Compressible Ground

Maximum Compressible Ground\* hazard rating identified on the study site

Negligible

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

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

#### 9.1.5 Collapsible Rocks

Maximum Collapsible Rocks\* hazard rating identified on the study site

Very Low

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

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

#### 9.1.6 Running Sand

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

Very Low

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

Hazard
Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

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



## 9.2 Radon

### 9.2.1 Radon Affected Areas

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

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

---

### 9.2.2 Radon Protection

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

# 10. Mining

## 10.1 Coal Mining

Coal mining areas within 75m of the study site

None identified

Database searched and no data found.

---

## 10.2 Non-Coal Mining

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

None identified

Database searched and no data found.

---

## 10.3 Brine Affected Areas

Brine affected areas within 75m of the study site

None identified

Guidance: No Guidance Required.

---



# Contact Details

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



**British Geological Survey Enquiries**  
Kingsley Dunham Centre  
Keyworth, Nottingham NG12 5GG  
Tel: 0115 936 3143.  
Fax: 0115 936 3276.  
Email:  
Web: [www.bgs.ac.uk](http://www.bgs.ac.uk)

BGS Geological Hazards Reports and general geological enquiries:  
[enquiries@bgs.ac.uk](mailto:enquiries@bgs.ac.uk)



**Environment Agency**  
National Customer Contact Centre, PO Box 544  
Rotherham, S60 1BY  
Tel: 03708 506 506  
Web: [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)  
Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)



**Public Health England**  
Public information access office  
Public Health England, Wellington House  
133-155 Waterloo Road, London, SE1 8UG  
[www.gov.uk/phe](http://www.gov.uk/phe)  
Email: [enquiries@phe.gov.uk](mailto:enquiries@phe.gov.uk)  
Main switchboard: 020 7654 8000



**The Coal Authority**  
200 Lichfield Lane  
Mansfield  
Notts NG18 4RG  
Tel: 0345 7626 848  
DX 716176 Mansfield 5  
[www.coal.gov.uk](http://www.coal.gov.uk)



**Ordnance Survey**  
Adanac Drive, Southampton  
SO16 0AS  
Tel: 08456 050505



**Local Authority**  
Authority: London Borough of Hounslow  
Phone: 020 8583 2000  
Web: <http://www.hounslow.gov.uk/>  
Address: Civic Centre, Lampton Road, Hounslow, London, TW3 4DN

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



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<https://www.groundsure.com/terms-and-conditions-feb11-2019>

Arcadis Consulting UK Ltd  
PO Box, 307,  
MANCHESTER, M60 3NT

Groundsure Reference: GS-5911323

Your Reference: 14023929

Report Date 29 Mar 2019

Report Delivery Method: Email - pdf

## Geo Insight

Address: OXFORD COURT, LONDON, W4 4DJ

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Geo Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,



Managing Director  
Groundsure Limited

Enc.  
Groundsure Geo Insight



Address: OXFORD COURT, LONDON, W4 4DJ

Date: 29 Mar 2019

Reference: GS-5911323

Client: Arcadis Consulting UK Ltd



Aerial Photograph Capture date: 20-Apr-2015

Grid Reference: 519684,178325

Site Size: 0.1428ha

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# Overview of Findings

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

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

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

## Section 1: Geology 1:10,000 Scale

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

## Section 2: Geology 1:50,000 Scale

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



## Section 2: Geology 1:50,000 Scale

### 2.3 Bedrock, Solid Geology and linear features

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

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

Yes

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

No

## Section 3: Radon

### 3. Radon

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

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

3.2 Radon Protection

No radon protective measures are necessary.

## Section 4: Ground Workings

	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	2	31	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	0	1	0

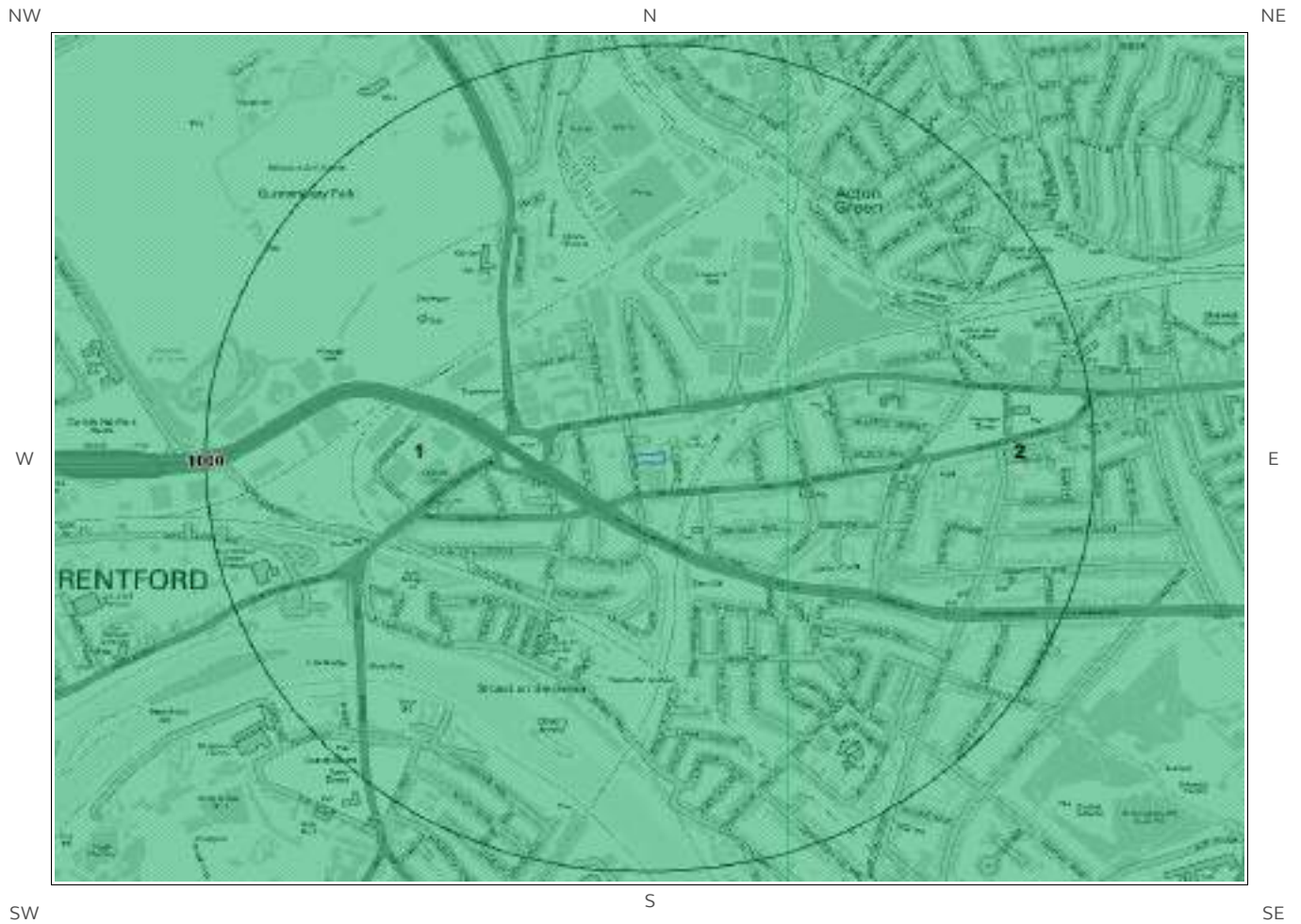
## Section 5: Mining, Extraction & Natural Cavities

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

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0
Section 6: Natural Ground Subsidence	On-site				
6.1 Shrink-Swell Clay	Moderate				
6.2 Landslides	Very Low				
6.3 Ground Dissolution of Soluble Rocks	Negligible				
6.4 Compressible Deposits	Negligible				
6.5 Collapsible Deposits	Very Low				
6.5 Running Sand	Very Low				
Section 7: Borehole Records	On-site	0-50m	51-250		
7 BGS Recorded Boreholes	0	2	8		
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
8 Records of Background Soil Chemistry	1	0	0		
Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500	
9.1 Tunnels	0	0	1	Not Searched	
9.2 Historical Railway and Tunnel Features	0	0	9	Not Searched	
9.3 Historical Railways	0	0	0	Not Searched	
9.4 Active Railways	0	0	22	Not Searched	
9.5 Railway Projects	0	0	0	0	

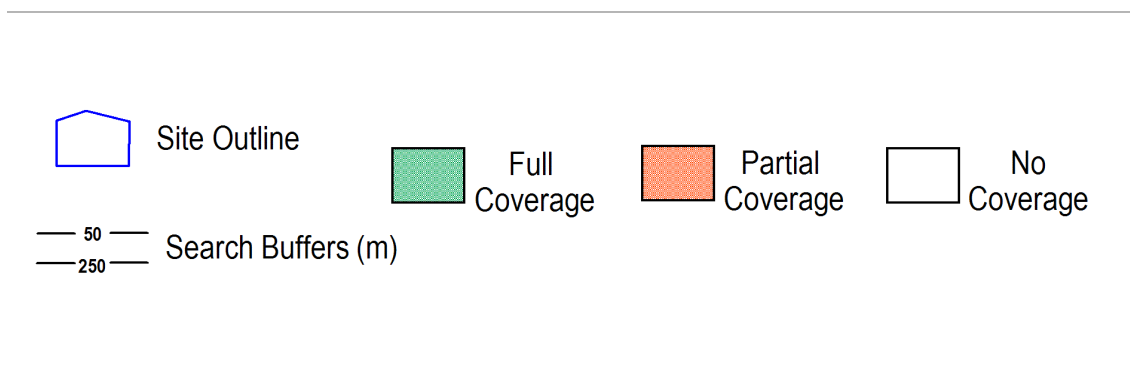


# 1:10,000 Scale Availability



1\_10,000 Availability Legend

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# Availability of 1:10,000 Scale Geology Mapping

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

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	Some deposits are mapped	Full	Full	No coverage
2	287.0	Some deposits are mapped	Full	Full	No coverage
N3	1661.0	Some deposits are mapped	Full	Full	No coverage
N4	1686.0	Some deposits are mapped	Full	Full	No coverage

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

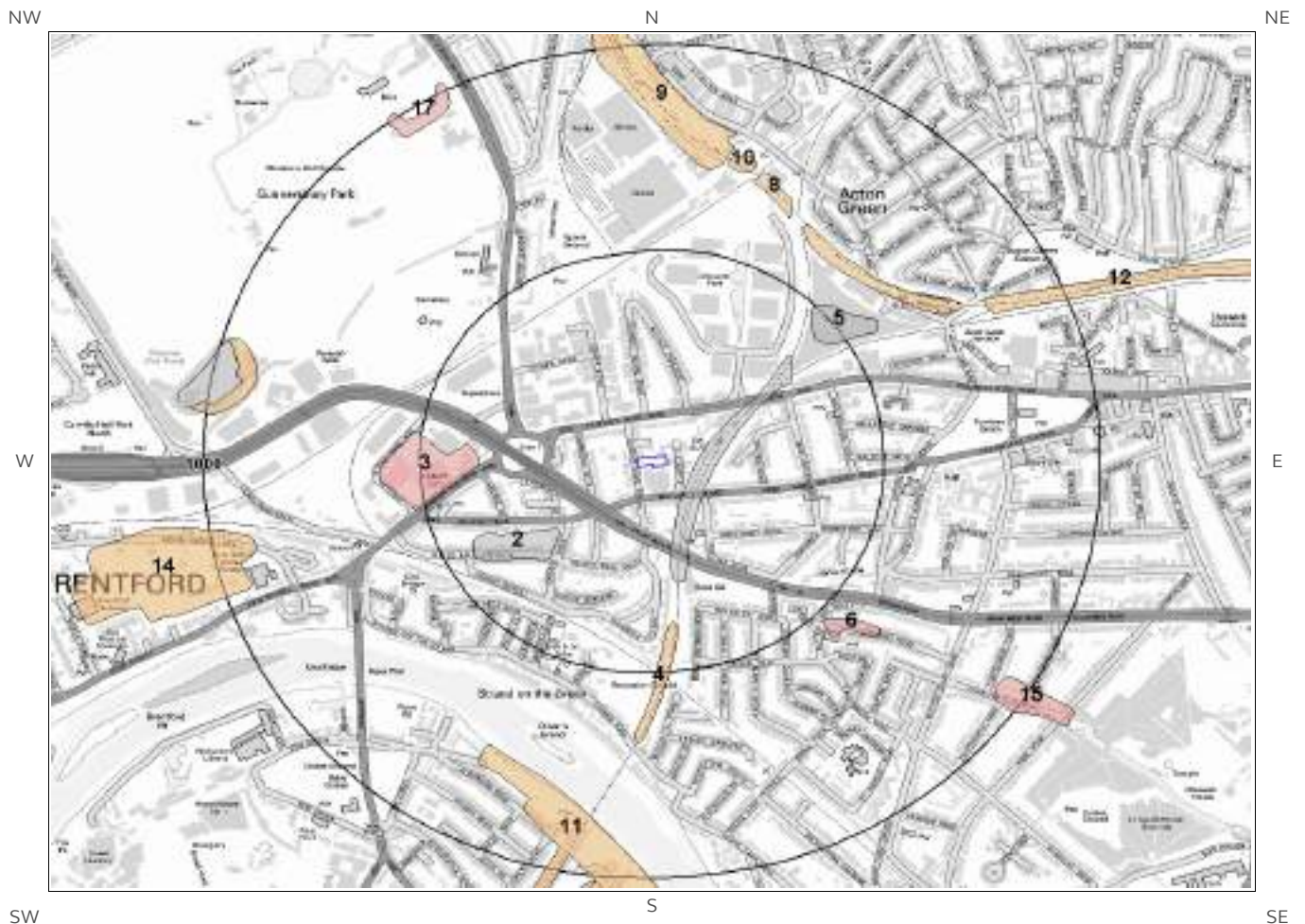
The definitions of coverage are as follows:

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



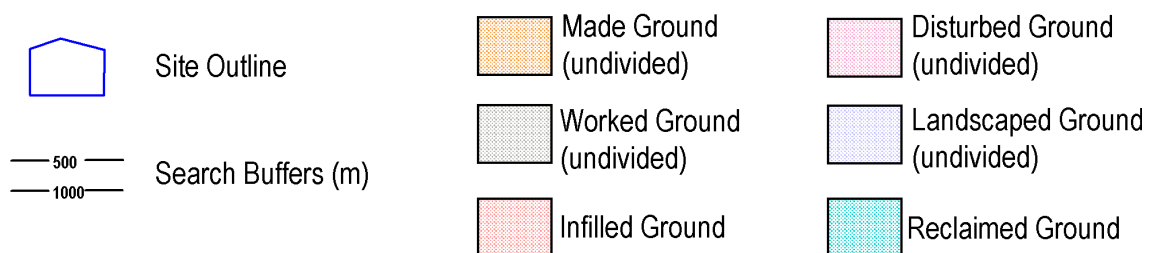
# 1 Geology (1:10,000 scale).

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



Artificial Ground Legend

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# 1. Geology 1:10,000 scale

## 1.1 Artificial Ground

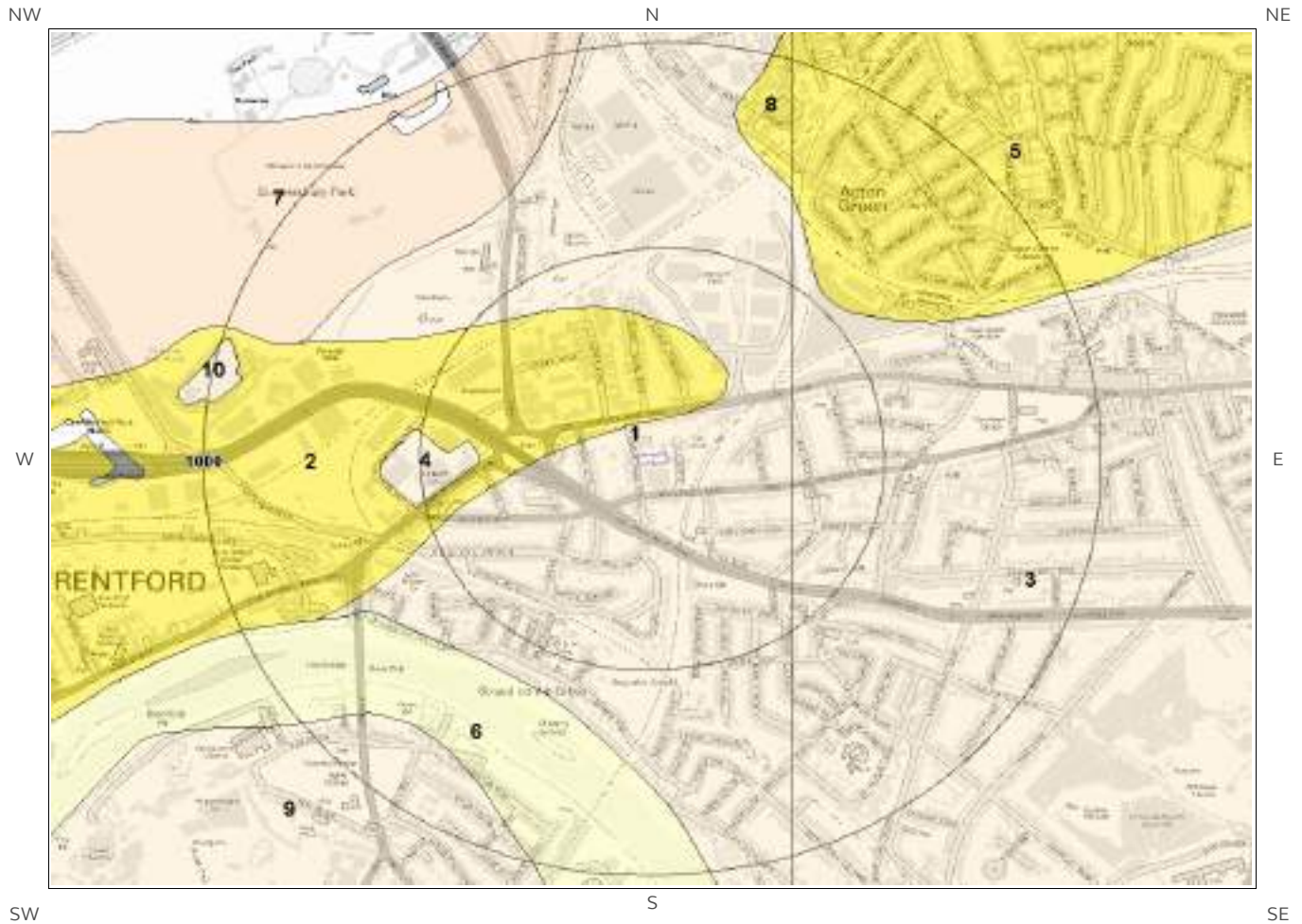
The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	59.0	SE	WGR-UNKNOWN	Worked Ground (Undivided)	Unknown/unclassified Entry
2	237.0	SW	WGR-UNKNOWN	Worked Ground (Undivided)	Unknown/unclassified Entry
3	361.0	W	WMGR-UNKNOWN	Infilled Ground	Unknown/unclassified Entry
4	380.0	S	MGR-UNKNOWN	Made Ground (Undivided)	Unknown/unclassified Entry
5	445.0	NE	WGR-UNKNOWN	Worked Ground (Undivided)	Unknown/unclassified Entry

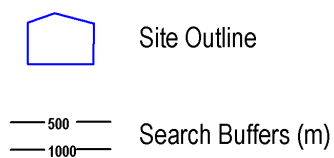


## 1.2 Superficial Deposits and Landslips map (1:10,000 scale)



Artificial Ground Legend

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# 1.2 Superficial Deposits and Landslips

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

## 1.2.1 Superficial Deposits/ Drift Geology

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

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	KPGR-XSV	Kempton Park Gravel Formation - Sand And Gravel	Sand And Gravel
2	79.0	N	LASI-Z	Langley Silt Member - Silt (unlithified Deposits Coding Scheme)	Silt
3	287.0	E	KPGR-XSV	Kempton Park Gravel Formation - Sand And Gravel	Sand And Gravel
4	361.0	W	KPGR-XSV	Kempton Park Gravel Formation - Sand And Gravel	Sand And Gravel

## 1.2.2 Landslip

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

No

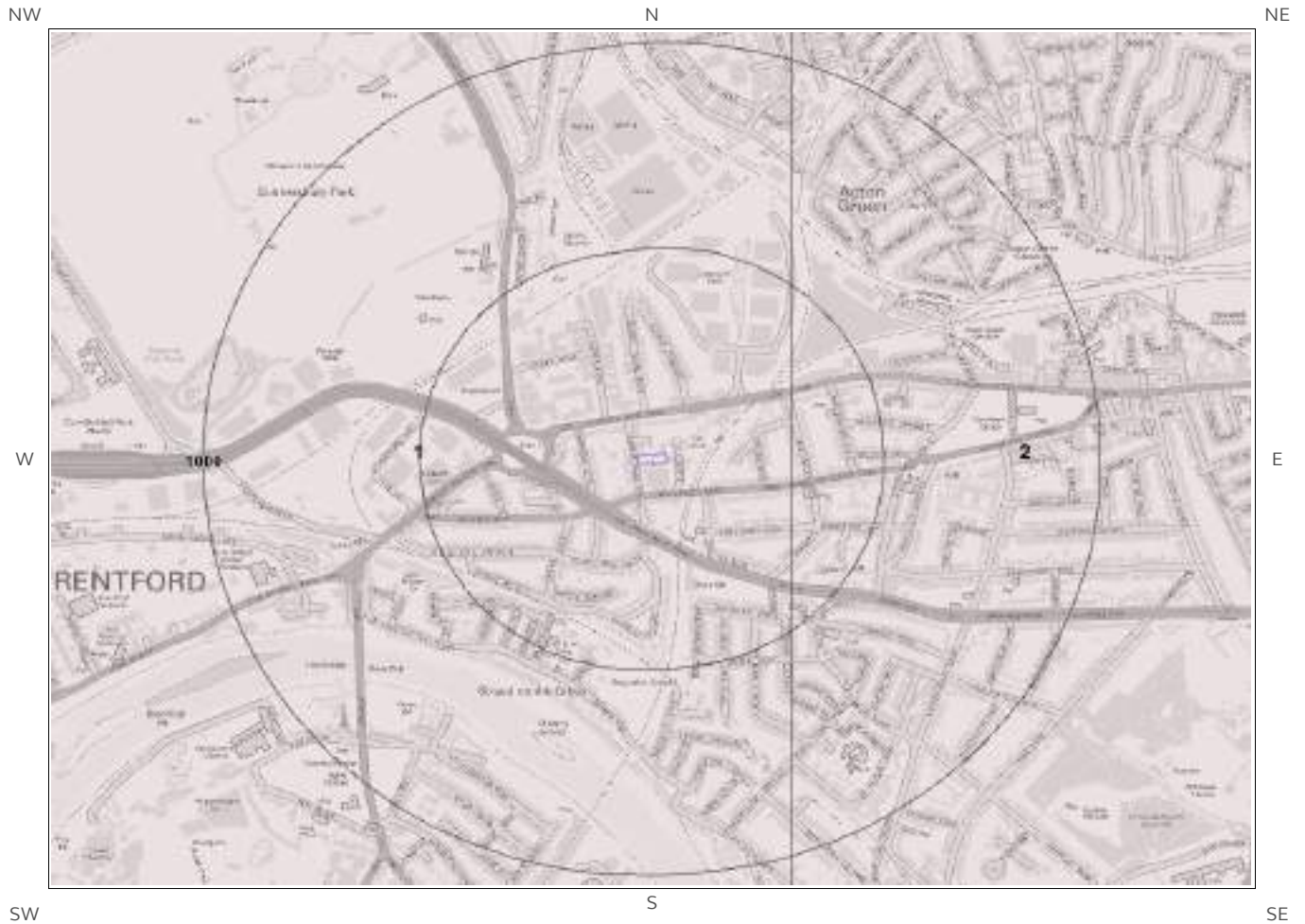
Database searched and no data found.

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

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

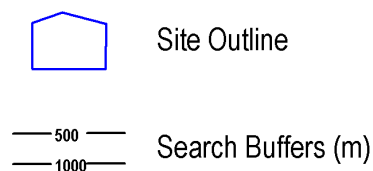


# 1.3 Bedrock and linear features map (1:10,000 scale)



**Bedrock and linear features Legend**

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## 1.3 Bedrock and linear features

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

### 1.3.1 Bedrock/ Solid Geology

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

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	LC-CLAY	London Clay Formation - Clay	Eocene Epoch
2	287.0	E	LC-CLAY	London Clay Formation - Clay	Eocene Epoch

---

### 1.3.2 Linear features

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

Database searched and no data found at this scale.

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

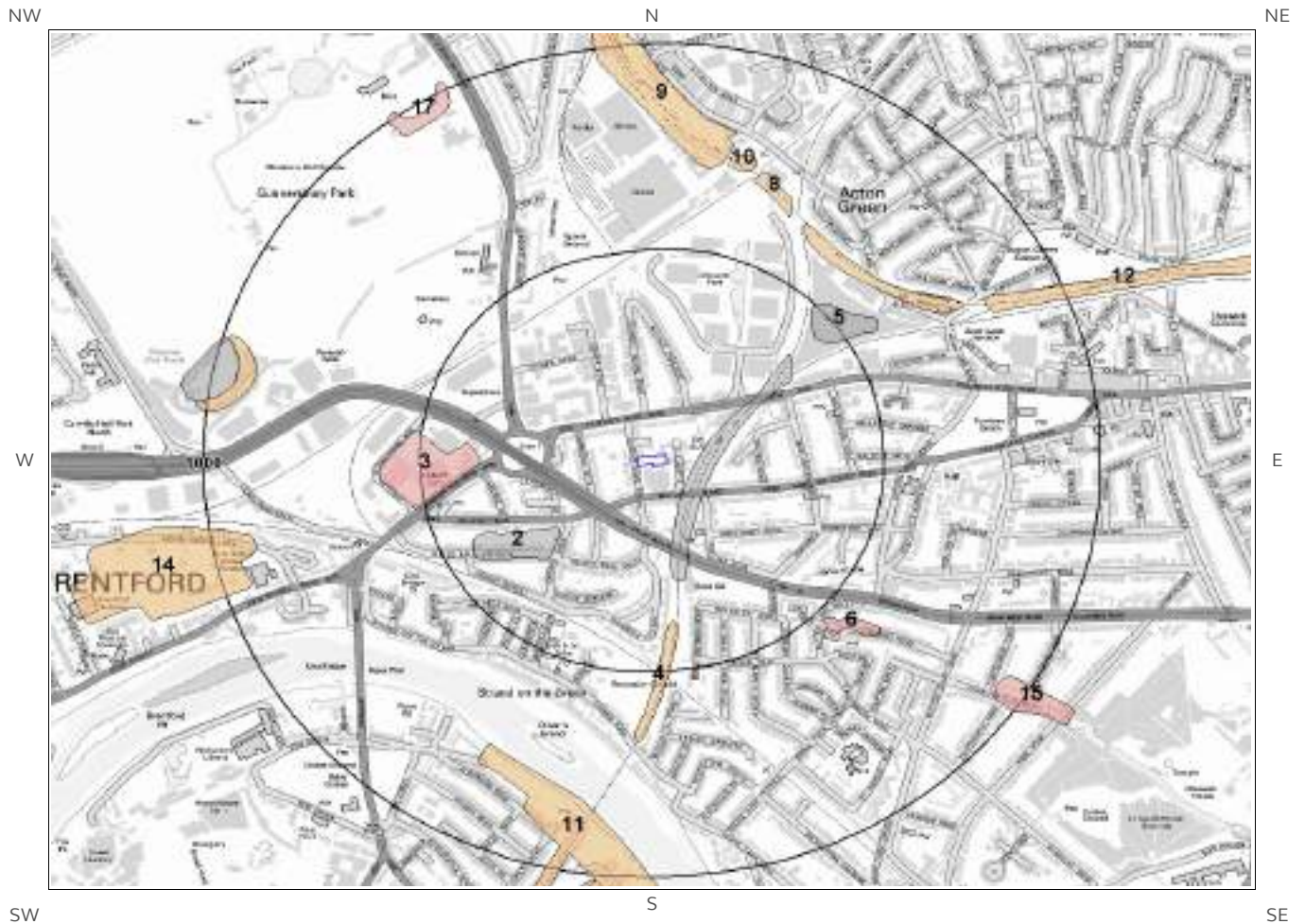
This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

---

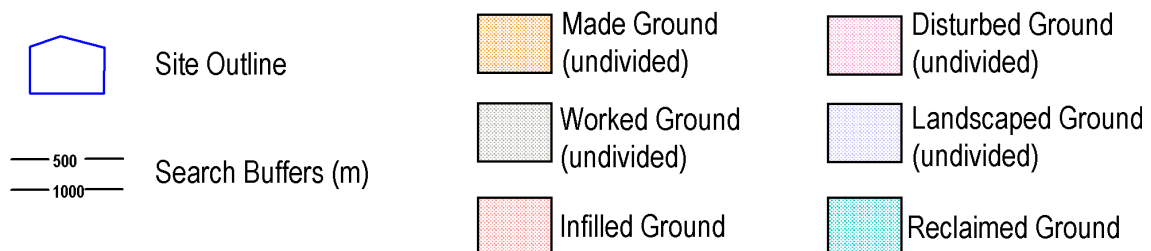


# 2 Geology 1:50,000 Scale

## 2.1 Artificial Ground map



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## 2. Geology 1:50,000 scale

### 2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 270

#### 2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	59.0	SE	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
2	237.0	SW	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
3	361.0	W	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT
4	380.0	S	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
5	445.0	NE	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID

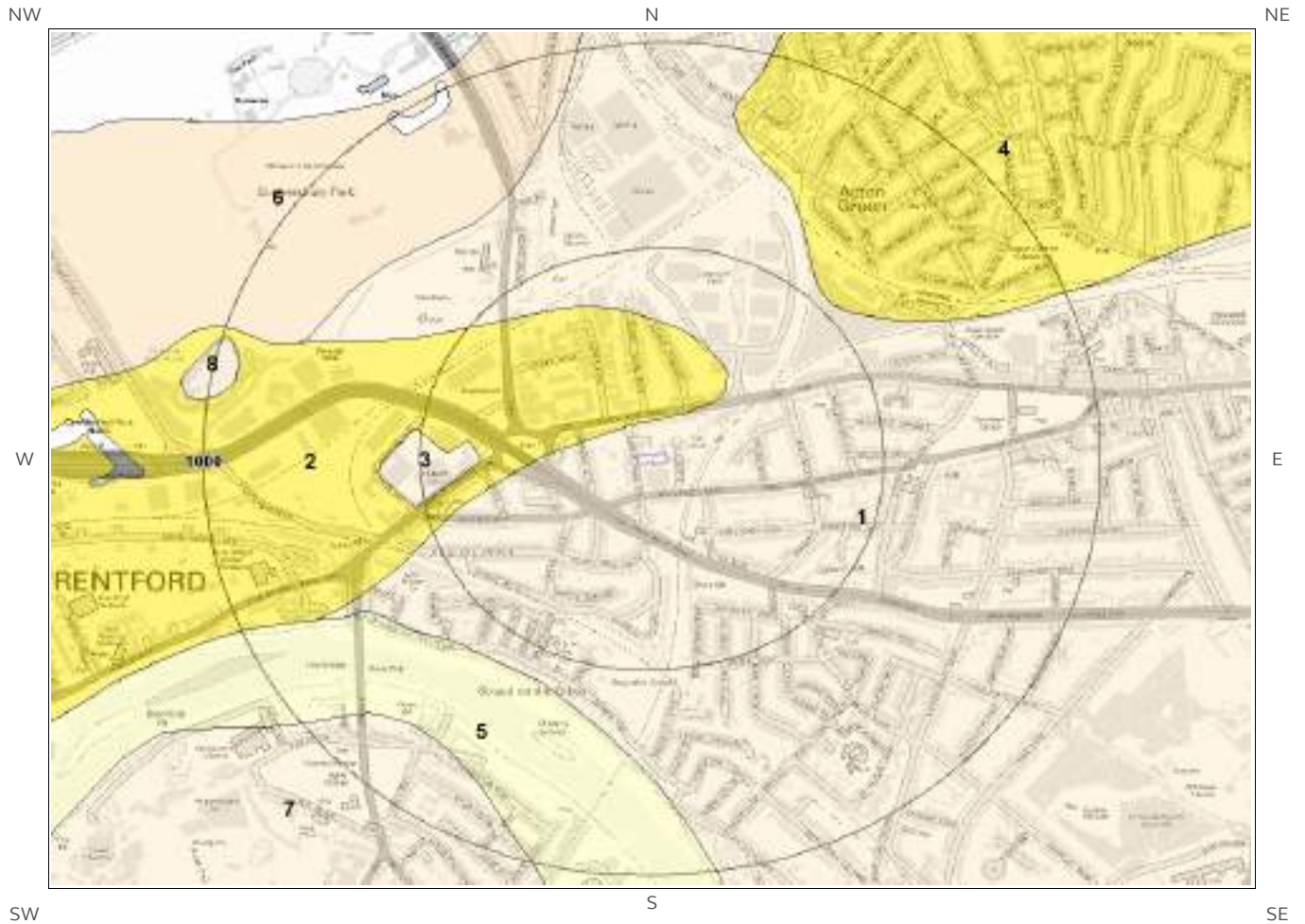
#### 2.1.2 Permeability of Artificial Ground

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

Database searched and no data found.



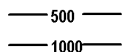
## 2.2 Superficial Deposits and Landslips map (1:50,000 scale)



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Site Outline



Search Buffers (m)

## 2.2 Superficial Deposits and Landslips

### 2.2.1 Superficial Deposits/ Drift Geology

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

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	KPGR-XSV	KEMPTON PARK GRAVEL MEMBER	SAND AND GRAVEL
2	79.0	N	LASI-XCZ	LANGLEY SILT MEMBER	CLAY AND SILT
3	361.0	W	KPGR-XSV	KEMPTON PARK GRAVEL MEMBER	SAND AND GRAVEL

### 2.2.2 Permeability of Superficial Ground

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

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

### 2.2.3 Landslip

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

Database searched and no data found.

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

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

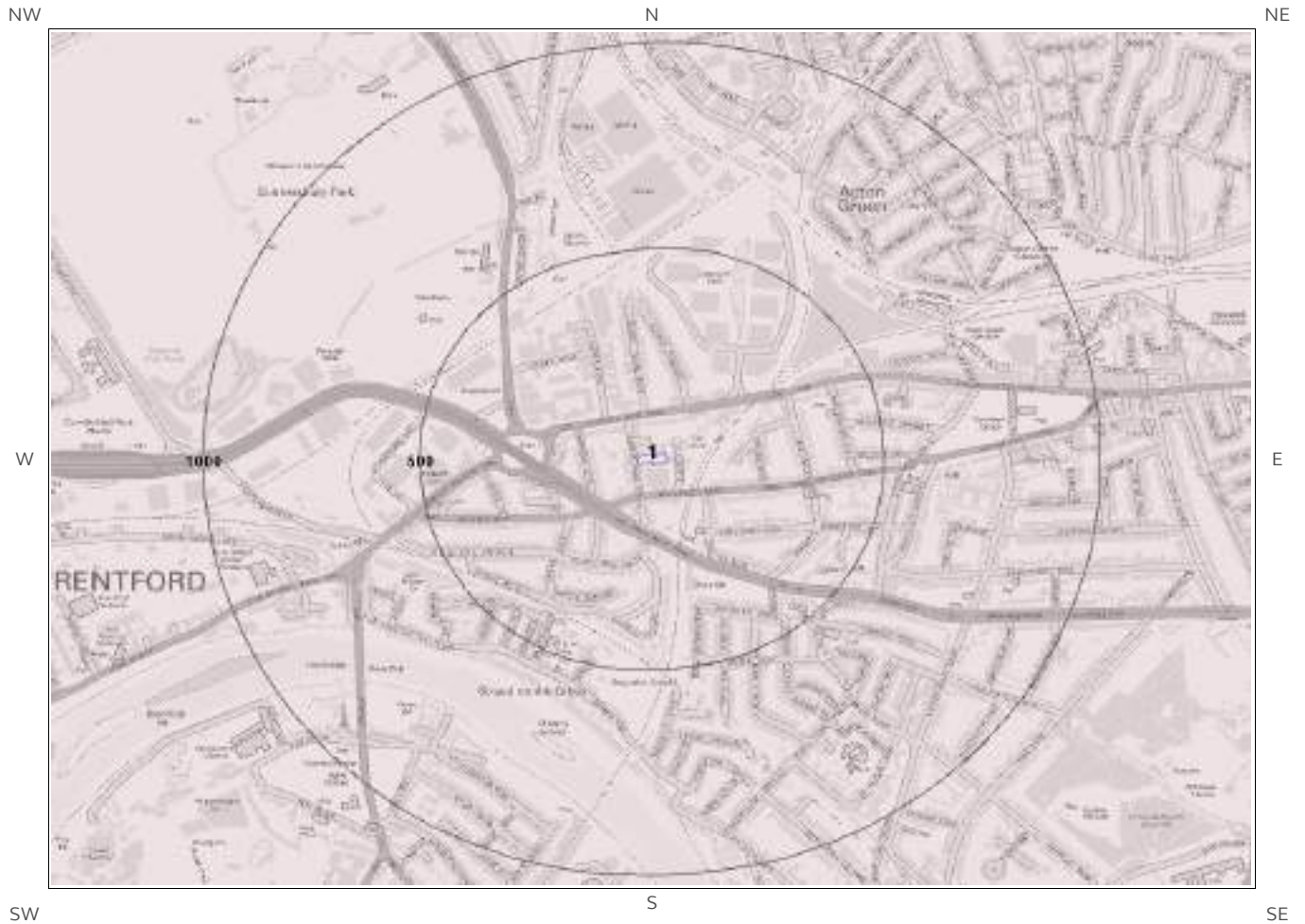
### 2.2.4 Landslip Permeability

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

Database searched and no data found.



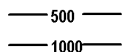
## 2.3 Bedrock and linear features map (1:50,000 scale)



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Site Outline



Search Buffers (m)

## 2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 270

### 2.3.1 Bedrock/Solid Geology

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

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	LC-XCZ	LONDON CLAY FORMATION - CLAY AND SILT	YPRESIAN

### 2.3.2 Permeability of Bedrock Ground

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

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

### 2.3.3 Linear features

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

Database searched and no data found.

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

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



## 3 Radon Data

### 3.1 Radon Affected Areas

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

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

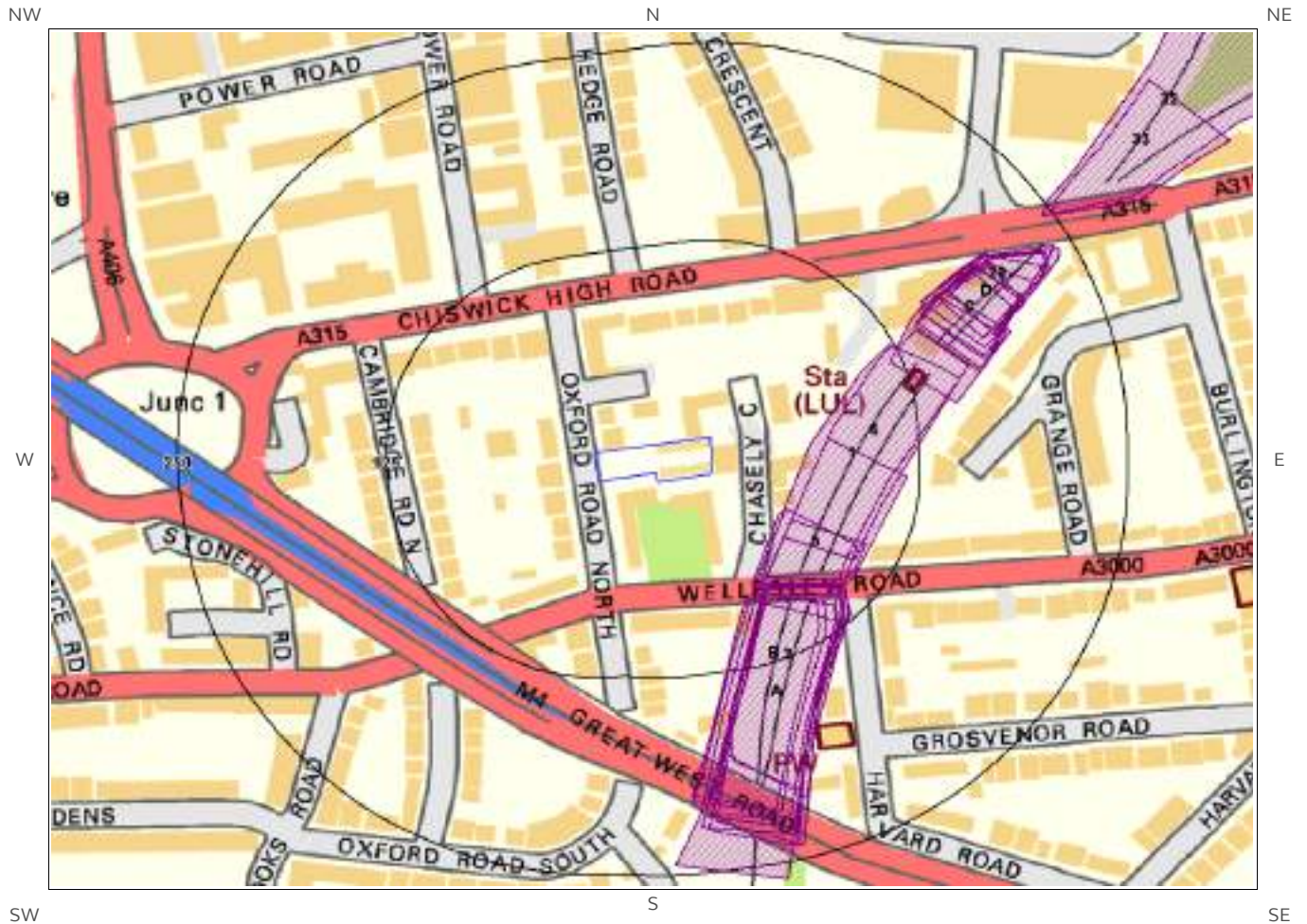
---

### 3.2 Radon Protection

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

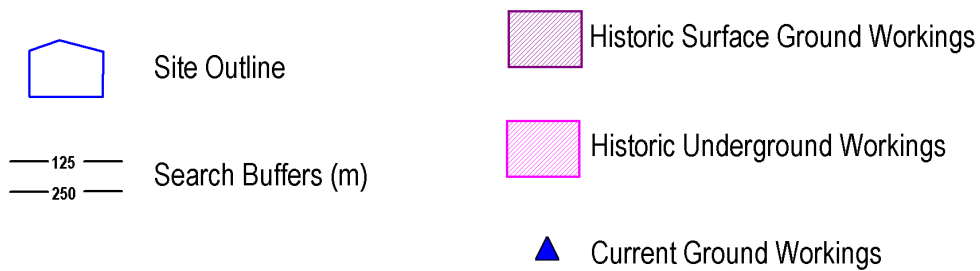
---

# 4 Ground Workings map



Ground Workings Legend

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# 4 Ground Workings

## 4.1 Historical Surface Ground Working Features derived from Historical Mapping

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

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

ID	Distance (m)	Direction	NGR	Use	Date
1	48.0	SE	519800 178321	Cuttings	1894
2B	50.0	SE	519751 178197	Cuttings	1898
3	56.0	SE	519761 178198	Cuttings	1873
4	56.0	SE	519812 178335	Cuttings	1966
5	56.0	SE	519776 178267	Cuttings	1893
6A	77.0	SE	519751 178168	Cuttings	1948
7A	77.0	SE	519751 178168	Cuttings	1948
8A	79.0	SE	519756 178163	Cuttings	1933
9A	79.0	SE	519756 178163	Cuttings	1910
10B	79.0	SE	519759 178177	Cuttings	1961
11A	82.0	S	519751 178168	Cuttings	1893
12A	82.0	S	519740 178169	Cuttings	1894
13A	84.0	S	519751 178159	Cuttings	1920
14A	84.0	S	519751 178159	Cuttings	1938
15A	86.0	S	519749 178162	Cuttings	1933
16A	89.0	S	519757 178174	Cuttings	1966
17A	89.0	S	519757 178174	Cuttings	1987
18A	89.0	S	519757 178174	Cuttings	1974
19C	118.0	NE	519870 178410	Cuttings	1873
20D	141.0	NE	519878 178419	Cuttings	1933
21C	144.0	NE	519869 178414	Cuttings	1938

ID	Distance (m)	Direction	NGR	Use	Date
22C	144.0	NE	519869 178414	Cuttings	1920
23D	148.0	NE	519874 178426	Cuttings	1948
24D	148.0	NE	519874 178426	Cuttings	1948
25C	149.0	NE	519875 178419	Cuttings	1933
26C	149.0	NE	519875 178419	Cuttings	1910
27D	153.0	NE	519878 178425	Cuttings	1961
28D	162.0	NE	519880 178429	Cuttings	1894
29	163.0	NE	519882 178431	Cuttings	1898
30D	168.0	NE	519877 178428	Cuttings	1966
31D	170.0	NE	519882 178430	Cuttings	1893
32	244.0	NE	520026 178572	Cuttings	1894
33	248.0	NE	519971 178522	Cuttings	1898

## 4.2 Historical Underground Working Features derived from Historical Mapping

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

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

Database searched and no data found.

## 4.3 Current Ground Workings

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

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

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

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	498.0	NE	520099 178653	Sand & Gravel	Acton Curve Ballast Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased



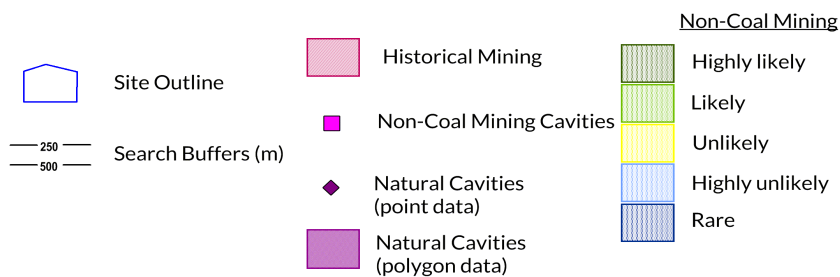


# 5 Mining, Extraction & Natural Cavities map



**Mining, Extraction and Natural Cavities Legend**

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# 5 Mining, Extraction & Natural Cavities

## 5.1 Historical Mining

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

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

Database searched and no data found.

---

## 5.2 Coal Mining

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

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

Database searched and no data found.

---

## 5.3 Johnson Poole and Bloomer

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

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

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

---

## 5.4 Non-Coal Mining

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

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

Database searched and no data found.

---



## 5.5 Non-Coal Mining Cavities

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

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

Database searched and no data found.

---

## 5.6 Natural Cavities

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

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

Database searched and no data found.

---

## 5.7 Brine Extraction

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

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

Database searched and no data found.

---

## 5.8 Gypsum Extraction

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

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

Database searched and no data found.

---

## 5.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level..

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

Database searched and no data found.

---

## 5.10 Clay Mining

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

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

No

Database searched and no data found.

---

# 6 Natural Ground Subsidence

## 6.1 Shrink-Swell Clay map



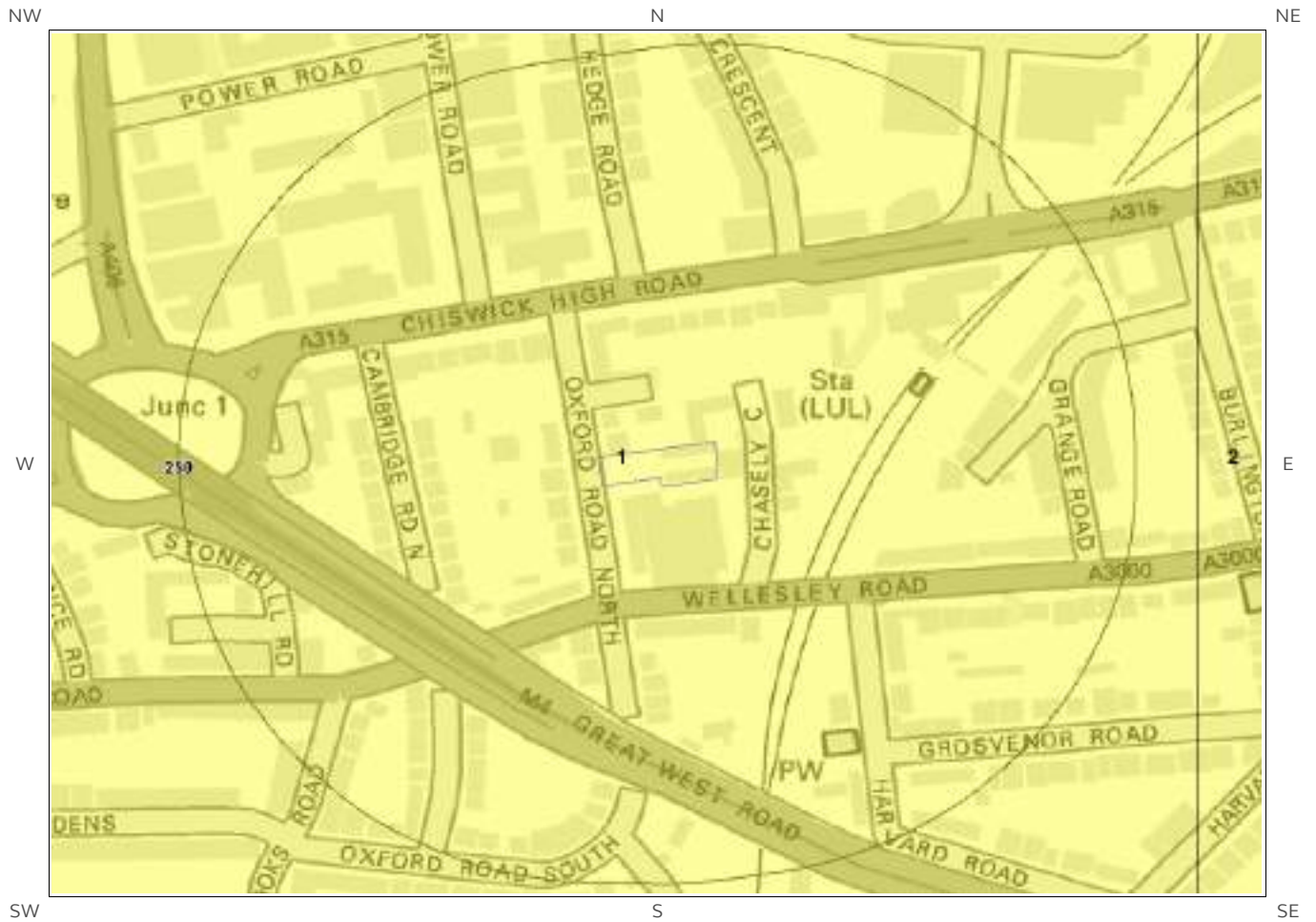
Shrink Swell Clay Legend

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## 6.2 Landslides map

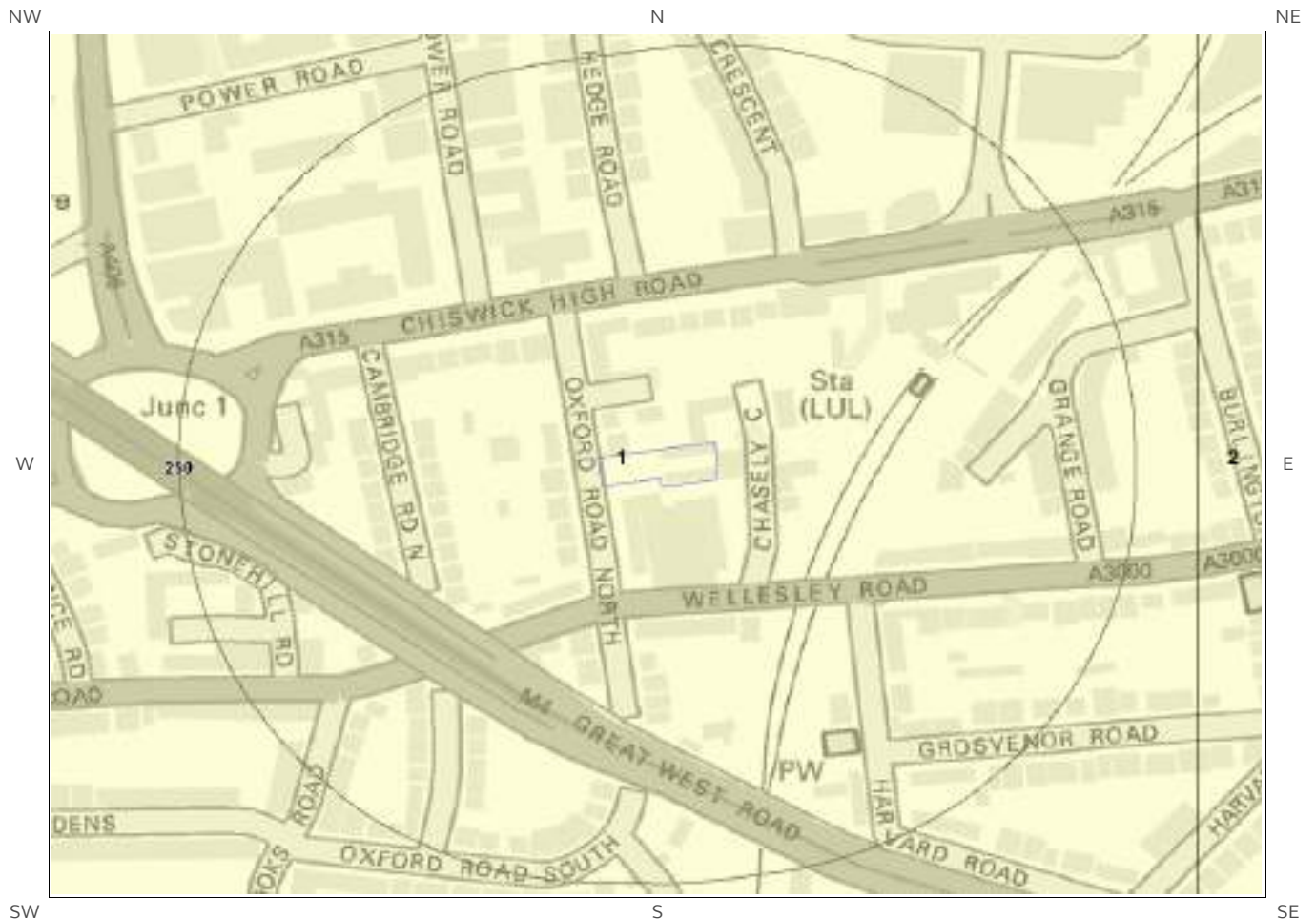


Landslides Legend

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## 6.3 Ground Dissolution of Soluble Rocks map

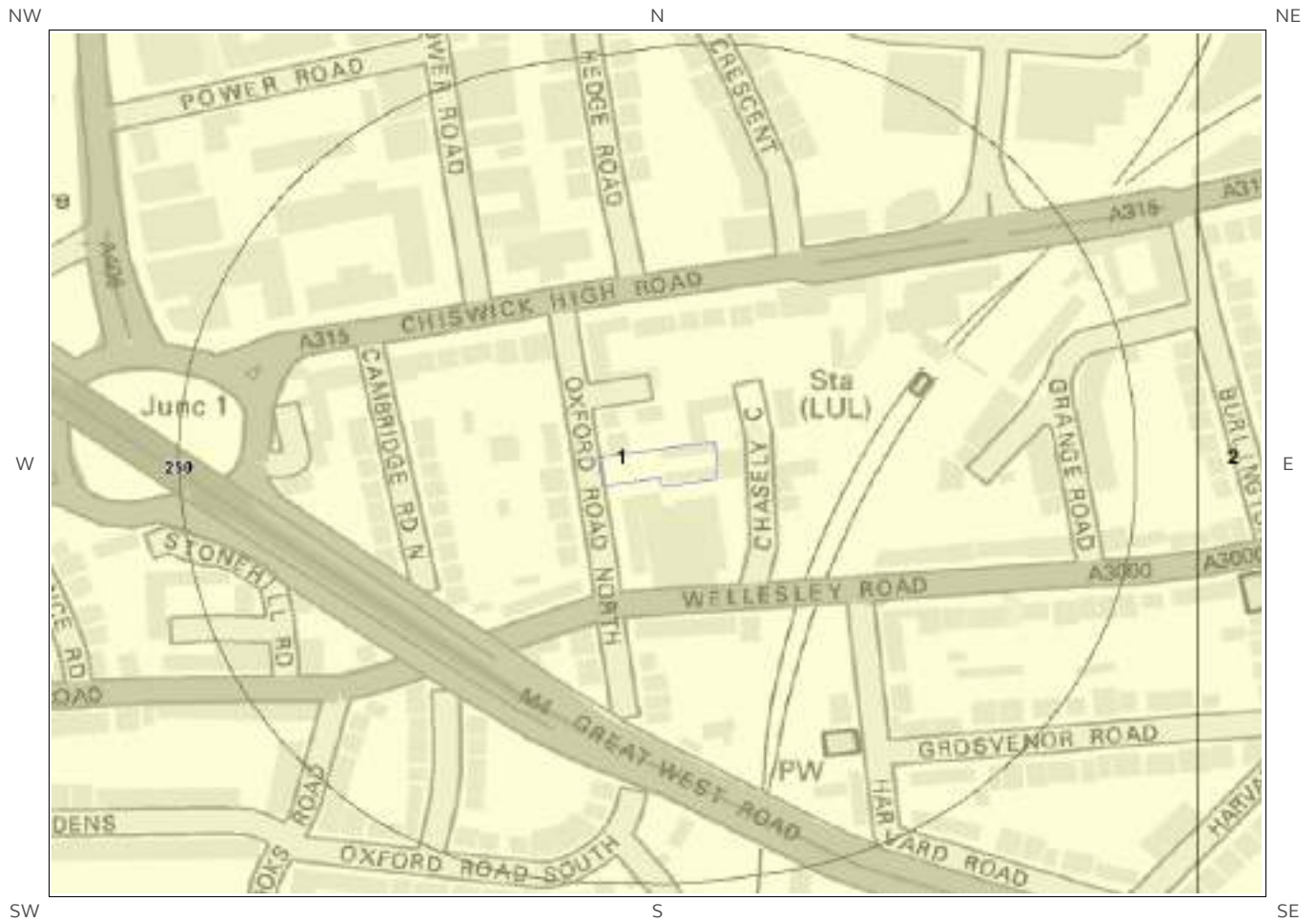


Ground Dissolution  
Soluble Rocks Legend

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## 6.4 Compressible Deposits map



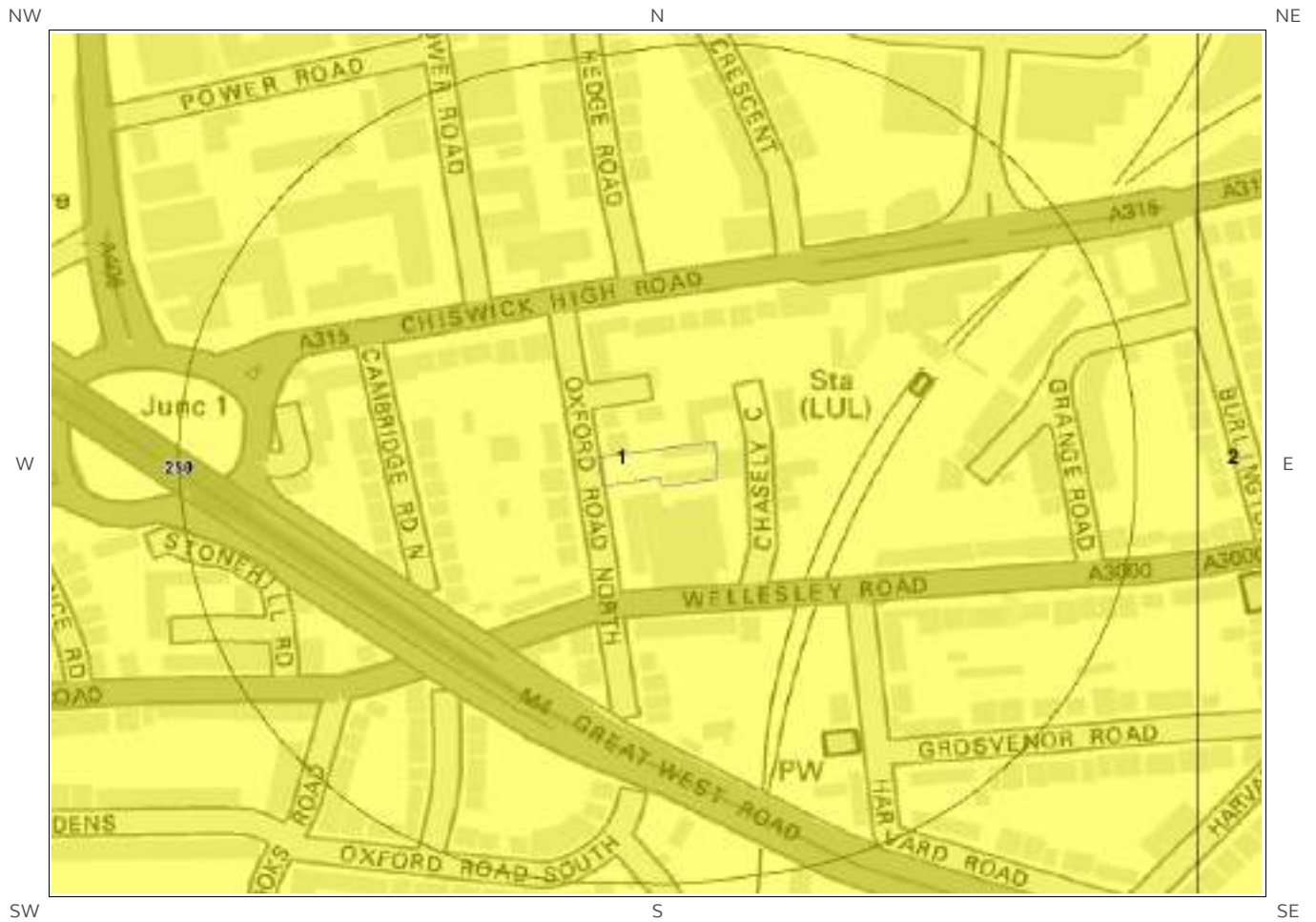
Compressible Deposits Legend

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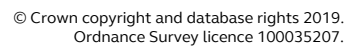
## 6.5 Collapsible Deposits map



Collapsible Deposits Legend

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# 6 Natural Ground Subsidence

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

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

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

## 6.1 Shrink-Swell Clays

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

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Moderate	Ground conditions predominantly high plasticity. Do not plant or remove trees or shrubs near to buildings without expert advice about their effect and management. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a probable increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a probable increase in insurance risk during droughts or where vegetation with high moisture demands is present.
2	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.

## 6.2 Landslides

The following Landslides information provided by the British Geological Survey:

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

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



## 6.3 Ground Dissolution of Soluble Rocks

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

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

## 6.4 Compressible Deposits

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

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

## 6.5 Collapsible Deposits

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

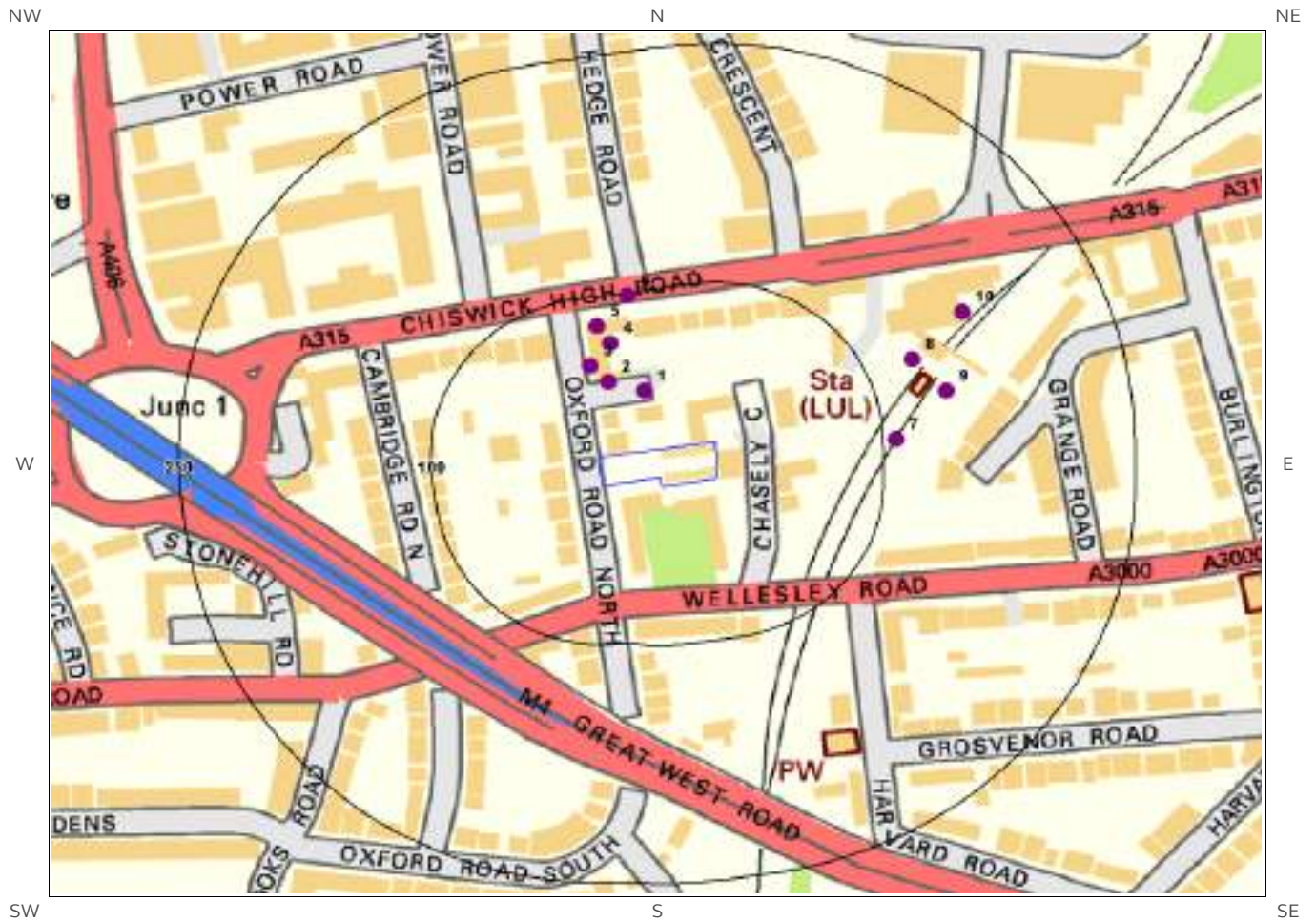
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

## 6.6 Running Sands

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

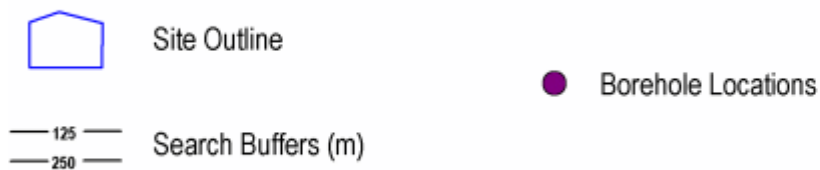
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

# 7 Borehole Records map



Borehole Records Legend

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## 7 Borehole Records

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

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

10

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	37.0	N	519670 178370	TQ17NE52	10.5	GLC 425 CHISWICK HIGH ROAD 3
2	46.0	N	519649 178376	TQ17NE304	15.2	427-431 CHISWICK HIGH ROAD 3
3	57.0	N	519638 178386	TQ17NE303	15.2	427-431 CHISWICK HIGH ROAD 2
4	70.0	N	519650 178400	TQ17NE51	15.0	GLC 425 CHISWICK HIGH ROAD 2
5	82.0	N	519642 178411	TQ17NE302	15.2	427-431 CHISWICK HIGH ROAD 1
6	98.0	N	519660 178430	TQ17NE50	10.0	GLC 425 CHISWICK HIGH ROAD 1
7	107.0	E	519820 178340	TQ17NE306	12.19	GUNNERSBURY STATION 2
8	128.0	NE	519830 178390	TQ17NE307	25.29	GUNNERSBURY STATION 3
9	141.0	E	519850 178370	TQ17NE305	12.19	GUNNERSBURY STATION 1
10	168.0	NE	519860 178420	TQ17NE308	25.29	GUNNERSBURY STATION 4

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

- #1: [scans.bgs.ac.uk/sobi\\_scans/boreholes/580694](https://scans.bgs.ac.uk/sobi_scans/boreholes/580694)
- #2: [scans.bgs.ac.uk/sobi\\_scans/boreholes/580949](https://scans.bgs.ac.uk/sobi_scans/boreholes/580949)
- #3: [scans.bgs.ac.uk/sobi\\_scans/boreholes/580948](https://scans.bgs.ac.uk/sobi_scans/boreholes/580948)
- #4: [scans.bgs.ac.uk/sobi\\_scans/boreholes/580693](https://scans.bgs.ac.uk/sobi_scans/boreholes/580693)
- #5: [scans.bgs.ac.uk/sobi\\_scans/boreholes/580947](https://scans.bgs.ac.uk/sobi_scans/boreholes/580947)
- #6: [scans.bgs.ac.uk/sobi\\_scans/boreholes/580692](https://scans.bgs.ac.uk/sobi_scans/boreholes/580692)
- #7: [scans.bgs.ac.uk/sobi\\_scans/boreholes/580951](https://scans.bgs.ac.uk/sobi_scans/boreholes/580951)
- #8: [scans.bgs.ac.uk/sobi\\_scans/boreholes/580952](https://scans.bgs.ac.uk/sobi_scans/boreholes/580952)
- #9: [scans.bgs.ac.uk/sobi\\_scans/boreholes/580950](https://scans.bgs.ac.uk/sobi_scans/boreholes/580950)
- #10: [scans.bgs.ac.uk/sobi\\_scans/boreholes/580953](https://scans.bgs.ac.uk/sobi_scans/boreholes/580953)



# 8 Estimated Background Soil Chemistry

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

1

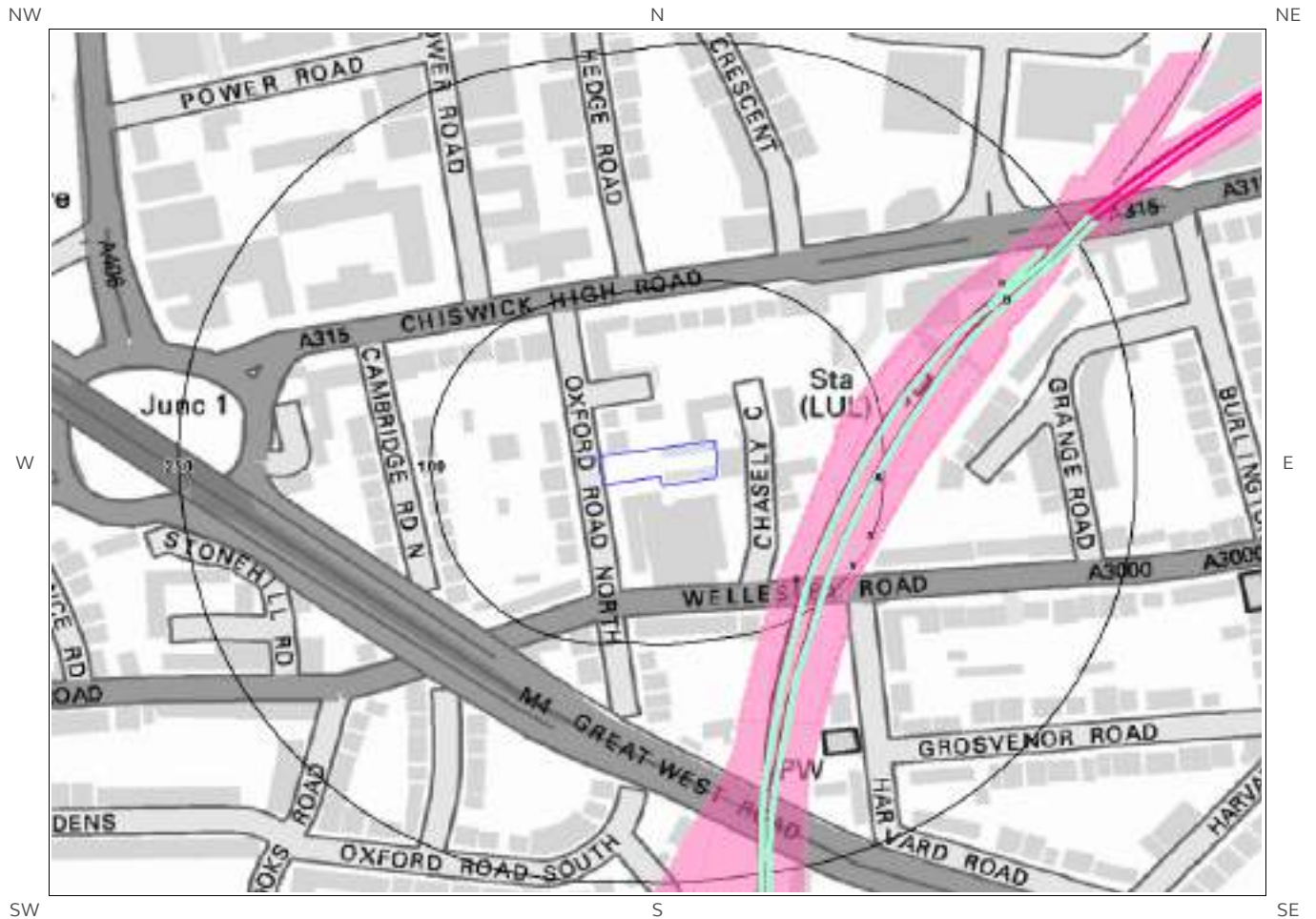
For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	London	No data	No data	No data	No data	No data

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

---

# 9 Railways and Tunnels map



Railways and Tunnels Legend

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# 9 Railways and Tunnels

## 9.1 Tunnels

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

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

Have any underground railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Detail
74	SE	London Underground - District Line

The approximate depth value for the nearest London Underground line given in this dataset has been extrapolated from published depths of tube lines at station platforms, and assume a constant gradient between stations. Using this method, topographical variation has resulted in some parts of the line having associated depth values either shallower or deeper than the real-world situation. Depth values are for indication only and should not be relied upon for any calculation or technical purpose and are in no way a substitute for a professional survey.

Line
London Underground Line: District Line Depth: 0mbgl Track Type: Surface Track

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

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

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

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

Database searched and no data found.

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



## 9.2 Historical Railway and Tunnel Features

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

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

Have any historical railway or tunnel features been identified within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Details	Date
1A	57	E	519825 178310	Railway Sidings	1938
2A	57	E	519825 178310	Railway Sidings	1920
4	58	E	n/a	Railway	1915
5	59	E	n/a	Railway	1935
6	66	SE	519762 178246	Railway Sidings	1915
7B	71	E	n/a	Railways	1915
8B	71	E	n/a	Railways	1897
3	80	E	519829 178359	Railway Sidings	1948
9	175	NE	519884 178435	Railway Sidings	1915

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

## 9.3 Historical Railways

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

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

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

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above

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

## 9.4 Active Railways

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

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

Have any active railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Name	Type
75	SE	District Line and Overground (North London Line)	Rail
75	SE	District Line and Overground (North London Line)	Rail

Distance (m)	Direction	Name	Type
86	SE	District Line and Overground (North London Line)	Rail
86	SE	District Line and Overground (North London Line)	Rail
135	E	District Line and Overground (North London Line)	Rail
135	E	District Line and Overground (North London Line)	Rail
141	E	District Line and Overground (North London Line)	Rail
141	E	District Line and Overground (North London Line)	Rail
153	NE	District Line and Overground (North London Line)	Rail
153	NE	District Line and Overground (North London Line)	Rail
157	E	District Line and Overground (North London Line)	Rail
157	E	District Line and Overground (North London Line)	Rail
186	NE	Not given	Rail
186	NE	Not given	Rail
195	S	District Line and Overground (North London Line)	Rail
195	S	District Line and Overground (North London Line)	Rail
199	S	District Line and Overground (North London Line)	Rail
199	S	District Line and Overground (North London Line)	Rail
234	S	District Line and Overground (North London Line)	Rail
234	S	District Line and Overground (North London Line)	Rail
238	S	District Line and Overground (North London Line)	Rail
238	S	District Line and Overground (North London Line)	Rail

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

## 9.5 Railway Projects

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

Is the study site within 5km of the route of the High Speed 2 rail project? Yes

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

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

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

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

# Contact Details

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



## British Geological Survey Enquiries

Kingsley Dunham Centre  
Keyworth, Nottingham NG12 5GG  
Tel: 0115 936 3143.  
Fax: 0115 936 3276.  
Email: [enquiries@bgs.ac.uk](mailto:enquiries@bgs.ac.uk)  
Web: [www.bgs.ac.uk](http://www.bgs.ac.uk)



**British Geological Survey**  
NATURAL ENVIRONMENT RESEARCH COUNCIL

BGS Geological Hazards Reports and general geological enquiries

## British Gypsum

British Gypsum Ltd  
East Leake  
Loughborough  
Leicestershire  
LE12 6HX



## The Coal Authority

200 Lichfield Lane  
Mansfield  
Notts NG18 4RG  
Tel: 0345 7626 848  
DX 716176 Mansfield 5  
[www.coal.gov.uk](http://www.coal.gov.uk)



The Coal  
Authority

## Public Health England

Public information access office  
Public Health England, Wellington House  
133-155 Waterloo Road, London, SE1 8UG  
<https://www.gov.uk/government/organisations/public-health-england>  
Email: [enquiries@phe.gov.uk](mailto:enquiries@phe.gov.uk)  
Main switchboard: 020 7654 8000



## Johnson Poole & Bloomer Limited

Harris and Pearson Building, Brettell Lane  
Brierley Hill, West Midlands  
DY5 3LH  
Tel: +44 (0) 1384 262 000  
Email: [enquiries.gs@jpb.co.uk](mailto:enquiries.gs@jpb.co.uk)  
Website: [www.jpb.co.uk](http://www.jpb.co.uk)



## Ordnance Survey

Adanac Drive, Southampton  
SO16 0AS  
Tel: 08456 050505  
Website: <http://www.ordnancesurvey.co.uk/>



## Getmapping PLC

Virginia Villas, High Street, Hartley Witney,  
Hampshire RG27 8NW  
Tel: 01252 845444  
Website: <http://www1.getmapping.com/>





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**Peter Brett Associates**

Caversham Bridge House  
Waterman Place  
Reading  
Berkshire RG1 8DN

Tel: +44 (0)118 950 0761 E-mail: [reading@pba.co.uk](mailto:reading@pba.co.uk)  
Website: <http://www.peterbrett.com/home>



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# Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:  
<https://www.groundsure.com/terms-and-conditions-feb11-2019>

## **APPENDIX C**

### **Site Photographs**



<b>CLIENT:</b>	London Borough of Hounslow	<b>DATE:</b>	03/04/2019	 <b>ARCADIS</b>		Design & Consultancy for natural and built assets
<b>REFERENCE:</b>	10030793	<b>SITE NAME:</b>	Oxford Court	10 <sup>th</sup> Floor Three Piccadilly Place Manchester M1 3BN	T: 0161 245 8700 F: 0161 245 8701	
Plate 1 – View of the site entrance and open air parking area, from Oxford Road North. Towards east						
Plate 2 – View of the garage buildings and parking area area. Towards east.						

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<p>Plate 3 – View of site from eastern end. Towards west.</p>						
<p>Plate 4 – View of small storage units along southern boundary of site. Towards northeast.</p>						




<b>CLIENT:</b>	London Borough of Hounslow	<b>DATE:</b>	03/04/2019	 <b>ARCADIS</b> <small>Design &amp; Consultancy for natural and built assets</small> 10 <sup>th</sup> Floor Three Piccadilly Place Manchester M1 3BN T: 0161 245 8700 F: 0161 245 8701
<b>REFERENCE:</b>	10030793	<b>SITE NAME:</b>	Oxford Court	

Plate 5 – View of household waste disposal area and small courtyard in southeast corner of site. Towards northeast.



Plate 6 – View of damage to brickwork due to external water pipe on eastern wall of site. Towards east.






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<b>REFERENCE:</b>	10030793	<b>SITE NAME:</b>	Oxford Court	10 <sup>th</sup> Floor Three Piccadilly Place Manchester M1 3BN	T: 0161 245 8700 F: 0161 245 8701	

Plate 7 – View of drainage and utilities covers in concrete hardstanding. Towards east.



Plate 8 – View of mature tree and damaged hardstanding on site. Towards northeast.



**Arcadis (UK) Limited**

Arcadis House  
34 York Way  
London  
N1 9AB  
United Kingdom  
T: +44 (0)20 7812 2000

**[arcadis.com](https://www.arcadis.com)**