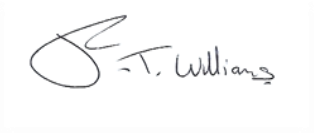
geotechnical and environmental consultants

ground&water

Phase I Desk Study

Land at Victoria Road, Waterlooville, Hampshire PO7 7ET

On behalf of Chris Flint Associates Ltd.

Report Reference: GWPR5150/DS/December 2022			Status: Final
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EXECUTIVE SUMMARY	
PROPOSED DEVELOPMENT	At the time of reporting, December 2022, the proposed development was understood to comprise the demolition of the existing buildings on-site and the construction of a two-storey block of flats and a smaller block of flats with associated car parking and bicycle storage areas.
GEOLOGY AND HYDROGEOLOGY	The British Geological Survey Solid and Drift Geology Map for the Waterlooville area (Fareham Sheet No. 316) revealed that the site was underlain by superficial Head Deposits and bedrock deposits of the London Clay Formation. No areas of Made Ground or Reworked Ground were noted within a 250m radius. A study of the aquifer maps on the DEFRA website revealed the site was underlain by a Secondary (Undifferentiated) Aquifer comprising the superficial Head Deposits, underlain by Unproductive Strata comprising bedrock deposits of the London Clay Formation. Examination of the Environment Agency records showed that the site did fall within a Groundwater Source Protection Zone (SPZ) Zone I – Subsurface Activity, as classified in the Policy and Practice for the Protection of Groundwater. No surface water features were present within a 250m radius of the site. The nearest surface water feature was an unnamed stream/drainage ditch located ~265m west/south-west of the site. A large pond associated with Hurstwood Park is located ~1km to the east. Chalkdock Lake located ~4.00km south of the site. From analysis of hydrogeological and topographical maps the actual groundwater table was anticipated to be encountered at depth below the London Clay Formation. Some amounts of groundwater however may be present at shallower depths within Made ground, parts of the Head Deposits or silty/sandy pockets of the London Clay Formation. It was considered that groundwater was flowing in a south-easterly direction in line with local topography. Examination of the Environment Agency records showed that the site was located within a Flood Zone 1, i.e. an area with a very low probability of flooding.
POTENTIAL SOURCES OF CONTAMINATION	Full details can be seen in sections 6.3 and 6.4 of this report. Onsite - The Desk study has revealed the following potential sources of contamination onsite: • Potential for Made Ground (associated with historical construction/demolition onsite) • On site use as Car wash/ Tyre Servicing Garage • Historical use as a garage Offsite - The Desk study has revealed the following potential sources of contamination within the site's environs: • Garages • Fuel Tanks • Car Rental Garage • Historical Nursery • Historical Industrial Land uses • Historical Fire stations

RECOMMENDATIONS / PHASE II OBJECTIVES	**Soils** It is possible that asbestos and asbestos containing materials will be incorporated within any Made Ground. An asbestos management strategy should be implemented to ensure that any asbestos uncovered during the investigation does not pose a risk to members of the public that use the site. On the basis of the Phase 1 Site Assessment the following contaminants of concern have been identified and should be included in the chemical analysis suite for the ground investigation: • Asbestos. • Semi-metals and heavy metals; • Poly-cyclic aromatic hydrocarbons (PAHs); • Speciated TPH including full aliphatic/aromatic split; • Volatile/semi-volatile organic compounds – BTEX Used as marker compounds; • Sulphates; The list above does not imply that these determinands are present on-site or that they are likely to cause contamination issues at the site. The ground investigation will be used to prove the presence or absence of these contaminants. The sampling and testing strategy must be in line with current standards. Given the site has undergone various phases of building and demolition, random sampling should be adopted across the site, Targeted sampling of proposed soft landscaped areas may be deemed appropriate. Results should be assessed against suitable assessment criteria to be protective of human health as well as vegetation. Services The CSM has identified a low/moderate risk for aggressive ground conditions that may affect water supply pipes as part of the development. Consideration should be given to the targeted sampling (0.75 – 1.50m bfgl) and scheduling for contaminants of concern: TPH, Naphthalene, Phenols, BTEX, VOCs and SVOCs. Groundwater If analytical results show elevated concentrations of contaminants of concern in the soil samples then there might be a requirement to assess the potential risks of leachability of contaminants migrating into the Secondary Aquifer groundwater underlying the site. This might mean leachate testing on soils samples is required or groundwater sampling and testing. Ground-gas The CSM has identified a moderate risk from ground-gases at the site as a result of on-site site usage as a Garage and nearby Garages. Analysis of soil samples should include Total Organic Carbon (TOC) testing in order to provide an indication of risk from on-site sources. In addition, ground gas monitoring should be undertaken within monitoring wells installed as part of the investigation. At this stage of investigation, in accordance with CIRIA C665 / BS8576:2013, it is anticipated that a minimum of four spot monitoring visits will be required within the ground gas risk assessment.

	Vapours The CSM has identified a source and associated contaminants that may pose a risk through the vapour pathway. The investigation should comprise a multiple line of evidence approach, comprising the analysis of soil samples taken from appropriate horizons, groundwater samples should be taken, where appropriate, and analysed for appropriate for determinands. During the monitoring of the standpipes, a PID should be used in order to identify whether a total VOC concentration is present. Should the PID identify anything over 10ppm, analysis by canister should be undertaken.

1. INTRODUCTION

1.1. General

Ground and Water Limited were instructed by Chris Flint Associates Ltd. on the 8th December 2022 to conduct a Phase I Desk Study on the site at Victoria Road, Waterlooville, Hampshire PO7 7ET. The scope of the investigation was detailed within the fee proposal GW-1515, dated the 5th December 2022.

1.2. Aims of the Investigation

This Phase 1 Desk Study was undertaken to advise the client on risk factors pertaining to the site with special reference to former and present day potential contaminative uses and their impact on sensitive receptors, these being human health, controlled waters, buildings, building materials and services.

This Phase I Desk Study comprises a Tier 1 Preliminary Risk Assessment, under Land Contamination Risk Management (LCRM), with the intention of discharging planning conditions.

1.3. Conditions and Limitations

This report has been prepared based on the terms, conditions and limitations outlined within Appendix A.

1.4. Technical Glossary

Generic technical terms and their description can be viewed within the glossary provided within Appendix B.

2. SITE SETTING

2.1. Site Location

The site comprised a ~1,505m^2 irregular-shaped plot of land, orientated in a north-west to south-east direction, along the northern side of Rockville Road and southern side of Victoria Road. The site was located in the central portion of Waterlooville, Hampshire.

The national grid reference for the centre of the site was approximately SU 68119 09158. A site location plan is given within Figure 1 and A site development area plan can be viewed in Figure 2.

2.2. Site Description

A Site Walkover was undertaken on the 16th December 2022. A description of the site, as noted during the Site Walkover, is tabulated below. Photographs can be seen in Appendix C.

Site Description Sheet	
Use of site	At the time of the site walkover, 16th December 2022, the site had three notable uses including as a Car wash, A tyre repair workshop and Car dealership.
Site topography	The site was noted to be flat and level.
Area topography	The overall area was noted to be on a relatively flat and level area with a gentle sloping road to the west in a north-west to south-east orientation.
Structures onsite	A large main industrial unit in the centre of site used by a Carwash, Tyre garage and a fabricated extension to the west as a car dealership.
Structures off-site	Residential dwellings to the north, Industrial business units to the south and south-west. Brick built mixed used buildings to the north. Shell garage to the west. Car park to the east/north-east.
Use of surrounding ground	Multiple restaurants and commercial uses in building to the north and north-east. Commercial/retail uses in units to the south-west. Car park to the east/north-east. Garage noted to the north east/east.
Boundary features	Northern Boundary: open boundary with central building side adjacent to Victoria road and neighbouring buildings. Eastern Boundary: An open boundary to the car park/roads. Southern Boundary: closed boundary with road to the south. Western Boundary: closed boundary with road to the west.
Site covering	The majority of the site was covered with tarmac/concrete hardstanding. The western half of the site was noted to be covered In gravel surfacing.
Contamination sources onsite	On site tyre garage (no tanks noted), on site car wash and small piles of fly tipping on site.
Contamination sources off-site	Shell Garage to the west. Kwik Fit Garage to the east.
Vegetation onsite	None noted.
Vegetation off-site	Trees noted in back gardens ~50m south of site.
Services	Multiple services including drainage manholes, electricity and gas inlets noted on site.

2.3. Proposed Development

At the time of reporting, December 2022, the proposed development was understood to comprise the demolition of the existing buildings on-site and the construction of a two-storey block of flats and a smaller block of flats with associated car parking and bicycle storage areas.

The proposed development plan can be seen within Figure 3.

2.4. Geology

The British Geological Survey Solid and Drift Geology Map for the Waterlooville area (Fareham Sheet No. 316) revealed that the site was underlain by superficial Head Deposits and bedrock deposits of the London Clay Formation. No areas of Made Ground or Reworked Ground were noted within a 250m radius.

Superficial deposits (Drift) are the youngest geological deposits formed during the most recent period of geological time. They rest on older deposits or rocks referred to as bedrock (Solid), which are the main mass forming the Earth. Bedrock is present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Head Deposits

The majority of Head Deposits are clay-dominated, derived from the London Clay. Generally, less than 2m thick, they probably accumulated in shallow mudslides of softened brecciated bedrock in the active layer. They consist of soft, ochreous brown silty clay with blue-grey mottling in places and angular, frost-shattered fragments of flint occur sporadically throughout. At the base of these deposits and interbedded in places, there is a bed of pebbly clay, generally less than 0.2m thick, with well-rounded flint pebbles derived from nearby outcrops of 'high level' gravel such as Stanmore Gravel.

London Clay Formation – Hampshire Basin

In the Hampshire Basin area, the London Clay Formation comprises blue, brown and grey clay with yellow and grey sands and silts interspersed with pebble beds. Localised developments of sandstone also occur. Concretions of argillaceous limestone in nodular form (Claystones) occur throughout the formation. Crystals of Gypsum (Selenite) are often found within the weathered part of the London Clay Formation, and precautions against sulphate attack to concrete are sometimes required. The basement beds of the London Clay Formation are sandy with rounded flints.

A BGS borehole (SU60NE165) located ~70m west of the site revealed a 0.10m capping of Tarmac over 'clay boulder fill/made ground' to 1.06m bgl followed by a plastic mottled clay to 3.00m bgl the final depth of the borehole. Groundwater was noted at 2.43m bgl.

2.5. Hydrogeology and Hydrology

A study of the aquifer maps on the DEFRA website revealed the site was underlain by a **Secondary (Undifferentiated) Aquifer** comprising the superficial Head Deposits, underlain by **Unproductive Strata** comprising bedrock deposits of the London Clay Formation.

Examination of the Environment Agency records showed that the site **did** fall within a Groundwater Source Protection Zone (SPZ) Zone I – Subsurface Activity, as classified in the Policy and Practice for the Protection of Groundwater. Groundsure Datasheets noted that the source protection zone was a type 1c (inner catchment within confined aquifer). The protection zone is likely below the London clay which acts as a confining/protective strata.

No surface water features were present within a 250m radius of the site. The nearest surface water feature was an unnamed stream/drainage ditch located ~265m west/south-west of the site. A large pond associated with Hurstwood Park is located ~1km to the east. Chalkdock Lake located ~4.00km south of the site.

From analysis of hydrogeological and topographical maps the actual groundwater table was anticipated to be encountered at depth below the London Clay Formation. Some amounts of groundwater however may be present at shallower depths within Made ground, parts of the Head Deposits or silty/sandy pockets of the London Clay Formation. It was considered that groundwater was flowing in a south-easterly direction in line with local topography.

Examination of the Environment Agency records showed that the site was located within a Flood Zone 1, i.e. an area with a low probability of fluvial flooding.

2.6. Radon

BRE 211 (2015) Map 5 of the London, Sussex and west Kent area indicated that the site **was not** located within an area where mandatory protection measures against the ingress of radon were likely to be required.

A review of the freely available UK Health Security Agency radon database, UK Radon, indicated that the site was located within a 1km grid square, where the maximum radon potential of <1% was recorded. Basic radon protection measures are required in areas where more than 3% of houses are at or above the Action Level.

The site was in an area where a risk assessment was not required.

2.7. Internet Search (Site Setting)

2.7.1. Available Unexploded Ordnance (UXO) Map Review

A review of the data available on www.zeticauxo.com/ revealed the site was located within a moderate -risk area associated with unexploded ordnance (UXO), as indicated by having 15 – 49bombs dropped per 1000 acres.

2.7.2. Historical Landfill Tool Review

A review of the data available on www.groundsure.io/ revealed an area of Historical Landfilling approximately 550m east of the site. This area of landfill had been associated withhold Council depot. Records for the active period are not given.

3. HISTORICAL REVIEW

3.1. Historical Map Review

The object of this search was to report on the history of the site and its environs from available County Series and Ordnance Survey Maps dating from the mid to late 19th Century to the present day and downloaded from Groundsure. In the following sections dealing with individual maps, only features considered to have a potential contaminative impact on the site and usually within a notional 250 metre radius of the site boundaries are discussed. Any distances quoted for features remote from the site have been scaled from the maps and are only approximate. The north point and approximate extent of the site are indicated on each figure. The historical maps referred to are given within Appendix D. The implications of the map search are discussed later within this report.

Environmental Significance of Data from Historical Maps		
Maps Dated Between	**Site**	**Environs**
1859 – 1869	The site comprised of open land/gardens with two small buildings in the western portion of the site.	The site environs generally comprised open undeveloped farmland in the south, west and north-west. The settlement of 'Waterloo Ville' was recorded as a grouping of multiple buildings to the north-east. A smithy was noted ~90m to the south-west and a brick field was noted ~240-250m north.
1897 - 1909	The site had three new buildings of unknown usage in the central and eastern portion of the site.	A large dwelling with gardens labelled 'The Willows' was noted neighboring to the south and south-west. Waitland End Farm was recorded ~250m south-west. A smithy was noted ~80m north and Allotment gardens were noted ~150m north.
1932 -1966	The site was noted to have an additional building among the existing buildings on site.	The sites environs noted significant development in 1932 with multiple buildings noted to the south-west and north-east. Allotment Gardens was noted in 1932 ~250m north and expanded to the north-west. 1932 mapping noted a Motor works ~150 north-east. 1939 mapping recorded a large Nursery ~100m south as well las residential development ~200 – 250m to the south-east. A pond was noted ~75m west. 1966 mapping recorded a Garage ~90m north-east and a depot 150m south-west. A Fire station was noted~ 80m north-west.
1972 - 1989	The sites main building was larger in 1974 mapping and labelled as a Garage.	A garage was noted ~75m south-west. Multiple Electricity Substations were recorded ~100 – 125m north. A tank was noted in 1984 ~75m south-west. A Car park was noted ~ 50m north-east. 1989 mapping showed that the house and grounds to the south was redeveloped into a larger unit/building. An Electricity Substation was recorded ~50m south-west.
1990 - 2022	Large building on central site area remains and smaller building in north-western site area.	No significant changes noted.

3.2. Historical Aerial Photography Review

The object of this search was to report on the history of the site and its immediate environs from available Aerial Photography dating from the late-20th Century to the present day and downloaded from Google Earth and Groundsure. Any distances quoted for features remote from the site have been scaled from the photography and are only approximate.

At the time of the earliest aerial photography, 1985 the aerial photography does not appear in a good enough quality to use. The next imagery is dated 1999 shows the site as being occupied by a large building associated with vehicles in the centre and a small building in the upper corner. No significant changes occurred on site up to the most recent 2022 aerial imagery.

4. ENVIRONMENTAL AND GEOLOGICAL INSIGHT

4.1. Groundsure Datasheets

Groundsure Environmental and Geological Datasheets were obtained for the site. Unless the data indicates a significant risk, only information within a 250m buffer zone has been included. The GroundSure Datasheets are also presented in Appendix E and a summary is given below and overleaf(s).

Environmental Insight	
Source	Nearest Distance from Site/Dated/Type
Past Land Use	
Historical industrial land uses	10 off-site records within a 250m radius: 3x records of Smithy 28 – 30m north-west and 87m south-west (1866 – 1907), 1x record of Unspecified Ground Workings 46m south-east (1898), 2x records of Fire stations 58m West and 193 north-west (1980 – 1991), 1x record of Nursery 78m south-west (1963), 1x record of Telephone Exchange 112m south-west (1980 – 1991), 1x record of Graveyard 218m north (1866), 1xrecord of Brickfield 224m north (1866).
Historical Tank Database	x records within a 250m radius: 5x records of Unspecified Tank 51m south-west and 52 – 139m south (1932 – 1993).
Historical Energy Features Database	12x off-side records within a 250m radius: 12x records of electricity substations 40 - 207m south-west, 71 - 104m north-west, 139 – 140m north, 212m west, 240m south. (1952 – 1993)
Historical Petrol Stations Database	None within a 250m radius.
Historical Garages Database	1 on-site record and 7 off site records within a 250m radius. 1x record on site of a garage (1974 – 1984), 7x off-site records of garages 36m west, 36m south-west, 78 – 79m north-east (1965 – 1993).
Historical Military Land	None within a 250m radius.
Waste and Landfill	
Active or recent landfill	None within a 250m radius.
Historical landfill (BGS records)	None within a 250m radius.
Historical landfill (LA/mapping records)	None within a 250m radius.
Historical landfill (EA/NRW records)	None within a 250m radius.
Historical waste sites	None within a 250m radius.
Licensed waste sites	None within a 250m radius.
Waste exemptions	2x records within a 250m radius: 2x records 190m south-west - storage waste exemptions (storage of waste in containers and storage of waste in a safe space)
Current Industrial Land Use	
Recent Industrial Land Uses	1 on-site record and 19 records off-site within a 250m radius. 1x on-site Waterlooville Hand Car Wash 1x MTs MOTs 11m north, 1x Emberz Fireplaces 40m north, 7x Electricity Substation 42 – 210m south-west, 73m north-west, 142m east, 150m north, 210m south-west, 214m west, 250m south, 1x tank 51m south-west, 1x Shell 66m south-west, 1x Enterprise rent-a-car 66m south-west,

	1x Kwik fit 100m north-east, 1x CIA 108m south-west, 1x Devine distribution 122m east, 1x Gas Governor 193m South-east, 1x Telephone Exchange 196m south-west, 1x Waterlooville Fire Station 208m north-west, 1x Specsavers Healthcare 247m north-west.
Current or recent petrol stations	1 off-site record within a 250m radius. 1x off site Shell Garage 73m west.
Sites determined as Contaminated Land	None within a 250m radius.
Control of Major Accident Hazards (COMAH)	None within a 250m radius.
Regulated explosive sites	None within a 250m radius.
Hazardous substance storage/usage	None within a 250m radius.
Licensed pollutant release (Part A(2)/B)	1 off-site record within a 250m radius. 1x Unloading of Petrol into storage at Service Stations (Shell UK Ltd) 66m south-west.
Radioactive Substance Authorisations	None within a 250m radius.
Licensed Discharges to controlled waters	None within a 250m radius.
Pollutant release to surface waters (Red List)	None within a 250m radius.
Pollutant release to public sewer	None within a 250m radius.
List 1 Dangerous Substances	None within a 250m radius.
List 2 Dangerous Substances	None within a 250m radius.
Pollution Incidents (EA/NRW)	None within a 250m radius.
Pollution inventory substances	None within a 250m radius.
Pollution inventory waste transfers	None within a 250m radius.
Pollution inventory radioactive waste	None within a 250m radius.
Hydrogeology	
Superficial Aquifer	1 record on-site: 1x Secondary Undifferentiated Aquifer.
Bedrock Aquifer	1 record onsite: 1x Unproductive Starta.
Groundwater Vulnerability	1 record onsite: 1x Secondary superficial aquifer – medium vulnerability, leaching class: low. 1x Unproductive Bedrock–unproductive , leaching class: low.
Groundwater Vulnerability – Soluble Rock Risk	18% of grid square covered by maximum risk Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.
Groundwater Vulnerability - local information	None within a 250m radius.
Groundwater Abstractions	None within a 250m radius.
Surface Water Abstractions	None within a 250m radius.
Potable Abstraction	None within a 250m radius.
Source Protection Zones	1 on-site record within a 250m radius. 1x record of Type 1c (Inner catchment within confined aquifer).
Hydrology	
Water Network (OS MAsterMap)	2 records within a 250m radius. 1x off site inland river not influenced by normal tidal action 23m east, 1x off site inland river not influenced by normal tidal action 204m north-west.
Surface Water Features	2 records within a 250m radius. 1x off site inland river not influenced by normal tidal action 23m east, 1x off site inland river not influenced by normal tidal action 204m north-west.

WFD Surface Water Body Catchments	1 record within a 250m radius: 1x Onsite River (Hermitage Stream).
WFD Surface Water Bodies	None within a 250m radius.
WFD Groundwater Bodies	None within a 250m radius.
Environmental Designations	
Sites of Special Scientific Interest (SSSI)	None within a 250m radius.
Conserved wetland sites (Ramsar sites)	None within a 250m radius.
Special Areas of Conservation (SAC)	None within a 250m radius.
Special Protection Areas (SPA)	None within a 250m radius.
National Nature Reserves (NNR)	None within a 250m radius.
Local Nature Reserves (LNR)	None within a 250m radius.
Designated Ancient Woodland	None within a 250m radius.
SSSI Units	None within a 250m radius.
Visual and Cultural Designations	
Areas of Outstanding Natural Beauty (AONB)	None within a 250m radius.
National Parks	None within a 250m radius.
Registered Parks and Gardens	None within a 250m radius.
Agricultural Designations	
Agricultural Land Classification	None within a 250m radius.
Habitat Designation	
Priority Habitat Inventory	1x onsite (urban), 1x Grade 4 124m west.

Geological Insight	
Source	Nearest Distance from Site/ Type
Artificial and Made Ground (1:10,000 Scale)	None within a 250m radius.
Superficial Geology (1:10,000 Scale)	1x on-site record: 1x record on-site – Head Deposits (Clay, Silt, Sand and Gravel).
Landslip (1:10,000 Scale)	None within a 250m radius.
Bedrock Geology (1:10,000 Scale)	1 on-site records: 1x London Clay Formation (clay, silt and sand).
Bedrock Faults and Other Linear Features (1:10,000 Scale)	None within a 250m radius.
Artificial ground and permeability (1:50,000 scale)	None within a 250m radius.
Superficial Geology and Permeability (1:50,000 scale)	1 on-site record: 1x Head. Flow Type: Mixed, Maximum Permeability: High, Minimum Permeability: Very Low.
Landslip Permeability (1:50,000 scale)	None within a 250m radius.
Bedrock Geology and Permeability (1:50,000 scale)	1 record onsite: 1x London Clay Formation. Flow Type – Mixed, Maximum Permeability – Moderate, Minimum Permeability – Very Low.
Bedrock faults and other linear features (60k)	None within a 250m radius.
Boreholes	
BGS recorded boreholes	7 records within a 250m radius: 57m west (18.5), 128m north (21.33), 135m north-west (3.00), 163m north (18.5), 185m north (15.0), 200m north (7.92), 205m north (7.92).

Natural Hazard Findings	
Shrink-Swell Clay	Low hazard onsite.
Running Sands	Very Low hazard onsite.
Compressible Deposits	Negligible hazard onsite.
Collapsible Deposits	Very Low hazard onsite.
Landslides	Very Low hazard onsite.
Ground Dissolution of Soluble Rocks	Negligible hazard onsite.
Mining, Ground Working and Natural Cavities	
Records of Natural Cavities	None within a 250m radius.
Records of BritPits	None within a 250m radius.
Records of Surface Ground Workings	3x records within a 250m radius: 1x Unspecified Ground Workings 46m south-east (1898), 1x Graveyard 218m north (1866), 1x Brick Field 224m north (1866).
Records of Underground Workings	None within a 250m radius.
Records of Historical Mineral Planning Areas	None within a 250m radius.
Records of Non-coal Mining	None within a 250m radius.
Records of Mining Cavities	None within a 250m radius.
Records of JPB Mining Areas	None within a 250m radius.
Records of Coal Mining	None within a 250m radius.
Records of Brine areas	None within a 250m radius.
Records of Gypsum Areas	None within a 250m radius.
Records of Tin Mining	None within a 250m radius.
Records of Clay Mining	None within a 250m radius.
Radon	
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.
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.
Estimated Background Soil Chemistry	
Records of BGS estimated background soil chemistry	2 records within a 250m radius: On-site (x2). Arsenic: 15mg/kg Lead 100mg/kg (60mg/kg bioaccessible) Cadmium: 1.8mg/kg Chromium: 90 – 120mg/kg Nickel: 15 – 30mg/kg
Records of BGS Estimated Urban Soils Chemistry	None within a 250m radius.
Records of BGS Measured Urban Soil Chemistry	None within a 250m radius.
Railway Infrastructure and Projects	
Records of Underground railways (London)	None within a 250m radius.
Records of Underground railways (Non-London)	None within a 250m radius.
Records of Railway Tunnels	None within a 250m radius.
Records of Historical Railway and Tunnel Features	None within a 250m radius.
Records of Royal Mail Tunnels	None within a 250m radius.

Records of Historical Railways	None within a 250m radius.
Records of Railways	None within a 250m radius.

5. ONLINE REVIEW AND HISTORICAL INVESTIGATIONS

5.1. Online Council Planning Database

A review of the Havant Borough Council Planning Database revealed that four planning applications had been filed for the site Victoria Road, Waterlooville PO7 7ET. Those pertinent to the site development area are tabulated below.

Planning Applications for the site		
Application No./Date	**Proposed**	Decision
APP/17/00568 27/09/2017	Variation to condition 3 of Planning Permission APP/15/00030 to allow car parking spaces 1-13 to be used for the purposes of car valeting in association with units C and D; also to allow the opening of the car valeting service from 08:00 to 19:00 Mondays to Saturdays and 10:00 to 16:00 on Sundays. (Revised details)	Granted
APP/17/00244 31/04/2017	Retention of 1No. externally illuminated fascia sign and 1No. externally illuminated freestanding sign.	Granted
APP/15/00030 03/03/2015	Variation of Conditions 5, 6 and 7 of Planning Permission 17055/5 in order to allow continued use of Unit D and associated parking spaces for car valeting.	Granted
APP/11/01505 01/06/2012	Variation of condition 5, 6 and 7 of Planning Permission 17055/5 to permit the use of plant and machinery, and the use of the open area for purposes in connection with the uses of the units as set out on the submitted plans.	Granted

5.2. Internet Search

An internet search did not identify any other information pertinent to this report.

6. PRELIMINARY RISK ASSESSMENT

6.1. Contaminant Source-Pathway-Receptor Model

In the UK, the assessment of risk from contamination follows the source-pathway-receptor (SPR) approach. For a risk to be present there must be a source of contamination, a receptor or receptors, and a pathway for contaminants to migrate or be absorbed. If one of these three elements are absent, it is considered that there is no risk of harm. If, however, there is a linkage between any given source and any given receptor, then a risk-based approach is used to assess the significance or impact of the pollutant linkage.

This Phase 1 Desk Study has been used to identify potential on-site and off-site sources of contamination, which are summarised in this section of the report. Additional potential sources of contamination identified within the Desk Study have been discounted based on the absence of a realistic SPR linkage (i.e. the distance from the site or the nature or age of any potential contamination sources).

In line with the requirements of BS 21365:2020, *Soil Quality – Conceptual site models for potentially contaminated sites*, the Conceptual Site Model (CSM) can be described in text, tabulated or presented as a figure. A tabulated CSM is provided in Section 6.6 of this report, where each component is discussed in the following sections. A diagrammatic CSM is provided within Figure 4.

6.2. Potential On-site Sources of Contaminants

This Desk Study revealed that at the time of the earliest historical mapping (1859) the site comprised of open land/gardens with two small buildings in the western portion of the site. In 1897 the site saw more development with more buildings of unknown usage constructed in the central and eastern portion of the site. An additional building was noted to be present in 1932 mapping amongst the existing buildings on site. The main building in the central portion of the site was noted to be large and extended in 1972 and in 1974 was labelled on maps as 'Garage'. In 1992 the site retained its large building in the centre of the site and a smaller building on the north-western corner was present. No significant changes were noted between 1990 and the most recent mapping dated 2022.

The Phase 1 Desk Study revealed the following on-site sources of contamination:

- The site has undergone various phases of construction/demolition and as a result various thicknesses of Made Ground resulting from these activities are likely to be encountered.

Contaminants of concern associated with Made Ground deposits include; metals, Petroleum Hydrocarbons (TPHs), Polycyclic aromatic hydrocarbons (PAHs), asbestos, sulphates, volatile organic compounds (VOCs) and ground gases.

• The historical mapping dated 1974 – 1984 and Groundsure Datasets show that the site building was used as a Garage. The site walkover noted part of the site was used as a tyre servicing company. Potential sources of contamination associated with a garage include: lubricant oils; brake fluids (constitute mainly of polymerised glycols and ethers. Waste fluid is generated during repair work on brake systems); solvents (chlorinated hydrocarbons, carbon tetrachloride, paraffin and proprietary degreasing compounds); paints (lead-based paints, zinc-rich epoxy primers, polyurethanes as

decorative finishes); gasoline, diesel, paraffin (Department of the Environment Industry Profile, Road vehicle fuelling, service and repair: garages and filling stations 1996).

- Groundsure Datasets note that the recent/current site use includes a Car Wash/ Valeting and Tyre Servicing use. The site walkover noted that the sites main building was used as a Car wash/Valeting company, A Tyre Servicing Garage, and a Vehicle retailer. This is a potential source of contaminants including Solvents, Phosphate, Surfactants, Silts/sediments, Hydrocarbons and Oils, Rubber products, and Heavy Metals.

6.3. Potential Off-site Sources of Contaminants

The Phase 1 Desk Study revealed the following potential off-site sources of contamination:

- Groundsure Datasheets noted a recent/current Garage (MT's MOTs) 11m north of the site area. Potential sources of contamination associated with a garage include: lubricant oils; brake fluids (constitute mainly of polymerised glycols and ethers. Waste fluid is generated during repair work on brake systems); solvents (chlorinated hydrocarbons, carbon tetrachloride, paraffin and proprietary degreasing compounds); paints (lead-based paints, zinc-rich epoxy primers, polyurethanes as decorative finishes); gasoline, diesel, paraffin (Department of the Environment Industry Profile, Road vehicle fuelling, service and repair: garages and filling stations 1996). The Risk is considered **Moderate.**

- Historical Mapping dated 1965 – 1993 showed historical several historical garages located 36m west, 36m south-west and 78 – 79m north-east. Groundsure Datasets noted garages <100m north/northwest. Potential sources of contamination associated with a garage include: lubricant oils; brake fluids (constitute mainly of polymerised glycols and ethers. Waste fluid is generated during repair work on brake systems); solvents (chlorinated hydrocarbons, carbon tetrachloride, paraffin and proprietary degreasing compounds); paints (lead-based paints, zinc-rich epoxy primers, polyurethanes as decorative finishes); gasoline, diesel, paraffin (Department of the Environment Industry Profile, Road vehicle fuelling, service and repair: garages and filling stations 1996). The Risk is considered. ***The Garages to the north/NW and at distances <100m are a moderate risk, as the groundwater from them flows towards the site (S-SE). The other garages will be low as a result of distance, direction from site and ground conditions expected.***

- Groundsure datasets and Aerial Imagery analysis show that there is a current/recent land use in the form of a garage (Kwik Fit) located 100m north-east. Potential sources of contamination associated with a garage include: lubricant oils; brake fluids (constitute mainly of polymerised glycols and ethers. Waste fluid is generated during repair work on brake systems); solvents (chlorinated hydrocarbons, carbon tetrachloride, paraffin and proprietary degreasing compounds); paints (lead-based paints, zinc-rich epoxy primers, polyurethanes as decorative finishes); gasoline, diesel, paraffin (Department of the Environment Industry Profile, Road vehicle fuelling, service and repair: garages and filling stations 1996). The Risk is considered **Low, as a result of distance and ground conditions expected.**

- Groundsure datasets and the site walkover noted a Shell Petrol Garage ~60 -70m west. Petrol Garages can be a source of contaminants due to associated underground and above ground fuel tanks as wel las contaminants including VOCs, SVOCs, PAHs and TPHs as well as lubricants and solvents, However due to the distance, direction of expected groundwater flow modelled and ground conditions expected the risk level is considered **Low.**

- Historical Mapping dated between 1932 – 1993 and Groundsure Datasets show an existing/recent Tank/Tanks located 51m south-west and 52 – 139m south. ASTs and the UST, if present, may have contained oil/fuel hydrocarbons to operate light plant machinery around the site and used to operate the machinery within the main creamery buildings. Spillages/leakages may have occurred over time and affected the soils and groundwater underlying the site.

  If hydrocarbons are present within the soils underlying the site and are slowly attenuating over time, the anaerobic biological breakdown of hydrocarbons can produce harmful bio-gases such as methane and carbon dioxide which could affect the site. The risk is considered **Low.**

- Historical Mapping recorded a Nursery 78m south-west in 1963. Nurseries can be potential source of contaminants including Fertilizers, Herbicides, Pesticides, and Heavy Metals. The risk is considered **Low.**

- Groundsure Datasets show a recent land use in the form of 'Enterprise rent-a-car' was located 66m south-west. A car rental garage can be a source of hydrocarbons, heavy metals, solvents, lubricants and rubber due to any potential car maintenance taking place on site, solvents, surfactants and cleaning chemicals may be used on the site also. The risk level is considered **Low.**

- Historical Mapping dated 1980 – 1991 and Groundsure Datasets recorded a Fire Station 58m west, 193m north-west and most recently 208m north-west. Fire stations can be a source of chemicals, heavy metals and notable harmful and persistent PFAS compounds. They can also be a potential source of Hydrocarbons, VOCs, PAHs and TPHs from vehicle storage/mainitance. Due to the distance to the site area and the impermeable lithology underlying the sources the risk level is considered Negligible.

- Historical Mapping dated 1866 – 1907 recorded multiple industrial land uses including Smithy (28 – 30m north-west), Graveyard (218m north), Brickfield (224m north), and Unspecified Ground Workings (46m South-east). The potential sources of contamination from these varied sources include Heavy metals, Asbestos, Hydrocarbons, PAHs, VOCs and TPHs. Due to the time lapsed since these sources were mapped and the areas being redeveloped along with the lithology underlying the sources the risk considered is negligible.

- Groundsure datasets and Historical Mapping (1952 – 1993) recorded forty-four Electricity Substations 71 – 141m north, 71 – 140m north-west, 40 – 208m South-west, 240m south and 212 – 213 west. Groundsure Datasets also noted that recent/current Electricity substations include 42m south-west, 73m north-west, 142m east, 150m north, 210m south-west and 250m south. High-voltage electricity sub-stations may be a potential source for PCBs. PCB oils and other cable/transformer oils, together with a series of waxes are commonly used in mainly high voltage applications. PCBs are generally toxic; however, newer forms of non-toxic oils and waxes have replaced the use of PCBs. All cable oils are extremely viscous and adhere strongly to soil particles and do not tend to migrate far from the point of leakage or spillage, therefore it was concluded that the potential risk of encountering PCBs on the site was negligible.

6.4. Potential Receptors

At the time of reporting, December 2022, the proposed development was understood to comprise the demolition of the existing buildings on-site and the construction of a two-storey block of flats and a smaller block of flats with associated car parking and bicycle storage areas. The proposed development plan can be seen within Figure 3.

Based on the proposed development, the potential receptors are presented below and comprise:

Human Health

- End users of the site (Residents/Future site visitors);
- Construction workers during redevelopment;
- Site operatives during maintenance works; and

Flora and Fauna

- Vegetation within soft landscaped areas;

Building Materials and Services

- Buildings;
- Buried concrete;
- Confined spaces; and
- Underground services (Water Pipes).

Controlled Waters

- Secondary (Undifferentiated) Aquifer (Head Deposits).

6.5. Contaminant Absorption Pathways

The potential pathways for contaminant absorption between the identified sources and the identified receptors are as follows:

Human Health:

- Direct ingestion of soil and soil derived dust;
- Dermal contact of soil and soil derived dust;
- Inhalation of dust (indoors and outdoors) with elevated concentration of determinands;
- Ingestion of home-grown produce, and soil attached;
- Direct ingestion of groundwater;
- Inhalation of volatile vapour (indoors and outdoors);
- Inhalation of ground gases.; and
- Explosion.

Flora and Fauna

- Direct uptake of groundwater; and
- Direct uptake of contaminants in the soil.

Building Materials and Services

- Direct contact;
- Explosion.

Controlled Waters

- Vertical and lateral migration in permeable strata horizons;
- Via anthropogenic pathways (infilled ground and service runs);
- Surface water Runoff.

6.6. Tabulated Conceptual Site Model

The tabulated Conceptual Site Model developed as part of this Desk Study is outlined overleaf. For ease of reference and understanding, the risks have been classified within this risk assessment against four possible levels / categories, summarised in the table below.

Risk Categories used in the Tabulated CSM	
Negligible	Regarding this potential SPR linkage, the site is considered suitable for the proposed end-use and there is no plausible risk. Therefore, there is no need to further assess this potential source of contamination.
Low Risk	Regarding this potential SPR linkage, the site is considered suitable for the proposed end-use and there is not considered to be an unacceptable risk to receptors. However, it is considered that further investigation to confirm this is recommended.
Moderate Risk	Regarding this potential SPR linkage, the site may not be suitable for the proposed end-use in its current condition and there may be an unacceptable risk to receptors. Further investigation is required to confirm this.
High Risk	Regarding this potential SPR linkage, the site is probably or certainly not suitable for proposed end-use and there is likely to be an unacceptable risk to receptors. Contaminants probably or certainly present and urgent action required in the short term.

Tabulated Conceptual Site Model – Pollutant Linkage Summary			(On-Site Sources)
Potential Sources	Potential Absorption Pathways	Potential Receptors	Risk Classification
Made Ground from construction/ demolition activities: • Asbestos, • PAHs, • TPHs, • VOCs, • Sulphates, and • Metals.	• Direct ingestion of soil and soil derived dust • Dermal contact of soil and soil derived dust • Inhalation of dust (indoors and outdoors) with elevated concentration of determinands • Ingestion of home-grown produce, and soils attached • Direct ingestion of groundwater • Inhalation of volatile vapour (indoors and outdoors)	**Human Health** • End Users (Residents/Future site visitors) • Construction workers during development • Site operatives during maintenance works •	**Moderate**
	• Direct uptake of groundwater • Direct uptake of determinands in the soil	**Flora and Fauna** • Vegetation within soft landscaped areas •	**Moderate**
	• Anthropogenic (man-made) pathways • Vertical and lateral migration in permeable strata • Surface water runoff	**Controlled Waters** • Secondary Aquifer (Head Deposits) •	**Low**
Aggressive ground conditions with Made Ground and natural ground, including groundwater: • Sulphates, • PAH/TPH.	• Direct contact with aggressive ground conditions	**Building Materials and Services** • Buried Concrete • Underground services (water pipes)	**Moderate**
Ground gases generated by Made Ground: • Methane, • Carbon Dioxide, • Hydrogen Sulphide, and • Carbon Monoxide.	• Migration through anthropogenic & natural pathways • Inhalation of Asphyxiating gases • Explosion (methane only)	**Human Health** • End Users (Residents/Future site visitors) • Construction workers during development (especially in confined spaces) • Site operatives during maintenance works in confined spaces •	**Moderate**
	• Migration through anthropogenic & natural pathways • Explosion (methane only)	**Building Materials and Services** • Buildings • Confined spaces • Underground services	**Moderate**
Historical site usage as a Garage between 1974 and 1984. Potential contaminants include: • Asbestos,	• Direct ingestion of soil and soil derived dust • Dermal contact of soil and soil derived dust • Inhalation of dust (indoors and outdoors) with elevated concentration of determinands • Ingestion of home-grown produce, and soils attached • Direct ingestion of groundwater	**Human Health** • End Users (Residents/Future site visitors) • Construction workers during development • Site operatives during maintenance works	**Moderate**

• PAHs, • TPHs, • VOCs, • Sulphates, and Metals.	• Inhalation of volatile vapour (indoors and outdoors)		
	• Direct uptake of groundwater • Direct uptake of determinands in the soil	**Flora and Fauna** • Vegetation within soft landscaped areas	**Moderate**
	• Anthropogenic (man-made) pathways • Vertical and lateral migration in permeable strata • Surface water runoff	**Controlled Waters** • Secondary Aquifer (Head Deposits)	**Low**
	• Direct contact with aggressive ground conditions	**Building Materials and Services** • Buried Concrete Underground services (water pipes)	**Moderate**
Historical site usage as a Garage between 1974 and 1984. Potential ground gases include: • Methane, • Carbon Dioxide, • Hydrogen Sulphide, and Carbon Monoxide.	• Migration through anthropogenic & natural pathways • Inhalation of Asphyxiating gases • Explosion (methane only)	**Human Health** • End Users (Residents/Future site visitors) • Construction workers during development (especially in confined spaces) • Site operatives during maintenance works in confined spaces	**Moderate**
	• Migration through anthropogenic & natural pathways • Explosion (methane only)	**Building Materials and Services** • Buildings • Confined spaces Underground services	**Moderate**
Recent/current use on site as a Car Wash / Valeting Service and Tyre servicing. Potential contaminants include: • Solvents, • Surfactants, • PAHs, • TPHs, • VOCs, • Sulphates, and Metals.	• Direct ingestion of soil and soil derived dust • Dermal contact of soil and soil derived dust • Inhalation of dust (indoors and outdoors) with elevated concentration of determinands • Ingestion of home-grown produce, and soils attached • Direct ingestion of groundwater • Inhalation of volatile vapour (indoors and outdoors)	**Human Health** • End Users (Residents/Future site visitors) • Construction workers during development • Site operatives during maintenance works	**Moderate**
	• Direct uptake of groundwater • Direct uptake of determinands in the soil	**Flora and Fauna** • Vegetation within soft landscaped areas	**Moderate**
	• Anthropogenic (man-made) pathways • Vertical and lateral migration in permeable strata • Surface water runoff	**Controlled Waters** • Secondary Aquifer (Head Deposits)	**Low**

Tabulated Conceptual Site Model – Pollutant Linkage Summary (Off-Site Sources)			
Potential Sources	Potential Absorption Pathways	Potential Receptors	Risk Classification
Recent/Current off site Garage (MT's MOTs) located 11m north of site. Potential contaminants include: • Asbestos, • PAHs, • TPHs, • VOCs, • Sulphates, and • Metals.	• Direct ingestion of soil and soil derived dust • Dermal contact of soil and soil derived dust • Inhalation of dust (indoors and outdoors) with elevated concentration of determinands • Direct ingestion of groundwater • Inhalation of volatile vapour (indoors and outdoors)	**Human Health** • End Users (Residents/Future site visitors) • Construction workers during development • Site operatives during maintenance works	**Moderate**
	• Direct uptake of groundwater	**Flora and Fauna** • Vegetation within soft landscaped areas	**Moderate**
Recent/Current off-site Garage (MT's MOTs) located 11m north of site. Potential ground gases include: • Methane, • Carbon Dioxide, • Hydrogen Sulphide, and Carbon Monoxide.	• Migration through anthropogenic & natural pathways • Inhalation of Asphyxiating gases • Explosion (methane only)	**Human Health** • End Users (Residents/Future site visitors) • Construction workers during development (especially in confined spaces) • Site operatives during maintenance works in confined spaces	**Moderate**
	• Migration through anthropogenic & natural pathways • Explosion (methane only)	**Building Materials and Services** • Buildings • Confined spaces • Underground services	**Moderate**
Historical Mapping dated 1965 – 1993 showed historical several historical garages located 36m west, 36m south-west and 78 – 79m north-east. Potential sources of	• Direct ingestion of soil and soil derived dust • Dermal contact of soil and soil derived dust • Inhalation of dust (indoors and outdoors) with elevated concentration of determinands • Direct ingestion of groundwater • Inhalation of volatile vapour (indoors and outdoors)	**Human Health** • End Users (Residents/Future site visitors) • Construction workers during development Site operatives during maintenance works	**Low**

Tabulated Conceptual Site Model – Pollutant Linkage Summary (Off-Site Sources)			
Potential Sources	Potential Absorption Pathways	Potential Receptors	Risk Classification
contamination associated with a garage include: • Asbestos, • PAHs, • TPHs, • VOCs, • Sulphates, and • Metals.	• Direct uptake of groundwater	**Flora and Fauna** Vegetation within soft landscaped areas	**Low**
Groundsure datasets, The site walkover and Aerial Imagery analysis show that there is a current/recent land use in the form of a garage (Kwik Fit) located >100m north-east: • Asbestos, • PAHs, • TPHs, • VOCs, • Sulphates, and • Metals.	• Direct ingestion of soil and soil derived dust • Dermal contact of soil and soil derived dust • Inhalation of dust (indoors and outdoors) with elevated concentration of determinands • Direct ingestion of groundwater • Inhalation of volatile vapour (indoors and outdoors)	**Human Health** • End Users (Residents/Future site visitors) • Construction workers during development Site operatives during maintenance works	**Moderate**
	• Direct uptake of groundwater	**Flora and Fauna** Vegetation within soft landscaped areas	**Moderate**
Historical Mapping dated between 1932 – 1993 and Groundsure Datasets show an existing/recent Tank/Tanks located 51m south-west and 52 – 139m south. • Asbestos, • PAHs, • TPHs,	• Direct ingestion of soil and soil derived dust • Dermal contact of soil and soil derived dust • Inhalation of dust (indoors and outdoors) with elevated concentration of determinands • Direct ingestion of groundwater • Inhalation of volatile vapour (indoors and outdoors)	**Human Health** • End Users (Residents/Future site visitors) • Construction workers during development Site operatives during maintenance works	**Low**
	• Direct uptake of groundwater	**Flora and Fauna** Vegetation within soft landscaped areas	**Low**

Tabulated Conceptual Site Model – Pollutant Linkage Summary (Off-Site Sources)			
Potential Sources	Potential Absorption Pathways	Potential Receptors	Risk Classification
• VOCs, • Sulphates, and • Metals.			
Historical Mapping recorded a Nursery 78m north-west in 1963. Potential Contaminants include: • Fertilizers, • Pesticides, • Herbicides, • Hydrocarbons.	• Direct ingestion of soil and soil derived dust • Dermal contact of soil and soil derived dust • Inhalation of dust (indoors and outdoors) with elevated concentration of determinands • Direct ingestion of groundwater • Inhalation of volatile vapour (indoors and outdoors)	**Human Health** • End Users (Residents/Future site visitors) • Construction workers during development Site operatives during maintenance works	**Low**
	• Direct uptake of groundwater	**Flora and Fauna** Vegetation within soft landscaped areas	**Low**
Groundsure Datasets show a recent land use in the form of 'Enterprise rent-a-car' was located 66m south-west: • PAHs, • TPHs, • VOCs, • Sulphates, and • Metals.	• Direct ingestion of soil and soil derived dust • Dermal contact of soil and soil derived dust • Inhalation of dust (indoors and outdoors) with elevated concentration of determinands • Direct ingestion of groundwater • Inhalation of volatile vapour (indoors and outdoors)	**Human Health** • End Users (Residents/Future site visitors) • Construction workers during development Site operatives during maintenance works	**Low**
	• Direct uptake of groundwater	**Flora and Fauna** Vegetation within soft landscaped areas	**Low**
Historical Mapping dated 1980 – 1991 and Groundsure Datasets recorded a Fire Station 58m west, 193m north-west and most recently 208m north-west: • PFAS compounds	• Direct ingestion of soil and soil derived dust • Dermal contact of soil and soil derived dust • Inhalation of dust (indoors and outdoors) with elevated concentration of determinands • Direct ingestion of groundwater • Inhalation of volatile vapour (indoors and outdoors)	**Human Health** • End Users (Residents/Future site visitors) • Construction workers during development Site operatives during maintenance works	**Negligible**
	• Direct uptake of groundwater	**Flora and Fauna** Vegetation within soft landscaped areas	**Negligible**

Tabulated Conceptual Site Model – Pollutant Linkage Summary (Off-Site Sources)			
Potential Sources	Potential Absorption Pathways	Potential Receptors	Risk Classification
• Hydrocarbons • Solvents			
Historical Mapping dated 1866 – 1907 recorded multiple industrial land uses including Smithy (28 – 30m north-west), Graveyard (218m north), Brickfield (224m north), and Unspecified Ground Workings (46m South-east). • **Asbestos,** • **PAHs,** • **TPHs,** • **VOCs,** • **Sulphates, and** • Metals.	• Direct ingestion of soil and soil derived dust • Dermal contact of soil and soil derived dust • Inhalation of dust (indoors and outdoors) with elevated concentration of determinands • Direct ingestion of groundwater • Inhalation of volatile vapour (indoors and outdoors)	**Human Health** • End Users (Residents/Future site visitors) • Construction workers during development Site operatives during maintenance works	**Negligible**
	• Direct uptake of groundwater	**Flora and Fauna** Vegetation within soft landscaped areas	**Negligible**
Historical and Recent Electricity Substations: • **PCBs,** • **Solvents** • **Heavy Metals**	• Direct ingestion of soil and soil derived dust • Dermal contact of soil and soil derived dust • Inhalation of dust (indoors and outdoors) with elevated concentration of determinands • Direct ingestion of groundwater • Inhalation of volatile vapour (indoors and outdoors)	**Human Health** • End Users (Residents/Future site visitors) • Construction workers during development Site operatives during maintenance works	**Negligible**
	• Direct uptake of groundwater	**Flora and Fauna** Vegetation within soft landscaped areas	**Negligible**

7. RECOMMENDATIONS AND PHASE II OBJECTIVES

This section of the report will present recommendations for the further investigation of each plausible pollutant linkage identified by the Conceptual Site Model.

It is recommended that an intrusive ground investigation is undertaken at the site to evaluate the risk that contaminants of concern within the soils and groundwater may affect end-users. This should determine the underlying ground and groundwater conditions and include an assessment of the level of contamination to enable the quantification of the ground-related risks associated with the proposed redevelopment.

Consideration should be given to the testing of soil samples recovered from exploratory holes for chemical laboratory testing. The testing should be for a broad range of contaminants in accordance with DEFRA / CLEA methodologies and include the contaminants of concern identified within the Conceptual Site Model.

7.1. Soils

It is possible that asbestos and asbestos containing materials will be incorporated within any Made Ground. An asbestos management strategy should be implemented to ensure that any asbestos uncovered during the investigation does not pose a risk to members of the public that use the site.

On the basis of the Phase 1 Site Assessment the following contaminants of concern have been identified and should be included in the chemical analysis suite for the ground investigation:

- Asbestos.
- Semi-metals and heavy metals;
- Poly-cyclic aromatic hydrocarbons (PAHs);
- Speciated TPH including full aliphatic/aromatic split;
- Volatile/semi-volatile organic compounds – BTEX Used as marker compounds;
- Sulphates;

The list above does not imply that these determinands are present on-site or that they are likely to cause contamination issues at the site. The ground investigation will be used to prove the presence or absence of these contaminants. The sampling and testing strategy must be in line with current standards. Given the site has undergone various phases of building and demolition, random sampling should be adopted across the site, Targeted sampling of proposed soft landscaped areas may be deemed appropriate. Results should be assessed against suitable assessment criteria to be protective of human health as well as vegetation.

Sub-surface concrete may be damaged due to being in contact with aggressive ground conditions. Sampling should be undertaken where the proposed foundations will be in contact with Made Ground and/or natural ground and tested for aggressive ground conditions (sulphates/pH). Classification should then be undertaken of the ground conditions in accordance with Building Research Establishment Special Digest 1, 2005, ‘Concrete in Aggressive Ground’.

7.2. Services

The CSM has identified a low/moderate risk for aggressive ground conditions that may affect water supply pipes as part of the development. Consideration should be given to the targeted sampling (0.75

– 1.50m bfgl) and scheduling for contaminants of concern: TPH, Naphthalene, Phenols, BTEX, VOCs and SVOCs.

7.3. Groundwater

If analytical results show elevated concentrations of contaminants of concern in the soil samples then there might be a requirement to assess the potential risks of leachability of contaminants migrating into the Secondary Aquifer groundwater underlying the site. This might mean leachate testing on soils samples is required or groundwater sampling and testing.

7.4. Ground-gas

The CSM has identified a moderate risk from ground-gases at the site as a result of on-site site usage as a Garage and nearby Garages. Analysis of soil samples should include Total Organic Carbon (TOC) testing in order to provide an indication of risk from on-site sources. In addition, ground gas monitoring should be undertaken within monitoring wells installed as part of the investigation. At this stage of investigation, in accordance with CIRIA C665 / BS8576:2013, it is anticipated that a minimum of four spot monitoring visits will be required within the ground gas risk assessment.

7.5. Vapours

The CSM has identified a source and associated contaminants that may pose a risk through the vapour pathway. The investigation should comprise a multiple line of evidence approach, comprising the analysis of soil samples taken from appropriate horizons. During the monitoring of the standpipes, a PID should be used in order to identify whether a total VOC concentration is present. Should the PID identify anything over 10ppm, analysis by canister and / or groundwater sampling if applicable should be undertaken.

7.6. Geotechnical Review

7.6.1. General

The BGS have identified the following natural hazards on-site and within a 50m buffer.

Natural Hazards	
Shrink-Swell Clay	Low hazard on-site.
Running Sands	Very Low hazard on-site.
Compressible Deposits	Negligible hazard on-site.
Collapsible Deposits	Very Low hazard on-site.
Landslides	Very Low hazard on-site.
Ground Dissolution of Soluble Rocks	Negligible hazard on-site.

No pits/quarrying or mining features were identified on-site, however a number of pits were noted within the site's close environs from the historical mapping. These were located to the south-east and north and were associated with brickworks, ground workings and a Graveyard.

When designing foundations, the potential presence of aggressive ground conditions should be taken into consideration. Further investigation may be required in accordance with the guidance established in BRE Special Digest 1 (SD1) (2005) 'Concrete in aggressive ground'. The BGS do not record any details regarding the potential for aggressive ground conditions within shallow units identified at the site.

It is recommended that as part of the site-specific ground investigation on-site, geotechnical testing is undertaken to determine the underlying ground conditions and to evaluate any geotechnical related risks associated with the proposed redevelopment of the site.

The Groundsure datasheets have indicated that the superficial Head Deposits are likely to have a very low to high permeability and may not be suitable for surface water disposal. The underlying London Clay Formation was recorded to have a very low to moderate permeability and therefore would not be suitable for surface water disposal. These will be subject to on-site testing.

FIGURES

2 The Long Barn, Norton Farm, Selborne Road, Alton, Hampshire GU34 3NB
0333 600 1221 enquiries@groundandwater.co.uk **groundandwater.co.uk**

Registered Office: Kineton House, 31 Horse Fair, Banbury, Oxfordshire OX16 0AE Registered in England No. 07032001

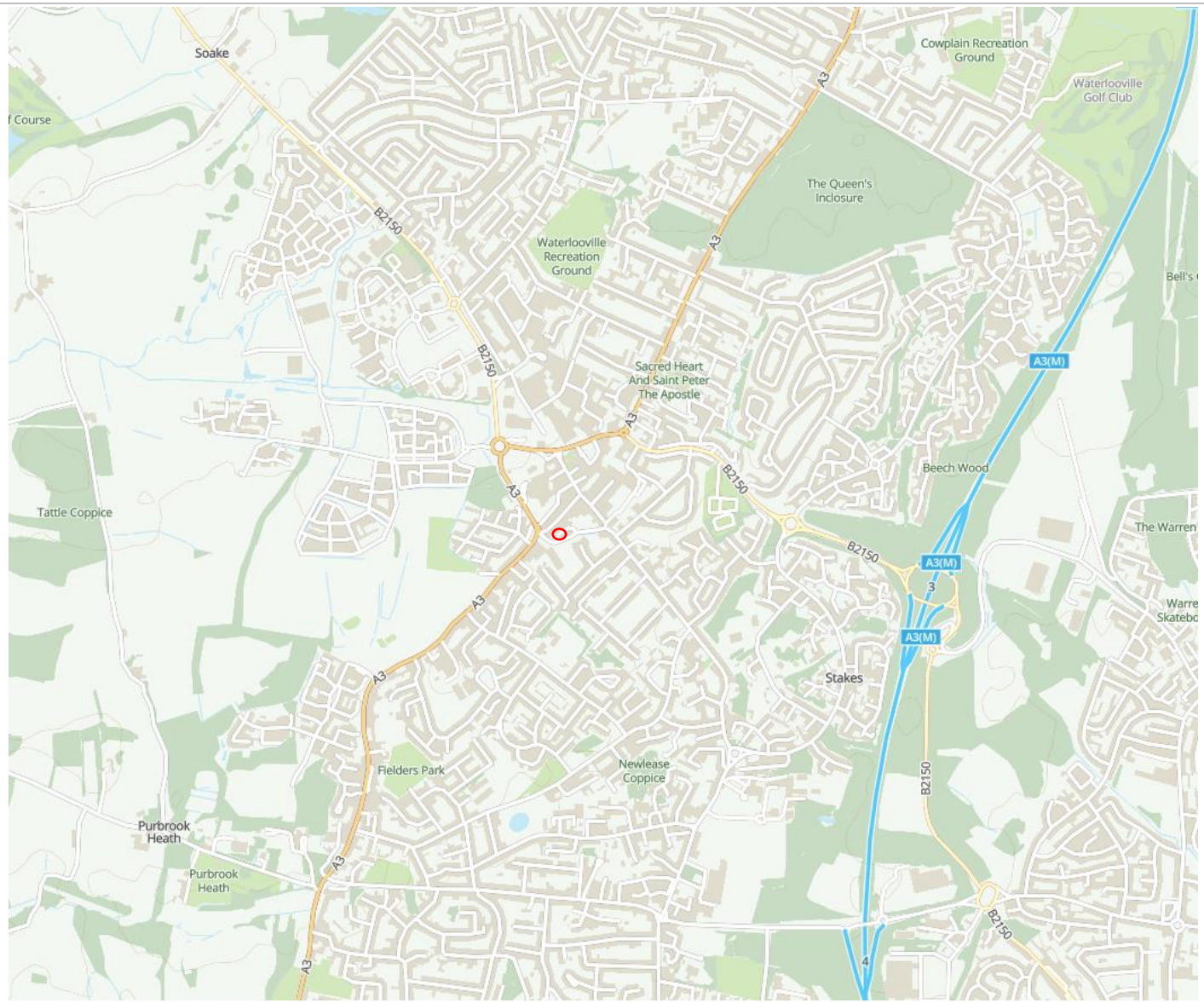
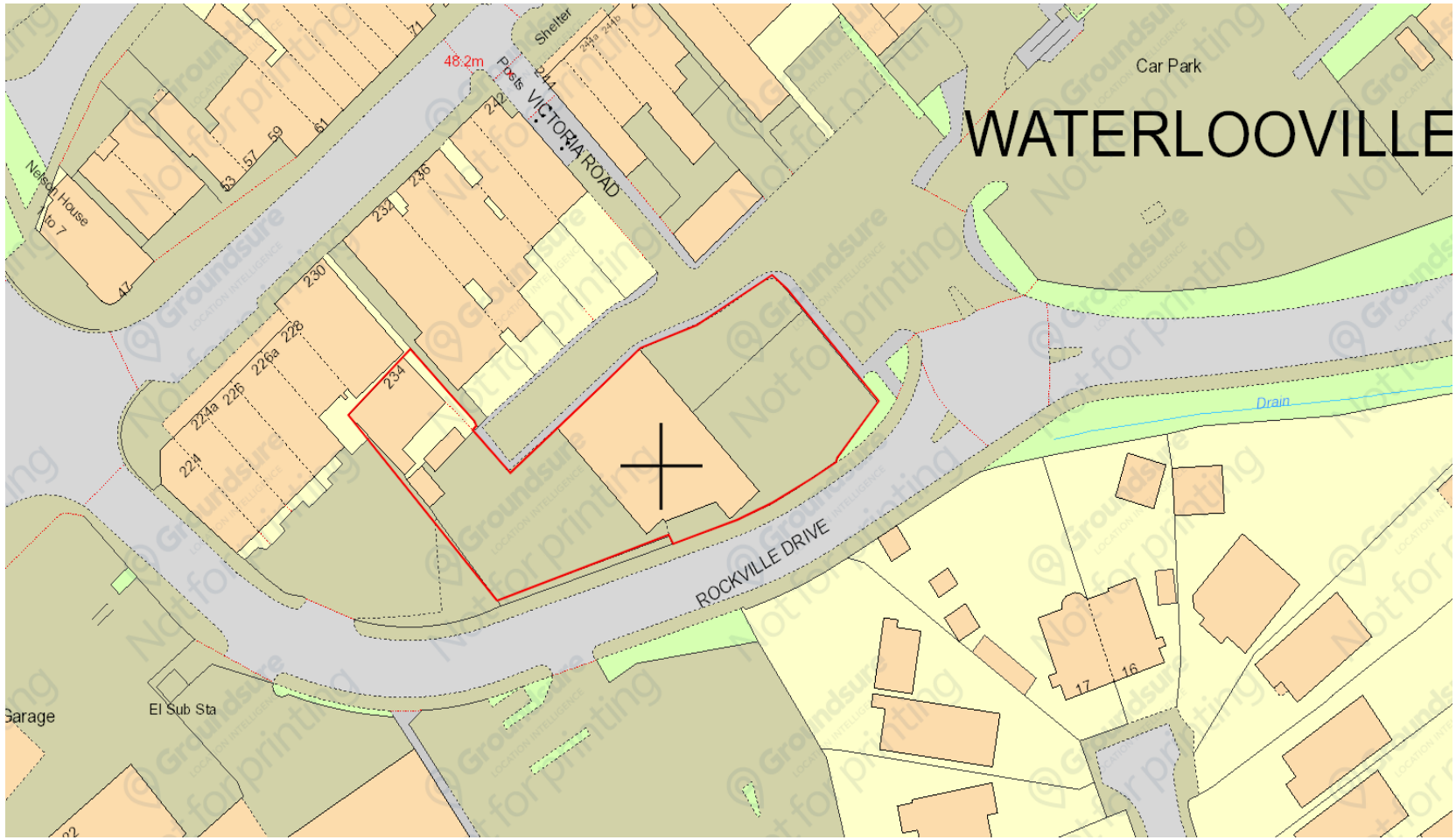


Figure 2 – Site Development Area

Land at Victoria Road, Waterlooville, Hampshire PO7 7ET

Chris Flint Associates Ltd.	**December 2022**
Figure 1 – Site Location Plan	**GWPR5150**

ground&water



Site Boundary

Land at Victoria Road, Waterlooville, Hampshire PO7 7ET	
Chris Flint Associates Ltd.	**December 2022**
Figure 2 – Site Development Area	**GWPR5150**

ground&water



Existing Building Footprint

NTS

Land at Victoria Road, Waterlooville, Hampshire PO7 7ET	
Chris Flint Associates Ltd.	**December 2022**
Figure 3 – Proposed Development Plan	**GWPR5150**

ground&water

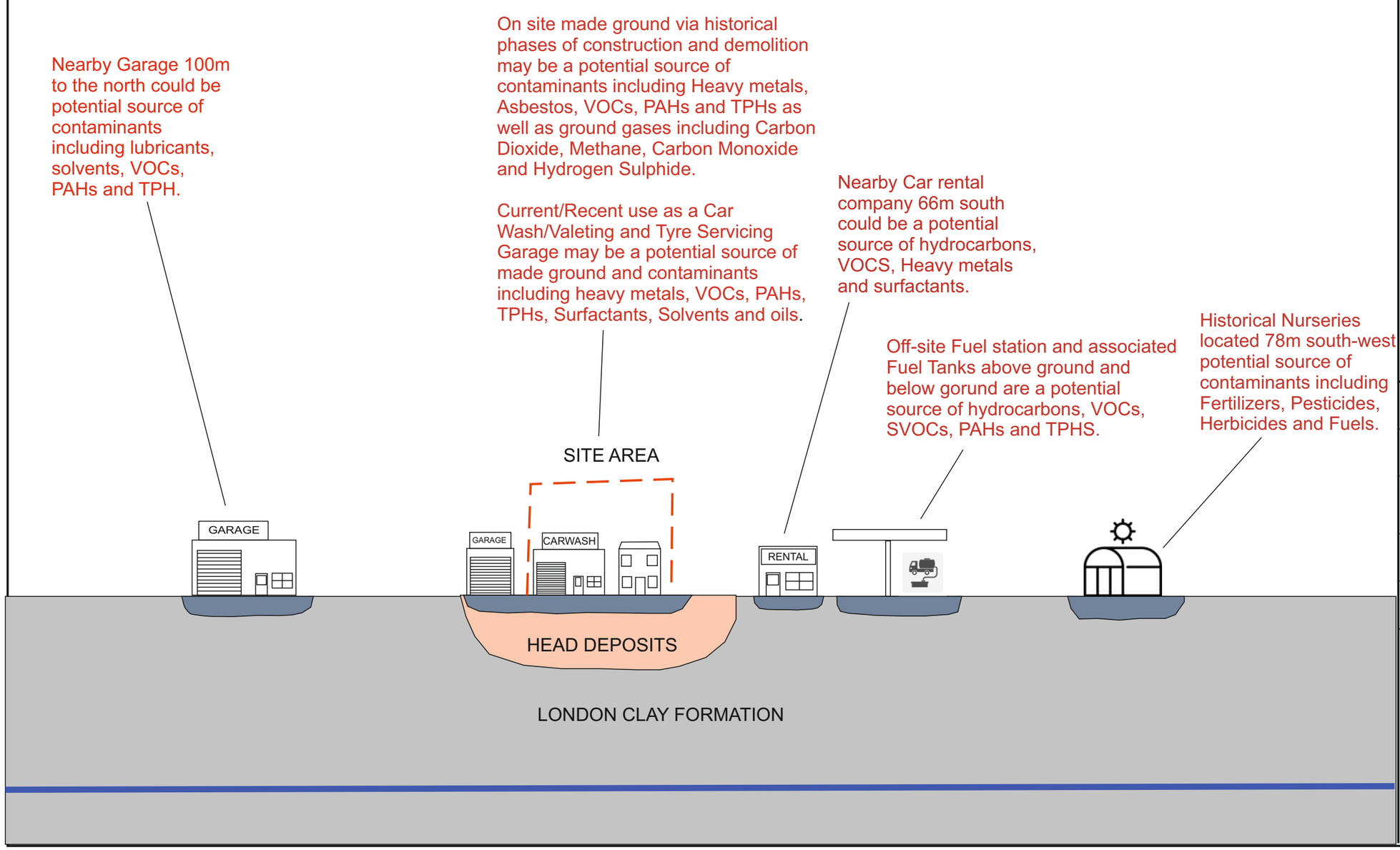
GENERAL AREA

N/NE

Potential Sources of on-site contamination include made ground from previous phases of development / demoltion along with current use as a Car-wash and Tyre Servicing Garage. The site has historically been used as a garage which may be a sourceof potential contaminants.

Off-site sources include Garages, Car rental company, Fuel tanks/petrol station, historical Nurseries.

S/SW



SITE AREA

HEAD DEPOSITS

LONDON CLAY FORMATION

MADE GROUND

POTENTIAL CONTAMINANT PATHWAY

POTENTIAL GROUND GAS PATHWAY

GROUNDWATER TABLE

PROJECT
Victoria Road, Waterlooville PO7 7ET

CLIENT
Chris Flint Associated

DRAWING TITLE
Conceptual Site Model

DRAWING NUMBER	DATE
GWPR5150 - Figure 4	December 2022
DRAWN BY	CHECKED BY
RJ	MM

ground&water

2 The Long Barn, Norton Farm, Selborne Road, Selborne, Alton, Hampshire, GU34 3NB

APPENDIX A: Conditions and Limitations

2 The Long Barn, Norton Farm, Selborne Road, Alton, Hampshire GU34 3NB
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The ground is a product of continuing natural and artificial processes. As a result, the ground will exhibit a variety of characteristics that vary from place to place across a site, and also with time. Whilst a ground investigation will mitigate to a greater or lesser degree against the resulting risk from variation, the risks cannot be eliminated.

The report has been prepared on the basis of information, data and materials which were available at the time of writing. Accordingly, any conclusions, opinions or judgements made in the report should not be regarded as definitive or relied upon to the exclusion of other information, opinions and judgements.

The investigation, interpretations, and recommendations given in this report were prepared for the sole benefit of the client in accordance with their brief; as such these do not necessarily address all aspects of ground behaviour at the site. No liability is accepted for any reliance placed on it by others unless specifically agreed in writing.

Any decisions made by you, or by any organisation, agency or person who has read, received or been provided with information contained in the report ("you" or "the Recipient") are decisions of the Recipient and we will not make, or be deemed to make, any decisions on behalf of any Recipient. We will not be liable for the consequences of any such decisions.

Current regulations and good practice were used in the preparation of this report. An appropriately qualified person must review the recommendations given in this report at the time of preparation of the scheme design to ensure that any recommendations given remain valid in light of changes in regulation and practice, or additional information obtained regarding the site.

Any Recipient must take into account any other factors apart from the Report of which they and their experts and advisers are or should be aware. The information, data, conclusions, opinions and judgements set out in the report may relate to certain contexts and may not be suitable in other contexts. It is your responsibility to ensure that you do not use the information we provide in the wrong context.

This report is based on readily available geological records, the recorded physical investigation, the strata observed in the works, together with the results of completed site and laboratory tests. Whilst skill and care has been taken to interpret these conditions likely between or below investigation points, the possibility of other characteristics not revealed cannot be discounted, for which no liability can be accepted. The impact of our assessment on other aspects of the development required evaluation by other involved parties.

The opinions expressed cannot be absolute due to the limitations of time and resources within the context of the agreed brief and the possibility of unrecorded previous in ground activities. The ground

conditions have been sampled or monitored in recorded locations and tests for some of the more common chemicals generally expected. Other concentrations of types of chemicals may exist.

The conclusions and recommendations relate to Land at Victoria Road, Waterlooville, Hampshire PO7 7ET.

Trial hole is a generic term used to describe a method of direct investigation. The term trial pit, borehole or window sampler borehole implies the specific technique used to produce a trial hole.

The depth to roots and/or of desiccation may vary from that found during the investigation. The client is responsible for establishing the depth to roots and/or of desiccation on a plot-by-plot basis prior to the construction of foundations. Where trees are mentioned in the text this means existing trees, recently removed trees (approximately 15 years to full recovery on cohesive soils) and those planned as part of the site landscaping.

Ownership of copyright of all printed material including reports, laboratory test results, trial pit and borehole log sheets, including drillers log sheets, remain with Ground and Water Limited. Licence is for the sole use of the client and may not be assigned, transferred or given to a third party.

Only our client may rely on this report and should this report or any information contained in it be provided to any third party we accept no responsibility to the third party for the contents of this report save to the extent expressly outlined by us in writing in a reliance letter addressed from us to the third party.

Recipients are not permitted to publish this report outside of their organisation without our express written consent.

APPENDIX B: Technical Glossary

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TECHNICAL GLOSSARY

The list of possible definitions within the report may be seen below. Please note that some definitions may not be relevant to this report.

HYDROGEOLOGY:

A **Principal Aquifer** is a layer of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.

Secondary (A) Aquifers consist of deposits with permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as Minor Aquifers.

Secondary (B) Aquifers consist of deposits with predominantly lower permeability layers with may stoke and yield limited amounts of groundwater due to localised features such as fissures, think permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.

Secondary Aquifers (Undifferentiated) are assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both a minor aquifer and non-aquifer in different locations due to the variable characteristics of the rock type.

Unproductive Strata are rock layers with low permeability that have negligible significance for water supply or river base flow. These were formerly classified as non-aquifers.

FLOOD ZONES:

Environment Agency Flood Zone 2, defined as; land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.

Environment Agency Flood Zone 3 shows the extent of a river flood with a 1 in 100 (1%0 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.

Environment Agency Flood Zone 3 area that benefits from flood defences, defined as; land and property in this flood zone would have a high probability of flooding without the local flood defences. These protect the area against a river flood with a 1% chance of happening each year, or a flood from the sea with a 0.5% chance of happening each year.

GROUNDWATER SOURCE PROTECTION ZONES (SPZS):

Inner Zone (SPZ1): This zone is 50 day travel time of pollutant to source with a 50 metres default minimum radius.

Outer Zone (SPZ2): This zone is 400 day travel time of pollutant to source. This has a 250 or 500 metres minimum radius around the source depending on the amount of water taken.

Total Catchment (SPZ3): This is the area around a supply source within which all the groundwater ends up at the abstraction point. This is the point from where the water is taken. This could extend some distance from the source point.

Zone of Special Interest (SPZ4): This zone is where local conditions require additional protection.

IN-SITU STRENGTH GEOTECHNICAL TESTING:

Windowless Sample and/or Cable Percussion and/or Rotary Boreholes provide samples of the ground for assessment but they do not give any engineering data. The standard penetration test (SPT) is an in-situ dynamic penetration test designed to provide information on the geotechnical engineering properties of soil. The test uses a thick-walled sample tube, with an outside diameter of 50mm and an inside diameter of 35mm, and a length of around 650mm. This is driven into the ground at the bottom of a borehole by blows from a slide hammer with a weight of 63.5kg falling through a distance of 760mm. The sample tube is driven 150mm into the ground and then the number of blows needed for the tube to penetrate each 75mm up to a depth of 450mm is recorded. The sum of the number of blows is termed the "standard penetration resistance" or the "N-value".

Dynamic Probing involves the driving of a metal cone into the ground via a series of steel rods. These rods are driven from the surface by a hammer system that lifts and drops a 63.5kg (SHDP) hammer onto the top of the rods through a set height, thus ensuring a consistent energy input. The number of hammer blows that are required to drive the cone down by each 100mm increment are recorded. These blow counts then provide a comparative assessment from which correlations have been published, based on dynamic energy, which permits engineering parameters to be generated. (The Dynamic Probe 'Super Heavy' (SHDP) Tests were conducted in accordance with BS 1377; 1990; Part 9, Clause 3.2).

APPENDIX C: Site Photographs

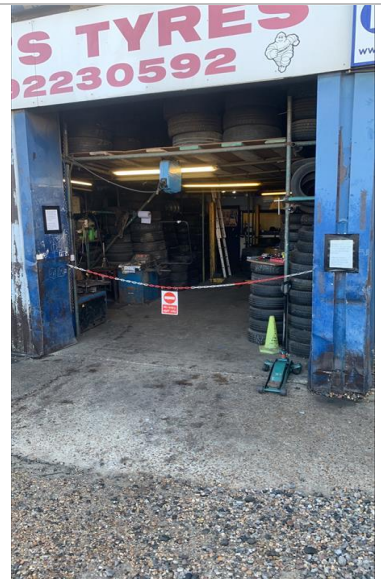
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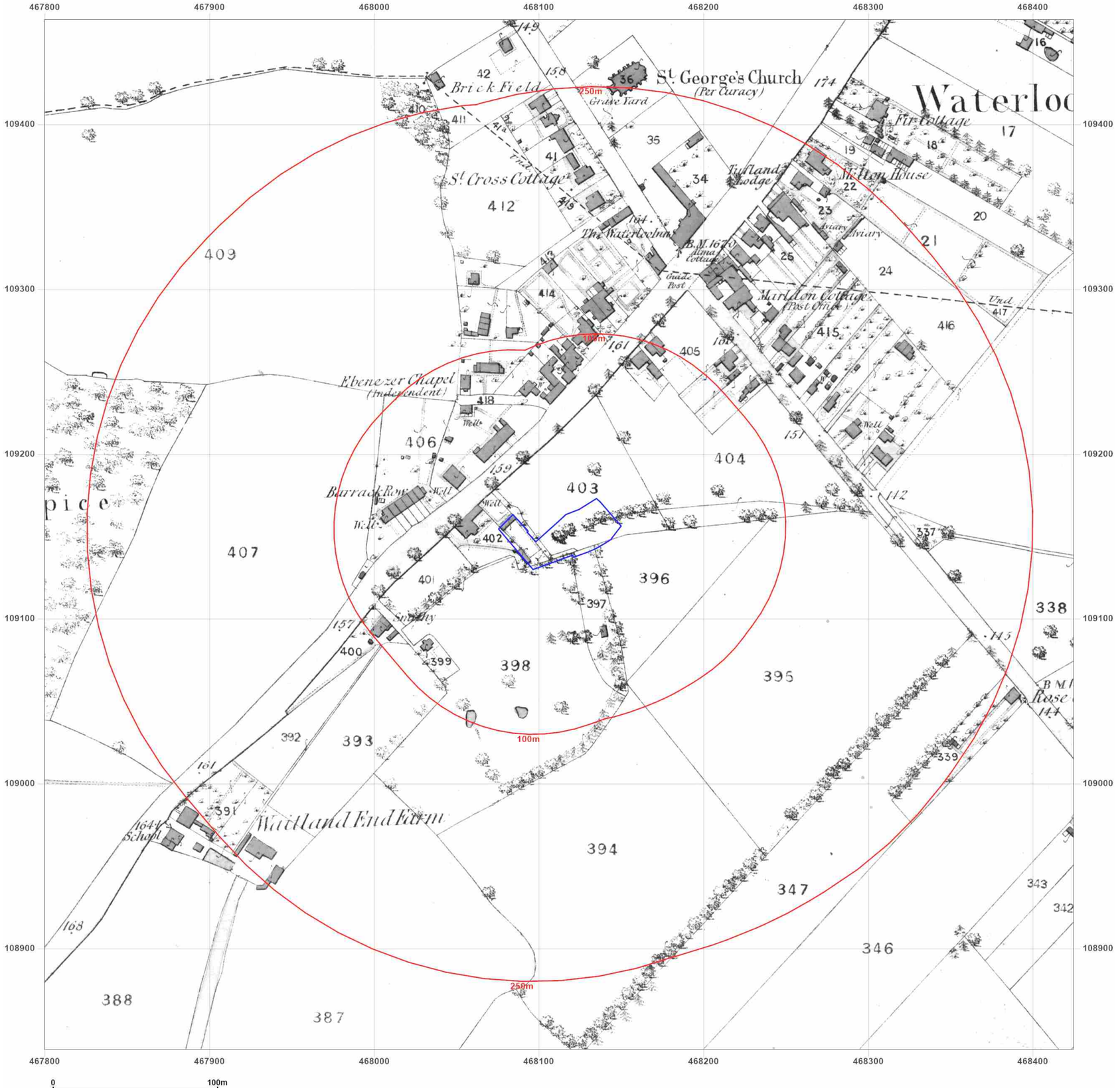
Victoria Road, Waterlooville PO7 7ET	
Chris Flint Associates Ltd	**December 2022**
Appendix C: Photoplates	**GWPR5150**

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APPENDIX D:
Historical Maps

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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: County Series

Map date: **1859**

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Printed at: 1:2,500

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Surveyed 1859
Revised 1859
Edition N/A
Copyright N/A
Levelled N/A

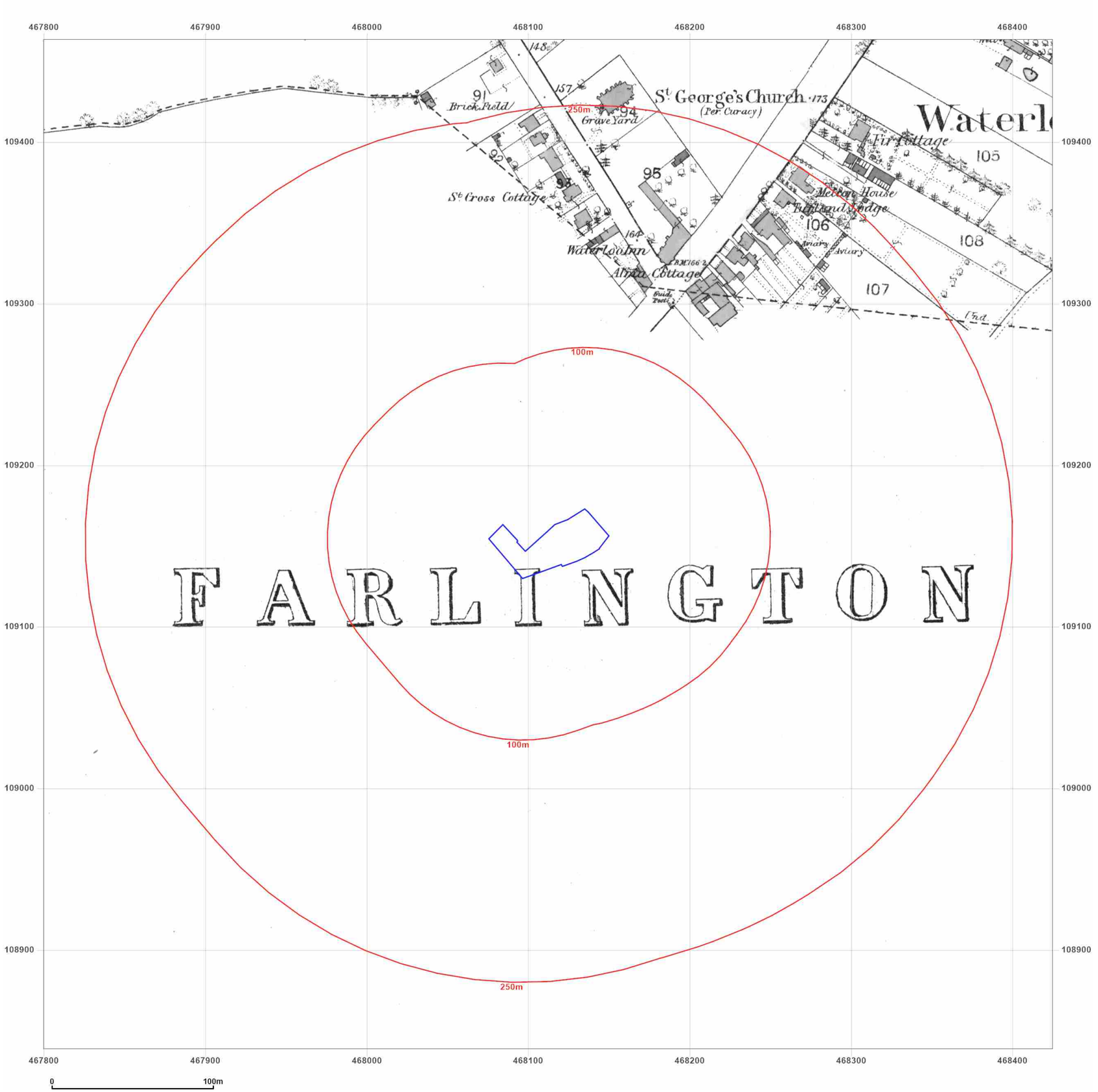
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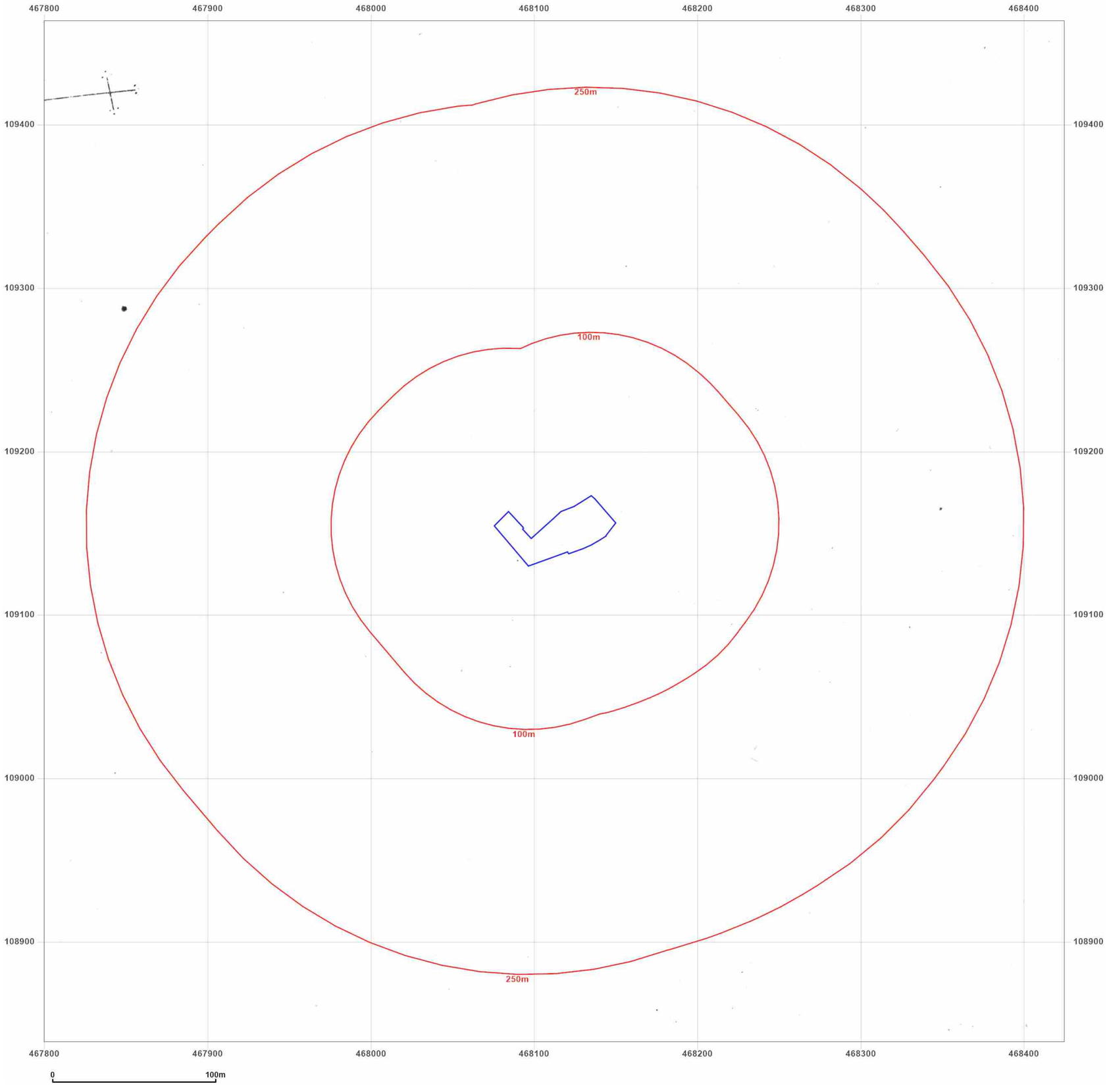
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Surveyed 1868
Revised 1868
Edition N/A
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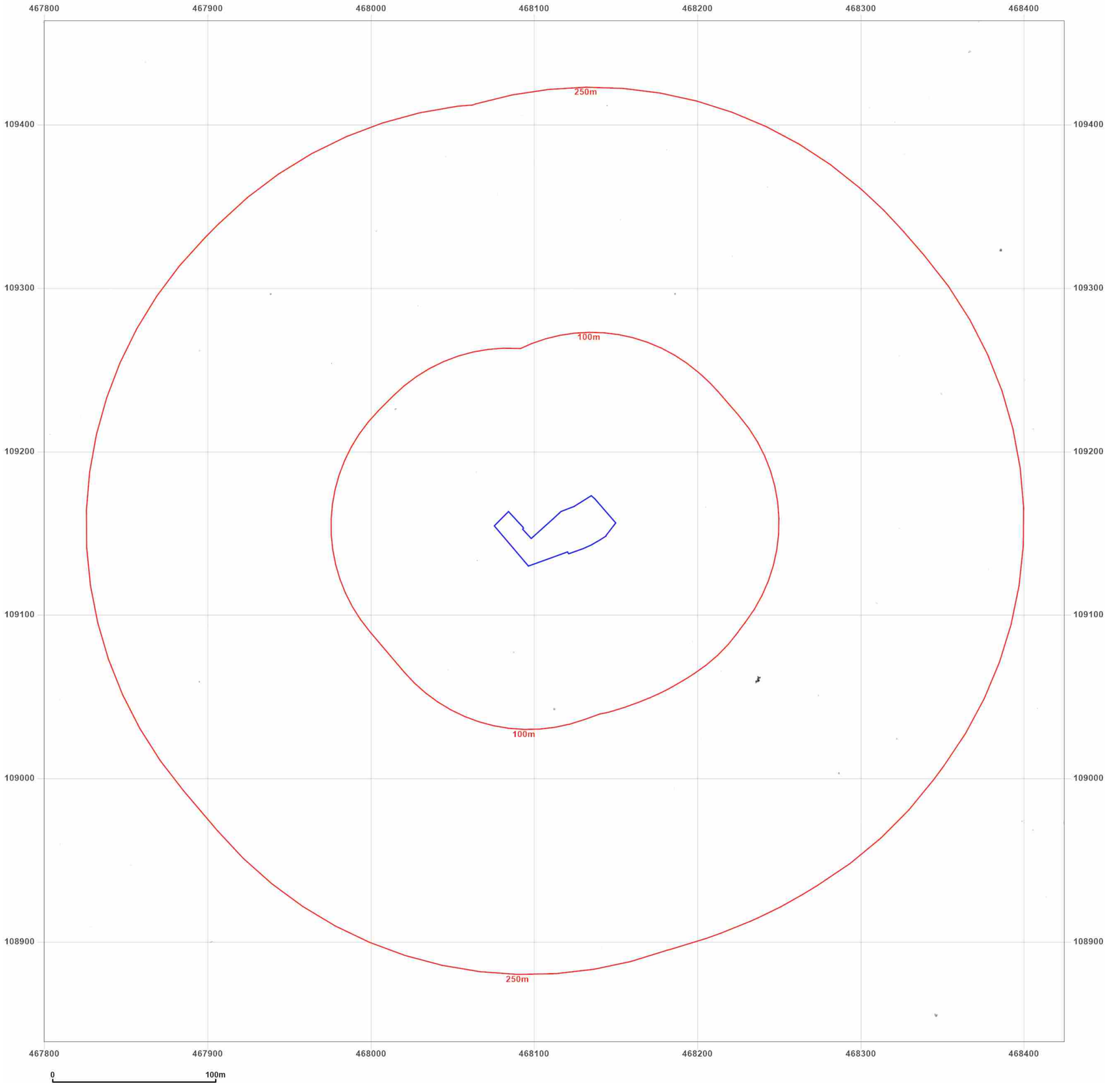
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Revised 1869
Edition N/A
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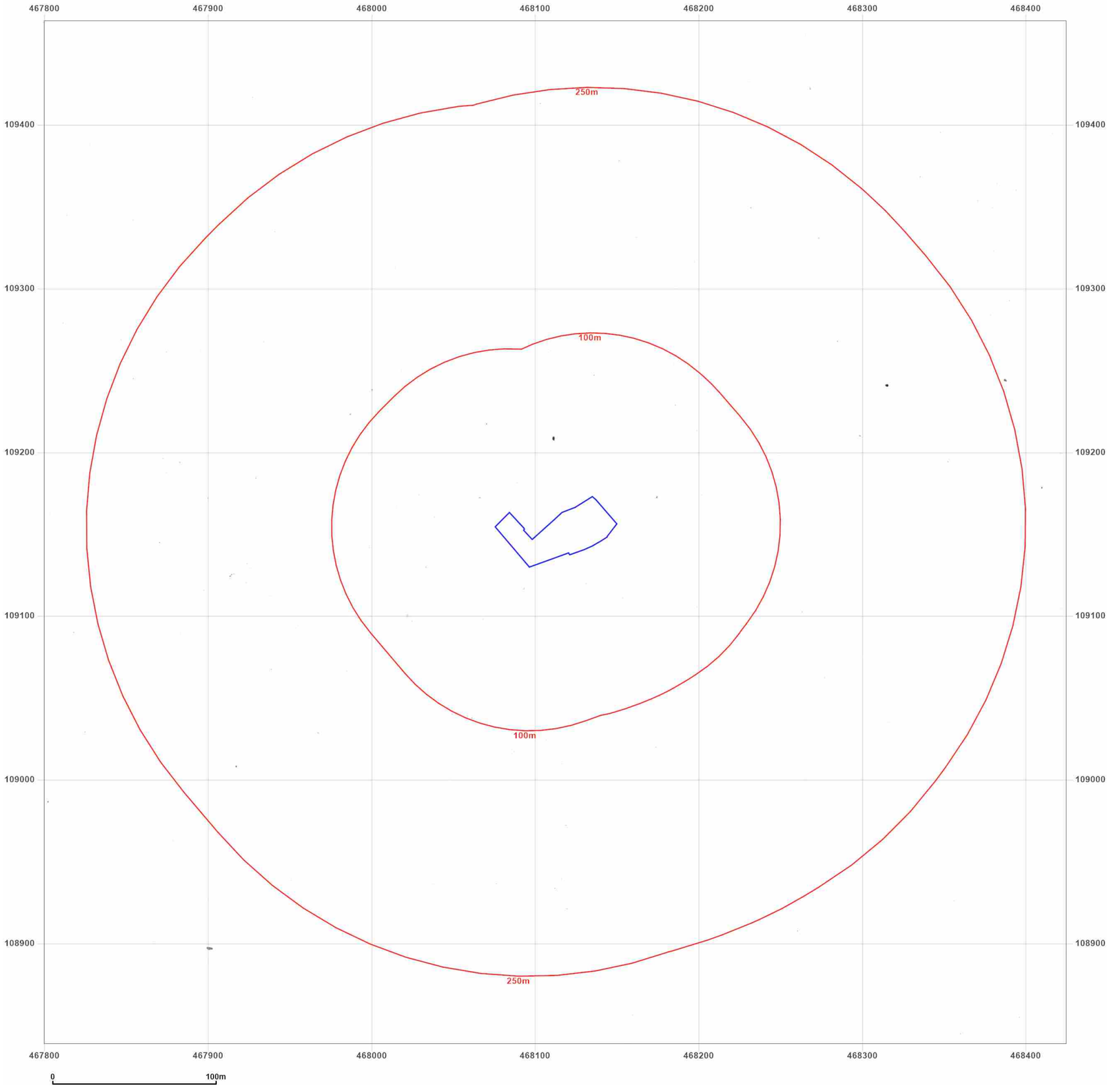
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Revised 1869
Edition N/A
Copyright N/A
Levelled N/A

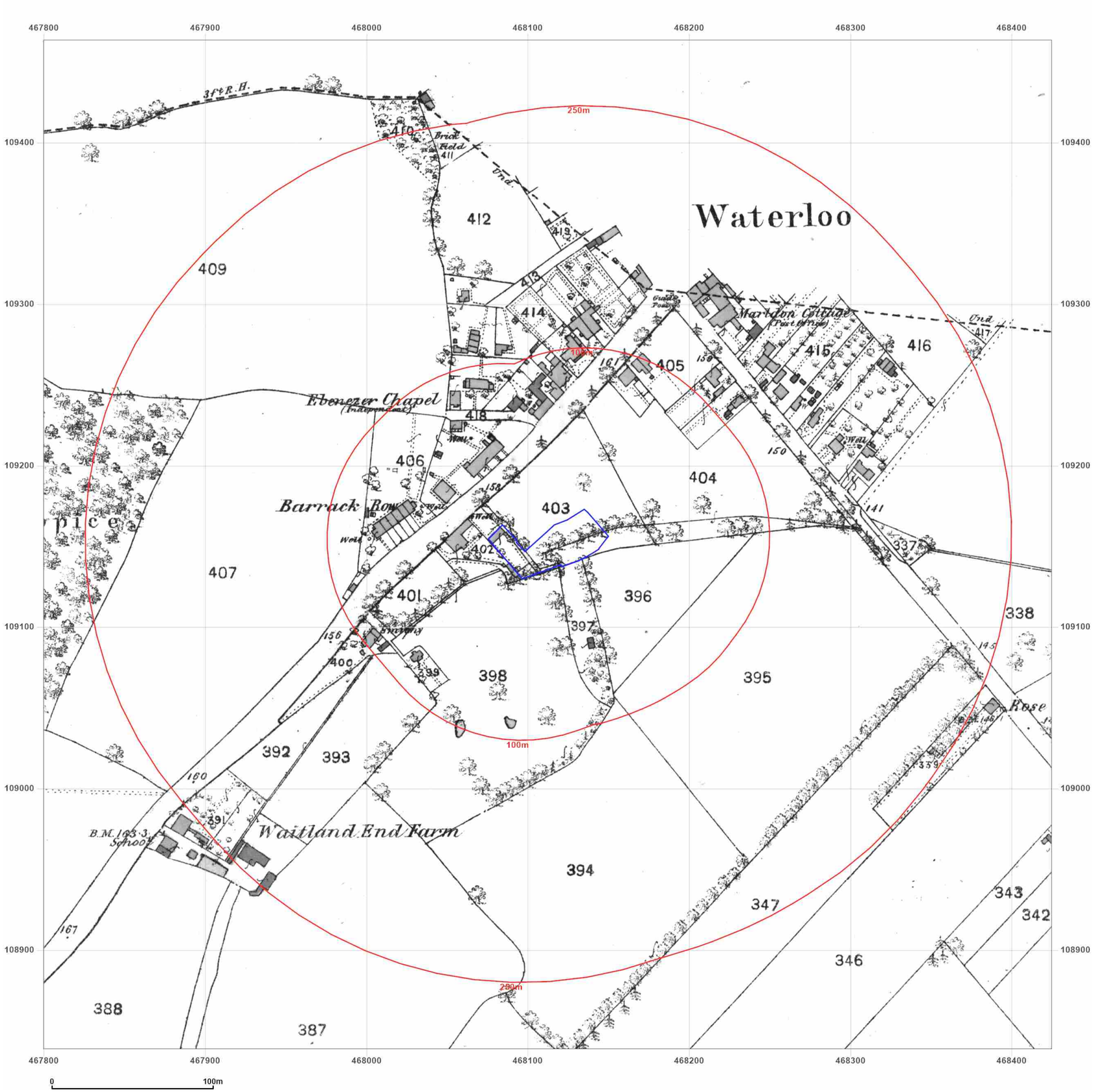
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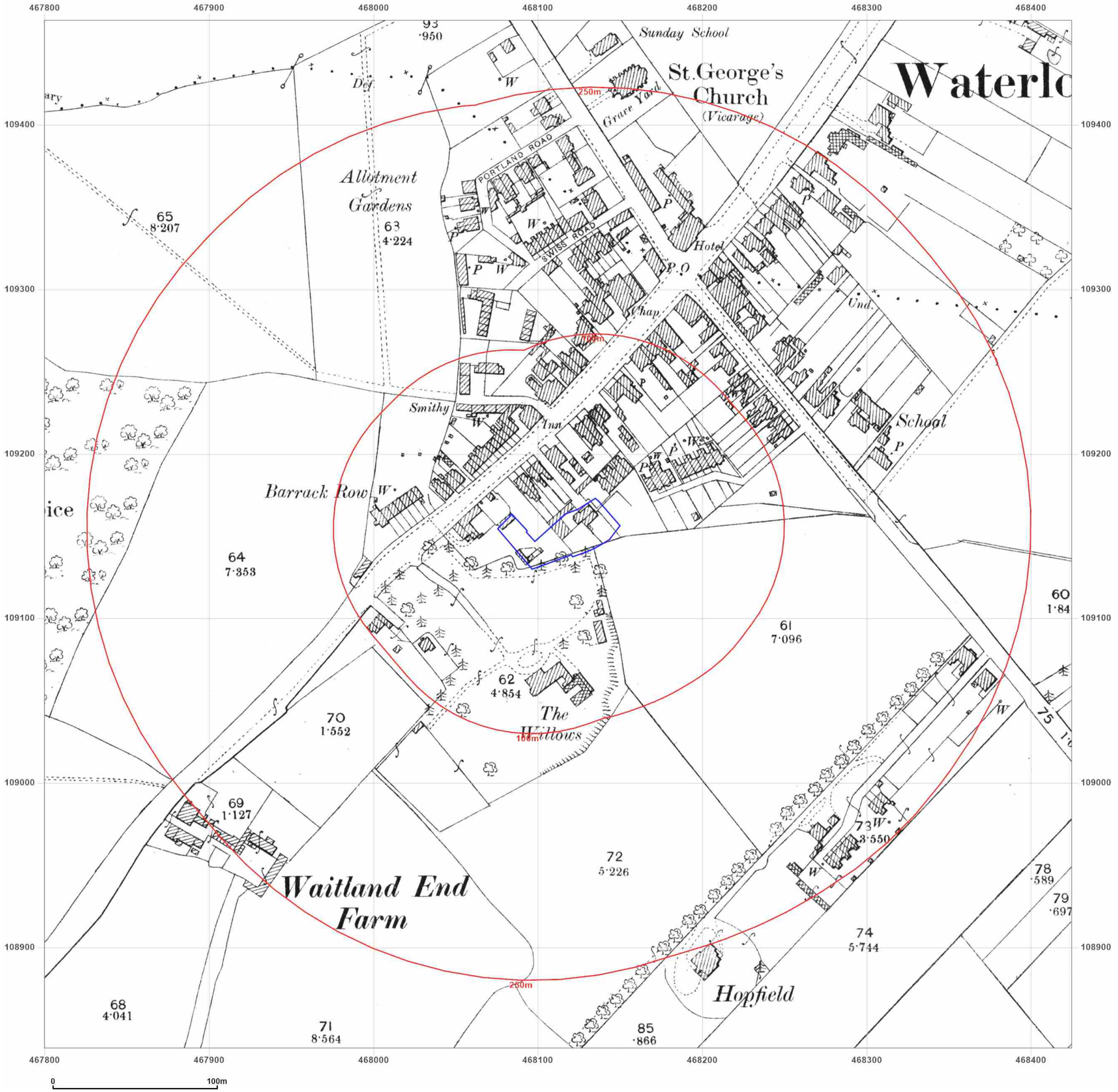
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Revised 1897
Edition N/A
Copyright N/A
Levelled N/A

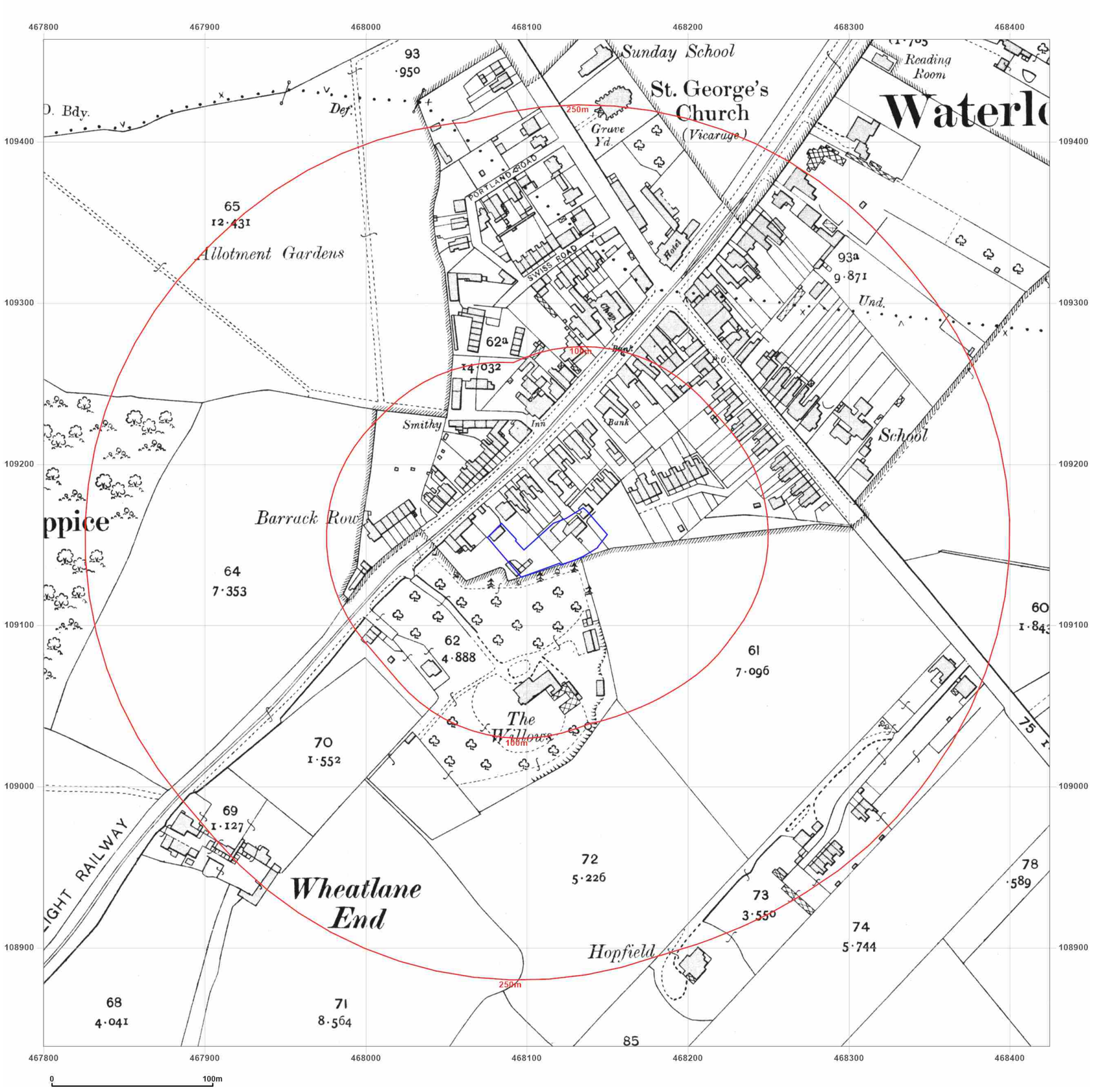
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Grid Ref: 468112, 109151

Map Name: County Series

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Surveyed 1909
Revised 1909
Edition N/A
Copyright N/A
Levelled N/A

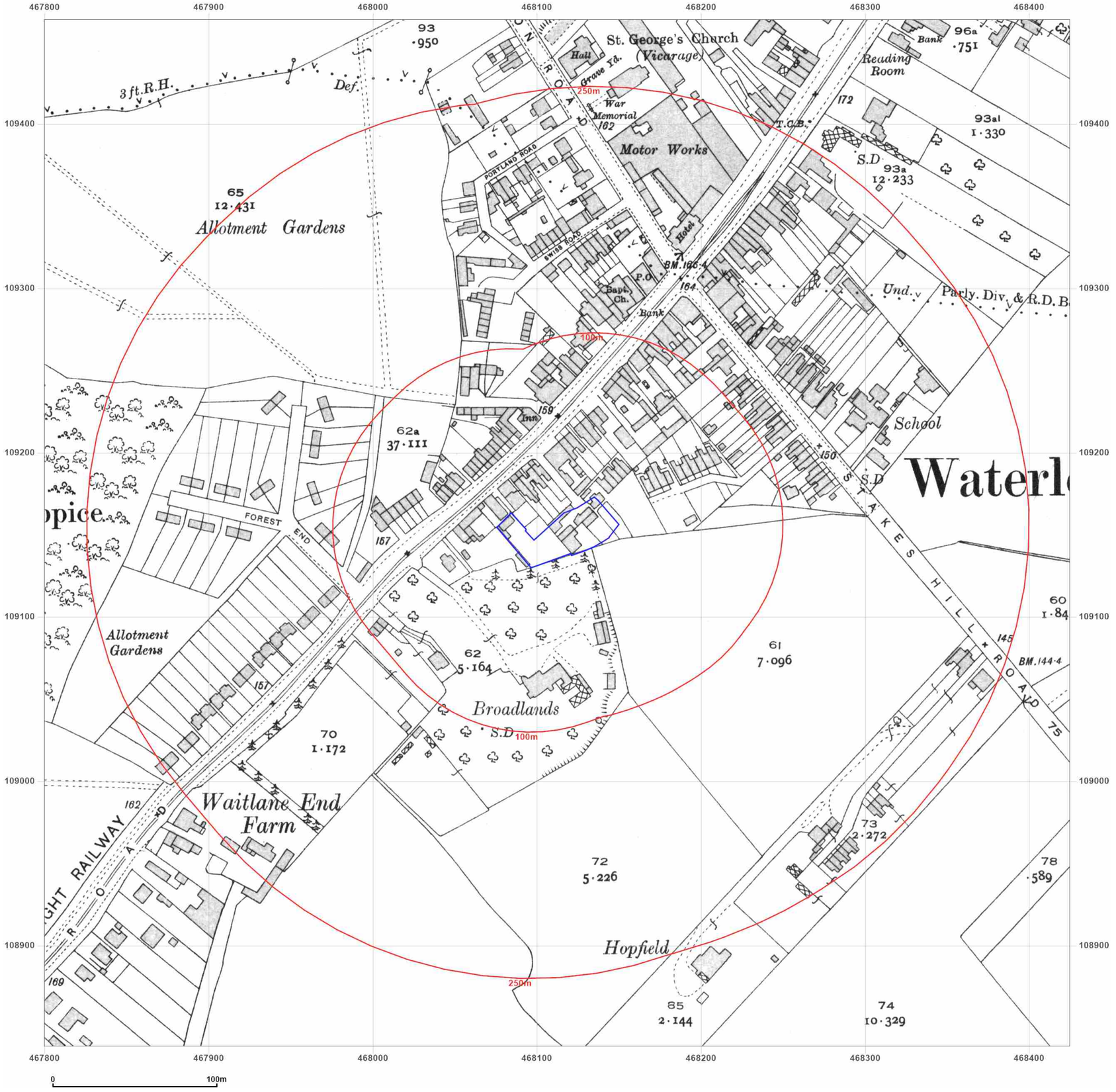
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Map Name: County Series

Map date: **1932**

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Revised 1932
Edition N/A
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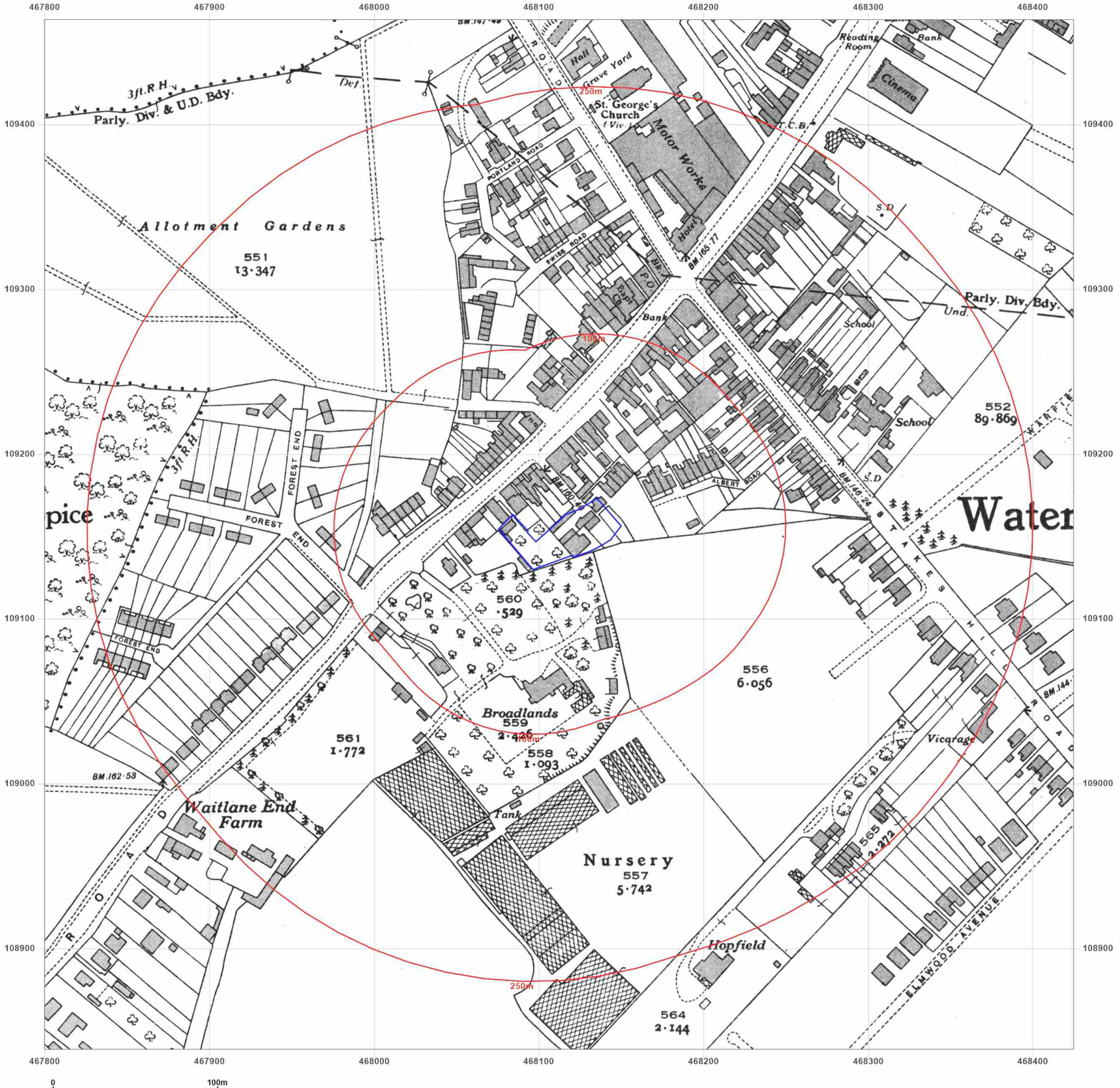
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Grid Ref: 468112, 109151

Map Name: County Series

Map date: **1939**

Scale: 1:2,500

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Grid Ref: 468112, 109151

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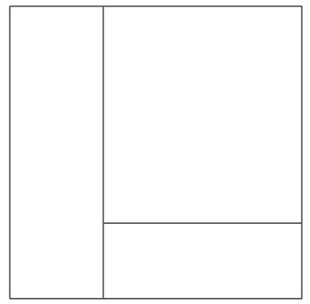
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Revised 1952
Edition N/A
Copyright N/A
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Surveyed 1952
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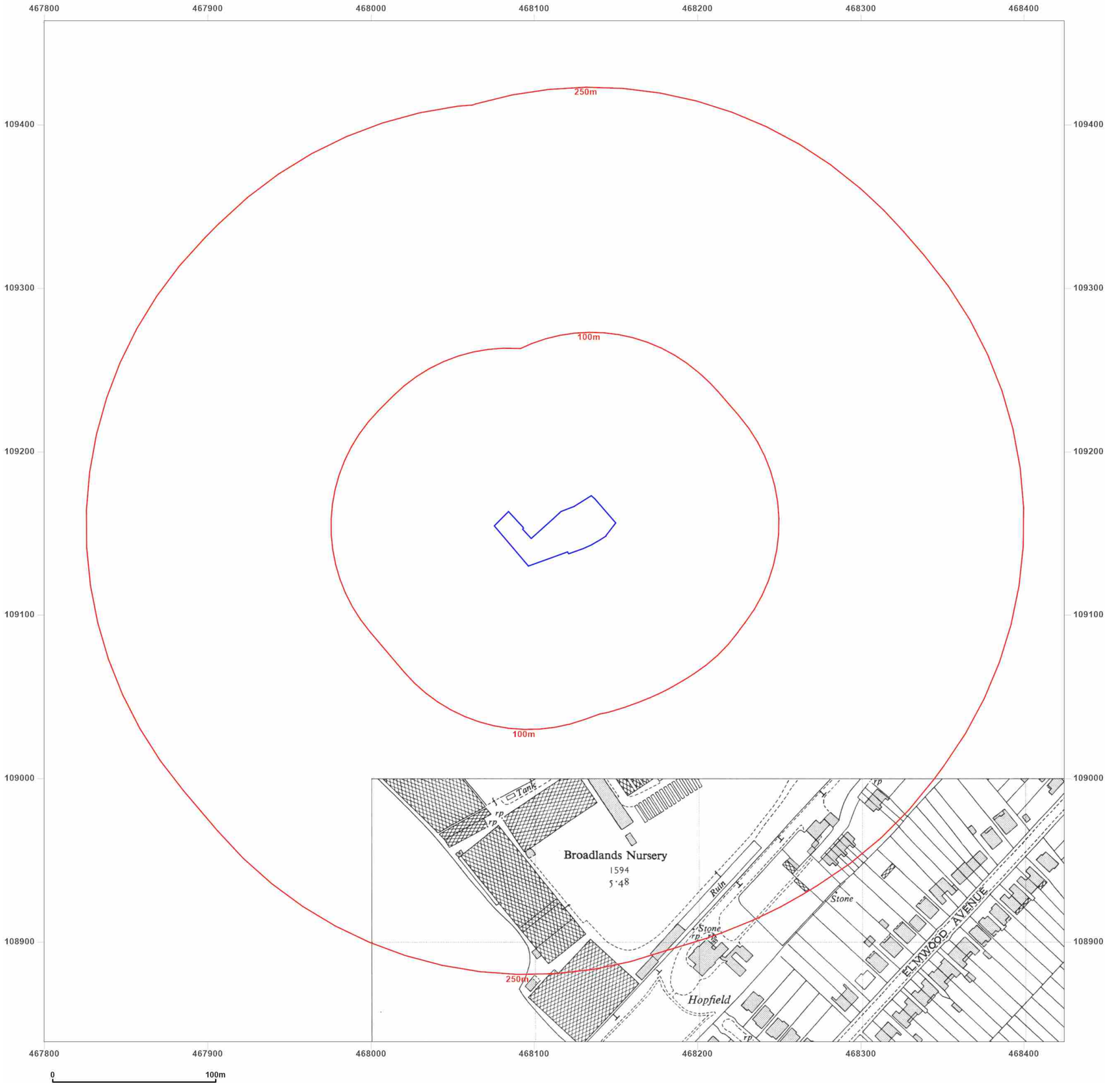
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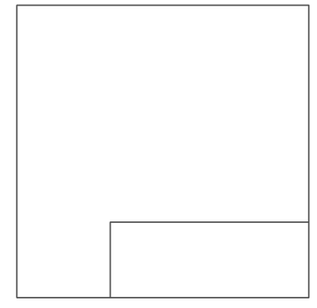
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Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: National Grid
Map date: **1954**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1954
Revised 1954
Edition N/A
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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: National Grid

Map date: **1962-1966**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1964
Revised 1964
Edition N/A
Copyright 1965
Levelled 1958

Surveyed 1952
Revised 1965
Edition N/A
Copyright 1966
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Surveyed 1964
Revised 1964
Edition N/A
Copyright 1965
Levelled 1957

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Revised 1960
Edition N/A
Copyright 1962
Levelled 1957

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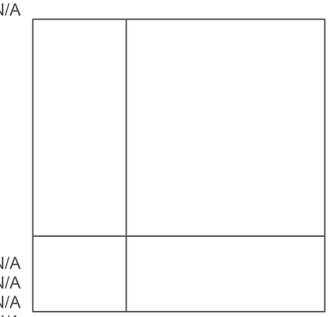
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Revised N/A
Edition N/A
Copyright N/A
Levelled N/A



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

Surveyed 1965
Revised 1965
Edition N/A
Copyright 1966
Levelled 1958

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Site Details:

CAR WASH, UNIT 3, VICTORIA ROAD, WATERLOOVILLE, PO7 7ET

Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: National Grid

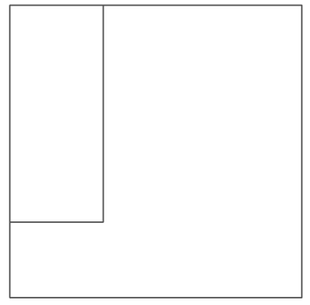
Map date: **1972**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1964
Revised 1972
Edition N/A
Copyright N/A
Levelled N/A



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Site Details:

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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: National Grid

Map date: **1973-1974**

Scale: 1:1,250

Printed at: 1:2,000

N
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Surveyed 1971 Revised 1971 Edition N/A Copyright 1973 Levelled 1987		Surveyed 1972 Revised 1972 Edition N/A Copyright 1974 Levelled 1958
Surveyed 1972 Revised 1972 Edition N/A Copyright 1973 Levelled 1957		Surveyed 1972 Revised 1972 Edition N/A Copyright 1973 Levelled 1957

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Site Details:

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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: National Grid

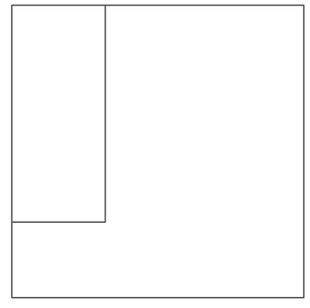
Map date: **1977**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1977
Levelled N/A



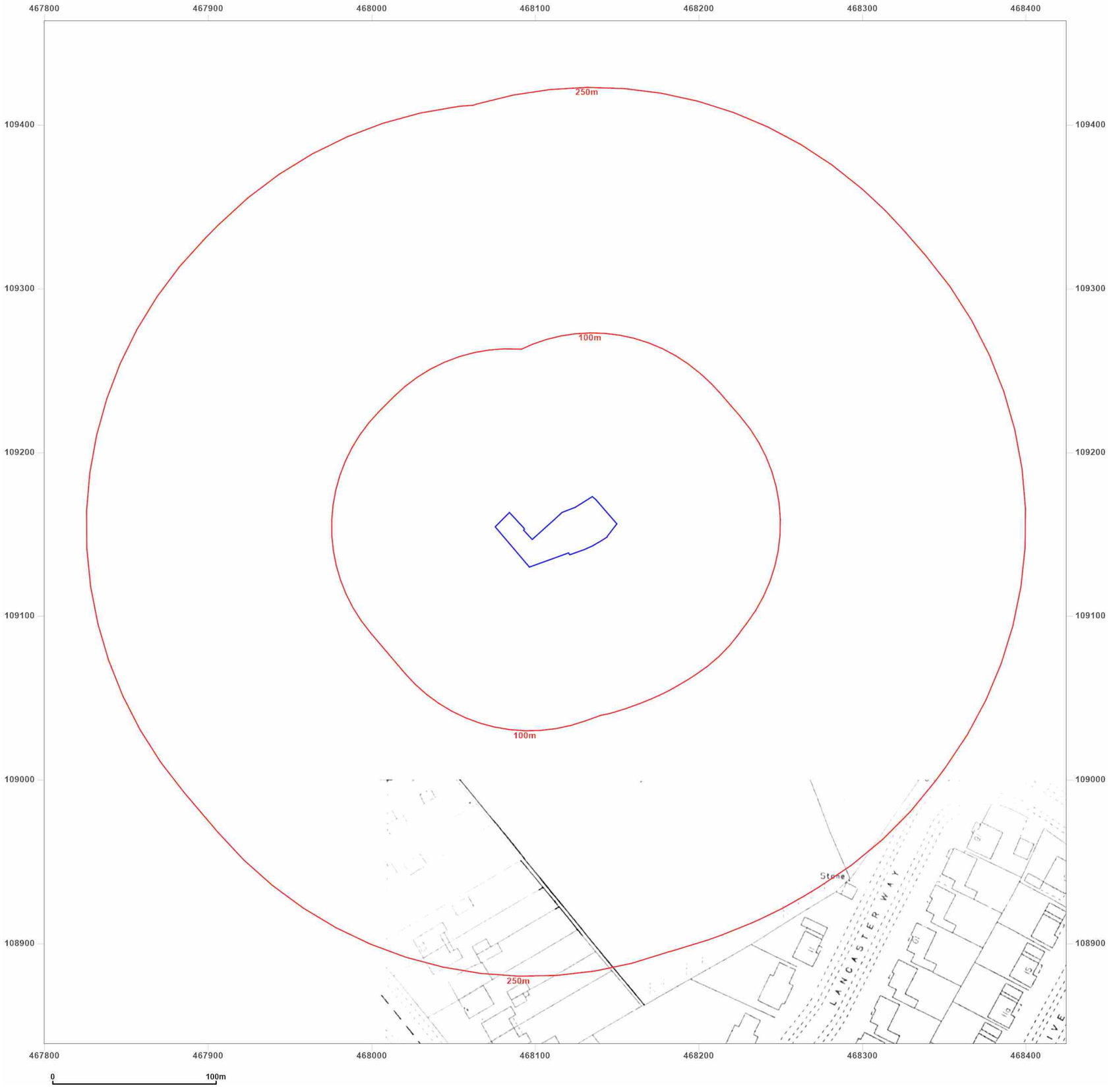
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Site Details:

CAR WASH, UNIT 3, VICTORIA ROAD, WATERLOOVILLE, PO7 7ET

Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

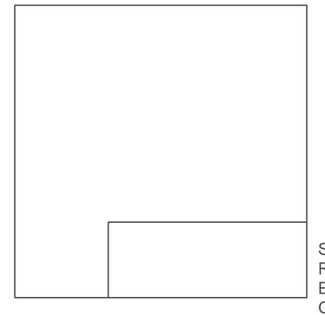
Map Name: National Grid

Map date: **1983**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1957
Revised 1983
Edition N/A
Copyright 1983
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Site Details:

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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: National Grid

Map date: **1980-1984**

Scale: 1:1,250

Printed at: 1:2,000

N
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Surveyed 1957 Revised 1982 Edition N/A Copyright 1982 Levelled 1957		Surveyed 1958 Revised 1984 Edition N/A Copyright 1984 Levelled 1958
Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A		

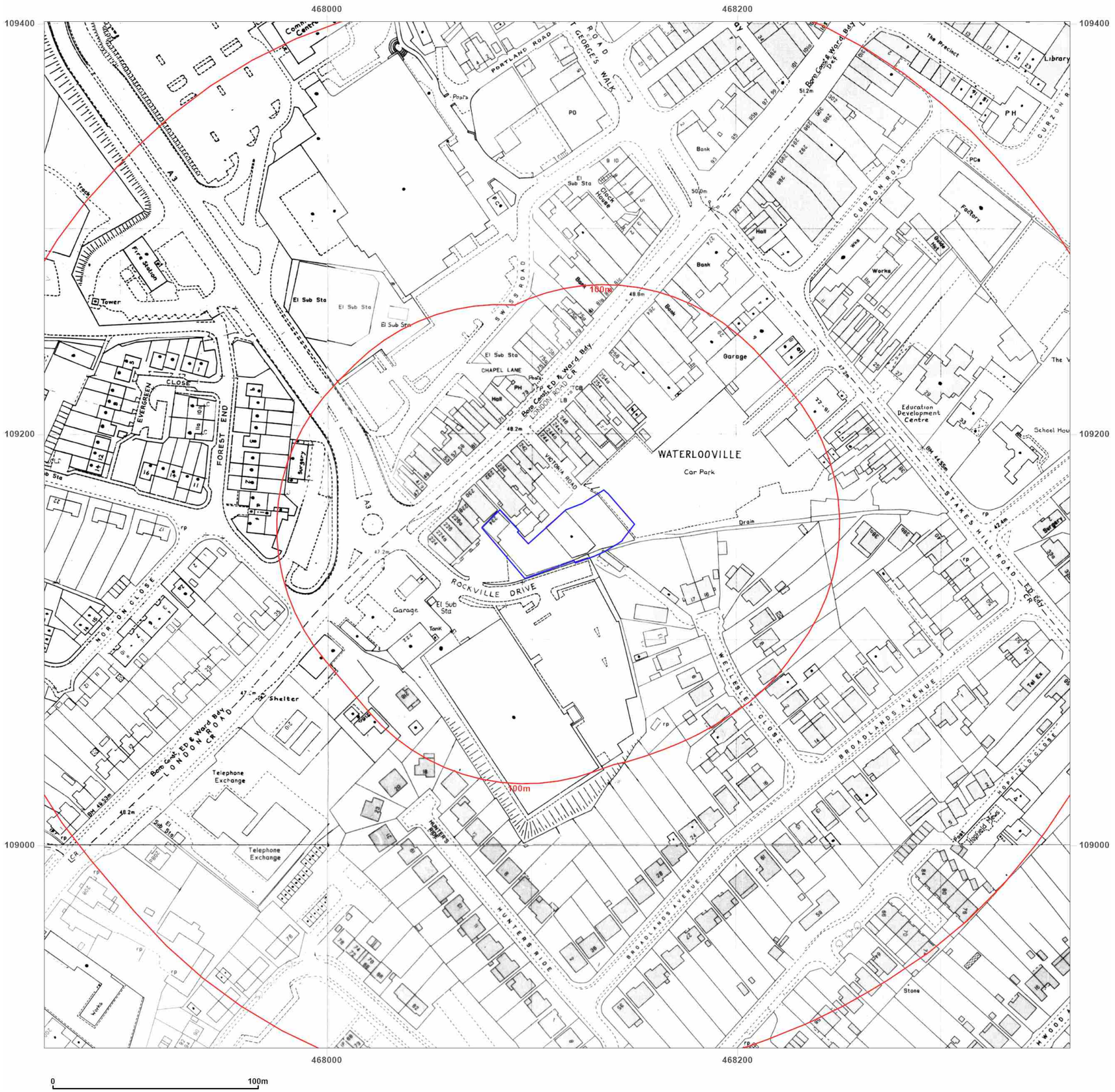
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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: National Grid

Map date: **1987-1989**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1957 Revised 1989 Edition N/A Copyright 1989 Levelled 1957		Surveyed 1958 Revised 1989 Edition N/A Copyright 1989 Levelled 1958
Surveyed N/A Revised N/A Edition N/A Copyright 1989 Levelled 1957		Surveyed 1957 Revised 1987 Edition N/A Copyright 1987 Levelled 1957

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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: National Grid

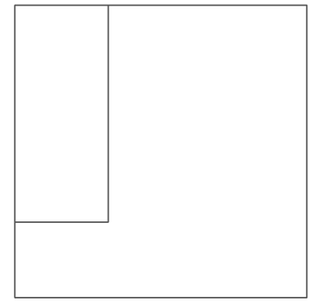
Map date: **1989**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1957
Revised 1989
Edition N/A
Copyright 1989
Levelled 1957



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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: National Grid

Map date: **1990**

Scale: 1:1,250

Printed at: 1:2,000

N
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Copyright 1990
Levelled 1957

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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: National Grid

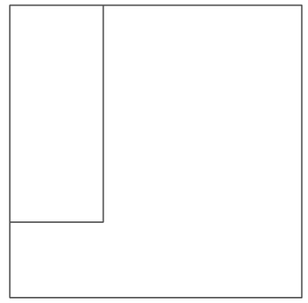
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Printed at: 1:2,500

N
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Surveyed 1957
Revised 1990
Edition N/A
Copyright 1990
Levelled 1957



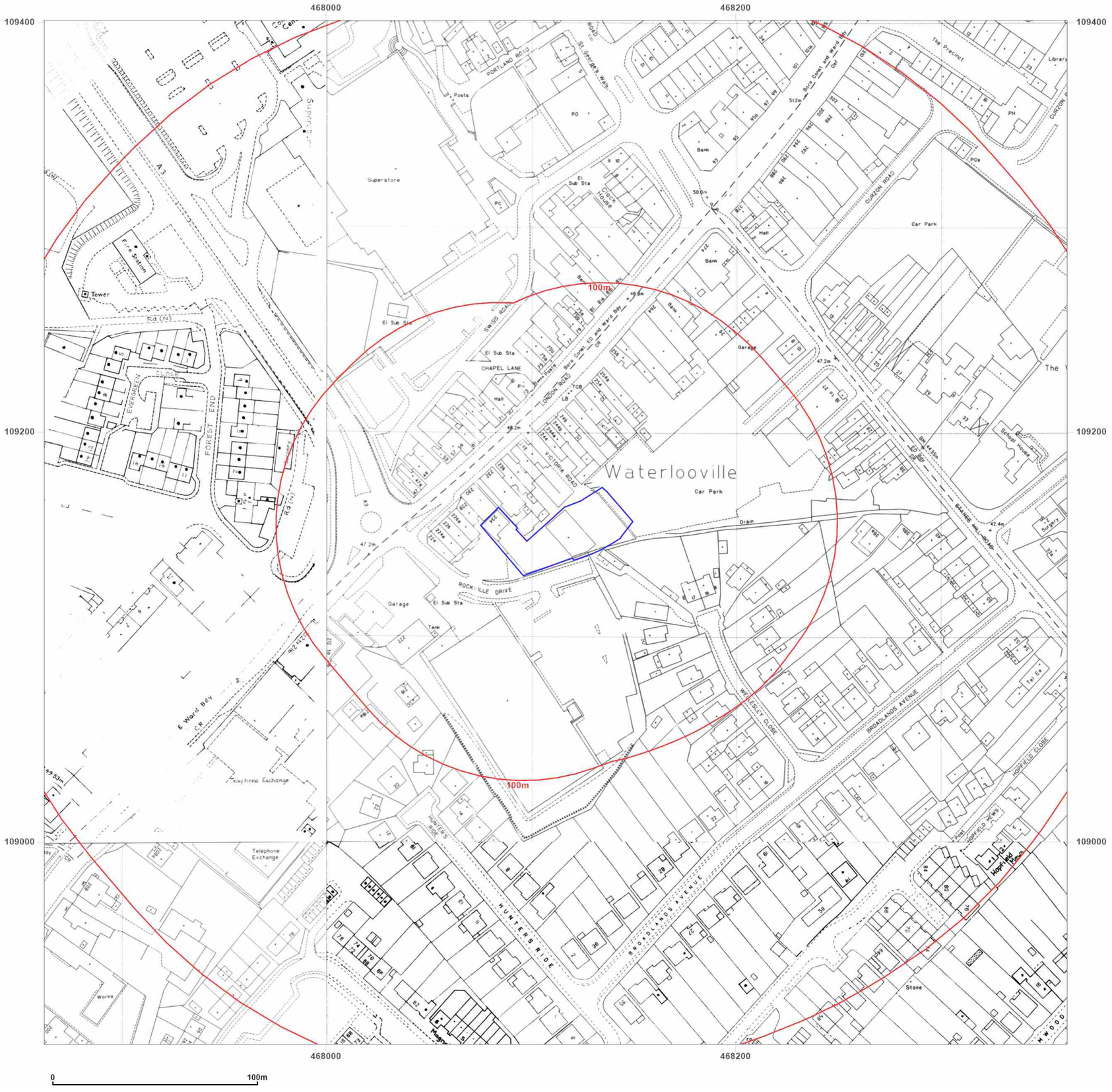
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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: National Grid

Map date: **1990-1993**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright 1990 Levelled 1957		Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A
Surveyed 1993 Revised 1993 Edition N/A Copyright N/A Levelled N/A		Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A

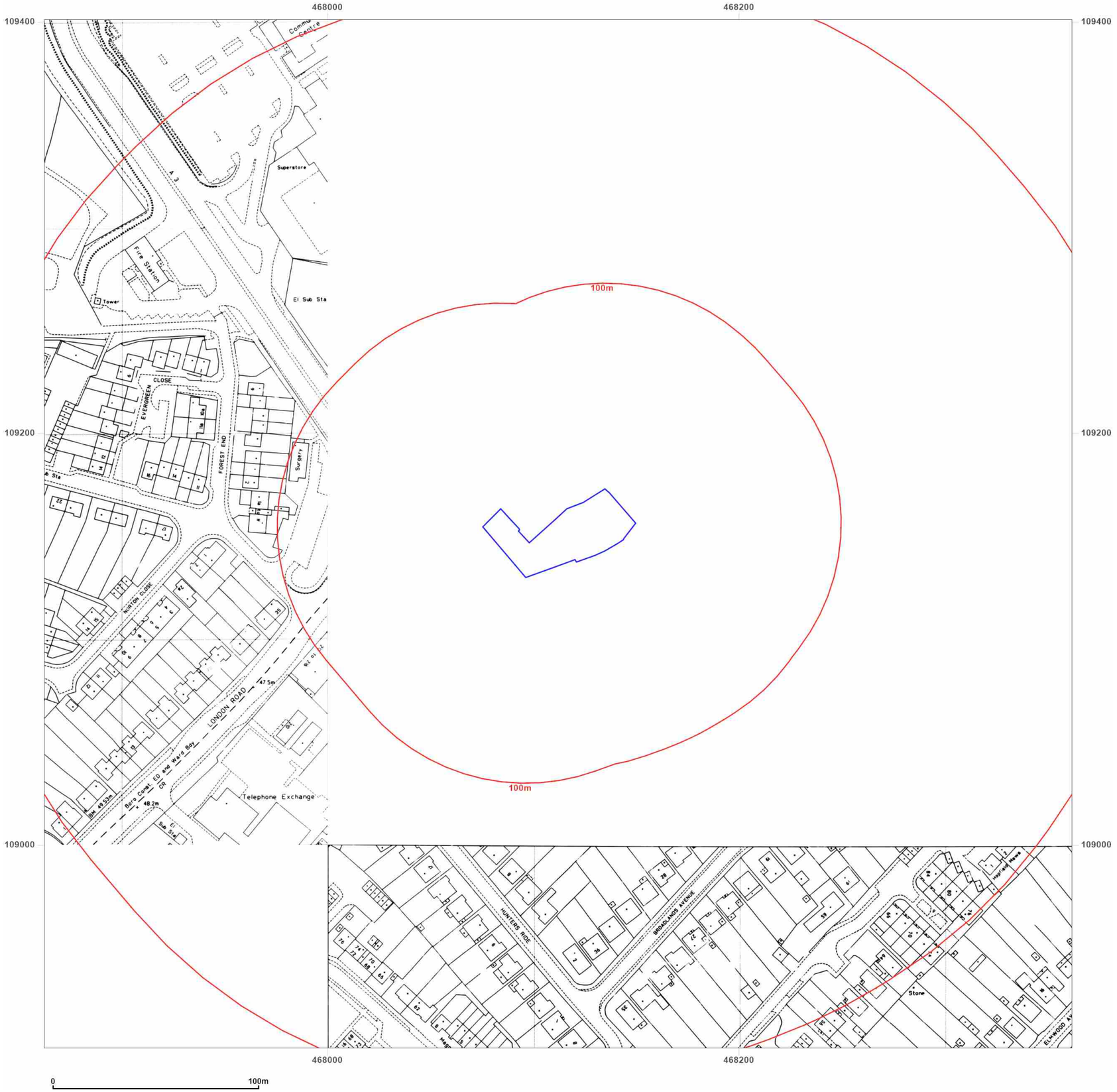
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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: National Grid

Map date: **1993**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed 1993
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

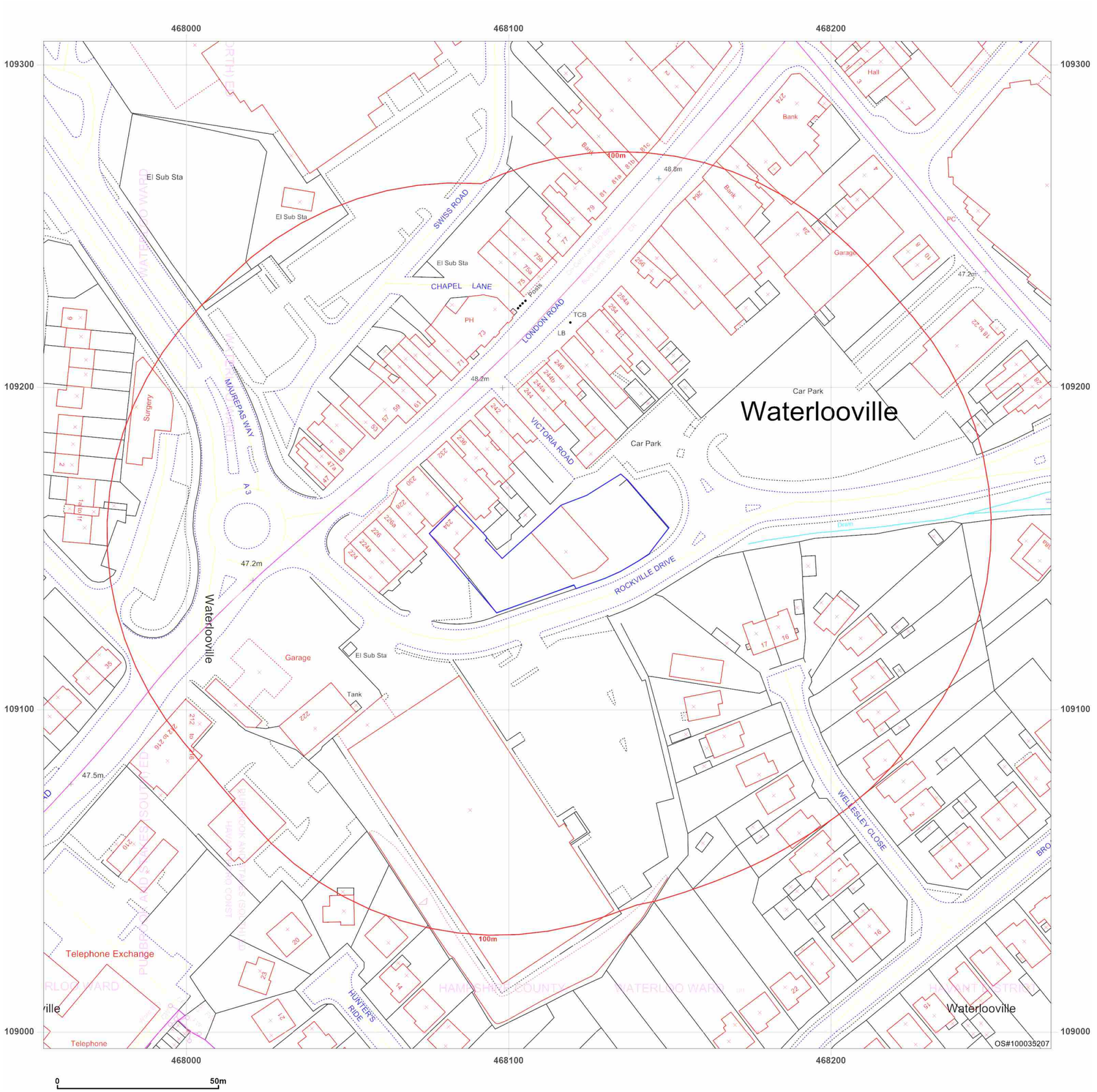
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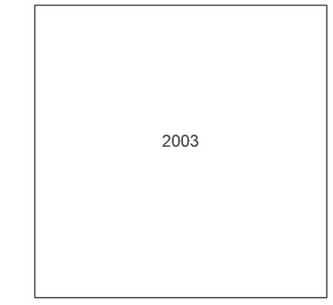
Site Details:

CAR WASH, UNIT 3, VICTORIA ROAD, WATERLOOVILLE, PO7 7ET

Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: LandLine
Map date: **2003**
Scale: 1:1,250
Printed at: 1:1,250

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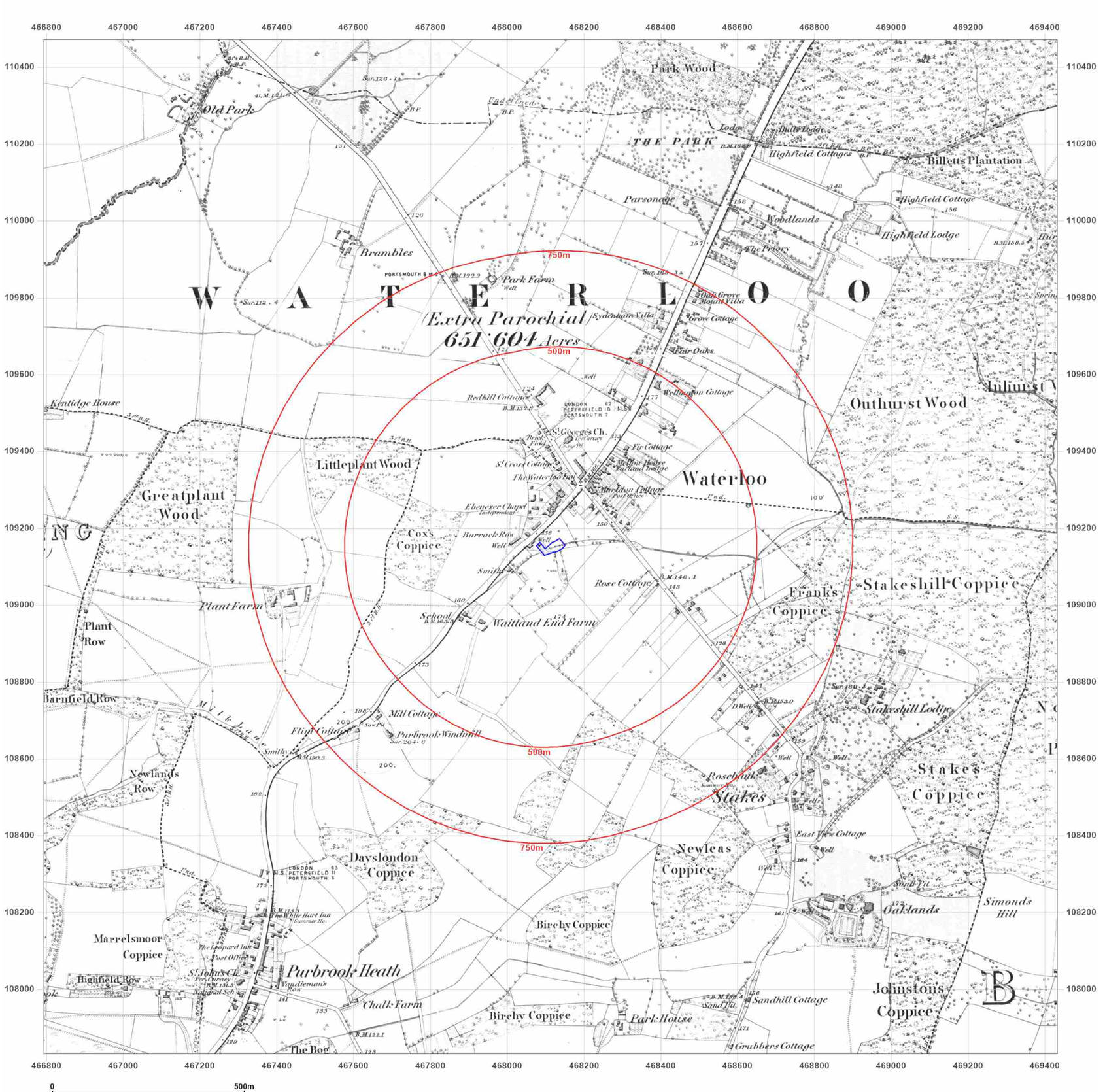
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Site Details:

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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: County Series

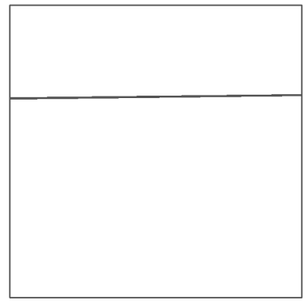
Map date: **1866-1867**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1867
Revised 1867
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1866
Revised 1866
Edition N/A
Copyright N/A
Levelled N/A

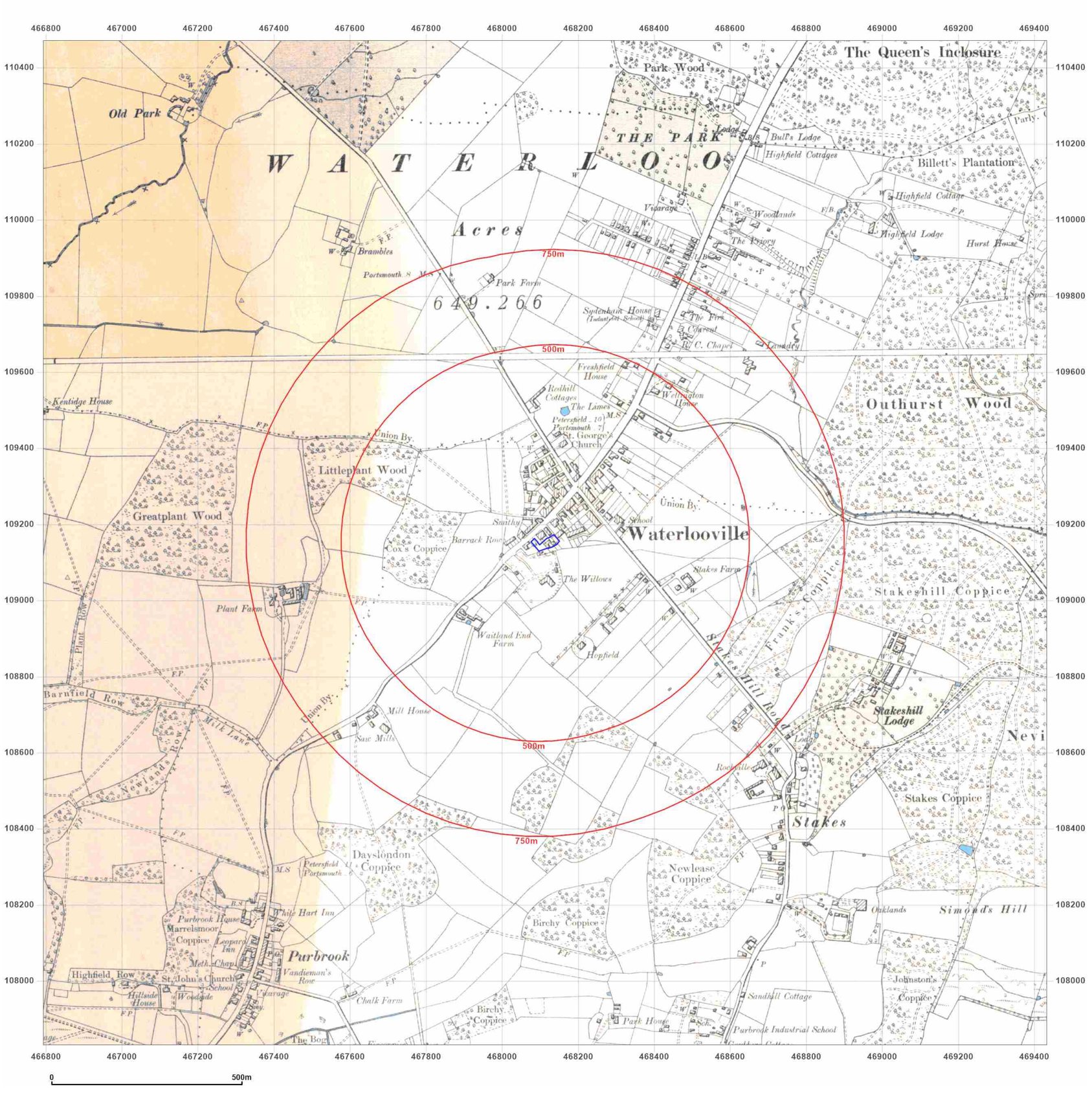
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Site Details:

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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: County Series

Map date: **1895-1897**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1865
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1867
Revised 1895
Edition N/A
Copyright N/A
Levelled N/A

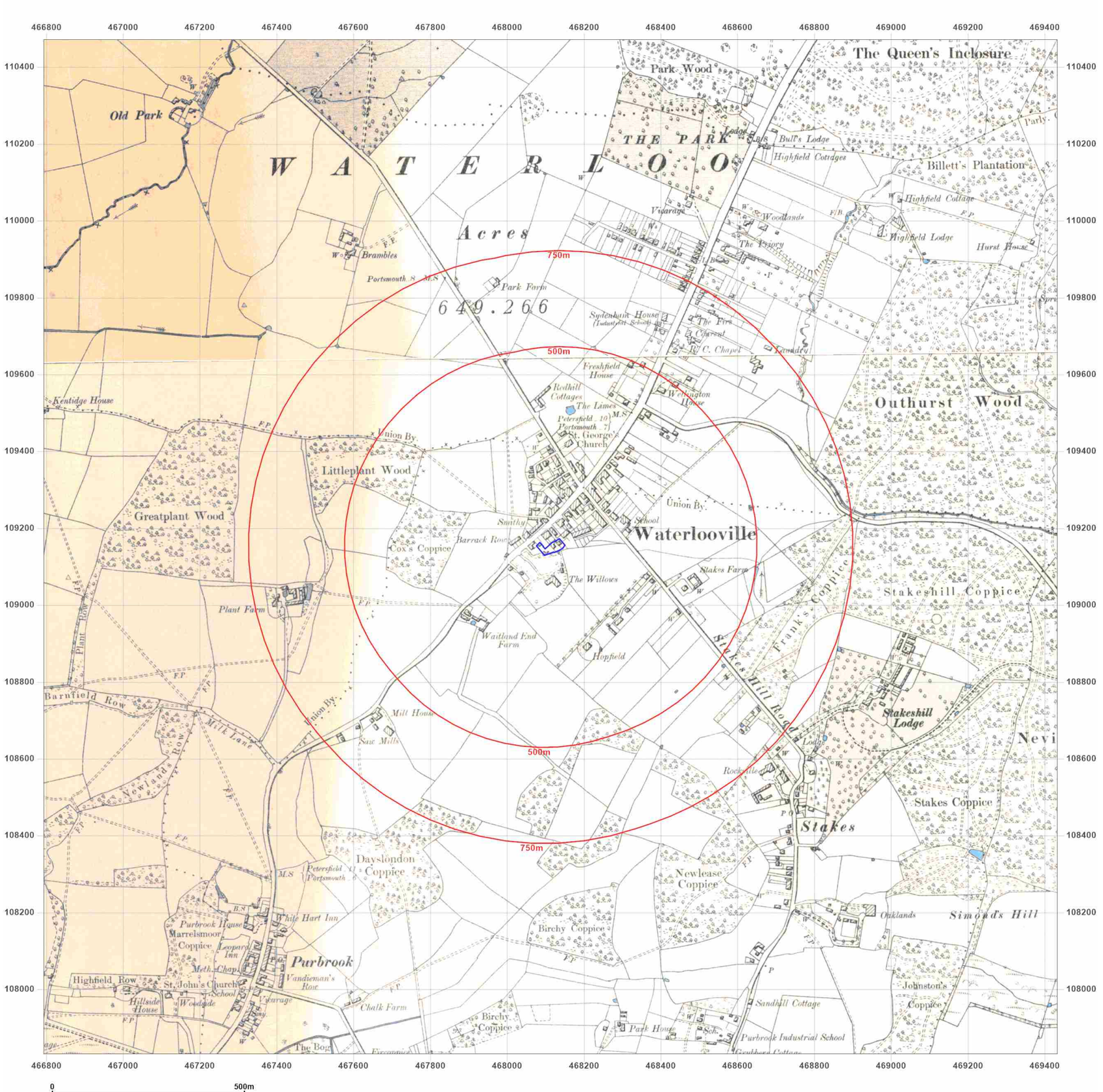
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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: County Series

Map date: **1895-1898**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1865
Revised 1895
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1867
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

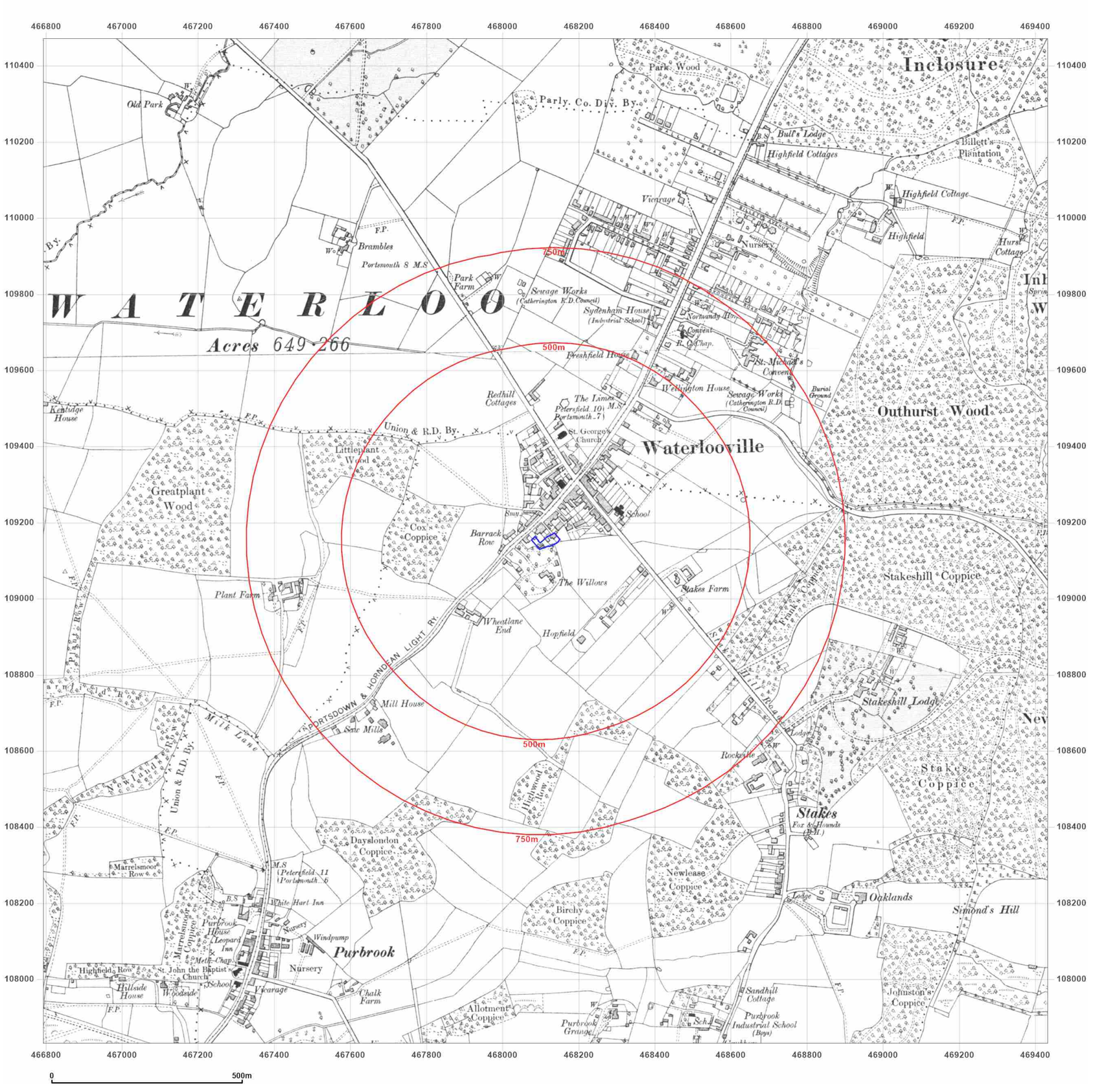
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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: County Series

Map date: **1907**

Scale: 1:10,560

Printed at: 1:10,560

N W E S

Surveyed 1865
Revised 1907
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1859
Revised 1907
Edition N/A
Copyright N/A
Levelled N/A

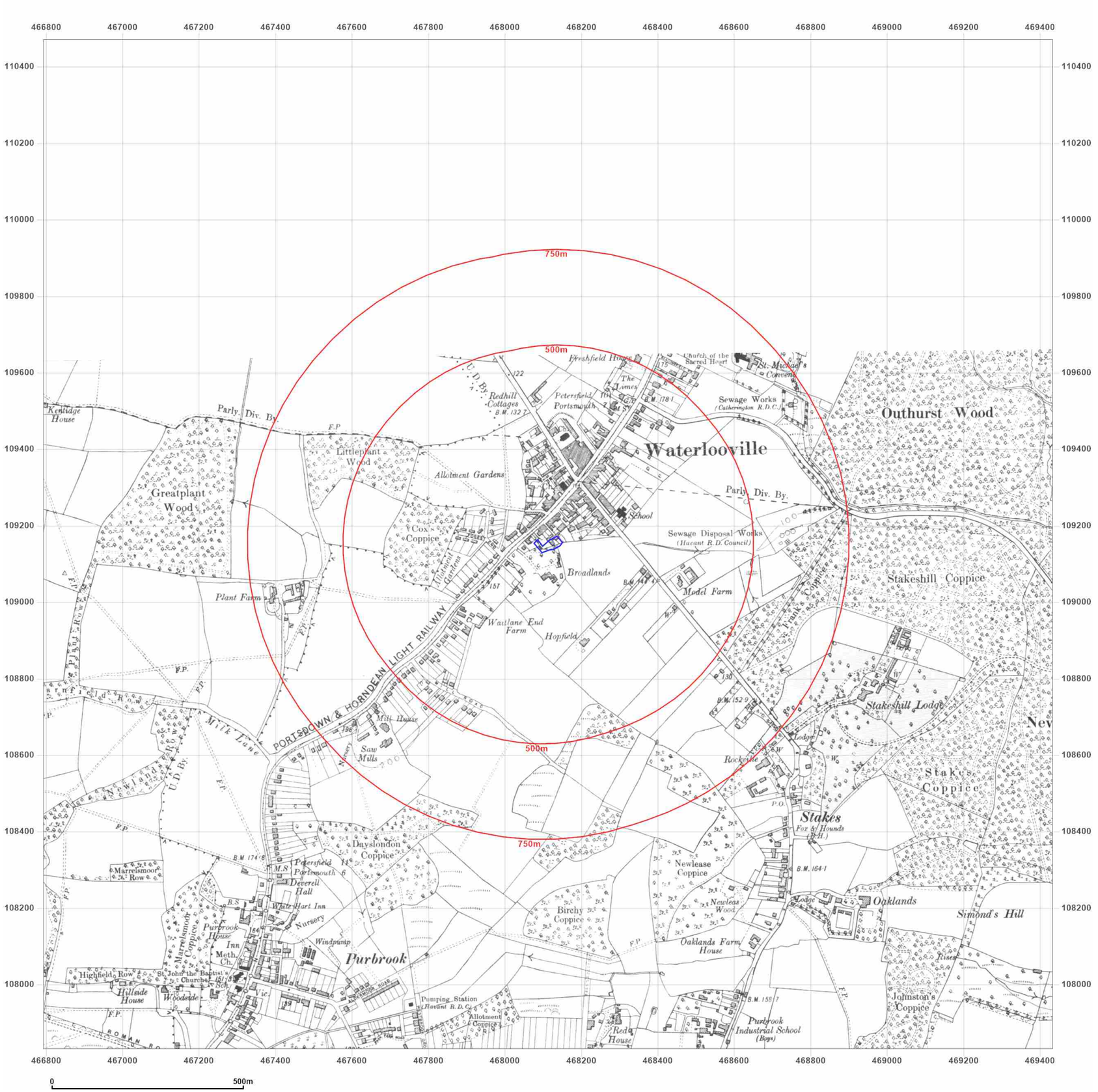
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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: County Series

Map date: **1930**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1859
Revised 1930
Edition N/A
Copyright N/A
Levelled N/A

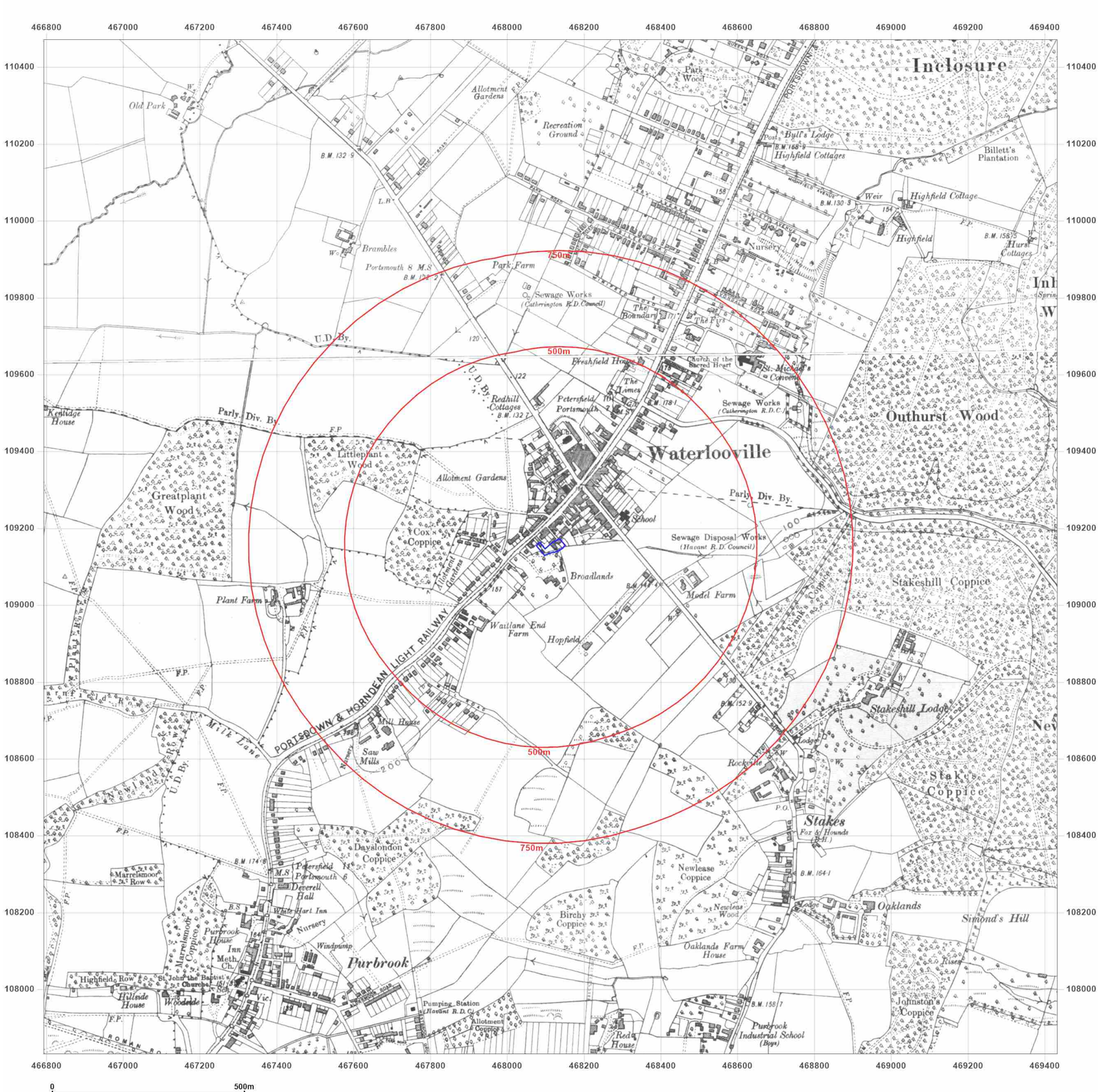
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Site Details:

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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: County Series

Map date: **1930-1933**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1865
Revised 1933
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1859
Revised 1930
Edition N/A
Copyright N/A
Levelled N/A

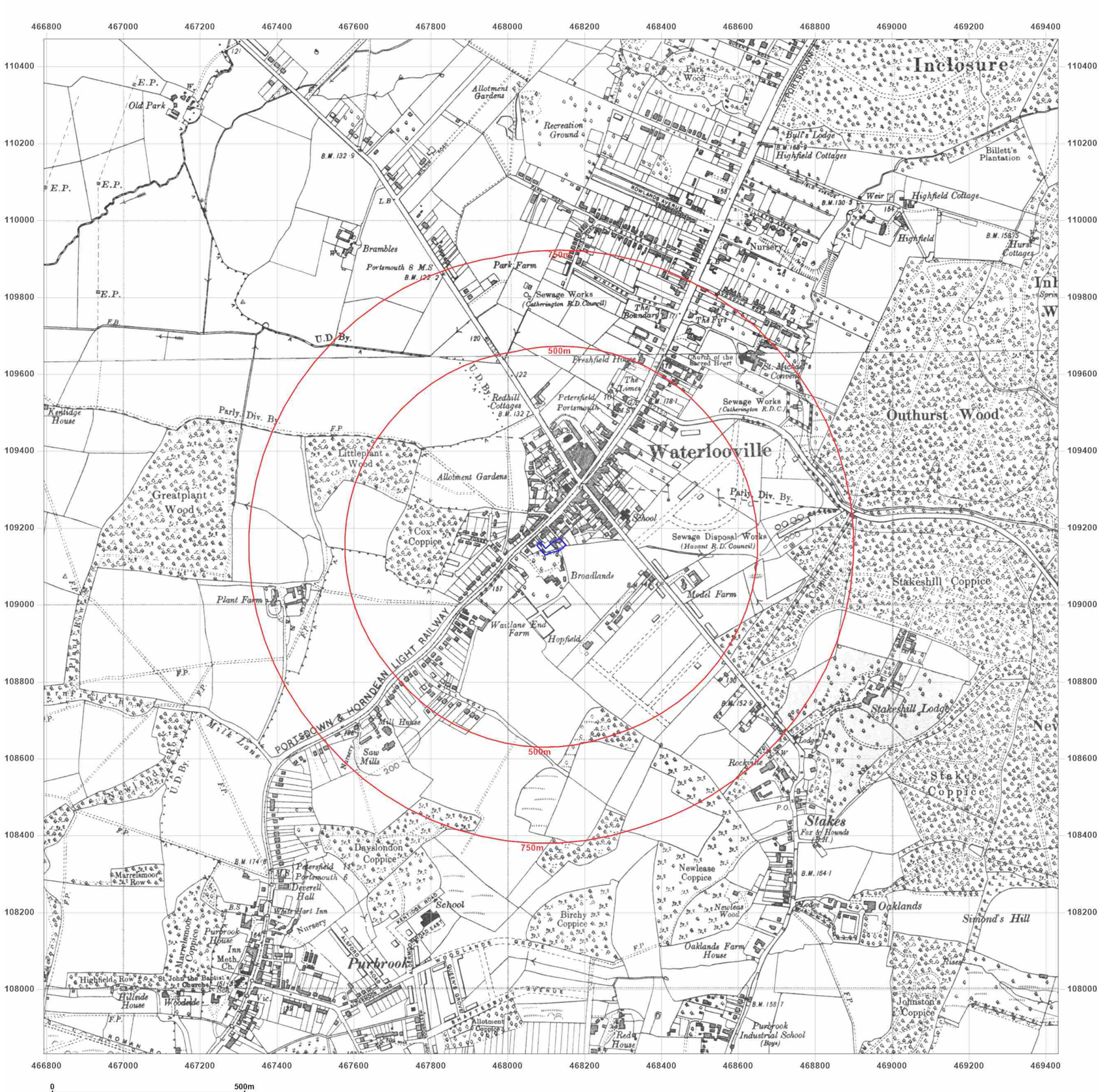
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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: County Series

Map date: **1938-1942**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1865
Revised 1942
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1859
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

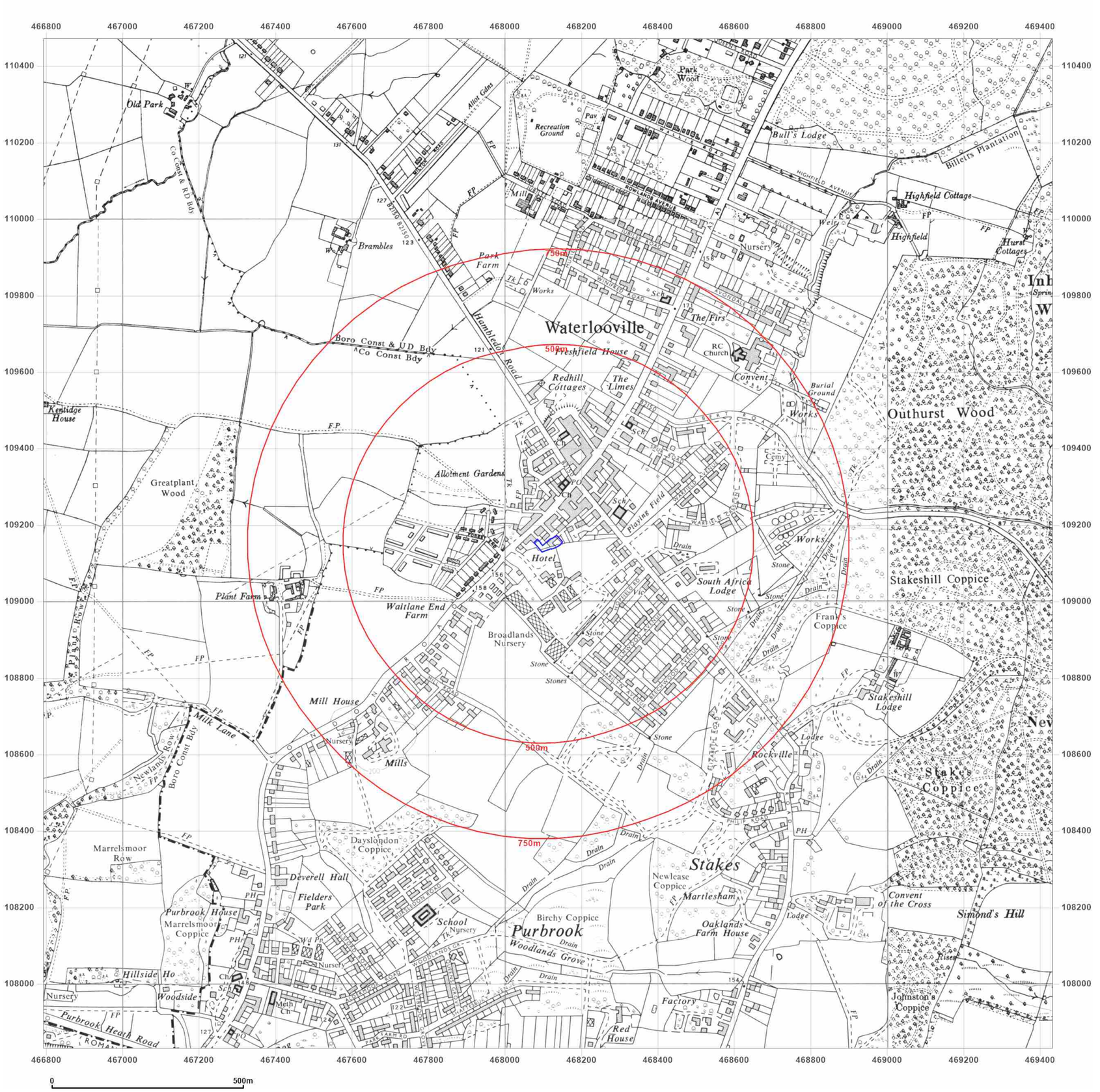
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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: Provisional
Map date: **1959-1963**
Scale: 1:10,560
Printed at: 1:10,560

N
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Surveyed 1959
Revised 1959
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1865
Revised 1957
Edition N/A
Copyright 1963
Levelled N/A

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Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: National Grid

Map date: **1980**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1973
Revised 1979
Edition N/A
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Levelled 1973

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Revised 1980
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Groundsure INSIGHTS

Site Details:

CAR WASH, UNIT 3, VICTORIA ROAD, WATERLOOVILLE, PO7 7ET

Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: National Grid

Map date: **1991-1992**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1990
Revised 1992
Edition N/A
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Levelled N/A

Surveyed 1988
Revised 1991
Edition N/A
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Levelled N/A

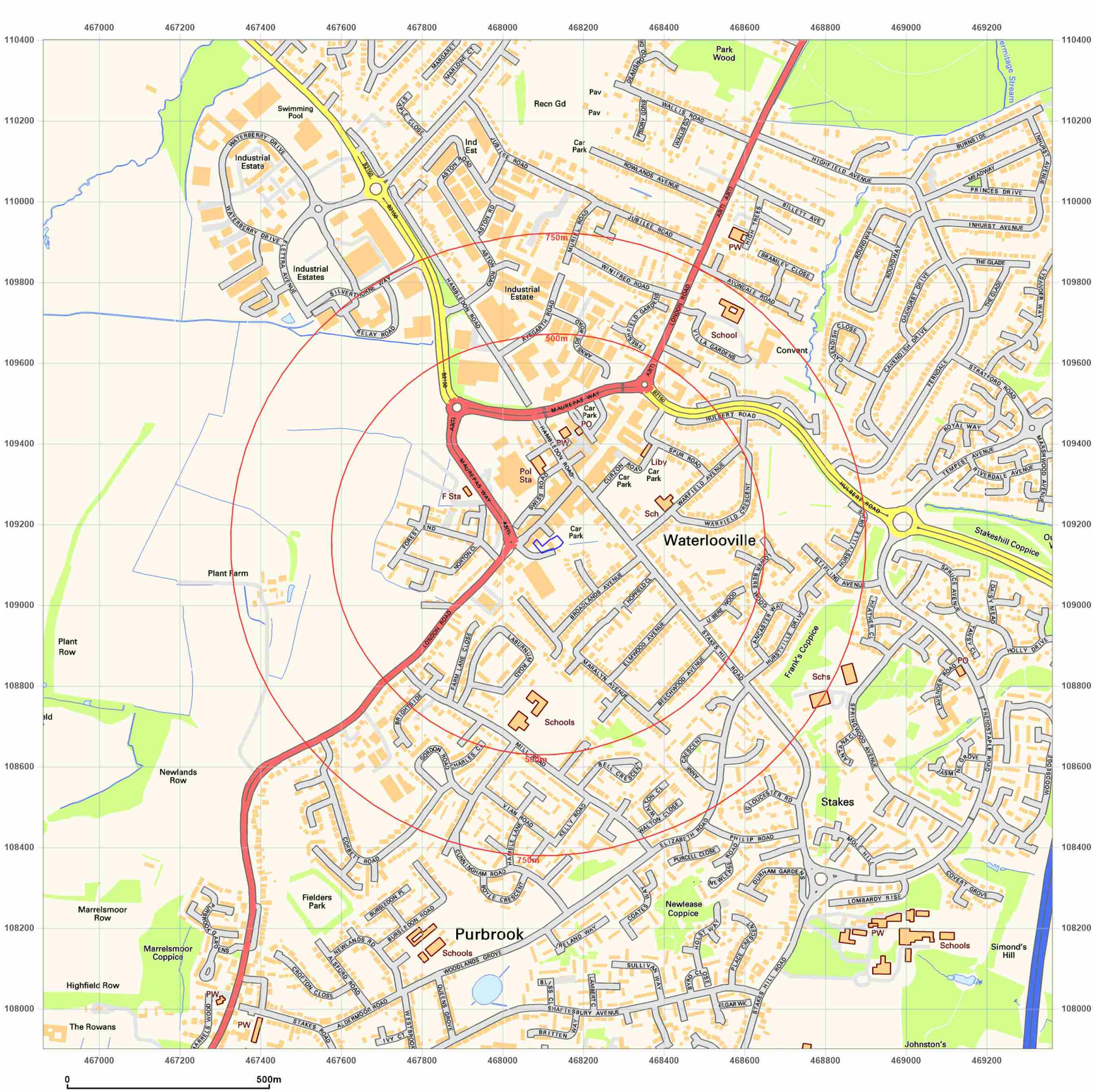
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Groundsure INSIGHTS

Site Details:

CAR WASH, UNIT 3, VICTORIA ROAD, WATERLOOVILLE, PO7 7ET

Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

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

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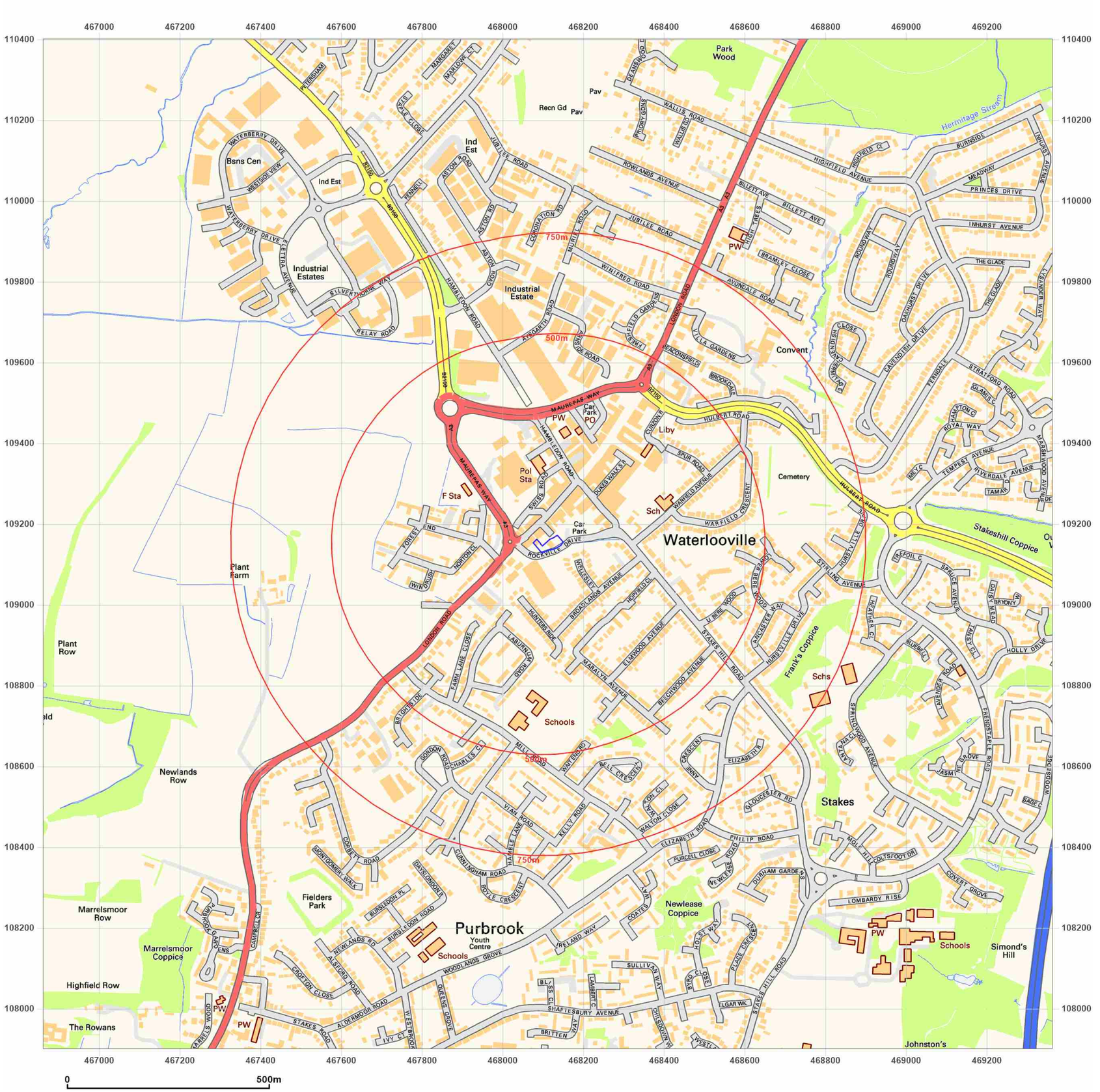
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Groundsure INSIGHTS

Site Details:

CAR WASH, UNIT 3, VICTORIA ROAD, WATERLOOVILLE, PO7 7ET

Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

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

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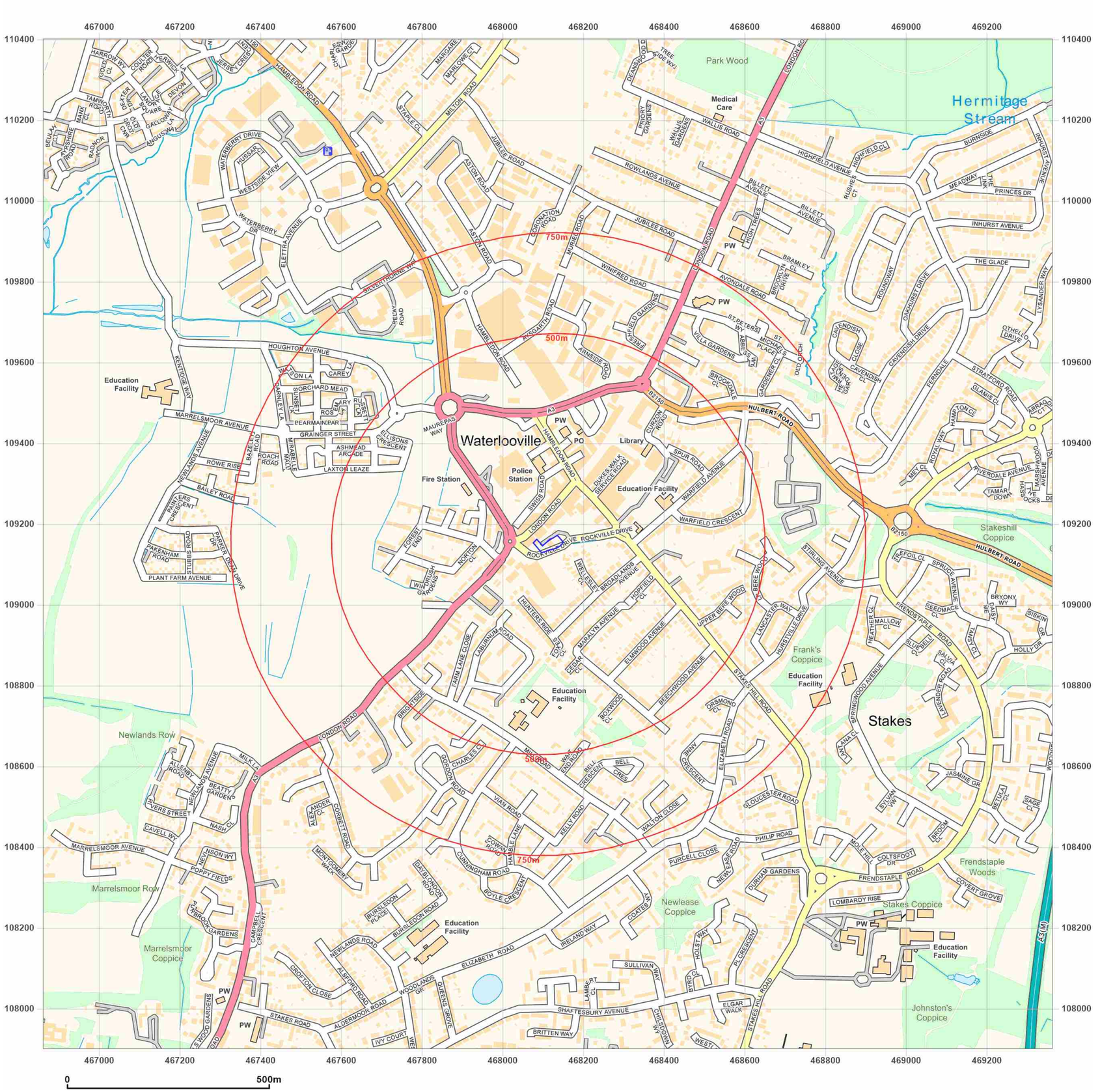
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Groundsure INSIGHTS

Site Details:

CAR WASH, UNIT 3, VICTORIA ROAD, WATERLOOVILLE, PO7 7ET

Client Ref: GWPR5150
Report Ref: GS-9257481
Grid Ref: 468112, 109151

Map Name: National Grid
Map date: 2022
Scale: 1:10,000
Printed at: 1:10,000

N W E S

2022

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APPENDIX E: GroundSure EnviroInsight and GeoInsight Datasheets

2 The Long Barn, Norton Farm, Selborne Road, Alton, Hampshire GU34 3NB
0333 600 1221 enquiries@groundandwater.co.uk **groundandwater.co.uk**

Registered Office: Kineton House, 31 Horse Fair, Banbury, Oxfordshire OX16 0AE Registered in England No. 07032001

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

CAR WASH, UNIT 3, VICTORIA ROAD, WATERLOOVILLE, PO7 7ET

Order Details

Date: 14/12/2022

Your ref: GWPR5150

Our Ref: GS-9257482

Site Details

Location: 468125 109144

Area: 0.15 ha

Authority: Havant Borough Council



Summary of findings p. 2

OS MasterMap site plan p.13

Aerial image p. 8

groundsure.com/insightuserguide

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

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	Historical industrial land uses	0	3	7	8	-
15	1.2	Historical tanks	0	0	5	11	-
16	1.3	Historical energy features	0	1	11	32	-
18	1.4	Historical petrol stations	0	0	0	0	-
18	1.5	Historical garages	1	4	3	3	-
19	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
20	2.1	Historical industrial land uses	0	3	9	10	-
21	2.2	Historical tanks	0	0	11	14	-
23	2.3	Historical energy features	0	2	42	50	-
26	2.4	Historical petrol stations	0	0	0	0	-
26	2.5	Historical garages	2	5	6	4	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
28	3.1	Active or recent landfill	0	0	0	0	-
28	3.2	Historical landfill (BGS records)	0	0	0	0	-
29	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
29	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
29	3.5	Historical waste sites	0	0	0	0	-
29	3.6	Licensed waste sites	0	0	0	0	-
29	3.7	Waste exemptions	0	0	2	1	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
31	4.1	Recent industrial land uses	1	3	16	-	-
33	4.2	Current or recent petrol stations	0	0	1	1	-
33	4.3	Electricity cables	0	0	0	0	-
33	4.4	Gas pipelines	0	0	0	0	-
33	4.5	Sites determined as Contaminated Land	0	0	0	0	-

34	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
34	4.7	Regulated explosive sites	0	0	0	0	-
34	4.8	Hazardous substance storage/usage	0	0	0	0	-
34	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
34	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
35	**4.11**	**Licensed pollutant release (Part A(2)/B)**	0	0	1	2	-
35	4.12	Radioactive Substance Authorisations	0	0	0	0	-
35	**4.13**	**Licensed Discharges to controlled waters**	0	0	0	2	-
36	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
36	4.15	Pollutant release to public sewer	0	0	0	0	-
36	4.16	List 1 Dangerous Substances	0	0	0	0	-
37	4.17	List 2 Dangerous Substances	0	0	0	0	-
37	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	0	6	-
38	4.19	Pollution inventory substances	0	0	0	0	-
38	4.20	Pollution inventory waste transfers	0	0	0	0	-
38	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
39	**5.1**	**Superficial aquifer**	Identified (within 500m)				
41	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
42	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
43	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
43	5.5	Groundwater vulnerability- local information	None (within 0m)				
44	5.6	Groundwater abstractions	0	0	0	0	0
45	**5.7**	**Surface water abstractions**	0	0	0	0	1
45	5.8	Potable abstractions	0	0	0	0	0
45	5.9	Source Protection Zones	0	0	0	0	-
46	**5.10**	**Source Protection Zones (confined aquifer)**	1	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
47	**6.1**	**Water Network (OS MasterMap)**	0	1	1	-	-

48	**6.2**	**Surface water features**	0	1	1	-	-
48	**6.3**	**WFD Surface water body catchments**	1	-	-	-	-
48	**6.4**	**WFD Surface water bodies**	0	0	0	-	-
49	6.5	WFD Groundwater bodies	0	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
50	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
50	7.2	Historical Flood Events	0	0	0	-	-
50	7.3	Flood Defences	0	0	0	-	-
51	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
51	7.5	Flood Storage Areas	0	0	0	-	-
52	7.6	Flood Zone 2	None (within 50m)				
52	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
53	**8.1**	**Surface water flooding**	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
55	**9.1**	**Groundwater flooding**	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
56	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
57	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
57	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
57	10.4	Special Protection Areas (SPA)	0	0	0	0	0
57	10.5	National Nature Reserves (NNR)	0	0	0	0	0
58	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
58	**10.7**	**Designated Ancient Woodland**	0	0	0	0	24
59	10.8	Biosphere Reserves	0	0	0	0	0
59	10.9	Forest Parks	0	0	0	0	0
59	10.10	Marine Conservation Zones	0	0	0	0	0
60	10.11	Green Belt	0	0	0	0	0
60	10.12	Proposed Ramsar sites	0	0	0	0	0

60	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
60	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
60	10.15	Nitrate Sensitive Areas	0	0	0	0	0
61	**10.16**	**Nitrate Vulnerable Zones**	1	0	0	0	1
62	**10.17**	**SSSI Impact Risk Zones**	1	-	-	-	-
63	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
64	11.1	World Heritage Sites	0	0	0	-	-
64	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
64	11.3	National Parks	0	0	0	-	-
64	11.4	Listed Buildings	0	0	0	-	-
65	11.5	Conservation Areas	0	0	0	-	-
65	11.6	Scheduled Ancient Monuments	0	0	0	-	-
65	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
66	**12.1**	**Agricultural Land Classification**	Grade 4 (within 250m)				
67	12.2	Open Access Land	0	0	0	-	-
67	12.3	Tree Felling Licences	0	0	0	-	-
67	12.4	Environmental Stewardship Schemes	0	0	0	-	-
68	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
69	13.1	Priority Habitat Inventory	0	0	0	-	-
69	13.2	Habitat Networks	0	0	0	-	-
69	13.3	Open Mosaic Habitat	0	0	0	-	-
69	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
70	**14.1**	**10k Availability**	Identified (within 500m)				
71	14.2	Artificial and made ground (10k)	0	0	0	0	-
72	**14.3**	**Superficial geology (10k)**	1	0	0	2	-

73	14.4	Landslip (10k)	0	0	0	0	-
74	**14.5**	**Bedrock geology (10k)**	1	0	0	0	-
75	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
76	**15.1**	**50k Availability**	Identified (within 500m)				
77	15.2	Artificial and made ground (50k)	0	0	0	0	-
77	15.3	Artificial ground permeability (50k)	0	0	-	-	-
78	**15.4**	**Superficial geology (50k)**	1	0	0	1	-
79	**15.5**	**Superficial permeability (50k)**	Identified (within 50m)				
79	15.6	Landslip (50k)	0	0	0	0	-
79	15.7	Landslip permeability (50k)	None (within 50m)				
80	**15.8**	**Bedrock geology (50k)**	1	0	0	0	-
81	**15.9**	**Bedrock permeability (50k)**	Identified (within 50m)				
81	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
82	**16.1**	**BGS Boreholes**	0	0	7	-	-
Page	Section	Natural ground subsidence					
84	**17.1**	**Shrink swell clays**	Low (within 50m)				
85	**17.2**	**Running sands**	Very low (within 50m)				
86	**17.3**	**Compressible deposits**	Negligible (within 50m)				
87	**17.4**	**Collapsible deposits**	Very low (within 50m)				
88	**17.5**	**Landslides**	Very low (within 50m)				
89	**17.6**	**Ground dissolution of soluble rocks**	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
90	18.1	Natural cavities	0	0	0	0	-
91	18.2	BritPits	0	0	0	0	-
91	**18.3**	**Surface ground workings**	0	1	2	-	-
91	18.4	Underground workings	0	0	0	0	0
91	18.5	Historical Mineral Planning Areas	0	0	0	0	-

92	18.6	Non-coal mining	0	0	0	0	0
92	18.7	Mining cavities	0	0	0	0	0
92	18.8	JPB mining areas	None (within 0m)				
92	18.9	Coal mining	None (within 0m)				
92	18.10	Brine areas	None (within 0m)				
93	18.11	Gypsum areas	None (within 0m)				
93	18.12	Tin mining	None (within 0m)				
93	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
94	**19.1**	**Radon**	Less than 1% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
96	**20.1**	**BGS Estimated Background Soil Chemistry**	2	0	-	-	-
96	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
96	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-

Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
97	21.1	Underground railways (London)	0	0	0	-	-
97	21.2	Underground railways (Non-London)	0	0	0	-	-
97	21.3	Railway tunnels	0	0	0	-	-
97	21.4	Historical railway and tunnel features	0	0	0	-	-
97	21.5	Royal Mail tunnels	0	0	0	-	-
98	21.6	Historical railways	0	0	0	-	-
98	21.7	Railways	0	0	0	-	-
98	21.8	Crossrail 1	0	0	0	0	-
98	21.9	Crossrail 2	0	0	0	0	-
98	21.10	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 05/04/2020

Site Area: 0.15ha

Recent site history - 2017 aerial photograph



Capture Date: 21/06/2017

Site Area: 0.15ha

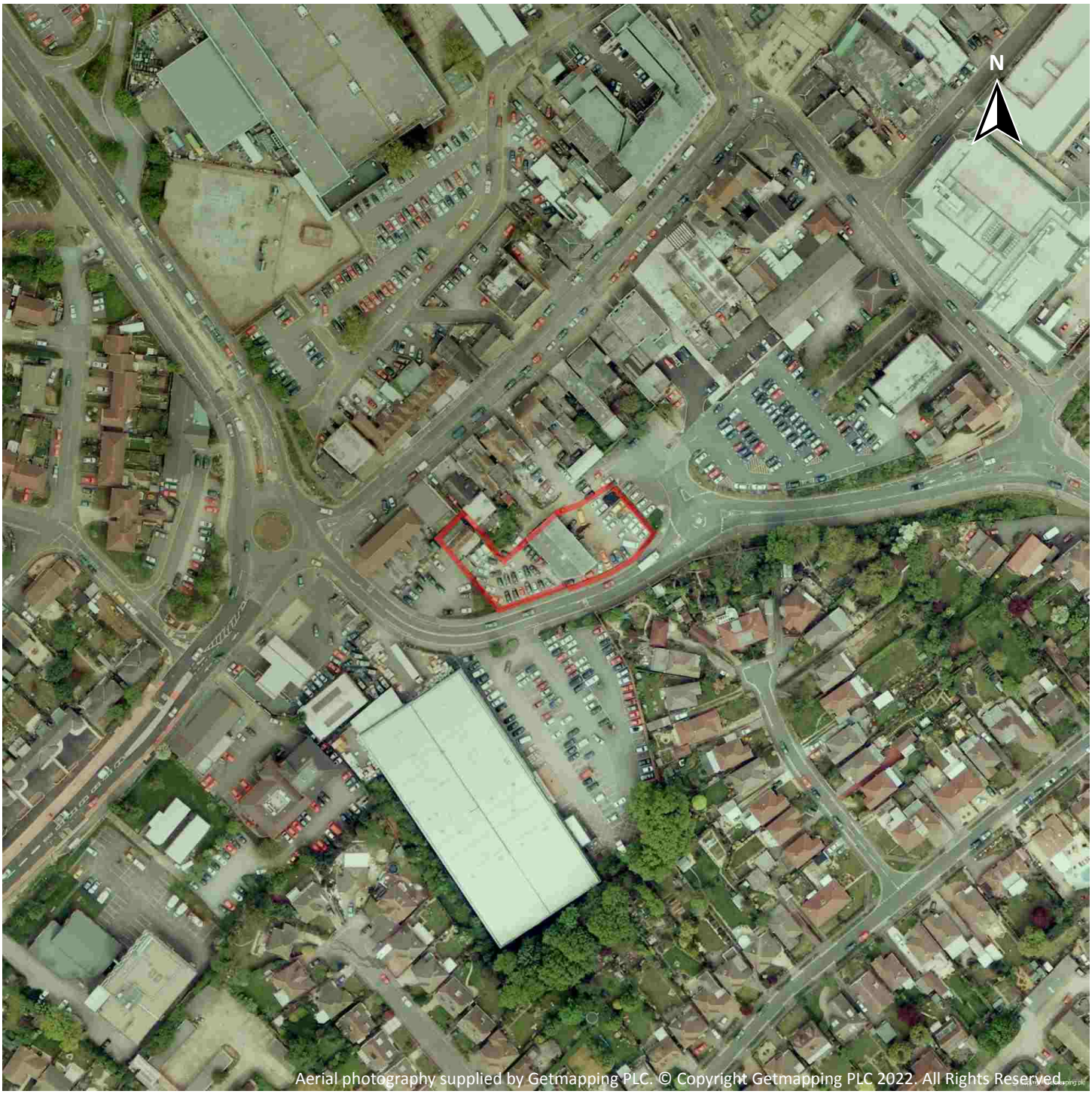
Recent site history - 2005 aerial photograph



Capture Date: 16/05/2005

Site Area: 0.15ha

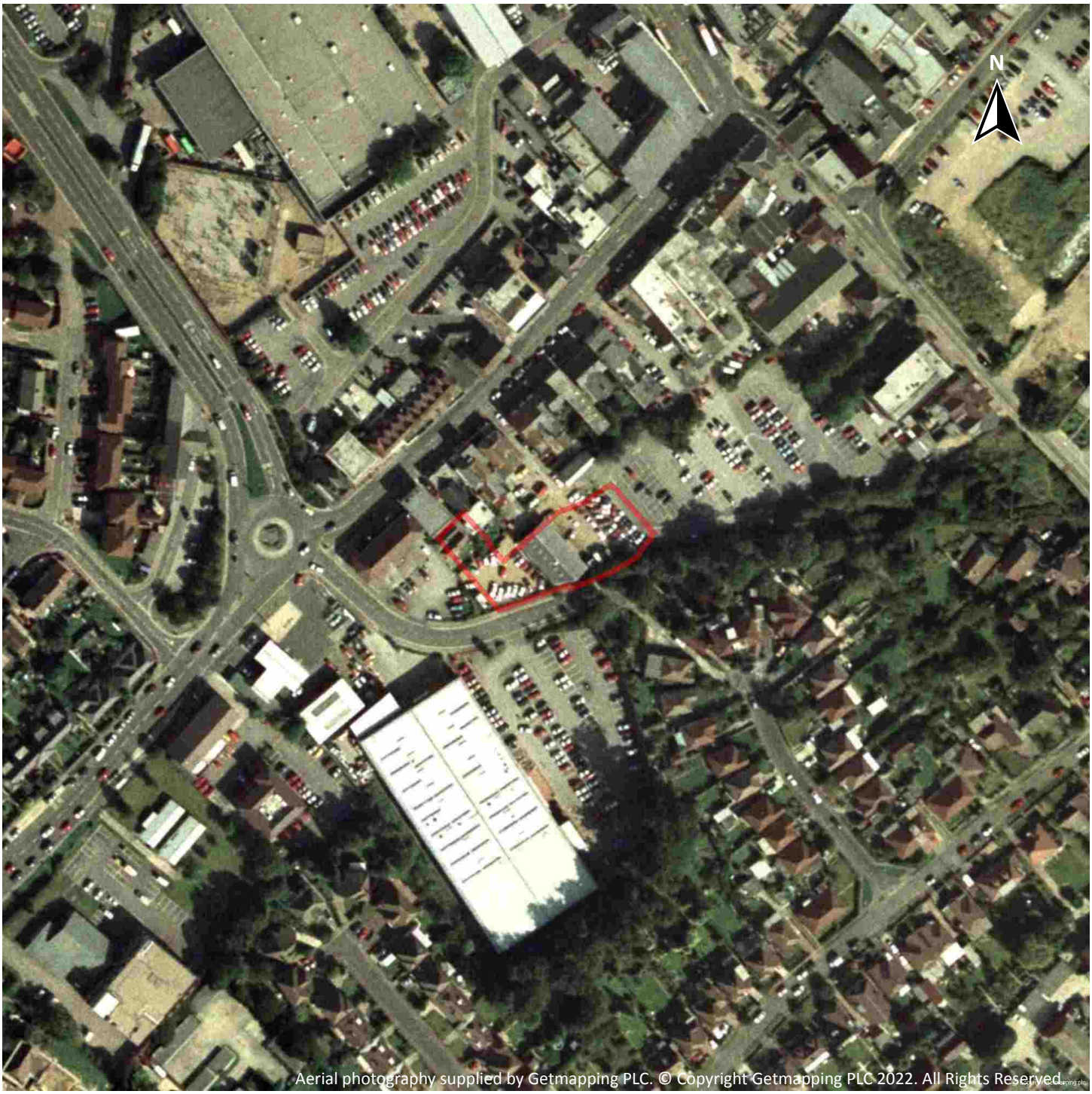
Recent site history - 2004 aerial photograph



Capture Date: 24/09/2004

Site Area: 0.15ha

Recent site history - 1999 aerial photograph

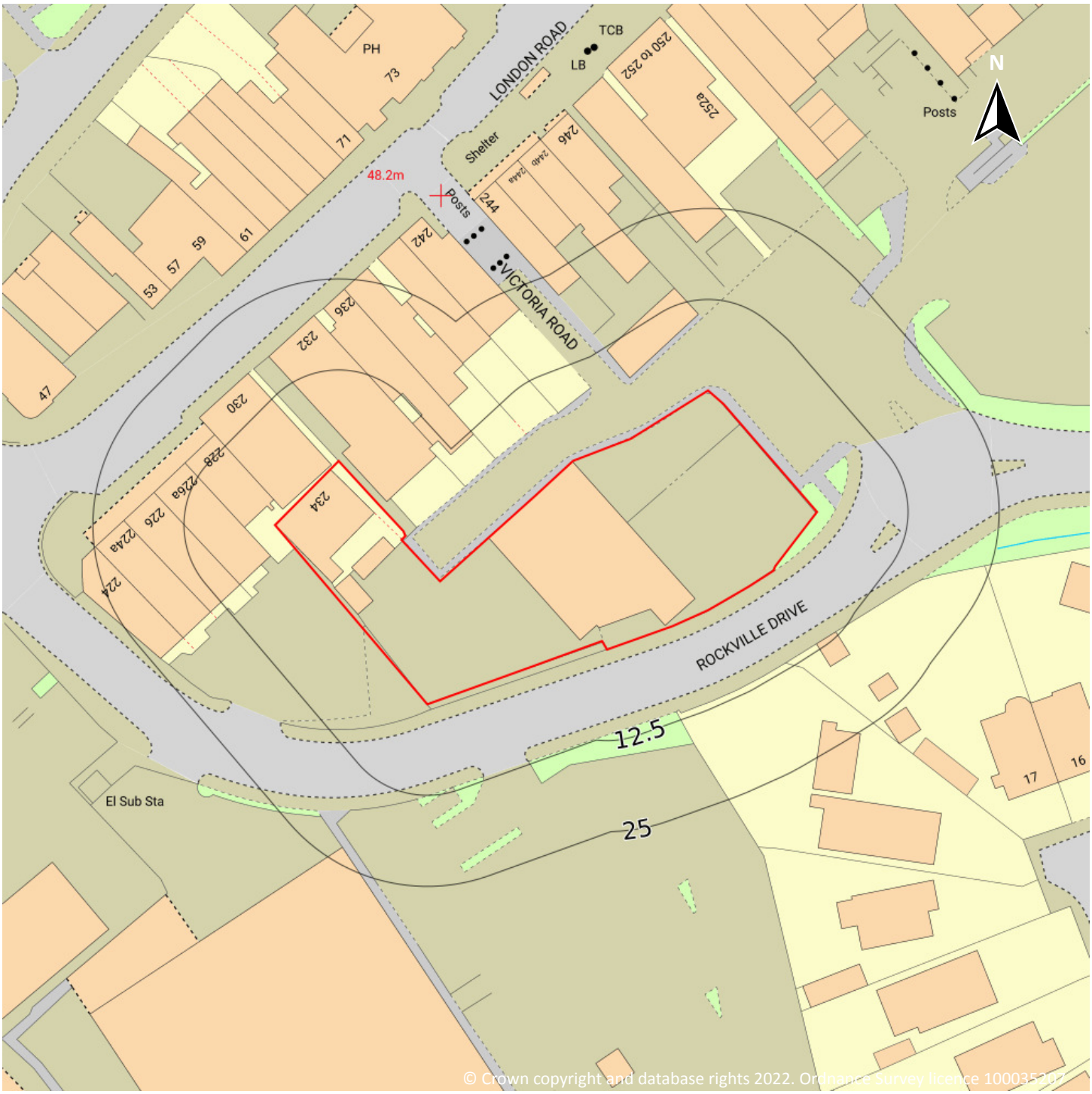


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Capture Date: 04/09/1999

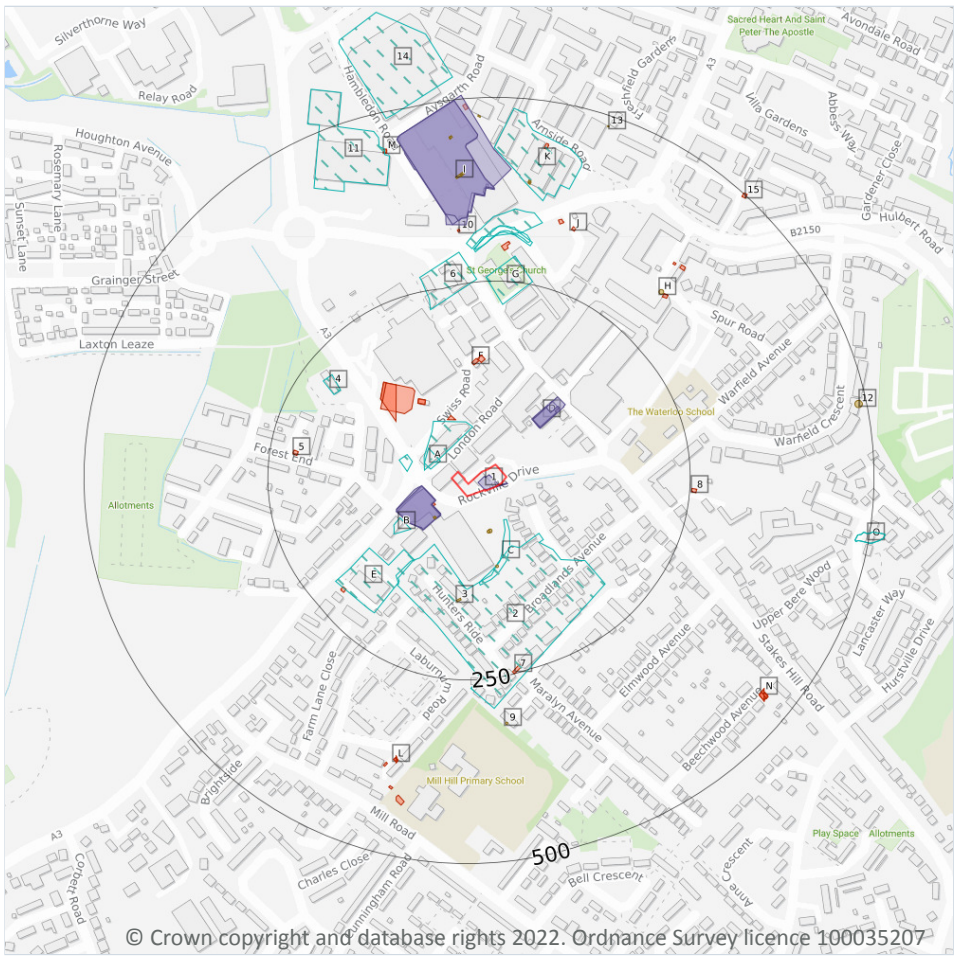
Site Area: 0.15ha

OS MasterMap site plan



Site Area: 0.15ha

1 Past land use



1.1 Historical industrial land uses

Records within 500m	18

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

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

ID	Location	Land use	Dates present	Group ID
A	28m NW	Smithy	1895	1907281

ID	Location	Land use	Dates present	Group ID
A	30m NW	Smithy	1898 - 1907	1963930
C	46m SE	Unspecified Ground Workings	1898	1853230
A	58m W	Fire Station	1980	1874268
2	79m SW	Nursery	1963	1867648
B	87m SW	Smithy	1866	1876074
E	112m SW	Telephone Exchange	1980 - 1991	1963873
4	193m NW	Fire Station	1991	1874267
G	218m N	Grave Yard	1866	1866046
6	224m N	Brick Field	1866	1884675
G	291m N	Unspecified Ground Workings	1930	1853231
G	294m N	Unspecified Heap	1930 - 1938	1929129
G	296m N	Unspecified Heap	1963	1913682
K	365m N	Unspecified Works	1991	1860726
11	402m N	Unspecified Stores	1991	1864477
O	482m E	Unspecified Ground Workings	1938	1853229
O	482m E	Unspecified Heap	1930	1870077
14	491m N	Unspecified Works	1980 - 1991	1923832

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**16**

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

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

ID	Location	Land use	Dates present	Group ID
B	51m SW	Unspecified Tank	1984 - 1993	313042

ID	Location	Land use	Dates present	Group ID
C	52m S	Unspecified Tank	1952 - 1965	318325
C	53m S	Unspecified Tank	1984	318878
C	102m S	Unspecified Tank	1932 - 1939	313723
3	139m S	Unspecified Tank	1952 - 1954	321546
9	312m S	Unspecified Tank	1954	308201
H	323m NE	Unspecified Tank	1952	308200
K	384m N	Tanks	1993	312851
K	386m N	Tanks	1973 - 1987	319426
I	393m N	Tanks	1973	311376
I	395m N	Unspecified Tank	1993	308198
I	397m N	Unspecified Tank	1987	308197
I	447m N	Unspecified Tank	1973 - 1993	325282
I	473m N	Unspecified Tank	1973	308196
12	484m E	Unspecified Tank	1932	308202
13	485m N	Unspecified Tank	1973	308199

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**44**

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

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

ID	Location	Land use	Dates present	Group ID
B	40m SW	Electricity Substation	1989 - 1993	209361
A	71m NW	Electricity Substation	1974 - 1993	206151
A	102m NW	Electricity Substation	1974 - 1989	199621

ID	Location	Land use	Dates present	Group ID
A	102m NW	Electricity Substation	1993	195285
A	106m NW	Electricity Substation	1972 - 1990	209971
A	108m NW	Electricity Substation	1993	193098
F	139m N	Electricity Substation	1952	191091
F	140m N	Electricity Substation	1974 - 1993	202412
A	140m NW	Electricity Substation	1982 - 1990	196187
E	207m SW	Electricity Substation	1972 - 1993	202910
5	212m W	Electricity Substation	1972 - 1993	199284
7	240m S	Electricity Substation	1973 - 1990	196956
8	253m E	Electricity Substation	1974 - 1993	196743
G	292m N	Electricity Substation	1974 - 1993	202124
10	321m N	Electricity Substation	1974	191092
H	322m NE	Electricity Substation	1974 - 1993	195904
J	335m N	Electricity Substation	1974	191093
J	339m N	Electricity Substation	1987 - 1993	209949
H	365m NE	Electricity Substation	1974	191094
H	367m NE	Electricity Substation	1984	191095
L	367m S	Electricity Substation	1973	193721
L	368m S	Electricity Substation	1973	195657
L	368m S	Electricity Substation	1987	192487
L	368m S	Electricity Substation	1990	193552
L	368m S	Electricity Substation	1990	193891
L	368m S	Electricity Substation	1993	194582
L	378m S	Electricity Substation	1989	191089
L	408m S	Electricity Substation	1973 - 1993	207995
L	417m S	Electricity Substation	1983	191090
K	435m N	Electricity Substation	1973 - 1993	209896
M	445m N	Electricity Substation	1987 - 1993	203109

ID	Location	Land use	Dates present	Group ID
M	445m N	Electricity Substation	1989	195630
N	453m SE	Electricity Substation	1990	192463
N	453m SE	Electricity Substation	1987	193390
N	453m SE	Electricity Substation	1990	194043
N	453m SE	Electricity Substation	1954	193778
N	453m SE	Electricity Substation	1973	194528
N	453m SE	Electricity Substation	1973	194529
N	457m SE	Electricity Substation	1996	209525
N	458m SE	Electricity Substation	1989	194707
N	459m SE	Electricity Substation	1987	192436
N	459m SE	Electricity Substation	1987	192834
I	485m N	Electricity Substation	1973 - 1993	211820
15	496m NE	Electricity Substation	1987 - 1993	196455

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	11

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

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

ID	Location	Land use	Dates present	Group ID
1	**On site**	**Garage**	**1974 - 1984**	**63460**
B	36m W	Garage	1965	63250
B	36m W	Garage	1993	62238
B	36m SW	Garage	1984 - 1989	63371
B	36m SW	Garage	1974	61567
D	78m NE	Garage	1984 - 1989	64874
D	78m NE	Garage	1974 - 1993	64241
D	79m NE	Garage	1960 - 1965	64983
I	329m N	Garage	1993	63140
I	332m N	Garage	1965	62677
I	336m N	Garage	1973 - 1987	63581

This data is sourced from Ordnance Survey / Groundsure.

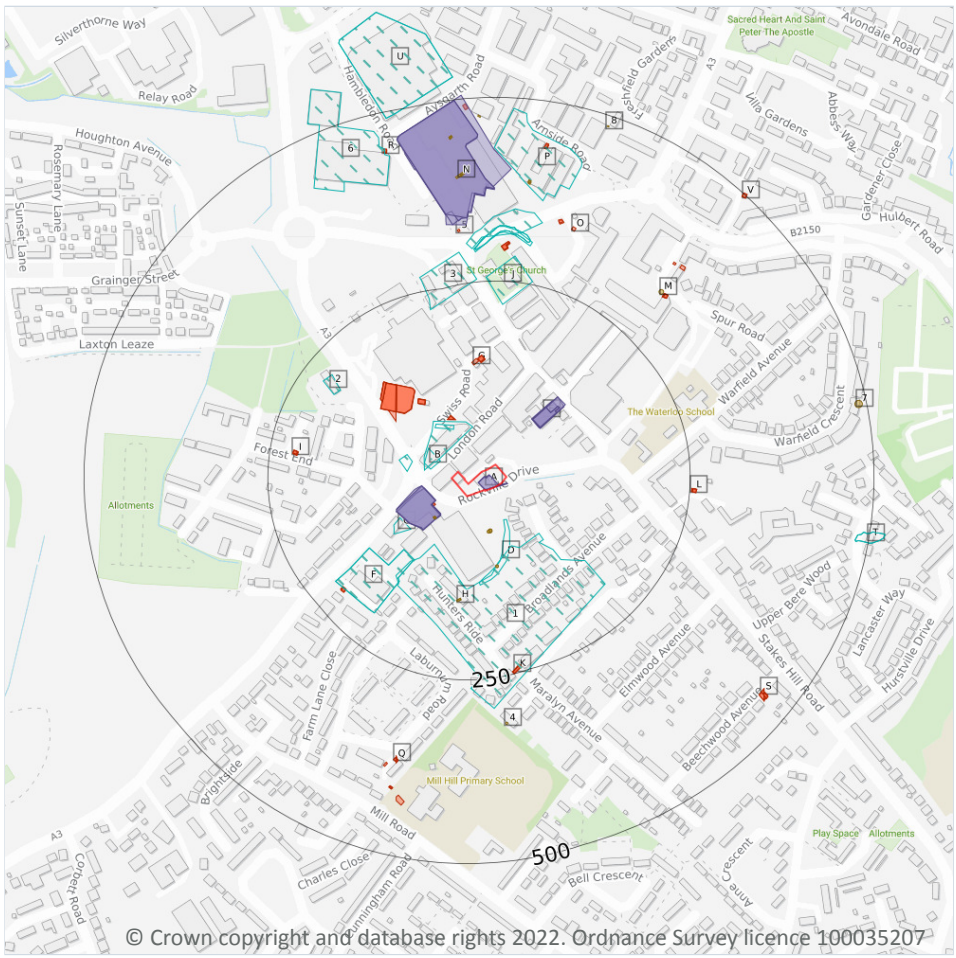
1.6 Historical military land

Records within 500m	**0**

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

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

2 Past land use - un-grouped



2.1 Historical industrial land uses

Records within 500m	22

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

Features are displayed on the Past land use - un-grouped map on **page 20**

ID	Location	Land Use	Date	Group ID
B	28m NW	Smithy	1895	1907281
B	30m NW	Smithy	1907	1963930
D	46m SE	Unspecified Ground Workings	1898	1853230

ID	Location	Land Use	Date	Group ID
B	58m W	Fire Station	1980	1874268
B	58m NW	Smithy	1898	1963930
1	79m SW	Nursery	1963	1867648
C	87m SW	Smithy	1866	1876074
F	112m SW	Telephone Exchange	1991	1963873
F	112m SW	Telephone Exchange	1980	1963873
2	193m NW	Fire Station	1991	1874267
J	218m N	Grave Yard	1866	1866046
3	224m N	Brick Field	1866	1884675
J	291m N	Unspecified Ground Workings	1930	1853231
J	294m N	Unspecified Heap	1938	1929129
J	294m N	Unspecified Heap	1930	1929129
J	296m N	Unspecified Heap	1963	1913682
P	365m N	Unspecified Works	1991	1860726
6	402m N	Unspecified Stores	1991	1864477
T	482m E	Unspecified Ground Workings	1938	1853229
T	482m E	Unspecified Heap	1930	1870077
U	491m N	Unspecified Works	1991	1923832
U	491m N	Unspecified Works	1980	1923832

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m **25**

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

Features are displayed on the Past land use - un-grouped map on **page 20**

ID	Location	Land Use	Date	Group ID
C	51m SW	Unspecified Tank	1993	313042

ID	Location	Land Use	Date	Group ID
C	52m SW	Unspecified Tank	1984	313042
C	52m SW	Unspecified Tank	1989	313042
D	52m S	Unspecified Tank	1952	318325
D	53m S	Unspecified Tank	1965	318325
D	53m S	Unspecified Tank	1960	318325
D	53m S	Unspecified Tank	1984	318878
D	102m S	Unspecified Tank	1932	313723
D	102m S	Unspecified Tank	1939	313723
H	139m S	Unspecified Tank	1952	321546
H	139m S	Unspecified Tank	1954	321546
4	312m S	Unspecified Tank	1954	308201
M	323m NE	Unspecified Tank	1952	308200
P	384m N	Tanks	1993	312851
P	386m N	Tanks	1973	319426
P	386m N	Tanks	1987	319426
N	393m N	Tanks	1973	311376
N	395m N	Unspecified Tank	1993	308198
N	397m N	Unspecified Tank	1987	308197
N	447m N	Unspecified Tank	1973	325282
N	447m N	Unspecified Tank	1987	325282
N	448m N	Unspecified Tank	1993	325282
N	473m N	Unspecified Tank	1973	308196
7	484m E	Unspecified Tank	1932	308202
8	485m N	Unspecified Tank	1973	308199

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**94**

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

Features are displayed on the Past land use - un-grouped map on **page 20**

ID	Location	Land Use	Date	Group ID
C	40m SW	Electricity Substation	1989	209361
C	40m SW	Electricity Substation	1993	209361
B	71m NW	Electricity Substation	1974	206151
B	71m N	Electricity Substation	1993	206151
B	72m NW	Electricity Substation	1984	206151
B	72m NW	Electricity Substation	1989	206151
B	102m NW	Electricity Substation	1974	199621
B	102m NW	Electricity Substation	1993	195285
B	102m NW	Electricity Substation	1984	199621
B	102m NW	Electricity Substation	1989	199621
B	106m NW	Electricity Substation	1974	209971
B	107m NW	Electricity Substation	1984	209971
B	107m NW	Electricity Substation	1989	209971
B	108m NW	Electricity Substation	1993	193098
B	117m NW	Electricity Substation	1972	209971
B	117m NW	Electricity Substation	1973	209971
B	118m NW	Electricity Substation	1989	209971
B	118m NW	Electricity Substation	1990	209971
G	139m N	Electricity Substation	1952	191091
G	140m N	Electricity Substation	1974	202412
B	140m NW	Electricity Substation	1982	196187
B	140m NW	Electricity Substation	1989	196187
B	140m NW	Electricity Substation	1990	196187

ID	Location	Land Use	Date	Group ID
G	140m N	Electricity Substation	1993	202412
G	141m N	Electricity Substation	1984	202412
G	141m N	Electricity Substation	1989	202412
F	207m SW	Electricity Substation	1972	202910
F	208m SW	Electricity Substation	1982	202910
F	208m SW	Electricity Substation	1989	202910
F	208m SW	Electricity Substation	1990	202910
F	208m SW	Electricity Substation	1973	202910
F	208m SW	Electricity Substation	1989	202910
F	208m SW	Electricity Substation	1990	202910
F	208m SW	Electricity Substation	1993	202910
I	212m W	Electricity Substation	1972	199284
I	212m W	Electricity Substation	1973	199284
I	212m W	Electricity Substation	1993	199284
I	213m W	Electricity Substation	1982	199284
I	213m W	Electricity Substation	1989	199284
I	213m W	Electricity Substation	1990	199284
K	240m S	Electricity Substation	1987	196956
K	240m S	Electricity Substation	1990	196956
K	240m S	Electricity Substation	1990	196956
K	240m S	Electricity Substation	1973	196956
L	253m E	Electricity Substation	1984	196743
L	253m E	Electricity Substation	1989	196743
L	254m E	Electricity Substation	1974	196743
L	254m E	Electricity Substation	1993	196743
J	292m N	Electricity Substation	1974	202124
J	292m N	Electricity Substation	1993	202124
J	292m N	Electricity Substation	1984	202124

ID	Location	Land Use	Date	Group ID
J	292m N	Electricity Substation	1989	202124
5	321m N	Electricity Substation	1974	191092
M	322m NE	Electricity Substation	1984	195904
M	322m NE	Electricity Substation	1989	195904
M	323m NE	Electricity Substation	1974	195904
M	323m NE	Electricity Substation	1993	195904
O	335m N	Electricity Substation	1974	191093
O	339m N	Electricity Substation	1993	209949
O	340m N	Electricity Substation	1987	209949
M	365m NE	Electricity Substation	1974	191094
M	367m NE	Electricity Substation	1984	191095
Q	367m S	Electricity Substation	1973	193721
Q	368m S	Electricity Substation	1973	195657
Q	368m S	Electricity Substation	1987	192487
Q	368m S	Electricity Substation	1990	193891
Q	368m S	Electricity Substation	1990	193552
Q	368m S	Electricity Substation	1993	194582
Q	378m S	Electricity Substation	1989	191089
Q	408m S	Electricity Substation	1973	207995
Q	408m S	Electricity Substation	1993	207995
Q	408m S	Electricity Substation	1989	207995
Q	417m S	Electricity Substation	1983	191090
P	435m N	Electricity Substation	1993	209896
P	437m N	Electricity Substation	1973	209896
P	437m N	Electricity Substation	1987	209896
R	445m N	Electricity Substation	1987	203109
R	445m N	Electricity Substation	1989	195630
R	446m N	Electricity Substation	1993	203109

ID	Location	Land Use	Date	Group ID
S	453m SE	Electricity Substation	1987	193390
S	453m SE	Electricity Substation	1990	192463
S	453m SE	Electricity Substation	1990	194043
S	453m SE	Electricity Substation	1954	193778
S	453m SE	Electricity Substation	1973	194528
S	457m SE	Electricity Substation	1996	209525
S	458m SE	Electricity Substation	1973	194529
S	458m SE	Electricity Substation	1989	194707
S	459m SE	Electricity Substation	1987	192436
S	459m SE	Electricity Substation	1987	192834
N	485m N	Electricity Substation	1993	211820
N	485m N	Electricity Substation	1973	211820
N	485m N	Electricity Substation	1987	211820
V	496m NE	Electricity Substation	1993	196455
V	496m NE	Electricity Substation	1987	196455

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	17

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

Features are displayed on the Past land use - un-grouped map on **page 20**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Garage**	**1984**	**63460**
A	**On site**	**Garage**	**1974**	**63460**
C	36m W	Garage	1965	63250
C	36m W	Garage	1993	62238
C	36m SW	Garage	1984	63371
C	36m SW	Garage	1989	63371
C	36m SW	Garage	1974	61567
E	78m NE	Garage	1984	64874
E	78m NE	Garage	1989	64874
E	78m NE	Garage	1974	64241
E	79m NE	Garage	1993	64241
E	79m NE	Garage	1965	64983
E	79m NE	Garage	1960	64983
N	329m N	Garage	1993	63140
N	332m N	Garage	1965	62677
N	336m N	Garage	1973	63581
N	338m N	Garage	1987	63581

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

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

3.5 Historical waste sites

Records within 500m	0

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

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

3.6 Licensed waste sites

Records within 500m	0

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

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

3.7 Waste exemptions

Records within 500m	3

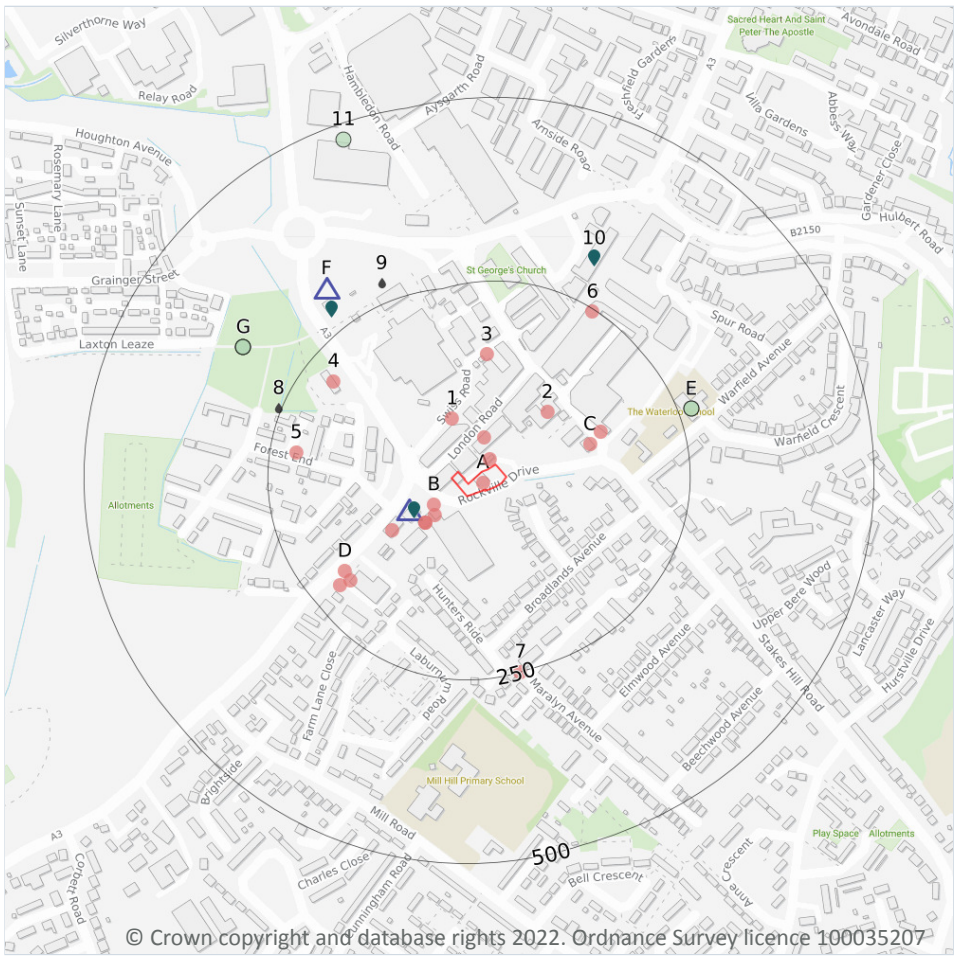
Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 28**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	190m SW	Security House, 212-218 London Road, Waterlooville, PO7 7AJ	WEX236431	Storing waste exemption	Not on a farm	Storage of waste in secure containers
A	190m SW	Security House, 212-218 London Road, Waterlooville, PO7 7AJ	WEX236431	Storing waste exemption	Not on a farm	Storage of waste in a secure place
1	399m N	WELLINGTON RETAIL PARK, UNIT 4, 2, HAMBLEDON ROAD, WATERLOOVILLE, PO7 7FG	WEX148727	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal

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

4 Current industrial land use



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Site Outline

Search buffers in metres (m)

Recent industrial land uses

Current or recent petrol stations

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

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	20

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 31**

ID	Location	Company	Address	Activity	Category
A	**On site**	**Waterlooville Hand Car Wash**	**1a, Victoria Road, Waterlooville, Hampshire, PO7 7ET**	**Vehicle Cleaning Services**	**Personal, Consumer and Other Services**
A	11m N	M T's M O Ts	1a, Victoria Road, Waterlooville, Hampshire, PO7 7ET	Vehicle Repair, Testing and Servicing	Repair and Servicing

ID	Location	Company	Address	Activity	Category
A	40m N	Emberz Fireplaces	248, London Road, Waterlooville, Hampshire, PO7 7HG	Fireplaces and Mantelpieces	Consumer Products
B	42m SW	Electricity Sub Station	Hampshire, PO7	Electrical Features	Infrastructure and Facilities
B	51m SW	Tank	Hampshire, PO7	Tanks (Generic)	Industrial Features
B	66m SW	Shell	222, London Road, Waterlooville, Hampshire, PO7 7AA	Petrol and Fuel Stations	Road and Rail
B	66m SW	Enterprise Rent-A-Car	222a, London Road, Waterlooville, Hampshire, PO7 7AA	Vehicle Hire and Rental	Hire Services
1	73m NW	Electricity Sub Station	Hampshire, PO7	Electrical Features	Infrastructure and Facilities
2	100m NE	Kwik-Fit (GB) Limited	6, Stakes Hill Road, Waterlooville, Hampshire, PO7 7HY	Vehicle Repair, Testing and Servicing	Repair and Servicing
B	108m SW	C I A	212-218, London Road, Waterlooville, Hampshire, PO7 7AJ	Electronic Equipment	Industrial Products
C	122m E	Devine Distribution Ltd	28a, Stakes Hill Road, Waterlooville, Hampshire, PO7 7HY	Distribution and Haulage	Transport, Storage and Delivery
C	142m E	Electricity Sub Station	Hampshire, PO7	Electrical Features	Infrastructure and Facilities
3	150m N	Electricity Sub Station	Hampshire, PO7	Electrical Features	Infrastructure and Facilities
D	193m SW	Gas Governor	Hampshire, PO7	Gas Features	Infrastructure and Facilities
D	196m SW	Telephone Exchange	Hampshire, PO7	Telecommunications Features	Infrastructure and Facilities
4	208m NW	Waterloovill e Fire Station	Fire Station, Forest End, Waterlooville, Hampshire, PO7 7PS	Fire Brigade Stations	Central and Local Government
D	210m SW	Electricity Sub Station	Hampshire, PO7	Electrical Features	Infrastructure and Facilities
5	214m W	Electricity Sub Station	Hampshire, PO7	Electrical Features	Infrastructure and Facilities
6	247m NE	Specsavers Hearcare	310, London Road, Waterlooville, Hampshire, PO7 7DU	Disability and Mobility Equipment	Consumer Products
7	250m S	Electricity Sub Station	Hampshire, PO7	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	2

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 31**

ID	Location	Company	Address	LPG	Status
B	73m W	SHELL	222, London Road, Rockville Drive, Waterlooville, Hampshire, PO7 7AA	No	Open
F	307m NW	ASDA	Maurepass Way, Waterlooville, Hampshire, PO7 7XR	No	Open

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

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

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

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

Records within 500m	3

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

Features are displayed on the Current industrial land use map on **page 31**

ID	Location	Address	Details	
B	66m SW	Shell UK Ltd, 222 London Road, Waterlooville, PO7 7AA	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
F	281m NW	ASDA Stores Ltd, ASDA Waterlooville, Portland Road, Waterlooville, PO7 7XR	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
10	311m NE	Solent Cleaners Ltd, 2 Queens Parade, 121-123 London Road, Waterlooville, PO7 7EB	Process: Dry Cleaning Status: Surrendered Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m	2

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

Features are displayed on the Current industrial land use map on **page 31**

ID	Location	Address	Details	
8	253m W	FOREST END, WATERLOOVILLE HAMPSHIRE	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: P00032 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 27/03/1985 Effective Date: 27/03/1985 Revocation Date: 23/08/1999
9	276m NW	WEST QUADRANT, HAMBLEDON RD/LONDON RD, WATERLOOVILLE HAMPSHIRE	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: N01251 Permit Version: 1 Receiving Water: FRESHWATER RIVER	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 06/12/1978 Effective Date: 06/12/1978 Revocation Date: 31/03/1997

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	**0**

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

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

4.15 Pollutant release to public sewer

Records within 500m	**0**

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	**0**

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

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

4.17 List 2 Dangerous Substances

Records within 500m	0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	6

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

Features are displayed on the Current industrial land use map on **page 31**

ID	Location	Details	
E	267m E	Incident Date: 08/06/2001 Incident Identification: 8257 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
E	267m E	Incident Date: 08/06/2001 Incident Identification: 8257 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
G	334m NW	Incident Date: 22/06/2001 Incident Identification: 10749 Pollutant: Inert Materials and Wastes Pollutant Description: Other Inert Material or Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
G	334m NW	Incident Date: 22/06/2001 Incident Identification: 10749 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
G	334m NW	Incident Date: 22/06/2001 Incident Identification: 10749 Pollutant: Inert Materials and Wastes:Sewage Materials Pollutant Description: Other Inert Material or Waste:Crude Sewage	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
11	478m N	Incident Date: 09/06/2003 Incident Identification: 164482 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

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

4.19 Pollution inventory substances

Records within 500m	0

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

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

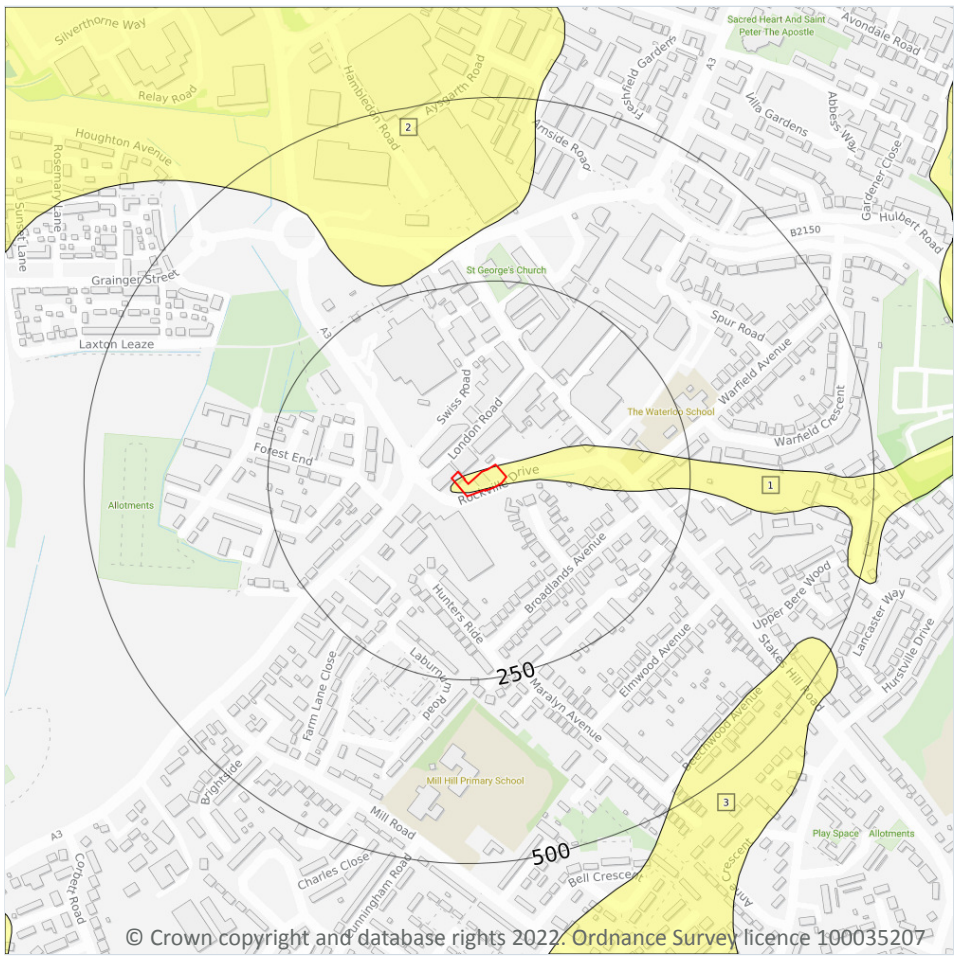
4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer



5.1 Superficial aquifer

Records within 500m	3

Aquifer status of groundwater held within superficial geology.

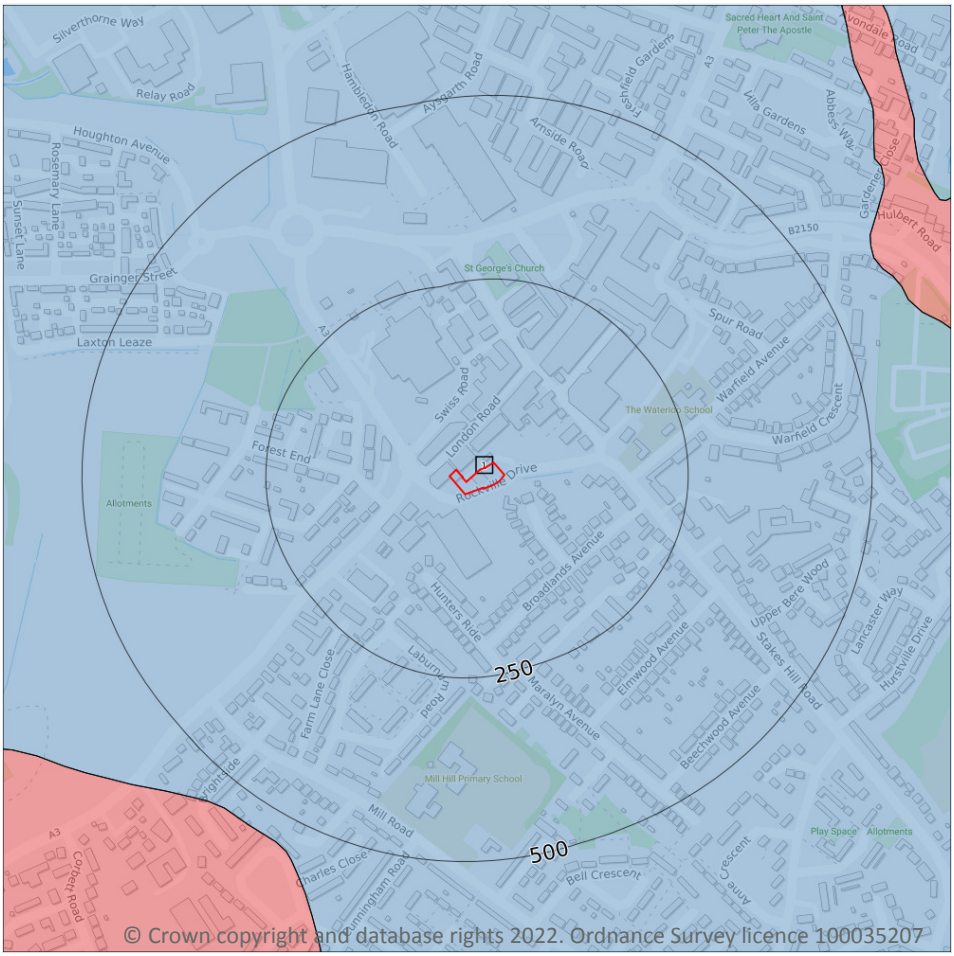
Features are displayed on the Hydrogeology map on **page 39**

ID	Location	Designation	Description
1	**On site**	**Secondary Undifferentiated**	**Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type**
2	268m N	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

ID	Location	Designation	Description
3	441m SE	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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

Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m	1

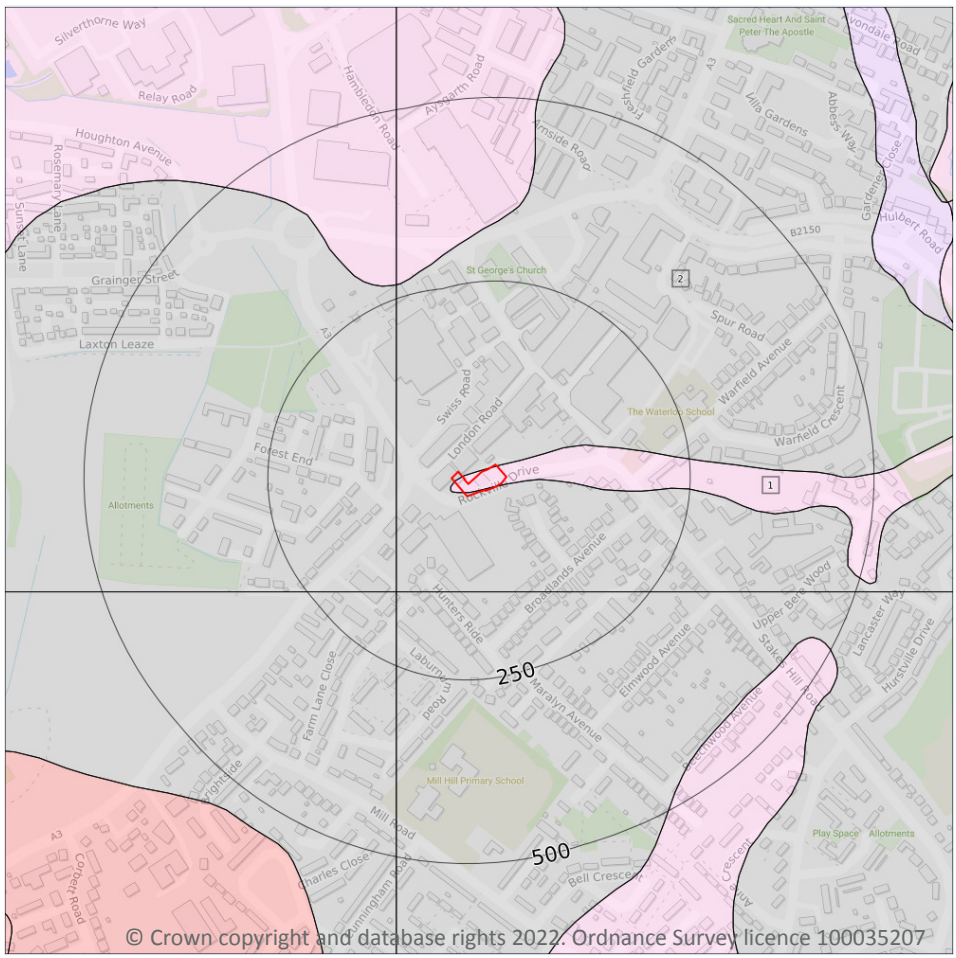
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 41**

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

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

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

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

Bedrock vulnerability

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

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	2

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

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

Features are displayed on the Groundwater vulnerability map on **page 42**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Unproductive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Mixed
2	On site	Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: 40-70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Mixed

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0

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

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

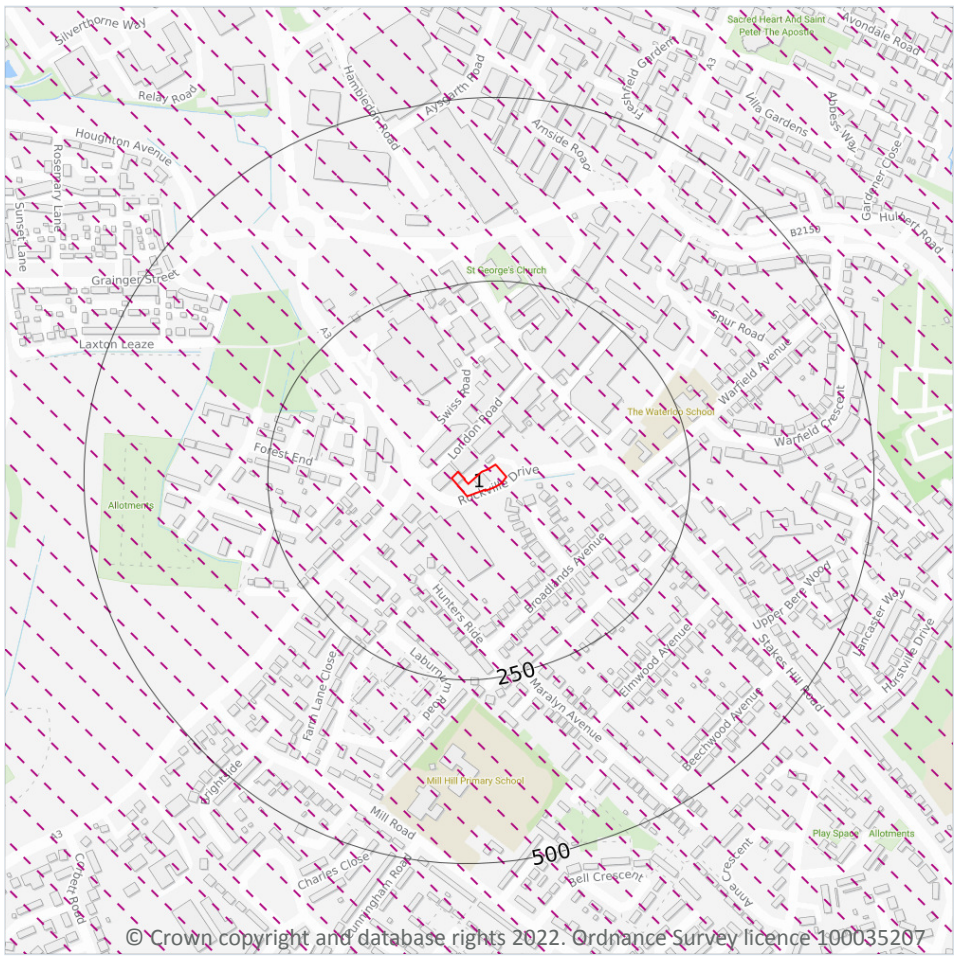
5.5 Groundwater vulnerability- local information

Records on site	0

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

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

Abstractions and Source Protection Zones



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5.6 Groundwater abstractions

Records within 2000m	0

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

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

5.7 Surface water abstractions

Records within 2000m	1

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 44**

ID	Location	Details	
-	823m NW	Status: Active Licence No: SO/042/0028/014 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: Southern Region Surface Waters Point: RIVER WALLINGTON, WEST OF WATERLOOVILLE Data Type: Point Name: West Waterlooville Developments Limited Easting: 467451 Northing: 109691	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: NPS/WR/031307 Original Start Date: 14/08/2019 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 14/08/2019 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	0

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

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

5.9 Source Protection Zones

Records within 500m	0

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

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m	**1**

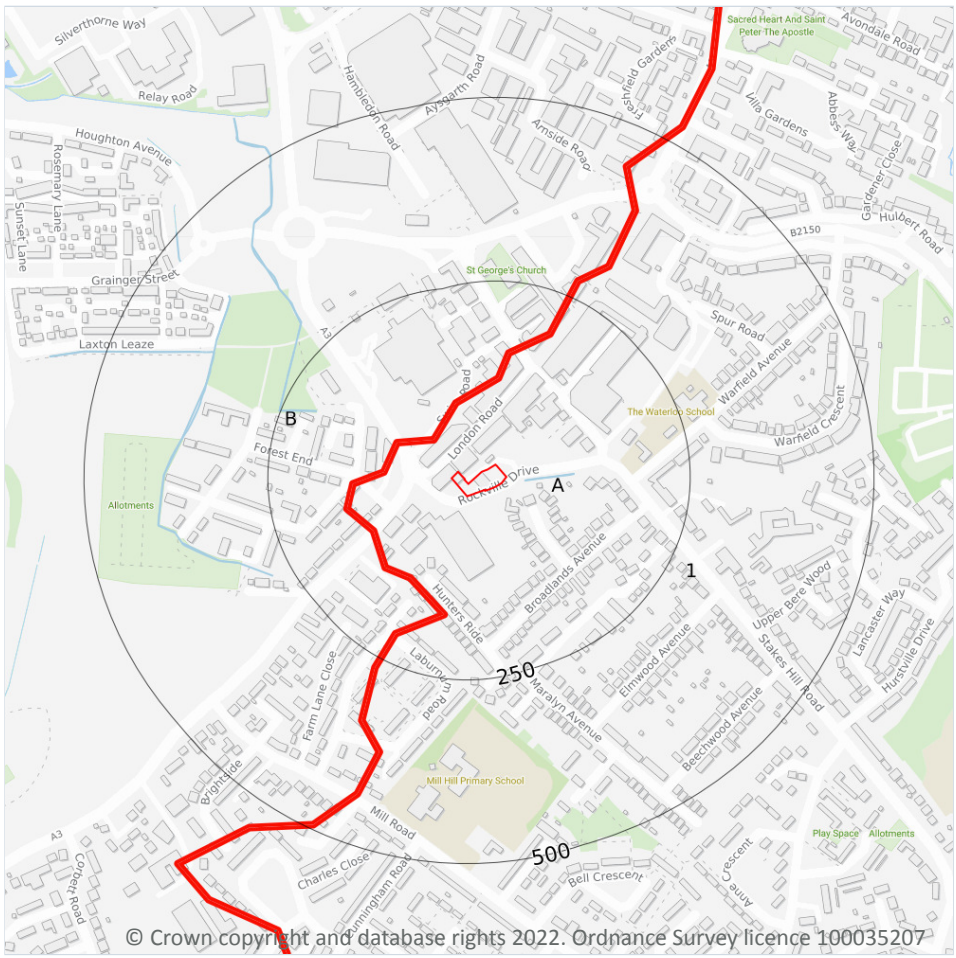
Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

Features are displayed on the Abstractions and Source Protection Zones map on **page 44**

ID	Location	Type	Description
1	**On site**	**1c**	**Inner catchment within confined aquifer**

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

6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	2

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

Features are displayed on the Hydrology map on **page 47**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	25m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
B	204m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	**2**

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

Features are displayed on the Hydrology map on **page 47**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	**1**

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

Features are displayed on the Hydrology map on **page 47**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	**On site**	**River**	**Hermitage Stream**	**GB107042016370**	**East Hampshire Rivers**	**East Hampshire**

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

6.4 WFD Surface water bodies

Records identified	**1**

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

Features are displayed on the Hydrology map on **page 47**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	672m E	River	Hermitage Stream	GB107042016370	Moderate	Fail	Moderate	2019

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

6.5 WFD Groundwater bodies

Records on site	0

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

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

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m	0

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

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

7.2 Historical Flood Events

Records within 250m	0

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

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

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

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

7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding



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8.1 Surface water flooding

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

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

Features are displayed on the Surface water flooding map on **page 53**

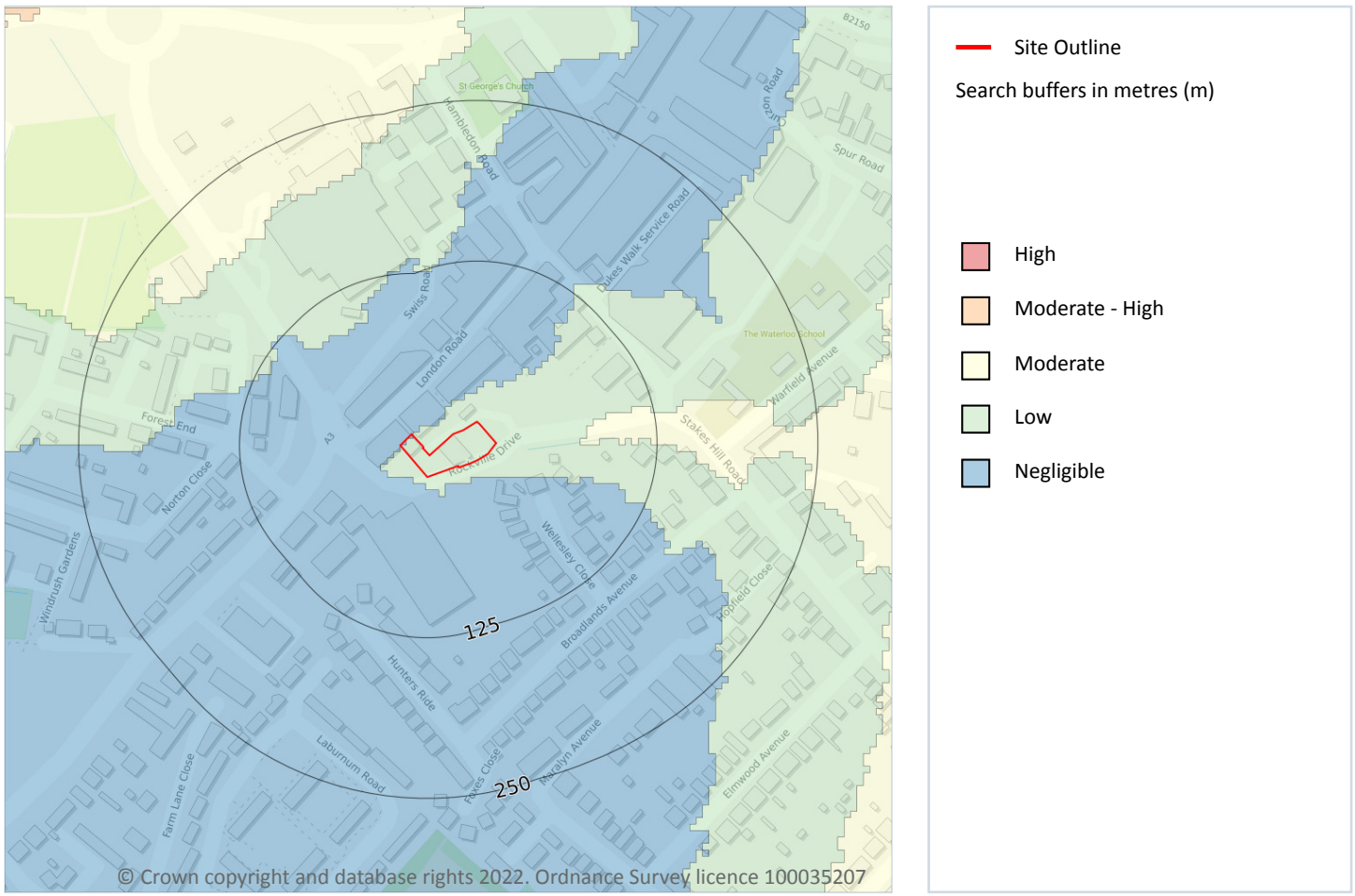
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



9.1 Groundwater flooding

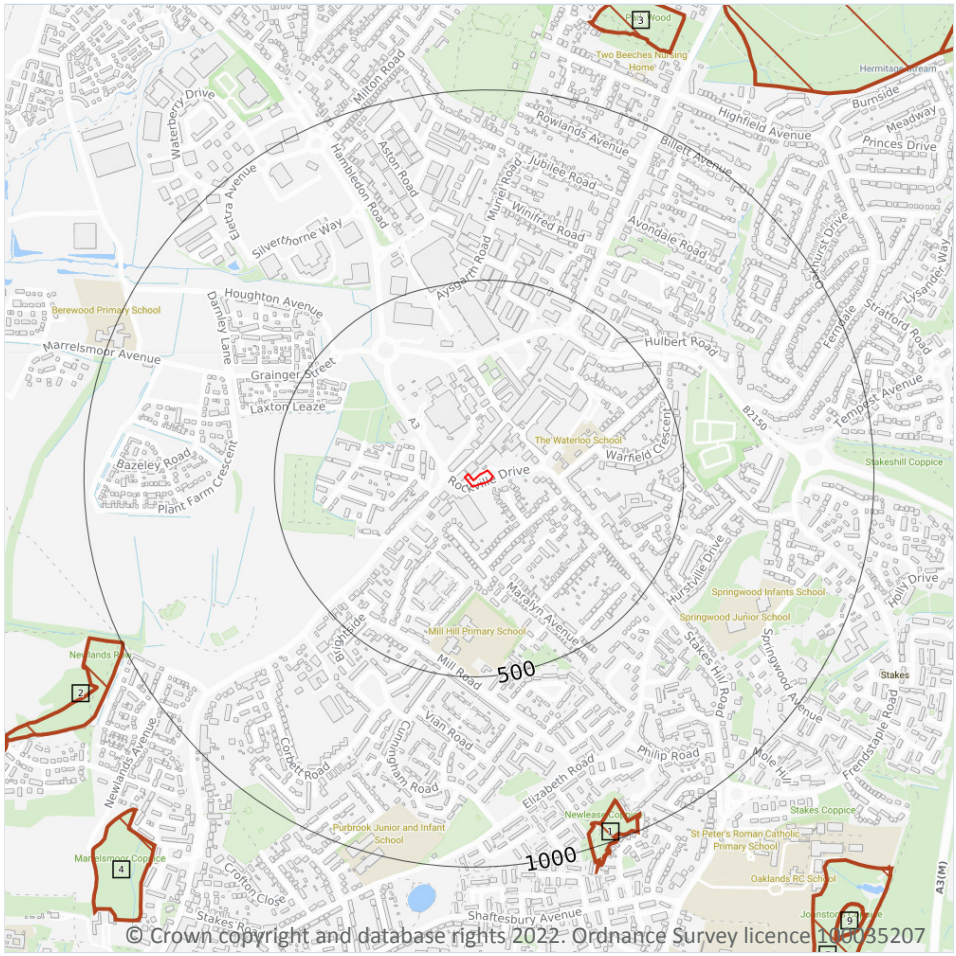
Highest risk on site	**Low**
Highest risk within 50m	**Low**

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

Features are displayed on the Groundwater flooding map on **page 55**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

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

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

10.7 Designated Ancient Woodland

Records within 2000m	24

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

Features are displayed on the Environmental designations map on **page 56**

ID	Location	Name	Woodland Type
1	902m SE	Unknown	Ancient & Semi-Natural Woodland
2	999m SW	Alsfordmoor Coppice	Ancient & Semi-Natural Woodland
3	1194m NE	Unknown	Ancient & Semi-Natural Woodland
4	1227m SW	Unknown	Ancient & Semi-Natural Woodland
5	1234m NE	The Queens Inclosure	Ancient Replanted Woodland
-	1267m N	Unknown	Ancient & Semi-Natural Woodland
7	1338m SE	Unknown	Ancient & Semi-Natural Woodland
8	1391m SW	Alsfordmoor Coppice	Ancient & Semi-Natural Woodland
9	1459m SE	Unknown	Ancient Replanted Woodland
-	1478m E	Unknown	Ancient & Semi-Natural Woodland
-	1546m E	Unknown	Ancient & Semi-Natural Woodland
-	1575m SE	Unknown	Ancient & Semi-Natural Woodland
12	1619m NE	The Queens Inclosure	Ancient & Semi-Natural Woodland
-	1622m SE	Unknown	Ancient & Semi-Natural Woodland
-	1641m SE	Unknown	Ancient Replanted Woodland
-	1653m SE	Unknown	Ancient & Semi-Natural Woodland

ID	Location	Name	Woodland Type
-	1705m W	Sheepwash/tattle/dunsland	Ancient Replanted Woodland
-	1710m SE	Unknown	Ancient Replanted Woodland
-	1710m W	Sheepwash/tattle/dunsland	Ancient & Semi-Natural Woodland
-	1736m W	Sheepwash/tattle/dunsland	Ancient Replanted Woodland
-	1776m SE	Bushy Lease	Ancient & Semi-Natural Woodland
-	1809m SE	Unknown	Ancient & Semi-Natural Woodland
-	1873m W	Sheepwash/tattle/dunsland	Ancient & Semi-Natural Woodland
-	1919m SE	Unknown	Ancient & Semi-Natural Woodland

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

10.8 Biosphere Reserves

Records within 2000m	0

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

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

10.9 Forest Parks

Records within 2000m	0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

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

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

10.11 Green Belt

Records within 2000m	0

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

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

10.12 Proposed Ramsar sites

Records within 2000m	0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was

closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

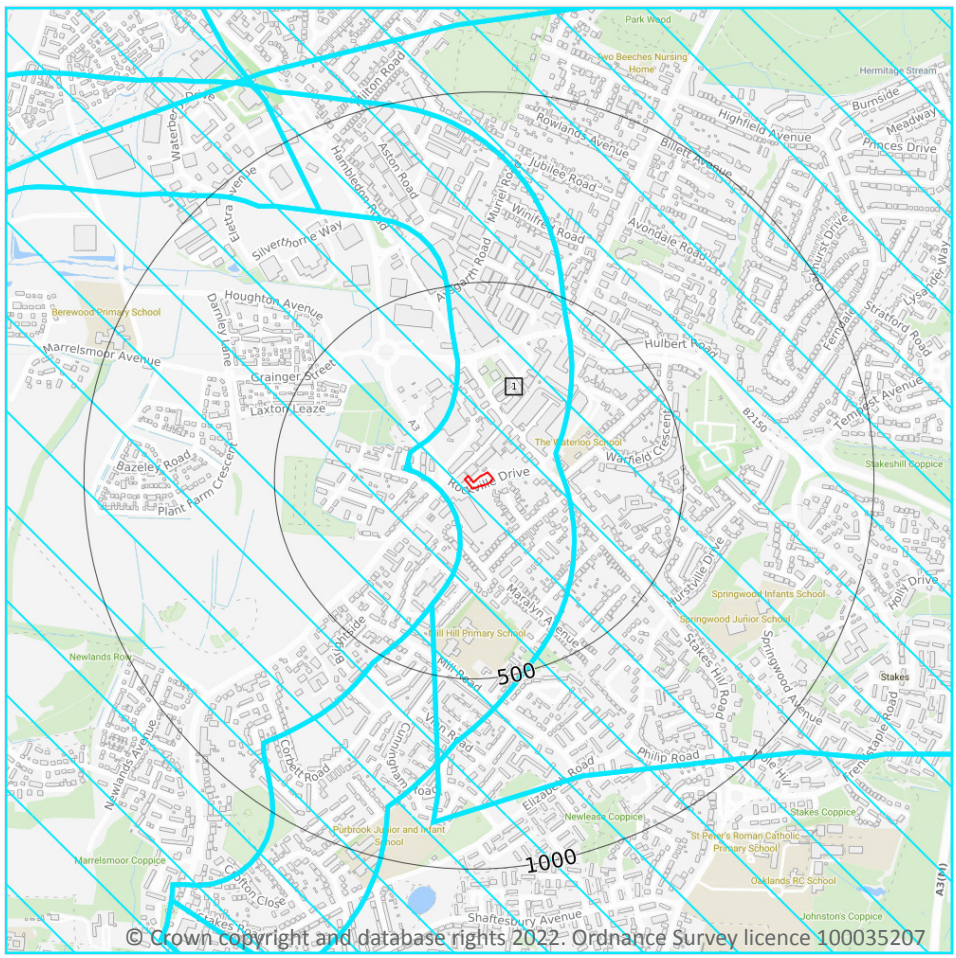
Records within 2000m	**2**

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

Location	Name	Type	NVZ ID	Status
On site	**Chichester,Langstone and Portsmouth Harbours Eutrophic NVZ (TraC)**	**Eutrophic Water**	**2**	**Existing**
1683m N	Hampshire Chalk	Groundwater	143	Existing

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

SSSI Impact Zones and Units



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10.17 SSSI Impact Risk Zones

Records on site	1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 62**

ID	Location	Type of developments requiring consultation
1	On site	**Infrastructure - Pylons and overhead cables. airports, helipads and other aviation proposals. Wind and Solar - Wind turbines. Residential - Residential development of 500 units or more. Rural residential - Any residential development of 500 or more houses outside existing settlements/urban areas. Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t). Combustion - General combustion processes >50mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Discharges - Any discharge of water or liquid waste that is discharged to ground (ie to seep away) or to surface water, such as a beck or stream. Notes: For new residential development in this area financial contributions are required to mitigate increased recreational disturbance on coastal spas and ramsar sites. check with local planning authority.Solent nutrient impact area. for new development with overnight accommodation reg 63 of the conservation of habitats and species regulations 2017 must be applied. lpa to refer to natural england's solent nutrient neutrality advice note june 2019.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0

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

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	0

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

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

11.5 Conservation Areas

Records within 250m	0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

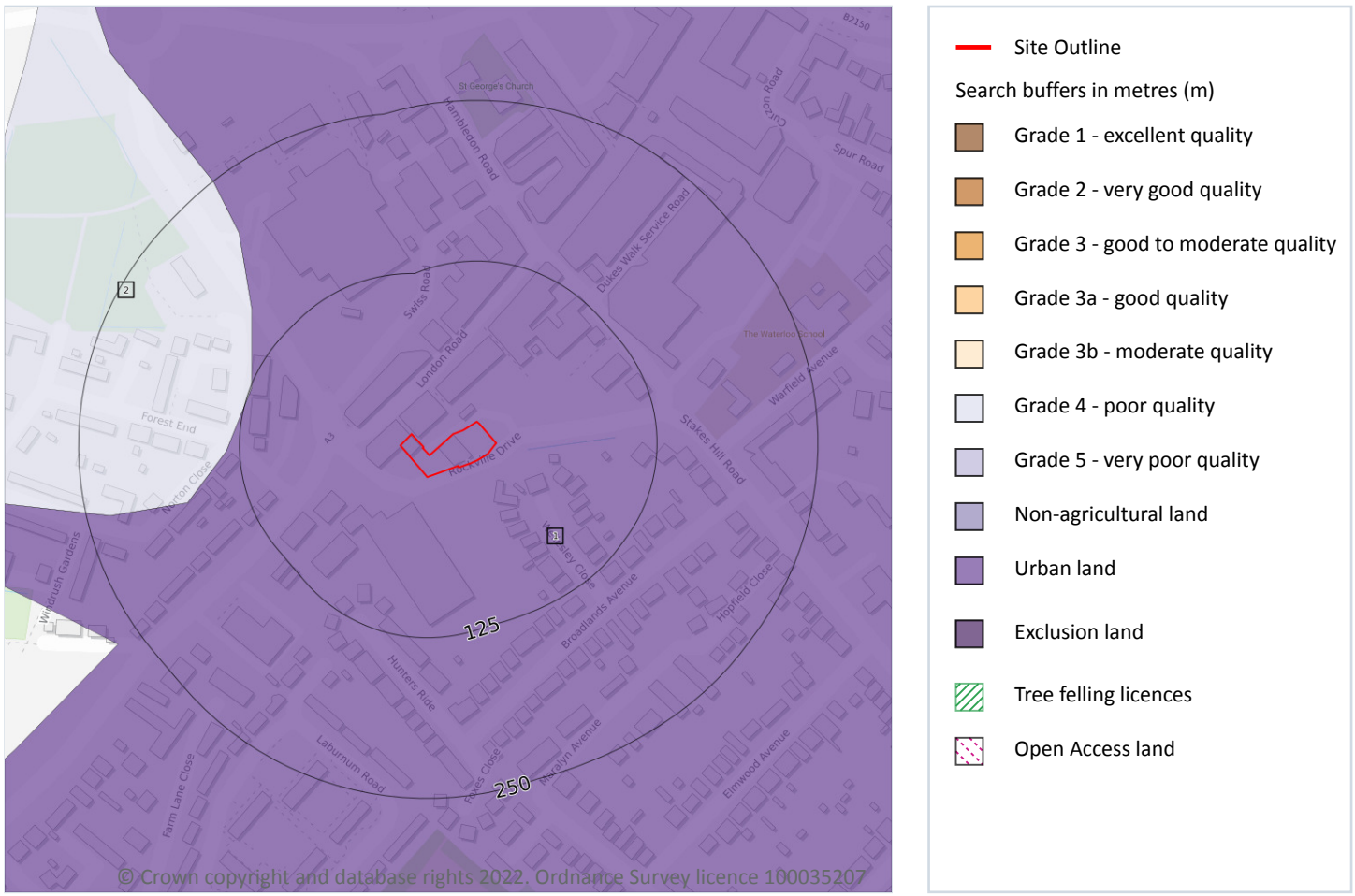
11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



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12.1 Agricultural Land Classification

Records within 250m	2

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

Features are displayed on the Agricultural designations map on **page 66**

ID	Location	Classification	Description
1	**On site**	**Urban**	-

ID	Location	Classification	Description
2	124m W	Grade 4	Poor quality agricultural land. Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	**0**

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

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

12.3 Tree Felling Licences

Records within 250m	**0**

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	**0**

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

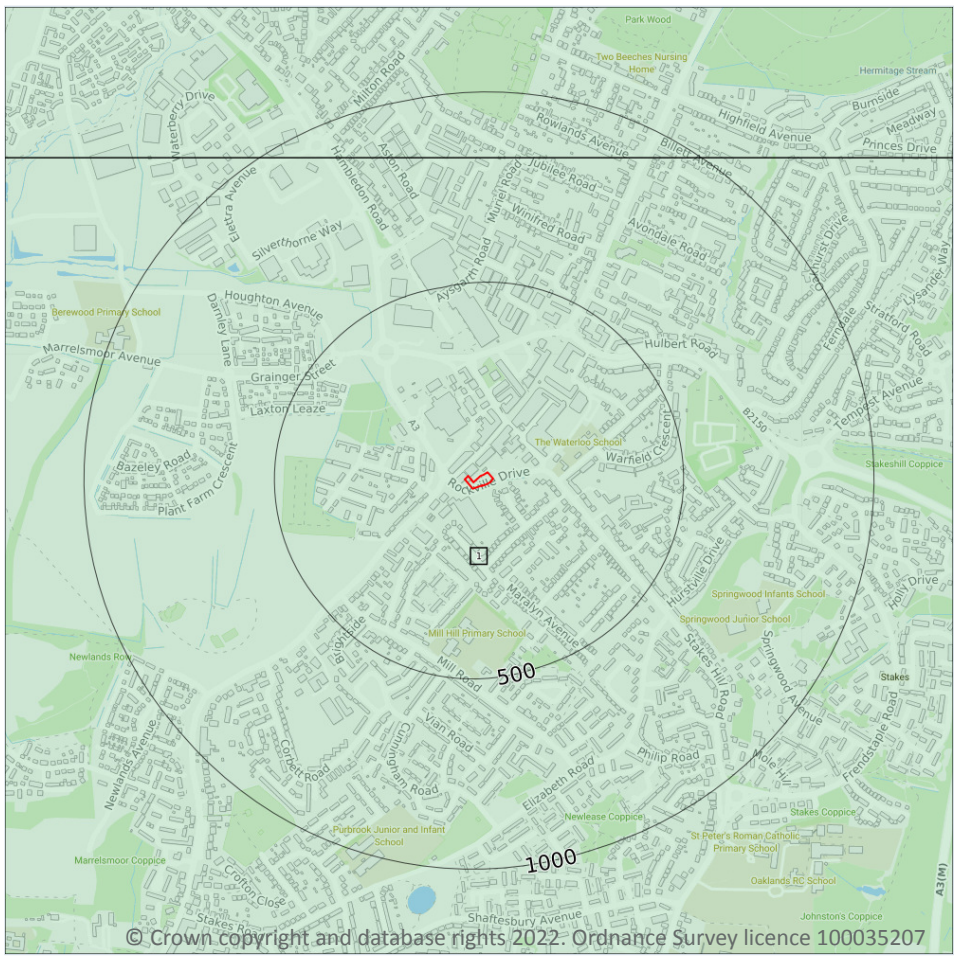
13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



14.1 10k Availability

Records within 500m	1

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

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 70**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**SU60NE**

This data is sourced from the British Geological Survey.

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

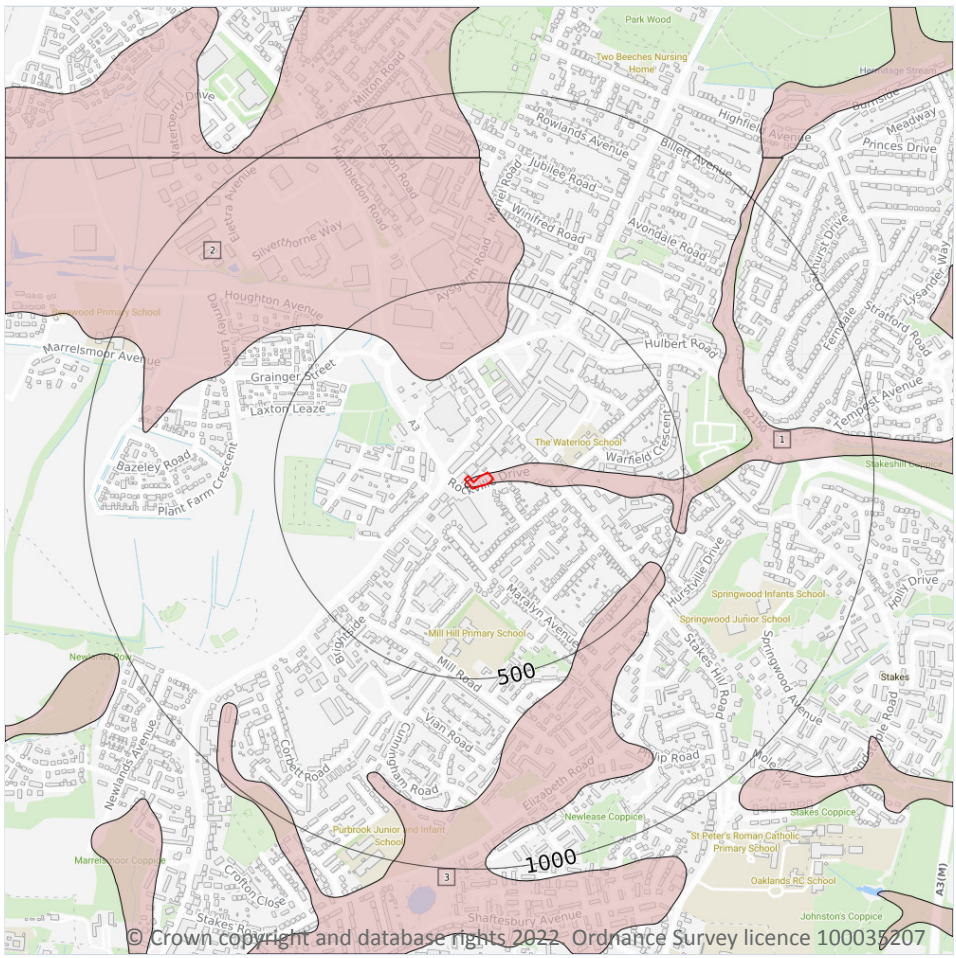
14.2 Artificial and made ground (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m **3**

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 72**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**HEAD-XCZSV**	**Head - Clay, Silt, Sand And Gravel**	**Clay, Silt, Sand And Gravel**
2	266m N	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel

ID	Location	LEX Code	Description	Rock description
3	443m SE	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel

This data is sourced from the British Geological Survey.

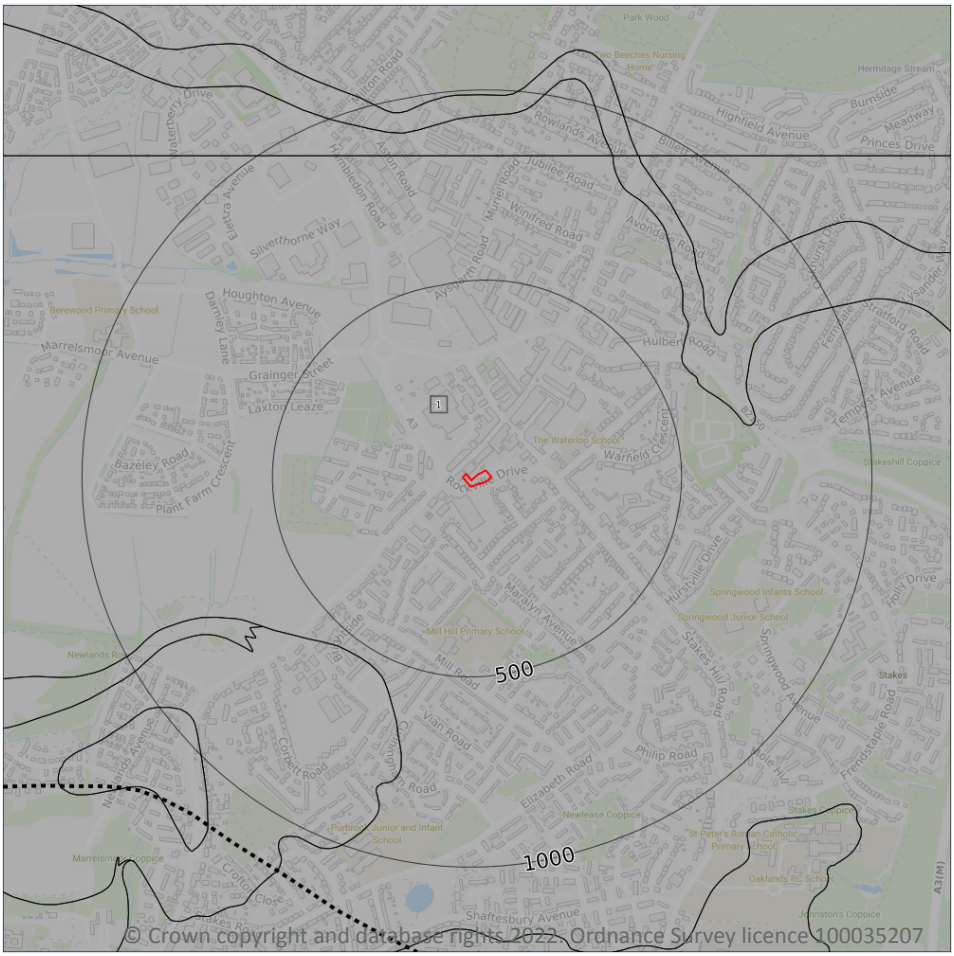
14.4 Landslip (10k)

Records within 500m	**0**

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

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

14.5 Bedrock geology (10k)

Records within 500m	1

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 74**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**LC-CLSISA**	**London Clay Formation - Clay, Silt And Sand**	**Eocene Epoch**

This data is sourced from the British Geological Survey.

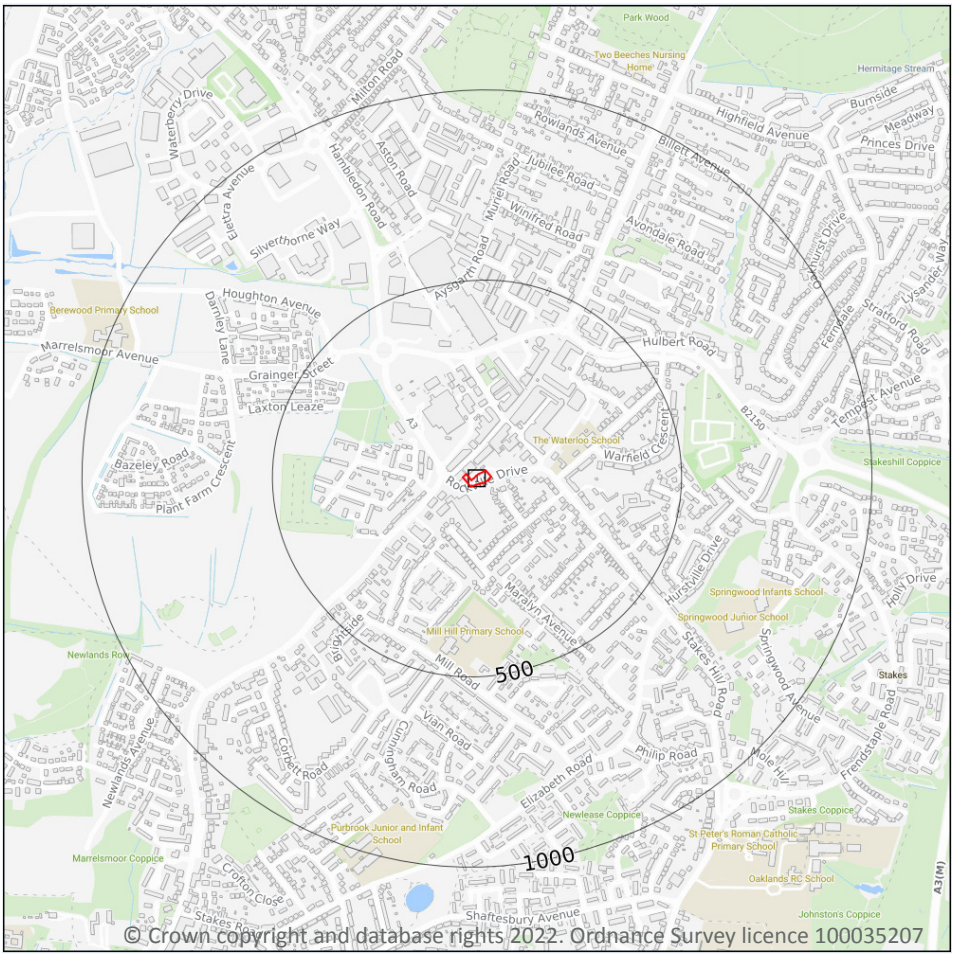
14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



15.1 50k Availability

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 76**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW316_fareham_v4**

This data is sourced from the British Geological Survey.

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

15.2 Artificial and made ground (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

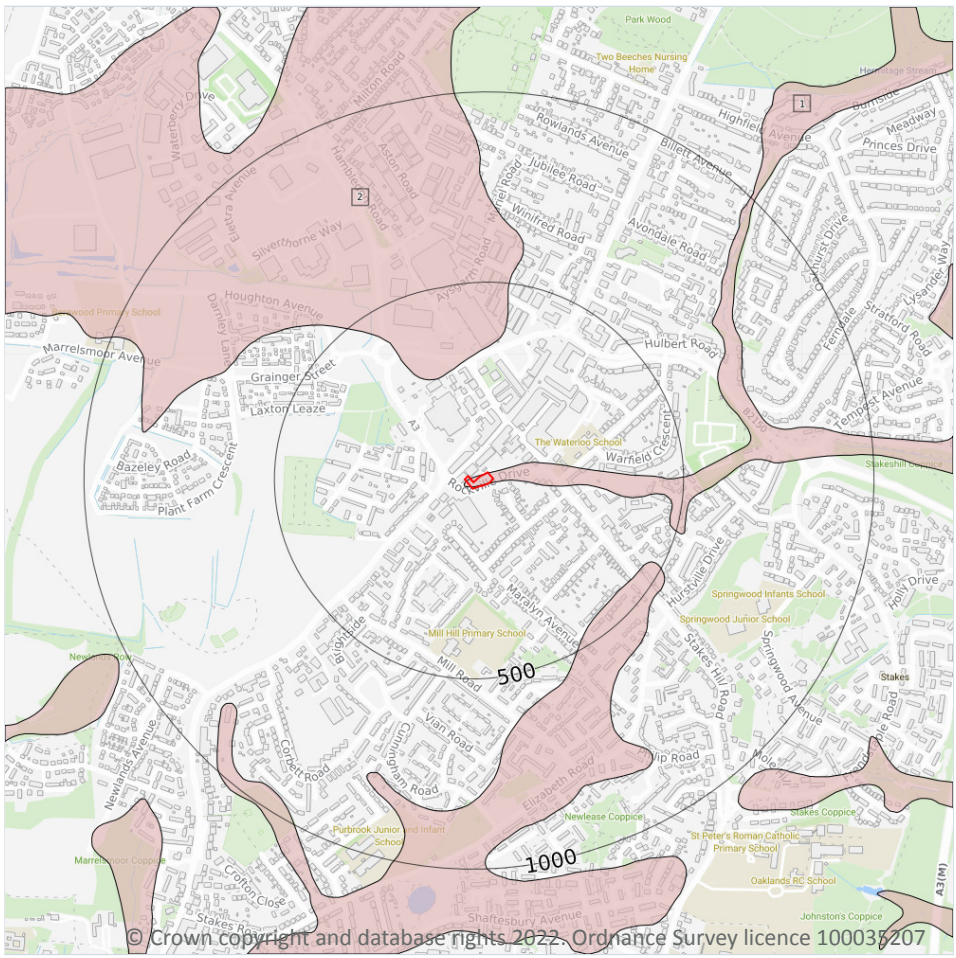
15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m	2

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 78**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**HEAD-XCZSV**	**HEAD**	**CLAY, SILT, SAND AND GRAVEL**
2	268m N	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Mixed**	**High**	**Very Low**

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

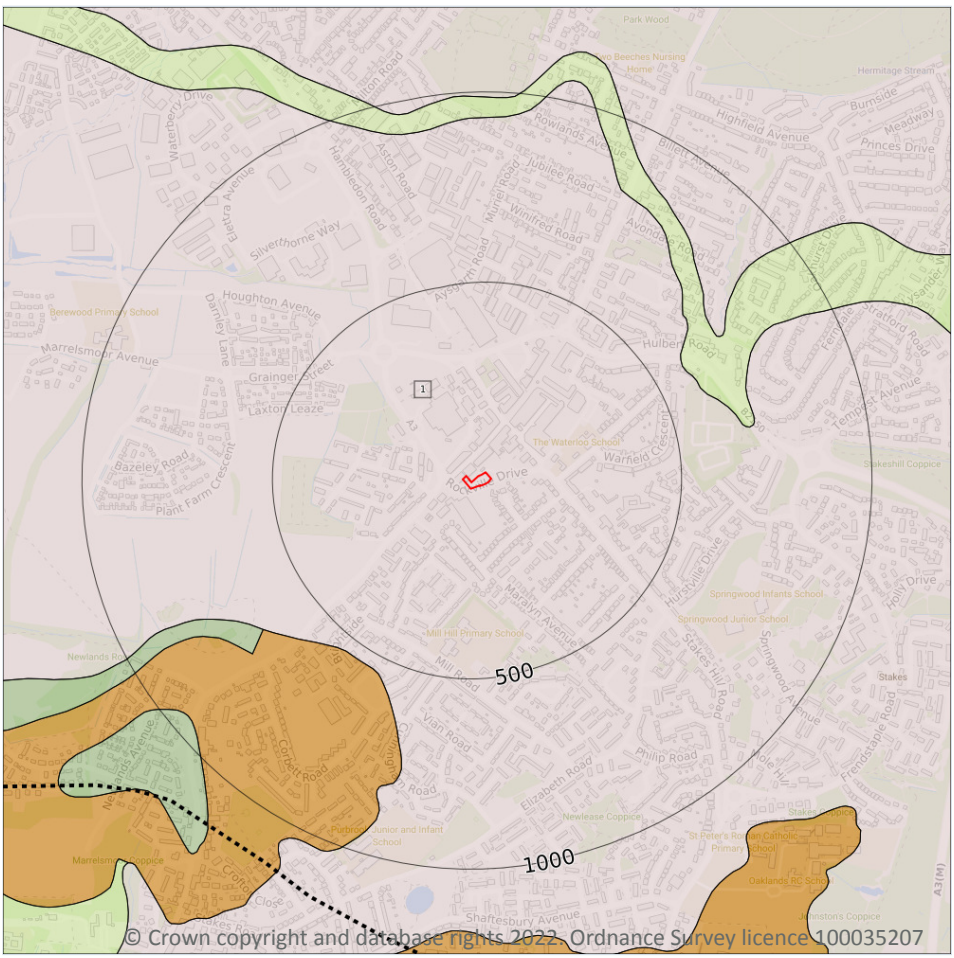
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m **1**

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 80**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**LC-XCZS**	**LONDON CLAY FORMATION - CLAY, SILT AND SAND**	**YPRESIAN**

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Mixed**	**Moderate**	**Very Low**

This data is sourced from the British Geological Survey.

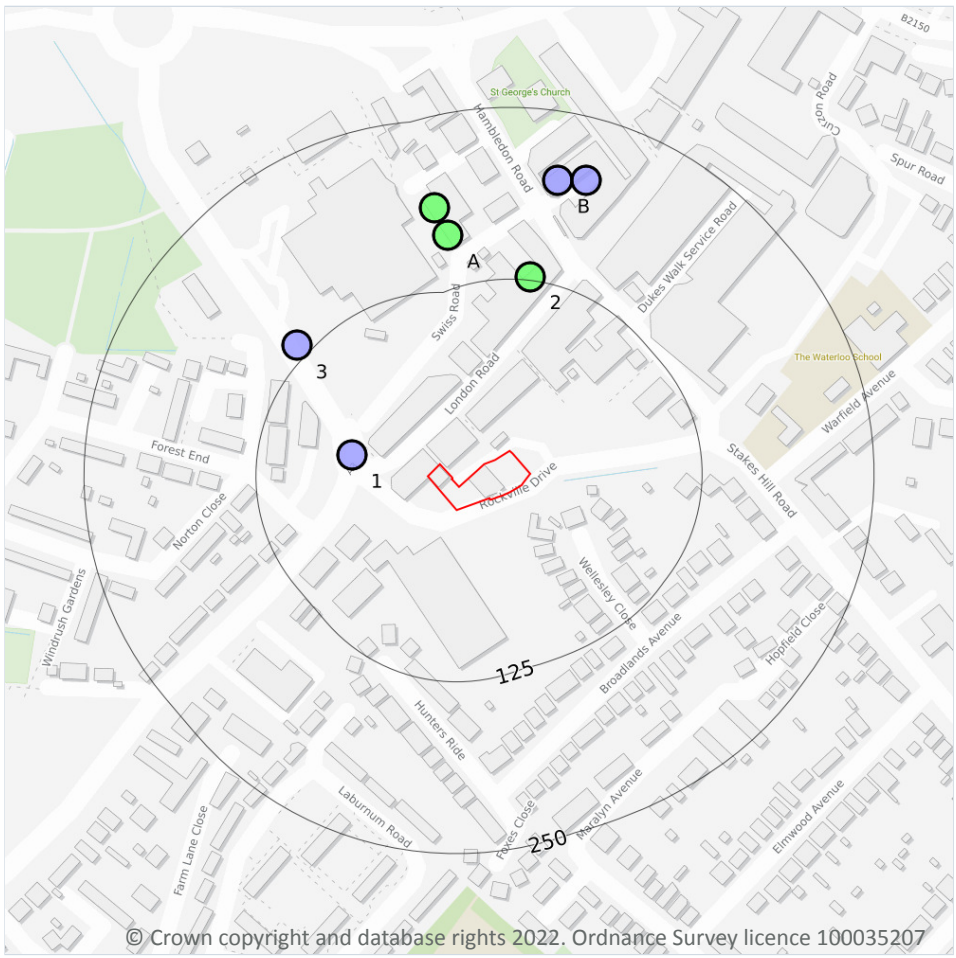
15.10 Bedrock faults and other linear features (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

16 Boreholes



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16.1 BGS Boreholes

Records within 250m **7**

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

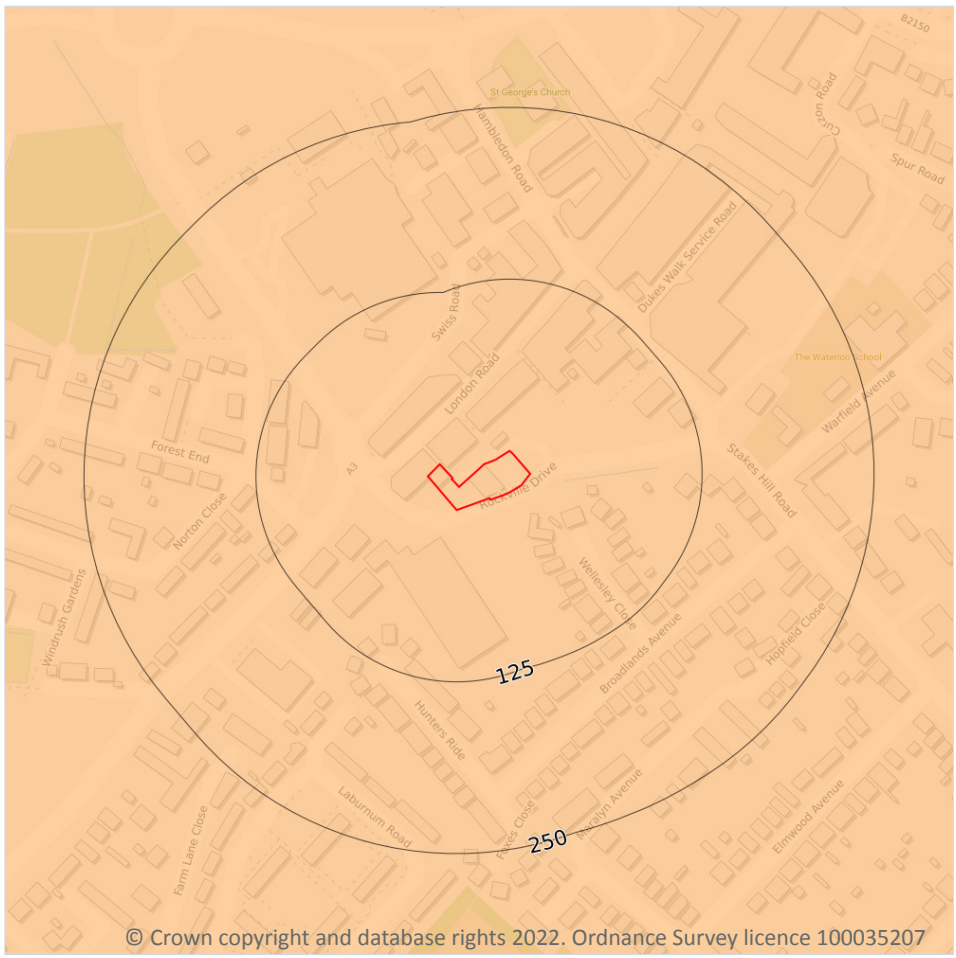
Features are displayed on the Boreholes map on **page 82**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	57m W	468020 109170	WATERLOOVILLE INNER RELIEF ROAD 15	3.0	N	420106
2	128m N	468150 109300	CLOCK HOUSE WATERLOOVILLE	21.33	N	420035
3	135m NW	467980 109250	WATERLOOVILLE INNER RELIEF ROAD 14	3.0	N	420105

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	163m N	468090 109330	WATERLOOVILLE POLICE STATION 2	18.5	N	17587244
A	185m N	468080 109350	WATERLOOVILLE POLICE STATION 1	15.0	N	17587243
B	200m N	468170 109370	LONDON ROAD WATERLOOVILLE BH4	7.92	N	420175
B	205m N	468190 109370	LONDON ROAD WATERLOOVILLE BH3	7.92	N	420174

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



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17.1 Shrink swell clays

Records within 50m	1

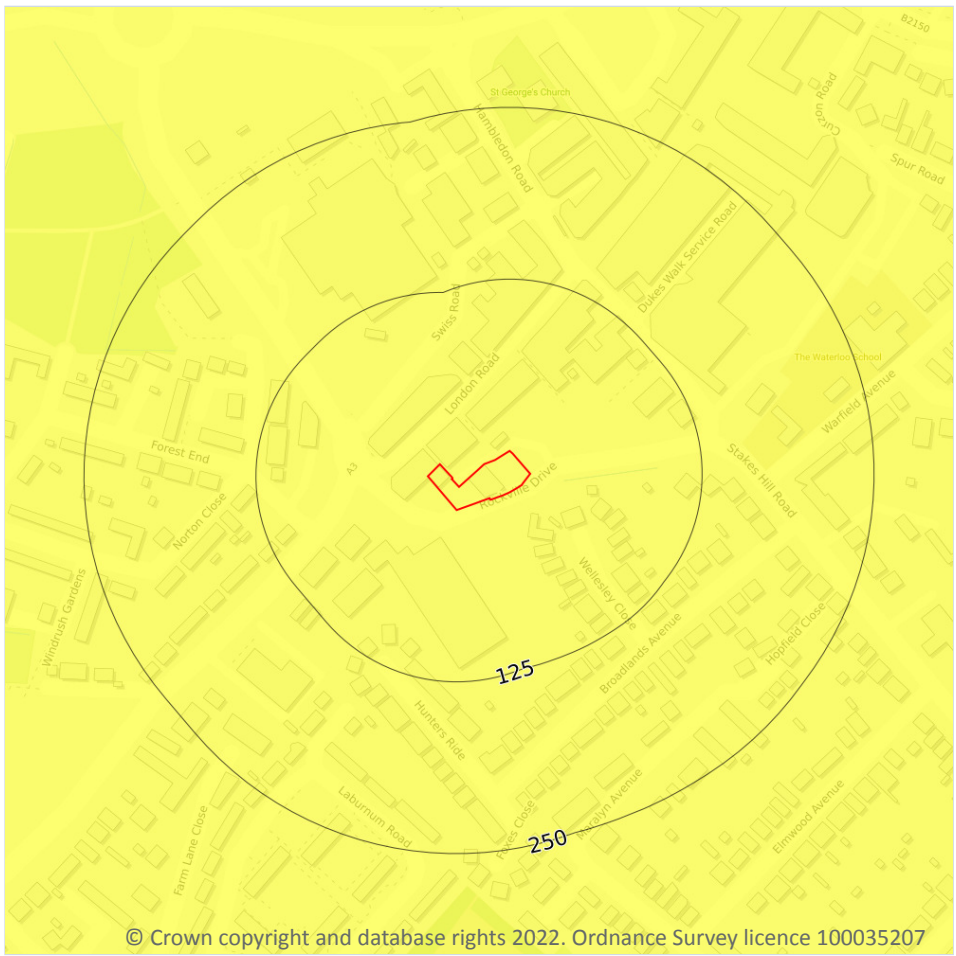
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 84**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



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17.2 Running sands

Records within 50m	1

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

Features are displayed on the Natural ground subsidence - Running sands map on **page 85**

Location	Hazard rating	Details
On site	**Very low**	**Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



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Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	1

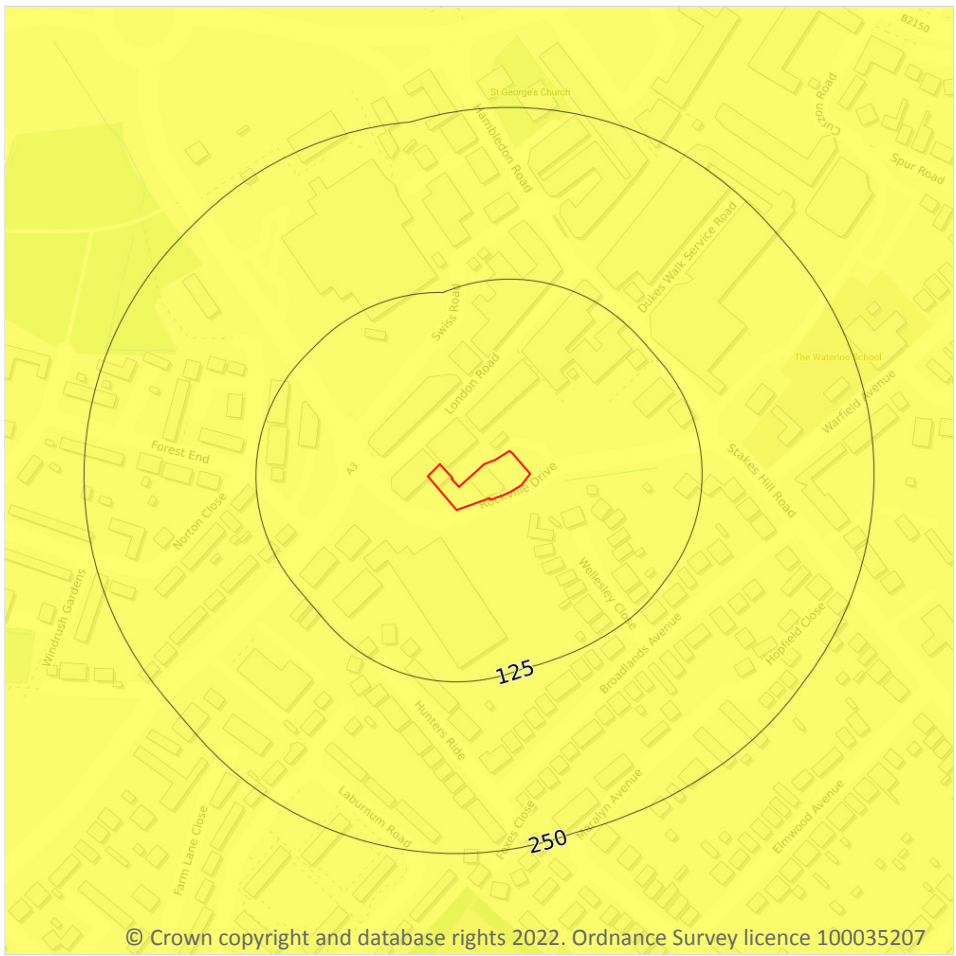
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 86**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



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Site Outline

Search buffers in metres (m)

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

17.4 Collapsible deposits

Records within 50m	1

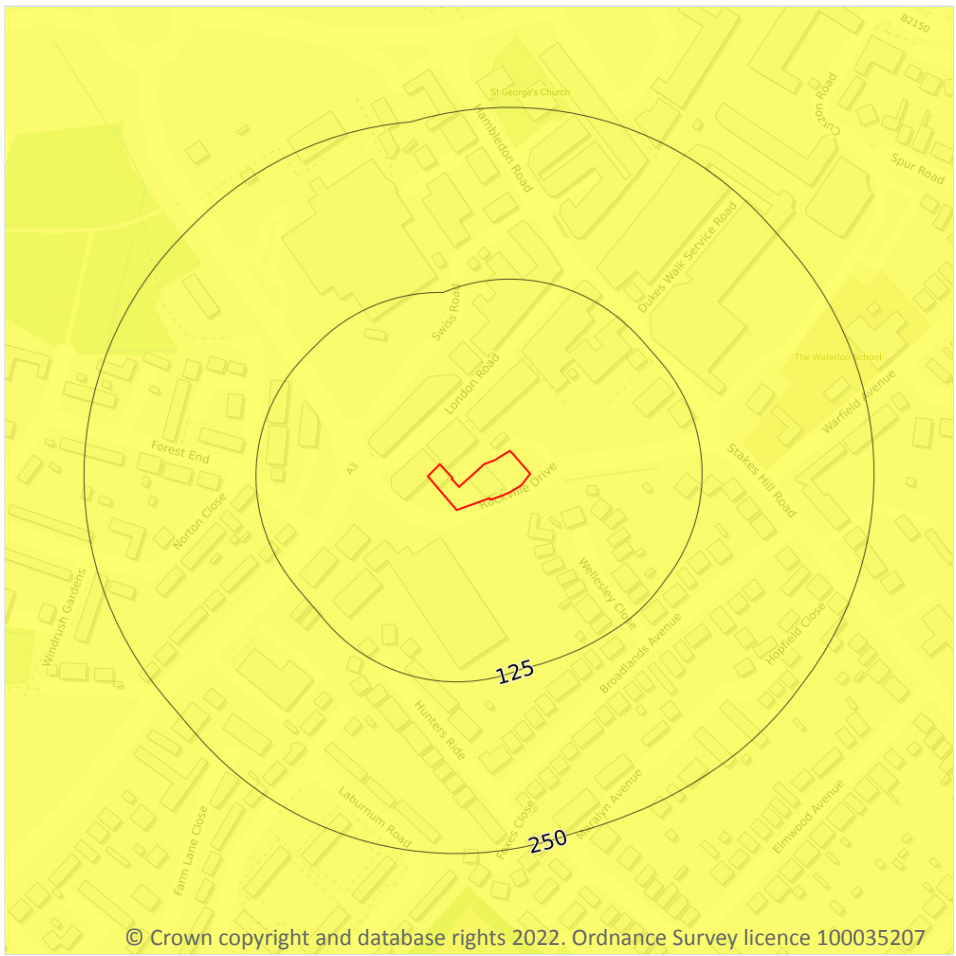
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 87**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



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Site Outline

Search buffers in metres (m)

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

17.5 Landslides

Records within 50m	1

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

Features are displayed on the Natural ground subsidence - Landslides map on **page 88**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



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Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

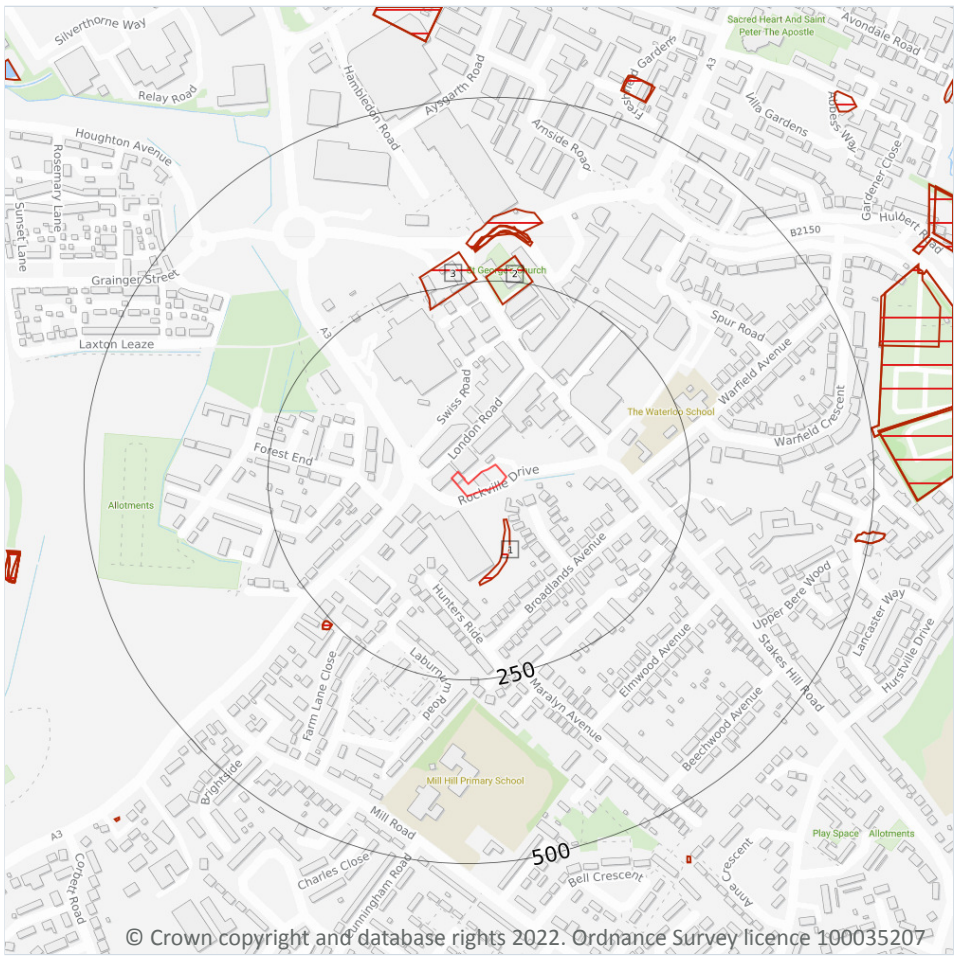
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 89**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities

Non Coal Mining

- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	3

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 90**

ID	Location	Land Use	Year of mapping	Mapping scale
1	46m SE	Unspecified Ground Workings	1898	1:10560
2	218m N	Grave Yard	1866	1:10560
3	224m N	Brick Field	1866	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.13 Clay mining

Records on site	0

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

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

19 Radon



Site Outline

Search buffers in metres (m)

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

19.1 Radon

Records on site	1

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

Features are displayed on the Radon map on **page 94**

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

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

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	2

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

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

This data is sourced from HS2 ltd.

Data providers

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

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