



PHASE 1 LAND QUALITY ASSESSMENT

Hemel Hempstead Datacentres

Prepared for: Gyron Internet Ltd

Client Ref: 413.05391.00002.003

SLR Ref: 413.05391.00002.003
Version No: V1
January 2020



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1.0 Introduction

1.1 Context and Objectives

SLR Consulting Limited (SLR) has been commissioned by Gyron Internet Ltd (the 'Client') to undertake a land quality assessment in support of an application for an Environmental Permit (EP) for the following three datacentres:

- Campus Datacentre, Spring Way, Hemel Hempstead, HP2 7UP (i.e. Campus);
- Centro Datacentre, 3 Boundary Way, Hemel Hempstead, HP2 7SU (i.e. Centro); and
- Maylands Datacentre, 150 Maylands Avenue, Hemel Hempstead, HP2 7DF (i.e. Maylands).

This report presents a summary of the Preliminary Land Quality Assessment (PLQRA), which comprised a desk study, site walkover and derivation of a conceptual site model with respect to potential pollutant linkages. The report goes on to set out recommendations for further actions considered necessary for each of the above sites.

1.2 Background

It is understood that the Client intends to apply for an EP for the operation of diesel-fired generators which will be used to generate electricity at the above three datacentres in the event of a black- or brown-out scenario. For the purpose of the EP application, a Preliminary Land Quality Risk Assessment is required to assess the baseline condition at the site, in relation to land quality. This report has been prepared in support of the EP application. The site locations are shown on **Drawing 01**.

1.3 Scope of Work

The PLQRA involved the following scope of work:

- document review to outline historic uses of the sites and surrounding land and establish the environmental setting;
- site walkover survey;
- review of planning files; and
- production of this PLQRA report, which includes a conceptual model for each of the sites.

The Groundsure Historical Maps are presented in **Appendix 01**; **Appendix 02** presents the Groundsure EnviroInsight; and **Appendix 03** presents the Groundsure GeoInsight.

1.4 Data Sources

This report has been produced following consultation with the sources of information summarised in **Table 1-1**.

**Table 1-1
Information Sources**

Information Type	Source
Topography	Ordnance Survey (OS) mapping
Site Setting and History	<p>Google Earth</p> <p>GroundSure Historical Ordnance Survey Map Extracts:</p> <ul style="list-style-type: none"> • Campus: EMS_579570_777898, purchased 25th November 2019 (Appendix 01). • Centro: EMS_579577_777908, purchased 25th November 2019 (Appendix 01). • Maylands: EMS_579562_777886, purchased 25th November 2019 (Appendix 01). <p>GroundSure EnviroInsight Reports:</p> <ul style="list-style-type: none"> • Campus: EMS_579570_777900, purchased 25th November 2019 (Appendix 02). • Centro: EMS_579577_777910, purchased 25th November 2019 (Appendix 02). • Maylands: EMS_579562_777888, purchased 25th November 2019 (Appendix 02). <p>GroundSure GeoInsight Report:</p> <ul style="list-style-type: none"> • Campus: EMS_579570_777899, purchased 25th November 2019 (Appendix 03). • Centro: EMS_579577_777909, purchased 25th November 2019 (Appendix 03). • Maylands: EMS_579562_777887, purchased 25th November 2019 (Appendix 03).
Hydrogeology and Geology	<p>Multi-Agency Geographic Information for the Countryside (MAGIC) website.</p> <p>British Geological Survey (BGS) website.</p> <p>Phase 1 Desk Study Report, The Campus. Prepared for Gyron Internet Limited by GeoDyne Limited. Dated 10/06/2013. Report Reference: 33068.</p>
Planning History	Dacorum Borough Council Planning Portal

2.0 Site Details, Setting and History

2.1 Site Details

Table 2-1 summarises the property details of each of the sites. A site location plan showing all three sites can be seen on **Drawing 01**. The site layout plan for Campus is shown on **Drawing 02**, the layout of Centro is shown on **Drawing 03** and the layout of the Maylands site is shown on **Drawing 04**.

Table 2-1
Site Details

Site Details		
Site Name	Campus Datacentre	
Address	Spring Way, Hemel Hempstead, HP2 7UP (NGR: 507986,208179).	
Site Name	Centro Datacentre	
Address	3 Boundary Way, Hemel Hempstead, HP2 7SU (NGR: 508130, 208430).	
Site Name	Maylands Datacentre	
Address	150 Maylands Avenue, Hemel Hempstead, HP2 7DF (NGR: 507541, 208475).	
Current Usage and Features	Each site is currently occupied by a datacentre with associated generators, electricity substations, fuel tanks, chillers and coolers.	
Surrounding Land Use	Campus	Industrial and commercial properties with associated car parking, with residential properties beyond.
	Centro	Industrial and commercial properties with associated car parking including Buncefield Oil Terminal to the east, with residential properties beyond.
	Maylands	Industrial and commercial properties with associated car parking, with residential properties c320m to the west.

2.2 Geographic Information

A summary of the geographic details of the site is presented in **Table 2-2**. Information has been obtained from EA and BGS mapping, along with data supplied by GroundSure (Envirolnsight and Geolnsight – **Appendices 02** and **03**).

Table 2-2
Geographical Information

Geographic Information		
Geography	Topography and Gradient	Each site is predominantly flat.
	Elevation	Campus: The site is approximately 140m above ordnance datum (m AOD) Centro: The site is approximately 138m AOD. Maylands: The site is approximately 145m AOD.
Geology and Hydrogeology	Artificial/ Made ground	Made Ground is not recorded as underlying any of the sites, however given the historic redevelopment of all the sites, the presence of Made Ground cannot be discounted.
	Superficial Geology	There are no superficial deposits recorded underlying any of the sites.
	Solid Geology	All of the sites are recorded to be underlain by the Lambeth Group which comprises clay, silt and sand. The Lambeth Group is further underlain by the Lewes Nodular Chalk.
	Borehole Records	There are two borehole records recorded on the Centro site (TL00NE96/TL00NE97). TL00NE97 recorded Made Ground to 2mBGL (Clay with concrete, brick, ash and odorous material). This was underlain by the Woolwich and Reading Beds (part of Lambeth Group) to 11mBGL, overlying the Lewes Nodular Chalk. TLNE0096 recorded Topsoil overlying the Woolwich and Reading Beds to 15mBGL overlying the Lewes Nodular Chalk. The above boreholes are the closest boreholes to the Maylands and Campus sites.
	Ground Workings	There are 31 records of historical underground workings within 250m of the sites. The closets relating to Campus is a disused brick works c.200m west; the closest relating to Maylands is another old brick works c.60m northwest of the site. There are no records of ground workings within 250m of Centro. There are no records of historical underground workings within 250m of the sites. There are five records of current ground workings within 250m of Maylands, the closest relating to Widmore Wood Brick works. There are no records of current ground workings within 250m of Campus or Centro.
	Mining	There are no records of historical or coal mining or natural cavities within 250m of the sites. All of the sites are listed as having the potential for small localised mining of chalk to have occurred, however at a very low likelihood.

Geographic Information		
		There are two records of non-coal mining activities within 250m of Maylands relating to Widmore Wood c.60m northwest of the site.
	Radon	None of the sites are listed in a Radon Affected Area, as less than 1% of properties are above the Action Level, therefore no radon protective measures are considered necessary.
	Natural Ground Subsidence	The following natural ground subsidence ratings are listed for the sites: Shrink-swell clays – Moderate Landslides – Very Low Dissolution of soluble rocks – Negligible (Negligible to Low at Centro) Compressible Deposits - Negligible Collapsible Deposits – Very Low Running Sands – Very Low
	Aquifer status	The bedrock underlying the sites (Lambeth Group) is classified as a secondary A aquifer, and is likely to predominantly flow towards the south, albeit at a weak gradient. All of the sites are recorded as lying within a Zone 3 Source Protection Zone (SPZ) (Total Catchment Area), which is likely to relate to an abstraction from the underlying principal aquifer in the chalk.
	Groundwater abstractions	There are is one groundwater abstraction licence within 500m of the sites relating to Hemel Telehouse Borehole A, 375m to the east of the closest site Campus. This abstraction is likely to locally impact the flow direction of the principal aquifer, towards the southeast. There are no potable abstraction licenses within 1km of the site.
Hydrology	Surface water	There are no recorded surface water features within 250m of the site.
	Flooding	The sites are not listed as being within a floodplain and are recorded as having a very low Risk of Flooding from Rivers and the Sea (RoFRaS) and the sites are not identified as being within a groundwater flooding susceptibility area.
	Discharge consents	There is one record of a licenced discharge consent within 500m of the sites relating to Trade Discharges – site drainage from Hatfield Business Park, c.220m to the west of the closest site Centro. However, given the description of the consent and the receiving water named, this is likely to be an erroneous entry into the database and has been discounted. There are no records of Red Licensed Discharge consents within 250m of the sites.

Geographic Information	
Surface water abstractions	There are no surface water abstractions within 2km of the sites.

2.3 Environmental Search Data

A copy of the GroundSure information obtained by SLR is presented in **Appendix 02** and a summary of the search information is provided in **Table 2-3**.

Table 2-3
Environmental Search Data

Environmental Search Data	
Landfill and waste sites	<p>There are no landfill sites within 250m of the sites.</p> <p>There are two records of other waste sites within 250m of the sites, the closest relates to a waste transfer station and workshop c.25m east of Campus and c.250m south of Centro and a waste recycling plant is located c.80m southeast of Maylands.</p> <p>There are five records of licenced waste sites within 250m of the sites: a Waste Transfer Station is located c.20m southwest of Maylands, and Waste Transfer station is located 45m east of Campus. No licenced waste sites are listed within 250m of Centro.</p>
Historical Potentially Contaminative Land Uses – On Site	<p>Campus: There are eight records of potentially historical contaminative land uses relating to industrial estate, unspecified works/factories, unspecified commercial/industrial. There are three records of unspecified tanks on site. There are five records of electricity substations on site.</p> <p>Centro: There are five records of potentially historical contaminative land uses relating to unspecified commercial/industrial, unspecified tanks and unspecified depot. There are two records of tanks on site.</p> <p>Maylands: There are four records of potentially historical contaminative land uses relating to unspecified commercial/industrial, industrial estate and unspecified works. There is one record of a tank on site.</p>
Historical Potentially Contaminative Land Uses – Off Site	<p>There are 76 records of potentially historical contaminative land uses within 250m of the study sites relating to a range of industrial features:</p> <ul style="list-style-type: none"> - the closest feature to Campus is an engineering works c.5m northwest; - the closest feature to Centro is an unspecified commercial/industrial use c.5m east of the site; and - the closest feature to Maylands in an unspecified commercial/industrial use 10m southwest. <p>There are 32 records of historical tanks within 250m of the study sites:</p> <ul style="list-style-type: none"> - the closest tank to Campus is c.5m northwest; - the closest tank to Centro is 10m west; and - the closest historical tank to Maylands is c.40m northwest. <p>There are 33 records of historical energy features within 250m of the study sites all relating to electricity substations the closest substation to:</p> <ul style="list-style-type: none"> - Campus is c.5m northwest;

Environmental Search Data	
	<ul style="list-style-type: none"> - Centro is c.50m west; and - Maylands is c.40m west.
Current Potentially Contaminative Land Uses	<p>There are 147 records of current potentially contaminative land uses within 250m of the sites:</p> <ul style="list-style-type: none"> - the closest feature to Campus is an electricity substation c.5m northwest; - the closest feature to Centro is Trademark Interiors 25m north; and - the closest feature to Maylands is a 3D Systems print works 50m southwest. <p>There is one record of a Petrol and Fuel site within 250m of the sites, relating to an obsolete petrol site 145m south of Campus.</p> <p>There are no records of National Grid High Voltage electricity cables or National Grid High Pressure gas pipelines within 250m of the sites.</p>
Environment Agency Recorded Pollution Incidents/permits	<p>There is one record of an industrial site, this relates to Henkel Loctite Adhesives for inorganic chemical processes c.120m south of Campus.</p> <p>There are three records of Part A(1) and IPPC authorised activities within 250m of the site:</p> <ul style="list-style-type: none"> - the closest relating to Campus is Henkel Loctite Adhesives producing ETC lead and alloys with release to air 120m south; and - the closest relating to Centro is A&M Tungsten Powders Ltd for inorganic chemicals and gases c.120m north. - There are no records relating to Maylands within 250m. <p>There are nine records of Part 2(A) and Part B activities within 250m of the sites:</p> <ul style="list-style-type: none"> - the closest relating to Campus is Fletcher Way Garage for a waste oil burner c.70m south; and - the closest relating to Maylands is Manders Printing Inks c.40m southeast. - There are no records within 250m of Centro. <p>There are two records of Category 3 or 4 Radioactive Substances authorisations within 250m of the sites, the closest relating to Centro is Jenson Tungsten for disposal of radioactive waste c.220m north of the site and to Maylands is Bio Rad for disposal of radioactive waste c.40m south of the site. There are no records within 250m of Campus.</p> <p>There is one record of Water Industry referrals within 250m of the sites relating to TRW Ltd 35m northwest of Maylands. There are no records within 250m for Camus or Centro.</p> <p>There are two records of Planning Hazardous Substance Consents and Enforcements within 250m of the sites relating to Shell UK Oil for storage and loading of hydrocarbons c.245m east of Centro. There are no records within 250m of Campus and Maylands.</p> <p>There are seven records of Environment Agency (EA) pollution incidents within 250m of the sites:</p> <ul style="list-style-type: none"> - the closest to Campus relates to Smoke and Firefighting run off c.50m east of the site; and - the closest to Maylands relates dust emissions 60m southwest. - There are no records within 250m of Centro.

Environmental Search Data	
	There are no sites determined as Contaminated Land under Part2A EPA 1990 within 250m of the sites.
Ecological / Environmentally sensitive sites	<p>There are no records of Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC) or Special Protection Areas (SPA) within 250m of the sites.</p> <p>There are two records of Ancient Woodland within 250m of Maylands, relating to Widmore Wood and Maylands Wood.</p>

2.4 Site History

The following section presents a summary of the history of the sites and their immediate surrounds from a review of historic OS map extracts and aerial images. The age and general type of activity and land use can often be determined from the type and layout of structures depicted on the maps and aerial images. However, specific elements of site operations cannot normally be determined from such extracts. Large scale (1:2,500 and 1:10,560) historical map extracts were reviewed for selected years between the 1870's and 2010's. A summary of the findings is provided in **Table 2-4**. The OS maps provided by GroundSure are included in **Appendix 01**.

Table 2-4
Site History Summary

Site History	
1870s	<p>Campus: The site exists as open undeveloped land, with a small track encroaching into the southwestern corner of the site.</p> <p>Centro: The site exists as open undeveloped land.</p> <p>Maylands: The site exists as open undeveloped land, a small track is encroaching into the west of the site.</p> <p>Site Vicinity: The majority of the local vicinity around the sites exists as open undeveloped land with sporadic buildings and roads.</p>
1880s	<p>Campus: No significant changes.</p> <p>Centro: No significant changes.</p> <p>Maylands: No map data.</p> <p>Site Vicinity: No significant changes.</p>
1890s	<p>Campus: No significant changes.</p> <p>Centro: No significant changes, a footpath is listed as encroaching along the eastern site boundary.</p> <p>Maylands: No significant changes, the track is no longer present on site.</p> <p>Site Vicinity: No significant changes, an old brick works is present c.100m northwest and a water tower c.100m west of Maylands and a brick works is present c.250m southwest of Campus.</p>
1920s	<p>Campus: No significant changes.</p> <p>Centro: No significant changes.</p> <p>Maylands: No significant changes.</p> <p>Site Vicinity: No significant changes, except for Maylands where the brick works northwest of Maylands is no longer shown and a clay pit is now present c.175m northwest.</p>

Site History	
1930s	<p>Campus: No significant changes.</p> <p>Centro: No significant changes.</p> <p>Maylands: No significant changes.</p> <p>Site Vicinity: No significant changes.</p>
1940s	<p>Campus: No significant changes.</p> <p>Centro: No significant changes.</p> <p>Maylands: No significant changes.</p> <p>Site Vicinity: No significant changes, the clay pit expanded northwest of Maylands and small-scale residential development has occurred directly south of Campus.</p>
1950s	<p>Campus: A factory is present in the north western corner of the site and the centre east of the site is developed with associated buildings.</p> <p>Centro: No significant changes.</p> <p>Maylands: No significant changes.</p> <p>Site Vicinity: Several large factories have been developed associated with the industrial estate, a factory is present directly north of Campus, and a factory is present directly south of Maylands.</p>
1960s	<p>Campus: No significant change.</p> <p>Centro: The only notable change is an above ground tank farm which encroaches onto the southern boundary.</p> <p>Maylands: An office equipment works is present in the centre of the site and a tank in the south of the site, reworked ground is present along the western and northern site boundaries possibly associated with the construction of Marks Road.</p> <p>Site Vicinity: Significant development of the industrial estate, including an engineering works and textile works with associated electricity substations and tanks, and a tank farm adjacent to Centro.</p>
1970s	<p>Campus: The factory is no longer present, an engineering works is located adjacent to the north eastern site boundary, a photographic works and an electricity substation are present in the centre and the western section of the site, and a tank is present in the south of the site with a further two tanks in north.</p> <p>Centro: No mapping data.</p> <p>Maylands: No mapping data.</p> <p>Site Vicinity: Further development of industrial buildings including engineering works and factories adjacent to Campus, and adjacent to Maylands a kitchen equipment works and engineering works.</p>
1980s	<p>Campus: No significant changes.</p> <p>Centro: No significant changes.</p> <p>Maylands: The office equipment works, and tank are no longer present on the site, a building has been constructed in the centre of the site, with a large building now encroaching into the south western corner of the site and a small building present in the west.</p> <p>Site Vicinity: An oil storage depot has been constructed 300m east of Centro and some small-scale development of industrial buildings has occurred directly south of Campus.</p>
1990s	<p>Campus: The photographic works and the tanks are no longer present, six buildings have been constructed on the site with associated access roads, two electricity substations are present in the north of the site.</p>

Site History	
	<p>Centro: The tank farm is no longer encroaching onto the site; a large square building has been constructed in the centre of the site.</p> <p>Maylands: No significant changes.</p> <p>Site Vicinity: Significant redevelopment of the industrial estate, the majority of the industrial units have been removed and replaced with industrial buildings, a large building has been constructed directly east of Centro and the tank farm directly south of Centro has been removed.</p>
2000s	<p>Campus: No significant changes</p> <p>Centro: No significant changes.</p> <p>Maylands: The large building in the centre of the site is no longer present, having been replaced with a large square building in the central area of the site</p> <p>Site Vicinity: No significant changes, small scale redevelopment of the industrial estate.</p>
2010s	<p>Campus: No changes, however the 2019 map edition shows no development present at the site.</p> <p>Centro: No significant changes.</p> <p>Maylands: No significant changes.</p> <p>Site Vicinity: No significant changes, small scale redevelopment of the industrial estate including two large buildings directly east of Maylands.</p>

2.5 Planning History

As part of the desk study, SLR reviewed the Dacorum District Council Planning Portal on the 12th December 2019. For clarity, only references to potential ground conditions/contamination have been included. The review is summarised in **Table 2-5**.

Table 2-5
Summary of Planning Review

Planning Portal Review	
Campus	<p>There were eight planning applications identified for the site. For clarity, only references to potential ground conditions / contamination have been included:</p> <p>4/01399/13/MFA - Mixed use development including headquarters office building, data storage facility and associated parking. Condition 7 required:</p> <ul style="list-style-type: none"> • A site investigation scheme, based on the Phase I Desk Study (GeoDyne, June 2013), to provide information for a detailed assessment of the risk to all receptors that may be affected. • The results of the site investigation and detailed risk assessment, an options appraisal and remediation strategy giving full details of the remediation measures where required. <p>The following applications were encountered directly adjacent to the Campus Site:</p> <p>4/00300/00/FUL - Replace existing underground storage tanks for solvents with new above ground storage at same location, Multicore Solders Ltd. Condition 3 stipulated:</p> <ul style="list-style-type: none"> • A site investigation and risk assessment must be completed to assess the nature of the contamination at the site

Planning Portal Review	
	<p>4/02186/02/CMA - Demolition of existing buildings and construction of covered waste transfer station, 82 Maxted Close, HP2 7BS. Condition 10 stipulated:</p> <ul style="list-style-type: none"> No development shall take place until a detailed site investigation is carried out to establish if the site is contaminated. <p>4/00115/05/CMA - Replacement of storage building with workshop, 82 Maxted Close, HP2 7BS. Condition 1 stipulated:</p> <ul style="list-style-type: none"> No soakaways shall be constructed in contaminated ground. <p>4/00909/08/FUL - Change of use to vehicle parking and skip storage, Maxon House, HP2 7EG. Condition 2 stipulated:</p> <ul style="list-style-type: none"> It is recommended that a watching brief is undertaken during groundworks for any potentially contaminated material as the site and vicinity have a potentially contaminative former land use. <p>4/00078/12/MFA - Demolition of single-story industrial process building and the construction of new 3 story b1 office headquarters building with associated external parking and servicing areas. Land Adj To Technologies House, HP2 4RQ. Condition 3 stipulated:</p> <ul style="list-style-type: none"> A site investigation and risk assessment must be completed to assess the nature of the contamination at the site LBH undertook a geotechnical and land contamination assessment, this stated that no potentially harmful contamination was encountered, however it is possible some contamination may exist in the areas beneath the existing infrastructure on site. <p>4/00271/13/DRC - Details of contamination and archaeology as required by conditions 3 parts (a) and (b) and 6 part (a) of planning permission 4/02081/12/roc, Land Adjacent to Woodhouse Lane, HP2 4RQ.</p> <ul style="list-style-type: none"> The Environ report stipulated that there were no significant contamination issues which would preclude the proposed development at the site, but due to shallow ashy made ground encountered a topsoil capping layer was recommended. <p>4/01380/14/DRC - Details of contamination as required by condition 3 of planning permission, Land Adjacent to Woodhouse Lane, HP2 4RQ</p> <ul style="list-style-type: none"> Environ undertook a verification report as part of condition 3 which stated that the measures undertaken in respect to suitable import material, use of GDPE pipe, unexpected contamination and former groundwater abstraction well were considered to address the concerns of condition 3.
Centro	<p>One planning application was identified for the Campus site and this did not include any reference to potential ground conditions / contamination.</p> <p>The following applications were encountered directly adjacent to the Centro Site:</p> <p>4/00888/02/FUL - Construction of 10 office units, 1 & 2 Maxted Road, HP2. Conditions 6 and 7 stipulated:</p>

Planning Portal Review	
	<ul style="list-style-type: none"> Development shall not begin until a scheme to deal with site contamination is submitted and a site investigation and risk assessment carried out. <p>4/01717/06/FUL - Demolition of existing and construction of two-story offices in two buildings, on site car parking, Spectra House, HP2 7SH:</p> <ul style="list-style-type: none"> Condition 10 – A detailed site investigation shall be carried out to establish if the site is contaminated. Condition 11 – No soakaways shall be constructed in contaminated ground. <p>4/00657/07/DRC - Details of materials, soft and hard landscape works, boundary treatment, site investigation report and site foundations, facilities for refuse collection, drainage scheme, renewable energy, conservation measures, sustainable drainage and water conservation, Spectra House. Condition 1 stipulated:</p> <ul style="list-style-type: none"> The discovery strategy shall be implemented. If further contamination is identified an addendum ground appraisal report should be submitted to the Local Planning Authority. <p>4/00909/08/FUL - Change of use to vehicle parking and skip storage Maxon House, HP2 7EG. Condition 2 stipulated:</p> <ul style="list-style-type: none"> It is recommended that a watching brief is undertaken during groundworks for any potentially contaminated material as the site and vicinity have a potentially contaminative former land use. <p>4/01900/15/FUL - Installation of 2 x dock levelers, sprinkler tanks, nitrogen tank and vaporisers and extract equipment, new pedestrian exit door to rear elevation, Graphics House:</p> <ul style="list-style-type: none"> The decision notice advised that the site is located within the vicinity of potentially contaminative former land uses and therefore it is recommended that the developer be advised to keep a watching brief during ground works on the site for any potentially contaminated material.
Maylands	<p>There were two planning applications identified for the site and these did not include any reference to potential ground conditions / contamination.</p> <p>The following applications were encountered directly adjacent to the Maylands Site:</p> <p>19/02814/OPA - Change of Use of Office (Class B1(A) To Residential (85 Apartments)), Technology House, HP2 7DF:</p> <ul style="list-style-type: none"> Desk top study carried out stipulated that there are potential pollutant linkages with regards to the site's previous land uses. <p>4/02525/06/FUL - Demolition of existing buildings, construction of two buildings for b1(c), b2 and b8 use, formation of new accesses, parking and landscaping, 10 Hall Road. Condition 16 stipulates:</p> <ul style="list-style-type: none"> Prior to commencement a Phase I Report to assess the potential contamination at the site shall be submitted to the local planning authority. If actual or potential contamination and/or ground gas risks are identified further investigation shall be carried out.

Planning Portal Review

4/00738/10/VOT - Demolition of existing buildings, construction of two buildings for b1(c), b2 and b8 use, formation of new accesses, parking and landscaping - variation of time limit to planning permission 4/02525/06, Units E & F Maylands Wood Estate. Condition 17 stipulates:

- The contamination works shall be carried out in accordance with the approved details under planning reference 4/01997/07/DRC.

4/01744/10/FUL - Fuel island, Unit 2 G Park Maxted Road, HP2 7DX:

- Given the site's former industrial use, the decision notice recommended to keep a watching brief during ground works on the site for any potentially contaminated material.

4/01745/10/FUL - Alterations to the existing building and operational yard, Unit 2 G Park Maxted Road HP2 7DX:

- Given the site's former industrial use, the decision notice recommended to keep a watching brief during ground works on the site for any potentially contaminated material.

4/03986/15/MFA - Development of 2 industrial units, use class b1(c), b2 and b8 with associated access and parking, Maylands Avenue, HP2 7DF:

- Delta Simons Phase 1 and 2 report did not encounter significantly elevated levels of contamination or ground gases.

4/01400/18/FUL - Construction of new shared use foot/cycleways, Land Adj To High Street:

- Given the site's former potentially contaminative, the decision notice recommended to keep a watching brief during ground works on the site for any potentially contaminated material.

3.0 Site Inspections

The site inspections were undertaken by SLR on the 11th December 2019 and comprised a walkover of the external areas at each site. Details are provided in the following sub-sections.

3.1 Site Walkover – Campus Datacentre

A site layout plan is provided as **Drawing 02** and photographs taken during the site walkover are contained within **Appendix 04**.

3.1.1 Buildings

The main building on the site is a large datacentre building situated in the centre of the site, with associated meeting rooms, office space and storage space. There are two brick-built electricity substations in the northeast and south of the site.

3.1.2 External Areas

The whole of the site perimeter is bound by a steel security fence, with a car park in the western and southern sections of the site. The majority of the site is flat, and the ground surface is covered with good quality concrete with no evidence of any cracks or deformities. Located in the central site area is a compound where the thirty generators are situated, the generators having been installed between 2015-2017.

3.1.3 Drainage System/ Service Features

A surface water drainage gully runs through the centre of the generator compound area, as does a water supply pipe which is situated to the southwest of the surface water gully. There are two high voltage electricity cables running either side of the two rows of generators which can be accessed by electrical inspection pits. Fibre optic cables run through to the north of the site outside the generator compound. There is no gas present on site.

3.1.4 Bulk Storage Tanks

There is a total of thirty diesel double skinned above ground storage tanks (AST) located beneath each of the generators (2 x 1,000 litre, 12 x 27,000 litre and 16 x 33,000 litre), these are known as belly tanks and are integral to the steel container units in which each generator is located. The belly tanks have the following protection measures:

- Fill points are located in a lockable cabinet provided with a drip tray designed to capture any minor spillages of oil from the fill point during delivery, which is integral to the generator container unit. The tank fill point cabinets remain locked when not in use.
- Tank level gauge.
- High and low level alarms connected to the BMS and the generator container units.
- A pressure delivery over-fill prevention valve.
- Leak detection alarms connected to the building management system (BMS).
- The generator sets have pressure relief valves to prevent over pressurisation of diesel supplied from the belly tanks.
- To minimise the risk of corrosion all pipework is painted or is constructed of corrosion resistant material.

In addition, each generator has its own oil or Midel filled transformer.

There are six below ground level rainwater harvesting water tanks beneath some of the generators, however SLR was informed that these are not in use.

3.1.5 Chemical Storage

During the walkover four 1,000 litre IBCs containing glycol were temporarily located in the generator compound area; the glycol is reportedly used for the annual coolant servicing.

3.1.6 Waste

The only waste stream generated on site is general office waste, which is stored in wheelie bins.

3.1.7 Site Surrounds Inspection

The site is situated within Hemel Hempstead Industrial Estate and is surrounded by industrial/commercial land uses. A large tank is present directly north of the site, the contents of which are unknown.

3.2 Site Walkover – Centro Datacentre

A site layout plan is provided as **Drawing 03** and photographs taken during the site walkover are contained within **Appendix 04**.

3.2.1 Buildings

The main building on the site is a large steel datacentre building situated in the centre of the site, with two electricity substations (one within a brick building) in the south of the site.

3.2.2 External Areas

The whole of the site perimeter is bound by a steel security fence. The majority of the site is flat, and the ground surface is covered with good quality concrete and tarmac surfacing with no evidence of any cracks or deformities. The majority of the site is taken up with the main building, with a car park present in the north of the site. There are four generators and associated bulk diesel storage tank present in the south eastern site area, eleven chillers in the west, two electricity substations southeast and northeast of the generators and a load bank electrical testing structure northwest of the generators.

3.2.3 Drainage System/ Service Features

There were limited surface water drains encountered across the site during the walkover although surface water gullies run around the main building and between one of the diesel tanks and the electrical sub station in the permit area.

3.2.4 Bulk Storage Tanks

There is one 75,000 litre bunded diesel AST located in the southeast of the site, which was installed in 2015. This tank feeds the four 840 litre 'belly tanks', one being situated beneath each of generators.

The bulk tank is provided with the following protection measures:

- Integrated secondary containment (110% containment capacity).
- The fill point is located in a lockable cabinet provided with a drip tray designed to capture any minor spillages of oil from the fill point during delivery, which is integral to the bulk tank unit.
- Level gauge connected to the BMS.
- High and low level alarms connected to the BMS.

- The delivery pipework from the bulk tank to the generators is above ground level with a pipe-in-pipe arrangement to minimise the risk of leaks. Leak detection is provided on the delivery pipework which is connected to the site's BMS.
- To minimise the risk of corrosion all pipework is painted or is constructed of corrosion resistant material.

The belly tanks have the following protection measures:

- Tank level gauge.
- High and low level alarms connected to the BMS.
- A pressure delivery over-fill prevention valve to prevent over pressurisation of diesel supplied from the bulk tanks.
- The generator sets have pressure relief valves to prevent over pressurisation of diesel supplied from the belly tanks.
- To minimise the risk of corrosion all pipework is painted or is constructed of corrosion resistant material.

3.2.5 Chemical Storage

No bulk storage of chemicals was noted on the site.

3.2.6 Waste

The only waste stream generated on site is general office waste, which is stored in wheelie bins.

3.2.7 Site Surrounds Inspection

The site is situated within Hemel Hempstead Industrial Estate, and therefore surrounded by industrial/commercial land uses. Two large tanks are present directly southeast of the site, the contents of which are not known.

3.3 Site Walkover – Maylands Datacentre

A site layout plan is provided as **Drawing 04** and photographs taken during the site walkover are contained within **Appendix 04**.

3.3.1 Buildings

The main building on the site is the large steel datacentre building situated in the centre east of the site, two electricity substations are present, one in the centre north and one in the centre south of the site

3.3.2 External Areas

The whole of the site perimeter is bound by a steel and wooden security fence. The majority of the site is flat, and the ground surface is covered with good quality concrete and tarmac surfacing with no evidence of any cracks or deformities. A car park is present in the east of the site. Fourteen diesel generators each located within a steel container unit are present in the west of the site along with associated two bulk storage tanks and chillers.

3.3.3 Drainage System/ Service Features

The majority of electrical cables present on the site are above ground, with one newly installed high voltage cable along the north-western boundary of the site.

Surface water drain covers were noted throughout the site.

3.3.4 Bulk Storage Tanks

Two 45,000 litre bunded double skinned diesel ASTs are present in the centre of the site; this tank feeds each 840 litre belly tank located below the generators (four in total) which serve Suit 1 (these belly tanks are integral to the steel container units in which each generator is located) .

The remaining ten generator belly tanks, all of which are integral to the steel container unit in which each generator is located, each have a 19,000 litre capacity; these are filled directly from a refuelling vehicle.

The two bulk diesel tanks have the following protection measures:

- Integrated secondary containment (110% containment capacity).
- The fill points are located in a lockable cabinet provided with a drip tray designed to capture any minor spillages of oil from the fill point during delivery, which is integral to the bulk tank unit.
- Level gauges connected to the BMS.
- High and low level alarms connected to the BMS.
- The delivery pipework from the bulk tanks to the generators is above ground level with a pipe-in-pipe arrangement to minimise the risk of leaks. Leak detection is provided on the delivery pipework which is connected to the site's BMS.
- To minimise the risk of corrosion all pipework is painted or is constructed of corrosion resistant material.

The diesel belly tanks have the following protection measures:

- For those belly tanks that are filled directly from a refuelling vehicle, the fill points are located in a lockable cabinet provided with a drip tray designed to capture any minor spillages of oil from the fill point during delivery, which is integral to the generator container unit. The tank fill point cabinets remain locked when not in use.
- Tank level gauge.
- A pressure delivery over-fill prevention valve to prevent over pressurisation of diesel supplied from the bulk tanks (Suite 1 generators only, the design being dictated by Gyron's customer).
- High and low level alarms connected to the BMS.
- The generator sets have pressure relief valves to prevent over pressurisation of diesel supplied from the belly tanks.
- To minimise the risk of corrosion all pipework is painted or is constructed of corrosion resistant material.

3.3.5 Chemical Storage

No bulk storage of chemicals was noted on the site.

3.3.6 Waste

The only waste stream generated on site is general office waste, which is stored in wheelie bins.

3.3.7 Site Surrounds Inspection

The site is situated within Hemel Hempstead Industrial Estate, and therefore surrounded by industrial/commercial land uses.

4.0 Review of Previous Report

4.1.1 Campus Datacentre

In June 2013 GeoDyne Ltd was appointed by Gyron Internet Ltd to undertake a Phase 1 desk study at Campus¹. At the time of reporting the datacentre had not been developed and the structures on the site were due to be demolished. As part of the Phase 1, GeoDyne produced a conceptual Site Model (CSM) which identified the following potential sources of contamination:

- Metals, metalloids, polyaromatic hydrocarbons and asbestos associated with Made Ground;
- Natural Metal Enrichment (NME) in natural strata;
- Oil/fuel hydrocarbons;
- Polychlorinated biphenyls (PCBs);
- Acid/sulphate contaminated soils; and
- Hazardous ground gases potentially due to Made Ground associated with former photographic/engineering works.

The following potential pathways were identified for the site:

- Direct ingestion of soil;
- Inhalation of dust and vapours;
- Direct skin contact with contaminated materials;
- Vertical and lateral migration of contamination; and
- Vertical and lateral migration of potentially hazardous ground gases/vapours.

The following potential receptors were identified for the site:

- Construction personnel involved with the development;
- Site end users;
- Controlled waters; and
- Buildings.

GeoDyne considered that the site represented a medium risk associated with the historical land uses identified at the site and within the site vicinity. GeoDyne recommended that a Phase 2 exploratory investigation should be undertaken to investigate the potential sources of contamination outlined in their Phase 1 desk study. A site investigation was also required by Condition 7 of the planning permission to develop the datacentre (i.e. 4/01399/13/MFA as referenced in Section 2.5). However, a site investigation report has not been provided to SLR for review and was not available via the Local Authority planning portal.

4.1.2 Centro and Maylands Datacentres

No previous reports have been provided for the Centro and Maylands datacentres.

¹ Phase 1 Desk Study Report, The Campus. Prepared for Gyron Internet Limited by GeoDyne Limited. Dated 10/06/2013. Report Reference: 33068.

5.0 Conceptual Site Models

Development of the CSM for each datacentre is based on the information as presented in the above sections of this report. The CSM aims to identify the potential contaminants, pathways and receptors present with respect to the site and assess their significance and acceptability. When considering the contaminants, receptors and pathways relevant to each site, SLR has been mindful of the sites' continued use as a datacentre.

As this report is in support of an Environmental Permit application for the use of diesel generators at the datacentres, the potential sources of contamination considered within the conceptual site models are limited to the current and historical sources of hydrocarbons.

5.1 Contaminants, Pathways and Receptors

Statutory guidance for Part IIA of the Environmental Protection Act (EPA), DEFRA Circular 04/12², defines a **contaminant** as:

"a substance which is in, on or under the land and which has the potential to cause significant harm to a relevant receptor, or to cause significant pollution of Controlled Waters".

DEFRA Circular 04/12, defines a **Pathway** as:

"a route by which a receptor is or might be affected by a contaminant".

Following an assessment of the environmental and geological setting of the sites and considering the existing land use, it is considered that potential pathways for contaminant impact are present.

The guidance goes on to define a **Receptor** as:

"something that could be adversely affected by a contaminant, for example a person, an organism, an ecosystem, property, or Controlled Waters."

On-site receptors relate to humans (i.e. site staff and visitors/contractors), groundwater (i.e. the site is underlain by a secondary A aquifer within the underlying bedrock) and on-site infrastructure.

The sites are considered to have low environmental sensitivity owing to being located on cohesive geology comprising clay, silt and sand, with no nearby residential properties (NB: the closest residential properties are 320m west of Maylands), surface water features or ecologically sensitive sites.

As part of the evaluation, and in accordance with current best practice, the desktop review for each of the sites involved development of the CSM using the principles of a risk assessment comprising the potential **Source → Pathway → Receptor** linkages, either known or suspected at the subject sites.

5.2 Conceptual Site Model – Campus Datacentre

The potential **Sources → Pathways → Receptors** for Campus have been reviewed and are considered in **Table 5-1**.

² DEFRA; 2012; EPA 1990: Part2A, Contaminated Land Statutory Guidance, PB13735; April 2012

Table 5-1
Preliminary Conceptual Model – Campus Datacentre

Potential Sources	
Current/Historical land use	<p>There is the potential for hydrocarbon contamination to be present on the site as a result of diesel storage, in AST tanks and generator belly tanks, and use in generators.</p> <p>There is the potential for hydrocarbon contamination to be present from historical land uses relating to historical tanks present on site c.1970s-1990s.</p> <p>There is the potential for hydrocarbon contamination from current and historical land uses in the site vicinity, notably relating to a tank which may have possibly contained fuel oil, located directly north of the site.</p>
Potential Receptors	
On-Site Human Health	Site staff / visitors and contractors
Off-site Human Health	Residential properties are not present within close proximity to the site. Off-site human health receptors relate to staff/ visitors of adjacent commercial properties.
Buildings	A datacentre is present on-site and further commercial properties are present adjacent to the site.
Surface Water (off site)	There are no surface water features within 250m of the site.
Groundwater	The underlying Lambeth Group is classified as a secondary A aquifer.
Ecological	Not present – no designated ecological receptors in proximity of the site.
Property: Flora & Fauna	Not present.
Potential Pathways	
Groundwater Migration	<p>The underlying geology of the site comprises the Lambeth Group which is classified as a secondary A aquifer. Nearby borehole records recorded on the Centro site (TLO0NE96/TLO0NE97) indicated that the geology encountered was the Woolwich and Reading Beds (part of Lambeth Group) comprising sandy silty Clay. Given the anticipated cohesive nature of the underlying bedrock, it is unlikely that hydrocarbon contaminants, if present, would leach and migrate in the underlying aquifer.</p> <p>Furthermore, given the presence of impermeable concrete hard standing present across the site if a leak or tank failure were to occur it is unlikely that a pathway is present to underlying soils.</p> <p><i>Pathway is unlikely to be active</i></p>
Surface Water Migration	<p>There are no surface water features located within 250m of the site. Given the anticipated cohesive nature of the underlying bedrock and distance to nearest surface water feature, it is unlikely that contaminants if present would be able to migrate to surface waters.</p> <p><i>Pathway unlikely to be active.</i></p>

Direct (Dermal) Contact Ingestion/Inhalation of dust.	The whole of the site is covered in good quality concrete, therefore the risk to site users coming into contact with potentially contaminative soils is low. <i>Pathway is unlikely to be active.</i>
Inhalation of volatile contaminants	Given that there are possible historical sources of volatile contaminants there is the potential for volatile contaminants to be present on site. It is therefore possible that vapour could build up in the unsaturated zone and potentially be inhaled by site users. <i>Pathway is possibly active.</i>

5.2.1 Linkage and Overall Qualitative Risk Assessment

Potential pathways and receptors have been identified on the Campus site, therefore potentially complete pollution linkages are considered present, as summarised in **Table 5-2**, and require further evaluation.

Table 5-2
Campus Potential Pollutant Linkage and Risk Assessment Summary

Potential Pollutant Linkages	Site Users Human Health	Historical fuel infrastructure present on site pose a potential source of volatile contaminants that may be present beneath the site.
		It is possible that site users could inhale hazardous vapours that have built up beneath the site.
	Buildings	Historical fuel infrastructure present on site pose a potential source of volatile contaminants that may be present beneath the site.
		It is possible that hazardous vapours that have built up beneath the site and potentially cause damage to infrastructure on site.

5.3 Conceptual Site Model – Centro Datacentre

The potential **Sources** → **Pathways** → **Receptors** for the Centro datacentre have been reviewed and are considered in **Table 5-3**.

Table 5-3
Preliminary Conceptual Model – Centro Datacentre

Potential Sources	
Current/Historical land use	<p>There is the potential for hydrocarbon contamination to be present from current land uses relating to diesel storage (1 x bulk AST and 4 x generator belly tanks) and use associated with the generators.</p> <p>There is the potential for hydrocarbon contamination to be present from historical land uses, notably relating to historical tanks encroaching onto the south of the site c.1960s-1990s.</p> <p>There is the potential for hydrocarbon contamination from current and historical land uses in the site vicinity, notably relating to tanks, which may or have possibly contained fuel oils, directly south of the site and historical tanks c.20m south and west of the site.</p>
Potential Receptors	
On-Site Human Health	Site staff / visitors and contractors
Off-site Human Health	Residential properties are not present within close proximity to the site. Off-site human health receptors relate to staff/ visitors of adjacent commercial properties.
Buildings	A datacentre is present on-site and further commercial properties are present adjacent to the site.
Surface Water (off site)	There are no surface water features within 250m of the site.
Groundwater	The underlying Lambeth Group is classified as a secondary A aquifer.
Ecological	Not present – no designated ecological receptors in proximity of the site.
Property: Flora & Fauna	Not present.
Potential Pathways	
Groundwater Migration	<p>The underlying geology of the site comprises the Lambeth Group which is classified as a secondary A aquifer. Borehole records recorded on site (TLOONE96/TLOONE97) indicated that the geology encountered was the Woolwich and Reading Beds (part of Lambeth Group) comprising sandy silty Clay. Given the anticipated cohesive nature of the underlying bedrock, it is unlikely that hydrocarbon contaminants, if present, would leach and migrate in the underlying aquifer.</p> <p>Furthermore, given the presence of impermeable concrete and tarmac hard standing present across the site, if a leak or tank failure were to occur it is unlikely that a pathway is present to underlying soils.</p> <p>Pathway is unlikely to be active</p>
Surface Water Migration	<p>There are no surface water features located within 250m of the site. Given the anticipated cohesive nature of the underlying bedrock and distance to nearest surface water feature, it is unlikely that contaminants if present would be able to migrate to surface waters.</p> <p>Pathway unlikely to be active.</p>

Direct (Dermal) Contact Ingestion/Inhalation of dust.	The whole of the site is covered in good quality concrete and tarmac, therefore the risk to site users coming into contact with potentially contaminative soils is low. Pathway is unlikely to be active.
Inhalation of volatile contaminants	Given the possible historical sources of volatile contaminants there is the potential for volatile contaminants to be present on site. It is therefore possible that vapour could build up in the unsaturated zone and potentially be inhaled by site users. Pathway is possibly active.

5.3.1 Linkage and Overall Qualitative Risk Assessment

Potential pathways and receptors have been identified on the Centro site, therefore potentially complete pollution linkages are considered present, as summarised in **Table 5-4**, and require further evaluation.

Table 5-4
Centro Potential Pollutant Linkage and Risk Assessment Summary

Potential Pollutant Linkages	Site Users Human Health	Historical fuel infrastructure present on site pose a potential source of volatile contaminants that may be present beneath the site.
		It is possible that site users could inhale hazardous vapours that have built up beneath the site.
	Buildings	Historical fuel infrastructure present on site pose a potential source of volatile contaminants that may be present beneath the site.
		It is possible that hazardous vapours that have built up beneath the site and potentially cause damage to infrastructure on site.

5.4 Conceptual Site Model – Maylands Datacentre

The potential **Sources** → **Pathways** → **Receptors** for the Maylands datacentre have been reviewed and are considered in **Table 5-5**.

Table 5-5
Preliminary Conceptual Model – Maylands Datacentre

Potential Sources	
Current/Historical land use	There is the potential for hydrocarbon contamination to be present as a result of diesel storage, in AST tanks and generator belly tanks, and use in generators. There is the potential for hydrocarbon contamination to be present from historical land uses relating to an historical tank present on site c.1960s-1980s.

	There is the potential for contamination from current and historical land uses in the site vicinity, notably relating to potential hydrocarbon contamination from a tank c.50m northwest of the site.
Potential Receptors	
On-Site Human Health	Site staff / visitors and contractors
Off-site Human Health	Residential properties are not present within close proximity to the site. Off-site human health receptors relate to staff/ visitors of adjacent commercial properties.
Buildings	A datacentre is present on-site and further commercial properties are present adjacent to the site.
Surface Water (off site)	There are no surface water features within 250m of the site.
Groundwater	The underlying Lambeth Group is classified as a secondary A aquifer.
Ecological	Not present – no designated ecological receptors in close proximity.
Property: Flora & Fauna	Not present.
Potential Pathways	
Groundwater Migration	<p>The underlying geology of the site comprises the Lambeth Group which is classified as a secondary A aquifer. Nearby borehole records recorded on the Centro site (TLOONE96/TLOONE97) indicated that the geology encountered was the Woolwich and Reading Beds (part of Lambeth Group) comprising sandy silty Clay. Given the anticipated cohesive nature of the underlying bedrock, it is unlikely that hydrocarbon contaminants, if present, would leach and migrate in the underlying aquifer.</p> <p>Furthermore, given the presence of impermeable concrete hard standing present across the site if a leak or tank failure were to occur it is unlikely that a pathway is present to underlying soils.</p> <p>Pathway is unlikely to be active</p>
Surface Water Migration	<p>There are no surface water features located within 250m of the site. Given the anticipated cohesive nature of the underlying bedrock and distance to nearest surface water feature, it is unlikely that contaminants if present would be able to migrate to surface waters.</p> <p>Pathway unlikely to be active.</p>
Direct (Dermal) Contact Ingestion/Inhalation of dust.	<p>The whole of the site is covered in good quality concrete and tarmac, therefore the risk to site users coming into contact with potentially contaminative soils is low.</p> <p>Pathway is unlikely to be active.</p>
Inhalation of volatile contaminants	<p>Given the historical sources of volatile contaminants there is the potential for volatile contaminants to be present on site. It is therefore possible that vapour could build up in the unsaturated zone and potentially be inhaled by site users.</p> <p>Pathway is possibly active.</p>

5.4.1 Linkage and Overall Qualitative Risk Assessment

Potential pathways and receptors have been identified on site, therefore potentially complete pollution linkages are considered present, as summarised in **Table 5-6**, and require further evaluation.

Table 5-6
Maylands Potential Pollutant Linkage and Risk Assessment Summary

Potential Pollutant Linkages	Site Users	Historical fuel infrastructure present on site pose a potential source of volatile contaminants that may be present beneath the site.
	Human Health	It is possible that site users could inhale hazardous vapours that have built up beneath the site.
	Buildings	Historical fuel infrastructure present on site pose a potential source of volatile contaminants that may be present beneath the site.
		It is possible that hazardous vapours that have built up beneath the site and potentially cause damage to infrastructure on site.

6.0 Summary and Recommendations

6.1 Summary

A Phase One Land Quality Assessment has been undertaken at three datacentres in support of the application for an Environmental Permit (EP) for the operation of diesel-fired standby generators in the event of a black- or brown-out scenario. The datacentres are as follows:

- Campus Datacentre, Spring Way, Hemel Hempstead, HP2 7UP;
- Centro Datacentre, 3 Boundary Way, Hemel Hempstead, HP2 7SU; and
- Maylands Datacentre, 150 Maylands Avenue, Hemel Hempstead, HP2 7DF.

The primary purpose of this report was to provide information regarding the sites current and historical land uses and whether these would have the potential to cause ground contamination. The information was used to generate a conceptual site model to provide a risk assessment comprising the **Source → Pathway → Receptor** linkages, either known or suspected at the each of the sites.

The information obtained for the sites is summarised below:

- The sites initially existed as open undeveloped land until c.1950s-1960s when the sites were developed for industrial use. During the remainder of the 20th century the sites underwent various redevelopments with industrial end uses, and all of the sites have historical tank and energy features. The sites are now occupied by datacentres and their associated infrastructure including diesel tanks and diesel-fired generators.
- The sites are within Hemel Hempstead industrial estate and have been surrounded by a variety of industrial land uses since c.1950s including historical tanks and electricity sub stations.
- The regional geology mapping records that all of the sites are underlain by the Lambeth Group. Borehole records for the Centro site indicate that the geology is cohesive in nature.
- The Lambeth Group is classified as a secondary A aquifer. Groundwater is likely to flow predominantly towards the south, albeit in a weak gradient. The sites are located within an SPZ3.
- There are no surface water features listed within 250m of the sites.
- There is one groundwater abstraction licence within 500m of the sites, situated c.375m east of Campus, relating to abstraction from the underlying principal aquifer.

As this report is in support of an Environmental Permit for the use of diesel generators, the potential sources of contamination considered within the conceptual site models are associated with the current and historical sources of hydrocarbons.

6.2 Recommendations

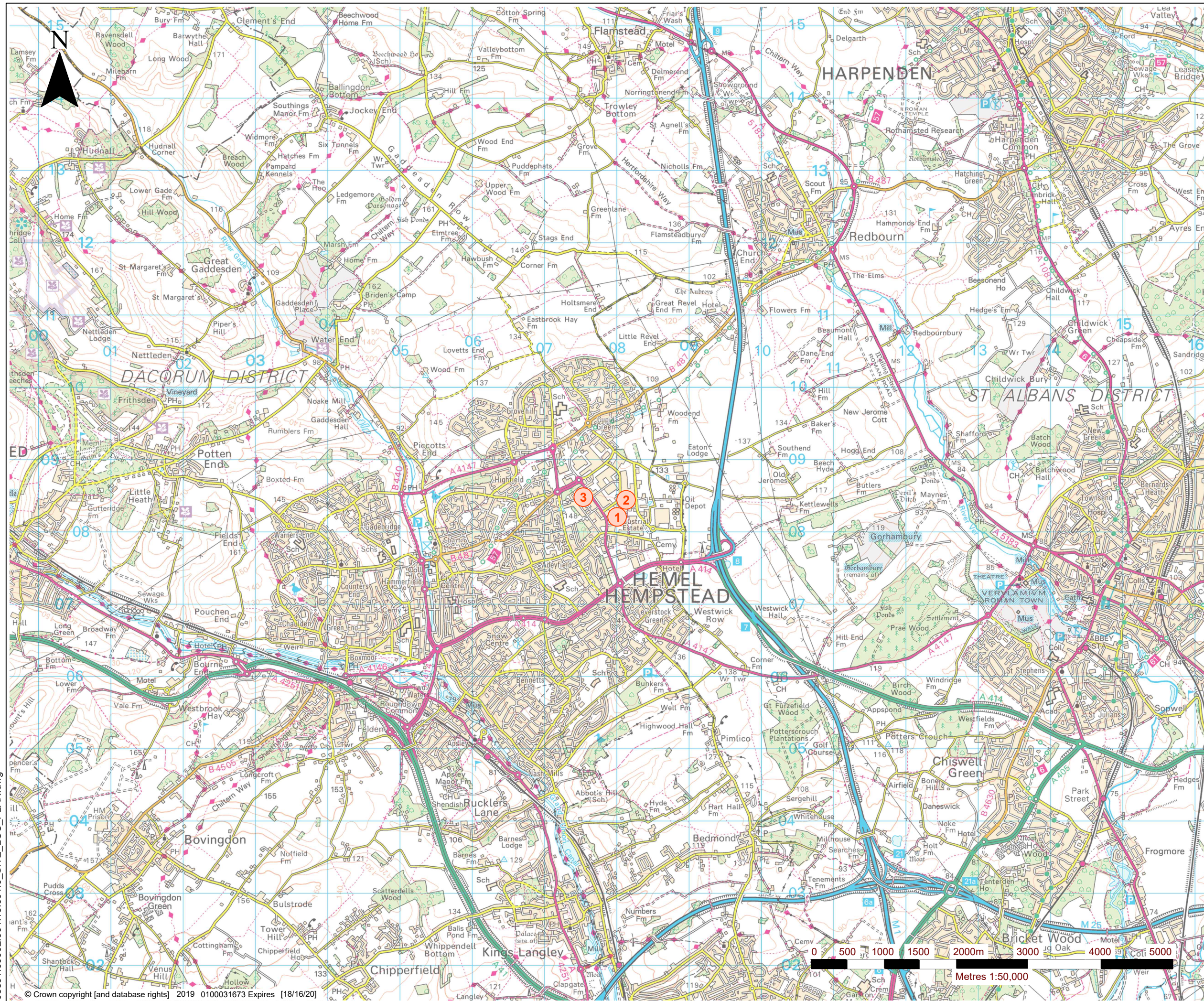
The desk study has identified potential sources of hydrocarbon contamination from historical tank infrastructure present on each of the sites, and potential pollutant linkages can be considered present. Given the uncertainty regarding the ground conditions and soil chemistry, SLR recommends that a site investigation is undertaken to establish baseline soil and groundwater conditions with respect to hydrocarbons at each of the three sites. The site investigations will focus on the areas where the diesel ASTs and generators are located, these being the areas which will be subject to an Environmental Permit.

SLR recommends the excavation of 8No. boreholes to approximately 5m depth using percussive and/or rotary drilling techniques. The rationale for each of the boreholes is provided in **Table 6-1**, with the proposed borehole locations presented on Drawings 005 - 007.

**Table 6-1:
Borehole Location Rationale**

Borehole Rationale	
Campus (Drawing 005)	<p>All boreholes are to be located within the area to be permitted i.e. the generator compound:</p> <ul style="list-style-type: none"> • BH1 – adjacent to generator HB; • BH2 - south of generator 20-1; • BH3 – south of generator 13-1. <p>Due to service locations, SLR recommends that boreholes are placed to the east of the surface water drain and water supply pipe running through the centre of the permitted area.</p>
Centro (Drawing 006)	<p>All boreholes are to be located within the area to be permitted, where possible:</p> <ul style="list-style-type: none"> • BH1 – adjacent 75,000ltr AST just outside of the permit area; • BH2 – adjacent to generator 2 just outside the permit area. <p>Due to access constraints within the are to be permitted, the boreholes have been placed adjacent to the fuel infrastructure and generators as close to the permitted area as possible.</p>
Maylands (Drawing 007)	<p>All boreholes are to be located within the area to be permitted, where possible:</p> <ul style="list-style-type: none"> • BH1 – adjacent to generators 6-1A and 6-1B, just outside of the area to be permitted. • BH2 – adjacent to the two bulk diesel tanks, just outside of area to be permitted. • BH3 – adjacent to generators 4-1A and 4-1B, within the permit area. <p>Due to access constraints, BH1 and BH2 are located adjacent to fuel infrastructure, but outside of the area to be permitted.</p>

DRAWINGS



- NOTES
- 1 CAMPUS DATACENTRE
 - 2 CENTRO DATACENTRE
 - 3 MAYLANDS DATACENTRE

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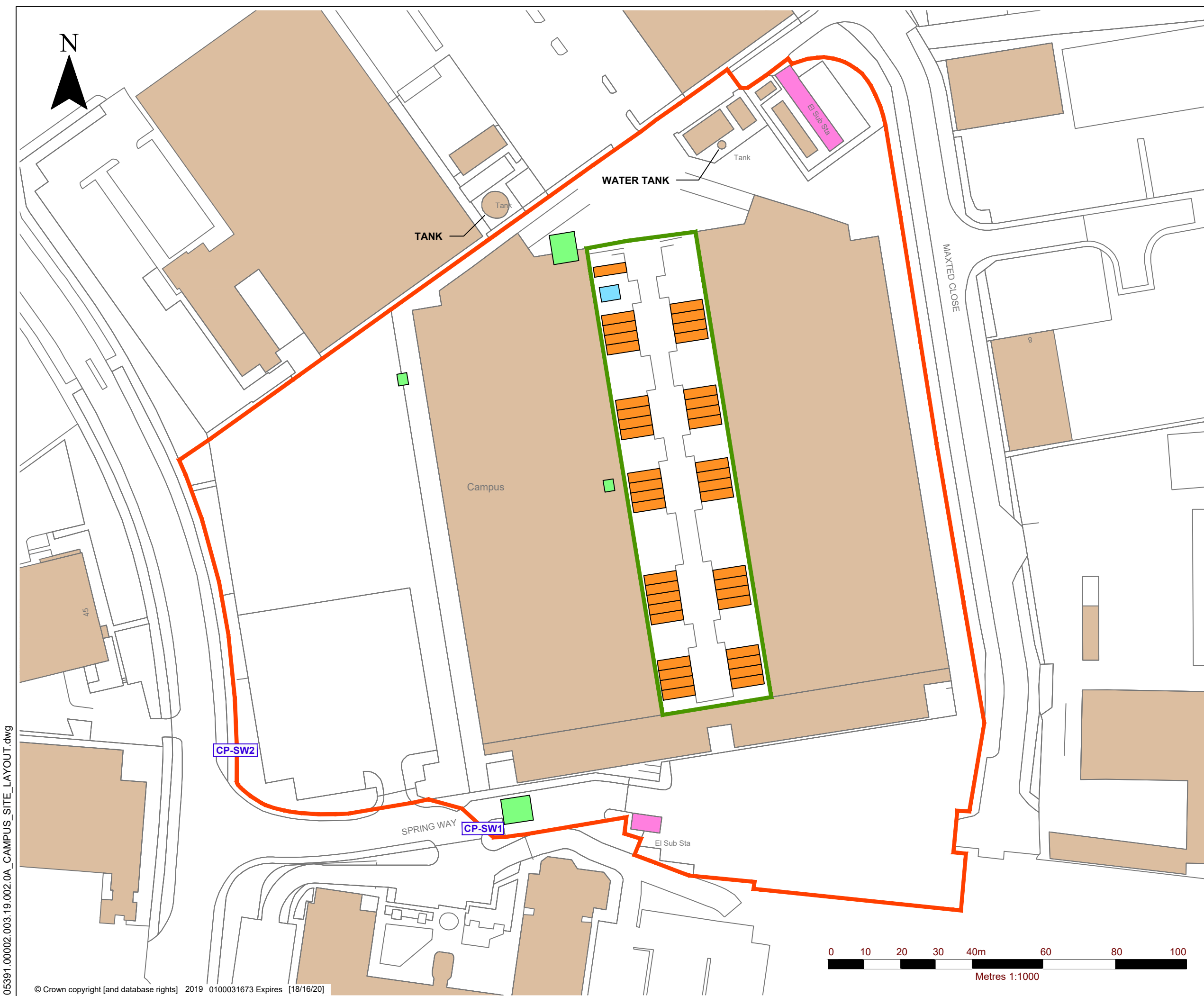
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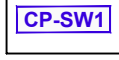
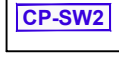
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Scale
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Date
JUNE 2019

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- LEGEND**
-  SITE BOUNDARY
 -  INSTALLATION BOUNDARY
 -  GENERATOR WITH DIESEL AST
 -  ELECTRICITY SUB STATION
 -  HISTORICAL TANKS c. 1970
 -  GLYCOL IBC'S IDENTIFIED DURING WALK OVER
 - SURFACE WATER DISCHARGE POINT**
 -  CAMPUS
 -  CAMPUS (CAR PARK AND CONTRACTORS COMPOUND AREA ONLY)

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DRAWING 002

Scale: 1:1000 @ A3 Date: JANUARY 2020

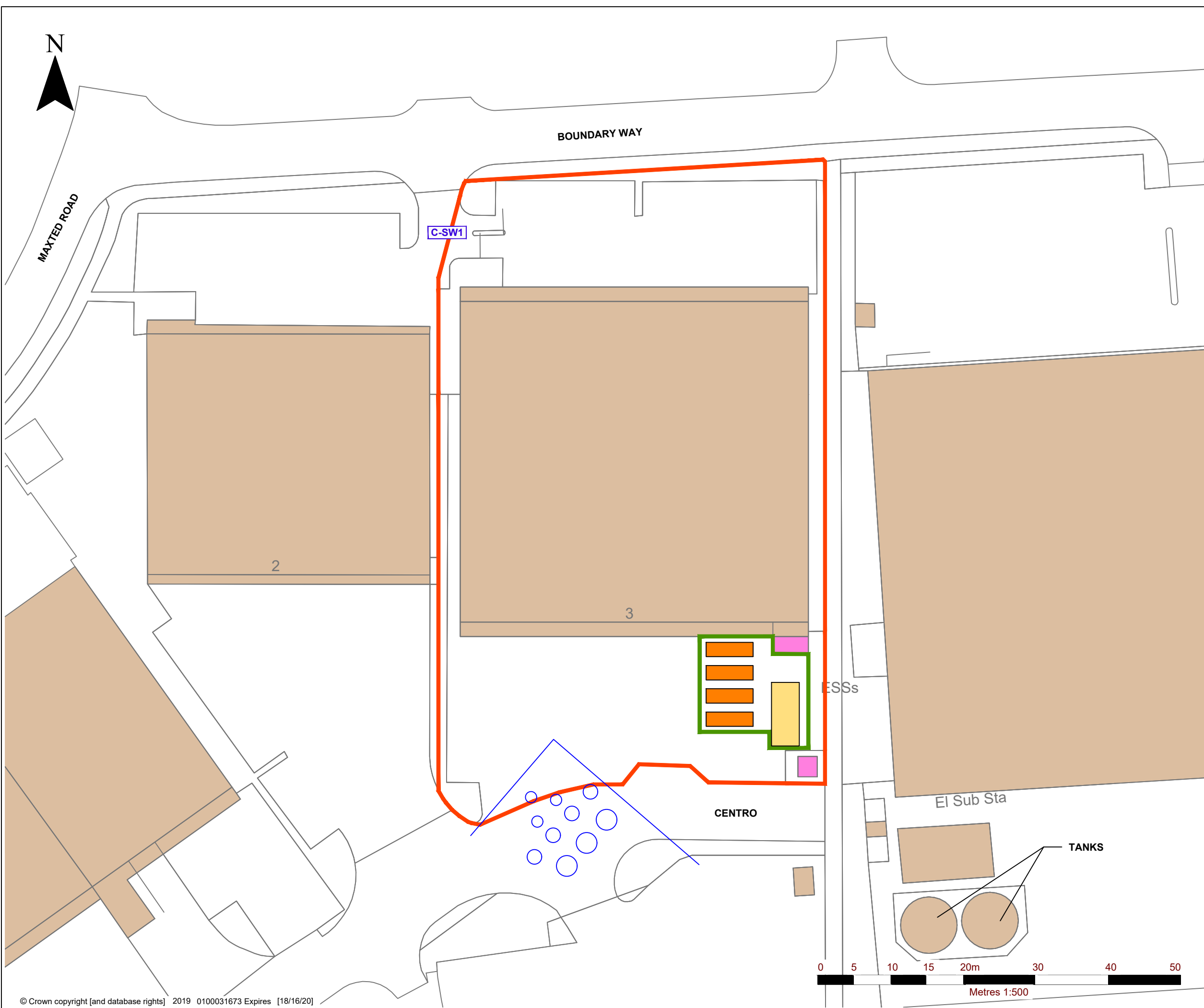


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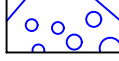
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LEGEND

-  SITE BOUNDARY
-  INSTALLATION BOUNDARY
-  ELECTRICITY SUB STATION
-  GENERATOR IN 840 LTR TANK
-  75,000 LTR FUEL AST
-  HISTORICAL TANK FARM c. 1980's

SURFACE WATER DISCHARGE POINT

-  CENTRO

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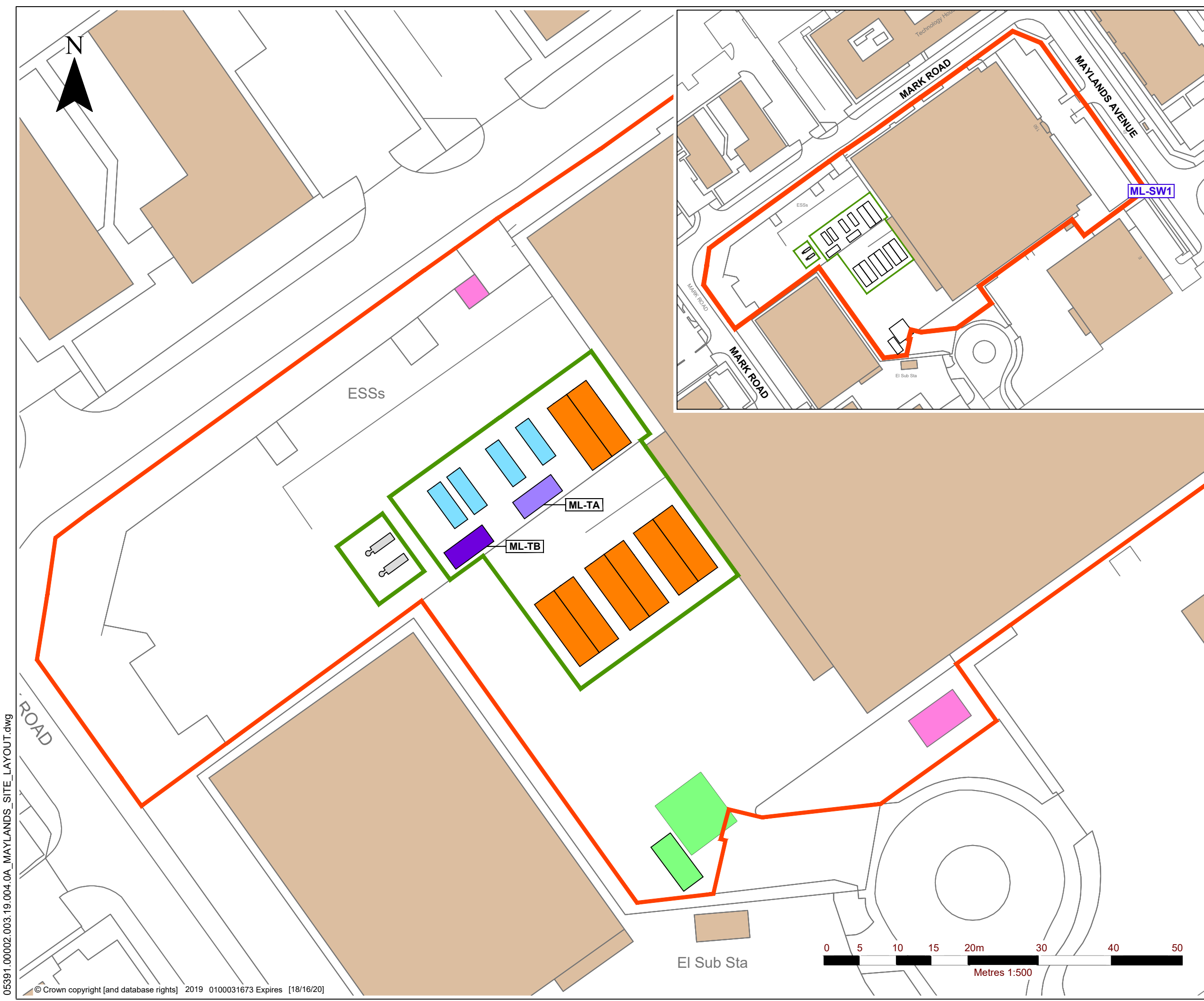
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CENTRO SITE LAYOUT PLAN

DRAWING 003

Scale: 1:500 @ A3 Date: JANUARY 2020





LEGEND

	SITE BOUNDARY
	INSTALLATION BOUNDARY
	GENERATOR WITH 19,000 LTR DIESEL AST
	GENERATOR WITH 840 LTR BELLY TANK
	ELECTRICITY SUB STATION
	HISTORICAL TANKS c. 1960s
BULK DIESEL STORAGE TANKS	
	45,000 LTR DIESEL AST A
	45,000 LTR DIESEL AST B
SURFACE WATER DISCHARGE POINT	
	MAYLANDS

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MAYLANDS SITE LAYOUT PLAN

DRAWING 004









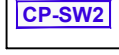
Scale SEE DRAWING (A3)	Date JANUARY 2020
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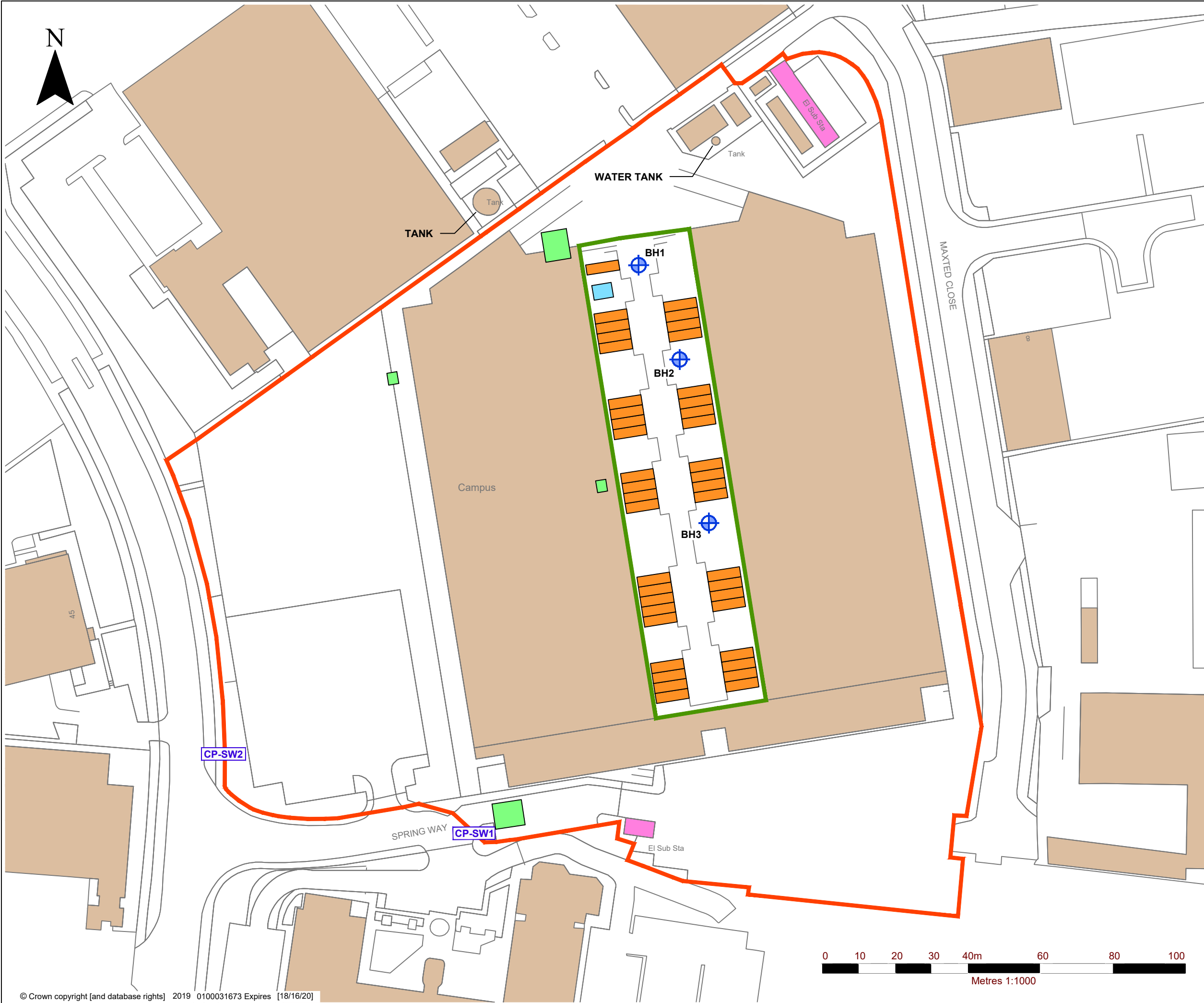
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- LEGEND**
-  SITE BOUNDARY
 -  INSTALLATION BOUNDARY
 -  GENERATOR WITH DIESEL AST
 -  ELECTRICITY SUB STATION
 -  HISTORICAL TANKS c. 1970
 -  GLYCOL IBC'S IDENTIFIED DURING WALK OVER
 -  PROPOSED BOREHOLE LOCATION
 - SURFACE WATER DISCHARGE POINT**
 -  CP-SW1 CAMPUS
 -  CP-SW2 CAMPUS (CAR PARK AND CONTRACTORS COMPOUND AREA ONLY)



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**CAMPUS SITE PROPOSED
BOREHOLE LOCATION PLAN**

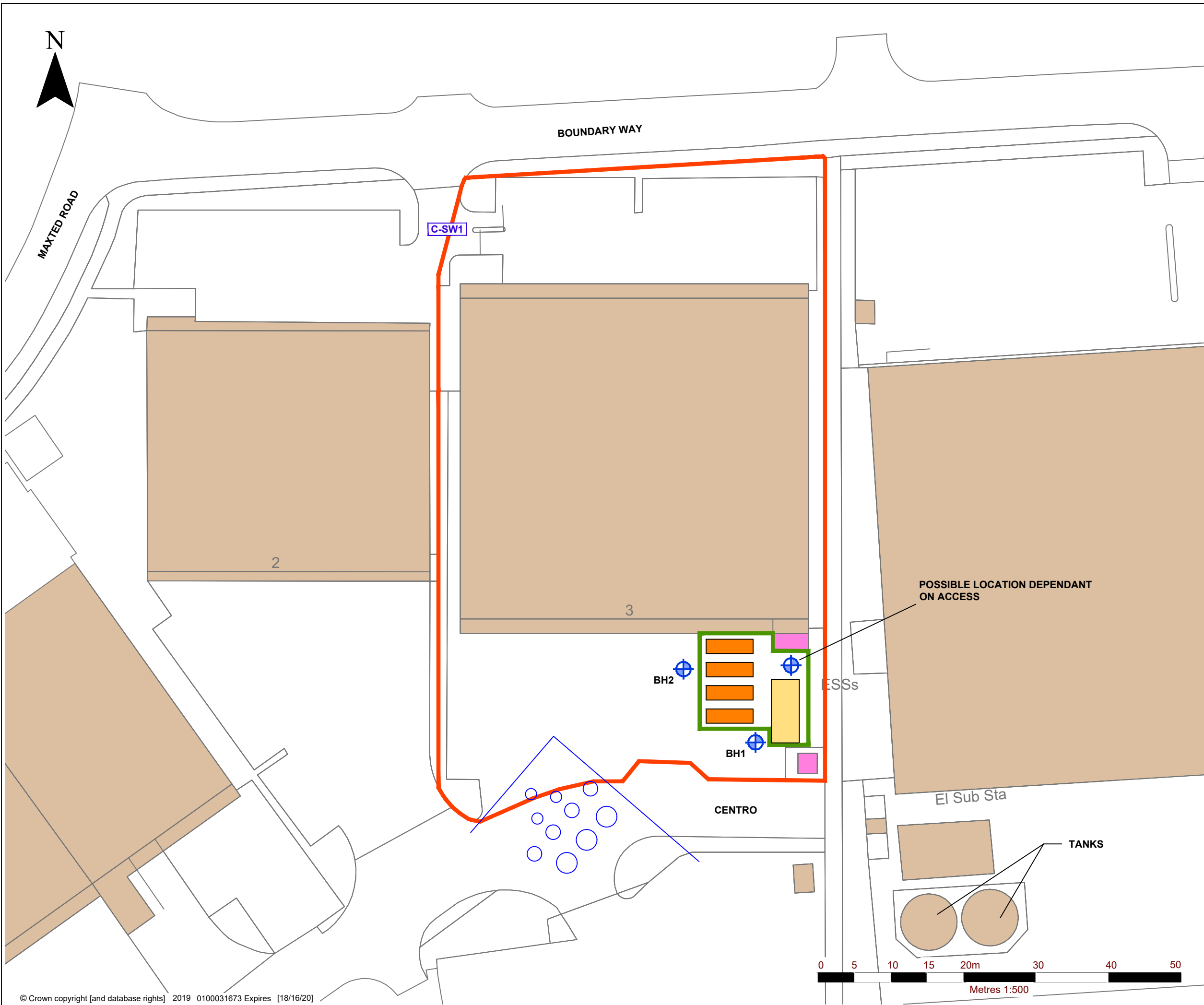
DRAWING 005








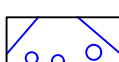

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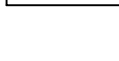
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LEGEND

-  SITE BOUNDARY
-  INSTALLATION BOUNDARY
-  ELECTRICITY SUB STATION
-  GENERATOR IN 840 LTR TANK
-  75,000 LTR FUEL AST
-  HISTORICAL TANK FARM c. 1980's
-  PROPOSED BOREHOLE LOCATION

SURFACE WATER DISCHARGE POINT

-  CENTRO

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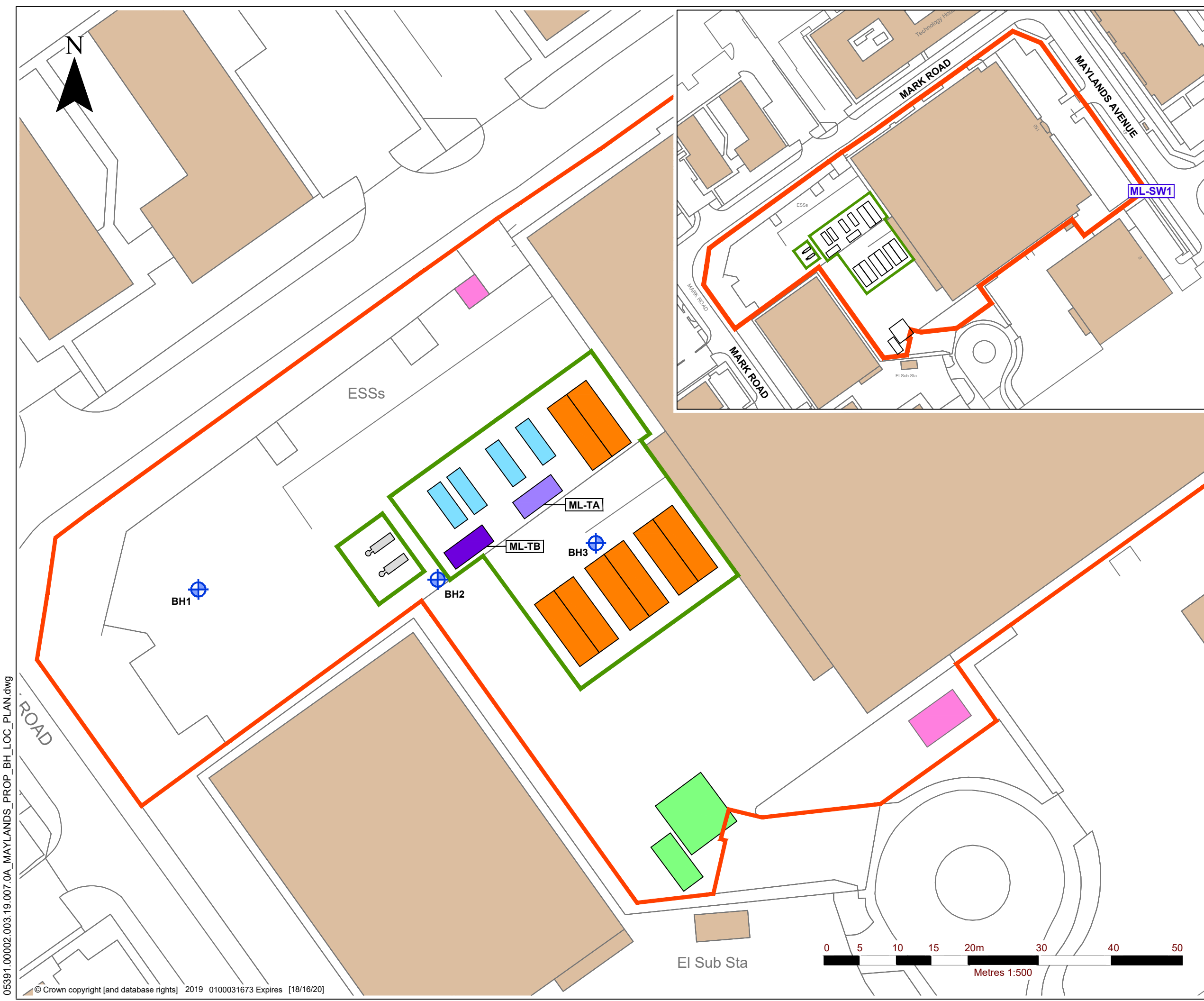
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**CENTRO SITE PROPOSED
BOREHOLE LOCATION PLAN**

DRAWING 006

Scale: 1:500 @ A3 Date: JANUARY 2020



- LEGEND**
- SITE BOUNDARY
 - INSTALLATION BOUNDARY
 - GENERATOR WITH 19,000 LTR DIESEL AST
 - GENERATOR WITH 840 LTR BELLY TANK
 - ELECTRICITY SUB STATION
 - HISTORICAL TANKS c. 1960s
 - PROPOSED BOREHOLE LOCATION

- BULK DIESEL STORAGE TANKS**
- 45,000 LTR DIESEL AST A
 - 45,000 LTR DIESEL AST B

- SURFACE WATER DISCHARGE POINT**
- ML-SW1 MAYLANDS

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**MAYLANDS SITE PROPOSED
BOREHOLE LOCATION PLAN**

DRAWING 007

Scale SEE DRAWING (A3)	Date JANUARY 2020
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APPENDICES

Appendix 01 GroundSure Historical Map - Campus

Site Details:

Campus Data Centre, Spring
Way, Hemel Hempstead, HP2
7UP

Client Ref: EMS_579570_777898
Report Ref: EMS-579570_777898
Grid Ref: 507973, 208191

Map Name: County Series

Map date: 1877-1878

Scale: 1:2,500

Printed at: 1:2,500



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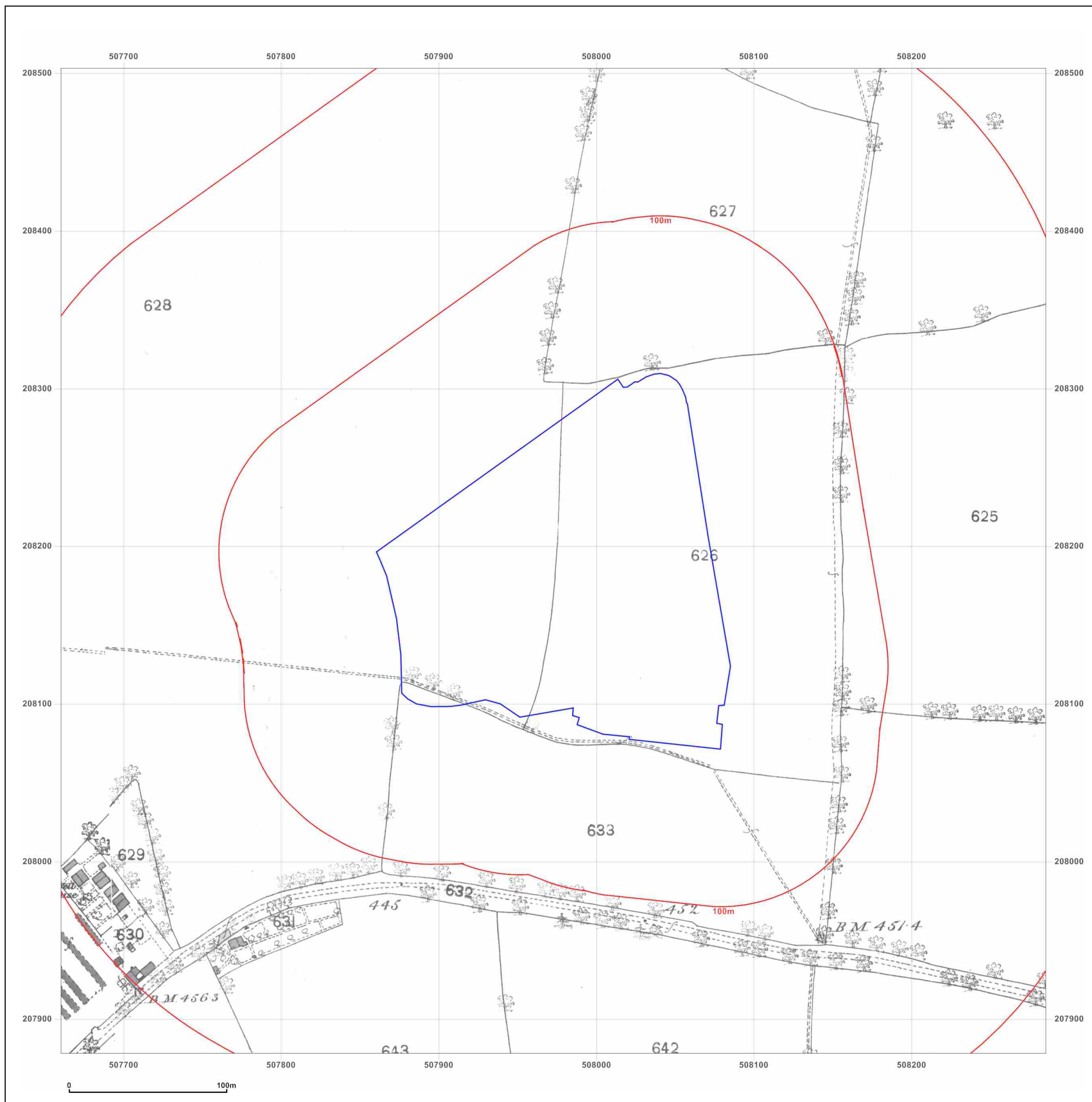


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Site Details:

Campus Data Centre, Spring Way, Hemel Hempstead, HP2 7UP

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Report Ref: EMS-579570_777898
Grid Ref: 507973, 208191

Map Name: County Series

Map date: 1898

Scale: 1:2,500

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Client Ref: EMS_579570_777898
Report Ref: EMS-579570_777898
Grid Ref: 507973, 208191

Map Name: County Series

Map date: 1924-1925

Scale: 1:2,500

Printed at: 1:2,500



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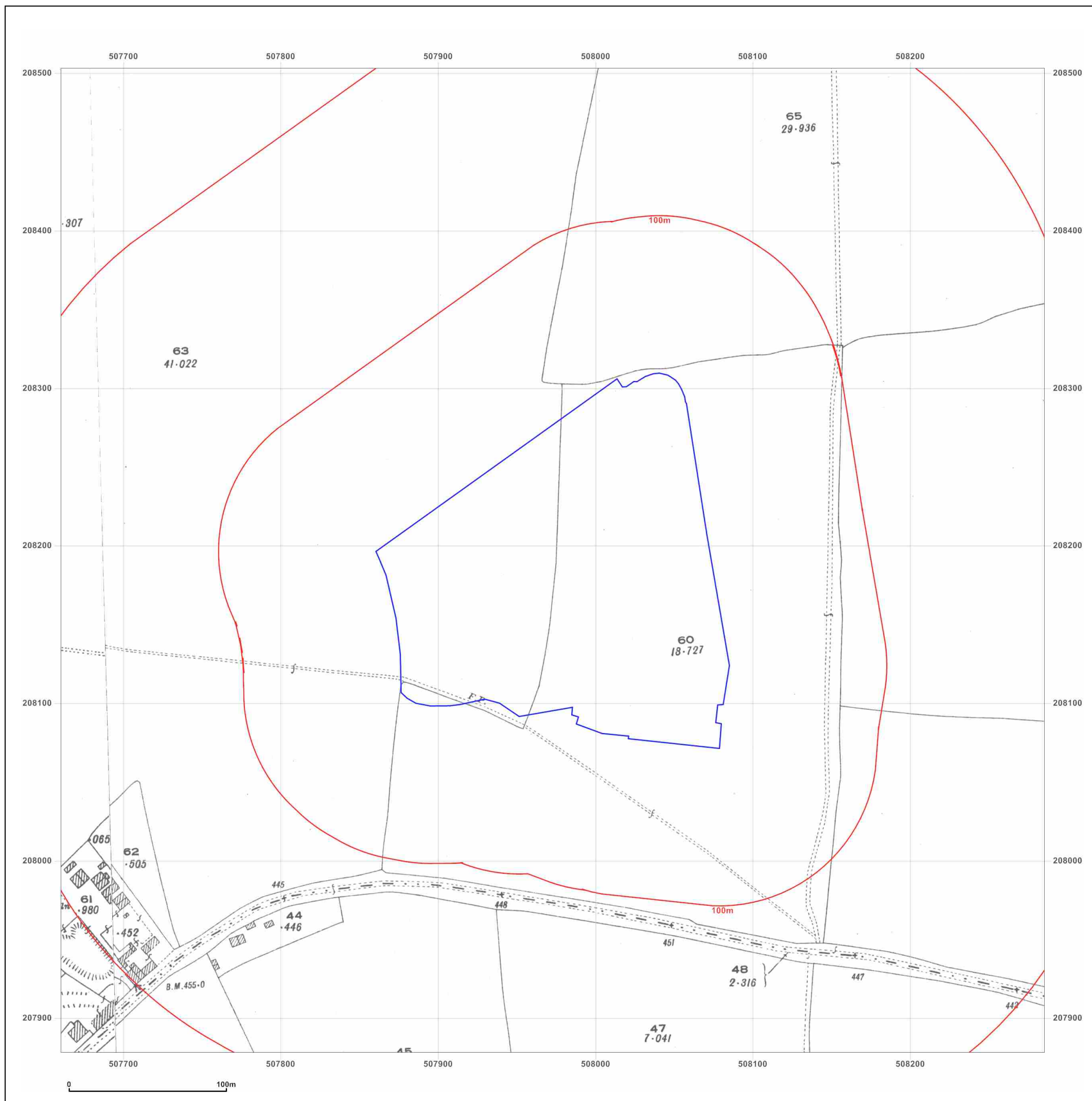


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Client Ref: EMS_579570_777898
Report Ref: EMS-579570_777898
Grid Ref: 507973, 208191

Map Name: National Grid

Map date: 1969-1970

Scale: 1:1,250

Printed at: 1:2,000



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 Revised 1969
 Edition N/A
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Surveyed 1968
 Revised 1968
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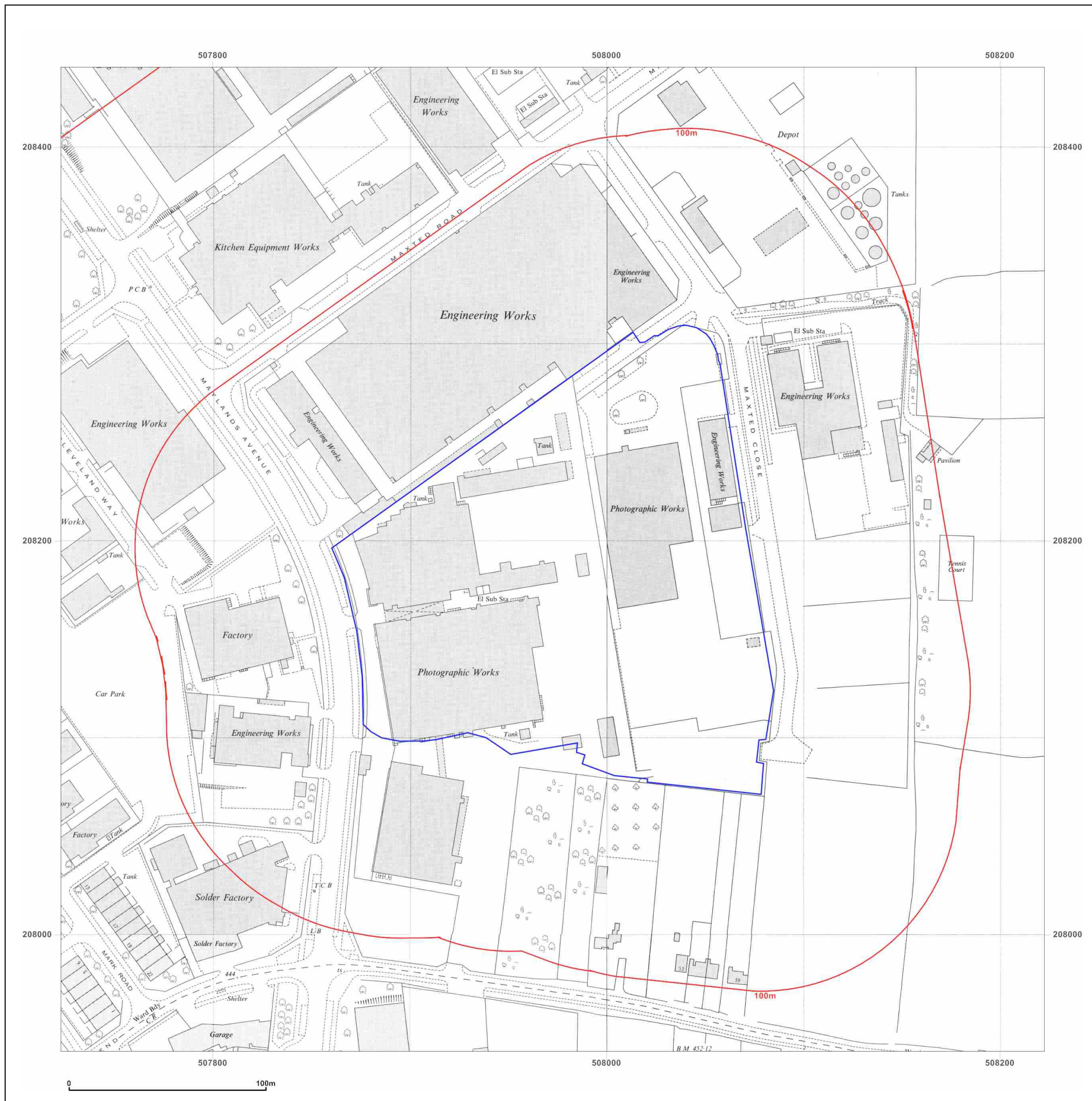


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0 100m

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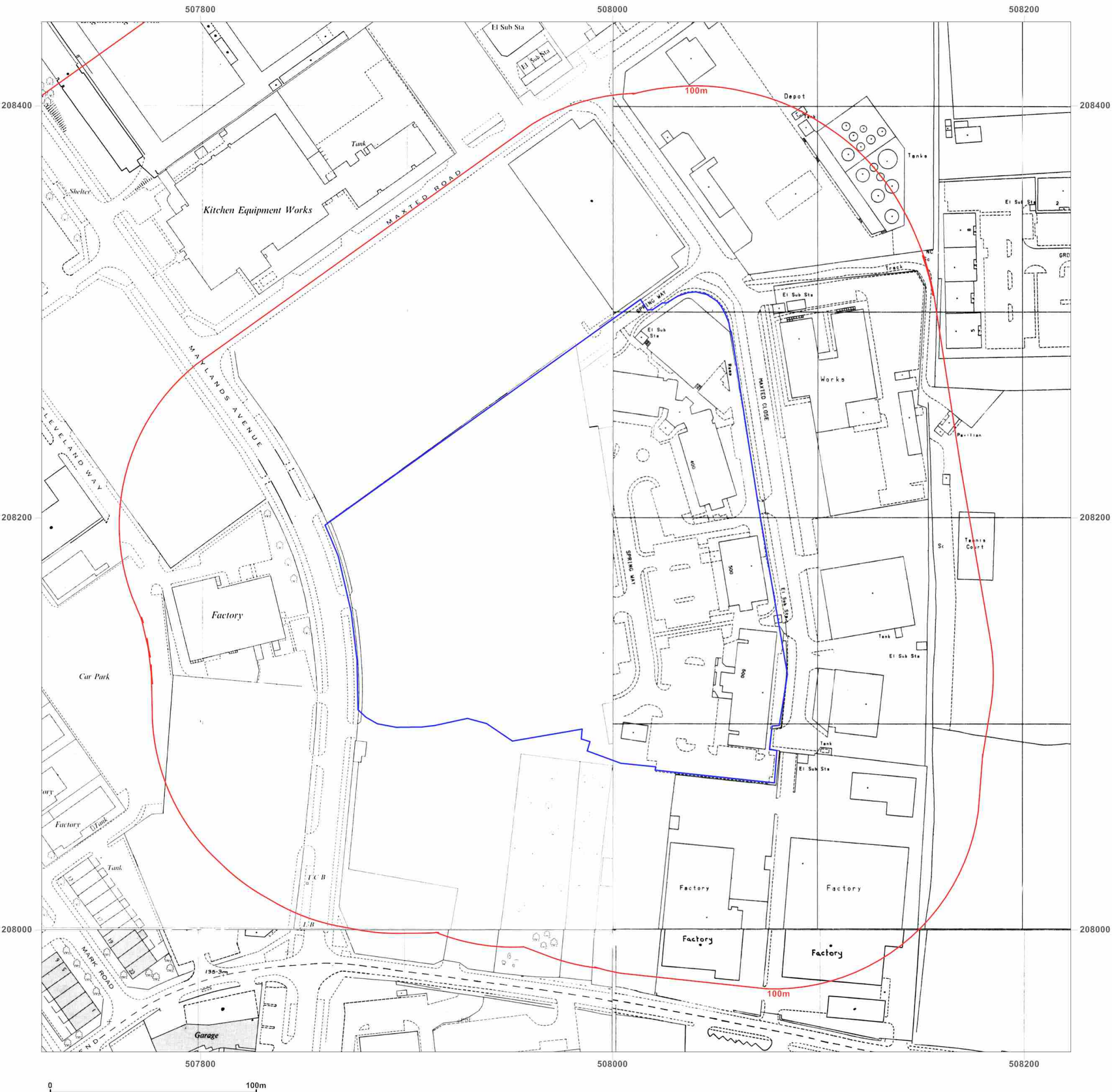
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Map Name: National Grid

Map date: 1986-1991

Scale: 1:1,250

Printed at: 1:2,000



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 Revised 1969
 Edition N/A
 Copyright 1991
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Surveyed 1976
 Revised 1987
 Edition N/A
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Client Ref: EMS_579570_777898
Report Ref: EMS-579570_777898
Grid Ref: 507973, 208191

Map Name: National Grid

Map date: 1987-1992

Scale: 1:1,250

Printed at: 1:2,000



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Report Ref: EMS-579570_777898
Grid Ref: 507973, 208191

Map Name: National Grid

Map date: 1991-1993

Scale: 1:1,250

Printed at: 1:2,000



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 Edition N/A
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Client Ref: EMS_579570_777898
Report Ref: EMS-579570_777898
Grid Ref: 507973, 208191

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



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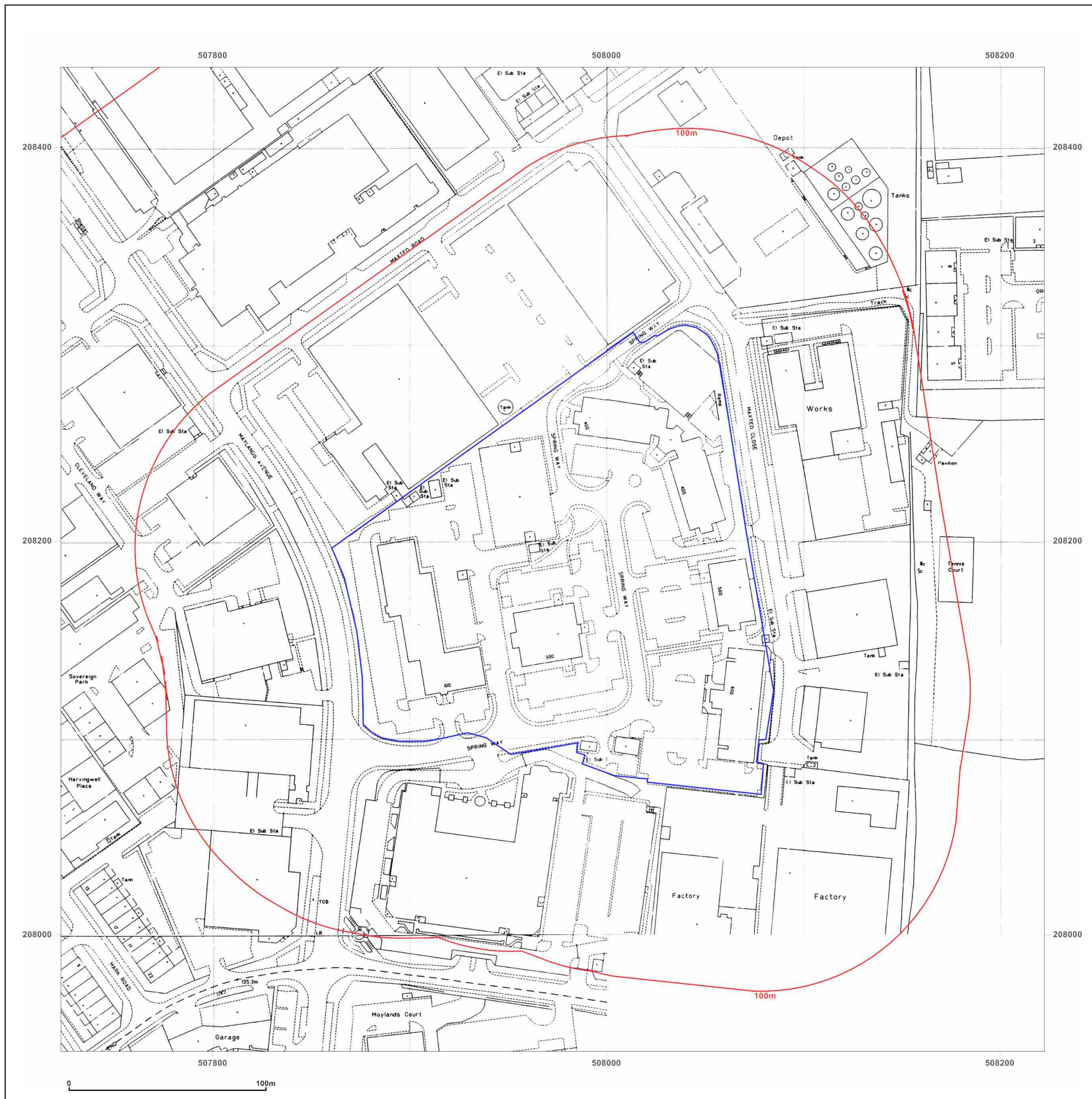


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Report Ref: EMS-579570_777898
Grid Ref: 507973, 208191

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



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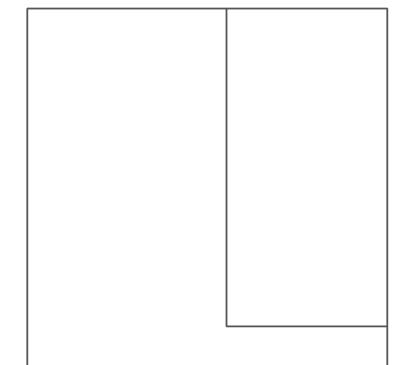
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Map Name: National Grid

Map date: 1995

Scale: 1:1,250

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Site Details:

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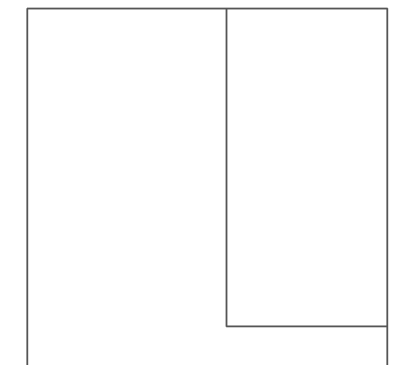
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Grid Ref: 507973, 208191

Map Name: National Grid

Map date: 1995

Scale: 1:1,250

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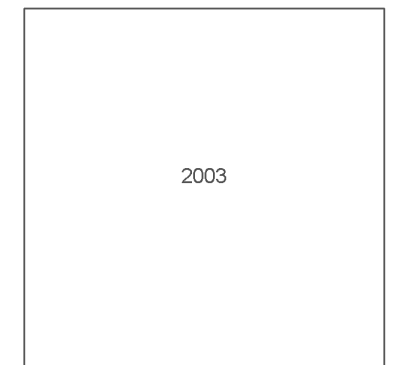
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Report Ref: EMS-579570_777898
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Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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APPENDICES

Appendix 01 GroundSure Historical Map - Centro

Site Details:

Centro Data Centre, 3 Boundary Way, Hemel Hempstead, HP2 7SU

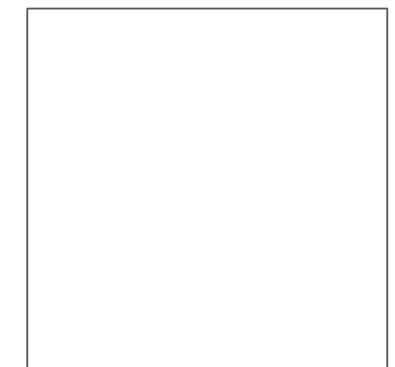
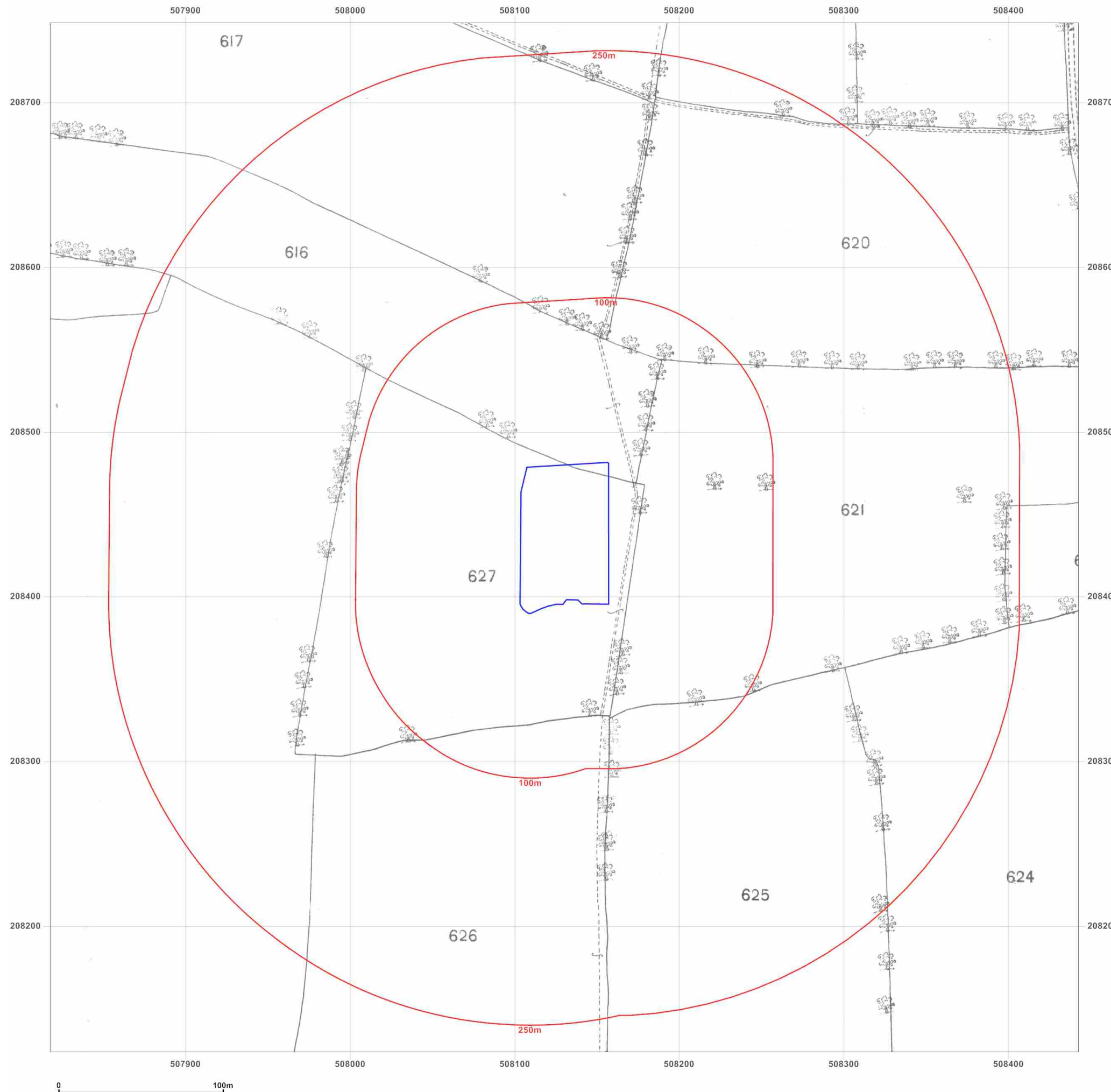
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Grid Ref: 508130, 208436

Map Name: County Series

Map date: 1878

Scale: 1:2,500

Printed at: 1:2,500



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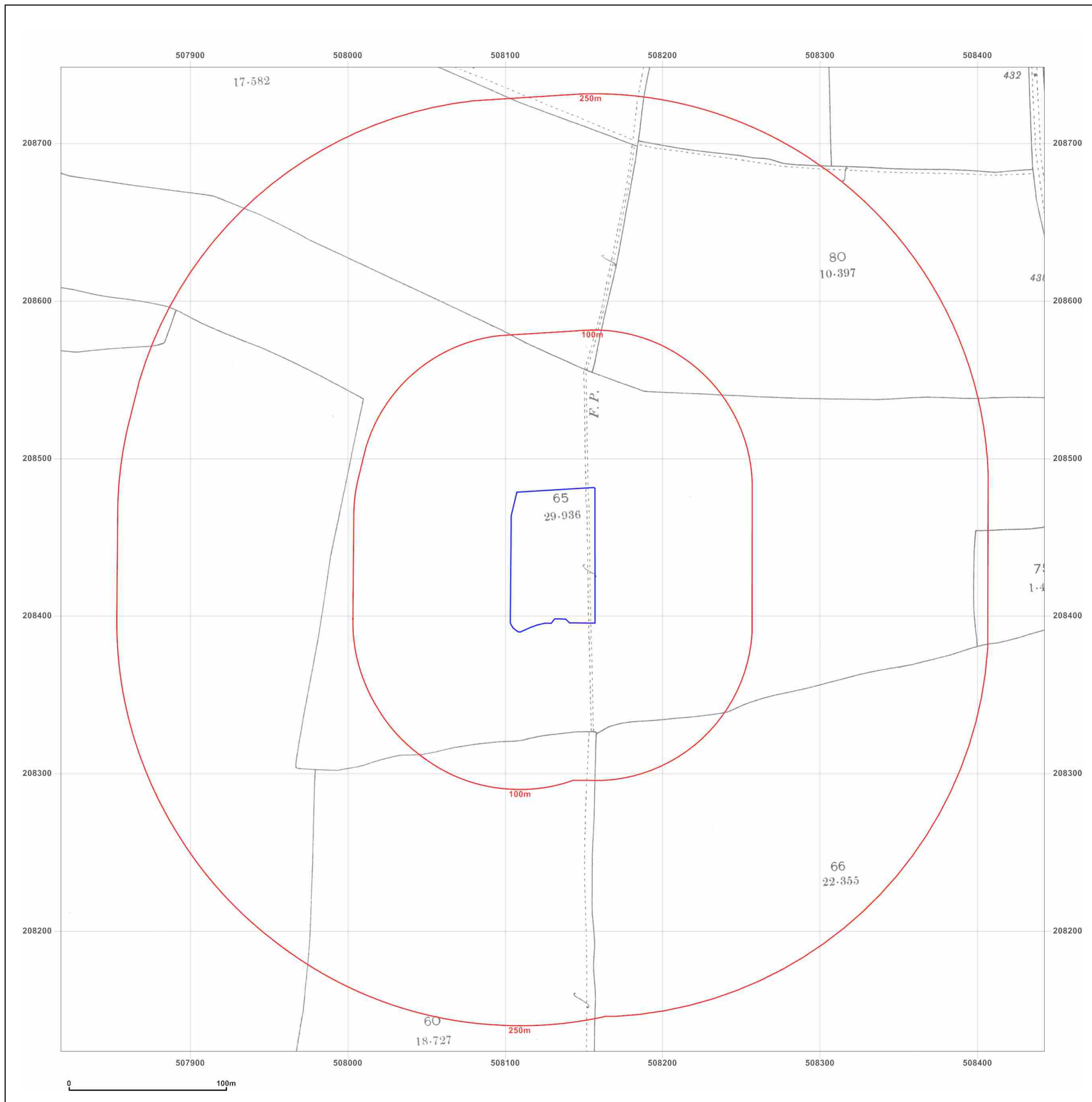


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Map legend available at:
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Site Details:

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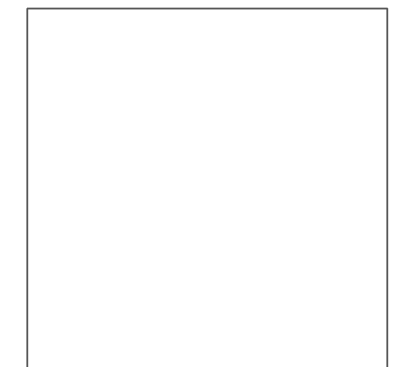
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Report Ref: EMS-579577_777908
Grid Ref: 508130, 208436

Map Name: County Series

Map date: 1898

Scale: 1:2,500

Printed at: 1:2,500



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 Revised 1898
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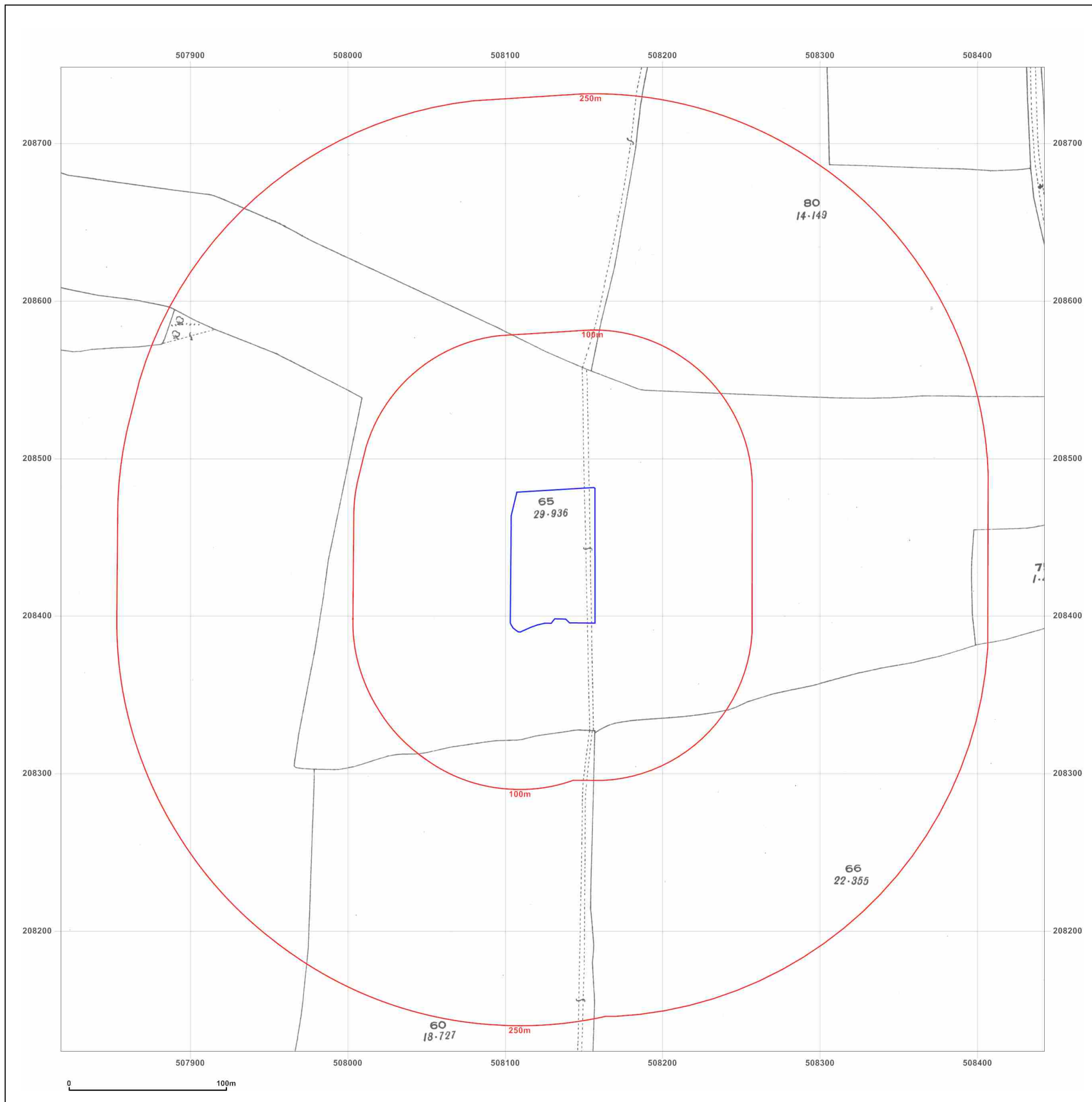


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Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Site Details:

Centro Data Centre, 3 Boundary Way, Hemel Hempstead, HP2 7SU

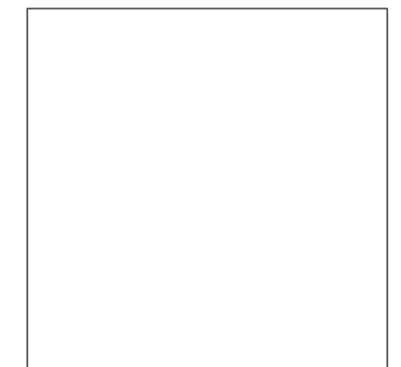
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Report Ref: EMS-579577_777908
Grid Ref: 508130, 208436

Map Name: County Series

Map date: 1924

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1924
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 Edition N/A
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Site Details:

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Client Ref: EMS_579577_777908
Report Ref: EMS-579577_777908
Grid Ref: 508130, 208436

Map Name: National Grid

Map date: 1969

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1968
 Revised 1968
 Edition N/A
 Copyright 1969
 Levelled 1956

Surveyed 1969
 Revised 1969
 Edition N/A
 Copyright 1969
 Levelled 1958

Surveyed 1968
 Revised 1968
 Edition N/A
 Copyright 1969
 Levelled 1956

Surveyed 1969
 Revised 1969
 Edition N/A
 Copyright 1969
 Levelled 1958



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Site Details:

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Client Ref: EMS_579577_777908
Report Ref: EMS-579577_777908
Grid Ref: 508130, 208436

Map Name: National Grid

Map date: 1982-1987

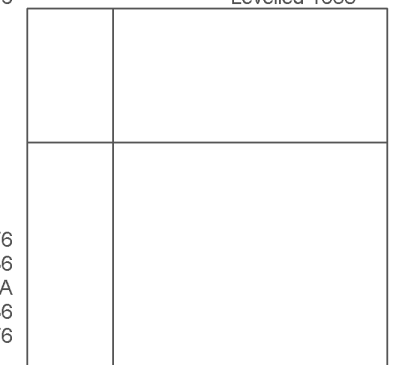
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 Revised 1987
 Edition N/A
 Copyright 1987
 Levelled 1976

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



Surveyed 1976
 Revised 1986
 Edition N/A
 Copyright 1986
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Client Ref: EMS_579577_777908
Report Ref: EMS-579577_777908
Grid Ref: 508130, 208436

Map Name: National Grid

Map date: 1987-1991

Scale: 1:1,250

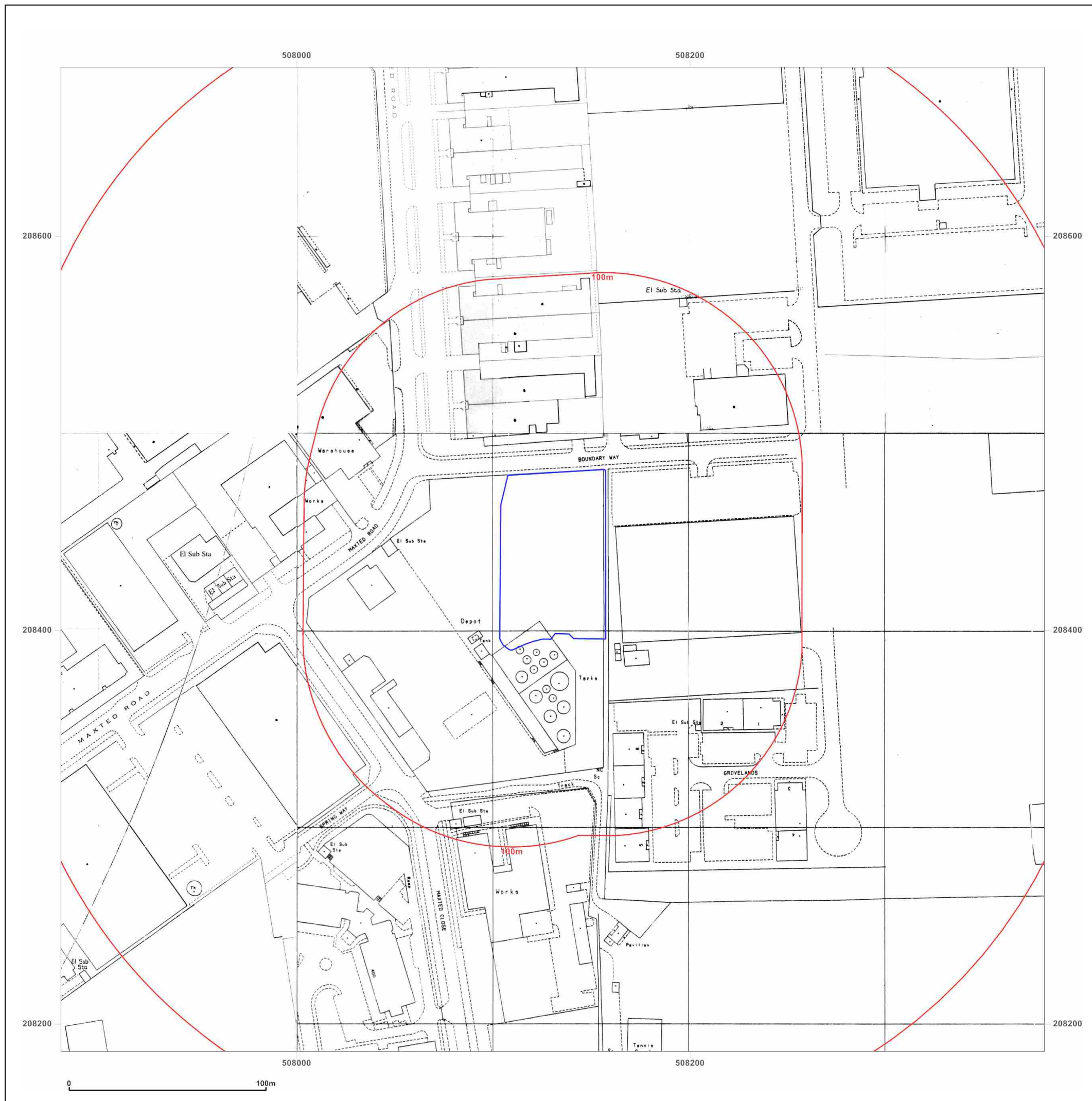
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 Revised 1987
 Edition N/A
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Surveyed 1976
 Revised 1987
 Edition N/A
 Copyright 1987
 Levelled 1976

Surveyed 1969
 Revised 1969
 Edition N/A
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Client Ref: EMS_579577_777908
Report Ref: EMS-579577_777908
Grid Ref: 508130, 208436

Map Name: National Grid

Map date: 1991-1993

Scale: 1:1,250

Printed at: 1:2,000



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Surveyed N/A
 Revised N/A
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 Copyright 1993
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 Revised 1991
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Client Ref: EMS_579577_777908
Report Ref: EMS-579577_777908
Grid Ref: 508130, 208436

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



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 Revised N/A
 Edition N/A
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 Revised N/A
 Edition N/A
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Client Ref: EMS_579577_777908
Report Ref: EMS-579577_777908
Grid Ref: 508130, 208436

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



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 Revised N/A
 Edition N/A
 Copyright 1993
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 Revised 1993
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Client Ref: EMS_579577_777908
Report Ref: EMS-579577_777908
Grid Ref: 508130, 208436

Map Name: National Grid

Map date: 1993-1995

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1993
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 Edition N/A
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	Surveyed N/A Revised N/A Edition N/A Copyright 1995 Levelled N/A



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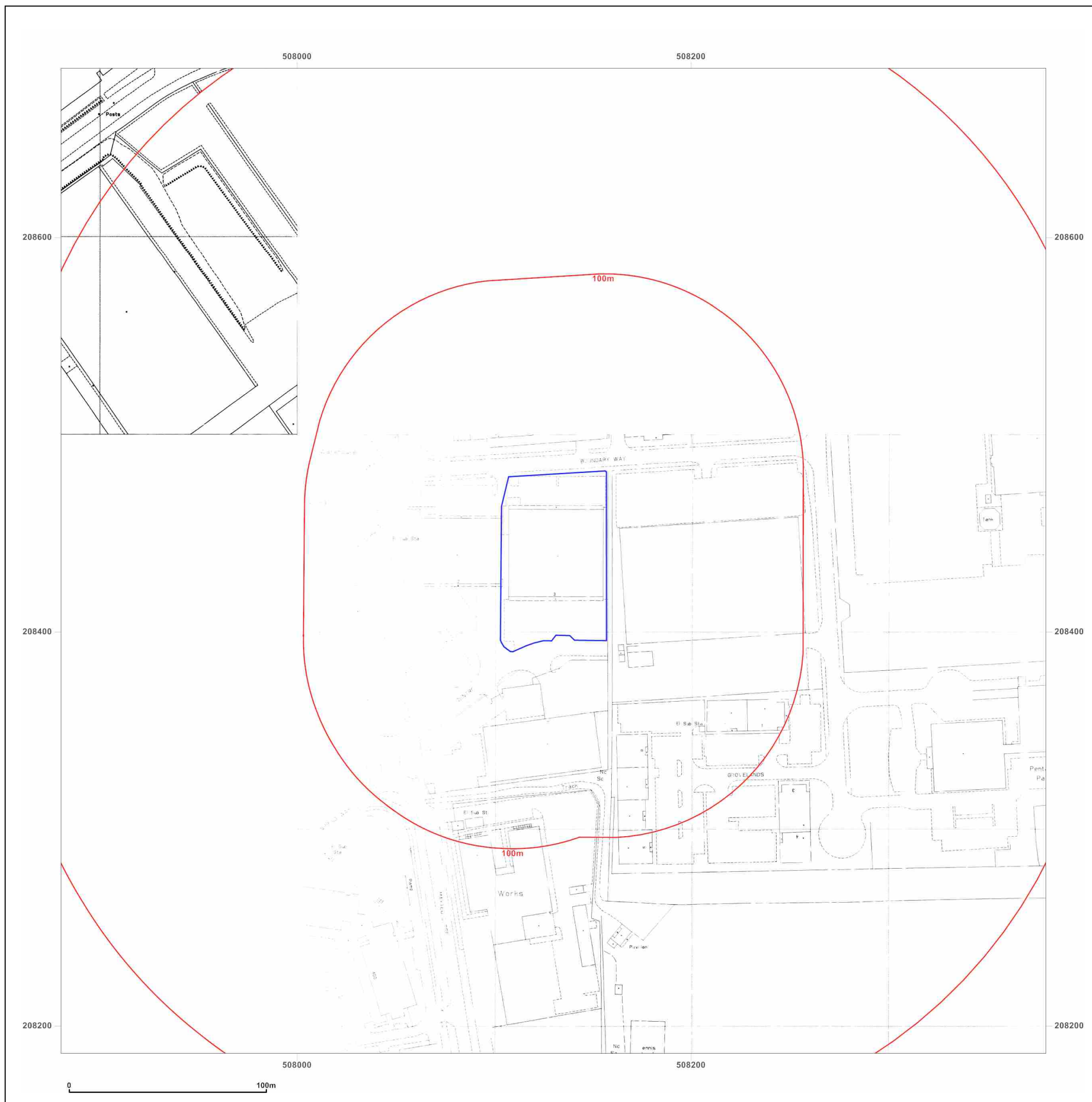


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Client Ref: EMS_579577_777908
Report Ref: EMS-579577_777908
Grid Ref: 508130, 208436

Map Name: National Grid

Map date: 1993-1995

Scale: 1:1,250

Printed at: 1:2,000



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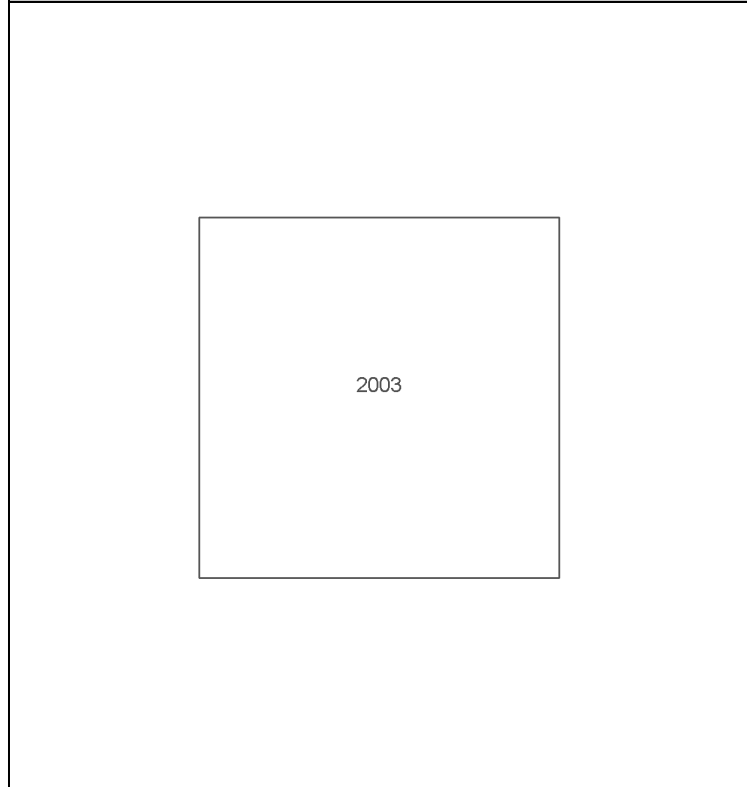
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Grid Ref: 508130, 208436

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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APPENDICES

Appendix 01 GroundSure Historical Map - Maylands

Site Details:

Maylands Data Centre, 150
Maylands Avenue, Hemel
Heampstead, HP27DF

Client Ref: EMS_579562_777886
Report Ref: EMS-579562_777886
Grid Ref: 507536, 208479

Map Name: County Series

Map date: 1877-1878

Scale: 1:2,500

Printed at: 1:2,500



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Revised 1878
Edition N/A
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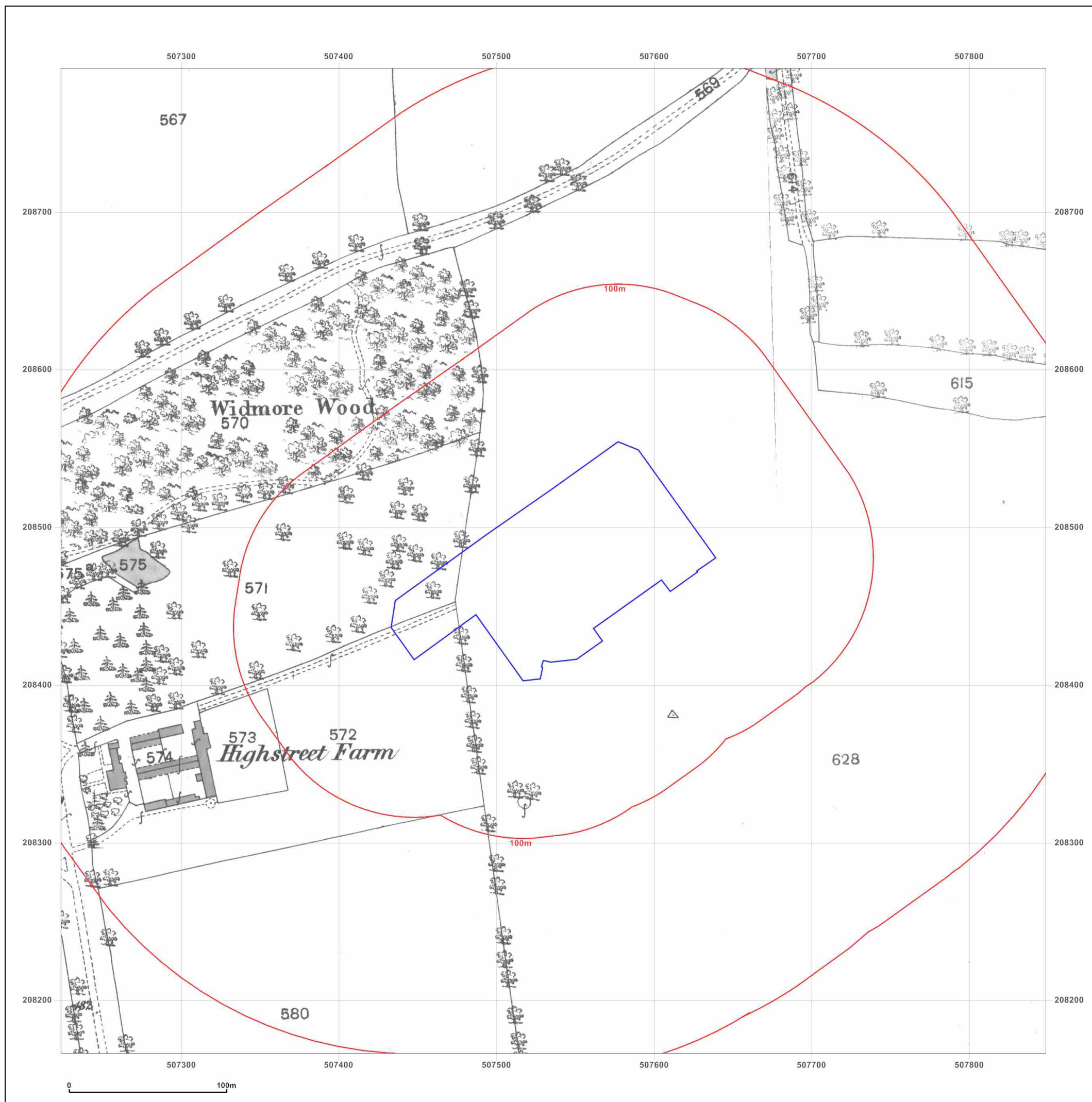


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Site Details:

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Heampstead, HP27DF

Client Ref: EMS_579562_777886
Report Ref: EMS-579562_777886
Grid Ref: 507536, 208479

Map Name: County Series

Map date: 1898

Scale: 1:2,500

Printed at: 1:2,500



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Site Details:

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 Hempstead, HP27DF

Client Ref: EMS_579562_777886
Report Ref: EMS-579562_777886
Grid Ref: 507536, 208479

Map Name: County Series

Map date: 1924-1925

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1925 Revised 1925 Edition N/A Copyright N/A Levelled N/A		Surveyed 1924 Revised 1924 Edition N/A Copyright N/A Levelled N/A
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Client Ref: EMS_579562_777886
Report Ref: EMS-579562_777886
Grid Ref: 507536, 208479

Map Name: County Series

Map date: 1932

Scale: 1:2,500

Printed at: 1:2,500



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Client Ref: EMS_579562_777886
Report Ref: EMS-579562_777886
Grid Ref: 507536, 208479

Map Name: County Series

Map date: 1947

Scale: 1:2,500

Printed at: 1:2,500



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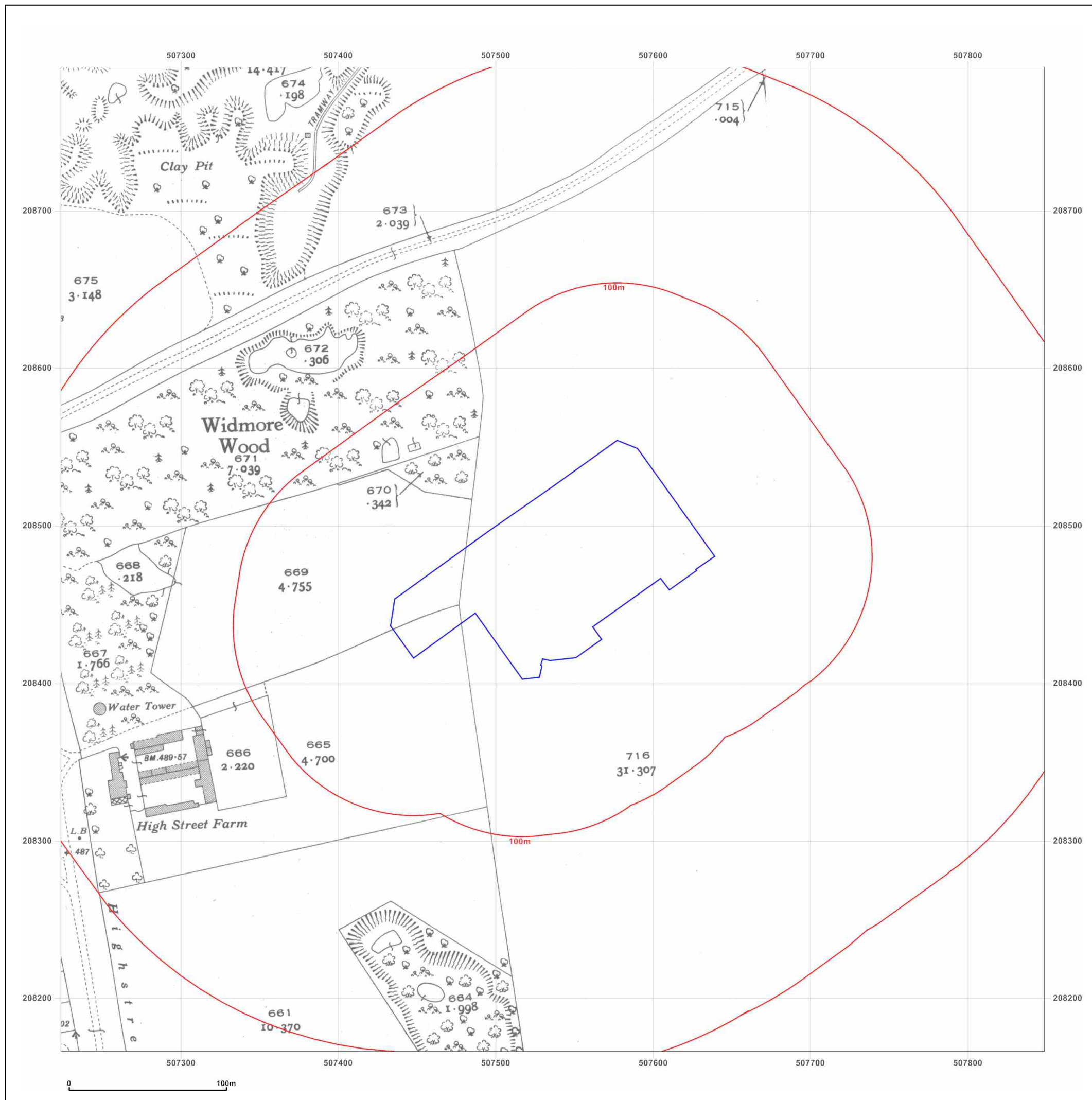


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Hempstead, HP27DF

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Report Ref: EMS-579562_777886
Grid Ref: 507536, 208479

Map Name: National Grid

Map date: 1968-1969

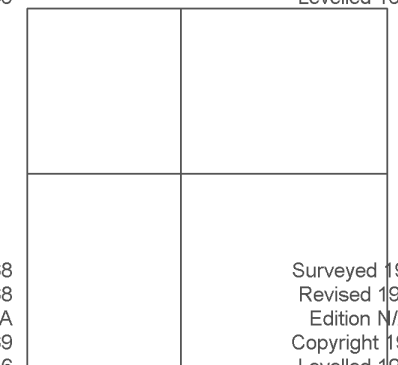
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Revised 1968
Edition N/A
Copyright 1969
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Revised 1968
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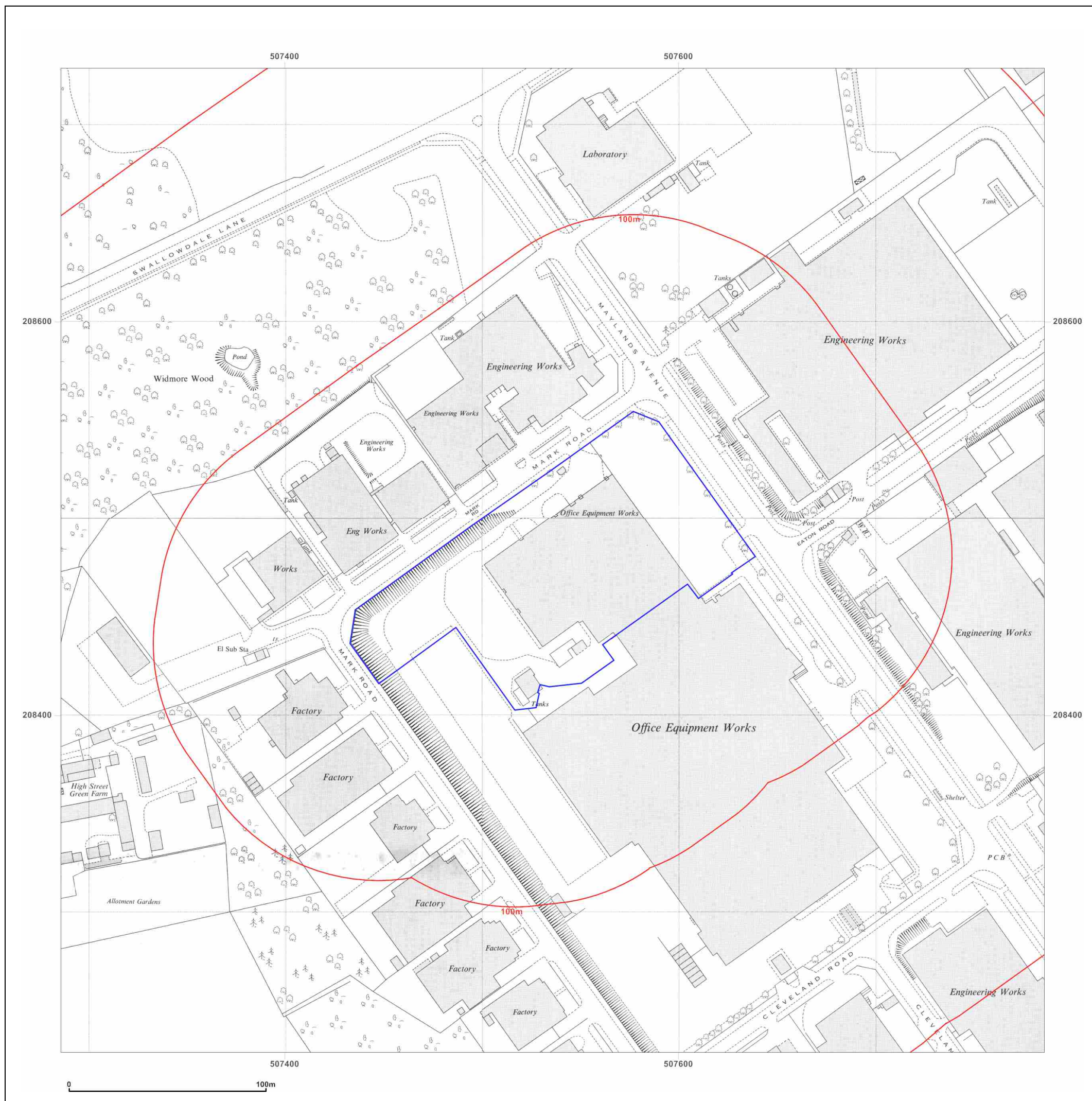


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Report Ref: EMS-579562_777886
Grid Ref: 507536, 208479

Map Name: National Grid

Map date: 1969-1973

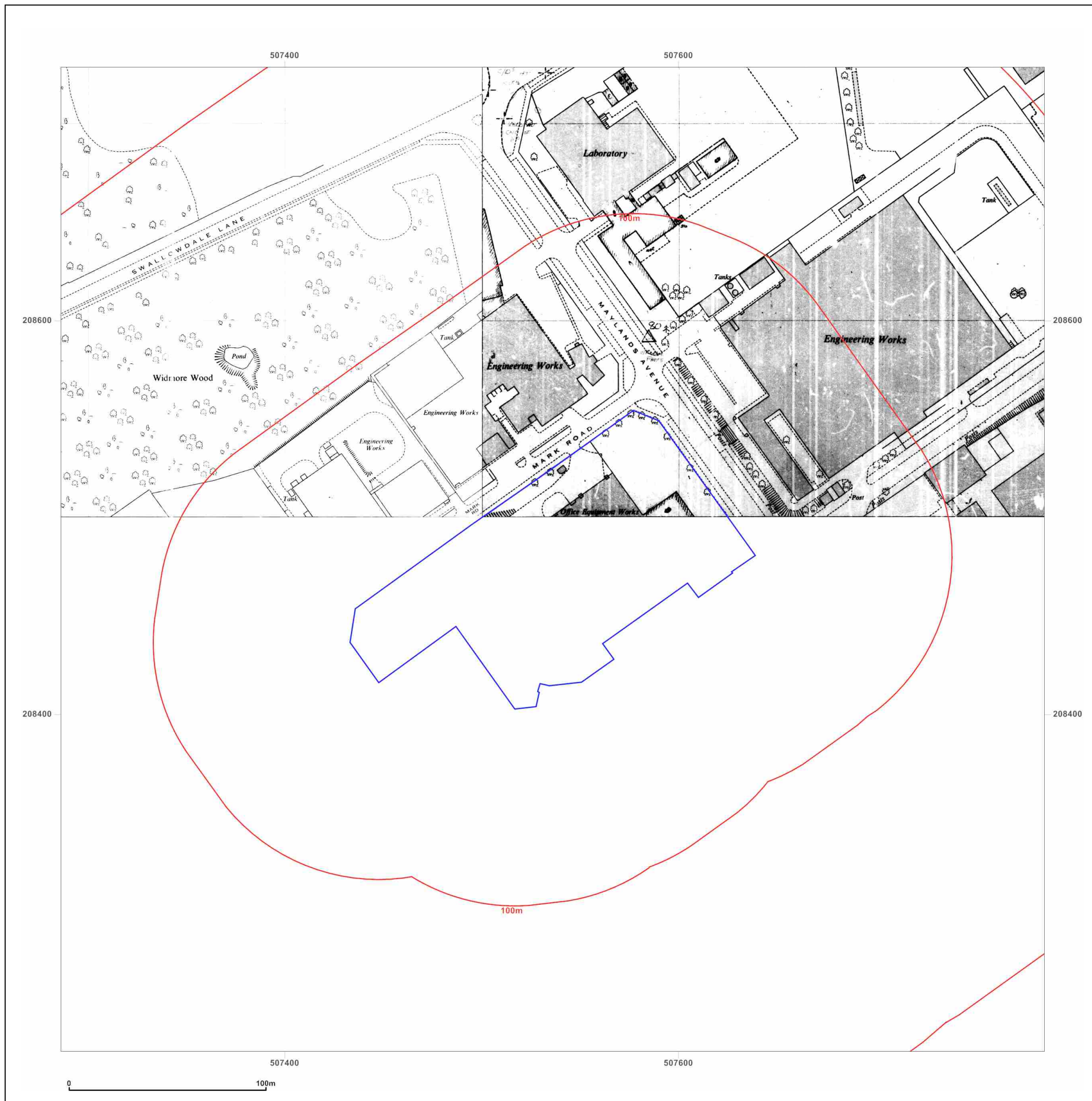
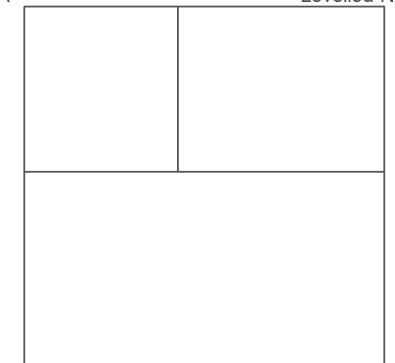
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Client Ref: EMS_579562_777886
Report Ref: EMS-579562_777886
Grid Ref: 507536, 208479

Map Name: National Grid

Map date: 1973-1975

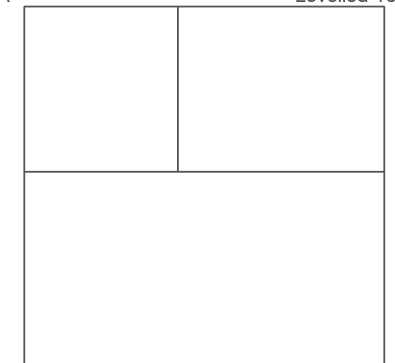
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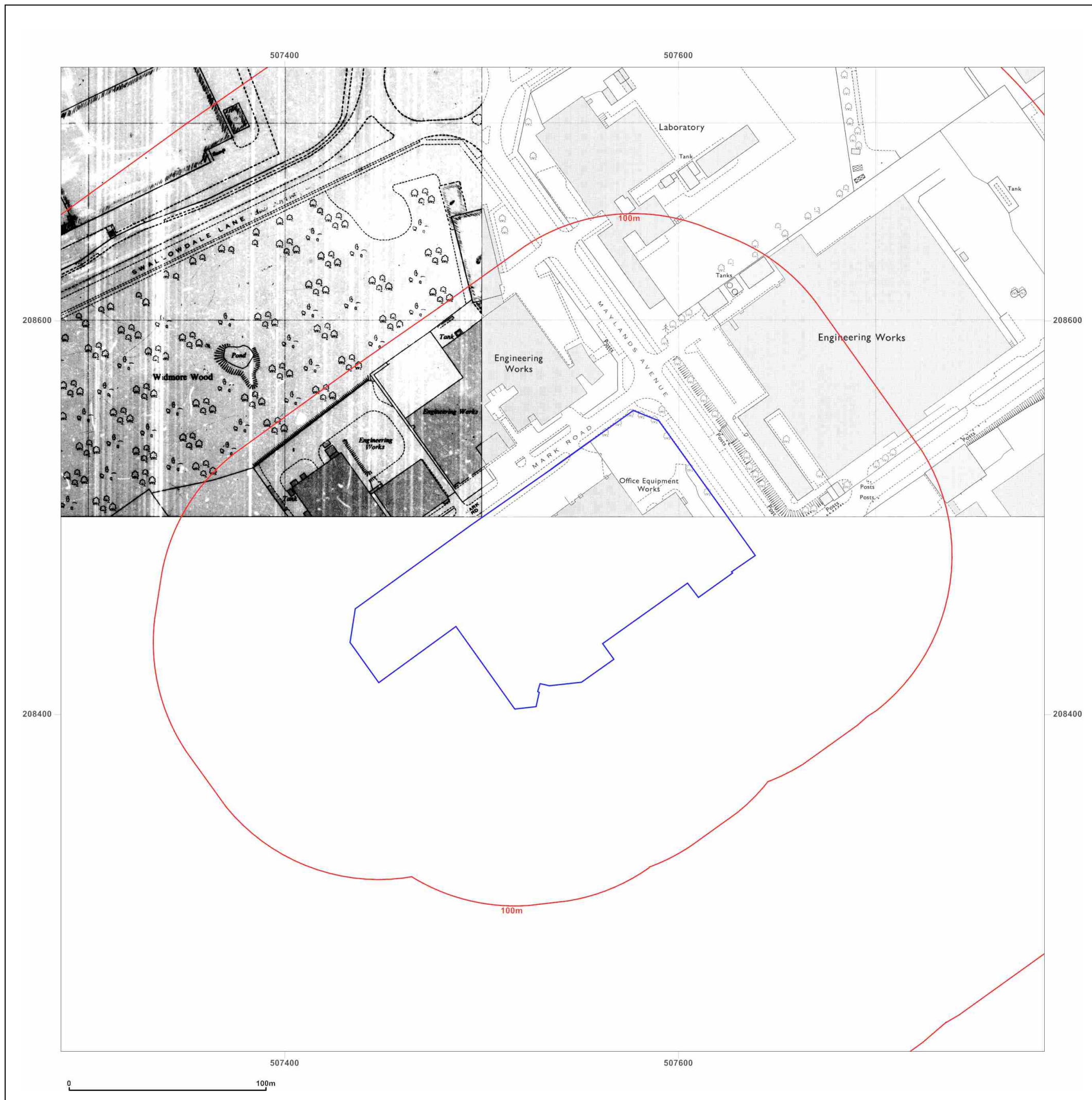


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Report Ref: EMS-579562_777886
Grid Ref: 507536, 208479

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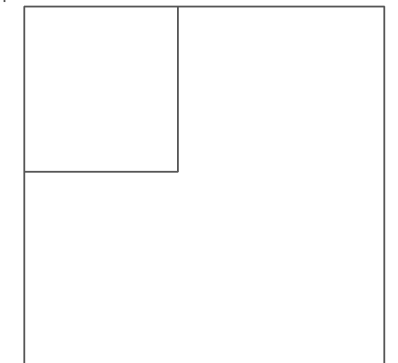
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Client Ref: EMS_579562_777886
Report Ref: EMS-579562_777886
Grid Ref: 507536, 208479

Map Name: National Grid

Map date: 1986-1987

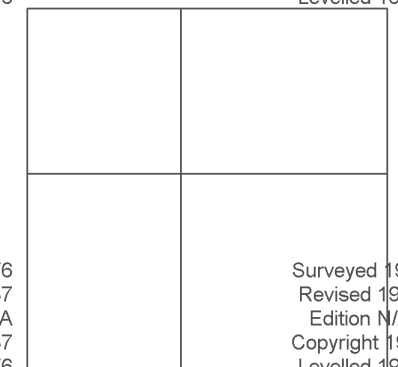
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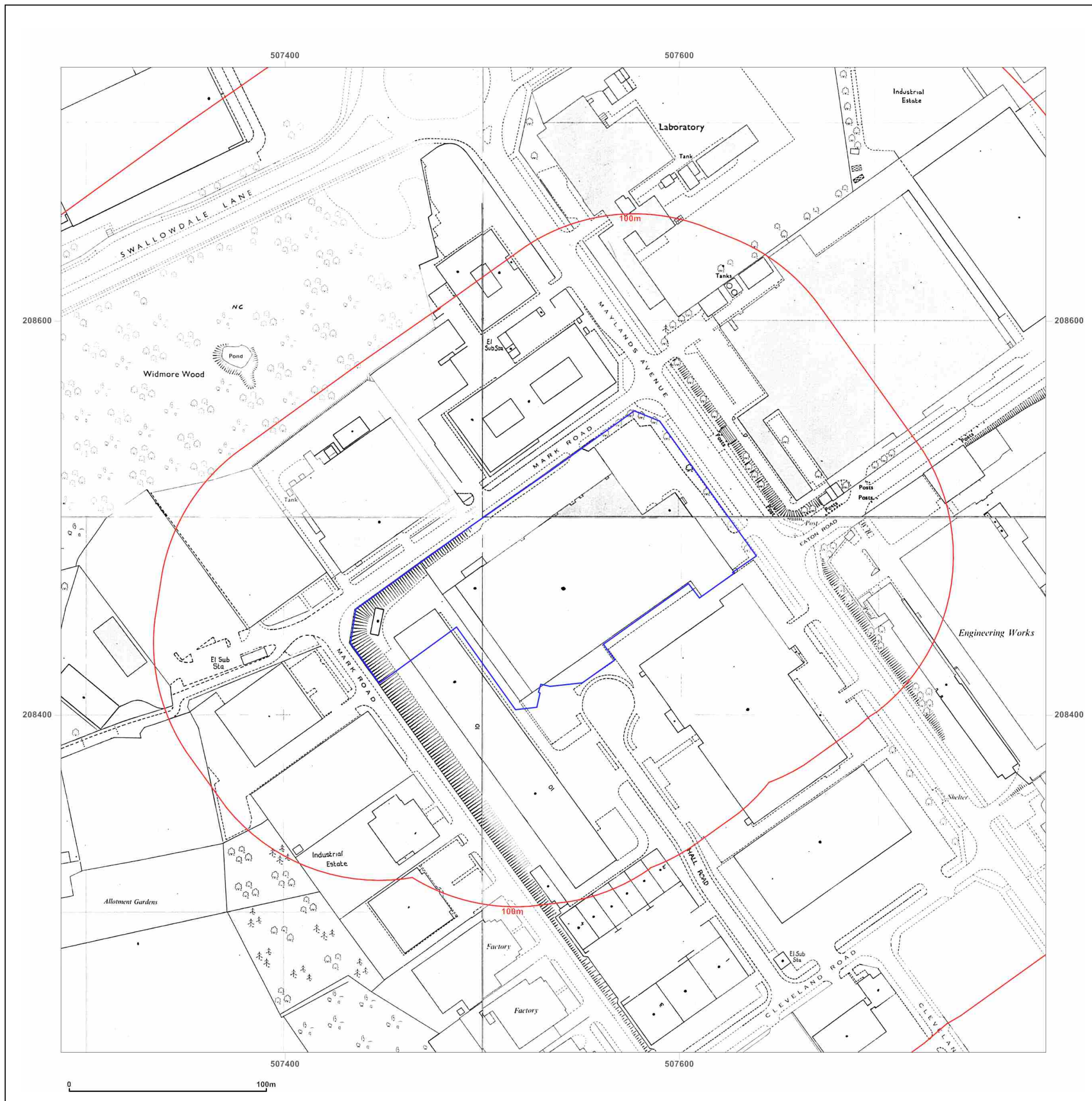


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Client Ref: EMS_579562_777886
Report Ref: EMS-579562_777886
Grid Ref: 507536, 208479

Map Name: National Grid

Map date: 1987

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Heampstead, HP27DF

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Report Ref: EMS-579562_777886
Grid Ref: 507536, 208479

Map Name: National Grid

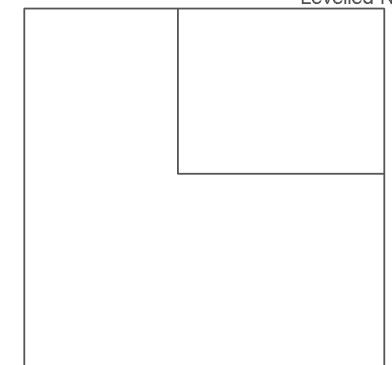
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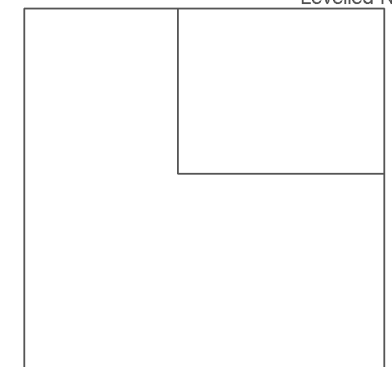
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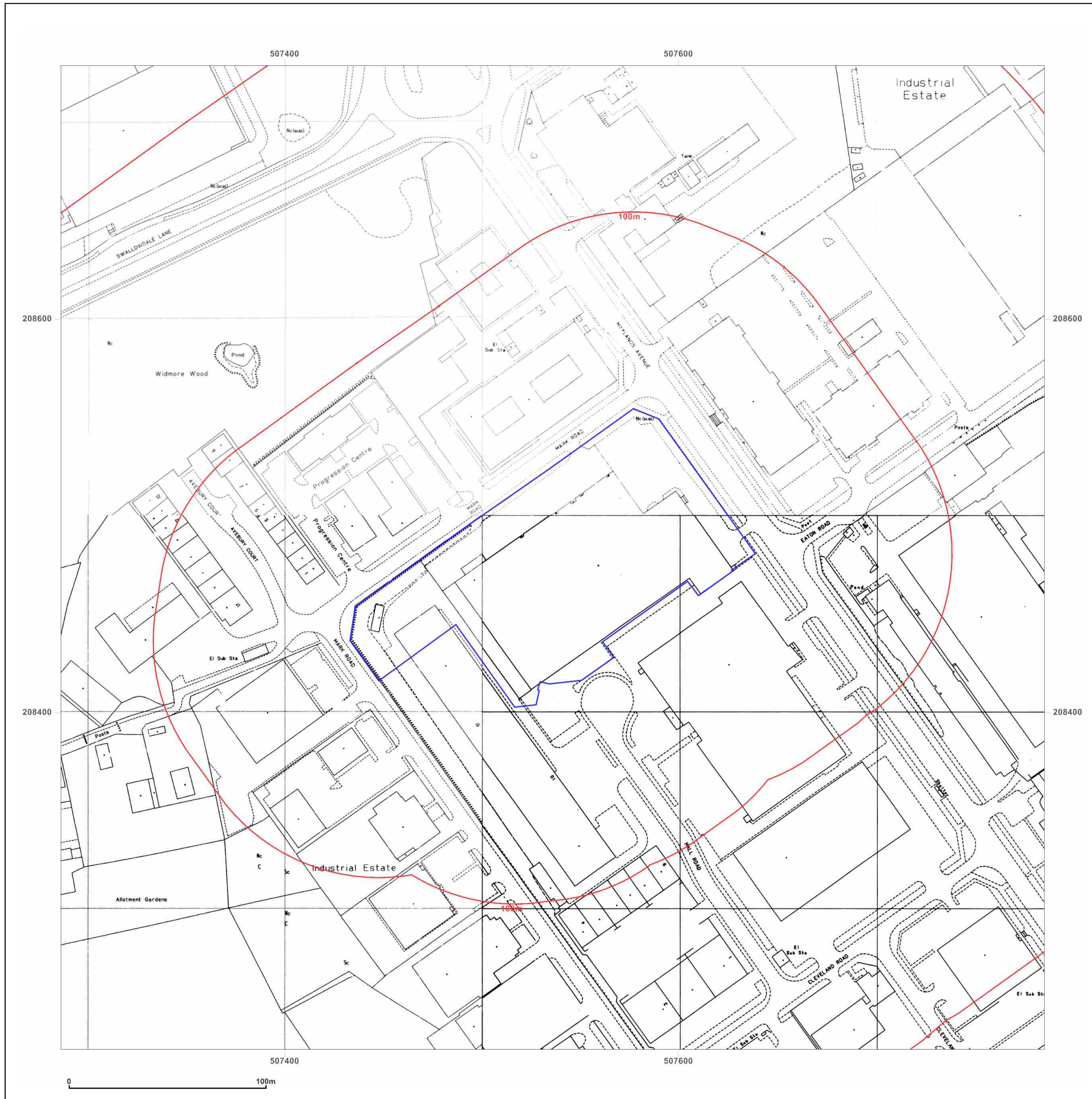
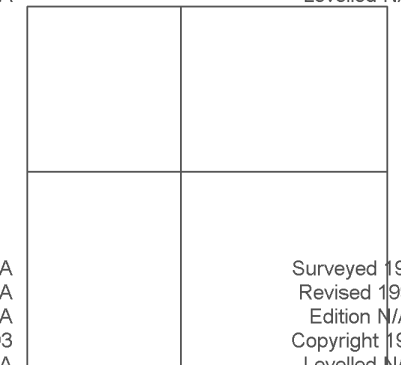


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Heampstead, HP27DF

Client Ref: EMS_579562_777886
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Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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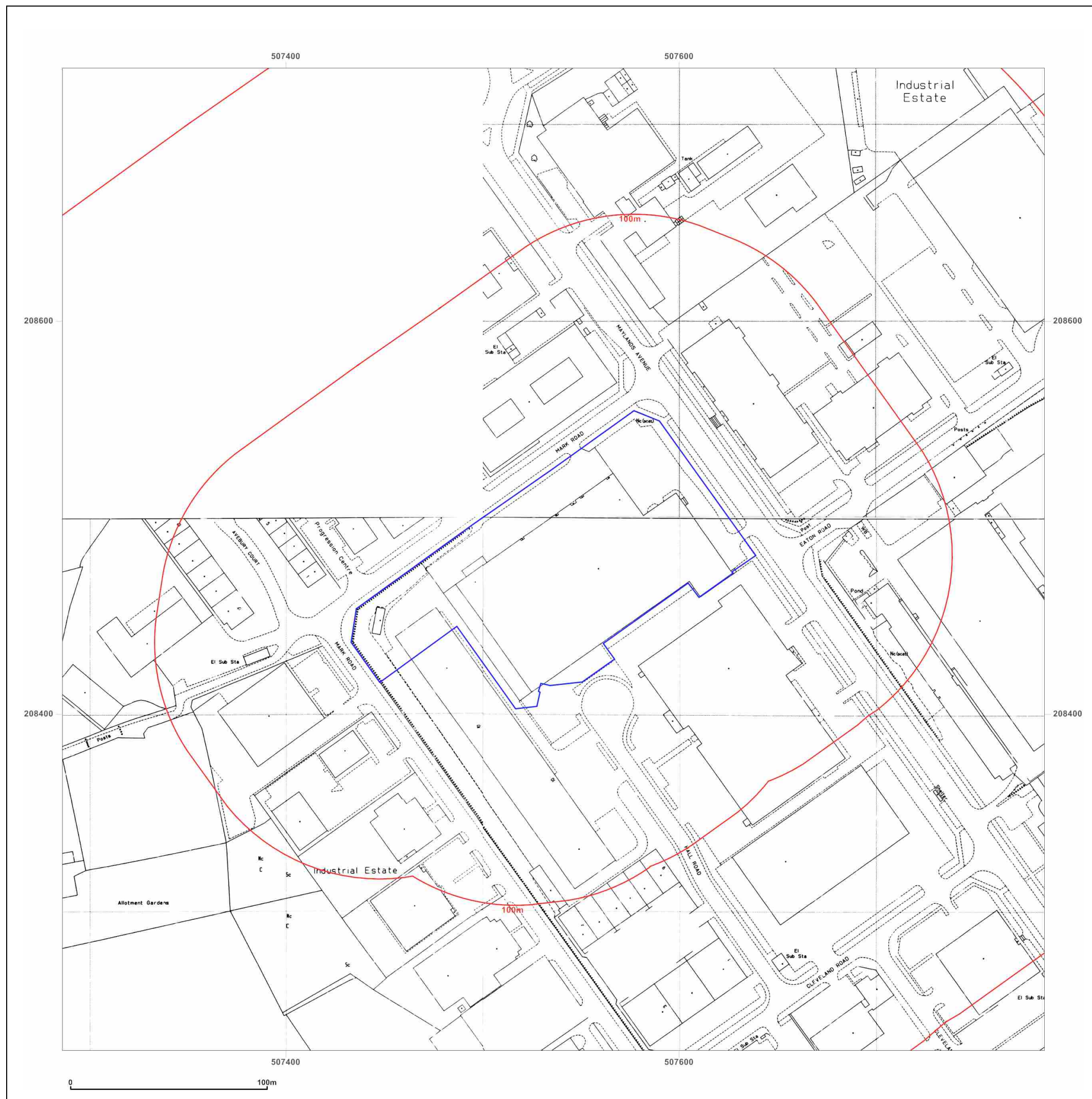


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Site Details:

Maylands Data Centre, 150
Maylands Avenue, Hemel
Heampstead, HP27DF

Client Ref: EMS_579562_777886
Report Ref: EMS-579562_777886
Grid Ref: 507536, 208479

Map Name: National Grid

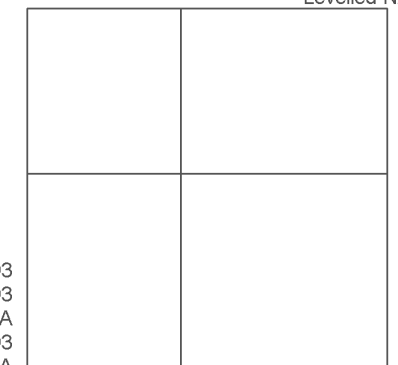
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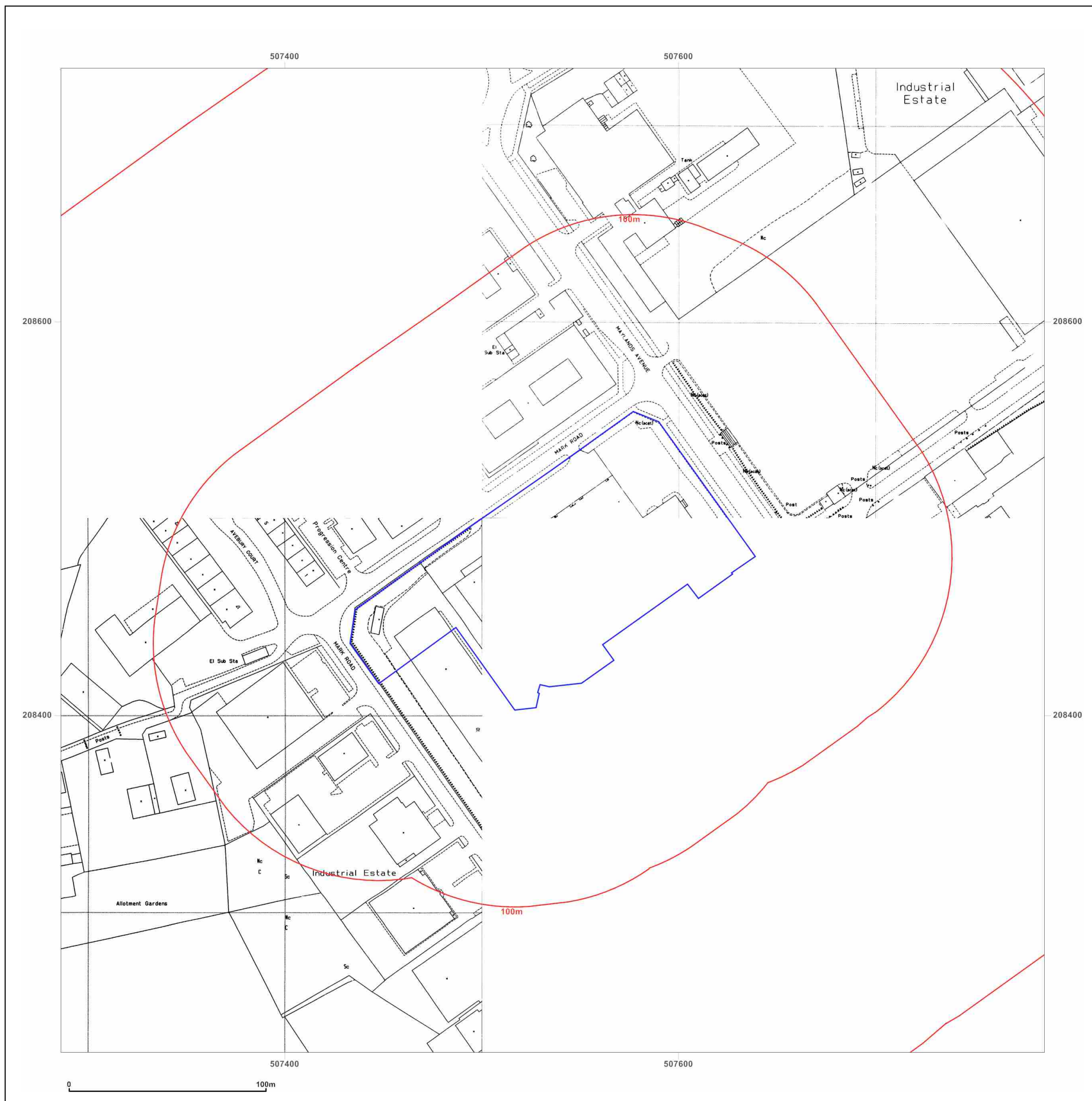


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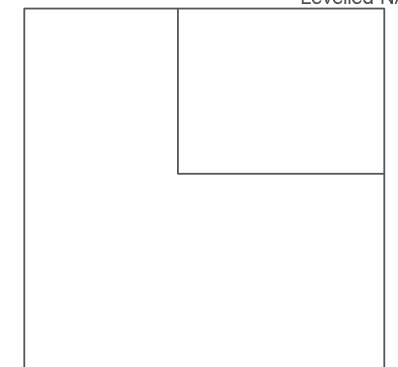
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Client Ref: EMS_579562_777886
Report Ref: EMS-579562_777886
Grid Ref: 507536, 208479

Map Name: National Grid

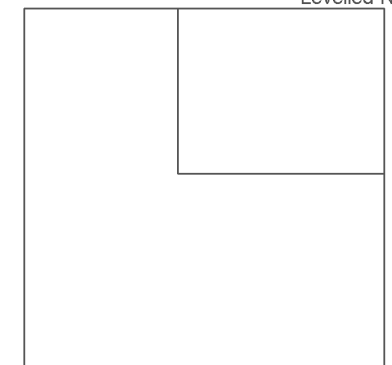
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Site Details:

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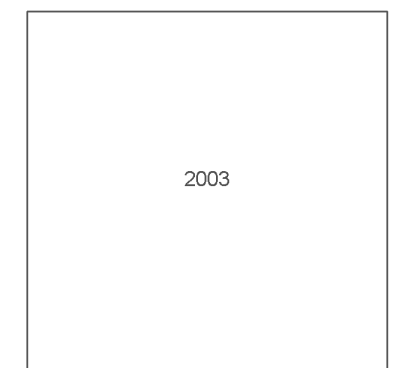
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Report Ref: EMS-579562_777886
Grid Ref: 507536, 208479

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

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APPENDICES

Appendix 02 GroundSure EnviroInsight - Campus

Address: Campus Data Centre, Spring Way, Hemel Hempstead, HP2 7UP,
Date: 25 Nov 2019
Reference: EMS-579570_777900
Client: emapsite

NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 12-Aug-2016
Grid Reference: 507986,208179
Site Size: 3.6199ha

Report Reference: EMS-579570_777900
Client Reference: EMS_579570_777900

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Overview of Findings

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

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	9	12	46	82
1.2 Additional Information – Historical Tank Database	3	24	38	42
1.3 Additional Information – Historical Energy Features Database	20	14	63	30
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	4	0
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	0	11	38
Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	4	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	8	11
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	5	3
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	6
2.1.8 Records of Licensed Discharge Consents	0	0	1	2
2.1.9 Records of Water Industry Referrals	0	0	0	1
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	2
2.2 Records of COMAH and NIHHS sites	0	0	0	6
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	2	1	1
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	1	0
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	1	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	2	0	1	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	1	0	2	3	7

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	3	14	75	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	1	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

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

Section 6: Hydrogeology and Hydrology	0-500m					
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified					
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified					
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	1	4	0
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	1	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	2	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

0-500m

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

Section 7: Flooding

7.1 Environment Agency Zone 2 floodplains within 250m of the study site	None identified					
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	None identified					
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Very Low					
7.4 Flood Defences within 250m of the study site	None identified					
7.5 Areas benefiting from Flood Defences within 250m of the study site	None identified					
7.6 Areas used for Flood Storage within 250m of the study site	None identified					
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Not Prone					
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Not Applicable					

Section 8: Designated Environmentally Sensitive Sites

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

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	0	0	0	0	1	3

Section 9: Natural Hazards

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

Section 10: Mining

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

Using this report

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

1. Historical Industrial Sites

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

2. Environmental Permits, Incidents and Registers

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

3. Landfills and Other Waste Sites

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

4. Current Land Uses

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

5. Geology

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

6. Hydrogeology and Hydrology

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

7. Flooding

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

8. Designated Environmentally Sensitive Sites

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

9. Natural Hazards

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

10. Mining

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

11. Contacts

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

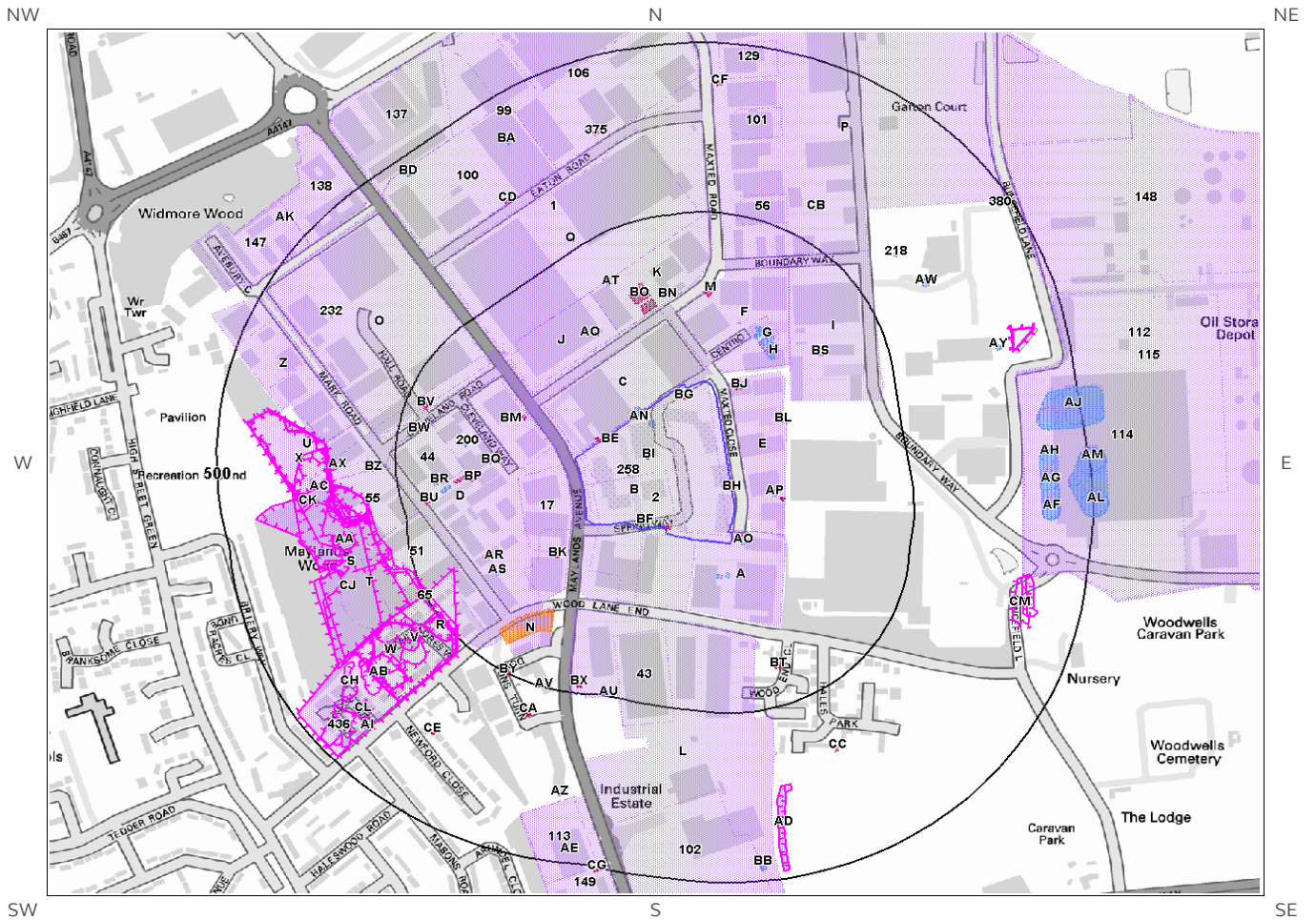
Note: Maps

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

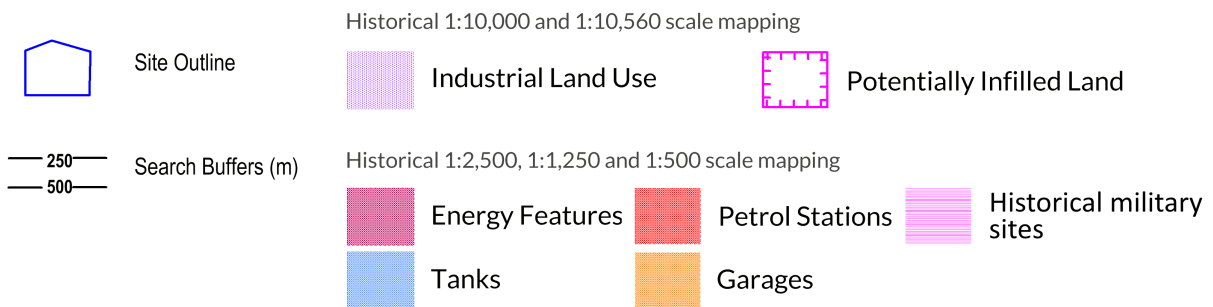
Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

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

1. Historical Land Use



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1. Historical Industrial Sites

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

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

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 149

ID	Distance [m]	Direction	Use	Date
1	0	On Site	Industrial Estate	1995
2	0	On Site	Unspecified Commercial/Industrial	1995
3A	0	On Site	Unspecified Commercial/Industrial	1995
4A	0	On Site	Unspecified Factories	1979
5B	0	On Site	Unspecified Works	1979
6AN	0	On Site	Unspecified Factories	1955
7D	0	On Site	Unspecified Factory	1955
8A	0	On Site	Unspecified Commercial/Industrial	1991
9B	0	On Site	Unspecified Commercial/Industrial	1991
10C	3	NW	Engineering Works	1979
11C	3	NW	Unspecified Commercial/Industrial	1991
12D	17	SW	Unspecified Commercial/Industrial	1995
13D	17	SW	Unspecified Commercial/Industrial	1991
14E	17	E	Unspecified Commercial/Industrial	1995
15E	17	E	Engineering Works	1979
16E	17	E	Unspecified Commercial/Industrial	1991
17	17	SW	Unspecified Factories	1979
18F	25	NE	Unspecified Commercial/Industrial	1995
19F	25	NE	Unspecified Commercial/Industrial	1991
20F	25	NE	Unspecified Depot	1979
21BM	34	NW	Unspecified Works	1979
22G	92	NE	Unspecified Tanks	1995
23G	92	NE	Unspecified Tanks	1991
24H	94	NE	Unspecified Tanks	1979
25H	94	NE	Unspecified Tanks	1979
26G	97	NE	Unspecified Tanks	1979
27H	101	NE	Unspecified Tanks	1979

28I	102	E	Unspecified Commercial/Industrial	1995
29I	102	E	Unspecified Commercial/Industrial	1991
30G	108	NE	Unspecified Tanks	1979
31J	111	NW	Unspecified Commercial/Industrial	1991
32J	111	NW	Unspecified Works	1979
33K	113	NW	Unspecified Commercial/Industrial	1991
34K	113	NW	Unspecified Works	1979
35L	121	S	Industrial Estate	1991
36L	121	S	Industrial Estate	1995
37M	130	N	Electric Substation	1995
38M	130	N	Electric Substation	1991
39M	130	N	Electric Substation	1979
40N	134	SW	Unspecified Commercial/Industrial	1995
41N	134	SW	Unspecified Works	1979
42N	134	SW	Unspecified Commercial/Industrial	1991
43	137	S	Unspecified Works	1979
44	154	W	Unspecified Works	1979
45O	180	NW	Unspecified Commercial/Industrial	1995
46O	180	NW	Unspecified Commercial/Industrial	1991
47O	180	NW	Unspecified Works	1979
48P	182	N	Unspecified Commercial/Industrial	1995
49P	182	N	Unspecified Commercial/Industrial	1991
50O	183	NW	Industrial Estate	1955
51	185	W	Unspecified Depot	1979
52Q	186	NW	Unspecified Commercial/Industrial	1991
53Q	186	NW	Engineering Works	1979
54V	198	W	Disused Brick Works	1938
55	230	W	Engineering Works	1979
56	236	N	Engineering Works	1979
57T	240	SW	Brick Works	1897
58R	246	SW	Unspecified Pit	1938
59R	246	SW	Unspecified Pit	1938
60S	247	SW	Disused Brick Works	1947
61S	247	SW	Disused Brick Works	1922
62R	247	SW	Unspecified Pit	1922
63R	247	SW	Unspecified Pit	1897
64R	247	SW	Unspecified Pit	1947
65	249	SW	Unspecified Old Kiln	1938
66AB	250	SW	Brick Field	1877

67CI	250	SW	Unspecified Ground Workings	1897
68T	253	W	Unspecified Old Kiln	1922
69U	277	W	Unspecified Commercial/Industrial	1995
70U	277	W	Unspecified Commercial/Industrial	1991
71U	277	W	Engineering Works	1979
72AC	289	W	Disused Brick Works	1938
73V	289	SW	Unspecified Pit	1897
74V	290	SW	Unspecified Pit	1947
75V	290	SW	Unspecified Pit	1922
76W	291	SW	Unspecified Ground Workings	1938
77W	291	SW	Unspecified Ground Workings	1938
78Y	299	W	Unspecified Ground Workings	1897
79X	303	W	Unspecified Ground Workings	1938
80X	303	W	Unspecified Ground Workings	1938
81Y	305	W	Unspecified Ground Workings	1922
82Y	305	W	Unspecified Ground Workings	1947
83Y	308	W	Unspecified Heap	1955
84Z	310	W	Unspecified Commercial/Industrial	1995
85Z	310	W	Unspecified Commercial/Industrial	1991
86CJ	311	W	Unspecified Pit	1877
87AA	323	W	Unspecified Heap	1938
88AA	323	W	Unspecified Heap	1938
89AA	325	W	Unspecified Heap	1947
90AA	325	W	Unspecified Heap	1922
91AB	335	SW	Unspecified Pit	1877
92S	339	W	Unspecified Ground Workings	1938
93S	339	W	Unspecified Ground Workings	1938
94AB	341	SW	Unspecified Pit	1922
95AB	341	SW	Unspecified Pit	1947
96AC	345	W	Unspecified Pit	1897
97U	346	W	Unspecified Pit	1947
98U	346	W	Unspecified Pit	1922
99	359	NW	Industrial Estate	1991
100	360	NW	Engineering Works	1979
101	360	N	Engineering Works	1979
102	363	S	Engineering Works	1979
103AD	364	S	Unspecified Ground	1995

				Workings	
104AD	364	S	Unspecified Ground Workings	1979	
105AD	364	S	Unspecified Ground Workings	1991	
106	364	NW	Engineering Works	1979	
107CK	369	W	Unspecified Ground Workings	1897	
108CH	388	SW	Unspecified Pit	1877	
109AE	398	S	Unspecified Commercial/Industrial	1995	
110AE	398	S	Unspecified Commercial/Industrial	1991	
111Z	400	W	Unspecified Factories	1979	
112	401	E	Oil Storage Depot	1995	
113	402	S	Unspecified Works	1979	
114	403	E	Oil Storage Depots	1979	
115	404	E	Oil Storage Depot	1991	
116CL	411	SW	Unspecified Pit	1877	
117AF	429	E	Unspecified Tank	1995	
118AF	429	E	Unspecified Tank	1991	
119AG	429	E	Unspecified Tanks	1979	
120AG	430	E	Unspecified Tank	1995	
121AG	430	E	Unspecified Tank	1991	
122AI	431	SW	Unspecified Kiln	1877	
123AH	433	E	Unspecified Tank	1991	
124AH	433	E	Unspecified Tank	1995	
125AI	435	SW	Unspecified Pits	1877	
126AJ	439	E	Unspecified Tanks	1979	
127AJ	440	E	Unspecified Tank	1991	
128AJ	440	E	Unspecified Tank	1995	
129	447	N	Unspecified Factories	1979	
130AJ	457	E	Unspecified Tank	1991	
131AJ	457	E	Unspecified Tank	1995	
132AG	467	E	Unspecified Tank	1991	
133AG	467	E	Unspecified Tank	1995	
134BC	468	E	Unspecified Tanks	1979	
135AK	472	NW	Unspecified Commercial/Industrial	1991	
136AK	472	NW	Unspecified Commercial/Industrial	1995	
137	473	NW	Unspecified Depot	1979	
138	475	NW	Engineering Works	1979	
139AJ	477	E	Unspecified Tank	1995	
140AJ	477	E	Unspecified Tank	1991	
141AJ	479	E	Unspecified Tank	1995	
142AJ	479	E	Unspecified Tank	1991	
143AL	484	E	Unspecified Tank	1991	

144AL	484	E	Unspecified Tank	1995
145AM	486	E	Unspecified Tank	1991
146AM	486	E	Unspecified Tank	1995
147	486	NW	Unspecified Factory	1979
148	491	E	Unspecified Commercial/Industrial	1979
149	492	S	Unspecified Commercial/Industrial	1979

1.2 Additional Information – Historical Tank Database

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

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

107

ID	Distance (m)	Direction	Use	Date
150BF	0	On Site	Unspecified Tank	1969
151BE	0	On Site	Unspecified Tank	1969
152AN	0	On Site	Unspecified Tank	1969
153AN	3	NW	Unspecified Tank	1996
154AN	3	NW	Unspecified Tank	1991
155AN	3	NW	Unspecified Tank	1987
156AO	15	E	Unspecified Tank	1995
157AO	15	E	Unspecified Tank	1996
158AO	15	E	Unspecified Tank	1993
159AO	15	E	Unspecified Tank	1999
160AO	15	E	Unspecified Tank	1995
161AO	21	E	Unspecified Tank	1991
162AO	22	E	Unspecified Tank	1999
163AO	22	E	Unspecified Tank	1995
164AO	22	E	Unspecified Tank	1996
165AO	22	E	Unspecified Tank	1993
166AO	22	E	Unspecified Tank	1995
167A	44	S	Unspecified Tank	1995
168A	44	S	Unspecified Tank	1996
169A	44	S	Unspecified Tank	1993
170A	44	S	Unspecified Tank	1999
171A	44	S	Unspecified Tank	1995
172A	47	S	Unspecified Tank	1999
173A	47	S	Unspecified Tank	1993
174A	47	S	Unspecified Tank	1995
175A	47	S	Unspecified Tank	1996
176A	47	S	Unspecified Tank	1995

177AP	55	E	Unspecified Tank	1991
178AP	56	E	Unspecified Tank	1996
179AP	56	E	Unspecified Tank	1993
180AP	56	E	Unspecified Tank	1995
181AP	56	E	Unspecified Tank	1999
182AP	56	E	Unspecified Tank	1995
183G	90	NE	Tanks	1991
184G	91	NE	Tanks	1969
185G	92	NE	Tanks	1991
186G	93	NE	Tanks	1969
187F	97	NE	Unspecified Tank	1991
188BQ	114	W	Unspecified Tank	1969
189BN	128	N	Unspecified Tank	1969
190AQ	134	NW	Unspecified Tank	1986
191AQ	134	NW	Unspecified Tank	1969
192AR	140	SW	Unspecified Tank	1987
193AR	140	SW	Unspecified Tank	1991
194AR	140	SW	Unspecified Tank	1986
195AR	141	SW	Unspecified Tank	1996
196AR	141	SW	Unspecified Tank	1969
197AS	145	SW	Unspecified Tank	1987
198AS	145	SW	Unspecified Tank	1986
199AS	145	SW	Unspecified Tank	1991
200	146	W	Tanks	1969
201AS	146	SW	Unspecified Tank	1996
202AS	147	SW	Unspecified Tank	1969
203D	177	W	Tanks	1986
204AT	178	NW	Unspecified Tank	1996
205AT	178	NW	Unspecified Tank	1987
206AT	178	NW	Unspecified Tank	1991
207D	179	W	Tanks	1969
208BR	183	W	Tanks	1969
209AU	246	S	Unspecified Tank	1993
210AU	246	S	Tanks	1968
211AU	246	S	Tanks	1969
212AU	246	S	Unspecified Tank	1987
213AV	248	S	Unspecified Tank	1968
214AV	250	S	Unspecified Tank	1987
215AV	256	SW	Unspecified Tank	1968
216AV	256	SW	Unspecified Tank	1969
217AV	258	SW	Unspecified Tank	1987
218	319	NE	Unspecified Tank	1999
219AW	329	NE	Unspecified Tank	1996
220AW	329	NE	Unspecified Tank	1993
221AW	329	NE	Unspecified Tank	1995
222AW	329	NE	Unspecified Tank	1995

223AX	330	W	Unspecified Tank	1991
224AX	330	W	Unspecified Tank	1986
225AX	330	W	Unspecified Tank	1987
226AX	330	W	Unspecified Tank	1969
227AW	331	NE	Unspecified Tank	1999
228AB	371	SW	Unspecified Tank	1925
229AB	371	SW	Unspecified Tank	1932
230AB	371	SW	Unspecified Tank	1925
231AB	371	SW	Unspecified Tank	1932
232	396	NW	Tanks	1969
233AY	397	E	Unspecified Tank	1999
234AY	397	E	Unspecified Tank	1996
235AY	397	E	Unspecified Tank	1995
236AY	397	E	Unspecified Tank	1995
237AZ	400	S	Unspecified Tank	1968
238AZ	400	S	Unspecified Tank	1969
239AZ	400	S	Unspecified Tank	1993
240AG	428	E	Tanks	1974
241AG	428	E	Tanks	1996
242BA	429	NW	Unspecified Tank	1975
243BA	429	NW	Unspecified Tank	1969
244AJ	436	E	Tanks	1996
245AJ	437	E	Tanks	1974
246BB	466	S	Tanks	1996
247BB	466	S	Tanks	1996
248BB	467	S	Tanks	1986
249AG	467	E	Tanks	1974
250BC	467	E	Tanks	1996
251BB	467	S	Unspecified Tank	1970
252BD	473	NW	Tanks	1975
253BD	473	NW	Tanks	1969
254BD	474	NW	Tanks	1987
255AL	482	E	Tanks	1974
256AM	484	E	Tanks	1974

1.3 Additional Information – Historical Energy Features Database

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

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

127

ID	Distance (m)	Direction	Use	Date
257BH	0	On Site	Electricity Substation	1991

258	0	On Site	Electricity Substation	1969
259BE	0	On Site	Electricity Substation	1996
260BE	0	On Site	Electricity Substation	1996
261BI	0	On Site	Electricity Substation	1996
262BF	0	On Site	Electricity Substation	1996
263BG	0	On Site	Electricity Substation	1996
264BG	0	On Site	Electricity Substation	1999
265BG	0	On Site	Electricity Substation	1993
266BG	0	On Site	Electricity Substation	1995
267BH	0	On Site	Electricity Substation	1995
268BH	0	On Site	Electricity Substation	1993
269BH	0	On Site	Electricity Substation	1999
270BH	0	On Site	Electricity Substation	1996
271BG	0	On Site	Electricity Substation	1991
272BE	0	On Site	Electricity Substation	1991
273BE	0	On Site	Electricity Substation	1991
274BI	0	On Site	Electricity Substation	1991
275BG	0	On Site	Electricity Substation	1995
276BH	0	On Site	Electricity Substation	1995
277BE	1	NW	Electricity Substation	1987
278BE	1	NW	Electricity Substation	1991
279BE	1	NW	Electricity Substation	1996
280AO	10	E	Electricity Substation	1991
281AO	11	E	Electricity Substation	1995
282AO	11	E	Electricity Substation	1996
283AO	11	E	Electricity Substation	1999
284AO	11	E	Electricity Substation	1993
285AO	11	E	Electricity Substation	1995
286BJ	29	E	Electricity Substation	1995
287BJ	29	E	Electricity Substation	1995
288BJ	29	E	Electricity Substation	1991
289BJ	29	E	Electricity Substation	1993
290BJ	30	E	Electricity Substation	1969
291BK	63	SW	Electricity Substation	1987
292BK	63	SW	Electricity Substation	1991
293BK	63	SW	Electricity Substation	1996
294AP	64	E	Electricity Substation	1991
295AP	65	E	Electricity Substation	1995
296AP	65	E	Electricity Substation	1996
297AP	65	E	Electricity Substation	1993
298AP	65	E	Electricity Substation	1999
299AP	65	E	Electricity Substation	1995
300BL	84	E	Electricity Substation	1999
301BL	85	E	Electricity Substation	1996
302BM	89	NW	Electricity Substation	1996
303BM	90	NW	Electricity Substation	1987

304BM	90	NW	Electricity Substation	1991
305BN	117	NW	Electricity Substation	1969
306BN	117	NW	Electricity Substation	1986
307BN	117	NW	Electricity Substation	1987
308BN	117	NW	Electricity Substation	1991
309BN	123	NW	Electricity Substation	1996
310M	125	N	Electricity Substation	1995
311M	125	N	Electricity Substation	1993
312M	125	N	Electricity Substation	1999
313M	125	N	Electricity Substation	1996
314M	125	N	Electricity Substation	1995
315M	127	N	Electricity Substation	1991
316M	128	N	Electricity Substation	1969
317BO	134	NW	Electricity Substation	1987
318BO	134	NW	Electricity Substation	1986
319BO	134	NW	Electricity Substation	1991
320BO	135	NW	Electricity Substation	1996
321BO	138	NW	Electricity Substation	1969
322BP	144	W	Electricity Substation	1991
323BP	144	W	Electricity Substation	1996
324BQ	150	W	Electricity Substation	1986
325BR	151	W	Electricity Substation	1969
326BS	156	E	Electricity Substation	1991
327BS	156	E	Electricity Substation	1995
328BS	156	E	Electricity Substation	1996
329BS	156	E	Electricity Substation	1993
330BS	156	E	Electricity Substation	1999
331BS	156	E	Electricity Substation	1995
332BP	157	W	Electricity Substation	1969
333BP	164	W	Electricity Substation	1986
334BT	189	S	Electricity Substation	1996
335BT	189	S	Electricity Substation	1996
336BT	190	S	Electricity Substation	1986
337BU	209	W	Electricity Substation	1996
338BU	210	W	Electricity Substation	1987
339BU	210	W	Electricity Substation	1991
340BV	218	W	Electricity Substation	1987
341BV	218	W	Electricity Substation	1986
342BV	218	W	Electricity Substation	1991
343BV	218	W	Electricity Substation	1996
344BW	220	W	Electricity Substation	1996
345BW	221	W	Electricity Substation	1987
346BX	232	S	Electricity Substation	1993
347BX	233	S	Electricity Substation	1969
348BX	233	S	Electricity Substation	1968
349BX	233	S	Electricity Substation	1987

350BY	246	SW	Electricity Substation	1993
351BY	246	SW	Electricity Substation	1968
352BY	247	SW	Electricity Substation	1969
353BY	248	SW	Electricity Substation	1987
354BZ	279	W	Electricity Substation	1987
355BZ	279	W	Electricity Substation	1986
356BZ	279	W	Electricity Substation	1991
357BZ	279	W	Electricity Substation	1996
358BZ	280	W	Electricity Substation	1969
359CA	285	S	Electricity Substation	1993
360CA	285	S	Electricity Substation	1968
361CA	286	S	Electricity Substation	1969
362CA	286	S	Electricity Substation	1987
363CB	295	NE	Electricity Substation	1993
364CB	296	NE	Electricity Substation	1987
365CC	332	SE	Electricity Substation	1996
366CC	332	SE	Electricity Substation	1996
367CC	333	SE	Electricity Substation	1986
368CD	362	NW	Electricity Substation	1999
369CD	362	NW	Electricity Substation	1996
370CD	362	NW	Electricity Substation	1994
371CD	362	NW	Electricity Substation	1993
372CE	375	SW	Electricity Substation	1968
373CE	376	SW	Electricity Substation	1969
374CE	377	SW	Electricity Substation	1987
375	386	N	Electricity Substation	1969
376CF	437	N	Electricity Substation	1993
377CF	439	N	Electricity Substation	1987
378CF	439	N	Electricity Substation	1982
379CF	439	N	Electricity Substation	1969
380	481	NE	Electricity Substation	1993
381CG	498	S	Electricity Substation	1968
382CG	499	S	Electricity Substation	1969
383CG	499	S	Electricity Substation	1987

1.4 Additional Information – Historical Petrol and Fuel Site Database

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

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

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

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 4

ID	Distance (m)	Direction	Use	Date
384N	137	SW	Garage	1969
385N	137	SW	Garage	1968
386N	137	SW	Garage	1993
387N	138	SW	Garage	1987

1.6 Historical military sites

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

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

Database searched and no data found.

1.7 Potentially Infilled Land

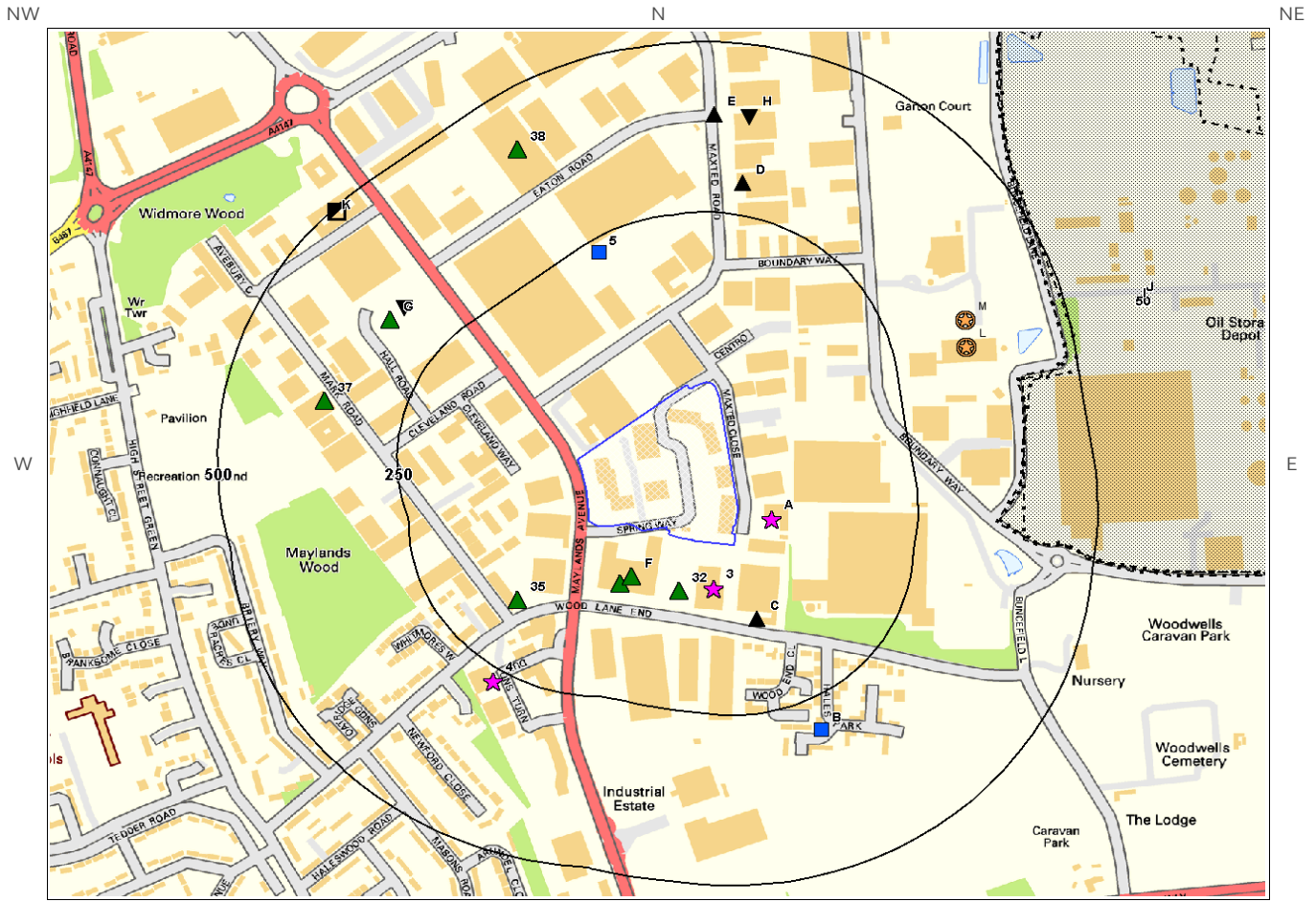
Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 49

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
















ID	Distance(m)	Direction	Use	Date
388V	198	W	Disused Brick Works	1938
389T	240	SW	Brick Works	1897
390R	246	SW	Unspecified Pit	1938
391R	246	SW	Unspecified Pit	1938
392S	247	SW	Disused Brick Works	1922
393S	247	SW	Disused Brick Works	1947
394R	247	SW	Unspecified Pit	1897
395R	247	SW	Unspecified Pit	1947
396R	247	SW	Unspecified Pit	1922
397CH	250	SW	Brick Field	1877
398CI	250	SW	Unspecified Ground Workings	1897
399AC	289	W	Disused Brick Works	1938
400V	289	SW	Unspecified Pit	1897
401V	290	SW	Unspecified Pit	1922

402V	290	SW	Unspecified Pit	1947
403W	291	SW	Unspecified Ground Workings	1938
404W	291	SW	Unspecified Ground Workings	1938
405Y	299	W	Unspecified Ground Workings	1897
406X	303	W	Unspecified Ground Workings	1938
407X	303	W	Unspecified Ground Workings	1938
408Y	305	W	Unspecified Ground Workings	1922
409Y	305	W	Unspecified Ground Workings	1947
410Y	308	W	Unspecified Heap	1955
411CJ	311	W	Unspecified Pit	1877
412AA	323	W	Unspecified Heap	1938
413AA	323	W	Unspecified Heap	1938
414AA	325	W	Unspecified Heap	1947
415AA	325	W	Unspecified Heap	1922
416AB	335	SW	Unspecified Pit	1877
417S	339	W	Unspecified Ground Workings	1938
418S	339	W	Unspecified Ground Workings	1938
419AB	341	SW	Unspecified Pit	1922
420AB	341	SW	Unspecified Pit	1947
421AX	345	W	Unspecified Pit	1897
422U	346	W	Unspecified Pit	1922
423U	346	W	Unspecified Pit	1947
424AD	364	S	Unspecified Ground Workings	1979
425AD	364	S	Unspecified Ground Workings	1991
426AD	364	S	Unspecified Ground Workings	1995
427CK	369	W	Unspecified Ground Workings	1897
428CH	388	SW	Unspecified Pit	1877
429CM	404	E	Ponds	1878
430CL	411	SW	Unspecified Pit	1877
431CM	415	E	Pond	1979
432CM	415	E	Pond	1991
433CM	415	E	Pond	1995
434AY	421	E	Pond	1995
435AY	422	E	Pond	1991
436	435	SW	Unspecified Pits	1877

2. Environmental Permits, Incidents and Registers Map



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

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

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

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

4

The following IPC Authorisations are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
73C	116	S	508110 207960	Operator: Henkel Loctite Adhesives Ltd Address: Kelsey House, Wood Lane End, Hemel Hempstead, Hertfordshire, HP2 4RQ Process: Inorganic Chemical Processes	Permit Number: BC9453 Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked
74C	116	S	508110 207960	Operator: Henkel Loctite Adhesives Ltd Address: Kelsey House, Wood Lane End, Hemel Hempstead, Hertfordshire, HP2 4RQ Process: Inorganic Chemical Processes	Permit Number: AO0580 Original Permit Number: IPCAPP Date Approved: 25-11-1994 Effective Date: 1-1-1995 Status: Superseded By Variation
75C	116	S	508110 207960	Operator: Henkel Loctite Adhesives Ltd Address: Wood Lane End, Hemel Hempstead, Hertfordshire, HP2 4RQ Process: Non-ferrous Metals	Permit Number: AS7574 Original Permit Number: IPCAPP Date Approved: 1-12-1995 Effective Date: 1-1-1996 Status: Superseded By Variation
76C	116	S	508110 207960	Operator: Henkel Loctite Adhesives Ltd Address: Wood Lane End, Hemel Hempstead, Hertfordshire, HP2 4RQ Process: Non-ferrous Metals	Permit Number: BD2527 Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked - Now Ippc

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

19

The following Part A(1) and IPPC Authorised Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
54C	116	S	508110 207960	Operator: HENKEL LTD Installation Name: HENKEL LOCTITE ADHESIVES LTD	Permit Number: CP3935XZ Original Permit Number: CP3935XZ EPR Reference: -

ID	Distance (m)	Direction	NGR	Details	
				Process: ASSOCIATED PROCESS	Issue Date: 24/04/2008 Effective Date: 24/04/2008 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
55C	116	S	508110 207960	Operator: HENKEL LOCTITE ADHESIVES LIMITED Installation Name: MULTICORE SOLDERS LIMITED Process: NON-FERROUS METALS; PRODUCING ETC LEAD AND ALLOYS WITH RELEASE TO AIR	Permit Number: BL7167IK Original Permit Number: BL7167IK EPR Reference: - Issue Date: 29/10/2002 Effective Date: 31/10/2002 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
56C	116	S	508110 207960	Operator: HENKEL LTD Installation Name: HENKEL LOCTITE ADHESIVES LTD Process: NON-FERROUS METALS; PRODUCING ETC LEAD AND ALLOYS WITH RELEASE TO AIR	Permit Number: CP3935XZ Original Permit Number: CP3935XZ EPR Reference: - Issue Date: 24/04/2008 Effective Date: 24/04/2008 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
57C	116	S	508110 207960	Operator: HENKEL LTD Installation Name: HENKEL LTD Process: NON-FERROUS METALS; PRODUCING ETC LEAD AND ALLOYS WITH RELEASE TO AIR	Permit Number: SP3539ZG Original Permit Number: CP3935XZ EPR Reference: - Issue Date: - Effective Date: 10/06/2013 Last date noted as effective: 2019-10-01 Status: SURRENDER EFFECTIVE
58C	116	S	508110 207960	Operator: HENKEL LOCTITE ADHESIVES LTD Installation Name: - Process: NON-FERROUS METALS; PRODUCING ETC LEAD & ALLOYS WITH RELEASE TO AIR	Permit Number: BU6042 Original Permit Number: BL7167 EPR Reference: - Issue Date: 08/04/2003 Effective Date: 30/04/2003 Last date noted as effective: 2004-10-01 Status: SUPERSEDED BY PAS
59C	116	S	508110 207960	Operator: HENKEL LOCTITE ADHESIVES LTD Installation Name: - Process: NON-FERROUS METALS; PRODUCING ETC LEAD & ALLOYS WITH RELEASE TO AIR	Permit Number: BL7167 Original Permit Number: BL7167 EPR Reference: - Issue Date: - Effective Date: 29/10/2002 Last date noted as effective: 2005-10-03 Status: SUPERSEDED BY VARIATION
60C	116	S	508110 207960	Operator: HENKEL LTD Installation Name: HENKEL LTD Process: ASSOCIATED PROCESS	Permit Number: SP3539ZG Original Permit Number: CP3935XZ EPR Reference: - Issue Date: - Effective Date: 10/06/2013 Last date noted as effective: 2019-10-01 Status: SURRENDER EFFECTIVE
61C	116	S	508110 207960	Operator: HENKEL LOCTITE ADHESIVES LIMITED Installation Name: MULTICORE SOLDERS LIMITED Process: NON-FERROUS METALS; PRODUCING ETC LEAD AND ALLOYS WITH RELEASE TO AIR	Permit Number: BU6042IF Original Permit Number: BL7167IK EPR Reference: - Issue Date: 08/04/2003 Effective Date: 30/04/2003 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
62D	295	N	508090 208600	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M	Permit Number: BU6875IC Original Permit Number: BK6912IX EPR Reference: -

ID	Distance (m)	Direction	NGR	Details	
				TUNGSTEN POWDERS LTD Process: INORGANIC CHEMICALS; GASES EG AMMONIA,	Issue Date: 30/06/2003 Effective Date: 01/07/2003 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
63D	295	N	508090 208600	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: ASSOCIATED PROCESS	Permit Number: UP3836MD Original Permit Number: BK6912IX EPR Reference: - Issue Date: - Effective Date: 25/06/2007 Last date noted as effective: 2019-10-01 Status: SURRENDER EFFECTIVE
64D	295	N	508090 208600	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: NON-FERROUS METALS; PRODUCING FROM RAW MATERIALS BY METALLURGICAL ACTIVITIES ETC	Permit Number: UP3836MD Original Permit Number: BK6912IX EPR Reference: - Issue Date: - Effective Date: 25/06/2007 Last date noted as effective: 2019-10-01 Status: SURRENDER EFFECTIVE
65D	295	N	508090 208600	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: INORGANIC CHEMICALS; GASES EG AMMONIA,	Permit Number: UP3836MD Original Permit Number: BK6912IX EPR Reference: - Issue Date: - Effective Date: 25/06/2007 Last date noted as effective: 2019-10-01 Status: SURRENDER EFFECTIVE
66D	295	N	508090 208600	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: NON-FERROUS METALS; PRODUCING FROM RAW MATERIALS BY METALLURGICAL ACTIVITIES ETC	Permit Number: BU6875IC Original Permit Number: BK6912IX EPR Reference: - Issue Date: 30/06/2003 Effective Date: 01/07/2003 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
67E	390	N	508050 208700	Operator: A AND M TUNGSTEN POWDERS LTD Installation Name: - Process: INORGANIC CHEMICALS; GASES EG AMMONIA,	Permit Number: BK6912 Original Permit Number: BK6912 EPR Reference: - Issue Date: - Effective Date: 31/01/2003 Last date noted as effective: 2005-10-03 Status: SUPERSEDED BY VARIATION
68E	390	N	508050 208700	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: INORGANIC CHEMICALS; GASES EG AMMONIA,	Permit Number: BK6912IX Original Permit Number: BK6912IX EPR Reference: - Issue Date: 31/01/2003 Effective Date: 31/01/2003 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
69E	390	N	508050 208700	Operator: A AND M TUNGSTEN POWDERS LTD Installation Name: - Process: NON-FERROUS METALS; PRODUCING FROM RAW MATERIALS BY METALLURGICAL ACTIVITIES ETC	Permit Number: BU6875 Original Permit Number: BK6912 EPR Reference: - Issue Date: 30/06/2003 Effective Date: 01/07/2003 Last date noted as effective: 2004-10-01 Status: SUPERSEDED BY PAS
70E	390	N	508050 208700	Operator: A AND M TUNGSTEN POWDERS LTD Installation Name: -	Permit Number: BU6875 Original Permit Number: BK6912 EPR Reference: -

ID	Distance (m)	Direction	NGR	Details	
				Process: INORGANIC CHEMICALS; GASES EG AMMONIA,	Issue Date: 30/06/2003 Effective Date: 01/07/2003 Last date noted as effective: 2004-10-01 Status: SUPERSEDED BY PAS
71E	390	N	508050 208700	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: NON-FERROUS METALS; PRODUCING FROM RAW MATERIALS BY METALLURGICAL ACTIVITIES ETC	Permit Number: BK6912IX Original Permit Number: BK6912IX EPR Reference: - Issue Date: 31/01/2003 Effective Date: 31/01/2003 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
72E	390	N	508050 208700	Operator: A AND M TUNGSTEN POWDERS LTD Installation Name: - Process: NON-FERROUS METALS; PRODUCING FROM RAW MATERIALS BY METALLURGICAL ACTIVITIES ETC	Permit Number: BK6912 Original Permit Number: BK6912 EPR Reference: - Issue Date: - Effective Date: 31/01/2003 Last date noted as effective: 2005-10-03 Status: SUPERSEDED BY VARIATION

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

8

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

ID	Distance (m)	Direction	NGR	Details
31F	72	S	507935 208022	Address: Fletcher Way Gge, Fletcher Way, Hemel Hempstead, HP2 5SE Process: Waste Oil Burner <0.4 MW Status: New Legislation Applies Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
32	79	S	508001 208001	Address: Multicore Solders, Kelsey House Wood Lane End. Town, Hemel Hempstead. HP2 4RQ Process: Chemical & Acid Processes Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
33F	86	S	507919 208012	Address: Dexion Ltd, Maylands Ave, Maylands Avenue, HP2 7DF Process: Other Metal Processes Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
34F	86	S	507919 208012	Address: Fletcher Way Gge, Fletcher Way, Hemel Hempstead, HP2 5SE Process: Petrol Vapour Recovery Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
35	155	SW	507777 207988	Address: Bizzy Dry Cleaners (Formerly Pristine Dry Cleaners), 22 Mark Road, Hemel Hempstead, Hertfordshire, HP2 7BN Process: Dry Cleaning Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
36G	330	NW	507600 208399	Address: Manders Printing Inks, Maxtead Rd Process: Printing Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
37	362	W	507508 208280	Address: Abbey Motors, 24 Mark Road, Hemel Hempstead, Herts, HP2 7DN Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
38	417	NW	507777 208649	Address: Spacestor, Noble House, Eaton Road, Hemel Hempstead, HP2 7UB Process: Timber Manufacture Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

6

The following RAS Licence (3 or 4) records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Address	Operator	Type	Permission Number	Dates	Status
77G	328	NW	507620 208420	Bio Rad Laboratories Ltd, Bio Rad House, Maylands Avenue, Hemel Hempstead, Hertfordshire, HP2 7TD	Bio Rad Laboratories Ltd	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AC1466	Date of Approval:31/3/1991 Effective from:31/3/1991 Last date of update:2015-01-01	Superseded By Variation
78G	328	NW	507620 208420	Bio Rad Laboratories Ltd, Bio Rad House, maylands Avenue, hemel Hempstead Industrial Est, Hemel Hempstead, Hertfordshire, HP2 7TD	Bio Rad Laboratories Ltd	Keeping And Use Of Radioactive Materials (was Rsa60 Section 1).	AC1504	Date of Approval:31/3/1991 Effective from:31/3/1991 Last date of update:2015-01-01	Revoked/cancelled
79G	328	NW	507620 208420	Bio Rad Laboratories Ltd, Bio Rad House, Maylands Avenue, Hemel Hempstead, Hertfordshire, HP2 7TD	Bio Rad Laboratories Ltd	Disposal Of Radioactive Waste (was Rsa60 Section 6).	BS9032	Date of Approval:5/9/2002 Effective from:3/10/2002 Last date of update:2015-01-01	Revoked/cancelled
80H	395	N	508100 208700	Jenson Tungsten Ltd (dissolved), 11 Maxted Road, Hemel Hempstead Industrial Est, Hemel Hempstead, Hertfordshire, HP2 7DX	Jenson Tungsten Ltd (dissolved)	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AF6090	Date of Approval:23/8/1993 Effective from:26/9/1993 Last date of update:2015-01-01	Revoked/cancelled
81H	395	N	508100 208700	Jenson Tungsten Ltd (dissolved), 11 Maxted Road, Hemel Hempstead Industrial Est, Hemel Hempstead, Hertfordshire, HP2 7DX	Jenson Tungsten Ltd (dissolved)	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AJ8133	Date of Approval:31/3/1991 Effective from:31/3/1991 Last date of update:2015-01-01	Superseded By Variation
82H	395	N	508100 208700	Jenson Tungsten Ltd (dissolved), 11 Maxted Road, Hemel Hempstead Industrial Est, Hemel Hempstead, Hertfordshire, HP2 7DX	Jenson Tungsten Ltd (dissolved)	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AJ8095	Date of Approval:31/3/1991 Effective from:31/3/1991 Last date of update:2015-01-01	Revoked/cancelled

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

3

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

ID	Distance (m)	Direction	NGR	Details	
5	230	NW	507890 208500	Address: HATFIELD BUSINESS PARK, HATFIELD PARK WAY, HATFIELD, HERTFORDSHIRE, AL10 9TA Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: CANM.0372 Permit Version: 1	Receiving Water: ELLEN BROOK Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 06/12/2001 Effective Date: 06-Dec-2001 Revocation Date: 10/04/2002
6B	297	SE	508200 207800	Address: Woodlane End, Hemel Hempstead (8, Woodlane End, Hemel Hempstead (8 Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.2300 Permit Version: 1	Receiving Water: GADE Status: TEMPORARY CONSENTS (WATER ACT 1989, SECTION 113) Issue date: 02/11/1989 Effective Date: 02-Nov-1989 Revocation Date: 02/09/2010
7B	297	SE	508200 207800	Address: Woodlane End, Hemel Hempstead (8, Woodlane End, Hemel Hempstead (8 Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.2300 Permit Version: 2	Receiving Water: Gade Status: SURRENDERED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03-Sep-2010 Revocation Date: 19/08/2014

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

1

The following Water Industry Referral records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Address	Permission reference	Local Authority	First Date Received	Last Date Received	Status
83K	495	NW	TRW LTD, MAYLANDS AVENUE, MAYLANDS AVENUE, HEMEL HEMPSTEAD, HERTFORDSHIRE, HP2 7DP	BA7093	DACORUM BOROUGH COUNCIL	01-Jul-2010	01-Jan-2018	RECEIVED

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

2

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

ID	Distance (m)	Direction	Application Reference Number	NGR	Application Status	Application Date	Address	Details	Details of Enforcement Action
84L	351	E	4/01445/92/HAZ	508401208361	Historical Consent	11/11/1992	Sheel [UK] Ltd, Buncefield, Hemel Hempstead, Hertfordshire, HP2 7HZ	Storage of hazardous substance	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
85M	359	E	4/01853/99/4	508400208400	Historical Consent	27/10/1999	Shell UK Oil, Green Lane, Hemel Hempstead, Herts, HP2 7JB	Storage and loading of hydrocarbon products	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

2.2 Dangerous or Hazardous Sites

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

6

The following COMAH & NIHHS Authorisation records provided by the Health and Safety Executive are represented as polygons or buffered points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Company	Address	Operational Status	Tier
45I	360	E	British Pipeline Agency Limited	British Pipeline Agency Limited, Buncefield Terminal, Green Lane, Hemel Hempstead, Hertfordshire, HP2 7HZ	Current COMAH Site	COMAH Lower Tier Operator
46I	363	E	Shell UK Oil	Shell UK Oil, Buncefield Terminal, Green Lane, Hemel Hempstead, HP2 7JB	Historical NIHHS Site	-
47J	363	E	Hertfordshire Oil Storage Ltd	Hertfordshire Oil Storage Ltd, Buncefield Terminal, Green Lane, Hemel Hempstead, HP2 7HZ	Historical NIHHS Site	-
48J	363	E	Bp Oil Uk Ltd	Bp Oil Uk Ltd, Green Lane, Off Brakespeare Way, Hemel Hempstead, HP4 7JA	Historical NIHHS Site	-
49J	363	E	Mobil Oil Company Ltd	Mobil Oil Company Ltd, Buncefield Terminal, Green Lane, Hemel Hempstead	Historical NIHHS Site	-
50	397	E	BP Oil UK Limited	BP Oil UK Limited, Buncefield Terminal, Buncefield Oil Terminal, Green Lane, Hemel Hempstead, Hertfordshire, HP2 7JA	Current COMAH Site	COMAH Lower Tier Operator

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

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

4

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

ID	Distance (m)	Direction	NGR	Details	
1A	47	E	508130.0 208108.0	Incident Date: 18-Dec-2007 Incident Identification: 551652.0 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 3 (Minor) Land Impact: Category 2 (Significant) Air Impact: Category 2 (Significant)
2A	47	E	508130.0 208108.0	Incident Date: 18-Dec-2007 Incident Identification: 551652.0 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off	Water Impact: Category 3 (Minor) Land Impact: Category 2 (Significant) Air Impact: Category 2 (Significant)
3	67	S	508049.0 208007.0	Incident Date: 12-Nov-2003 Incident Identification: 201105.0 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
4	271	SW	507743.0 207870.0	Incident Date: 03-Jul-2003 Incident Identification: 170838.0 Pollutant: Oils and Fuel Pollutant Description: Unidentified Oil	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

0

Database searched and no data found.

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

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










0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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-  Site Outline
-  250 Search Buffers (m)
-  500 Search Buffers (m)
-  EA/NRW Active Landfill
-  EA/NRW Historic Landfill
-  BGS / DoE Survey Landfill
-  Historic and Planned Waste Sites
-  EA/NRW Licensed Waste Site
-  Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

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

0

Database searched and no data found.

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

1

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

ID	Distance (m)	Direction	NGR	Details
Not shown	833	NW		Site Address: Eastman Way, Hemel Hempstead Waste Licence: - Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: Development Corporation First Recorded: 31-Dec-1949 Last Recorded: 31-Dec-1951

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

0

Database searched and no data found.

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

1

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

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
Not shown	844	NW	507501 209008	Nr. Eastman Way, Hemel Hempstead, Hertfordshire	Proprietary database	Point

3.2 Other Waste Sites

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

3

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

ID	Distance (m)	Direction	NGR	Details		
1A	24	E	508133 208119	Type of Site: Waster Transfer Station & Workshop Site Address: 82 Maxted Close, Hemel Hempstead Industrial Est, HEMEL HEMPSTEAD, Hertfordshire, HP2 7EG	Planning Application Reference: 4/01701/08/CMA Date: -	Further Details: Scheme comprises construction of side extension and covered bay to rear and construction of workshop and fencing and relocation of port (county matter application). Construction - fencing site works. An application (ref: 4/01701/08/CMA) for detailed panning permission was submitted to Dacorum B.C. Data Source: Historic Planning Application Data Type: Point
2A	26	E	508135 208119	Type of Site: Waste Transfer Station Site Address: 82 Maxted Close, Hemel Hempstead Industrial Est, HEMEL HEMPSTEAD, Hertfordshire, HP2 7EG	Planning Application Reference: 4/00275/08/CMA Date: -	Further Details: Scheme comprises construction of waste transfer station. An application (ref: 4/00275/08/CMA) for detailed planning permission was submitted to Dacorum B.C. Data Source: Historic Planning Application Data Type: Point
3B	271	NW	507590 208318	Type of Site: Recycling Waste Plant Site Address: 9 Hall Road, HEMEL HEMPSTEAD, Hertfordshire, HP2 7BH	Planning Application Reference: 4/01733/10/FUL Date: 11/04/2011	Further Details: Scheme comprises change of use to recycling/waste management plant. An application (ref: 4/01733/10/FUL) for detailed planning permission was granted by Dacorum B.C. A detailed planning application has been granted.

ID	Distance (m)	Direction	NGR	Details
Data Source: Historic Planning Application Data Type: Point				

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

13

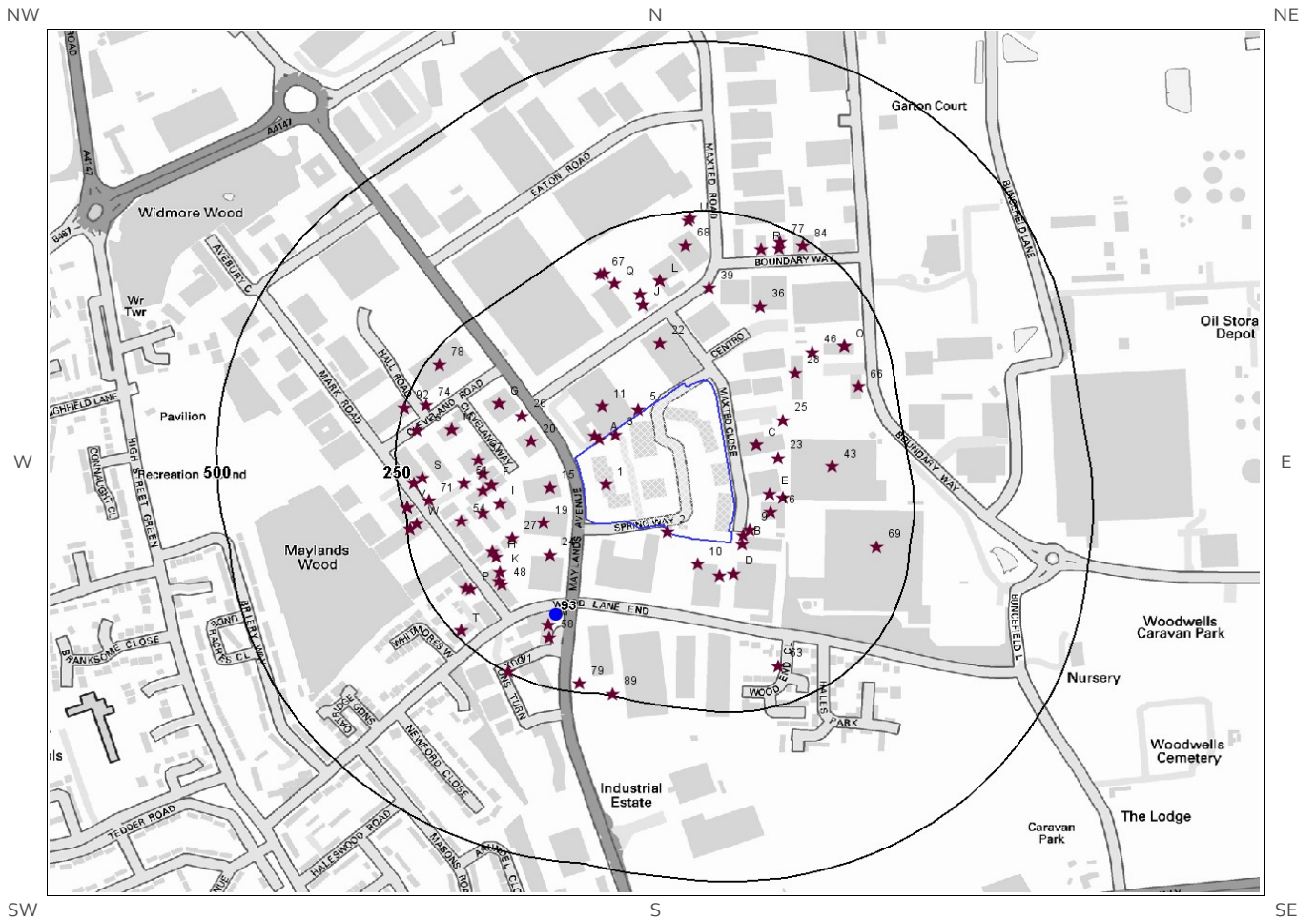
The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
5	45	E	508127 208105	<p>Site Address: 82-86, Maxted Close, Hemel Hempstead Ind Est, Hemel Hempstead, Hertfordshire, HP2 7DX Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HOL006 EPR reference: EA/EPR/EP3097NY/V003 Operator: Holywell Haulage Ltd Waste Management licence No: 80606 Annual Tonnage: 75000.0</p> <p>Issue Date: 08/03/2004 Effective Date: - Modified: 06/11/2015 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Holywell Hemel Hempstead Correspondence Address: -</p>
6B	297	NW	507590 208320	<p>Site Address: Unit 9, Hall Road, Maylands Wood Estate, Hemel Hempstead, Hertfordshire, HP2 7BH Type: 75kte WEEE Treatment Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MAR234 EPR reference: EA/EPR/VP3892EF/A001 Operator: Maritrans Recycling (U K) Ltd Waste Management licence No: 102600 Annual Tonnage: 74999.0</p> <p>Issue Date: 16/05/2011 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked Site Name: Maritrans Recycling (U K) Ltd Correspondence Address: -</p>
7	472	NW	507436 208403	<p>Site Address: Bishop House, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7BW Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BIS002 EPR reference: EA/EPR/KP3897NR/A001 Operator: David James Bishop & Vivien Irene Hutchins Waste Management licence No: 80517 Annual Tonnage: 133848.0</p> <p>Issue Date: 04/01/2001 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: J F Bishop & Son Correspondence Address: -</p>
8	570	W	507300 208300	<p>Site Address: Mr D J Bishop, Bishop House, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7BW Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BIS001 EPR reference: EA/EPR/KP3591NB/S003 Operator: J F Bishop & Son</p> <p>Issue Date: 08/04/1987 Effective Date: - Modified: 30/03/1992 Surrendered Date: Apr 25 2002 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Mark Road, Hemel Hempstead Correspondence Address: -</p>

ID	Distance (m)	Direction	NGR	Details
				Waste Management licence No: 80226 Annual Tonnage: 59516.0
9	570	W	507313 208355	<p>Site Address: Bishop House, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7BW</p> <p>Type: Household, Commercial & Industrial Waste T Stn</p> <p>Size: >= 75000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: BIS016</p> <p>EPR reference: EA/EPR/DB3333DJ/V003</p> <p>Operator: J F Bishop & Son Ltd</p> <p>Waste Management licence No: 80517</p> <p>Annual Tonnage: 133848.0</p>
Not shown	997	NW	507322 209037	<p>Site Address: Mr Toomay, Household Waste Recycling Centre, Eastman Way, Hemel Hempstead, Hertfordshire, HP2 7DU</p> <p>Type: Household Waste Amenity Site</p> <p>Size: < 25000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: AME051</p> <p>EPR reference: EA/EPR/CB3203CE/V002</p> <p>Operator: Amey Cespa (East) Ltd</p> <p>Waste Management licence No: 80199</p> <p>Annual Tonnage: 24999.0</p>
Not shown	1002	NW	507231 208976	<p>Site Address: Cupid Green Yard, Redbourn Road, Hemel Hempstead, Hertfordshire, HP2 7AZ</p> <p>Type: Metal Recycling Site (Vehicle Dismantler)</p> <p>Size: < 25000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: HUN005</p> <p>EPR reference: EA/EPR/JP3597NC/A001</p> <p>Operator: Hunt Martin</p> <p>Waste Management licence No: 80697</p> <p>Annual Tonnage: 2499.0</p>
Not shown	1027	NW	507241 209016	<p>Site Address: Yard 1, Redbourne Road, Cupid Green, Hemel Hempstead, Hertfordshire, HP2 7JH</p> <p>Type: ELV Facility</p> <p>Size: < 25000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: BRO013</p> <p>EPR reference: EA/EPR/BP3393EG/A001</p> <p>Operator: Brown Peter John</p> <p>Waste Management licence No: 80733</p> <p>Annual Tonnage: 2499.0</p>
Not shown	1054	NW	507270 209070	<p>Site Address: Cupid Green Depot, Redbourn Road, Hemel Hempstead, Hertfordshire, HP2 7BA</p> <p>Type: 75kte HCI Waste TS + asbestos</p> <p>Size: < 25000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: DAC001</p> <p>EPR reference: EA/EPR/FP3797NC/V002</p> <p>Operator: Dacorum Borough Council</p> <p>Waste Management licence No: 80567</p> <p>Annual Tonnage: 24999.0</p>
Not shown	1109	NW	507254 209126	<p>Site Address: Cupid Green Depot, Redbourn Road, Hemel Hempstead, Hertfordshire, HP2 7BA</p> <p>Type: Special Waste Transfer Station</p> <p>Size: < 25000 tonnes</p>

ID	Distance (m)	Direction	NGR	Details
				<p>Environmental Permitting Regulations (Waste) Licence Number: DAC001 EPR reference: EA/EPR/FP3797NC/V005 Operator: Dacorum Borough Council Waste Management licence No: 80567 Annual Tonnage: 74998.0</p> <p>Cancelled Date: - Status: Modified Site Name: Cupid Green Depot Correspondence Address: -</p>
Not shown	1282	NW	507200 209300	<p>Site Address: Mr Toomay, Household Waste Recycling Centre, Eastman Way, Hemel Hempstead, Hertfordshire, HP2 7DU Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HER008 EPR reference: EA/EPR/UP3191NL/V003 Operator: Hertfordshire County Council Waste Management licence No: 80199 Annual Tonnage: 24999.0</p> <p>Issue Date: 19/02/1977 Effective Date: - Modified: 27/04/2007 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Hemel Hempstead Waste Recycling Centre Correspondence Address: -</p>
Not shown	1282	NW	507200 209300	<p>Site Address: Mr Toomay, Household Waste Site, Eastman Way, Hemel Hempstead, Herts, HP2 7DU Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HER008 EPR reference: - Operator: Hertfordshire County Council Waste Management licence No: 80199 Annual Tonnage: 0.0</p> <p>Issue Date: 19/02/1977 Effective Date: - Modified: 20/03/1997 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Eastman Way, Hemel Hempstead Correspondence Address: Hertfordshire County Council, Waste Management Unit, County Hall, Pegs Lane, Hertford, Hertfordshire, SG13 8DN</p>
Not shown	1282	NW	507200 209300	<p>Site Address: Mr Toomay, Household Waste Recycling Centre, Eastman Way, Hemel Hempstead, Hertfordshire, HP2 7DU Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: AME051 EPR reference: EA/EPR/CB3203CE/T001 Operator: Amey Cespa (East) Limited Waste Management licence No: 80199 Annual Tonnage: 24999.0</p> <p>Issue Date: 19/02/1977 Effective Date: 16/10/2014 Modified: 27/04/2007 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Hemel Hempstead H W R C Correspondence Address: -</p>

4. Current Land Use Map



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-  Site Outline
-  Current Industrial Sites
-  Electricity Transmission Cables
-  Search Buffers (m)
-  Petrol & Fuel Sites
-  Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

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

92

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	0	On Site	Epson	507904 208158	100 The Campus, Maylands Avenue, Hemel Hempstead, Hertfordshire, HP2 7DE	General Manufacturing	Industrial Products
2	0	On Site	Electricity Sub Station	507990 208088	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
3	0	On Site	Electricity Sub Station	507917 208231	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
4A	3	NW	Electricity Sub Station	507894 208224	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
5	7	NW	Tank	507949 208268	Hertfordshire, HP2	Tanks (Generic)	Industrial Features
6A	10	NW	Electricity Sub Station	507888 208229	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
7B	16	E	Tank	508094 208070	Hertfordshire, HP2	Tanks (Generic)	Industrial Features
8B	17	E	Electricity Sub Station	508096 208083	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
9	26	E	Tank	508105 208091	Hertfordshire, HP2	Tanks (Generic)	Industrial Features
10	36	S	Electricity Sub Station	508032 208040	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
11	40	NW	Smiths Detection	507898 208273	Century House, Maylands Avenue, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DE	Civil Engineers	Engineering Services
12C	44	E	Alamo Rent A Car	508113 208216	Unit 5, Enterprise Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7YJ	Vehicle Hire and Rental	Hire Services
13C	44	E	Europcar	508113 208216	Unit 5, Enterprise Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7YJ	Vehicle Hire and Rental	Hire Services
14D	46	S	Tank	508082 208026	Hertfordshire, HP2	Tanks (Generic)	Industrial Features
15	46	W	Blue Box Storage	507826 208153	45, Maylands Avenue, Hemel Hempstead Industrial Estate, Hemel	Container and Storage	Transport, Storage and Delivery

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
					Hempstead, Hertfordshire, HP2 7DF		
16	50	E	Holywell Haulage	508134 208117	11-12, Maxted Rad, Hemel Hempstead, Hertfordshire, HP2 7PD	Construction and Tool Hire	Hire Services
17D	50	S	Tank	508063 208023	Hertfordshire, HP2	Tanks (Generic)	Industrial Features
18E	51	E	Tank	508133 208144	Hertfordshire, HP2	Tanks (Generic)	Industrial Features
19	60	W	D D C Foods Ltd	507817 208101	Lobster House, Maylands Avenue, Hemel Hempstead, Hertfordshire, HP2 7DE	Tobacco Products	Consumer Products
20	66	W	Vanarama	507799 208221	Maylands Avenue, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DE	Vehicle Hire and Rental	Hire Services
21E	68	E	Electricity Sub Station	508151 208138	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
22	69	NW	Deyongs Ltd	507979 208366	Unit 3 Maxted Court, Maxted Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BL	Carpets, Flooring, Rugs and Soft Furnishings	Consumer Products
23	71	E	Holywell Skip Hire & Metro Skip Hire	508144 208197	Maxted Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DX	Construction and Tool Hire	Hire Services
24	73	SW	Electricity Sub Station	507826 208054	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
25	86	E	Electricity Sub Station	508151 208252	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
26	96	NW	Electricity Sub Station	507786 208258	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
27	107	W	Bodet	507773 208078	Unit 4 Sovereign Park, Cleveland Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DA	Office and Shop Equipment	Industrial Products
28	115	E	Apogee Flow Systems Ltd	508168 208322	Unit 7 Grovelands Business Centre, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7TE	Measurement and Inspection Equipment	Industrial Products
29I	119	W	IDIS	507756 208129	Unit 1 Sovereign Park, Cleveland Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DA	Electronic Equipment	Industrial Products
30F	123	W	Stateline Bearings & Transmission Ltd	507743 208156	Unit 14 Sovereign Park, Cleveland Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DA	Bearing, Gear and Drive Elements	Industrial Products
31F	123	W	Hydraulic Components & Systems Ltd	507743 208156	Unit 14 Sovereign Park, Cleveland Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DA	Hydraulic Engineers	Engineering Services

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
32F	130	W	Golf 2 Golf Ltd	507732 208174	Unit 3, Cleveland Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DL	Hobby, Sports and Pastime Products	Consumer Products
33J	131	NW	Electricity Sub Station	507955 208423	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
34G	133	NW	Xerox	507754 208276	Xerox House, Maylands Avenue, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DE	Office and Shop Equipment	Industrial Products
35G	133	NW	F F E I	507754 208276	The Cube, Maylands Avenue, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DF	General Purpose Machinery	Industrial Products
36	134	NE	Voxhub	508119 208420	Centro 3, Boundary Way, Hemel Hempstead, Hertfordshire, HP2 7SU	Radar and Telecommunications Equipment	Industrial Products
37	136	W	Dental E Z Integrated Solutions	507724 208193	Cleveland Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products
38F	137	W	Rees Flooring Ltd	507732 208148	Unit 12 Sovereign Park, Cleveland Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DA	Construction Completion Services	Construction Services
39	138	N	Electricity Sub Station	508048 208447	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
40H	138	SW	Tank	507750 208051	Hertfordshire, HP2	Tanks (Generic)	Industrial Features
41H	140	W	Halfords Autocentre	507744 208059	28, Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BW	Vehicle Repair, Testing and Servicing	Repair and Servicing
42K	143	SW	Tank	507756 208029	Hertfordshire, HP2	Tanks (Generic)	Industrial Features
43	144	E	Gist	508220 208184	Unit 2 1, Boundary Way, Hemel Hempstead, Hertfordshire, HP2 7EQ	Distribution and Haulage	Transport, Storage and Delivery
44I	144	W	Comfort Controls	507732 208116	Unit 9 Sovereign Park, Cleveland Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DA	Electronic Equipment	Industrial Products
45J	146	NW	Electricity Sub Station	507952 208438	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
46	148	NE	Electricity Sub Station	508192 208353	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
47K	152	SW	Herts Flooring & Interiors	507755 208015	16, Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BN	Carpets, Flooring, Rugs and Soft Furnishings	Consumer Products
48	152	SW	Cantor & Nissel Ltd	507758 208009	17, Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BN	Photographic and Optical Equipment	Household, Office, Leisure and Garden

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
49L	155	N	Green Shields J C B	507978 208457	Amir House, Maxted Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DX	Industrial Repairs and Servicing	Repair and Servicing
50L	155	N	A P T Powerdrive	507978 208457	Amir House, Maxted Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DX	Special Purpose Machinery and Equipment	Industrial Products
51	160	W	Electricity Sub Station	507705 208159	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
52M	162	SW	Formula One Autocentres	507823 207951	Wood Lane End, Hemel Hempstead, Hertfordshire, HP2 4RA	Vehicle Repair, Testing and Servicing	Repair and Servicing
53M	162	SW	Maylands Car Sales	507822 207950	Wood Lane End, Hemel Hempstead, Hertfordshire, HP2 4RA	New Vehicles	Motoring
54	175	W	Bishop Skip Hire Ltd	507701 208103	Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DN	Construction and Tool Hire	Hire Services
55Q	177	NW	Tank	507916 208454	Hertfordshire, HP2	Tanks (Generic)	Industrial Features
56N	177	W	Maxon C I C Europe Ltd	507688 208238	Maxon House, Cleveland Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7EY	Radar and Telecommunications Equipment	Industrial Products
57N	177	W	Eltek Power UK Ltd	507688 208238	Eltek House, Cleveland Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7EY	Electrical Production and Manipulation Equipment	Industrial Products
58	179	S	Dacorum Borough Chauffeurs Ltd	507824 207932	5, Maylands Avenue, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 4SE	Vehicle Hire and Rental	Hire Services
59P	192	SW	Diverse Print & Design	507714 208003	7, Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BN	Published Goods	Industrial Products
60O	192	E	Arbiter Coatings	508237 208361	Unit 1 Grovelands Business Centre, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7TE	Industrial Coatings and Finishings	Industrial Products
61O	192	E	Tornado Storage Solutions	508237 208361	Unit 1 Grovelands Business Centre, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7TE	Shelving, Storage, Safes and Vaults	Industrial Products
62O	192	E	Herts Mechanical Handling Services Ltd	508237 208361	Unit 1 Grovelands Business Centre, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7TE	Lifting and Handling Equipment	Industrial Products

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
63	193	S	Electricity Sub Station	508144 207890	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
64P	196	SW	The Print G D S	507708 208005	8 Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BN	Published Goods	Industrial Products
65Q	198	NW	Electricity Sub Station	507901 208469	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
66	199	E	Glanville	508256 208302	Unit 3 Grovelands Business Centre, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7TE	Civil Engineers	Engineering Services
67	199	NW	Electricity Sub Station	507896 208467	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
68	202	N	Furnell Transport	508015 208510	Enterprise House, Maxted Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BT	Distribution and Haulage	Transport, Storage and Delivery
69	203	E	Martin Brower	508282 208066	Unit 1 Boundary Way, Hemel Hempstead, Hertfordshire, HP2 7EQ	Distribution and Haulage	Transport, Storage and Delivery
70R	210	N	4 Ways	508120 208504	Unit 7 Marchmont Gate, Boundary Way, Hemel Hempstead, Hertfordshire, HP2 7BF	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products
71	213	W	Electricity Sub Station	507657 208134	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
72S	215	W	Summer Infant	507647 208167	South Wing Focus 31, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7BW	Clothing, Components and Accessories	Consumer Products
73R	221	NE	Trademark Interiors	508145 208505	Unit 8 Marchmont Gate, Boundary Way, Hemel Hempstead, Hertfordshire, HP2 7BF	Furniture	Consumer Products
74	223	W	Electricity Sub Station	507652 208275	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
75	224	W	Electricity Sub Station	507640 208237	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
76S	227	W	Barking Heads	507636 208159	33, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7EY	Animal Feeds, Pet Foods, Hay and Straw	Foodstuffs
77	230	NE	Qubicaamf	508147 208515	Unit 8 Marchmont Gate, Boundary Way, Hemel Hempstead, Hertfordshire, HP2 7BF	Hobby, Sports and Pastime Products	Consumer Products
78	234	NW	Multi Distribution Ltd	507671 208334	Unit G1 Aqua House, Cleveland Road, Hemel Hempstead, Hertfordshire, HP2 7EY	Distribution and Haulage	Transport, Storage and Delivery
79	236	S	Electricity Sub Station	507867 207864	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
80W	237	W	Barbizon Europe Ltd	507639 208099	Unit 12 Saracen Industrial Area, Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead,	Lampshades and Lighting	Consumer Products

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
Hertfordshire, HP2 7BJ							
81U	238	N	Electricity Sub Station	508019 208547	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
82T	241	SW	G T Print & Design	507701 207942	37, Wood Lane End, Hemel Hempstead, Hertfordshire, HP2 4RA	Published Goods	Industrial Products
83T	241	SW	Gt Signs	507701 207942	37, Wood Lane End, Hemel Hempstead, Hertfordshire, HP2 4RA	Signs	Industrial Products
84	241	NE	Aspin Group	508179 208509	Nexus House, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7SJ	Civil Engineers	Engineering Services
85U	241	N	Electricity Sub Station	508022 208550	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
86V	245	W	O P R O	507626 208123	1 The Willows, Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BN	Clothing, Components and Accessories	Consumer Products
87V	245	W	Opro Dental	507626 208123	1 The Willows, Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BN	Hobby, Sports and Pastime Products	Consumer Products
88V	245	W	Drager UK	507626 208124	The Willows, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7BN	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products
89	246	S	Tank	507913 207849	Hertfordshire, HP2	Tanks (Generic)	Industrial Features
90W	247	W	Jetstone	507629 208092	Unit 11 Saracen Industrial Area, Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BJ	General Construction Supplies	Industrial Products
91	248	SW	Electricity Sub Station	507768 207882	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
92	250	W	S M H Vehicle Rentals	507622 208271	1, Hall Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BH	Vehicle Hire and Rental	Hire Services

4.2 Petrol and Fuel Sites

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

1

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

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
93	145	S	507834 207965	OBSOLETE	Wood Lane End, Maylands, Hemel Hempstead, Hertfordshire, HP3	Not Applicable	Obsolete

4.3 National Grid High Voltage Underground Electricity Transmission Cables

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

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

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

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

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

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

5.2 Superficial Ground and Drift Geology

Database searched and no data found.

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

5.3 Bedrock and Solid Geology

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

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

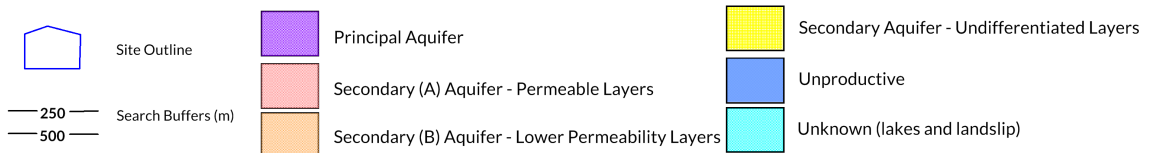
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

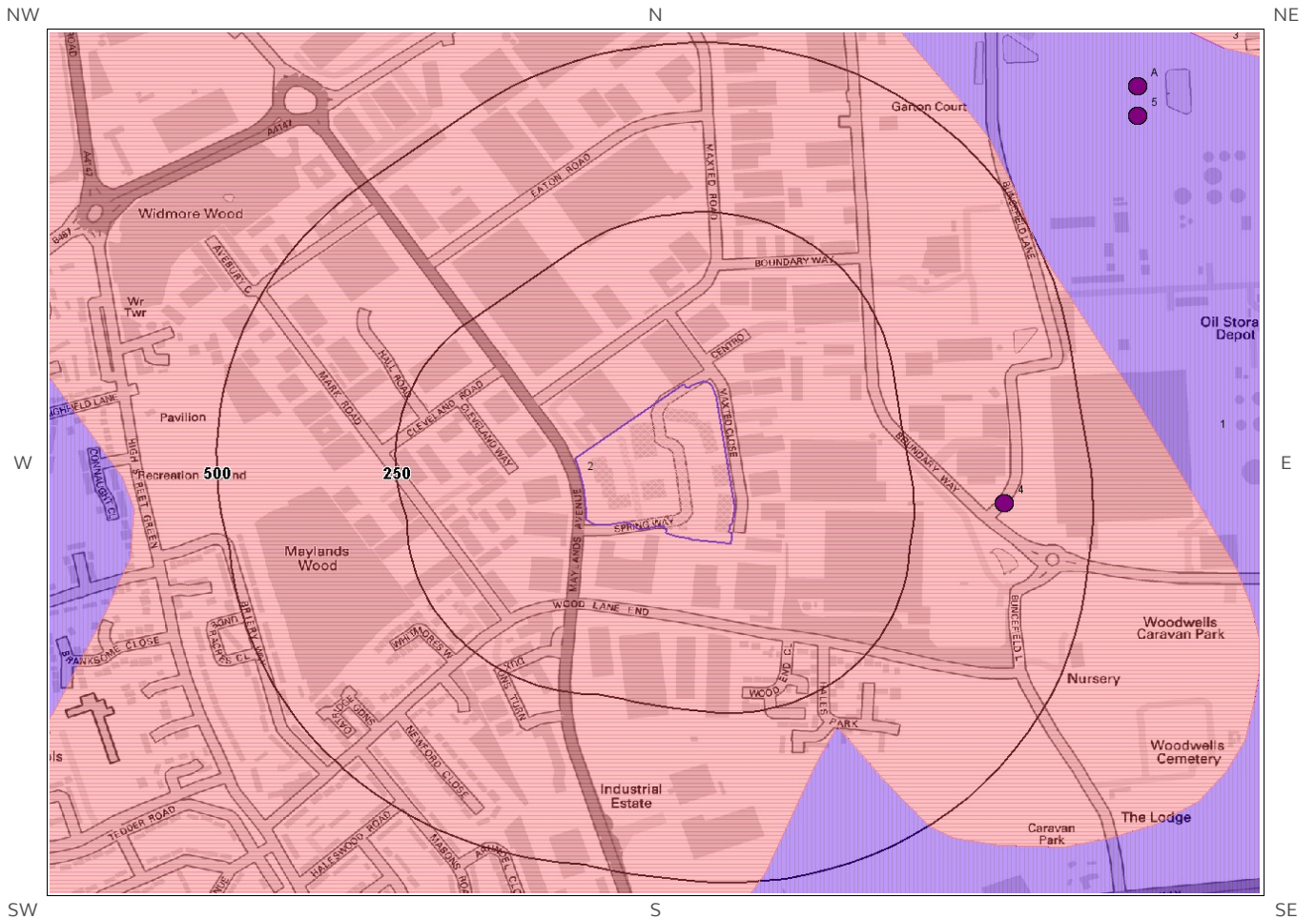
6a. Aquifer Within Superficial Geology



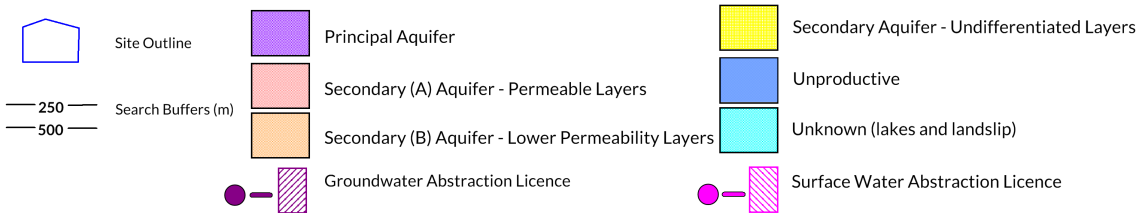
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6b. Aquifer Within Bedrock Geology and Abstraction Licences



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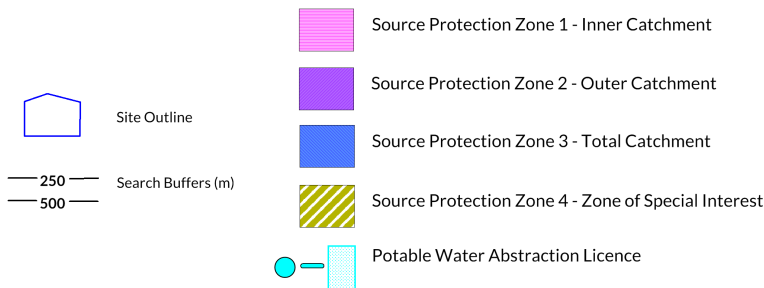




6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences

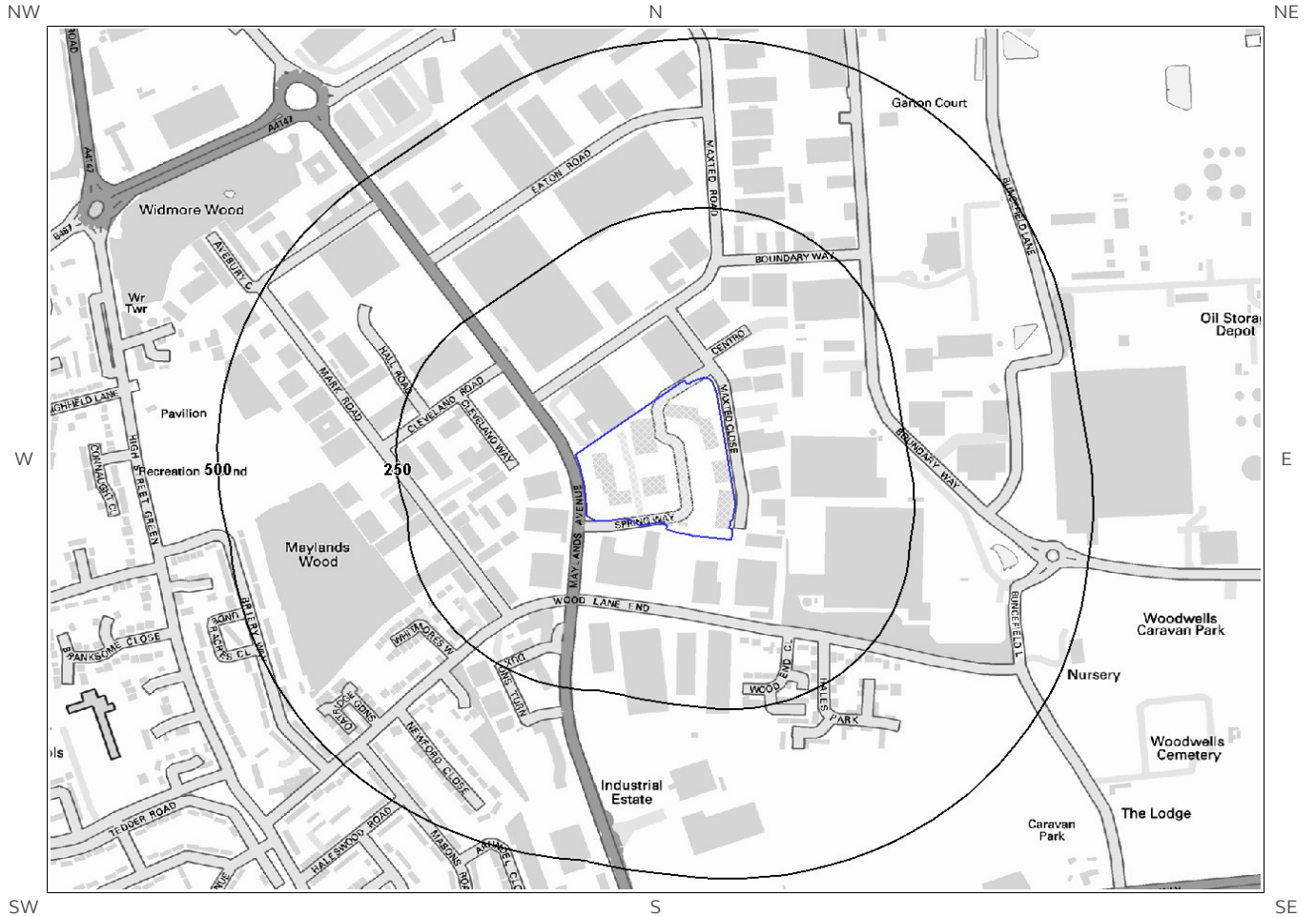


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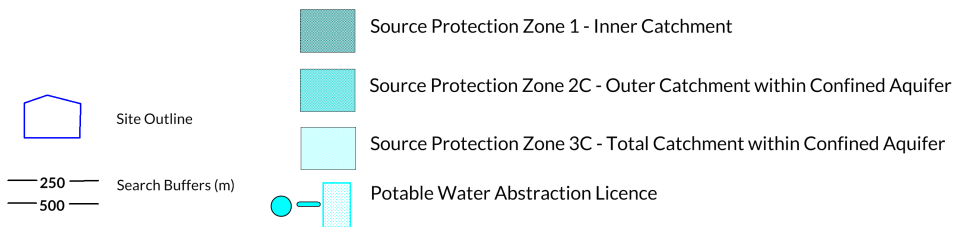




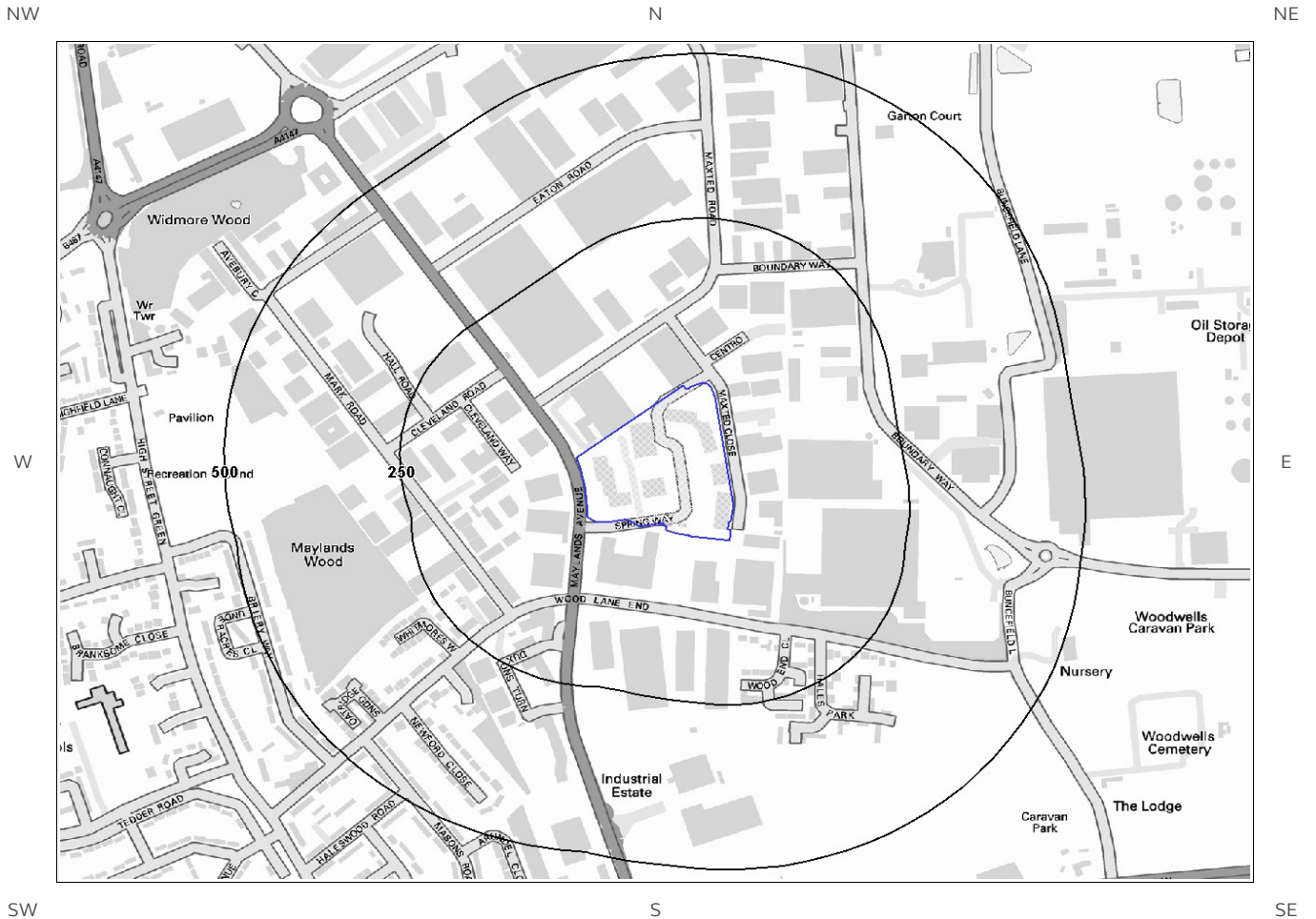
6d. Hydrogeology – Source Protection Zones within confined aquifer


















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6e. Hydrology – Watercourse Network and River Quality



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	Site Outline	Watercourse type	 Tidal River	Watercourse level	 On ground surface
	250 Search Buffers (m)	 Inland River	 Canal	 Underground or Elevated	
	500 Search Buffers (m)	 Lock or Flight of Locks	 Lake, Reservoir, or Marsh	 Level unknown	
		 Foreshore		 General Quality Assessment: Biology	
		 Drain or Transfer		 General Quality Assessment: Chemistry	

6. Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

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

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

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

ID	Distance (m)	Direction	Designation	Description
1	308	SE	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

6.2 Aquifer within Bedrock Deposits

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

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

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

ID	Distance (m)	Direction	Designation	Description
2	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
1	308	SE	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site

Identified

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

ID	Distance (m)	Direction	NGR	Details
4	375	E	508460 208130	Status: Historical Licence No: 28/39/28/0573 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: HEMEL TELEHOUSE-BOREHOLE A Data Type: Point Name: HUTCHISON NETWORK SERVICES UK LIMITED
				Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 17/12/2002 Expiry Date: - Issue No: 2 Version Start Date: 01/01/2003 Version End Date:
5	715	NE	508646 208701	Status: Historical Licence No: TH/039/0028/027 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: BUNCEFIELD OIL DEPOT BOREHOLE 2 Data Type: Point Name: BRITISH PIPELINE AGENCY LIMITED
				Annual Volume (m ³): 31536 Max Daily Volume (m ³): 86.4 Original Application No: - Original Start Date: 29/09/2012 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 29/09/2012 Version End Date:
6A	740	NE	508647 208744	Status: Historical Licence No: TH/039/0028/003 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: BUNCEFIELD OIL DEPOT BOREHOLE Data Type: Point Name: BRITISH PIPELINE AGENCY LIMITED
				Annual Volume (m ³): 175200 Max Daily Volume (m ³): 480 Original Application No: - Original Start Date: 04/09/2009 Expiry Date: 03/09/2010 Issue No: 1 Version Start Date: 04/09/2009 Version End Date:
7A	740	NE	508647 208744	Status: Historical Licence No: TH/039/0028/027 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: BUNCEFIELD OIL DEPOT BOREHOLE Data Type: Point Name: BRITISH PIPELINE AGENCY LIMITED
				Annual Volume (m ³): 31536 Max Daily Volume (m ³): 86.4 Original Application No: - Original Start Date: 29/09/2012 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 29/09/2012 Version End Date:
8A	740	NE	508647 208744	Status: Historical Licence No: TH/039/0028/014 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: BUNCEFIELD OIL DEPOT BOREHOLE Data Type: Point Name: BRITISH PIPELINE AGENCY LIMITED
				Annual Volume (m ³): 31536 Max Daily Volume (m ³): 86.4 Original Application No: - Original Start Date: 04/11/2010 Expiry Date: 03/11/2011 Issue No: 1 Version Start Date: 04/11/2010 Version End Date:

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site

Identified

The following Source Protection Zones records are represented on the SPZ and Potable Water Abstraction Map (6c):

ID	Distance (m)	Direction	Zone	Description
1	0	On Site	3	Total catchment

6.7 Source Protection Zones within Confined Aquifer

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

None identified

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

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

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

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

6.9 River Quality

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

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Ordnance Survey MasterMap Water Network

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

Database searched and no data found.

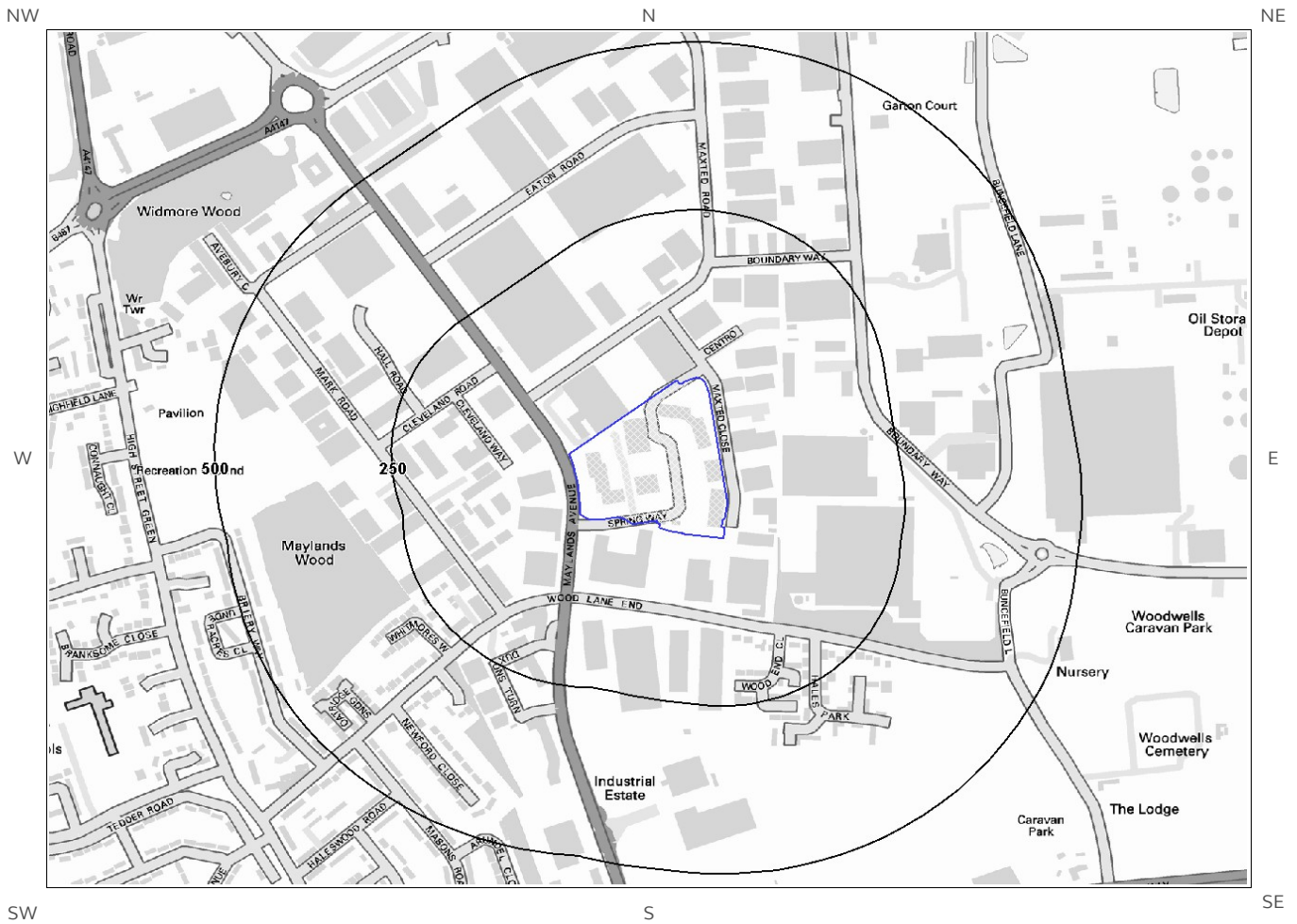
6.11 Surface Water Features

Surface water features within 250m of the study site

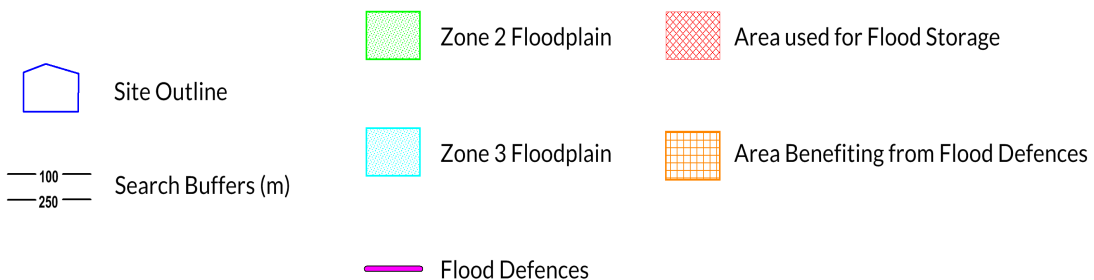
None identified

Database searched and no data found.

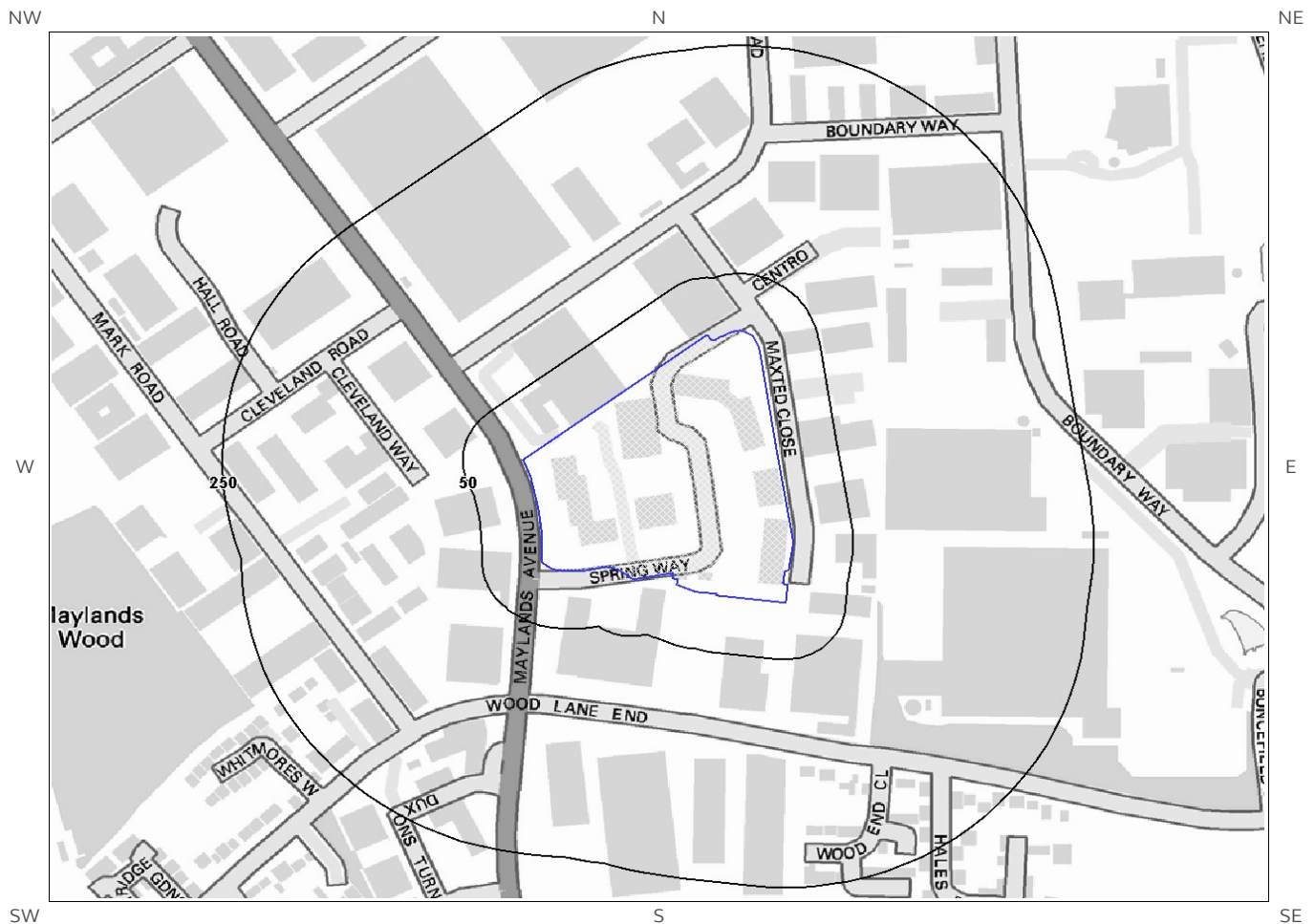
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



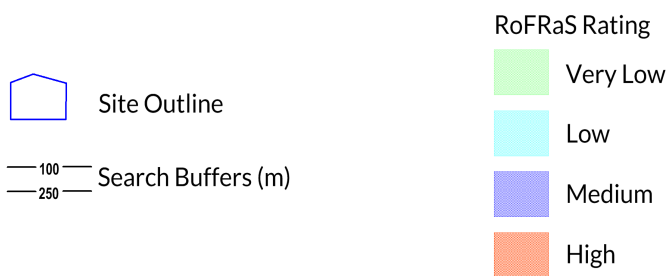
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7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m None identified

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

Database searched and no data found.

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m None identified

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

Database searched and no data found.

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

Highest risk of flooding onsite Very Low

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

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

7.4 Flood Defences

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

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site None identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site

None identified

7.7 Groundwater Flooding Susceptibility Areas

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

None identified

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

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

Not Prone

The area is not considered to be prone to groundwater flooding based on rock type.

7.8 Groundwater Flooding Confidence Areas

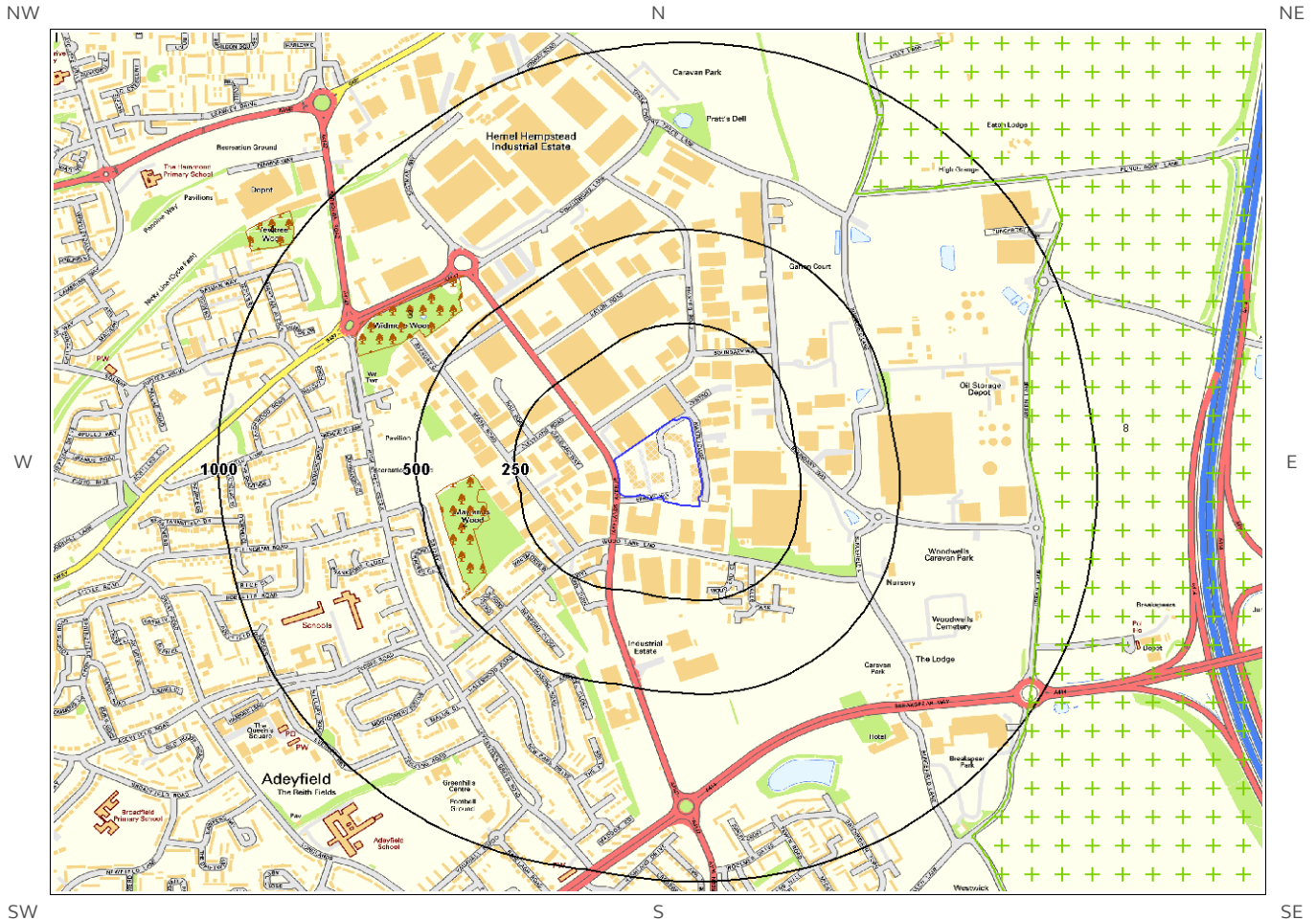
British Geological Survey confidence rating in this result

Not Applicable

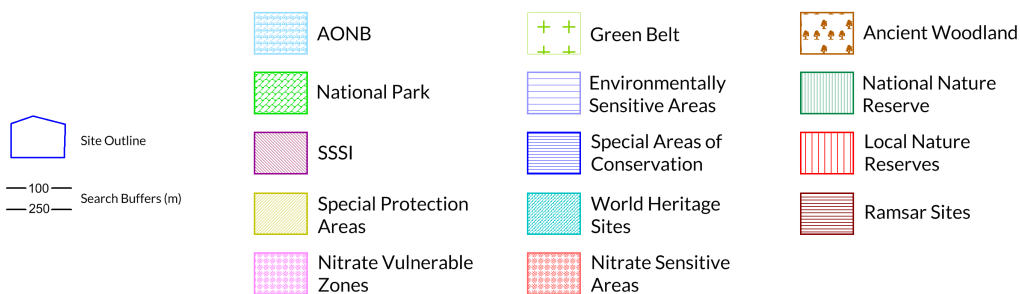
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

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

8. Designated Environmentally Sensitive Sites Map



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8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site

Identified

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

6

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

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
2	335	W	MAYLANDS WOOD	Ancient & Semi-Natural Woodland
3	554	NW	WIDMORE WOOD	Ancient & Semi-Natural Woodland
4	997	NW	Unknown	Ancient & Semi-Natural Woodland
Not shown	1377	N	Unknown	Ancient & Semi-Natural Woodland
Not shown	1682	W	HOWE GROVE	Ancient & Semi-Natural Woodland
Not shown	1959	N	Unknown	Ancient & Semi-Natural Woodland

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

1

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

ID	Distance (m)	Direction	LNR Name	Data Source
Not shown	1682	W	Howe Grove Wood	Natural England

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

4

Green Belt data contains Ordnance Survey data © Crown copyright and database right [2015].

ID	Distance	Direction	Green Belt Name	Local Authority Name
8	737	NE	London Area Greenbelt	St. Albans District (B)
Not shown	1682	W	London Area Green Belt	Dacorum
Not shown	1714	N	London Area Greenbelt	St. Albans District (B)
Not shown	1915	E	London Area Greenbelt	St. Albans District (B)

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

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

9.1.1 Shrink Swell

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

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

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

9.1.2 Landslides

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

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

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

9.1.3 Soluble Rocks

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

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

Hazard
Significant soluble rocks are present. Low possibility of subsidence occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow. Consider implications for stability when changes to drainage or new construction are planned. For new build site investigation should consider potential for dissolution problems on the site and its surroundings. Care should be taken with local drainage into the bedrock. Some possibility groundwater pollution. For existing property possible increase in insurance risk due to soluble rocks.

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

9.1.4 Compressible Ground

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

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

Hazard

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

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site Very Low

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

Hazard

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

9.1.6 Running Sand

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

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

Hazard

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

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

9.2 Radon

9.2.1 Radon Affected Areas

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

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

9.2.2 Radon Protection

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

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site

None identified

Database searched and no data found.

10.2 Non-Coal Mining

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

Identified

The following non-coal mining information is provided by the BGS:

Distance (m)	Direction	Name	Commodity	Assessment of likelihood
0.0	On Site	Not available	Chalk	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

Past underground mine workings may occur. The rock types present in these areas are such that small mineral veins may be present on which it is possible that small scale mining has been undertaken and/or it is possible that limited underground extraction of other materials may have occurred. All such occurrences are likely to be of minor localised extent and infrequent. It should be noted, however, that there is always the possibility of the existence of other sub-surface excavations, such as wells, cess pits, follies, air raid shelters/bunkers and other military structures etc. that could affect surface ground stability but which are outside the scope of this dataset. However, if in a coalfield area you should still consider a Coal Authority mining search for the area of interest.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site

None identified

Guidance: No Guidance Required.

Contact Details

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Email:

Web: www.bgs.ac.uk

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

Environment Agency

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

Web: www.environment-agency.gov.uk

Email: enquiries@environment-agency.gov.uk

Public Health England

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

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

The Coal Authority

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Mansfield
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Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey

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Tel: 08456 050505

Local Authority

Authority: Dacorum Council
Phone: 01442 228 000
Web: <http://www.dacorum.gov.uk/>
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Gemapping PLC

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Hampshire RG27 8NW
Tel: 01252 845444

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**British
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL



**Environment
Agency**



**Public Health
England**



**The Coal
Authority**





Groundsure

LOCATION INTELLIGENCE

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Standard Terms and Conditions

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

APPENDICES

Appendix 02 GroundSure EnviroInsight - Centro

Address: Centro Data Centre, 3 Boundary Way, Hemel Hempstead, HP2 7SU,
Date: 25 Nov 2019
Reference: EMS-579577_777910
Client: emapsite

NW N NE



W E

SW S SE

Aerial Photograph Capture date: 12-Aug-2016
Grid Reference: 508130,208437
Site Size: 0.4533ha

Report Reference: EMS-579577_777910
Client Reference: EMS_579577_777910

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Overview of Findings

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

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	5	12	18	96
1.2 Additional Information – Historical Tank Database	2	3	22	93
1.3 Additional Information – Historical Energy Features Database	0	0	48	59
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	3
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	0	0	12
Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	4
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	11	8
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	6
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	3	3
2.1.8 Records of Licensed Discharge Consents	0	0	1	0
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	2	4
2.2 Records of COMAH and NIHHS sites	0	0	0	6
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	3
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	1	0
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	1	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	2	1	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	1	5	7

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	1	4	43	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

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

Section 6: Hydrogeology and Hydrology	0-500m					
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified					
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified					
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	1	4	0
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	1	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	2	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

0-500m

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

Section 7: Flooding

7.1 Environment Agency Zone 2 floodplains within 250m of the study site	None identified					
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	None identified					
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Very Low					
7.4 Flood Defences within 250m of the study site	None identified					
7.5 Areas benefiting from Flood Defences within 250m of the study site	None identified					
7.6 Areas used for Flood Storage within 250m of the study site	None identified					
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Not Prone					
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Not Applicable					

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	2	5
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	1
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	0	0	0	0	1	4

Section 9: Natural Hazards

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

Section 10: Mining

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

Using this report

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

1. Historical Industrial Sites

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

2. Environmental Permits, Incidents and Registers

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

3. Landfills and Other Waste Sites

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

4. Current Land Uses

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

5. Geology

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

6. Hydrogeology and Hydrology

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

7. Flooding

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

8. Designated Environmentally Sensitive Sites

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

9. Natural Hazards

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

10. Mining

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

11. Contacts

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

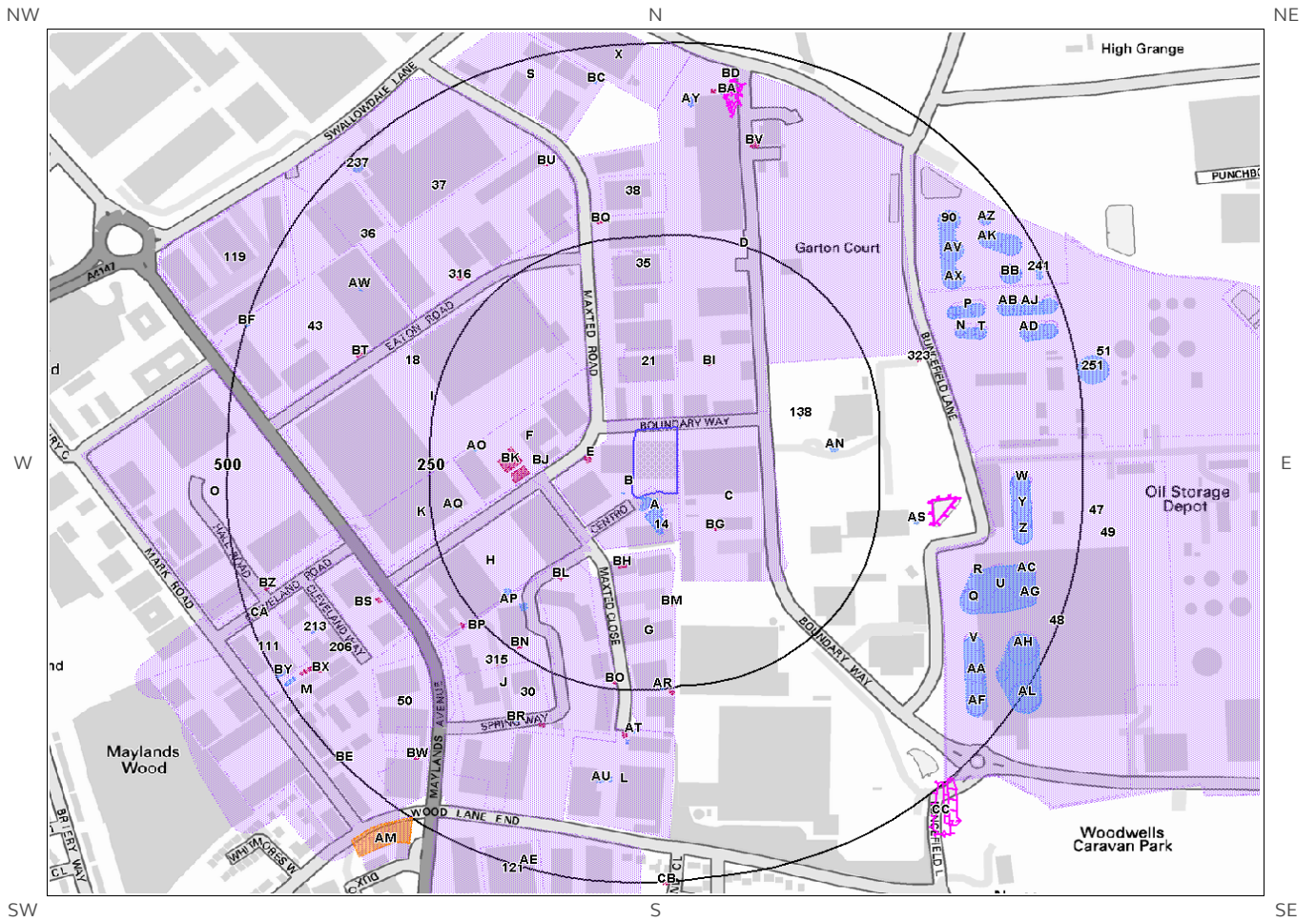
Note: Maps

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

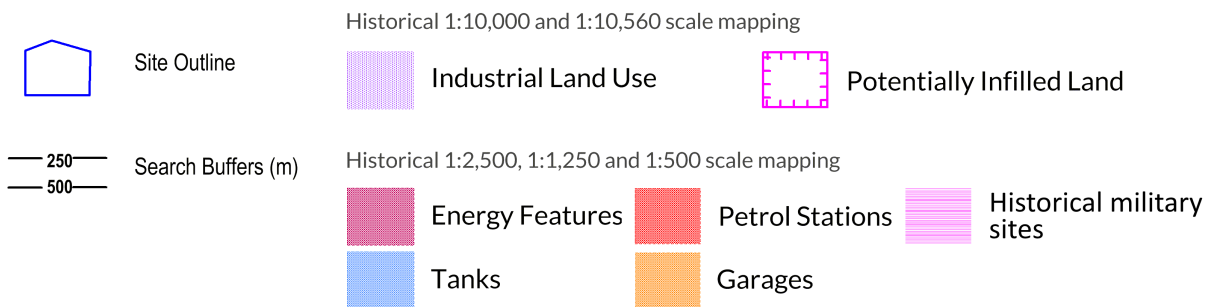
Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

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

1. Historical Land Use



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1. Historical Industrial Sites

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

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

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 131

ID	Distance [m]	Direction	Use	Date
1B	0	On Site	Unspecified Commercial/Industrial	1995
2A	0	On Site	Unspecified Tanks	1995
3A	0	On Site	Unspecified Tanks	1991
4B	0	On Site	Unspecified Commercial/Industrial	1991
5B	0	On Site	Unspecified Depot	1979
6C	2	E	Unspecified Commercial/Industrial	1995
7C	2	E	Unspecified Commercial/Industrial	1991
8A	8	SE	Unspecified Tanks	1979
9D	13	N	Unspecified Commercial/Industrial	1995
10D	13	N	Unspecified Commercial/Industrial	1991
11A	14	S	Unspecified Tanks	1979
12A	21	S	Unspecified Tanks	1979
13A	27	S	Unspecified Tanks	1979
14	40	S	Unspecified Tanks	1979
15E	47	W	Electric Substation	1995
16E	47	W	Electric Substation	1991
17E	47	W	Electric Substation	1979
18	59	W	Industrial Estate	1995
19F	59	W	Unspecified Commercial/Industrial	1991
20F	59	W	Unspecified Works	1979
21	62	N	Engineering Works	1979
22G	70	S	Unspecified Commercial/Industrial	1995
23G	70	S	Engineering Works	1979
24G	70	S	Unspecified Commercial/Industrial	1991
25AP	84	SW	Unspecified Factories	1955
26H	85	SW	Engineering Works	1979
27H	85	SW	Unspecified Commercial/Industrial	1991
28I	102	NW	Unspecified	1991

			Commercial/Industrial	
29I	102	NW	Engineering Works	1979
30	108	SW	Unspecified Commercial/Industrial	1995
31J	161	SW	Unspecified Works	1979
32J	161	SW	Unspecified Commercial/Industrial	1991
33K	181	W	Unspecified Commercial/Industrial	1991
34K	181	W	Unspecified Works	1979
35	189	N	Engineering Works	1979
36	261	NW	Industrial Estate	1991
37	273	NW	Engineering Works	1979
38	279	N	Unspecified Factories	1979
39L	301	S	Unspecified Commercial/Industrial	1995
40L	301	S	Unspecified Factories	1979
41L	301	S	Unspecified Commercial/Industrial	1991
42M	305	SW	Unspecified Factory	1955
43	307	NW	Engineering Works	1979
44BS	326	SW	Unspecified Works	1979
45M	326	SW	Unspecified Commercial/Industrial	1995
46M	326	SW	Unspecified Commercial/Industrial	1991
47	328	E	Oil Storage Depot	1995
48	328	E	Oil Storage Depots	1979
49	329	E	Oil Storage Depot	1991
50	330	SW	Unspecified Factories	1979
51	339	E	Unspecified Commercial/Industrial	1979
52N	365	E	Unspecified Tank	1995
53N	365	E	Unspecified Tank	1991
54O	365	W	Unspecified Commercial/Industrial	1995
55O	365	W	Unspecified Commercial/Industrial	1991
56O	365	W	Unspecified Works	1979
57N	365	E	Unspecified Tanks	1979
58O	366	W	Industrial Estate	1955
59P	367	NE	Unspecified Tanks	1979
60P	368	NE	Unspecified Tank	1991
61P	368	NE	Unspecified Tank	1995
62U	375	E	Unspecified Tanks	1979
63Q	377	E	Unspecified Tank	1991
64Q	377	E	Unspecified Tank	1995
65R	377	E	Unspecified Tank	1991
66R	377	E	Unspecified Tank	1995

67AX	379	NE	Unspecified Tank	1995
68S	384	N	Unspecified Commercial/Industrial	1995
69S	384	N	Unspecified Commercial/Industrial	1991
70S	384	N	Engineering Works	1979
71T	388	E	Unspecified Tank	1995
72T	388	E	Unspecified Tank	1991
73P	394	NE	Unspecified Tank	1995
74P	394	NE	Unspecified Tank	1991
75AV	396	NE	Unspecified Tank	1995
76U	398	E	Unspecified Tank	1995
77U	398	E	Unspecified Tank	1991
78V	401	SE	Unspecified Tank	1991
79V	401	SE	Unspecified Tank	1995
80AA	402	SE	Unspecified Tanks	1979
81U	411	E	Unspecified Tank	1995
82U	411	E	Unspecified Tank	1991
83Y	412	E	Unspecified Tanks	1979
84W	413	E	Unspecified Tank	1995
85W	413	E	Unspecified Tank	1991
86X	414	N	Unspecified Commercial/Industrial	1995
87X	414	N	Unspecified Commercial/Industrial	1991
88Y	415	E	Unspecified Tank	1995
89Y	415	E	Unspecified Tank	1991
90	416	NE	Unspecified Tank	1995
91Z	418	E	Unspecified Tank	1991
92Z	418	E	Unspecified Tank	1995
93AA	423	SE	Unspecified Tank	1995
94AA	423	SE	Unspecified Tank	1991
95AJ	427	E	Unspecified Tanks	1979
96AB	429	E	Unspecified Tank	1991
97AB	429	E	Unspecified Tank	1995
98AC	430	E	Unspecified Tank	1991
99AC	430	E	Unspecified Tank	1995
100AD	442	E	Unspecified Tank	1991
101AD	442	E	Unspecified Tank	1995
102AD	443	E	Unspecified Tanks	1979
103AK	443	NE	Unspecified Tank	1995
104AE	443	S	Industrial Estate	1991
105AE	443	S	Industrial Estate	1995
106BB	444	NE	Unspecified Tank	1995
107AF	447	SE	Unspecified Tank	1995
108AF	447	SE	Unspecified Tank	1991
109AG	447	E	Unspecified Tank	1991

110AG	447	E	Unspecified Tank	1995
111	450	SW	Unspecified Works	1979
112AH	452	SE	Unspecified Tank	1991
113AH	452	SE	Unspecified Tank	1995
114AI	453	SE	Unspecified Tanks	1979
115AI	455	SE	Unspecified Tank	1991
116AI	455	SE	Unspecified Tank	1995
117AJ	456	E	Unspecified Tank	1995
118AJ	456	E	Unspecified Tank	1991
119	458	NW	Unspecified Depot	1979
120AZ	459	NE	Unspecified Tank	1995
121	461	S	Unspecified Works	1979
122AK	462	NE	Unspecified Tank	1995
123AD	470	E	Unspecified Tank	1991
124AD	470	E	Unspecified Tank	1995
125AJ	478	E	Unspecified Tank	1995
126AJ	478	E	Unspecified Tank	1991
127AL	485	SE	Unspecified Tank	1991
128AL	485	SE	Unspecified Tank	1995
129AM	497	SW	Unspecified Commercial/Industrial	1995
130AM	497	SW	Unspecified Works	1979
131AM	497	SW	Unspecified Commercial/Industrial	1991

1.2 Additional Information – Historical Tank Database

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

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

120

ID	Distance (m)	Direction	Use	Date
132A	0	On Site	Tanks	1991
133A	0	On Site	Tanks	1969
134B	10	W	Unspecified Tank	1991
135A	17	S	Tanks	1969
136A	17	S	Tanks	1991
137BJ	111	W	Unspecified Tank	1969
138	150	E	Unspecified Tank	1999
139AN	189	E	Unspecified Tank	1996
140AN	189	E	Unspecified Tank	1993
141AN	189	E	Unspecified Tank	1995
142AN	189	E	Unspecified Tank	1995

143AN	189	E	Unspecified Tank	1999
144AO	192	W	Unspecified Tank	1996
145AO	192	W	Unspecified Tank	1987
146AO	192	W	Unspecified Tank	1991
147AP	192	SW	Unspecified Tank	1969
148AP	195	SW	Unspecified Tank	1996
149AP	196	SW	Unspecified Tank	1991
150AP	196	SW	Unspecified Tank	1987
151AQ	222	W	Unspecified Tank	1986
152AQ	222	W	Unspecified Tank	1969
153AR	245	S	Unspecified Tank	1991
154AR	246	S	Unspecified Tank	1996
155AR	246	S	Unspecified Tank	1993
156AR	246	S	Unspecified Tank	1995
157AR	246	S	Unspecified Tank	1999
158AR	246	S	Unspecified Tank	1995
159BP	259	SW	Unspecified Tank	1969
160AS	293	E	Unspecified Tank	1999
161AS	293	E	Unspecified Tank	1996
162AS	293	E	Unspecified Tank	1995
163AS	293	E	Unspecified Tank	1995
164AT	302	S	Unspecified Tank	1991
165AT	304	S	Unspecified Tank	1999
166AT	304	S	Unspecified Tank	1995
167AT	304	S	Unspecified Tank	1996
168AT	304	S	Unspecified Tank	1993
169AT	304	S	Unspecified Tank	1995
170AT	315	S	Unspecified Tank	1995
171AT	315	S	Unspecified Tank	1996
172AT	315	S	Unspecified Tank	1993
173AT	315	S	Unspecified Tank	1999
174AT	315	S	Unspecified Tank	1995
175BR	321	SW	Unspecified Tank	1969
176L	364	S	Unspecified Tank	1995
177L	364	S	Unspecified Tank	1996
178L	364	S	Unspecified Tank	1993
179L	364	S	Unspecified Tank	1999
180L	364	S	Unspecified Tank	1995
181P	364	NE	Unspecified Tank	1993
182T	364	E	Tanks	1974
183T	364	E	Tanks	1999
184P	364	NE	Unspecified Tank	1969
185P	365	NE	Unspecified Tank	1987
186P	365	NE	Unspecified Tank	1982
187AU	367	S	Unspecified Tank	1999
188AU	367	S	Unspecified Tank	1993

189AU	367	S	Unspecified Tank	1995
190AU	367	S	Unspecified Tank	1996
191AU	367	S	Unspecified Tank	1995
192P	372	NE	Tanks	1999
193P	372	NE	Tanks	1974
194U	375	E	Tanks	1996
195U	375	E	Tanks	1974
196AV	377	NE	Tanks	1993
197AW	383	NW	Unspecified Tank	1975
198AW	383	NW	Unspecified Tank	1969
199T	386	E	Tanks	1999
200AX	388	NE	Tanks	1999
201P	392	E	Tanks	1999
202AA	403	SE	Tanks	1996
203AA	403	SE	Tanks	1974
204AV	406	NE	Tanks	1999
205Y	410	E	Tanks	1974
206	411	SW	Unspecified Tank	1969
207Y	411	E	Tanks	1996
208AY	417	N	Tanks	1993
209AY	418	N	Tanks	1987
210AY	418	N	Tanks	1982
211AB	424	E	Tanks	1999
212AB	424	E	Tanks	1974
213	425	SW	Tanks	1969
214AZ	430	NE	Tanks	1999
215BA	438	N	Tanks	1993
216BA	439	N	Tanks	1987
217BA	439	N	Tanks	1982
218AD	440	E	Tanks	1974
219AD	440	E	Tanks	1999
220BA	441	N	Unspecified Tank	1982
221BA	441	N	Unspecified Tank	1987
222AK	444	NE	Tanks	1999
223BB	445	NE	Tanks	1999
224AB	452	E	Tanks	1999
225BC	452	N	Unspecified Tank	1993
226AH	452	SE	Tanks	1974
227BC	452	N	Unspecified Tank	1969
228AI	452	SE	Tanks	1996
229BC	453	N	Unspecified Tank	1982
230BC	453	N	Unspecified Tank	1987
231AI	458	SE	Tanks	1974
232BD	460	N	Unspecified Tank	1993
233AZ	460	NE	Tanks	1999
234BD	461	N	Unspecified Tank	1982

235BD	461	N	Unspecified Tank	1987
236AJ	475	E	Tanks	1999
237	478	NW	Unspecified Tank	1999
238M	480	SW	Tanks	1986
239BY	481	SW	Tanks	1969
240M	481	SW	Tanks	1969
241	484	NE	Tanks	1999
242AL	485	SE	Tanks	1974
243BE	494	SW	Unspecified Tank	1987
244BE	494	SW	Unspecified Tank	1991
245BE	494	SW	Unspecified Tank	1986
246BE	495	SW	Unspecified Tank	1996
247BE	495	SW	Unspecified Tank	1969
248BF	496	W	Tanks	1975
249BF	496	W	Tanks	1969
250BF	497	W	Tanks	1987
251	500	E	Tanks	1999

1.3 Additional Information – Historical Energy Features Database

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

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

107

ID	Distance (m)	Direction	Use	Date
252E	51	W	Electricity Substation	1995
253E	51	W	Electricity Substation	1993
254E	51	W	Electricity Substation	1999
255E	51	W	Electricity Substation	1996
256E	51	W	Electricity Substation	1995
257E	52	W	Electricity Substation	1969
258E	52	W	Electricity Substation	1991
259BG	63	SE	Electricity Substation	1991
260BG	65	SE	Electricity Substation	1995
261BG	65	SE	Electricity Substation	1996
262BG	65	SE	Electricity Substation	1993
263BG	65	SE	Electricity Substation	1999
264BG	65	SE	Electricity Substation	1995
265BH	85	S	Electricity Substation	1969
266BH	86	S	Electricity Substation	1991
267BH	87	S	Electricity Substation	1993
268BH	87	S	Electricity Substation	1995
269BH	87	S	Electricity Substation	1995

270BI	90	NE	Electricity Substation	1993
271BI	91	NE	Electricity Substation	1987
272BJ	127	W	Electricity Substation	1969
273BJ	128	W	Electricity Substation	1986
274BJ	128	W	Electricity Substation	1987
275BJ	128	W	Electricity Substation	1991
276BJ	136	W	Electricity Substation	1996
277BK	137	W	Electricity Substation	1996
278BL	137	SW	Electricity Substation	1991
279BK	137	W	Electricity Substation	1987
280BK	137	W	Electricity Substation	1986
281BK	137	W	Electricity Substation	1991
282BL	138	SW	Electricity Substation	1996
283BL	138	SW	Electricity Substation	1999
284BL	138	SW	Electricity Substation	1993
285BL	138	SW	Electricity Substation	1995
286BL	138	SW	Electricity Substation	1995
287BK	139	W	Electricity Substation	1969
288BM	142	S	Electricity Substation	1996
289BM	143	S	Electricity Substation	1999
290BN	238	SW	Electricity Substation	1996
291BO	238	S	Electricity Substation	1991
292BN	239	SW	Electricity Substation	1991
293BO	239	S	Electricity Substation	1995
294BO	239	S	Electricity Substation	1993
295BO	239	S	Electricity Substation	1999
296BO	239	S	Electricity Substation	1996
297BO	239	S	Electricity Substation	1995
298BP	249	SW	Electricity Substation	1996
299BP	249	SW	Electricity Substation	1991
300AR	253	S	Electricity Substation	1991
301AR	255	S	Electricity Substation	1995
302AR	255	S	Electricity Substation	1996
303AR	255	S	Electricity Substation	1993
304AR	255	S	Electricity Substation	1999
305AR	255	S	Electricity Substation	1995
306BP	261	SW	Electricity Substation	1996
307BP	262	SW	Electricity Substation	1991
308BP	268	SW	Electricity Substation	1996
309BP	269	SW	Electricity Substation	1987
310BP	269	SW	Electricity Substation	1991
311BQ	272	N	Electricity Substation	1993
312BQ	273	N	Electricity Substation	1969
313BQ	273	N	Electricity Substation	1987
314BQ	273	N	Electricity Substation	1982
315	273	SW	Electricity Substation	1969

316	290	NW	Electricity Substation	1969
317AT	305	S	Electricity Substation	1991
318AT	307	S	Electricity Substation	1995
319AT	307	S	Electricity Substation	1996
320AT	307	S	Electricity Substation	1999
321AT	307	S	Electricity Substation	1993
322AT	307	S	Electricity Substation	1995
323	309	E	Electricity Substation	1993
324BR	314	S	Electricity Substation	1996
325BS	339	SW	Electricity Substation	1996
326BS	340	SW	Electricity Substation	1987
327BS	340	SW	Electricity Substation	1991
328BT	351	W	Electricity Substation	1999
329BT	351	W	Electricity Substation	1996
330BT	351	W	Electricity Substation	1994
331BT	351	W	Electricity Substation	1993
332BU	360	N	Electricity Substation	1999
333BU	360	N	Electricity Substation	1993
334BU	360	N	Electricity Substation	1994
335BU	360	N	Electricity Substation	1996
336BV	375	N	Electricity Substation	1987
337BV	376	N	Electricity Substation	1993
338BW	429	SW	Electricity Substation	1987
339BW	429	SW	Electricity Substation	1991
340BW	429	SW	Electricity Substation	1996
341AY	437	N	Electricity Substation	1993
342AY	438	N	Electricity Substation	1987
343AY	438	N	Electricity Substation	1982
344BX	447	SW	Electricity Substation	1991
345BX	447	SW	Electricity Substation	1996
346BY	451	SW	Electricity Substation	1986
347BX	452	SW	Electricity Substation	1969
348BX	458	SW	Electricity Substation	1969
349BZ	463	W	Electricity Substation	1987
350BZ	463	W	Electricity Substation	1986
351BZ	463	W	Electricity Substation	1991
352BZ	464	W	Electricity Substation	1996
353BX	465	SW	Electricity Substation	1986
354CA	486	W	Electricity Substation	1996
355CA	487	W	Electricity Substation	1987
356CB	499	S	Electricity Substation	1996
357CB	499	S	Electricity Substation	1996
358CB	499	S	Electricity Substation	1986

1.4 Additional Information – Historical Petrol and Fuel Site Database

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

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

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

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 3

ID	Distance (m)	Direction	Use	Date
359AM	499	SW	Garage	1968
360AM	499	SW	Garage	1969
361AM	500	SW	Garage	1993

1.6 Historical military sites

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

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

Database searched and no data found.

1.7 Potentially Infilled Land

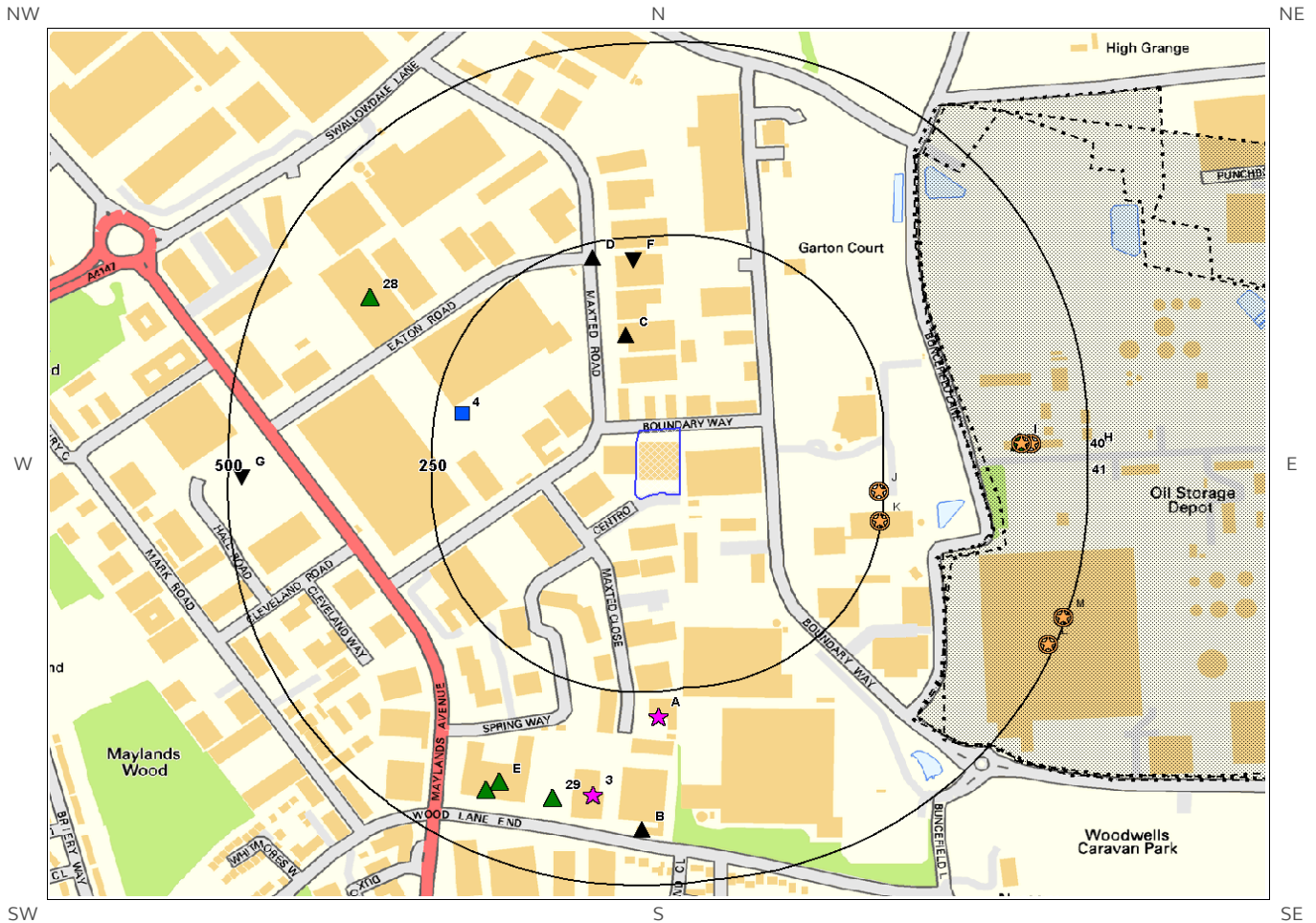
Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 12

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














ID	Distance(m)	Direction	Use	Date
362AS	314	E	Pond	1995
363AS	315	E	Pond	1991
364BA	414	N	Pond	1938
365BA	414	N	Pond	1947
366BA	414	N	Pond	1923
367BA	414	N	Pond	1897

368BA	414	N	Pond	1878
369BA	415	N	Pond	1955
370CC	496	SE	Ponds	1878
371CC	499	SE	Pond	1995
372CC	499	SE	Pond	1991
373CC	499	SE	Pond	1979

2. Environmental Permits, Incidents and Registers Map



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

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

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

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

4

The following IPC Authorisations are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
71B	430	S	508110 207960	Operator: Henkel Loctite Adhesives Ltd Address: Kelsey House, Wood Lane End, Hemel Hempstead, Hertfordshire, HP2 4RQ Process: Inorganic Chemical Processes	Permit Number: BC9453 Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked
72B	430	S	508110 207960	Operator: Henkel Loctite Adhesives Ltd Address: Kelsey House, Wood Lane End, Hemel Hempstead, Hertfordshire, HP2 4RQ Process: Inorganic Chemical Processes	Permit Number: AO0580 Original Permit Number: IPCAPP Date Approved: 25-11-1994 Effective Date: 1-1-1995 Status: Superseded By Variation
73B	430	S	508110 207960	Operator: Henkel Loctite Adhesives Ltd Address: Wood Lane End, Hemel Hempstead, Hertfordshire, HP2 4RQ Process: Non-ferrous Metals	Permit Number: AS7574 Original Permit Number: IPCAPP Date Approved: 1-12-1995 Effective Date: 1-1-1996 Status: Superseded By Variation
74B	430	S	508110 207960	Operator: Henkel Loctite Adhesives Ltd Address: Wood Lane End, Hemel Hempstead, Hertfordshire, HP2 4RQ Process: Non-ferrous Metals	Permit Number: BD2527 Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked - Now Ippc

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

19

The following Part A(1) and IPPC Authorised Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
52C	123	N	508090 208600	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M	Permit Number: BU6875IC Original Permit Number: BK6912IX EPR Reference: -

ID	Distance (m)	Direction	NGR	Details	
				TUNGSTEN POWDERS LTD Process: INORGANIC CHEMICALS; GASES EG AMMONIA,	Issue Date: 30/06/2003 Effective Date: 01/07/2003 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
53C	123	N	508090 208600	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: ASSOCIATED PROCESS	Permit Number: UP3836MD Original Permit Number: BK6912IX EPR Reference: - Issue Date: - Effective Date: 25/06/2007 Last date noted as effective: 2019-10-01 Status: SURRENDER EFFECTIVE
54C	123	N	508090 208600	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: NON-FERROUS METALS; PRODUCING FROM RAW MATERIALS BY METALLURGICAL ACTIVITIES ETC	Permit Number: UP3836MD Original Permit Number: BK6912IX EPR Reference: - Issue Date: - Effective Date: 25/06/2007 Last date noted as effective: 2019-10-01 Status: SURRENDER EFFECTIVE
55C	123	N	508090 208600	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: INORGANIC CHEMICALS; GASES EG AMMONIA,	Permit Number: UP3836MD Original Permit Number: BK6912IX EPR Reference: - Issue Date: - Effective Date: 25/06/2007 Last date noted as effective: 2019-10-01 Status: SURRENDER EFFECTIVE
56C	123	N	508090 208600	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: NON-FERROUS METALS; PRODUCING FROM RAW MATERIALS BY METALLURGICAL ACTIVITIES ETC	Permit Number: BU6875IC Original Permit Number: BK6912IX EPR Reference: - Issue Date: 30/06/2003 Effective Date: 01/07/2003 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
57D	229	N	508050 208700	Operator: A AND M TUNGSTEN POWDERS LTD Installation Name: - Process: INORGANIC CHEMICALS; GASES EG AMMONIA,	Permit Number: BK6912 Original Permit Number: BK6912 EPR Reference: - Issue Date: - Effective Date: 31/01/2003 Last date noted as effective: 2005-10-03 Status: SUPERSEDED BY VARIATION
58D	229	N	508050 208700	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: INORGANIC CHEMICALS; GASES EG AMMONIA,	Permit Number: BK6912IX Original Permit Number: BK6912IX EPR Reference: - Issue Date: 31/01/2003 Effective Date: 31/01/2003 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
59D	229	N	508050 208700	Operator: A AND M TUNGSTEN POWDERS LTD Installation Name: - Process: NON-FERROUS METALS; PRODUCING FROM RAW MATERIALS BY METALLURGICAL ACTIVITIES ETC	Permit Number: BU6875 Original Permit Number: BK6912 EPR Reference: - Issue Date: 30/06/2003 Effective Date: 01/07/2003 Last date noted as effective: 2004-10-01 Status: SUPERSEDED BY PAS
60D	229	N	508050 208700	Operator: A AND M TUNGSTEN POWDERS LTD Installation Name: -	Permit Number: BU6875 Original Permit Number: BK6912 EPR Reference: -

ID	Distance (m)	Direction	NGR	Details	
				Process: INORGANIC CHEMICALS; GASES EG AMMONIA,	Issue Date: 30/06/2003 Effective Date: 01/07/2003 Last date noted as effective: 2004-10-01 Status: SUPERSEDED BY PAS
61D	229	N	508050 208700	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: NON-FERROUS METALS; PRODUCING FROM RAW MATERIALS BY METALLURGICAL ACTIVITIES ETC	Permit Number: BK6912IX Original Permit Number: BK6912IX EPR Reference: - Issue Date: 31/01/2003 Effective Date: 31/01/2003 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
62D	229	N	508050 208700	Operator: A AND M TUNGSTEN POWDERS LTD Installation Name: - Process: NON-FERROUS METALS; PRODUCING FROM RAW MATERIALS BY METALLURGICAL ACTIVITIES ETC	Permit Number: BK6912 Original Permit Number: BK6912 EPR Reference: - Issue Date: - Effective Date: 31/01/2003 Last date noted as effective: 2005-10-03 Status: SUPERSEDED BY VARIATION
63B	430	S	508110 207960	Operator: HENKEL LTD Installation Name: HENKEL LOCTITE ADHESIVES LTD Process: ASSOCIATED PROCESS	Permit Number: CP3935XZ Original Permit Number: CP3935XZ EPR Reference: - Issue Date: 24/04/2008 Effective Date: 24/04/2008 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
64B	430	S	508110 207960	Operator: HENKEL LOCTITE ADHESIVES LIMITED Installation Name: MULTICORE SOLDERS LIMITED Process: NON-FERROUS METALS; PRODUCING ETC LEAD AND ALLOYS WITH RELEASE TO AIR	Permit Number: BL7167IK Original Permit Number: BL7167IK EPR Reference: - Issue Date: 29/10/2002 Effective Date: 31/10/2002 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
65B	430	S	508110 207960	Operator: HENKEL LTD Installation Name: HENKEL LOCTITE ADHESIVES LTD Process: NON-FERROUS METALS; PRODUCING ETC LEAD AND ALLOYS WITH RELEASE TO AIR	Permit Number: CP3935XZ Original Permit Number: CP3935XZ EPR Reference: - Issue Date: 24/04/2008 Effective Date: 24/04/2008 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
66B	430	S	508110 207960	Operator: HENKEL LTD Installation Name: HENKEL LTD Process: NON-FERROUS METALS; PRODUCING ETC LEAD AND ALLOYS WITH RELEASE TO AIR	Permit Number: SP3539ZG Original Permit Number: CP3935XZ EPR Reference: - Issue Date: - Effective Date: 10/06/2013 Last date noted as effective: 2019-10-01 Status: SURRENDER EFFECTIVE
67B	430	S	508110 207960	Operator: HENKEL LOCTITE ADHESIVES LTD Installation Name: - Process: NON-FERROUS METALS; PRODUCING ETC LEAD & ALLOYS WITH RELEASE TO AIR	Permit Number: BU6042 Original Permit Number: BL7167 EPR Reference: - Issue Date: 08/04/2003 Effective Date: 30/04/2003 Last date noted as effective: 2004-10-01 Status: SUPERSEDED BY PAS
68B	430	S	508110 207960	Operator: HENKEL LOCTITE ADHESIVES LTD Installation Name: -	Permit Number: BL7167 Original Permit Number: BL7167 EPR Reference: -

ID	Distance (m)	Direction	NGR	Details	
				Process: NON-FERROUS METALS; PRODUCING ETC LEAD & ALLOYS WITH RELEASE TO AIR	Issue Date: - Effective Date: 29/10/2002 Last date noted as effective: 2005-10-03 Status: SUPERSEDED BY VARIATION
69B	430	S	508110 207960	Operator: HENKEL LTD Installation Name: HENKEL LTD Process: ASSOCIATED PROCESS	Permit Number: SP3539ZG Original Permit Number: CP3935XZ EPR Reference: - Issue Date: - Effective Date: 10/06/2013 Last date noted as effective: 2019-10-01 Status: SURRENDER EFFECTIVE
70B	430	S	508110 207960	Operator: HENKEL LOCTITE ADHESIVES LIMITED Installation Name: MULTICORE SOLDERS LIMITED Process: NON-FERROUS METALS; PRODUCING ETC LEAD AND ALLOYS WITH RELEASE TO AIR	Permit Number: BU6042IF Original Permit Number: BL71671K EPR Reference: - Issue Date: 08/04/2003 Effective Date: 30/04/2003 Last date noted as effective: 2019-10-01 Status: SUPERCEDED

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

6

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

ID	Distance (m)	Direction	NGR	Details	
28	372	NW	507777 208649	Address: Spacestor, Noble House, Eaton Road, Hemel Hempstead, HP2 7UB Process: Timber Manufacture Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
29	404	S	508001 208001	Address: Multicore Solders, Kelsey House Wood Lane End. Town, Hemel Hempstead. HP2 4RQ Process: Chemical & Acid Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
30E	407	SW	507935 208022	Address: Fletcher Way Gge, Fletcher Way, Hemel Hempstead, HP2 5SE Process: Waste Oil Burner <0.4 MW Status: New Legislation Applies Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
311	417	E	508574 208462	Address: Hertfordshire Oil Storage Ltd, Buncefield Terminal, Green Lane, Hemel Hempstead, Herts, HP2 7HZ Process: Unloading of Petrol into Storage at Service Stations Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
32E	423	SW	507919 208012	Address: Dexion Ltd, Maylands Ave, Maylands Avenue, HP2 7DF Process: Other Metal Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
33E	423	SW	507919 208012	Address: Fletcher Way Gge, Fletcher Way, Hemel Hempstead, HP2 5SE Process: Petrol Vapour Recovery Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

6

The following RAS Licence (3 or 4) records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Address	Operator	Type	Permission Number	Dates	Status
75F	221	N	508100 208700	Jenson Tungsten Ltd (dissolved), 11 Maxted Road, Hemel Hempstead Industrial Est, Hemel Hempstead, Hertfordshire, HP2 7DX	Jenson Tungsten Ltd (dissolved)	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AF6090	Date of Approval:23/8/1993 Effective from:26/9/1993 Last date of update:2015-01-01	Revoked/cancelled
76F	221	N	508100 208700	Jenson Tungsten Ltd (dissolved), 11 Maxted Road, Hemel Hempstead Industrial Est, Hemel Hempstead, Hertfordshire, HP2 7DX	Jenson Tungsten Ltd (dissolved)	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AJ8133	Date of Approval:31/3/1991 Effective from:31/3/1991 Last date of update:2015-01-01	Superseded By Variation
77F	221	N	508100 208700	Jenson Tungsten Ltd (dissolved), 11 Maxted Road, Hemel Hempstead Industrial Est, Hemel Hempstead, Hertfordshire, HP2 7DX	Jenson Tungsten Ltd (dissolved)	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AJ8095	Date of Approval:31/3/1991 Effective from:31/3/1991 Last date of update:2015-01-01	Revoked/cancelled
78G	483	W	507620 208420	Bio Rad Laboratories Ltd, Bio Rad House, Maylands Avenue, Hemel Hempstead, Hertfordshire, HP2 7TD	Bio Rad Laboratories Ltd	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AC1466	Date of Approval:31/3/1991 Effective from:31/3/1991 Last date of update:2015-01-01	Superseded By Variation
79G	483	W	507620 208420	Bio Rad Laboratories Ltd, Bio Rad House, Maylands Avenue, Hemel Hempstead Industrial Est, Hemel Hempstead, Hertfordshire, HP2 7TD	Bio Rad Laboratories Ltd	Keeping And Use Of Radioactive Materials (was Rsa60 Section 1).	AC1504	Date of Approval:31/3/1991 Effective from:31/3/1991 Last date of update:2015-01-01	Revoked/cancelled
80G	483	W	507620 208420	Bio Rad Laboratories Ltd, Bio Rad House, Maylands Avenue, Hemel Hempstead, Hertfordshire, HP2 7TD	Bio Rad Laboratories Ltd	Disposal Of Radioactive Waste (was Rsa60 Section 6).	BS9032	Date of Approval:5/9/2002 Effective from:3/10/2002 Last date of update:2015-01-01	Revoked/cancelled

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

1

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

ID	Distance (m)	Direction	NGR	Details	
4	217	W	507890 208500	Address: HATFIELD BUSINESS PARK, HATFIELD PARK WAY, HATFIELD, HERTFORDSHIRE, AL10 9TA Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: CANM.0372 Permit Version: 1	Receiving Water: ELLEN BROOK Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 06/12/2001 Effective Date: 06-Dec-2001 Revocation Date: 10/04/2002

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

0

Database searched and no data found.

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

6

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

ID	Distance (m)	Direction	Application Reference Number	NGR	Application Status	Application Date	Address	Details	Details of Enforcement Action
81J	243	E	4/01853/99/ 4	508400 208400	Historical Consent	27/10/1999	Shell UK Oil, Green Lane, Hemel Hempstead, Herts, HP2 7JB	Storage and loading of hydrocarbon products	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
82K	247	E	4/01445/92/ HAZ	508401 208361	Historical Consent	11/11/1992	Sheel [UK] Ltd, Buncefield, Hemel Hempstead, Hertfordshire, HP2 7HZ	Storage of hazardous substance	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
83I	418	E	No Details	508575 208462	Approved	No Details	Hertfordshire Oil Storage	No Details	Enforcement: No Enforcements

ID	Distance (m)	Direction	Application Reference Number	NGR	Application Status	Application Date	Address	Details	Details of Enforcement Action
							Ltd, Buncefield Oil Terminal, Green Lane, Hemel Hempstead, Hertfordshire, England, HP2 7HZ		Notified Date of Enforcement: No Details Comment: No Details
84I	430	E	5/2010/3107	508587 208462	Historical Consent	25/01/2011	BPA Buncefield Terminal, Green Lane, Hemel Hempstead, HP2 7HZ	Oil Pipeline And Storage Facilities, Storage Of Aviation Kerosene For Transfer To Heathrow And Gatwick Airports Via Pipeline And Storage Of Pipeline Product Interface Material	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
85L	491	SE	4/02082/09/ HAZ	508608 208201	Withdrawn	23/12/2009	Buncefield Oil Terminal, Green Lane, Hemel Hempstead, HP2 7JA	Storage of jet fuel, diesel, gasoline, kerosene, gas oil, interface oil, ethanol and additives.	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
86M	496	E	4/01788/99/ HAZ	508627 208236	Approved	12/10/1999	British Pipeline Agency Limited, Buncefield Oil Terminal, Green Lane, Hemel Hempstead, Hertfordshire, England, HP2 7HZ	Storage of aviation kerosene	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

2.2 Dangerous or Hazardous Sites

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

6

The following COMAH & NIHHS Authorisation records provided by the Health and Safety Executive are represented as polygons or buffered points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Company	Address	Operational Status	Tier
40	325	E	British Pipeline Agency Limited	British Pipeline Agency Limited, Buncefield Terminal, Green Lane, Hemel Hempstead, Hertfordshire, HP2 7HZ	Current COMAH Site	COMAH Lower Tier Operator
41	332	E	BP Oil UK Limited	BP Oil UK Limited, Buncefield Terminal, Buncefield Oil Terminal, Green Lane, Hemel Hempstead, Hertfordshire, HP2 7JA	Current COMAH Site	COMAH Lower Tier Operator
42H	338	E	Shell UK Oil	Shell UK Oil, Buncefield Terminal, Green Lane, Hemel Hempstead, HP2 7JB	Historical NIHHS Site	-

ID	Distance (m)	Direction	Company	Address	Operational Status	Tier
43H	338	E	Hertfordshire Oil Storage Ltd	Hertfordshire Oil Storage Ltd, Buncefield Terminal, Green Lane, Hemel Hempstead, HP2 7HZ	Historical NIHHS Site	-
44H	338	E	Bp Oil Uk Ltd	Bp Oil Uk Ltd, Green Lane, Off Brakespeare Way, Hemel Hempstead, HP4 7JA	Historical NIHHS Site	-
45H	338	E	Mobil Oil Company Ltd	Mobil Oil Company Ltd, Buncefield Terminal, Green Lane, Hemel Hempstead	Historical NIHHS Site	-

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

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

3

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

ID	Distance (m)	Direction	NGR	Details
1A	283	S	508130.0 208108.0	Incident Date: 18-Dec-2007 Incident Identification: 551652.0 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke Water Impact: Category 3 (Minor) Land Impact: Category 2 (Significant) Air Impact: Category 2 (Significant)
2A	283	S	508130.0 208108.0	Incident Date: 18-Dec-2007 Incident Identification: 551652.0 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off Water Impact: Category 3 (Minor) Land Impact: Category 2 (Significant) Air Impact: Category 2 (Significant)
3	388	S	508049.0 208007.0	Incident Date: 12-Nov-2003 Incident Identification: 201105.0 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

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

0

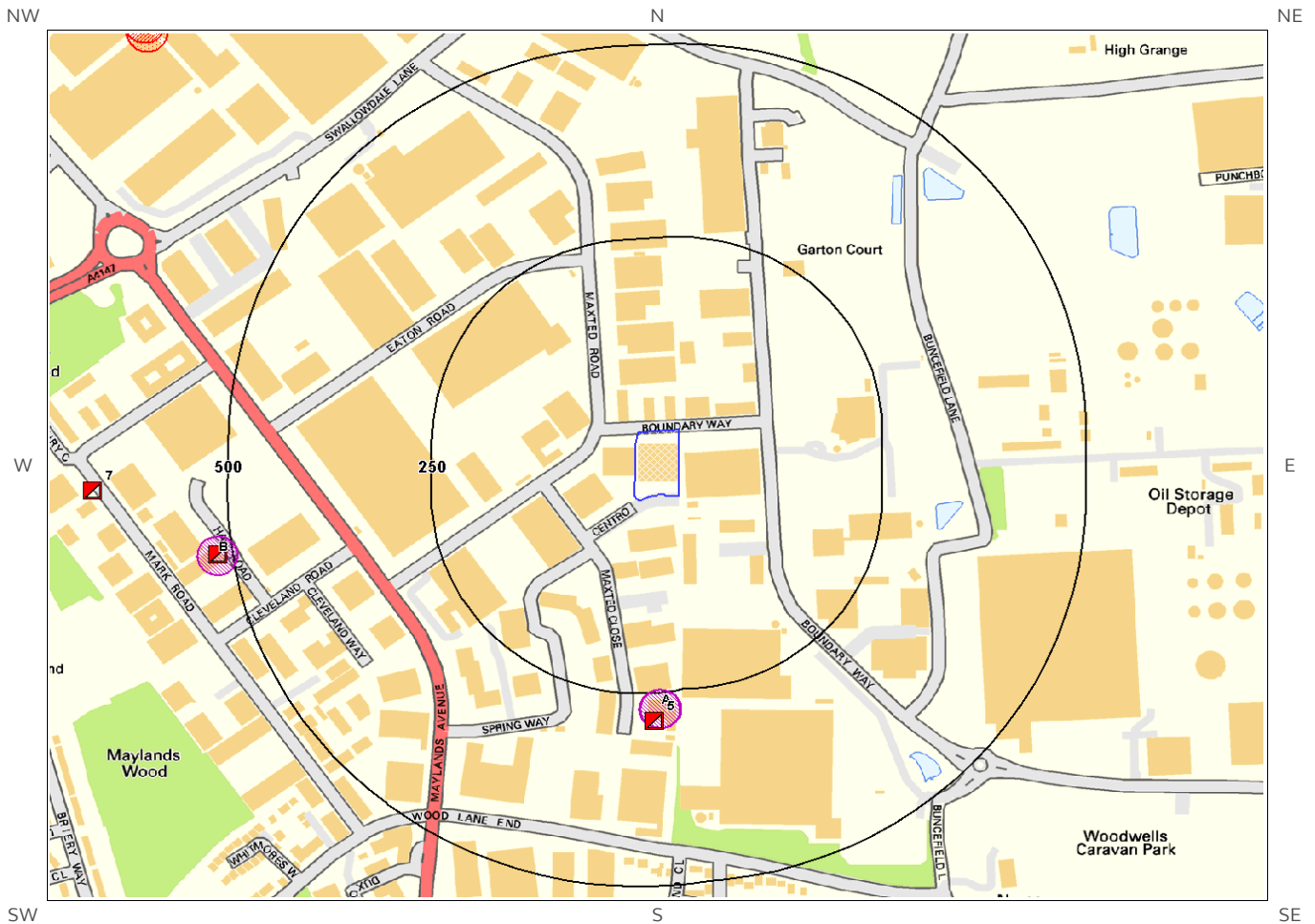
Database searched and no data found.

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










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

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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- | | | | | | |
|---|------------------------|---|---------------------------|---|---|
|  | Site Outline |  | EA/NRW Active Landfill |  | Historic and Planned Waste Sites |
|  | 250 Search Buffers (m) |  | EA/NRW Historic Landfill |  | EA/NRW Licensed Waste Site |
|  | 500 Search Buffers (m) |  | BGS / DoE Survey Landfill |  | Local Authority/Historical Mapping Landfill Records |

3. Landfill and Other Waste Sites

3.1 Landfill Sites

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

0

Database searched and no data found.

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

1

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

ID	Distance (m)	Direction	NGR	Details
4C	770	NW		Site Address: Eastman Way, Hemel Hempstead Waste Licence: - Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: Development Corporation First Recorded: 31-Dec-1949 Last Recorded: 31-Dec-1951

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

0

Database searched and no data found.

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

1

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

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
18C	780	NW	507501 209008	Nr. Eastman Way, Hemel Hempstead, Hertfordshire	Proprietary database	Point

3.2 Other Waste Sites

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

3

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

ID	Distance (m)	Direction	NGR	Details		
1A	246	S	508133 208119	Type of Site: Waster Transfer Station & Workshop Site Address: 82 Maxted Close, Hemel Hempstead Industrial Est, HEMEL HEMPSTEAD, Hertfordshire, HP2 7EG	Planning Application Reference: 4/01701/08/CMA Date: -	Further Details: Scheme comprises construction of side extension and covered bay to rear and construction of workshop and fencing and relocation of port (county matter application). Construction - fencing site works. An application (ref: 4/01701/08/CMA) for detailed panning permission was submitted to Dacorum B.C. Data Source: Historic Planning Application Data Type: Point
2A	246	S	508135 208119	Type of Site: Waste Transfer Station Site Address: 82 Maxted Close, Hemel Hempstead Industrial Est, HEMEL HEMPSTEAD, Hertfordshire, HP2 7EG	Planning Application Reference: 4/00275/08/CMA Date: -	Further Details: Scheme comprises construction of waste transfer station. An application (ref: 4/00275/08/CMA) for detailed planning permission was submitted to Dacorum B.C. Data Source: Historic Planning Application Data Type: Point
3B	494	W	507590 208318	Type of Site: Recycling Waste Plant Site Address: 9 Hall Road, HEMEL HEMPSTEAD, Hertfordshire, HP2 7BH	Planning Application Reference: 4/01733/10/FUL Date: 11/04/2011	Further Details: Scheme comprises change of use to recycling/waste management plant. An application (ref: 4/01733/10/FUL) for detailed planning permission was granted by Dacorum B.C. A detailed planning application has been granted.

ID	Distance (m)	Direction	NGR	Details
Data Source: Historic Planning Application Data Type: Point				

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

13

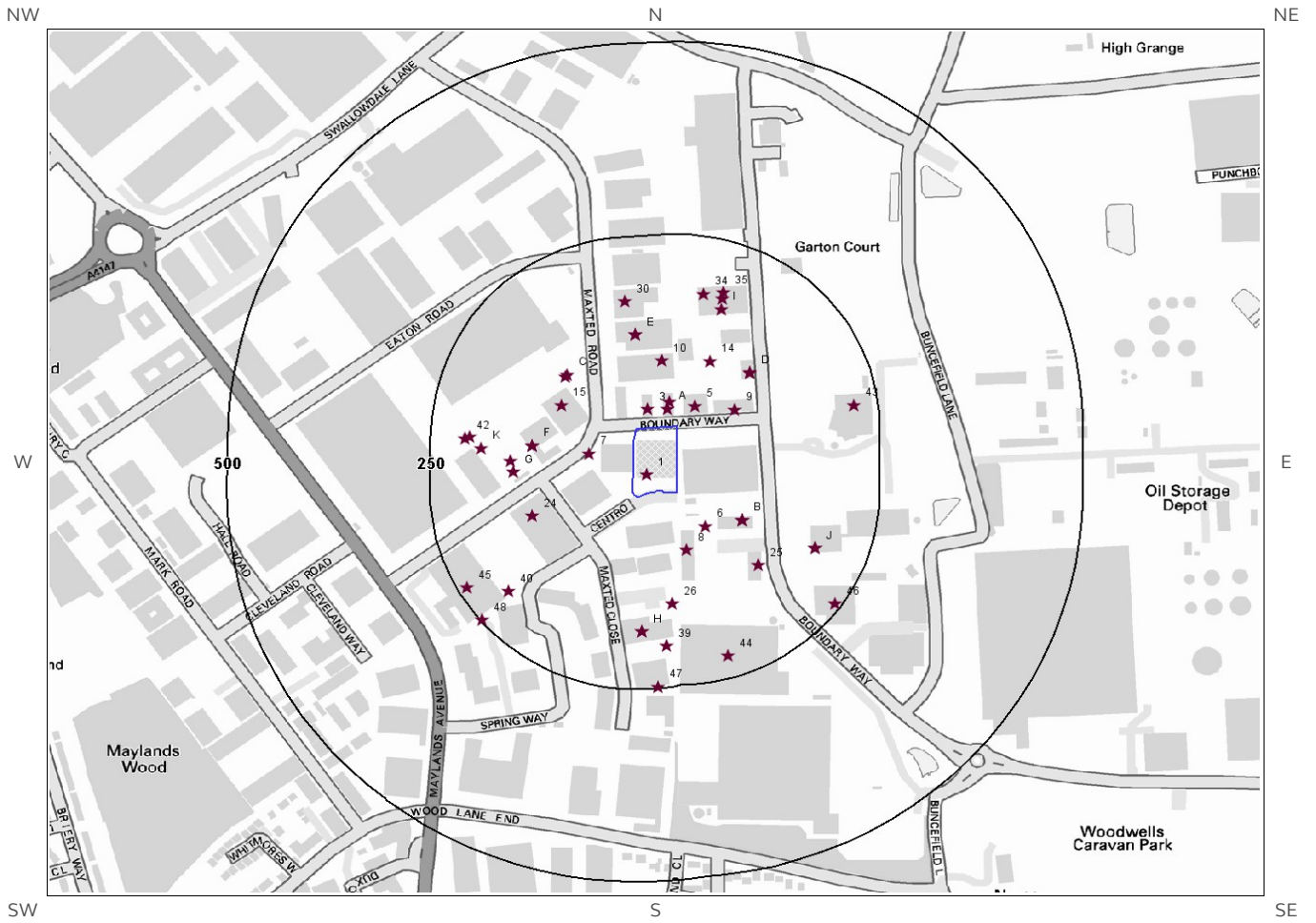
The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
5	285	S	508127 208105	<p>Site Address: 82-86, Maxted Close, Hemel Hempstead Ind Est, Hemel Hempstead, Hertfordshire, HP2 7DX Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HOL006 EPR reference: EA/EPR/EP3097NY/V003 Operator: Holywell Haulage Ltd Waste Management licence No: 80606 Annual Tonnage: 75000.0</p> <p>Issue Date: 08/03/2004 Effective Date: - Modified: 06/11/2015 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Holywell Hemel Hempstead Correspondence Address: -</p>
6B	519	W	507590 208320	<p>Site Address: Unit 9, Hall Road, Maylands Wood Estate, Hemel Hempstead, Hertfordshire, HP2 7BH Type: 75kte WEEE Treatment Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MAR234 EPR reference: EA/EPR/VP3892EF/A001 Operator: Maritrans Recycling (U K) Ltd Waste Management licence No: 102600 Annual Tonnage: 74999.0</p> <p>Issue Date: 16/05/2011 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked Site Name: Maritrans Recycling (U K) Ltd Correspondence Address: -</p>
7	667	W	507436 208403	<p>Site Address: Bishop House, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7BW Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BIS002 EPR reference: EA/EPR/KP3897NR/A001 Operator: David James Bishop & Vivien Irene Hutchins Waste Management licence No: 80517 Annual Tonnage: 133848.0</p> <p>Issue Date: 04/01/2001 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: J F Bishop & Son Correspondence Address: -</p>
Not shown	791	W	507313 208355	<p>Site Address: Bishop House, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7BW Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BIS016 EPR reference: EA/EPR/DB3333DJ/V003 Operator: J F Bishop & Son Ltd</p> <p>Issue Date: 04/01/2001 Effective Date: 02/12/2011 Modified: 28/03/2013 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: J F Bishop & Son Correspondence Address: -</p>

ID	Distance (m)	Direction	NGR	Details
				Waste Management licence No: 80517 Annual Tonnage: 133848.0
Not shown	809	W	507300 208300	<p>Site Address: Mr D J Bishop, Bishop House, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7BW Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BIS001 EPR reference: EA/EPR/KP3591NB/S003 Operator: J F Bishop & Son Waste Management licence No: 80226 Annual Tonnage: 59516.0</p> <p>Issue Date: 08/04/1987 Effective Date: - Modified: 30/03/1992 Surrendered Date: Apr 25 2002 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Mark Road, Hemel Hempstead Correspondence Address: -</p>
Not shown	963	NW	507322 209037	<p>Site Address: Mr Toomay, Household Waste Recycling Centre, Eastman Way, Hemel Hempstead, Hertfordshire, HP2 7DU Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: AME051 EPR reference: EA/EPR/CB3203CE/V002 Operator: Amey Cespa (East) Ltd Waste Management licence No: 80199 Annual Tonnage: 24999.0</p> <p>Issue Date: 19/02/1977 Effective Date: 16/10/2014 Modified: 21/01/2015 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Hemel Hempstead H W R C Correspondence Address: -</p>
Not shown	1007	NW	507231 208976	<p>Site Address: Cupid Green Yard, Redbourn Road, Hemel Hempstead, Hertfordshire, HP2 7AZ Type: Metal Recycling Site (Vehicle Dismantler) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HUN005 EPR reference: EA/EPR/JP3597NC/A001 Operator: Hunt Martin Waste Management licence No: 80697 Annual Tonnage: 2499.0</p> <p>Issue Date: 07/07/2005 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Hunts Carbreakers, Cupid Green Correspondence Address: -</p>
Not shown	1019	NW	507241 209016	<p>Site Address: Yard 1, Redbourne Road, Cupid Green, Hemel Hempstead, Hertfordshire, HP2 7JH Type: ELV Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRO013 EPR reference: EA/EPR/BP3393EG/A001 Operator: Brown Peter John Waste Management licence No: 80733 Annual Tonnage: 2499.0</p> <p>Issue Date: 02/06/2008 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Peter John Brown Correspondence Address: -</p>
Not shown	1025	NW	507270 209070	<p>Site Address: Cupid Green Depot, Redbourn Road, Hemel Hempstead, Hertfordshire, HP2 7BA Type: 75kte HCI Waste TS + asbestos Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: DAC001 EPR reference: EA/EPR/FP3797NC/V002 Operator: Dacorum Borough Council Waste Management licence No: 80567 Annual Tonnage: 24999.0</p> <p>Issue Date: 27/09/2002 Effective Date: - Modified: 06/05/2008 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Cupid Green Depot Correspondence Address: -</p>
Not shown	1071	NW	507254 209126	<p>Site Address: Cupid Green Depot, Redbourn Road, Hemel Hempstead, Hertfordshire, HP2 7BA Type: Special Waste Transfer Station Size: < 25000 tonnes</p> <p>Issue Date: 27/09/2002 Effective Date: - Modified: 18/09/2019 Surrendered Date: - Expiry Date: -</p>

ID	Distance (m)	Direction	NGR	Details
				<p>Environmental Permitting Regulations (Waste) Licence Number: DAC001 EPR reference: EA/EPR/FP3797NC/V005 Operator: Dacorum Borough Council Waste Management licence No: 80567 Annual Tonnage: 74998.0</p> <p>Cancelled Date: - Status: Modified Site Name: Cupid Green Depot Correspondence Address: -</p>
Not shown	1224	NW	507200 209300	<p>Site Address: Mr Toomay, Household Waste Recycling Centre, Eastman Way, Hemel Hempstead, Hertfordshire, HP2 7DU Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HER008 EPR reference: EA/EPR/UP3191NL/V003 Operator: Hertfordshire County Council Waste Management licence No: 80199 Annual Tonnage: 24999.0</p> <p>Issue Date: 19/02/1977 Effective Date: - Modified: 27/04/2007 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Hemel Hempstead Waste Recycling Centre Correspondence Address: -</p>
Not shown	1224	NW	507200 209300	<p>Site Address: Mr Toomay, Household Waste Site, Eastman Way, Hemel Hempstead, Herts, HP2 7DU Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HER008 EPR reference: - Operator: Hertfordshire County Council Waste Management licence No: 80199 Annual Tonnage: 0.0</p> <p>Issue Date: 19/02/1977 Effective Date: - Modified: 20/03/1997 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Eastman Way, Hemel Hempstead Correspondence Address: Hertfordshire County Council, Waste Management Unit, County Hall, Pegs Lane, Hertford, Hertfordshire, SG13 8DN</p>
Not shown	1224	NW	507200 209300	<p>Site Address: Mr Toomay, Household Waste Recycling Centre, Eastman Way, Hemel Hempstead, Hertfordshire, HP2 7DU Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: AME051 EPR reference: EA/EPR/CB3203CE/T001 Operator: Amey Cespa (East) Limited Waste Management licence No: 80199 Annual Tonnage: 24999.0</p> <p>Issue Date: 19/02/1977 Effective Date: 16/10/2014 Modified: 27/04/2007 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Hemel Hempstead H W R C Correspondence Address: -</p>

4. Current Land Use Map



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-  Site Outline
-  Current Industrial Sites
-  Electricity Transmission Cables
-  Search Buffers (m)
-  Petrol & Fuel Sites
-  Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

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

48

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	0	On Site	Voxhub	508119 208420	Centro 3, Boundary Way, Hemel Hempstead, Hertfordshire, HP2 7SU	Radar and Telecommunications Equipment	Industrial Products
2A	25	N	Trademark Interiors	508145 208505	Unit 8 Marchmont Gate, Boundary Way, Hemel Hempstead, Hertfordshire, HP2 7BF	Furniture	Consumer Products
3	25	N	4 Ways	508120 208504	Unit 7 Marchmont Gate, Boundary Way, Hemel Hempstead, Hertfordshire, HP2 7BF	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products
4A	34	N	Qubicaamf	508147 208515	Unit 8 Marchmont Gate, Boundary Way, Hemel Hempstead, Hertfordshire, HP2 7BF	Hobby, Sports and Pastime Products	Consumer Products
5	36	NE	Aspin Group	508179 208509	Nexus House, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7SJ	Civil Engineers	Engineering Services
6	55	SE	Electricity Sub Station	508192 208353	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
7	55	W	Electricity Sub Station	508048 208447	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
8	74	S	Apogee Flow Systems Ltd	508168 208322	Unit 7 Grovelands Business Centre, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7TE	Measurement and Inspection Equipment	Industrial Products
9	75	E	Yazaki	508227 208504	Unit 1-3 Zodiac, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7SJ	Electronic Equipment	Industrial Products
10	87	N	Wanted Clothing	508138 208567	4, Maxted Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DX	Container and Storage	Transport, Storage and Delivery
11B	87	SE	Tornado Storage Solutions	508237 208361	Unit 1 Grovelands Business Centre, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire,	Shelving, Storage, Safes and Vaults	Industrial Products

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
HP2 7TE							
12B	87	SE	Arbiter Coatings	508237 208361	Unit 1 Grovelands Business Centre, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7TE	Industrial Coatings and Finishings	Industrial Products
13B	87	SE	Herts Mechanical Handling Services Ltd	508237 208361	Unit 1 Grovelands Business Centre, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7TE	Lifting and Handling Equipment	Industrial Products
14	95	NE	Electricity Sub Station	508198 208567	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
15	97	W	Furnell Transport	508015 208510	Enterprise House, Maxted Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BT	Distribution and Haulage	Transport, Storage and Delivery
16C	111	NW	Electricity Sub Station	508022 208550	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
17C	112	NW	Electricity Sub Station	508019 208547	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
18D	114	NE	Kaiser Craft Ltd	508246 208552	Unit 5 Zodiac, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7SJ	Lifting and Handling Equipment	Industrial Products
19D	114	NE	Kaiser & Kraft	508246 208552	Unit 5 Zodiac, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7SJ	Office and Shop Equipment	Industrial Products
20E	123	N	Cheetah Couriers & Logistics	508105 208601	6, Maxted Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DX	Distribution and Haulage	Transport, Storage and Delivery
21E	123	N	F B H-fichet Ltd	508105 208601	5, Maxted Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DX	Shelving, Storage, Safes and Vaults	Industrial Products
22F	125	W	A P T Powerdrive	507978 208457	Amir House, Maxted Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DX	Special Purpose Machinery and Equipment	Industrial Products
23F	125	W	Green Shields J C B	507978 208457	Amir House, Maxted Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DX	Industrial Repairs and Servicing	Repair and Servicing
24	128	W	Deyongs Ltd	507979 208366	Unit 3 Maxted Court, Maxted Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BL	Carpets, Flooring, Rugs and Soft Furnishings	Consumer Products
25	137	SE	Glanville	508256 208302	Unit 3 Grovelands Business Centre, Boundary Way, Hemel Hempstead Industrial Estate, Hemel	Civil Engineers	Engineering Services

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
Hempstead, Hertfordshire, HP2 7TE							
26	144	S	Electricity Sub Station	508151 208252	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
27G	148	W	Electricity Sub Station	507955 208423	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
28G	151	W	Electricity Sub Station	507952 208438	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
29I	163	N	Apex Digital Graphics Ltd	508212 208635	Unit C Ata House, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7SS	Printing Related Machinery	Industrial Products
30	167	N	Holywell Recycling	508093 208645	11-12 Maxted Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DX	Construction and Tool Hire	Hire Services
31H	174	S	Alamo Rent A Car	508113 208216	Unit 5, Enterprise Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7YJ	Vehicle Hire and Rental	Hire Services
32H	174	S	Europcar	508113 208216	Unit 5, Enterprise Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7YJ	Vehicle Hire and Rental	Hire Services
33I	176	N	Binder	508212 208648	Unit D Ata House, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7SS	Electrical Components	Industrial Products
34	176	N	Intelligent Finishing Systems Ltd	508189 208654	Unit C Atta House, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7SJ	Plate Makers, Print Finishers and Type Setters	IT, Advertising, Marketing and Media Services
35	184	N	A T A Engineering Processes Ltd	508213 208656	Unit B Ata House, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7SS	Tools Including Machine Shops	Industrial Products
36J	185	SE	L Lynch Plant Hire & Haulage Ltd	508327 208324	Lynch House, Boundary Way, Hemel Hempstead, Hertfordshire, HP2 7YU	Waste Collection, Processing and Disposal Equipment	Industrial Products
37J	185	SE	L Lynch Plant Hire & Haulage Ltd	508327 208324	Boundary Way, Hemel Hempstead, Hertfordshire, HP2 7YU	Construction and Tool Hire	Hire Services
38K	188	W	Tank	507916 208454	Hertfordshire, HP2	Tanks (Generic)	Industrial Features
39	196	S	Holywell Skip Hire & Metro Skip Hire	508144 208197	Maxted Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DX	Construction and Tool Hire	Hire Services
40	199	SW	Tank	507949 208268	Hertfordshire, HP2	Tanks (Generic)	Industrial Features
41K	203	W	Electricity Sub Station	507901 208469	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
42	208	W	Electricity Sub Station	507896 208467	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
43	219	E	City Transport Solutions	508374 208510	Hemel One, Boundary Way, Hemel Hempstead, Hertfordshire, HP2 7YU	Vehicle Hire and Rental	Hire Services
44	221	S	Gist	508220 208184	Unit 2 1, Boundary Way, Hemel Hempstead, Hertfordshire, HP2 7EQ	Distribution and Haulage	Transport, Storage and Delivery
45	239	SW	Smiths Detection	507898 208273	Century House, Maylands Avenue, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DE	Civil Engineers	Engineering Services
46	242	SE	Thermo Fisher Scientific	508351 208252	Stafford House 1 Boundary Park, Boundary Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7GE	Measurement and Inspection Equipment	Industrial Products
47	247	S	Tank	508133 208144	Hertfordshire, HP2	Tanks (Generic)	Industrial Features
48	248	SW	Electricity Sub Station	507917 208231	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities

4.2 Petrol and Fuel Sites

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

0

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

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

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

0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

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

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

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

5.2 Superficial Ground and Drift Geology

Database searched and no data found.

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

5.3 Bedrock and Solid Geology

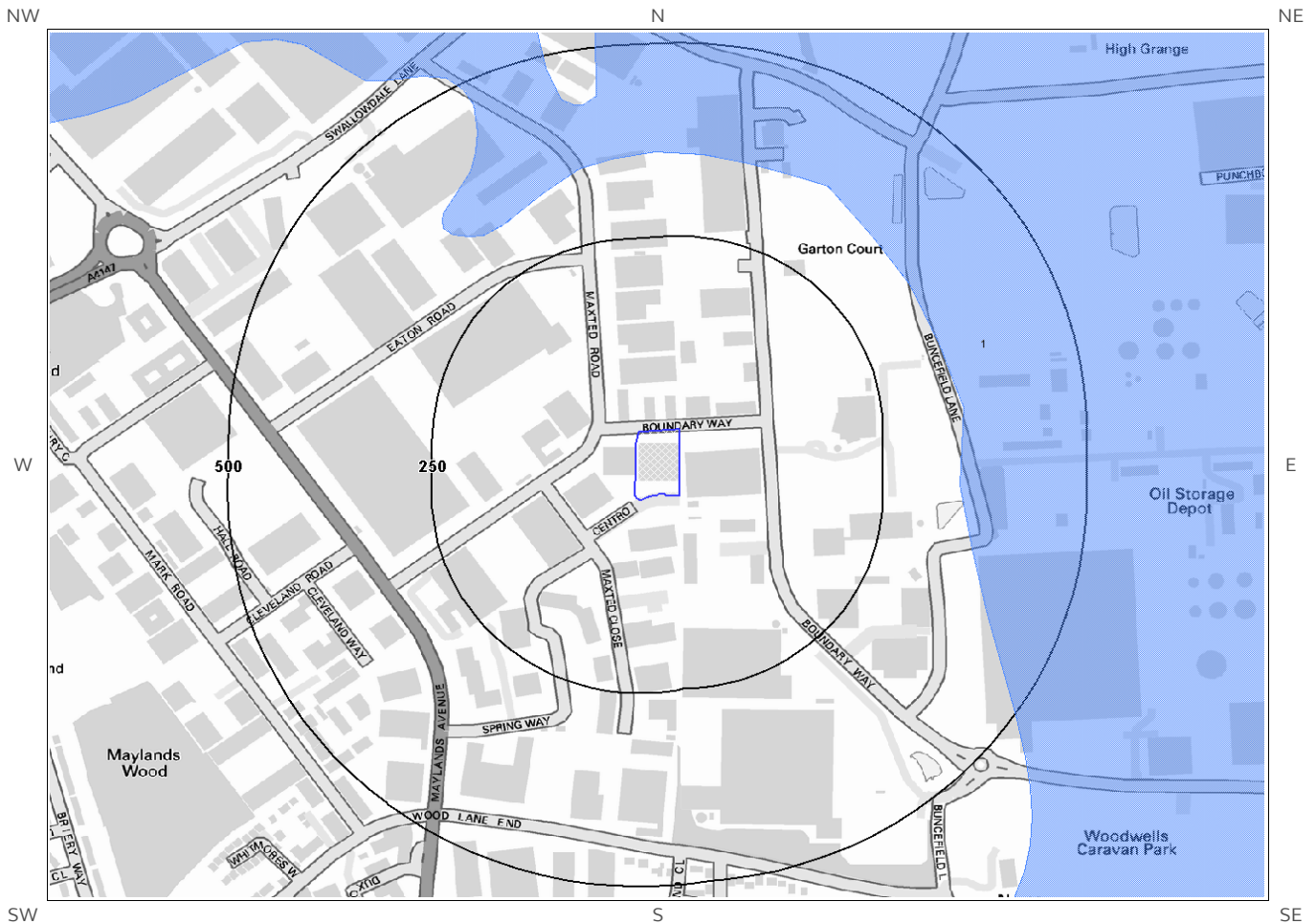
The database has been searched on site, including a 50m buffer.

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

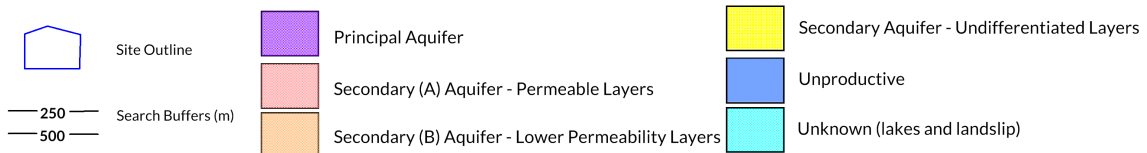
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

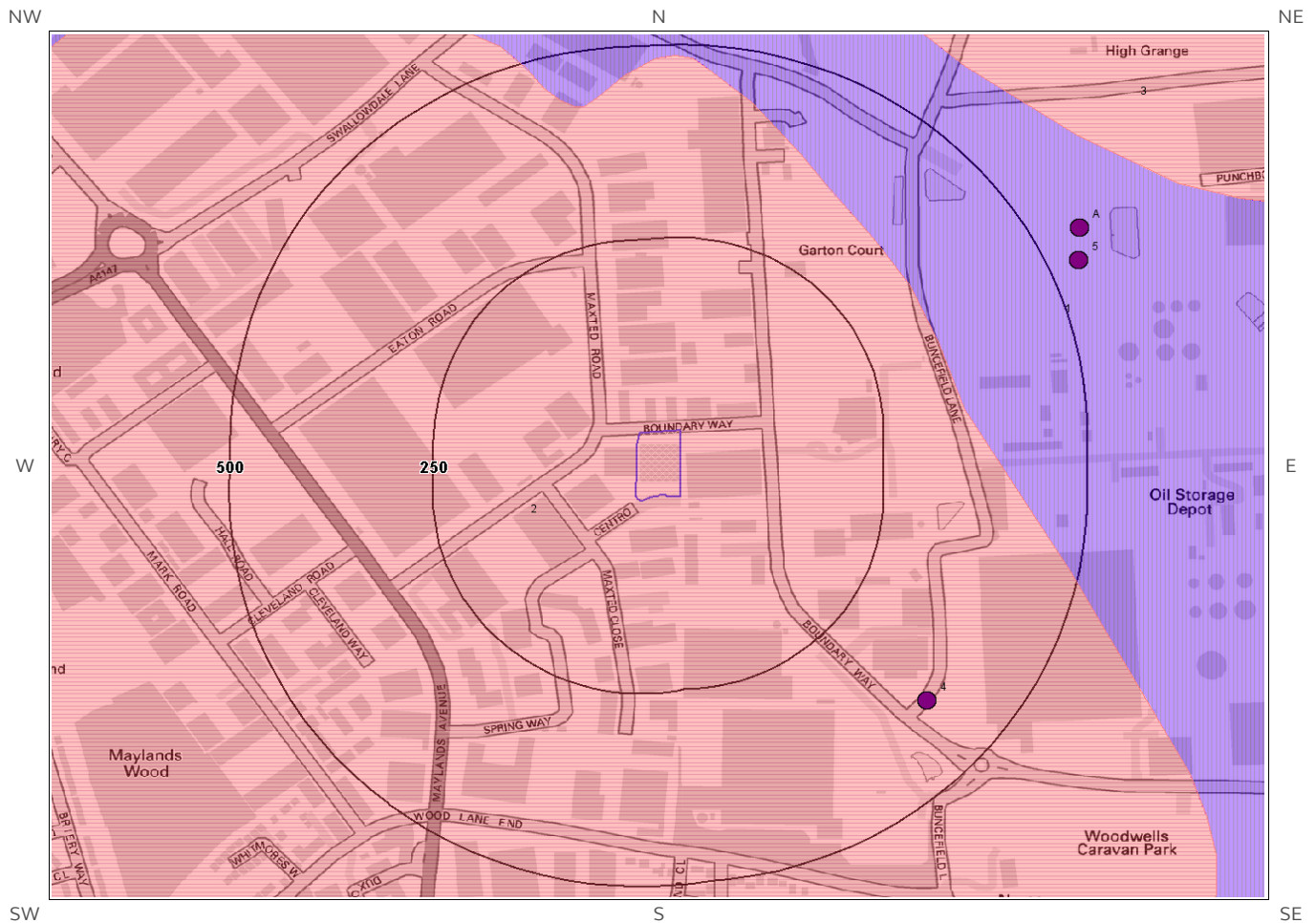
6a. Aquifer Within Superficial Geology



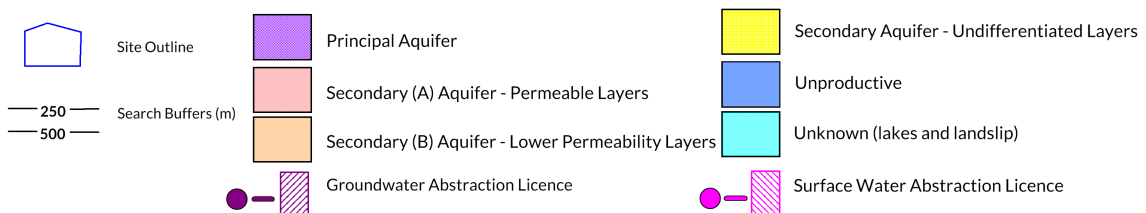
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6b. Aquifer Within Bedrock Geology and Abstraction Licences



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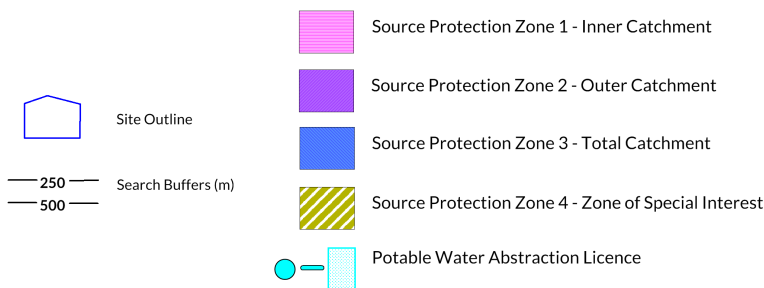




6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences

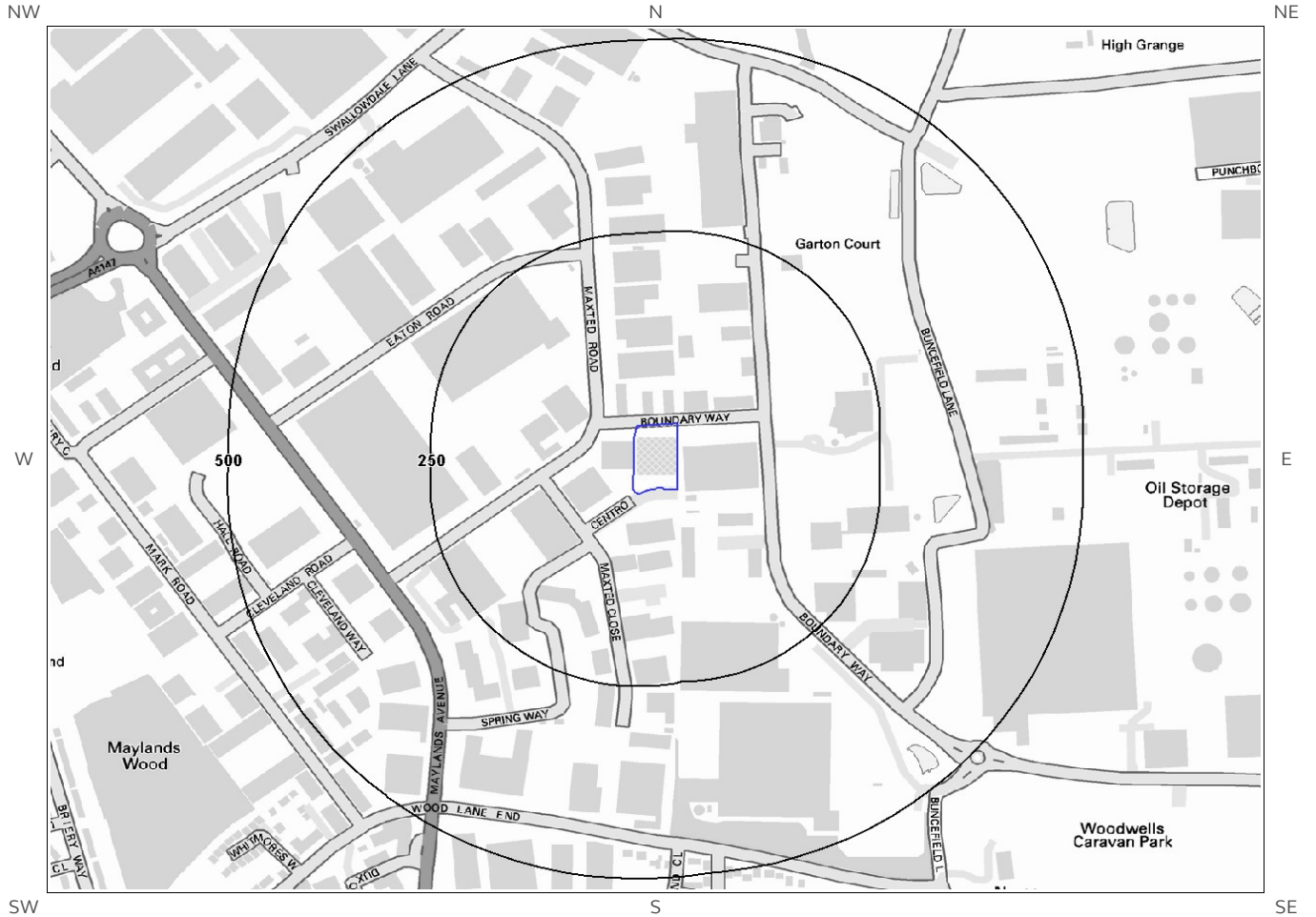


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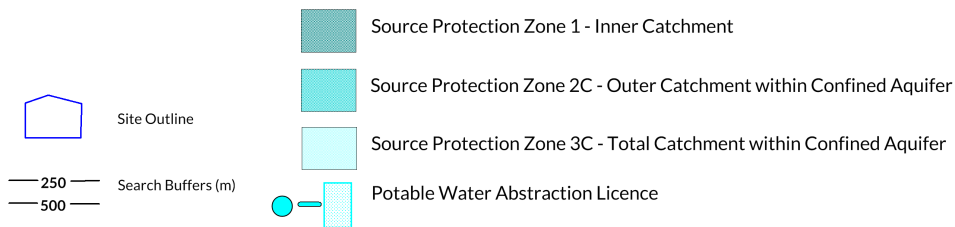




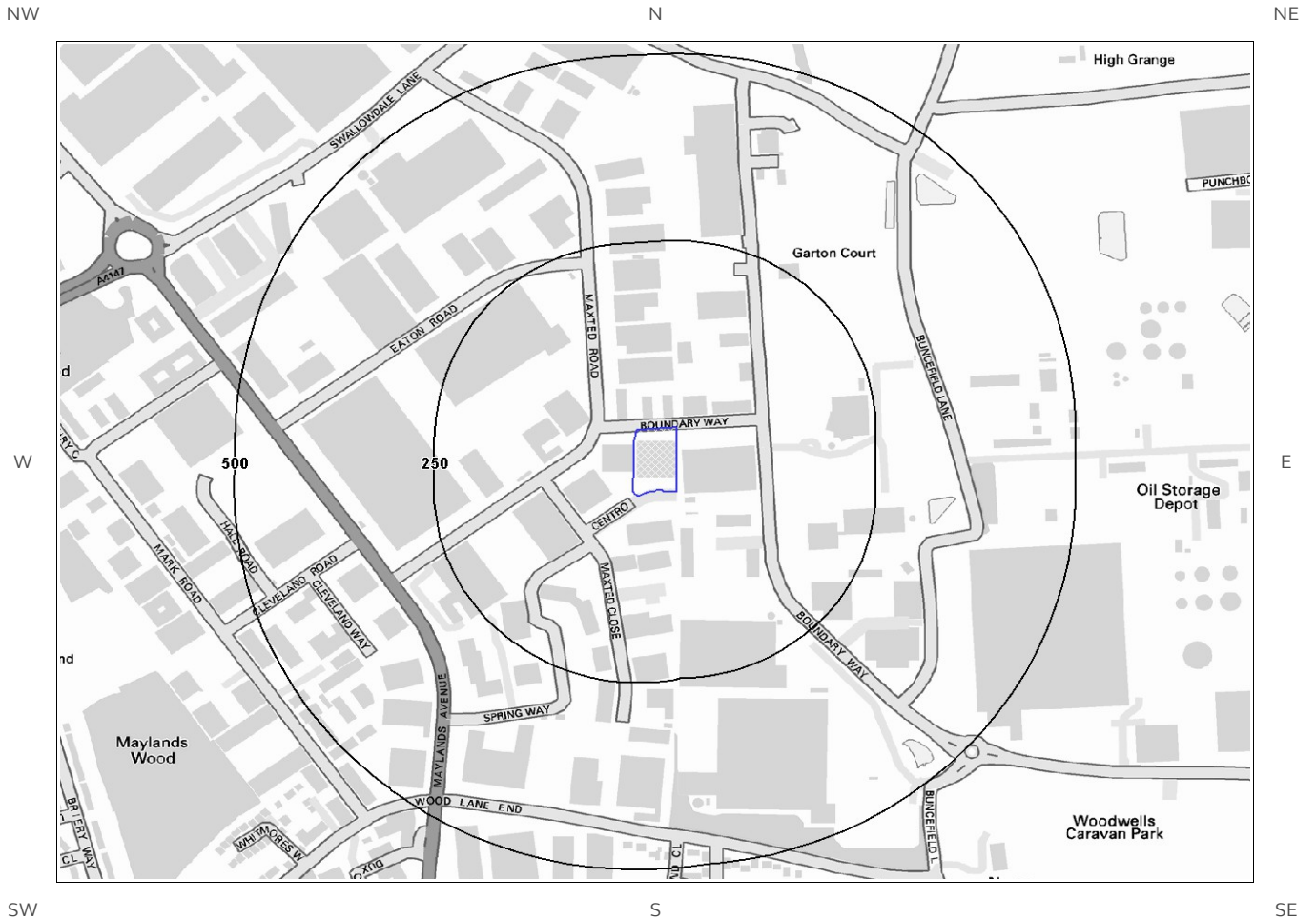
6d. Hydrogeology – Source Protection Zones within confined aquifer



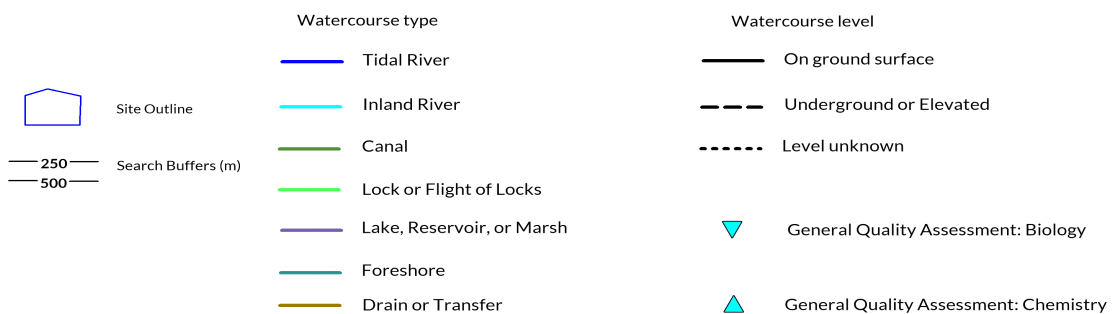
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6e. Hydrology – Watercourse Network and River Quality



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6. Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

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

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

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

ID	Distance (m)	Direction	Designation	Description
1	315	NW	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

6.2 Aquifer within Bedrock Deposits

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

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

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

ID	Distance (m)	Direction	Designation	Description
2	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
1	336	NE	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site

Identified

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

ID	Distance (m)	Direction	NGR	Details
4	403	SE	508460 208130	Status: Historical Licence No: 28/39/28/0573 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: HEMEL TELEHOUSE-BOREHOLE A Data Type: Point Name: HUTCHISON NETWORK SERVICES UK LIMITED Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 17/12/2002 Expiry Date: - Issue No: 2 Version Start Date: 01/01/2003 Version End Date:
5	536	NE	508646 208701	Status: Historical Licence No: TH/039/0028/027 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: BUNCFIELD OIL DEPOT BOREHOLE 2 Data Type: Point Name: BRITISH PIPELINE AGENCY LIMITED Annual Volume (m ³): 31536 Max Daily Volume (m ³): 86.4 Original Application No: - Original Start Date: 29/09/2012 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 29/09/2012 Version End Date:
6A	556	NE	508647 208744	Status: Historical Licence No: TH/039/0028/003 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: BUNCFIELD OIL DEPOT BOREHOLE Data Type: Point Name: BRITISH PIPELINE AGENCY LIMITED Annual Volume (m ³): 175200 Max Daily Volume (m ³): 480 Original Application No: - Original Start Date: 04/09/2009 Expiry Date: 03/09/2010 Issue No: 1 Version Start Date: 04/09/2009 Version End Date:
7A	556	NE	508647 208744	Status: Historical Licence No: TH/039/0028/027 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: BUNCFIELD OIL DEPOT BOREHOLE Data Type: Point Name: BRITISH PIPELINE AGENCY LIMITED Annual Volume (m ³): 31536 Max Daily Volume (m ³): 86.4 Original Application No: - Original Start Date: 29/09/2012 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 29/09/2012 Version End Date:
8A	556	NE	508647 208744	Status: Historical Licence No: TH/039/0028/014 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: BUNCFIELD OIL DEPOT BOREHOLE Data Type: Point Name: BRITISH PIPELINE AGENCY LIMITED Annual Volume (m ³): 31536 Max Daily Volume (m ³): 86.4 Original Application No: - Original Start Date: 04/11/2010 Expiry Date: 03/11/2011 Issue No: 1 Version Start Date: 04/11/2010 Version End Date:

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site

Identified

The following Source Protection Zones records are represented on the SPZ and Potable Water Abstraction Map (6c):

ID	Distance (m)	Direction	Zone	Description
1	0	On Site	3	Total catchment

6.7 Source Protection Zones within Confined Aquifer

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

None identified

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

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

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

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
298	NE	Major Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
461	NE	Major Aquifer/Intermediate Leaching Potential	I1	Soils which can possibly transmit a wide range of pollutants.

6.9 River Quality

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

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Ordnance Survey MasterMap Water Network

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

Database searched and no data found.

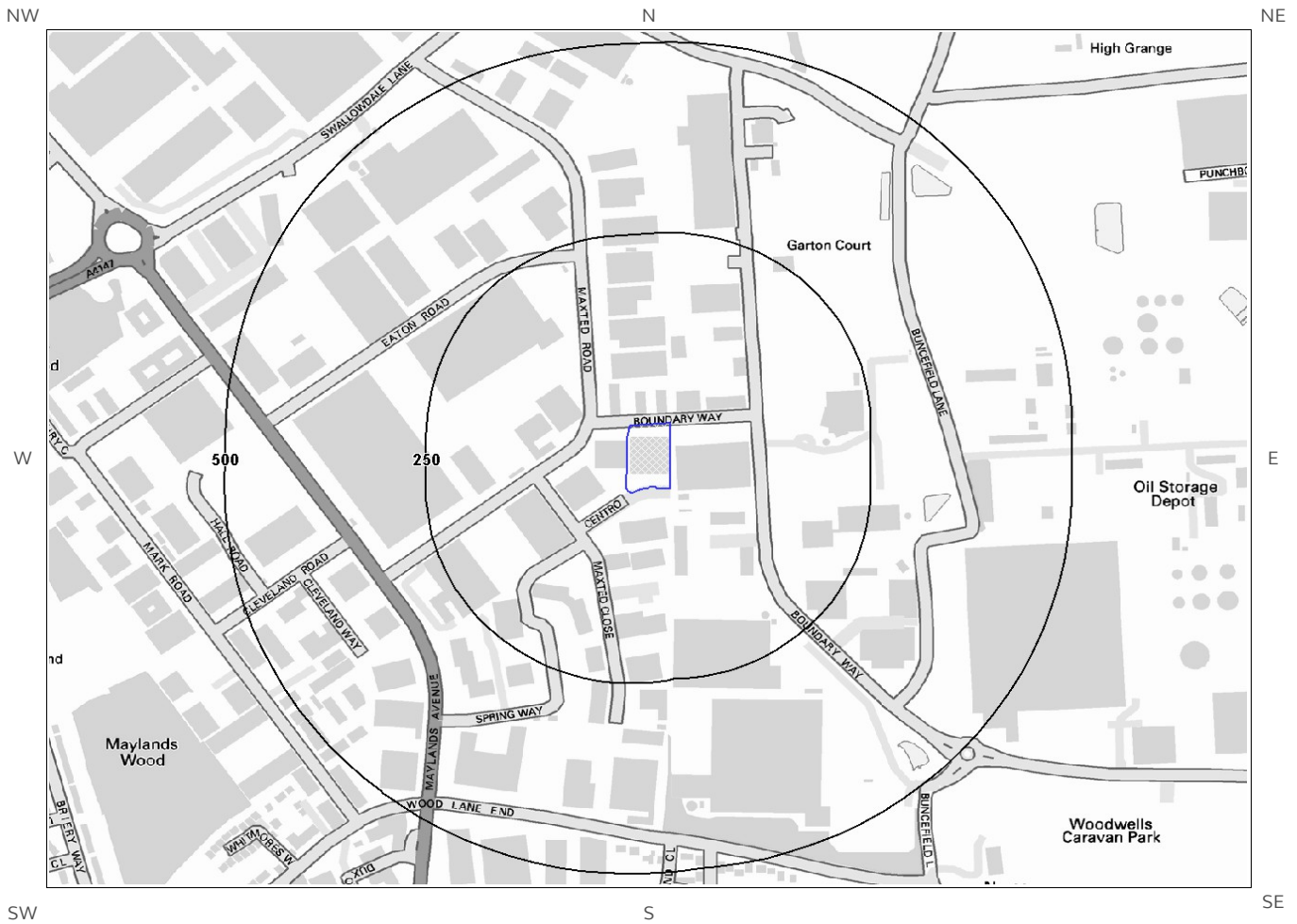
6.11 Surface Water Features

Surface water features within 250m of the study site

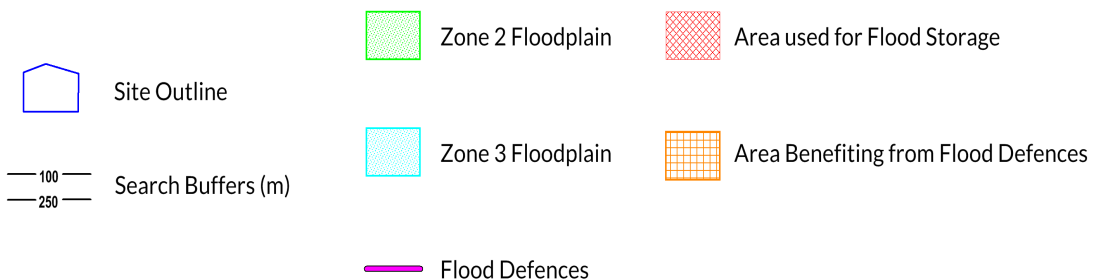
None identified

Database searched and no data found.

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



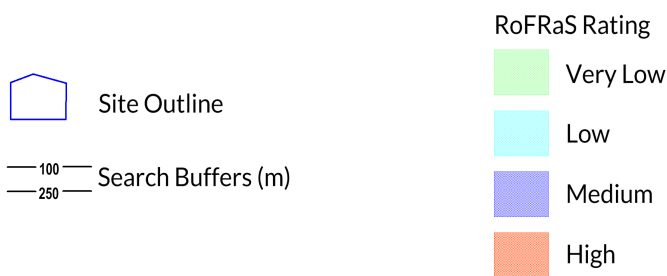
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7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m None identified

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

Database searched and no data found.

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m None identified

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

Database searched and no data found.

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

Highest risk of flooding onsite Very Low

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

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

7.4 Flood Defences

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

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site None identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site

None identified

7.7 Groundwater Flooding Susceptibility Areas

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

None identified

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

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

Not Prone

The area is not considered to be prone to groundwater flooding based on rock type.

7.8 Groundwater Flooding Confidence Areas

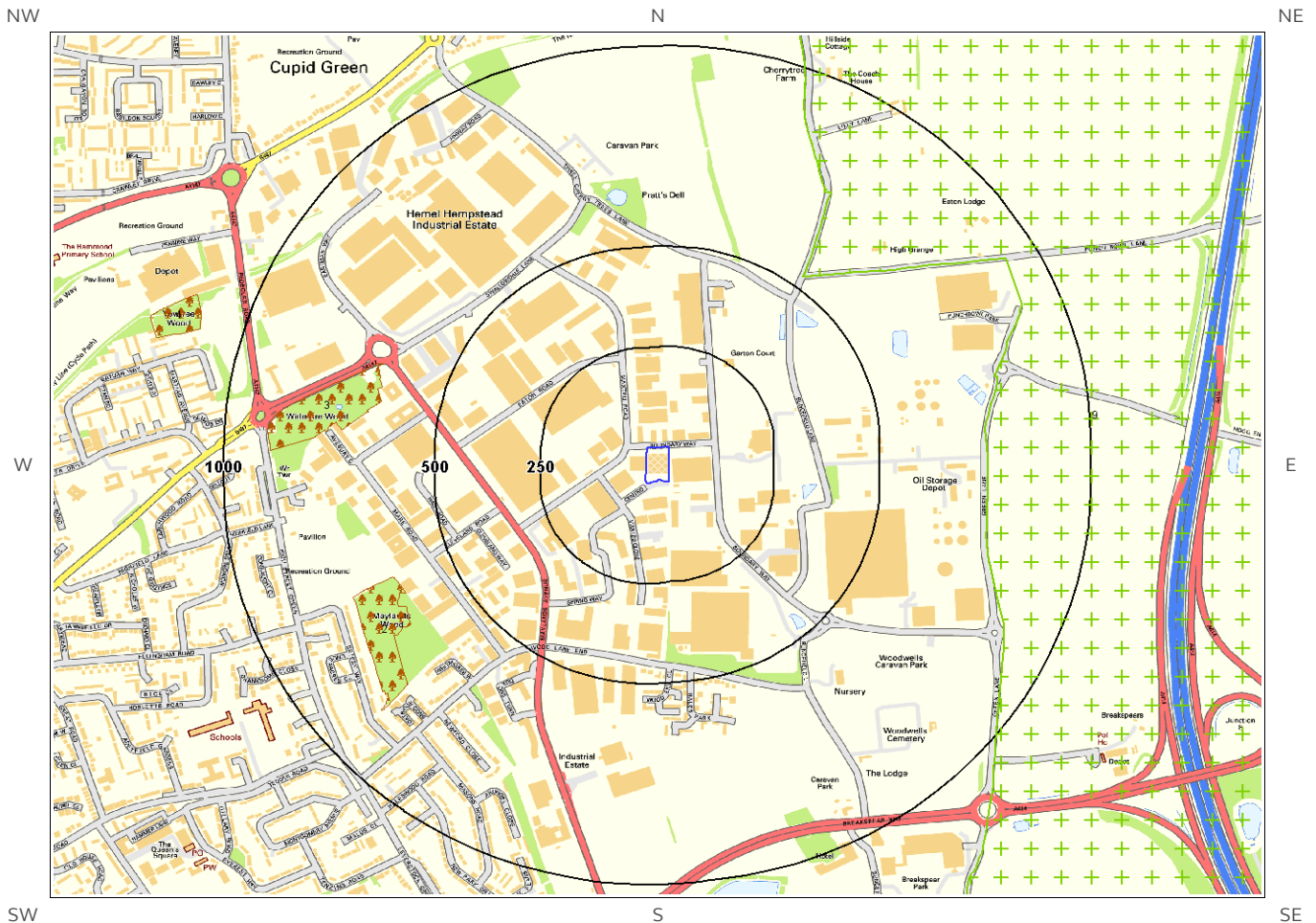
British Geological Survey confidence rating in this result

Not Applicable

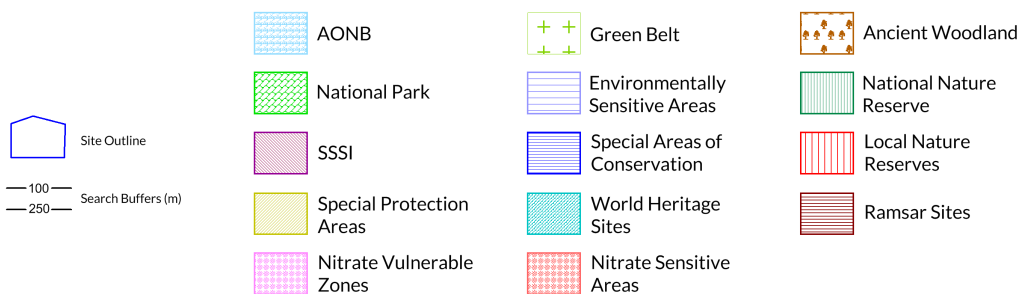
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

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

8. Designated Environmentally Sensitive Sites Map



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8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site

Identified

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

7

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

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
2	633	SW	MAYLANDS WOOD	Ancient & Semi-Natural Woodland
3	641	W	WIDMORE WOOD	Ancient & Semi-Natural Woodland
4	1100	W	Unknown	Ancient & Semi-Natural Woodland
Not shown	1259	NW	Unknown	Ancient & Semi-Natural Woodland
Not shown	1801	N	Unknown	Ancient & Semi-Natural Woodland
Not shown	1860	W	HOWE GROVE	Ancient & Semi-Natural Woodland
Not shown	1875	N	Unknown	Ancient & Semi-Natural Woodland

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

1

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

ID	Distance (m)	Direction	LNR Name	Data Source
Not shown	1860	W	Howe Grove Wood	Natural England

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

5

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ID	Distance	Direction	Green Belt Name	Local Authority Name
9	532	NE	London Area Greenbelt	St. Albans District (B)
Not shown	1528	N	London Area Greenbelt	St. Albans District (B)
Not shown	1843	E	London Area Greenbelt	St. Albans District (B)
Not shown	1858	NW	London Area Green Belt	Dacorum
Not shown	1893	N	London Area Green Belt	Dacorum

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

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

9.1.1 Shrink Swell

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

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

Hazard

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

9.1.2 Landslides

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

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

Hazard

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

9.1.3 Soluble Rocks

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

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

Hazard

Significant soluble rocks are present. Low possibility of subsidence occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow. Consider implications for stability when changes to drainage or new construction are planned. For new build site investigation should consider potential for dissolution problems on the site and its surroundings. Care should be taken with local drainage into the bedrock. Some possibility groundwater pollution. For existing property possible increase in insurance risk due to soluble rocks.

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

9.1.4 Compressible Ground

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

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

Hazard

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

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site Very Low

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

Hazard

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

9.1.6 Running Sand

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

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

Hazard

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

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

9.2 Radon

9.2.1 Radon Affected Areas

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

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

9.2.2 Radon Protection

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

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site

None identified

Database searched and no data found.

10.2 Non-Coal Mining

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

Identified

The following non-coal mining information is provided by the BGS:

Distance (m)	Direction	Name	Commodity	Assessment of likelihood
0.0	On Site	Not available	Chalk	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

Past underground mine workings may occur. The rock types present in these areas are such that small mineral veins may be present on which it is possible that small scale mining has been undertaken and/or it is possible that limited underground extraction of other materials may have occurred. All such occurrences are likely to be of minor localised extent and infrequent. It should be noted, however, that there is always the possibility of the existence of other sub-surface excavations, such as wells, cess pits, follies, air raid shelters/bunkers and other military structures etc. that could affect surface ground stability but which are outside the scope of this dataset. However, if in a coalfield area you should still consider a Coal Authority mining search for the area of interest.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site

None identified

Guidance: No Guidance Required.

Contact Details

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Keyworth, Nottingham NG12 5GG
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Email:

Web: www.bgs.ac.uk

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

Environment Agency

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

Web: www.environment-agency.gov.uk

Email: enquiries@environment-agency.gov.uk

Public Health England

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

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

The Coal Authority

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

Ordnance Survey

Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority

Authority: Dacorum Council
Phone: 01442 228 000
Web: <http://www.dacorum.gov.uk/>
Address: The Forum, Marlowes, Hemel Hempstead, Hertfordshire,

Gemapping PLC

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

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**British
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL



**Environment
Agency**



**Public Health
England**



**The Coal
Authority**





Groundsure

LOCATION INTELLIGENCE

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

APPENDICES

Appendix 02 GroundSure EnviroInsight - Maylands

Address: Maylands Data Centre, 150 Maylands Avenue, Hemel Hempstead, HP27DF,
Date: 25 Nov 2019
Reference: EMS-579562_777888
Client: emapsite



Aerial Photograph Capture date: 12-Aug-2016
Grid Reference: 507540,208475
Site Size: 1.5006ha

Report Reference: EMS-579562_777888
Client Reference: EMS_579562_777888

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Overview of Findings

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

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1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	4	13	38	81
1.2 Additional Information – Historical Tank Database	1	1	24	36
1.3 Additional Information – Historical Energy Features Database	0	3	22	87
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	0	25	43
Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	11
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	2	3	1
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	3	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	1
2.1.9 Records of Water Industry Referrals	0	1	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	4	0
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

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

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	2	45	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

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

Section 6: Hydrogeology and Hydrology	0-500m					
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified					
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified					
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	1	4
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	1	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	1	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

0-500m

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

Section 7: Flooding

7.1 Environment Agency Zone 2 floodplains within 250m of the study site	None identified					
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	None identified					
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Very Low					
7.4 Flood Defences within 250m of the study site	None identified					
7.5 Areas benefiting from Flood Defences within 250m of the study site	None identified					
7.6 Areas used for Flood Storage within 250m of the study site	None identified					
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Not Prone					
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Not Applicable					

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	2	0	1	4
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	1
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	0	0	0	0	1	3

Section 9: Natural Hazards

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

Section 10: Mining

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

Using this report

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

1. Historical Industrial Sites

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

2. Environmental Permits, Incidents and Registers

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

3. Landfills and Other Waste Sites

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

4. Current Land Uses

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

5. Geology

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

6. Hydrogeology and Hydrology

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

7. Flooding

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

8. Designated Environmentally Sensitive Sites

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

9. Natural Hazards

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

10. Mining

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

11. Contacts

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

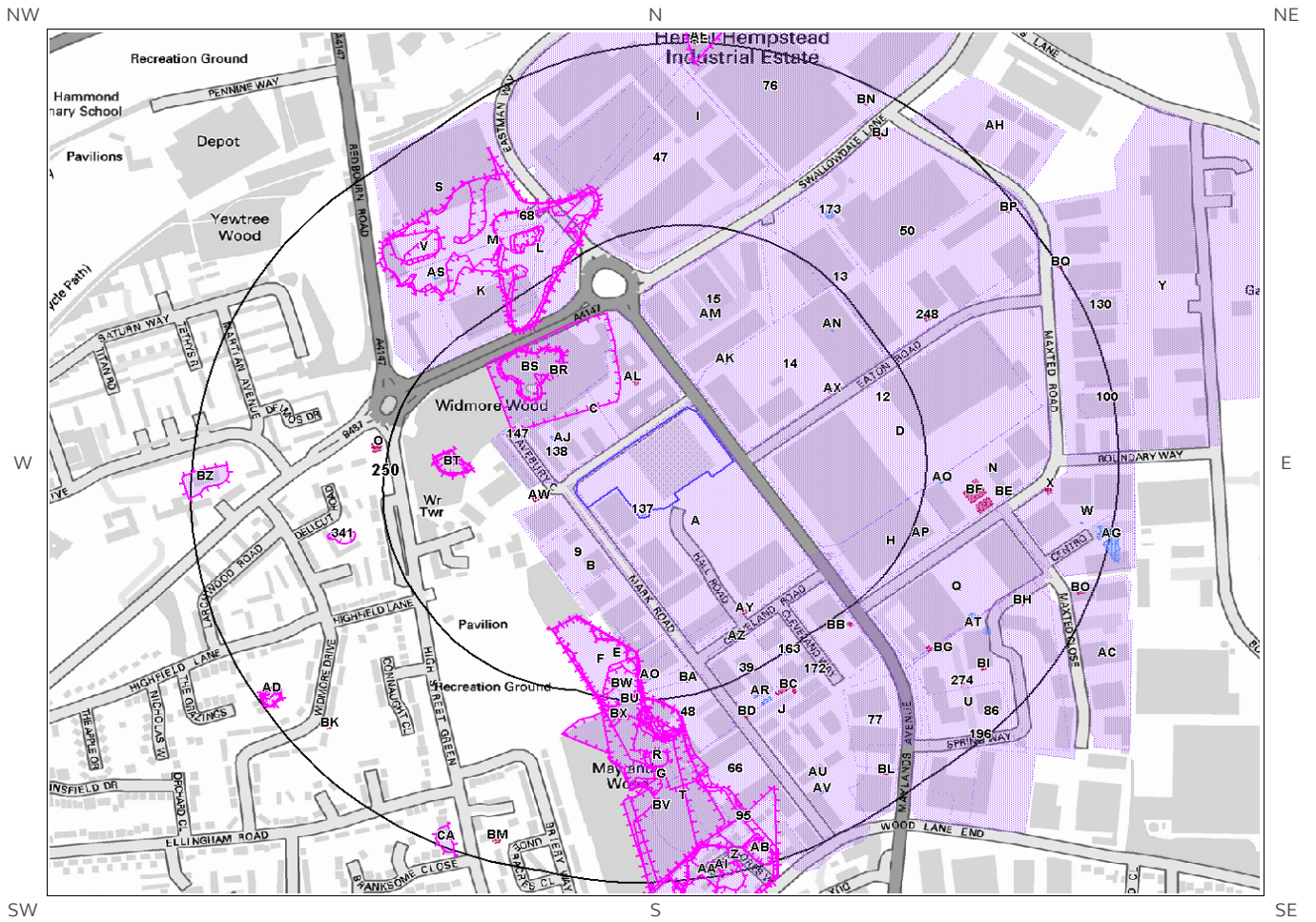
Note: Maps

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

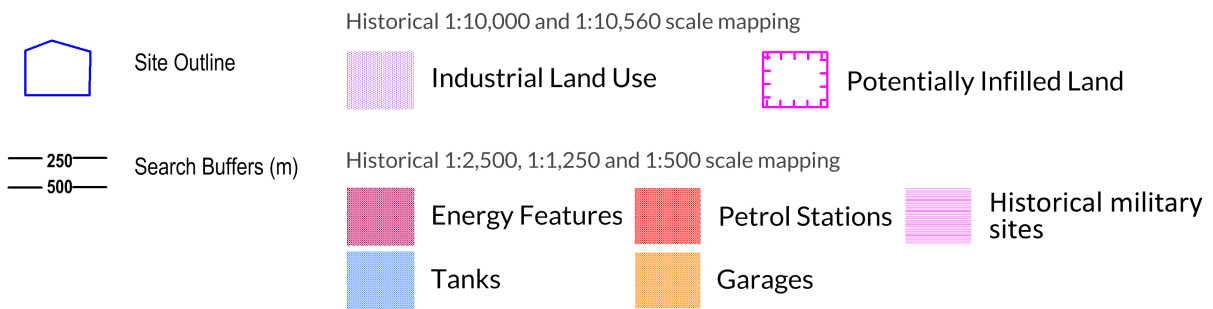
Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

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

1. Historical Land Use



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1. Historical Industrial Sites

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

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

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 136

ID	Distance [m]	Direction	Use	Date
1A	0	On Site	Unspecified Commercial/Industrial	1995
2A	0	On Site	Unspecified Commercial/Industrial	1991
3A	0	On Site	Industrial Estate	1955
4A	0	On Site	Unspecified Works	1979
5B	10	SW	Unspecified Commercial/Industrial	1995
6B	10	SW	Unspecified Commercial/Industrial	1991
7C	12	NW	Unspecified Commercial/Industrial	1991
8C	12	NW	Unspecified Commercial/Industrial	1995
9	13	S	Unspecified Factories	1979
10AJ	15	NW	Unspecified Factory	1979
11AL	15	NW	Engineering Works	1979
12	20	NE	Industrial Estate	1995
13	20	NE	Industrial Estate	1991
14	22	NE	Engineering Works	1979
15	34	N	Unspecified Depot	1979
16D	38	E	Unspecified Commercial/Industrial	1991
17D	38	E	Engineering Works	1979
18BR	59	NW	Old Brick Works	1897
19BS	122	NW	Unspecified Pit	1955
20E	145	S	Unspecified Commercial/Industrial	1995
21E	145	S	Unspecified Commercial/Industrial	1991
22E	145	S	Engineering Works	1979
23F	148	S	Unspecified Pit	1947
24G	148	S	Disused Brick Works	1947
25F	148	S	Unspecified Pit	1922
26G	148	S	Disused Brick Works	1922
27BU	150	S	Disused Brick Works	1938
28F	150	S	Unspecified Ground Workings	1938

29F	150	S	Unspecified Ground Workings	1938
30J	161	SE	Unspecified Factory	1955
31H	176	SE	Unspecified Commercial/Industrial	1991
32H	176	SE	Unspecified Works	1979
33T	189	S	Brick Works	1897
34I	195	N	Unspecified Commercial/Industrial	1991
35I	195	N	Unspecified Commercial/Industrial	1995
36BB	197	SE	Unspecified Works	1979
37J	198	SE	Unspecified Commercial/Industrial	1995
38J	198	SE	Unspecified Commercial/Industrial	1991
39	198	SE	Unspecified Works	1979
40K	204	NW	Unspecified Commercial/Industrial	1995
41K	204	NW	Unspecified Commercial/Industrial	1991
42M	204	NW	Clay Pit	1947
43BW	206	S	Unspecified Pit	1897
44L	207	NW	Clay Pit	1938
45L	207	NW	Clay Pit	1922
46M	211	NW	Clay Pit	1955
47	216	N	Unspecified Depot	1979
48	226	S	Engineering Works	1979
49K	229	NW	Unspecified Works	1979
50	237	NE	Engineering Works	1979
51L	240	NW	Tramway Sidings	1947
52AT	242	SE	Unspecified Factories	1955
53N	246	E	Unspecified Commercial/Industrial	1991
54N	246	E	Unspecified Works	1979
55P	248	S	Unspecified Ground Workings	1897
56O	257	W	Electric Substation	1995
57O	257	W	Electric Substation	1991
58O	257	W	Electric Substation	1979
59P	259	S	Unspecified Ground Workings	1922
60P	259	S	Unspecified Ground Workings	1947
61P	263	S	Unspecified Heap	1955
62BX	263	S	Unspecified Ground Workings	1897
63Q	267	SE	Engineering Works	1979
64Q	267	SE	Unspecified Commercial/Industrial	1991
65BV	278	S	Unspecified Pit	1877

66	307	SE	Unspecified Depot	1979
67	313	NW	Tramway Sidings	1938
68	314	NW	Tramway Sidings	1922
69R	320	S	Unspecified Heap	1938
70R	320	S	Unspecified Heap	1938
71R	320	S	Unspecified Heap	1947
72R	320	S	Unspecified Heap	1922
73S	330	NW	Unspecified Commercial/Industrial	1995
74S	330	NW	Unspecified Commercial/Industrial	1991
75S	330	NW	Engineering Works	1979
76	336	N	Unspecified Works	1979
77	339	SE	Unspecified Factories	1979
78BY	354	S	Unspecified Ground Workings	1897
79T	355	S	Unspecified Old Kiln	1922
80G	356	S	Unspecified Ground Workings	1938
81G	356	S	Unspecified Ground Workings	1938
82U	358	SE	Unspecified Works	1979
83U	358	SE	Unspecified Commercial/Industrial	1991
84V	359	NW	Unspecified Heap	1991
85V	359	NW	Unspecified Heap	1995
86	362	SE	Unspecified Commercial/Industrial	1995
87V	362	NW	Unspecified Heap	1979
88W	375	E	Unspecified Commercial/Industrial	1995
89W	375	E	Unspecified Commercial/Industrial	1991
90W	375	E	Unspecified Depot	1979
91Z	404	SE	Disused Brick Works	1938
92X	407	E	Electric Substation	1995
93X	407	E	Electric Substation	1991
94X	407	E	Electric Substation	1979
95	427	S	Unspecified Old Kiln	1938
96AI	428	S	Brick Field	1877
97Y	431	E	Unspecified Commercial/Industrial	1995
98Y	431	E	Unspecified Commercial/Industrial	1991
99BZ	451	W	Unspecified Pit	1877
100	453	E	Engineering Works	1979
101Z	454	S	Unspecified Pit	1897
102Z	457	S	Unspecified Pit	1947
103Z	457	S	Unspecified Pit	1922
104AA	457	S	Unspecified Ground	1938

			Workings	
105AA	457	S	Unspecified Ground Workings	1938
106AB	462	S	Unspecified Pit	1938
107AB	462	S	Unspecified Pit	1938
108AB	463	S	Unspecified Pit	1922
109AB	463	S	Unspecified Pit	1897
110AB	463	S	Unspecified Pit	1947
111AD	465	SW	Unspecified Pit	1979
112AC	469	E	Unspecified Commercial/Industrial	1995
113AC	469	E	Engineering Works	1979
114AC	469	E	Unspecified Commercial/Industrial	1991
115AD	470	SW	Unspecified Pit	1938
116AD	470	SW	Unspecified Pit	1938
117AD	471	SW	Unspecified Pit	1922
118AD	471	SW	Unspecified Pit	1947
119AD	471	SW	Unspecified Pit	1897
120AF	471	N	Unspecified Works	1955
121AE	471	N	Tramway Sidings	1947
122AE	471	N	Tramway Sidings	1922
123AF	471	N	Brick Works	1922
124AF	471	N	Brick Works	1947
125CA	472	SW	Unspecified Pit	1877
126AD	472	SW	Unspecified Pit	1877
127AD	472	SW	Unspecified Pit	1955
128AG	474	E	Unspecified Tanks	1995
129AG	474	E	Unspecified Tanks	1991
130	481	NE	Engineering Works	1979
131AG	485	E	Unspecified Tanks	1979
132AH	489	NE	Unspecified Commercial/Industrial	1995
133AH	489	NE	Unspecified Commercial/Industrial	1991
134AH	489	NE	Engineering Works	1979
135AI	495	S	Unspecified Pit	1877
136AG	495	E	Unspecified Tanks	1979

1.2 Additional Information – Historical Tank Database

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

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

62

ID	Distance (m)	Direction	Use	Date
137	0	On Site	Tanks	1969
138	44	NW	Unspecified Tank	1969
139AJ	65	NW	Unspecified Tank	1968
140AJ	65	NW	Unspecified Tank	1975
141AJ	66	NW	Unspecified Tank	1987
142AK	74	NE	Tanks	1987
143AK	74	NE	Tanks	1969
144AK	74	NE	Tanks	1975
145AL	82	NW	Unspecified Tank	1968
146AL	82	NW	Unspecified Tank	1975
147	96	NW	Unspecified Tank	1975
148AM	123	N	Unspecified Tank	1993
149AM	123	N	Unspecified Tank	1993
150AM	123	N	Unspecified Tank	1994
151AM	123	N	Unspecified Tank	1996
152AM	123	N	Unspecified Tank	1999
153AM	123	N	Unspecified Tank	1993
154AM	123	N	Unspecified Tank	1987
155AM	123	N	Unspecified Tank	1975
156AM	123	N	Unspecified Tank	1969
157AN	208	NE	Unspecified Tank	1975
158AN	208	NE	Unspecified Tank	1969
159AO	218	S	Unspecified Tank	1991
160AO	218	S	Unspecified Tank	1986
161AO	218	S	Unspecified Tank	1987
162AO	218	S	Unspecified Tank	1969
163	254	SE	Tanks	1969
164AP	261	SE	Unspecified Tank	1969
165AP	261	SE	Unspecified Tank	1986
166AQ	268	E	Unspecified Tank	1987
167AQ	268	E	Unspecified Tank	1991
168AQ	269	E	Unspecified Tank	1996
169AR	279	SE	Tanks	1969
170AR	292	SE	Tanks	1986
171AR	292	SE	Tanks	1969
172	295	SE	Unspecified Tank	1969
173	316	NE	Unspecified Tank	1999
174AS	331	NW	Unspecified Tank	1993
175AS	331	NW	Unspecified Tank	1975
176AS	332	NW	Unspecified Tank	1987
177BE	351	E	Unspecified Tank	1969

178AT	371	SE	Unspecified Tank	1991
179AT	371	SE	Unspecified Tank	1987
180AT	372	SE	Unspecified Tank	1996
181BG	375	SE	Unspecified Tank	1969
182AT	397	SE	Unspecified Tank	1969
183AU	415	SE	Unspecified Tank	1996
184AU	415	SE	Unspecified Tank	1969
185AU	415	SE	Unspecified Tank	1987
186AU	415	SE	Unspecified Tank	1991
187AU	415	SE	Unspecified Tank	1986
188AV	436	SE	Unspecified Tank	1987
189AV	436	SE	Unspecified Tank	1986
190AV	436	SE	Unspecified Tank	1991
191AV	436	SE	Unspecified Tank	1996
192AV	436	SE	Unspecified Tank	1969
193W	458	E	Unspecified Tank	1991
194AG	481	E	Tanks	1991
195AG	482	E	Tanks	1969
196	492	SE	Unspecified Tank	1969
197AG	492	E	Tanks	1991
198AG	494	E	Tanks	1969

1.3 Additional Information – Historical Energy Features Database

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

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

112

ID	Distance (m)	Direction	Use	Date
199AW	42	W	Electricity Substation	1969
200AW	42	W	Electricity Substation	1993
201AW	43	W	Electricity Substation	1987
202AL	63	NW	Electricity Substation	1999
203AL	63	NW	Electricity Substation	1994
204AL	63	NW	Electricity Substation	1993
205AL	63	NW	Electricity Substation	1996
206AL	63	NW	Electricity Substation	1993
207AL	63	NW	Electricity Substation	1993
208AL	64	NW	Electricity Substation	1987
209AX	155	NE	Electricity Substation	1999
210AX	155	NE	Electricity Substation	1996
211AX	155	NE	Electricity Substation	1994
212AX	155	NE	Electricity Substation	1993

213AY	170	SE	Electricity Substation	1987
214AY	170	SE	Electricity Substation	1986
215AY	170	SE	Electricity Substation	1991
216AY	170	SE	Electricity Substation	1996
217AZ	200	SE	Electricity Substation	1987
218AZ	201	SE	Electricity Substation	1996
219BA	227	S	Electricity Substation	1986
220BA	227	S	Electricity Substation	1987
221BA	227	S	Electricity Substation	1991
222BA	227	S	Electricity Substation	1996
223BA	227	S	Electricity Substation	1969
224O	259	W	Electricity Substation	1969
225O	260	W	Electricity Substation	1993
226O	260	W	Electricity Substation	1993
227O	260	W	Electricity Substation	1968
228O	260	W	Electricity Substation	1975
229O	261	W	Electricity Substation	1987
230O	262	W	Electricity Substation	1987
231BB	266	SE	Electricity Substation	1987
232BB	266	SE	Electricity Substation	1991
233BB	267	SE	Electricity Substation	1996
234AR	290	SE	Electricity Substation	1969
235AR	290	SE	Electricity Substation	1986
236BC	290	SE	Electricity Substation	1986
237BC	291	SE	Electricity Substation	1969
238BD	295	SE	Electricity Substation	1987
239BD	295	SE	Electricity Substation	1991
240BD	296	SE	Electricity Substation	1996
241BC	298	SE	Electricity Substation	1996
242BC	300	SE	Electricity Substation	1991
243BE	300	E	Electricity Substation	1996
244BF	301	E	Electricity Substation	1987
245BF	301	E	Electricity Substation	1986
246BF	301	E	Electricity Substation	1991
247BF	301	E	Electricity Substation	1969
248	314	NE	Electricity Substation	1969
249BE	320	E	Electricity Substation	1986
250BE	320	E	Electricity Substation	1987
251BE	320	E	Electricity Substation	1991
252BE	321	E	Electricity Substation	1969
253BE	324	E	Electricity Substation	1996
254BG	357	SE	Electricity Substation	1987
255BG	357	SE	Electricity Substation	1991
256BG	358	SE	Electricity Substation	1996
257BG	366	SE	Electricity Substation	1996
258BG	367	SE	Electricity Substation	1991

259BG	368	SE	Electricity Substation	1996
260BG	369	SE	Electricity Substation	1991
261X	406	E	Electricity Substation	1991
262X	406	E	Electricity Substation	1995
263X	406	E	Electricity Substation	1993
264X	406	E	Electricity Substation	1999
265X	406	E	Electricity Substation	1996
266X	406	E	Electricity Substation	1995
267X	406	E	Electricity Substation	1969
268BH	419	SE	Electricity Substation	1996
269BH	419	SE	Electricity Substation	1993
270BH	419	SE	Electricity Substation	1999
271BH	419	SE	Electricity Substation	1995
272BH	419	SE	Electricity Substation	1995
273BH	419	SE	Electricity Substation	1991
274	424	SE	Electricity Substation	1969
275BI	427	SE	Electricity Substation	1996
276BI	428	SE	Electricity Substation	1991
277BJ	442	NE	Electricity Substation	1987
278BJ	442	NE	Electricity Substation	1993
279BJ	442	NE	Electricity Substation	1993
280BJ	442	NE	Electricity Substation	1969
281BJ	442	NE	Electricity Substation	1975
282BK	446	SW	Electricity Substation	1969
283BK	446	SW	Electricity Substation	1993
284BK	446	SW	Electricity Substation	1987
285BL	458	SE	Electricity Substation	1987
286BL	458	SE	Electricity Substation	1991
287BL	459	SE	Electricity Substation	1996
288BM	463	S	Electricity Substation	1968
289BM	463	S	Electricity Substation	1996
290BM	464	S	Electricity Substation	1969
291BN	473	NE	Electricity Substation	1987
292BN	474	NE	Electricity Substation	1999
293BN	474	NE	Electricity Substation	1993
294BN	474	NE	Electricity Substation	1993
295BN	474	NE	Electricity Substation	1996
296BN	474	NE	Electricity Substation	1994
297BN	474	NE	Electricity Substation	1993
298BO	479	E	Electricity Substation	1991
299BO	479	E	Electricity Substation	1969
300BO	480	E	Electricity Substation	1995
301BO	480	E	Electricity Substation	1995
302BO	480	E	Electricity Substation	1993
303BP	487	NE	Electricity Substation	1999
304BP	487	NE	Electricity Substation	1993

305BP	487	NE	Electricity Substation	1994
306BP	487	NE	Electricity Substation	1996
307BQ	497	NE	Electricity Substation	1993
308BQ	497	NE	Electricity Substation	1987
309BQ	497	NE	Electricity Substation	1982
310BQ	498	NE	Electricity Substation	1969

1.4 Additional Information – Historical Petrol and Fuel Site Database

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

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

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

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

Database searched and no data found.

1.6 Historical military sites

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

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

Database searched and no data found.

1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 68

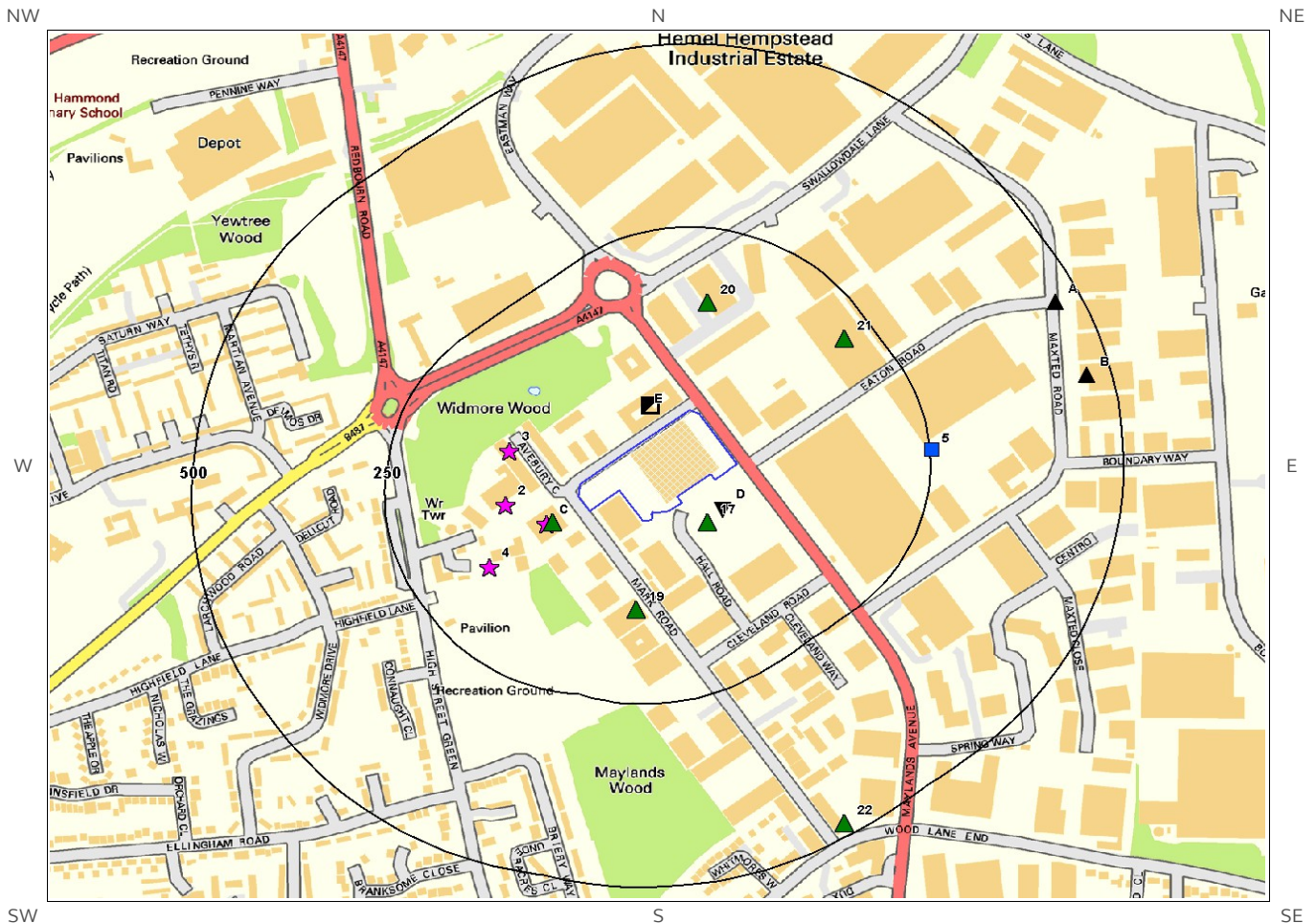
The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
311BR	59	NW	Old Brick Works	1897

312BS	119	NW	Ponds	1938
313BS	122	NW	Unspecified Pit	1955
314BR	122	NW	Ponds	1947
315BR	122	NW	Ponds	1897
316BR	122	NW	Ponds	1922
317BT	137	W	Pond	1938
318BT	139	W	Pond	1922
319BT	139	W	Pond	1947
320BT	139	W	Pond	1897
321BT	146	W	Pond	1877
322E	148	S	Unspecified Pit	1922
323E	148	S	Unspecified Pit	1947
324G	148	S	Disused Brick Works	1922
325G	148	S	Disused Brick Works	1947
326F	150	S	Unspecified Ground Workings	1938
327F	150	S	Unspecified Ground Workings	1938
328BU	150	S	Disused Brick Works	1938
329BV	189	S	Brick Works	1897
330M	204	NW	Clay Pit	1947
331BW	206	S	Unspecified Pit	1897
332L	207	NW	Clay Pit	1938
333L	207	NW	Clay Pit	1922
334M	211	NW	Clay Pit	1955
335P	248	S	Unspecified Ground Workings	1897
336P	259	S	Unspecified Ground Workings	1922
337P	259	S	Unspecified Ground Workings	1947
338P	263	S	Unspecified Heap	1955
339BX	263	S	Unspecified Ground Workings	1897
340BV	278	S	Unspecified Pit	1877
341	292	W	Pond	1877
342L	296	NW	Pond	1947
343L	298	NW	Pond	1955
344R	320	S	Unspecified Heap	1938
345R	320	S	Unspecified Heap	1938
346R	320	S	Unspecified Heap	1947
347R	320	S	Unspecified Heap	1922
348BY	354	S	Unspecified Ground Workings	1897
349G	356	S	Unspecified Ground Workings	1938
350G	356	S	Unspecified Ground Workings	1938
351V	359	NW	Unspecified Heap	1991

352V	359	NW	Unspecified Heap	1995
353V	362	NW	Unspecified Heap	1979
354Z	404	SE	Disused Brick Works	1938
355AI	428	S	Brick Field	1877
356BZ	451	W	Unspecified Pit	1877
357Z	454	S	Unspecified Pit	1897
358Z	457	S	Unspecified Pit	1922
359Z	457	S	Unspecified Pit	1947
360AA	457	S	Unspecified Ground Workings	1938
361AA	457	S	Unspecified Ground Workings	1938
362AB	462	S	Unspecified Pit	1938
363AB	462	S	Unspecified Pit	1938
364AB	463	S	Unspecified Pit	1897
365AB	463	S	Unspecified Pit	1947
366AB	463	S	Unspecified Pit	1922
367AD	465	SW	Unspecified Pit	1979
368AD	470	SW	Unspecified Pit	1938
369AD	470	SW	Unspecified Pit	1938
370AD	471	SW	Unspecified Pit	1897
371AD	471	SW	Unspecified Pit	1947
372AD	471	SW	Unspecified Pit	1922
373AF	471	N	Brick Works	1947
374AF	471	N	Brick Works	1922
375CA	472	SW	Unspecified Pit	1877
376AD	472	SW	Unspecified Pit	1877
377AD	472	SW	Unspecified Pit	1955
378AI	495	S	Unspecified Pit	1877

2. Environmental Permits, Incidents and Registers Map



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

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

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

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

0

Database searched and no data found.

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

11

The following Part A(1) and IPPC Authorised Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
27A	466	NE	508050 208700	Operator: A AND M TUNGSTEN POWDERS LTD Installation Name: - Process: INORGANIC CHEMICALS; GASES EG AMMONIA, Permit Number: BK6912 Original Permit Number: BK6912 EPR Reference: - Issue Date: - Effective Date: 31/01/2003 Last date noted as effective: 2005-10-03 Status: SUPERSEDED BY VARIATION
28A	466	NE	508050 208700	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: INORGANIC CHEMICALS; GASES EG AMMONIA, Permit Number: BK6912IX Original Permit Number: BK6912IX EPR Reference: - Issue Date: 31/01/2003 Effective Date: 31/01/2003 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
29A	466	NE	508050 208700	Operator: A AND M TUNGSTEN POWDERS LTD Installation Name: - Process: NON-FERROUS METALS; PRODUCING FROM RAW MATERIALS BY METALLURGICAL ACTIVITIES ETC Permit Number: BU6875 Original Permit Number: BK6912 EPR Reference: - Issue Date: 30/06/2003 Effective Date: 01/07/2003 Last date noted as effective: 2004-10-01 Status: SUPERSEDED BY PAS
30A	466	NE	508050 208700	Operator: A AND M TUNGSTEN POWDERS LTD Installation Name: - Process: INORGANIC CHEMICALS; GASES EG AMMONIA, Permit Number: BU6875 Original Permit Number: BK6912 EPR Reference: - Issue Date: 30/06/2003 Effective Date: 01/07/2003 Last date noted as effective: 2004-10-

ID	Distance (m)	Direction	NGR	Details	
					01 Status: SUPERSEDED BY PAS
31A	466	NE	508050 208700	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: NON-FERROUS METALS; PRODUCING FROM RAW MATERIALS BY METALLURGICAL ACTIVITIES ETC	Permit Number: BK6912IX Original Permit Number: BK6912IX EPR Reference: - Issue Date: 31/01/2003 Effective Date: 31/01/2003 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
32A	466	NE	508050 208700	Operator: A AND M TUNGSTEN POWDERS LTD Installation Name: - Process: NON-FERROUS METALS; PRODUCING FROM RAW MATERIALS BY METALLURGICAL ACTIVITIES ETC	Permit Number: BK6912 Original Permit Number: BK6912 EPR Reference: - Issue Date: - Effective Date: 31/01/2003 Last date noted as effective: 2005-10-03 Status: SUPERSEDED BY VARIATION
33B	467	E	508090 208600	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: INORGANIC CHEMICALS; GASES EG AMMONIA,	Permit Number: BU6875IC Original Permit Number: BK6912IX EPR Reference: - Issue Date: 30/06/2003 Effective Date: 01/07/2003 Last date noted as effective: 2019-10-01 Status: SUPERCEDED
34B	467	E	508090 208600	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: ASSOCIATED PROCESS	Permit Number: UP3836MD Original Permit Number: BK6912IX EPR Reference: - Issue Date: - Effective Date: 25/06/2007 Last date noted as effective: 2019-10-01 Status: SURRENDER EFFECTIVE
35B	467	E	508090 208600	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: NON-FERROUS METALS; PRODUCING FROM RAW MATERIALS BY METALLURGICAL ACTIVITIES ETC	Permit Number: UP3836MD Original Permit Number: BK6912IX EPR Reference: - Issue Date: - Effective Date: 25/06/2007 Last date noted as effective: 2019-10-01 Status: SURRENDER EFFECTIVE
36B	467	E	508090 208600	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: INORGANIC CHEMICALS; GASES EG AMMONIA,	Permit Number: UP3836MD Original Permit Number: BK6912IX EPR Reference: - Issue Date: - Effective Date: 25/06/2007 Last date noted as effective: 2019-10-01 Status: SURRENDER EFFECTIVE
37B	467	E	508090 208600	Operator: A & M TUNGSTEN POWDERS LIMITED Installation Name: A AND M TUNGSTEN POWDERS LTD Process: NON-FERROUS METALS; PRODUCING FROM RAW MATERIALS BY METALLURGICAL ACTIVITIES ETC	Permit Number: BU6875IC Original Permit Number: BK6912IX EPR Reference: - Issue Date: 30/06/2003 Effective Date: 01/07/2003 Last date noted as effective: 2019-10-01 Status: SUPERCEDED

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

6

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

ID	Distance (m)	Direction	NGR	Details	
17	44	SE	507600 208399	Address: Manders Printing Inks, Maxtead Rd Process: Printing Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
18C	49	SW	507400 208399	Address: Tds Watford, Mark Rd Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
19	123	S	507508 208280	Address: Abbey Motors, 24 Mark Road, Hemel Hempstead, Herts, HP2 7DN Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
20	146	N	507600 208699	Address: Dupont, Maylands Ave, Hemel Hamstead, HP2 4SE Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
21	210	NE	507777 208649	Address: Spacestor, Noble House, Eaton Road, Hemel Hempstead, HP2 7UB Process: Timber Manufacture Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
22	485	SE	507777	Address: Bizzy Dry Cleaners (Formerly	Enforcement: No Enforcements Notified

ID	Distance (m)	Direction	NGR	Details
			207988	Pristine Dry Cleaners), 22 Mark Road, Hemel Hempstead, Hertfordshire, HP2 7BN Process: Dry Cleaning Status: Current Permit Permit Type: Part B Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

3

The following RAS Licence (3 or 4) records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Address	Operator	Type	Permission Number	Dates	Status
38D	41	S	507620 208420	Bio Rad Laboratories Ltd, Bio Rad House, Maylands Avenue, Hemel Hempstead, Hertfordshire, HP2 7TD	Bio Rad Laboratories Ltd	Disposal Of Radioactive Waste (was Rsa60 Section 6).	AC1466	Date of Approval:31/3/1991 Effective from:31/3/1991 Last date of update:2015-01-01	Superseded By Variation
39D	41	S	507620 208420	Bio Rad Laboratories Ltd, Bio Rad House, Maylands Avenue, Hemel Hempstead Industrial Est, Hemel Hempstead, Hertfordshire, HP2 7TD	Bio Rad Laboratories Ltd	Keeping And Use Of Radioactive Materials (was Rsa60 Section 1).	AC1504	Date of Approval:31/3/1991 Effective from:31/3/1991 Last date of update:2015-01-01	Revoked/cancelled
40D	41	S	507620 208420	Bio Rad Laboratories Ltd, Bio Rad House, Maylands Avenue, Hemel Hempstead, Hertfordshire, HP2 7TD	Bio Rad Laboratories Ltd	Disposal Of Radioactive Waste (was Rsa60 Section 6).	BS9032	Date of Approval:5/9/2002 Effective from:3/10/2002 Last date of update:2015-01-01	Revoked/cancelled

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

1

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

ID	Distance (m)	Direction	NGR	Details
5	252	E	507890 208500	Address: HATFIELD BUSINESS PARK, HATFIELD PARK WAY, HATFIELD, Receiving Water: ELLEN BROOK Status: NEW CONSENT (WRA 91, S88 &

ID	Distance (m)	Direction	NGR	Details
				HERTFORDSHIRE, AL10 9TA Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: CANM.0372 Permit Version: 1 SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 06/12/2001 Effective Date: 06-Dec-2001 Revocation Date: 10/04/2002

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

1

The following Water Industry Referral records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Address	Permission reference	Local Authority	First Date Received	Last Date Received	Status
41E	35	NW	TRW LTD, MAYLANDS AVENUE, MAYLANDS AVENUE, HEMEL HEMPSTEAD, HERTFORDSHIRE, HP2 7DP	BA7093	DACORUM BOROUGH COUNCIL	01-Jul-2010	01-Jan-2018	RECEIVED

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

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

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

0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

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

4

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

ID	Distance (m)	Direction	NGR	Details	
1C	56	SW	507391.0 208399.0	Incident Date: 04-Oct-2013 Incident Identification: 1164888.0 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)
2	96	W	507338.0 208424.0	Incident Date: 04-Dec-2001 Incident Identification: 46525.0 Pollutant: Organic Chemicals/Products Pollutant Description: Paints and Varnishes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
3	103	NW	507343.0 208498.0	Incident Date: 17-Apr-2003 Incident Identification: 152193.0 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
4	151	SW	507317.0 208340.0	Incident Date: 18-Mar-2014 Incident Identification: 1219150.0 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)

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

0

Database searched and no data found.

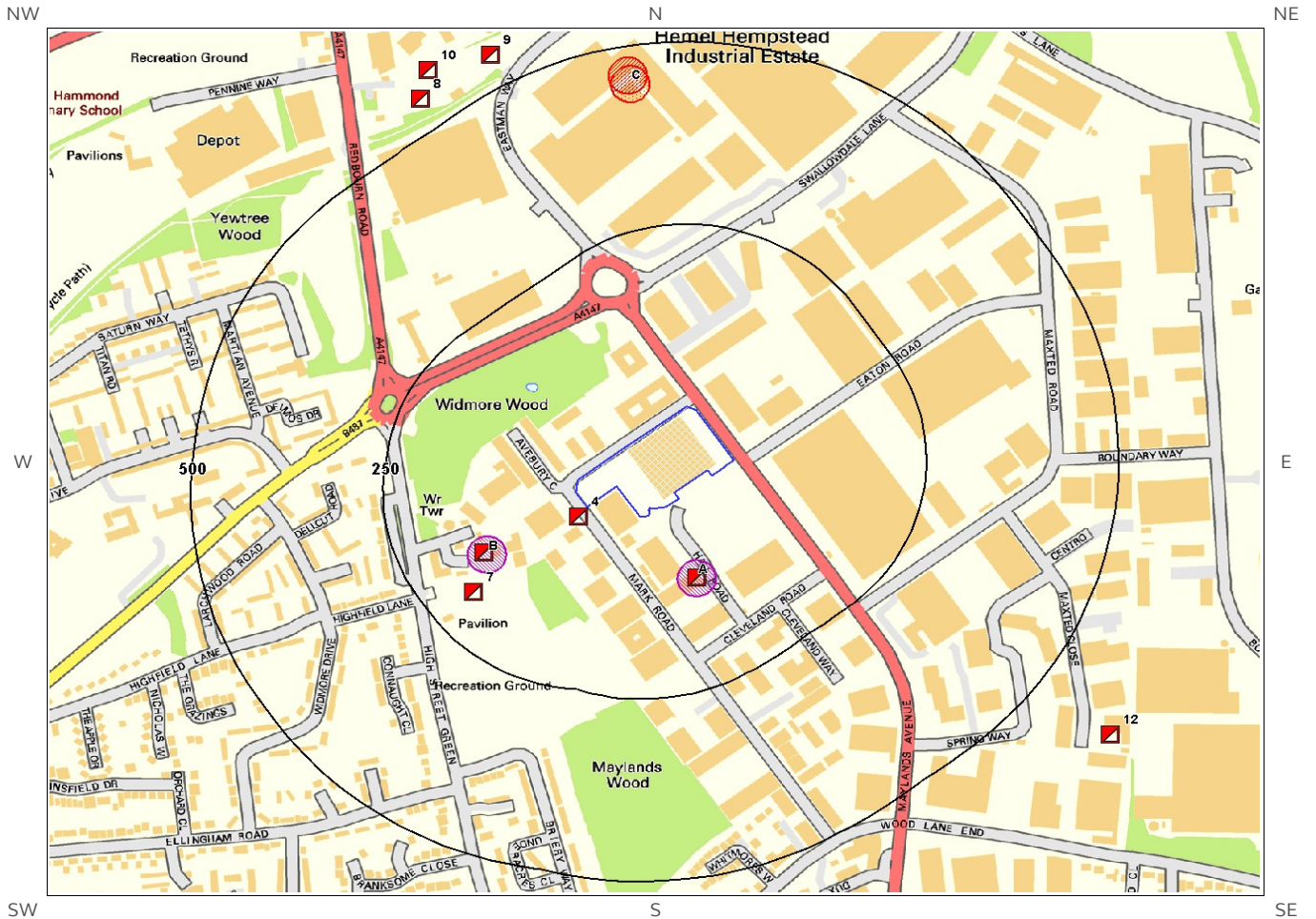
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

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










0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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- | | | | | | |
|---|------------------------|---|---------------------------|---|---|
|  | Site Outline |  | EA/NRW Active Landfill |  | Historic and Planned Waste Sites |
|  | 250 Search Buffers (m) |  | EA/NRW Historic Landfill |  | EA/NRW Licensed Waste Site |
|  | 500 Search Buffers (m) |  | BGS / DoE Survey Landfill |  | Local Authority/Historical Mapping Landfill Records |

3. Landfill and Other Waste Sites

3.1 Landfill Sites

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

0

Database searched and no data found.

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

1

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

ID	Distance (m)	Direction	NGR	Details
3C	423	N		Site Address: Eastman Way, Hemel Hempstead Waste Licence: - Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: Development Corporation First Recorded: 31-Dec-1949 Last Recorded: 31-Dec-1951

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

0

Database searched and no data found.

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

1

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

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
17C	435	N	507501 209008	Nr. Eastman Way, Hemel Hempstead, Hertfordshire	Proprietary database	Point

3.2 Other Waste Sites

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

2

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

ID	Distance (m)	Direction	NGR	Details		
1A	81	SE	507590 208318	Type of Site: Recycling Waste Plant Site Address: 9 Hall Road, HEMEL HEMPSTEAD, Hertfordshire, HP2 7BH	Planning Application Reference: 4/01733/10/FUL Date: 11/04/2011	Further Details: Scheme comprises change of use to recycling/waste management plant. An application (ref: 4/01733/10/FUL) for detailed planning permission was granted by Dacorum B.C. A detailed planning application has been granted. Data Source: Historic Planning Application Data Type: Point
2B	118	SW	507317 208350	Type of Site: Waste Transfer Building Site Address: J F Bishop & Son Ltd, Bishops, Mark Road, Hemel Hempstead Industrial Est, Hemel Hempstead, Hertfordshire, HP2 7BW	Planning Application Reference: 4/0073-14 Date: 19/03/2014	Further Details: Scheme comprises construction of a steel portal frame building with pitched roof to cover area used to sort waste from skips. The associated works include sewer systems, landscaping, infrastructure, enabling works, cable laying and access roads. Data Source: Historic Planning Application Data Type: Point

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

13

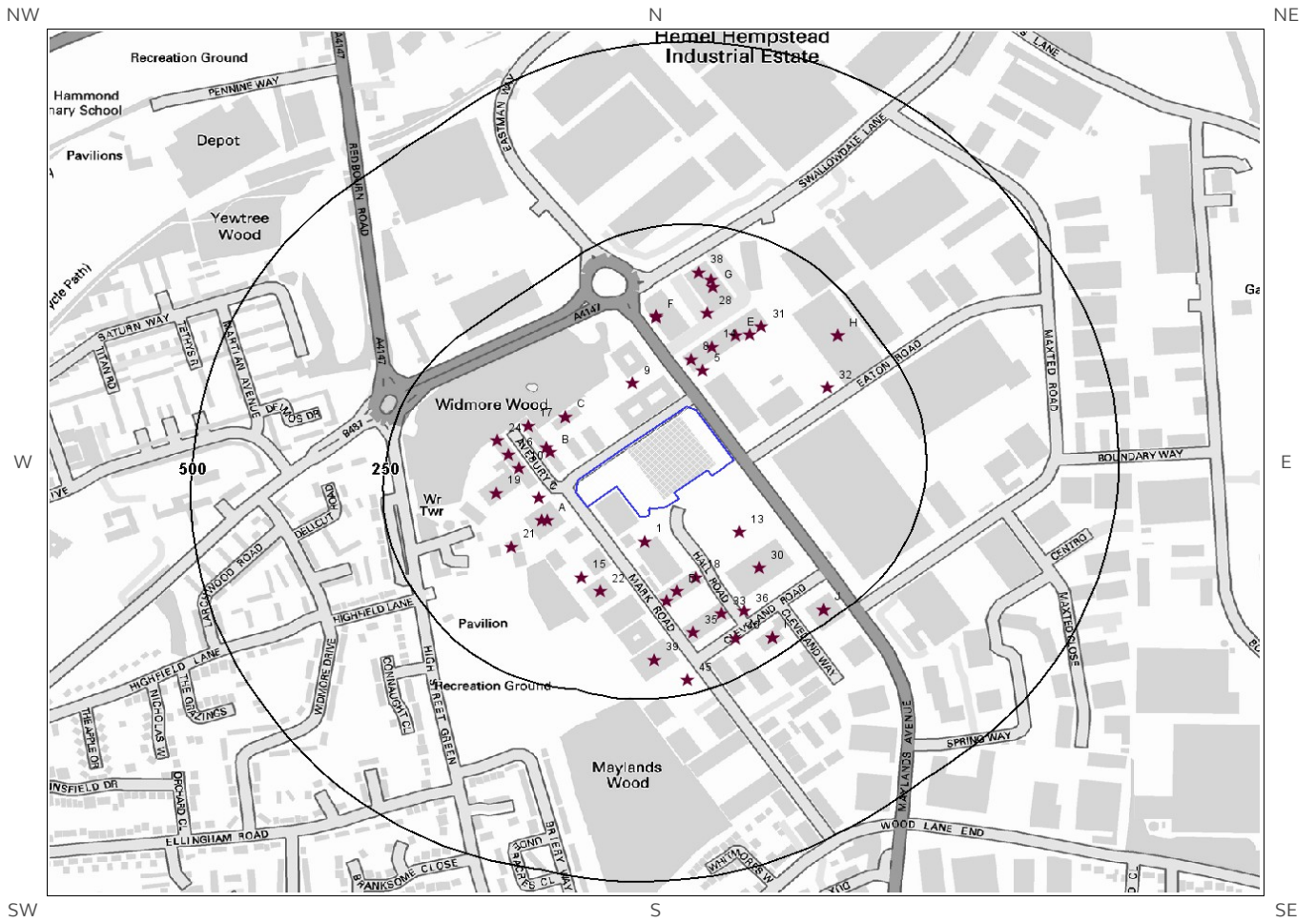
The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
4	18	SW	507436 208403	<p>Site Address: Bishop House, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7BW</p> <p>Type: Household, Commercial & Industrial Waste T Stn</p> <p>Size: >= 75000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: BIS002</p> <p>EPR reference: EA/EPR/KP3897NR/A001</p> <p>Operator: David James Bishop & Vivien Irene Hutchins</p> <p>Waste Management licence No: 80517</p> <p>Annual Tonnage: 133848.0</p> <p>Issue Date: 04/01/2001</p> <p>Effective Date: -</p> <p>Modified: -</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Issued</p> <p>Site Name: J F Bishop & Son</p> <p>Correspondence Address: -</p>
5A	104	S	507590 208320	<p>Site Address: Unit 9, Hall Road, Maylands Wood Estate, Hemel Hempstead, Hertfordshire, HP2 7BH</p> <p>Type: 75kte WEEE Treatment Facility</p> <p>Size: < 25000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: MAR234</p> <p>EPR reference: EA/EPR/VP3892EF/A001</p> <p>Operator: Maritrans Recycling (U K) Ltd</p> <p>Waste Management licence No: 102600</p> <p>Annual Tonnage: 74999.0</p> <p>Issue Date: 16/05/2011</p> <p>Effective Date: -</p> <p>Modified: -</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Revoked</p> <p>Site Name: Maritrans Recycling (U K) Ltd</p> <p>Correspondence Address: -</p>
6B	145	SW	507313 208355	<p>Site Address: Bishop House, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7BW</p> <p>Type: Household, Commercial & Industrial Waste T Stn</p> <p>Size: >= 75000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: BIS016</p> <p>EPR reference: EA/EPR/DB3333DJ/V003</p> <p>Operator: J F Bishop & Son Ltd</p> <p>Waste Management licence No: 80517</p> <p>Annual Tonnage: 133848.0</p> <p>Issue Date: 04/01/2001</p> <p>Effective Date: 02/12/2011</p> <p>Modified: 28/03/2013</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Modified</p> <p>Site Name: J F Bishop & Son</p> <p>Correspondence Address: -</p>
7	188	SW	507300 208300	<p>Site Address: Mr D J Bishop, Bishop House, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7BW</p> <p>Type: Household, Commercial & Industrial Waste T Stn</p> <p>Size: < 25000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: BIS001</p> <p>EPR reference: EA/EPR/KP3591NB/S003</p> <p>Operator: J F Bishop & Son</p> <p>Waste Management licence No: 80226</p> <p>Annual Tonnage: 59516.0</p> <p>Issue Date: 08/04/1987</p> <p>Effective Date: -</p> <p>Modified: 30/03/1992</p> <p>Surrendered Date: Apr 25 2002 12:00AM</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Surrendered</p> <p>Site Name: Mark Road, Hemel Hempstead</p> <p>Correspondence Address: -</p>
8	544	NW	507231 208976	<p>Site Address: Cupid Green Yard, Redbourn Road, Hemel Hempstead, Hertfordshire, HP2 7AZ</p> <p>Type: Metal Recycling Site (Vehicle Dismantler)</p> <p>Size: < 25000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: HUN005</p> <p>Issue Date: 07/07/2005</p> <p>Effective Date: -</p> <p>Modified: -</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Issued</p> <p>Site Name: Hunts Carbreakers, Cupid</p>

ID	Distance (m)	Direction	NGR	Details
				EPR reference: EA/EPR/JP3597NC/A001 Operator: Hunt Martin Waste Management licence No: 80697 Annual Tonnage: 2499.0 Green Correspondence Address: -
9	546	NW	507322 209037	Site Address: Mr Toomay, Household Waste Recycling Centre, Eastman Way, Hemel Hempstead, Hertfordshire, HP2 7DU Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: AME051 EPR reference: EA/EPR/CB3203CE/V002 Operator: Amey Cespa (East) Ltd Waste Management licence No: 80199 Annual Tonnage: 24999.0 Issue Date: 19/02/1977 Effective Date: 16/10/2014 Modified: 21/01/2015 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Hemel Hempstead H W R C Correspondence Address: -
10	571	NW	507241 209016	Site Address: Yard 1, Redbourne Road, Cupid Green, Hemel Hempstead, Hertfordshire, HP2 7JH Type: ELV Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRO013 EPR reference: EA/EPR/BP3393EG/A001 Operator: Brown Peter John Waste Management licence No: 80733 Annual Tonnage: 2499.0 Issue Date: 02/06/2008 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Peter John Brown Correspondence Address: -
Not shown	600	NW	507270 209070	Site Address: Cupid Green Depot, Redbourn Road, Hemel Hempstead, Hertfordshire, HP2 7BA Type: 75kte HCI Waste TS + asbestos Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: DAC001 EPR reference: EA/EPR/FP3797NC/V002 Operator: Dacorum Borough Council Waste Management licence No: 80567 Annual Tonnage: 24999.0 Issue Date: 27/09/2002 Effective Date: - Modified: 06/05/2008 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Cupid Green Depot Correspondence Address: -
12	616	SE	508127 208105	Site Address: 82-86, Maxted Close, Hemel Hempstead Ind Est, Hemel Hempstead, Hertfordshire, HP2 7DX Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HOL006 EPR reference: EA/EPR/EP3097NY/V003 Operator: Holywell Haulage Ltd Waste Management licence No: 80606 Annual Tonnage: 75000.0 Issue Date: 08/03/2004 Effective Date: - Modified: 06/11/2015 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Holywell Hemel Hempstead Correspondence Address: -
Not shown	657	NW	507254 209126	Site Address: Cupid Green Depot, Redbourn Road, Hemel Hempstead, Hertfordshire, HP2 7BA Type: Special Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: DAC001 EPR reference: EA/EPR/FP3797NC/V005 Operator: Dacorum Borough Council Waste Management licence No: 80567 Annual Tonnage: 74998.0 Issue Date: 27/09/2002 Effective Date: - Modified: 18/09/2019 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Cupid Green Depot Correspondence Address: -
Not shown	835	NW	507200 209300	Site Address: Mr Toomay, Household Waste Recycling Centre, Eastman Way, Hemel Hempstead, Hertfordshire, HP2 7DU Issue Date: 19/02/1977 Effective Date: - Modified: 27/04/2007 Surrendered Date: -

ID	Distance (m)	Direction	NGR	Details
				<p>Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HER008 EPR reference: EA/EPR/UP3191NL/V003 Operator: Hertfordshire County Council Waste Management licence No: 80199 Annual Tonnage: 24999.0</p> <p>Expiry Date: - Cancelled Date: - Status: Modified Site Name: Hemel Hempstead Waste Recycling Centre Correspondence Address: -</p>
Not shown	835	NW	507200 209300	<p>Site Address: Mr Toomay, Household Waste Site, Eastman Way, Hemel Hempstead, Herts, HP2 7DU Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HER008 EPR reference: - Operator: Hertfordshire County Council Waste Management licence No: 80199 Annual Tonnage: 0.0</p> <p>Issue Date: 19/02/1977 Effective Date: - Modified: 20/03/1997 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Eastman Way, Hemel Hempstead Correspondence Address: Hertfordshire County Council, Waste Management Unit, County Hall, Pegs Lane, Hertford, Hertfordshire, SG13 8DN</p>
Not shown	835	NW	507200 209300	<p>Site Address: Mr Toomay, Household Waste Recycling Centre, Eastman Way, Hemel Hempstead, Hertfordshire, HP2 7DU Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: AME051 EPR reference: EA/EPR/CB3203CE/T001 Operator: Amey Cespa (East) Limited Waste Management licence No: 80199 Annual Tonnage: 24999.0</p> <p>Issue Date: 19/02/1977 Effective Date: 16/10/2014 Modified: 27/04/2007 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Hemel Hempstead H W R C Correspondence Address: -</p>

4. Current Land Use Map



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-  Site Outline
-  Current Industrial Sites
-  Electricity Transmission Cables
-  Petrol & Fuel Sites
-  Gas Transmission Pipelines
-  Search Buffers (m)

4. Current Land Uses

4.1 Current Industrial Data

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

47

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	33	S	Pylon	507523 208370	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
2	48	W	Electricity Sub Station	507385 208430	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
3A	52	SW	3D Systems	507396 208399	Suite 3 Mark House, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7UE	Printing Related Machinery	Industrial Products
4B	53	NW	Carrob Controls & Services Ltd	507399 208492	4 Avebury Court, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7TA	Electronic Equipment	Industrial Products
5	54	N	Electricity Sub Station	507598 208604	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
6A	58	SW	3 D Systems	507388 208399	Suite 1 Mark House, Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7UA	Published Goods	Industrial Products
7B	61	NW	Adex Interiors for Industry Ltd	507394 208498	5 Avebury Court, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7TA	Office and Shop Equipment	Industrial Products
8	65	N	STS Tyre Pros	507582 208619	2, McDonald Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7EB	Vehicle Parts and Accessories	Motoring
9	67	NW	Electricity Sub Station	507507 208587	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
10	79	W	Electron Beam Services Ltd	507358 208470	15 Avebury Court, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7TA	General Construction Supplies	Industrial Products
11C	81	NW	Network Services Haulage Ltd	507419 208541	5 The Progression Centre, Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DW	Distribution and Haulage	Transport, Storage and Delivery
12C	81	NW	Environmental Cooling UK Ltd	507419 208541	4 The Progression Centre, Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DW	Construction Completion Services	Construction Services
13	84	SE	Wasp Guys	507646 208383	222 Maylands Avenue, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire,	Pest and Vermin Control	Contract Services

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
HP2 7DF							
14	89	N	Magnet Trade	507610 208637	4-8, McDonald Way, Hemel Hempstead, Hertfordshire, HP2 7EB	General Construction Supplies	Industrial Products
15	95	S	Industrial Estate	507440 208321	Hertfordshire, HP2	Business Parks and Industrial Estates	Industrial Features
16	96	W	Birdsall Services Ltd	507346 208489	13 Avebury Court, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7TA	Construction Completion Services	Construction Services
17	98	NW	Texcel	507371 208528	8 Avebury Court, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7TA	Instrumentation Engineers	Engineering Services
18	103	S	Car Van Scraping Services Hemel Hempstead	507589 208321	9, Hall Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BH	Scrap Metal Merchants	Recycling Services
19	104	W	Golding Commercials Ltd	507329 208436	Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DN	Vehicle Repair, Testing and Servicing	Repair and Servicing
20D	108	S	D A Engineering UK Ltd	507564 208302	Unit 6, Hall Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BH	Structural Engineers	Engineering Services
21	111	SW	Sara L B S Ltd	507349 208362	Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DN	General Construction Supplies	Industrial Products
22	113	SW	Flaktgroup UK Ltd	507465 208302	Forsyth House 39, Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DN	Cooling and Refrigeration	Industrial Products
23E	115	NE	Toolstation	507640 208653	Unit 10 Mcdonald Business Park, Maylands Avenue, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7EB	Construction and Tool Hire	Hire Services
24	118	NW	M G Drainage Ltd	507331 208508	10 Avebury Court, Mark Road, Hemel Hempstead, Hertfordshire, HP2 7TA	Civil Engineers	Engineering Services
25D	118	S	Simply Recycling Solutions Ltd	507550 208288	4, Hall Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BH	Scrap Metal Merchants	Recycling Services
26E	125	NE	Tropical Marine Centre	507658 208653	12, McDonald Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7EB	Container and Storage	Transport, Storage and Delivery
27F	130	N	Kipling Motorist Centres	507536 208677	5 Trade City, Maylands Avenue, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7EB	Vehicle Repair, Testing and Servicing	Repair and Servicing
28	131	N	Tank	507604 208683	Hertfordshire, HP2	Tanks (Generic)	Industrial Features
29F	132	N	Protyre Kipling	507537 208679	5, McDonald Way, Hemel Hempstead Industrial	Vehicle Repair, Testing and Servicing	Repair and Servicing

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
			Motorist Centres		Estate, Hemel Hempstead, Hertfordshire, HP2 7EB		
30	140	SE	Multi Distribution Ltd	507671 208334	Unit G1 Aqua House, Cleveland Road, Hemel Hempstead, Hertfordshire, HP2 7EY	Distribution and Haulage	Transport, Storage and Delivery
31	143	NE	Smart Platform Rentals Ltd	507674 208664	14, McDonald Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7EB	Construction and Tool Hire	Hire Services
32	157	NE	Electricity Sub Station	507760 208581	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
33	162	SE	S M H Vehicle Rentals	507622 208271	1, Hall Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BH	Vehicle Hire and Rental	Hire Services
34G	168	N	Hopespare Ltd	507611 208718	19, McDonald Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7EB	Industrial Repairs and Servicing	Repair and Servicing
35	169	S	Prime Air	507585 208245	3, Hall Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7BH	Aeroplanes	Industrial Products
36	174	SE	Electricity Sub Station	507652 208275	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
37G	177	N	Profoto	507608 208729	Unit 21 Macdonald Business Park, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7EB	Photographic and Optical Equipment	Consumer Products
38	185	N	General All Purpose Plastics	507592 208738	Unit 23 Mcdonald Business Park, Mcdonald Way, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7EB	Rubber, Silicones and Plastics	Industrial Products
39	196	S	Fenton Packaging Ltd	507535 208208	27, Mark Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DN	Packaging	Industrial Products
40	200	SE	Electricity Sub Station	507640 208237	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
41H	209	NE	Space Store	507773 208652	Noble House, Eaton Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7UB	Furniture	Consumer Products
42H	209	NE	Remtec	507773 208652	Noble House, Eaton Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7UB	Disability and Mobility Equipment	Consumer Products
43I	225	SE	Eltek Power UK Ltd	507688 208238	Eltek House, Cleveland Road, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7EY	Electrical Production and Manipulation Equipment	Industrial Products
44I	225	SE	Maxon C I C Europe Ltd	507688 208238	Maxon House, Cleveland Road, Hemel Hempstead	Radar and Telecommunications	Industrial Products

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
					Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7EY	Equipment	
45	230	S	Electricity Sub Station	507578 208180	Hertfordshire, HP2	Electrical Features	Infrastructure and Facilities
46J	233	SE	F F E I	507754 208276	The Cube, Maylands Avenue, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DF	General Purpose Machinery	Industrial Products
47J	233	SE	Xerox	507754 208276	Xerox House, Maylands Avenue, Hemel Hempstead Industrial Estate, Hemel Hempstead, Hertfordshire, HP2 7DE	Office and Shop Equipment	Industrial Products

4.2 Petrol and Fuel Sites

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

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

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

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

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

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

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

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

5.2 Superficial Ground and Drift Geology

Database searched and no data found.

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

5.3 Bedrock and Solid Geology

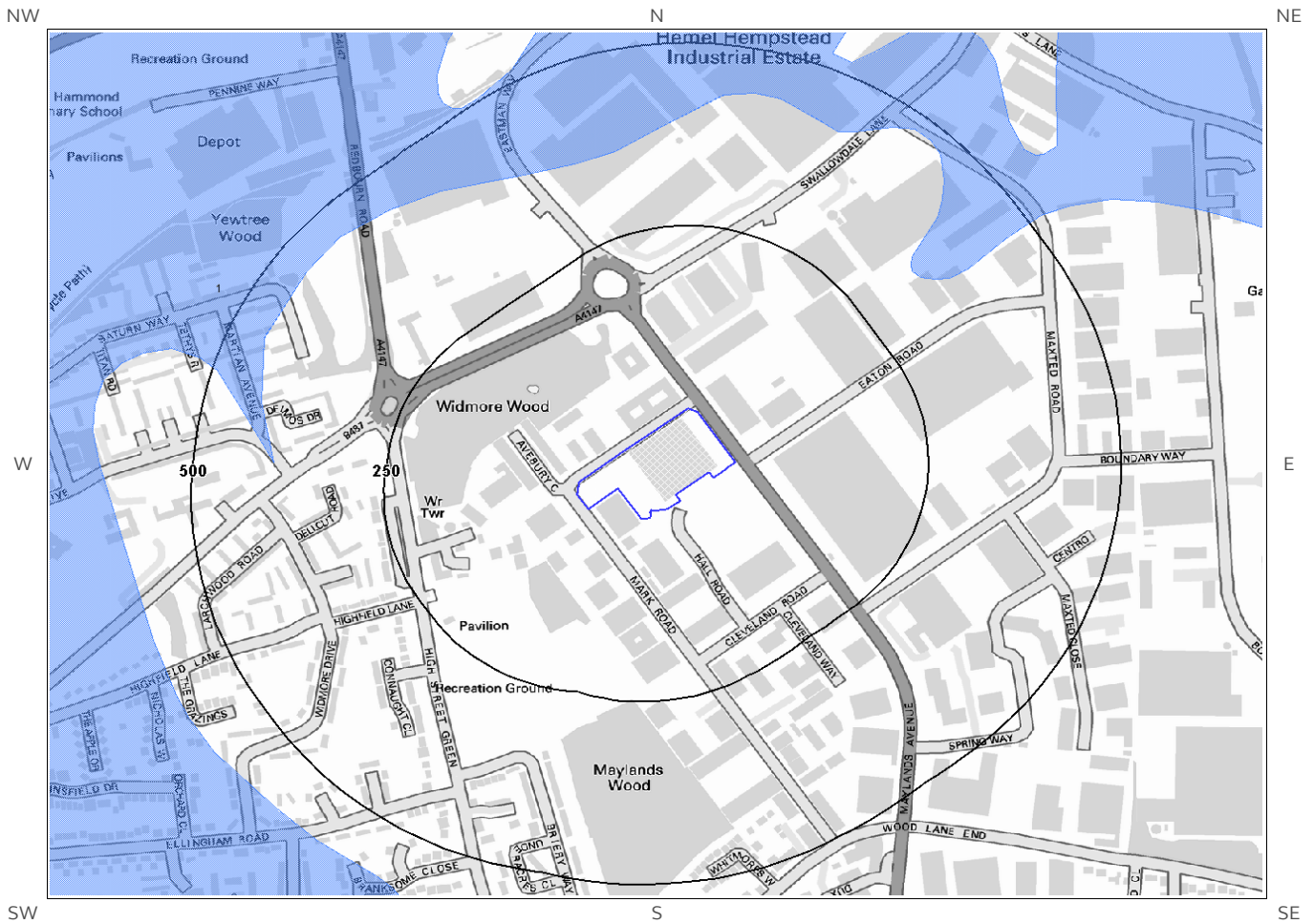
The database has been searched on site, including a 50m buffer.

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

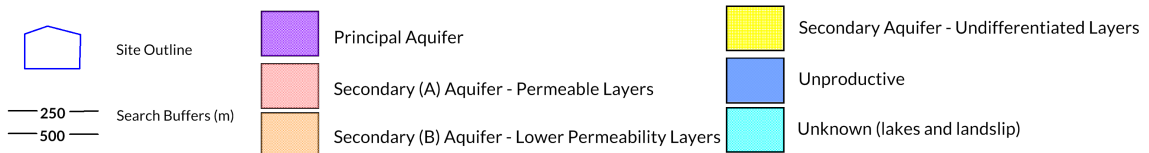
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

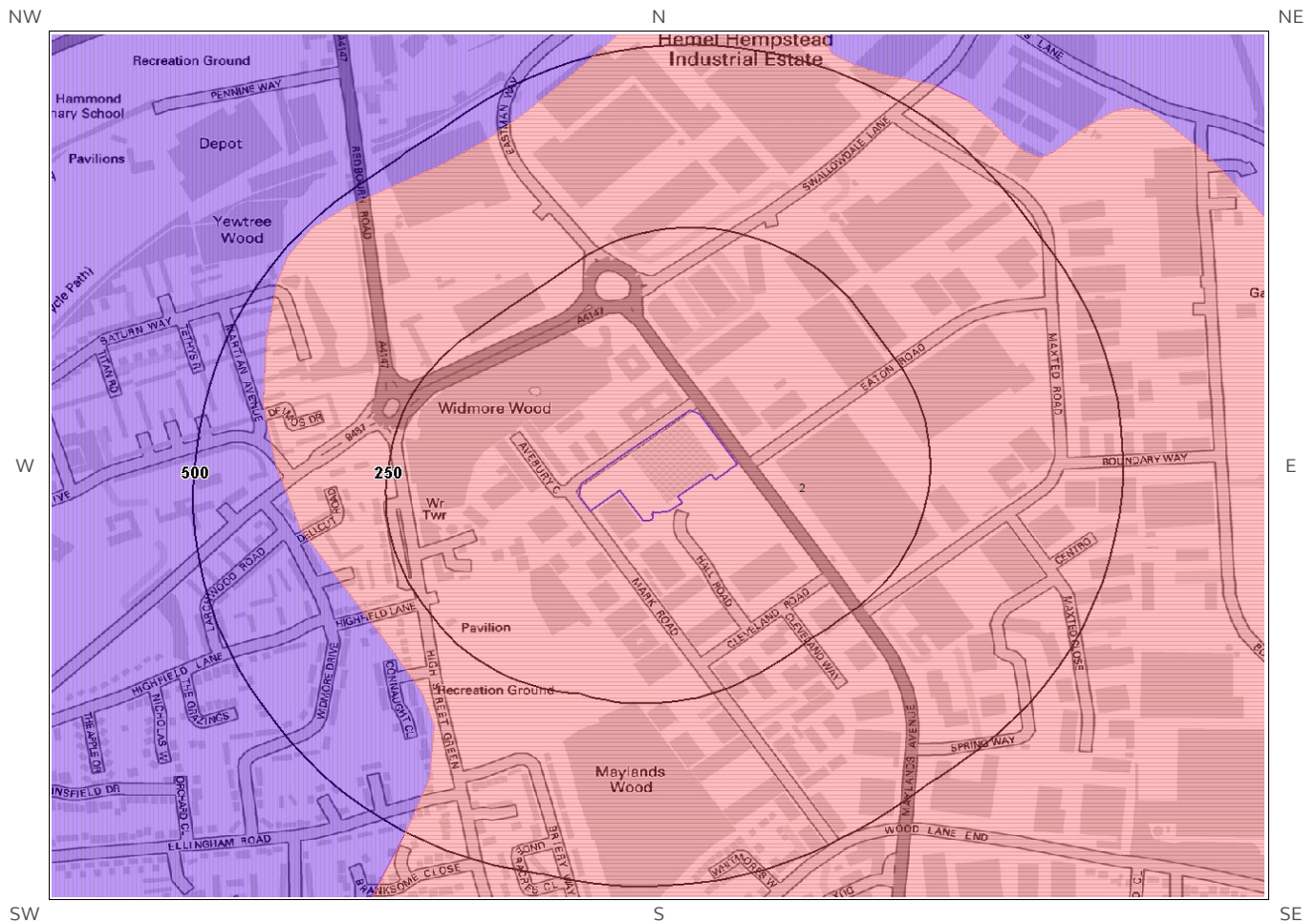
6a. Aquifer Within Superficial Geology



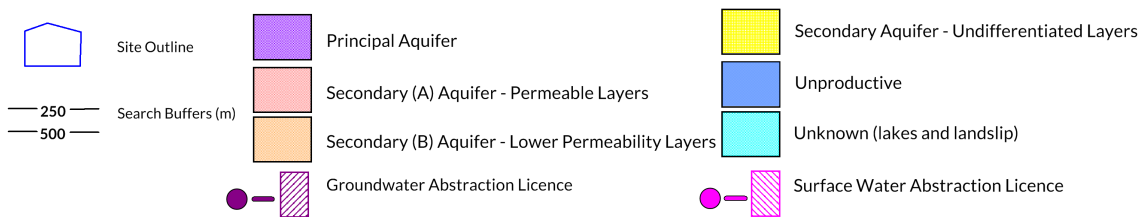
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6b. Aquifer Within Bedrock Geology and Abstraction Licences

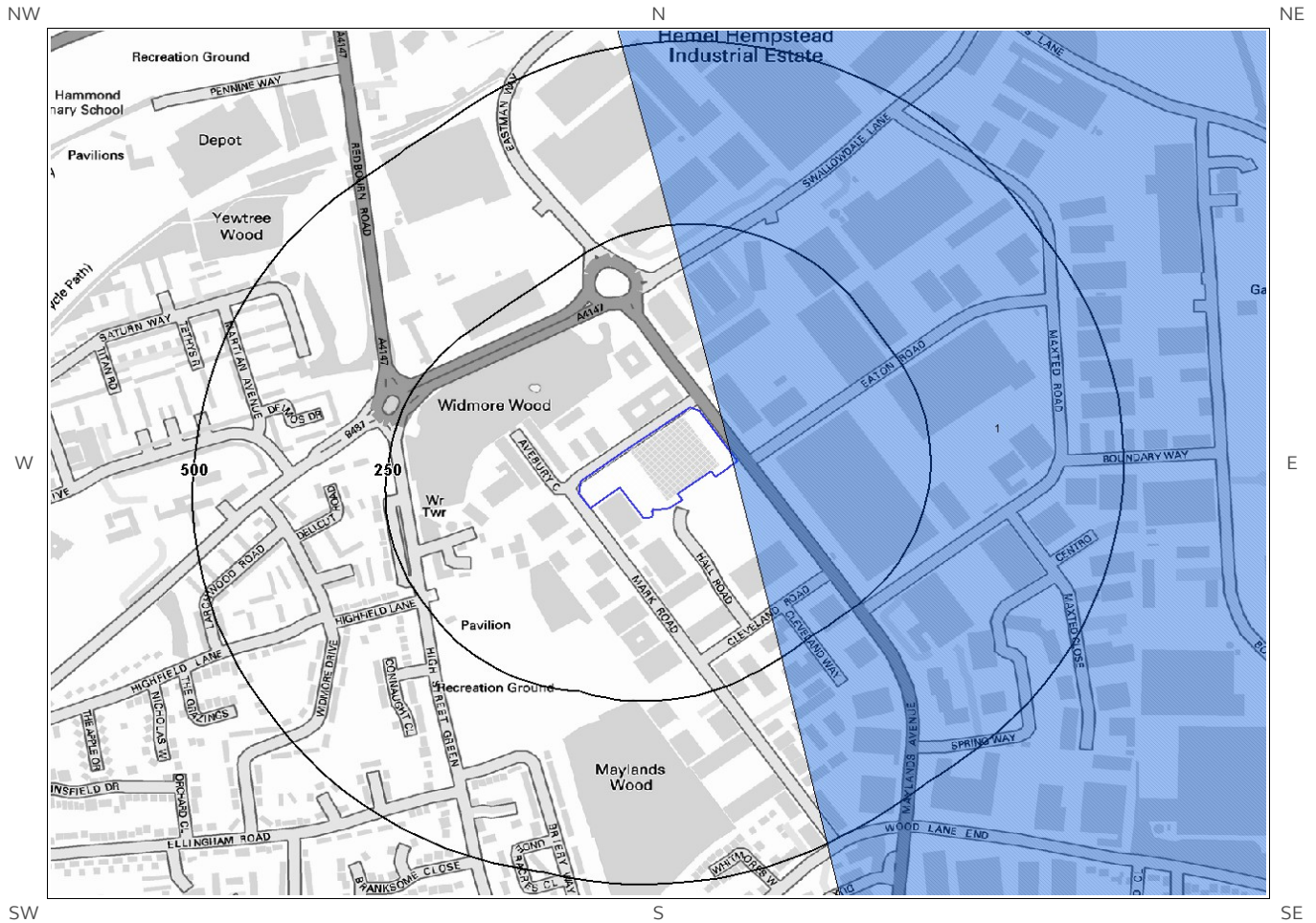


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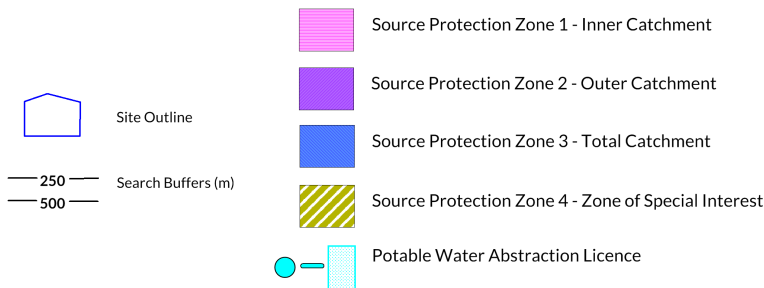




6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences

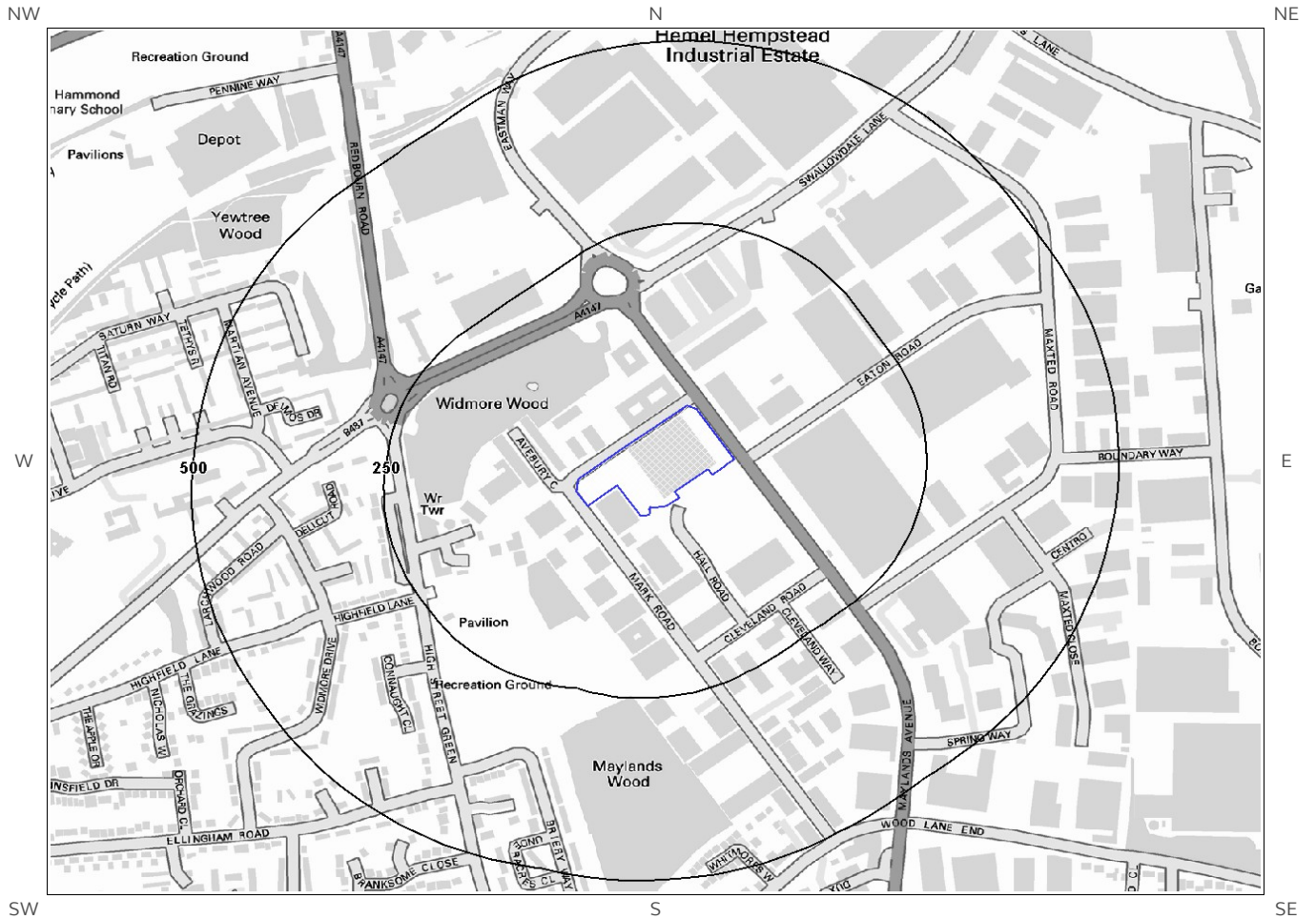


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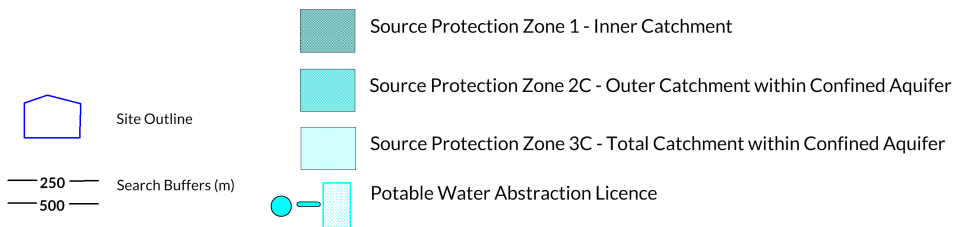




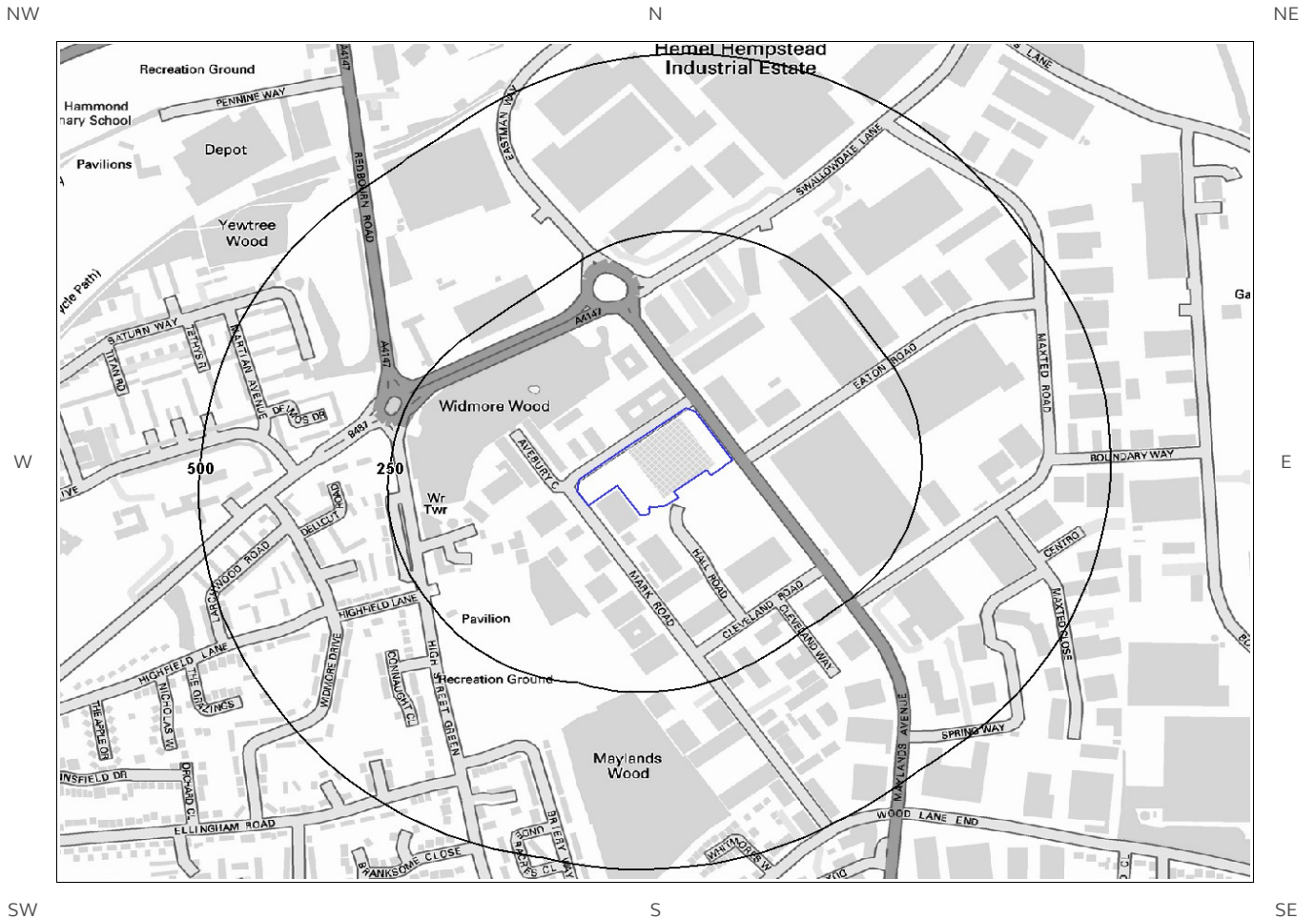
6d. Hydrogeology – Source Protection Zones within confined aquifer



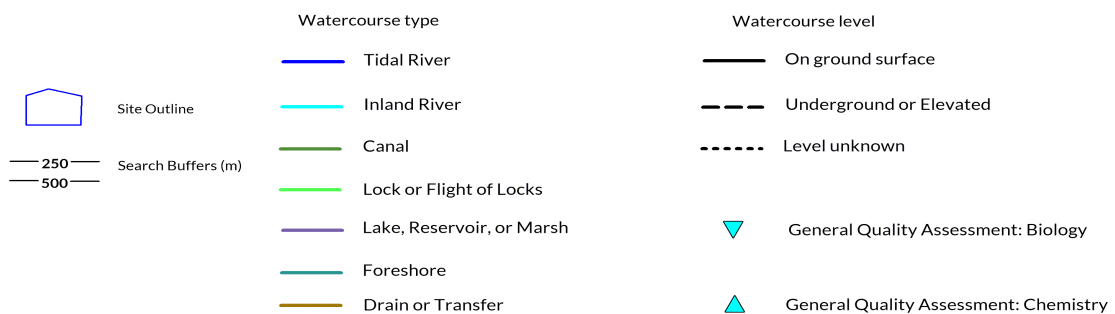
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6e. Hydrology – Watercourse Network and River Quality



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6. Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

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

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

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

ID	Distance (m)	Direction	Designation	Description
1	338	NE	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

6.2 Aquifer within Bedrock Deposits

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

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

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

ID	Distance (m)	Direction	Designation	Description
2	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
1	320	SW	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site

Identified

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

ID	Distance (m)	Direction	NGR	Details	
Not shown	893	SE	508460 208130	Status: Historical Licence No: 28/39/28/0573 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: HEMEL TELEHOUSE-BOREHOLE A Data Type: Point Name: HUTCHISON NETWORK SERVICES UK LIMITED	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 17/12/2002 Expiry Date: - Issue No: 2 Version Start Date: 01/01/2003 Version End Date:
Not shown	1031	E	508646 208701	Status: Historical Licence No: TH/039/0028/027 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: BUNCEFIELD OIL DEPOT BOREHOLE 2 Data Type: Point Name: BRITISH PIPELINE AGENCY LIMITED	Annual Volume (m ³): 31536 Max Daily Volume (m ³): 86.4 Original Application No: - Original Start Date: 29/09/2012 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 29/09/2012 Version End Date:
Not shown	1042	E	508647 208744	Status: Historical Licence No: TH/039/0028/003 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: BUNCEFIELD OIL DEPOT BOREHOLE Data Type: Point Name: BRITISH PIPELINE AGENCY LIMITED	Annual Volume (m ³): 175200 Max Daily Volume (m ³): 480 Original Application No: - Original Start Date: 04/09/2009 Expiry Date: 03/09/2010 Issue No: 1 Version Start Date: 04/09/2009 Version End Date:
Not shown	1042	E	508647 208744	Status: Historical Licence No: TH/039/0028/027 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: BUNCEFIELD OIL DEPOT BOREHOLE Data Type: Point Name: BRITISH PIPELINE AGENCY LIMITED	Annual Volume (m ³): 31536 Max Daily Volume (m ³): 86.4 Original Application No: - Original Start Date: 29/09/2012 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 29/09/2012 Version End Date:
Not shown	1042	E	508647 208744	Status: Historical Licence No: TH/039/0028/014 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: BUNCEFIELD OIL DEPOT BOREHOLE Data Type: Point Name: BRITISH PIPELINE AGENCY LIMITED	Annual Volume (m ³): 31536 Max Daily Volume (m ³): 86.4 Original Application No: - Original Start Date: 04/11/2010 Expiry Date: 03/11/2011 Issue No: 1 Version Start Date: 04/11/2010 Version End Date:

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site

Identified

The following Source Protection Zones records are represented on the SPZ and Potable Water Abstraction Map (6c):

ID	Distance (m)	Direction	Zone	Description
1	0	On Site	3	Total catchment

6.7 Source Protection Zones within Confined Aquifer

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

None identified

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

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

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

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

6.9 River Quality

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

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Ordnance Survey MasterMap Water Network

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

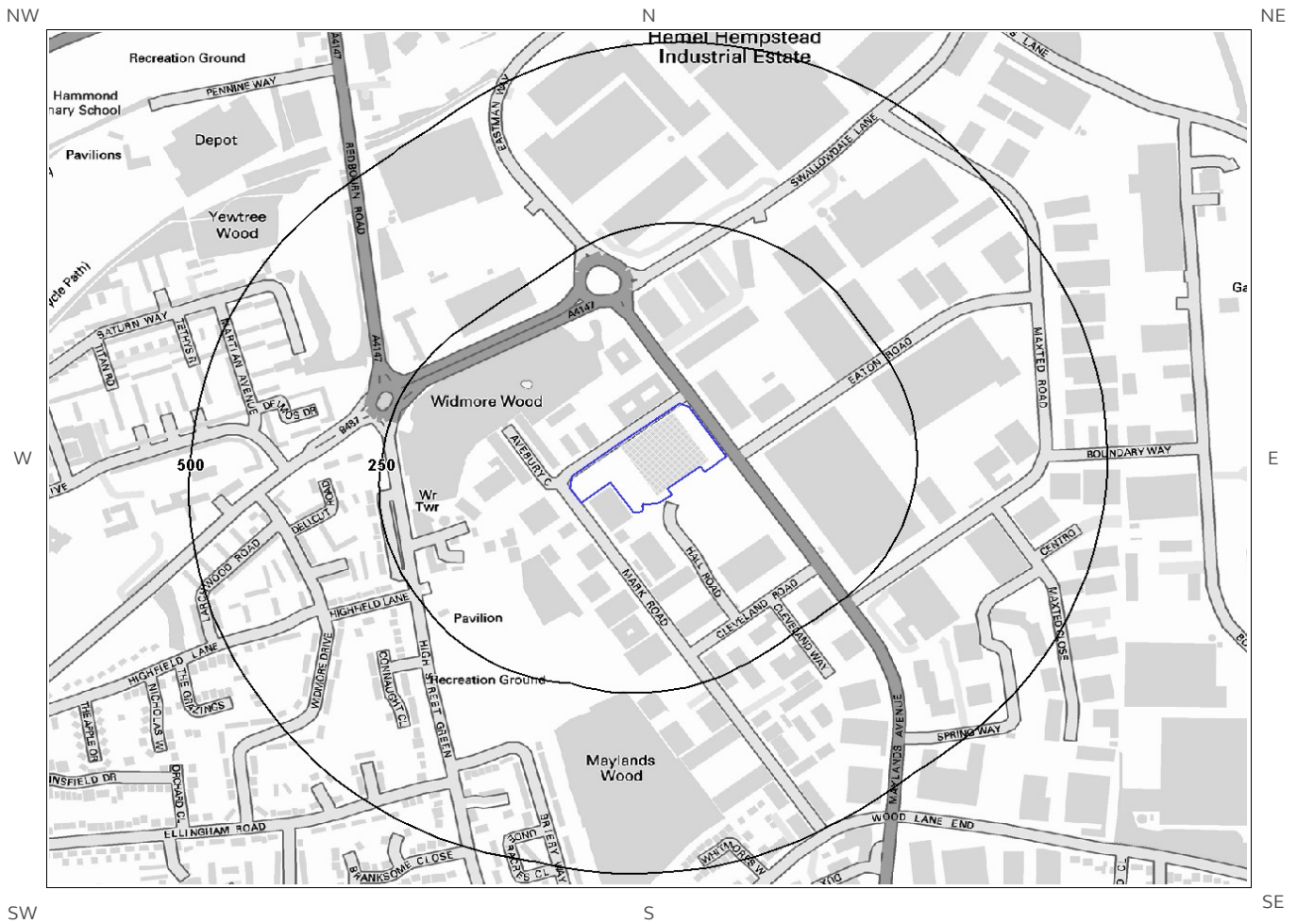
Database searched and no data found.

6.11 Surface Water Features

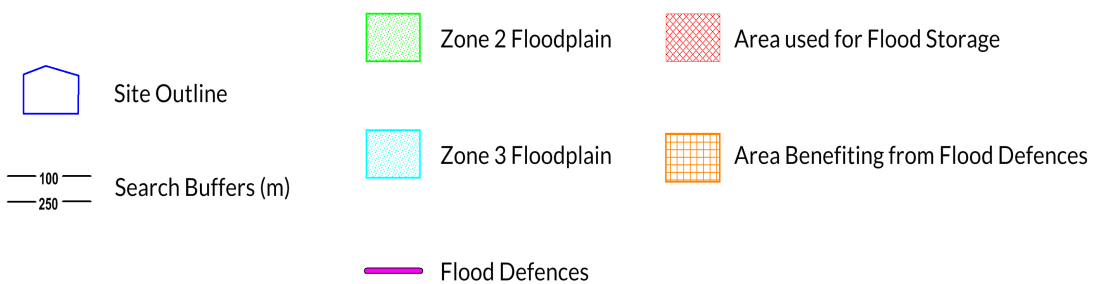
Surface water features within 250m of the study site None identified

Database searched and no data found.

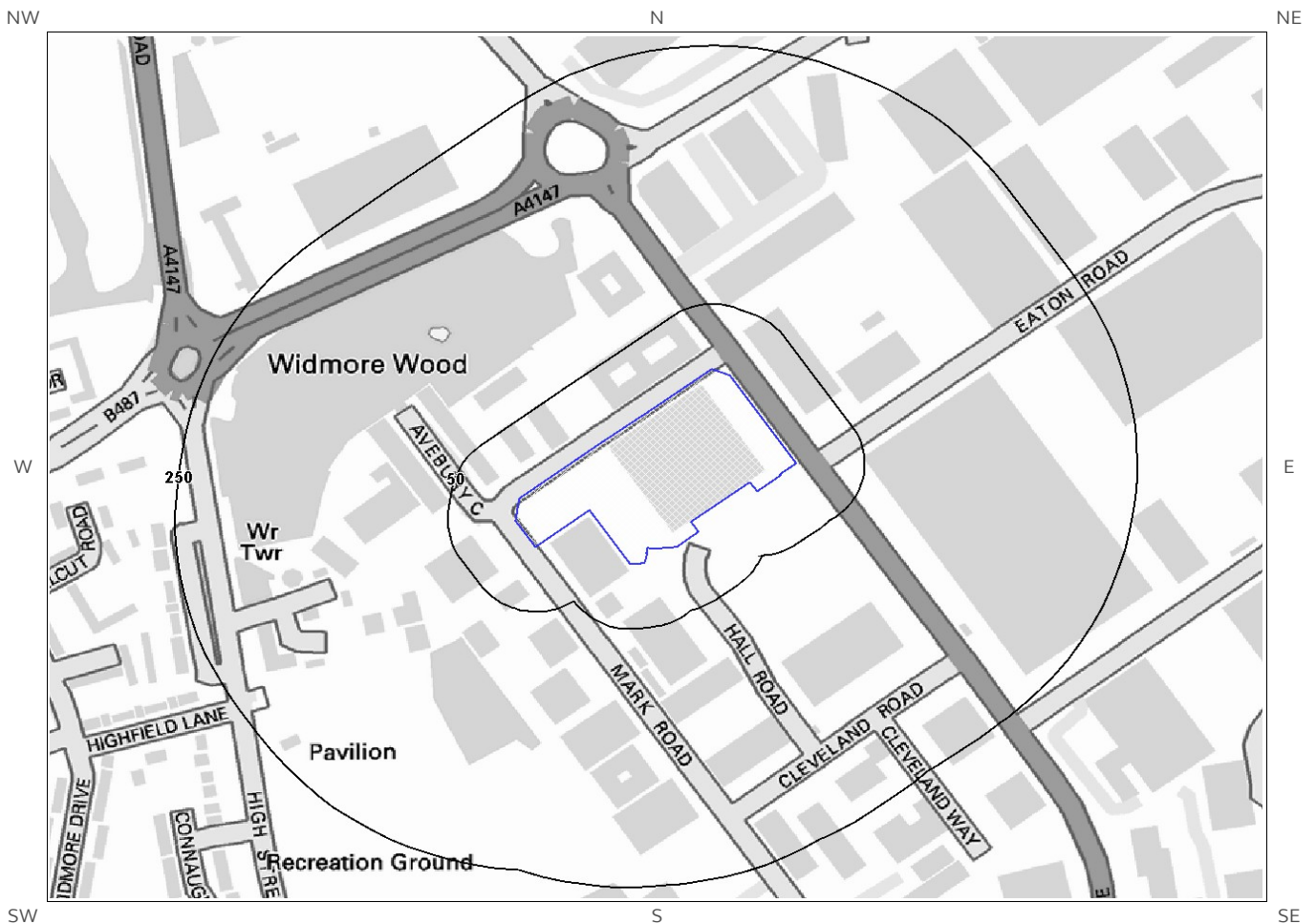
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



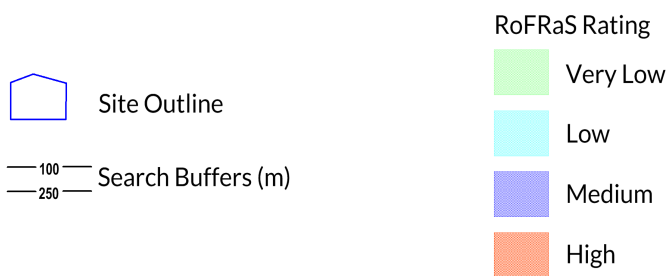
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7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m None identified

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

Database searched and no data found.

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m None identified

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

Database searched and no data found.

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

Highest risk of flooding onsite Very Low

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

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

7.4 Flood Defences

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

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site None identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site

None identified

7.7 Groundwater Flooding Susceptibility Areas

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

None identified

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

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

Not Prone

The area is not considered to be prone to groundwater flooding based on rock type.

7.8 Groundwater Flooding Confidence Areas

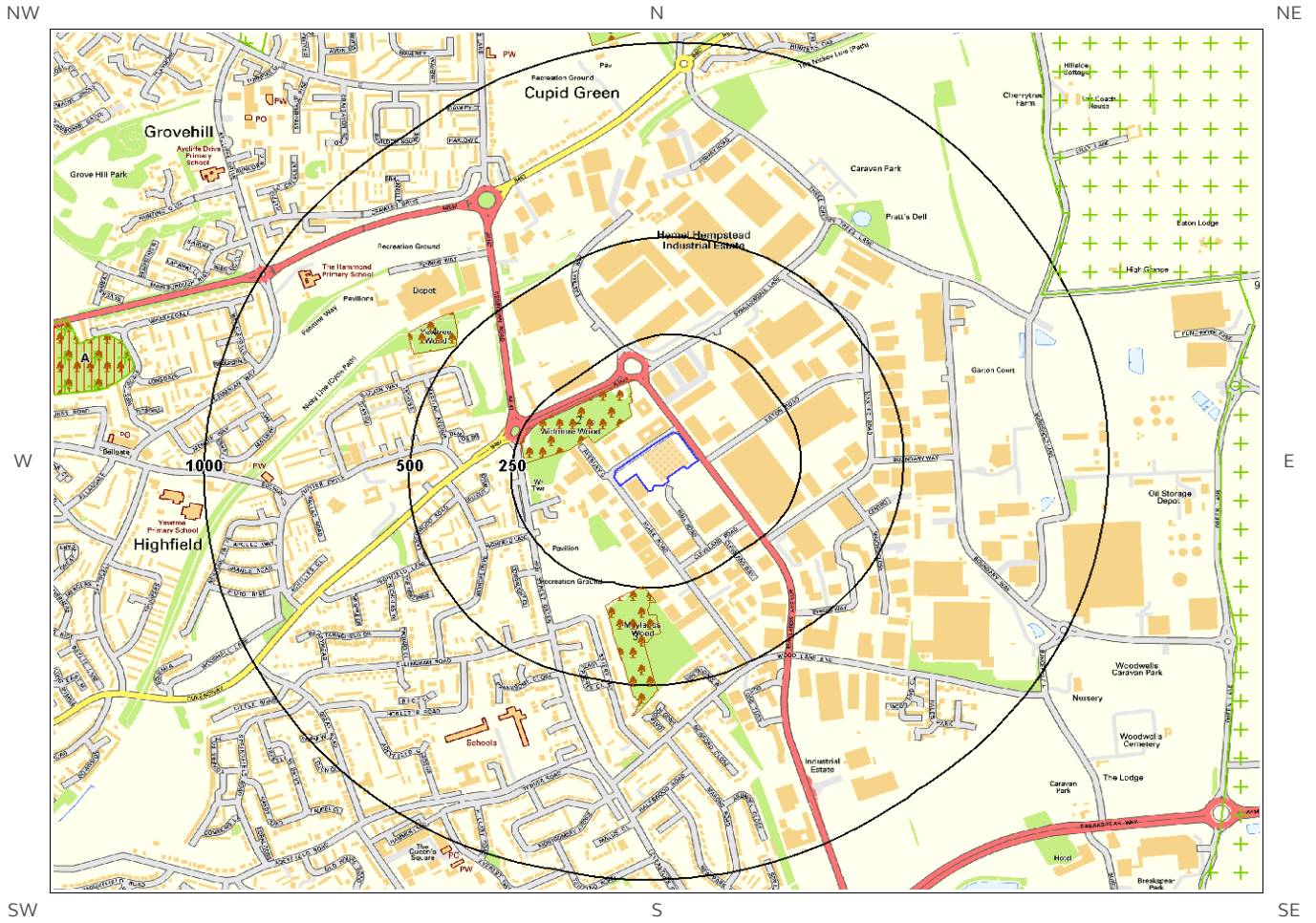
British Geological Survey confidence rating in this result

Not Applicable

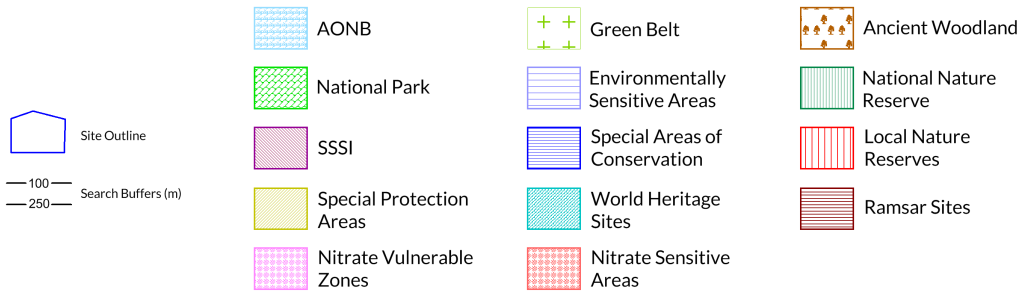
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

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

8. Designated Environmentally Sensitive Sites Map



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8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site

Identified

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

7

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

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
2	87	NW	WIDMORE WOOD	Ancient & Semi-Natural Woodland
3	246	S	MAYLANDS WOOD	Ancient & Semi-Natural Woodland
4	504	NW	Unknown	Ancient & Semi-Natural Woodland
5	1013	N	Unknown	Ancient & Semi-Natural Woodland
6A	1204	W	HOWE GROVE	Ancient & Semi-Natural Woodland
Not shown	1689	N	Unknown	Ancient & Semi-Natural Woodland
Not shown	1718	N	Unknown	Ancient & Semi-Natural Woodland

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

1

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

ID	Distance (m)	Direction	LNR Name	Data Source
1A	1204	W	Howe Grove Wood	Natural England

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

4

Green Belt data contains Ordnance Survey data © Crown copyright and database right [2015].

ID	Distance	Direction	Green Belt Name	Local Authority Name
9	938	NE	London Area Greenbelt	St. Albans District (B)
10	1204	W	London Area Green Belt	Dacorum
Not shown	1627	NE	London Area Greenbelt	St. Albans District (B)
Not shown	1701	NW	London Area Green Belt	Dacorum

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

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

9.1.1 Shrink Swell

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

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

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

9.1.2 Landslides

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

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

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

9.1.3 Soluble Rocks

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

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

Hazard
Significant soluble rocks are present. Low possibility of subsidence occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow. Consider implications for stability when changes to drainage or new construction are planned. For new build site investigation should consider potential for dissolution problems on the site and its surroundings. Care should be taken with local drainage into the bedrock. Some possibility groundwater pollution. For existing property possible increase in insurance risk due to soluble rocks.

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

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site

Negligible

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

Hazard

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

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site

Very Low

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

Hazard

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

9.1.6 Running Sand

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

Very Low

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

Hazard

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

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

9.2 Radon

9.2.1 Radon Affected Areas

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

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

9.2.2 Radon Protection

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

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site

None identified

Database searched and no data found.

10.2 Non-Coal Mining

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

Identified

The following non-coal mining information is provided by the BGS:

Distance (m)	Direction	Name	Commodity	Assessment of likelihood
0.0	On Site	Not available	Chalk	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

Past underground mine workings may occur. The rock types present in these areas are such that small mineral veins may be present on which it is possible that small scale mining has been undertaken and/or it is possible that limited underground extraction of other materials may have occurred. All such occurrences are likely to be of minor localised extent and infrequent. It should be noted, however, that there is always the possibility of the existence of other sub-surface excavations, such as wells, cess pits, follies, air raid shelters/bunkers and other military structures etc. that could affect surface ground stability but which are outside the scope of this dataset. However, if in a coalfield area you should still consider a Coal Authority mining search for the area of interest.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site

None identified

Guidance: No Guidance Required.

Contact Details

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

Web: www.bgs.ac.uk

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

Environment Agency

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

Web: www.environment-agency.gov.uk

Email: enquiries@environment-agency.gov.uk

Public Health England

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

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

The Coal Authority

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

Ordnance Survey

Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority

Authority: Dacorum Council
Phone: 01442 228 000
Web: <http://www.dacorum.gov.uk/>
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Gemapping PLC

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

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**British
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL



**Environment
Agency**



**Public Health
England**



**The Coal
Authority**





Groundsure

LOCATION INTELLIGENCE

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Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:

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

APPENDICES

Appendix 03 GroundSure – GeoInsight - Campus

Address: Campus Data Centre, Spring Way, Hemel Hempstead, HP2 7UP,
Date: 25 Nov 2019
Reference: EMS-579570_777899
Client: emapsite

NW N NE



SW S SE

Aerial Photograph Capture date: 12-Aug-2016
Grid Reference: 507986,208179
Site Size: 3.6199ha

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Overview of Findings

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

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

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

Section 1: Geology 1:10,000 Scale		
1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	No
	1.2.2 Are there any records of landslip within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	No
Section 2: Geology 1:50,000 Scale		
2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	No
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	No
	2.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features

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

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

Yes

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

No

Section 3: Radon

3. Radon

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

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

3.2 Radon Protection

No radon protective measures are necessary.

Section 4: Ground Workings

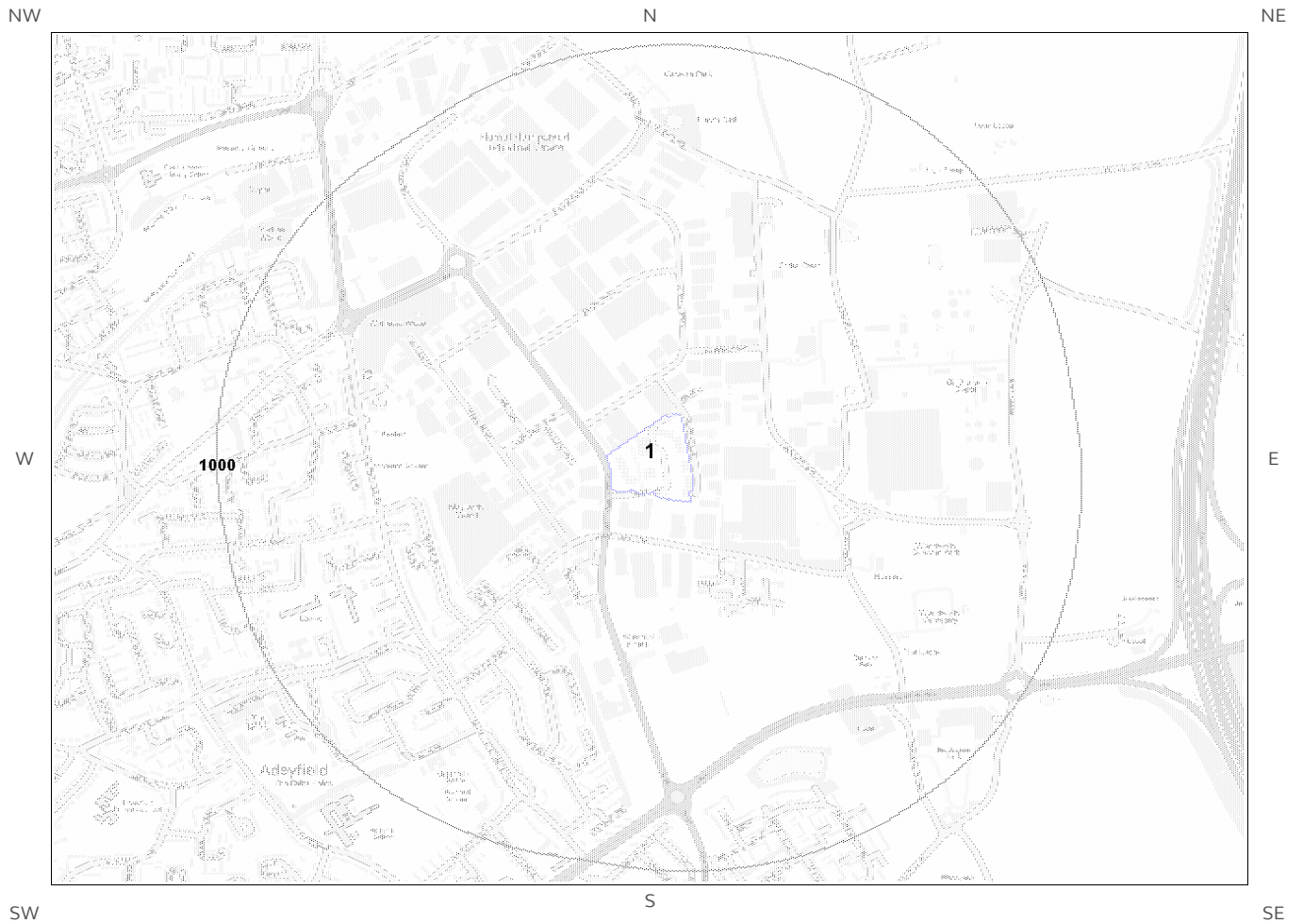
	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	0	9	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	0	12	9

Section 5: Mining, Extraction & Natural Cavities

	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	0
5.2 Coal Mining	0	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	1	0	0	1	3
5.5 Non-Coal Mining Cavities	0	0	0	2	0
5.5 Natural Cavities	0	0	0	1	3

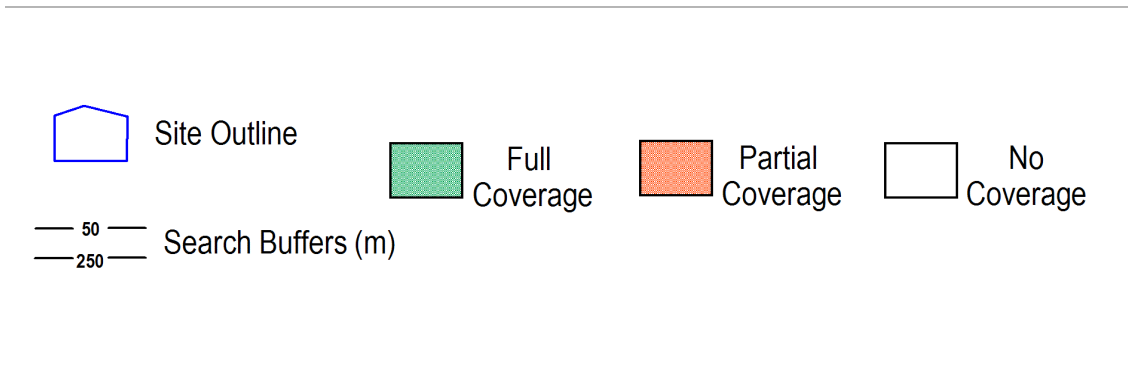
Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Cornwall and Devon Metalliferous Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0
Section 6: Natural Ground Subsidence	On-site				
6.1 Shrink-Swell Clay	Moderate				
6.2 Landslides	Very Low				
6.3 Ground Dissolution of Soluble Rocks	Low				
6.4 Compressible Deposits	Negligible				
6.5 Collapsible Deposits	Very Low				
6.5 Running Sand	Very Low				
Section 7: Borehole Records	On-site	0-50m	51-250		
7 BGS Recorded Boreholes	0	0	17		
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
8 Records of Background Soil Chemistry	2	0	0		
Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500	
9.1 Tunnels	0	0	0	Not Searched	
9.2 Historical Railway and Tunnel Features	0	0	0	Not Searched	
9.3 Historical Railways	0	0	0	Not Searched	
9.4 Active Railways	0	0	0	Not Searched	
9.5 Railway Projects	0	0	0	0	

1:10,000 Scale Availability



1_10,000 Availability Legend

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Availability of 1:10,000 Scale Geology Mapping

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

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	No deposits are mapped	No coverage	No coverage	No coverage

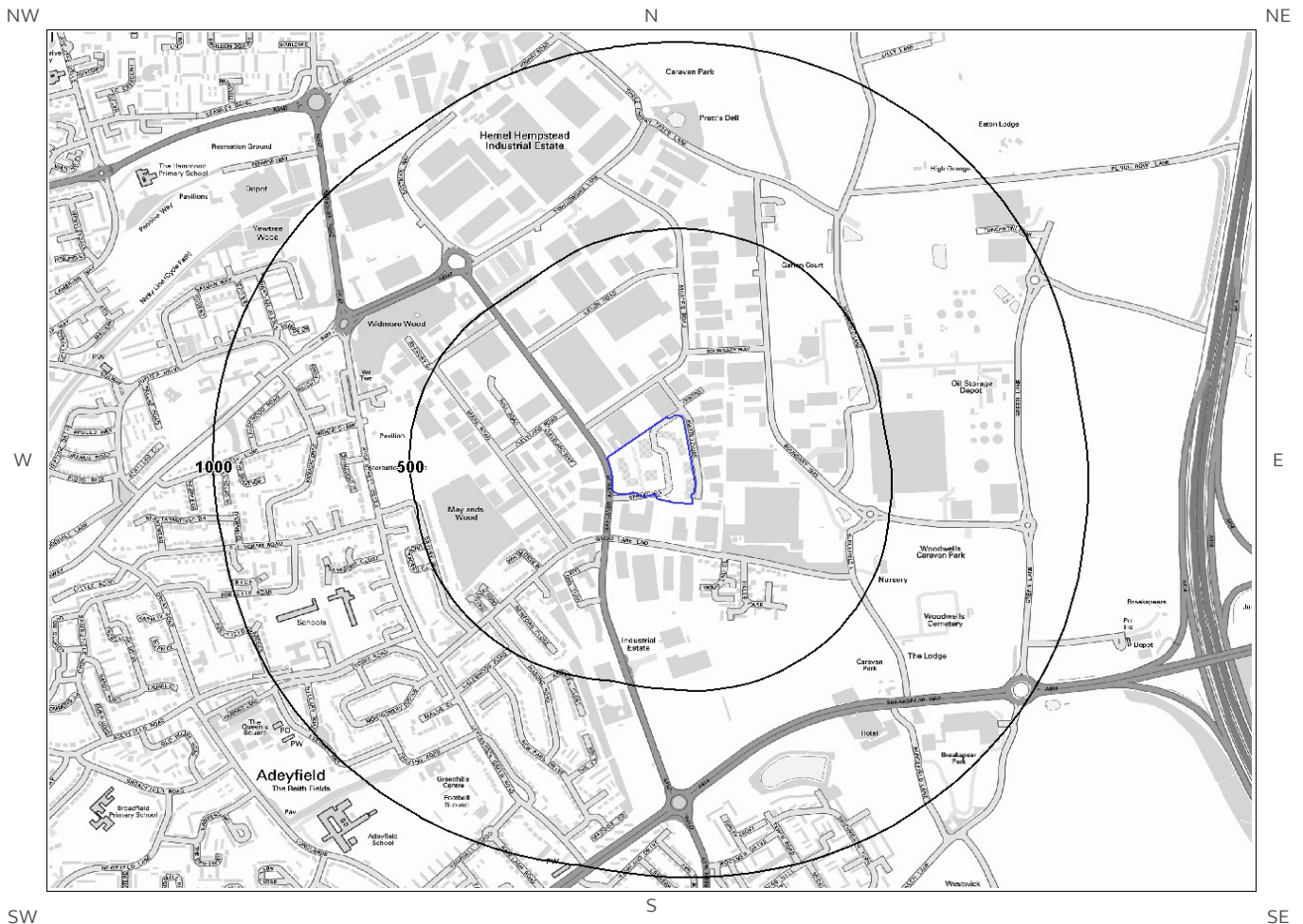
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not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

The definitions of coverage are as follows:

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

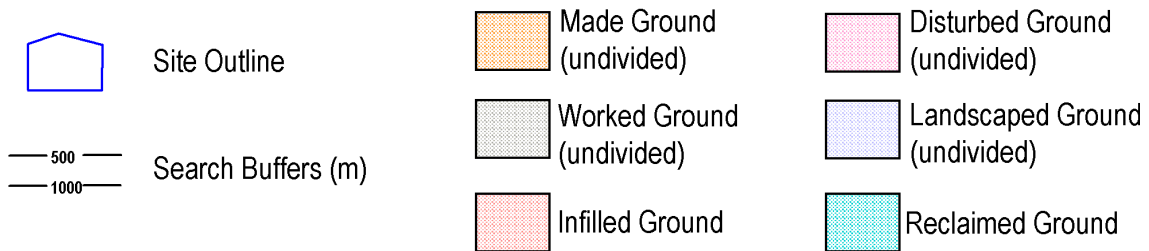
1 Geology (1:10,000 scale).

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



Artificial Ground Legend

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1. Geology 1:10,000 scale

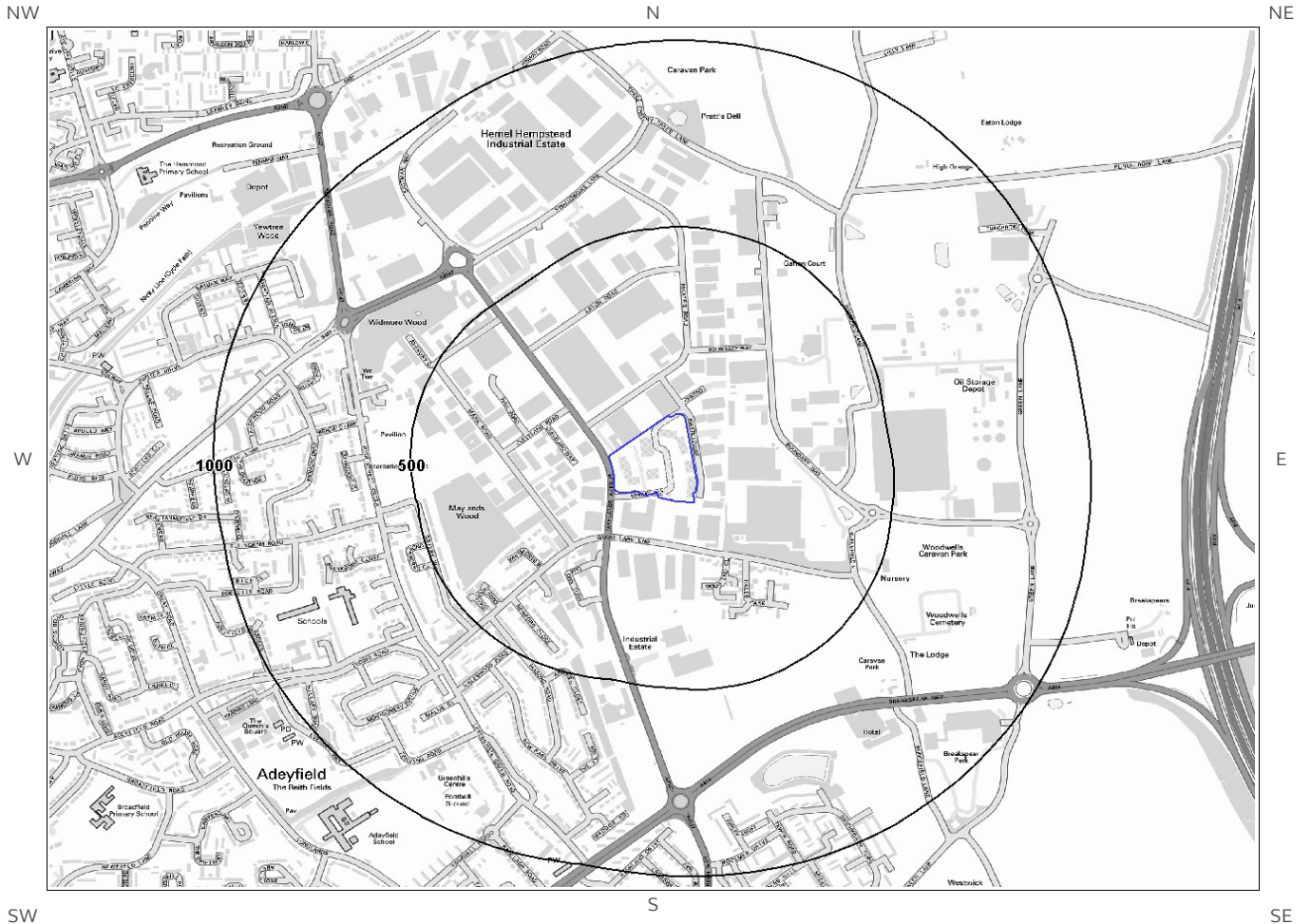
1.1 Artificial Ground

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

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




Database searched and no data found.

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



Artificial Ground Legend

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-  Site Outline
-  500 Search Buffers (m)
-  1000 Search Buffers (m)

1.2 Superficial Deposits and Landslips

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

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

1.2.2 Landslip

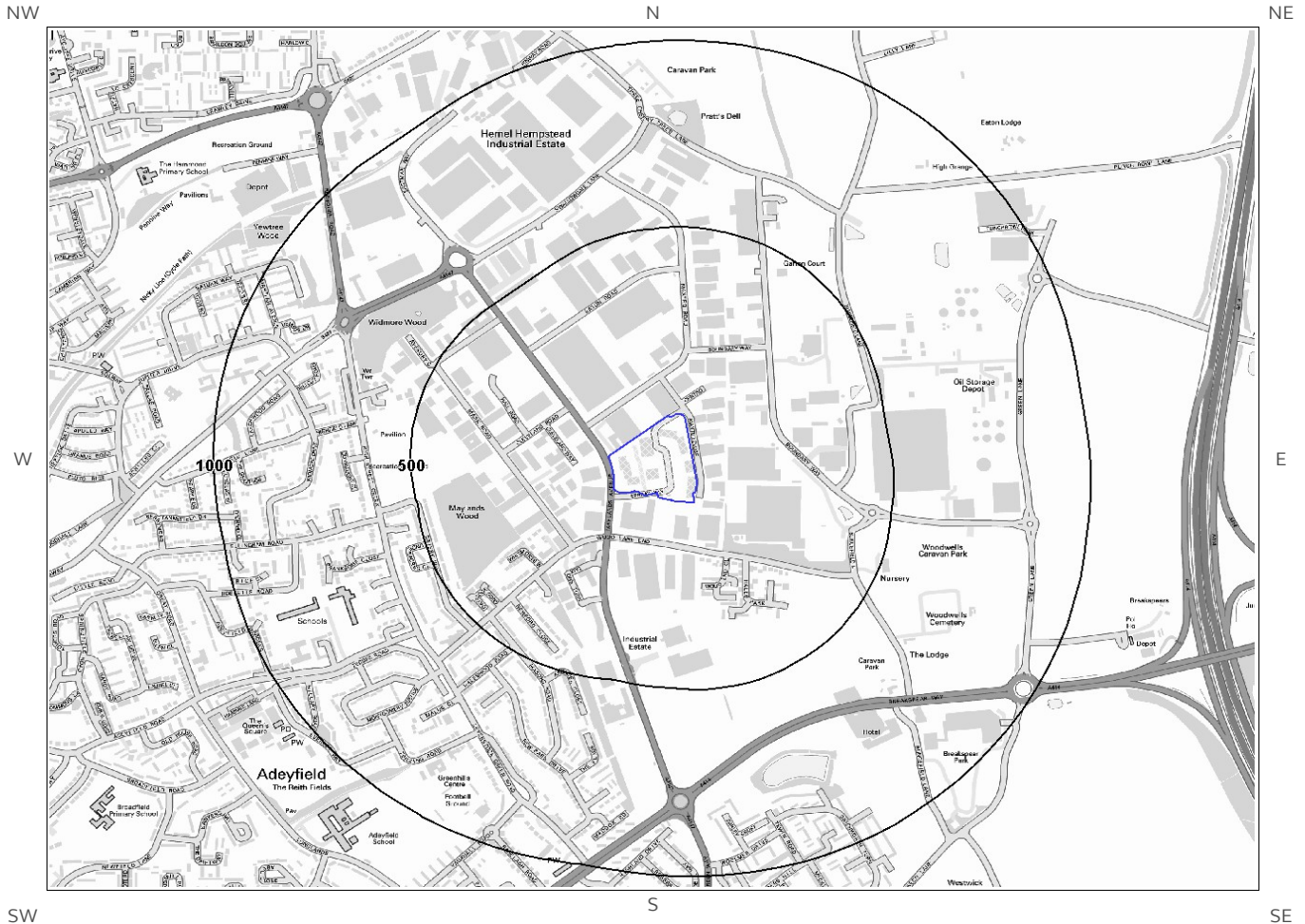
Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

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




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

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



Bedrock and linear features Legend

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-  Site Outline
 -  500
 -  1000
- Search Buffers (m)

1.3 Bedrock and linear features

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

1.3.1 Bedrock/ Solid Geology

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

Database searched and no data found at this scale.

1.3.2 Linear features

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

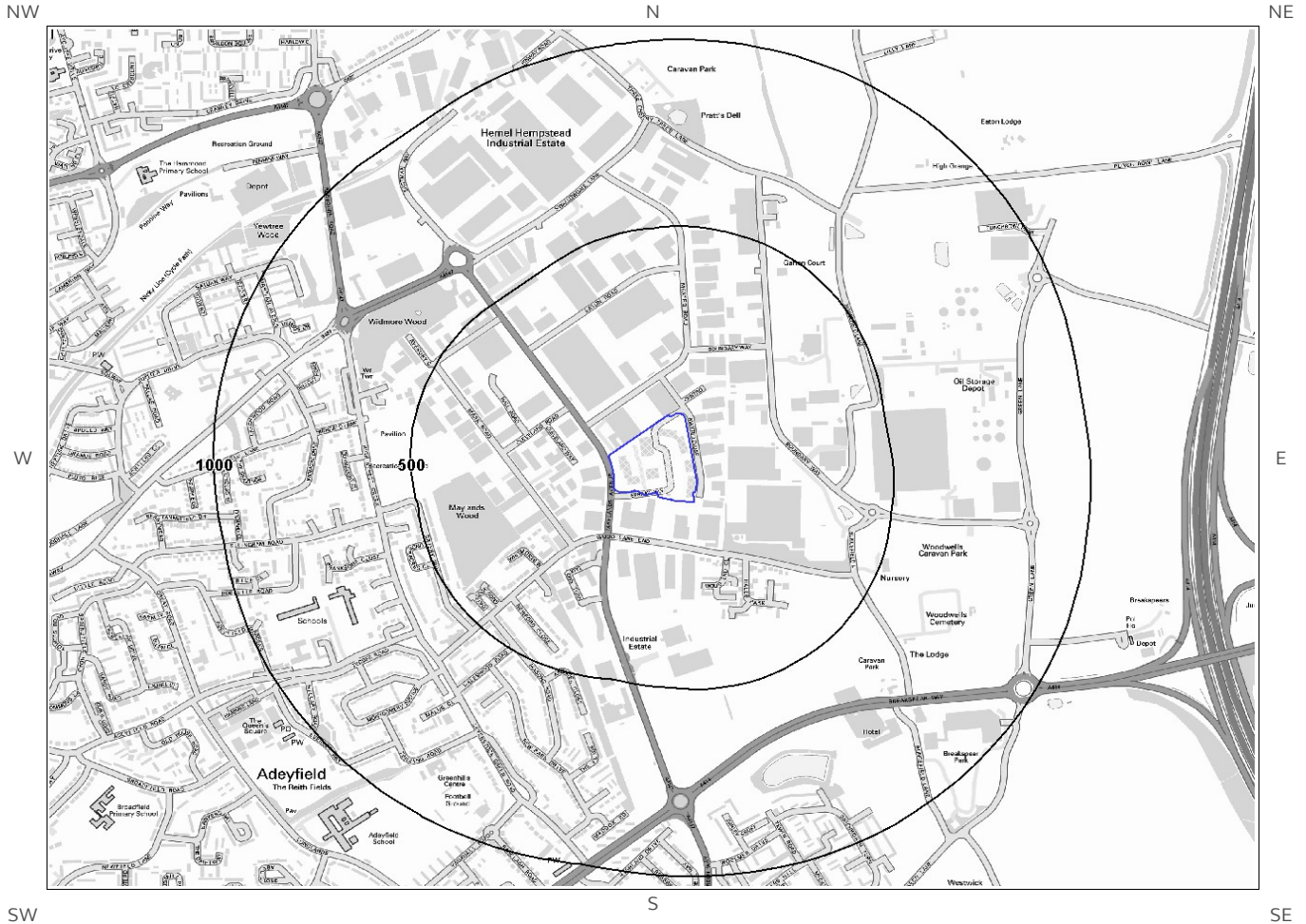
Database searched and no data found at this scale.

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

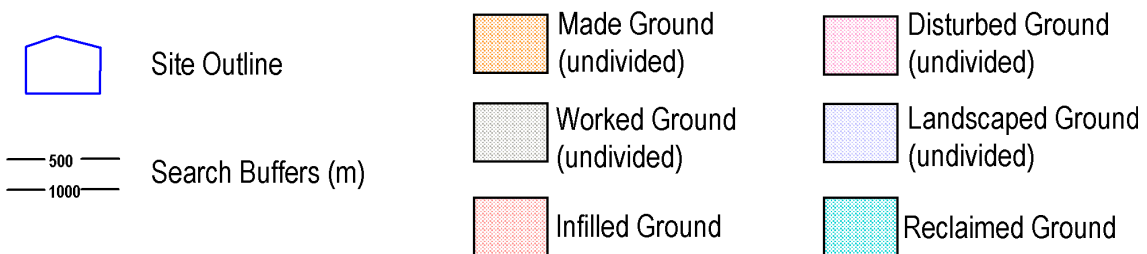
This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



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2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 238

2.1.1 Artificial/ Made Ground

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

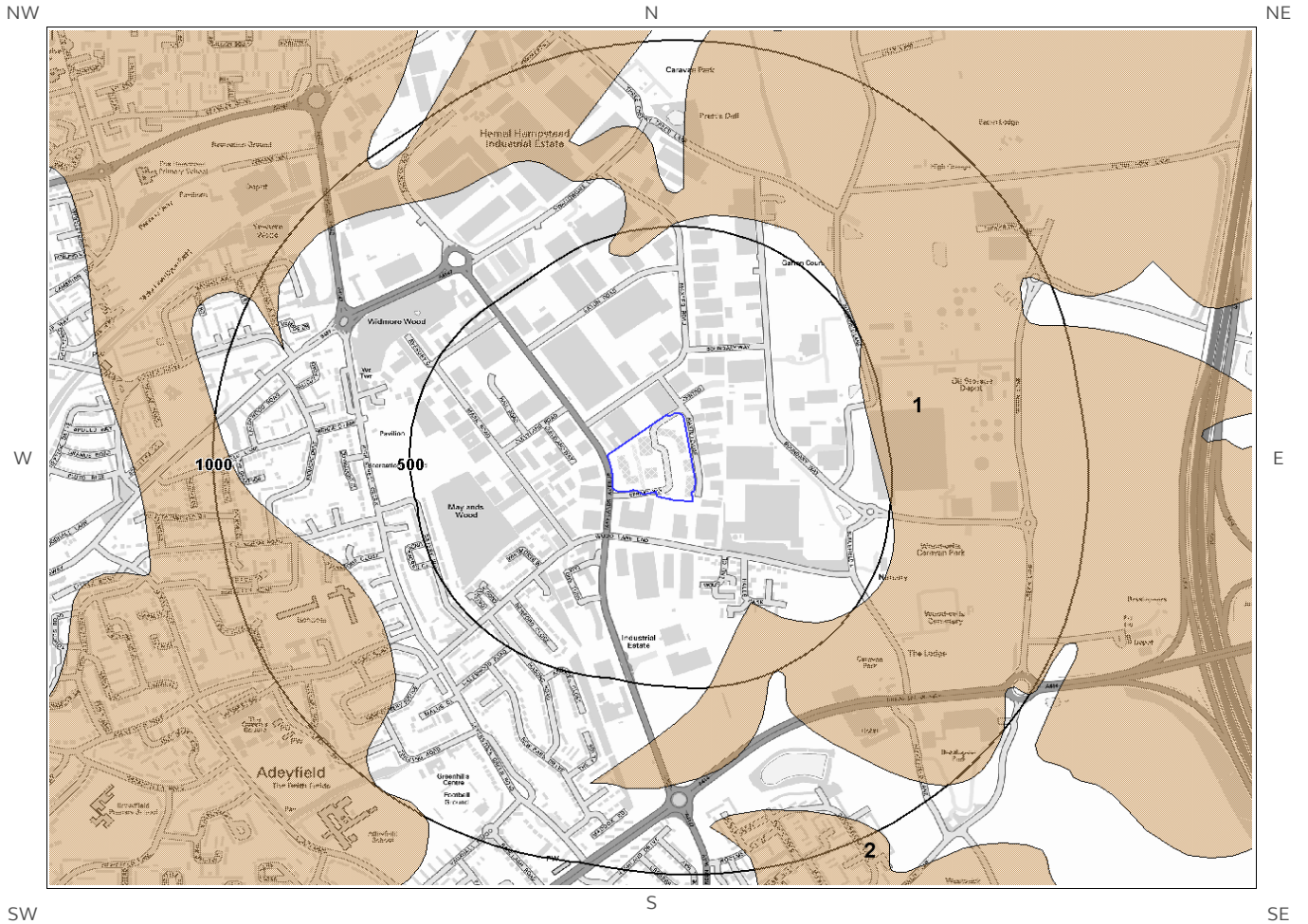
Database searched and no data found.

2.1.2 Permeability of Artificial Ground

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

Database searched and no data found.

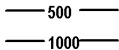
2.2 Superficial Deposits and Landslips map (1:50,000 scale)



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Site Outline



Search Buffers (m)

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

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

ID	Distance	Direction	LEX Code	Description	Rock Description
1	308.0	SE	CWF-XCZSV	CLAY-WITH-FLINTS FORMATION	CLAY, SILT, SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

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

Database searched and no data found.

2.2.3 Landslip

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

Database searched and no data found.

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

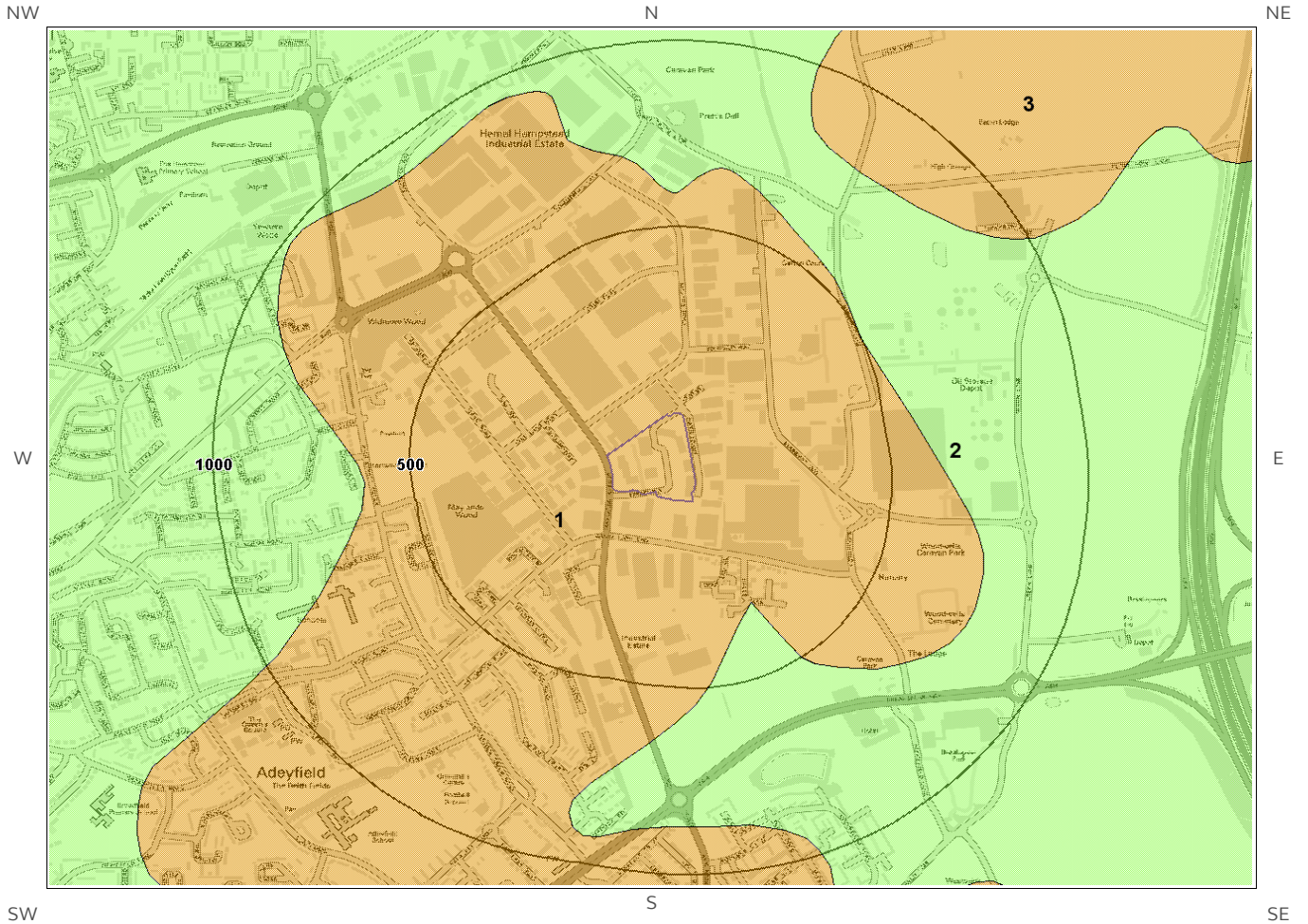
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

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

Database searched and no data found.

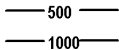
2.3 Bedrock and linear features map (1:50,000 scale)



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Site Outline



Search Buffers (m)

2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 238

2.3.1 Bedrock/Solid Geology

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

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	LMBE-XCZS	LAMBETH GROUP - CLAY, SILT AND SAND	THANETIAN
2	308.0	SE	LESE-CHLK	LEWES NODULAR CHALK FORMATION AND SEAFORD CHALK FORMATION (UNDIFFERENTIATED) - CHALK	TURONIAN

2.3.2 Permeability of Bedrock Ground

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

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

2.3.3 Linear features

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

Database searched and no data found.

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

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

3 Radon Data

3.1 Radon Affected Areas

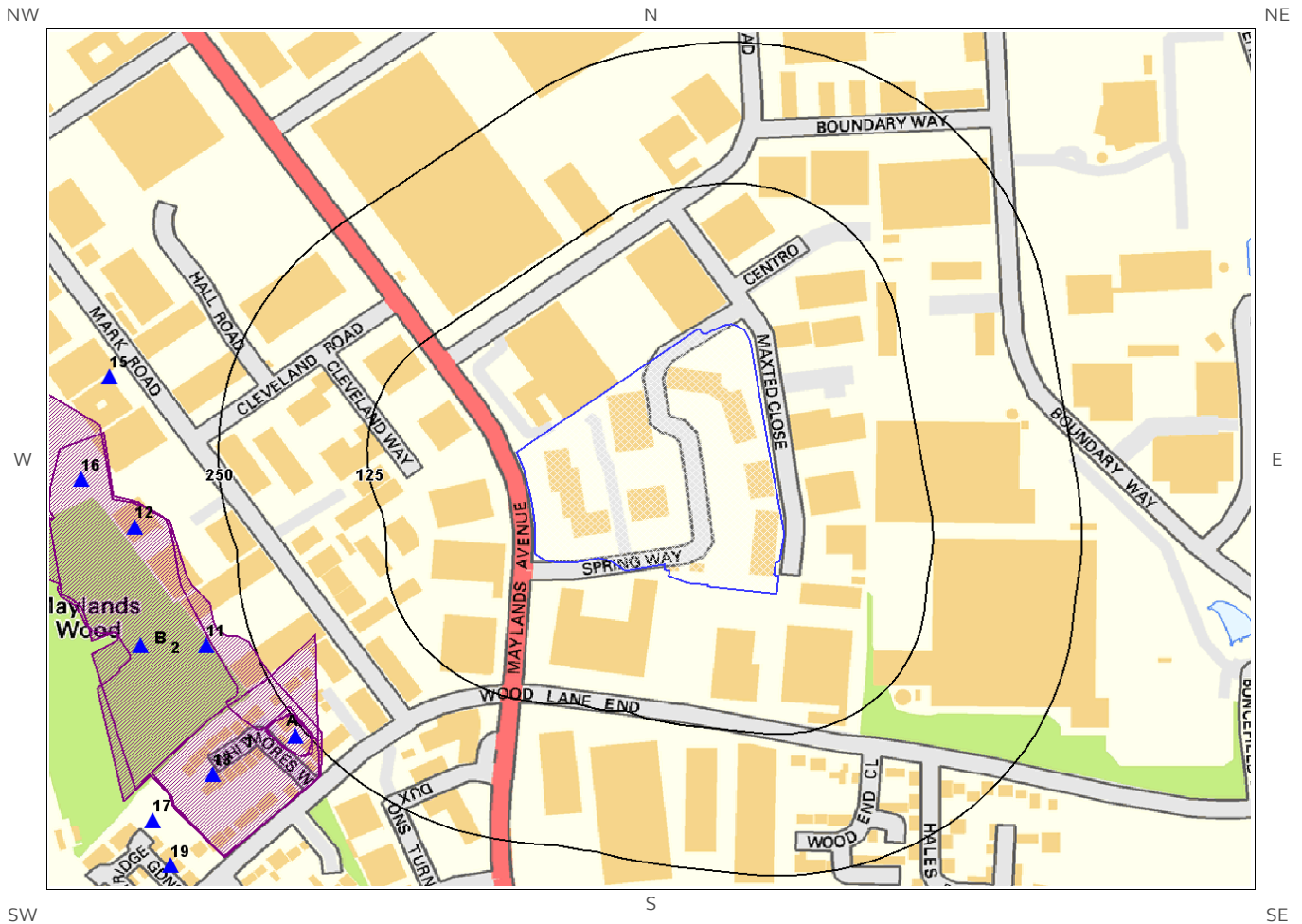
Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

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

3.2 Radon Protection




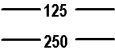

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

4 Ground Workings map



Ground Workings Legend

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

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

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

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

ID	Distance (m)	Direction	NGR	Use	Date
1	198.0	W	507624 207937	Disused Brick Works	1938
2	240.0	SW	507582 208026	Brick Works	1897
3A	246.0	SW	507670 207946	Unspecified Pit	1938
4A	246.0	SW	507670 207946	Unspecified Pit	1938
5B	247.0	SW	507555 207996	Disused Brick Works	1947
6B	247.0	SW	507555 207996	Disused Brick Works	1922
7A	247.0	SW	507669 207945	Unspecified Pit	1922
8A	247.0	SW	507669 207945	Unspecified Pit	1947
9A	247.0	SW	507669 207945	Unspecified Pit	1897

4.2 Historical Underground Working Features derived from Historical Mapping

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

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

Database searched and no data found.

4.3 Current Ground Workings

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

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

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

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
10A	258.0	SW	507675 207945	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
11	288.0	W	507600 208025	Clay & Shale	Gillingham's Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
12	327.0	W	507540 208130	Clay & Shale	Gillingham's Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
13	335.0	SW	507605 207911	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
14B	341.0	W	507545 208025	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
15	348.0	W	507519 208263	Clay & Shale	Highstreet Farm Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
16	366.0	W	507495 208172	Clay & Shale	Gillingham's Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
17	399.0	SW	507555 207870	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	410.0	W	507451 208225	Clay & Shale	Gillingham's Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
19	413.0	SW	507570 207830	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	426.0	SW	507576 207804	Chalk	Woodlane-end Brick Field Chalk Mine	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	457.0	SW	507530 207808	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	612.0	NW	507400 208600	Clay & Shale	Widmore Wood Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	617.0	NW	507463 208669	Chalk	Widmore Wood Chalkwell	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	759.0	NW	507375 208780	Clay & Shale	Widmore Brickworks	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

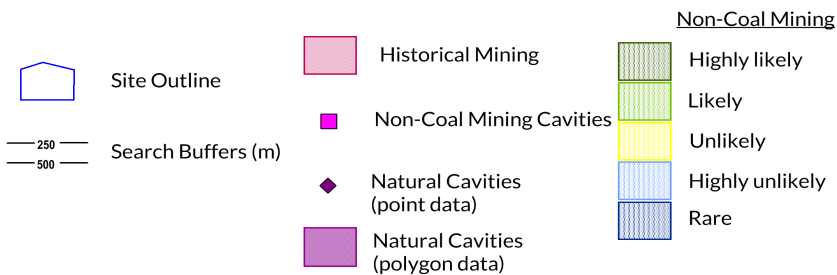
ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	798.0	N	508042 209108	Chalk	Pratt's Dell	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	822.0	W	507039 208159	Chalk	Bohemia Chalk Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	845.0	NW	507245 208775	Clay & Shale	Widmore Brickworks	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	876.0	NW	507415 208955	Clay & Shale	Widmore Brickworks	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	951.0	W	506946 208458	Chalk	Highfield Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	987.0	S	508060 207085	Clay & Shale	Leverstock Green	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

5 Mining, Extraction & Natural Cavities map



Mining, Extraction and Natural Cavities Legend

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5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

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

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

Database searched and no data found.

5.2 Coal Mining

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

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

Database searched and no data found.

5.3 Johnson Poole and Bloomer

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

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

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

5.4 Non-Coal Mining

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

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	0.0	On Site	Not available	Chalk	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
2	308.0	SE	Not available	Chalk	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
3A	517.0	NW	Widmore Wood	Chalk	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
4A	567.0	NW	Widmore Wood	Chalk	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
5	793.0	NE	Not available	Chalk	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

5.5 Non-Coal Mining Cavities

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

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? Yes

The following Non-Coal Mining Cavities information provided by Peter Brett Associates:

ID	Distance (m)	Direction	NGR	Address	Superficial Deposits	Bedrock Deposits	Extracted Mineral
6	345.0	SW	507600 207900	Hemel Hempstead, Hertfordshire	-	Lambeth Group, Upper Chalk Formation	Chalk
7	434.0	SW	507570 207800	Hemel Hempstead, Hertfordshire	-	Lambeth Group, Chalk Group	Chalk

5.6 Natural Cavities

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

Are there any Natural Cavities within 1000m of the study site boundary? Yes

The following Natural Cavities information provided by Peter Brett Associates:

ID	Distance (m)	Direction	NGR	Superficial Deposits	Bedrock Deposits	Cavity Type and Number
8	297.0	SE	508200 207800	Clay-with-Flints	Chalk Group, Lambeth Group	Solution Pipe x 1
9	631.0	SW	507500 207600	-	Chalk Group, Lambeth Group	Solution Pipe x 6
10	662.0	W	507200 208250	-	Chalk Group, Lambeth Group	Solution Pipe x 1
Not shown	724.0	NW	507600 208900	Clay-with-Flints	Chalk Group, Chalk Group, Lambeth Group	Solution Pipe x 10

5.7 Brine Extraction

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

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

Database searched and no data found.

5.8 Gypsum Extraction

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

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

Database searched and no data found.

5.9 Cornwall and Devon Metalliferous Mining

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

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

Database searched and no data found.

5.10 Clay Mining

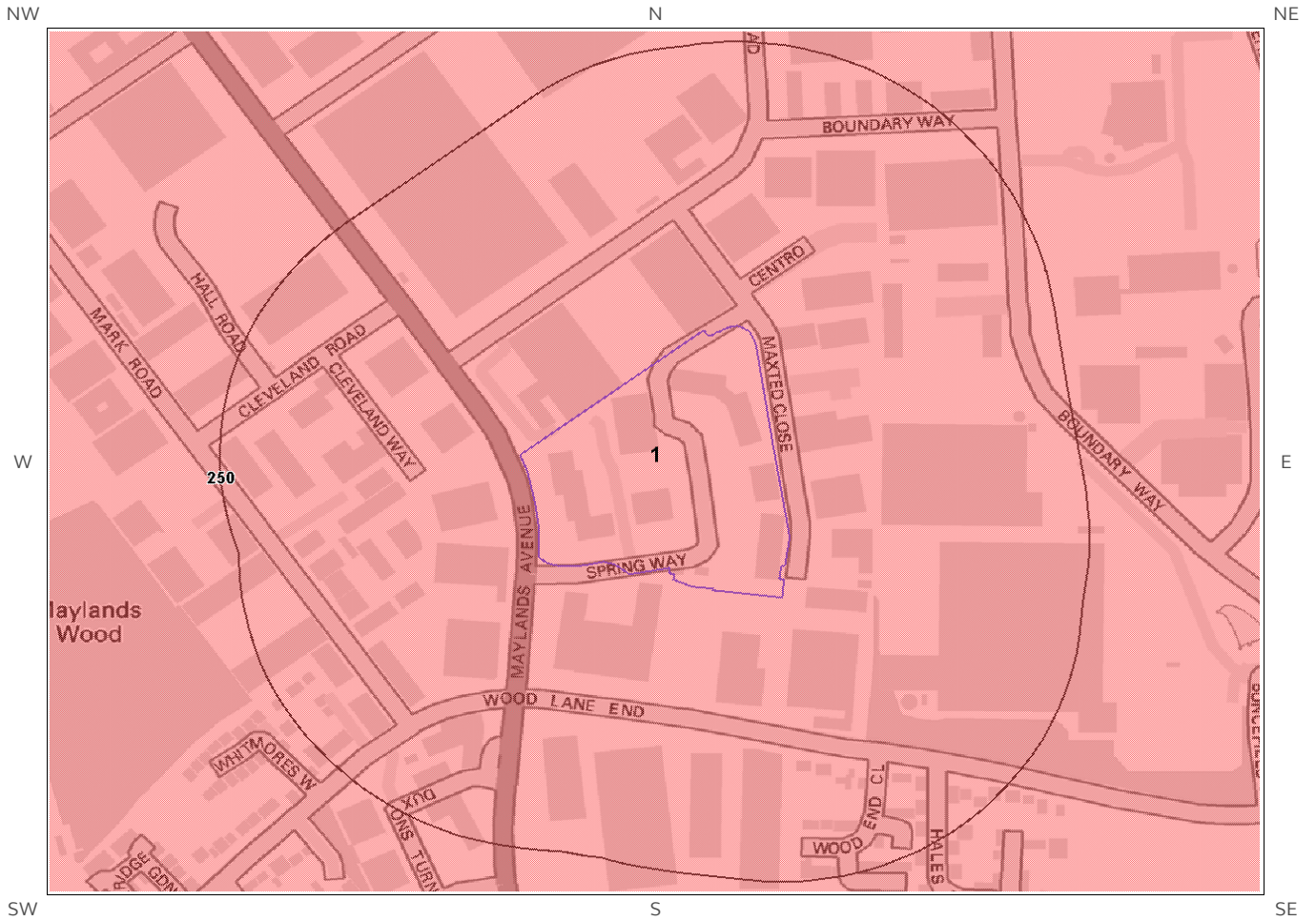
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

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

Database searched and no data found.

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map

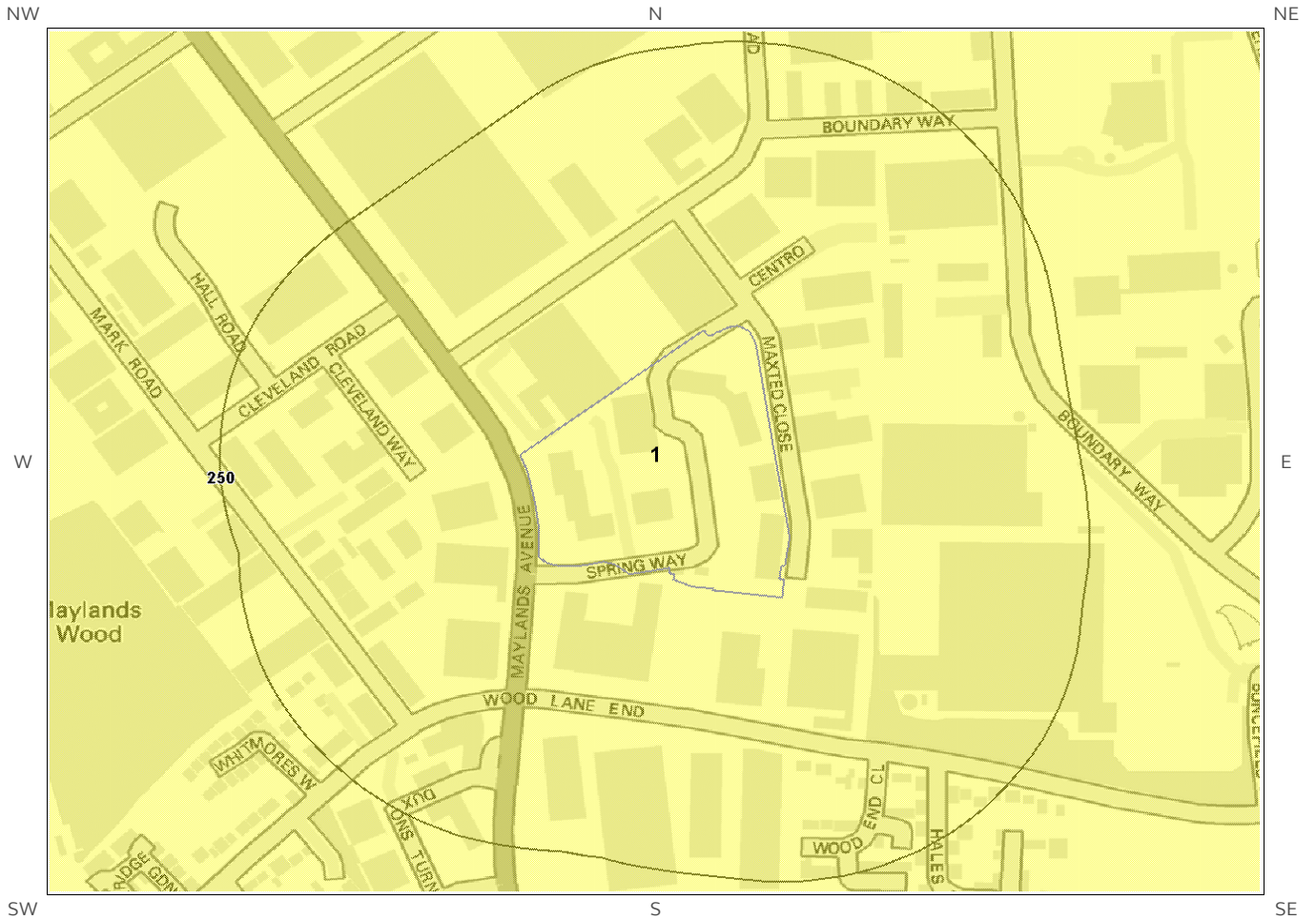


Shrink Swell Clay Legend

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6.2 Landslides map

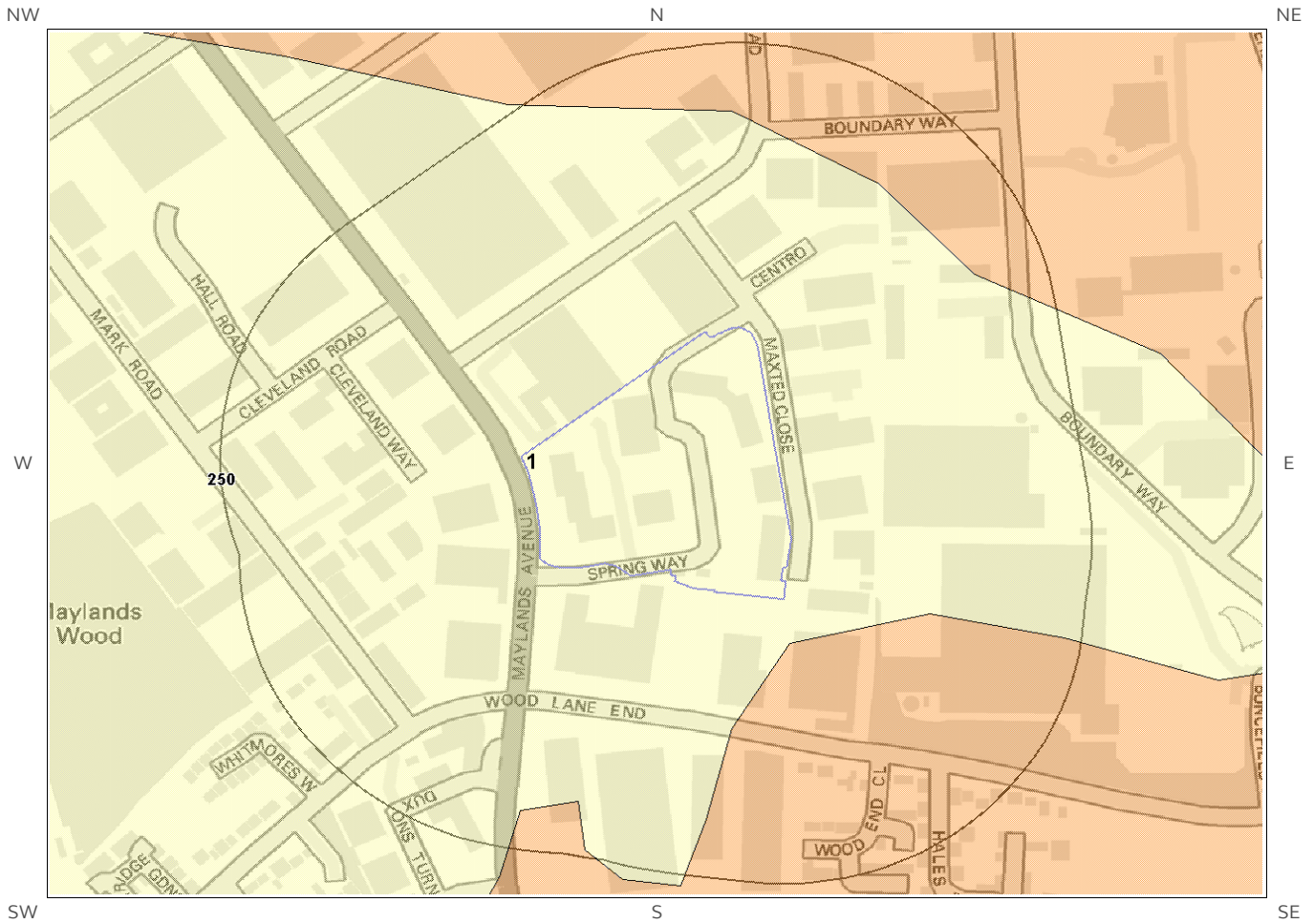


Landslides Legend

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6.3 Ground Dissolution of Soluble Rocks map

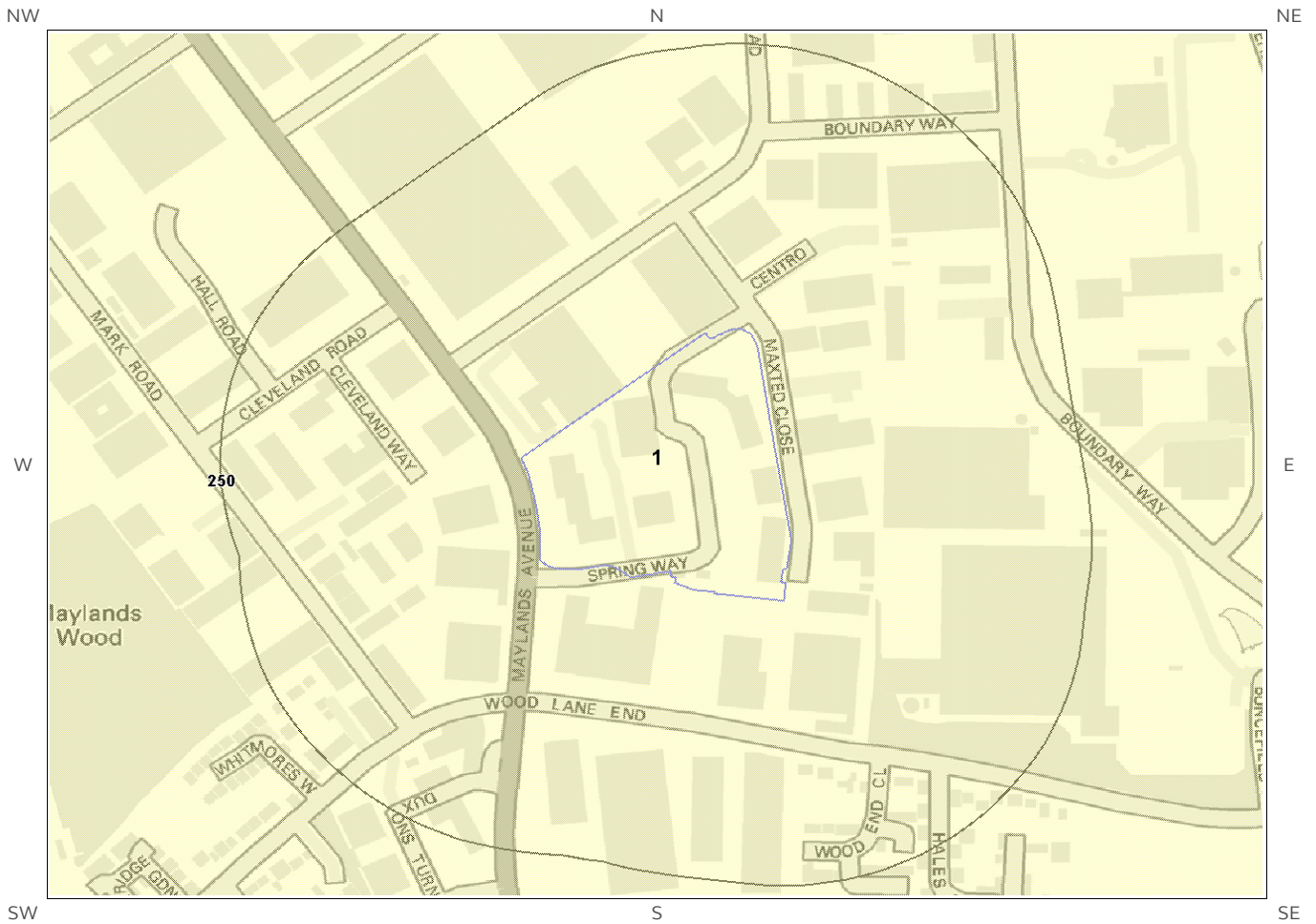


Ground Dissolution Soluble Rocks Legend

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6.4 Compressible Deposits map

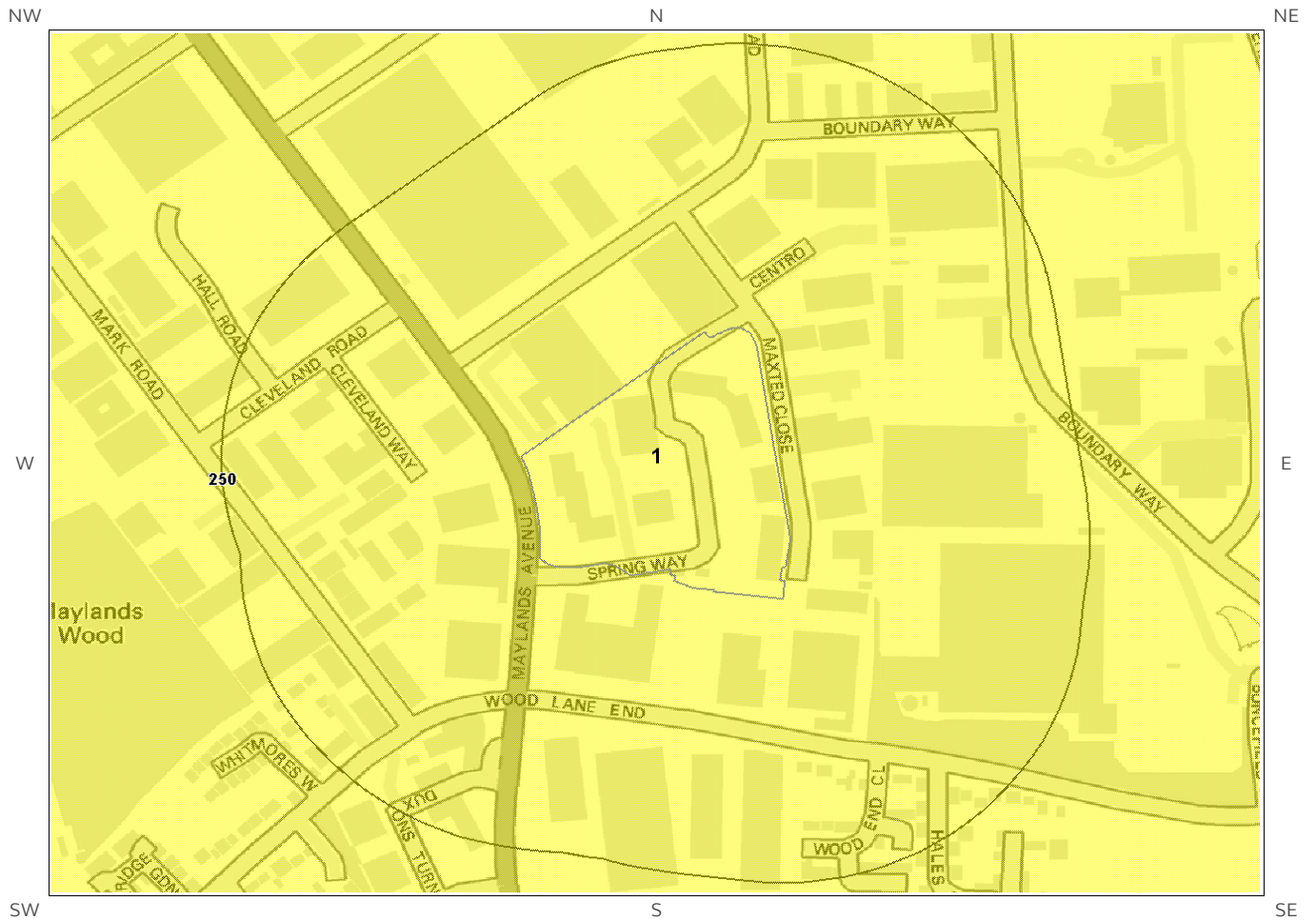


Compressible Deposits Legend

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6.5 Collapsible Deposits map

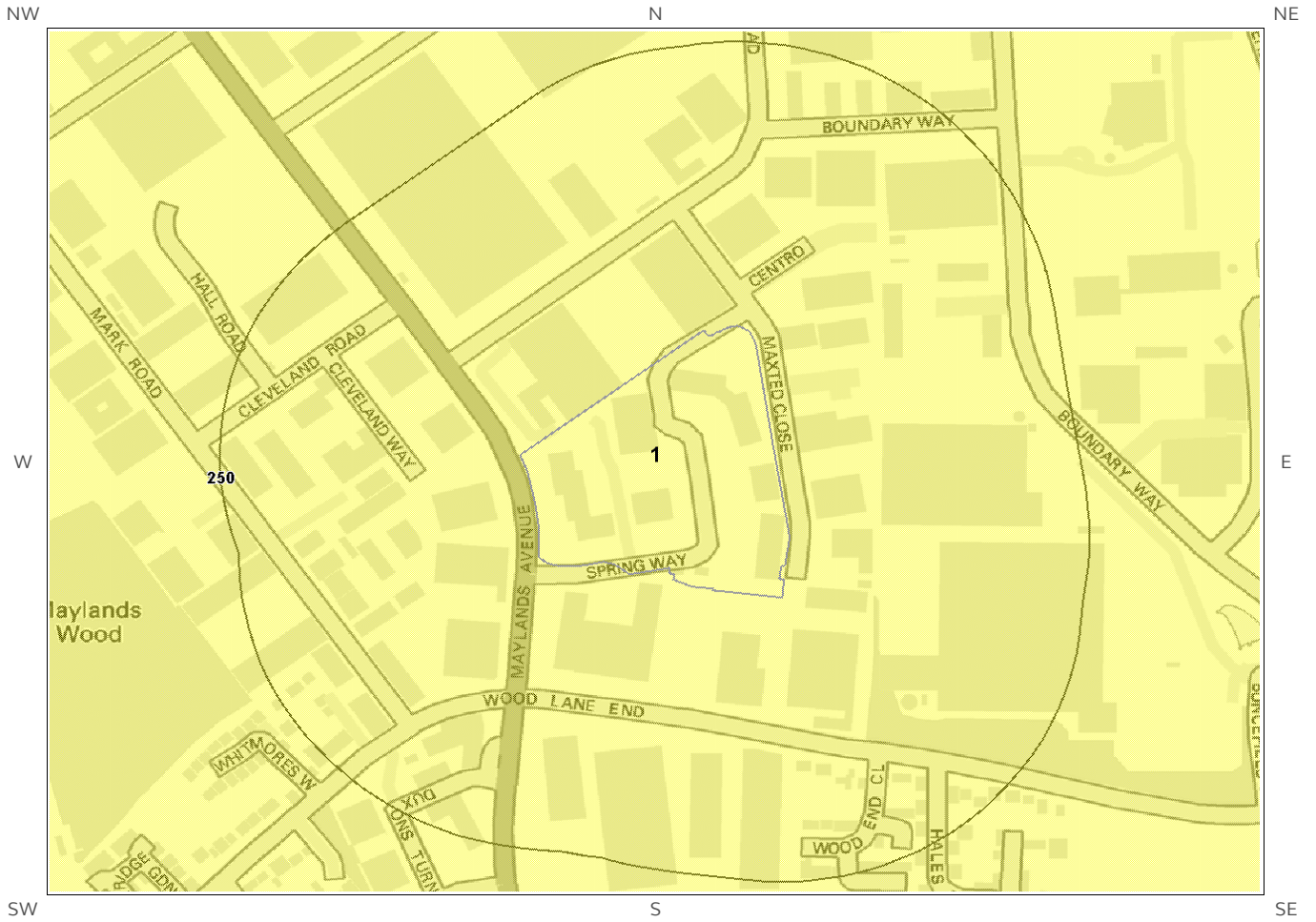


Collapsible Deposits Legend

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6.6 Running Sand map



Running Sand Legend

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6 Natural Ground Subsidence

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

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

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

6.1 Shrink-Swell Clays

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

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

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

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

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

6.3 Ground Dissolution of Soluble Rocks

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

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.
2	39.0	S	Low	Significant soluble rocks are present. Low possibility of subsidence occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow. Consider implications for stability when changes to drainage or new construction are planned. For new build - site investigation should consider potential for dissolution problems on the site and its surroundings. Care should be taken with local drainage into the bedrock. Some possibility groundwater pollution. For existing property - possible increase in insurance risk due to soluble rocks.

6.4 Compressible Deposits

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

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

6.5 Collapsible Deposits

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

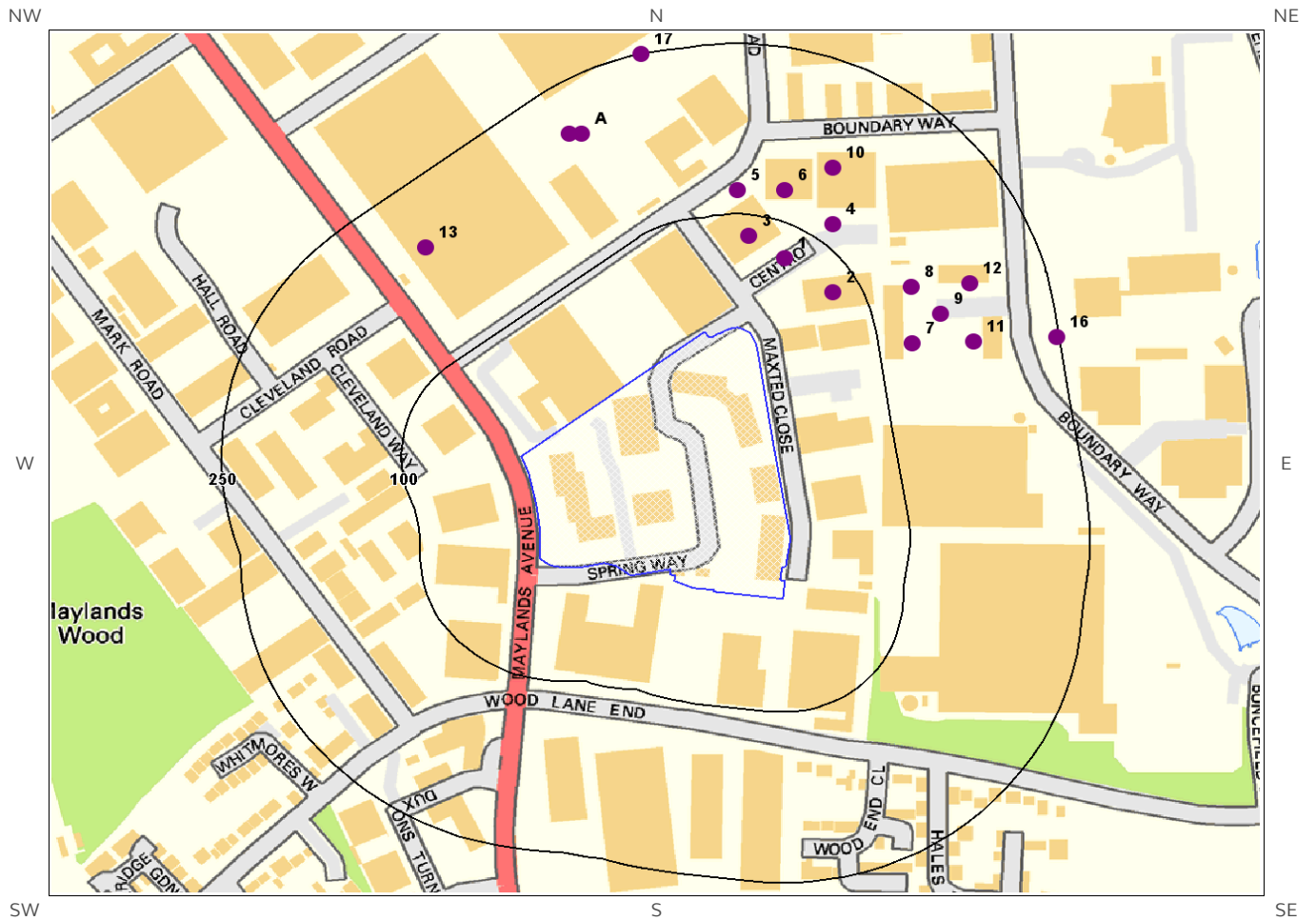
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible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

6.6 Running Sands

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

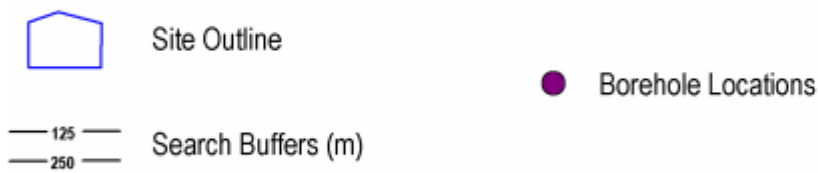
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased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

7 Borehole Records map



Borehole Records Legend

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7 Borehole Records

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

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

17

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	71.0	NE	508080 208370	TL00NE43	10	MAXTED RD HEMEL HEMPSTEAD 3
2	77.0	NE	508120 208340	TL00NE98	19.45	MAXTED ROAD HEMEL HEMPSTEAD 104
3	81.0	N	508050 208390	TL00NE95	16.6	MAXTED ROAD HEMEL HEMPSTEAD 101
4	118.0	NE	508120 208400	TL00NE97	20.5	MAXTED ROAD HEMEL HEMPSTEAD 103
5	120.0	N	508040 208430	TL00NE41	10	MAXTED RD HEMEL HEMPSTEAD 1
6	126.0	N	508080 208430	TL00NE42	15	MAXTED RD HEMEL HEMPSTEAD 2
7	128.0	E	508186 208295	TL00NE118	10	BOUNDARY WAY HEMEL HEMPSTEAD 2
8	138.0	E	508185 208345	TL00NE117	20	BOUNDARY WAY HEMEL HEMPSTEAD 1
9	156.0	E	508210 208321	TL00NE119	6	BOUNDARY WAY HEMEL HEMPSTEAD 3
10	160.0	NE	508120 208450	TL00NE96	21.5	MAXTED ROAD HEMEL HEMPSTEAD 102
11	178.0	E	508237 208297	TL00NE121	6	BOUNDARY WAY HEMEL HEMPSTEAD 5
12	185.0	E	508234 208348	TL00NE120	6	BOUNDARY WAY HEMEL HEMPSTEAD 4
13	196.0	NW	507780 208380	TL00NE327	No details	DEXION FAXTORY EATON ROAD HEMEL HEMPSTEAD 6
14A	202.0	NW	507910 208480	TL00NE328	No details	DEXION FAXTORY EATON ROAD HEMEL HEMPSTEAD 8
15A	208.0	NW	507900 208480	TL00NE332	No details	DEXION FAXTORY EATON ROAD HEMEL HEMPSTEAD TP4
16	248.0	E	508307 208301	TL00NE123	6	BOUNDARY WAY HEMEL HEMPSTEAD 7
17	250.0	N	507960 208550	TL00NE326	No details	DEXION FAXTORY EATON ROAD HEMEL HEMPSTEAD 5

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

- #1: scans.bgs.ac.uk/sobi_scans/boreholes/521030
 - #2: scans.bgs.ac.uk/sobi_scans/boreholes/15954437
 - #3: scans.bgs.ac.uk/sobi_scans/boreholes/15954433
 - #4: scans.bgs.ac.uk/sobi_scans/boreholes/15954435
 - #5: scans.bgs.ac.uk/sobi_scans/boreholes/521028
 - #6: scans.bgs.ac.uk/sobi_scans/boreholes/521029
 - #7: scans.bgs.ac.uk/sobi_scans/boreholes/17863680
 - #8: scans.bgs.ac.uk/sobi_scans/boreholes/17863679
 - #9: scans.bgs.ac.uk/sobi_scans/boreholes/17863681
 - #10: scans.bgs.ac.uk/sobi_scans/boreholes/15954434
 - #11: scans.bgs.ac.uk/sobi_scans/boreholes/17863683
 - #12: scans.bgs.ac.uk/sobi_scans/boreholes/17863682
 - #16: scans.bgs.ac.uk/sobi_scans/boreholes/17863685
-

8 Estimated Background Soil Chemistry

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

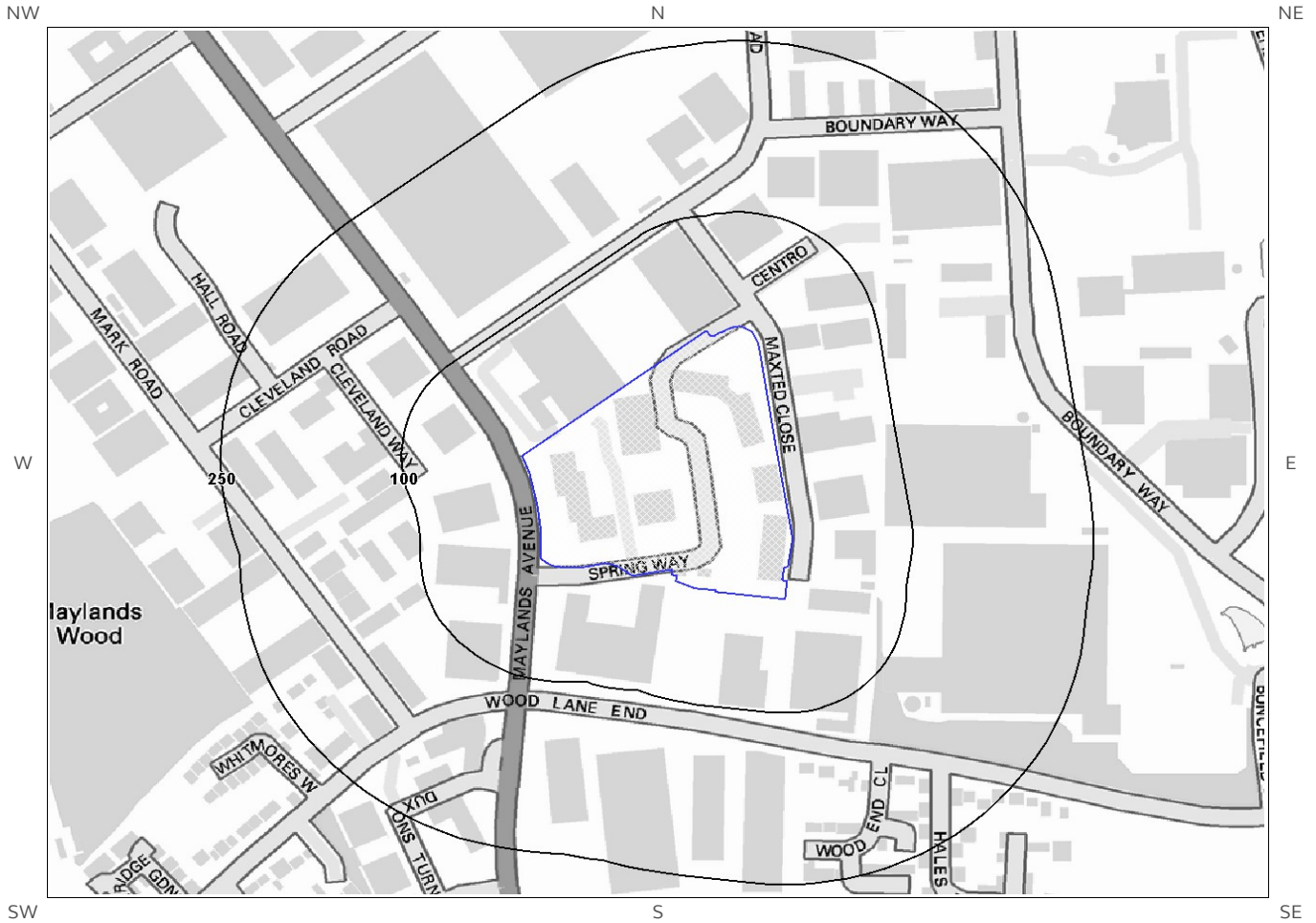
2

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

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg













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

9 Railways and Tunnels map



Railways and Tunnels Legend

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	Site Outline		Underground or Partially Underground Railway / Subway System		Railway Track (OpenStreetMap)
	250 Search Buffers (m)		Railway Tunnel (OS Mapping)		High Speed 2
	500 Search Buffers (m)		Abandoned or Dismantled Railway (OpenStreetMap)		High Speed 2 Revised Proposed Route
			Railway Track (OS Mapping)		Crossrail 1
					Railway and/or Tunnel Feature from Historical Mapping

9 Railways and Tunnels

9.1 Tunnels

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

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

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

Database searched and no data found.

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

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

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

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

Database searched and no data found.

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

9.2 Historical Railway and Tunnel Features

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

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

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

Database searched and no data found.

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

9.3 Historical Railways

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

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

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

Database searched and no data found.

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

9.4 Active Railways

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

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

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

Database searched and no data found.

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

9.5 Railway Projects

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

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

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

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

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

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

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BGS Geological Hazards Reports and general geological enquiries



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The Coal Authority

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<https://www.gov.uk/government/organisations/public-health-england>
Email: enquiries@phe.gov.uk
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Standard Terms and Conditions

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

APPENDICES

Appendix 03 GroundSure – GeoInsight - Centro

Address: Centro Data Centre, 3 Boundary Way, Hemel Hempstead, HP2 7SU,
Date: 25 Nov 2019
Reference: EMS-579577_777909
Client: emapsite

NW N NE

W E



SW S SE

Aerial Photograph Capture date: 12-Aug-2016
Grid Reference: 508130,208437
Site Size: 0.4533ha

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Overview of Findings

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

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

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

Section 1: Geology 1:10,000 Scale		
1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	No
	1.2.2 Are there any records of landslip within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	No
Section 2: Geology 1:50,000 Scale		
2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	No
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	No
	2.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features

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

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

Yes

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

No

Section 3: Radon

3. Radon

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

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

3.2 Radon Protection

No radon protective measures are necessary.

Section 4: Ground Workings

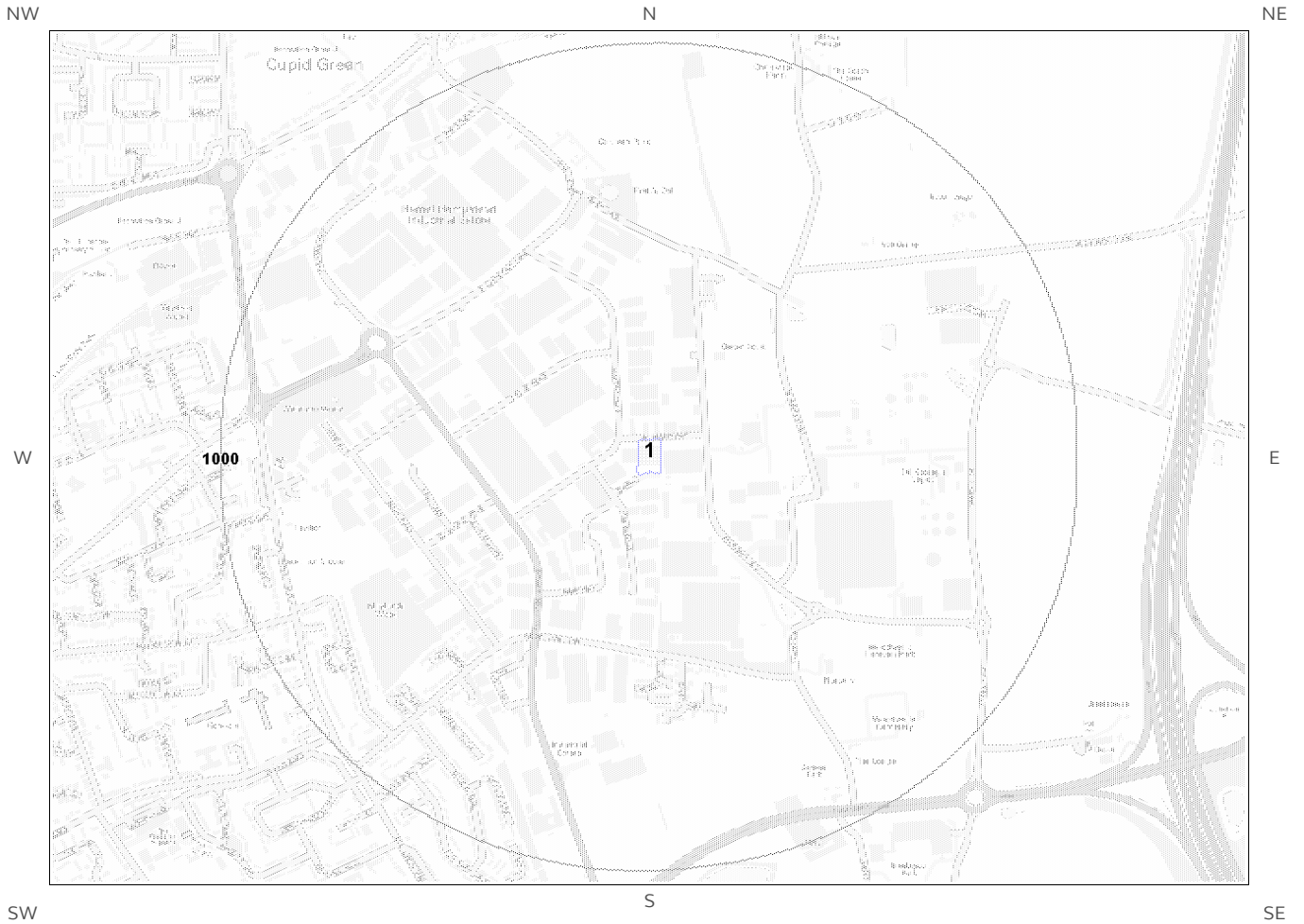
	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	0	0	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	0	0	19

Section 5: Mining, Extraction & Natural Cavities

	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	0
5.2 Coal Mining	0	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	1	0	0	1	3
5.5 Non-Coal Mining Cavities	0	0	0	0	2
5.5 Natural Cavities	0	0	0	0	4

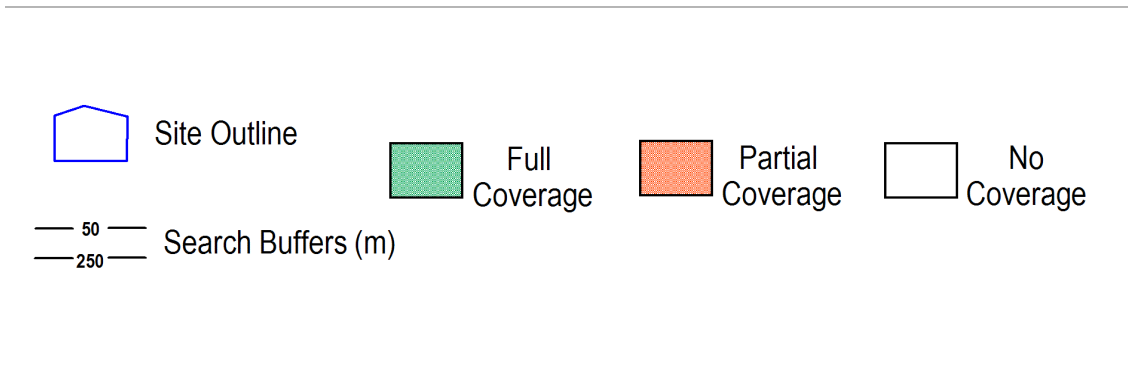
Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Cornwall and Devon Metalliferous Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0
Section 6: Natural Ground Subsidence	On-site				
6.1 Shrink-Swell Clay	Moderate				
6.2 Landslides	Very Low				
6.3 Ground Dissolution of Soluble Rocks	Low				
6.4 Compressible Deposits	Negligible				
6.5 Collapsible Deposits	Very Low				
6.5 Running Sand	Very Low				
Section 7: Borehole Records	On-site	0-50m	51-250		
7 BGS Recorded Boreholes	2	2	19		
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
8 Records of Background Soil Chemistry	1	1	0		
Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500	
9.1 Tunnels	0	0	0	Not Searched	
9.2 Historical Railway and Tunnel Features	0	0	0	Not Searched	
9.3 Historical Railways	0	0	0	Not Searched	
9.4 Active Railways	0	0	0	Not Searched	
9.5 Railway Projects	0	0	0	0	

1:10,000 Scale Availability



1_10,000 Availability Legend

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Availability of 1:10,000 Scale Geology Mapping

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

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	No deposits are mapped	No coverage	No coverage	No coverage

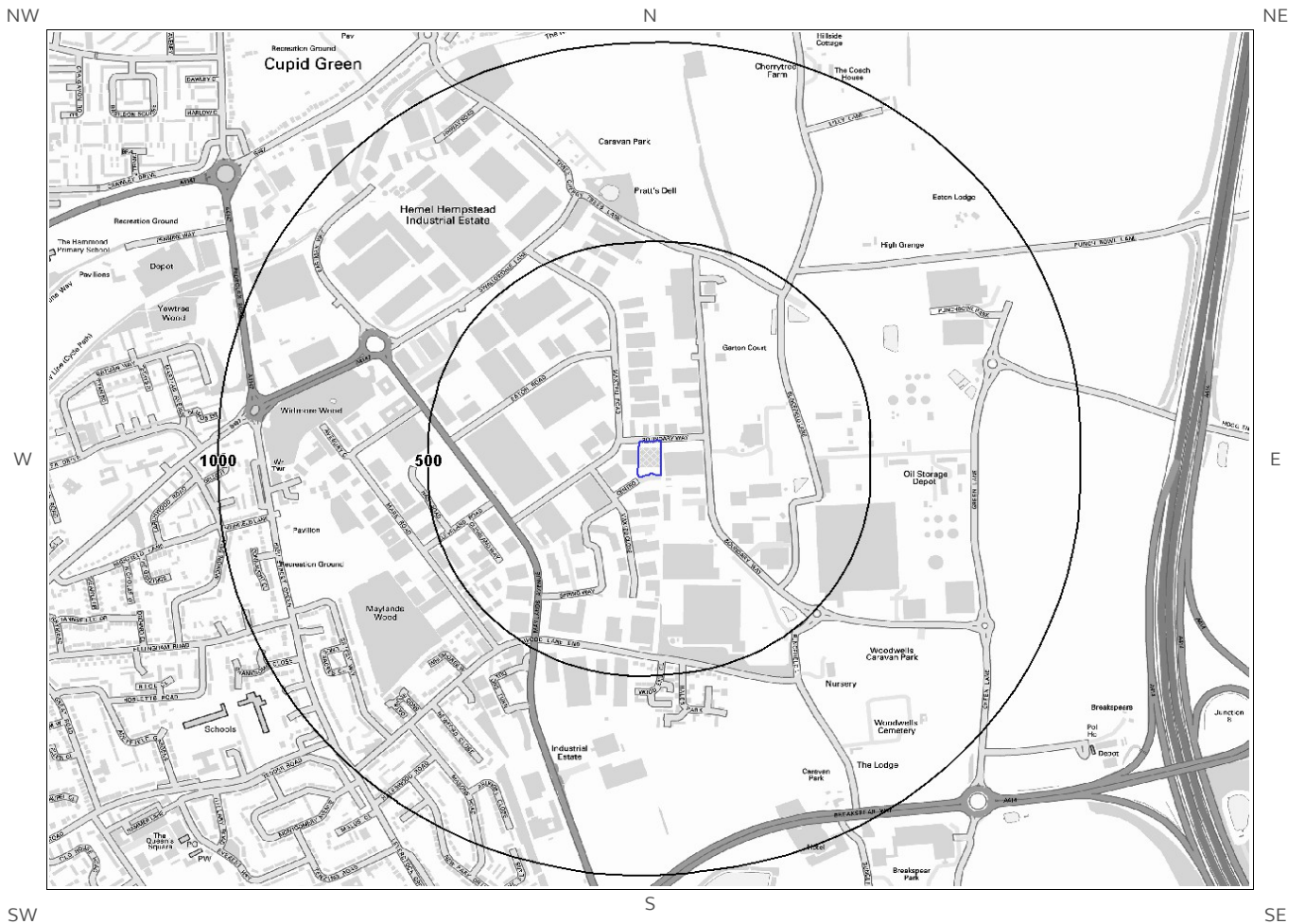
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not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

The definitions of coverage are as follows:

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




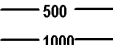




1 Geology (1:10,000 scale).

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



Artificial Ground Legend

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	Site Outline		Made Ground (undivided)		Disturbed Ground (undivided)
	Search Buffers (m)		Worked Ground (undivided)		Landscaped Ground (undivided)
			Infilled Ground		Reclaimed Ground

1. Geology 1:10,000 scale

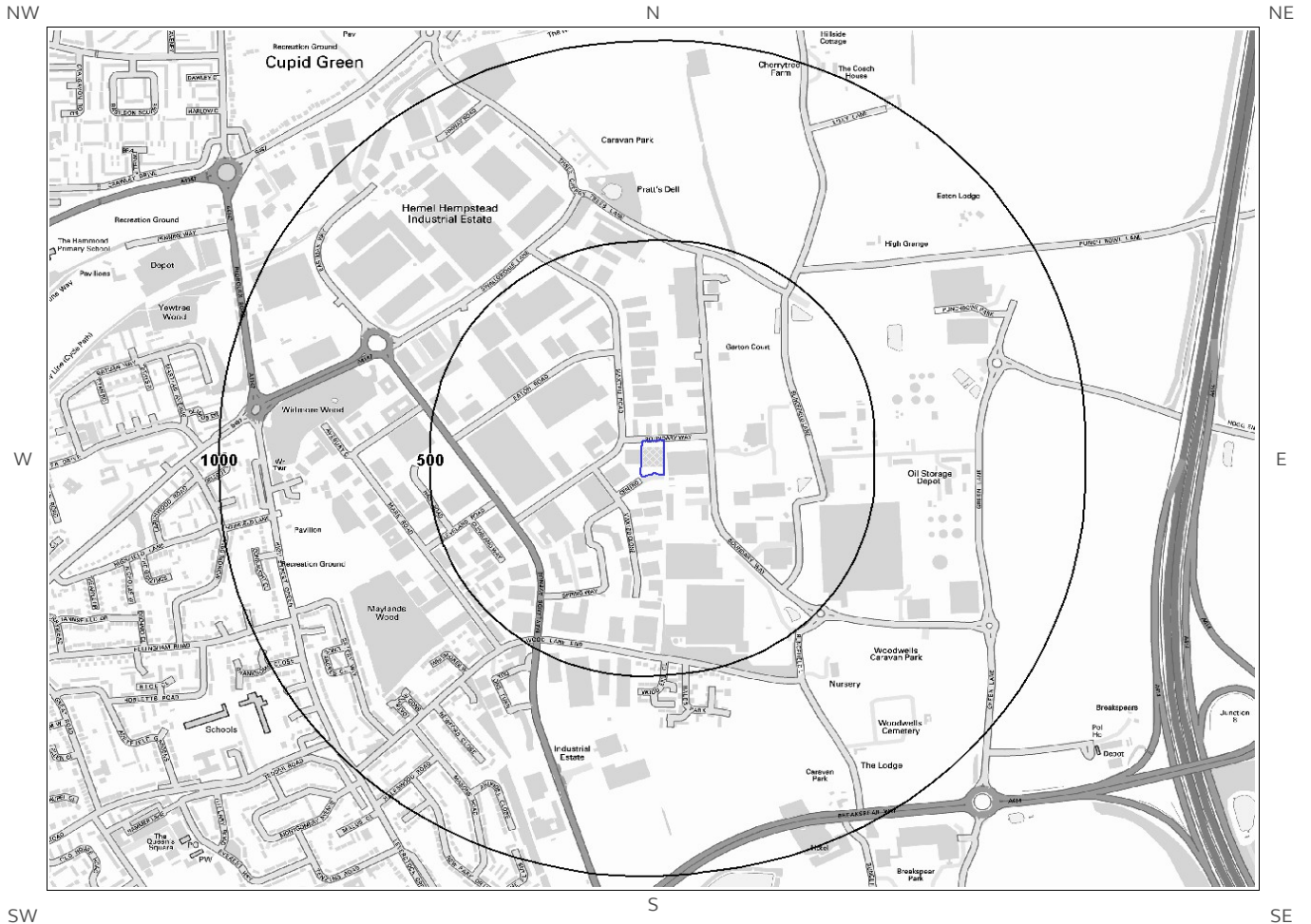
1.1 Artificial Ground

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

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

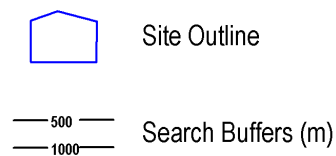
Database searched and no data found.

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



Artificial Ground Legend

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1.2 Superficial Deposits and Landslips

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

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

1.2.2 Landslip

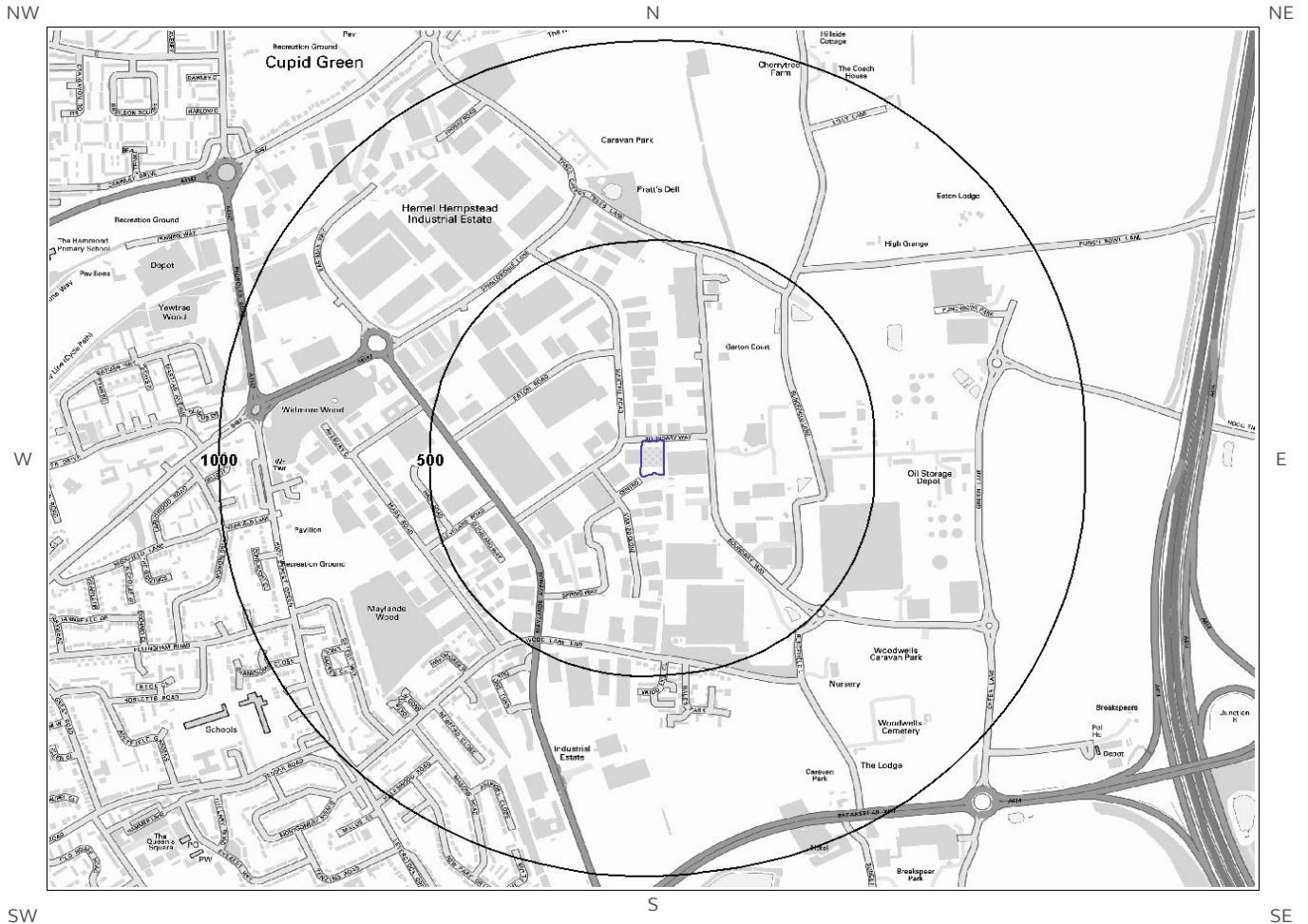
Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

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




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

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



Bedrock and linear features Legend

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-  Site Outline
 -  500
 -  1000
- Search Buffers (m)

1.3 Bedrock and linear features

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

1.3.1 Bedrock/ Solid Geology

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

Database searched and no data found at this scale.

1.3.2 Linear features

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

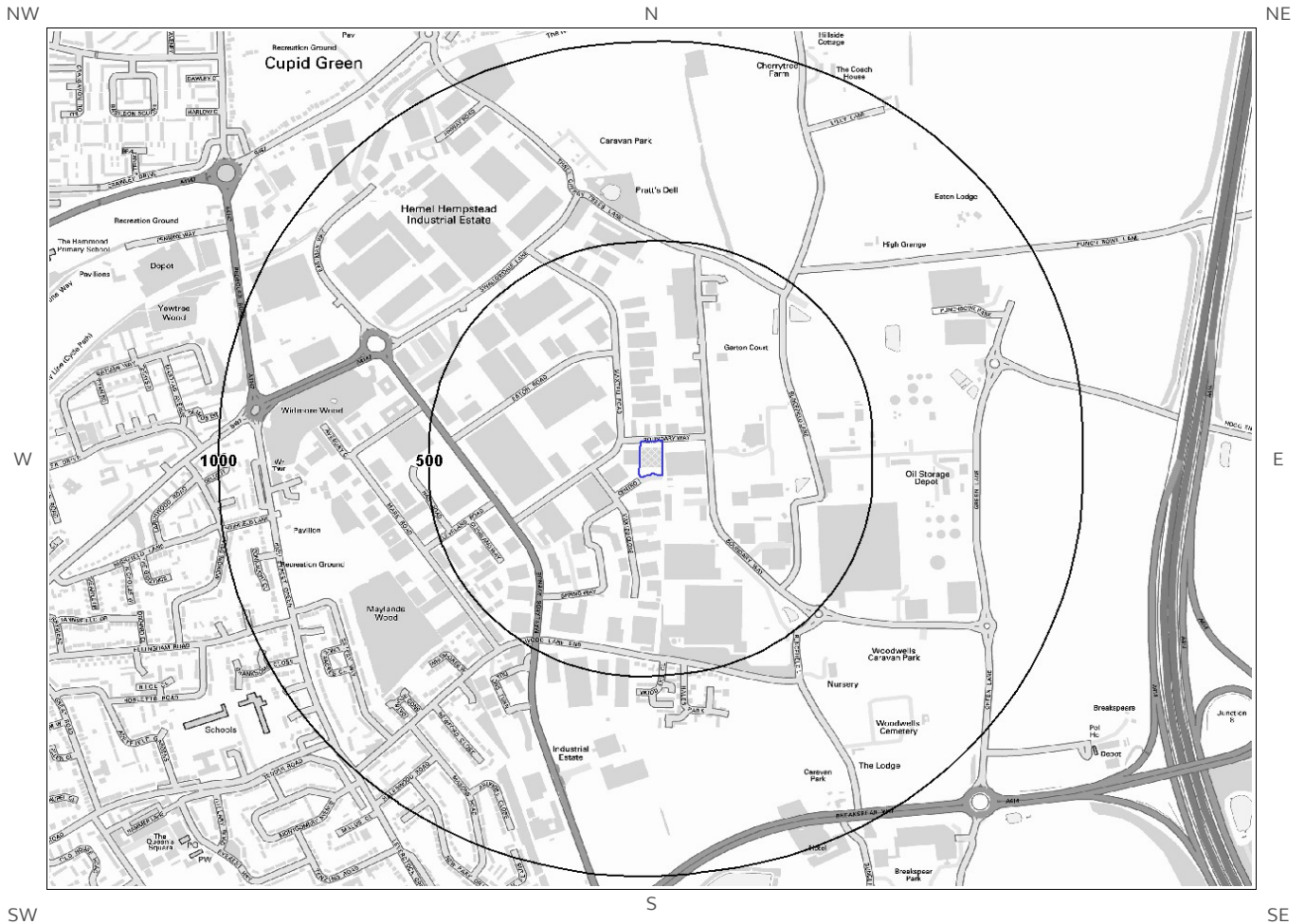
Database searched and no data found at this scale.

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

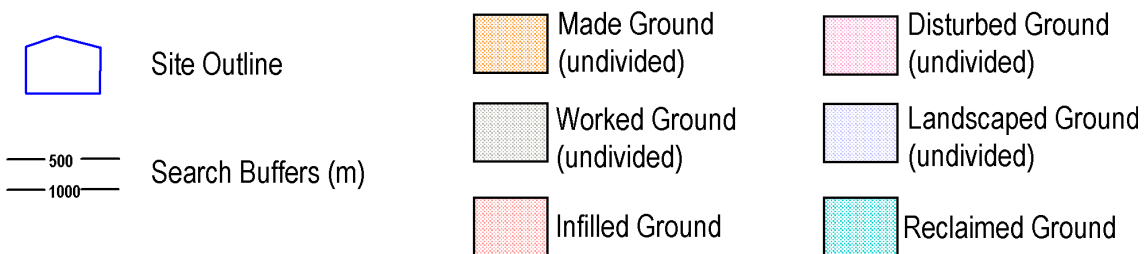
This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



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2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 238

2.1.1 Artificial/ Made Ground

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

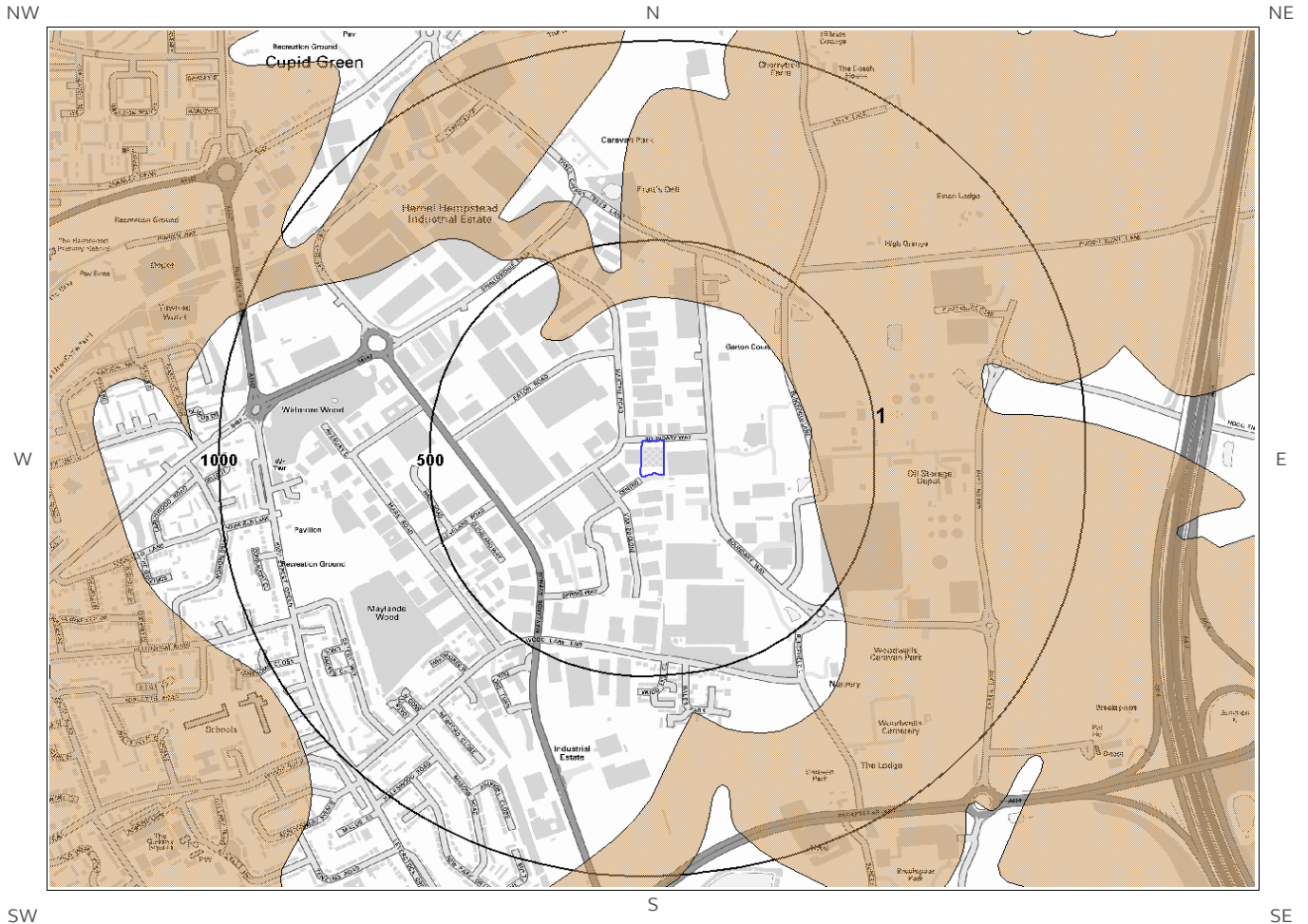
Database searched and no data found.

2.1.2 Permeability of Artificial Ground

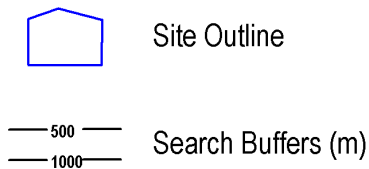
Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

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



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2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

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

ID	Distance	Direction	LEX Code	Description	Rock Description
1	315.0	NW	CWF-XCZSV	CLAY-WITH-FLINTS FORMATION	CLAY, SILT, SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

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

Database searched and no data found.

2.2.3 Landslip

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

Database searched and no data found.

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

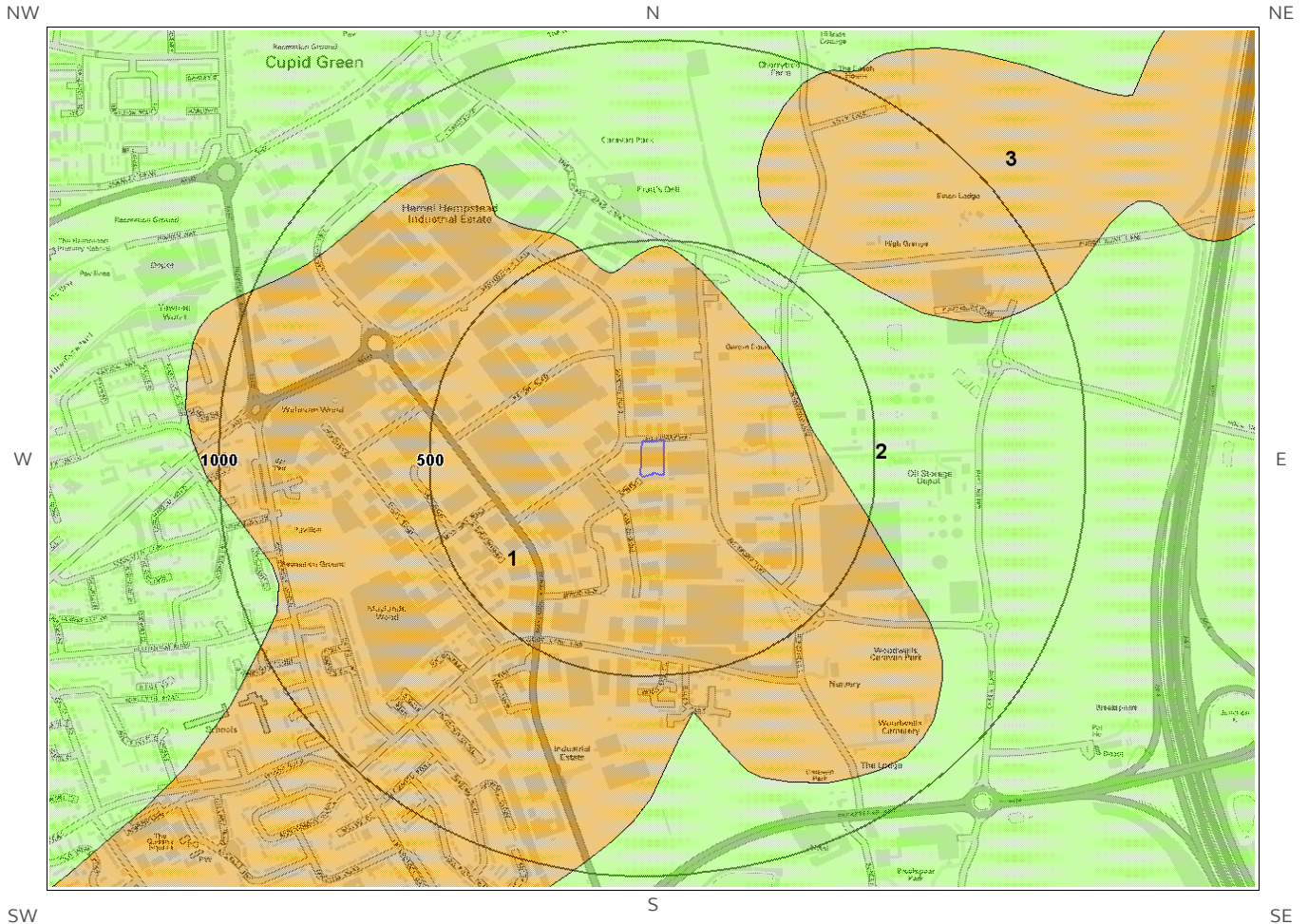
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

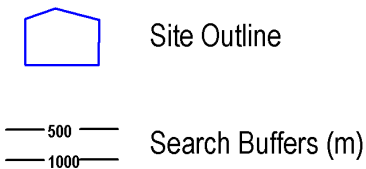
Are there any records relating to permeability of landslips within the study site boundary? No

Database searched and no data found.

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



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2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 238

2.3.1 Bedrock/Solid Geology

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

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	LMBE-XCZS	LAMBETH GROUP - CLAY, SILT AND SAND	THANETIAN
2	336.0	NE	LESE-CHLK	LEWES NODULAR CHALK FORMATION AND SEAFORD CHALK FORMATION (UNDIFFERENTIATED) - CHALK	TURONIAN

2.3.2 Permeability of Bedrock Ground

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

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

2.3.3 Linear features

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

Database searched and no data found.

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

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

3 Radon Data

3.1 Radon Affected Areas

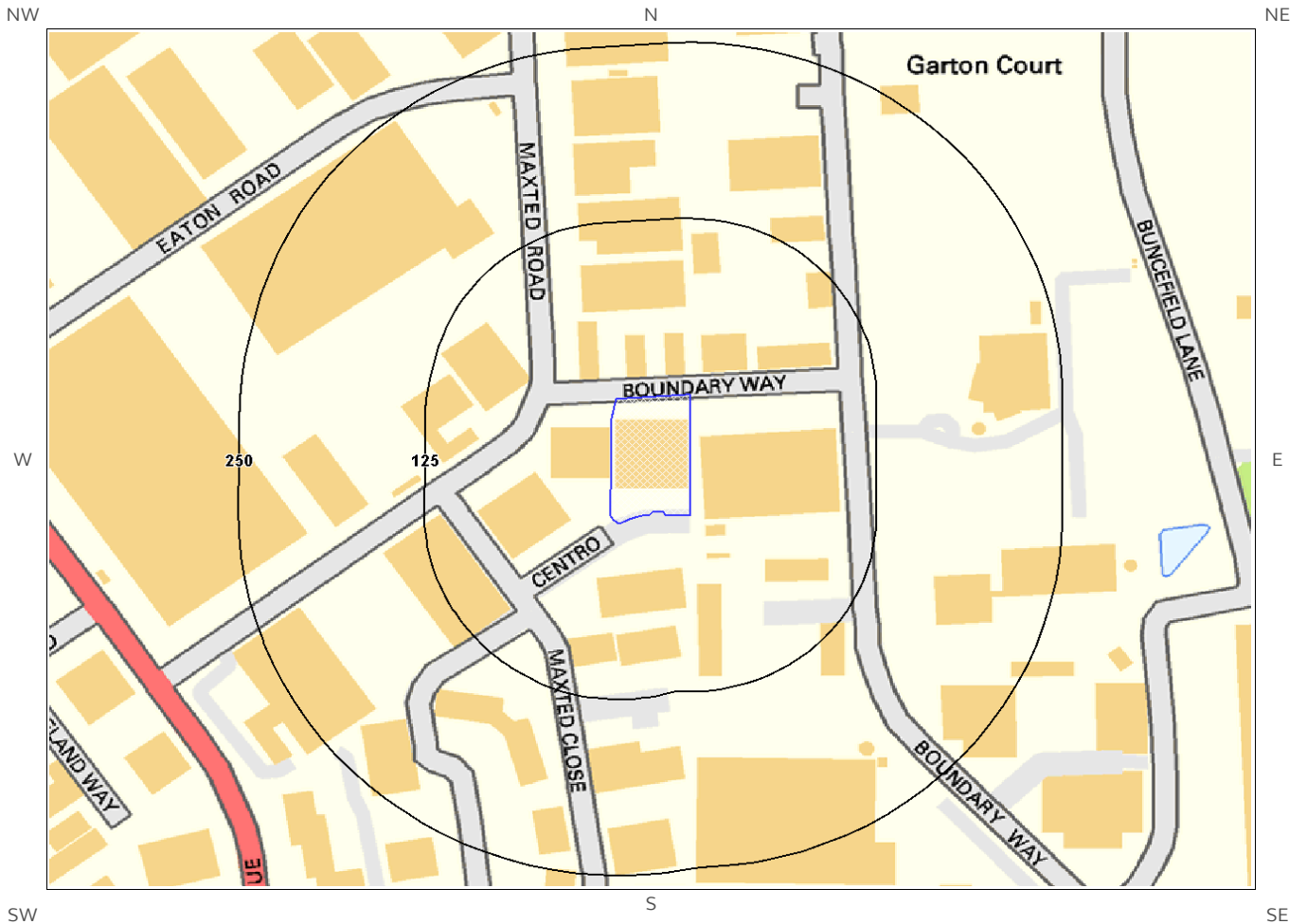
Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

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

3.2 Radon Protection





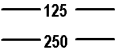
Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

4 Ground Workings map



Ground Workings Legend

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

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

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

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? No

Database searched and no data found.

4.2 Historical Underground Working Features derived from Historical Mapping

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

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

Database searched and no data found.

4.3 Current Ground Workings

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

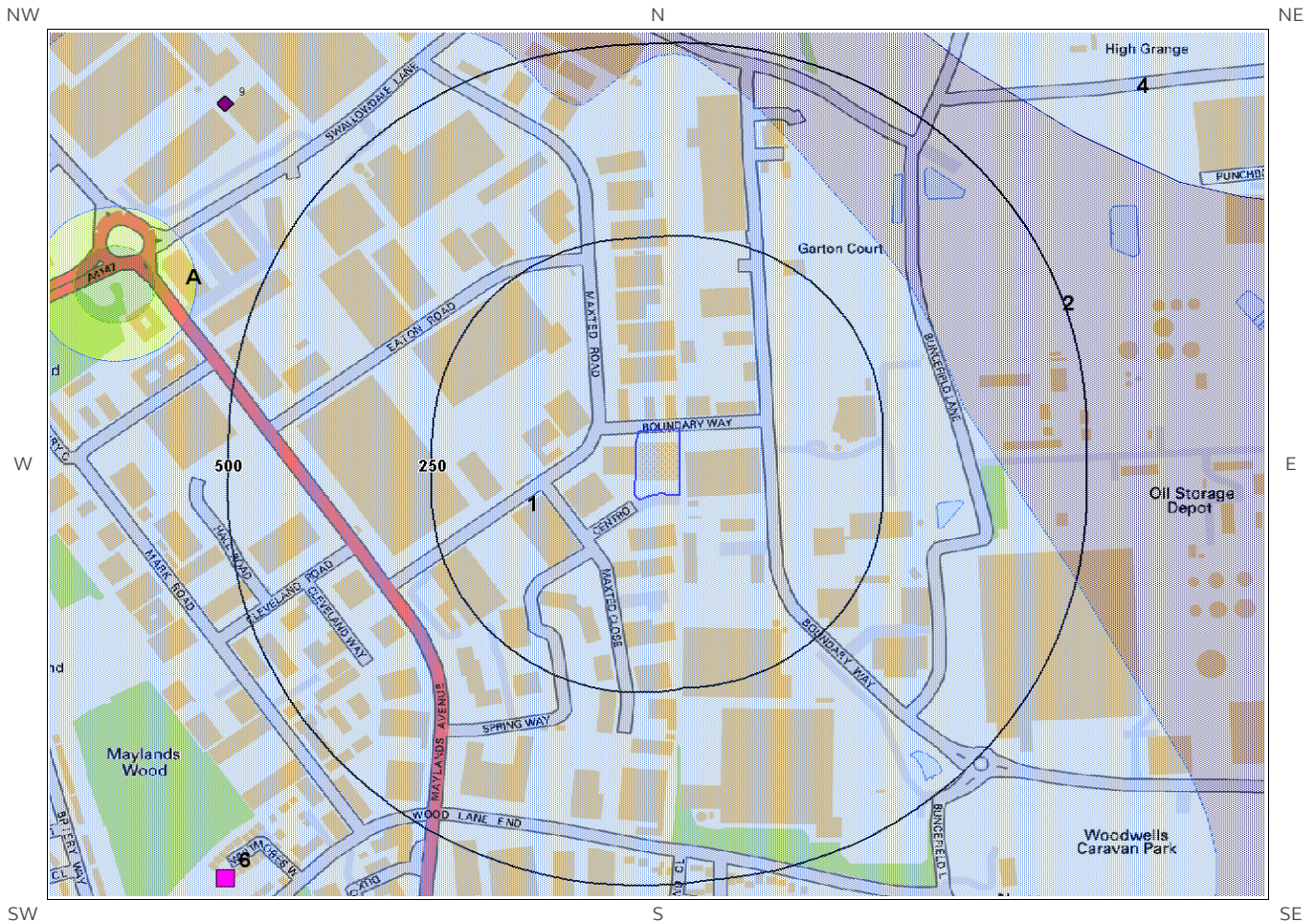
Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

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

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	599.0	W	507519 208263	Clay & Shale	Highstreet Farm Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	620.0	SW	507675 207945	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	623.0	SW	507540 208130	Clay & Shale	Gillingham's Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	624.0	SW	507600 208025	Clay & Shale	Gillingham's Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	633.0	N	508042 209108	Chalk	Pratt's Dell	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

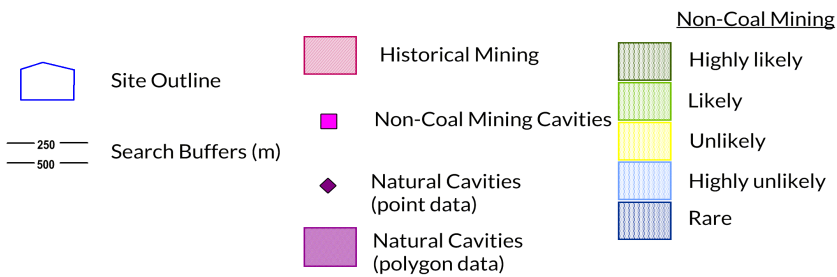
ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	648.0	W	507495 208172	Clay & Shale	Gillingham's Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	670.0	SW	507545 208025	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	672.0	W	507463 208669	Chalk	Widmore Wood Chalkwell	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	674.0	W	507451 208225	Clay & Shale	Gillingham's Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	694.0	SW	507605 207911	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	717.0	W	507400 208600	Clay & Shale	Widmore Wood Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	758.0	SW	507555 207870	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	776.0	SW	507570 207830	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	791.0	SW	507576 207804	Chalk	Woodlane-end Brick Field Chalk Mine	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	792.0	W	507375 208780	Clay & Shale	Widmore Brickworks	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	820.0	SW	507530 207808	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	840.0	NW	507415 208955	Clay & Shale	Widmore Brickworks	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	901.0	NW	507610 209230	Clay & Shale	Claydales Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	912.0	W	507245 208775	Clay & Shale	Widmore Brickworks	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

5 Mining, Extraction & Natural Cavities map



Mining, Extraction and Natural Cavities Legend

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5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

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

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

Database searched and no data found.

5.2 Coal Mining

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

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

Database searched and no data found.

5.3 Johnson Poole and Bloomer

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

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

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

5.4 Non-Coal Mining

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

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	0.0	On Site	Not available	Chalk	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
2	336.0	NE	Not available	Chalk	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
3A	571.0	W	Widmore Wood	Chalk	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
4	588.0	NE	Not available	Chalk	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
5A	621.0	W	Widmore Wood	Chalk	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered

5.5 Non-Coal Mining Cavities

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

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? Yes

The following Non-Coal Mining Cavities information provided by Peter Brett Associates:

ID	Distance (m)	Direction	NGR	Address	Superficial Deposits	Bedrock Deposits	Extracted Mineral
6	705.0	SW	507600 207900	Hemel Hempstead, Hertfordshire	-	Lambeth Group, Upper Chalk Formation	Chalk
Not shown	798.0	SW	507570 207800	Hemel Hempstead, Hertfordshire	-	Lambeth Group, Chalk Group	Chalk

5.6 Natural Cavities

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

Are there any Natural Cavities within 1000m of the study site boundary? Yes

The following Natural Cavities information provided by Peter Brett Associates:

ID	Distance (m)	Direction	NGR	Superficial Deposits	Bedrock Deposits	Cavity Type and Number
Not shown	597.0	S	508200 207800	Clay-with-Flints	Chalk Group, Lambeth Group	Solution Pipe x 1
9	659.0	NW	507600 208900	Clay-with-Flints	Chalk Group, Chalk Group, Lambeth Group	Solution Pipe x 10
Not shown	915.0	W	507200 208250	-	Chalk Group, Lambeth Group	Solution Pipe x 1
Not shown	997.0	SW	507500 207600	-	Chalk Group, Lambeth Group	Solution Pipe x 6

5.7 Brine Extraction

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

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

Database searched and no data found.

5.8 Gypsum Extraction

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

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

Database searched and no data found.

5.9 Cornwall and Devon Metalliferous Mining

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

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

Database searched and no data found.

5.10 Clay Mining

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

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

Database searched and no data found.

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map

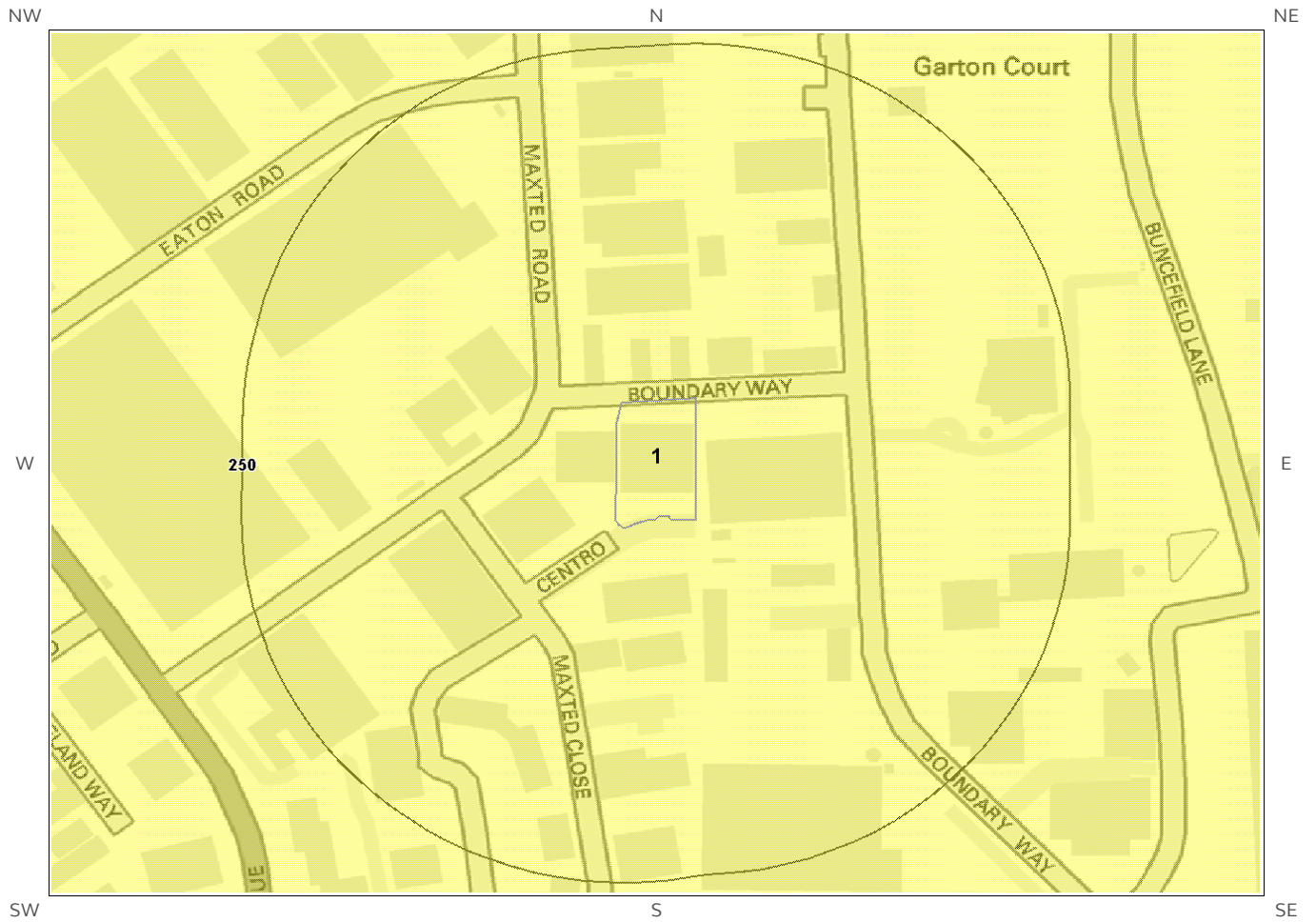


Shrink Swell Clay Legend

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6.2 Landslides map

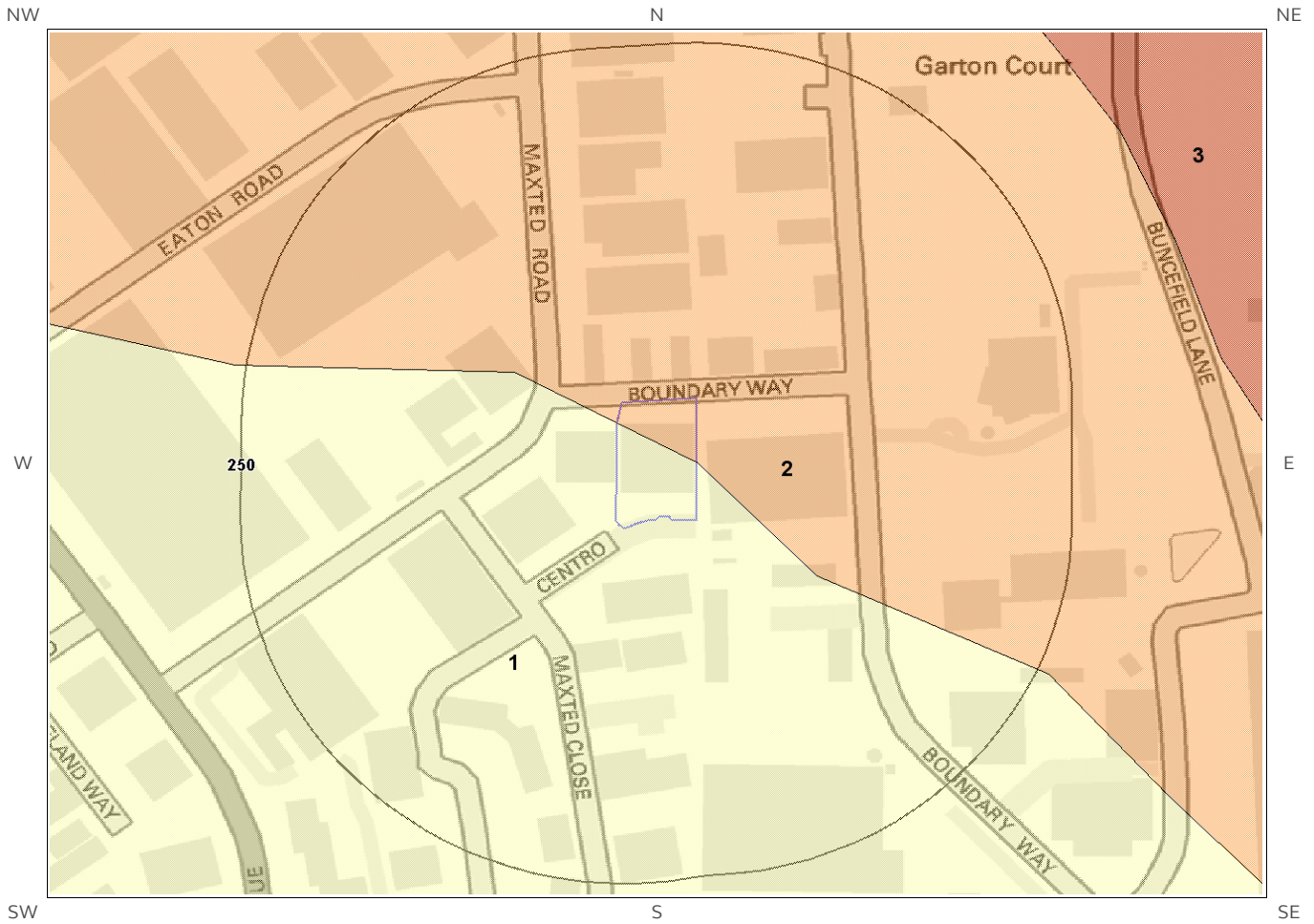


Landslides Legend

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6.3 Ground Dissolution of Soluble Rocks map



Ground Dissolution Soluble Rocks Legend

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6.4 Compressible Deposits map

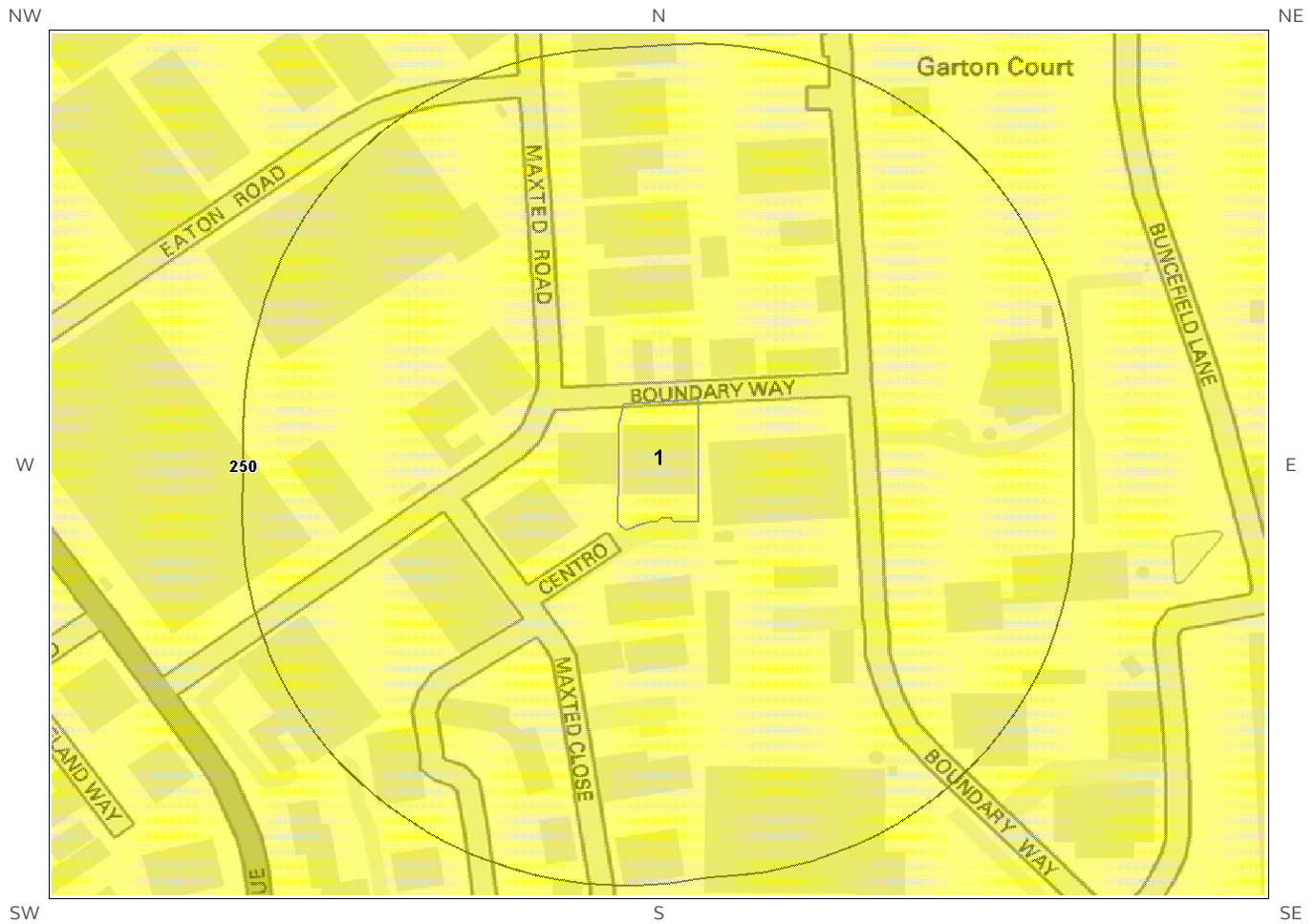


Compressible Deposits Legend

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6.5 Collapsible Deposits map



Collapsible Deposits Legend

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6.6 Running Sand map



Running Sand Legend

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6 Natural Ground Subsidence

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

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

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

6.1 Shrink-Swell Clays

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

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

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

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

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

6.3 Ground Dissolution of Soluble Rocks

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

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.
2	0.0	On Site	Low	Significant soluble rocks are present. Low possibility of subsidence occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow. Consider implications for stability when changes to drainage or new construction are planned. For new build - site investigation should consider potential for dissolution problems on the site and its surroundings. Care should be taken with local drainage into the bedrock. Some possibility groundwater pollution. For existing property - possible increase in insurance risk due to soluble rocks.

6.4 Compressible Deposits

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

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

6.5 Collapsible Deposits

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

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

6.6 Running Sands

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

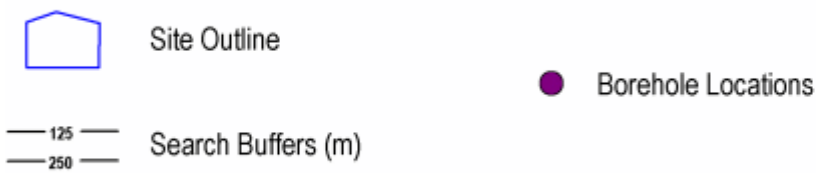
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased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

7 Borehole Records map



Borehole Records Legend

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7 Borehole Records

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

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

23

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	0.0	On Site	508120 208400	TL00NE97	20.5	MAXTED ROAD HEMEL HEMPSTEAD 103
2	0.0	On Site	508120 208450	TL00NE96	21.5	MAXTED ROAD HEMEL HEMPSTEAD 102
3	23.0	W	508080 208430	TL00NE42	15	MAXTED RD HEMEL HEMPSTEAD 2
4	33.0	SW	508080 208370	TL00NE43	10	MAXTED RD HEMEL HEMPSTEAD 3
5	51.0	S	508120 208340	TL00NE98	19.45	MAXTED ROAD HEMEL HEMPSTEAD 104
6	53.0	W	508050 208390	TL00NE95	16.6	MAXTED ROAD HEMEL HEMPSTEAD 101
7	58.0	SE	508185 208345	TL00NE117	20	BOUNDARY WAY HEMEL HEMPSTEAD 1
8	63.0	W	508040 208430	TL00NE41	10	MAXTED RD HEMEL HEMPSTEAD 1
9	91.0	SE	508234 208348	TL00NE120	6	BOUNDARY WAY HEMEL HEMPSTEAD 4
10	92.0	SE	508210 208321	TL00NE119	6	BOUNDARY WAY HEMEL HEMPSTEAD 3
11	105.0	S	508186 208295	TL00NE118	10	BOUNDARY WAY HEMEL HEMPSTEAD 2
12	127.0	SE	508237 208297	TL00NE121	6	BOUNDARY WAY HEMEL HEMPSTEAD 5
13	151.0	E	508305 208365	TL00NE122	6	BOUNDARY WAY HEMEL HEMPSTEAD 6
14	164.0	NW	507960 208550	TL00NE326	No details	DEXION FAXTORY EATON ROAD HEMEL HEMPSTEAD 5
15	177.0	SE	508307 208301	TL00NE123	6	BOUNDARY WAY HEMEL HEMPSTEAD 7
16	187.0	E	508330 208325	TL00NE124	6	BOUNDARY WAY HEMEL HEMPSTEAD 8
17A	194.0	W	507910 208480	TL00NE328	No details	DEXION FAXTORY EATON ROAD HEMEL HEMPSTEAD 8
18	202.0	E	508354 208351	TL00NE125	6	BOUNDARY WAY HEMEL HEMPSTEAD 9
19A	204.0	W	507900 208480	TL00NE332	No details	DEXION FAXTORY EATON ROAD HEMEL HEMPSTEAD TP4
20	210.0	W	507910 208550	TL00NE333	No details	DEXION FAXTORY EATON ROAD HEMEL HEMPSTEAD TP5
21	217.0	NE	508245 208680	TL00NE370	46	BOUNDARY WAY PGWU2059

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
22	219.0	SE	508357 208307	TL00NE126	8.5	BOUNDARY WAY HEMEL HEMPSTEAD 10
23	249.0	E	508404 208365	TL00NE127	6	BOUNDARY WAY HEMEL HEMPSTEAD 11

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

- #1: scans.bgs.ac.uk/sobi_scans/boreholes/15954435
- #2: scans.bgs.ac.uk/sobi_scans/boreholes/15954434
- #3: scans.bgs.ac.uk/sobi_scans/boreholes/521029
- #4: scans.bgs.ac.uk/sobi_scans/boreholes/521030
- #5: scans.bgs.ac.uk/sobi_scans/boreholes/15954437
- #6: scans.bgs.ac.uk/sobi_scans/boreholes/15954433
- #7: scans.bgs.ac.uk/sobi_scans/boreholes/17863679
- #8: scans.bgs.ac.uk/sobi_scans/boreholes/521028
- #9: scans.bgs.ac.uk/sobi_scans/boreholes/17863682
- #10: scans.bgs.ac.uk/sobi_scans/boreholes/17863681
- #11: scans.bgs.ac.uk/sobi_scans/boreholes/17863680
- #12: scans.bgs.ac.uk/sobi_scans/boreholes/17863683
- #13: scans.bgs.ac.uk/sobi_scans/boreholes/17863684
- #15: scans.bgs.ac.uk/sobi_scans/boreholes/17863685
- #16: scans.bgs.ac.uk/sobi_scans/boreholes/17863686
- #18: scans.bgs.ac.uk/sobi_scans/boreholes/17863687
- #21: scans.bgs.ac.uk/sobi_scans/boreholes/18598273
- #22: scans.bgs.ac.uk/sobi_scans/boreholes/17863688
- #23: scans.bgs.ac.uk/sobi_scans/boreholes/17863689

8 Estimated Background Soil Chemistry

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

2

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

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













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

9 Railways and Tunnels map



Railways and Tunnels Legend

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© OpenStreetMapContributors

- | | | | | | |
|---|------------------------|---|--|---|---|
|  | Site Outline |  | Underground or Partially Underground Railway / Subway System |  | Railway Track (OpenStreetMap) |
|  | 250 Search Buffers (m) |  | Railway Tunnel (OS Mapping) |  | High Speed 2 |
|  | 500 Search Buffers (m) |  | Abandoned or Dismantled Railway (OpenStreetMap) |  | High Speed 2 Revised Proposed Route |
| | |  | Railway Track (OS Mapping) |  | Crossrail 1 |
| | | | |  | Railway and/or Tunnel Feature from Historical Mapping |

9 Railways and Tunnels

9.1 Tunnels

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

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

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

Database searched and no data found.

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

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

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

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

Database searched and no data found.

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

9.2 Historical Railway and Tunnel Features

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

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

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

Database searched and no data found.

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

9.3 Historical Railways

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

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

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

Database searched and no data found.

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

9.4 Active Railways

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

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

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

Database searched and no data found.

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

9.5 Railway Projects

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

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

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

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

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

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

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The Coal Authority

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Email: enquiries@phe.gov.uk
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Standard Terms and Conditions

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

APPENDICES

Appendix 03 GroundSure – GeoInsight - Maylands

Address: Maylands Data Centre, 150 Maylands Avenue, Hemel Hempstead, HP27DF,
Date: 25 Nov 2019
Reference: EMS-579562_777887
Client: emapsite

NW N NE



SW S SE

Aerial Photograph Capture date: 12-Aug-2016
Grid Reference: 507540,208475
Site Size: 1.5006ha

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Overview of Findings

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

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

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

Section 1: Geology 1:10,000 Scale		
1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	No
	1.2.2 Are there any records of landslip within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	No
Section 2: Geology 1:50,000 Scale		
2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	No
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	No
	2.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features

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

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

Yes

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

No

Section 3: Radon

3. Radon

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

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

3.2 Radon Protection

No radon protective measures are necessary.

Section 4: Ground Workings

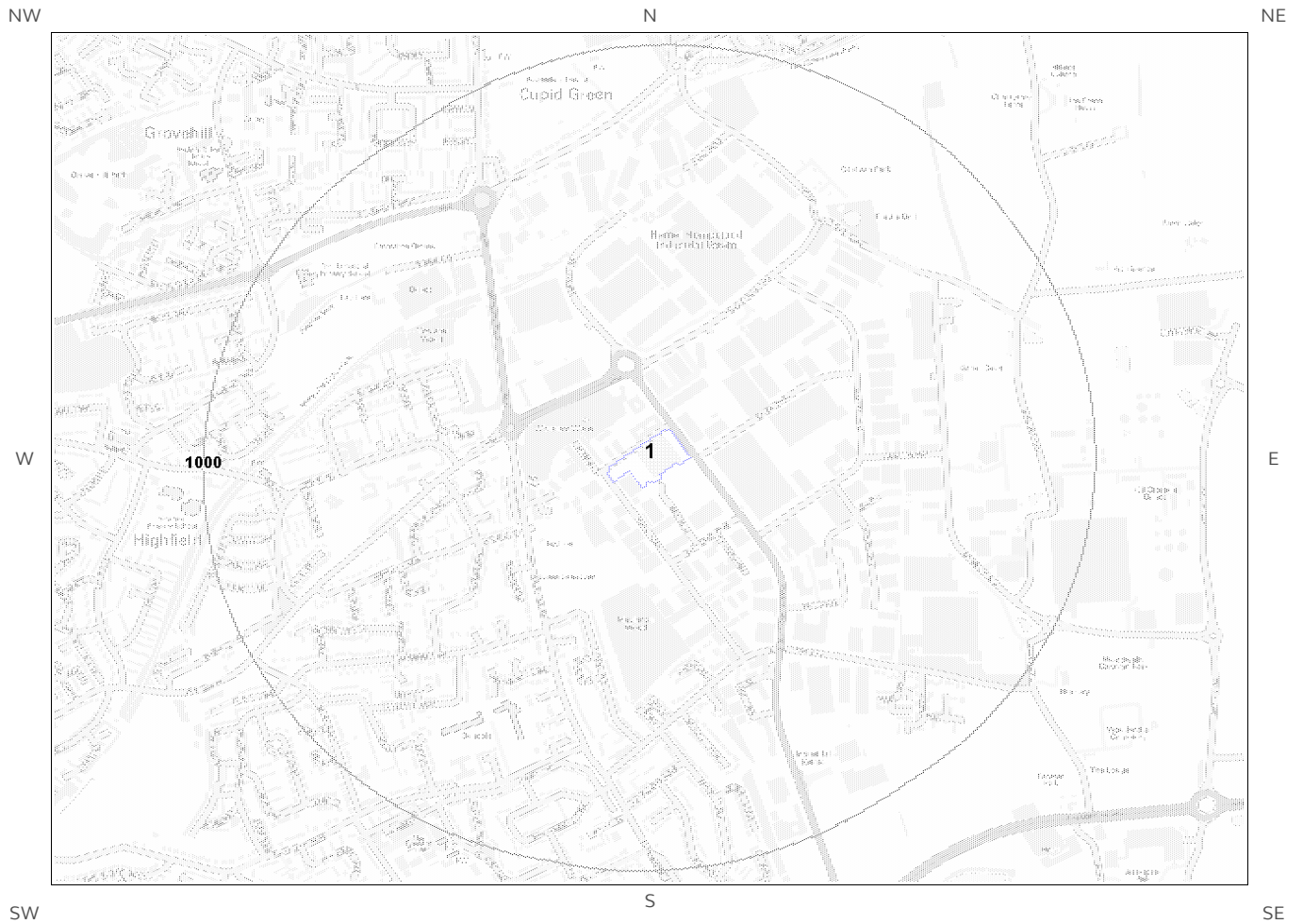
	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	0	25	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	5	10	6

Section 5: Mining, Extraction & Natural Cavities

	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	0
5.2 Coal Mining	0	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	1	0	2	1	1
5.5 Non-Coal Mining Cavities	0	0	0	0	2
5.5 Natural Cavities	0	0	0	2	3

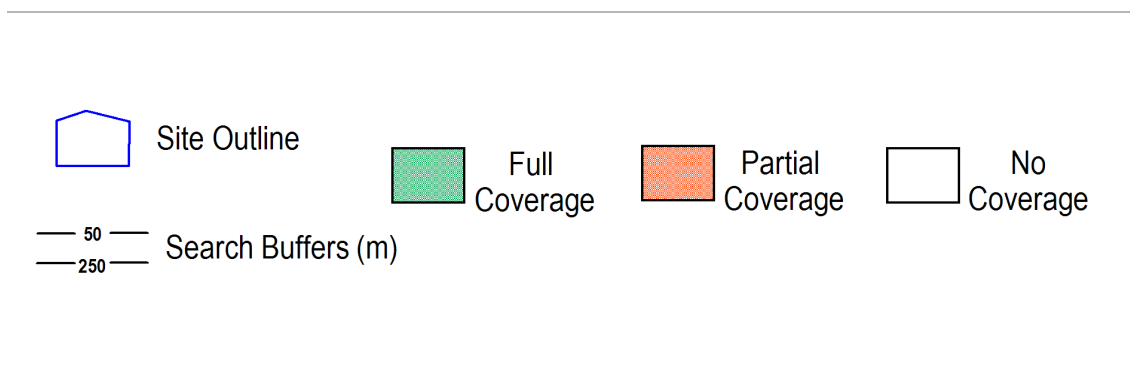
Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Cornwall and Devon Metalliferous Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0
Section 6: Natural Ground Subsidence	On-site				
6.1 Shrink-Swell Clay	Moderate				
6.2 Landslides	Very Low				
6.3 Ground Dissolution of Soluble Rocks	Low				
6.4 Compressible Deposits	Negligible				
6.5 Collapsible Deposits	Very Low				
6.5 Running Sand	Very Low				
Section 7: Borehole Records	On-site	0-50m	51-250		
7 BGS Recorded Boreholes	0	1	26		
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
8 Records of Background Soil Chemistry	4	0	0		
Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500	
9.1 Tunnels	0	0	0	Not Searched	
9.2 Historical Railway and Tunnel Features	0	0	2	Not Searched	
9.3 Historical Railways	0	0	0	Not Searched	
9.4 Active Railways	0	0	0	Not Searched	
9.5 Railway Projects	0	0	0	0	

1:10,000 Scale Availability



1_10,000 Availability Legend

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Availability of 1:10,000 Scale Geology Mapping

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

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	No deposits are mapped	No coverage	No coverage	No coverage

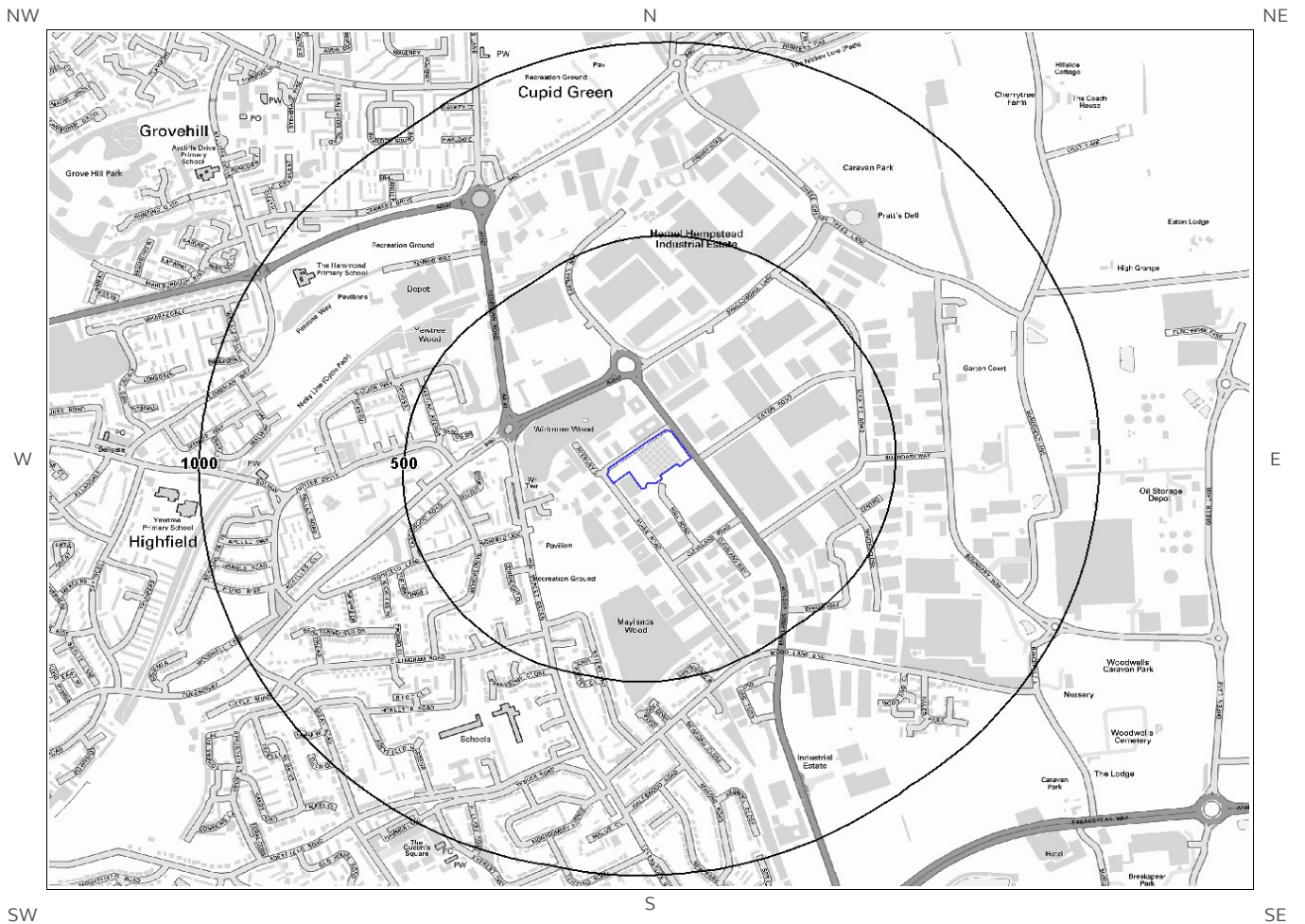
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not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

The definitions of coverage are as follows:

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




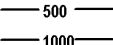




1 Geology (1:10,000 scale).

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



Artificial Ground Legend

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	Site Outline		Made Ground (undivided)		Disturbed Ground (undivided)
	Search Buffers (m)		Worked Ground (undivided)		Landscaped Ground (undivided)
			Infilled Ground		Reclaimed Ground

1. Geology 1:10,000 scale

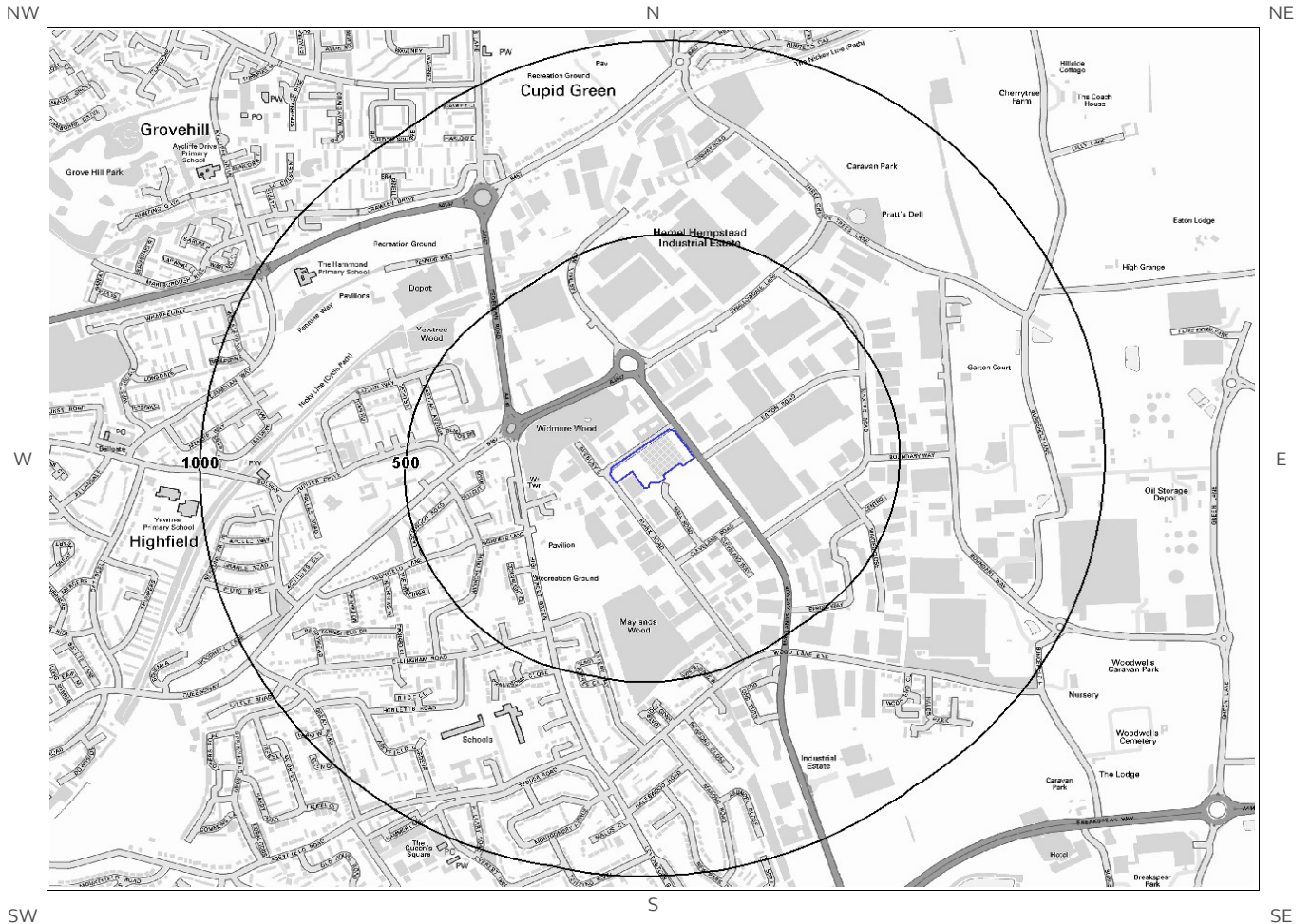
1.1 Artificial Ground

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

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

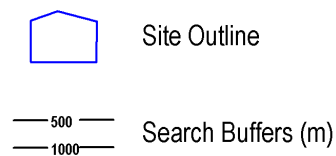
Database searched and no data found.

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



Artificial Ground Legend

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1.2 Superficial Deposits and Landslips

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

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

1.2.2 Landslip

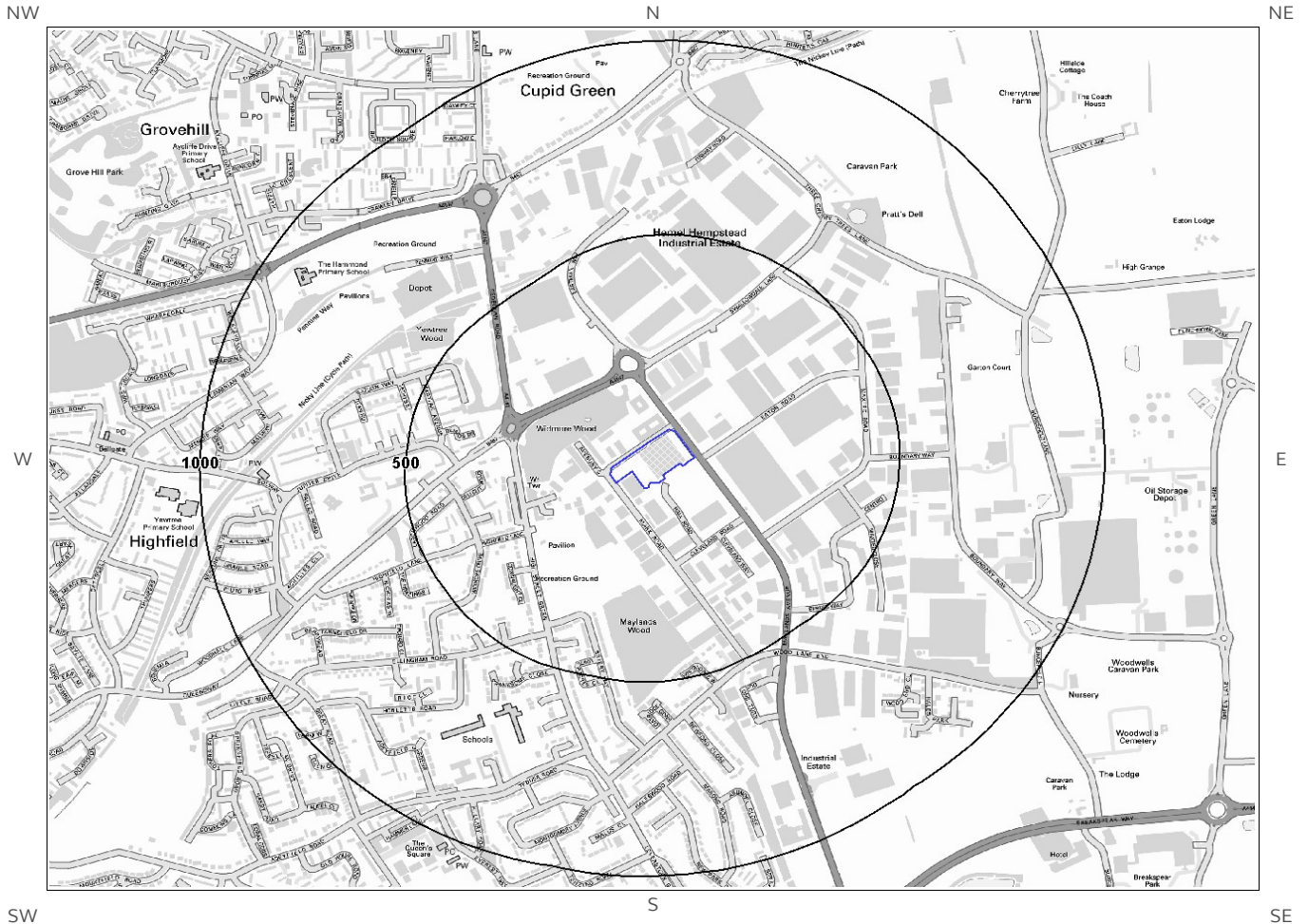
Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

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




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

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



Bedrock and linear features Legend

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-  Site Outline
 -  500
 -  1000
- Search Buffers (m)

1.3 Bedrock and linear features

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

1.3.1 Bedrock/ Solid Geology

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

Database searched and no data found at this scale.

1.3.2 Linear features

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

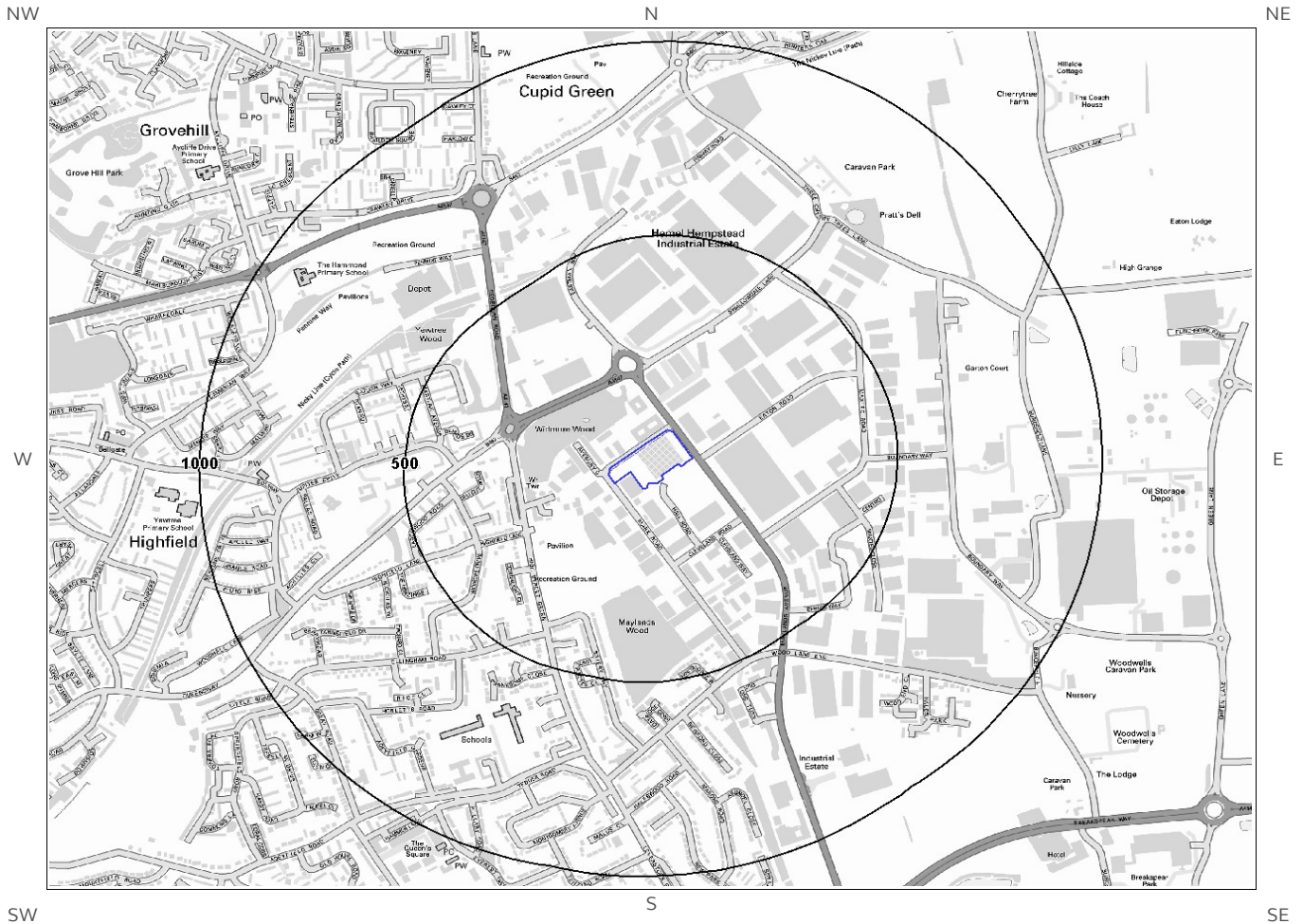
Database searched and no data found at this scale.

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

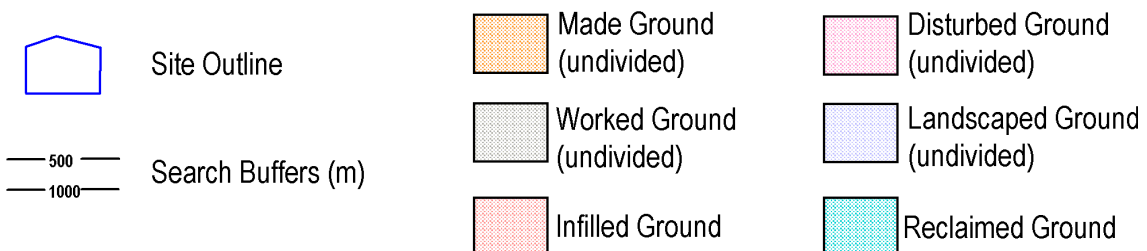
This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



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2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 238

2.1.1 Artificial/ Made Ground

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

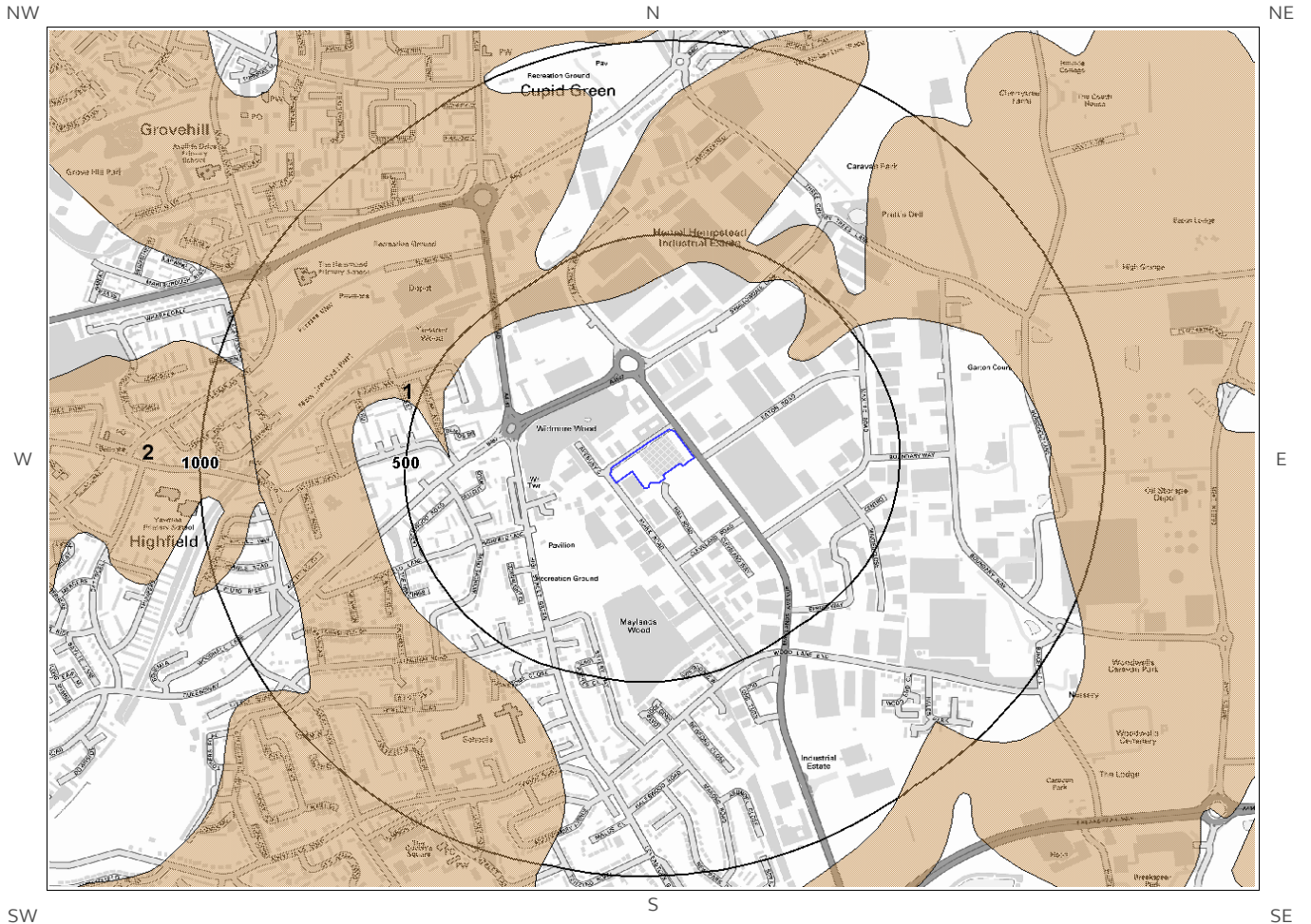
Database searched and no data found.

2.1.2 Permeability of Artificial Ground

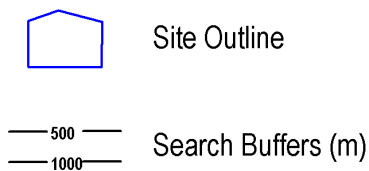
Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

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



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2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

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

ID	Distance	Direction	LEX Code	Description	Rock Description
1	338.0	NE	CWF-XCZSV	CLAY-WITH-FLINTS FORMATION	CLAY, SILT, SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

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

Database searched and no data found.

2.2.3 Landslip

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

Database searched and no data found.

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

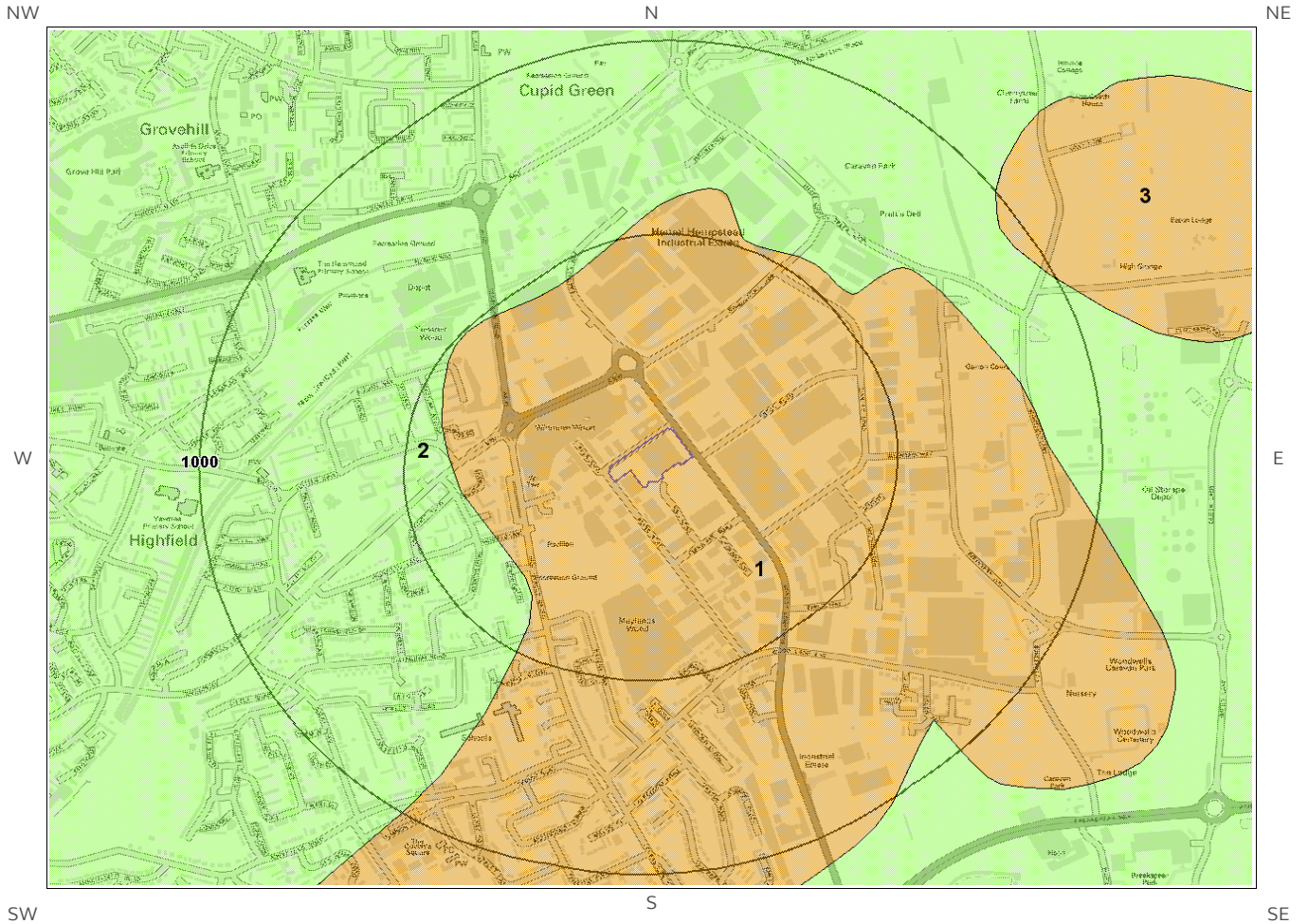
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

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

Database searched and no data found.

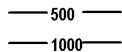
2.3 Bedrock and linear features map (1:50,000 scale)



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Site Outline



Search Buffers (m)

2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 238

2.3.1 Bedrock/Solid Geology

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

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	LMBE-XCZS	LAMBETH GROUP - CLAY, SILT AND SAND	THANETIAN
2	320.0	SW	LESE-CHLK	LEWES NODULAR CHALK FORMATION AND SEAFORD CHALK FORMATION (UNDIFFERENTIATED) - CHALK	TURONIAN

2.3.2 Permeability of Bedrock Ground

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

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

2.3.3 Linear features

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

Database searched and no data found.

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

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

3 Radon Data

3.1 Radon Affected Areas

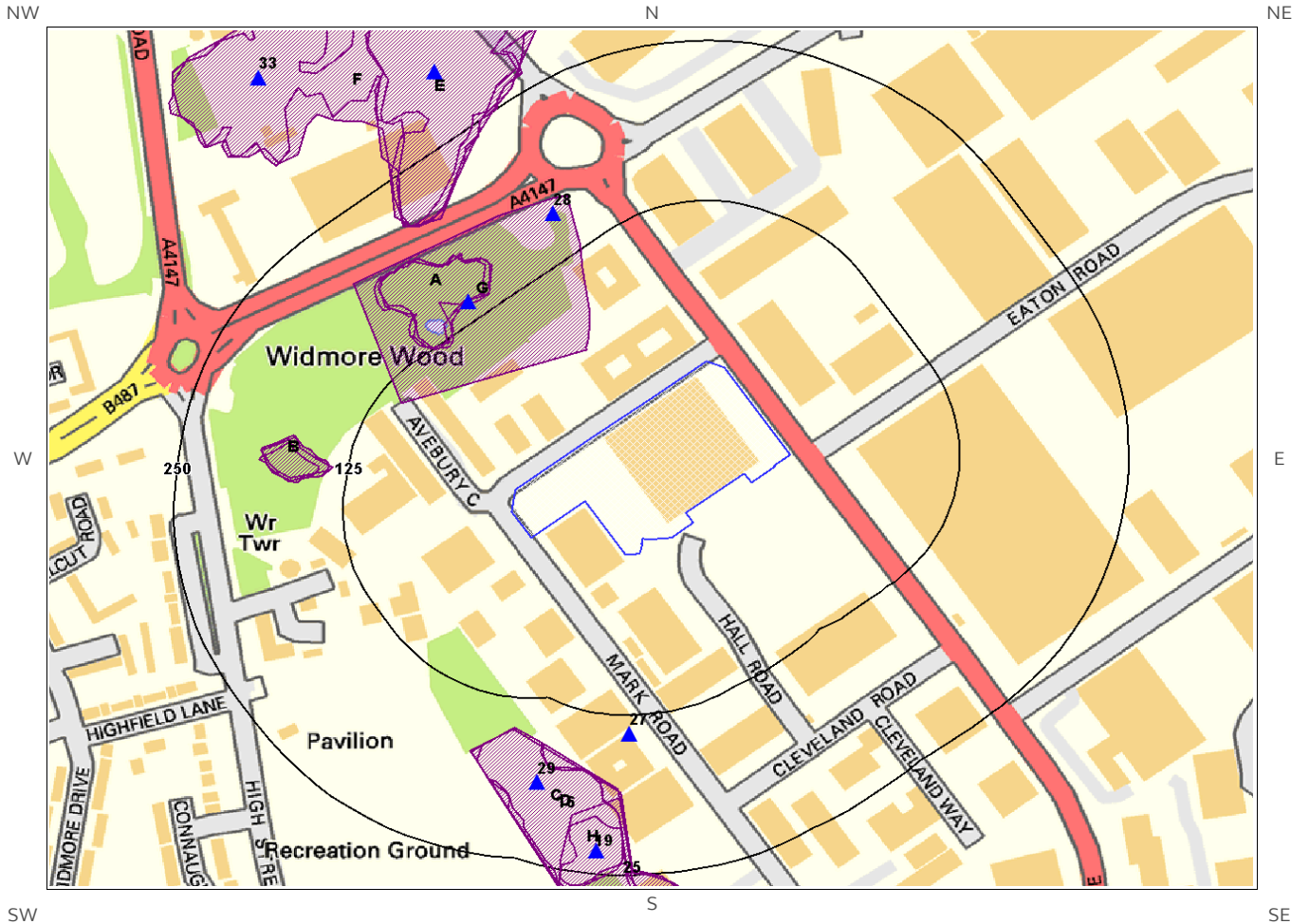
Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

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

3.2 Radon Protection





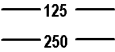
Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

4 Ground Workings map



Ground Workings Legend

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

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

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

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

ID	Distance (m)	Direction	NGR	Use	Date
1G	59.0	NW	507348 208582	Old Brick Works	1897
2A	119.0	NW	507376 208601	Ponds	1938
3A	122.0	NW	507372 208600	Unspecified Pit	1955
4A	122.0	NW	507375 208618	Ponds	1922
5A	122.0	NW	507375 208618	Ponds	1897
6A	122.0	NW	507375 208618	Ponds	1947
7B	137.0	W	507274 208478	Pond	1938
8B	139.0	W	507273 208480	Pond	1897
9B	139.0	W	507273 208480	Pond	1947
10B	139.0	W	507273 208480	Pond	1922
11B	146.0	W	507268 208475	Pond	1877
12D	148.0	S	507555 207996	Disused Brick Works	1947
13C	148.0	S	507459 208203	Unspecified Pit	1947
14C	148.0	S	507459 208203	Unspecified Pit	1922
15D	148.0	S	507555 207996	Disused Brick Works	1922
16	150.0	S	507548 208052	Disused Brick Works	1938
17C	150.0	S	507489 208184	Unspecified Ground Workings	1938
18C	150.0	S	507489 208184	Unspecified Ground Workings	1938
19	189.0	S	507582 208026	Brick Works	1897
20F	204.0	NW	507322 208767	Clay Pit	1947
21H	206.0	S	507493 208172	Unspecified Pit	1897

ID	Distance (m)	Direction	NGR	Use	Date
22E	207.0	NW	507394 208754	Clay Pit	1938
23E	207.0	NW	507395 208755	Clay Pit	1922
24F	211.0	NW	507318 208782	Clay Pit	1955
25	248.0	S	507520 208127	Unspecified Ground Workings	1897

4.2 Historical Underground Working Features derived from Historical Mapping

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

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

Database searched and no data found.

4.3 Current Ground Workings

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

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

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

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
26G	139.0	NW	507400 208600	Clay & Shale	Widmore Wood Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
27	140.0	S	507519 208263	Clay & Shale	Highstreet Farm Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
28	160.0	NW	507463 208669	Chalk	Widmore Wood Chalkwell	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
29	190.0	S	507451 208225	Clay & Shale	Gillingham's Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
30H	232.0	S	507495 208172	Clay & Shale	Gillingham's Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	274.0	S	507540 208130	Clay & Shale	Gillingham's Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

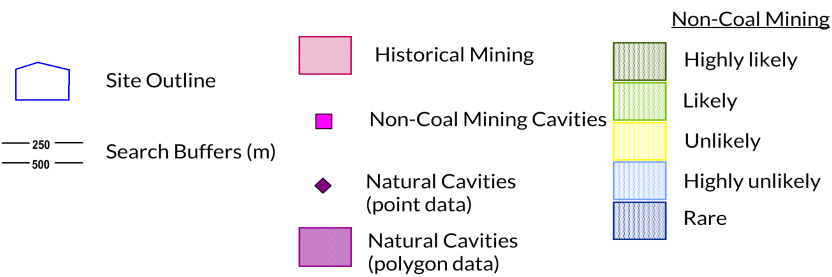
ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
32E	301.0	NW	507375 208780	Clay & Shale	Widmore Brickworks	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
33	372.0	NW	507245 208775	Clay & Shale	Widmore Brickworks	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	379.0	S	507545 208025	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	386.0	S	507600 208025	Clay & Shale	Gillingham's Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	432.0	N	507415 208955	Clay & Shale	Widmore Brickworks	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	482.0	SW	507039 208159	Chalk	Bohemia Chalk Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	482.0	S	507675 207945	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	487.0	W	506946 208458	Chalk	Highfield Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	499.0	S	507605 207911	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	534.0	S	507555 207870	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	575.0	S	507570 207830	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	595.0	S	507530 207808	Clay & Shale	Woodlane-end Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	602.0	S	507576 207804	Chalk	Woodlane-end Brick Field Chalk Mine	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	676.0	N	507610 209230	Clay & Shale	Claydales Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	719.0	NE	508042 209108	Chalk	Pratt's Dell	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

5 Mining, Extraction & Natural Cavities map



Mining, Extraction and Natural Cavities Legend

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5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

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

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

Database searched and no data found.

5.2 Coal Mining

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

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

Database searched and no data found.

5.3 Johnson Poole and Bloomer

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

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

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

5.4 Non-Coal Mining

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

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	0.0	On Site	Not available	Chalk	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
2A	59.0	NW	Widmore Wood	Chalk	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
3A	109.0	NW	Widmore Wood	Chalk	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
4	320.0	SW	Not available	Chalk	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
Not shown	952.0	NE	Not available	Chalk	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

5.5 Non-Coal Mining Cavities

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

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? Yes

The following Non-Coal Mining Cavities information provided by Peter Brett Associates:

ID	Distance (m)	Direction	NGR	Address	Superficial Deposits	Bedrock Deposits	Extracted Mineral
6	509.0	S	507600 207900	Hemel Hempstead, Hertfordshire	-	Lambeth Group, Upper Chalk Formation	Chalk
Not shown	605.0	S	507570 207800	Hemel Hempstead, Hertfordshire	-	Lambeth Group, Chalk Group	Chalk

5.6 Natural Cavities

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

Are there any Natural Cavities within 1000m of the study site boundary? Yes

The following Natural Cavities information provided by Peter Brett Associates:

ID	Distance (m)	Direction	NGR	Superficial Deposits	Bedrock Deposits	Cavity Type and Number
8	298.0	SW	507200 208250	-	Chalk Group, Lambeth Group	Solution Pipe x 1
9	346.0	N	507600 208900	Clay-with-Flints	Chalk Group, Chalk Group, Lambeth Group	Solution Pipe x 10
Not shown	734.0	W	506700 208400	Clay-with-Flints	Chalk Group	Solution Pipe x 6
Not shown	803.0	S	507500 207600	-	Chalk Group, Lambeth Group	Solution Pipe x 6

ID	Distance (m)	Direction	NGR	Superficial Deposits	Bedrock Deposits	Cavity Type and Number
Not shown	882.0	SE	508200 207800	Clay-with-Flints	Chalk Group, Lambeth Group	Solution Pipe x 1

5.7 Brine Extraction

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

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

Database searched and no data found.

5.8 Gypsum Extraction

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

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

Database searched and no data found.

5.9 Cornwall and Devon Metalliferous Mining

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

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

Database searched and no data found.

5.10 Clay Mining

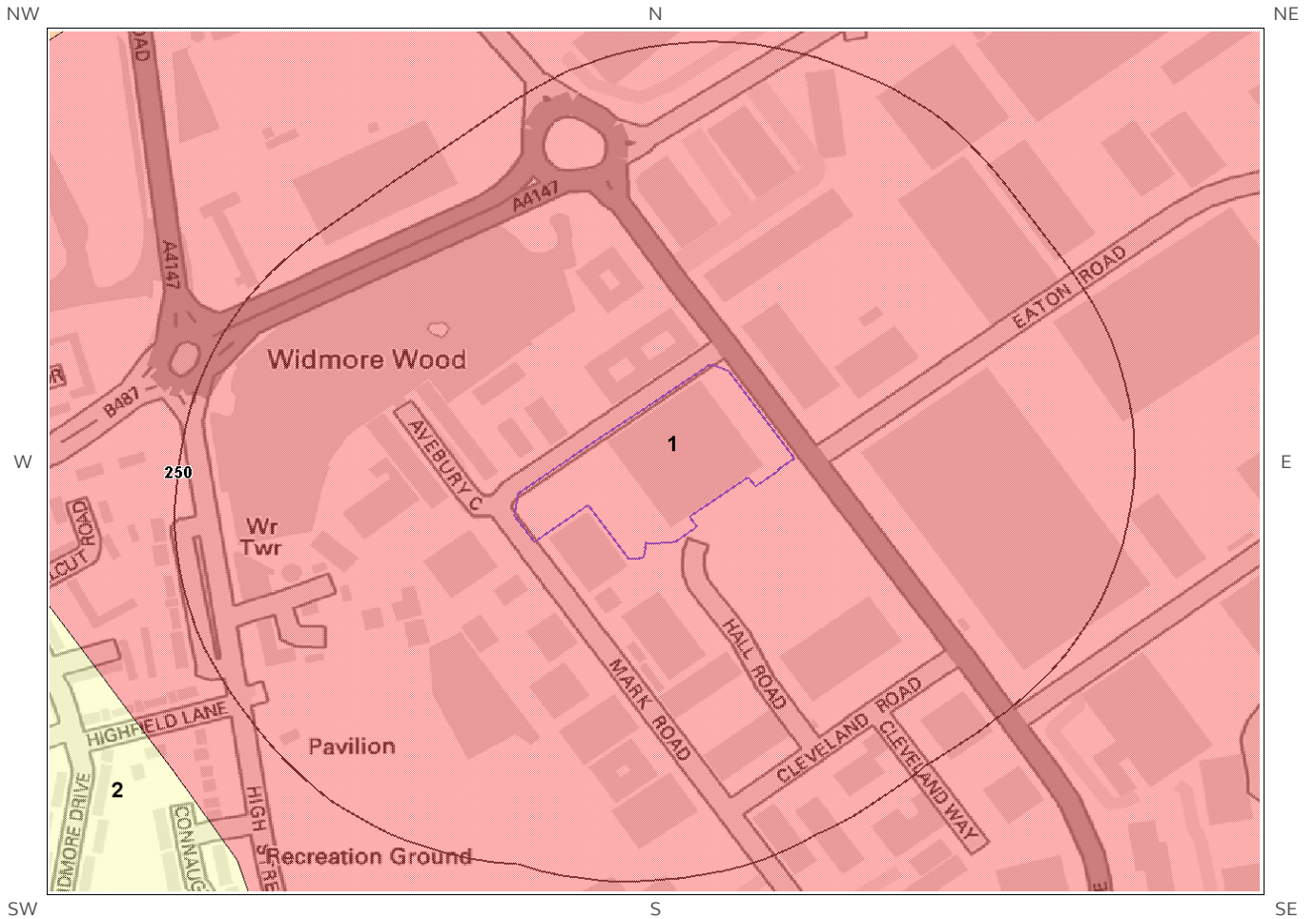
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

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

Database searched and no data found.

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map



Shrink Swell Clay Legend

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6.2 Landslides map



Landslides Legend

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6.3 Ground Dissolution of Soluble Rocks map



Ground Dissolution Soluble Rocks Legend

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6.4 Compressible Deposits map



Compressible Deposits Legend

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6.5 Collapsible Deposits map



Collapsible Deposits Legend

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6.6 Running Sand map



Running Sand Legend

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6 Natural Ground Subsidence

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

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

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

6.1 Shrink-Swell Clays

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

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

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

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

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

6.3 Ground Dissolution of Soluble Rocks

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

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.
2	9.0	N	Low	Significant soluble rocks are present. Low possibility of subsidence occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow. Consider implications for stability when changes to drainage or new construction are planned. For new build - site investigation should consider potential for dissolution problems on the site and its surroundings. Care should be taken with local drainage into the bedrock. Some possibility groundwater pollution. For existing property - possible increase in insurance risk due to soluble rocks.

6.4 Compressible Deposits

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

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

6.5 Collapsible Deposits

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

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

6.6 Running Sands

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





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

7 Borehole Records map



Borehole Records Legend

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-  Site Outline
-  Borehole Locations
-  125 Search Buffers (m)
-  250 Search Buffers (m)

7 Borehole Records

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

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

27

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	46.0	N	507580 208600	TL00NE320	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD WS13
2	72.0	E	507710 208470	TL00NE322	No details	DEXION FAXTORY EATON ROAD HEMEL HEMPSTEAD 1
3	77.0	NE	507620 208620	TL00NE316	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD WS9
4	79.0	N	507600 208630	TL00NE321	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD WS14
5	102.0	N	507540 208650	TL00NE317	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD WS10
6	106.0	N	507590 208660	TL00NE315	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD WS8
7	119.0	NW	507530 208664	TL00NE306	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD 3
8	121.0	E	507760 208480	TL00NE330	No details	DEXION FAXTORY EATON ROAD HEMEL HEMPSTEAD TP2
9	123.0	N	507620 208670	TL00NE314	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD WS7
10	128.0	E	507760 208440	TL00NE329	No details	DEXION FAXTORY EATON ROAD HEMEL HEMPSTEAD TP1
11	132.0	E	507770 208500	TL00NE325	No details	DEXION FAXTORY EATON ROAD HEMEL HEMPSTEAD 4
12	140.0	N	507610 208690	TL00NE313	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD WS6
13	144.0	NE	507770 208540	TL00NE323	No details	DEXION FAXTORY EATON ROAD HEMEL HEMPSTEAD 2
14A	148.0	NE	507660 208680	TL00NE309	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD WS2
15A	153.0	NE	507670 208680	TL00NE305	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD 2
16B	156.0	N	507570 208710	TL00NE311	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD WS4
17C	160.0	N	507540 208710	TL00NE318	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD WS11
18	161.0	N	507620 208710	TL00NE310	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD WS3

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
19B	166.0	N	507580 208720	TL00NE307	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD 4
20C	168.0	N	507550 208720	TL00NE312	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD WS5
21	171.0	E	507810 208470	TL00NE331	No details	DEXION FAXTORY EATON ROAD HEMEL HEMPSTEAD TP3
22	173.0	SE	507780 208380	TL00NE327	No details	DEXION FAXTORY EATON ROAD HEMEL HEMPSTEAD 6
23	184.0	NE	507800 208570	TL00NE324	No details	DEXION FAXTORY EATON ROAD HEMEL HEMPSTEAD 3
24	186.0	N	507590 208740	TL00NE319	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD WS12
25	190.0	N	507650 208730	TL00NE308	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD WS1
26	216.0	N	507510 208760	TL00NE298	No details	KODAK SITE HEMEL HEMPSTEAD 51
27	237.0	N	507650 208780	TL00NE304	No details	MARYLANDS AVENUE HEMEL HEMPSTEAD 1

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

8 Estimated Background Soil Chemistry

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

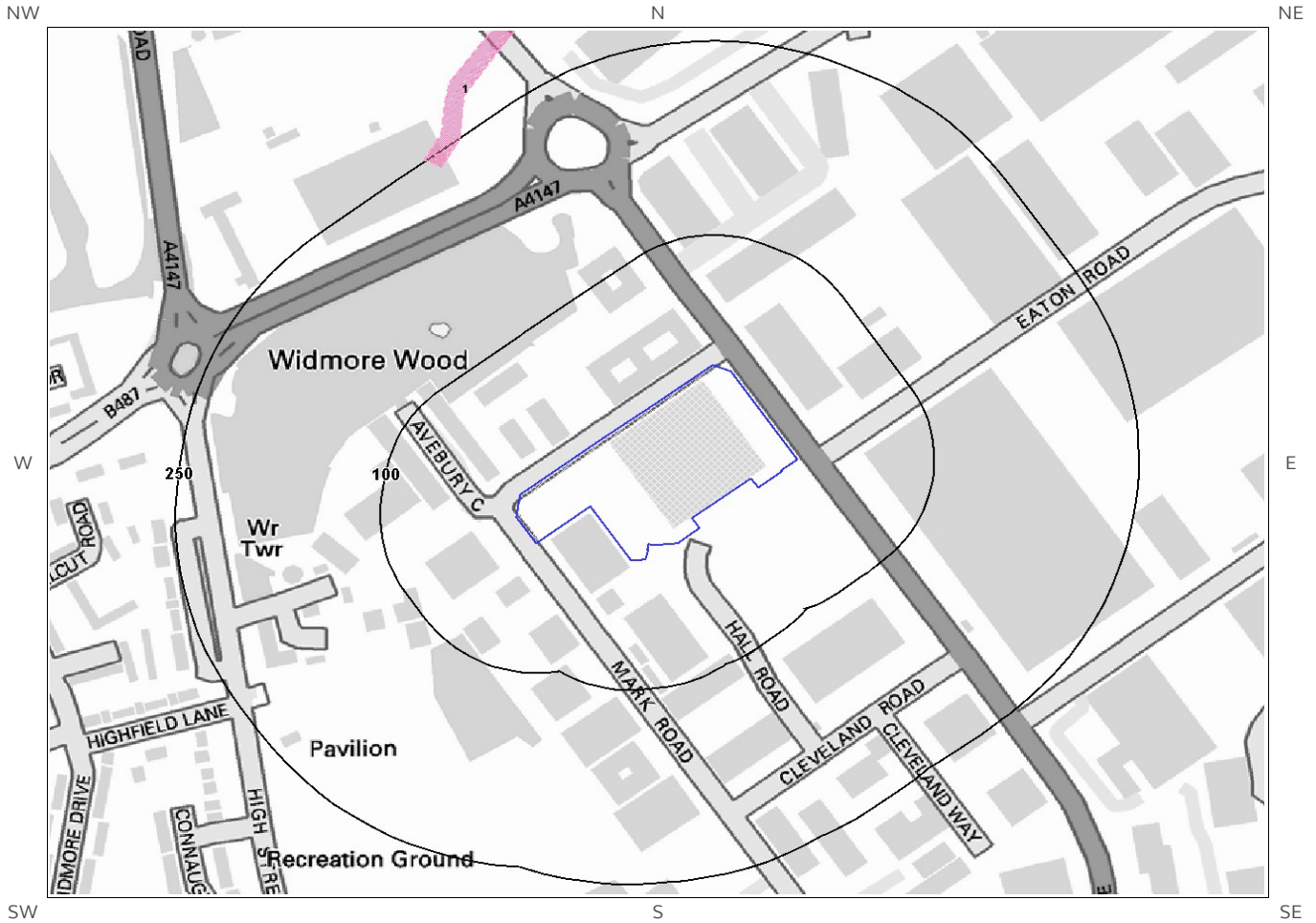
4

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

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg

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

9 Railways and Tunnels map



Railways and Tunnels Legend

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- | | | | |
|--|--|--|---|
| | Underground or Partially Underground Railway / Subway System | | Railway Track (OpenStreetMap) |
| | Site Outline | | High Speed 2 |
| | Search Buffers (m) | | High Speed 2 Revised Proposed Route |
| | 250 | | Crossrail 1 |
| | 500 | | Railway Track (OS Mapping) |
| | Abandoned or Dismantled Railway (OpenStreetMap) | | Railway and/or Tunnel Feature from Historical Mapping |

9 Railways and Tunnels

9.1 Tunnels

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

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

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

Database searched and no data found.

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

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

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

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

Database searched and no data found.

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

9.2 Historical Railway and Tunnel Features

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

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

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

ID	Distance (m)	Direction	NGR	Details	Date
1	240	NW	507400 208782	Tramway Sidings	1947
2	246	NW	507394 208769	Tramway Sidings	1947

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

9.3 Historical Railways

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

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

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

Database searched and no data found.

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

9.4 Active Railways

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

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

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

Database searched and no data found.

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

9.5 Railway Projects

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

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

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

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

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

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

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

APPENDICES

Appendix 04 Photographic Log



Photo 1:
Campus - Entrance to permit area looking south



Photo 2:
Campus - inside the permit area looking north. Note concrete AST bunds in the foreground of picture.



Photo 3:
Centro - 75,000ltr AST

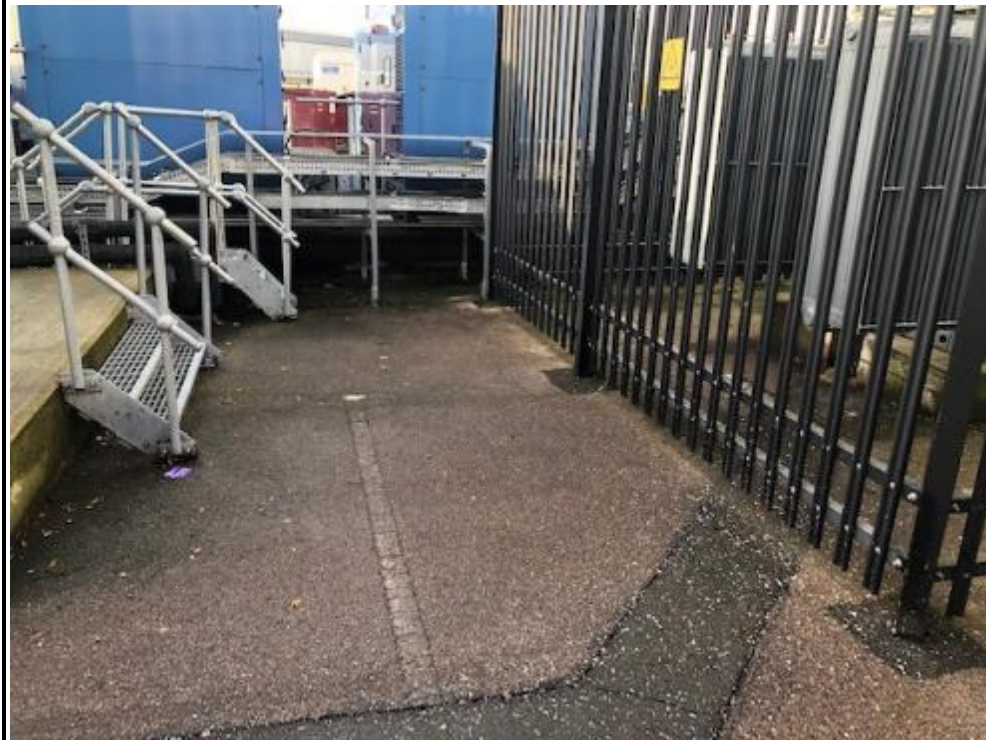


Photo 4:
Centro - North of AST looking west towards generators. Note transformer in the right foreground.



Photo 5:
Centro - Proposed drilling location adjacent to the AST looking east towards coolers/chillers.



Photo 6:
Maylands - Looking north at bulk diesel tanks and towards delivery access route to main building .

Notes:



413.05391.00002.0003

Site:	GYRON – HEMEL HEMPSTEAD DATA CENTRES	
Project:	PRELIMINARY LAND QUALITY ASSESSMENT	
Date:	DECEMBER 2019	
Drawing:	OBSERVATION PHOTOGRAPHS	1 of 2



Photo 7:

Maylands - Option for borehole location north of Gen 4-1A, Note scarp on road probably electricity cables



Photo 8:

Maylands - Looking NE with electrical sub stations on left hand side and Gen 6 directly in front.

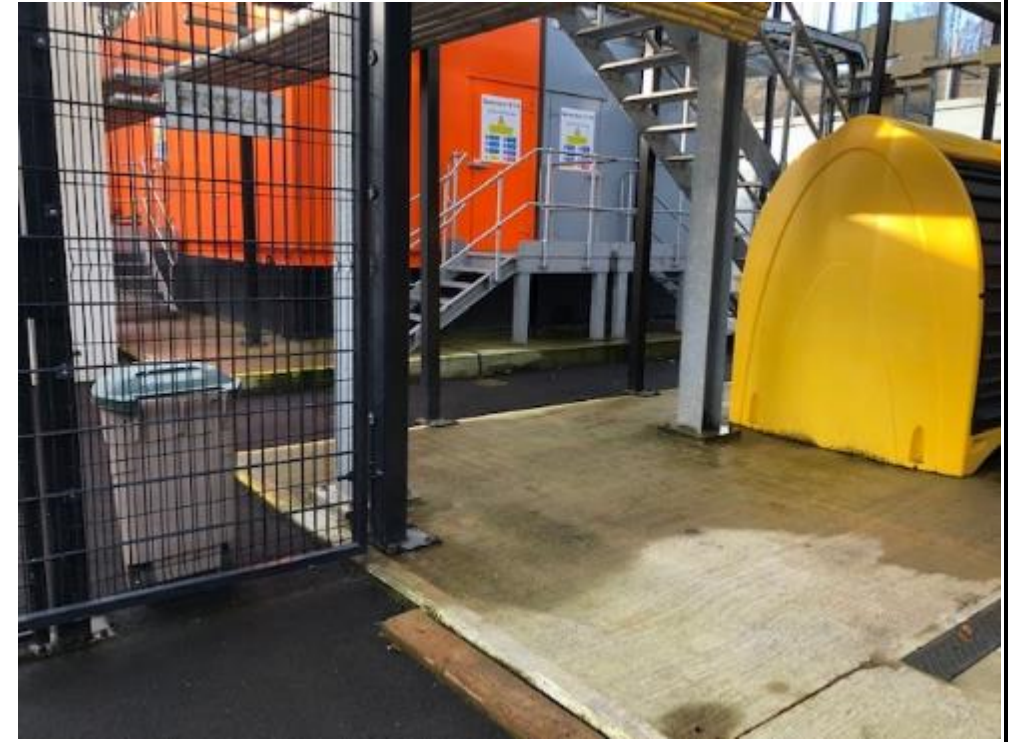


Photo 9:

Maylands – phot in between generator 1 and generator 6..

Notes:



413.05391.00002.0003

Site:	GYRON – HEMEL HEMPSTEAD DATA CENTRES	
Project:	PRELIMINARY LAND QUALITY ASSESSMENT	
Date:	DECEMBER 2019	
Drawing:	OBSERVATION PHOTOGRAPHS	2 of 2

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