



Geo-Environmental Report

Caversham Road, Reading RG1 7BT
for:

Elstree Land Limited



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For:	Elstree Land Limited
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Executive Summary

Proposed Development

The site is to be developed for residential apartments with associated infrastructure.

Investigation

A desk study and ground investigation were undertaken by Enzygo Geoenvironmental Ltd. in June 2020.

Ground Conditions

Ground Conditions comprise Made Ground over soft clay to depths of around 3m bgl over medium dense sand and gravel and Chalk. Groundwater was encountered at depths of between 3m and 4.2m bgl.

Foundations

It is considered that piled foundations will be required.

Pavement Design

An equilibrium CBR range of <2% is recommended. Soils are considered to be frost susceptible.

Buried Concrete

It is recommended that Class AC-1s conditions of Special Digest 1 are used.

Contamination

Elevated PAH and Lead were noted associated with ash and clinker within the Made Ground. Cover soils are proposed in areas of future soft landscaping.

Ground Gas and Radon

No radon risk has been identified. Elevated Carbon Dioxide has been measured and it is recommended that a gas membrane is provided to ground floor slabs.

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1.0 INTRODUCTION

Background

- 1.1 Enzygo Geoenvironmental Limited has been commissioned to prepare a Geo-Environmental Report for a site at Caversham Road, Reading RG1 7BT.

Proposed Development

- 1.2 The site is to be developed for residential use comprising apartments with communal open space.

Objectives

- 1.3 The objectives of the study are to:
- Obtain desk study information, a copy of which is included in Appendix A;
 - Undertake a targeted ground investigation;
 - Assess the implications of any potential environmental risks, liabilities and development constraints associated with the site in relation to the future use of the site and in relation to off-site receptors; and
 - Provide a factual and interpretative report relating to the desk study and site investigations. Provide a revised conceptual model and recommendations on any potential development issues and mitigation measures, where appropriate.
 - Provide geotechnical recommendations in relation to foundations and infrastructure.

Risk Classification

- 1.4 Enzygo Geoenvironmental has utilised the available information, together with our experience to assess the likely risks to development from land quality issues. Definitions of the risk terms used are provided on the following table.

Risk	Description
Negligible	No contamination risk has been identified which is likely to affect development.
Low	No significant contaminated land risks have been encountered affecting development and a low risk that remediation will be required.
Low-Moderate	There are unlikely to be significant contaminated land issue associated with the site which will adversely affect its re-development. However, minor or localised contamination may be present requiring remediation. Remediation should be possible

	under a discovery strategy and with a call out service.
Moderate	Some potential contaminated land risks have been encountered or identified which may affect re- development. The risks identified are unlikely to affect the entire site or preclude development. Remediation is considered feasible as part of the development process and no further investigation is considered necessary.
Moderate-High	Some potentially significant contaminated land risks have been identified at the property that requires remediation. It is recommended that a separate remedial methodology is prepared supported by a site-specific risk assessment
High	Significant potential contaminated land risks have been identified and remediation is required supported by further intrusive ground investigation, risk assessment and remedial design.

- 1.5 Where adverse risks from ground instability are identified these are discussed within the report.

2.0 SITE SETTING

Site Description

Item	Description
Site Address	Caversham Road, Reading RG1 7BT
National Grid Reference	471104 173749
Approximate Site Area	0.15 Ha

Current Site Description

- 2.1 The following site description has been compiled from the site inspection undertaken by Enzygo Geoenvironmental Ltd staff, together with current maps and aerial photographs.
- 2.2 The site comprises a car rental company and is occupied by a building in the south used for offices. The western area of the building includes bays for cleaning and servicing vehicles.
- 2.3 The servicing area of the building has a concrete floor slab with no evidence of oil or chemical spillages.
- 2.4 No fuel or chemical storage was noted on site.
- 2.5 The remainder of the site comprises concrete and block paved hardstanding used for parking of rental cars.
- 2.6 No significant sources of potential contamination were noted on the site.

Surrounding Area

- 2.7 The surrounding land uses are summarised as follows:

Direction	Land Use
South	Residential development.
West	Residential use.
East	Caversham Road with offices beyond.
North	Great Knollys Street with Farmers Market and residential development beyond.

- 2.8 No significant sources of potential contamination were noted adjacent to the site.

3.0 SITE HISTORY

- 3.1 A review of historical maps has been undertaken pertinent to the current development site and within a 250m radius. Details are summarised below:

Potentially Contaminative Historical Land Use		
Historical Land Use		
Map Edition	On Site	Off Site
1879	Residential houses in W & Stone Yard in E.	Great Knollys Street 0m N. Caversham Road 0m E. Residential development 0m S, 10m N & E. Commercial use 0m W, Cattle Market 150m NW. Railway line 150m N. Corporation Yard 150m NW.
1899	No significant change.	No significant change.
1912	No significant change.	No significant change.
1931	No significant change.	No significant change.
1957	No significant change.	Public house 0m W. Corn exchange 120m N. Bus depot 100m SW.
1962	One of the houses is shown as a garage.	Garage 80m SW.
1969	Stone Yard shown as builders yard.	Offices 10m E.
1973	Garage no longer shown.	No significant change.
1978	No houses. Site builders yard.	No significant change.
1986	No significant change.	Corn Exchange shown as hall.
1993	No significant change.	No significant change.
1994	No significant change.	Apartments 10m N.
2001	No significant change.	No significant change.
2003	No significant change.	Apartments 0m W.
2010	No significant change.	No significant change.
2020	No significant change.	No significant change.

- 3.2 Google Earth indicates that the Builders Yard became a car rental around 2010. The builders yard appears to have comprised an area of hardstanding used for storage of materials and as such is not considered significant risk.
- 3.3 One of the houses appears to have been converted to a garage. Given the small size it is considered that this would only have been used for servicing of vehicles.

- 3.4 There is a risk of Made Ground associated with demolition of historic houses which may include ash from domestic fires and potential infilled cellars. Given the age of the houses the presence of asbestos is not considered significant.
- 3.5 Historical maps show no significant potential sources identified on or near to the development site.

4.0 ENVIRONMENTAL SETTING

Ground Conditions

- 4.1 The British Geological Survey (BGS) indicates that the site is underlain by the following geological sequence:

Geological Unit	Type	Description	Aquifer Classification
Drift	Alluvium	Silt	Secondary A
Solid	Lewes Nodular Chalk, Seaford Chalk and Newhaven Chalk Formations	Chalk	Principal

- 4.2 There are no records of Made Ground below or adjacent to the site.
- 4.3 No records of landslides are identified near to the site.
- 4.4 Published soil quality records for the site show no exceedance above GAC values for residential use.
- 4.5 BGS borehole records close to site confirm clay over gravel and Chalk.

Groundwater

- 4.6 The recorded permeability of the drift geology is high to very low reflecting the mixed lithology of the soils. The recorded permeability of the solid geology is high to very high which is based on structured chalk.
- 4.7 Chalk weathers to a matrix dominant material near surface and as such permeability will be lower.
- 4.8 The site is not shown as being within a Source Protection Zone.
- 4.9 There is one groundwater abstraction license within 250m of the site. This is located 249m south. Given the distance to the site this is not considered to be viable receptor.

Coal Mining

- 4.10 No historical or current coal mining extraction has been identified within 250m of the site.

Non Coal Mining

- 4.11 No other mining activity has been identified within 250m of the site.

Natural Cavities

- 4.12 No natural cavities or solution features are identified within 250m of the site.

Ground Workings

- 4.13 No significant ground working are identified within 250m of the site.

Hydrology

- 4.14 There are no surface water courses within 250m of the site.
- 4.15 There are no surface water abstractions within 250m of the site.
- 4.16 The BGS identifies that there is a moderate risk from groundwater flooding. Groundwater will be assessed as part of the ground investigation.

Radon Risk Potential

- 4.17 The Groundsure GeoInsight Report indicates that the site is not within a Radon Affected Area. No radon protective measures are necessary in the construction of new dwellings.

Natural Hazards Finding

- 4.18 BGS information presented within the Groundsure Geoinsight report identifies the following:

Hazard	Risk Designation (Groundsure)
Coal Mining.	None Identified.
Collapsible Ground.	Very Low.
Compressible Ground.	Moderate.
Ground Dissolution.	Very Low.
Landslide.	Very Low.
Running Sand.	Low.
Swelling / Shrinking Clay.	Very Low.

- 4.19 There is a moderate risk of compressible ground associated with Alluvium and this will be assessed as part of the ground investigation. No other significant geotechnical risks are identified.

Sensitive Land Uses

- 4.20 There are no sites of special interest on the site.

- 4.21 English Heritage has not identified any listed buildings or scheduled ancient monuments on or close to the site. No sensitive geology has been identified at the site.

Environmental Sensitivity

- 4.22 Overall the site is currently considered to be of low/Moderate sensitivity due to the following:

- The underlying stratum is classified as a Secondary A Aquifer over a Principal Aquifer;
- Not within a source protection zone;
- No surface water courses on and adjacent to the site; and
- No sensitive ecology is noted adjacent to or on the site.

- 4.23 The proposed end use of the site is residential apartments and as such future sensitivity will be moderate for end users.

Industrial Land Uses

- 4.24 Industrial land uses within 250m of the site are limited to car repair, retail and infrastructure. None are close enough to the site to pose a significant risk.

- 4.25 The Groundsure EnviroInsight Report indicates that there is one fuel station within 250m of the site. This is located 211m south of the site and given the distance is not considered a significant risk.

- 4.26 There are no high-pressure oil pipelines within 250m of the site.

- 4.27 No new potential contamination risks are identified on or adjacent to the site from the register of industrial activities.

Regulatory Database

- 4.28 The following information has been obtained from a commercially available environmental database. The summary table only includes records not otherwise detailed in the report.

Environmental Permits, Incidents and Registers	On site	0 -250m	Details
Site determined as contaminated land.	0	0	Not Applicable.
Authorised industrial processes.	0	0	Not Applicable.
Registered radioactive substances.	0	0	Not Applicable.
Enforcements, prohibitions or prosecutions.	0	0	Not Applicable.
Consents issued under the Planning (Hazardous Substances) Act 1990.	0	0	Not Applicable.
Control of Major Accident Hazard (COMAH)/ Notification of Installations Handling Hazardous Substances (NIHHS) sites.	0	0	Not Applicable.
Pollution Incidents.	0	7	Category 3 (Minor) impact to land from oils. Nearest located 269m E and not considered a risk.
Records of Licensed Discharge Consents.	1	2	Site drainage with nearest 229m NW. Not considered a significant risk.

4.29 No new significant risks to the site are identified.

Landfill Sites and Waste Treatment Sites

4.30 There are no active or historic landfills within 250m of the site.

4.31 There are no significant waste treatment facilities within 250m of the site.

4.32 There are no significant risks from waste activities.

5.0 PREVIOUS REPORTS

General

5.1 No previous reports were provided.

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6.0 PRELIMINARY CONCEPTUAL MODEL

6.1 Based on the desk study information the following Preliminary Conceptual Model has been prepared:

Source	Location	Exposure Pathway	Potential Receptor	Probability of Exposure	Details
Human Health					
Oils	Historic Garage	Ingestion dermal and inhalation.	Construction Workers.	Dismissed.	Normal PPE will address risk.
			Site users.	Low.	Significant source unlikely.
Asbestos, Hydrocarbon and metals.	Made Ground from historic buildings.	Ingestion dermal and inhalation.	Construction Workers.	Dismissed.	Normal PPE will address risk.
			Site users.	Low.	Significant source unlikely.
Asbestos, Hydrocarbon and metals.	Current On-site sources.	Ingestion dermal and inhalation.	Construction Workers.	Dismissed.	No source identified.
			Site users.		
Asbestos, Hydrocarbon and metals.	Unforeseen Contamination.	Ingestion dermal and inhalation.	Construction Workers.	Dismissed.	Normal PPE will address risk.
			Site users.	Negligible.	No significant risk identified.
Hydrocarbon and metals.	Off-site sources.	Ingestion dermal and inhalation.	Construction Workers.	Dismissed.	No source identified.
			Site users.		
Ground Gas.	Historic Landfill.	Asphyxiation & Explosive.	Construction Workers.	Dismissed.	No source identified.
			Site users.		
	Potential Made Ground.	Asphyxiation & Explosive.	Construction Workers.	Dismissed.	Significant putrescible material unlikely.
			Site users.		
Groundwater					
Hydrocarbon and metals.	Potential spillage on site.	Vertical Migration.	Groundwater.	Dismissed.	No mobile significant source identified.
Surface Water					
Hydrocarbon and metals.	Potential spillage on site.	Horizontal Migration.	River Network.	Dismissed.	No significant source or receptor.
Environmental Receptors					
On site contaminants		Ingestion dermal and inhalation.	Ecology.	Dismissed.	No sensitive ecology designation.
		Direct.	Archaeology.	Dismissed.	None present.
		Direct.	Geology.	Dismissed.	No sensitive receptor present.
		Phytotoxic.	Woodland.	Dismissed.	None present.
		Phytotoxic.	Crops.	Dismissed.	No source identified.
		Ingestion dermal and inhalation.	Livestock.	Dismissed.	No source identified.
Building Services					
On site contaminants		Direct.	Historic Buildings.	Dismissed.	None present.
		Direct.	Proposed Buildings.	Dismissed.	No source identified.
		Permeate into pipework.	Water Pipes.	Dismissed.	No significant source identified.

- 6.2 There are potential risks from Made Ground and localised oil spillages from the historic garage site. Contamination is unlikely to be widespread and will not significantly impact development as any remediation necessary can easily be accommodated within normal construction practice.

7.0 SITE INVESTIGATION

General

- 7.1 A ground investigation was undertaken based on the findings of the desk study and proposed development. The locations of the exploratory holes are shown on Drawing CRM.1726.002.GE.D.001.

Site Works

- 7.2 The site investigation works were undertaken on 3rd June 2020 and comprised window sampler holes (WS1 to WS4) and a cable percussive borehole (BH1). Window Sampler WS3 could not be advanced due to site constraints.
- 7.3 Exploratory holes were located to provide coverage across the site but the following specific exploratory hole locations were chosen:

Rational	Exploratory Holes	Notes
Former garage.	BH1.	Historical map.
Former houses.	WS1.	Historical map.
Former building yard.	WS1 to WS4 & BH1	Historical map.
Deep Foundations.	BH1.	Deep borehole.
General coverage.	WS1 to WS4 & BH1.	Site coverage.
Pavement design.	WS4.	CBR test.
Groundwater and ground gas monitoring.	WS1 to WS4.	Installations.

- 7.4 Strength of soils were assessed using Standard Penetration Tests (SPT). The results of which are included on the borehole logs presented in Appendix B.
- 7.5 Representative soil samples were collected for chemical and geotechnical testing. Soil samples destined for chemical analysis were collected in appropriate containers provided by the analytical laboratory. Samples were stored in cool boxes prior to dispatch to the laboratory for analysis. All samples were collected using appropriate sampling equipment that was cleaned at each sampling location.
- 7.6 Generally samples were collected from Made Ground, which may contain potential inclusions of contaminating materials and materials displaying evidence of potential contamination.
- 7.7 In the absence of any evidence of contamination samples were collected near surface as this material is more likely to be contaminated by surface spillages and also will potentially be in contact with future residents.

Monitoring

- 7.8 Return visits were undertaken to monitor groundwater levels. During these visits ground gas will be measured. During a return visit undertaken on 26th August 2020 samples of groundwater were collected for contamination testing.

Laboratory Testing

- 7.9 Samples for geotechnical testing were sent to the laboratories of I2, which is UKAS accredited, for the following analysis:
- California Bearing Ratio (CBR) test;
 - Atterberg Limits Determinations;
 - Moisture Content;
 - Soluble sulphate and pH.
- 7.10 Samples for chemical analysis were sent to the laboratories of The I2 Ltd who are UKAS and MCERTS accredited. Samples were tested for the CLEA metal suite, pH, sulphate, cyanide, phenols, speciated Polycyclic Aromatic Hydrocarbons (PAH), organic carbon, banded Total Petroleum Hydrocarbon (TPH) and asbestos screen.
- 7.11 Groundwater samples were tested for speciated Total Petroleum Hydrocarbons (TPH CWG).

8.0 GROUND AND GROUNDWATER CONDITIONS

Summary of Ground and Groundwater Conditions

- 8.1 The investigations undertaken by Enzygo Geoenvironmental Ltd identify the following strata below the site:

Strata	Summary Description	Thickness (m)
Made Ground	Concrete hardstanding over orange brown silty sandy brick and concrete gravel varying to gravelly clay with fragments of ash and flint.	1.8 to 2.9
Alluvium	Soft becoming firm with depth grey gravelly silty clay.	1.4 to 1.8
Taplow Gravels	Medium dense orange brown clayey flint gravel.	4
Lewes Nodular Chalk, Seaford Chalk and Newhaven Chalk Formations.	Yellow white structureless Chalk composed of clayey gravel of chalk and flint. (Class Dm/Dc).	>16
Groundwater	Seepage.	3.0m to 4.2 bgl.

- 8.2 Details of the ground and groundwater conditions encountered are given on the exploratory hole records included in Appendix B and are summarised in the sections below:

Made Ground

- 8.3 Made Ground was encountered across the site and was noted to comprise 200mm of concrete hardstanding over orange brown silty sandy brick and concrete gravel varying to gravelly clay with fragments of ash and flint.
- 8.4 The Made Ground appears to be a mixture of general fill probably associated with the former houses which occupied the site and a poor quality sub-base to the pavement construction. The depth of Made Ground is likely to represent infilling of substructures to the historic houses.

Alluvium

- 8.5 Soft becoming firm with depth grey gravelly silty clay.

Taplow Gravels

- 8.6 Medium dense orange brown clayey flint gravel was encountered below the alluvial clay, which is likely to be Taplow Gravels.

Lewes Nodular Chalk, Seaford Chalk and Newhaven Chalk Formations

- 8.7 The undifferentiated Lewes Nodular Chalk, Seaford Chalk and Newhaven Chalk Formations were recovered as yellow white structureless Chalk composed of clayey gravel of chalk and flint. (Class Dm/Dc).

Visual and Olfactory Evidence of Contamination

- 8.8 No visual or olfactory evidence of contamination was encountered during the site works.

Soil Strength

- 8.9 Clay soils were generally noted to be soft but becoming firm close to the base. Taplow Gravels were noted to be medium dense with SPT values increasing from 14 at 4m below ground level (bgl) to 28 at 8m bgl.

Groundwater

- 8.10 Groundwater was encountered as seepages at depths of between 3.0m and 4.2m bgl. The depth to groundwater measured from installations during monitoring visits are summarised on the table below:

Exploratory Hole	Depth m(bgl)		
	26.8.20	2.9.20	10.9.20
WS1	2.14	2.15	2.25
WS2	2.18	2.16	2.21
WS4	2.54	2.62	2.66

Ground Gas

- 8.11 Ground gas was monitored during the return visits to monitor groundwater levels. Results are provided on the table below:

Exploratory Hole	Atmos pressure (Mb)	Flow (l/hr)	CH4		CO2		O2
			Concentration (%)	GSV (l/hr)	Concentration (%)	GSV (l/hr)	Concentration (%)
26.8.20							
WS1	988 (F)	<0.1	<0.1	<0.0001	5.3	<0.0053	14.5
WS2	988 (F)	<0.1	<0.1	<0.0001	2.0	<0.0020	18.8
WS4	988 (F)	<0.1	<0.1	<0.0001	6.2	<0.0062	12.0
2.9.20							
WS1	999 (F)	<0.1	<0.1	<0.0001	5.1	<0.0051	14.9
WS2	999 (F)	<0.1	<0.1	<0.0001	1.2	<0.0012	18.9
WS4	999 (F)	<0.1	<0.1	<0.0001	12.7	<0.0127	1.2
10.9.20							
WS1	1011 (S)	<0.1	<0.1	<0.0001	5.4	<0.0054	15.1
WS2	1011 (S)	<0.1	<0.1	<0.0001	1.3	<0.0013	19.5
WS4	1011 (S)	<0.1	<0.1	<0.0001	12.6	<0.0126	1.1

9.0 CONTAMINATION ASSESSMENT

General

- 9.1 A Tier I risk assessment has been undertaken using available and current screening values for human health and where appropriate controlled waters. The risk assessment is undertaken based on the findings of the preliminary conceptual model presented in Section 6. Based on the contamination testing and Tier I assessment a revised Conceptual Model has been prepared, which is presented later in this section.
- 9.2 Where significant risks are identified remedial measures are recommended.

Human Health

- 9.3 Assessment of the risks to human health has been undertaken by comparing the soil quality data with reference values obtained from the Contaminated Land Exposure Assessment (CLEA), Soil Guideline Values (SGV) and General Acceptance Criteria (GAC) published by LQM and derived in consultation with the Chartered Institute of Environmental Health. The LQM/CIEH S4ULs values are used and summary tables of the reference values are included in Appendix C.
- 9.4 Where an exceedance is identified the risk is assessed by considering the sensitivity of the proposed development and the potential pathway. The proposed use of the Development Site comprises apartments with communal open space.
- 9.5 The GAC values for residential use without plant uptake are used.
- 9.6 The soil quality shows exceedances of the GAC values in the following samples:

Exploratory Hole	Determinant	Concentration (mg/kg)	
		Soil	GAC
WS2 @ 0.3m	Dibenzo(ah)Anthracene	0.34	0.31
WS1 @ 0.3m	Lead	410	310
WS4 @ 1m		920	

- 9.7 A double ratio plot confirms the source of the PAH as coal derived combustion product consistent with the visual observations within the Made Ground.
- 9.8 No asbestos fibres were detected.

Controlled Waters

- 9.9 Where groundwater samples have been analysed the results are compared against reference values. These reference values are summarised in Appendix C and are taken from Fresh Water Environmental Quality Standards (EQS), UK Drinking Water Standards and World Health Organisation (WHO) values for Drinking Water.
- 9.9 Where the controlled waters receptor is a surface water course then the EQS are used as the primary reference value. Drinking Water Standards and WHO values are used where EQS values are not available. An assessment of likely risk is then made based on a source-pathway-receptor model. Where the receptor is potable groundwater resources the Drinking Water Standards and WHO values are used.
- 9.10 Groundwater testing identified TPH in one sample (WS2) only associated with C₂₁ to C₃₅ Aliphatic hydrocarbons. The concentrations measured do not exceed the WHO values and so are not considered a significant risk. As a precaution the piling method will be adapted to avoid creation of a new pathway. This is discussed in Section 10.

Ground Gas

- 9.11 Following the guidance provided in Section 3 of CIRIA C665 an initial assessment is undertaken to determine if there are any significant sources of potential ground gas. Such sources include landfills, organic clays and made ground incorporating putrescible materials such as rags, paper and wood. Where no significant source is identified no further assessment is necessary.
- 9.12 This approach is further supported by supplementary guidance given in RB17, published by CL:AIRE which confirms that gas monitoring is not generally required on sites where Made Ground is less than 5m thick and with low organic matter content or on natural soils such as alluvial clays and Chalk as the ground gas sources are not considered significant. The supplementary guidance given in RB17 also takes account of the current requirements for sealing of floor slabs and substructures to meet air tightness requirements under Part L of the Building Regulations which were not considered in CIRIA C665. The advice given in RB17 is consistent with CIRIA C665 and the Local Authority Guide to Ground Gas published by CIEH.
- 9.13 Where significant potential risk from ground gas is identified from the Initial Conceptual Model and the intrusive ground investigation works ground gas monitoring is undertaken

and the results of the monitoring are compared against the Gas Screening Values given in CIRIA Report 665. From this the Characteristic Situation is identified and remedial measures proposed.

- 9.14 When assessing the risk and type of remedial measures appropriate consideration is given to the likely construction of the development, the nature of the gas posing a risk and the nature of the likely source. The use of engineering judgement when determining risk from ground gas is consistent with the recommendations given in CIRIA C665 using a pollutant linkage model.
- 9.15 Gas monitoring has identified elevated concentrations of Carbon Dioxide and it is recommended that gas protection measures are used to meet the requirements of Characteristic Situation 2. It is considered likely that the Carbon Dioxide is associated with organic matter in the alluvial clays.

Revised Conceptual Model

- 9.16 The Initial Conceptual Model presented in Section 6 has been revised based on the findings of the ground investigation and the revised Conceptual Model is presented below:

Source	Location	Exposure Pathway	Potential Receptor	Probability of Exposure	Details
Human Health					
PAH & Lead	Made Ground	Ingestion.	Construction Workers.	Dismissed.	Normal PPE will address risk.
			Site users.	Very Low.	Remediation Proposed.
Asbestos, Hydrocarbon and metals.	On-site sources.	Ingestion dermal and inhalation.	Construction Workers.	Dismissed.	No source identified and no exceedance of GAC.
			Site users.		
Asbestos, Hydrocarbon and metals.	Unforeseen Contamination.	Ingestion dermal and inhalation.	Construction Workers.	Dismissed.	Normal PPE will address risk.
			Site users.	Negligible.	No source identified.
Ground Gas.	Historic Landfill.	Asphyxiation & Explosive.	Construction Workers.	Dismissed.	No source identified.
			Site users.		
	Potential Made Ground.	Asphyxiation & Explosive.	Construction Workers.	Very Low.	Gas protection measures to be used.
			Site users.		
Groundwater					
Hydrocarbon and metals.	On site contamination sources.	Vertical Migration.	Groundwater.	Dismissed.	No mobile source identified on site.
Surface Water					
Hydrocarbon and metals.	On site contamination sources.	Horizontal Migration.	River Network.	Dismissed.	No significant source or receptor.
Environmental Receptors					
On site contaminants		Ingestion dermal and inhalation.	Ecology.	Dismissed.	No sensitive ecology designation.
		Direct.	Archaeology.	Dismissed.	None present.
		Direct.	Geology.	Dismissed.	No sensitive receptor present.
		Phytotoxic.	Woodland.	Dismissed.	None present.
		Phytotoxic.	Crops.	Dismissed.	No source identified.
		Ingestion dermal and inhalation.	Livestock.	Dismissed.	No source identified.
Building Services					
On site contaminants		Direct.	Historic Buildings.	Dismissed.	None present.
		Direct.	Proposed Buildings.	Dismissed.	No source identified.
		Permeate into pipework.	Water Pipes.	Dismissed.	No significant source identified.

Remediation

- 9.19 No mobile or volatile contaminants have been identified. It is considered that the use of hardstanding across the majority of the site associated with the proposed buildings and pavement construction will act as a barrier o break the potential pollutant linkage.
- 9.20 Existing Made Ground is not considered suitable for re-use as topsoil as it is unsuitable to support future planting. It is therefore recommended that clean cover spoils are used in areas of future soft landscaping. This will provide a barrier to future site users from any residual contaminants and also act as a suitable rooting medium for future planting. It is recommended that 400mm of clean topsoil is used placed over a geotextile no dig barrier.
- 9.21 Gas protective measures are proposed which are discussed in Section 10.
- 9.22 If unforeseen contamination is encountered during construction works such as localised spillage outside the areas investigated an Environmental consultant will be available on a 'call out' basis to undertake an assessment of risk. If 'unforeseen contamination' is encountered the discovery strategy will be to remove the source as it is likely to be very limited in extent and the Local Planning Authority advised.

Waste Classification

- 9.23 No asbestos has been detected and concentrations of TOC and PAH are below threshold values for Hazardous Waste. One sample (BH1 @ 0.5m) recorded TPH above the threshold for Stable Non Reactive Waste.
- 9.24 The Waste Management paper 2 has been updated to version 3 which states that sites which previously could be considered 'uncontaminated land' surplus soils if they did not exceed the GAC values now requires the landfill to make an appropriate assessment of the waste classification. As such final assessment, will be undertaken by the receiving landfill based on the requirements of their permit.
- 9.25 Based on the results received and the historical use of the site it is considered that soils should generally to be classified as non-hazardous classification with a stable non-reactive classification where the TPH has been measured.

10.0 GEOTECHNICAL ASSESSMENT

Proposed Development

- 10.1 Currently no development layout has been provided but it is understood that residential apartments are proposed within the area of the current building with remainder of the site being utilised for vehicle parking and communal soft landscaping.
- 10.2 It is considered that the scheme meets the criteria of Geotechnical Category 1 of Eurocode 7.

Ground Conditions

- 10.3 Ground Conditions comprise Made Ground over soft clay to depths of around 3m bgl over medium dense sand and gravel and Chalk.
- 10.4 Groundwater was encountered at depths of between 3m and 4.2m bgl.

Site Preparation

- 10.5 The site should be cleared and any vegetation below areas of proposed development stripped in accordance with Series 200 of the Specification for Highway Works. This should include:
- Excavation of any remaining substructures;
 - Excavation, segregation and testing of topsoil in advance of disposal or re-use; and
 - Any redundant services should be sealed off and grubbed out and replaced with suitable compacted engineered fill.

Foundations

- 10.6 Given the depth of Made Ground and soft alluvial clays it is recommended that piled foundations are used. As there is a residual risk from TPH in soils and shallow groundwater it is recommended that CFA pile are used which will maintain a seal through the low permeability Alluvial clay in accordance with the foundation solution preferred by the Environment Agency.
- 10.7 An assessment of the soils modified plasticity index confirms that soils are of Low volume change potential varying to Non-Plastic. No evidence of desiccation was noted.

Ground Floor Slab

- 10.8 It is recommended that suspended floor slabs are used. Due to the presence of elevated Carbon Dioxide concentrations it is recommended that gas protective measures are incorporated into the ground floor slab meeting the requirements of Characteristic Situation 2. These should comprise:
- Use of a gas membrane in place of DPM, sealed the cavity tray and around service entries; and
 - Ventilation of the underfloor void.

Pavement Construction

- 10.9 An assessment of the likely California Bearing Ratio (CBR) has been assessed from the following sources:
- Laboratory CBR testing undertaken on samples re-compacted to simulate proof rolling;
 - Description of the materials encountered in the exploratory holes; and
 - Guidance given in HD25/94.
- 10.10 Based on the above it is considered that an equilibrium CBR of <2% is suitable.
- 10.11 Soils are considered to be frost susceptible.

Buried Concrete

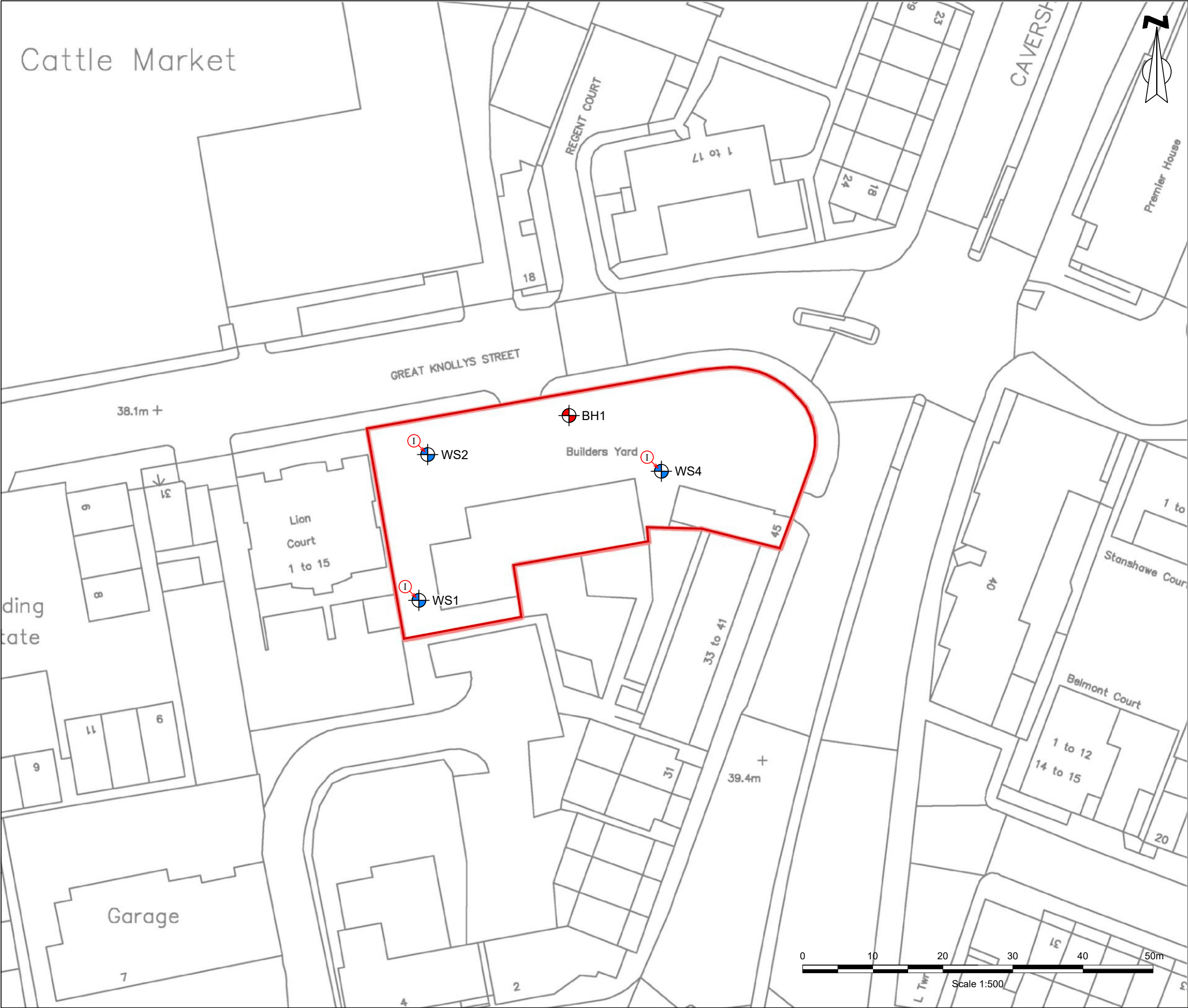
- 10.12 Results of the sulphate testing indicate that soils generally have soluble sulphate concentrations less than 500 mg/l consistent with class DS1. It is considered that buried concrete may be designed to Class AC1-s.

Excavation

- 10.13 It is considered that excavations should be feasible in the near surface with conventional plant. Where access is required the excavations should be designed in accordance with CIRIA RR97.
- 10.14 No significant dewatering is anticipated.

Drainage

10.15 Soakaways are considered suitable for surface water drainage due to the presence of low permeability clay.



Key

- Site Boundary
- Window Sampler Boreholes (WS)
(WS1, WS2 & WS4)
- Borehole Location (BH)
(BH1)
- Borehole Installation (I)

Samuel House, 5 Fox Valley Way, Stocksbridge, Sheffield, S36 2AA		
CLIENT:		Elstree Land
SCALE:	PROJECT REF:	
1:500@A3	CRM.1726.002	
DRAWN:	CHECKED:	DATE:
MG	SR	March 2020
PROJECT:		
Caversham Road, Reading		
TITLE:		
Site Plan		
FIGURE NO:		
CRM.1726.002.GE.D.001		

Caversham Road, Reading, RG1 7BT,

Order Details

Date: 04/03/2020
Your ref: EMS_597960_800141
Our Ref: EMS-597960_800141
Client: emapsite

Site Details

Location: 471104 173749
Area: 0.15 ha



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Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

p.13

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Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	1.1	<u>Historical industrial land uses</u>	0	0	48	91	-
20	1.2	<u>Historical tanks</u>	0	6	13	21	-
21	1.3	<u>Historical energy features</u>	0	0	10	28	-
23	1.4	<u>Historical petrol stations</u>	0	0	0	1	-
23	1.5	<u>Historical garages</u>	2	3	20	6	-
25	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
26	2.1	<u>Historical industrial land uses</u>	0	0	66	115	-
33	2.2	<u>Historical tanks</u>	0	6	16	26	-
35	2.3	<u>Historical energy features</u>	0	0	25	55	-
38	2.4	<u>Historical petrol stations</u>	0	0	0	1	-
39	2.5	<u>Historical garages</u>	5	5	28	15	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
42	3.1	Active or recent landfill	0	0	0	0	-
42	3.2	Historical landfill (BGS records)	0	0	0	0	-
43	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
43	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
43	3.5	<u>Historical waste sites</u>	0	0	1	2	-
44	3.6	Licensed waste sites	0	0	0	0	-
44	3.7	<u>Waste exemptions</u>	0	0	7	8	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
46	4.1	<u>Recent industrial land uses</u>	2	2	33	-	-
49	4.2	<u>Current or recent petrol stations</u>	0	0	1	2	-
49	4.3	Electricity cables	0	0	0	0	-
49	4.4	Gas pipelines	0	0	0	0	-
49	4.5	Sites determined as Contaminated Land	0	0	0	0	-



50	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
50	4.7	Regulated explosive sites	0	0	0	0	-
50	4.8	Hazardous substance storage/usage	0	0	0	0	-
50	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
50	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
51	4.11	<u>Licensed pollutant release (Part A(2)/B)</u>	0	0	0	3	-
51	4.12	Radioactive Substance Authorisations	0	0	0	0	-
51	4.13	<u>Licensed Discharges to controlled waters</u>	0	0	1	2	-
52	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
52	4.15	Pollutant release to public sewer	0	0	0	0	-
52	4.16	List 1 Dangerous Substances	0	0	0	0	-
53	4.17	List 2 Dangerous Substances	0	0	0	0	-
53	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	0	0	7	-
54	4.19	Pollution inventory substances	0	0	0	0	-
54	4.20	Pollution inventory waste transfers	0	0	0	0	-
54	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
55	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
56	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
57	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
58	5.4	<u>Groundwater vulnerability- soluble rock risk</u>	Identified (within 0m)				
58	5.5	Groundwater vulnerability- local information	None (within 0m)				
59	5.6	<u>Groundwater abstractions</u>	0	0	1	4	11
63	5.7	<u>Surface water abstractions</u>	0	0	0	0	6
65	5.8	<u>Potable abstractions</u>	0	0	1	2	2
66	5.9	Source Protection Zones	0	0	0	0	-
66	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
67	6.1	<u>Water Network (OS MasterMap)</u>	0	0	2	-	-



68	6.2	<u>Surface water features</u>	0	0	1	-	-
68	6.3	<u>WFD Surface water body catchments</u>	1	-	-	-	-
68	6.4	<u>WFD Surface water bodies</u>	0	0	0	-	-
69	6.5	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
70	7.1	<u>Risk of Flooding from Rivers and Sea (RoFRaS)</u>	Low (within 50m)				
71	7.2	<u>Historical Flood Events</u>	0	0	2	-	-
71	7.3	Flood Defences	0	0	0	-	-
71	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
72	7.5	Flood Storage Areas	0	0	0	-	-
73	7.6	<u>Flood Zone 2</u>	Identified (within 50m)				
74	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
75	8.1	<u>Surface water flooding</u>	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
77	9.1	<u>Groundwater flooding</u>	Moderate (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
78	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
78	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
78	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
78	10.4	Special Protection Areas (SPA)	0	0	0	0	0
79	10.5	National Nature Reserves (NNR)	0	0	0	0	0
79	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
79	10.7	Designated Ancient Woodland	0	0	0	0	0
79	10.8	Biosphere Reserves	0	0	0	0	0
80	10.9	Forest Parks	0	0	0	0	0
80	10.10	Marine Conservation Zones	0	0	0	0	0
80	10.11	Green Belt	0	0	0	0	0
80	10.12	Proposed Ramsar sites	0	0	0	0	0



80	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
81	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
81	10.15	Nitrate Sensitive Areas	0	0	0	0	0
81	10.16	<u>Nitrate Vulnerable Zones</u>	1	0	0	0	1
82	10.17	<u>SSSI Impact Risk Zones</u>	1	-	-	-	-
83	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
84	11.1	World Heritage Sites	0	0	0	-	-
85	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
85	11.3	National Parks	0	0	0	-	-
85	11.4	<u>Listed Buildings</u>	0	2	4	-	-
86	11.5	Conservation Areas	0	0	0	-	-
86	11.6	Scheduled Ancient Monuments	0	0	0	-	-
86	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
87	12.1	<u>Agricultural Land Classification</u>	Urban (within 250m)				
88	12.2	Open Access Land	0	0	0	-	-
88	12.3	Tree Felling Licences	0	0	0	-	-
88	12.4	Environmental Stewardship Schemes	0	0	0	-	-
88	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
89	13.1	Priority Habitat Inventory	0	0	0	-	-
89	13.2	Habitat Networks	0	0	0	-	-
89	13.3	Open Mosaic Habitat	0	0	0	-	-
89	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
90	14.1	<u>10k Availability</u>	Identified (within 500m)				
91	14.2	<u>Artificial and made ground (10k)</u>	0	0	3	1	-
93	14.3	<u>Superficial geology (10k)</u>	1	0	3	0	-

94	14.4	Landslip (10k)	0	0	0	0	-
95	14.5	<u>Bedrock geology (10k)</u>	1	0	0	0	-
96	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
97	15.1	<u>50k Availability</u>	Identified (within 500m)				
98	15.2	Artificial and made ground (50k)	0	0	0	0	-
98	15.3	Artificial ground permeability (50k)	0	0	-	-	-
99	15.4	<u>Superficial geology (50k)</u>	1	1	2	0	-
100	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
100	15.6	Landslip (50k)	0	0	0	0	-
100	15.7	Landslip permeability (50k)	None (within 50m)				
101	15.8	<u>Bedrock geology (50k)</u>	1	0	0	0	-
102	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
102	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
103	16.1	<u>BGS Boreholes</u>	0	0	86	-	-
Page	Section	Natural ground subsidence					
108	17.1	<u>Shrink swell clays</u>	Very low (within 50m)				
109	17.2	<u>Running sands</u>	Low (within 50m)				
111	17.3	<u>Compressible deposits</u>	Moderate (within 50m)				
113	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
114	17.5	<u>Landslides</u>	Very low (within 50m)				
116	17.6	<u>Ground dissolution of soluble rocks</u>	Low (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
118	18.1	<u>Natural cavities</u>	0	0	0	1	-
119	18.2	BritPits	0	0	0	0	-
119	18.3	<u>Surface ground workings</u>	0	0	2	-	-
119	18.4	Underground workings	0	0	0	0	0
119	18.5	Historical Mineral Planning Areas	0	0	0	0	-



<u>120</u>	<u>18.6</u>	<u>Non-coal mining</u>	0	1	1	0	41
<u>124</u>	<u>18.7</u>	<u>Mining cavities</u>	0	0	0	0	16
<u>125</u>	<u>18.8</u>	<u>JPB mining areas</u>	Identified (within 0m)				
125	18.9	Coal mining	None (within 0m)				
126	18.10	Brine areas	None (within 0m)				
126	18.11	Gypsum areas	None (within 0m)				
126	18.12	Tin mining	None (within 0m)				
126	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
<u>127</u>	<u>19.1</u>	<u>Radon</u>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
<u>128</u>	<u>20.1</u>	<u>BGS Estimated Background Soil Chemistry</u>	1	2	-	-	-
128	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
128	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
129	21.1	Underground railways (London)	0	0	0	-	-
129	21.2	Underground railways (Non-London)	0	0	0	-	-
130	21.3	Railway tunnels	0	0	0	-	-
<u>130</u>	<u>21.4</u>	<u>Historical railway and tunnel features</u>	0	0	66	-	-
132	21.5	Royal Mail tunnels	0	0	0	-	-
133	21.6	Historical railways	0	0	0	-	-
<u>133</u>	<u>21.7</u>	<u>Railways</u>	0	0	60	-	-
<u>135</u>	<u>21.8</u>	<u>Crossrail 1</u>	0	0	0	1	-
136	21.9	Crossrail 2	0	0	0	0	-
136	21.10	HS2	0	0	0	0	-

Recent aerial photograph



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Capture Date: 29/06/2019

Site Area: 0.15ha



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Date: 4 March 2020

Recent site history - 2015 aerial photograph



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Capture Date: 20/04/2015

Site Area: 0.15ha



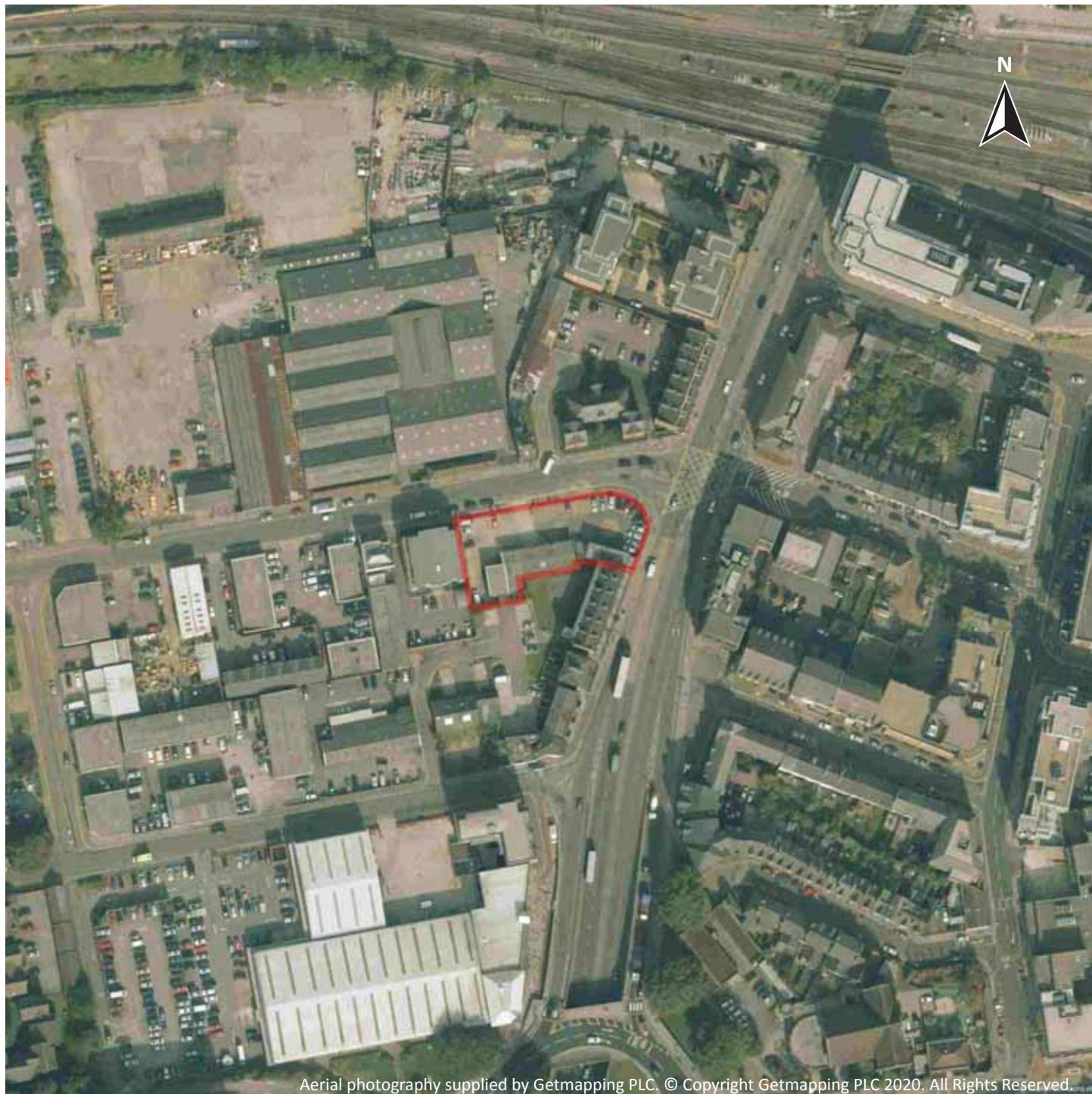
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Recent site history - 2010 aerial photograph



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Capture Date: 22/09/2010

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Recent site history - 2002 aerial photograph



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Capture Date: 16/08/2002

Site Area: 0.15ha



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Recent site history - 1999 aerial photograph



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Capture Date: 04/09/1999

Site Area: 0.15ha



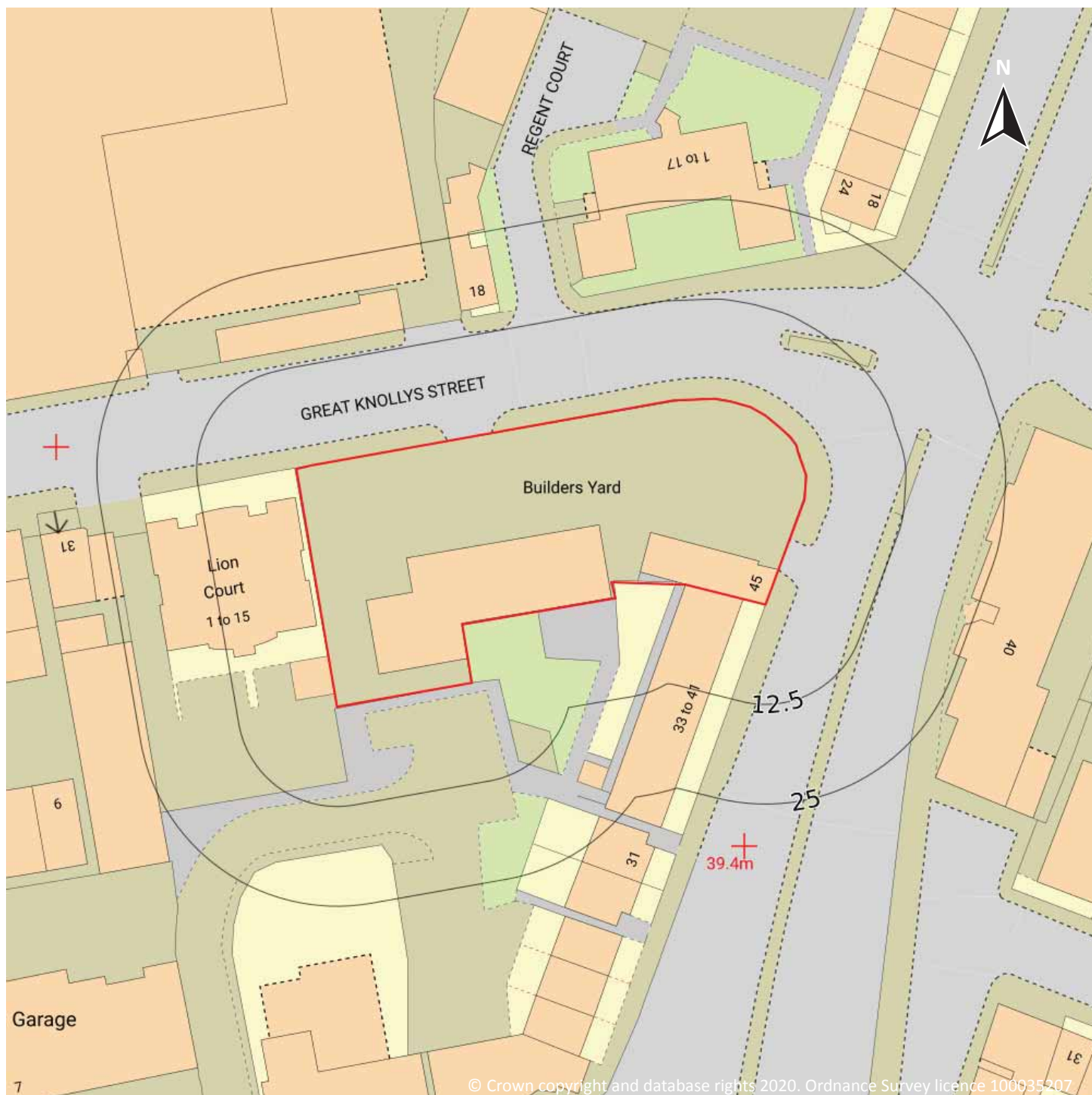
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OS MasterMap site plan



Site Area: 0.15ha



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Date: 4 March 2020

1 Past land use



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- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical petrol stations
- Historical garages

1.1 Historical industrial land uses

Records within 500m

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

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

ID	Location	Land use	Dates present	Group ID
E	72m S	Unspecified Depot	1977	1862097



ID	Location	Land use	Dates present	Group ID
F	116m N	Railway Sidings	1897 - 1913	1955038
G	119m NW	Corporation Yard	1989 - 1994	1939215
2	120m N	Railway Sidings	1932 - 1977	1908472
H	121m N	Railway Sidings	1989 - 1994	1913684
F	126m N	Railway Building	1898	1866754
H	130m N	Railway Sidings	1933	1905455
H	140m N	Railway Building	1913	1899836
H	140m N	Railway Building	1938	1968519
H	142m N	Railway Building	1938	1935637
G	144m NW	Corporation Yard	1933 - 1938	1935241
F	144m NE	Railway Building	1913	1866755
G	146m NW	Corporation Yard	1962	1909928
G	146m NW	Corporation Yard	1938	1932614
G	146m NW	Corporation Yard	1913	1962441
H	153m N	Railway Building	1913	1866757
H	163m NW	Railway Building	1938	1925681
H	163m NW	Railway Building	1913	1955053
M	177m NE	Railway Station	1933	1958834
L	178m E	Bus Station	1994	1864796
L	182m E	Smithy	1913	1875839
H	186m N	Railway Building	1898	1866760
N	188m E	Railway Building	1977	1901767
N	188m E	Railway Building	1989 - 1994	1964573
F	188m N	Fire Station	1962 - 1971	1898729
F	188m N	Fire Station	1977	1957046
F	188m N	Fire Station	1989 - 1994	1957033
M	191m NE	Railway Station	1971 - 1989	1962142
H	191m N	Unspecified Ground Workings	1938	1928064



ID	Location	Land use	Dates present	Group ID
H	191m N	Unspecified Ground Workings	1910 - 1913	1953745
3	192m N	Timber Yard	1913	1874339
M	193m NE	Railway Station	1898 - 1994	1906538
M	195m NE	Railway Station	1962	1936088
M	195m NE	Railway Station	1913	1937402
M	195m NE	Railway Station	1938	1962601
M	198m NE	Railway Station	1938	1948567
P	200m NE	Unspecified Works	1962 - 1971	1903310
P	200m NE	Unspecified Works	1977	1943410
P	202m NE	Railway Works	1913	1932396
P	202m NE	Railway Works	1938	1952064
P	206m NE	Railway Works	1898	1968682
P	208m NE	Unspecified Works	1933 - 1938	1929531
L	213m E	Garage	1971	1883648
H	220m NW	Railway Building	1898	1866758
H	240m NW	Railway Building	1913	1866761
Q	241m W	Unspecified Works	1977	1860419
Q	241m W	Unspecified Commercial/Industrial	1989 - 1994	1907408
H	250m NW	Railway Buildings	1938 - 1962	1922315
H	252m NW	Railway Buildings	1898	1919877
H	255m NW	Railway Buildings	1933	1914298
H	260m NW	Railway Buildings	1938	1910814
H	260m NW	Railway Buildings	1913	1946716
4	268m NW	Railway Building	1898	1866759
T	278m NE	Railway Building	1989 - 1994	1902104
T	278m NE	Railway Building	1977	1923638
T	278m NE	Railway Building	1971	1956131
H	285m NW	Railway Buildings	1977	1955184



ID	Location	Land use	Dates present	Group ID
H	288m NW	Railway Buildings	1989 - 1994	1904963
5	288m N	Malthouses	1878	1862728
H	299m NW	Railway Building	1933	1866771
W	306m N	Unspecified Works	1989 - 1994	1889396
W	306m N	Unspecified Works	1977	1893436
W	306m N	Unspecified Works	1962 - 1971	1947482
W	306m N	Printing Works	1910	1933766
W	308m N	Printing Works	1938	1912621
X	309m NE	Railway Sidings	1938	1947411
X	309m NE	Railway Sidings	1910	1953560
7	318m NW	Railway Building	1898	1866762
Y	320m S	Smithy	1913	1875838
Z	326m NE	Unspecified Works	1962	1860481
Z	326m NE	Unspecified Commercial/Industrial	1971	1938132
Z	326m NE	Unspecified Commercial/Industrial	1977	1963538
Z	326m NE	Unspecified Commercial/Industrial	1989 - 1994	1967558
AA	340m NE	Coal Depot	1910	1875305
M	344m NE	Railway Building	1898	1866756
H	350m NW	Railway Building	1962 - 1971	1968211
H	350m NW	Railway Building	1989 - 1994	1908478
H	350m NW	Railway Building	1977	1960184
AA	366m NE	Coal Depot	1938	1875306
AC	369m NW	Railway Building	1933 - 1938	1951325
AC	370m NW	Railway Building	1938 - 1962	1958832
AE	388m W	Engine Shed	1898	1956197
AE	388m W	Engine Shed	1913	1969097
AB	389m E	Railway Building	1962	1866740
AB	391m E	Terminus	1898	1948431



ID	Location	Land use	Dates present	Group ID
AF	391m NW	Railway Buildings	1962 - 1971	1949673
AB	391m E	Terminus	1938	1945798
AB	391m E	Terminus	1913	1969032
AE	391m NW	Engine Shed	1938	1900365
AF	392m NW	Railway Buildings	1977	1895517
AF	392m NW	Railway Buildings	1989 - 1994	1902562
AB	393m E	Terminus	1933	1949896
AE	393m NW	Engine Shed	1938	1943191
AB	393m E	Terminus	1938	1933328
AE	396m NW	Engine Shed	1962	1926541
AE	397m NW	Engine Shed	1933	1891905
AB	400m E	Garage	1971	1883649
11	406m NW	Railway Sidings	1901	1885395
AB	412m E	Railway Building	1938	1919647
AB	412m E	Railway Building	1913	1957368
AE	412m W	Railway Building	1913	1937336
AE	412m W	Railway Building	1938 - 1962	1953154
12	413m E	Railway Sidings	1933	1965409
AE	414m W	Railway Building	1977	1935042
AH	429m NE	Electric Works	1910	1940165
AE	433m W	Railway Building	1962	1941975
AE	435m W	Railway Building	1938	1946191
AG	435m E	Railway Building	1898	1945084
AE	436m W	Railway Building	1938 - 1962	1962000
AE	437m W	Railway Building	1913	1885372
AE	437m W	Railway Building	1913	1894317
AG	437m E	Railway Building	1938	1907514
AG	437m E	Railway Building	1913	1967493



ID	Location	Land use	Dates present	Group ID
AJ	446m SW	Nursery	1913	1867818
13	450m W	Refuse Heap	1913	1884301
AE	455m NW	Railway Building	1898	1927401
14	457m NE	Railway Sidings	1901	1887263
AK	457m NE	Smithy	1900	1875902
AL	460m NE	Sawmill	1938	1892814
AL	460m NE	Sawmill	1910	1933074
AE	460m W	Railway Building	1938 - 1962	1966442
AE	462m NW	Railway Building	1913	1919802
AM	467m NW	Unspecified Depot	1977	1916817
AM	469m NW	Unspecified Depots	1989	1862395
AE	470m NW	Railway Building	1898	1890616
AE	471m W	Railway Building	1989 - 1994	1953742
AE	471m W	Railway Building	1977	1888896
AE	471m W	Railway Building	1971	1937002
AE	472m W	Railway Building	1962	1866763
AK	472m NE	Smithy	1897	1875901
15	477m N	Unspecified Works	1962	1925766
16	482m NE	Railway Building	1933	1866802
AH	483m NE	Unspecified Depot	1989 - 1994	1914143
17	489m NW	Unspecified Depot	1971	1963192
AH	494m NE	Electric Works	1897 - 1900	1940569
18	495m NE	Iron Works	1910	1942788
AO	495m E	Railway Building	1913	1892409
AO	495m E	Railway Building	1938	1929321
AO	495m E	Railway Building	1938	1958202

This data is sourced from Ordnance Survey / Groundsure.



1.2 Historical tanks

Records within 500m

40

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

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

ID	Location	Land use	Dates present	Group ID
B	35m SW	Pump and Tank	1880	313632
B	35m SW	Pump and Tank	1880	317922
C	46m E	Tank or Trough	1879	316845
C	46m E	Tank or Trough	1879	324092
C	47m E	Tank or Trough	1879	316867
C	47m E	Tank or Trough	1879	325471
D	90m SE	Unspecified Tank	1880	321877
D	90m SE	Unspecified Tank	1880	318898
D	93m SE	Unspecified Tank	1880	314047
D	93m SE	Unspecified Tank	1880	317232
D	109m S	Tank or Trough	1880	321521
D	109m S	Tank or Trough	1880	325799
H	154m NW	Unspecified Tank	1986 - 1993	318870
H	159m NW	Tanks	1986 - 1993	326933
K	173m SE	Unspecified Tank	1912	315638
K	173m SE	Unspecified Tank	1879	312605
K	175m SE	Unspecified Tank	1900	322205
H	194m N	Tank or Trough	1879	312017
L	215m E	Unspecified Tank	1969	305869
G	274m NW	Tank or Trough	1879	312016
U	293m NE	Tank or Trough	1879	319837



ID	Location	Land use	Dates present	Group ID
U	293m NE	Tank or Trough	1879	326269
U	299m NE	Tank or Trough	1879	312004
6	303m NE	Tank or Trough	1879	312005
L	330m E	Tank or Trough	1879	326647
L	331m E	Tank or Trough	1879	327920
L	332m E	Tank or Trough	1879	312006
9	341m W	Tank or Trough	1879	312015
W	346m NW	Unspecified Tank	1970	305890
AG	405m E	Unspecified Tank	1879	305888
AE	422m W	Unspecified Tank	1912 - 1959	319576
AE	423m W	Tanks	1971 - 1986	316005
AE	427m W	Tanks	1959	318689
AE	427m W	Tanks	1958	327937
AE	433m W	Unspecified Tank	1900	305866
AE	442m W	Tanks	1959 - 1986	323854
AB	442m E	Unspecified Tank	1988	305886
AE	443m W	Unspecified Tank	1993	305865
AE	479m NW	Unspecified Tank	1959	317940
AE	479m NW	Unspecified Tank	1958	325389

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

38

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

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



ID	Location	Land use	Dates present	Group ID
1	88m NE	Electricity Substation	1988 - 1996	197999
C	94m E	Electricity Substation	1993 - 1996	203574
E	125m SW	Electricity Substation	1971 - 1986	198242
J	157m SE	Electricity Substation	1994 - 1996	209780
J	163m SE	Electricity Substation	1979 - 1993	204406
J	164m SE	Electricity Substation	1986	204349
I	165m S	Electricity Substation	1979 - 1996	209850
J	170m SE	Electricity Substation	1969	189830
O	199m W	Electricity Substation	1986 - 1993	205279
O	228m W	Electricity Substation	1971	189829
R	254m SE	Electricity Substation	1986 - 1996	207537
R	254m SE	Electricity Substation	1969	192596
R	266m SE	Electricity Substation	1979 - 1993	211699
R	280m SE	Electricity Substation	1993	206172
R	280m SE	Electricity Substation	1994 - 1996	200407
V	300m S	Electricity Substation	1980 - 1988	200961
V	301m S	Electricity Substation	1970	197671
W	317m N	Electricity Substation	1970 - 1988	208840
AA	326m NE	Electricity Substation	1982	202059
AA	326m NE	Electricity Substation	1971 - 1984	206466
8	331m SE	Electricity Substation	1986 - 1996	204833
AA	342m NE	Electricity Substation	1984	189859
AA	344m NE	Electricity Substation	1993	189862
10	391m SE	Electricity Substation	1969 - 1996	198092
P	391m NE	Electricity Substation	1993 - 1996	205206
AI	443m N	Electricity Substation	1971 - 1984	203361
AI	443m N	Electricity Substation	1982 - 1993	200621
AB	465m E	Electricity Substation	1971 - 1979	200623



ID	Location	Land use	Dates present	Group ID
AB	466m E	Electricity Substation	1986	201931
AN	485m S	Electricity Substation	1970	196813
AN	485m S	Electricity Substation	1980 - 1988	209601
AH	490m NE	Electricity Depot	1972	191558
AJ	498m SW	Electricity Substation	1971	209325
AP	499m NE	Electricity Substation	1982	192932
AP	499m NE	Electricity Substation	1984	192936
AJ	499m SW	Electricity Substation	1986 - 1993	201498
AP	499m NE	Electricity Substation	1971 - 1972	202539
AP	499m NE	Electricity Substation	1984 - 1993	203489

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

1

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

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

ID	Location	Land use	Dates present	Group ID
AB	364m E	Filling Station	1979	3336

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

31

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



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

ID	Location	Land use	Dates present	Group ID
A	On site	Garage	1957 - 1969	63644
A	On site	Garage	1957 - 1958	64847
B	27m SW	Garage	1994 - 1996	65332
B	29m SW	Garage	1986	62866
B	29m SW	Garage	1988 - 1993	64107
D	68m S	Garage	1962	61293
D	78m SW	Garage	1958	62286
D	79m SW	Garage	1957	62373
D	79m SW	Garage	1957	62486
F	85m N	Garage	1969	60830
I	143m S	Garage	1962	62062
I	144m S	Garage	1957	62737
I	144m S	Garage	1957 - 1958	63801
L	176m E	Garage	1957	61452
L	177m E	Garage	1957 - 1958	64717
I	188m S	Car Park and Garage	1994	63159
I	188m S	Car Park and Garage	1986 - 1996	64617
I	190m S	Multistorey Garage and Car Park	1979 - 1993	64353
I	190m S	Garage	1957 - 1958	63727
I	191m S	Garage	1957 - 1962	63978
I	199m S	Car Park and Garage	1969	62265
I	200m SW	Garage	1971	60828
L	214m E	Garage	1962 - 1969	65314
F	237m N	Garage	1988	63233
F	238m N	Garage	1986	62109
S	269m E	Garage	1957 - 1958	64825
S	278m E	Garage	1957 - 1969	65271



ID	Location	Land use	Dates present	Group ID
Y	364m S	Garage	1957 - 1962	63734
AB	386m E	Garage	1971	60831
AD	388m E	Garage	1956 - 1971	65429
AD	389m E	Garage	1957 - 1958	64369

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

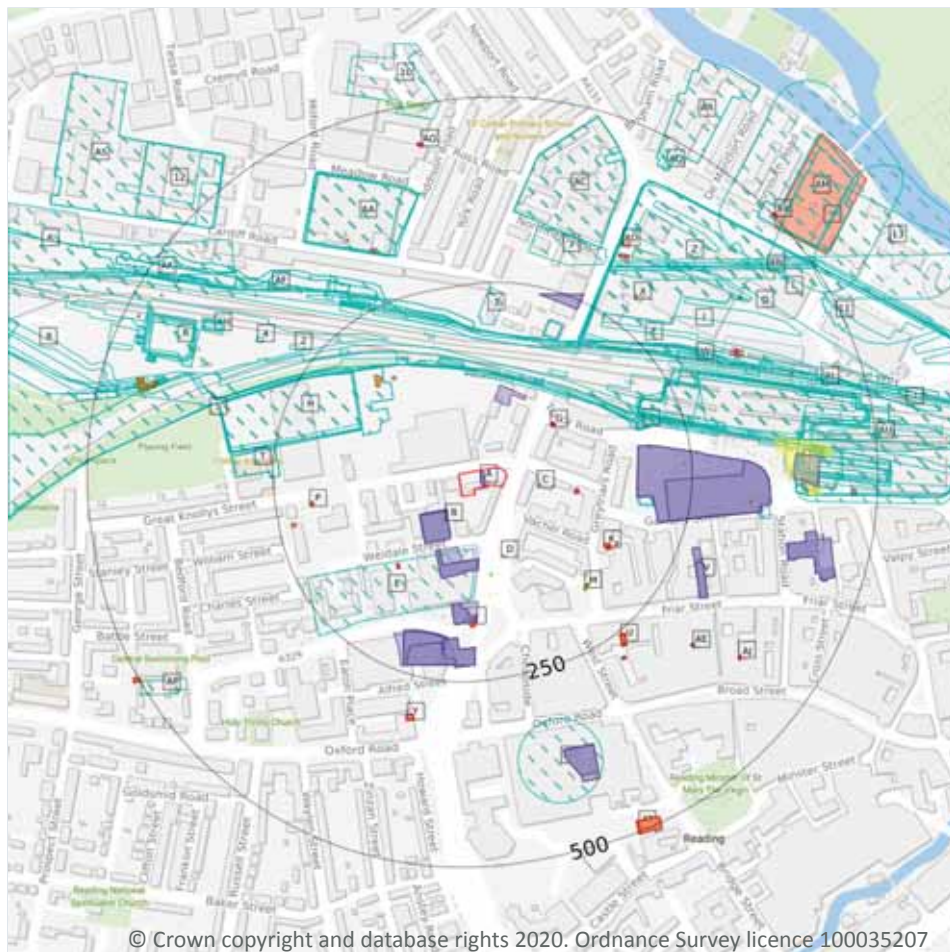
0

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

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



2 Past land use - un-grouped



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical petrol stations
- Historical garages

2.1 Historical industrial land uses

Records within 500m

181

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

Features are displayed on the Past land use - un-grouped map on **page 26**

ID	Location	Land Use	Date	Group ID
E	72m S	Unspecified Depot	1977	1862097
F	116m N	Railway Sidings	1898	1955038
H	119m NW	Corporation Yard	1994	1939215



ID	Location	Land Use	Date	Group ID
H	119m NW	Corporation Yard	1989	1939215
F	120m N	Railway Sidings	1962	1908472
I	121m N	Railway Sidings	1977	1908472
I	121m N	Railway Sidings	1971	1908472
I	121m N	Railway Sidings	1994	1913684
I	121m N	Railway Sidings	1989	1913684
F	123m N	Railway Sidings	1938	1908472
F	123m N	Railway Sidings	1913	1955038
F	126m N	Railway Building	1898	1866754
F	126m N	Railway Sidings	1938	1908472
I	130m N	Railway Sidings	1933	1905455
I	140m N	Railway Building	1938	1968519
I	140m N	Railway Building	1913	1899836
I	142m N	Railway Building	1938	1935637
H	144m NW	Corporation Yard	1938	1935241
F	144m NE	Railway Building	1913	1866755
H	146m NW	Corporation Yard	1938	1932614
H	146m NW	Corporation Yard	1913	1962441
H	146m NW	Corporation Yard	1962	1909928
H	150m NW	Corporation Yard	1933	1935241
I	153m N	Railway Building	1913	1866757
I	163m NW	Railway Building	1938	1925681
I	163m NW	Railway Building	1913	1955053
L	169m N	Railway Sidings	1933	1908472
L	177m NE	Railway Station	1933	1958834
N	178m E	Bus Station	1994	1864796
N	182m E	Smithy	1913	1875839
I	186m N	Railway Building	1898	1866760



ID	Location	Land Use	Date	Group ID
O	188m E	Railway Building	1994	1964573
O	188m E	Railway Building	1989	1964573
O	188m E	Railway Building	1977	1901767
F	188m N	Fire Station	1994	1957033
F	188m N	Fire Station	1989	1957033
F	188m N	Fire Station	1977	1957046
F	188m N	Fire Station	1962	1898729
F	188m N	Fire Station	1971	1898729
L	191m NE	Railway Station	1989	1962142
I	191m N	Unspecified Ground Workings	1938	1928064
I	191m N	Unspecified Ground Workings	1913	1953745
1	192m N	Timber Yard	1913	1874339
L	193m NE	Railway Station	1994	1906538
L	195m NE	Railway Station	1977	1962142
L	195m NE	Railway Station	1962	1936088
L	195m NE	Railway Station	1971	1962142
L	195m NE	Railway Station	1938	1962601
L	195m NE	Railway Station	1913	1937402
L	198m NE	Railway Station	1938	1948567
Q	200m NE	Unspecified Works	1977	1943410
Q	200m NE	Unspecified Works	1962	1903310
Q	200m NE	Unspecified Works	1971	1903310
Q	202m NE	Railway Works	1938	1952064
Q	202m NE	Railway Works	1913	1932396
R	205m NW	Railway Sidings	1933	1908472
Q	206m NE	Railway Works	1898	1968682
S	208m NE	Unspecified Works	1933	1929531
N	213m E	Garage	1971	1883648



ID	Location	Land Use	Date	Group ID
Q	215m NE	Unspecified Works	1938	1929531
I	220m NW	Railway Building	1898	1866758
I	240m NW	Railway Building	1913	1866761
T	241m W	Unspecified Commercial/Industrial	1994	1907408
T	241m W	Unspecified Commercial/Industrial	1989	1907408
T	241m W	Unspecified Works	1977	1860419
I	250m NW	Railway Buildings	1938	1922315
I	250m NW	Railway Buildings	1962	1922315
I	252m NW	Railway Buildings	1898	1919877
I	255m NW	Railway Buildings	1933	1914298
L	259m NE	Railway Station	1898	1906538
I	260m NW	Railway Buildings	1938	1910814
I	260m NW	Railway Buildings	1913	1946716
2	268m NW	Railway Building	1898	1866759
W	278m NE	Railway Building	1994	1902104
W	278m NE	Railway Building	1989	1902104
W	278m NE	Railway Building	1977	1923638
W	278m NE	Railway Building	1971	1956131
I	285m NW	Railway Buildings	1977	1955184
I	288m NW	Railway Buildings	1994	1904963
I	288m NW	Railway Buildings	1989	1904963
3	288m N	Malthouses	1878	1862728
I	299m NW	Railway Building	1933	1866771
Z	305m NE	Railway Sidings	1900	1955038
AA	306m N	Unspecified Works	1994	1889396
AA	306m N	Unspecified Works	1989	1889396
AA	306m N	Unspecified Works	1977	1893436
AA	306m N	Unspecified Works	1962	1947482



ID	Location	Land Use	Date	Group ID
AA	306m N	Unspecified Works	1971	1947482
AA	306m N	Printing Works	1910	1933766
Z	308m NE	Railway Sidings	1897	1955038
AA	308m N	Printing Works	1938	1912621
Z	309m NE	Railway Sidings	1938	1947411
Z	309m NE	Railway Sidings	1910	1953560
4	318m NW	Railway Building	1898	1866762
AB	320m S	Smithy	1913	1875838
AC	326m NE	Unspecified Commercial/Industrial	1994	1967558
AC	326m NE	Unspecified Commercial/Industrial	1989	1967558
AC	326m NE	Unspecified Commercial/Industrial	1977	1963538
AC	326m NE	Unspecified Works	1962	1860481
AC	326m NE	Unspecified Commercial/Industrial	1971	1938132
AD	340m NE	Coal Depot	1910	1875305
L	344m NE	Railway Building	1898	1866756
AF	350m NW	Railway Building	1962	1968211
AF	350m NW	Railway Building	1971	1968211
AF	350m NW	Railway Building	1994	1908478
AF	350m NW	Railway Building	1989	1908478
AF	350m NW	Railway Building	1977	1960184
AD	366m NE	Coal Depot	1938	1875306
AH	369m NW	Railway Building	1938	1951325
AH	370m NW	Railway Building	1938	1958832
AH	373m NW	Railway Building	1962	1958832
AH	375m NW	Railway Building	1933	1951325
R	388m W	Engine Shed	1913	1969097
R	388m W	Engine Shed	1898	1956197
AG	389m E	Railway Building	1962	1866740



ID	Location	Land Use	Date	Group ID
AG	391m E	Terminus	1898	1948431
AK	391m NW	Railway Buildings	1962	1949673
AK	391m NW	Railway Buildings	1971	1949673
R	391m NW	Engine Shed	1938	1900365
AG	391m E	Terminus	1938	1945798
AG	391m E	Terminus	1913	1969032
AK	392m NW	Railway Buildings	1994	1902562
AK	392m NW	Railway Buildings	1989	1902562
AK	392m NW	Railway Buildings	1977	1895517
AG	393m E	Terminus	1933	1949896
R	393m NW	Engine Shed	1938	1943191
AG	393m E	Terminus	1938	1933328
R	396m NW	Engine Shed	1962	1926541
R	397m NW	Engine Shed	1933	1891905
AG	400m E	Garage	1971	1883649
AK	405m NW	Unspecified Ground Workings	1938	1928064
AK	405m NW	Unspecified Ground Workings	1910	1953745
6	406m NW	Railway Sidings	1901	1885395
AG	412m E	Railway Building	1938	1919647
AG	412m E	Railway Building	1913	1957368
R	412m W	Railway Building	1913	1937336
R	412m W	Railway Building	1938	1953154
7	413m E	Railway Sidings	1933	1965409
R	414m W	Railway Building	1977	1935042
R	416m W	Railway Building	1962	1953154
AM	429m NE	Electric Works	1910	1940165
R	433m W	Railway Building	1962	1941975
R	435m W	Railway Building	1938	1946191



ID	Location	Land Use	Date	Group ID
AL	435m E	Railway Building	1898	1945084
R	436m W	Railway Building	1938	1962000
R	437m W	Railway Building	1913	1885372
R	437m W	Railway Building	1913	1894317
AL	437m E	Railway Building	1938	1907514
AL	437m E	Railway Building	1913	1967493
AN	438m NE	Railway Sidings	1900	1955038
R	439m W	Railway Building	1962	1962000
AP	446m SW	Nursery	1913	1867818
8	450m W	Refuse Heap	1913	1884301
AN	453m NE	Railway Sidings	1900	1955038
R	455m NW	Railway Building	1898	1927401
9	457m NE	Railway Sidings	1901	1887263
AQ	457m NE	Smithy	1900	1875902
AR	460m NE	Sawmill	1938	1892814
AR	460m NE	Sawmill	1910	1933074
R	460m W	Railway Building	1938	1966442
R	462m NW	Railway Building	1913	1919802
R	463m W	Railway Building	1962	1966442
AS	467m NW	Unspecified Depot	1977	1916817
AS	469m NW	Unspecified Depots	1989	1862395
R	470m NW	Railway Building	1898	1890616
R	471m W	Railway Building	1994	1953742
R	471m W	Railway Building	1989	1953742
R	471m W	Railway Building	1977	1888896
R	471m W	Railway Building	1971	1937002
R	472m W	Railway Building	1962	1866763
AQ	472m NE	Smithy	1897	1875901



ID	Location	Land Use	Date	Group ID
10	477m N	Unspecified Works	1962	1925766
11	482m NE	Railway Building	1933	1866802
AM	483m NE	Unspecified Depot	1994	1914143
AM	483m NE	Unspecified Depot	1989	1914143
12	489m NW	Unspecified Depot	1971	1963192
AM	494m NE	Electric Works	1900	1940569
13	495m NE	Iron Works	1910	1942788
AU	495m E	Railway Building	1938	1958202
AU	495m E	Railway Building	1913	1892409
AU	495m E	Railway Building	1938	1929321

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

48

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

Features are displayed on the Past land use - un-grouped map on **page 26**

ID	Location	Land Use	Date	Group ID
B	35m SW	Pump and Tank	1880	313632
B	35m SW	Pump and Tank	1880	317922
C	46m E	Tank or Trough	1879	324092
C	46m E	Tank or Trough	1879	316845
C	47m E	Tank or Trough	1879	316867
C	47m E	Tank or Trough	1879	325471
D	90m SE	Unspecified Tank	1880	318898
D	90m SE	Unspecified Tank	1880	321877
D	93m SE	Unspecified Tank	1880	314047
D	93m SE	Unspecified Tank	1880	317232



ID	Location	Land Use	Date	Group ID
D	109m S	Tank or Trough	1880	321521
D	109m S	Tank or Trough	1880	325799
I	154m NW	Unspecified Tank	1986	318870
I	154m NW	Unspecified Tank	1993	318870
I	159m NW	Tanks	1986	326933
I	159m NW	Tanks	1993	326933
M	173m SE	Unspecified Tank	1912	315638
M	173m SE	Unspecified Tank	1879	312605
M	173m SE	Unspecified Tank	1879	312605
M	175m SE	Unspecified Tank	1900	322205
I	194m N	Tank or Trough	1879	312017
N	215m E	Unspecified Tank	1969	305869
H	274m NW	Tank or Trough	1879	312016
X	293m NE	Tank or Trough	1879	319837
X	293m NE	Tank or Trough	1879	326269
X	299m NE	Tank or Trough	1879	312004
S	303m NE	Tank or Trough	1879	312005
N	330m E	Tank or Trough	1879	326647
N	331m E	Tank or Trough	1879	327920
N	332m E	Tank or Trough	1879	312006
5	341m W	Tank or Trough	1879	312015
AA	346m NW	Unspecified Tank	1970	305890
AL	405m E	Unspecified Tank	1879	305888
R	422m W	Unspecified Tank	1959	319576
R	423m W	Unspecified Tank	1958	319576
R	423m W	Tanks	1971	316005
R	424m W	Unspecified Tank	1912	319576
R	424m W	Unspecified Tank	1931	319576



ID	Location	Land Use	Date	Group ID
R	424m W	Tanks	1986	316005
R	427m W	Tanks	1958	327937
R	427m W	Tanks	1959	318689
R	433m W	Unspecified Tank	1900	305866
R	442m W	Tanks	1959	323854
AG	442m E	Unspecified Tank	1988	305886
R	443m W	Tanks	1986	323854
R	443m W	Unspecified Tank	1993	305865
R	479m NW	Unspecified Tank	1959	317940
R	479m NW	Unspecified Tank	1958	325389

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

80

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

Features are displayed on the Past land use - un-grouped map on **page 26**

ID	Location	Land Use	Date	Group ID
G	88m NE	Electricity Substation	1988	197999
G	88m NE	Electricity Substation	1993	197999
G	90m NE	Electricity Substation	1994	197999
G	90m NE	Electricity Substation	1996	197999
C	94m E	Electricity Substation	1993	203574
C	94m E	Electricity Substation	1994	203574
C	94m E	Electricity Substation	1996	203574
E	125m SW	Electricity Substation	1971	198242
E	125m SW	Electricity Substation	1986	198242
K	157m SE	Electricity Substation	1994	209780



ID	Location	Land Use	Date	Group ID
K	157m SE	Electricity Substation	1996	209780
K	163m SE	Electricity Substation	1979	204406
K	163m SE	Electricity Substation	1988	204406
K	163m SE	Electricity Substation	1993	204406
K	164m SE	Electricity Substation	1986	204349
J	165m S	Electricity Substation	1994	209850
J	165m S	Electricity Substation	1996	209850
J	166m S	Electricity Substation	1986	209850
J	166m S	Electricity Substation	1979	209850
J	166m S	Electricity Substation	1988	209850
J	166m S	Electricity Substation	1993	209850
K	170m SE	Electricity Substation	1969	189830
P	199m W	Electricity Substation	1986	205279
P	199m W	Electricity Substation	1993	205279
P	228m W	Electricity Substation	1971	189829
U	254m SE	Electricity Substation	1994	207537
U	254m SE	Electricity Substation	1996	207537
U	254m SE	Electricity Substation	1969	192596
U	254m SE	Electricity Substation	1986	207537
U	266m SE	Electricity Substation	1979	211699
U	266m SE	Electricity Substation	1988	211699
U	266m SE	Electricity Substation	1993	211699
U	280m SE	Electricity Substation	1993	206172
U	280m SE	Electricity Substation	1994	200407
U	280m SE	Electricity Substation	1996	200407
Y	300m S	Electricity Substation	1988	200961
Y	301m S	Electricity Substation	1980	200961
Y	301m S	Electricity Substation	1970	197671



ID	Location	Land Use	Date	Group ID
AA	317m N	Electricity Substation	1970	208840
AA	321m N	Electricity Substation	1988	208840
AD	326m NE	Electricity Substation	1982	202059
AD	326m NE	Electricity Substation	1971	206466
AD	326m NE	Electricity Substation	1984	206466
AE	331m SE	Electricity Substation	1988	204833
AE	331m SE	Electricity Substation	1993	204833
AE	332m SE	Electricity Substation	1994	204833
AE	332m SE	Electricity Substation	1996	204833
AE	332m SE	Electricity Substation	1986	204833
AD	342m NE	Electricity Substation	1984	189859
AD	344m NE	Electricity Substation	1993	189862
AJ	391m SE	Electricity Substation	1979	198092
AJ	391m SE	Electricity Substation	1988	198092
AJ	391m SE	Electricity Substation	1993	198092
Q	391m NE	Electricity Substation	1993	205206
AJ	391m SE	Electricity Substation	1969	198092
AJ	391m SE	Electricity Substation	1994	198092
AJ	391m SE	Electricity Substation	1996	198092
AJ	392m SE	Electricity Substation	1986	198092
Q	392m NE	Electricity Substation	1994	205206
Q	392m NE	Electricity Substation	1996	205206
AO	443m N	Electricity Substation	1971	203361
AO	443m N	Electricity Substation	1984	203361
AO	443m N	Electricity Substation	1982	200621
AO	443m N	Electricity Substation	1984	200621
AO	443m N	Electricity Substation	1993	200621
AG	465m E	Electricity Substation	1979	200623



ID	Location	Land Use	Date	Group ID
AG	466m E	Electricity Substation	1986	201931
AG	466m E	Electricity Substation	1971	200623
AT	485m S	Electricity Substation	1970	196813
AT	485m S	Electricity Substation	1988	209601
AT	485m S	Electricity Substation	1980	209601
AM	490m NE	Electricity Depot	1972	191558
AP	498m SW	Electricity Substation	1971	209325
AV	499m NE	Electricity Substation	1982	192932
AV	499m NE	Electricity Substation	1984	192936
AP	499m SW	Electricity Substation	1986	201498
AP	499m SW	Electricity Substation	1993	201498
AV	499m NE	Electricity Substation	1971	202539
AV	499m NE	Electricity Substation	1984	203489
AV	500m NE	Electricity Substation	1993	203489

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m

1

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

Features are displayed on the Past land use - un-grouped map on **page 26**

ID	Location	Land Use	Date	Group ID
AG	364m E	Filling Station	1979	3336

This data is sourced from Ordnance Survey / Groundsure.



2.5 Historical garages

Records within 500m

53

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

Features are displayed on the Past land use - un-grouped map on **page 26**

ID	Location	Land Use	Date	Group ID
A	On site	Garage	1962	63644
A	On site	Garage	1957	64847
A	On site	Garage	1958	64847
A	On site	Garage	1957	63644
A	On site	Garage	1969	63644
B	27m SW	Garage	1994	65332
B	27m SW	Garage	1996	65332
B	29m SW	Garage	1986	62866
B	29m SW	Garage	1988	64107
B	29m SW	Garage	1993	64107
D	68m S	Garage	1962	61293
D	78m SW	Garage	1958	62286
D	79m SW	Garage	1957	62373
D	79m SW	Garage	1957	62486
F	85m N	Garage	1969	60830
J	143m S	Garage	1962	62062
J	144m S	Garage	1957	62737
J	144m S	Garage	1957	63801
J	144m S	Garage	1958	63801
N	176m E	Garage	1957	61452
N	177m E	Garage	1957	64717
N	177m E	Garage	1958	64717
J	188m S	Car Park and Garage	1994	63159



ID	Location	Land Use	Date	Group ID
J	188m S	Car Park and Garage	1996	64617
J	190m S	Multistorey Garage and Car Park	1988	64353
J	190m S	Multistorey Garage and Car Park	1993	64353
J	190m S	Multistorey Garage and Car Park	1979	64353
J	190m S	Garage	1957	63727
J	190m S	Garage	1958	63727
J	191m S	Garage	1962	63978
J	191m S	Garage	1957	63978
J	199m S	Car Park and Garage	1969	62265
J	199m S	Car Park and Garage	1986	64617
J	200m SW	Garage	1971	60828
N	214m E	Garage	1962	65314
N	214m E	Garage	1969	65314
F	237m N	Garage	1988	63233
F	238m N	Garage	1986	62109
V	269m E	Garage	1957	64825
V	269m E	Garage	1958	64825
V	278m E	Garage	1962	65271
V	278m E	Garage	1957	65271
V	278m E	Garage	1969	65271
AB	364m S	Garage	1957	63734
AB	364m S	Garage	1958	63734
AB	365m S	Garage	1957	63734
AB	365m S	Garage	1962	63734
AG	386m E	Garage	1971	60831
AI	388m E	Garage	1962	65429
AI	388m E	Garage	1956	65429
AI	388m E	Garage	1971	65429



ID	Location	Land Use	Date	Group ID
AI	389m E	Garage	1957	64369
AI	389m E	Garage	1958	64369

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



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- Site Outline
- Search buffers in metres (m)
- Historical waste sites
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m

0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m

0

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

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

3.5 Historical waste sites

Records within 500m

3

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

Features are displayed on the Waste and landfill map on **page 42**

ID	Location	Address	Further Details	Date
1	121m NW	Site Address: N/A	Type of Site: Refuse Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1879
3	255m W	Site Address: Great Knollys Street, Hodsoll Road, READING, Berkshire, RG1 7HP	Type of Site: Surface Car Park/Waste Station Planning application reference: 96/0097/R3/NJP Description: Relocation of a public car park and civic amenity recycling centre with associated landscaping. Relocation of a public car park and civic amenity recycling centre with associated landscaping. Detailed plans approved 29th May, 1996. An application (ref: 96/0097/R3/NJP) for Detailed Planning permission was submitted to Reading B.C. on 14th February 1996. Data source: Historic Planning Application Data Type: Point	01/09/1996

ID	Location	Address	Further Details	Date
7	471m N	Site Address: N/A	Type of Site: Scrap Metal Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1969

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

3.6 Licensed waste sites

Records within 500m	0
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Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

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

3.7 Waste exemptions

Records within 500m	15
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Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 42**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	109m SW	Unit 2 Building C Weldale Street READING RG1 7BX	EPR/NH0918JR /A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of waste in a secure place
A	109m SW	Unit 2 Building C Weldale Street READING RG1 7BX	EPR/NH0918JR /A001	Treating waste exemption	Non-Agricultural Waste Only	Sorting mixed waste
A	109m SW	Unit 2 Building C Weldale Street READING RG1 7BX	EPR/NH0918JR /A001	Treating waste exemption	Non-Agricultural Waste Only	Manual treatment of waste
A	109m SW	Unit 2 Building C Weldale Street READING RG1 7BX	EPR/NH0918JR /A001	Treating waste exemption	Non-Agricultural Waste Only	Preparatory treatments (baling, sorting, shredding etc)

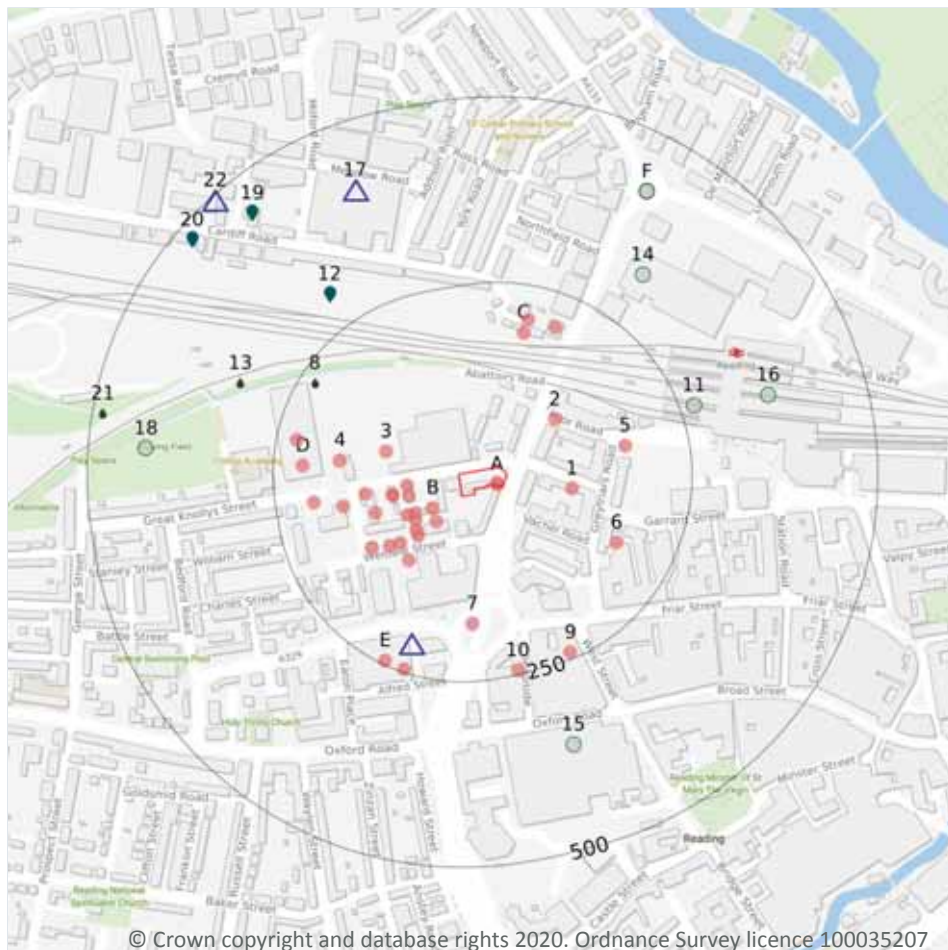


ID	Location	Site	Reference	Category	Sub-Category	Description
A	109m SW	Unit 2 Building C Weldale Street READING RG1 7BX	EPR/NH0918JR /A001	Treating waste exemption	Non-Agricultural Waste Only	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	109m SW	Unit 2 Building C Weldale Street READING RG1 7BX	EPR/NH0918JR /A001	Treating waste exemption	Non-Agricultural Waste Only	Recovery of scrap metal
2	196m SE	All Roads in Berkshire	EPR/ZH0512R R/A001	Treating waste exemption	Non-Agricultural Waste Only	Screening and blending of waste
4	352m E	25b Friar Street READING RG1 1DP	EPR/WF0702X Y/A001	Treating waste exemption	Non-Agricultural Waste Only	Crushing waste fluorescent tubes
B	356m SW	A 104 Oxford Road Reading Berkshire RG1 7LL	EPR/QF0331NJ /A001	Treating waste exemption	Non-Agricultural Waste Only	Sorting and de-naturing of controlled drugs for disposal
B	357m SW	104A, OXFORD ROAD, READING, RG1 7LL	WEX078879	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
5	392m S	Centre Management Suite, Broad Street Mall, Broad Street, Reading, RG1 7QE	WEX157193	Treating waste exemption	Not on a Farm	Aerobic composting and associated prior treatment
6	409m E	2 Miles either side of Reading Railway Station Station Approach READING RG1 1LZ	EPR/AF0134Q F/A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste in construction
C	439m E	15, FRIAR STREET, READING, RG1 1DB	WEX078089	Disposing of waste exemption	Not on a farm	Disposal by incineration
C	440m E	15 Friar Street Reading Berkshire RG1 1DB	EPR/PE5889A A/A001	Treating waste exemption	Non-Agricultural Waste Only	Sorting and de-naturing of controlled drugs for disposal
8	497m NW	70 4 Barret Court Cardiff Road Reading RG1 8ES	EPR/EH0110Q T/A001	Treating waste exemption	Non-Agricultural Waste Only	Manual treatment of waste

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



4 Current industrial land use



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- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- △ Current or recent petrol stations
- Licensed pollutant release (Part A(2)/B)
- Licensed Discharges to controlled waters
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

37

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 46**

ID	Location	Company	Address	Activity	Category
A	On site	Budget Rent A Car	45, Caversham Road, Reading, Berkshire, RG1 7BT	Vehicle Hire and Rental	Hire Services
A	On site	Avis Rent A Car	45, Caversham Road, Reading, Berkshire, RG1 7BT	Vehicle Hire and Rental	Hire Services
B	43m W	C T Autos	Unit B10, Great Knollys Street, Reading, Berkshire, RG1 7HN	Vehicle Repair, Testing and Servicing	Repair and Servicing



ID	Location	Company	Address	Activity	Category
B	49m SW	Motest Reading	7, Weldale Street, Reading, Berkshire, RG1 7BX	Vehicle Repair, Testing and Servicing	Repair and Servicing
B	68m W	Biggins & Gallagher Ltd	Flat 4 Bellman Court, Great Knollys Street, Reading, Berkshire, RG1 7HN	Concrete Products	Industrial Products
B	71m W	A & M Motors	Unit B4, Great Knollys Street, Reading, Berkshire, RG1 7HN	Vehicle Repair, Testing and Servicing	Repair and Servicing
B	71m SW	Total Sounds	Unit 5c Weldale Street, Reading, Berkshire, RG1 7BX	Electronic Equipment	Industrial Products
B	72m W	Swains Automotive	Unit B1, Great Knollys Street, Reading, Berkshire, RG1 7HN	Vehicle Repair, Testing and Servicing	Repair and Servicing
B	76m SW	Aquaid	Unit 7 Building C, Weldale Street, Reading, Berkshire, RG1 7BX	Food and Beverage Industry Machinery	Industrial Products
B	78m W	500 Cars Ltd	Unit 2 Bellman Court, Great Knollys Street, Reading, Berkshire, RG1 7HN	Vehicle Hire and Rental	Hire Services
B	80m SW	D R W	Unit C8 Weldale Street, Reading, Berkshire, RG1 7BX	Vehicle Repair, Testing and Servicing	Repair and Servicing
1	90m E	Electricity Sub Station	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
B	92m W	M & J Plant Hire	63, Great Knollys Street, Reading, Berkshire, RG1 7HN	Construction and Tool Hire	Hire Services
B	92m W	MJ Hire Ltd	63, Great Knollys Street, Reading, Berkshire, RG1 7HN	Construction and Tool Hire	Hire Services
2	97m NE	Electricity Sub Station	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
3	103m W	Cattle Market	Berkshire, RG1	Livestock Markets	Food, Drink and Multi Item Retail
B	105m SW	Cavaliers	Unit 9 Building C, Weldale Street, Reading, Berkshire, RG1 7BX	Clothing, Components and Accessories	Consumer Products
B	113m SW	Electricity Sub Station	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
B	118m SW	A & M Parts Ltd	Unit 10-11 Building C, Weldale Street, Reading, Berkshire, RG1 7BX	Vehicle Parts and Accessories	Motoring
B	119m W	S E A Windows & Doors	Unit 1A, North Street, Reading, Berkshire, RG1 7DA	General Construction Supplies	Industrial Products



ID	Location	Company	Address	Activity	Category
B	128m W	Pit Stop Tyres	Unit A1, Great Knollys Street, Reading, Berkshire, RG1 7HN	Vehicle Parts and Accessories	Motoring
B	140m SW	R A Engineering	Unit 12-14, North Street, Reading, Berkshire, RG1 7DA	Vehicle Repair, Testing and Servicing	Repair and Servicing
B	161m W	Reading Ambulance Resource Centre	North Street, Reading, Berkshire, RG1 7DA	Ambulance and Medical Transportation Services	Health Support Services
4	161m W	Electricity Sub Station	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
5	165m E	Electricity Sub Stations	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
6	171m SE	Electricity Sub Station	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
7	172m S	Electricity Sub Station	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
C	185m N	Pylon	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
B	198m W	Electricity Sub Station	Berkshire, RG1	Electrical Features	Infrastructure and Facilities
C	203m N	Caversham Road Fire Station	Caversham Road, Reading, Berkshire, RG1 8AA	Fire Brigade Stations	Central and Local Government
C	204m N	Mast (Telecommunication)	Berkshire, RG1	Telecommunications Features	Infrastructure and Facilities
D	210m W	Depot	Berkshire, RG1	Container and Storage	Transport, Storage and Delivery
D	223m W	Reading Buses	Great Knollys Street, Reading, Berkshire, RG1 7HH	Bus and Coach Stations, Depots and Companies	Public Transport, Stations and Infrastructure
9	241m S	Jewelsparkle	44, West Street, Reading, Berkshire, RG1 1TZ	Jewellery, Gems, Clocks and Watches	Consumer Products
10	244m S	Amplifon	Amplivox Plus Ultrazone, Cheapside, Reading, Berkshire, RG1 7AQ	Disability and Mobility Equipment	Consumer Products
E	245m SW	Sixt	Chatham Place, Chatham Street, Reading, Berkshire, RG1 7DS	Vehicle Hire and Rental	Hire Services



ID	Location	Company	Address	Activity	Category
E	246m S	24k Gold Plated Ltd	Flat 3 Hayward, Chatham Place, Reading, Berkshire, RG1 7AZ	Jewellery, Gems, Clocks and Watches	Consumer Products

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	3
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Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 46**

ID	Location	Company	Address	LPG	Status
E	211m S	OBSOLETE	Chatham Street, Reading, Reading, RG1 7JF	Not Applicable	Obsolete
17	407m N	OBSOLETE	Cardiff Road, Reading, Reading, RG1 8HW	Not Applicable	Obsolete
22	494m NW	OBSOLETE	165-7, Cardiff Road, Reading, Reading, RG1 8HY	Not Applicable	Obsolete

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0
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High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0
----------------------------	----------

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0
----------------------------	----------

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

This data is sourced from Local Authority records.



4.6 Control of Major Accident Hazards (COMAH)

Records within 500m

0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m

0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m

0

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

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



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

Records within 500m

3

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

Features are displayed on the Current industrial land use map on **page 46**

ID	Location	Address	Details	
12	298m NW	Scenery Salvage, Cardiff Road, Reading, Berkshire, RG1 8ES	Process: Combustion & Incineration Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
19	448m NW	Rivermead Accident Repair Centre Limited, 64 Cardiff Road, Reading, Berkshire, RG1 8LL	Process: Respraying of Road Vehicles Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
20	478m NW	Sprayworks Limited, Unit 5, 151-155 Cardiff Road, Reading, RG1 8ES	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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m

3

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

Features are displayed on the Current industrial land use map on **page 46**

ID	Location	Address	Details	
8	229m NW	GREAT KNOLLEYS STREET, READING, BERKS, GREAT KNOLLEYS STREET READING BE, RKSHIRE RG1 7HP	Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: CATM.3308 Permit Version: 1 Receiving Water: ABATTOIR DITCH	Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 06/07/1998 Effective Date: 06/07/1998 Revocation Date: -
13	318m NW	GREAT KNOLLEYS STREET, READING, BERKS, GREAT KNOLLEYS STREET READING BE, RKSHIRE RG1 7HP	Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: CATM.3307 Permit Version: 1 Receiving Water: ABATTOIR DITCH	Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 06/07/1998 Effective Date: 06/07/1998 Revocation Date: -
21	485m W	COW LANE BRIDGE, COW LANE, READING	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: EPRHB3597RH Permit Version: 1 Receiving Water: TRIBUTARY OF RIVER THAMES	Status: SURRENDERED UNDER EPR 2010 Issue date: 10/05/2018 Effective Date: 01/06/2018 Revocation Date: 31/07/2019

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

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

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

4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m

0

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

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



4.17 List 2 Dangerous Substances

Records within 500m

0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m

7

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

Features are displayed on the Current industrial land use map on **page 46**

ID	Location	Details	
11	269m E	Incident Date: 26/04/2002 Incident Identification: 74851 Pollutant: Oils and Fuel Pollutant Description: Gas and Fuel Oils	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
14	322m NE	Incident Date: 12/09/2001 Incident Identification: 42851 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Composted Material	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
15	360m S	Incident Date: 05/01/2002 Incident Identification: 50702 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
16	368m E	Incident Date: 14/05/2003 Incident Identification: 158358 Pollutant: Oils and Fuel Pollutant Description: Other Oil or Fuel	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
F	421m NE	Incident Date: 17/09/2002 Incident Identification: 108560 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
F	421m NE	Incident Date: 17/09/2002 Incident Identification: 108560 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

ID	Location	Details	
18	422m W	Incident Date: 23/07/2007 Incident Identification: 516354 Pollutant: Oils and Fuel Pollutant Description: Unidentified Oil	Water Impact: Category 3 (Minor) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m

0

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

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

4.20 Pollution inventory waste transfers

Records within 500m

0

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

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

4.21 Pollution inventory radioactive waste

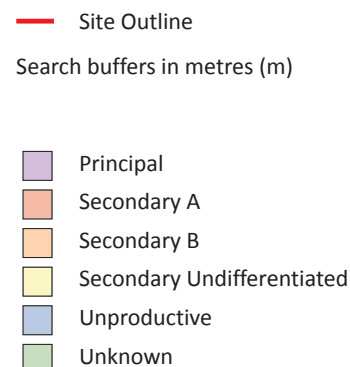
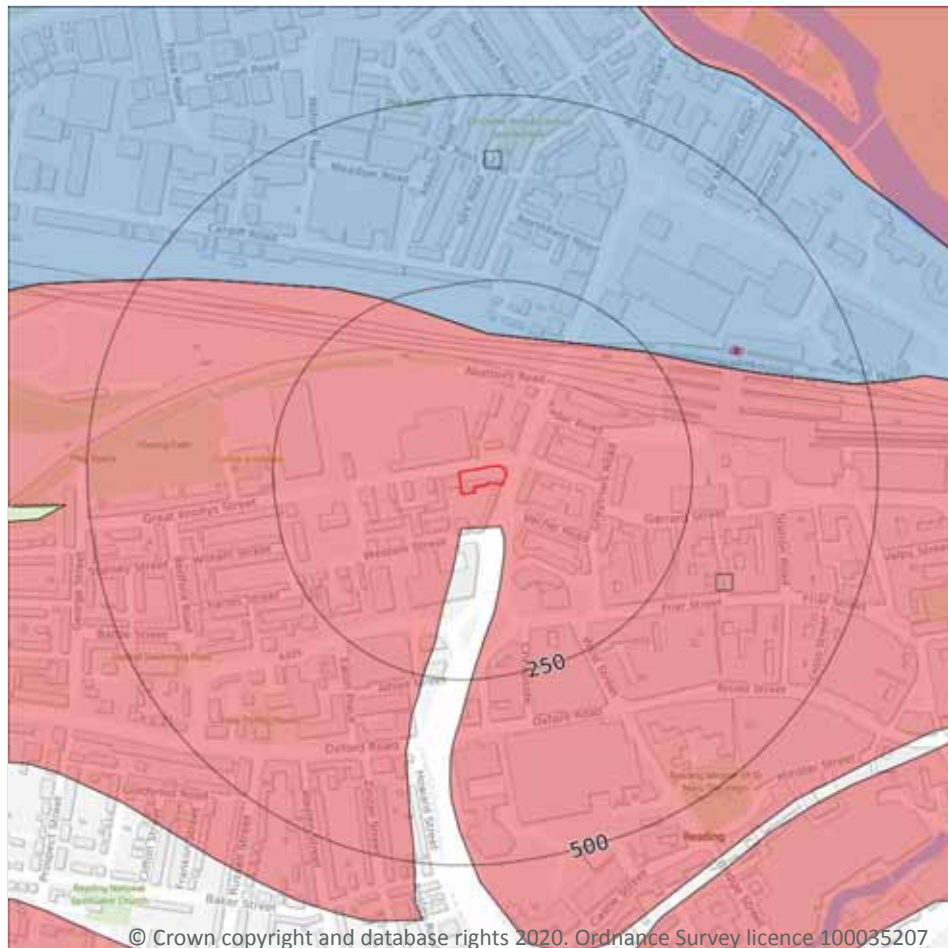
Records within 500m

0

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

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

5 Hydrogeology - Superficial aquifer



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5.1 Superficial aquifer

Records within 500m

2

Aquifer status of groundwater held within superficial geology.

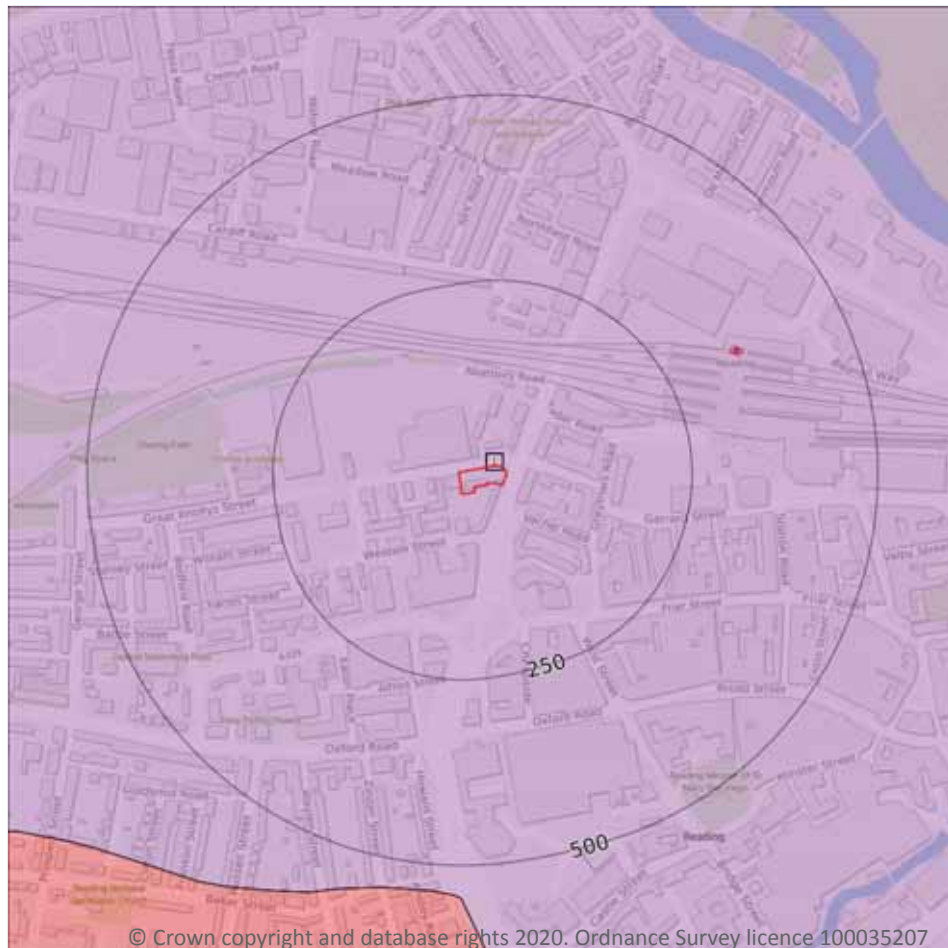
Features are displayed on the Hydrogeology map on **page 55**

ID	Location	Designation	Description
1	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
2	176m N	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

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



Bedrock aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

5.2 Bedrock aquifer

Records within 500m

1

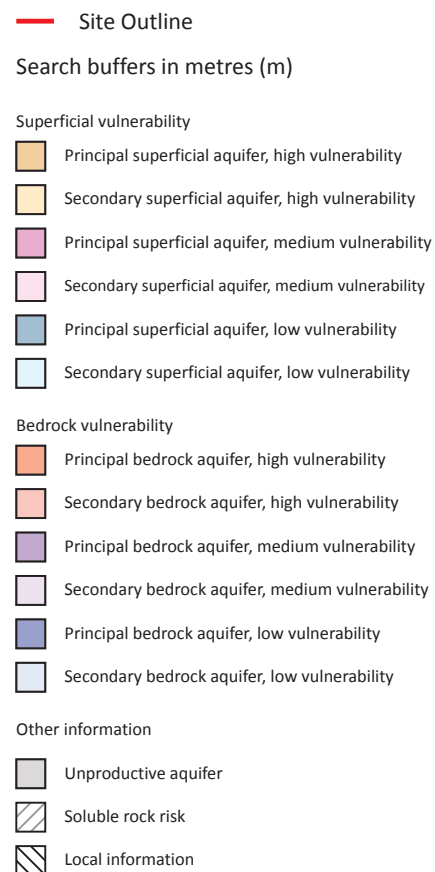
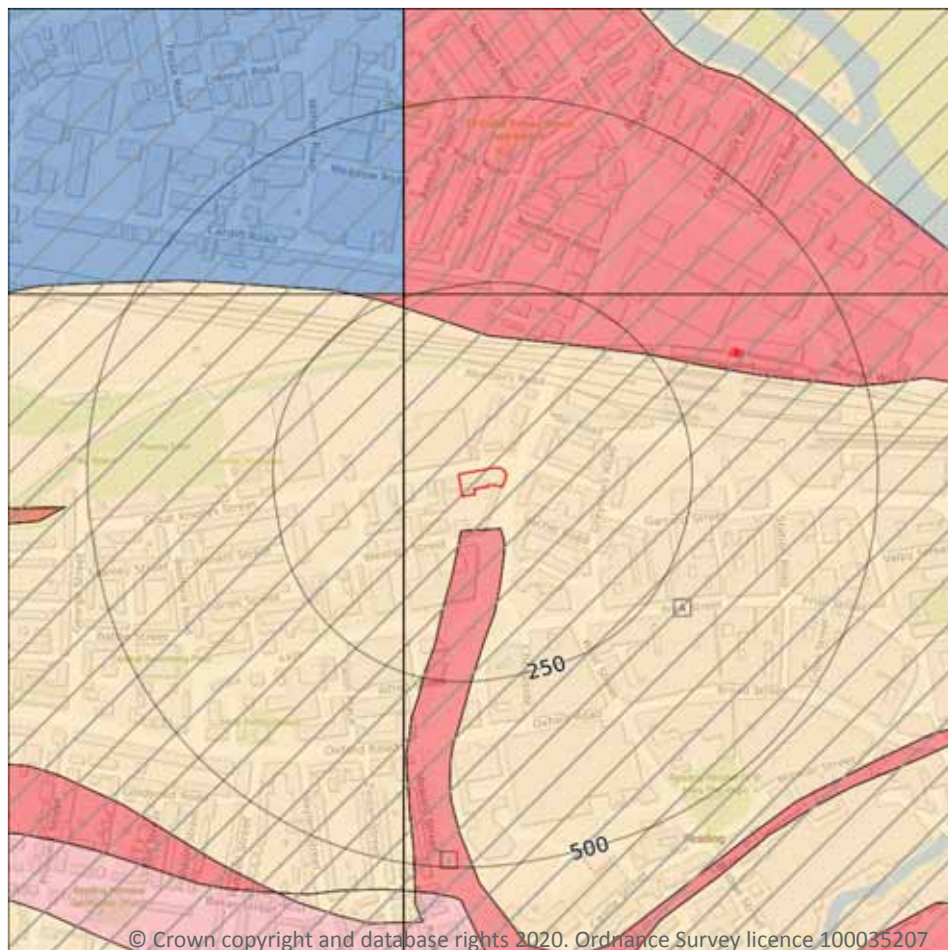
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 56**

ID	Location	Designation	Description
1	On site	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

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

Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

2

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

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

Features are displayed on the Groundwater vulnerability map on **page 57**



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
A	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: Medium	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
1	46m S	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: Medium	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	1
------------------------	----------

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

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
A	Very significant soluble rocks are likely to be present with a high possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, especially in adverse conditions such as concentrated surface or subsurface water flow.	20.0%

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

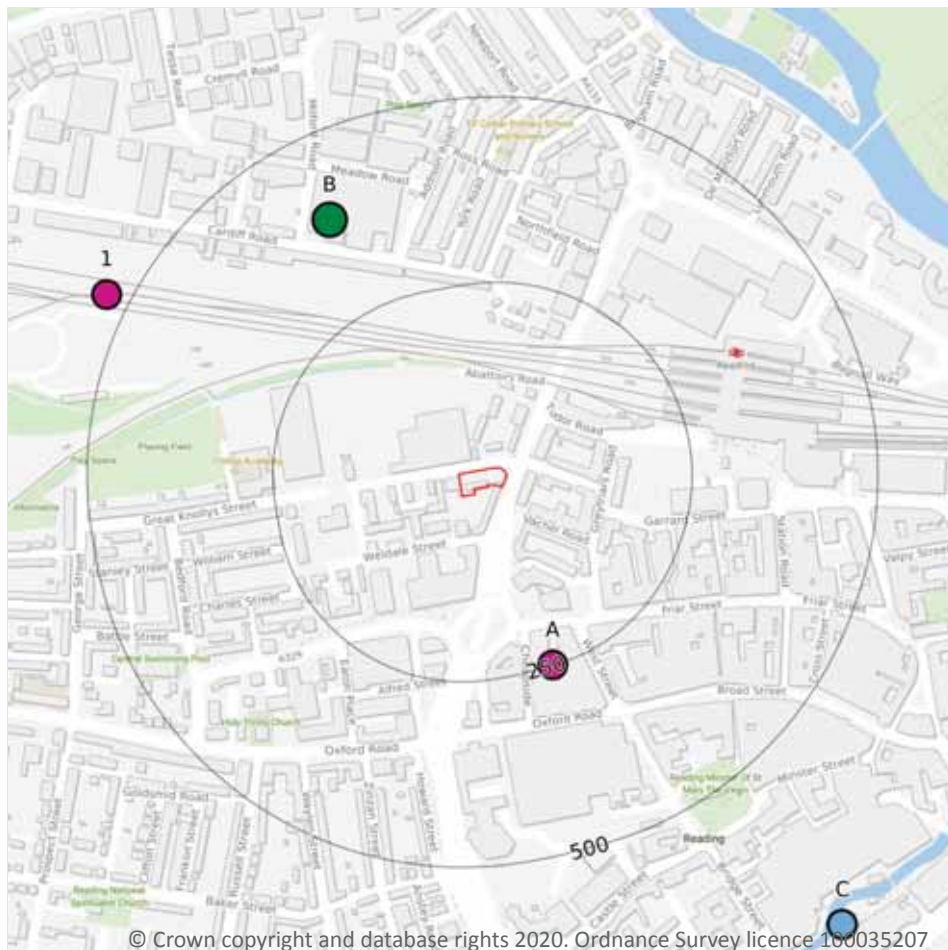
5.5 Groundwater vulnerability- local information

Records on site	0
------------------------	----------

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

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

Abstractions and Source Protection Zones



- Site Outline
- Search buffers in metres (m)
- Source Protection Zone 1
Inner catchment
- Source Protection Zone 2
Outer catchment
- Source Protection Zone 3
Total catchment
- Source Protection Zone 4
Zone of Special Interest
- Source Protection Zone 1c
Inner catchment - confined aquifer
- Source Protection Zone 2c
Outer catchment - confined aquifer
- Source Protection Zone 3c
Total catchment - confined aquifer
- Drinking water abstraction licences
Point features
- Drinking water abstraction licences
Linear features
- Drinking water abstraction licences
Area features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m

16

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 59**

ID	Location	Details	
A	249m S	Status: Active Licence No: 28/39/23/0042 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: CHEAPSIDE, READING, BERKSHIRE Data Type: Point Name: PRIMARK STORES LIMITED Easting: 471200 Northing: 173500	Annual Volume (m ³): 14,933 Max Daily Volume (m ³): 40.91 Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -
B	384m NW	Status: Historical Licence No: 28/39/23/0041 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: CARDIFF ROAD, READING, BERKSHIRE Data Type: Point Name: COX & WYMAN LTD Easting: 470900 Northing: 174100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/07/1966 Version End Date: -
B	384m NW	Status: Historical Licence No: 28/39/23/0041 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: CARDIFF ROAD, READING, BERKSHIRE Data Type: Point Name: COX & WYMAN LTD Easting: 470900 Northing: 174100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/07/1966 Version End Date: -
B	384m NW	Status: Active Licence No: 28/39/23/0167 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: MEADOW ROAD, READING, BERKSHIRE Data Type: Point Name: MANROSE MANUFACTURING LTD Easting: 470900 Northing: 174100	Annual Volume (m ³): 90,920 Max Daily Volume (m ³): 727.40 Original Application No: - Original Start Date: 23/01/1990 Expiry Date: - Issue No: 101 Version Start Date: 30/06/2006 Version End Date: -
B	384m NW	Status: Active Licence No: 28/39/23/0167 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: MEADOW ROAD, READING, BERKSHIRE Data Type: Point Name: MANROSE MANUFACTURING LTD Easting: 470900 Northing: 174100	Annual Volume (m ³): 90,920 Max Daily Volume (m ³): 727.40 Original Application No: - Original Start Date: 23/01/1990 Expiry Date: - Issue No: 101 Version Start Date: 30/06/2006 Version End Date: -



ID	Location	Details	
1	532m NW	Status: Active Licence No: 28/39/23/0128 Details: Process Water Direct Source: THAMES GROUNDWATER Point: CARDIFF ROAD, READING POINT B Data Type: Point Name: HILLIER GROUP OF COMPANIES Easting: 470600 Northing: 174000	Annual Volume (m ³): 6,682 Max Daily Volume (m ³): 27.28 Original Application No: - Original Start Date: 22/01/1975 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -
-	756m NW	Status: Active Licence No: 28/39/23/0128 Details: Process Water Direct Source: THAMES GROUNDWATER Point: CARDIFF ROAD, READING POINT A Data Type: Point Name: HILLIER GROUP OF COMPANIES Easting: 470400 Northing: 174100	Annual Volume (m ³): 6,682 Max Daily Volume (m ³): 27.28 Original Application No: - Original Start Date: 22/01/1975 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -
-	996m NE	Status: Active Licence No: 28/39/23/0020 Details: Laundry Use Direct Source: THAMES GROUNDWATER Point: 72 GEORGE STREET, CAVERSHAM, - BOREHOLE 'A' Data Type: Point Name: Berendsen UK Limited Easting: 471900 Northing: 174400	Annual Volume (m ³): 68,190 Max Daily Volume (m ³): 300.04 Original Application No: - Original Start Date: 09/05/1966 Expiry Date: - Issue No: 102 Version Start Date: 12/01/2016 Version End Date: -
-	1114m NW	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: LITTLE JOHN'S FARM, READING (E) Data Type: Point Name: DRAYTON Easting: 470100 Northing: 174300	Annual Volume (m ³): 9,819 Max Daily Volume (m ³): 26.82 Original Application No: - Original Start Date: 09/01/1967 Expiry Date: - Issue No: 100 Version Start Date: 09/01/1967 Version End Date: -
-	1281m W	Status: Historical Licence No: 28/39/23/0181 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BATTLE HOSPITAL, OXFORD ROAD, READING Data Type: Point Name: WEST BERKSHIRE HEALTH AUTHORITY Easting: 469800 Northing: 173900	Annual Volume (m ³): 136875 Max Daily Volume (m ³): 400 Original Application No: - Original Start Date: 17/01/1992 Expiry Date: - Issue No: 100 Version Start Date: 07/01/1999 Version End Date: -



ID	Location	Details	
-	1287m NW	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: LITTLE JOHN'S FARM, READING (D) Data Type: Point Name: DRAYTON Easting: 470100 Northing: 174600	Annual Volume (m ³): 9,819 Max Daily Volume (m ³): 26.82 Original Application No: - Original Start Date: 09/01/1967 Expiry Date: - Issue No: 100 Version Start Date: 09/01/1967 Version End Date: -
-	1516m NW	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: LITTLE JOHN'S FARM, READING (C) Data Type: Point Name: DRAYTON Easting: 469700 Northing: 174400	Annual Volume (m ³): 9,819 Max Daily Volume (m ³): 26.82 Original Application No: - Original Start Date: 09/01/1967 Expiry Date: - Issue No: 100 Version Start Date: 09/01/1967 Version End Date: -
-	1516m NW	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: LITTLE JOHN'S FARM, READING (B) Data Type: Point Name: DRAYTON Easting: 469700 Northing: 174400	Annual Volume (m ³): 9,819 Max Daily Volume (m ³): 26.82 Original Application No: - Original Start Date: 09/01/1967 Expiry Date: - Issue No: 100 Version Start Date: 09/01/1967 Version End Date: -
-	1570m E	Status: Historical Licence No: 28/39/22/0600 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: FORMER GASWORKS, KENAVON DRIVE, READING (5 BOREHOLES) Data Type: Point Name: M J GLEESON GROUP PLC Easting: 472700 Northing: 173600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 31/07/2000 Expiry Date: 31/08/2001 Issue No: 1 Version Start Date: 31/07/2000 Version End Date: -
-	1578m SE	Status: Active Licence No: 28/39/22/0521 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: ROYAL BERKSHIRE HOSPITAL Data Type: Point Name: ROYAL BERKSHIRE HOSPITAL Easting: 472400 Northing: 172800	Annual Volume (m ³): 127,750 Max Daily Volume (m ³): 350 Original Application No: - Original Start Date: 17/01/1992 Expiry Date: - Issue No: 100 Version Start Date: 17/01/1992 Version End Date: -



ID	Location	Details	
-	1634m W	Status: Active Licence No: 28/39/23/0070 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: LITTLE JOHN'S FARM, READING (A) Data Type: Point Name: DRAYTON Easting: 469500 Northing: 174200	Annual Volume (m ³): 9,819 Max Daily Volume (m ³): 26.82 Original Application No: - Original Start Date: 09/01/1967 Expiry Date: - Issue No: 100 Version Start Date: 09/01/1967 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m

6

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 59**

ID	Location	Details	
C	746m SE	Status: Historical Licence No: 28/39/22/0594 Details: Lake & Pond Throughflow Direct Source: THAMES SURFACE WATER - NON TIDAL Point: THE ORACLE CENTRE, READING Data Type: Point Name: ORACLE SHOPPING CENTRE LTD Easting: 471590 Northing: 173150	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 16/02/2000 Expiry Date: - Issue No: 1 Version Start Date: 16/02/2000 Version End Date: -
C	746m SE	Status: Active Licence No: 28/39/22/0594 Details: Lake & Pond Throughflow Direct Source: THAMES SURFACE WATER - NON TIDAL Point: ST.GILES STREAM AT THE ORACLE CENTRE, READING Data Type: Point Name: ORACLE SHOPPING CENTRE LTD Easting: 471590 Northing: 173150	Annual Volume (m ³): 737,856 Max Daily Volume (m ³): 2,016 Original Application No: - Original Start Date: 16/02/2000 Expiry Date: - Issue No: 1 Version Start Date: 16/02/2000 Version End Date: -



ID	Location	Details	
-	751m NE	Status: Historical Licence No: 28/39/23/0196 Details: Transfer between sources Direct Source: THAMES SURFACE WATER - NON TIDAL Point: THAMES AT CHRISTCHURCH MEADOW Data Type: Point Name: READING BOROUGH COUNCIL Easting: 471440 Northing: 174450	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 12/05/2003 Expiry Date: 31/03/2016 Issue No: 1 Version Start Date: 12/05/2003 Version End Date: -
-	751m NE	Status: Historical Licence No: 28/39/23/0196 Details: Lake & Pond Throughflow Direct Source: THAMES SURFACE WATER - NON TIDAL Point: THAMES AT CHRISTCHURCH MEADOW Data Type: Point Name: READING BOROUGH COUNCIL Easting: 471440 Northing: 174450	Annual Volume (m ³): 31536 Max Daily Volume (m ³): 86.4 Original Application No: - Original Start Date: 12/05/2003 Expiry Date: 31/03/2016 Issue No: 1 Version Start Date: 01/04/2006 Version End Date: -
-	751m NE	Status: Historical Licence No: 28/39/23/0199/TR Details: Transfer Between Sources (Post Water Act 2003) Direct Source: THAMES SURFACE WATER - NON TIDAL Point: RIVER THAMES - CHRISTCHURCH MEADOWS Data Type: Point Name: READING BOROUGH COUNCIL Easting: 471440 Northing: 174450	Annual Volume (m ³): 1,752,000 Max Daily Volume (m ³): 4800 Original Application No: - Original Start Date: 10/09/2008 Expiry Date: 31/03/2016 Issue No: 1 Version Start Date: 10/09/2008 Version End Date: -
-	1027m NE	Status: Active Licence No: TH/039/0023/022 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: THAMES SURFACE WATER - NON TIDAL Point: RIVER THAMES AT CAVERSHAM WEIR Data Type: Point Name: The Reading Sustainability Centre CIC Easting: 472072 Northing: 174185	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 19/02/2016 Expiry Date: 31/03/2028 Issue No: 2 Version Start Date: 19/02/2019 Version End Date: -

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



5.8 Potable abstractions

Records within 2000m

5

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 59**

ID	Location	Details	
A	249m S	Status: Active Licence No: 28/39/23/0042 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: CHEAPSIDE, READING, BERKSHIRE Data Type: Point Name: PRIMARK STORES LIMITED Easting: 471200 Northing: 173500	Annual Volume (m ³): 14,933 Max Daily Volume (m ³): 40.91 Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -
B	384m NW	Status: Historical Licence No: 28/39/23/0041 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: CARDIFF ROAD, READING, BERKSHIRE Data Type: Point Name: COX & WYMAN LTD Easting: 470900 Northing: 174100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/07/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/07/1966 Version End Date: -
B	384m NW	Status: Active Licence No: 28/39/23/0167 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: MEADOW ROAD, READING, BERKSHIRE Data Type: Point Name: MANROSE MANUFACTURING LTD Easting: 470900 Northing: 174100	Annual Volume (m ³): 90,920 Max Daily Volume (m ³): 727.40 Original Application No: - Original Start Date: 23/01/1990 Expiry Date: - Issue No: 101 Version Start Date: 30/06/2006 Version End Date: -



ID	Location	Details	
-	1281m W	Status: Historical Licence No: 28/39/23/0181 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: BATTLE HOSPITAL, OXFORD ROAD, READING Data Type: Point Name: WEST BERKSHIRE HEALTH AUTHORITY Easting: 469800 Northing: 173900	Annual Volume (m ³): 136875 Max Daily Volume (m ³): 400 Original Application No: - Original Start Date: 17/01/1992 Expiry Date: - Issue No: 100 Version Start Date: 07/01/1999 Version End Date: -
-	1578m SE	Status: Active Licence No: 28/39/22/0521 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: ROYAL BERKSHIRE HOSPITAL Data Type: Point Name: ROYAL BERKSHIRE HOSPITAL Easting: 472400 Northing: 172800	Annual Volume (m ³): 127,750 Max Daily Volume (m ³): 350 Original Application No: - Original Start Date: 17/01/1992 Expiry Date: - Issue No: 100 Version Start Date: 17/01/1992 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	0
----------------------------	----------

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

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

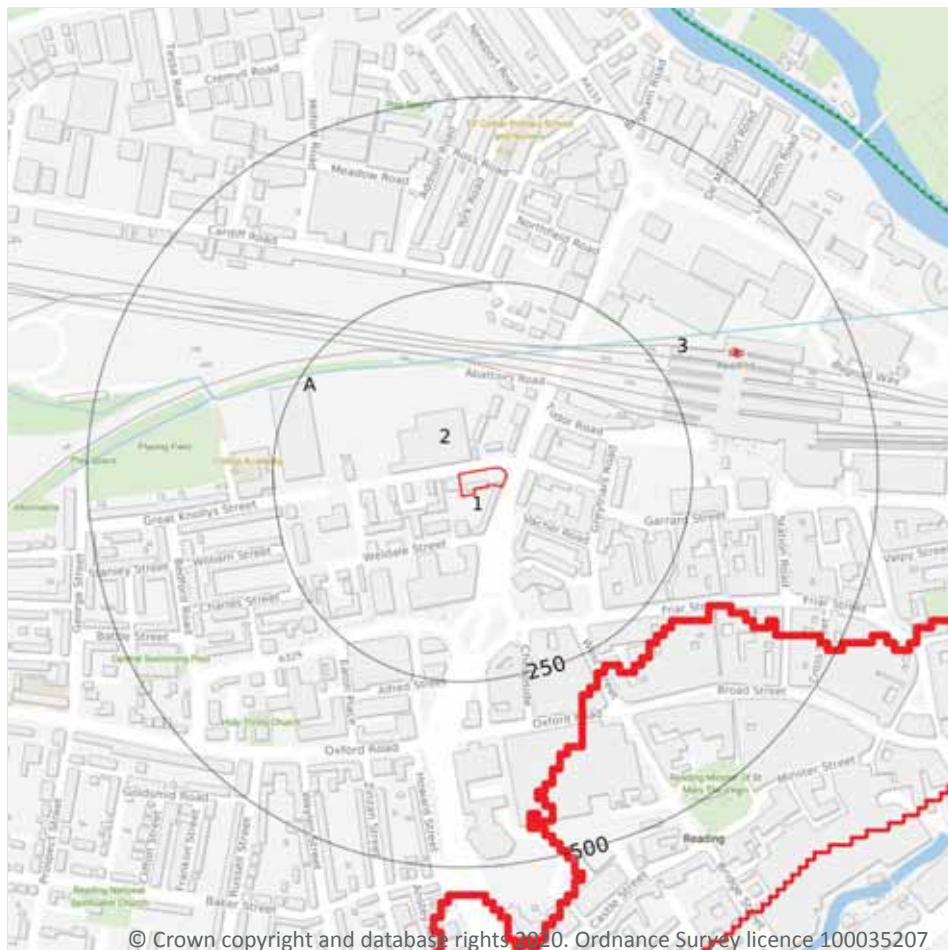
5.10 Source Protection Zones (confined aquifer)

Records within 500m	0
----------------------------	----------

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

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

6 Hydrology



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

2

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

Features are displayed on the Hydrology map on **page 67**

ID	Location	Type of water feature	Ground level	Permanence	Name
3	150m N	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
A	171m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	1
----------------------------	----------

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

Features are displayed on the Hydrology map on **page 67**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1
------------------------	----------

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

Features are displayed on the Hydrology map on **page 67**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
2	On site	River WB catchment	Thames Wallingford to Caversham	GB106039030331	South Chilterns	Thames and South Chilterns

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

6.4 WFD Surface water bodies

Records identified	1
---------------------------	----------

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

water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed. Features are displayed on the Hydrology map on **page 67**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	636m NE	River	Thames Wallingford to Caversham	GB106039030331	Moderate	Good	Moderate	2016

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

6.5 WFD Groundwater bodies

Records on site	1
------------------------	----------

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

Features are displayed on the Hydrology map on **page 67**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
1	On site	Berkshire Downs Chalk	GB40601G600900	Poor	Poor	Poor	2015

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

7 River and coastal flooding



— Site Outline

Search buffers in metres (m)

Environment Agency river and coastal flooding:

High

Medium

Low

Very Low

Historical Flood Events

Areas Used for Flood Storage

Areas Benefiting from Flood Defences

— Flood Defences

7.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m

1

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

Features are displayed on the River and coastal flooding map on **page 70**

Distance	RoFRaS flood risk
On site	Low
0 - 50m	Low



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

7.2 Historical Flood Events

Records within 250m

2

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

Features are displayed on the River and coastal flooding map on **page 70**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
2	59m NE	06marchspring1947	1947-01-01 1947-12-12	Other	Local drainage/surface water	Fluvial
4	183m NE	06marchspring1947	1947-01-01 1947-12-12	Other	Local drainage/surface water	Fluvial

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

7.3 Flood Defences

Records within 250m

0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m

0

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

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



7.5 Flood Storage Areas

Records within 250m

0

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

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



River and coastal flooding - Flood Zones



- Site Outline
- Search buffers in metres (m)
- Flood zone 2
- Flood zone 3

7.6 Flood Zone 2

Records within 50m

1

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

Features are displayed on the River and coastal flooding map on **page 70**

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

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

7.7 Flood Zone 3

Records within 50m

0

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

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



8 Surface water flooding



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site

1 in 100 year, 0.1m - 0.3m

Highest risk within 50m

1 in 30 year, 0.3m - 1.0m

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

Features are displayed on the Surface water flooding map on **page 75**

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

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

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

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site

Moderate

Highest risk within 50m

Moderate

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

Features are displayed on the Groundwater flooding map on **page 77**

This data is sourced from Ambienta Risk Analytics.

10 Environmental designations

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m

0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m

0

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

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



10.5 National Nature Reserves (NNR)

Records within 2000m

0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m

0

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

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

10.7 Designated Ancient Woodland

Records within 2000m

0

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

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

10.8 Biosphere Reserves

Records within 2000m

0

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

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



10.9 Forest Parks

Records within 2000m

0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

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

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

10.11 Green Belt

Records within 2000m

0

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

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

10.12 Proposed Ramsar sites

Records within 2000m

0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

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

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



10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m

2

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

Location	Name	Type	NVZ ID	Status
On site	Thames Wallingford to Caversham NVZ	Surface Water	S481	Existing
1972m NE	Sheeplands	Groundwater	G88	Existing

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

SSSI Impact Zones and Units



- Site Outline
- Search buffers in metres (m)
- SSSI Impact Risk Zones
- SSSI Units
- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site

1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 82**

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

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m

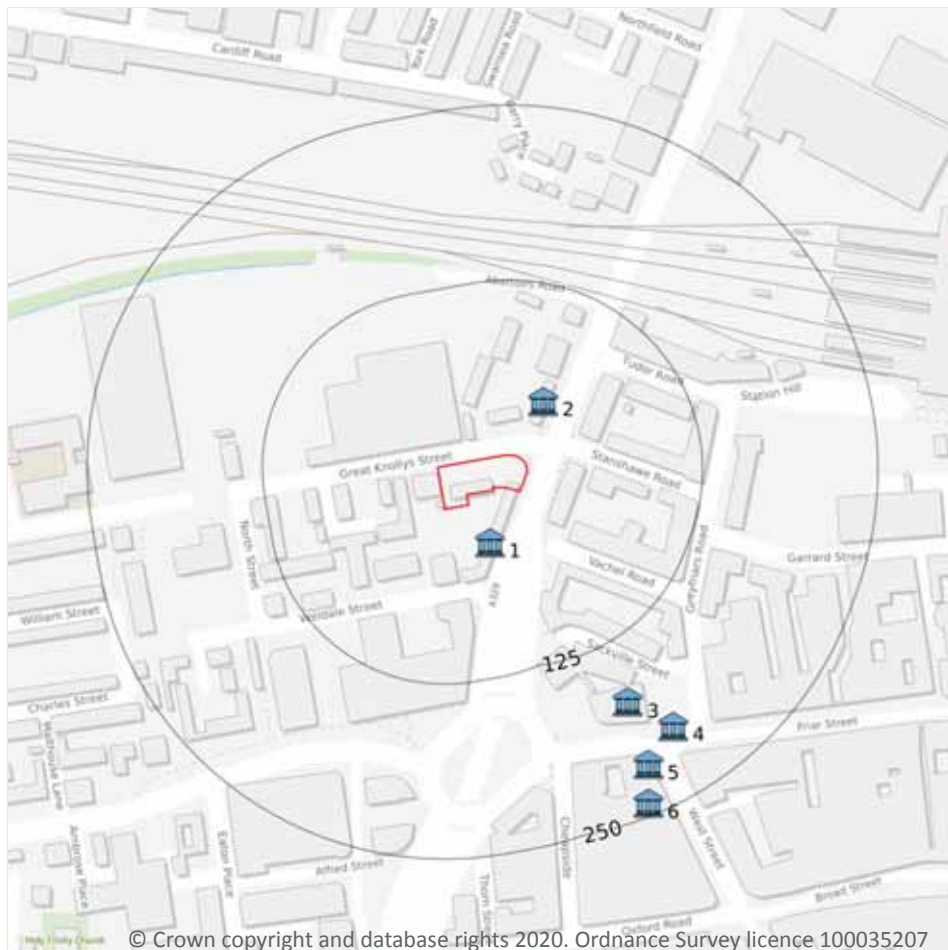
0

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

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



11 Visual and cultural designations



- Site Outline
- Search buffers in metres (m)
- Listed buildings
- Conservation areas
- Conservation areas - no data
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

11.3 National Parks

Records within 250m

0

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

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

11.4 Listed Buildings

Records within 250m

6

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

Features are displayed on the Visual and cultural designations map on **page 84**

ID	Location	Name	Grade	Reference Number	Listed date
1	31m SE	29 And 31, Caversham Road, Reading, RG1	II	1113433	14/12/1978
2	44m NE	Regent Place, Reading, RG1	II	1113434	14/12/1978
3	169m SE	Greyfriars Church, Reading, RG1	I	1321952	22/03/1957
4	200m SE	Quadrant Walls And Railings To Former No 64 (Greyfriars Vicarage), Reading, RG1	II	1113487	22/03/1957
5	215m SE	The Mitre Inn, Reading, RG1	II	1157216	14/12/1978

ID	Location	Name	Grade	Reference Number	Listed date
6	241m S	W I Palmer Memorial Hall, Reading, RG1	II	1113613	24/10/1974

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

11.5 Conservation Areas

Records within 250m

0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m

0

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

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

11.7 Registered Parks and Gardens

Records within 250m

0

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

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

12 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

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12.1 Agricultural Land Classification

Records within 250m

1

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

Features are displayed on the Agricultural designations map on **page 87**

ID	Location	Classification	Description
1	On site	Urban	-

This data is sourced from Natural England.



12.2 Open Access Land

Records within 250m

0

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

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

12.3 Tree Felling Licences

Records within 250m

0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

0

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

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m

0

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m

0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m

0

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

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



- Site Outline
- Search buffers in metres (m)
- Full coverage
 - Partial coverage
 - No coverage

14.1 10k Availability

Records within 500m

1

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

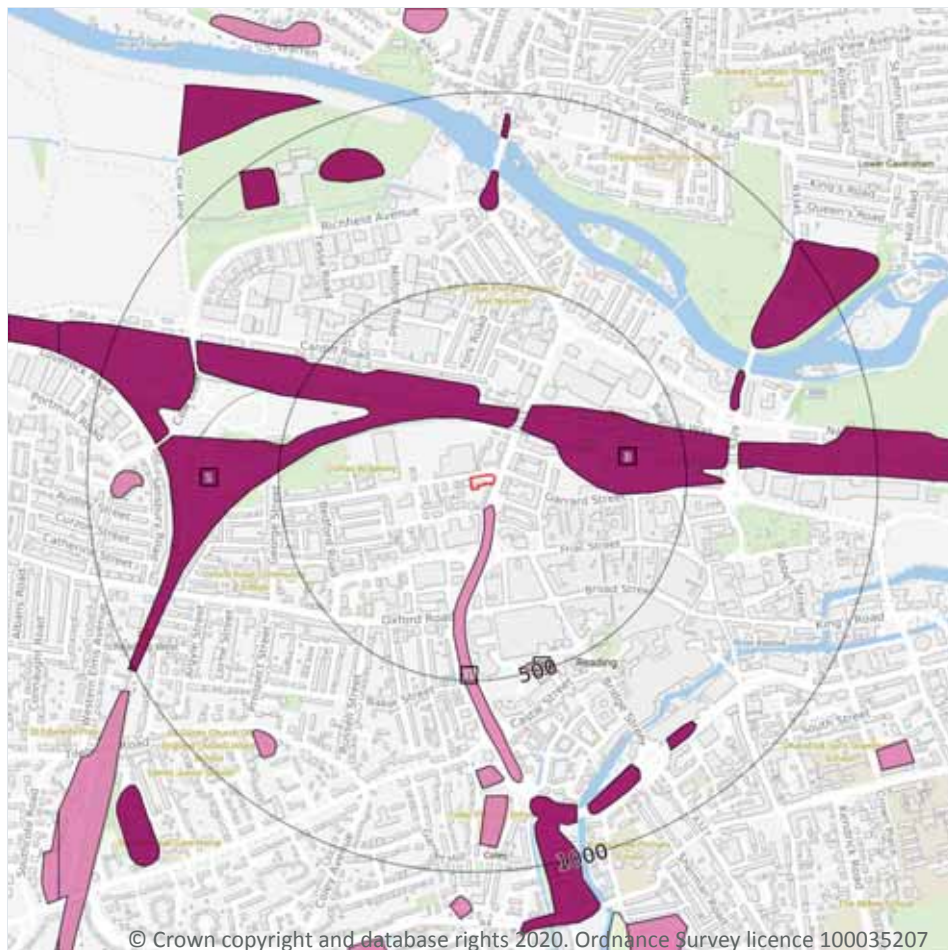
Features are displayed on the Geology 1:10,000 scale - Availability map on **page 90**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	SU77SW

This data is sourced from the British Geological Survey.



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



— Site Outline
Search buffers in metres (m)

- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m

4

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

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 91**

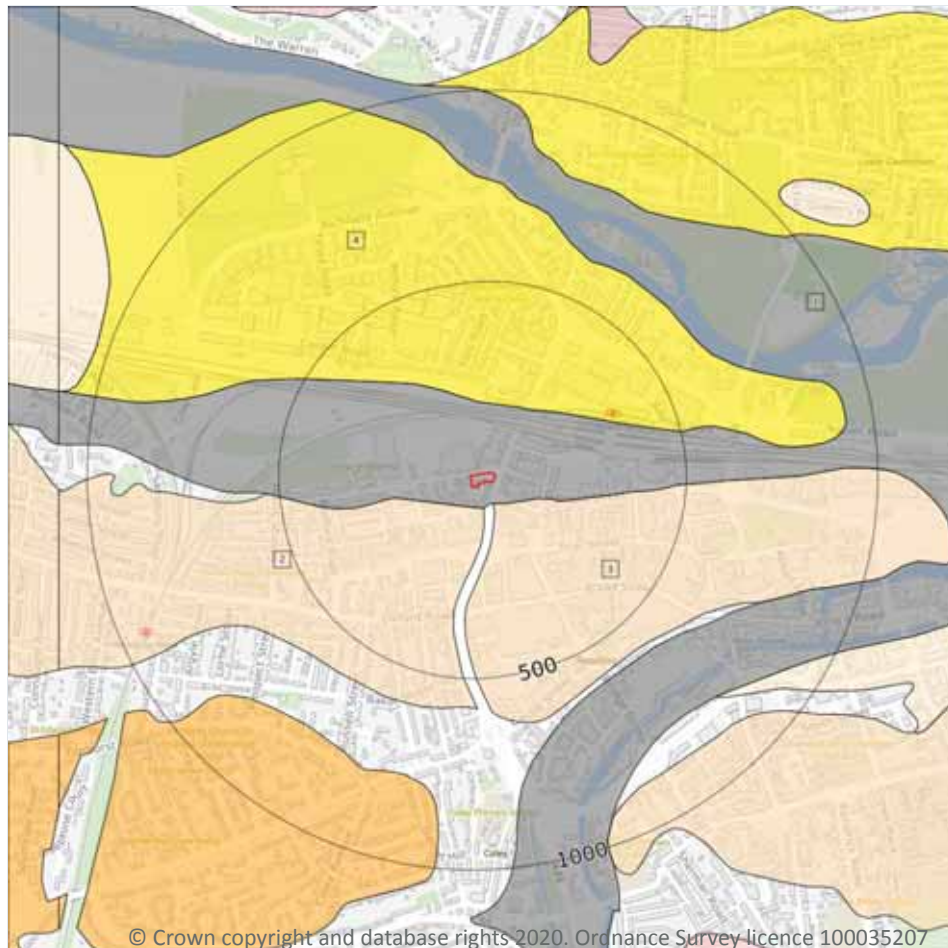
ID	Location	LEX Code	Description	Rock description
1	54m SE	WGR-VOID	Worked Ground (Undivided)	Void
2	130m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	140m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	476m S	WGR-VOID	Worked Ground (Undivided)	Void



This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



— Site Outline

Search buffers in metres (m)

▣ Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m

4

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 93**

ID	Location	LEX Code	Description	Rock description
1	On site	ALV-Z	Alluvium - Silt (unlithified Deposits Coding Scheme)	Silt
2	52m S	TPGR-XSV	Taplow Gravel Formation - Sand And Gravel	Sand And Gravel
3	56m S	TPGR-XSV	Taplow Gravel Formation - Sand And Gravel	Sand And Gravel
4	180m N	LASI-XCZ	Langley Silt Member - Clay And Silt	Clay And Silt



This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

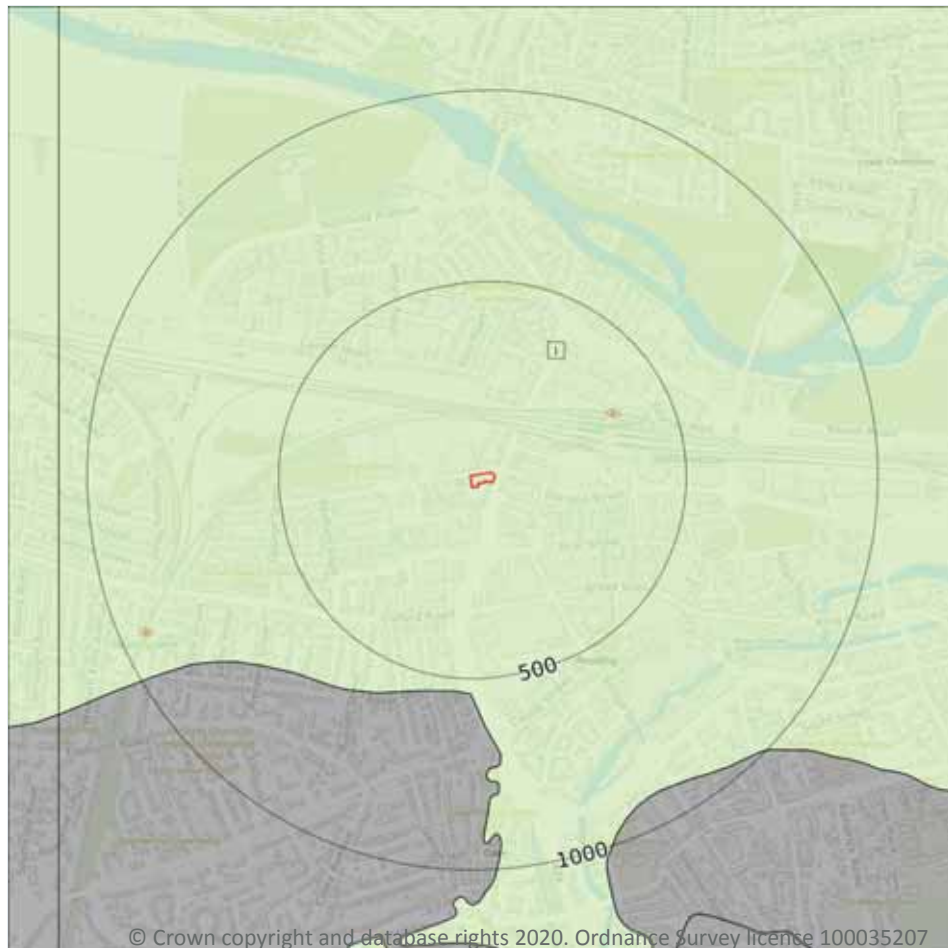
0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (10k)

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

14.5 Bedrock geology (10k)

Records within 500m

1

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 95**

ID	Location	LEX Code	Description	Rock age
1	On site	LSNCK-CHLK	Lewes Nodular Chalk Formation, Seaford Chalk Formation And Newhaven Chalk Formation (undifferentiated) - Chalk	Campanian Age - Turonian Age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

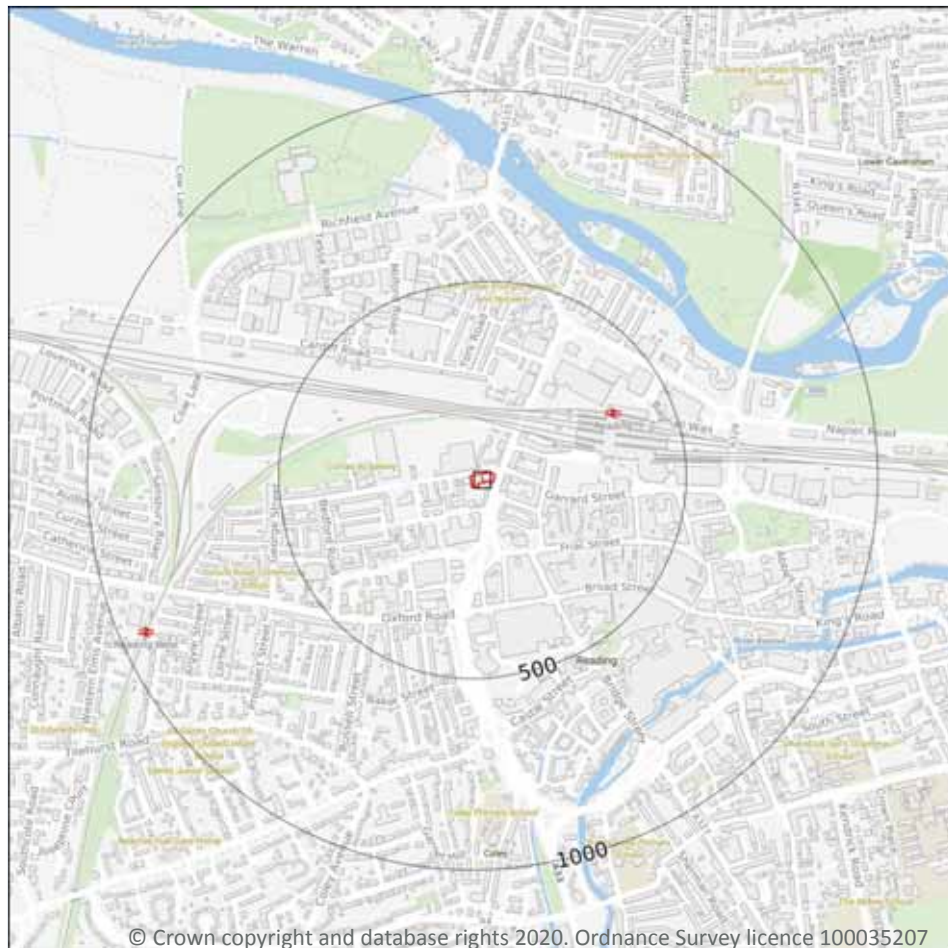
0

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

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 97**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	EW268_reading_v4

This data is sourced from the British Geological Survey.



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

15.2 Artificial and made ground (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

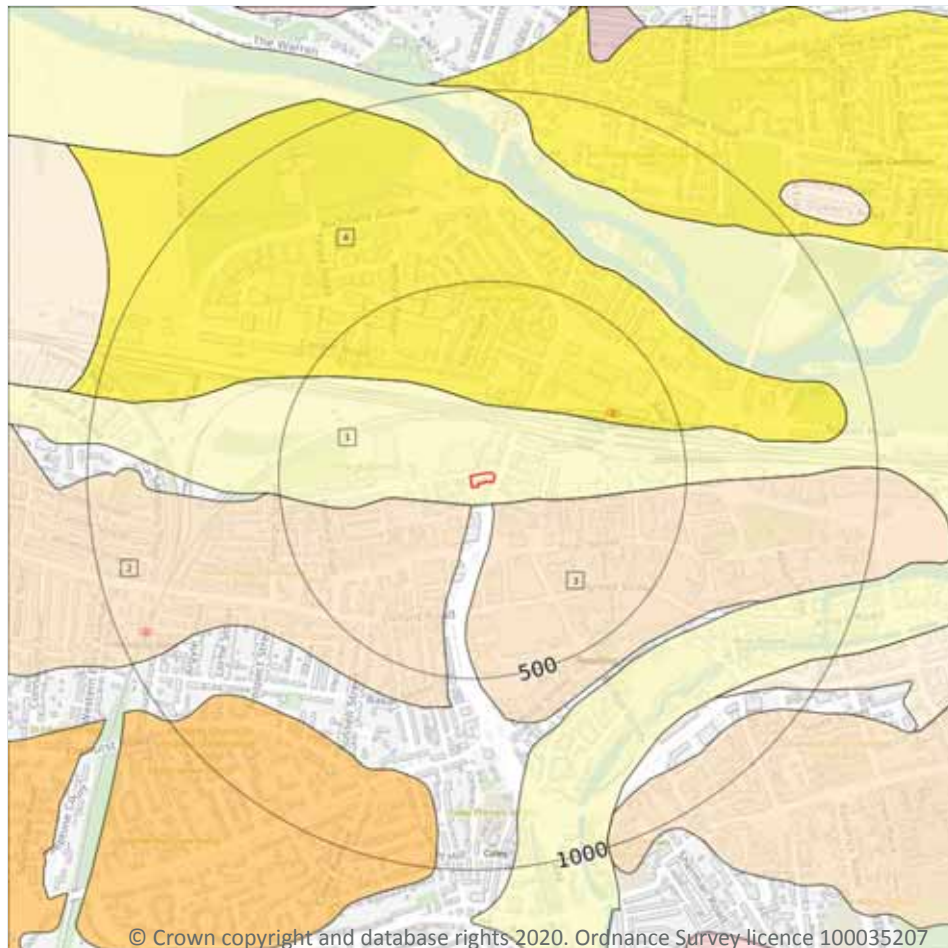
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



— Site Outline

Search buffers in metres (m)

▨ Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

4

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 99**

ID	Location	LEX Code	Description	Rock description
1	On site	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
2	46m S	TPGR-XSV	TAPLOW GRAVEL MEMBER	SAND AND GRAVEL
3	56m S	TPGR-XSV	TAPLOW GRAVEL MEMBER	SAND AND GRAVEL
4	176m N	LASI-XCZ	LANGLEY SILT MEMBER	CLAY AND SILT



This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m

2

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	High	Very Low
46m SW	Intergranular	Very High	High

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m

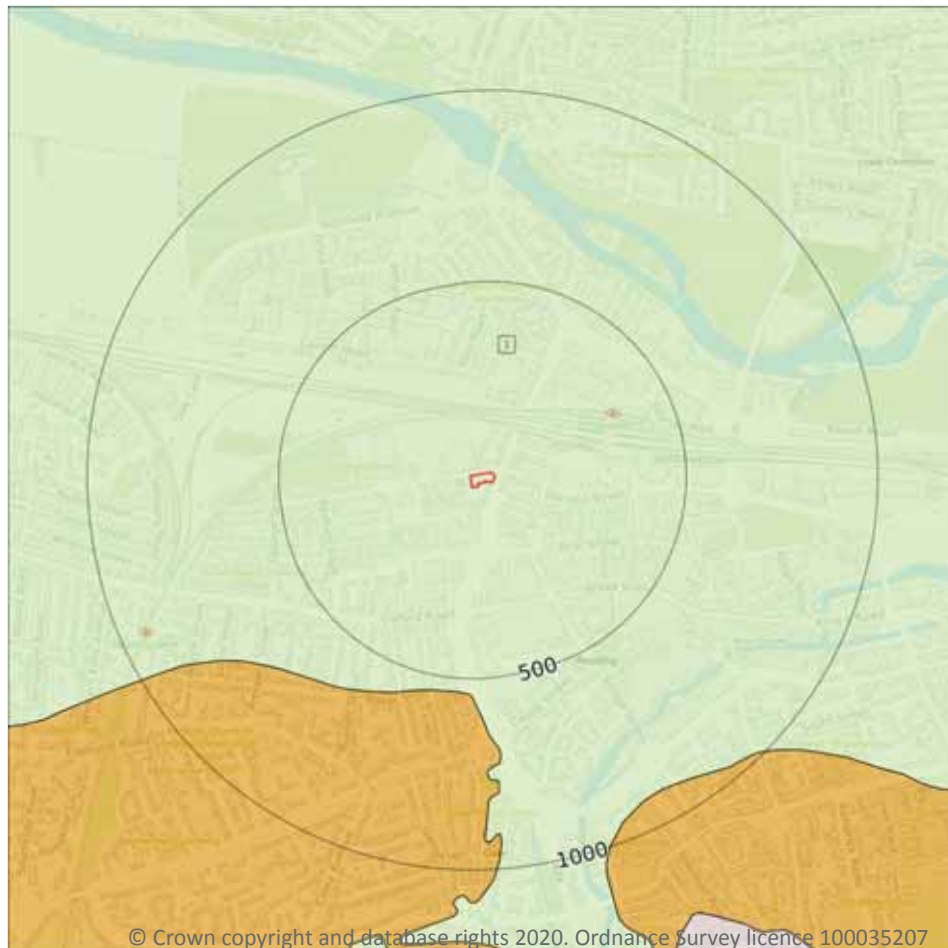
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 101**

ID	Location	LEX Code	Description	Rock age
1	On site	SNCK-CHLK	SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION (UNDIFFERENTIATED) - CHALK	CONIACIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m

1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Very High	Very High

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

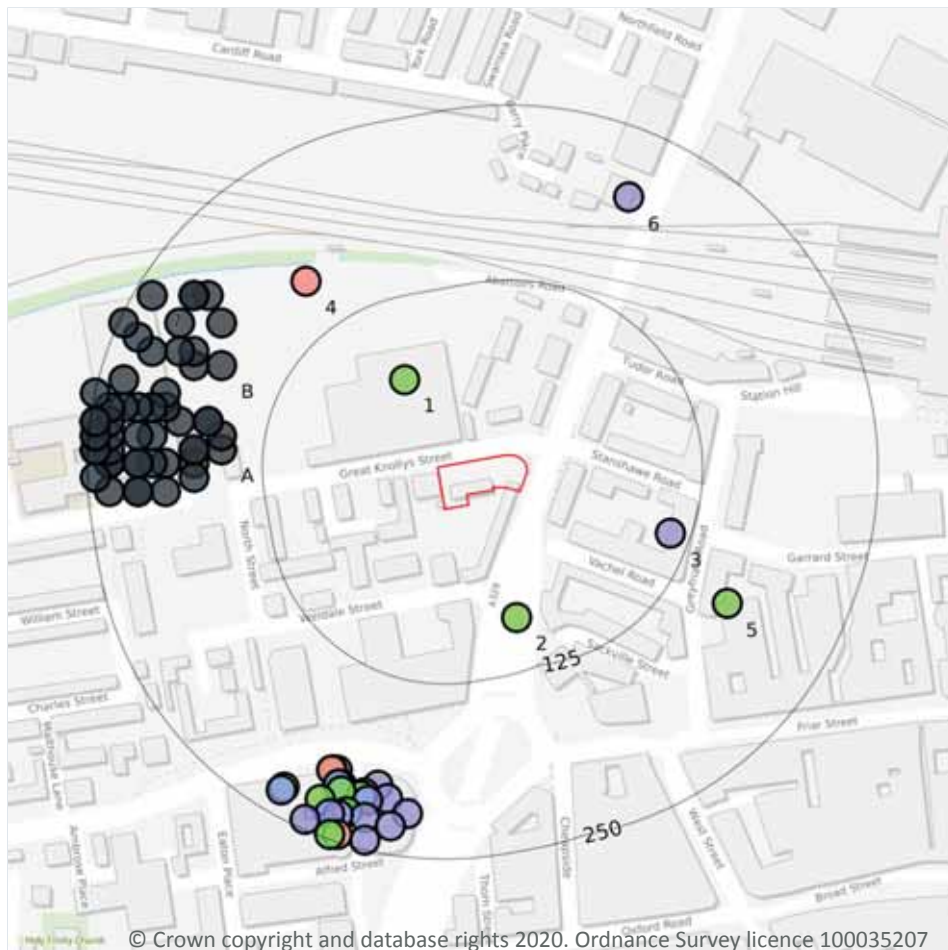
0

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

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m

86

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

Features are displayed on the Boreholes map on **page 103**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	67m N	471050 173820	CATTLE MARKET READING	10.05	N	428203
2	87m SE	471130 173650	READING CO-OP SACKVILLE STREET	12.19	N	428834
3	111m E	471240 173710	21 GREYFRIARS ROAD	7.47	N	428251



ID	Location	Grid reference	Name	Length	Confidential	Web link
A	154m W	470920 173770	GREAT KNOLLYS STREET READING BERKSHIRE TP 3	-	Y	N/A
A	156m W	470920 173780	GREAT KNOLLYS STREET READING 96/7	-	Y	N/A
4	163m NW	470980 173890	THE ABATTOIRS READING	91.44	N	428198
A	167m W	470910 173790	GREAT KNOLLYS STREET READING BERKSHIRE 51	-	Y	N/A
A	167m W	470910 173790	GREAT KNOLLYS STREET READING WS96/5	-	Y	N/A
5	168m SE	471280 173660	16 GREYFRIARS ROAD READING	12.19	N	428163
B	170m NW	470920 173830	GREAT KNOLLYS STREET READING TP96/9	-	Y	N/A
A	174m W	470900 173760	GREAT KNOLLYS STREET READING BERKSHIRE 5	-	Y	N/A
A	174m W	470900 173750	GREAT KNOLLYS STREET READING TP96/11	-	Y	N/A
A	174m W	470900 173770	GREAT KNOLLYS STREET READING BERKSHIRE TP 10	-	Y	N/A
A	174m W	470900 173770	GREAT KNOLLYS STREET READING BERKSHIRE 1	-	Y	N/A
B	185m NW	470920 173860	GREAT KNOLLYS STREET READING TP96/8	-	Y	N/A
A	187m W	470890 173790	GREAT KNOLLYS STREET READING TP96/3	-	Y	N/A
B	189m NW	470900 173830	GREAT KNOLLYS STREET READING 96/3	-	Y	N/A
B	193m NW	470900 173840	GREAT KNOLLYS STREET READING 96/2	-	Y	N/A
A	194m W	470880 173760	GREAT KNOLLYS STREET READING BERKSHIRE TP 11	-	Y	N/A
A	195m W	470880 173740	GREAT KNOLLYS STREET READING BERKSHIRE TP 11	-	Y	N/A
A	199m W	470880 173800	GREAT KNOLLYS STREET READING BERKSHIRE 52	-	Y	N/A
A	201m W	470880 173810	GREAT KNOLLYS STREET READING BERKSHIRE TP 3	-	Y	N/A
6	201m NE	471210 173950	CAVERSHAM ROAD READING	5.79	N	428196
B	202m NW	470890 173840	GREAT KNOLLYS STREET READING 96/1	-	Y	N/A
C	202m S	471002 173541	CHATHAM PLACE READING TP01	3.4	N	18382980
C	203m SW	470999 173541	CHATHAM PLACE READING 1	11.5	N	18381987
C	203m S	471031 173530	CHATHAM PLACE READING TP10	2.7	N	18382993
C	203m SW	470998 173541	CHATHAM PLACE READING 1R	60.0	N	18382007



ID	Location	Grid reference	Name	Length	Confidential	Web link
A	204m W	470870 173760	GREAT KNOLLYS STREET READING BERKSHIRE TP 2	-	Y	N/A
B	205m NW	470910 173880	READING BUS GARAGE 96/9	-	Y	N/A
A	205m W	470870 173780	GREAT KNOLLYS STREET READING BERKSHIRE 58	-	Y	N/A
A	208m W	470870 173800	GREAT KNOLLYS STREET READING BERKSHIRE TP 12	-	Y	N/A
C	210m S	471005 173531	CHATHAM PLACE READING 13	3.7	N	18382001
C	210m S	471038 173521	CHATHAM PLACE READING TP11	1.2	N	18383002
C	211m S	471003 173531	CHATHAM PLACE READING TP03	3.5	N	18382982
C	211m S	471003 173531	CHATHAM PLACE READING TP02	1.21	N	18382981
C	211m S	471021 173525	CHATHAM PLACE READING 12	10.5	N	18381998
B	211m NW	470890 173860	GREAT KNOLLYS STREET READING BERKSHIRE 2	-	Y	N/A
B	213m NW	470900 173880	GREAT KNOLLYS STREET READING BERKSHIRE TP 7	-	Y	N/A
B	213m NW	470900 173880	GREAT KNOLLYS STREET READING TP96/6	-	Y	N/A
C	213m S	471019 173523	CHATHAM PLACE READING 12A	11.0	N	18381999
A	214m W	470860 173760	GREAT KNOLLYS STREET READING BERKSHIRE TP 10	-	Y	N/A
A	214m W	470860 173760	GREAT KNOLLYS STREET READING BERKSHIRE TP 9	-	Y	N/A
A	215m W	470860 173740	GREAT KNOLLYS STREET READING BERKSHIRE TP 12	-	Y	N/A
A	215m W	470860 173740	GREAT KNOLLYS STREET READING TP96/5	-	Y	N/A
C	215m S	471005 173526	CHATHAM PLACE READING 13A	11.0	N	18382003
A	215m W	470860 173780	GREAT KNOLLYS STREET READING BERKSHIRE 53	-	Y	N/A
C	216m S	471024 173519	CHATHAM PLACE READING TP04	1.9	N	18382983
A	218m W	470860 173800	GREAT KNOLLYS STREET READING BERKSHIRE TP 2	-	Y	N/A
C	219m S	471052 173510	CHATHAM PLACE READING TP05	1.5	N	18382984
B	220m W	470870 173840	GREAT KNOLLYS STREET READING BERKSHIRE TP 4	-	Y	N/A
C	226m SW	470990 173520	CHATHAM PLACE READING 11	10.5	N	18381997



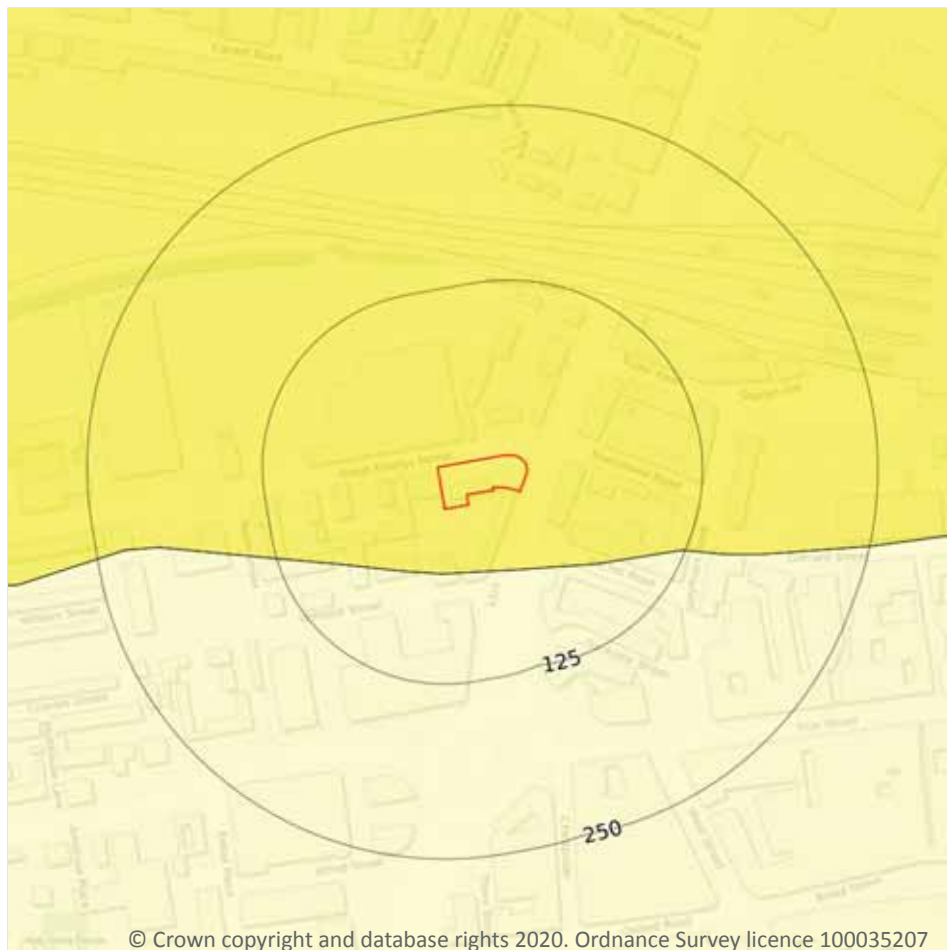
ID	Location	Grid reference	Name	Length	Confidential	Web link
C	227m S	471009 173511	CHATHAM STREET - READING 2	29.95	N	15616939
C	228m S	471022 173507	CHATHAM PLACE READING TP14	1.4	N	18383042
A	228m W	470850 173800	GREAT KNOLLYS STREET READING BERKSHIRE TP 8	-	Y	N/A
D	229m SW	470964 173529	CHATHAM PLACE READING 2R	30.0	N	18382009
C	230m S	471040 173501	CHATHAM PLACE READING TP12	1.0	N	18383004
C	231m S	471003 173509	CHATHAM PLACE READING TP13	1.3	N	18383005
D	232m SW	470962 173527	CHATHAM PLACE READING 2	3.45	N	18381988
C	232m S	470997 173510	CHATHAM PLACE READING TP06	2.0	N	18382987
A	233m W	470850 173820	GREAT KNOLLYS STREET READING BERKSHIRE 3	-	Y	N/A
B	233m NW	470860 173850	GREAT KNOLLYS STREET READING TP96/1	-	Y	N/A
A	234m W	470840 173760	GREAT KNOLLYS STREET READING BERKSHIRE 54	-	Y	N/A
A	234m W	470840 173760	GREAT KNOLLYS STREET READING BERKSHIRE TP 1	-	Y	N/A
A	234m W	470840 173760	GREAT KNOLLYS STREET READING BERKSHIRE TP 8	-	Y	N/A
A	234m W	470840 173760	GREAT KNOLLYS STREET READING TP96/4	-	Y	N/A
A	234m W	470840 173770	GREAT KNOLLYS STREET READING BERKSHIRE 4	-	Y	N/A
A	234m W	470840 173740	GREAT KNOLLYS STREET READING BERKSHIRE TP 9	-	Y	N/A
A	235m W	470840 173780	GREAT KNOLLYS STREET READING BERKSHIRE 57	-	Y	N/A
A	236m W	470840 173790	GREAT KNOLLYS STREET READING BERKSHIRE 2	-	Y	N/A
A	238m W	470840 173800	GREAT KNOLLYS STREET READING WS96/2	-	Y	N/A
7	238m NW	470870 173880	GREAT KNOLLYS STREET READING BERKSHIRE TP 5	-	Y	N/A
C	243m SW	470979 173506	CHATHAM PLACE READING TP20	1.2	N	18383048
C	243m S	471022 173491	CHATHAM PLACE READING TP15	1.3	N	18383043
A	244m W	470830 173750	GREAT KNOLLYS STREET READING BERKSHIRE TP 13	-	Y	N/A
A	244m W	470830 173770	GREAT KNOLLYS STREET READING 96/6	-	Y	N/A
A	244m W	470830 173770	GREAT KNOLLYS STREET READING 96/4	-	Y	N/A



ID	Location	Grid reference	Name	Length	Confidential	Web link
A	244m W	470830 173770	GREAT KNOLLYS STREET READING 96/5	-	Y	N/A
C	245m S	471002 173495	CHATHAM PLACE READING 4R	50.0	N	18382594
A	245m W	470830 173780	GREAT KNOLLYS STREET READING BERKSHIRE 55	-	Y	N/A
A	245m W	470830 173780	GREAT KNOLLYS STREET READING WS96/3	-	Y	N/A
A	246m W	470830 173790	GREAT KNOLLYS STREET READING BERKSHIRE TP 1	-	Y	N/A
A	246m W	470830 173790	GREAT KNOLLYS STREET READING BERKSHIRE 56	-	Y	N/A
B	246m NW	470850 173860	GREAT KNOLLYS STREET READING TP96/10	-	Y	N/A
C	246m S	470997 173495	CHATHAM PLACE READING 4	10.5	N	18381990
A	250m W	470830 173810	GREAT KNOLLYS STREET READING TP96/2	-	Y	N/A

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.1 Shrink swell clays

Records within 50m

2

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

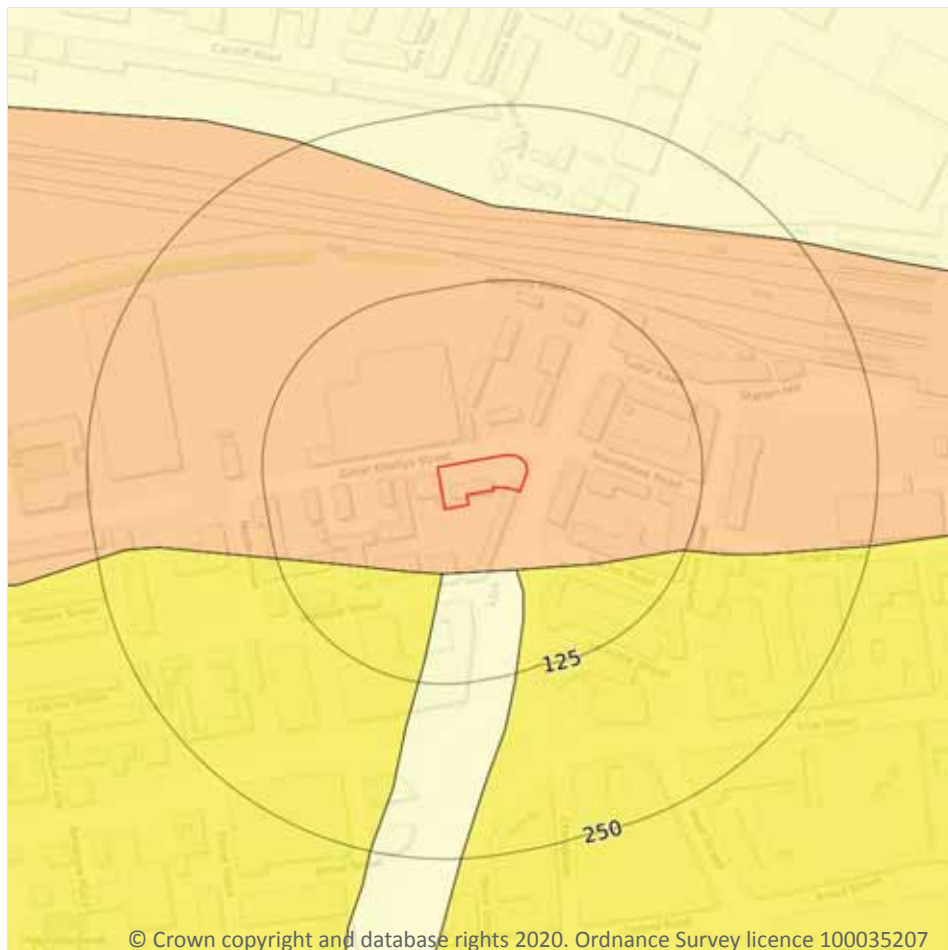
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 108**

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.
46m S	Negligible	Ground conditions predominantly non-plastic.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.2 Running sands

Records within 50m

3

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

Features are displayed on the Natural ground subsidence - Running sands map on **page 109**

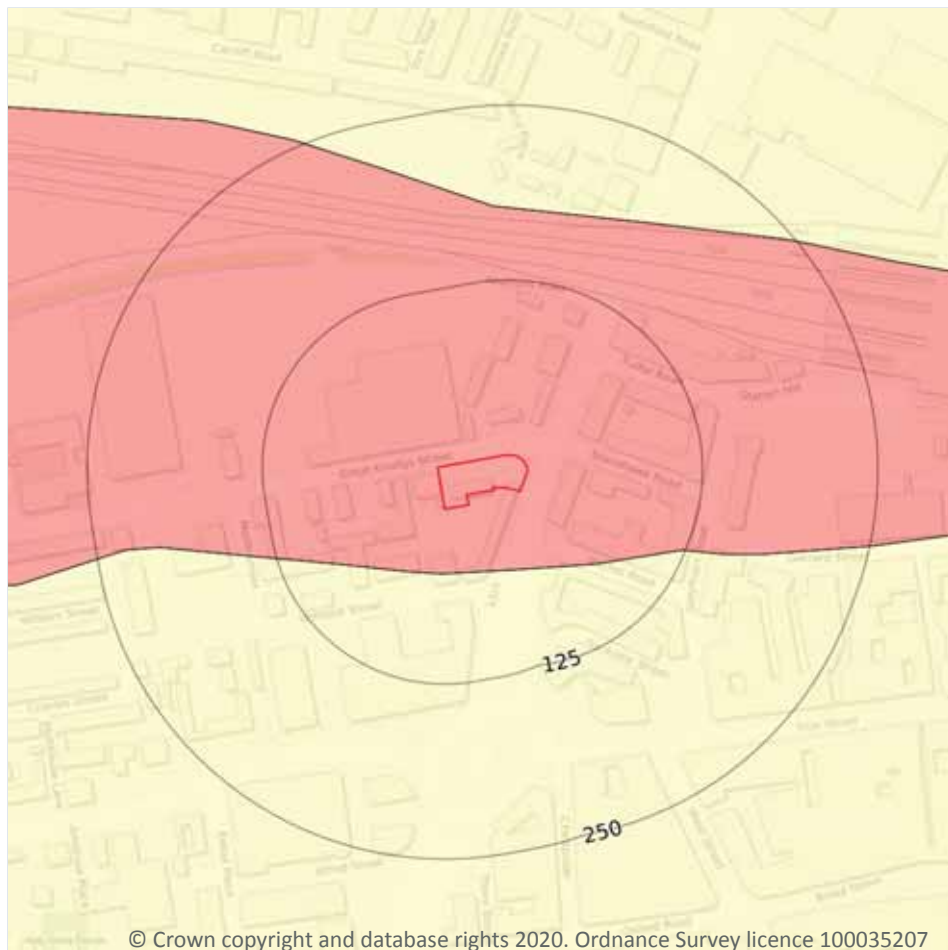
Location	Hazard rating	Details
On site	Low	Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.

Location	Hazard rating	Details
46m S	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.
46m S	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.3 Compressible deposits

Records within 50m

2

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

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 111**

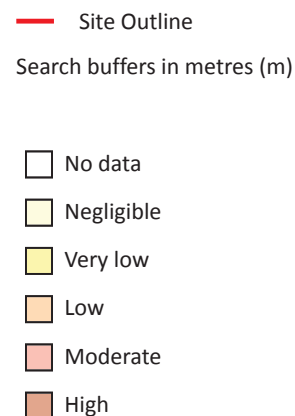
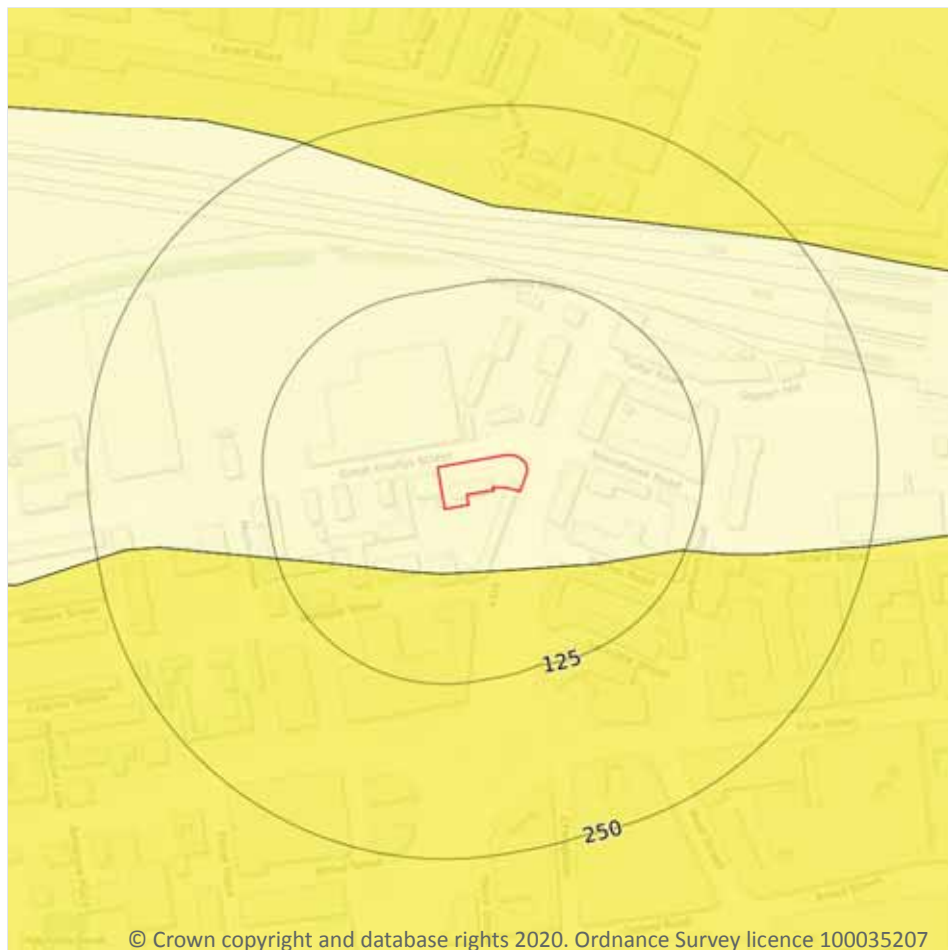
Location	Hazard rating	Details
On site	Moderate	Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.
46m S	Negligible	Compressible strata are not thought to occur.



This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



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17.4 Collapsible deposits

Records within 50m

2

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

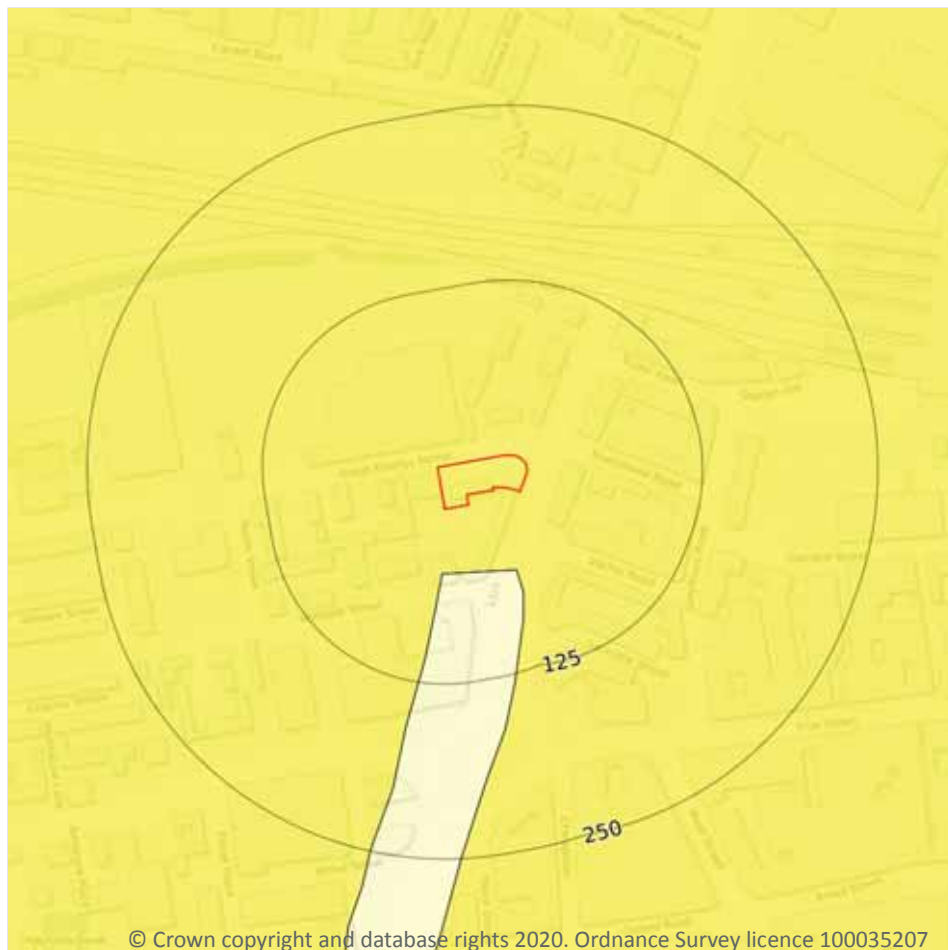
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 113**

Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
46m S	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.5 Landslides

Records within 50m

2

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

Features are displayed on the Natural ground subsidence - Landslides map on **page 114**

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

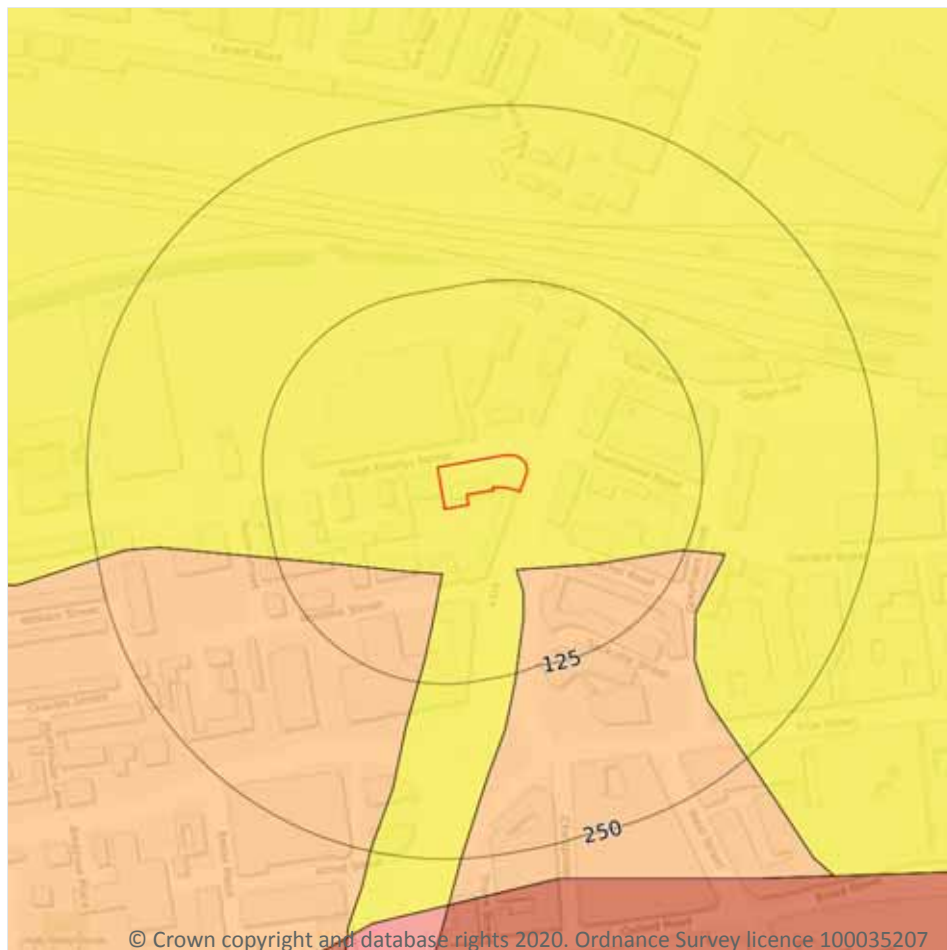


Location	Hazard rating	Details
46m S	Negligible	Slope instability problems are not thought to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

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17.6 Ground dissolution of soluble rocks

Records within 50m

2

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

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 116**

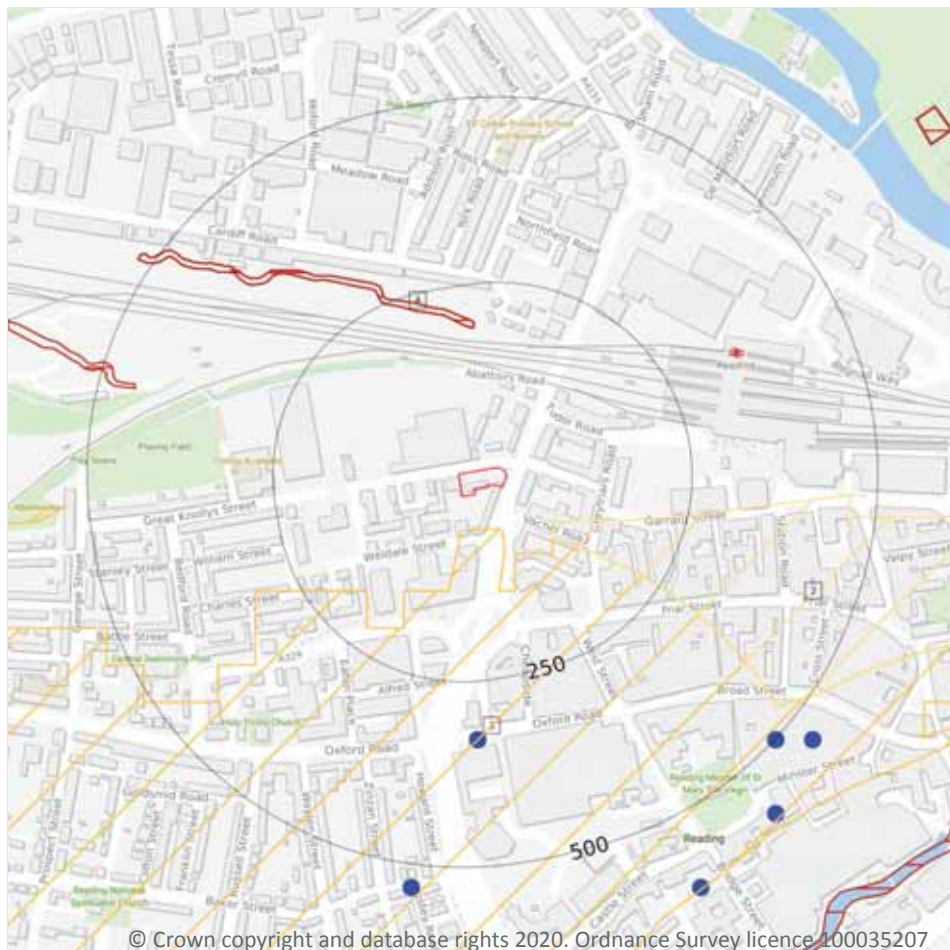
Location	Hazard rating	Details
On site	Very low	Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered.

Location	Hazard rating	Details
46m S	Low	Soluble rocks are present within the ground. Some dissolution features may be present. Potential for difficult ground conditions are at a level where they may be considered, localised subsidence need not be considered except in exceptional circumstances.

This data is sourced from the British Geological Survey.



18 Mining, ground workings and natural cavities



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- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m

1

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 118**

ID	Location	Details	Source
3	328m S	Type: Solution Pipe x 3 Superficial Geology: Taplow Gravel Bedrock Geology: Chalk Group	Simple Bibliography: Reading Borough Council Full Bibliography: - Confidentiality: Data source can be revealed, data can be used freely



This data is sourced from Peter Brett Associates (PBA).

18.2 BritPits

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

2

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 118**

ID	Location	Land Use	Year of mapping	Mapping scale
A	191m N	Unspecified Ground Workings	1938	1:10560
A	191m N	Unspecified Ground Workings	1913	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m

0

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

This data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

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

This data is sourced from the British Geological Survey.



18.6 Non-coal mining

Records within 1000m

43

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 118**

ID	Location	Name	Commodity	Class	Likelihood
1	46m S	Not available	Chalk	B	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	84m SE	Not available	Chalk	A	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
-	635m S	Not available	Chalk	D	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
-	643m S	Not available	Chalk	D	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
-	658m S	Not available	Chalk	D	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
-	661m S	Not available	Chalk	D	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
-	680m S	Not available	Chalk	D	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
-	685m S	Not available	Chalk	E	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



ID	Location	Name	Commodity	Class	Likelihood
-	694m S	Not available	Chalk	E	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
-	708m S	Not available	Chalk	E	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
-	711m S	Not available	Chalk	E	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
-	730m S	Not available	Chalk	E	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
-	775m W	Not available	Chalk	A	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
-	785m S	Not available	Chalk	E	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
-	787m S	Not available	Chalk	D	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
-	791m S	Not available	Chalk	E	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
-	805m S	Not available	Chalk	E	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
-	824m S	Not available	Chalk	E	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



ID	Location	Name	Commodity	Class	Likelihood
-	831m S	Not available	Chalk	E	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
-	848m S	Not available	Chalk	E	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
-	849m S	Not available	Chalk	D	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
-	853m S	Not available	Chalk	E	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
-	861m S	Not available	Chalk	D	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
-	865m S	Not available	Chalk	D	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
-	867m S	Not available	Chalk	E	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
-	869m S	Not available	Chalk	D	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
-	870m S	Not available	Chalk	E	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
-	876m S	Not available	Chalk	D	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	Location	Name	Commodity	Class	Likelihood
-	885m S	Not available	Chalk	E	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
-	886m S	Not available	Chalk	E	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
-	890m S	Not available	Chalk	D	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
-	892m S	Not available	Chalk	D	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
-	893m S	Not available	Chalk	E	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
-	923m S	Not available	Chalk	D	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
-	944m S	Not available	Chalk	E	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
-	948m S	Not available	Chalk	E	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
-	960m SE	Not available	Chalk	B	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
-	963m SE	Not available	Chalk	C	Small scale underground mining may have occurred; mine adits, shafts and tunnels may be present. Potential for localised difficult ground conditions are at a level where they should be considered



ID	Location	Name	Commodity	Class	Likelihood
-	964m SE	Not available	Chalk	B	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
-	969m S	Not available	Chalk	D	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
-	972m S	Not available	Chalk	E	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
-	974m S	Not available	Chalk	D	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
-	989m S	Not available	Chalk	E	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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	16
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Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

Features are displayed on the Mining, ground workings and natural cavities map on **page 118**

ID	Location	Mine Address	Mineral	Data source	Publisher
-	690m S	Reading (Coley), Berkshire	Chalk	-	-
-	691m S	Reading (Coley), Berkshire	Chalk	-	-
-	698m S	Reading (Coley), Berkshire	Chalk	-	-
-	699m S	Reading (Coley), Berkshire	Chalk	-	-
-	778m S	Reading (Coley), Berkshire	Chalk	-	-
-	781m S	Reading (Coley), Berkshire	Chalk	-	-



ID	Location	Mine Address	Mineral	Data source	Publisher
-	792m S	Reading (Coley), Berkshire	Chalk	-	-
-	828m S	Reading (Coley), Berkshire	Chalk	-	-
-	831m S	Reading (Coley), Berkshire	Chalk	-	-
-	866m SW	Reading, Berkshire	Chalk	-	-
-	904m S	Reading (Coley), Berkshire	Chalk	-	-
-	930m SW	Reading (West), Berkshire	Chalk	-	-
-	931m S	'Castle Hill Kiln', Reading (Coley), Berkshire	Chalk	-	-
-	936m S	Reading (Coley), Berkshire	Chalk	-	-
-	941m SW	'Cooper's Brick & Lime Manufactory', Reading (West), Berkshire	Chalk	-	-
-	992m S	Reading (Coley), Berkshire	Chalk	-	-

This data is sourced from Peter Brett Associates (PBA).

18.8 JPB mining areas

Records on site	1
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Areas which could be affected by former coal mining. This data includes some mine plans unavailable to the Coal Authority.

Location	Details
On site	Whilst outside of an area where The Coal Authority have information on coal mining activities, Johnson Poole & Bloomer (JPB) have information such as mining plans and maps held within their archive of mining activities that have occurred within 1km of this property. Further details and a quote for services can be obtained by emailing this report to enquiries.gs@jpb.co.uk.

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0
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Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0
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The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

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

18.11 Gypsum areas

Records on site	0
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Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0
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Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.

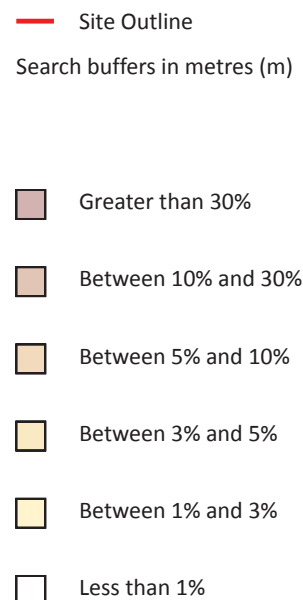
18.13 Clay mining

Records on site	0
-----------------	---

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

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

19 Radon



19.1 Radon

Records on site

1

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

Features are displayed on the Radon map on **page 127**

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

This data is sourced from the British Geological Survey and Public Health England.



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

3

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
46m SW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
46m S	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects



- Site Outline
- Search buffers in metres (m)
- C1** Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 1 Worksites
- C2** Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- 🚂 Railway stations
- ⋯ Active railways
- ⋯ Active tunnels
- ⋯ Abandoned railways
- Historic railways
- Historic tunnels
- 🚂 Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

21.1 Underground railways (London)

Records within 250m

0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m

0

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



This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m

66

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

Features are displayed on the Railway infrastructure and projects map on **page 129**

Location	Land Use	Year of mapping	Mapping scale
116m N	Railway Sidings	1898	10560
120m N	Railway Sidings	1900	2500
120m N	Railway Sidings	1962	10560
121m N	Railway Sidings	1977	10000
121m N	Railway Sidings	1971	10000
121m N	Railway Sidings	1994	10000
121m N	Railway Sidings	1989	10000
122m N	Railway Sidings	1912	2500
122m N	Railway Sidings	1931	2500
122m N	Railway	1932	-
122m N	Railway	1910	-
123m N	Railway Sidings	1938	10560
123m N	Railway Sidings	1913	10560
124m N	Railway Sidings	1957	2500
124m N	Railway Sidings	1958	2500
126m N	Railway Sidings	1938	10560
126m N	Railway Sidings	1994	1250



Location	Land Use	Year of mapping	Mapping scale
126m N	Railway Sidings	1996	1250
130m N	Railway Sidings	1933	10560
131m N	Railway	1879	-
135m N	Railway	1879	-
138m N	Railway Sidings	1879	2500
138m NE	Railway Sidings	1979	1250
138m NE	Railway Sidings	1988	1250
138m NE	Railway Sidings	1993	1250
139m N	Railway Sidings	1879	500
139m N	Railway	1931	-
139m N	Railway	1900	-
144m N	Railway Sidings	1962	1250
144m N	Railway Sidings	1957	1250
144m NE	Railway Sidings	1879	500
145m NE	Railway Sidings	1986	1250
145m NE	Railway Sidings	1969	1250
145m NE	Railway Sidings	1962	1250
145m NE	Railway Sidings	1957	1250
157m N	Railway Sidings	1900	2500
162m N	Railway Sidings	1879	500
163m NE	Railway Sidings	1994	1250
163m NE	Railway Sidings	1996	1250
163m NE	Railway Sidings	1979	1250
163m NE	Railway Sidings	1988	1250
163m NE	Railway Sidings	1993	1250
167m NE	Railway Sidings	1986	1250
167m NE	Railway Sidings	1969	1250
169m N	Railway Sidings	1933	10560



Location	Land Use	Year of mapping	Mapping scale
173m NE	Railway Sidings	1979	1250
173m NE	Railway Sidings	1988	1250
173m NE	Railway Sidings	1993	1250
173m NW	Railway Sidings	1959	1250
175m NW	Railway Sidings	1986	1250
175m NW	Railway Sidings	1993	1250
175m NW	Railway Sidings	1971	1250
197m NE	Railway Sidings	1979	1250
197m NE	Railway Sidings	1988	1250
197m NE	Railway Sidings	1993	1250
198m NE	Railway Sidings	1986	1250
199m NE	Railway Sidings	1994	1250
199m NE	Railway Sidings	1996	1250
205m NW	Railway Sidings	1933	10560
208m NW	Railway Sidings	1959	1250
215m NE	Railway Sidings	1879	500
244m NW	Railway Sidings	1959	1250
247m NE	Railway Sidings	1979	1250
247m NE	Railway Sidings	1969	1250
247m NE	Railway Sidings	1962	1250
247m NE	Railway Sidings	1957	1250

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m

0

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

This data is sourced from Groundsure/the Postal Museum.



21.6 Historical railways

Records within 250m

0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m

60

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways. Features are displayed on the Railway infrastructure and projects map on **page 129**

Location	Name	Type
127m N	-	rail
130m NE	-	rail
133m N	Reading to Taunton line	rail
136m NE	-	rail
137m N	Great Western Main Line	rail
137m NE	Reading to Taunton line	rail
137m N	Not given	Multi Track
138m N	Reading to Taunton line	rail
140m NE	Not given	Multi Track
141m NE	Great Western Main Line	rail
143m NE	-	rail
143m NE	Reading to Plymouth Line	rail
144m N	Great Western Main Line	rail
145m NE	-	rail
145m NE	-	rail
148m NE	Great Western Main Line	rail
149m N	Great Western Main Line	rail
151m NE	Great Western Main Line	rail



Location	Name	Type
152m N	-	rail
153m N	Not given	Multi Track
153m N	Not given	Multi Track
155m N	Not given	Multi Track
156m NE	Great Western Main Line	rail
157m NE	Great Western Main Line	rail
158m N	Reading to Plymouth Line	rail
158m N	-	rail
159m NE	-	rail
159m N	Reading to Taunton line	rail
163m N	Great Western Main Line	rail
163m N	Great Western Main Line	rail
163m N	Great Western Main Line	rail
164m NE	Great Western Main Line	rail
167m N	Great Western Main Line	rail
167m N	-	rail
167m N	Great Western Main Line	rail
167m NE	-	rail
169m N	-	rail
174m NE	-	rail
175m NE	-	rail
178m NE	-	rail
179m N	-	rail
180m N	Great Western Main Line	rail
183m N	Great Western Main Line	rail
185m NW	-	rail
186m N	-	rail
188m NE	-	rail



Location	Name	Type
188m NE	-	rail
190m N	-	rail
192m NE	-	rail
192m NE	-	rail
192m NE	-	rail
195m NE	Great Western Main Line	rail
204m NW	Reading to Taunton line	rail
206m N	-	rail
211m N	-	rail
211m NW	Great Western Main Line	rail
211m NW	Great Western Main Line	rail
211m NE	-	rail
215m NW	Great Western Main Line	rail
220m NW	Reading to Plymouth Line	rail

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m

1

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

Features are displayed on the Railway infrastructure and projects map on **page 129**

Location	Route Type
338m E	Surface Alignment

This data is sourced from publicly available information by Groundsure.



21.9 Crossrail 2

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m

0

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

This data is sourced from HS2 Ltd.



Data providers

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

Terms and conditions

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Site Details:

Caversham Road, Reading, RG1
7BT

Client Ref: EMS_597960_800140
Report Ref: EMS-597960_800140
Grid Ref: 471106, 173747

Map Name: County Series

Map date: 1879

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1879
Revised 1879
Edition N/A
Copyright N/A
Levelled N/A



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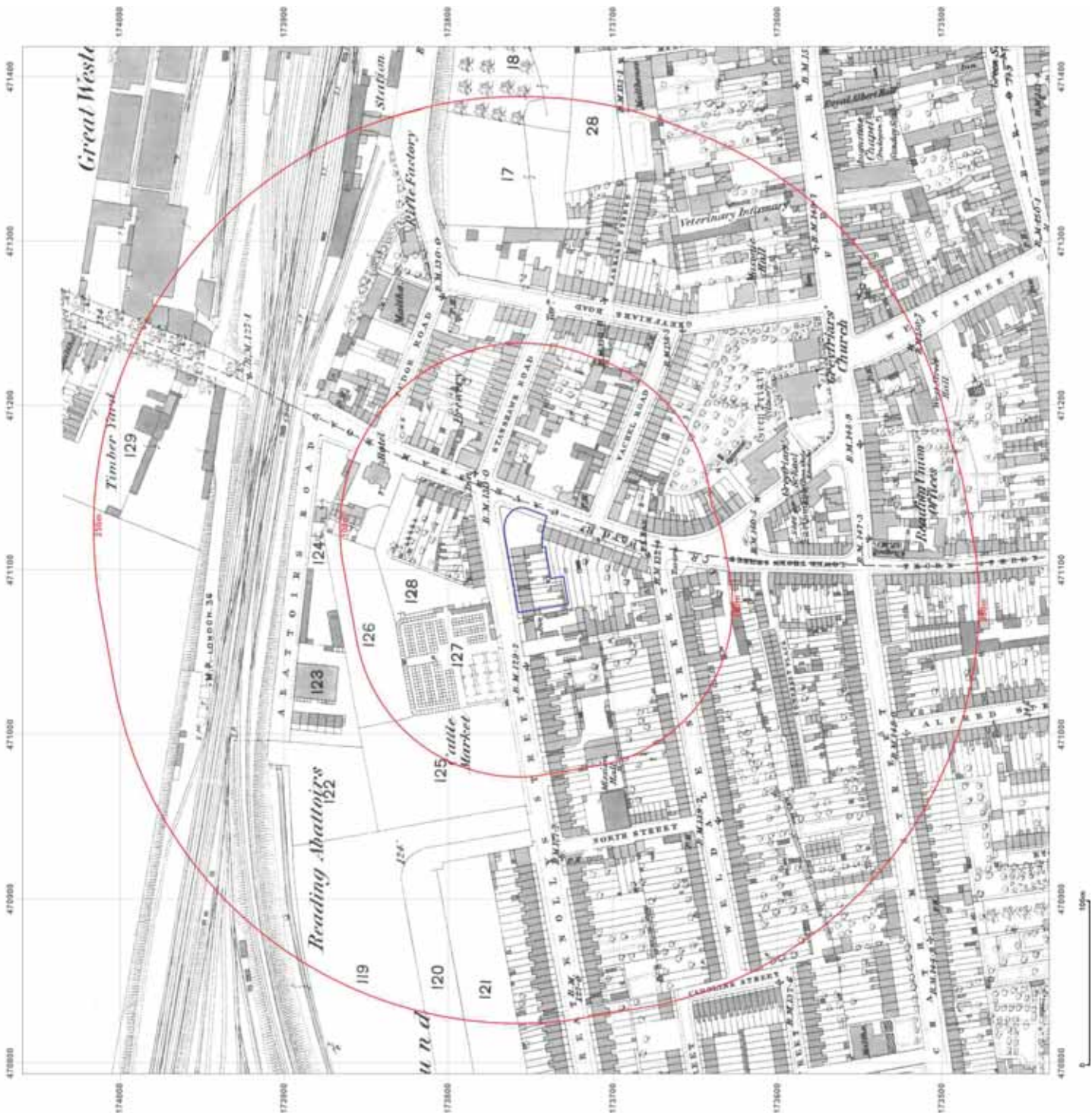


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Map legend available at:

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Site Details:

Caversham Road, Reading, RG1
7BT

Client Ref: EMS_597960_800140
Report Ref: EMS_597960_800140
Grid Ref: 471106, 173747

Map Name: County Series Town Plan

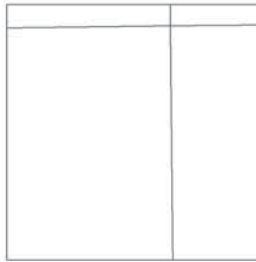
Map date: 1879-1880

Scale: 1:500

Printed at: 1:1,000



Surveyed 1879
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1879
Revised N/A
Edition N/A
Copyright N/A
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Surveyed 1880
Revised N/A
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Site Details:

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7BT

Client Ref: EMS_597960_800140
Report Ref: EMS-597960_800140
Grid Ref: 471106, 173747

Map Name: County Series

Map date: 1912-1913

Scale: 1:2,500

Printed at: 1:2,500



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Surveyed 1912
Revised 1912
Edition N/A
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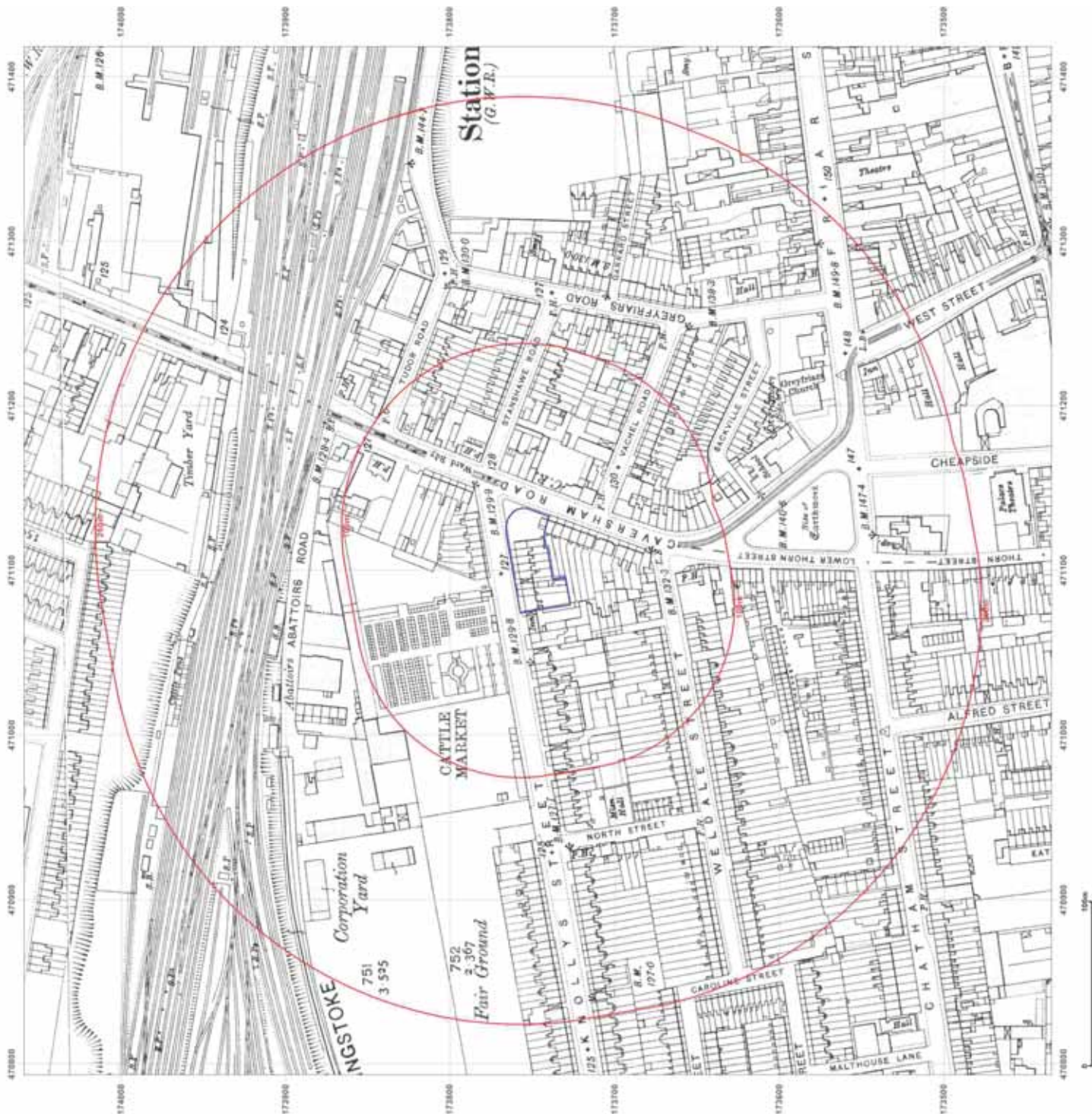
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Client Ref: EMS_597960_800140
Report Ref: EMS_597960_800140
Grid Ref: 471106, 173747

Map Name: County Series

Map date: 1931-1932

Scale: 1:2,500

Printed at: 1:2,500



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Edition N/A
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Surveyed 1931
Revised 1931
Edition N/A
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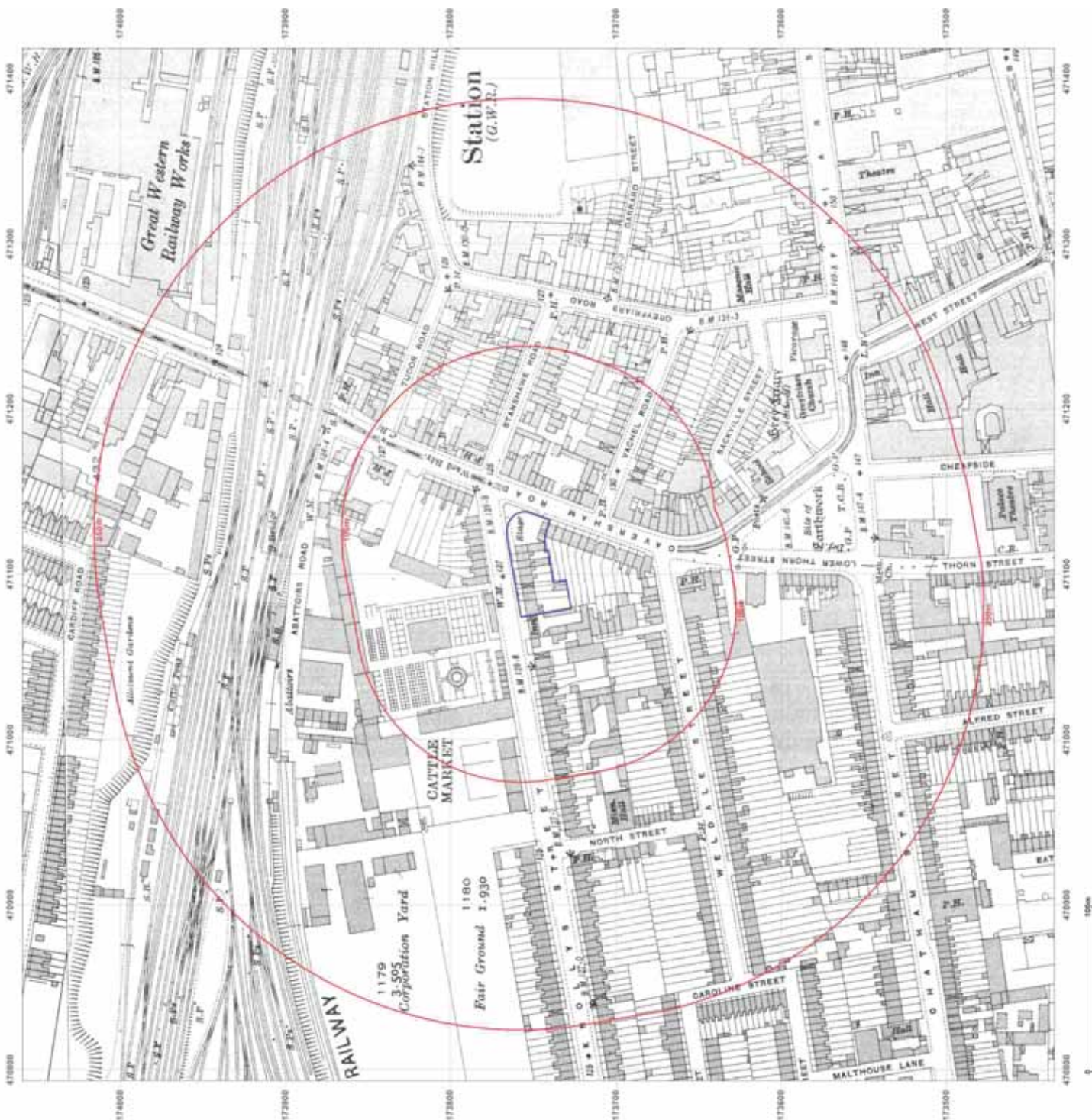
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Site Details:

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Client Ref: EMS_597960_800140
Report Ref: EMS-597960_800140
Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 1957-1959

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: EMS_597960_800140
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Map Name: National Grid

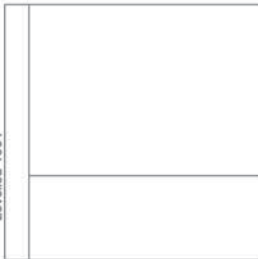
Map date: 1957-1959

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1859
Revised 1959
Edition 1961
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Surveyed 1957
Revised 1957
Edition 1958
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Client Ref: EMS_597960_800140
Report Ref: EMS_597960_800140
Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 1956-1961

Scale: 1:2,500

Printed at: 1:2,500



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Surveyed 1958
Revised 1958
Edition 1961
Copyright 1961
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Client Ref: EMS_597960_800140
Report Ref: EMS_597960_800140
Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 1962

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1957 Revised 1962 Edition N/A Copyright 1962 Levelled 1951	Surveyed 1957 Revised 1962 Edition N/A Copyright 1962 Levelled 1951
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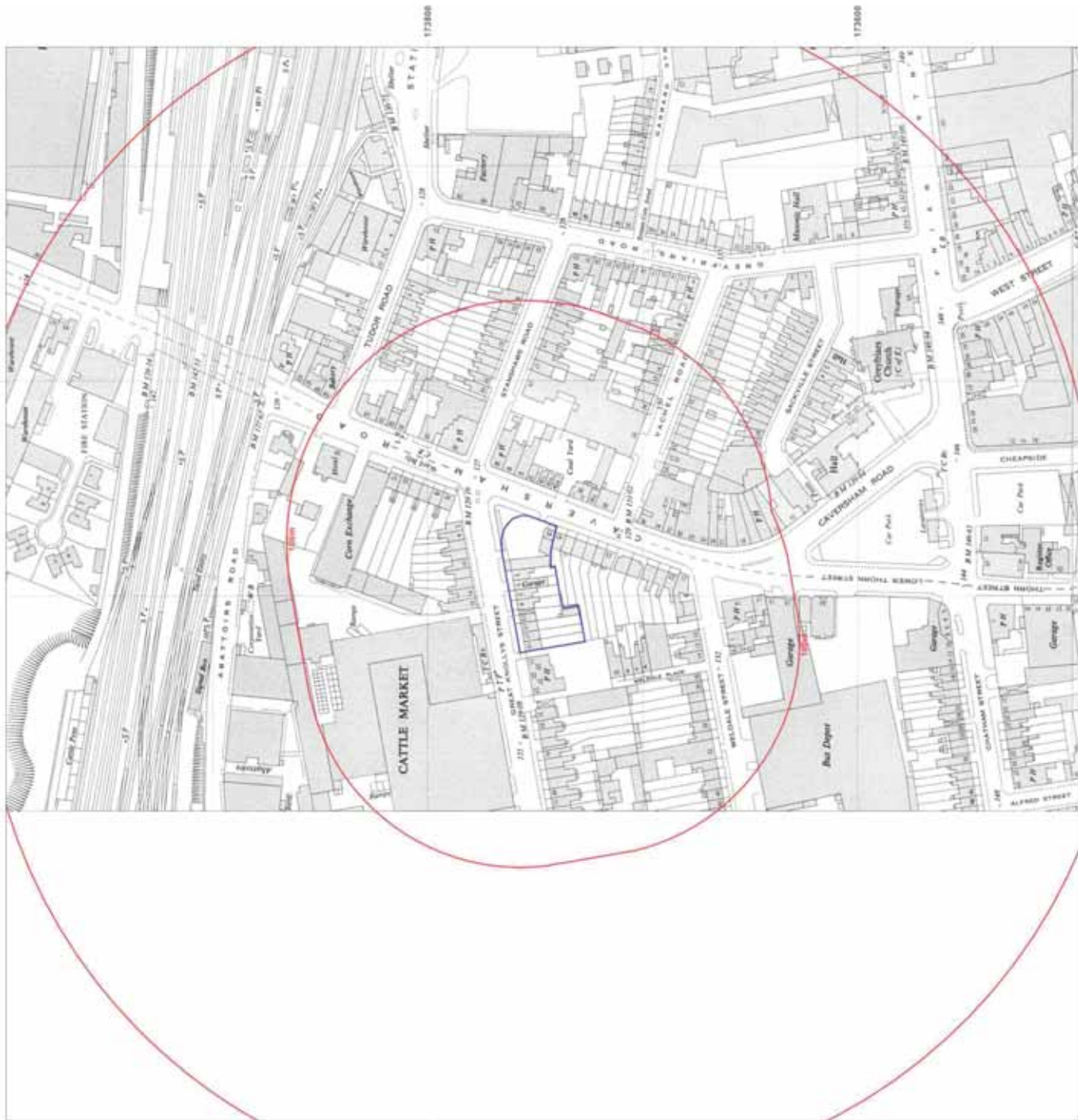


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0 100m

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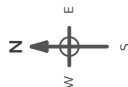
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Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 1969-1971

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: EMS_597960_800140
Report Ref: EMS_597960_800140
Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 1973-1977

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A	Surveyed N/A
Revised N/A	Revised N/A
Edition N/A	Edition N/A
Copyright 1974	Copyright 1973
Levelled N/A	Levelled N/A

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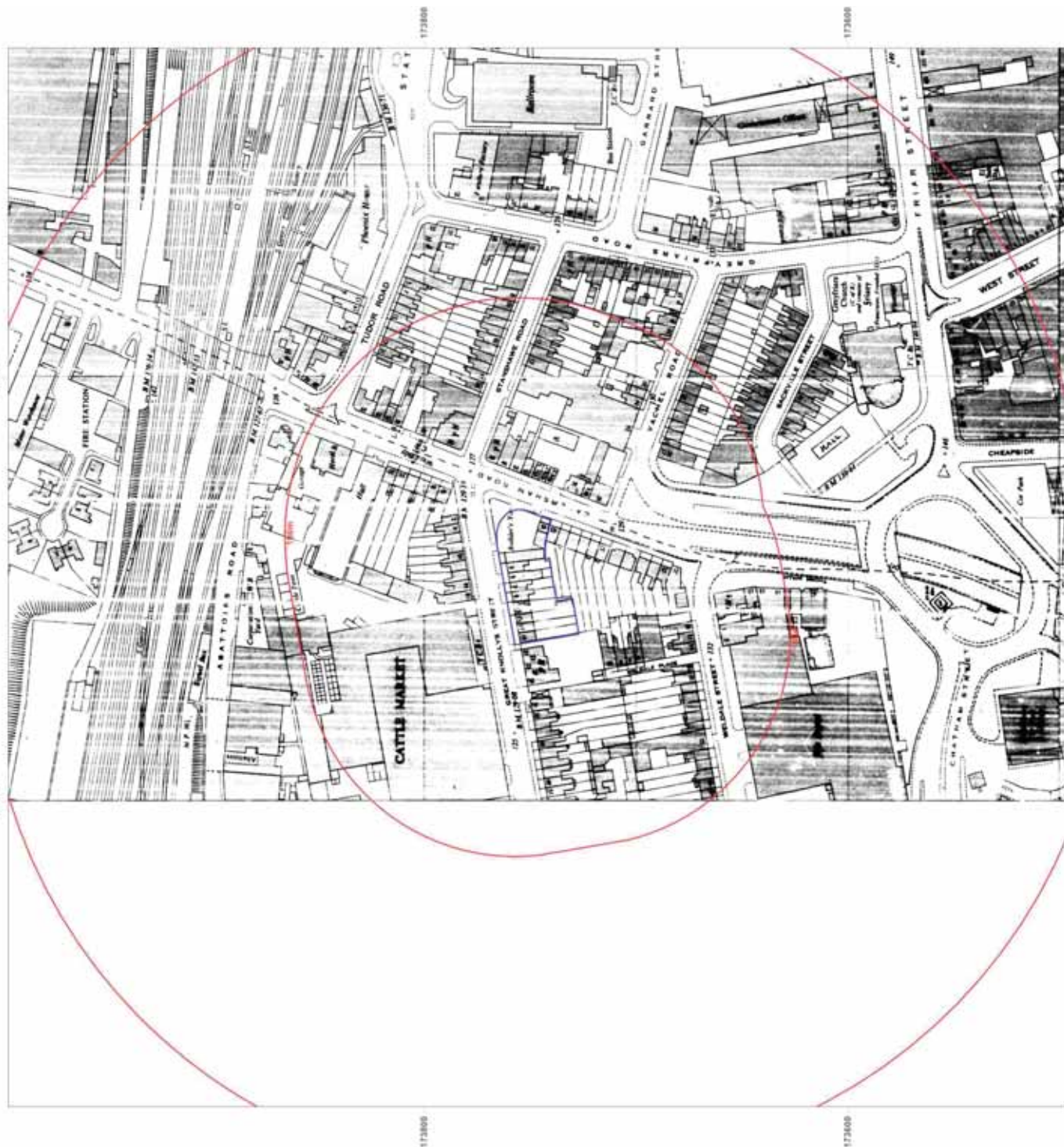


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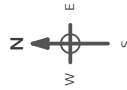
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Map Name: National Grid

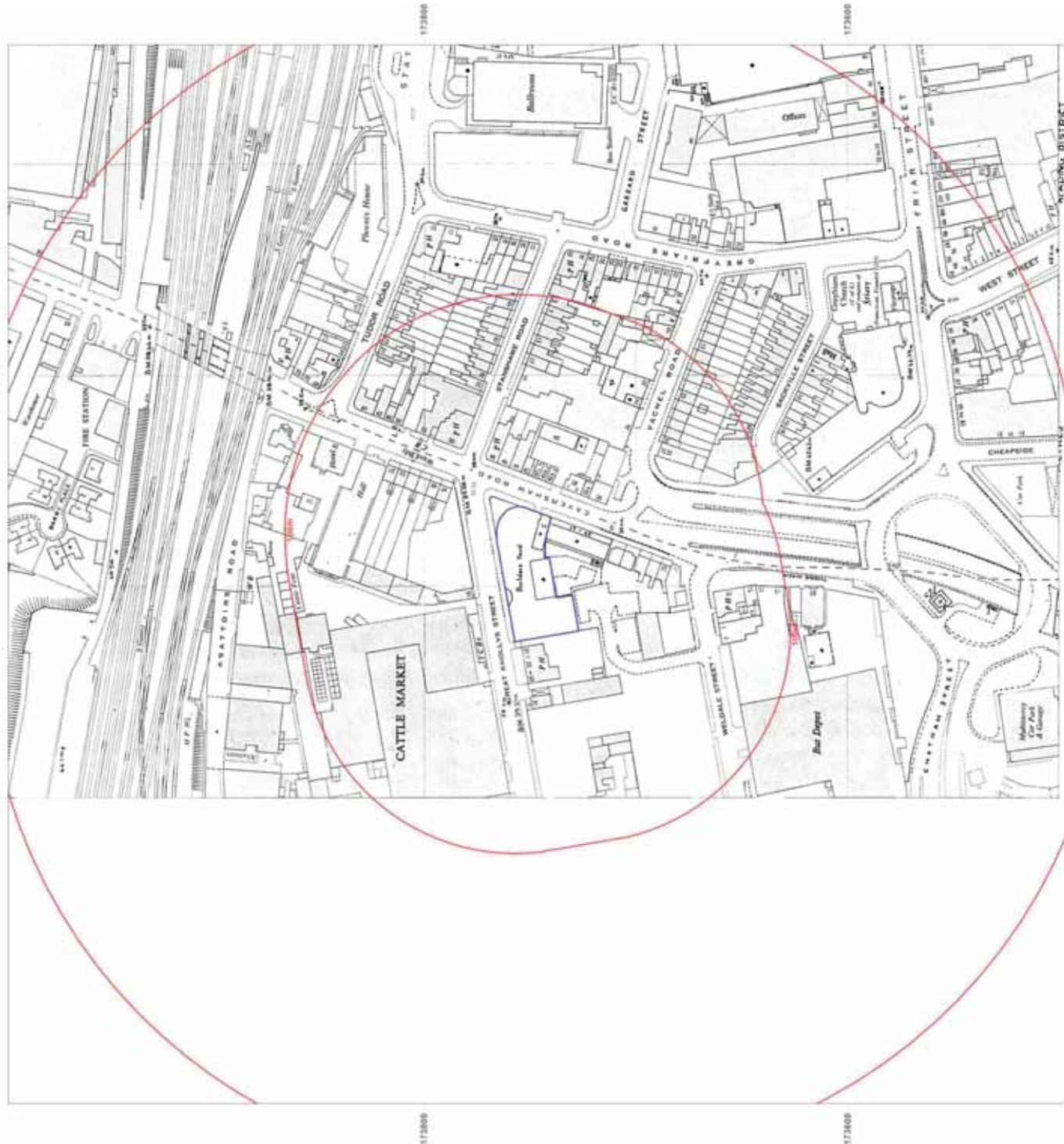
Map date: 1978-1979

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A Revised N/A Edition N/A Copyright 1979 Levelled 1972	Surveyed N/A Revised N/A Edition N/A Copyright 1978 Levelled N/A
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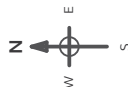
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Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 1986-1988

Scale: 1:1,250

Printed at: 1:2,000



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Surveyed 1972 Revised 1986 Edition N/A Copyright 1986 Levelled 1972	Surveyed 1973 Revised 1988 Edition N/A Copyright 1988 Levelled 1973



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Client Ref: EMS_597960_800140
Report Ref: EMS_597960_800140
Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1973
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Edition N/A
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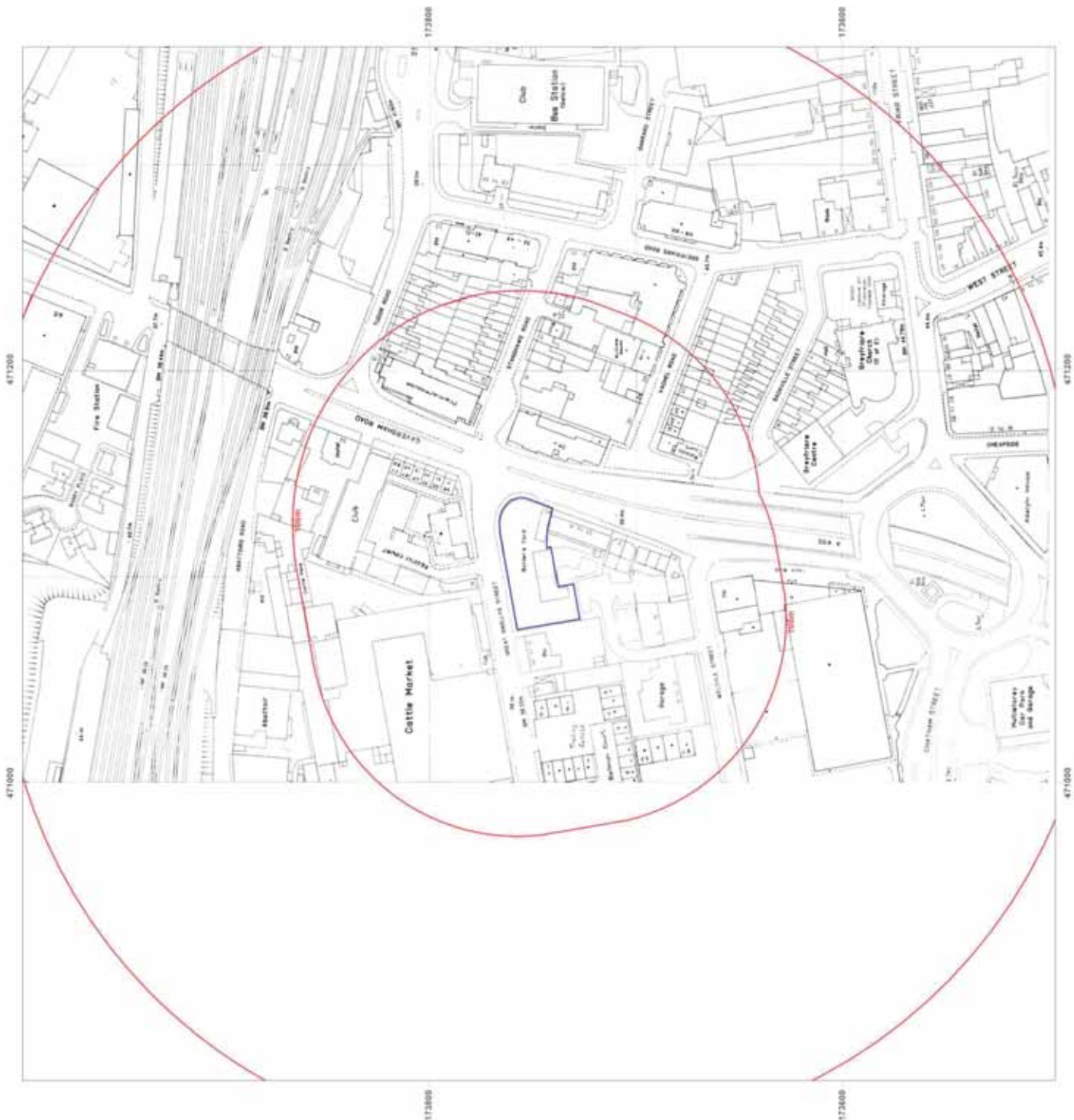


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Client Ref: EMS_597960_800140
Report Ref: EMS-597960_800140
Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 1988-1993

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1973 Revised 1988 Edition N/A Copyright 1988 Levelled 1973	Surveyed 1993 Revised N/A Edition N/A Copyright 1993 Levelled N/A
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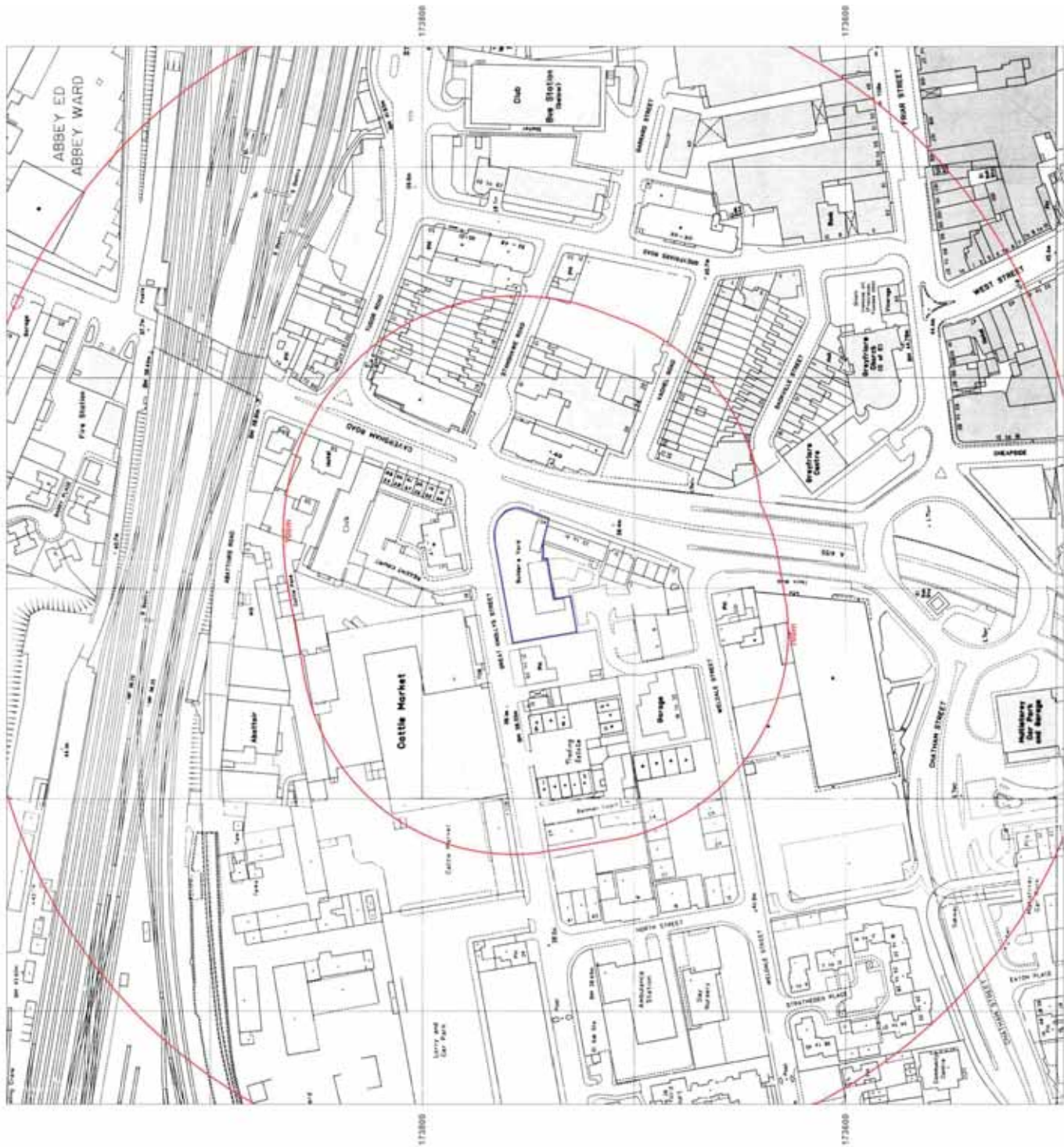


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Report Ref: EMS_597960_800140
Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: EMS_597960_800140
Report Ref: EMS_597960_800140
Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1994
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Edition N/A
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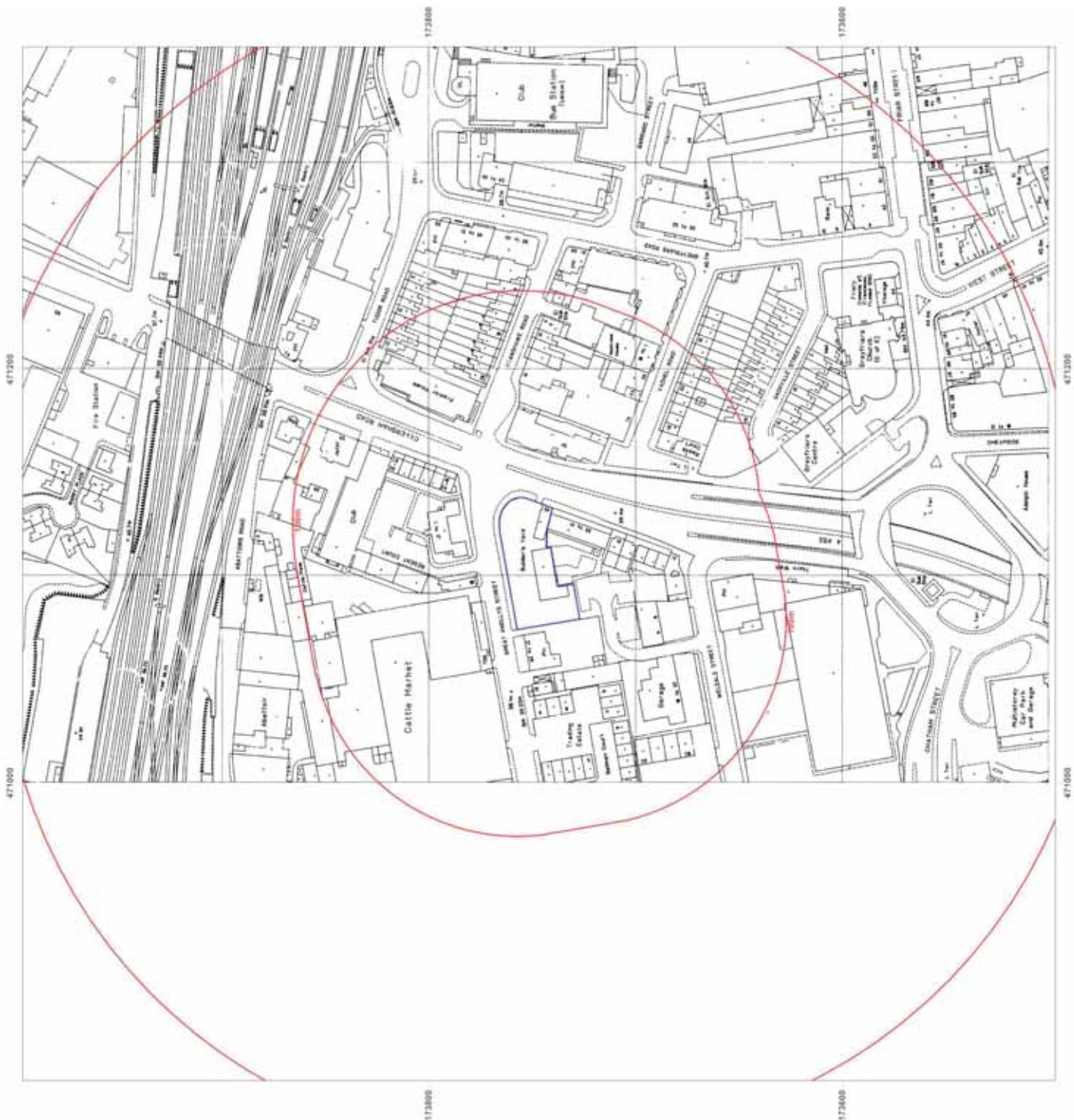


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Client Ref: EMS_597960_800140
Report Ref: EMS-597960_800140
Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1994
Revised 1994
Edition N/A
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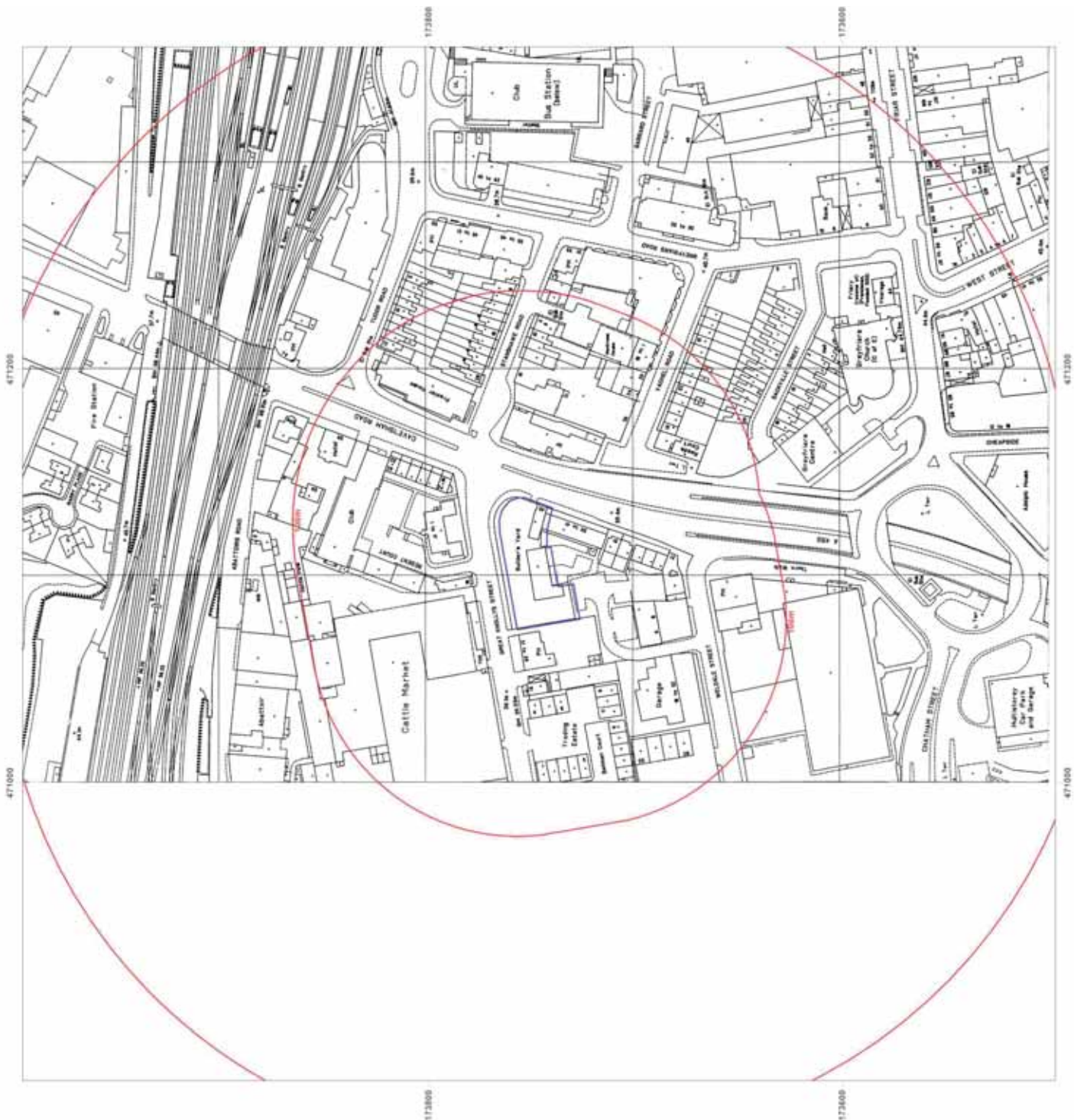
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Site Details:

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Client Ref: EMS_597960_800140
Report Ref: EMS_597960_800140
Grid Ref: 471106, 173747

Map Name: County Series

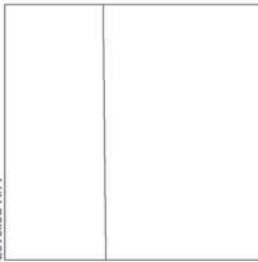
Map date: 1878

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1878
Revised 1878
Edition N/A
Copyright N/A
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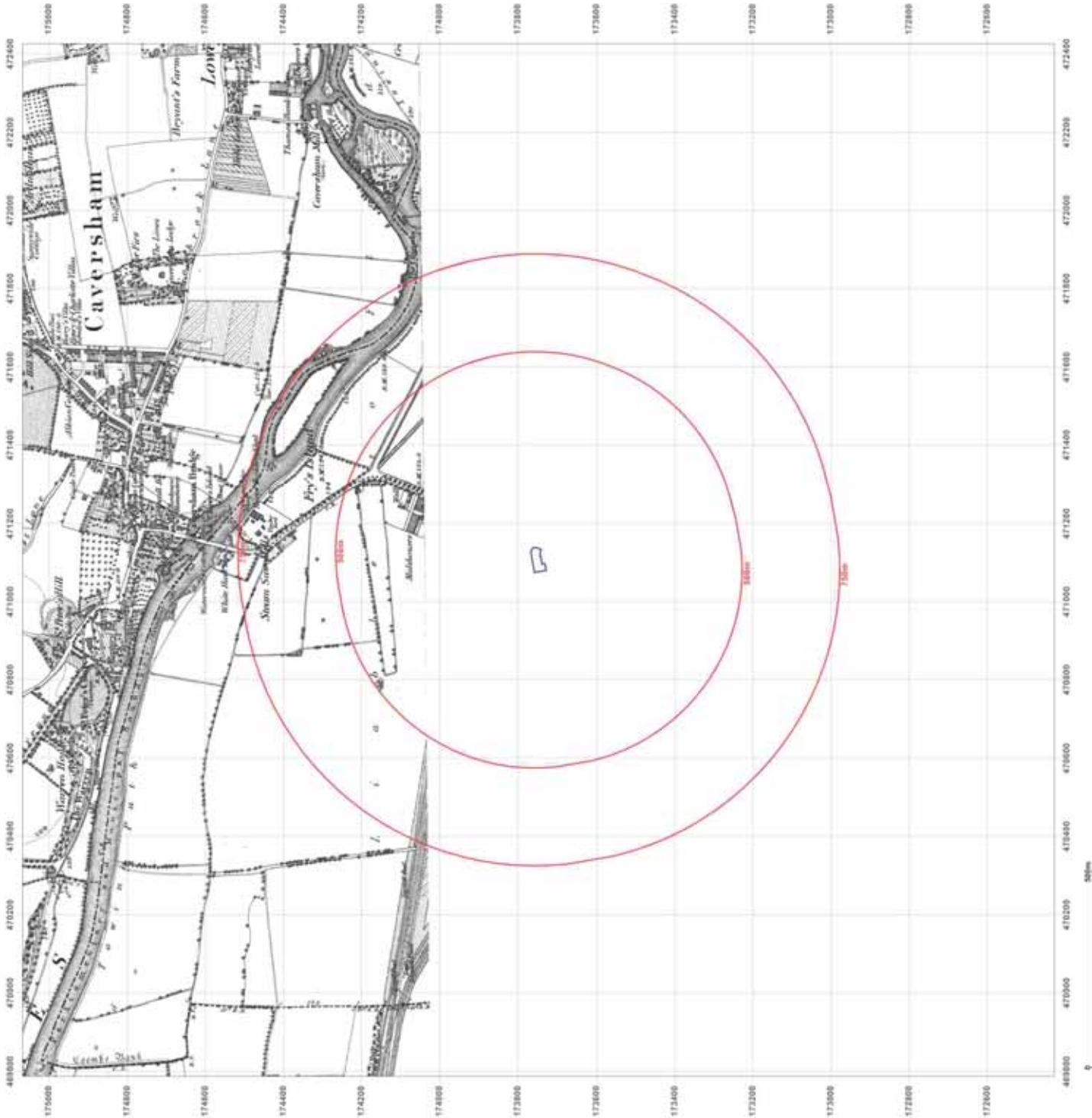


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Client Ref: EMS_597960_800140
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Map Name: County Series

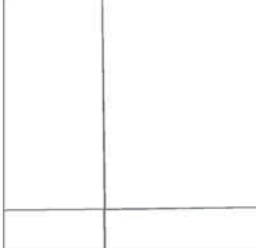
Map date: 1897-1900

Scale: 1:10,560

Printed at: 1:10,560



Surveyed N/A
Revised N/A
Edition 1900
Copyright N/A
Levelled N/A



Surveyed 1877
Revised 1898
Edition 1900
Copyright N/A
Levelled N/A

Surveyed 1877
Revised 1897
Edition N/A
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Revised 1898
Edition N/A
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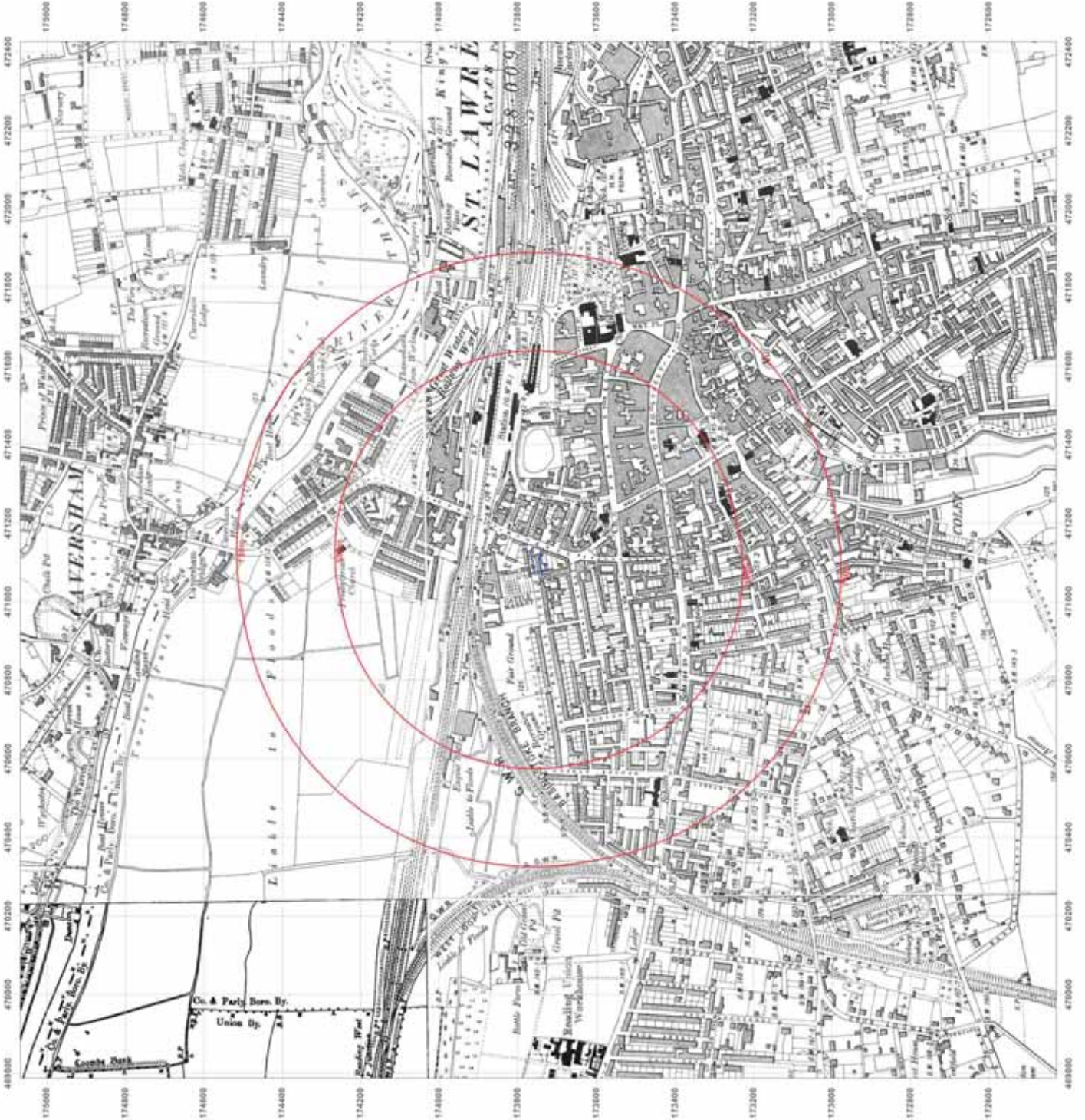


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Client Ref: EMS_597960_800140
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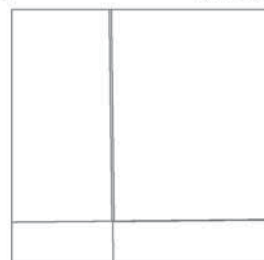
Map date: 1900

Scale: 1:10,560

Printed at: 1:10,560



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Edition 1900
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Surveyed 1877
Revised 1898
Edition 1900
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Revised N/A
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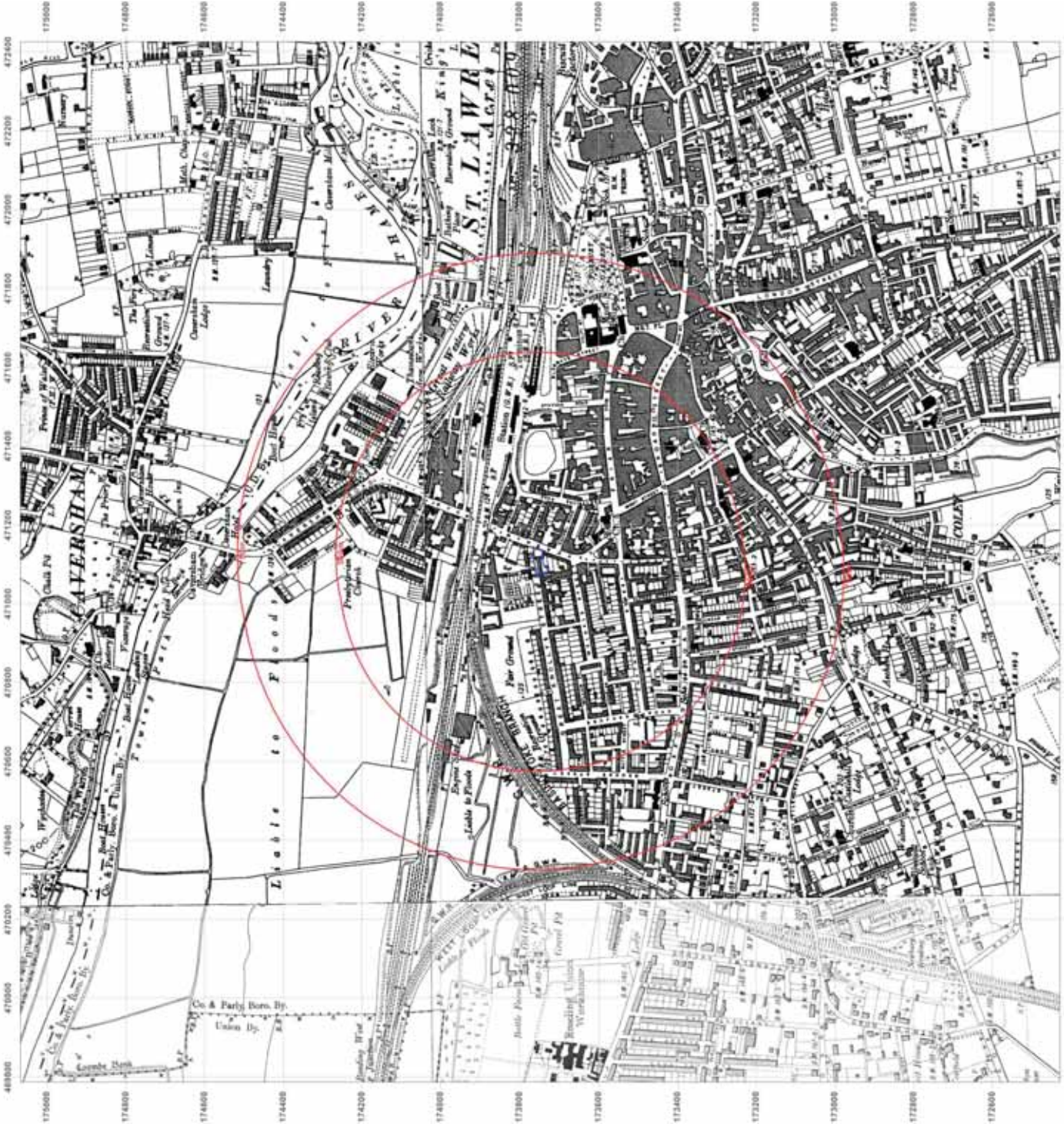


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Client Ref: EMS_597960_800140
Report Ref: EMS-597960_800140
Grid Ref: 471106, 173747

Map Name: County Series

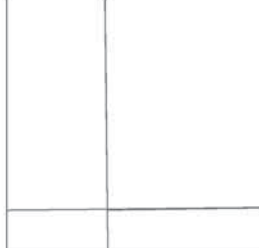
Map date: 1910-1913

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1877
Revised 1910
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1877
Revised 1910
Edition N/A
Copyright N/A
Levelled N/A

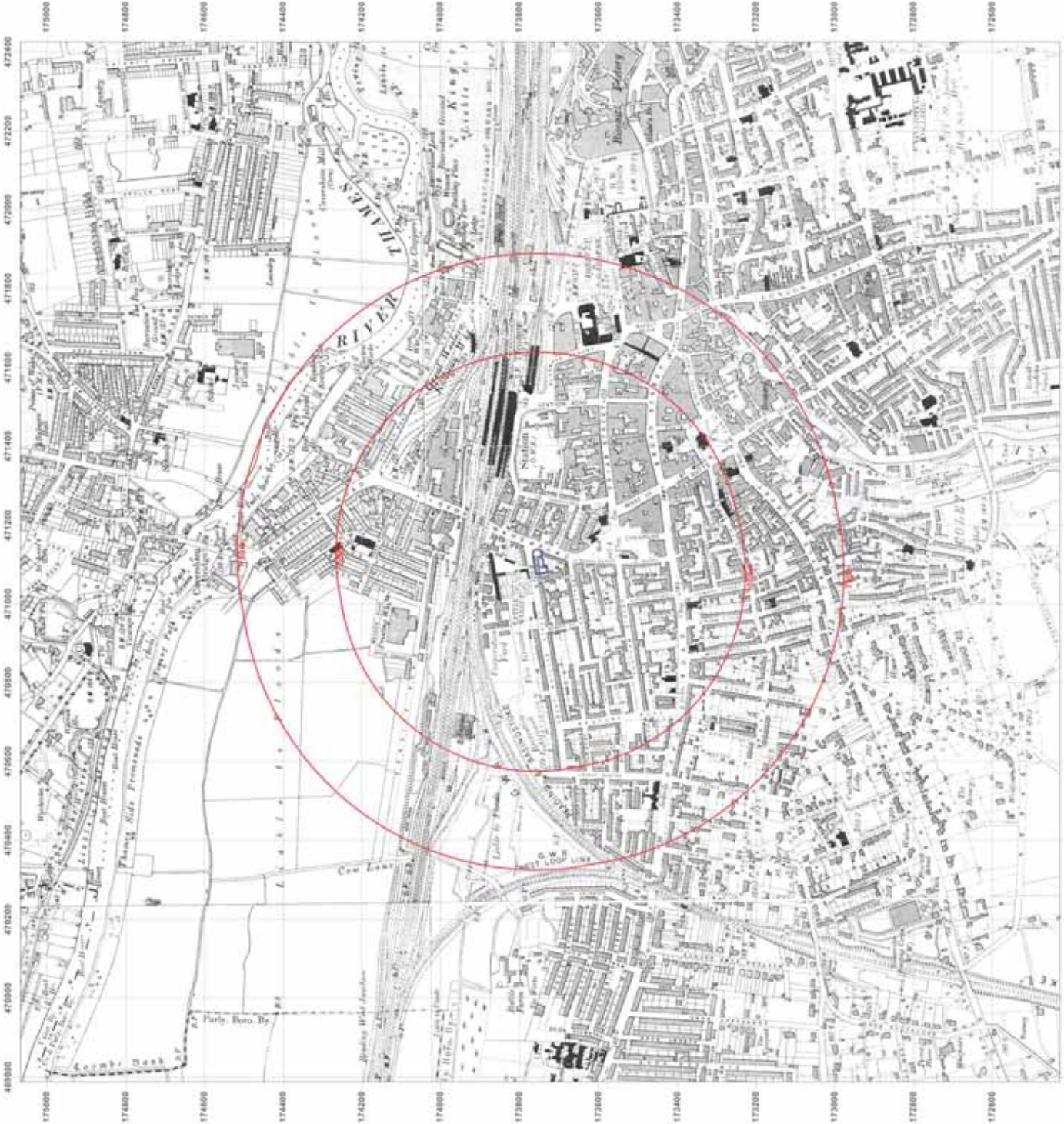
Surveyed 1877
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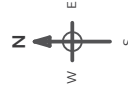
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Map Name: County Series

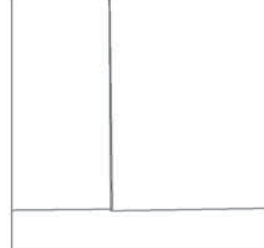
Map date: 1914

Scale: 1:10,560

Printed at: 1:10,560



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Edition 1914
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Surveyed N/A
Revised 1914
Edition 1913
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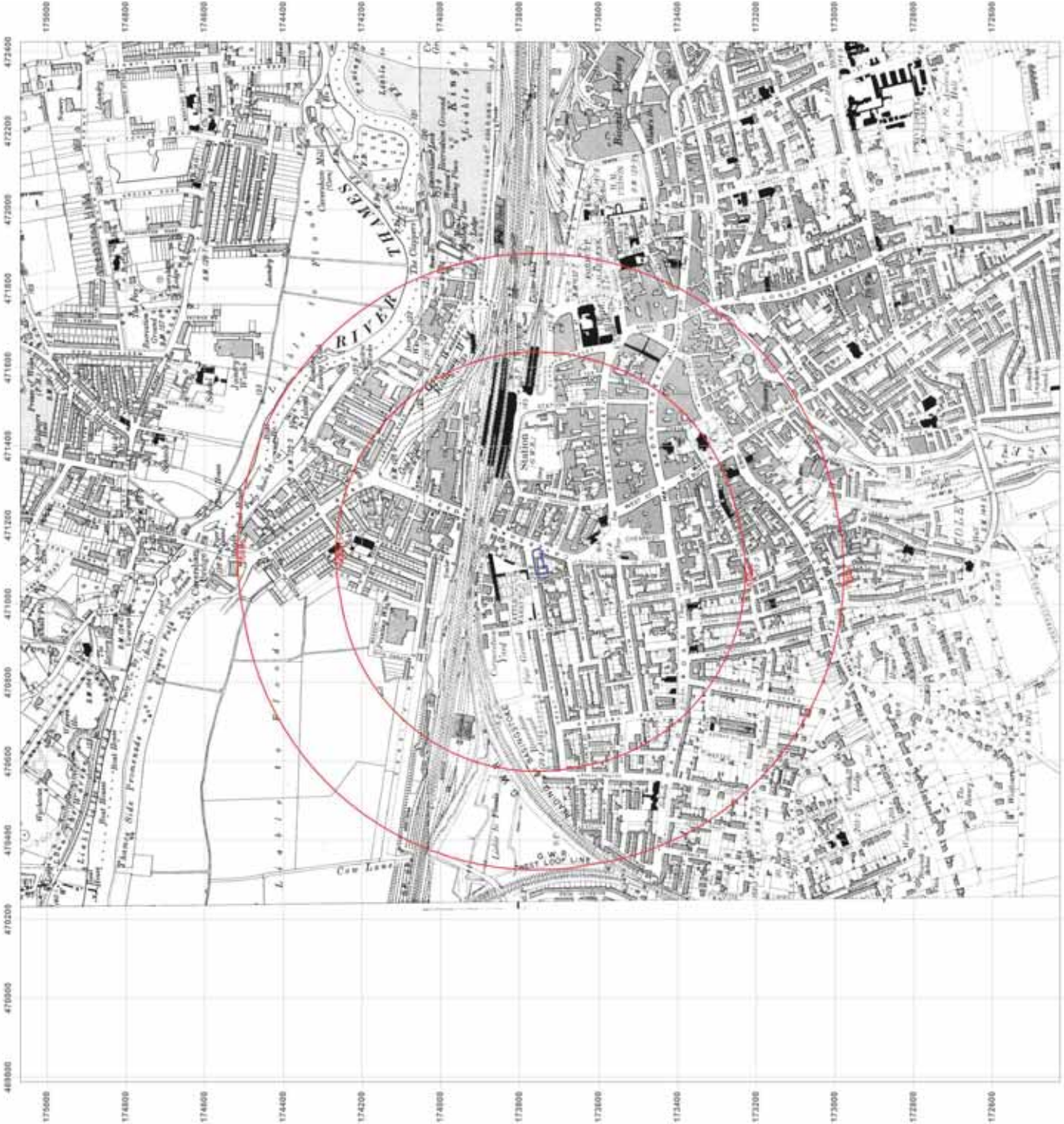


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Site Details:

Caversham Road, Reading, RG1 7BT

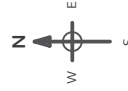
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Map Name: County Series

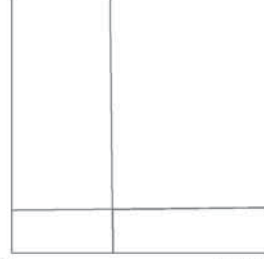
Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



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

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Revised 1938
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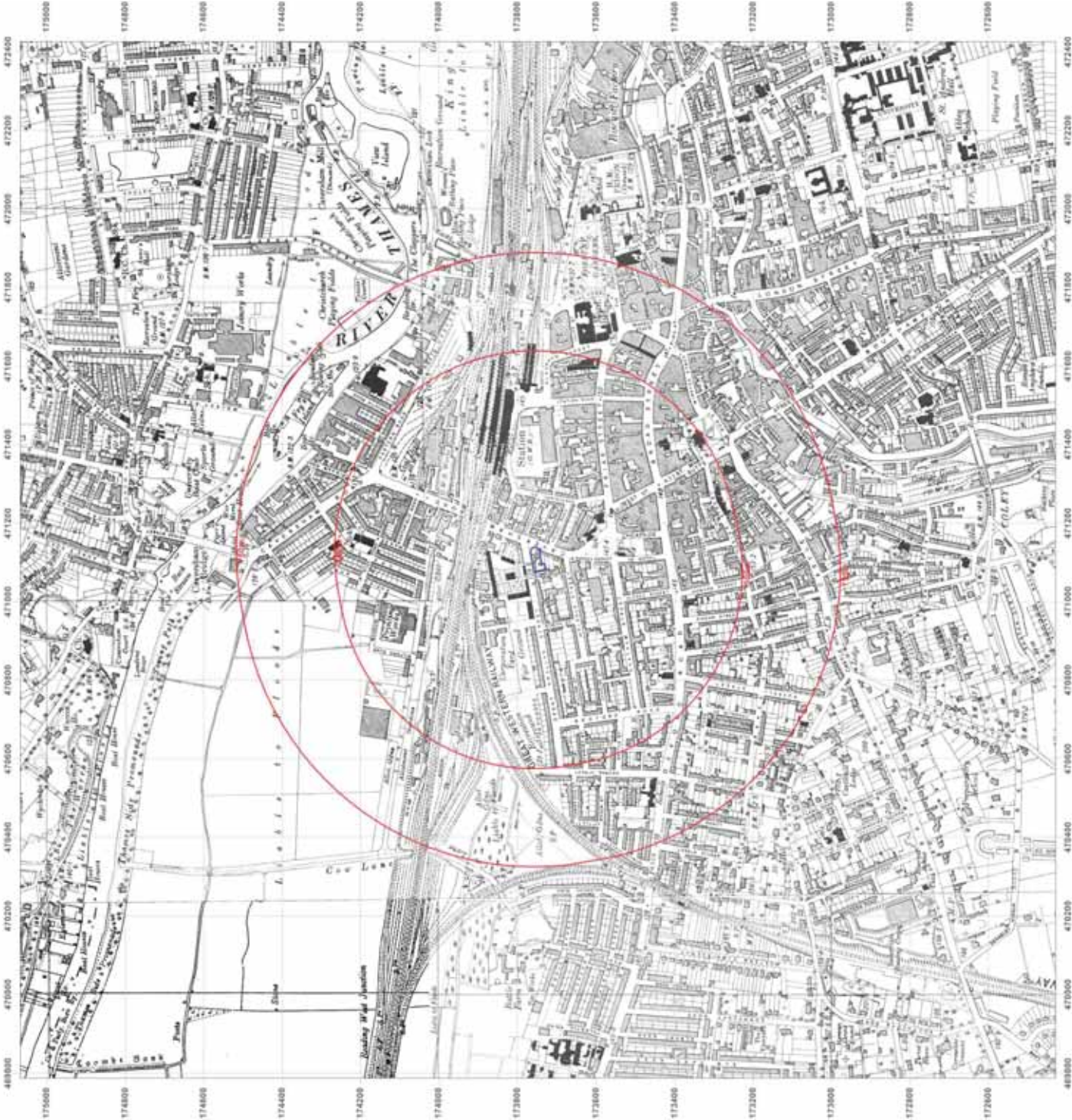


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7BT

Client Ref: EMS_597960_800140
Report Ref: EMS-597960_800140
Grid Ref: 471106, 173747

Map Name: County Series

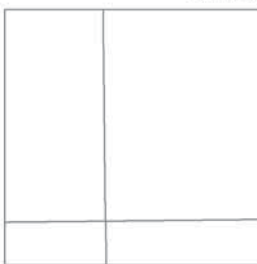
Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed N/A
Revised N/A
Edition 1938
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Surveyed 1877
Revised 1938
Edition N/A
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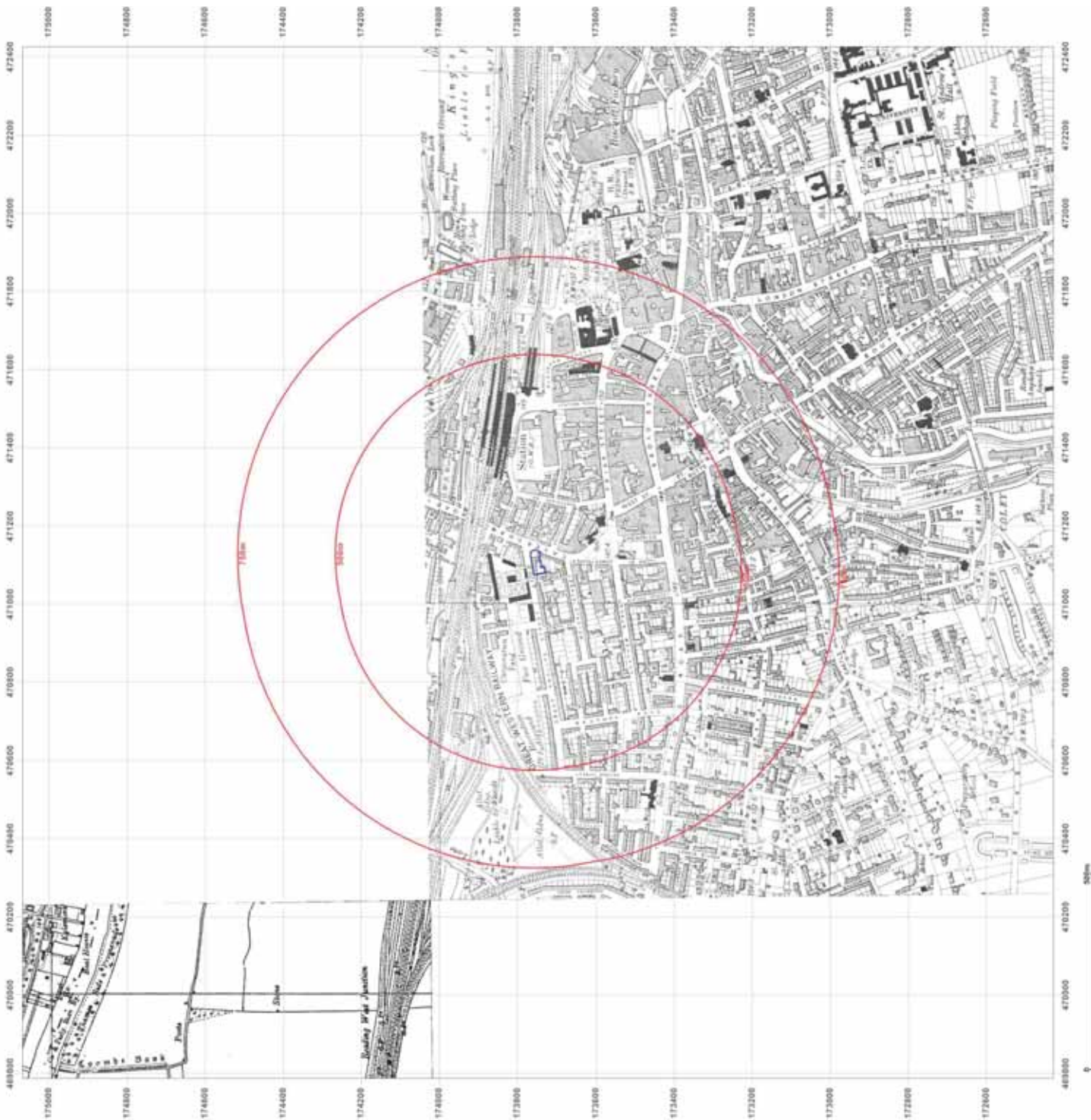
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Site Details:

Caversham Road, Reading, RG1
7BT

Client Ref: EMS_597960_800140
Report Ref: EMS-597960_800140
Grid Ref: 471106, 173747

Map Name: Provisional

Map date: 1960-1962

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1956
Revised 1956
Edition N/A
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Surveyed 1877
Revised 1956
Edition N/A
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Surveyed N/A
Revised 1960
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Site Details:

Caversham Road, Reading, RG1
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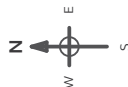
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Report Ref: EMS-597960_800140
Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 1979-1982

Scale: 1:10,000

Printed at: 1:10,000



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Surveyed 1977
Revised 1979
Edition N/A
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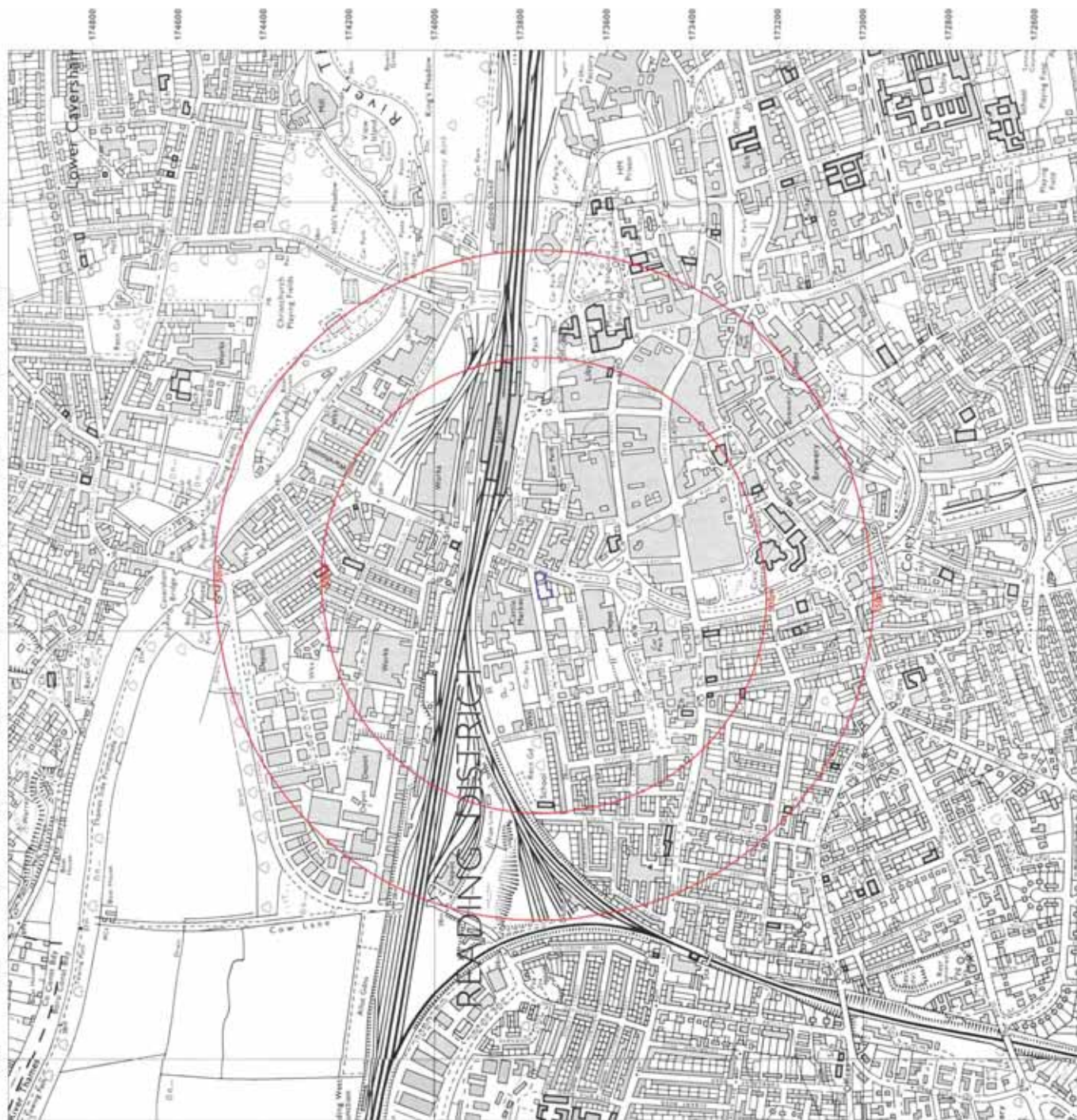


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Site Details:

Caversham Road, Reading, RG1
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Client Ref: EMS_597960_800140
Report Ref: EMS_597960_800140
Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 1989-1991

Scale: 1:10,000

Printed at: 1:10,000



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Surveyed 1987
Revised 1989
Edition N/A
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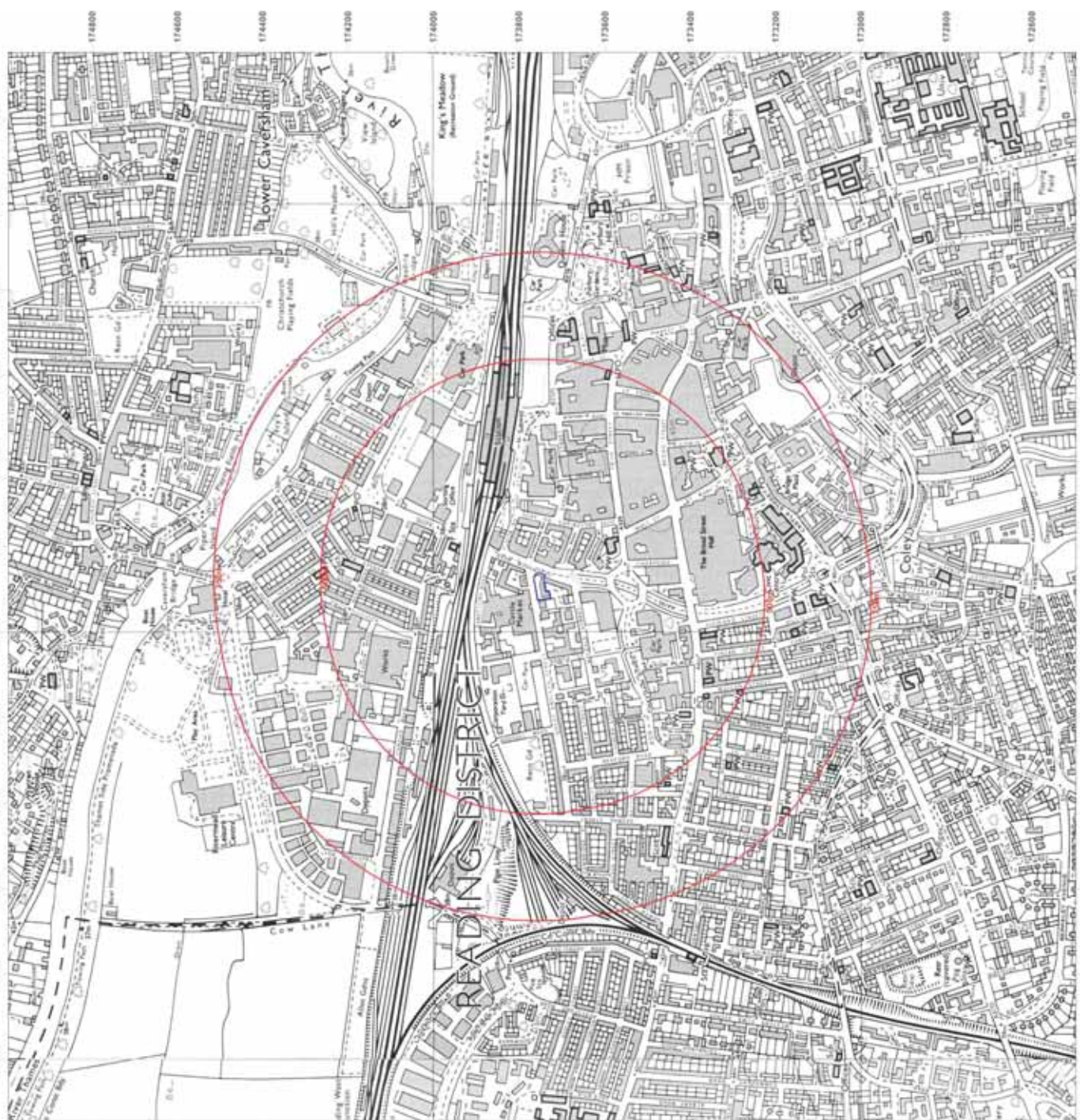


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Site Details:

Caversham Road, Reading, RG1
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Client Ref: EMS_597960_800140
Report Ref: EMS_597960_800140
Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 1994

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1987
Revised 1994
Edition N/A
Copyright N/A
Levelled N/A



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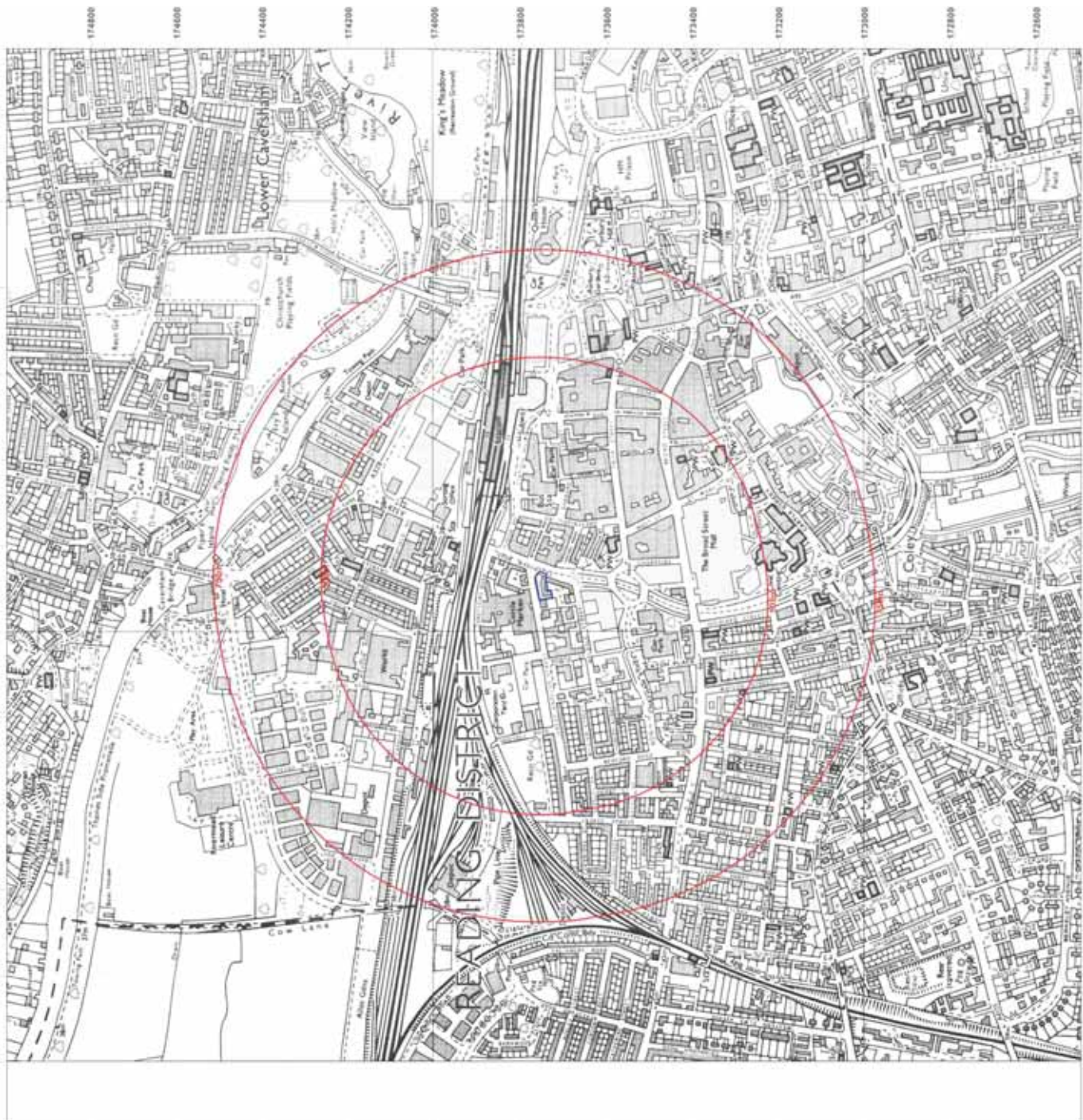


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Site Details:

Caversham Road, Reading, RG1
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Client Ref: EMS_597960_800140
Report Ref: EMS-597960_800140
Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

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Site Details:

Caversham Road, Reading, RG1
7BT

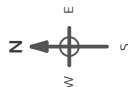
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Report Ref: EMS-597960_800140
Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



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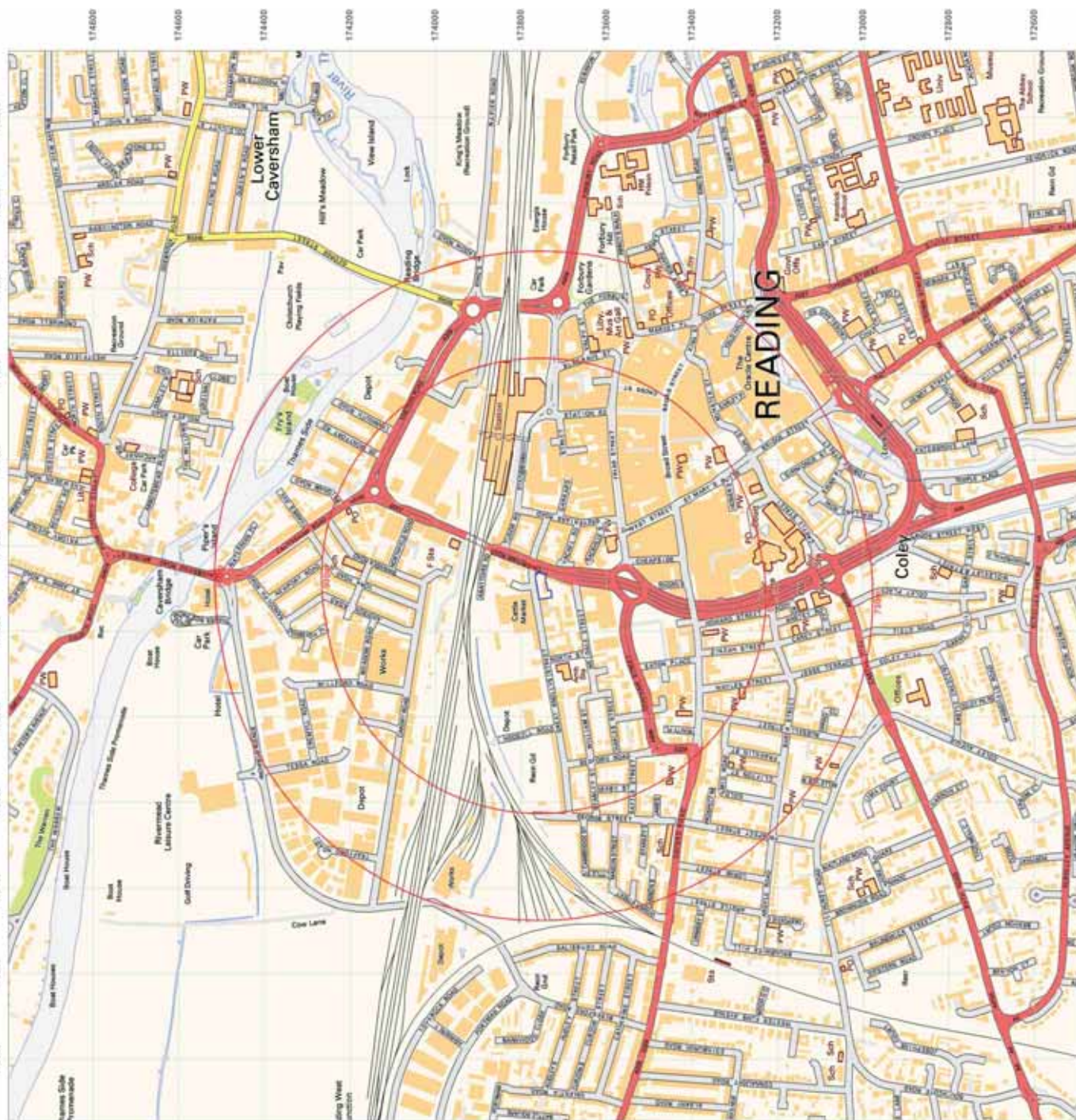


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Site Details:

Caversham Road, Reading, RG1
7BT

Client Ref: EMS_597960_800140
Report Ref: EMS_597960_800140
Grid Ref: 471106, 173747

Map Name: National Grid

Map date: 2020

Scale: 1:10,000

Printed at: 1:10,000



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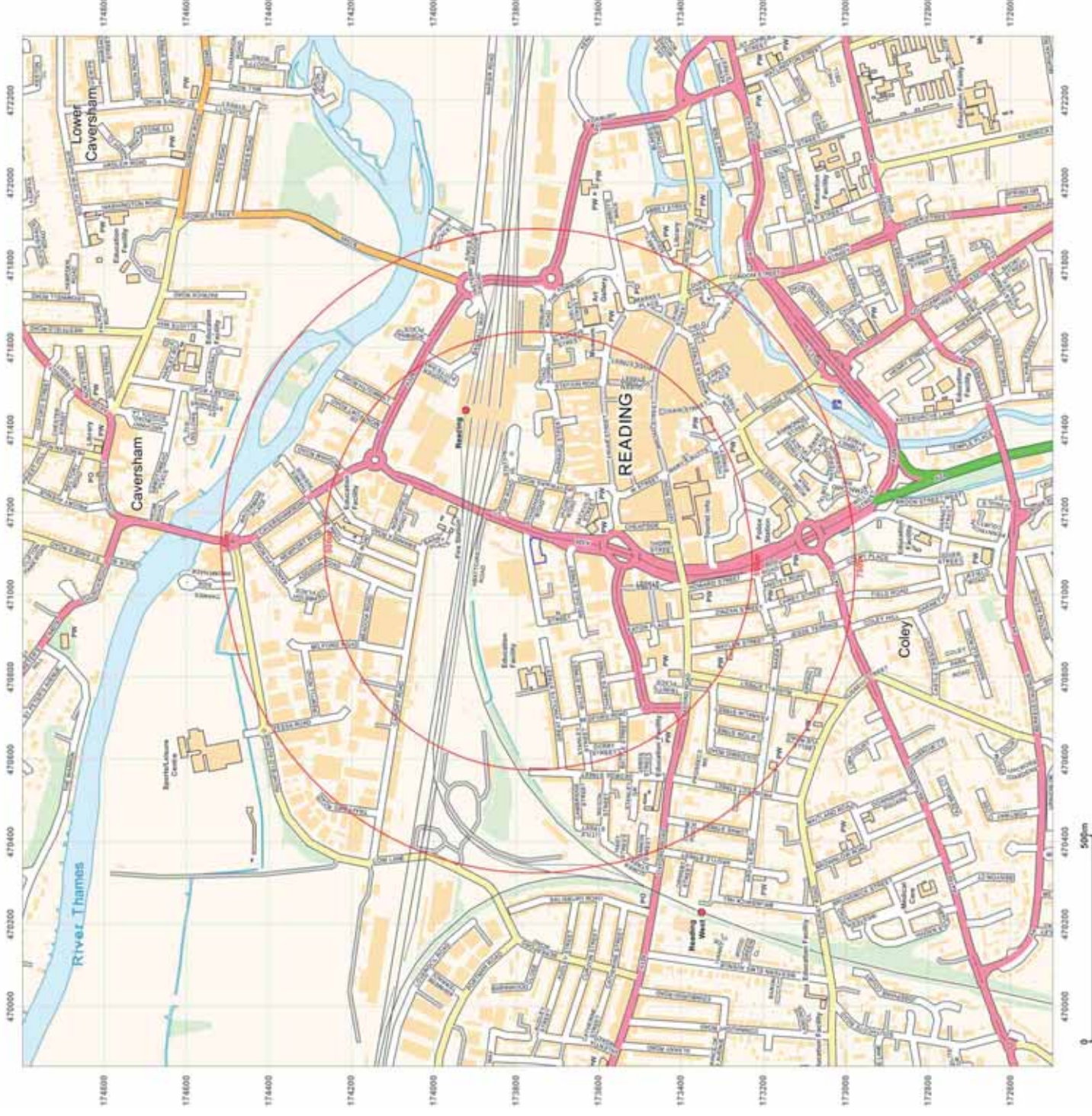


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Production date: 04 March 2020

Map legend available at:

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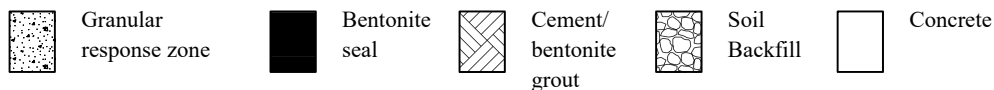


EXPLORATORY HOLE LOG KEY

Logging

The logging of soils and rocks has been carried out in accordance with BS 5930:2015 unless stated otherwise.

Well/Backfill



Water Levels

▽ Strike depth ▼ Standing water

Sample type

D	Small disturbed sample	G	Gas	U	Undisturbed	P	Piston
B	Bulk disturbed sample	ES	Soil sample for environmental testing	UT	Undisturbed thin wall	W	Water
LB	Large bulk disturbed	EW	Water sample for environmental testing	C	Core		

Test type

N SPT/CPT N value
HV Hand vane - direct reading in kPa
PP Pocket penetrometer - direct reading in kg/sq.cm

Core

**	TCR Total Core Recovery as percentage of core run
**	SCR Solid Core Recovery as percentage of core run. Assessment of core is based on full diameter
**	RQD Rock Quality Designation - Amount of solid core greater than 100mm expressed as percentage of core run

I_r

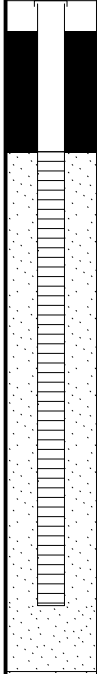
**	Minimum fracture spacing value (cm)
**	Mode fracture spacing value (cm)
**	Maximum fracture spacing value (cm)

Strata boundaries

———— Boundary - - - - - Estimated boundary

General Comments

Site Caversham Road, Reading, RG1 7BT				WS01
Job No CRM.1726.002	Dates Start 03-06-20 Finish 03-06-20	Ground Level (m)	Co-Ordinates	
Client Elstree Land Ltd				Sheet 1 of 1

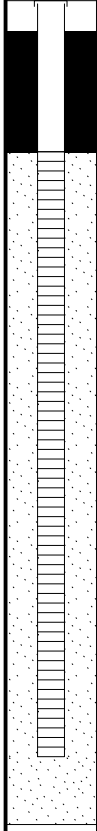
Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
		0.30	ES		0.20			CONCRETE. (Made Ground)	0
		1.00 - 1.45	SPT	C 16	1.00			Orangish brown slightly silty sandy subangular and subrounded fine to coarse brick and concrete GRAVEL. (Made Ground)	
		1.00	ES						1
		1.00	D					Reddish brown slightly silty sandy subangular and subrounded fine to coarse flint GRAVEL. (Made Ground)	
		2.00 - 2.45	SPT	C 1					2
		2.00	ES						
		2.00	D						
		3.00 - 3.45	SPT	C 6	2.90			Soft brown sandy CLAY.	3
		3.00	D		3.30			Soft becoming firm brown mottled bluish grey sandy CLAY.	
		4.00 - 4.44	SPT	C>50	3.70			Stiff becoming very stiff brown mottled orangish brown and grey sandy CLAY.	4
		4.00	D		4.44			4.00 Very stiff.	
								Borehole completed at 4.44m.	5
									6
									7
					{8.00}				8

General Remarks

EQUIPMENT: Competitor Dart rig.
METHOD: Hand dug inspection pit 0.00-1.00m, dynamic sampled 1.00-4.00m.
CASING: Not used.
REMARKS: Groundwater encountered at 3.00m.
BACK FILL: On completion, a slotted standpipe (50mm) was installed to 4.00m, granular response zone 4.435-1.00m, bentonite seal 1.00-0.20m, concrete and stopcock cover 0.20-0.00m.

Groundwater				
	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
	03/06/20	3.00	n/a	3.00
All dimensions in metres Scale 1:50				Logged By ED

Site Caversham Road, Reading, RG1 7BT				WS02
Job No CRM.1726.002	Dates Start 03-06-20 Finish 03-06-20	Ground Level (m)	Co-Ordinates	
Client Elstree Land Ltd				Sheet 1 of 1

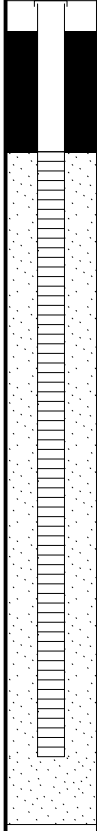
Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
		0.30	ES		0.20			CONCRETE. (Made Ground)	0
		1.00 - 1.45 1.00	SPT D	C 4	1.55 1.65			Soft brown slightly sandy gravelly CLAY. Gravel is subangular and subrounded fine to coarse brick with occasional ash and low subangular brick cobble content. (Made Ground)	1
		2.00 - 2.45 2.00	SPT D	C 4	2.20			Soft dark grey mottled black slightly gravelly silty CLAY with fine gravel sized pockets of fine black sand. Gravel is subangular fine to coarse flint.	2
					2.60			Soft brown slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine and medium flint.	
					2.75			Soft brown mottled orangish brown and dark brown sandy CLAY.	
					2.90			Soft orangish brown mottled grey sandy CLAY.	
		3.00 - 3.45 3.00	SPT D	C 16	3.10			Soft orangish brown mottled grey slightly sandy gravelly CLAY. Gravel is subangular and subrounded fine to coarse flint.	3
								Medium dense orangish brown mottled grey slightly sandy clayey subangular and subrounded fine to coarse flint GRAVEL.	
		4.00 - 4.45 4.00	SPT D	C 14				Medium dense orangish brown slightly silty sandy subangular and subrounded fine to coarse flint GRAVEL.	4
		5.00 - 5.45 5.00	SPT D	C 15	5.45				5
					{8.00}			Borehole completed at 5.45m.	6
									7
									8

General Remarks

EQUIPMENT: Competitor Dart rig.
METHOD: Hand dug inspection pit 0.00-1.00m, dynamic sampled 1.00-5.00m.
CASING: Not used.
REMARKS: Groundwater encountered at 3.00m.
BACK FILL: On completion, a slotted standpipe (50mm) was installed to 5.00m, granular response zone 5.45-1.00m, bentonite seal 1.00-0.20m, concrete and stopcock cover 0.20-0.00m.

Groundwater				
Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)	
03/06/20	3.00	n/a	3.00	
All dimensions in metres Scale 1:50				Logged By ED

Site Caversham Road, Reading, RG1 7BT				WS04
Job No CRM.1726.002	Dates Start 03-06-20 Finish 03-06-20	Ground Level (m)	Co-Ordinates	
Client Elstree Land Ltd				Sheet 1 of 1

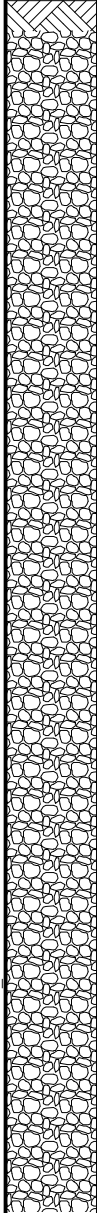
Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
		0.40	ES		0.20			CONCRETE. (Made Ground)	0
		0.50	B		0.35			Reddish brown slightly sandy subangular and subrounded fine to coarse brick GRAVEL with a low subangular brick cobble content. (Made Ground)	
		1.00	ES	C 2				Brown and off-white slightly clayey sandy subangular and subrounded fine to coarse brick, chalk and concrete. (Made Ground)	1
		1.00 - 1.45	SPT		1.30				
		1.00	D		1.80			Firm brown slightly sandy gravelly CLAY. Gravel is subangular and subrounded fine to coarse ash, brick and rare chalk. (Made Ground)	
		2.00 - 2.45	SPT	C 1				Very soft brown sandy CLAY.	2
		2.00	D		2.40			Very soft becoming soft and firm orangish brown slightly sandy gravelly CLAY. Gravel is subangular and subrounded fine to coarse flint.	
		3.00 - 3.45	SPT	C 13	2.80			Firm orangish brown and grey rarely mottled brown locally slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine to coarse flint.	3
		3.00	D		3.00			Firm orangish brown and grey rarely mottled brown slightly gravelly very sandy CLAY. Gravel is subangular and subrounded fine to coarse flint.	
		4.00 - 4.45	SPT	C 33	3.60			Orangish brown slightly silty sandy subangular and subrounded fine to coarse flint GRAVEL.	4
		4.00	D					4.00 Dense.	
		5.00 - 5.45	SPT	C 22	5.45			5.00 Medium dense.	5
		5.00	D					Borehole completed at 5.45m.	6
					{8.00}				7
									8

General Remarks

EQUIPMENT: Competitor Dart rig.
METHOD: Hand dug inspection pit 0.00-1.00m, dynamic sampled 1.00-5.00m.
CASING: Not used.
REMARKS: Groundwater encountered at 3.00m.
BACK FILL: On completion, a slotted standpipe (50mm) was installed to 5.00m, granular response zone 5.45-1.00m, bentonite seal 1.00-0.20m, concrete and stopcock cover 0.20-0.00m.

Groundwater				
Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)	
03/06/20	3.00	n/a	3.00	
All dimensions in metres Scale 1:50				Logged By ED

Site Caversham Road, Reading, RG1 7BT				BH01
Job No CRM.1726.002	Dates Start 03-06-20 Finish 03-06-20	Ground Level (m)	Co-Ordinates	
Client Elstree Land Ltd				Sheet 1 of 3

Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
		0.20			0.20			CONCRETE paving slabs. (Made Ground)	0
		0.50	ES					Reddish brown slightly sandy subangular and subrounded fine to coarse brick GRAVEL with a low subangular brick cobble content. (Made Ground)	
		1.20 - 1.65 1.20 - 1.65	SPT D	S 10					1
		2.00 - 2.45 2.00	SPT D	S 4					2
		3.00 - 3.45 3.00 - 3.45	SPT D	S 8	2.50			Soft becoming soft and firm orangish brown and grey slightly gravelly sandy CLAY. Gravel is subangular and subrounded fine to coarse flint. 3.00 Soft and firm.	3
		4.00 - 4.45	SPT	S 17	4.00			Medium dense orangish brown slightly silty sandy subangular and subrounded fine to coarse flint GRAVEL.	4
		5.00 - 5.45	SPT	S 28					5
		6.50 - 6.95	SPT	S 27					6
		8.00 - 8.45	SPT	S 27	8.00 {8.00}			Continued next sheet	8

General Remarks

EQUIPMENT: Dando 2000 Shell & Auger rig.
METHOD: Hand dug inspection pit 0.00-1.20m, cable percussion casing and tools 1.20-20.00m.
CASING: 150mm diam. to 20.00m.
REMARKS: Groundwater encountered at 4.20m.
BACKFILL: On completion, the borehole was backfilled with material arisings and the ground surface reinstated.

Groundwater				
Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)	
03/06/20	4.20	4.00	2.00	
All dimensions in metres Scale 1:50				Logged By ED



Enzygo Ltd
Tel: 01454 269237
Fax: 01454 269760
Web: www.enzygo.com

Site Caversham Road, Reading, RG1 7BT				BH01
Job No CRM.1726.002	Dates Start 03-06-20 Finish 03-06-20	Ground Level (m)	Co-Ordinates	
Client Elstree Land Ltd				Sheet 2 of 3

Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
		8.00 - 8.45	D		9.50			Structureless CHALK composed of off-white slightly sandy silty angular and subangular fine to coarse gravel. Gravel is very weak and weak, low to medium density. (Grade Dc)	8
		9.50 - 9.95	SPT	S 20				Structureless CHALK composed of off-white slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse very weak and weak, low to medium density. With rare flints. (Grade Dm)	9
		9.50 - 9.95	D						10
		11.00 - 11.45	SPT	S 28					11
		12.50 - 12.95	SPT	S 26					12
		12.50 - 12.95	D						13
		14.00 - 14.32	SPT	S>50					14
		15.50 - 15.95	SPT	S 40					15
		15.50 - 15.96	D						16
					{16.00}			Continued next sheet	

General Remarks

EQUIPMENT: Dando 2000 Shell & Auger rig.
METHOD: Hand dug inspection pit 0.00-1.20m, cable percussion casing and tools 1.20-20.00m.
CASING: 150mm diam. to 20.00m.
REMARKS: Groundwater encountered at 4.20m.
BACK FILL; On completion, the borehole was backfilled with material arisings and the ground surface reinstated.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:50				Logged By ED



Enzygo Ltd
Tel: 01454 269237
Fax: 01454 269760
Web: www.enzygo.com

Site Caversham Road, Reading, RG1 7BT				BH01
Job No CRM.1726.002	Dates Start 03-06-20 Finish 03-06-20	Ground Level (m)	Co-Ordinates	
Client Elstree Land Ltd				Sheet 3 of 3

Well	Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
		Depth (m)	No/Type	Results					
		17.00 - 17.40	SPT	S>50	20.43				16
		17.00 - 17.40	D						17
		18.00 - 18.41	SPT	S>50					18
		18.00 - 18.41	D						19
		20.00 - 20.43	SPT	S>50	{24.00}			Borehole completed at 20.43m.	20
									21
									22
									23
					{24.00}				24

General Remarks

EQUIPMENT: Dando 2000 Shell & Auger rig.
METHOD: Hand dug inspection pit 0.00-1.20m, cable percussion casing and tools 1.20-20.00m.
CASING: 150mm diam. to 20.00m.
REMARKS: Groundwater encountered at 4.20m.
BACK FILL; On completion, the borehole was backfilled with material arisings and the ground surface reinstated.

Groundwater	Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
All dimensions in metres Scale 1:50				Logged By ED

APPENDIX C – CHEMICAL TESTING



Steve Rhodes

Enzygo Geoenvironmental Ltd
The Byre
Woodend Lane
Cromhall
Gloucestershire
GL12 8AA



Environmental Science

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

e: steve.rhodes@enzygo.com

Analytical Report Number : 20-13126

Project / Site name:	Caversham Rd	Samples received on:	05/06/2020
Your job number:	CRM.1726.002	Sample instructed/ Analysis started on:	10/06/2020
Your order number:		Analysis completed by:	17/06/2020
Report Issue Number:	1	Report issued on:	17/06/2020
Samples Analysed:	7 soil samples		

Signed: Karolina Marek

Karolina Marek
PL Head of Reporting Team

For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Iss No 20-13126-1 Caversham Rd CRM.1726.002.XLS

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The results included within the report relate only to the sample(s) submitted for testing.

Page 1 of 7



4041



Analytical Report Number: 20-13126

Project / Site name: Caversham Rd

Lab Sample Number				1528581	1528582	1528583	1528584	1528585
Sample Reference				BH1	WS1	WS1	WS1	WS2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.30	1.00	2.00	0.30
Date Sampled				03/06/2020	03/06/2020	03/06/2020	03/06/2020	03/06/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	6.9	12	17	12	15
Total mass of sample received	kg	0.001	NONE	0.90	0.90	0.90	0.90	0.90

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	Not-detected
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General Inorganics

pH - Automated	pH Units	N/A	MCERTS	10.3	9.8	8.3	-	8.2
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.9	0.9	0.1	-	1.0

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	1.0	< 0.05	< 0.05	-	0.80
Anthracene	mg/kg	0.05	MCERTS	0.26	< 0.05	< 0.05	-	0.39
Fluoranthene	mg/kg	0.05	MCERTS	1.7	< 0.05	< 0.05	-	4.7
Pyrene	mg/kg	0.05	MCERTS	1.6	< 0.05	< 0.05	-	4.2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.1	< 0.05	< 0.05	-	2.7
Chrysene	mg/kg	0.05	MCERTS	0.77	< 0.05	< 0.05	-	1.5
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.84	< 0.05	< 0.05	-	2.1
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.77	< 0.05	< 0.05	-	1.2
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.73	< 0.05	< 0.05	-	1.6
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.49	< 0.05	< 0.05	-	0.99
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	0.34
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.57	< 0.05	< 0.05	-	0.91

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	9.79	< 0.80	< 0.80	-	21.5
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	79	12	-	19
Boron (water soluble)	mg/kg	0.2	MCERTS	1.0	1.6	0.7	-	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	0.6	< 0.2	-	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	-	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	17	20	25	-	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	17	18	13	-	30
Lead (aqua regia extractable)	mg/kg	1	MCERTS	130	410	11	-	130
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.5	< 0.3	-	0.5
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	17	23	-	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110	330	36	-	110

Petroleum Hydrocarbons



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Analytical Report Number: 20-13126

Project / Site name: Caversham Rd

Lab Sample Number				1528581	1528582	1528583	1528584	1528585
Sample Reference				BH1	WS1	WS1	WS1	WS2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.30	1.00	2.00	0.30
Date Sampled				03/06/2020	03/06/2020	03/06/2020	03/06/2020	03/06/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	1.8	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	19	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	39	< 8.0	< 8.0	13	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	240	< 8.0	< 8.0	61	< 8.0
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	64	< 8.4	< 8.4	14	< 8.4
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	300	< 10	< 10	75	< 10
TPH-CWG - Aliphatic (EC5 - EC44)	mg/kg	10	NONE	360	< 10	< 10	89	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	2.9	< 1.0	< 1.0	6.6	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	8.0	< 2.0	< 2.0	17	3.4
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	34	< 10	< 10	43	19
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	200	< 10	< 10	76	87
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	190	< 8.4	< 8.4	31	51
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	240	< 10	< 10	140	110
TPH-CWG - Aromatic (EC5 - EC44)	mg/kg	10	NONE	440	< 10	< 10	170	160

TPH (>C5 - C7)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (>C7 - C8)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	4.6	< 2.0	< 2.0	6.6	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	27	< 4.0	< 4.0	17	< 4.0
TPH (C16 - C21)	mg/kg	1	MCERTS	72	< 1.0	< 1.0	56	19
TPH (C21 - C35)	mg/kg	1	MCERTS	440	< 1.0	< 1.0	140	87
TPH (C35 - C44)	mg/kg	10	NONE	260	< 10	< 10	45	51
TPH Total C5 - C44	mg/kg	10	NONE	800	< 10	< 10	260	160



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Analytical Report Number: 20-13126

Project / Site name: Caversham Rd

Lab Sample Number				1528586	1528587			
Sample Reference				WS4	WS4			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.40	1.00			
Date Sampled				03/06/2020	03/06/2020			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	14	13			
Total mass of sample received	kg	0.001	NONE	0.90	0.90			

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected			
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General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.4	8.4			
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.3	1.7			

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0			
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.33			
Pyrene	mg/kg	0.05	MCERTS	< 0.05	0.34			
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.38			
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.25			
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.36			
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.26			
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.25			
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	2.17			
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	15			
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	1.2			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.3			
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	17			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	31	87			
Lead (aqua regia extractable)	mg/kg	1	MCERTS	180	920			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.6	1.9			
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23	23			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	63	190			

Petroleum Hydrocarbons



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Environmental Science

Analytical Report Number: 20-13126

Project / Site name: Caversham Rd

Lab Sample Number				1528586	1528587			
Sample Reference				WS4	WS4			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.40	1.00			
Date Sampled				03/06/2020	03/06/2020			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0			
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0			
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0			
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0			
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4			
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10			
TPH-CWG - Aliphatic (EC5 - EC44)	mg/kg	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0			
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0			
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10			
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10			
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4			
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10			
TPH-CWG - Aromatic (EC5 - EC44)	mg/kg	10	NONE	< 10	< 10			
TPH (>C5 - C7)	mg/kg	1	MCERTS	< 1.0	< 1.0			
TPH (>C7 - C8)	mg/kg	1	MCERTS	< 1.0	< 1.0			
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	< 2.0			
TPH (C12 - C16)	mg/kg	4	MCERTS	< 4.0	< 4.0			
TPH (C16 - C21)	mg/kg	1	MCERTS	< 1.0	< 1.0			
TPH (C21 - C35)	mg/kg	1	MCERTS	< 1.0	< 1.0			
TPH (C35 - C44)	mg/kg	10	NONE	< 10	< 10			
TPH Total C5 - C44	mg/kg	10	NONE	< 10	< 10			



Analytical Report Number : 20-13126

Project / Site name: Caversham Rd

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1528581	BH1	None Supplied	0.50	Brown clay and sand with gravel and rubble.
1528582	WS1	None Supplied	0.30	Brown sand with gravel and brick.
1528583	WS1	None Supplied	1.00	Light brown clay and sand.
1528584	WS1	None Supplied	2.00	Red clay and sand with brick and gravel.
1528585	WS2	None Supplied	0.30	Brown clay and sand.
1528586	WS4	None Supplied	0.40	Brown clay with chalk.
1528587	WS4	None Supplied	1.00	Brown clay with chalk and gravel



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Environmental Science

Analytical Report Number : 20-13126

Project / Site name: Caversham Rd

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/cleanup.	L088/76-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



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Analytical Report Number : 20-26832

Project / Site name:	Caversham Road	Samples received on:	27/08/2020
Your job number:	CRM.1726.002	Samples instructed on/ Analysis started on:	27/08/2020
Your order number:	CRM.1726.002	Analysis completed by:	03/09/2020
Report Issue Number:	1	Report issued on:	03/09/2020
Samples Analysed:	3 water samples		

Signed:

Joanna Wawrzeczko
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.



Analytical Report Number: 20-26832
Project / Site name: Caversham Road

Your Order No: CRM.1726.002

Lab Sample Number				1604083	1604084	1604085
Sample Reference				WS1	WS2	WS4
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				26/08/2020	26/08/2020	26/08/2020
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	270	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	270	< 10

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 20-26832
Project / Site name: Caversham Road

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Human Health Assessment Reference Values

Determinant	Units	GAC Value Residential					
		With Plant Uptake			Without Plant Uptake		
Arsenic	mg/kg	37			40		
Cadmium	mg/kg	11			85		
Chromium	mg/kg	910			910		
Chromium VI	mg/kg	6			6		
Lead	mg/kg	200			310		
Mercury	mg/kg	40			56		
Nickel	mg/kg	180			180		
Selenium	mg/kg	250			430		
Copper	mg/kg	2400			7100		
Zinc	mg/kg	3700			40000		
Cyanide	mg/kg	791			800		
SOM	%	1	2.5	6	1	2.5	6
Phenol	mg/kg	120	200	380	440	690	1200
Napthalene	mg/kg	2.3	5.6	13	2.3	5.6	13
Acenaphthylene	mg/kg	170	420	920	2900	4600	6000
Acenaphthene	mg/kg	210	510	1100	3000	4700	6000
Flourene	mg/kg	170	400	860	2800	3800	4500
Phenanthrene	mg/kg	95	220	440	1300	1500	1500
Anthracene	mg/kg	2400	5400	11000	31000	35000	37000
Fluoranthene	mg/kg	280	560	890	1500	1600	1600
Pyrene	mg/kg	620	1200	2000	3700	3800	3800
Benzo(a)Anthracene	mg/kg	7.2	11	13	11	14	15
Chrysene	mg/kg	15	22	27	30	31	32
Benzo(b)Flouranthene	mg/kg	2.6	3.3	3.7	3.9	4.0	4.0
Benzo(k)Flouranthene	mg/kg	77	93	100	110	110	110
Benzo(a)Pyrene	mg/kg	2.2	2.7	3.0	3.2	3.2	3.2
Indeno(123-cd)Pyrene	mg/kg	27	36	41	45	46	46
Dibenzo(a,h)Anthracene	mg/kg	0.24	0.28	0.3	0.31	0.32	0.32
Benzo(ghi)Perylene	mg/kg	320	340	350	360	360	360
TPH C ₅ -C ₆ Aliphatic	mg/kg	42	78	160	42	78	160
TPH C ₆ -C ₈ Aliphatic	mg/kg	100	230	530	100	230	530
TPH C ₈ -C ₁₀ Aliphatic	mg/kg	27	65	150	27	65	150
TPH C ₁₀ -C ₁₂ Aliphatic	mg/kg	130	330	760	130	330	770
TPH C ₁₂ -C ₁₆ Aliphatic	mg/kg	1100	2400	4300	1100	2400	4400
TPH C ₁₆ -C ₃₅ Aliphatic	mg/kg	65000	92000	110000	65000	92000	110000
TPH C ₃₅ -C ₄₄ Aliphatic	mg/kg	65000	92000	110000	65000	92000	110000
TPH C ₅ -C ₇ Aromatic	mg/kg	70	140	300	370	690	1400
TPH C ₇ -C ₈ Aromatic	mg/kg	130	290	660	860	1800	3900
TPH C ₈ -C ₁₀ Aromatic	mg/kg	34	83	190	47	110	270
TPH C ₁₀ -C ₁₂ Aromatic	mg/kg	74	180	380	250	590	1200
TPH C ₁₂ -C ₁₆ Aromatic	mg/kg	140	330	660	1800	2300	2500
TPH C ₁₆ -C ₂₁ Aromatic	mg/kg	260	540	930	1900	1900	1900
TPH C ₂₁ -C ₃₅ Aromatic	mg/kg	1100	1500	1700	1900	1900	1900
TPH C ₃₅ -C ₄₄ Aromatic	mg/kg	1100	1500	1700	1900	1900	1900
Benzene	mg/kg	0.087	0.17	0.37	0.38	0.70	1.4
Toluene	mg/kg	130	290	660	880	1900	3900
Ethylebenzene	mg/kg	47	110	260	83	190	440
Xylene	mg/kg	56	130	310	79	180	430

Determinant	Units	GAC Value					
		Residential POS			Commercial		
Arsenic	mg/kg	79			640		
Cadmium	mg/kg	120			190		
Chromium	mg/kg	1500			8600		
Chromium VI	mg/kg	7.7			33		
Lead	mg/kg	630			2330		
Mercury	mg/kg	120			1100		
Nickel	mg/kg	230			980		
Selenium	mg/kg	1100			12000		
Copper	mg/kg	12000			68000		
Zinc	mg/kg	81000			730000		
Cyanide	mg/kg	N/A			16200		
SOM	%	1	2.5	6	1	2.5	6
Phenol	mg/kg	440	690	1300	440	690	1300
Napthalene	mg/kg	4900	4900	4900	190	460	1100
Acenaphtylene	mg/kg	15000	15000	15000	83000	97000	100000
Acenaphthene	mg/kg	15000	15000	15000	84000	97000	100000
Flourene	mg/kg	9900	9900	9900	63000	68000	71000
Phenanthrene	mg/kg	3100	3100	3100	22000	22000	23000
Anthracene	mg/kg	74000	74000	74000	520000	540000	540000
Fluoranthene	mg/kg	3100	3100	3100	23000	23000	23000
Pyrene	mg/kg	7400	7400	7400	54000	54000	54000
Benzo(a)Anthracene	mg/kg	29	29	29	170	170	180
Chrysene	mg/kg	57	57	57	350	350	350
Benzo(b)Flouranthene	mg/kg	7.1	7.2	7.2	44	44	45
Benzo(k)Flouranthene	mg/kg	190	190	190	1200	1200	1200
Benzo(a)Pyrene	mg/kg	5.7	5.7	5.7	35	35	36
Indeno(123-cd)Pyrene	mg/kg	82	82	82	500	510	510
Dibenzo(a,h)Anthracene	mg/kg	0.57	0.57	0.58	3.5	3.6	3.6
Benzo(ghi)Perylene	mg/kg	640	640	640	3900	4000	4000
TPH C ₅ -C ₆ Aliphatic	mg/kg	570000	590000	600000	3200	5900	12000
TPH C ₆ -C ₈ Aliphatic	mg/kg	600000	610000	620000	7800	17000	40000
TPH C ₈ -C ₁₀ Aliphatic	mg/kg	13000	13000	13000	2000	4800	11000
TPH C ₁₀ -C ₁₂ Aliphatic	mg/kg	13000	13000	13000	9700	23000	47000
TPH C ₁₂ -C ₁₆ Aliphatic	mg/kg	13000	13000	13000	59000	82000	90000
TPH C ₁₆ -C ₃₅ Aliphatic	mg/kg	250000	250000	250000	1600000	1700000	1800000
TPH C ₃₅ -C ₄₄ Aliphatic	mg/kg	250000	250000	250000	1600000	1700000	1800000
TPH C ₅ -C ₇ Aromatic	mg/kg	56000	56000	56000	26000	46000	86000
TPH C ₇ -C ₈ Aromatic	mg/kg	56000	56000	56000	56000	110000	180000
TPH C ₈ -C ₁₀ Aromatic	mg/kg	5000	5000	5000	3500	8100	17000
TPH C ₁₀ -C ₁₂ Aromatic	mg/kg	5000	5000	5000	16000	28000	34000
TPH C ₁₂ -C ₁₆ Aromatic	mg/kg	5100	5100	5000	36000	37000	38000
TPH C ₁₆ -C ₂₁ Aromatic	mg/kg	3800	3800	3800	28000	28000	28000
TPH C ₂₁ -C ₃₅ Aromatic	mg/kg	3800	3800	3800	28000	28000	28000
TPH C ₃₅ -C ₄₄ Aromatic	mg/kg	3800	3800	3800	28000	28000	28000
Benzene	mg/kg	72	72	73	27	47	90
Toluene	mg/kg	56000	56000	56000	56000	110000	180000
Ethylebenzene	mg/kg	24000	24000	25000	5700	13000	27000
Xylene	mg/kg	41000	42000	43000	5900	14000	30000

Determinant	Units	GAC Value					
		Park POS			Allotments		
Arsenic	mg/kg	170			43		
Cadmium	mg/kg	532			1.9		
Chromium	mg/kg	33000			18000		
Chromium VI	mg/kg	220			1.8		
Lead	mg/kg	1300			80		
Mercury	mg/kg	240			19		
Nickel	mg/kg	3400			230		
Selenium	mg/kg	1800			88		
Copper	mg/kg	44000			520		
Zinc	mg/kg	170000			620		
Cyanide	mg/kg						
SOM	%	1	2.5	6	1	2.5	6
Phenol	mg/kg	440	690	1300	23	42	83
Napthalene	mg/kg	1200	1900	3000	4.1	10	24
Acenaphtylene	mg/kg	29000	30000	30000	28	69	160
Acenaphthene	mg/kg	29000	30000	30000	34	85	200
Flourene	mg/kg	20000	20000	20000	27	67	160
Phenanthrene	mg/kg	6200	6200	6300	15	38	90
Anthracene	mg/kg	150000	150000	150000	380	950	2200
Fluoranthene	mg/kg	6300	6300	6400	52	130	290
Pyrene	mg/kg	15000	15000	15000	110	270	620
Benzo(a)Anthracene	mg/kg	49	56	62	2.9	6.5	13
Chrysene	mg/kg	93	110	120	4.1	9.4	19
Benzo(b)Flouranthene	mg/kg	13	15	16	0.99	2.1	3.9
Benzo(k)Flouranthene	mg/kg	370	410	440	37	75	130
Benzo(a)Pyrene	mg/kg	11	12	13	0.97	2.0	3.5
Indeno(123-cd)Pyrene	mg/kg	150	170	180	9.5	21	39
Dibenzo(a,h)Anthracene	mg/kg	1.1	1.3	1.4	0.14	0.27	0.43
Benzo(ghi)Perylene	mg/kg	1400	1500	1600	290	470	640
TPH C ₅ -C ₆ Aliphatic	mg/kg	95000	130000	180000	730	1700	3900
TPH C ₆ -C ₈ Aliphatic	mg/kg	150000	220000	320000	2300	5600	13000
TPH C ₈ -C ₁₀ Aliphatic	mg/kg	14000	18000	21000	320	770	1700
TPH C ₁₀ -C ₁₂ Aliphatic	mg/kg	21000	23000	24000	2200	4400	7300
TPH C ₁₂ -C ₁₆ Aliphatic	mg/kg	25000	25000	26000	11000	13000	13000
TPH C ₁₆ -C ₃₅ Aliphatic	mg/kg	450000	480000	490000	260000	270000	270000
TPH C ₃₅ -C ₄₄ Aliphatic	mg/kg	450000	480000	490000	260000	270000	270000
TPH C ₅ -C ₇ Aromatic	mg/kg	76000	84000	92000	13	27	57
TPH C ₇ -C ₈ Aromatic	mg/kg	87000	95000	100000	22	51	120
TPH C ₈ -C ₁₀ Aromatic	mg/kg	7200	8500	9300	8.6	21	51
TPH C ₁₀ -C ₁₂ Aromatic	mg/kg	9200	9700	10000	13	31	74
TPH C ₁₂ -C ₁₆ Aromatic	mg/kg	10000	10000	10000	23	57	130
TPH C ₁₆ -C ₂₁ Aromatic	mg/kg	7600	7700	7800	46	110	260
TPH C ₂₁ -C ₃₅ Aromatic	mg/kg	7800	7800	7900	370	820	1600
TPH C ₃₅ -C ₄₄ Aromatic	mg/kg	7800	7800	7900	370	820	1600
Benzene	mg/kg	90	100	110	0.017	0.034	0.075
Toluene	mg/kg	87000	95000	100000	22	51	120
Ethylbenzene	mg/kg	17000	22000	27000	16	39	91
Xylene	mg/kg	17000	23000	31000	28	67	160

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Controlled Waters Assessment Reference Values

Determinant	Unit	EQS Freshwater						UK DWS	WHO
Hardness	mg/l	0-50	50-100	100-150	150-200	200-250	>250		
Arsenic	ug/l	50						10	10
Boron	ug/l	2000						1000	0.3
Cadmium	ug/l	5						5	3
Chromium	ug/l	2	10	10	20	20	20	50	50
Lead	ug/l	4	10	10	20	20	20	10	10
Mercury	ug/l	1						1	1
Selenium	ug/l							10	10
Copper	ug/l	0.5	3	3	3	8	12	20000	2000
Nickel	ug/l	8	20	20	40	40	40	20	70
Zinc	ug/l	8	15	15	50	50	50	5000	3000
Sulphate	mg/l	400						250	250
PAH	ug/l							0.1	
Anthracene	ug/l	0.02							
Naphthalene	ug/l	10							
Benzo(a)Pyrene	ug/l	0.03							0.01
Fluoranthene	ug/l	0.02							
Benzene	ug/l	30						1	10
Toluene	ug/l	50							
Ethylbenzene	ug/l	20							
Xylene	ug/l	30							
C ₅ – C ₆ Aliphatic	ug/l								15000
C ₆ – C ₈ Aliphatic	ug/l								15000
C ₈ – C ₁₀ Aliphatic	ug/l								300
C ₁₀ – C ₁₂ Aliphatic	ug/l								300
C ₁₂ – C ₁₆ Aliphatic	ug/l								300
C ₁₆ – C ₃₆ Aliphatic	ug/l								N/A
C ₆ – C ₇ Aromatic	ug/l								10
C ₇ – C ₈ Aromatic	ug/l	50							10
C ₈ – C ₁₀ Aromatic	ug/l	20							300
C ₁₀ – C ₁₂ Aromatic	ug/l								1000
C ₁₂ – C ₁₆ Aromatic	ug/l								1000
C ₁₆ – C ₂₁ Aromatic	ug/l								90
C ₂₁ – C ₃₅ Aromatic	ug/l								90



TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client: Enzygo Geoenvironmental Ltd

Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Steve Rhodes

Site Address: Caversham

Client Reference: CRM-1802-001

Job Number: 20-13434

Date Sampled: 04/06/2020

Date Received: 05/06/2020

Date Tested: 19/06/2020

Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1530000

Hole No.: WS1

Sample Reference: Not Given

Soil Description: MADE GROUND

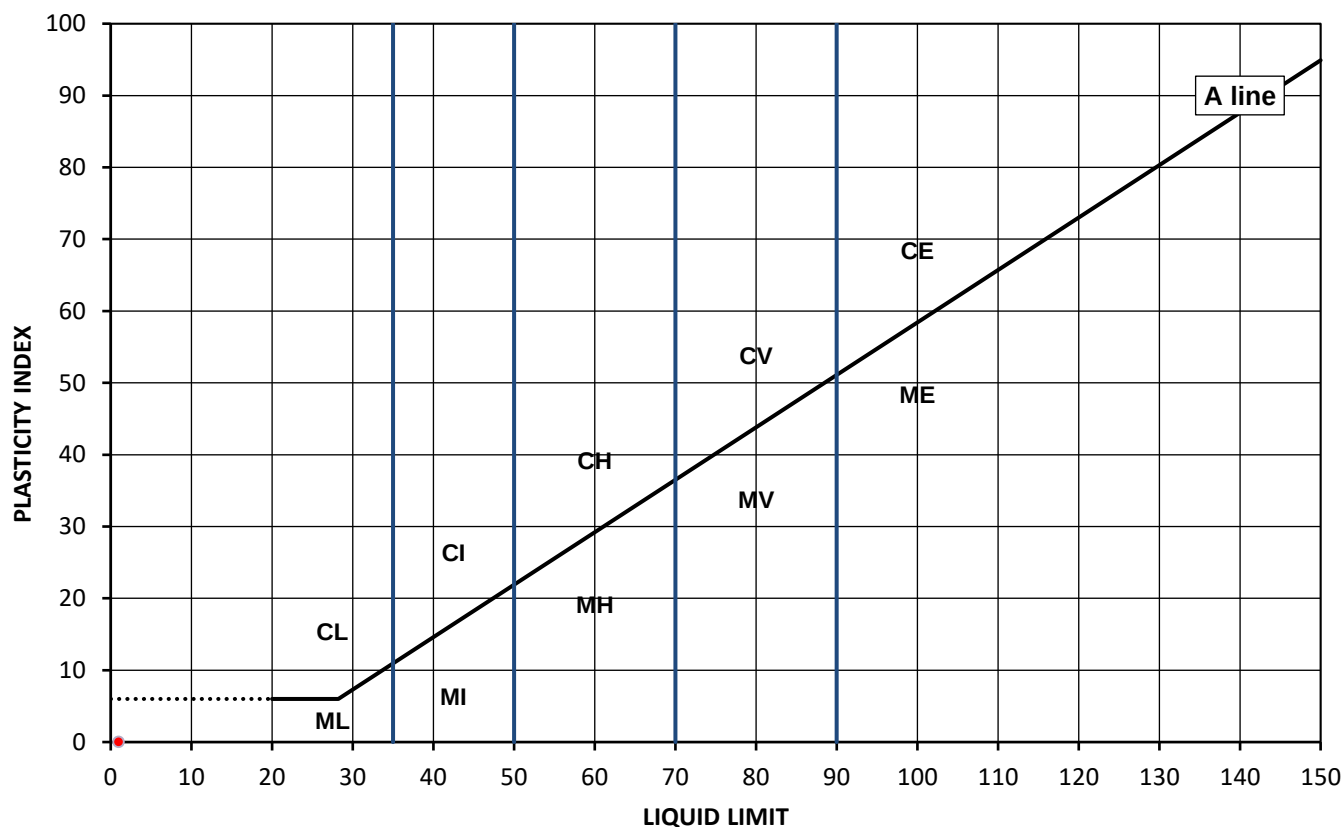
Depth Top [m]: 1.00

Depth Base [m]: Not Given

Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
10	N/A	NP	NP	26



Legend, based on BS 5930:2015 Code of practice for site investigations

C	Clay	Plasticity	Liquid Limit
M	Silt	L	Low
		I	Medium
		H	High
		V	Very high
		E	Extremely high
			below 35
			35 to 50
			50 to 70
			70 to 90
			exceeding 90
	Organic	O	append to classification for organic material (eg CHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: NP - non plastic
N/A - not applicable

Signed:

Marcin Szulc
PL Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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Date Reported: 26/06/2020

GF 232.9



TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client: Enzygo Geoenvironmental Ltd

Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Steve Rhodes

Site Address: Caversham

Client Reference: CRM-1802-001

Job Number: 20-13434

Date Sampled: 04/06/2020

Date Received: 05/06/2020

Date Tested: 19/06/2020

Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1530001

Hole No.: WS1

Sample Reference: Not Given

Soil Description: MADE GROUND

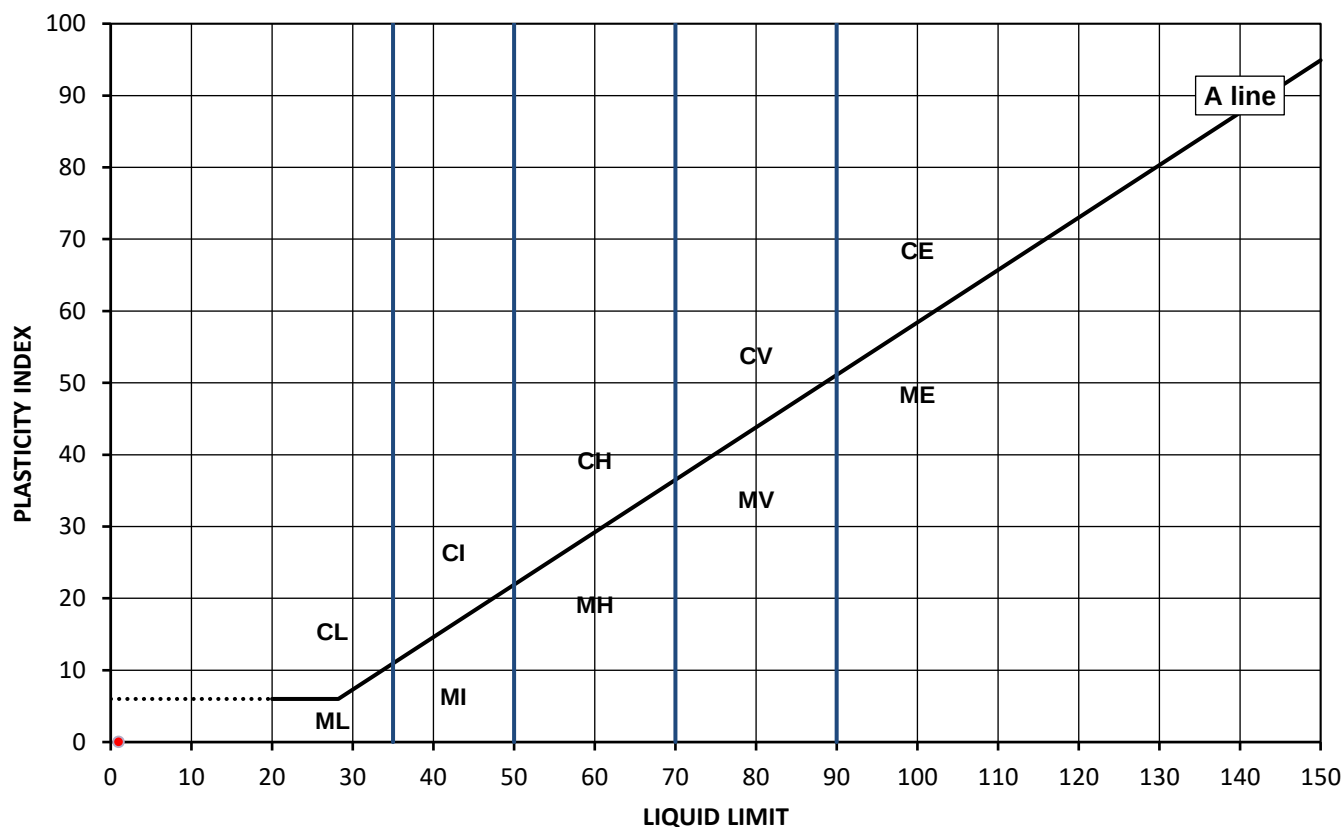
Depth Top [m]: 2.00

Depth Base [m]: Not Given

Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
18	N/A	NP	NP	21



Legend, based on BS 5930:2015 Code of practice for site investigations

C	Clay	Plasticity	Liquid Limit
M	Silt	L	Low
		I	Medium
		H	High
		V	Very high
		E	Extremely high
			below 35
			35 to 50
			50 to 70
			70 to 90
			exceeding 90
	Organic	O	append to classification for organic material (eg CHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: NP - non plastic
N/A - not applicable

Signed:

Marcin Szulc
PL Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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Date Reported: 26/06/2020

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TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
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Northampton NN4 7EB



Environmental Science

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client: Enzygo Geoenvironmental Ltd

Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Steve Rhodes

Site Address: Caversham

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: CRM-1802-001

Job Number: 20-13434

Date Sampled: 04/06/2020

Date Received: 05/06/2020

Date Tested: 19/06/2020

Sampled By: Not Given

Test Results:

Laboratory Reference: 1530002

Hole No.: WS1

Sample Reference: Not Given

Soil Description: Multicolour slightly gravelly sandy CLAY with fragments of brick

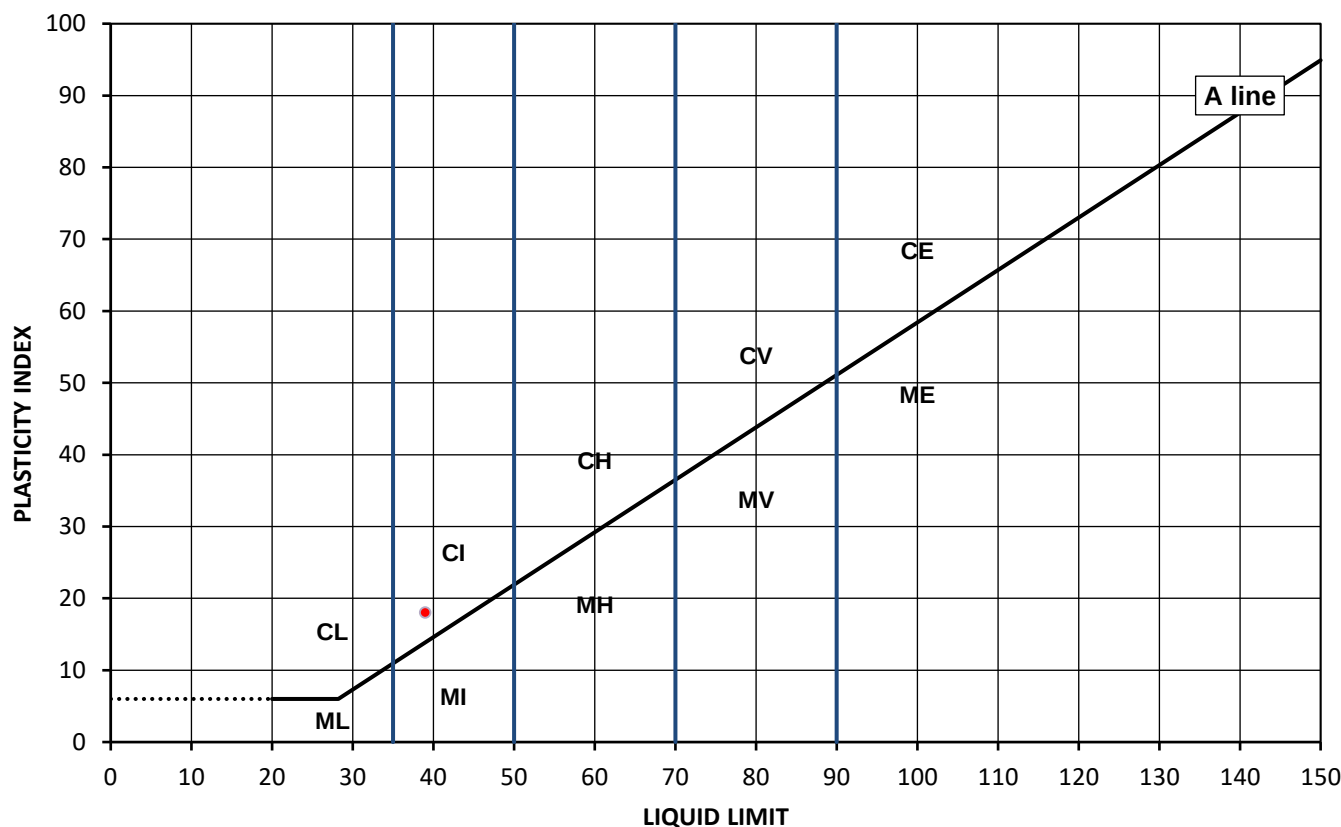
Depth Top [m]: 3.00

Depth Base [m]: Not Given

Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
25	39	21	18	87



Legend, based on BS 5930:2015 Code of practice for site investigations

C	Clay	Plasticity	L	Low	Liquid Limit	below 35
M	Silt		I	Medium		35 to 50
			H	High		50 to 70
			V	Very high		70 to 90
			E	Extremely high		exceeding 90
	Organic	O		append to classification for organic material (eg CHO)		

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Marcin Szulc
PL Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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Environmental Science

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client: Enzygo Geoenvironmental Ltd

Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Steve Rhodes

Site Address: Caversham

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: CRM-1802-001

Job Number: 20-13434

Date Sampled: 04/06/2020

Date Received: 05/06/2020

Date Tested: 19/06/2020

Sampled By: Not Given

Test Results:

Laboratory Reference: 1530003

Hole No.: WS2

Sample Reference: Not Given

Soil Description: Brown slightly gravelly slightly sandy CLAY

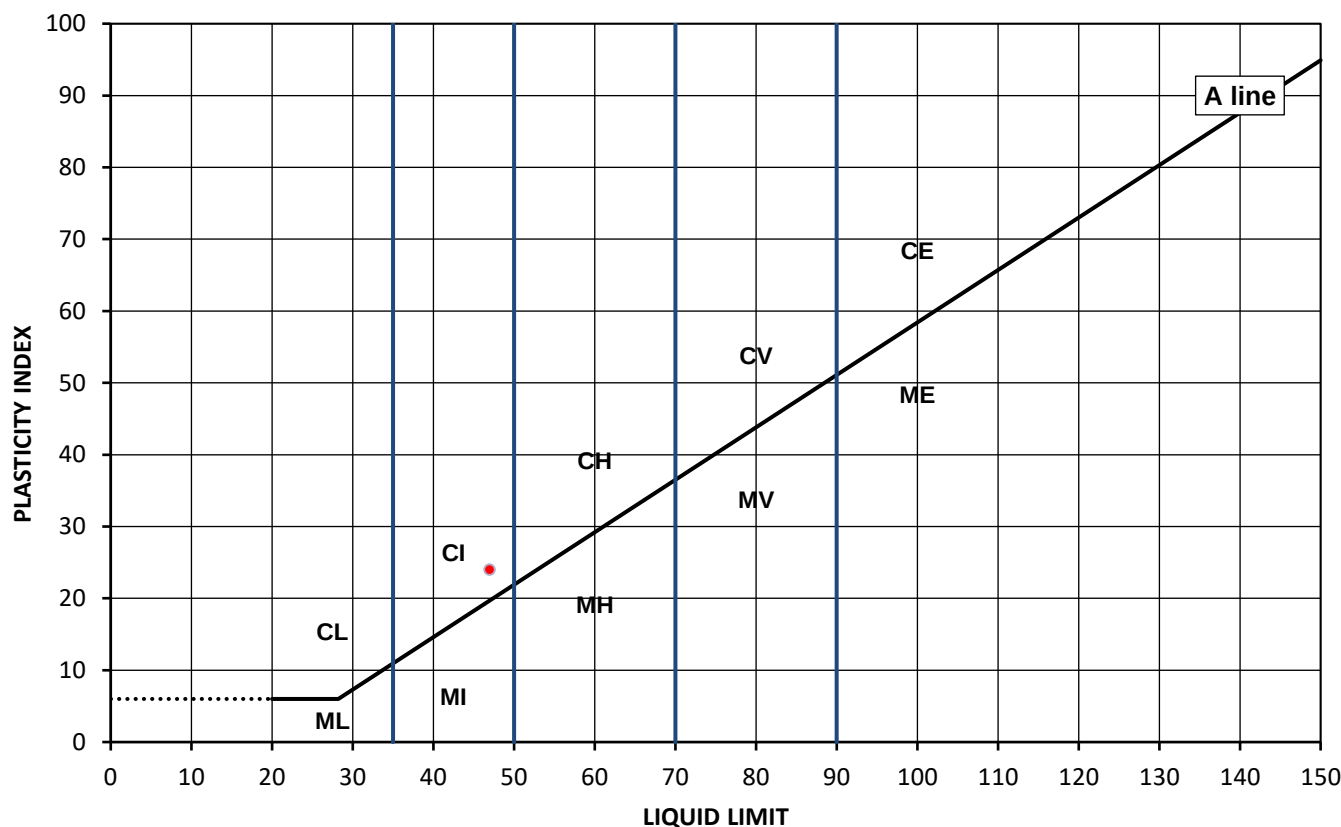
Depth Top [m]: 1.00

Depth Base [m]: Not Given

Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
28	47	23	24	84



Legend, based on BS 5930:2015 Code of practice for site investigations

C	Clay	Plasticity	L	Low	Liquid Limit	below 35
M	Silt		I	Medium		35 to 50
			H	High		50 to 70
			V	Very high		70 to 90
			E	Extremely high		exceeding 90
	Organic	O		append to classification for organic material (eg CHO)		

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Marcin Szulc
PL Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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Liquid and Plastic Limits

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Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client: Enzygo Geoenvironmental Ltd

Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Steve Rhodes

Site Address: Caversham

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: CRM-1802-001

Job Number: 20-13434

Date Sampled: 04/06/2020

Date Received: 05/06/2020

Date Tested: 19/06/2020

Sampled By: Not Given

Test Results:

Laboratory Reference: 1530004

Hole No.: WS2

Sample Reference: Not Given

Soil Description: Brown slightly gravelly very sandy CLAY

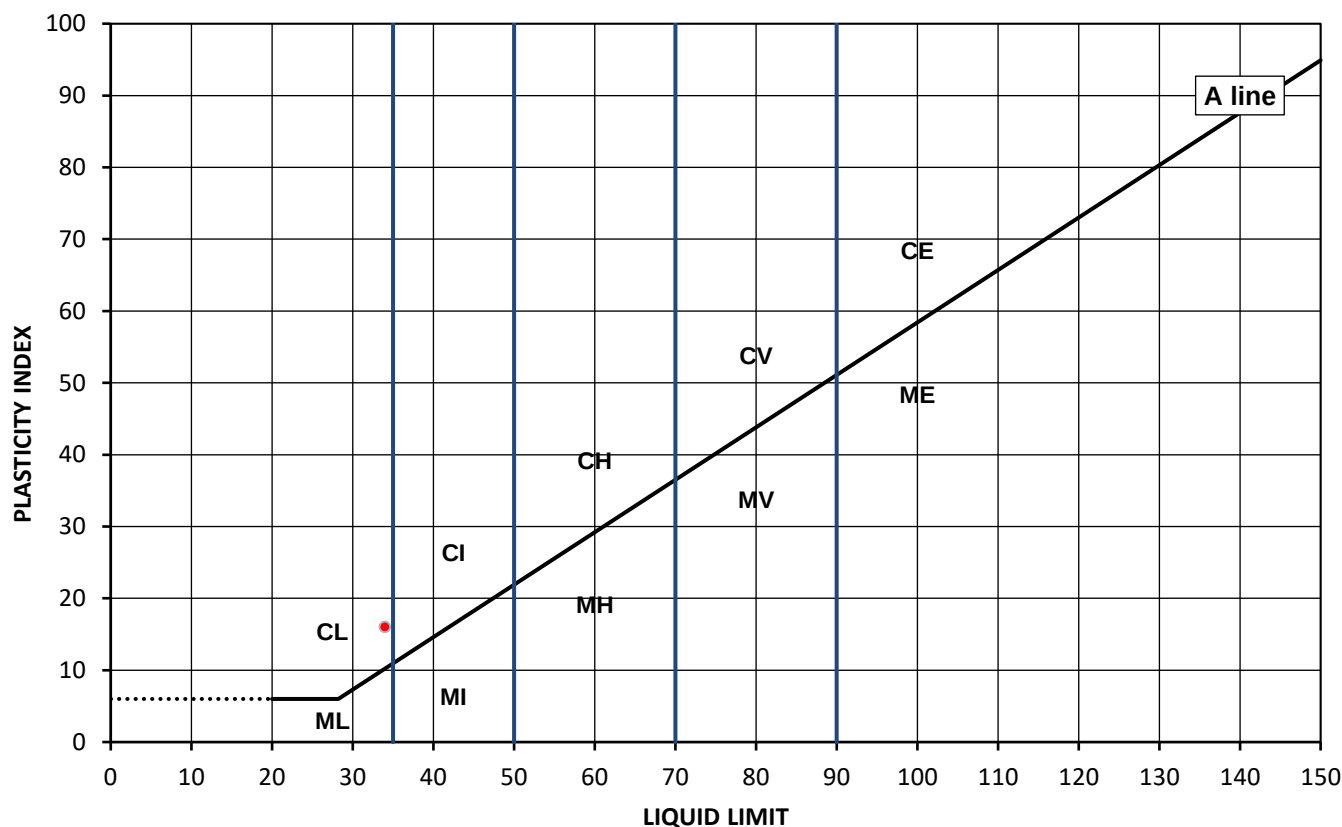
Depth Top [m]: 2.00

Depth Base [m]: Not Given

Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
25	34	18	16	99



Legend, based on BS 5930:2015 Code of practice for site investigations

C	Clay	Plasticity	Liquid Limit
M	Silt	L	Low
		I	Medium
		H	High
		V	Very high
		E	Extremely high
	Organic	O	append to classification for organic material (eg CHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Marcin Szulc
PL Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client: Enzygo Geoenvironmental Ltd

Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Steve Rhodes

Site Address: Caversham

Client Reference: CRM-1802-001

Job Number: 20-13434

Date Sampled: 04/06/2020

Date Received: 05/06/2020

Date Tested: 19/06/2020

Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1530005

Hole No.: WS2

Sample Reference: Not Given

Soil Description: Yellowish brown sandy GRAVEL

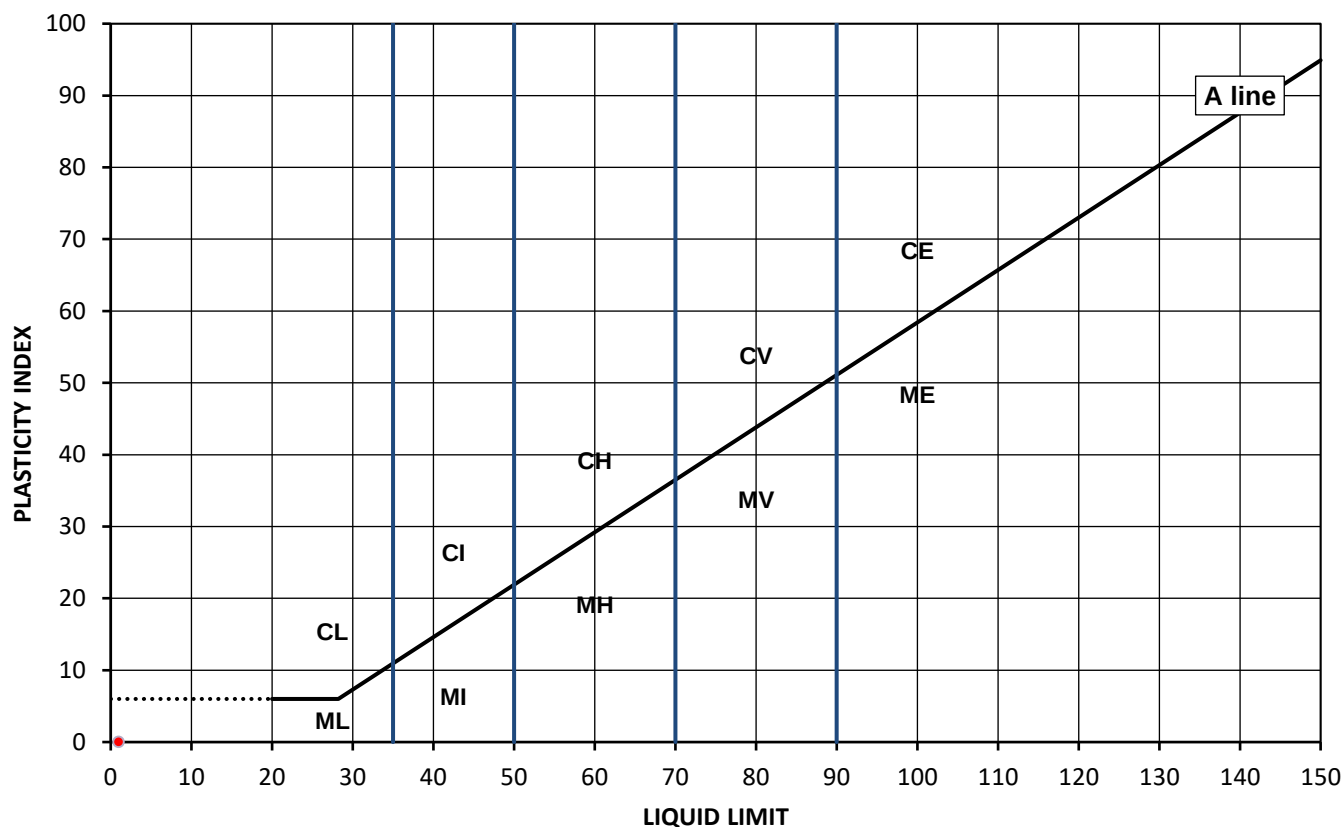
Depth Top [m]: 3.00

Depth Base [m]: Not Given

Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
12	N/A	NP	NP	19



Legend, based on BS 5930:2015 Code of practice for site investigations

C	Clay	Plasticity	Liquid Limit
M	Silt	L	Low
		I	Medium
		H	High
		V	Very high
		E	Extremely high
			below 35
			35 to 50
			50 to 70
			70 to 90
			exceeding 90
	Organic	O	append to classification for organic material (eg CHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: NP - non plastic
N/A - not applicable

Signed:

Marcin Szulc
PL Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.



TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client: Enzygo Geoenvironmental Ltd

Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Steve Rhodes

Site Address: Caversham

Client Reference: CRM-1802-001

Job Number: 20-13434

Date Sampled: 04/06/2020

Date Received: 05/06/2020

Date Tested: 16/06/2020

Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1530006

Hole No.: WS4

Sample Reference: Not Given

Soil Description: Brown gravelly sandy CLAY with fragments of brick

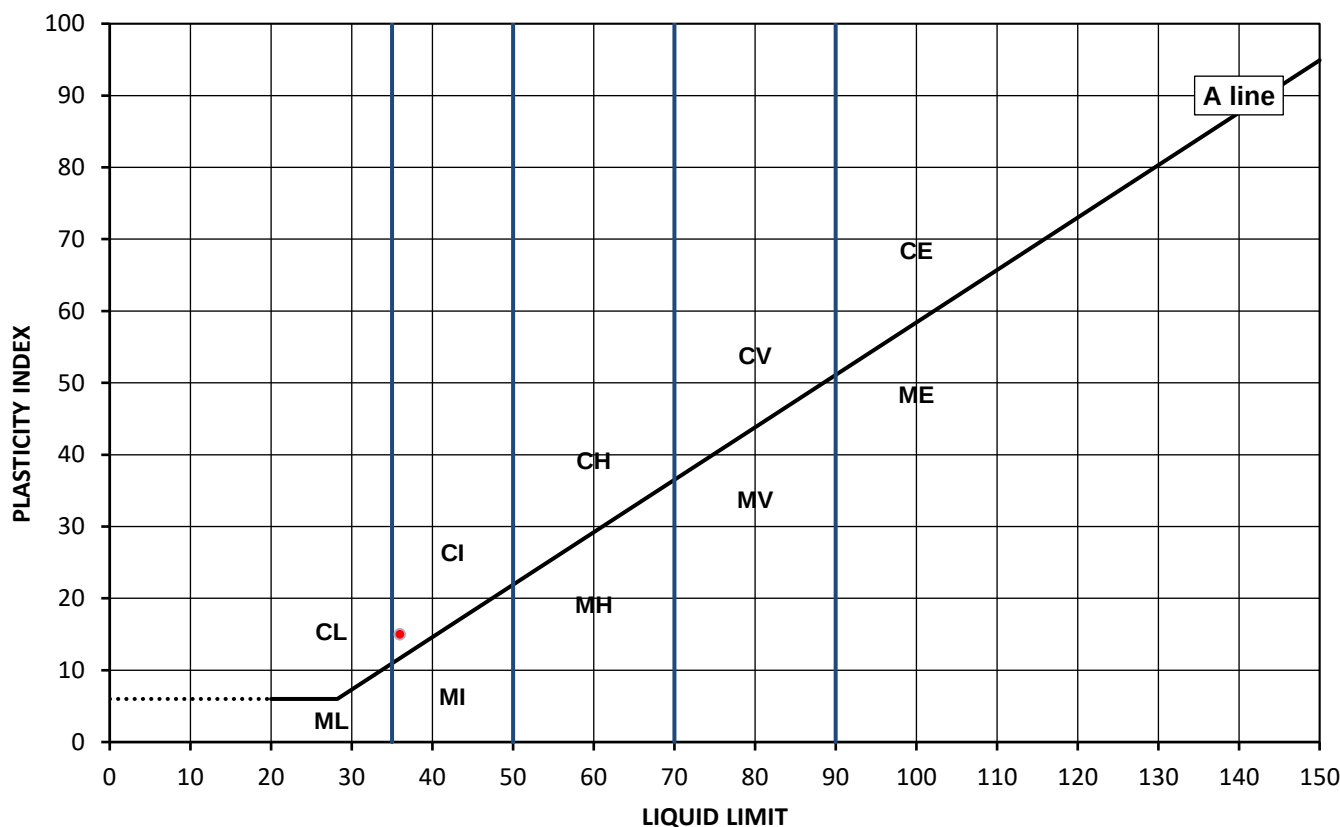
Depth Top [m]: 0.50

Depth Base [m]: Not Given

Sample Type: B

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
16	36	21	15	49



Legend, based on BS 5930:2015 Code of practice for site investigations

C	Clay	Plasticity	L	Low	Liquid Limit	below 35
M	Silt		I	Medium		35 to 50
			H	High		50 to 70
			V	Very high		70 to 90
			E	Extremely high		exceeding 90
	Organic	O		append to classification for organic material (eg CHO)		

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Marcin Szulc
PL Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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Page 1 of 1

Date Reported: 26/06/2020

GF 232.9



TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client: Enzygo Geoenvironmental Ltd

Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Steve Rhodes

Site Address: Caversham

Client Reference: CRM-1802-001

Job Number: 20-13434

Date Sampled: 04/06/2020

Date Received: 05/06/2020

Date Tested: 19/06/2020

Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1530007

Hole No.: WS4

Sample Reference: Not Given

Soil Description: Greyish brown slightly gravelly sandy CLAY

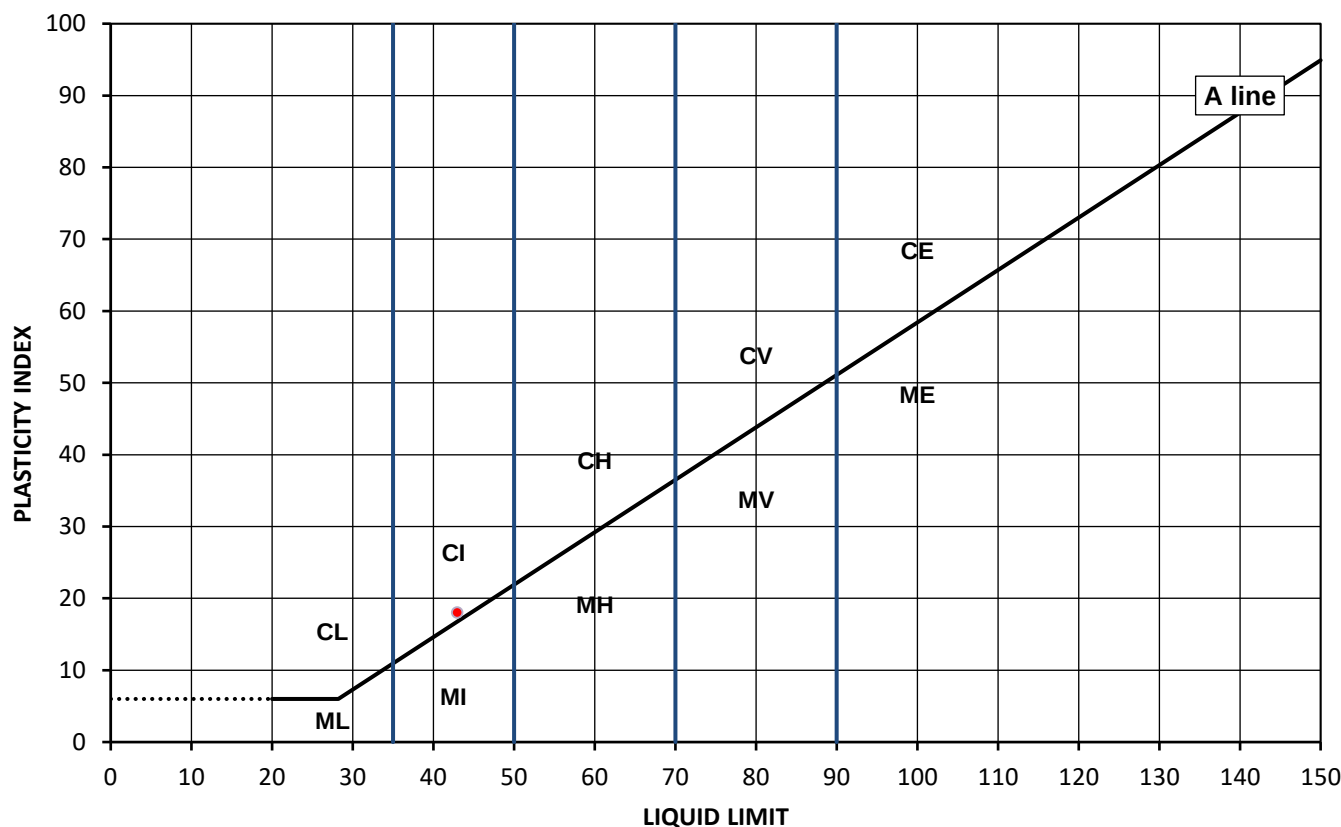
Depth Top [m]: 2.00

Depth Base [m]: Not Given

Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
18	43	25	18	83



Legend, based on BS 5930:2015 Code of practice for site investigations

C	Clay	Plasticity	Liquid Limit
M	Silt	L	Low
		I	Medium
		H	High
		V	Very high
		E	Extremely high
	Organic	O	append to classification for organic material (eg CHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Marcin Szulc
PL Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client: Enzygo Geoenvironmental Ltd

Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Steve Rhodes

Site Address: Caversham

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Client Reference: CRM-1802-001

Job Number: 20-13434

Date Sampled: 04/06/2020

Date Received: 05/06/2020

Date Tested: 19/06/2020

Sampled By: Not Given

Test Results:

Laboratory Reference: 1530008

Hole No.: WS4

Sample Reference: Not Given

Soil Description: Brown sandy CLAY

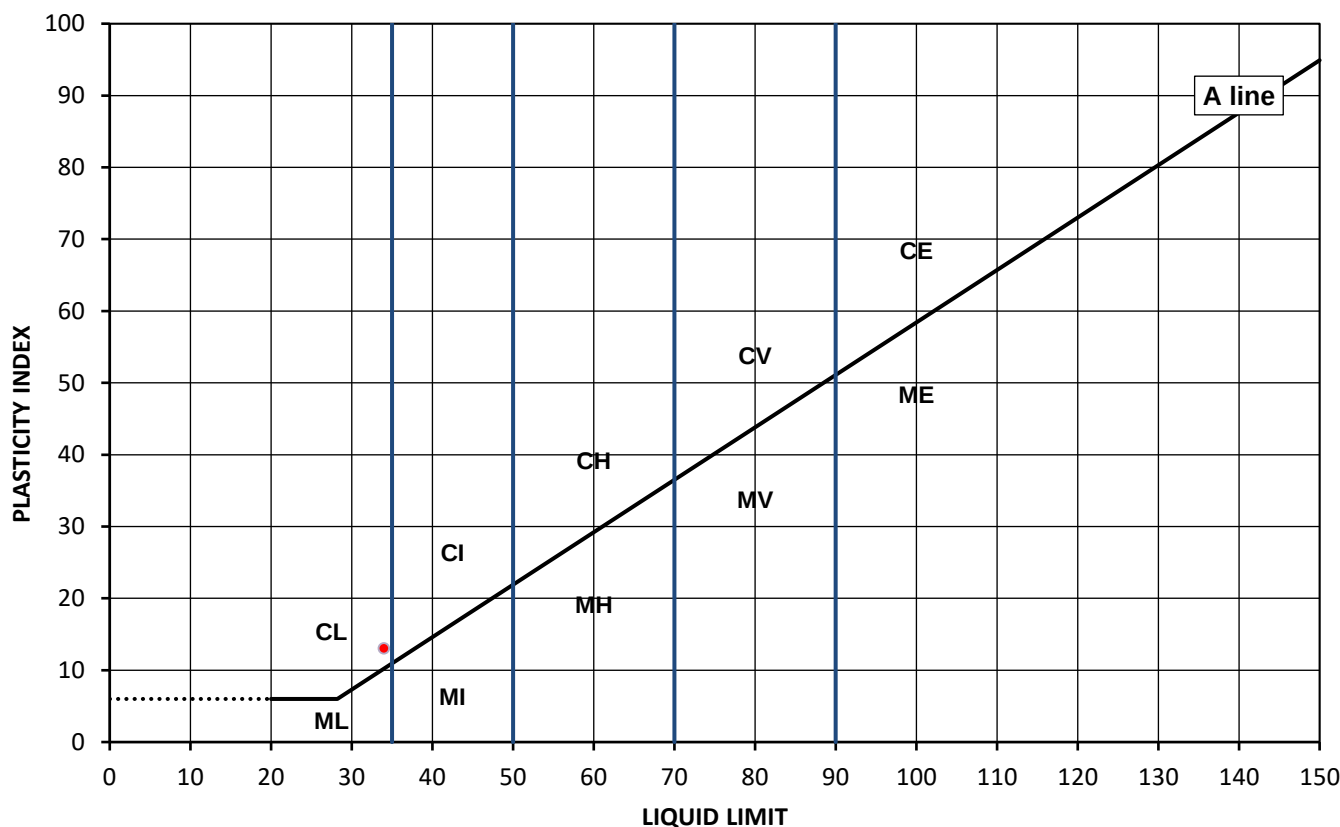
Depth Top [m]: 3.00

Depth Base [m]: Not Given

Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
24	34	21	13	100



Legend, based on BS 5930:2015 Code of practice for site investigations

C	Clay	Plasticity	L	Low	Liquid Limit	below 35
M	Silt		I	Medium		35 to 50
			H	High		50 to 70
			V	Very high		70 to 90
			E	Extremely high		exceeding 90
	Organic	O		append to classification for organic material (eg CHO)		

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Marcin Szulc
PL Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client: Enzygo Geoenvironmental Ltd

Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Steve Rhodes

Site Address: Caversham

Client Reference: CRM-1802-001

Job Number: 20-13434

Date Sampled: 04/06/2020

Date Received: 05/06/2020

Date Tested: 19/06/2020

Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1530009

Hole No.: BH1

Sample Reference: Not Given

Soil Description: MADE GROUND

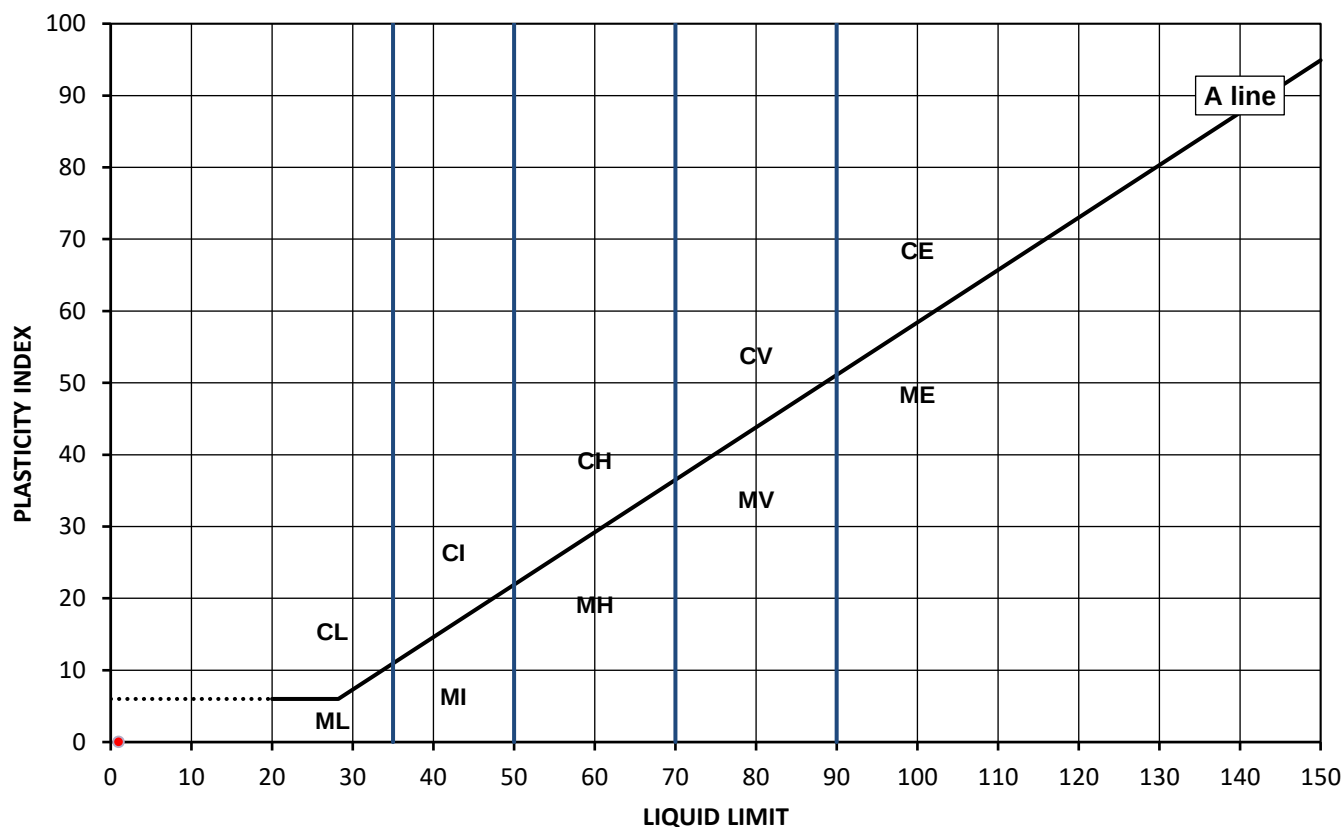
Depth Top [m]: 1.20

Depth Base [m]: Not Given

Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
9.7	N/A	NP	NP	15



Legend, based on BS 5930:2015 Code of practice for site investigations

C	Clay	Plasticity	Liquid Limit
M	Silt	L	Low
		I	Medium
		H	High
		V	Very high
		E	Extremely high
			below 35
			35 to 50
			50 to 70
			70 to 90
			exceeding 90
	Organic	O	append to classification for organic material (eg CHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: NP - non plastic
N/A - not applicable

Signed:

Marcin Szulc
PL Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client: Enzygo Geoenvironmental Ltd

Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Steve Rhodes

Site Address: Caversham

Client Reference: CRM-1802-001

Job Number: 20-13434

Date Sampled: 04/06/2020

Date Received: 05/06/2020

Date Tested: 19/06/2020

Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1530010

Hole No.: BH1

Sample Reference: Not Given

Soil Description: MADE GROUND

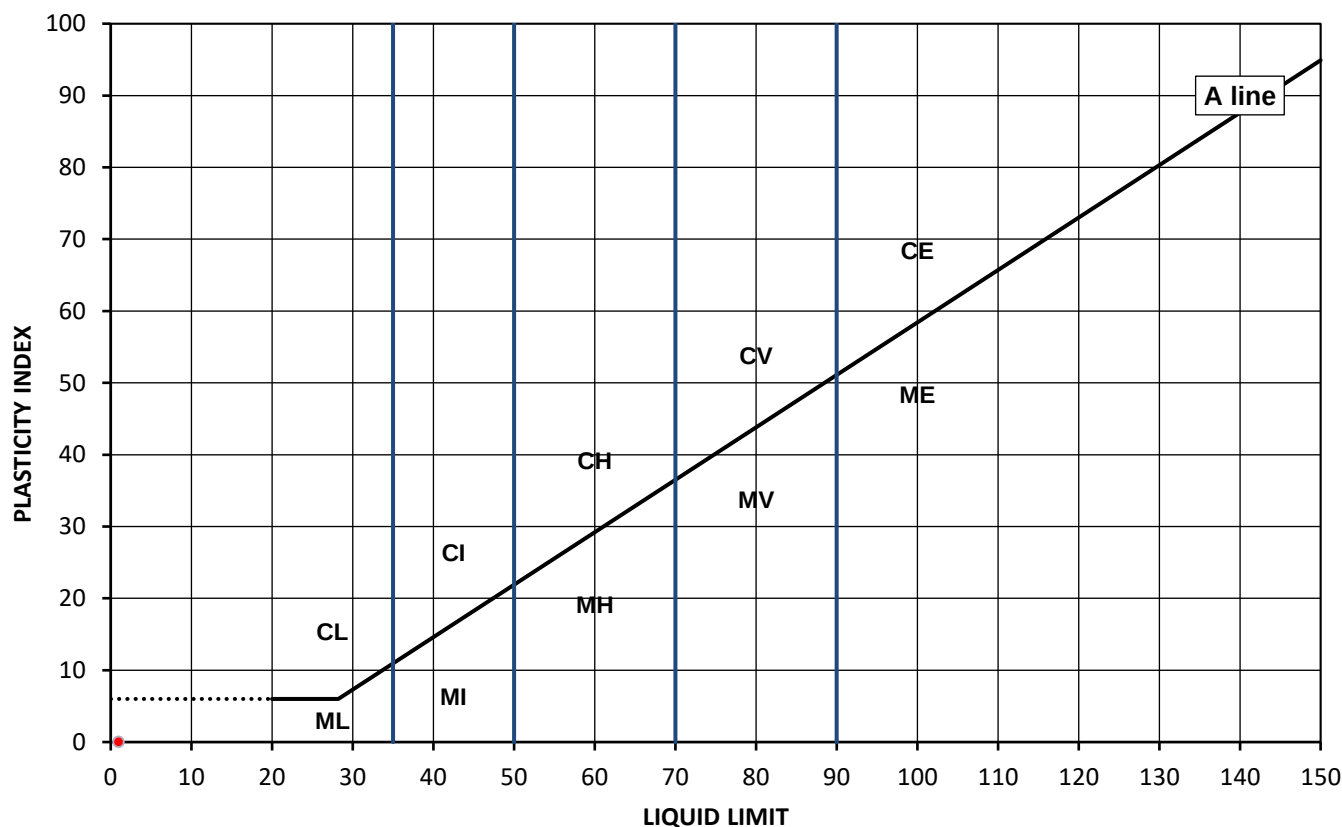
Depth Top [m]: 2.00

Depth Base [m]: 2.45

Sample Type: D

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
17	N/A	NP	NP	24



Legend, based on BS 5930:2015 Code of practice for site investigations

	Plasticity	Liquid Limit
C	Clay	
M	Silt	
L	Low	below 35
I	Medium	35 to 50
H	High	50 to 70
V	Very high	70 to 90
E	Extremely high	exceeding 90
O	Organic	append to classification for organic material (eg CHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks: NP - non plastic
N/A - not applicable

Signed:

Marcin Szulc
PL Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client: Enzygo Geoenvironmental Ltd

Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Steve Rhodes

Site Address: Caversham

Client Reference: CRM-1802-001

Job Number: 20-13434

Date Sampled: 04/06/2020

Date Received: 05/06/2020

Date Tested: 19/06/2020

Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1530011

Hole No.: BH1

Sample Reference: Not Given

Soil Description: White clayey CHALK

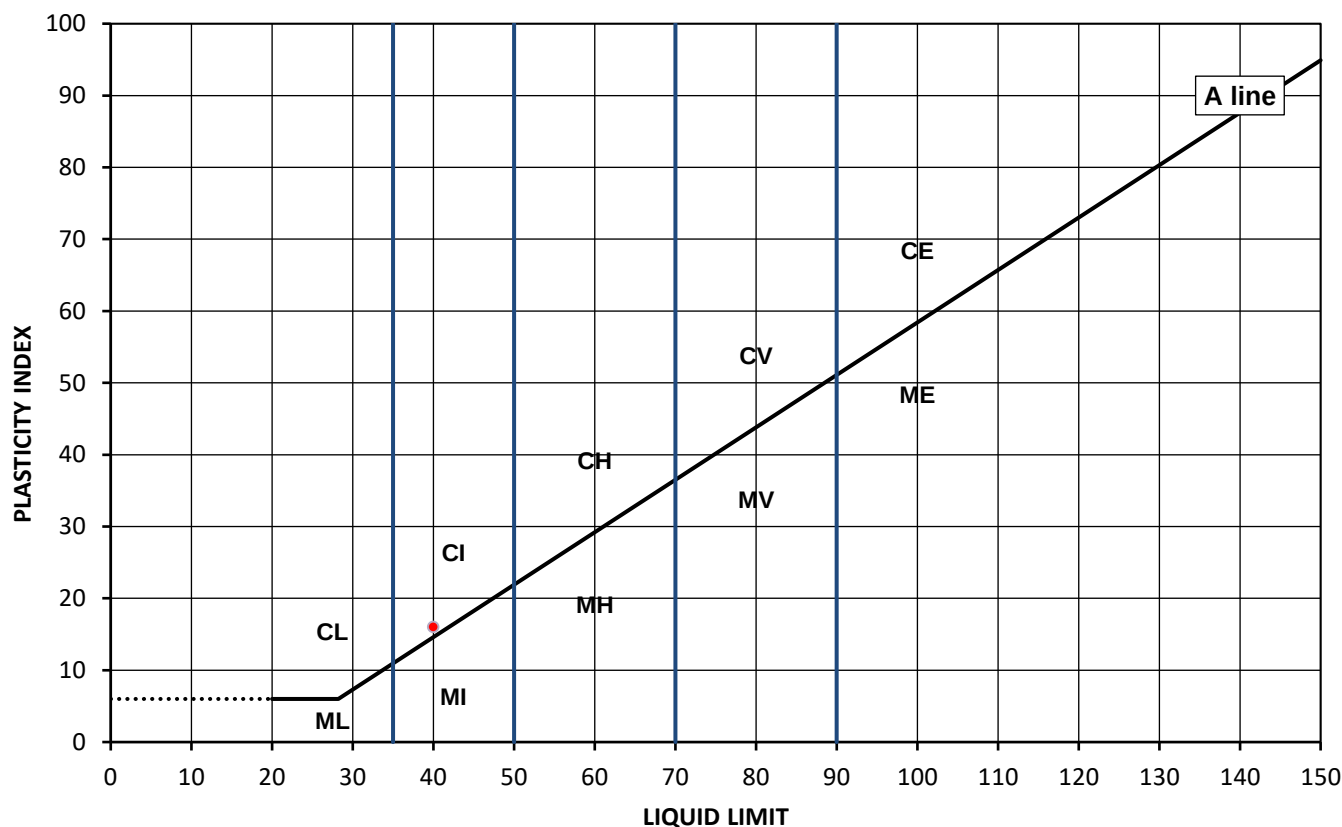
Depth Top [m]: 9.50

Depth Base [m]: 9.95

Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
25	40	24	16	100



Legend, based on BS 5930:2015 Code of practice for site investigations

C	Clay	Plasticity	L	Low	Liquid Limit	below 35
M	Silt		I	Medium		35 to 50
			H	High		50 to 70
			V	Very high		70 to 90
			E	Extremely high		exceeding 90
	Organic	O		append to classification for organic material (eg CHO)		

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Marcin Szulc
PL Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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Page 1 of 1

Date Reported: 26/06/2020

GF 232.9



4041

Client: Enzygo Geoenvironmental Ltd

Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Steve Rhodes

Site Address: Caversham

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

SUMMARY REPORT

Summary of Classification Test Results

Tested in Accordance with:

MC by BS 1377-2: 1990: Clause 3.2; WC by BS EN 17892-1: 2014; Atterberg
by BS 1377-2: 1990: Clause 4.3, Clause 4.4 and 5; PD by BS 1377-2: 1990:
Clause 8.2i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Environmental Science

Client Reference: CRM-1802-001

Job Number: 20-13434

Date Sampled: 04/06/2020

Date Received: 05/06/2020

Date Tested: 16/06 - 19/06/2020

Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	MC	WC	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	LL	PL	PI	bulk	dry	PD			
			m	m				%	%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3	%		
1530009	BH1	Not Given	1.20	Not Given	D	MADE GROUND	Atterberg 1 Point	9.7		15	N/A	NP	NP						
1530010	BH1	Not Given	2.00	2.45	D	MADE GROUND	Atterberg 1 Point	17		24	N/A	NP	NP						
1530011	BH1	Not Given	9.50	9.95	D	White clayey CHALK	Atterberg 1 Point	25		100	40	24	16						
1530000	WS1	Not Given	1.00	Not Given	D	MADE GROUND	Atterberg 1 Point	10		26	N/A	NP	NP						
1530001	WS1	Not Given	2.00	Not Given	D	MADE GROUND	Atterberg 1 Point	18		21	N/A	NP	NP						
1530002	WS1	Not Given	3.00	Not Given	D	Multicolour slightly gravelly sandy CLAY with fragments of brick	Atterberg 1 Point	25		87	39	21	18						
1530003	WS2	Not Given	1.00	Not Given	D	Brown slightly gravelly slightly sandy CLAY	Atterberg 1 Point	28		84	47	23	24						
1530004	WS2	Not Given	2.00	Not Given	D	Brown slightly gravelly very sandy CLAY	Atterberg 1 Point	25		99	34	18	16						
1530005	WS2	Not Given	3.00	Not Given	D	Yellowish brown sandy GRAVEL	Atterberg 1 Point	12		19	N/A	NP	NP						
1530006	WS4	Not Given	0.50	Not Given	B	Brown gravelly sandy CLAY with fragments of brick	Atterberg 1 Point	16		49	36	21	15						

Note: # Non accredited; NP - Non plastic

Comments: N/A - not applicable

Signed:

Marcin Szulc
PL Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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4041

Client: Enzygo Geoenvironmental Ltd

Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Steve Rhodes

Site Address: Caversham

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

SUMMARY REPORT

Summary of Classification Test Results

Tested in Accordance with:

MC by BS 1377-2: 1990: Clause 3.2; WC by BS EN 17892-1: 2014; Atterberg
by BS 1377-2: 1990: Clause 4.3, Clause 4.4 and 5; PD by BS 1377-2: 1990:
Clause 8.2i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Environmental Science

Client Reference: CRM-1802-001

Job Number: 20-13434

Date Sampled: 04/06/2020

Date Received: 05/06/2020

Date Tested: 19/06/2020

Sampled By: Not Given

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	MC	WC	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	LL	PL	PI	bulk	dry	PD			
			m	m															
1530007	WS4	Not Given	2.00	Not Given	D	Greyish brown slightly gravelly sandy CLAY	Atterberg 1 Point	18		83	43	25	18						
1530008	WS4	Not Given	3.00	Not Given	D	Brown sandy CLAY	Atterberg 1 Point	24		100	34	21	13						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Marcin Szulc
PL Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

California Bearing Ratio Top Only

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

4041

Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: Enzygo Geoenvironmental Ltd
Client Address: The Byre, Woodend Lane,
Cromhall, Gloucestershire,
GL12 8AA

Contact: Steve Rhodes
Site Address: Caversham

Client Reference: CRM-1802-001

Job Number: 20-13434
Date Sampled: 04/06/2020
Date Received: 05/06/2020
Date Tested: 22/05/2020
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1530006
Hole No.: WS4
Sample Reference: Not Given
Sample Description: Brown gravelly sandy CLAY with fragments of brick

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: B

Specimen Preparation:

Condition Remoulded
Details Recompacted with specified standard effort using 2.5kg rammer

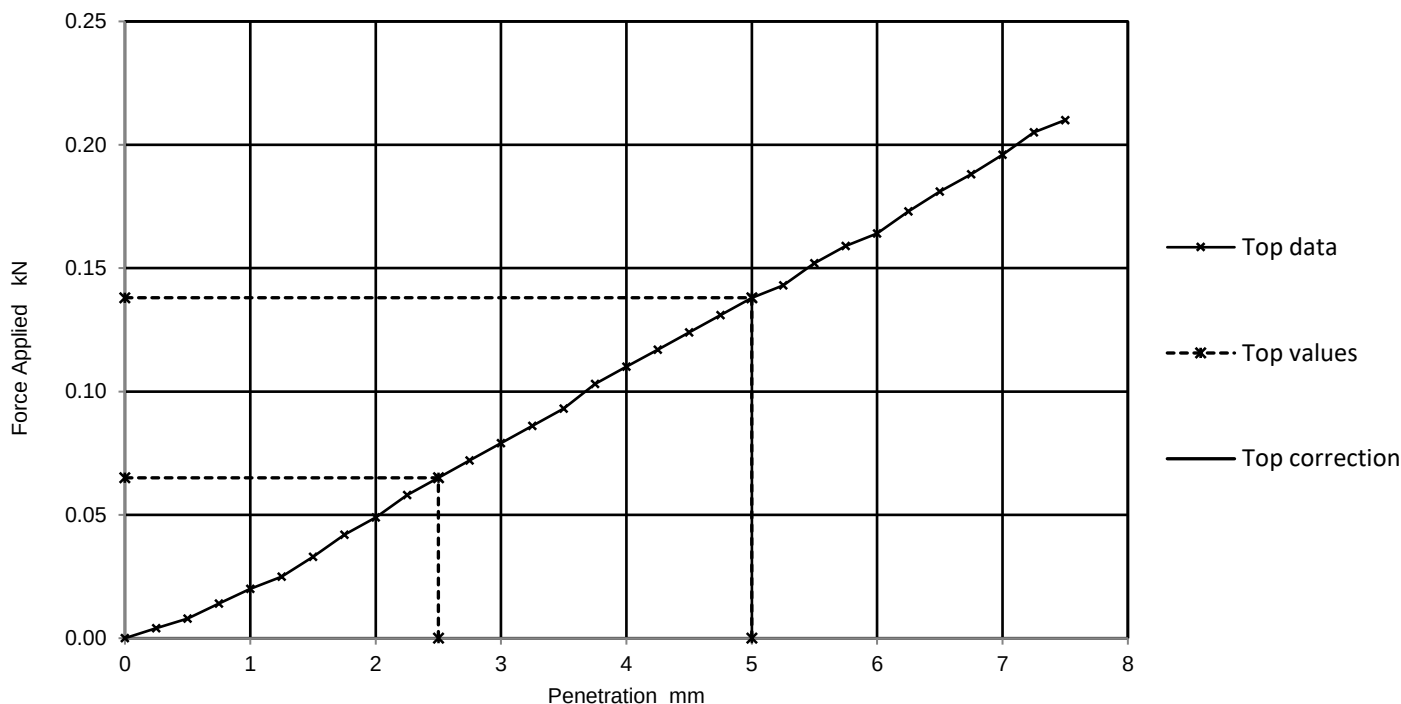
Soaking details Not soaked
Period of soaking days
Time to surface days
Amount of swell recorded mm
Dry density after soaking Mg/m3

Material retained on 20mm sieve removed 13 %

Initial Specimen details Bulk density 2.04 Mg/m3
Dry density 1.71 Mg/m3
Moisture content 19 %

Surcharge applied 8 kg
4.8 kPa

Force v Penetration Plots



Results

TOP

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	0.5	0.7	0.7	N/A

Moisture Content %
19

Remarks:

Test/ Specimen specific remarks:

Signed:

Marcin Szulc
PL Head of Geotechnical Section
for and on behalf of i2 Analytical Ltd

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**Steve Rhodes**

Enzygo Geoenvironmental Ltd
The Byre
Woodend Lane
Cromhall
Gloucestershire
GL12 8AA

e: steve.rhodes@enzygo.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 20-13440

Project / Site name:	Caversham	Samples received on:	05/06/2020
Your job number:	CRM-1802-001	Sample instructed/ Analysis started on:	08/06/2020
Your order number:		Analysis completed by:	19/06/2020
Report Issue Number:	1	Report issued on:	19/06/2020
Samples Analysed:	4 soil samples		

Signed: *A. Czerwińska*

Agnieszka Czerwińska

Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Iss No 20-13440-1 Caversham CRM-1802-001

This certificate should not be reproduced, except in full, without the express permission of the laboratory.

The results included within the report relate only to the sample(s) submitted for testing.

Page 1 of 4

Analytical Report Number: 20-13440

Project / Site name: Caversham

Lab Sample Number				1530026	1530027	1530028	1530029	
Sample Reference				WS1	BH1	BH1	BH1	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				1.00	3.00	8.00	17.00	
Date Sampled				04/06/2020	04/06/2020	04/06/2020	04/06/2020	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
Moisture Content	%	N/A	NONE	7.8	12	20	19	
Total mass of sample received	kg	0.001	NONE	0.45	0.50	0.50	0.50	

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.2	8.1	8.3	8.2	
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.16	0.034	0.021	0.026	



Analytical Report Number : 20-13440

Project / Site name: Caversham

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1530026	WS1	None Supplied	1.00	Brown loam and clay with gravel and brick.
1530027	BH1	None Supplied	3.00	Brown loam and clay with gravel.
1530028	BH1	None Supplied	8.00	White chalk with gravel.**
1530029	BH1	None Supplied	17.00	White chalk with gravel.**

** Non MCERTS Matrix

Analytical Report Number : 20-13440

Project / Site name: Caversham

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



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