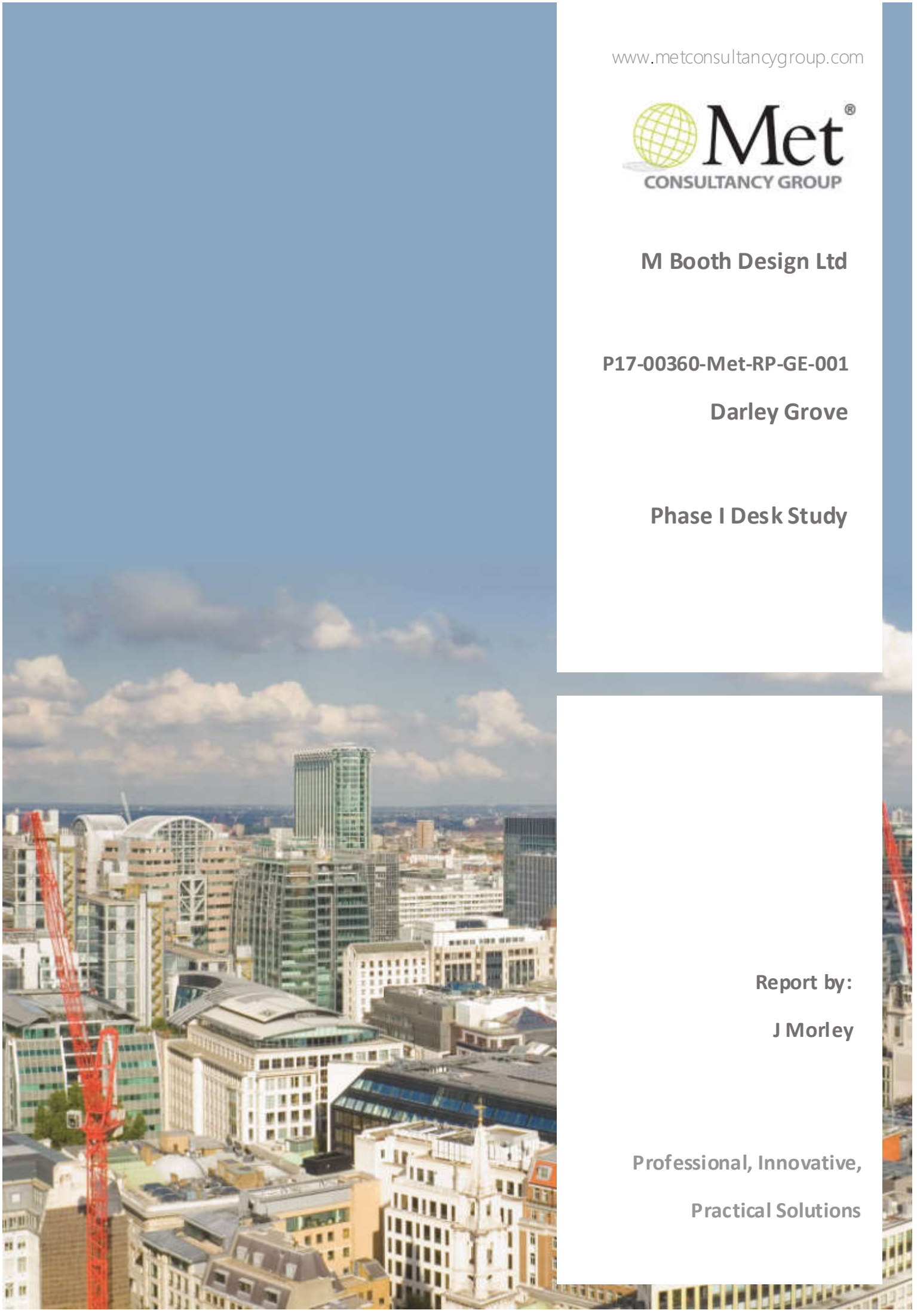

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CONSULTANCY GROUP

M Booth Design Ltd

P17-00360-Met-RP-GE-001

Darley Grove

Phase I Desk Study

Report by:

J Morley

Professional, Innovative,

Practical Solutions

About Us

Part of Met Consultancy Group, Met Engineers provides a range of solutions and engineering consultancy services in the following key areas:

Drainage design, Highway design, Ground modelling, Structural appraisals, Foundations and superstructure design, Building Options analysis, Civil Engineering structures, Flood Risk assessment and Site investigation.

Taking time to understand you, the client, your project requirements and problems, is a crucial part of the way we work. It allows us to provide you with a tailored, reasoned and sensible solution followed by the delivery of a service that is flexible, of excellent quality and designed to cope with specific circumstance.

We provide a tailored solution to meet all your project needs.

Consulting with us at an early stage may allow you to consider a range of options that could affect the risk, costs and timescales of your project. We are here to provide assistance and advice to help your compliance, risk assessment, evaluation, design and management processes on any project you are undertaking.

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Peace of Mind: We carry Professional Indemnity Insurance with cover up to £10 million to meet the risk level of your project. As part of a larger group we have strength in depth.

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Tailored Solutions: Met recognise that no one project is the same. We are flexible and will work closely with you, listening and providing advice to ensure you receive an appropriate solution. Before making a decision on what you want, discuss your desired outcome with us and we will advise on how you may achieve the best results. This can save you, or your client both time and money which in today's market is critical.

Informed, Qualified People: All our team members are qualified to a minimum of degree level in Engineering related subjects and have relevant experience in this industry sector. Many of our personnel hold professional memberships of bodies such as the Institution of Environmental Scientists and the Institution of Civil Engineers.

CONTENTS

1. REVISION RECORD

Report Ref: P17-00360 / Phase I Desk Study					
Rev	**Description**	**Date**	**Originator**	**Checked**	**Approved**
0	Initial Issue	09/08/17	JAM	AEC	IFL

Prepared For:	**Prepared By:**
M Booth Design Ltd Fairfield House Bernesiai Close Off Churchfield Barnsley South Yorkshire S70 2FL	**Met Engineers Ltd** Southgate House Pontefract Road Leeds West Yorkshire LS10 1SW

2. INTRODUCTION

2.1. GENERAL INTRODUCTION

This Report presents the findings of a Phase I Desk Study of a site at Darley House, Darley Grove, Worsborough Dale, Barnsley, S70 4RP (Grid Reference: 436259,404061) for M Booth Design Ltd.

The Desk Study (Phase I) comprised obtaining research/archive information from Emapsite, in the form of a GroundSure Report. The GroundSure Report provides the basic background information including Historical Ordnance Survey Plans, British Geological Survey Plans and Environment Agency Report (including Radon). This report presents the findings of this background information as it relates to the proposed end use of the site and considers the potential for contamination of the site. The Groundsure Report is attached as Appendix I.

2.2. OBJECTIVES

This Desk Study was conducted in order to formulate an opinion as to the potential for hazardous substances to exist on, at, or near the vicinity of the site which might affect the future development of the site, appropriate to the proposed end use of the site. It is understood that redevelopment of the site for residential purposes is proposed. The "vicinity" of the site for the purposes of this Report is defined as being located within an approximate 250m radius of the site.

The objectives of the Desk Study were aimed to determine:-

- The historical site usage, identifying any factors, based on the Archive Ordnance Survey Maps, which might give rise to the potential for hazardous substances to exist on, at, or near the vicinity of the site.
- The general ground conditions at the site, based on published Geological Maps, identifying any significant geotechnical conditions which might affect the future redevelopment of the site.
- Current operations undertaken within the site and in the immediate vicinity, based on the GroundSure database, which might give rise to the potential for hazardous substances to exist on, at, or near the vicinity of the site and which might affect the future redevelopment of the site.

2.3. SCOPE OF WORKS

In order to meet the objectives, Met Engineers obtained research information from Emapsite, which includes data from the following sources: -

- Historical Ordnance Survey Plans
- British Geological Survey Plans and Radon Report
- Environment Agency Report
- Coal Authority Mining Information

This Report presents the findings of the Desk Study as related to the proposed end use of the site. The purpose of the Desk Study is to allow an opinion to be formulated as to the likely Geo Environmental conditions at the site and the potential implications for the end use. This report does not quantify those findings nor provide any recommendations for remedial works, mitigation or risk management.

2.4. LIMITATIONS OF THE REPORT

M Booth Design Ltd (the Client) has requested that a Phase I Geo-Environmental Site Assessment be undertaken in order to assess the suitability of the site for redevelopment. The Report is not a comprehensive site characterisation and should not be construed as such.

This Report has been prepared for the sole internal use and reliance of M Booth Design Ltd. The Report shall not be relied upon or transferred to any other parties without the express written authority of Met Engineers. If any unauthorised third party comes into possession of the Report, they rely on it at their own risk and the Met Engineers owes them no Duty of Care.

The findings and opinions conveyed via this Report are based on information obtained from a variety of sources as detailed within this Report and which Met Engineers, believes are reliable. Nevertheless, Met Engineers, cannot and does not guarantee the authenticity or reliability of the information it has relied upon. The information contained in this Report is to the best of our knowledge accurate at the date of issue, however, sub-surface conditions, including ground water levels, and may vary over time.

It is possible that the GroundSure Report may not include information from every information source. Assuming such further information sources actually exist, their information has not been considered in the formulation of these findings and opinions; this Report only considers the information contained within the GroundSure Report.

In preparing this Report it has been assumed that all past and present occupants and Third Parties have provided accurate information, especially relating to known or potential hazards. This Report does not identify deficiencies or mistakes in the information provided by the user/owner, or from any other source, except where obvious in the light of other information.

This Report is relevant at the date the report was written and should be read in the light of any subsequent changes in legislation, statutory requirement or industry practices.

The Report represents the technical findings and opinions of Met Engineers, and does not constitute any legal advice. As such, the advice of a Solicitor may also be required.

3. SITE HISTORY AND ENVIRONMENTAL SETTING

A detailed review of the published history, hydrological, geological and available environmental information has been carried out.

The area of land referred to as 'The Site' within this document is indicated in Appendix I.

3.1. SITE DESCRIPTION

Site Address	Darley House, Darley Grove, Worsborough Dale, Barnsley, S70 4RP
Location	Grid Reference: 436259,404061
Setting	The site is located in Worsborough Dale, approximately 3km south east of Barnsley town centre. The site is irregular in shape and covers an area of approximately 0.33 hectares (Ha). It is accessed via double metal gates in the north west and west of the site, off Pantry Hill. The site is covered by a mixture of residential buildings and vegetative cover. The main building 'Darley House' is located in the north west corner. The eastern part of this building is currently used as an arts building. Towards the east of the site is a rectangular residential building named 'the stables'. There is a track with manholes through the centre of the site. The southern part of the site is heavily overgrown with vegetation. A stream flows through the south eastern area of the site, from north east to south west. Overgrown steps are located to the west of the stream which lead down towards a derelict brick building. There is a narrow (approximately 0.9m) gap between the brick building and the wooden garden fence which form the southern boundary. The topography of the site is irregular but is generally sloping at a shallow gradient towards the south west. The adjacent land uses are residential houses and gardens in all directions.
Development Proposal	It is proposed to develop the site with 9№ 2 bed two storey dwellings and 2№ 3 bed two storey dwellings. A proposed layout is included in Appendix IV.

3.2. SITE HISTORY FROM MAPPING

Year (map scale)	Comment
1850-1855 (1:10,560)	The site was originally noted as agricultural land labelled 'Darley Grove'. The surrounding area was mainly agricultural land with sandstone quarries 20m north and 200m south of the site. Darley Main Colliery was located approximately 250m south west of the site. A railway line and the Dearne Dove Canal Worsborough are also situated less than 500m south of the site.
1892 (1:2,500)	The site has now been developed with unlabelled residential housing in the north, including the existing Darley House and Stables, and a small woodland in the centre. A small excavation appears in the western corner of the site. Buildings are shown along the north western boundary of the site. A pump is located 50m south west of the site and a cricket ground has been developed approximately 60m north. The sandstone quarries to the north and south still appear to be active. Shafts are shown approximately 200m and 225m west of the site.
1890-1894 (1:10,560)	No significant change to the site. Darley Main Colliery is no longer shown to the south west.
1906 (1:2,500)	The trees have been removed from the centre of the site. Allotment gardens appear adjacent to the south of the site. The quarries remain to the north and south of the site, however these are no longer labelled. The shafts are no longer shown to the west of the site.
1931 (1:10,560)	No significant change to the site. The quarries now appear to be disused and are shown to be covered with trees. The residential area to the west of the site has expanded.
1948 (1:10,560)	No significant change to the site or the surrounding area.
1956 (1:10,560)	No significant change to the site or the surrounding area.
1960 (1:1,250)	A small building, assumed to be a shed or outbuilding has now been constructed in the south of the site. Some of the buildings along the north western edge of the site have been demolished. A playing field is now shown 100m south east of the site. Buildings are shown within the quarry area to the south of the site, however this doesn't appear to have been completely infilled as quarry walls are still shown. A factory is now located approximately 200m south west of the site.
1965-1966 (1:10.560)	No significant change to the site. A school has been developed approximately 250m east of the site.
1967 (1:1,250)	No significant change to the site. The factory to the south west is now a garage. Residential areas have been developed to the north east.

Year (map scale)	Comment
1987-1992 (1:10,000)	No significant change to the site or surrounding area.
2014 (1:10,000)	No significant change to the site or surrounding area.
1854-2014	Those maps not specifically mentioned show no deviation from the observations made above.

3.3. SITE HISTORICAL OVERVIEW

The site was agricultural land before the development of the existing buildings by 1892. The small outbuilding was built in the south east of the site by 1960 and the site has remained predominantly unchanged since.

Darley Main Colliery was located 250m south west until around 1890 and sandstone quarries were located approximately 20m north and 200m south until 1931. Buildings adjacent to the north west of the site were demolished by 1960 at which time residential houses appeared in the quarry areas and a factory was developed 200m south west. The main development since the 1960's was a school developed 250m east of the site around 1965.

3.4. GEOLOGICAL OVERVIEW

Geology	Artificial Ground – The Groundsure report doesn't identify any artificial ground on the site. Made Ground is recorded 245m south west. Superficial Deposits – None recorded Bedrock Geology – Pennine Middle Coal Measures- mudstone, siltstone and sandstone. Woolley Edge Sandstone is also recorded 14m north east and 75m south east of the site. Faults – 75m south east of the site trending south west to north east. Coal Outcrops – Inferred coal seams recorded 7m south west and 9m north east of the site.
Radon	1 – 3 % of properties in the area are above the radon action level. However radon specific protection measures are not required for new buildings in accordance with BRE publication BR211.
Ground Workings	There are 6№ areas of ground workings shown within 250m of the site. The nearest is an area of unspecified workings 9m north east. Others include quarries, pits, cuttings and a refuse heap located between 100m and 245m south and west of the site.
Mining	The site is within a Coal Mine Reporting Area therefore a Coal Report has been obtained from The Coal Authority, which can be found within Appendix III of this report. The Coal Authority confirm that the site is in the zone of influence of workings in 11№ seams of coal at 150m to 530m depth, last worked in 1970. Any movement from these workings should have stopped by now. In addition, the property is in an area where the coal authority believes there is coal at or close to the surface which may have been worked at some time in the past. The site is not affected by any present or planned underground mining however reserves of coal do exist in the area which may be worked at some time in the future. There are no mine entries within 20m of the site. There may however be mine entries in the local area which the coal authority has no knowledge of. The site is not affected by any past, present or future opencast mining. The Coal Authority have received a claim for coal mine related subsidence for a property within 50m of the site. This is located to the north west of the site boundary. The site is within a Development High Risk Area with regards to shallow coal mining, therefore a Coal Mining Risk Assessment has been carried out as part of this report and is presented in Section 4.
Natural Ground Subsidence	Landslides – Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soakaways.

Boreholes	6№ BGS borehole records are held for positions located within 250m of the site. These appear to be associated with the construction of the school approximately 150m south east. The nearest, (ref. SE30SE 105) located 154m south east shows topsoil overlying mottle brown clay with sandstone fragments to 0.91m. From 0.91m to the base of the borehole at 2.44m is weathered brown sandstone with clay bands.

3.5. ENVIRONMENTAL OVERVIEW

Historical Land Use	There are 6№ potentially contaminative historical land uses shown within 250m of the site. The nearest is the unspecified ground workings 9m north east. Others include quarries, pits, cuttings, a colliery, an unspecified tank and a refuse heap which are all down hydraulic grade of the site.
Current Land Use	There are 5№ potentially contaminative current industrial land uses shown within 250m of the site. The most significant is an electricity substation 122m north east.
Environmental Permits	There is 1№ licenced discharge consent 244m south west for a storm sewage overflow.
Pollution Incidents	There are no pollution incidents shown within 250m of the site.
Landfill Sites	There are no current or historical landfills shown within 250m of the site.
Waste Transfer & Processing Stations	There are no waste transfer and processing stations shown within 250m of the site.
Hydrogeology	The bedrock is classed as a Secondary A Aquifer. The site is not within a source protection zone and there are no ground water abstractions within the vicinity of the site.
Hydrology	The Groundsure report does not record any watercourses within 250m of the site, however a stream was noted in the south east of the site during the site walkover. There are no surface water abstractions within 250m of the site.
Flooding	The site is not within a flood risk area.
Environmental Sensitivity	The site is in a nitrate vulnerable zone.

3.6. PREVIOUS INVESTIGATIONS

Met Engineers are not aware of any other site investigations and no details of any have been provided.

4. POTENTIAL CONTAMINATION

4.1. BACKGROUND

Current Environmental Legislation, in particular Part IIA of the Environmental Protection Act 1990, adopts a risk-based approach to the evaluation of contaminated sites, based on the proposed end use of the site. The commonly accepted approach is to adopt a Source-Pathway-Receptor model where the Source of the contaminant is examined in relation to potential Receptors (i.e. humans, controlled waters etc.) to determine if there is a Pathway (i.e. pollution linkage) connecting them. If any of these elements (i.e. contaminant, pathway or receptor) are absent or removed, then there is no risk.

4.2. DEVELOPMENT PROPOSAL

It is proposed to develop the site with 9№ 2 bed two storey dwellings and 2№ 3 bed two storey dwellings.

4.3. HISTORICAL LAND USE

The site was agricultural land before the development of the existing buildings by 1892. The small outbuilding was built in the south east of the site by 1960 and the site has remained predominantly unchanged since.

4.4. CURRENT LAND USE

The site is covered by a mixture of residential buildings and vegetative cover.

4.5. EXTERNAL ENVIRONMENTAL INFLUENCES

There are a number of potentially contaminative current and historical land uses in the surrounding area. Historical land uses include ground workings, quarries, pits, cuttings, a colliery, an unspecified tank and a refuse heap. Current land uses include electricity substations. Contaminants from these land uses have the potential to have migrated on to the site through various pathways.

4.6. PRELIMINARY RISK ASSESSMENT

In considering the potential for contamination, the information highlighted in this report has to be assessed utilising the source-pathway-receptor methodology. Should one of the three links be absent, the site cannot be considered contaminated under Part IIA of the Environmental Protection Act.

The risks identified in this report are perceived risks relative to the proposed end use. Actual risks can only be fully assessed after a robust and thorough intrusive investigation of the site. The preliminary conceptual risk assessment model undertaken for the site is detailed as follows:

4.7. SOURCES

Based on the evidence collated, the possible sources of contamination which potentially affect the site include:

	Activities	Contaminant Location On Site	Potential Contaminants	Likelihood of Contaminant being present on site	Comment
Historical Site Usage	Buildings	Building Fabric	Asbestos	Moderate	Buildings on site from 1892. Potential for asbestos in building fabric.
Current Site Usage	As above	As above	As above	As above	As above
Historical Neighbours	Ground Workings	Surface soil/ bedrock	Land Gas Asbestos PAH TPH Heavy Metals	Low to Moderate	Quarries, pits and cuttings recorded from 9m north of the site. Potentially infilled land. Risk of contaminants including land gas migrating to site considered moderate due to close proximity.
	Colliery	Surface soil/ bedrock	Land Gas	Moderate	Colliery recorded 199m west of the site until around 1890. Shafts recorded approximately 200m and 225m west. Potential for migration of land gas.
			PAH TPH Heavy Metals	Low	Potential for migration of soil and water based contaminants considered low due to the distance and relative topography of the former colliery from the site. Colliery located downhill of the site.
	Tank	Surface soil/ bedrock	Land Gas PAH TPH Heavy Metals	Low	Unspecified tank 236m west from 1850. Contents of tank unknown. Likelihood of contaminants migrating to site considered low due to age and distance from site boundary.
Current Neighbours	Substations	Surface soil/ bedrock	Land Gas PAH TPH Heavy Metals Polychlorinated Biphenyls (PCBs)	Very Low	Nearest substation recorded 122m north east. No pollution incidents previously recorded. Likelihood of contaminants being present on site reduced due to distance.

The sources which are considered to have a moderate risk or greater of occurring on site have been assessed further as part of the Conceptual Site Model in Section 4.7 of this report.

The list of possible contaminants has been based solely on the information identified by the GroundSure Report and the site walkover and therefore should not be considered exhaustive.

4.8. PATHWAYS

The Potential main pathways specific to the probable future use of the site are:

Pathway	Pathway Present	Comments
Direct Contact with soil/ water	Yes	Potential for contact with soil/ water during future development works
Incidental ingestion	Yes	Potential for ingestion of soils/ water during future development works
Inhalation of soil dust/ asbestos fibres	Yes	Potential for inhalation of soil dust/ asbestos during future development works and ground disturbance
Leaching/ migration of liquids	Yes	Potential for leaching to aquifer in areas developed with soft, vegetative cover
Surface water run-off	Yes	Potential for surface water run-off in hardstanding areas.
Migration/ emission/accumulation inhalation of land gas/ vapours	Yes	Migration and emission of land gas/ vapours possible, potential for accumulation is increased in buildings on proposed site
Plant uptake/ plant uptake followed by ingestion	Yes	Site is to be landscaped, increasing plant uptake. Proposed residential houses with gardens.

4.9. RECEPTORS

The following site-specific receptors should be considered:

Receptor	Receptor Present	Comments
Site worker	Yes	Staff involved in construction and demolition works and underground utility works at the site
Maintenance staff	Yes	Carrying out routine maintenance in the future (assumes workers will visit the site on an infrequent basis and will not carry out intrusive works)
Long term site user/ future resident	Yes	Long term site users/ future residents
Off-site resident	Yes	Residential housing within 250m of the site
Flora & Fauna	Yes	Flora on landscaped areas
Aquifer	Yes	Bedrock is a Secondary A Aquifer, however there are no groundwater abstractions or source protection zones in the vicinity of the site
Surface water	Yes	Surface watercourse noted in the south east of the site. Not shown on plans or recorded in Ground Sure therefore assumed to be low sensitivity.
Buildings & Infrastructure	Yes	Building substructure/ services, drinking water pipes, drainage etc.

4.10. PRELIMINARY CONCEPTUAL SITE MODEL

Potential Source	Contaminants	Receptor	Pathway	Severity	Likelihood	Potential Risk
Soil based Contaminants (Solid)	Heavy Metals PAH TPH	Construction Workers Maintenance Workers End user	Direct contact with soil Ingestion of soils Inhalation of soil dust Inhalation of vapours (PAH/ TPH only)	Moderate	Low	Low/Moderate
		Flora & Fauna	Plant uptake	Very Low	Very Low	Very Low
		Buildings & Infrastructure	Direct Contact with soil	Very Low	Very Low	Very Low
		Surface Water	Surface water run-off	Very Low	Very Low	Very Low
Soil based Contaminants (as Leachate)	Heavy Metals PAH TPH	Flora & Fauna	Plant uptake	Very Low	Very Low	Very Low
		Surface water	Leaching/ migration via groundwater	Very Low	Very Low	Very Low
		Aquifer	Leaching/ migration via groundwater	Low	Very Low	Low
Asbestos within building fabric	Asbestos Fibres	Construction Workers	Inhalation of asbestos fibres	High	High	High
Asbestos within Made Ground*	Asbestos Fibres	Construction Workers Maintenance Workers End user	Inhalation of asbestos fibres	High	Very Low	Moderate
Land Gas		Construction Workers Maintenance Workers End user	Inhalation of gases	High	Moderate	Moderate/High

Please see Appendix V for the matrix used to determine Risk.
Please note, the risks to off- site receptors from off-site sources (e.g Off-site landfill impacting off-site surface water stream) have not been assessed as part of this study.
*Very Low likelihood of asbestos in the Made Ground due to lack of previous demolition and ground works on the site. Asbestos may be present in the existing building fabric and this assessment assumes that a specialist asbestos contractor will be consulted prior to any demolition works being carried out on the site. It assumes that any proposed demolition works will be carried out in accordance with current guidance to ensure that the ground does not become contaminated with asbestos.

5. COAL MINING RISK ASSESSMENT

The site is in a development high risk area and therefore the following coal mining risk assessment has been undertaken.

Coal Mining Issue	Yes	No	Discussion	Risk
Underground coal mining (recorded at shallow depths)		X	There is no evidence of shallow coal mining beneath the site.	Low
Underground coal mining (probable at shallow depths)	X		It is likely that coal seams are beneath the site at depths of less than 30m	High
Mine entries (shafts and adits)	X		There are no known mine entries or adits. However mine entries may exist that the coal authority have no record of.	Moderate
Coal mining geology (fissures)		X	There are coal seams outcropping in close proximity to the site. However the coal authority has no record of faults or other lines of weakness that have been affected by coal mining.	Low
Record of past mine gas emissions or potential		X	No record made by the Coal Authority	Low
Recorded coal mining surface hazard	X		1 claim for coal mining related subsidence within 50m of the site boundary.	High
Surface mining (opencast workings)		X	There are no known surface workings within close proximity to the site	Low

BGS maps (1:50,000 sheet 87 – Barnsley) identify the Meltonfield Coal outcropping 9m north east and the Two-foot Coal outcropping 7m south west of the site. These seams are recorded to be up to 1.4m thick and 2.1m thick respectively. The Adby Coal and Top Beamshaw Coal are also recorded 183m south west and 218m south west of the site respectively and are up to 1.9m thick and 2.9m thick. The deposits are older to the south of the site and geological maps indicate the bedrock dipping at approximately 5 degrees towards the north beneath the site. It is therefore considered highly likely that the Two-foot coal dips at shallow depths of less than 5m beneath the site. It is also likely that the Adby Coal and Top Beamshaw coal are present at depths of approximately 16m and 19m beneath the site.

From the above discussion it is likely that underground coal seams are present beneath the site at depths less than 30m. The Coal Authority believe that there is a risk that these have been worked at some time in the past by underground methods. Therefore the risk to the site from migration of crown holes towards the surface as a result of the collapse of unrecorded shallow coal workings is considered to be **HIGH** and further intrusive site investigation is recommended.

6. RECOMMENDATIONS

6.1. ENVIRONMENTAL

Potential risks from land gas exist on the site related to the various ground workings in the surrounding area and an intrusive site investigation is recommended to confirm this potential. Although the likelihood of soil based contaminants migrating to the site is considered relatively low, it is recommended that samples are taken within the proposed garden areas during the site investigation to confirm these assumptions.

The site investigation should target the area of the proposed buildings and boreholes should be installed to monitor land gas over a period of 3 months. In addition, a general range of contaminants including Heavy Metals, Poly-aromatic Hydrocarbons, Total Petroleum Hydrocarbons and Asbestos should be tested.

Following the site investigation, options for remediation, if required, can be evaluated. Any remedial measures undertaken will inevitably reduce the environmental risk to future ownership.

6.2. GEOTECHNICAL

It is considered unlikely that there will be significant amounts of Made Ground present at the surface of the site. Based on geological records there is expected to be topsoil on top of sandstone, siltstone or mudstone bedrock.

The intrusive investigation should confirm the immediate sub-surface soil conditions such that foundation recommendations can be made. A series of boreholes and/or trial pits should be undertaken to allow an assessment of the underlying strata. Suitable *in-situ* and laboratory geotechnical tests should be performed as part of the investigation.

The site is located within a development high risk area with regards to shallow depth coal mining, and as such a formal coal mining risk assessment has been carried out. Based on the information presented within this report, it is considered that the risk from shallow depth mining works is High and a shallow coal mining site investigation comprising rotary open hole boreholes to 30m is recommended.

Due to the potential for slope stability issue, soakaway drainage is not recommended. However, a watercourse does exist on site and therefore the hierarchy of surface water drainage will require that surface water from the site is taken to the watercourse.

APPENDIX I

Groundsure Report

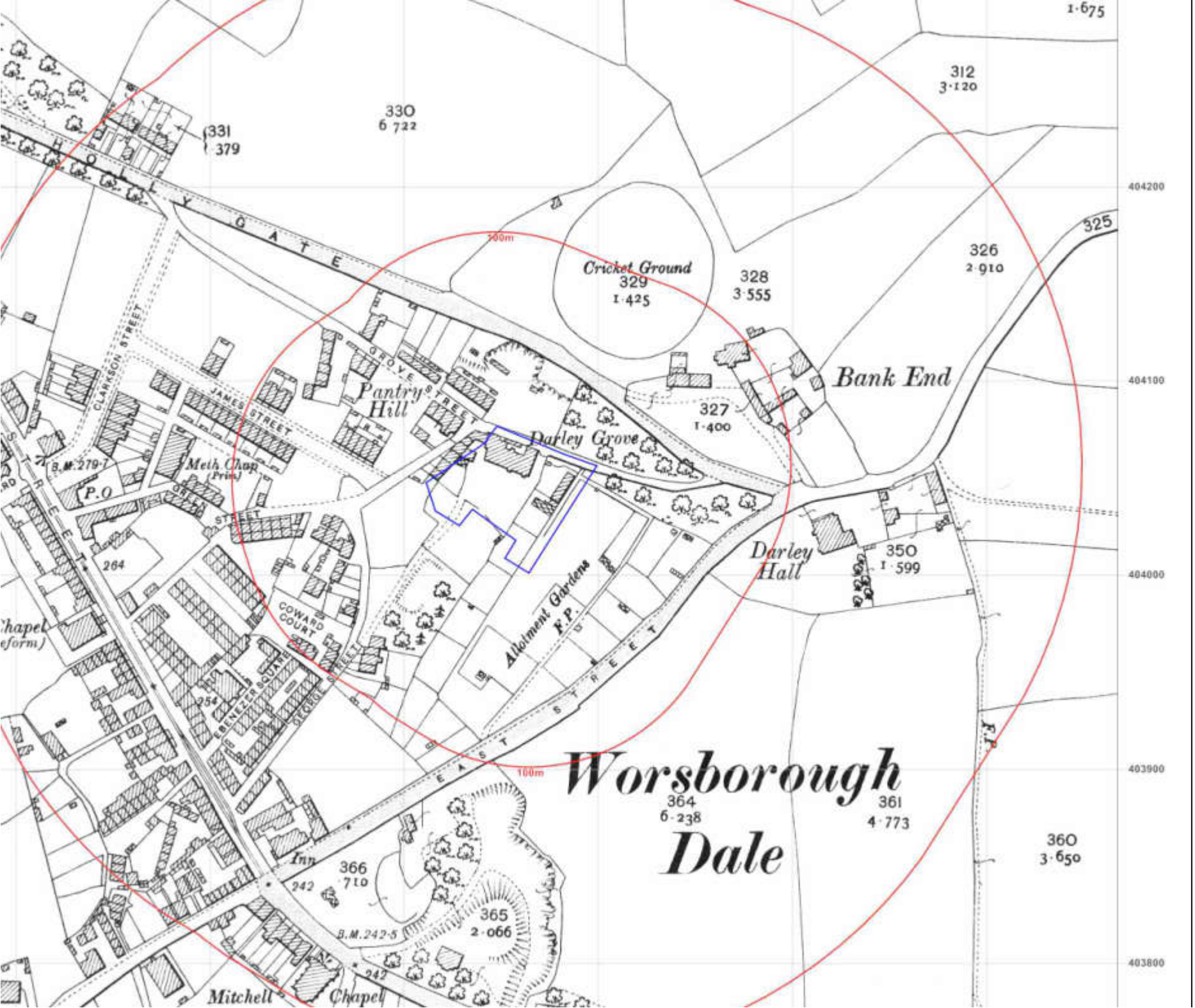
Site Details:

Client Ref:	EMS_43379
Report Ref:	EMS 43379
Grid Ref:	436255, 40
Map Name:	County Ser
Map date:	**1892**
Scale:	1:2,500
Printed at:	1:2,500

Surveyed 1
Revised N
Edition 18
Copyright
Levelled N

Groundsure INSIGHTS

Powered by



Site Details:

Client Ref:	EMS_43379
Report Ref:	EMS 43379
Grid Ref:	436255, 40
Map Name:	County Ser
Map date:	**1906**
Scale:	1:2,500
Printed at:	1:2,500

Surveyed 1
Revised 19
Edition N/
Copyright N
Levelled N

Groundsure INSIGHTS

Powered by

Site Details:

Client Ref:	EMS_43379
Report Ref:	EMS 43379
Grid Ref:	436255, 40

Map Name:	National Gr
Map date:	**1960**
Scale:	1:1,250
Printed at:	1:2,000

Groundsure INSIGHTS

Powered by

Site Details:

Client Ref: EMS_43379
Report Ref: EMS 43379
Grid Ref: 436255, 40

Map Name: National Gr
Map date: **1959-1961**
Scale: 1:2,500
Printed at: 1:2,500

Surveyed 1959
Revised 1959
Edition 1961
Copyright 1961
Levelled 1930

Surveyed 1959
Revised 1960
Edition N/A
Copyright 1961
Levelled 1959

Groundsure INSIGHTS

Powered by

Site Details:

Client Ref:	EMS_43379
Report Ref:	EMS 43379
Grid Ref:	436255, 40
Map Name:	National Gr
Map date:	1967
Scale:	1:1,250
Printed at:	1:2,000

Groundsure INSIGHTS

Powered by

Site Details:

Client Ref: EMS_43379
Report Ref: EMS 43379
Grid Ref: 436255, 40

Map Name: National Gr

Map date: 1967

Scale: 1:2,500

Printed at: 1:2,500

Groundsure INSIGHTS

Powered by

Site Details:

Client Ref:	EMS_43379
Report Ref:	EMS 43379
Grid Ref:	436255, 40

Map Name:	National Gr
Map date:	**1975**
Scale:	1:1,250
Printed at:	1:2,000

Groundsure INSIGHTS

Powered by

Site Details:

Client Ref:	EMS_43379
Report Ref:	EMS 43379
Grid Ref:	436255, 40

Map Name:	National Gr
Map date:	**1985**
Scale:	1:1,250
Printed at:	1:2,000

Groundsure INSIGHTS

Powered by

Site Details:

Client Ref:	EMS_43379
Report Ref:	EMS 43379
Grid Ref:	436255, 40
Map Name:	National Gr
Map date:	**1990**
Scale:	1:1,250
Printed at:	1:2,000

Groundsure INSIGHTS

Powered by

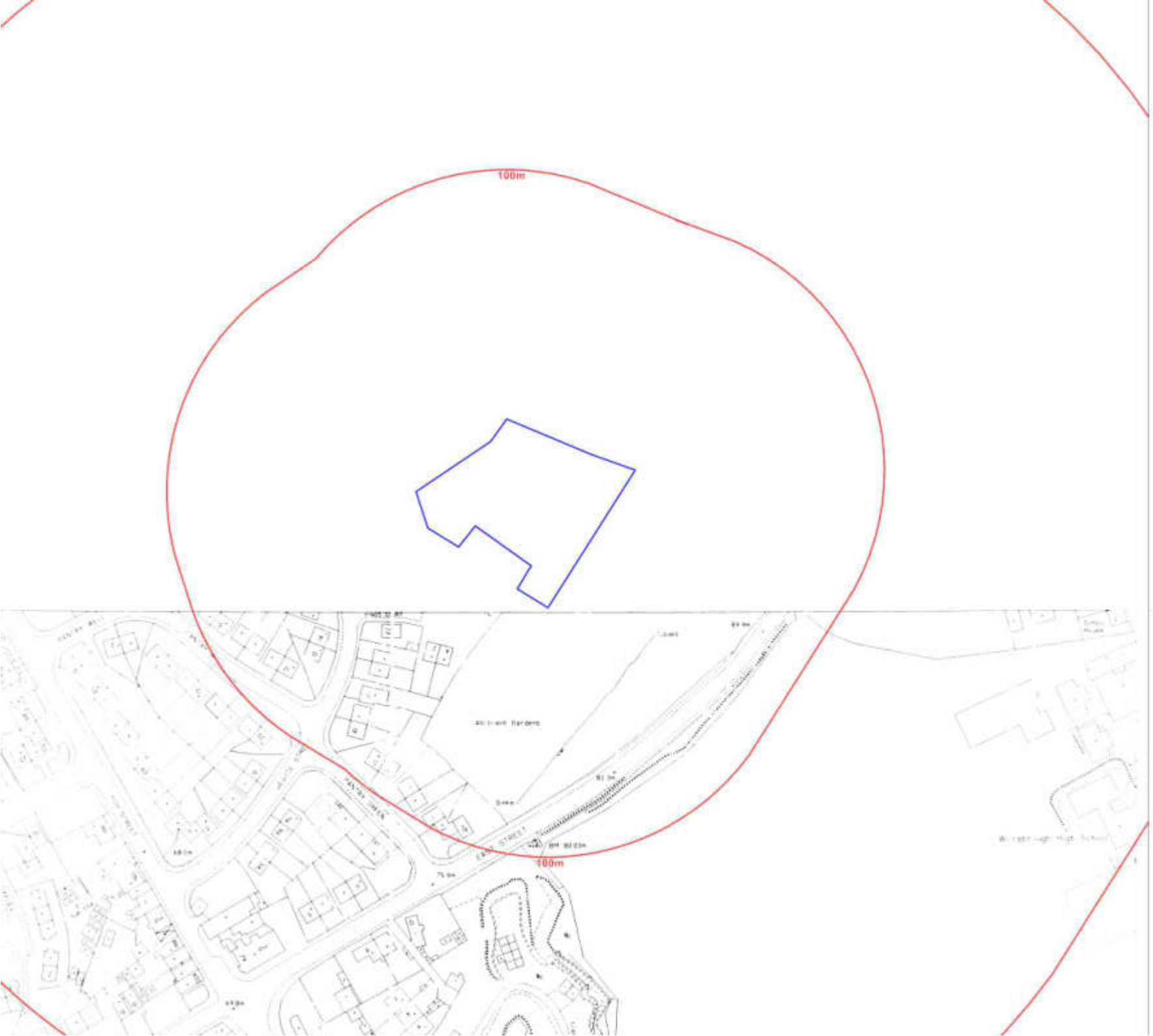
Site Details:

Client Ref: EMS_43379
Report Ref: EMS 43379
Grid Ref: 436255, 40

Map Name: National Gr
Map date: 1990-1993
Scale: 1:1,250
Printed at: 1:2,000

Groundsure INSIGHTS

Powered by



Site Details:

Client Ref:	EMS_43379
Report Ref:	EMS 43379
Grid Ref:	436255, 40

Map Name:	National Gr
Map date:	**1993**
Scale:	1:1,250
Printed at:	1:2,000

Groundsure INSIGHTS

Powered by

Site Details:

Client Ref:	EMS_43379
Report Ref:	EMS 43379
Grid Ref:	436255, 40
Map Name:	National Gr
Map date:	**1994**
Scale:	1:1,250
Printed at:	1:2,000

Groundsure INSIGHTS

Powered by

Site Details:

Client Ref:	EMS_43379
Report Ref:	EMS 43379
Grid Ref:	436255, 40

Map Name:	National Gr
Map date:	**1994**
Scale:	1:1,250
Printed at:	1:2,000

Groundsure INSIGHTS

Powered by

Site Details:

Client Ref:	EMS_43379
Report Ref:	EMS 43379
Grid Ref:	436255, 40

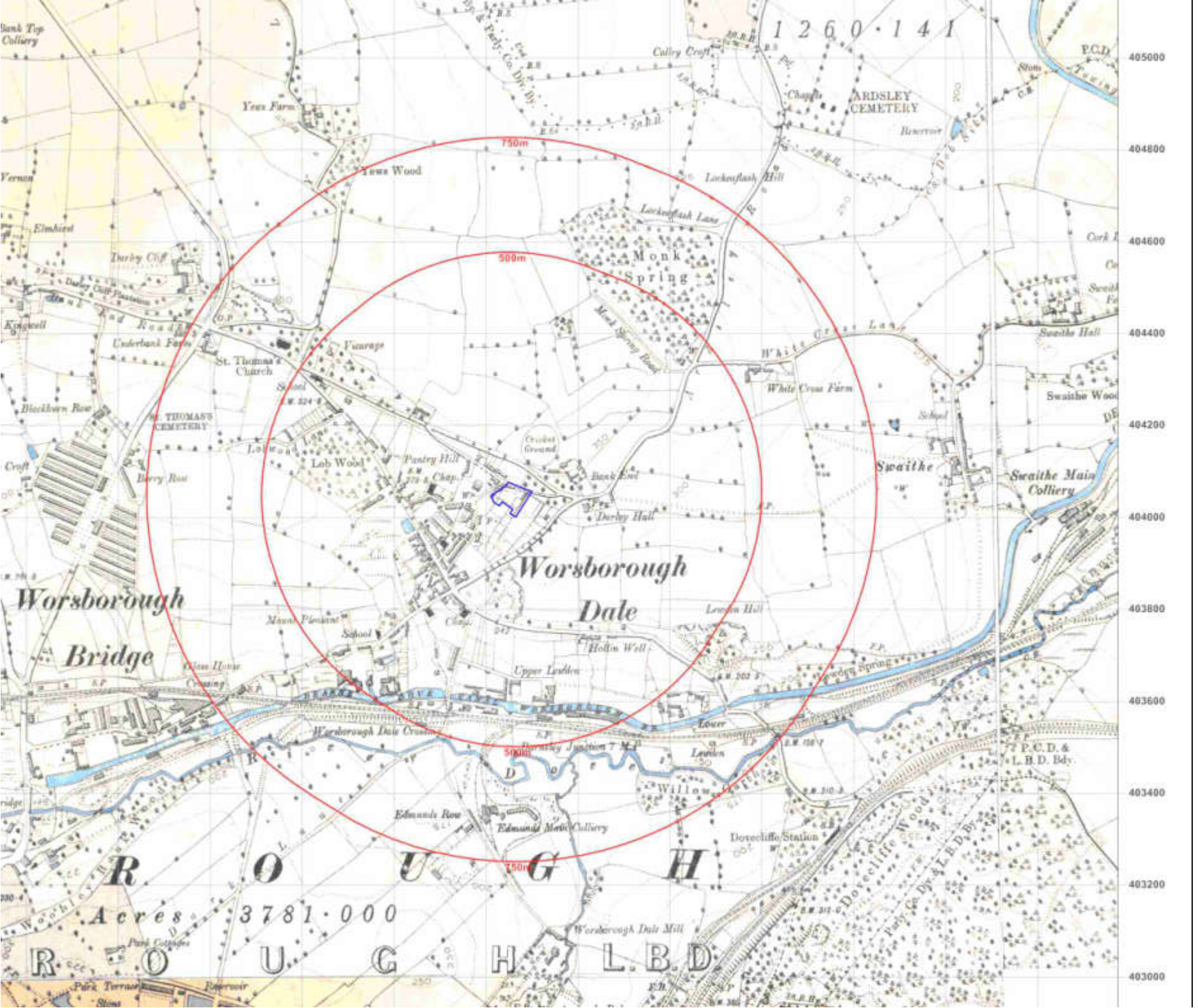
Map Name:	County Ser
Map date:	**1850-1855**
Scale:	1:10,560
Printed at:	1:10,560

Surveyed 1851
Revised N/A
Edition 1850
Copyright N/A
Levelled N/A

Surveyed 1851
Revised N/A
Edition 1855
Copyright N/A
Levelled N/A

Groundsure INSIGHTS

Powered by



Site Details:

Client Ref:	EMS_43379
Report Ref:	EMS 43379
Grid Ref:	436255, 40

Map Name:	County Ser
Map date:	**1890-1894**
Scale:	1:10,560
Printed at:	1:10,560

Surveyed 1890
Revised 1890
Edition 1890
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1891
Edition 1891
Copyright N/A
Levelled N/A

Groundsure INSIGHTS

Powered by

Site Details:

Client Ref:	EMS_43379
Report Ref:	EMS 43379
Grid Ref:	436255, 40

Map Name:	County Ser
Map date:	**1901-1904**
Scale:	1:10,560
Printed at:	1:10,560

Surveyed 1890
Revised 1904
Edition 1904
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1903
Edition 1903
Copyright N/A
Levelled N/A

Groundsure INSIGHTS

Powered by

Site Details:

Client Ref: EMS_43379
Report Ref: EMS 43379
Grid Ref: 436255, 40

Map Name: County Ser

Map date: **1929-1931**

Scale: 1:10,560

Printed at: 1:10,560

Surveyed 1851
Revised 1929
Edition 1929
Copyright N/A
Levelled 1915

Surveyed 1851
Revised 1929
Edition 1929
Copyright N/A
Levelled 1915

Groundsure INSIGHTS

Powered by

Site Details:

Client Ref: EMS_43379
Report Ref: EMS 43379
Grid Ref: 436255, 40

Map Name: County Ser
Map date: 1938
Scale: 1:10,560
Printed at: 1:10,560

Surveyed 1851
Revised 1938
Edition 1938
Copyright N/A
Levelled 1929

Surveyed 1851
Revised 1938
Edition 1938
Copyright N/A
Levelled 1929

Groundsure INSIGHTS

Powered by

Site Details:

Client Ref:	EMS_43379
Report Ref:	EMS 43379
Grid Ref:	436255, 40

Map Name:	County Ser
Map date:	**1948**
Scale:	1:10,560
Printed at:	1:10,560

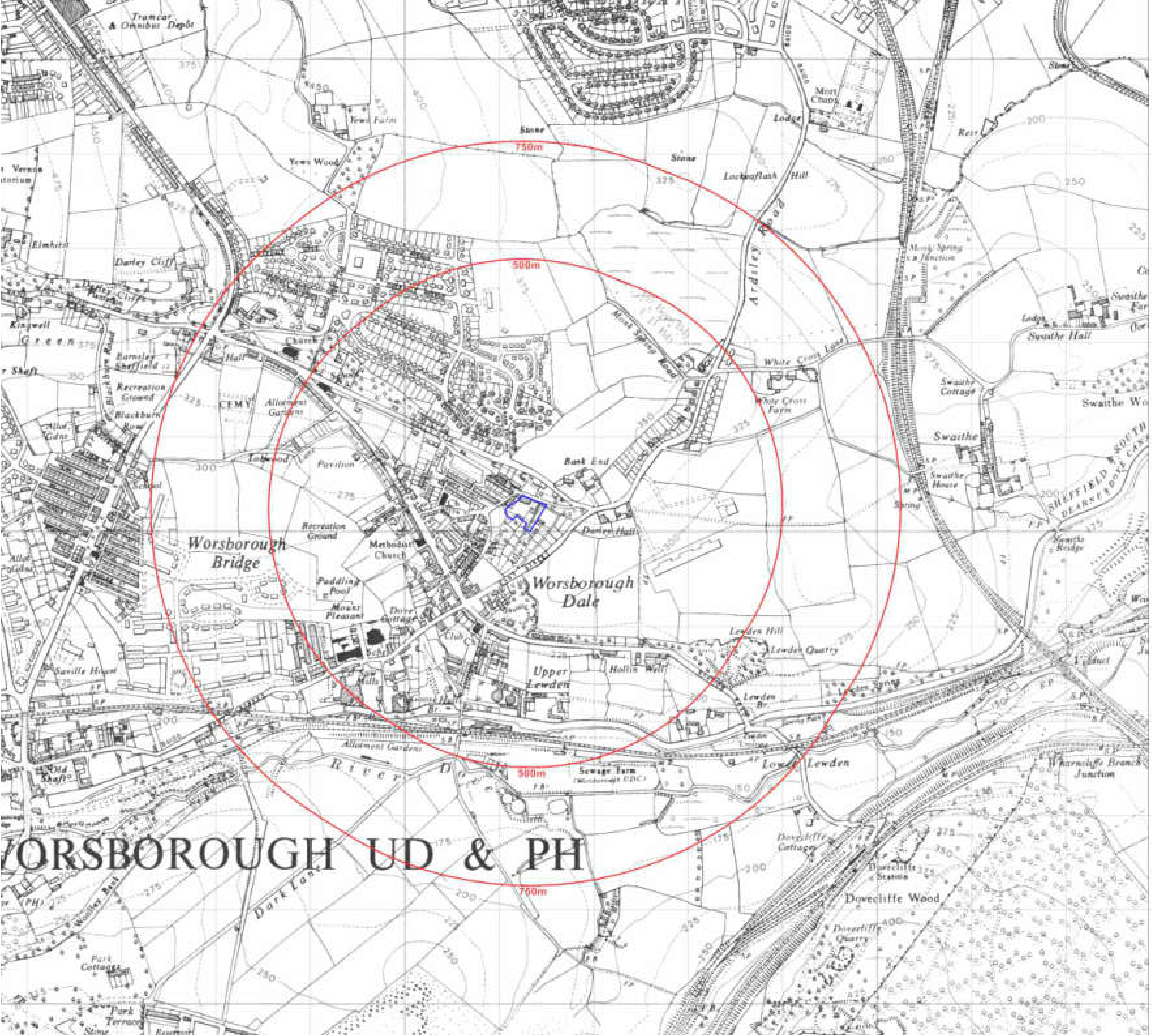
Surveyed 1851
Revised 1948
Edition 1948
Copyright N/A
Levelled 1929

Surveyed 1851
Revised 1948
Edition 1948
Copyright N/A
Levelled 1929

Groundsure INSIGHTS

Powered by

Site Details:



Client Ref: EMS_43379
Report Ref: EMS 43379
Grid Ref: 436255, 40

Map Name: Provisional

Map date: 1951-1956

Scale: 1:10,560

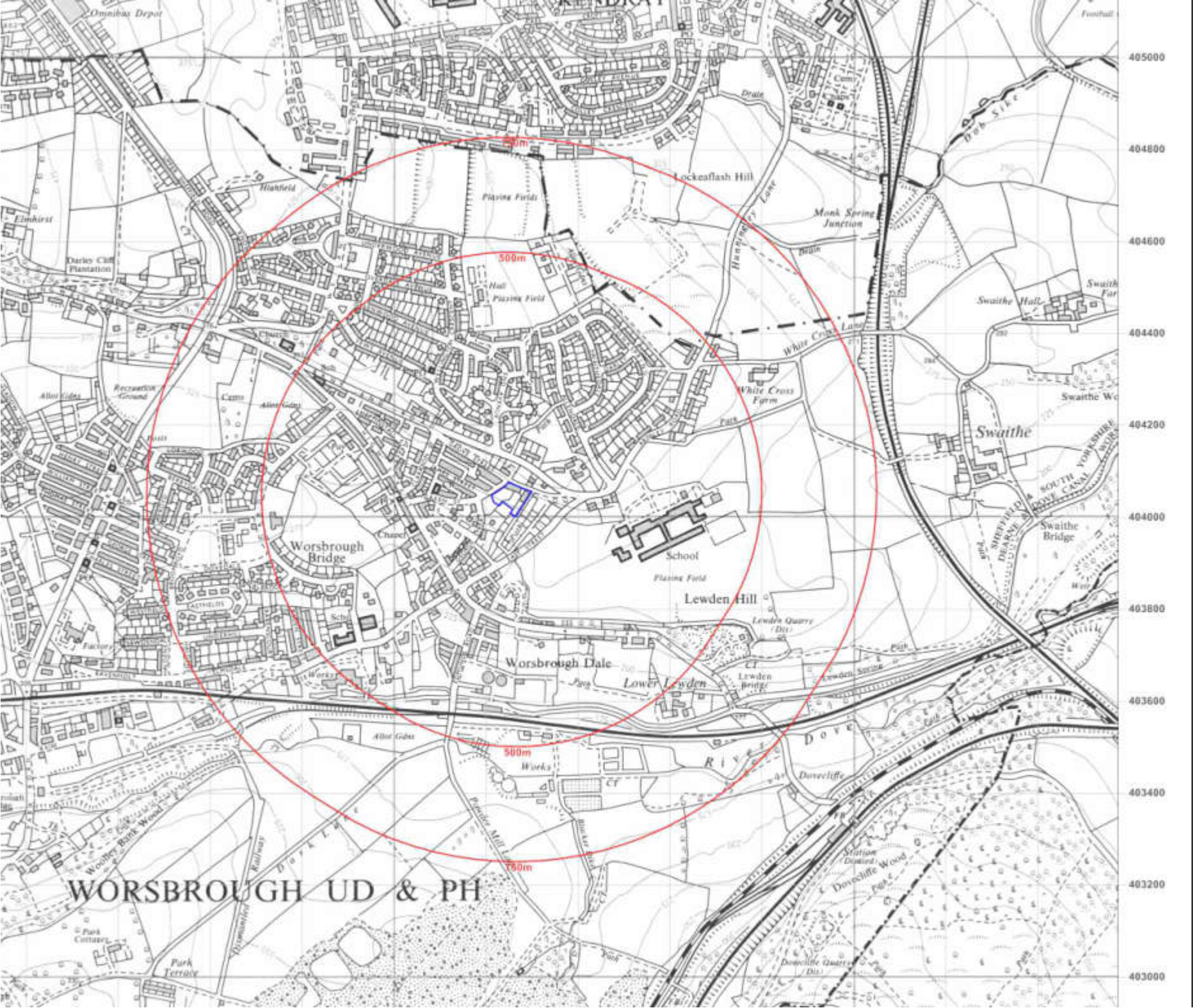
Printed at: 1:10,560

Surveyed N/A
Revised 1955
Edition N/A
Copyright 1956
Levelled N/A

Surveyed N/A
Revised 1955
Edition N/A
Copyright 1956
Levelled N/A

Groundsure INSIGHTS

Powered by



Site Details:

Client Ref: EMS_43379
Report Ref: EMS 43379
Grid Ref: 436255, 40

Map Name: Provisional

Map date: 1965-1966

Scale: 1:10,560

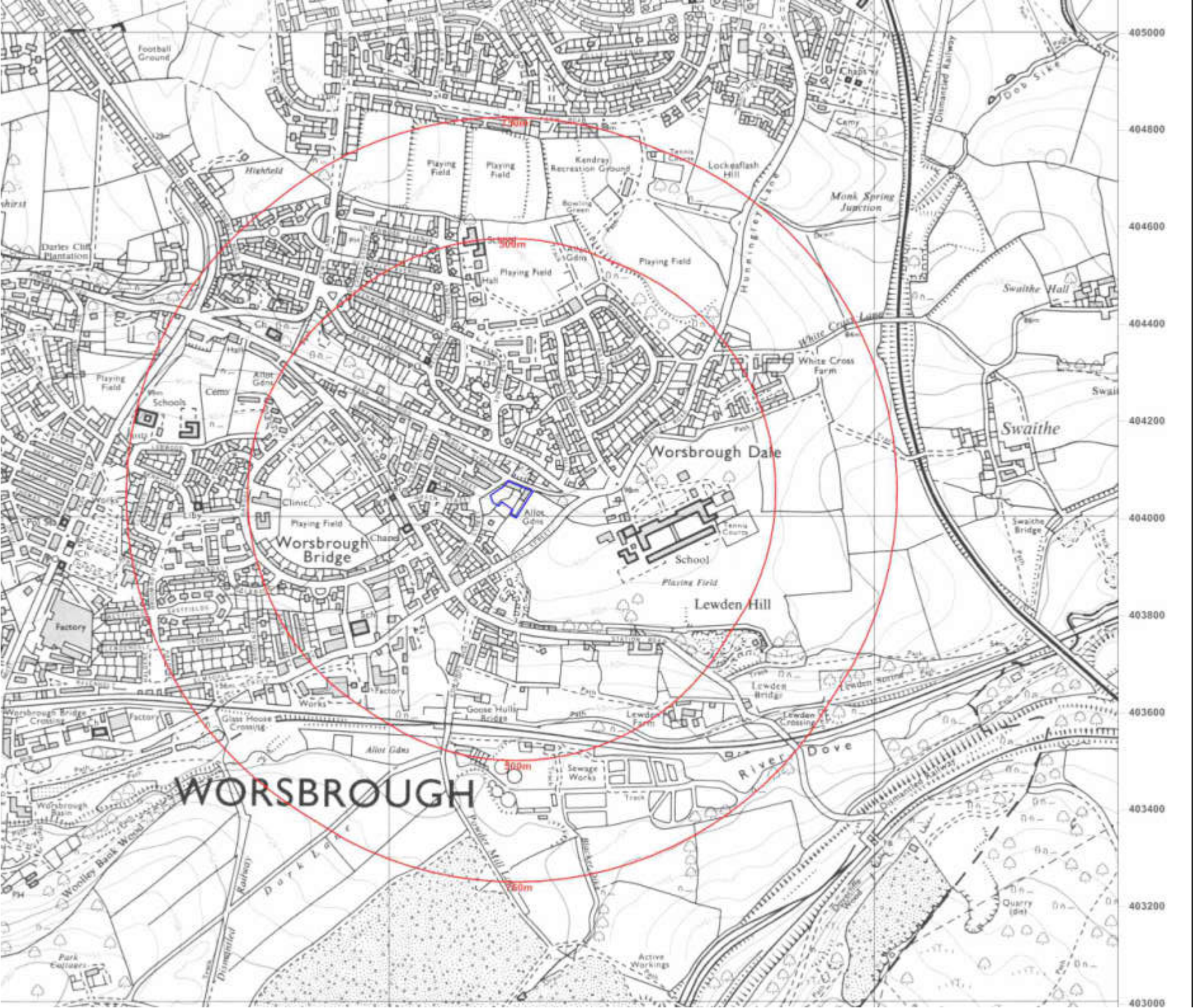
Printed at: 1:10,560

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

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

Groundsure INSIGHTS

Powered by



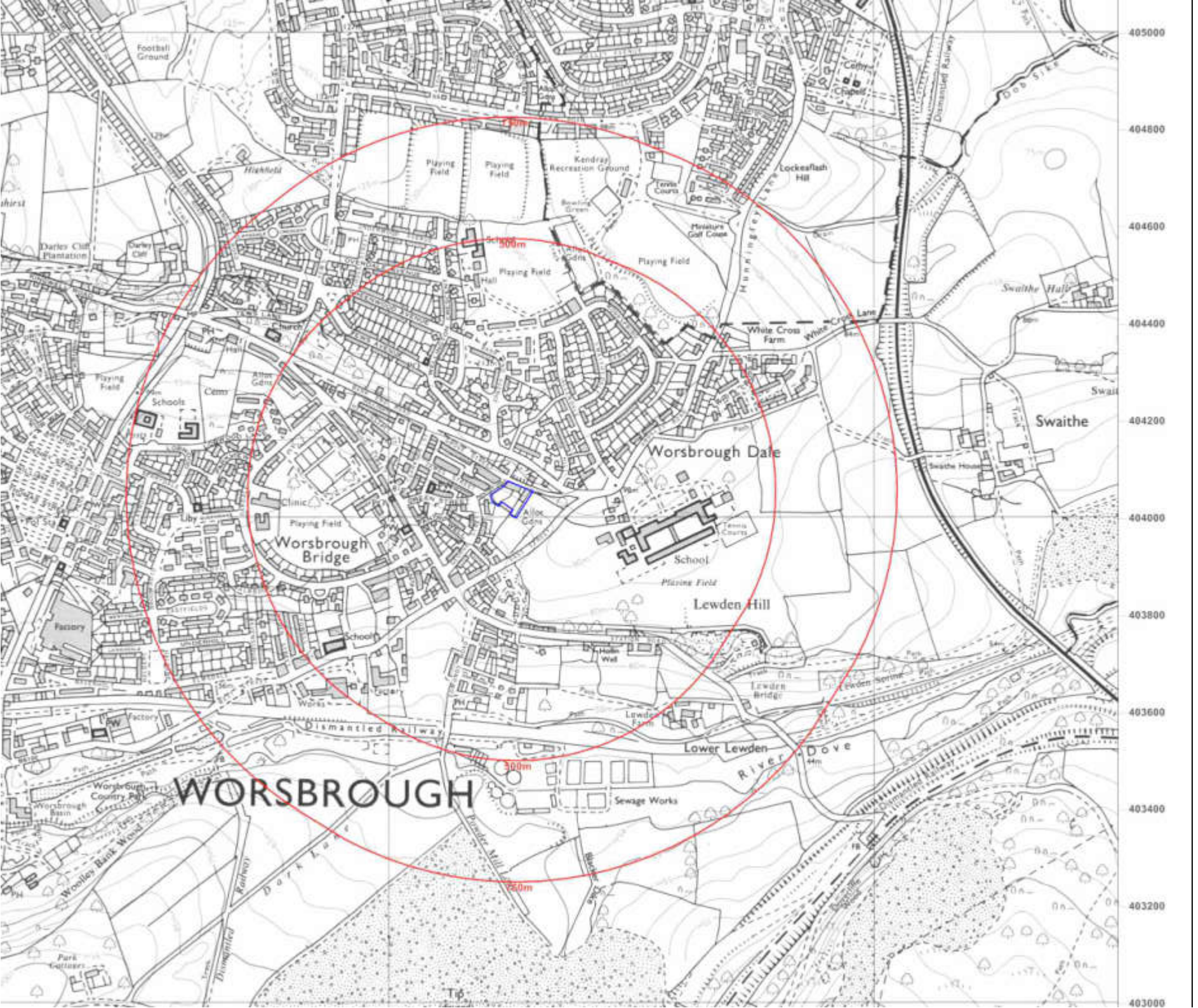
Site Details:

Client Ref: EMS_43379
Report Ref: EMS 43379
Grid Ref: 436255, 40

Map Name: National Gr
Map date: **1974-1977**
Scale: 1:10,000
Printed at: 1:10,000

Groundsure INSIGHTS

Powered by



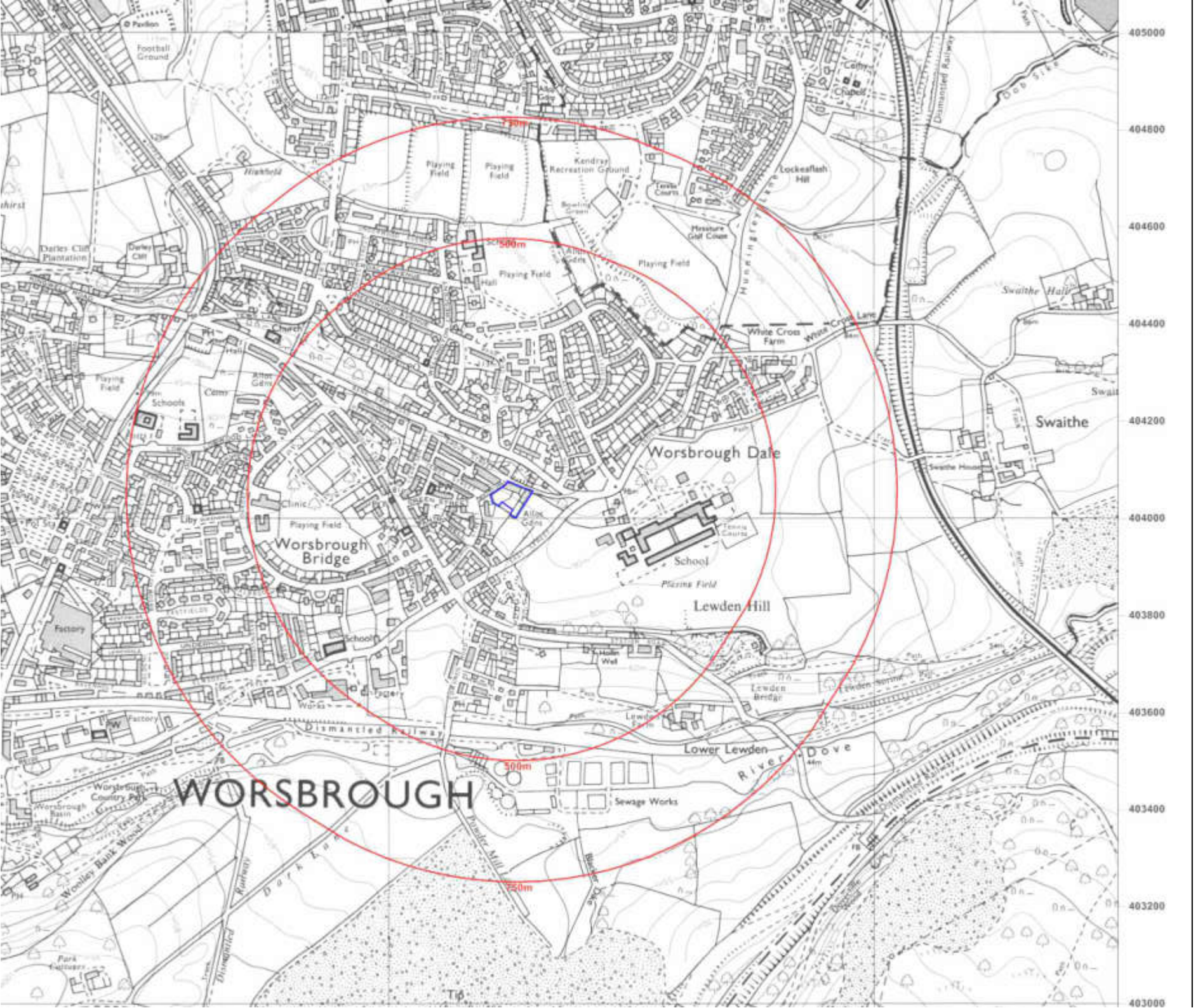
Site Details:

Client Ref: EMS_43379
Report Ref: EMS 43379
Grid Ref: 436255, 40

Map Name: National Gr
Map date: 1982-1987
Scale: 1:10,000
Printed at: 1:10,000

Groundsure INSIGHTS

Powered by



Site Details:

Client Ref: EMS_43379
Report Ref: EMS 43379
Grid Ref: 436255, 40

Map Name: National Gr
Map date: 1987-1992
Scale: 1:10,000
Printed at: 1:10,000

Groundsure INSIGHTS

Powered by

Client Ref: EMS_43379
Report Ref: EMS 43379
Grid Ref: 436255, 40

Map Name: 1:10,000 Ra
Map date: 2002
Scale: 1:10,000
Printed at: 1:10,000

Groundsure INSIGHTS

Powered by

Client Ref: EMS_43379
Report Ref: EMS 43379
Grid Ref: 436255, 40

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

Groundsure INSIGHTS

Powered by

Site Details:

Client Ref:	EMS_43379
Report Ref:	EMS 43379
Grid Ref:	436255, 40
Map Name:	National Gr
Map date:	2014
Scale:	1:10,000
Printed at:	1:10,000

Groundsure INSIGHTS

Powered by

Mixed Wood

Brushwood

Orchard

Reeds

Rough Pasture

Furze

Marsh

Osiers

Railway over Road

Road over Railway

Road over River or Canal

Level Crossing

Railway over River

Road over Stream

Road over Stream

Sunken Road

Raised Road

Double Lines of Railway

Single Lines of Railway and Tramway

FEATURES

Gravel Pit

Sand Pit

Quarry

Shingle

Other Pits

Antiquities, Site of

Arrow, showing direction of flow of water

Trigonometrical Station

County Boundary

Parliamentary Division Boundary

Bench marks and their values are shown on large scale maps, and bench mark lists containing fuller and possibly later levelling information are obtainable from the Director General, Ordnance Survey.

Contours are at 5 metres vertical interval.

Boulders

Outcrop

Scree

Vertical face

Feet

6000

5000

1500

4000

ABBREVIATIONS

BP,BS	Boundary Post or Stone	PO	Post Office
Ch	Church	PC	Public Convenience
CH	Club House	PH	Public House
F Sta	Fire Station	S	Stone
FB	Foot Bridge	Spr	Spring
Fn	Fountain	TCB	Telephone Call Box
GP	Guide Post	TCP	Telephone Call Post
MP,MS	Mile Post or Stone	TH	Town Hall
P	Pole or Post	W	Well
Pol Sta	Police Station	Y	Youth hostel

ROADS

Road

Track

Track

Where unfenced shown by pecked lines.

Path

Path

RAILWAYS

Cutting

Embankment

Multiple track

Road over

Single track

Road under

Level crossing

Foot Bridge

Siding, tramway or mineral line

Standard gauge

Narrow gauge

GENERAL FEATURES

Antiquity, (site of)

Boulders

Building

Pylon

Pole

Electricity transmission line

Glasshouse

Triangulation station

Lake, loch or pond

Sloping masonry

Chalk pit, clay pit or quarry

Gravel pit

Sand pit

Refuse or slag heap

Direction of flow of water

Shingle

Sand

Historica
Le

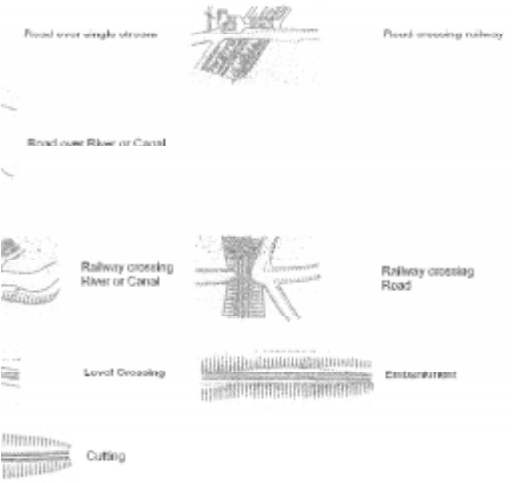
County
Nation

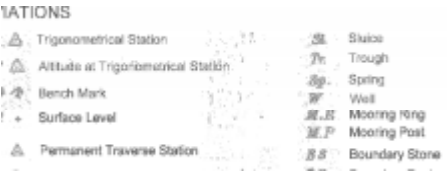
1:10,5

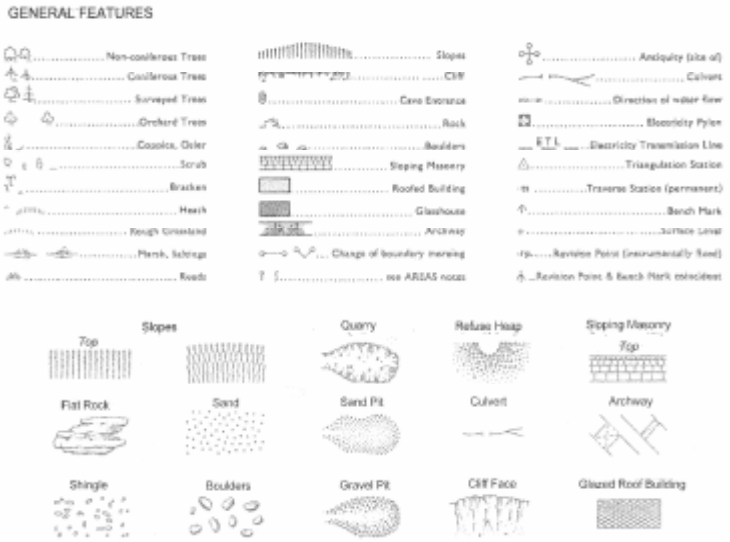
Information present on
from the same Ordnan
maps used

If you have a query rega
provided please contac
helpline. We will endea
queries you may have.

Technical Helpline







ABBREVIATIONS

B H	Beer House	F Sta	Fire Station	M P U	Mail Pick-up	S L	Signal Light
B M	Bench Mark	G P	Guide Post	M S	Mile Stone	Sl	Sluice
B P	Boundary Post	G V C	Gas Valve Compound	N T	National Trust	S P	Signal Post
B S	Boundary Stone	H	Hydrant or Hydraulic	N T L	Normal Tidal Limit	Spr	Spring
C	Crane	ha	Hectares	N T S	National Trust for Scotland	S Sta	Signal Station
C H	Club House	L B	Letter Box	P	Pillar, Pole or Post	T C B	Telephone Call Box
Chy	Chimney	L B Sta	Lifeboat Station	P C	Public Convenience	T C P	Telephone Call Post
Cn	Capstan	L C	Level Crossing	P C B	Police Call Box	Tk	Tank or Track
D Fn	Drinking Fountain	L G	Loading Gauge	P H	Public House	Tr	Trough
Dk	Dock	L Ho	Lighthouse	P O	Post Office	Ts	Transverse Station

Historica
Le

Coun

1:1,2

County
Natio

1:2,5

Information present on
from the same Ordnan
maps used

If you have a query rega
provided within this ma
GroundSure's technica
endeavour to answer a

Technical Helpline:

emapsite

Masdar House, 1 Reading Road,
Eversley, RG27 0RP

Report Reference: EMS-433797_580261

Your Reference: EMS_433797_580261

Report Date 3 Aug 2017

Report Delivery Method: Email - pdf

Geo Insight

Address: ,

Dear Sir/ Madam,

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

If you would like further assistance regarding this report then please contact the emapsite customer services team on 01 18 97 36883 quoting the above report reference number.

Yours faithfully,

emapsite customer services team

Enc.
Groundsure Geo Insight

Geo Insight

Address:	**,**
Date:	**3 Aug 2017**
Reference:	**EMS-433797_580261**
Client:	**emapsite**

NW N NE

W E

SW S SE

Aerial Photograph Capture date:	07-Jun-2013
Grid Reference:	436256,404044
Site Size:	0.33ha

Contents Page

Overview of Findings

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

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

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

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

Section 2: Geology 1:50,000 Scale		
2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	No
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	No
	2.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and Faults	2.3.1 For records of Bedrock and Solid Geology beneath the study site * see the detailed findings section.	
	2.3.2 Are there any records relating to permeability of bedrock ground within the study site boundary?	Yes
	2.3.3 Are there any records of faults within 500m of the study site boundary?	Yes

Section 3: Radon

3. Radon	3.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.
	3.2 Radon Protection	No radon protective measures are necessary.

Section 4: Ground Workings	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	2	10	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	7
4.3 Current Ground Workings	0	1	2	2	21

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	7
5.2 Coal Mining	1	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	1	1	1	0	5
5.5 Non–Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	0

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0

Section 6: Natural Ground Subsidence	On-site
6.1 Shrink-Swell Clay	Very Low
6.2 Landslides	Moderate
6.3 Ground Dissolution of Soluble Rocks	Negligible
6.4 Compressible Deposits	Negligible
6.5 Collapsible Deposits	Very Low
6.5 Running Sand	Negligible

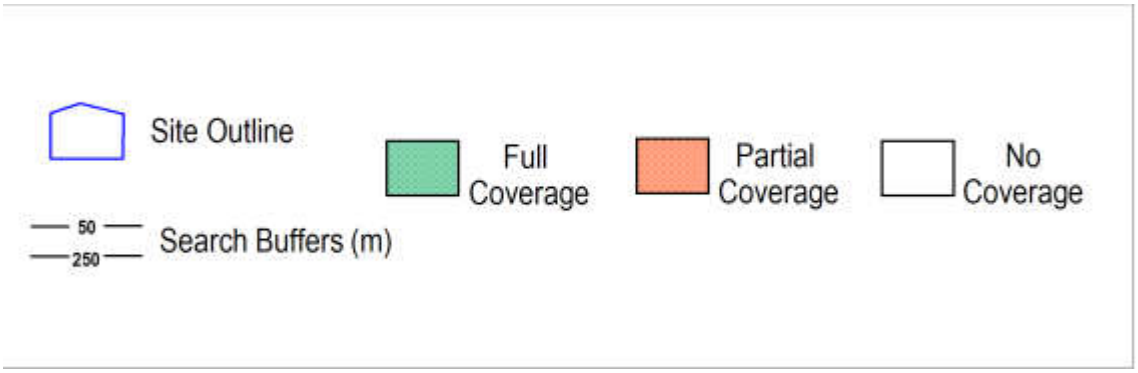
Section 7: Borehole Records	On-site	0-50m	51-250
7 BGS Recorded Boreholes	0	0	6

Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250
8 Records of Background Soil Chemistry	1	3	0

Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500
9.1 Tunnels	0	0	0	Not Searched
9.2 Historical Railway and Tunnel Features	0	0	0	Not Searched
9.3 Historical Railways	0	0	0	Not Searched
9.4 Active Railways	0	0	0	Not Searched
9.5 Railway Projects	0	0	0	0

1:10,000 Scale Availability

1_10,000 Availability Legend



Availability of 1:10,000 Scale Geology Mapping

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

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	Some deposits are mapped	Full	Full	Some deposits are mapped
2	923.0	Some deposits are mapped	Full	Full	No coverage
3	1211.0	Some deposits are mapped	Full	Full	Some deposits are mapped
4	1541.0	Some deposits are mapped	Full	Full	Some deposits are mapped

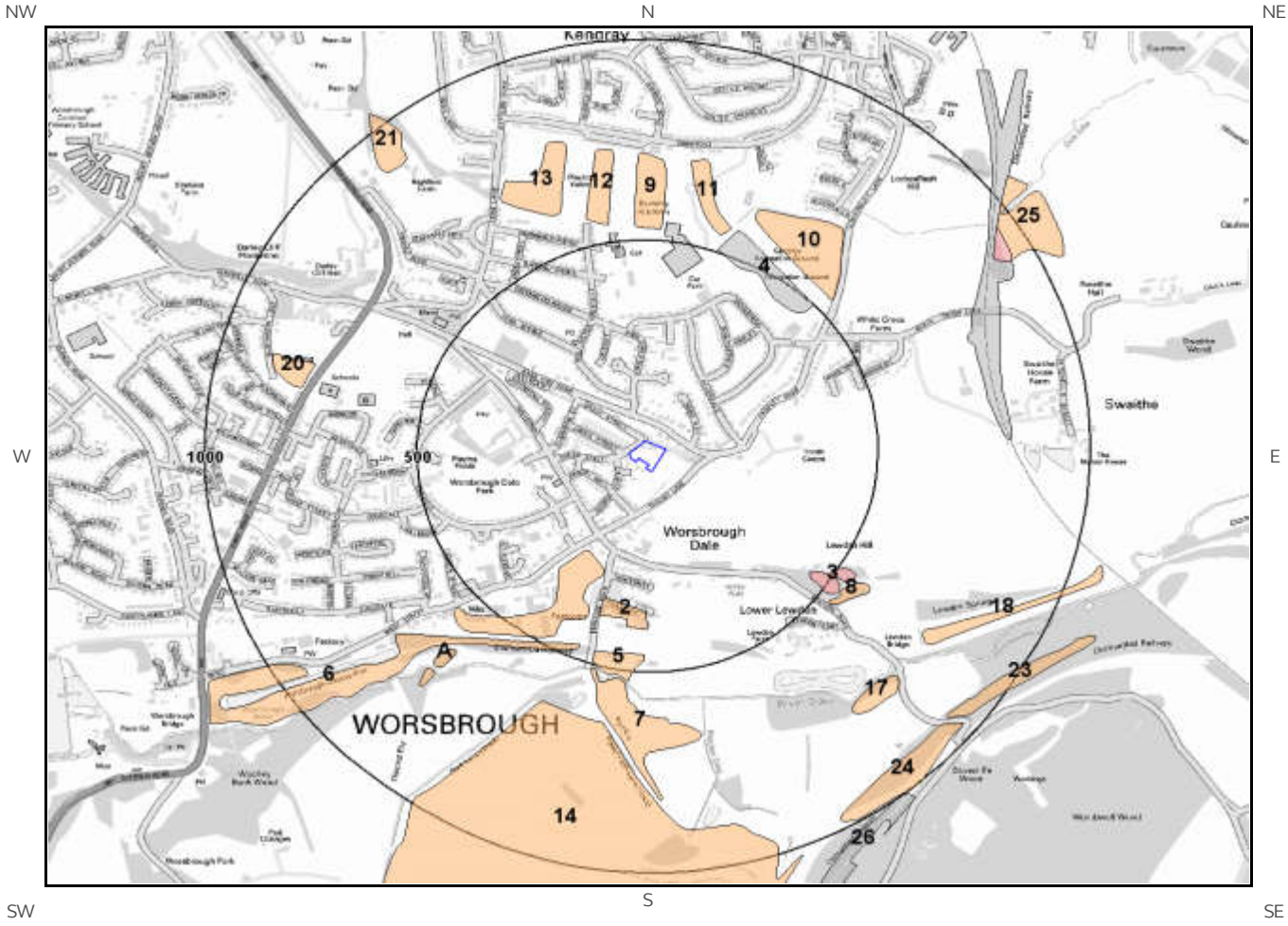
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not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

The definitions of coverage are as follows:

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

1 Geology (1:10,000 scale).

1.1 Artificial Ground Map (1:10,000 scale)



Artificial Ground Legend

Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Disturbed Ground (undivided)

Worked Ground (undivided)

Landscaped Ground (undivided)

Infilled Ground

Reclaimed Ground

1. Geology 1:10,000 scale

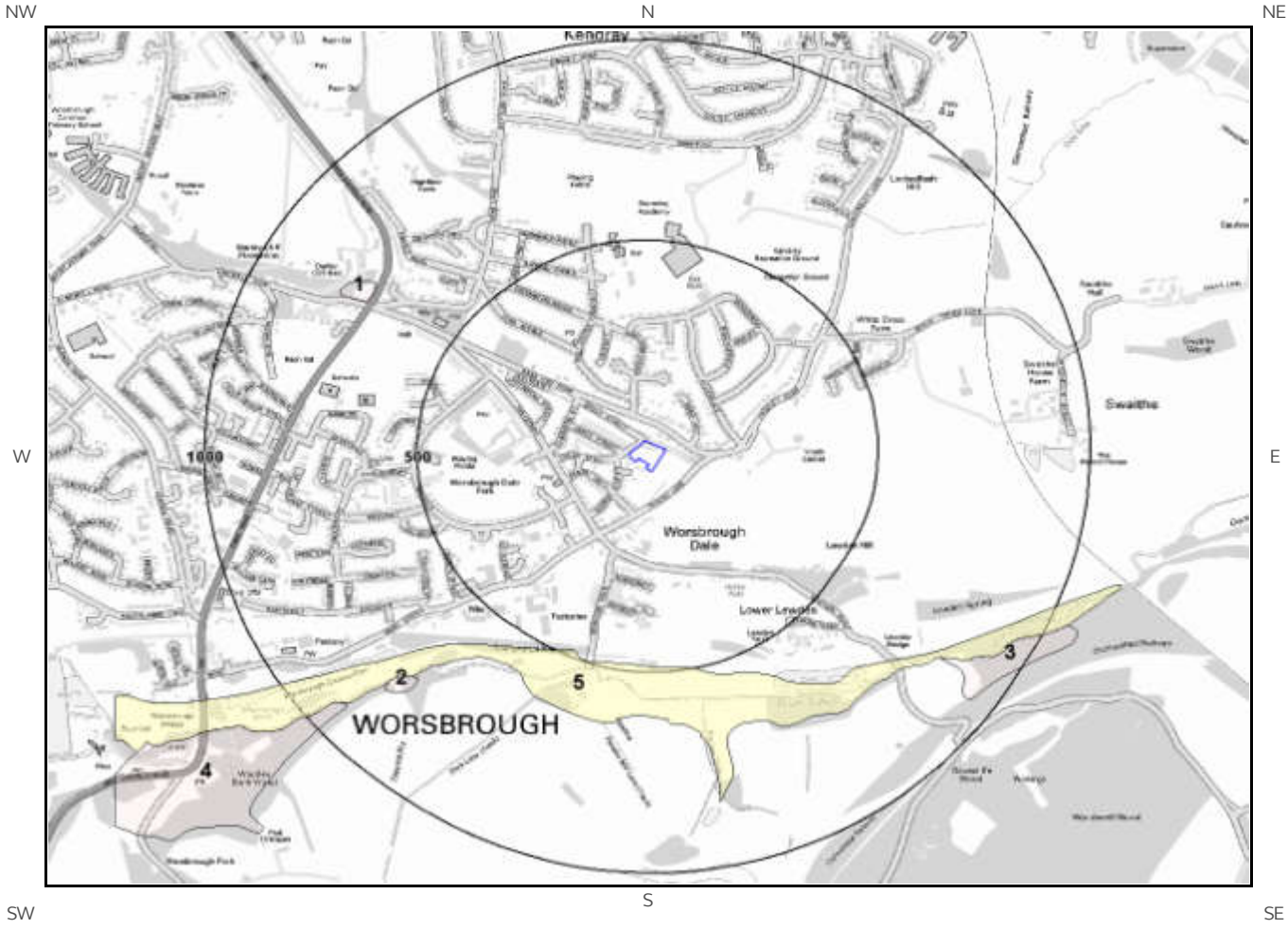
1.1 Artificial Ground

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

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

ID	Distance	Direction	LEX Code	Description	Rock Description
1	245.0	SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	333.0	S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	450.0	SE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
4	452.0	NE	WGR-VOID	Worked Ground (Undivided)	Void
5	456.0	S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
6	463.0	S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

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



Artificial Ground Legend

Site Outline

500
1000
Search Buffers (m)

1.2 Superficial Deposits and Landslips

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

1.2.1 Superficial Deposits/ Drift Geology

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

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
5	480.0	SW	ALV-XCZ	Alluvium - Clay And Silt	Clay And Silt

1.2.2 Landslip

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

No

Database searched and no data found.

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

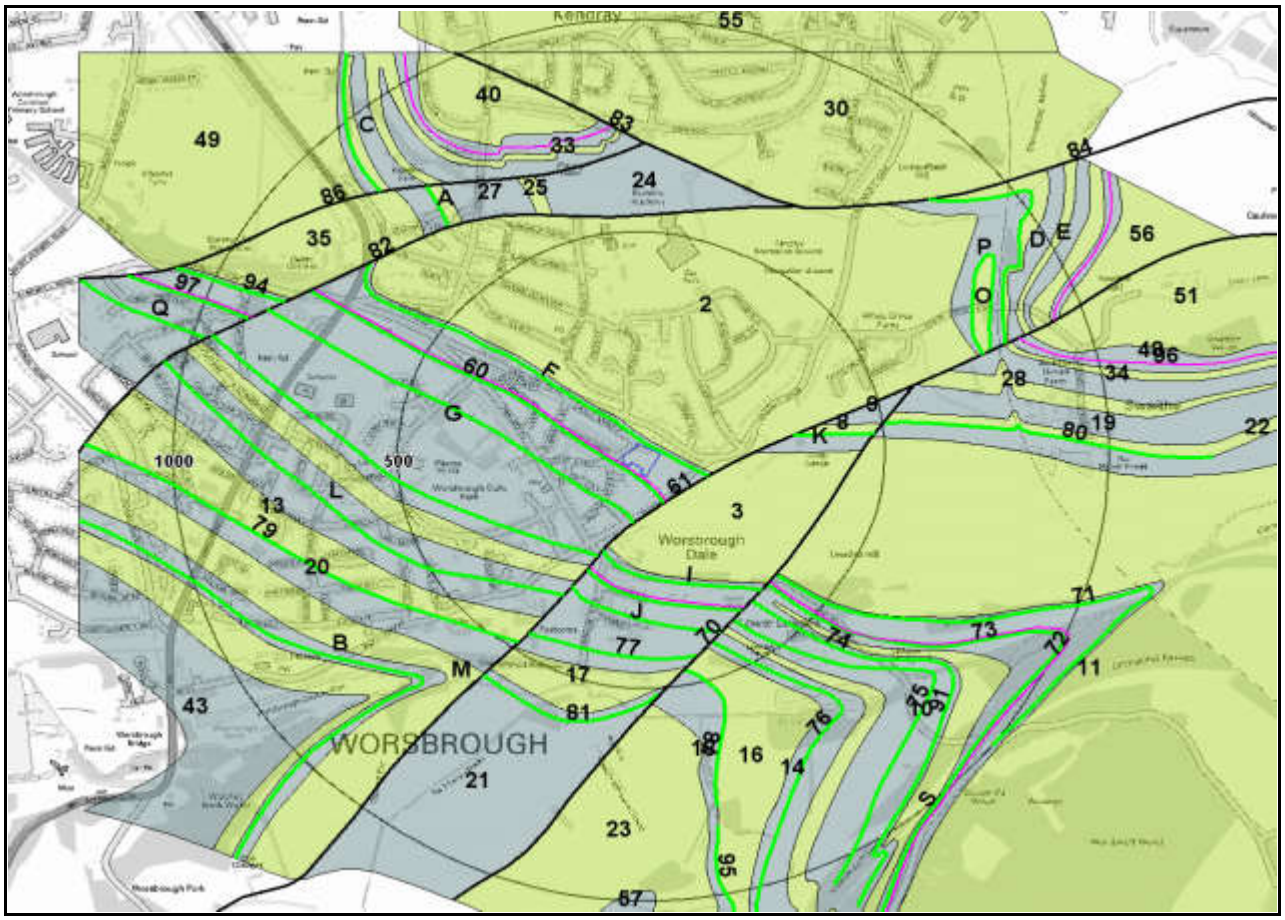
This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3 Bedrock and Faults Map (1:10,000 scale)

NW N NE

W E

SW S SE



Bedrock and Faults Legend

Site Outline

500
1000
Search Buffers (m)

1.3 Bedrock and Faults

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

1.3.1 Bedrock/ Solid Geology

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

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1G	0.0	On Site	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
2	14.0	NE	WE-SDST	Woolley Edge Rock - Sandstone	Duckmantian Sub-age
3	75.0	SE	WE-SDST	Woolley Edge Rock - Sandstone	Duckmantian Sub-age
4J	183.0	SW	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
5K	209.0	E	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
6H	241.0	SW	PMCM-SDST	Pennine Middle Coal Measures Formation - Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
7L	289.0	SW	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
8	300.0	E	PMCM-SDST	Pennine Middle Coal Measures Formation - Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
9	360.0	E	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
10	372.0	SE	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
11	372.0	SE	WE-SDST	Woolley Edge Rock - Sandstone	Duckmantian Sub-age
12	397.0	SE	PMCM-SDST	Pennine Middle Coal Measures Formation - Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
13	402.0	SW	KNR-SDST	Kent's Rock - Sandstone	Duckmantian Sub-age
14	404.0	SE	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
15R	411.0	SE	ABR-SDST	Abdy Rock - Sandstone	Duckmantian Sub-age
16	424.0	S	KNR-SDST	Kent's Rock - Sandstone	Duckmantian Sub-age
17	457.0	S	PMCM-SDST	Pennine Middle Coal Measures Formation - Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
18	463.0	S	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
19	472.0	E	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
20	482.0	SW	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
21	491.0	S	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age

1.3.2 Faults

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

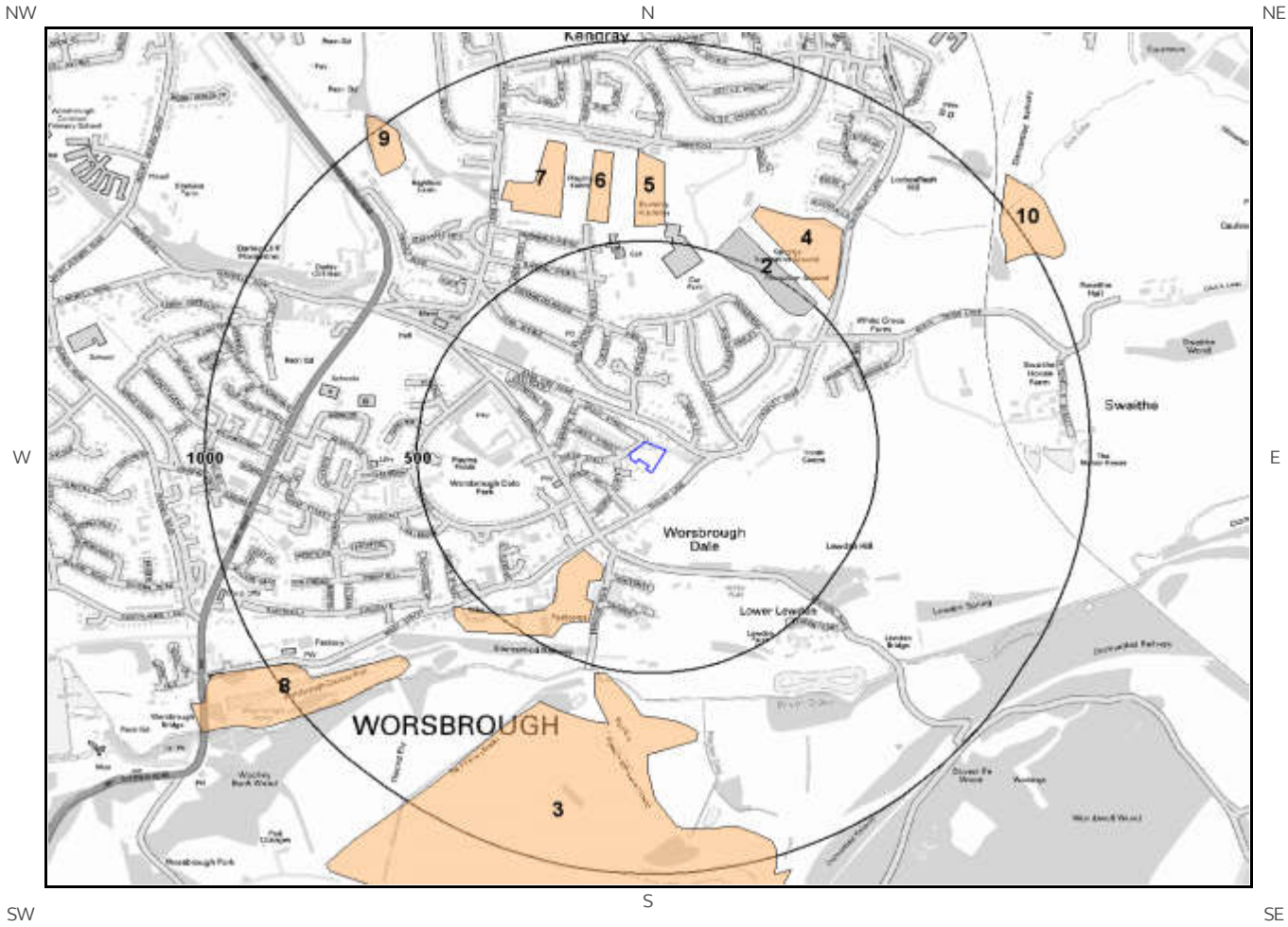
ID	Distance (m)	Direction	Category Description	Feature Description
58F	3.0	NE	ROCK	Coal seam, inferred
59F	4.0	SW	FOSSIL_HORIZON	Fossil horizon, marine band
60	12.0	SW	ROCK	Coal seam, inferred
61	75.0	SE	FAULT	Normal fault, inferred
62G	94.0	SW	ROCK	Coal seam, inferred
63I	199.0	SW	ROCK	Coal seam, inferred
64H	215.0	SW	ROCK	Coal seam, inferred
65I	245.0	SW	FOSSIL_HORIZON	Fossil horizon, marine band
66J	253.0	SW	ROCK	Coal seam, inferred
67K	300.0	E	ROCK	Coal seam, inferred coincident with bedrock geology boundary
68J	305.0	SW	ROCK	Coal seam, inferred
69L	333.0	SW	ROCK	Coal seam, inferred
70	372.0	SE	FAULT	Normal fault, inferred
71	372.0	SE	ROCK	Coal seam, inferred
72	372.0	SE	FOSSIL_HORIZON	Fossil horizon, marine band
73	373.0	SE	ROCK	Coal seam, inferred
74	377.0	SE	ROCK	Coal seam, inferred
75	391.0	SE	ROCK	Coal seam, inferred
76	417.0	S	ROCK	Coal seam, inferred
77	425.0	S	ROCK	Coal seam, inferred
78	463.0	S	ROCK	Coal seam, inferred coincident with bedrock geology boundary
79	482.0	SW	ROCK	Coal seam, inferred coincident with bedrock geology boundary

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

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

2 Geology 1:50,000 Scale

2.1 Artificial Ground Map



Ground Workings Legend

Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Worked Ground (undivided)

Infilled Ground

Disturbed Ground (undivided)

Landscaped Ground (undivided)

Reclaimed Ground

2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 087

2.1.1 Artificial/ Made Ground

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

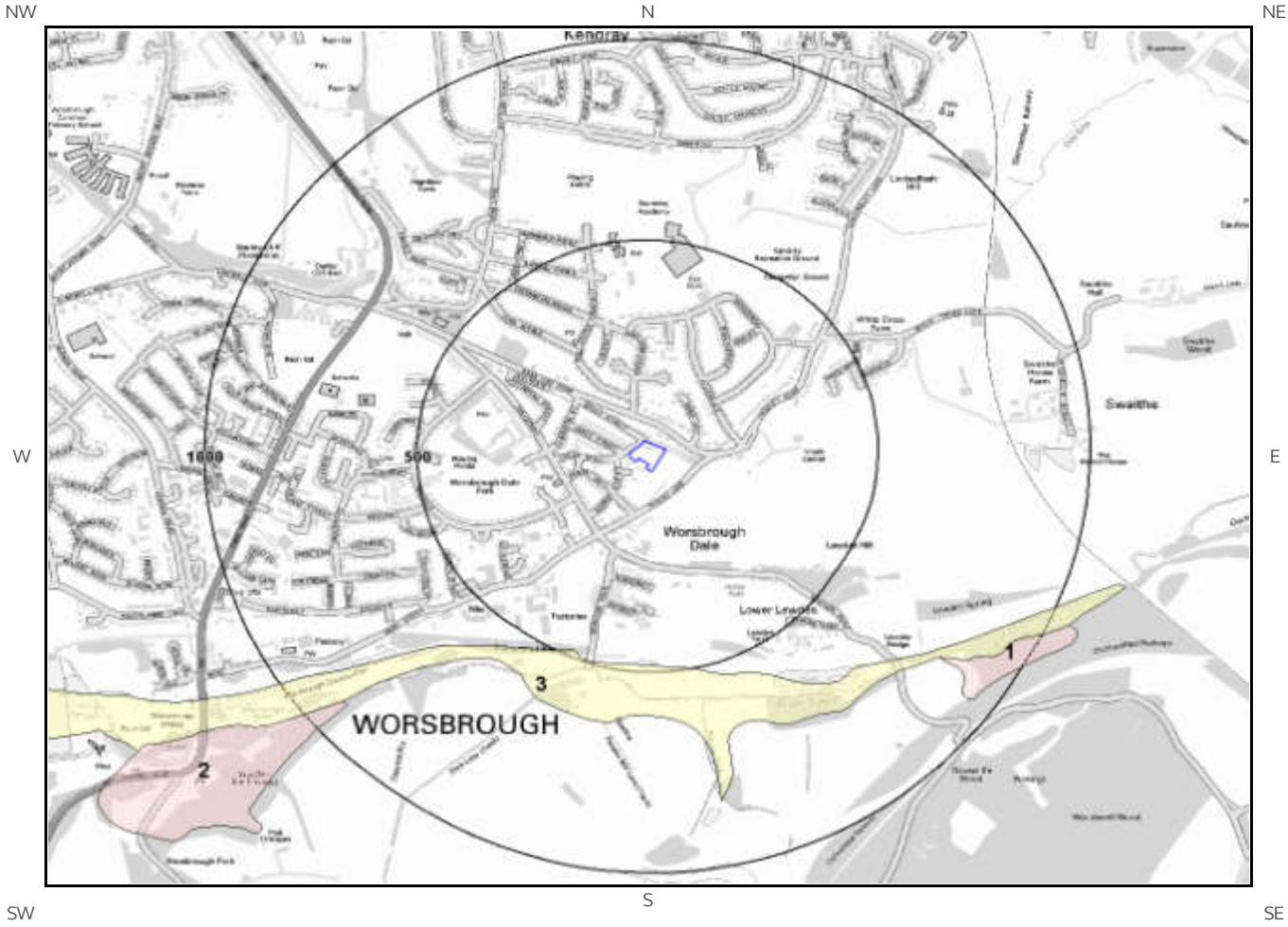
ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	248.0	SW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	446.0	NE	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID

2.1.2 Permeability of Artificial Ground

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

Database searched and no data found.

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



Ground Workings Legend

Site Outline

500
1000
Search Buffers (m)

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

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

ID	Distance	Direction	LEX Code	Description	Rock Description
3	480.0	S	ALV-XCZ	ALLUVIUM	CLAY AND SILT

2.2.2 Permeability of Superficial Ground

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

Database searched and no data found.

2.2.3 Landslip

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

Database searched and no data found.

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

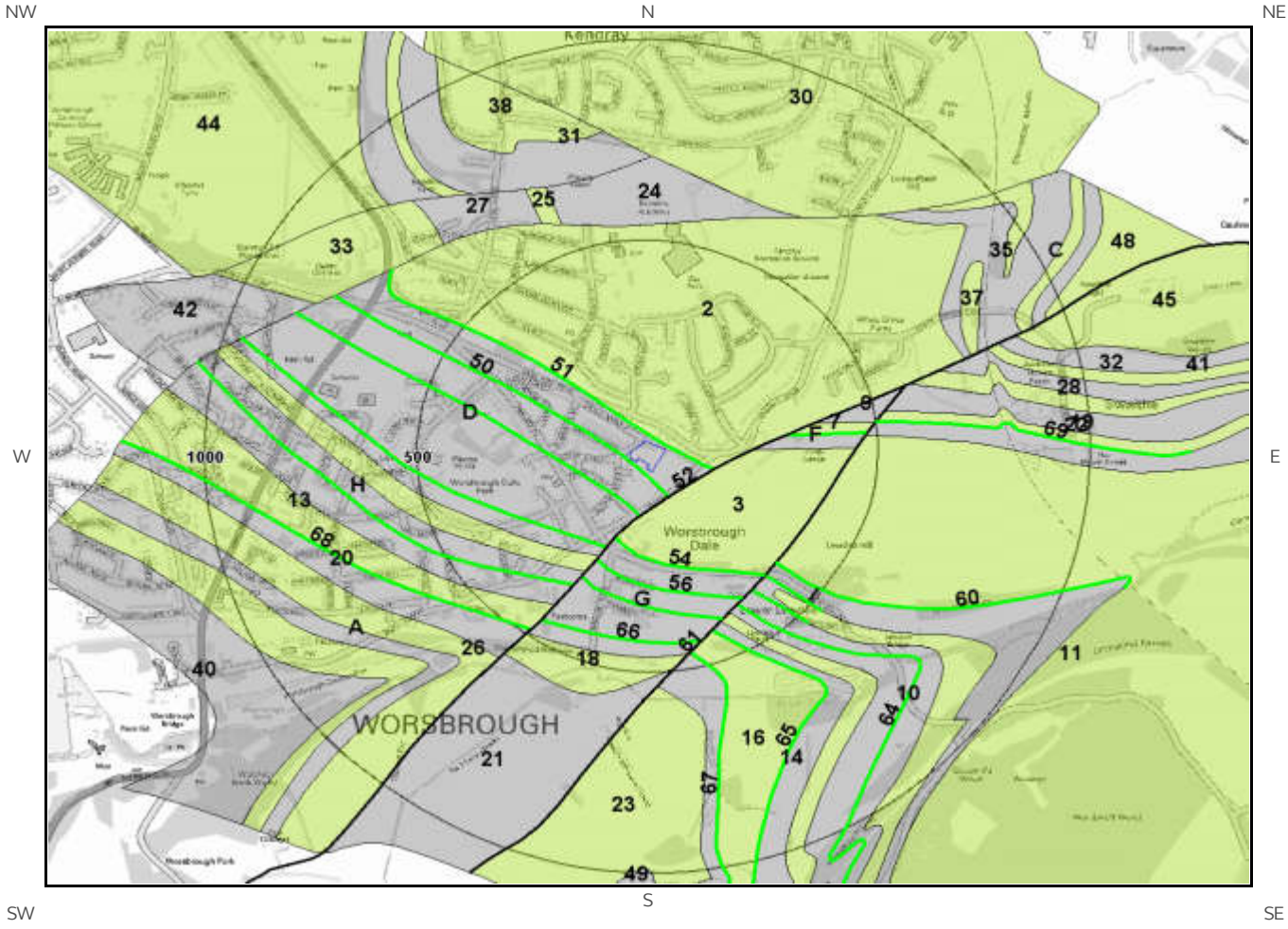
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

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

Database searched and no data found.

2.3 Bedrock and Faults Map (1:50,000 scale)



Ground Workings Legend

Site Outline

500
1000
Search Buffers (m)

2.3 Bedrock, Solid Geology & Faults

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 087

2.3.1 Bedrock/Solid Geology

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

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1D	0.0	On Site	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
2	9.0	NE	WE-SDST	WOOLLEY EDGE ROCK - SANDSTONE	WESTPHALIAN
3	75.0	SE	WE-SDST	WOOLLEY EDGE ROCK - SANDSTONE	WESTPHALIAN
4G	183.0	SW	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
5F	206.0	E	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
6E	240.0	SW	PMCM-SDST	PENNINE MIDDLE COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
7	284.0	E	PMCM-SDST	PENNINE MIDDLE COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
8H	294.0	SW	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
9	359.0	E	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
10	371.0	SE	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
11	371.0	SE	WE-SDST	WOOLLEY EDGE ROCK - SANDSTONE	WESTPHALIAN
12	396.0	SE	PMCM-SDST	PENNINE MIDDLE COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
13	399.0	SW	KNR-SDST	KENT'S ROCK - SANDSTONE	WESTPHALIAN
14	407.0	SE	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
15	416.0	SE	ABR-SDST	ABDY ROCK - SANDSTONE	WESTPHALIAN
16	420.0	S	KNR-SDST	KENT'S ROCK - SANDSTONE	WESTPHALIAN
17	460.0	S	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
18	460.0	S	PMCM-SDST	PENNINE MIDDLE COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
19	471.0	E	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
20	484.0	SW	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
21	492.0	S	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
22	499.0	E	PMCM-SDST	PENNINE MIDDLE COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN

2.3.2 Permeability of Bedrock Ground

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

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	Moderate	Low
9.0	NE	Fracture	High	Moderate

2.3.3 Faults

Are there any records of Faults within 500m of the study site boundary? Yes

ID	Distance	Direction	Category Description	Feature Description
50	7.0	SW	ROCK	Coal seam, inferred
51	9.0	NE	ROCK	Coal seam, inferred
52	75.0	SE	FAULT	Fault, inferred
53D	96.0	SW	ROCK	Coal seam, inferred
54	183.0	SW	ROCK	Coal seam, inferred
55E	218.0	SW	ROCK	Coal seam, inferred
56	253.0	SW	ROCK	Coal seam, inferred
57F	284.0	E	ROCK	Coal seam, inferred
58G	308.0	SW	ROCK	Coal seam, inferred
59H	336.0	SW	ROCK	Coal seam, inferred
60	371.0	SE	ROCK	Coal seam, inferred
61	372.0	SE	FAULT	Fault, inferred
62I	373.0	SE	ROCK	Coal seam, inferred
63I	378.0	SE	ROCK	Coal seam, inferred
64	388.0	SE	ROCK	Coal seam, inferred
65	420.0	S	ROCK	Coal seam, inferred
66	422.0	S	ROCK	Coal seam, inferred
67	460.0	S	ROCK	Coal seam, inferred
68	484.0	SW	ROCK	Coal seam, inferred
69	499.0	E	ROCK	Coal seam, inferred

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

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

3 Radon Data

3.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.

3.2 Radon Protection

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

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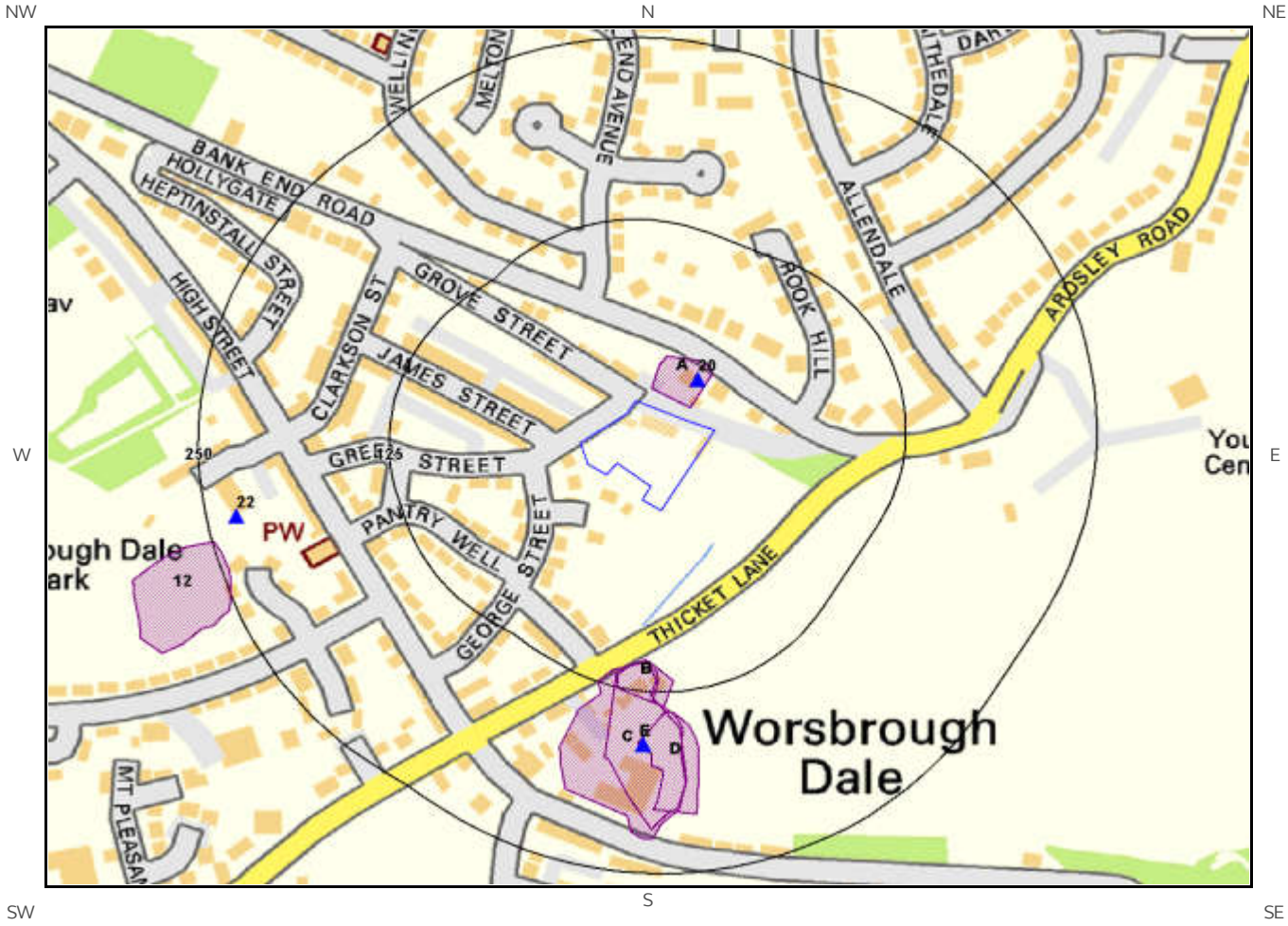
4 Ground Workings Map



Ground Workings Legend

Site Outline

125
250
Search Buffers (m)

Historic Surface Ground Workings

Historic Underground Workings

Current Ground Workings

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

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

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

ID	Distance (m)	Direction	NGR	Use	Date
1A	9.0	NE	436278 404090	Unspecified Ground Workings	1987
2A	9.0	NE	436278 404090	Unspecified Ground Workings	1977
3E	103.0	S	436254 403840	Unspecified Quarry	1951
4B	104.0	S	436254 403882	Unspecified Pit	1977
5B	104.0	S	436254 403882	Unspecified Pit	1987
6C	106.0	S	436239 403836	Unspecified Quarry	1904
7C	106.0	S	436239 403836	Unspecified Quarry	1938
8C	106.0	S	436239 403836	Unspecified Quarry	1890
9D	139.0	S	436269 403827	Cuttings	1987
10D	139.0	S	436269 403827	Cuttings	1966
11D	139.0	S	436269 403827	Cuttings	1977
12	245.0	W	435951 403941	Refuse Heap	1890

4.2 Historical Underground Working Features derived from Historical Mapping

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

Are there any Historical Underground Working Features within 1000m of the study site boundary? Yes

The following Historical Underground Working Features are provided by Groundsure:

ID	Distance (m)	Direction	NGR	Use	Date
Not shown	523.0	S	436247 403330	Colliery	1890
Not shown	591.0	SE	436768 403675	Unspecified Level	1904
Not shown	614.0	W	435622 403863	Air Shaft	1938
Not shown	614.0	W	435622 403863	Air Shaft	1904
Not shown	641.0	SE	436814 403644	Unspecified Level	1904
Not shown	778.0	S	436548 403136	Unspecified Workings	1977
Not shown	960.0	S	435699 402726	Collieries	1951

4.3 Current Ground Workings

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

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

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

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
20	29.0	NE	436288 404091	Sandstone	Darley Grove	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
21E	162.0	S	436252 403840	Sandstone	Pantry Green	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
22	231.0	W	435986 403997	Coal, Deep	Darley Main Colliery, No. 1 Shaft	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	326.0	S	436200 403682	Coal, Deep	Worsbrough Dale Mine	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	339.0	S	436190 403670	Coal, Deep	Worsbrough Dale Mine	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased
Not shown	502.0	NW	435828 404372	Sandstone	Yews Lane	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	524.0	SE	436709 403724	Sandstone	Lewden Hill	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	530.0	SW	435842 403658	Coal, Deep	Darley Main Colliery, No. 2 Shaft	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased
Not shown	561.0	SE	436710 403661	Coal, Deep	Lewden Hill Mine	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased
Not shown	561.0	SE	436760 403735	Coal, Deep	Lewden Hill Shaft	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased
Not shown	574.0	SE	436734 403671	Coal, Deep	Lewden Hill Mine	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased
Not shown	591.0	NW	435758 404427	Sandstone	Yews Lane	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	599.0	SE	436758 403663	Coal, Deep	Lewden Hill Shaft	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased
Not shown	611.0	SE	436783 403679	Coal, Deep	Lewden Hill Mine Shaft	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased
Not shown	617.0	W	435625 403855	Coal, Deep	Darley Main Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased
Not shown	620.0	SE	436784 403663	Coal, Deep	Lewden Hill Mine	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased
Not shown	622.0	NE	436862 404321	Sandstone	White Cross	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	634.0	S	436216 403369	Coal, Deep	Edmund's Main Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	638.0	SE	436787 403635	Coal, Deep	Lewden Hill Mine	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased
Not shown	668.0	SE	436825 403638	Coal, Deep	Lewden Hill Mine	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased
Not shown	689.0	SE	436813 403584	Coal, Deep	Lewden Hill Mine	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased
Not shown	692.0	SE	436847 403628	Coal, Deep	Lewden Hill Mine	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased
Not shown	798.0	S	436140 403213	Coal, Deep	Edmund's Main Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased
Not shown	972.0	W	435241 403986	Coal, Deep	Bell Ing Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased
Not shown	976.0	W	435236 404006	Coal, Deep	Bell Ing Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased
Not shown	983.0	SW	435389 403501	Coal, Deep	Bell Ing Colliery	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee-Scots)	Ceased

5 Mining, Extraction & Natural Cavities Map

Mining, Extraction and Natural Cavities Legend

5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

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

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

The following Historical Mining information is provided by Groundsure:

ID	Distance (m)	Direction	NGR	Details	Date
9	523.0	S	436247 403330	Colliery	1890
10	591.0	SE	436768 403675	Unspecified Level	1904
11A	614.0	W	435622 403863	Air Shaft	1904
12A	614.0	W	435622 403863	Air Shaft	1938
13	641.0	SE	436814 403644	Unspecified Level	1904
Not shown	778.0	S	436548 403136	Unspecified Workings	1977
Not shown	960.0	S	435699 402726	Collieries	1951

5.2 Coal Mining

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

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

The following Coal Mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0.0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

5.3 Johnson Poole and Bloomer

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

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

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

5.4 Non-Coal Mining

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

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

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

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	0.0	On Site	Not available	Iron Ore (Bedded)	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	20.0	NE	Sheffield Area	Vein Mineral/Iron ore	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
3	54.0	SE	Sheffield Area	Vein Mineral/Iron ore	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
Not shown	558.0	S	Sheffield Area	Vein Mineral/Iron ore	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
Not shown	624.0	N	Not available	Iron Ore (Bedded)	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
6	715.0	E	Sheffield Area	Vein Mineral/Iron ore	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
Not shown	923.0	N	Sheffield Area	Vein Mineral/Iron ore	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
Not shown	954.0	SE	Sheffield Area	Vein Mineral/Iron ore	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

5.5 Non-Coal Mining Cavities

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

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

Database searched and no data found.

5.6 Natural Cavities

This dataset provides information based on Peter Brett Associates natural cavities database.

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

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

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

Database searched and no data found.

5.8 Gypsum Extraction

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

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

Database searched and no data found.

5.9 Tin Mining

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

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

Database searched and no data found.

5.10 Clay Mining

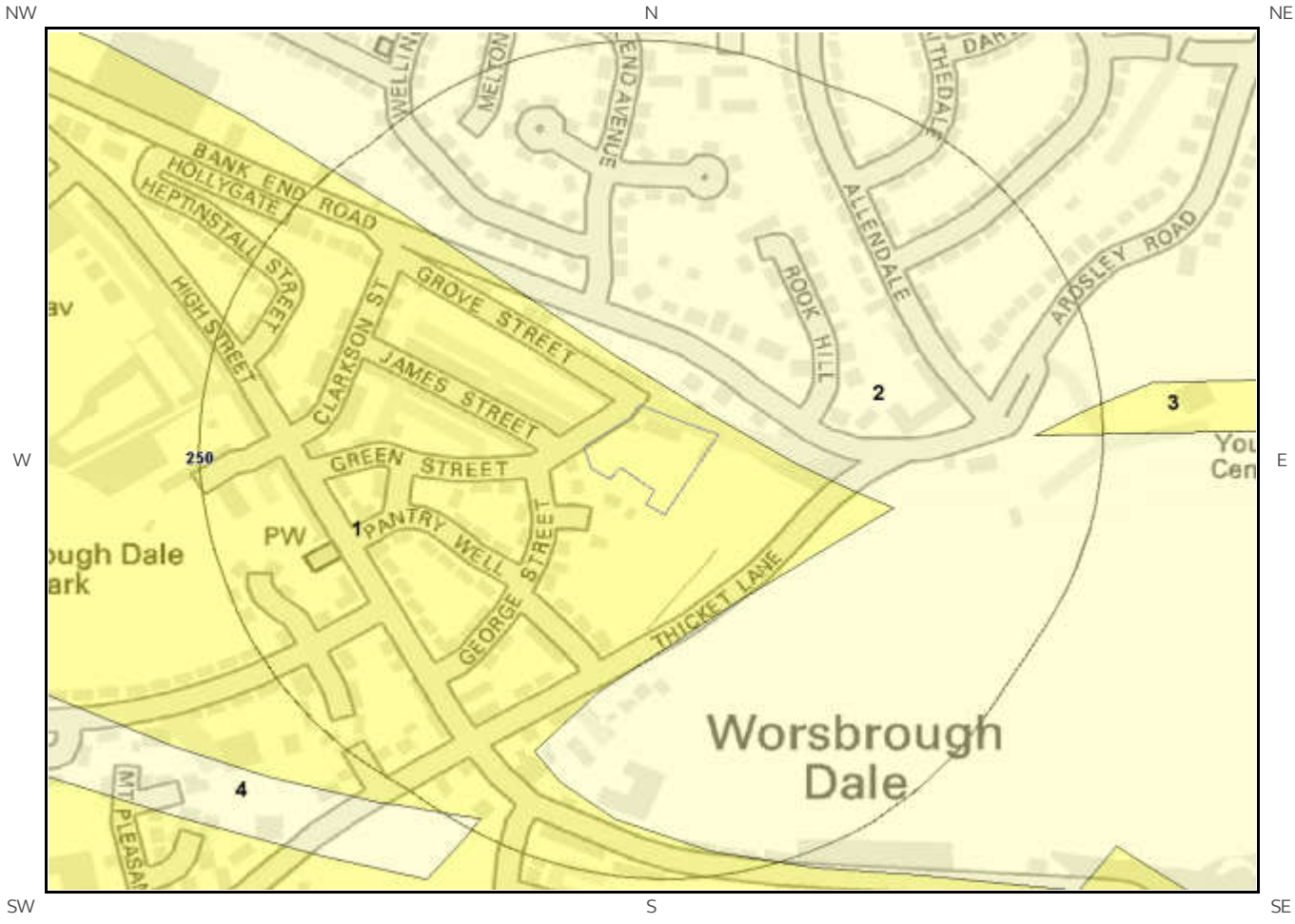
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

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

Database searched and no data found.

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay Map



Shrink Swell Clay Legend

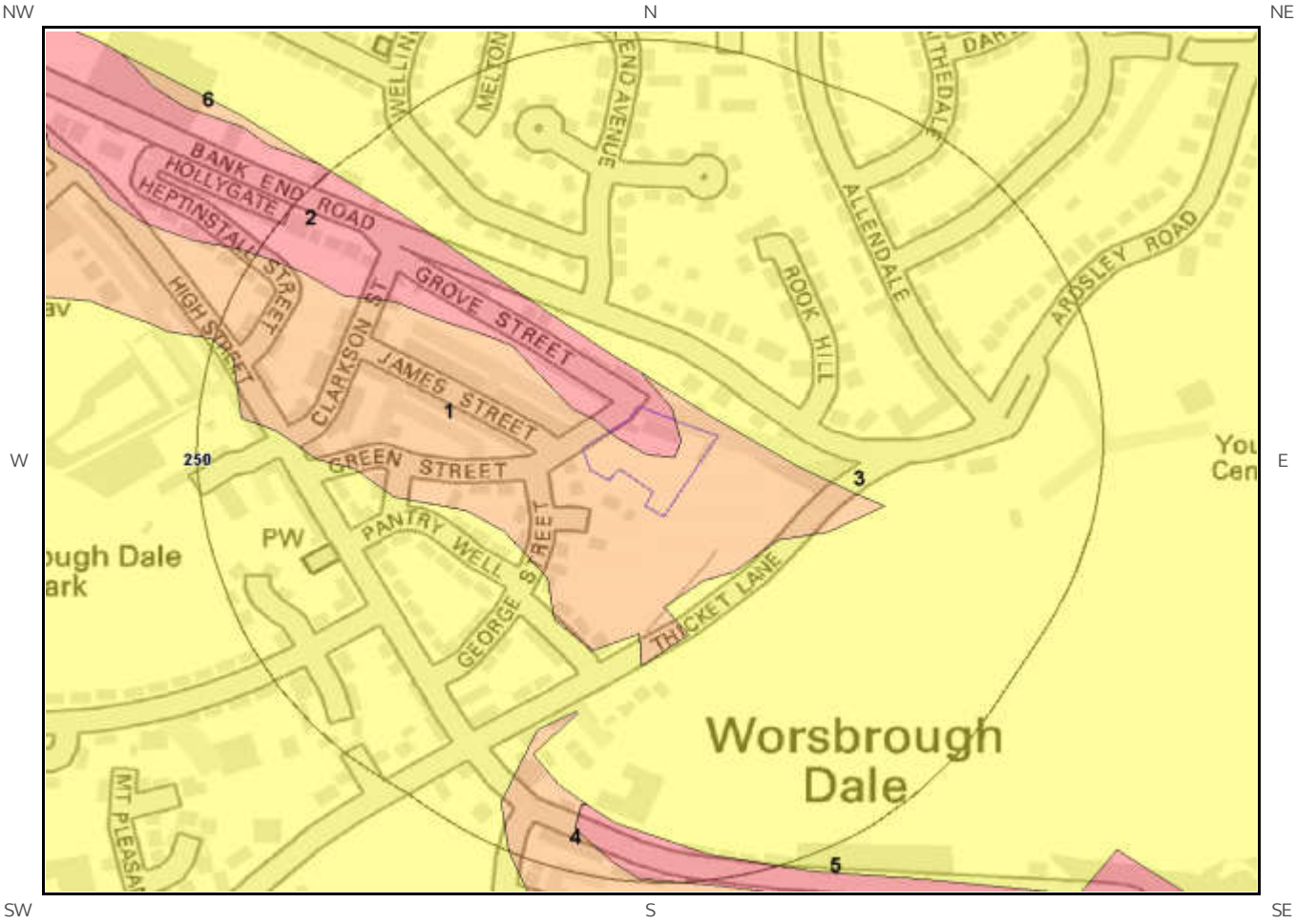
Site Outline

125
250
Search Buffers (m)

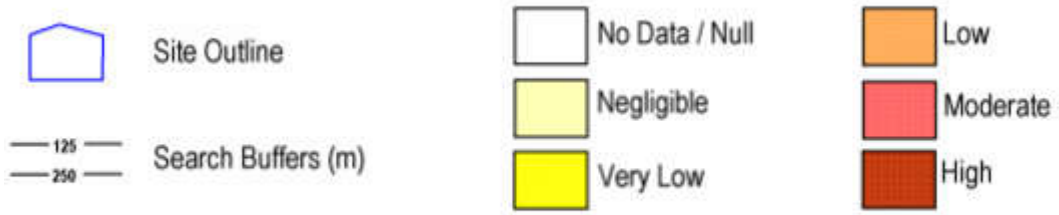
No Data / Null
Negligible
Very Low

Low
Moderate
High

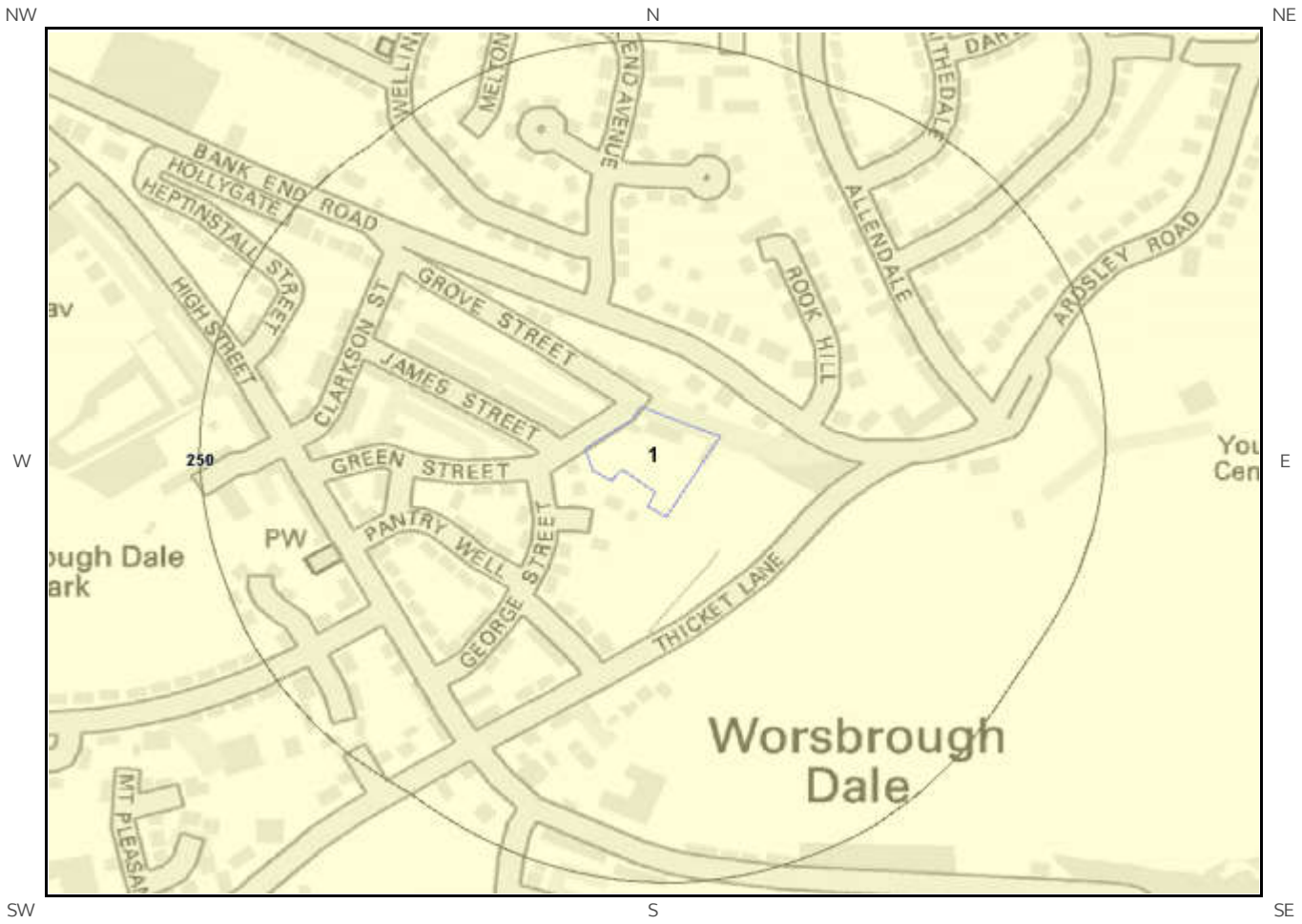
6.2 Landslides Map



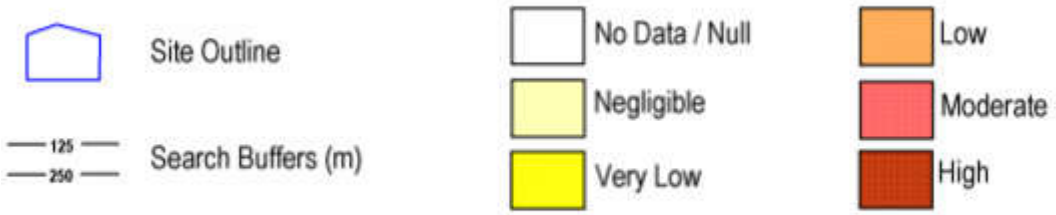
Landslides Legend



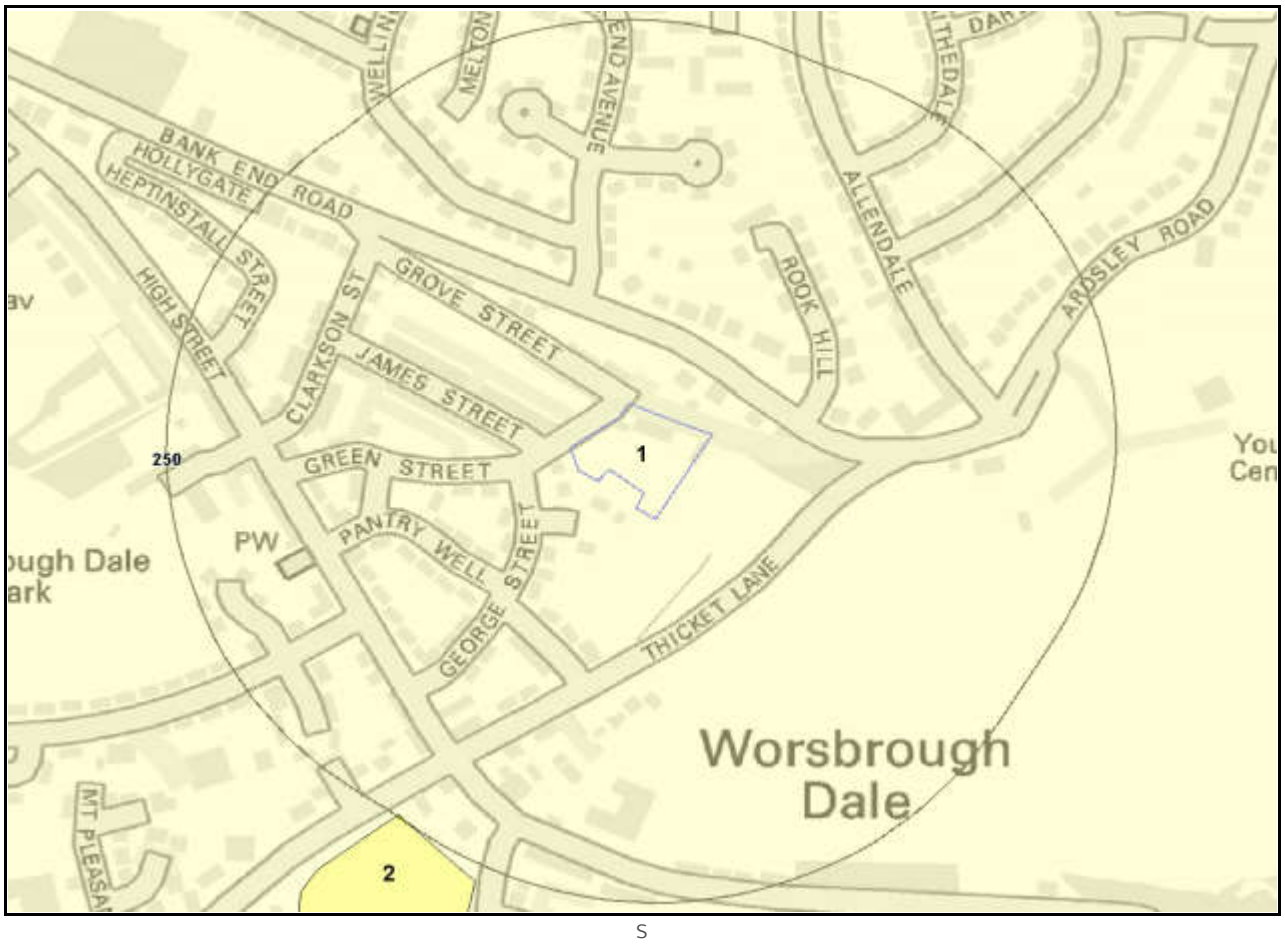
6.3 Ground Dissolution of Soluble Rocks Map



Ground Dissolution Soluble Rocks Legend



6.4 Compressible Deposits Map



Compressible Deposits Legend

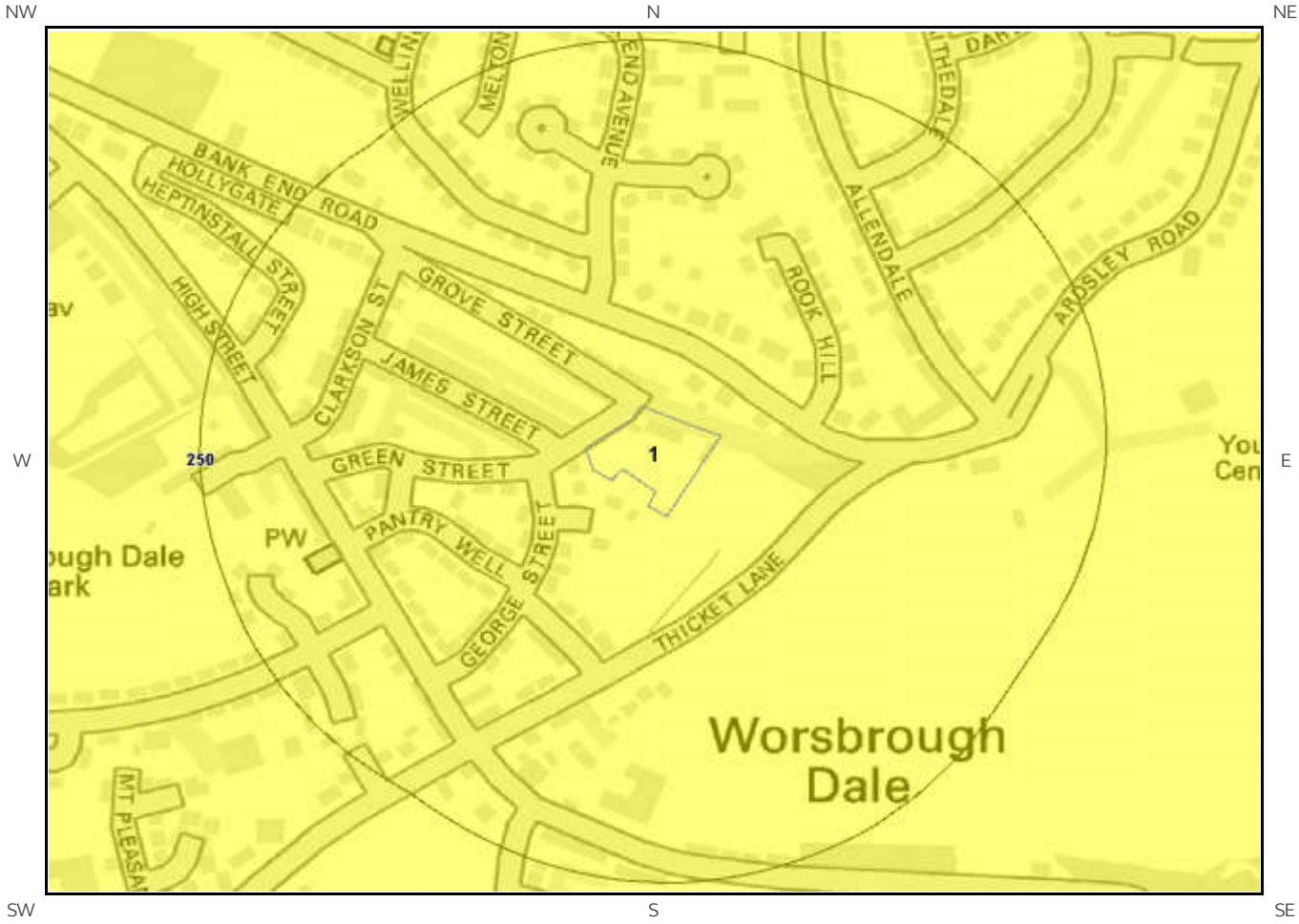
Site Outline

125
250
Search Buffers (m)

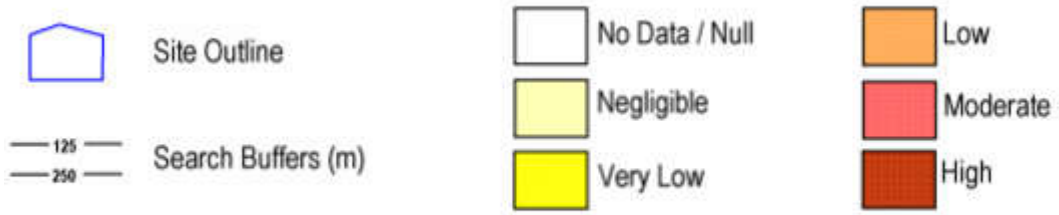
No Data / Null
Negligible
Very Low

Low
Moderate
High

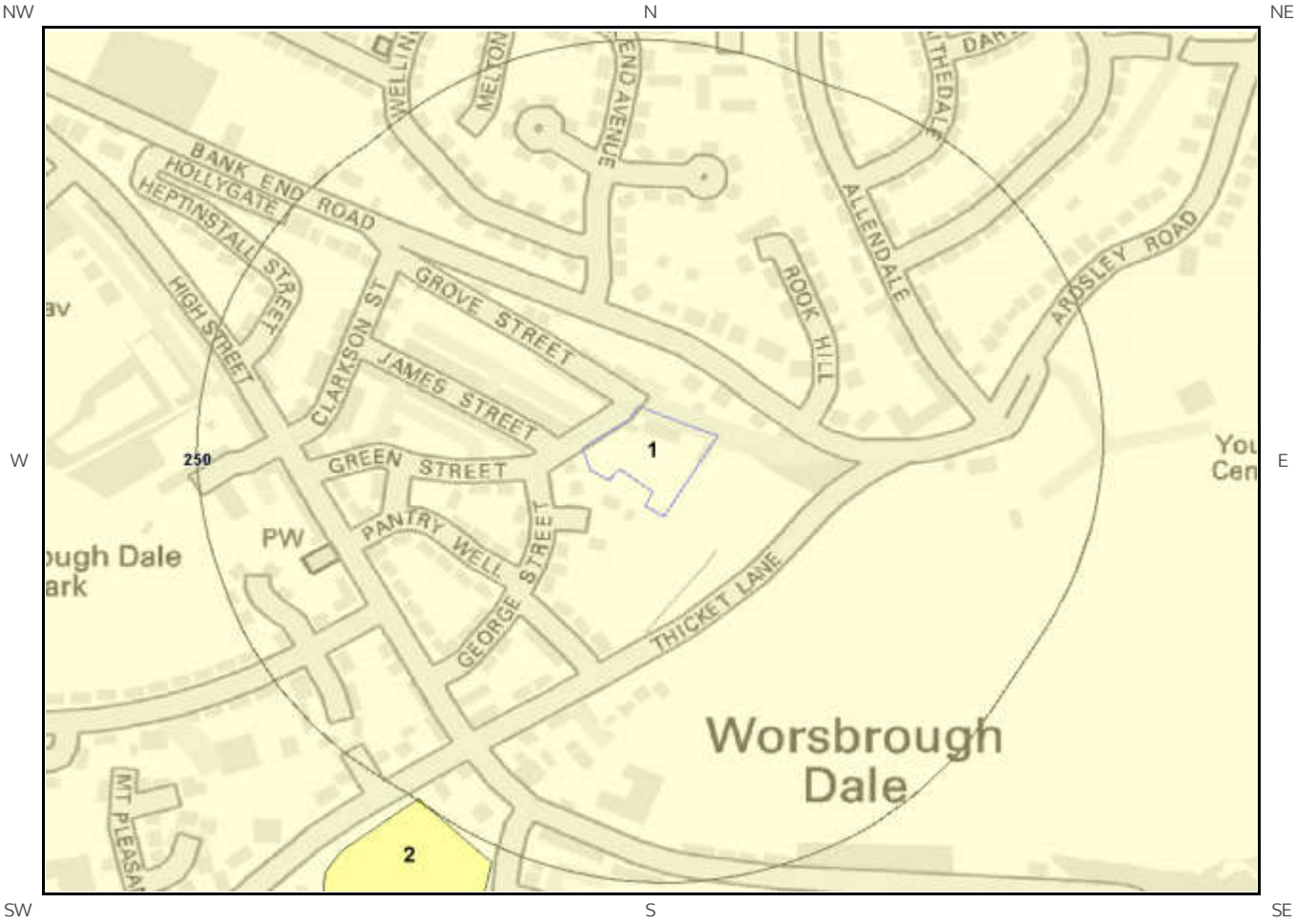
6.5 Collapsible Deposits Map



Collapsible Deposits Legend



6.6 Running Sand Map



Running Sand Legend

Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

6 Natural Ground Subsidence

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

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

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

6.1 Shrink-Swell Clays

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

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.
2	9.0	NE	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.

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

ID	Distance (m)	Direction	Hazard Rating	Details
2	0.0	On Site	Moderate	Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.
3	9.0	NE	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

6.3 Ground Dissolution of Soluble Rocks

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

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

6.4 Compressible Deposits

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

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

6.5 Collapsible Deposits

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

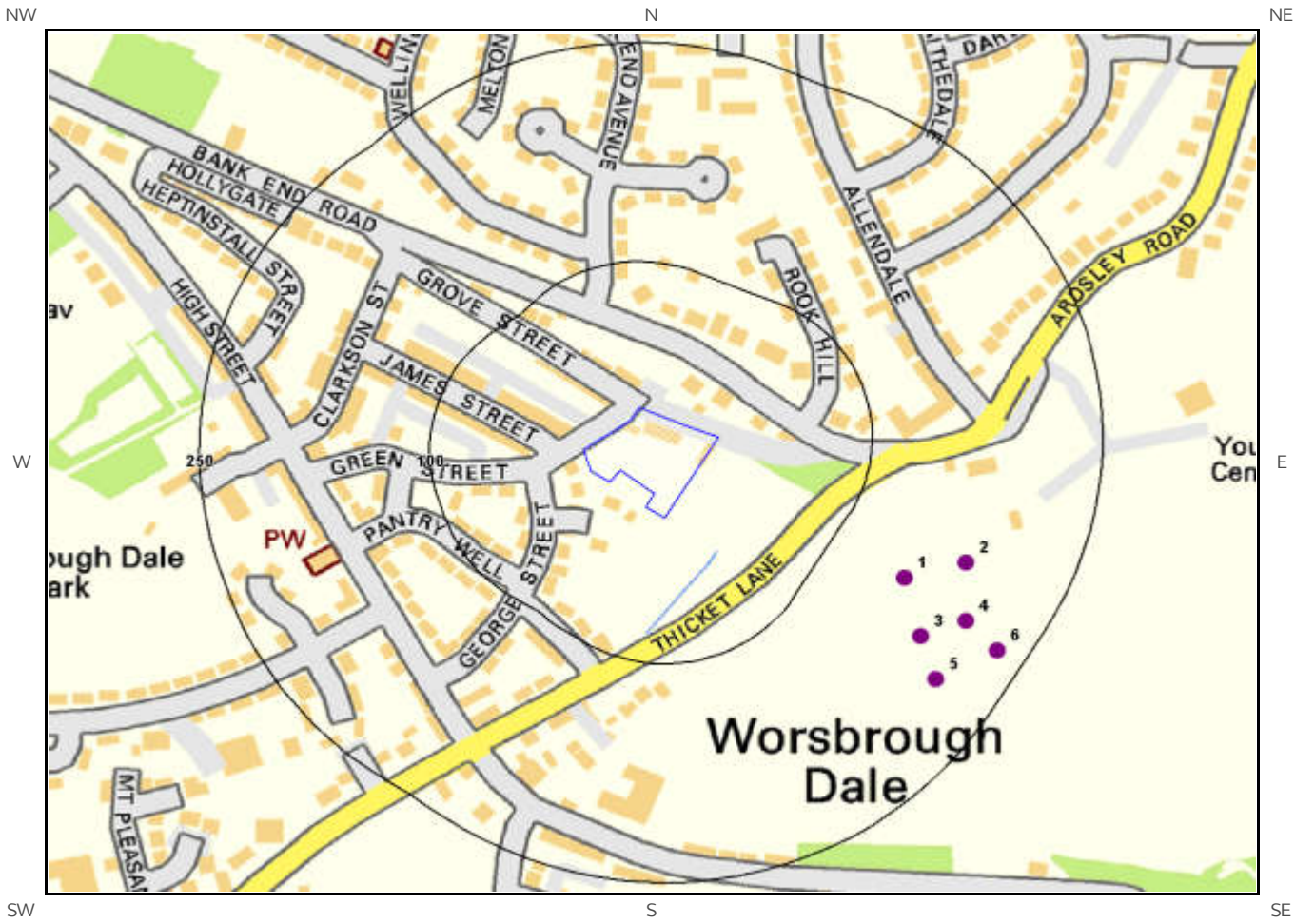
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible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

6.6 Running Sands

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

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

7 Borehole Records Map



Borehole Records Legend

Site Outline

Borehole Locations

125
250
Search Buffers (m)

7 Borehole Records

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

Records of boreholes within 250m of the study site boundary: 6

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	154.0	SE	436420 403960	SE30SE105	2.44	WORSBOROUGH HIGH SCH 9
2	183.0	SE	436460 403970	SE30SE106	2.74	WORSBOROUGH HIGH SCH 10
3	184.0	SE	436430 403920	SE30SE107	3.05	WORSBOROUGH HIGH SCH 11
4	204.0	SE	436460 403930	SE30SE108	3.05	WORSBOROUGH HIGH SCH 12
5	208.0	SE	436440 403890	SE30SE109	3.05	WORSBOROUGH HIGH SCH 13
6	231.0	SE	436480 403910	SE30SE110	3.35	WORSBOROUGH HIGH SCH 14

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

#1: scans.bgs.ac.uk/sobi_scans/boreholes/84541
#2: scans.bgs.ac.uk/sobi_scans/boreholes/84542
#3: scans.bgs.ac.uk/sobi_scans/boreholes/84543
#4: scans.bgs.ac.uk/sobi_scans/boreholes/84544
#5: scans.bgs.ac.uk/sobi_scans/boreholes/84545
#6: scans.bgs.ac.uk/sobi_scans/boreholes/84546

8 Estimated Background Soil Chemistry

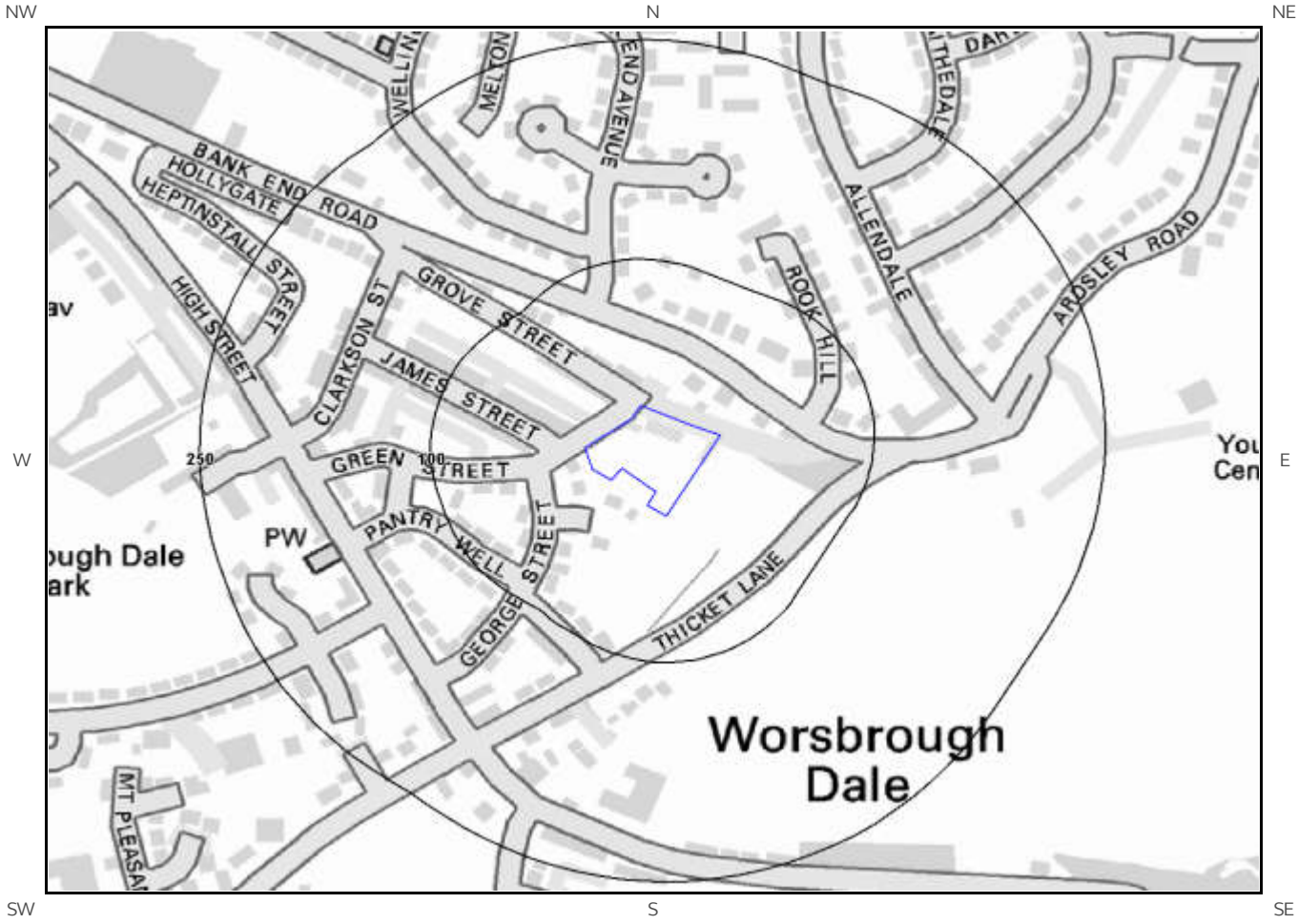
Records of background estimated soil chemistry within 250m of the study site boundary: 4

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

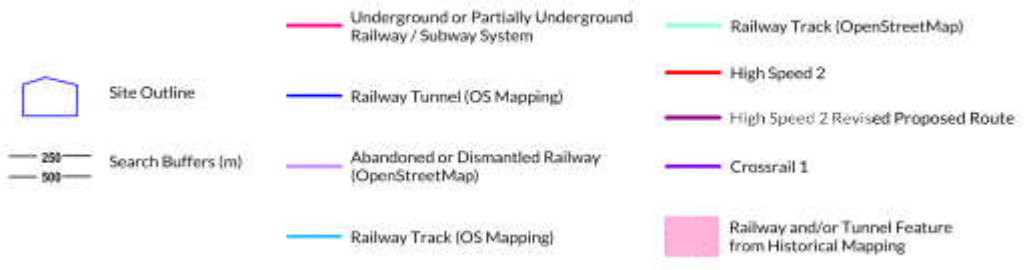
Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Rural Soil	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
1.0	S	Rural Soil	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	200 - 300 mg/kg
1.0	S	Rural Soil	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	200 - 300 mg/kg
20.0	NE	Rural Soil	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg

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

9 Railways and Tunnels Map



Railways and Tunnels Legend



9 Railways and Tunnels

9.1 Tunnels

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

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

Database searched and no data found.

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

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

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

Database searched and no data found.

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

9.2 Historical Railway and Tunnel Features

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

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

Database searched and no data found.

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

9.3 Historical Railways

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

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

Database searched and no data found.

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

9.4 Active Railways

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

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

Database searched and no data found.

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

9.5 Railway Projects

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

Is the study site within 5km of the route of the High Speed 2 rail project?	Yes
Is the study site within 500m of the route of the Crossrail 1 rail project?	No

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

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

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

Contact Details

emapsite

Telephone: 0118 9736883
sales@emapsite.com

British Geological Survey Enquiries

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email: **enquiries@bgs.ac.uk**
Web: **www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries

British Gypsum

British Gypsum Ltd
East Leake
Loughborough
Leicestershire
LE12 6HX

The Coal Authority

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

Public Health England

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

Johnson Poole & Bloomer Limited

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

Ordnance Survey

Adanac Drive, Southampton
SO16 0AS

Tel: 08456 050505
Website: http://www.ordnancesurvey.co.uk/

Getmapping PLC

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

Peter Brett Associates
Caversham Bridge House
Waterman Place
Reading
Berkshire RG1 8DN
Tel: +44 (0)118 9500761 E-mail: **reading@pba.co.uk**
Website: **http://www.peterbrett.com/home**

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https://www.groundsure.com/terms-and-conditions-sept-2016/

emapsite

Masdar House, 1 Reading Road,
Eversley, RG27 0RP

Groundsure Reference:	EMS-433797_580262
Your Reference:	EMS_433797_580262
Report Date	3 Aug 2017
Report Delivery Method:	Email - pdf

Enviro Insight

Address: ,

Dear Sir/ Madam,

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

If you would like further assistance regarding this report then please contact the emapsite customer services team on 01 18 97 36883 quoting the above report reference number.

Yours faithfully,

emapsite customer services team

Enc.
Groundsure Enviroinsight

Enviro Insight

Address:	,
Date:	3 Aug 2017
Reference:	EMS-433797_580262
Client:	emapsite

NW N NE

W E

SW S SE

Aerial Photograph Capture date:	07-Jun-2013
Grid Reference:	436256,404044
Site Size:	0.33ha

Report Reference: EMS-433797_580262
Client Reference: EMS_433797_580262

Contents Page

Overview of Findings

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

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	0	3	14	65
1.2 Additional Information – Historical Tank Database	0	0	0	17
1.3 Additional Information – Historical Energy Features Database	0	0	9	22
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	2	5
1.6 Potentially Infilled Land	0	2	11	43

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	3
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	0
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	1	0
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	1
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	1

Section 3: Landfill and Other Waste Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	1	2	2
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	1
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	1	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	4	3

Section 4: Current Land Use

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

Section 5: Geology

5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	No
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	None
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology

	0-500m
6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?	Yes
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?	Yes

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	1	7
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	1	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site?	No	No	No	No	Yes	No
6.10 Detailed River Network entries within 500m of the site	0	0	0	0	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	No	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Are there any Enviroment Agency Zone 2 floodplains within 250m of the study site?	No
7.2 Are there any Environment Agency /Natural Resources Wales Zone 3 floodplains within 250m of the study site	No
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Very Low
7.4 Are there any Flood Defences within 250m of the study site?	No
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Limited potential
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Low

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	1
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	1	7
8.7 Records of Local Nature Reserves (LNR)	0	0	0	1	0	1
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites

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

Section 9: Natural Hazards

9.1 What is the maximum risk of natural ground subsidence?	Very Low
9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Very Low
9.1.2 What is the maximum Landslides hazard rating identified on the study site?	Moderate
9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Negligible
9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	Negligible
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Negligible
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining

10.1 Are there any coal mining areas within 75m of the study site?	Yes
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	Yes
10.3 Are there any brine affected areas within 75m of the study site?	No

Using this report

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

1. Historical Industrial Sites

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

2. Environmental Permits, Incidents and Registers

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

3. Landfills and Other Waste Sites

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

4. Current Land Uses

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

5. Geology

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

6. Hydrogeology and Hydrology

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

7. Flooding

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

8. Designated Environmentally Sensitive Sites

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

9. Natural Hazards

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

10. Mining

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

11. Contacts

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

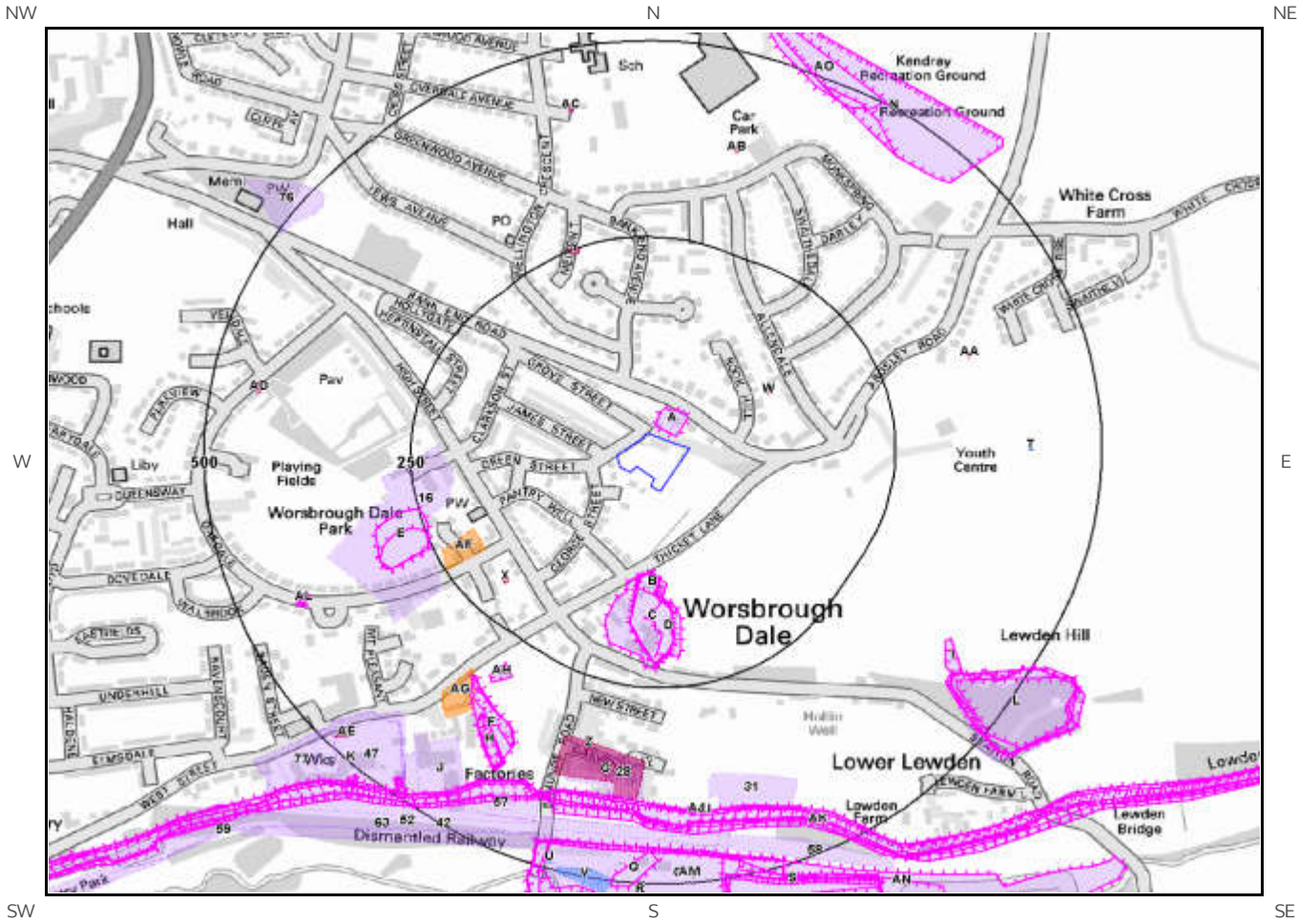
Note: Maps

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

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

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

1. Historical Land Use



Site Outline

250
500
Search Buffers (m)

Historical 1:10,000 and 1:10,560 scale mapping

Industrial Land Use

Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping

Energy Features

Petrol Stations

Tanks

Garages

1. Historical Industrial Sites

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

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

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 82

ID	Distance [m]	Direction	Use	Date
1A	9	NE	Unspecified Ground Workings	1977
2A	9	NE	Unspecified Ground Workings	1987
3A	11	NE	Sandstone Quarry	1850
4C	103	S	Unspecified Quarry	1951
5B	104	S	Unspecified Pit	1977
6B	104	S	Unspecified Pit	1987
7C	105	S	Unspecified Quarry	1948
8C	106	S	Unspecified Quarry	1890
9C	106	S	Unspecified Quarry	1904
10C	106	S	Unspecified Quarry	1938
11D	139	S	Cuttings	1977
12D	139	S	Cuttings	1987
13D	139	S	Cuttings	1966
14C	141	S	Sandstone Quarry	1850
15E	199	W	Colliery	1850
16	236	W	Unspecified Tank	1850
17E	245	W	Refuse Heap	1890
18E	251	W	Refuse Heap	1904
19AH	285	SW	Refuse Heap	1977
20F	319	SW	Unspecified Heap	1951
21F	322	SW	Unspecified Ground Workings	1948
22F	322	SW	Unspecified Ground Workings	1948
23G	335	S	Unspecified Commercial/Industrial	1948
24G	341	S	Unspecified Tanks	1966
25G	341	S	Unspecified Tanks	1951
26G	347	S	Unspecified Tanks	1948
27G	349	S	Unspecified Tank	1938
28	353	S	Unspecified Tank	1938
29H	353	SW	Unspecified Pit	1938
30H	353	SW	Unspecified Pit	1904
31	365	S	Sawmill	1904

32AI	393	S	Disused Canal	1951
33I	394	SE	Unspecified Heap	1966
34I	394	SE	Unspecified Heap	1987
35I	394	SE	Unspecified Heap	1977
36J	396	SW	Unspecified Factory	1987
37J	396	SW	Unspecified Factory	1977
38K	408	SW	Unspecified Works	1987
39K	408	SW	Unspecified Works	1977
40AK	410	S	Disused Canal	1987
41K	414	SW	Sawmills	1938
42	420	S	Railway Sidings	1951
43L	421	SE	Unspecified Quarry	1951
44K	422	SW	Sawmills	1948
45K	422	SW	Unspecified Works	1966
46K	422	SW	Sawmills	1951
47	424	SW	Sawmills	1904
48L	424	SE	Unspecified Quarry	1948
49L	426	SE	Unspecified Quarry	1890
50L	426	SE	Unspecified Quarry	1904
51L	426	SE	Unspecified Quarry	1938
52	429	S	Railway Sidings	1948
53L	432	SE	Unspecified Quarry	1977
54L	432	SE	Unspecified Quarry	1987
55L	432	SE	Unspecified Disused Quarry	1966
56J	434	SW	Chemical Works	1850
57	435	SW	Railway Buildings	1951
58	439	S	Railway Sidings	1890
59	445	S	Railway Sidings	1890
60M	445	S	Railway Sidings	1904
61M	445	S	Railway Sidings	1938
62L	447	SE	Sandstone Quarry	1850
63	449	S	Railway Sidings	1977
64N	450	NE	Unspecified Pit	1987
65N	450	NE	Unspecified Pit	1977
66AM	453	S	Sewage Farm	1951
67O	454	S	Sewage Farm	1948
68O	454	S	Sewage Farm	1948
69P	454	S	Sewage Works	1987
70P	454	S	Sewage Works	1977
71Q	459	S	Unspecified Heap	1966
72Q	459	S	Unspecified Heap	1977
73O	459	S	Sewage Farm	1938
74AN	474	S	Sewage Farm	1904
75AO	477	NE	Unspecified Pit	1966
76	479	NW	Sandstone Quarries	1850

77	484	SW	Timber Yard	1904
78R	494	S	Unspecified Tanks	1987
79R	494	S	Unspecified Tanks	1977
80S	496	S	Unspecified Ground Workings	1948
81S	496	S	Unspecified Ground Workings	1948
82S	496	S	Unspecified Pit	1951

1.2 Additional Information – Historical Tank Database

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

Records of historical tanks within 500m of the search boundary: 17

ID	Distance (m)	Direction	Use	Date
83G	330	S	Gasholder Station	1967
84G	330	S	Gasholder Station	1967
85G	342	S	Gas Holder	1967
86G	342	S	Gasholder	1967
87G	342	S	Tanks	1961
88G	342	S	Tanks	1960
89T	411	E	Unspecified Tank	1961
90T	411	E	Unspecified Tank	1960
91T	411	E	Unspecified Tank	1977
92T	411	E	Unspecified Tank	1993
93U	485	S	Detritus Tanks	1967
94U	486	S	Detritus Tanks	1990
95U	486	S	Detritus Tanks	1990
96V	489	S	Settling Tanks	1967
97V	489	S	Settling Tanks	1967
98V	489	S	Settling Tanks	1990
99V	489	S	Settling Tanks	1990

1.3 Additional Information – Historical Energy Features Database

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

Records of historical energy features within 500m of the search boundary: 31

ID	Distance (m)	Direction	Use	Date

100W	117	NE	Electricity Substation	1993
101W	118	NE	Electricity Substation	1975
102X	198	SW	Electricity Substation	1994
103X	198	SW	Electricity Substation	1967
104X	199	SW	Electricity Substation	1990
105X	199	SW	Electricity Substation	1990
106X	199	SW	Electricity Substation	1967
107Y	243	N	Electricity Substation	1993
108Y	244	N	Electricity Substation	1975
109G	330	S	Gasholder Station	1967
110G	330	S	Gasholder Station	1967
111Z	331	S	Gas Governor	1990
112Z	331	S	Gas Governor	1990
113Z	331	S	Gas Governor	1994
114G	342	S	Gas Holder	1967
115G	342	S	Gasholder	1967
116AA	356	E	Electricity Substation	1977
117AA	356	E	Electricity Substation	1993
118AB	373	N	Electricity Substation	1993
119AB	374	N	Electricity Substation	1975
120AC	418	N	Electricity Substation	1993
121AC	419	N	Electricity Substation	1975
122AD	437	W	Electricity Substation	1993
123AD	437	W	Electricity Substation	1977
124AD	438	W	Electricity Substation	1977
125AE	474	SW	Electricity Substation	1988
126AE	474	SW	Electricity Substation	1971
127AE	474	SW	Electricity Substation	1994
128AE	480	SW	Electricity Substation	1988
129AE	481	SW	Electricity Substation	1994
130AE	481	SW	Electricity Substation	1971

1.4 Additional Information – Historical Petrol and Fuel Site Database

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

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

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

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

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 7

ID	Distance(m)	Direction	Use	Date
131AF	193	SW	Garage	1967
132AF	194	SW	Garage	1967
133AG	313	SW	Garage	1990
134AG	313	SW	Garage	1990
135AG	313	SW	Garage	1967
136AG	313	SW	Garage	1967
137AG	314	SW	Garage	1994

1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 56

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

ID	Distance(m)	Direction	Use	Date
138A	9	NE	Unspecified Ground Workings	1977
139A	9	NE	Unspecified Ground Workings	1987
140D	103	S	Unspecified Quarry	1951
141B	104	S	Unspecified Pit	1977
142B	104	S	Unspecified Pit	1987
143D	105	S	Unspecified Quarry	1948
144C	106	S	Unspecified Quarry	1890
145C	106	S	Unspecified Quarry	1904
146C	106	S	Unspecified Quarry	1938
147D	139	S	Cuttings	1966
148D	139	S	Cuttings	1987
149D	139	S	Cuttings	1977
150E	245	W	Refuse Heap	1890
151E	251	W	Refuse Heap	1904
152AH	285	SW	Refuse Heap	1977
153F	319	SW	Unspecified Heap	1951
154F	322	SW	Unspecified Ground Workings	1948
155F	322	SW	Unspecified Ground Workings	1948
156H	353	SW	Unspecified Pit	1904
157H	353	SW	Unspecified Pit	1938
158AJ	392	S	Canal	1948
159AI	393	S	Canal	1966
160AI	393	S	Disused Canal	1951

161I	394	SE	Unspecified Heap	1966
162I	394	SE	Unspecified Heap	1977
163I	394	SE	Unspecified Heap	1987
164AJ	397	S	Canal	1938
165AJ	398	S	Canal	1904
166AJ	398	S	Canal	1890
167AK	410	S	Disused Canal	1987
168AL	415	SW	Pool	1951
169AL	416	SW	Pool	1948
170AL	420	SW	Pool	1938
171L	421	SE	Unspecified Quarry	1951
172L	424	SE	Unspecified Quarry	1948
173L	426	SE	Unspecified Quarry	1938
174L	426	SE	Unspecified Quarry	1890
175L	426	SE	Unspecified Quarry	1904
176L	432	SE	Unspecified Disused Quarry	1966
177L	432	SE	Unspecified Quarry	1987
178L	432	SE	Unspecified Quarry	1977
179N	450	NE	Unspecified Pit	1977
180N	450	NE	Unspecified Pit	1987
181AM	453	S	Sewage Farm	1951
182O	454	S	Sewage Farm	1948
183O	454	S	Sewage Farm	1948
184P	454	S	Sewage Works	1987
185P	454	S	Sewage Works	1977
186Q	459	S	Unspecified Heap	1966
187Q	459	S	Unspecified Heap	1977
188O	459	S	Sewage Farm	1938
189AN	474	S	Sewage Farm	1904
190AO	477	NE	Unspecified Pit	1966
191S	496	S	Unspecified Ground Workings	1948
192S	496	S	Unspecified Ground Workings	1948
193S	496	S	Unspecified Pit	1951

2. Environmental Permits, Incidents and Registers Map

- Site Outline
- Search Buffers (m) 250 500
- Recorded Pollution Incident
- Dangerous Substances (List 1)
- Dangerous Substances (List 2)
- Water Industry Referrals
- Licenced Discharge Consents
- Red List Discharge Consents
- RAS 3 & 4 Authorisations
- Part A(1) Authorised Processes and Historic IPC Authorisations
- Part A(2) and Part B Authorised Processes
- COMAH / NIHHS Sites
- Sites Determined as Contaminated Land
- Hazardous Substance Consents and Enforcements

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

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

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

0

Database searched and no data found.

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

3

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

ID	Distance (m)	Direction	NGR	Details	
7A	471	S	436250 403530	Operator: Yorkshire Water Services Limited Installation Name: Worsbrough Sludge Treatment Facility Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT	Permit Number: FP3130VC Original Permit Number: KP3136LR EPR Reference: - Issue Date: 18/2/2014 Effective Date: 18/2/2014 Last date noted as effective: 2017-04-01 Status: Effective
8A	471	S	436250 403530	Operator: Yorkshire Water Services Limited Installation Name: Worsbrough Sludge Treatment Facility Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT	Permit Number: KP3136LR Original Permit Number: KP3136LR EPR Reference: - Issue Date: 23/2/2007 Effective Date: 23/2/2007 Last date noted as effective: 2017-04-01 Status: Superceded
9A	471	S	436250 403530	Operator: Yorkshire Water Services Limited Installation Name: Worsbrough Sludge Treatment Facility Process: OTHER WASTE DISPOSAL; NON-HAZARDOUS WASTE >50T/D BY PHYSICO-CHEMICAL TREATMENT	Permit Number: EP3537UK Original Permit Number: KP3136LR EPR Reference: - Issue Date: 23/9/2008 Effective Date: 23/9/2008 Last date noted as effective: 2017-04-01 Status: Superceded

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

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

1

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

ID	Distance (m)	Direction	NGR	Details	
3	244	SW	436110 403810	Address: WEST STREET WORSBROUGH CSO, WEST STREET (OPP NO.22), WORSBROUGH DALE, BARNSLEY, SOUTH YORKSHIRE Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: WRA9239 Permit Version: 1	Receiving Water: RIVER DOVE Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 03/09/2007 Effective Date: 03-Sep-2007 Revocation Date: -

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

0

Database searched and no data found.

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

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

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

1

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

ID	Distance (m)	Direction	NGR	Details	
1	435	SW	436014 403644	Incident Date: 22-Jan-2003 Incident Identification: 132758 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

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

0

Database searched and no data found.

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

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site? 1

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

ID	Distance (m)	Direction	NGR	Description	Location	Category	Year Identified
2	309	S	436220 403648	Former Gas Works	Oakwood Close, Barnsley	Potentially Contaminated Land	N/A

3. Landfill and Other Waste Sites Map

Site Outline

250
500
Search Buffers (m)

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

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

0

Database searched and no data found.

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

5

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

ID	Distance (m)	Direction	NGR	Details	
2A	283	SW	436000 403700	Site Address: Stallite Batteries, West Street, Worsbrough Waste Licence: - Site Reference: 4400/(147) Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: Mr A Smith Licence Holder: Mr A Smith First Recorded: 30-Apr-1965 Last Recorded: -
Not shown	808	NW	435600 404700	Site Address: Highfield Farm, Knowle Road, Barnsley Waste Licence: Yes Site Reference: WD20B311, 4400/B311, 20B311(78) Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 16-Jan-1981 Licence Surrendered: Licence Holder Address: Highfield Farm, Knowle Road, Barnsley Operator: R J Norman Licence Holder: R J Norman First Recorded: 31-Jan-1981 Last Recorded: 31-Dec-1983
Not shown	955	E	437400 403900	Site Address: C E Medlam, Swaithe House Farm, Worsbrough Dale, Barnsley, South Yorkshire Waste Licence: Yes Site Reference: WD20B89, 60599, NE4239 Waste Type: Inert, Industrial, Commercial, Household Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 28-Feb-1979 Licence Surrendered: 31-Dec-1990 Licence Holder Address: - Operator: Mr C E Medlam Licence Holder: Mr C E Medlam First Recorded: 01-Feb-1979 Last Recorded: 31-Dec-1990

ID	Distance (m)	Direction	NGR	Details	
Not shown	1031	SE	437100 403200	Site Address: Dovecliffe Quarry, Wombwell Wood, Blacker Hill, Barnsley Waste Licence: Yes Site Reference: 4400/B2, 2B2(8), WD2 B2 Waste Type: Inert, Industrial, Commercial, Household, Liquid, sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 03-Nov-1976 Licence Surrendered: 31-Dec-1982 Licence Holder Address: - Operator: Barnsley Metropolitan Borough Council Licence Holder: South Yorkshire County Council First Recorded: 30-Nov-1976 Last Recorded: 31-Dec-1982
Not shown	1059	E	437500 403900	Site Address: Swaithe Tip, Warsborough Dale, Barnsley, Yorkshire Waste Licence: - Site Reference: - Waste Type: Commercial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: Worsbrough Urban District Council Licence Holder: - First Recorded: - Last Recorded: -

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

1

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

ID	Distance (m)	Direction	NGR	Details	
Not shown	1211	E	437500.0 403900.0	Address: Swaithe Tip, Warsborough Dale, Barnsley, Yorks BGS Number: 2630.0	Risk: No risk to aquifer Waste Type: N/A

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

1

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

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
14A	275	SW	436075 403778	Refuse Tip	1967 mapping	Polygon

3.2 Other Waste Sites

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

0

Database searched and no data found.

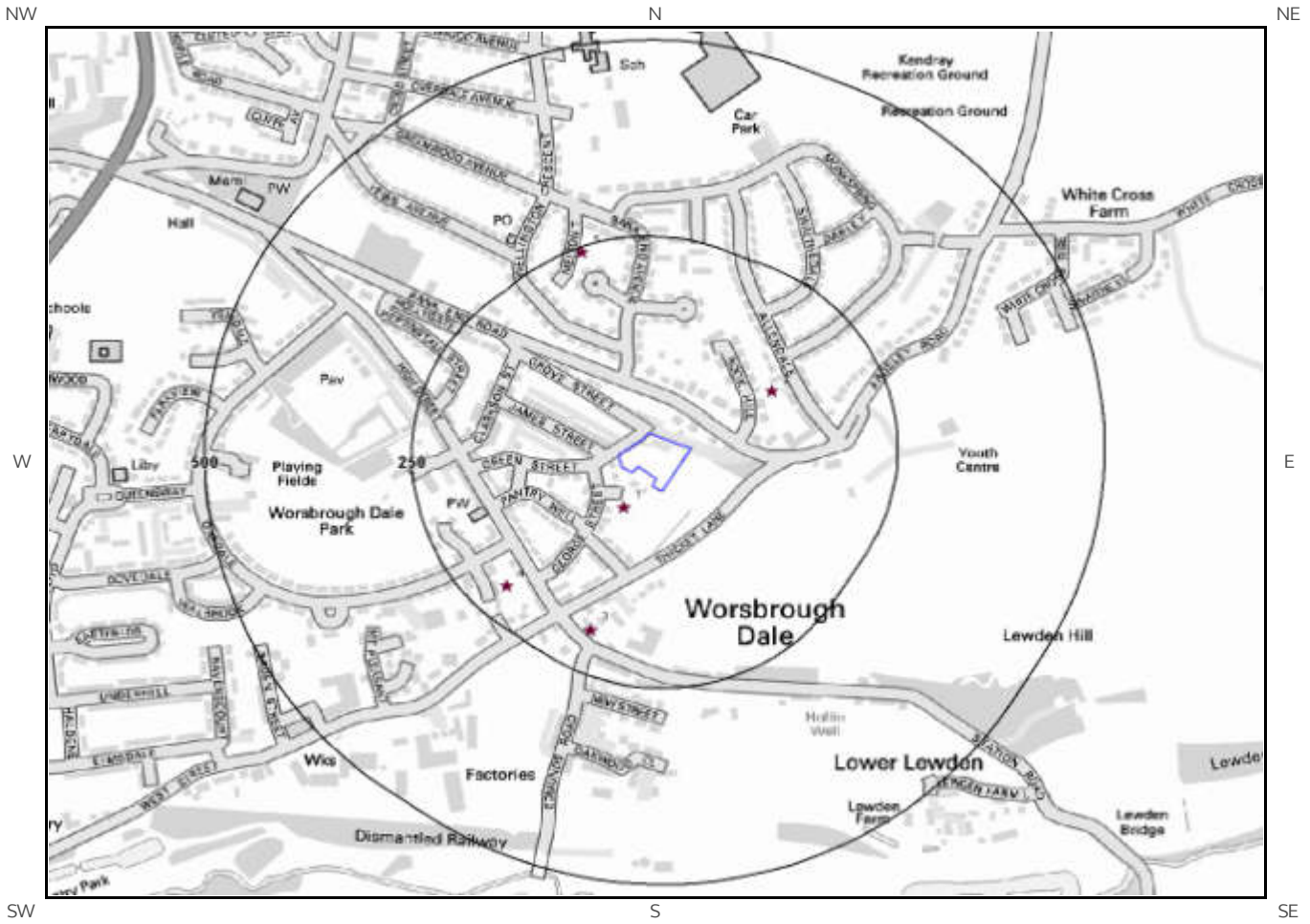
3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

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

ID	Distance (m)	Direction	NGR	Details	
Not shown	864	SW	435500 403550	Site Address: West Street, Worsbrough, Barnsley, S Yorks Type: Special Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: REG007 EPR reference: - Operator: Regional Waste Recycling Plc Waste Management licence No: 60606 Annual Tonnage: 5000.0	Issue Date: 18/08/1993 Effective Date: 08/12/2006 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: West Street Civic Amenity Site Correspondence Address: 2 Cecil Court, 49-55, London Road, Enfield, Middlesex, EN2 6DE
Not shown	864	SW	435500 403550	Site Address: West Street, Worsbrough, Barnsley, S Yorks Type: Special Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BDR010 EPR reference: - Operator: South Herts Waste Management Ltd Waste Management licence No: 60606 Annual Tonnage: 0.0	Issue Date: 18/08/1993 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: West Street Civic Amenity Site Correspondence Address: 48, Cardigan Road, Stanion, Northants, NN14 1BY
Not shown	864	SW	435500 403550	Site Address: West Street Hwrc Site, West Street, Worsbrough, Barnsley, South Yorkshire, S70 5DJ Type: Special Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAS069 EPR reference: EA/EPR/DP3993LM/T001 Operator: Waste Recycling Ltd Waste Management licence No: 60606 Annual Tonnage: 24999.0	Issue Date: 18/08/1993 Effective Date: 27/01/2009 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: West Street H W R C Site Correspondence Address: -
Not shown	864	SW	435500 403550	Site Address: West Street H W R C, West Street, Worsbrough, Barnsley, South Yorkshire, S70 5DJ Type: Special Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAS069 EPR reference: EA/EPR/DP3993LM/V003 Operator: F C C Recycling (U K) Limited Waste Management licence No: 60606 Annual Tonnage: 24999.0	Issue Date: 18/08/1993 Effective Date: 27/01/2009 Modified: 05/09/2014 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: West Street Household Waste Recycling Centre Correspondence Address: -
Not shown	1280	NW	435550 405150	Site Address: Vernon Works, Upper Sheffield Road, Barnsley, South Yorkshire, S70 4PN Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CSO002 EPR reference: EA/EPR/WP3490ZY/S005 Operator: C Soar & Sons Waste Management licence No: 60541 Annual Tonnage: 0.0	Issue Date: 15/07/1993 Effective Date: - Modified: - Surrendered Date: 16/10/2012 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Vernon Works Correspondence Address: -

ID	Distance (m)	Direction	NGR	Details	
Not shown	1302	E	437600 404100	Site Address: Swaithe House Farm, Worsbrough Dale, Barnsley, S Yorks, S70 3QF Type: Household, Commercial & Industrial Waste Landfill Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MED001 EPR reference: - Operator: Medlam C E Waste Management licence No: 60599 Annual Tonnage: 0.0	Issue Date: 28/02/1979 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: C E Medlam Correspondence Address: Swaithe House Farm, Worsbrough Dale, Barnsley, S Yorks, S70 3QF
Not shown	1391	N	436100 405460	Site Address: Kendray Hospital, Doncaster Road, Kendray, Barnsley, South Yorkshire, S70 3RD Type: Special Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BAR002 EPR reference: EA/EPR/JP3890ZV/S003 Operator: Barnsley Primary Care Trust Waste Management licence No: 60603 Annual Tonnage: 0.0	Issue Date: 17/10/1994 Effective Date: - Modified: - Surrendered Date: 11/09/2013 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Kendray Hospital Correspondence Address: -

4. Current Land Use Map



Site Outline

Search Buffers (m)
250
500

Current Industrial Sites

Petrol & Fuel Sites

Electricity Transmission Cables

Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 5

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	43	SW	B R Guest Holidays	436217 403982	B R Guest Holidays, 2, Kings Croft, Worsbrough Dale, Barnsley, S70 4SX	Vehicle Hire and Rental	Hire Services
2	122	NE	Electricity Sub Station	436396 404130	Electricity Sub Station, S70	Electrical Features	Infrastructure and Facilities
3	196	SW	Warehouse	436177 403826	Warehouse, S70	Container and Storage	Transport, Storage and Delivery
4	206	SW	Electricity Sub Station	436076 403882	Electricity Sub Station, S70	Electrical Features	Infrastructure and Facilities
5	244	N	Electricity Sub Station	436167 404307	Electricity Sub Station, S70	Electrical Features	Infrastructure and Facilities

4.2 Petrol and Fuel Sites

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

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

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

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

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

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

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

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

5.2 Superficial Ground and Drift Geology

Database searched and no data found.

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

5.3 Bedrock and Solid Geology

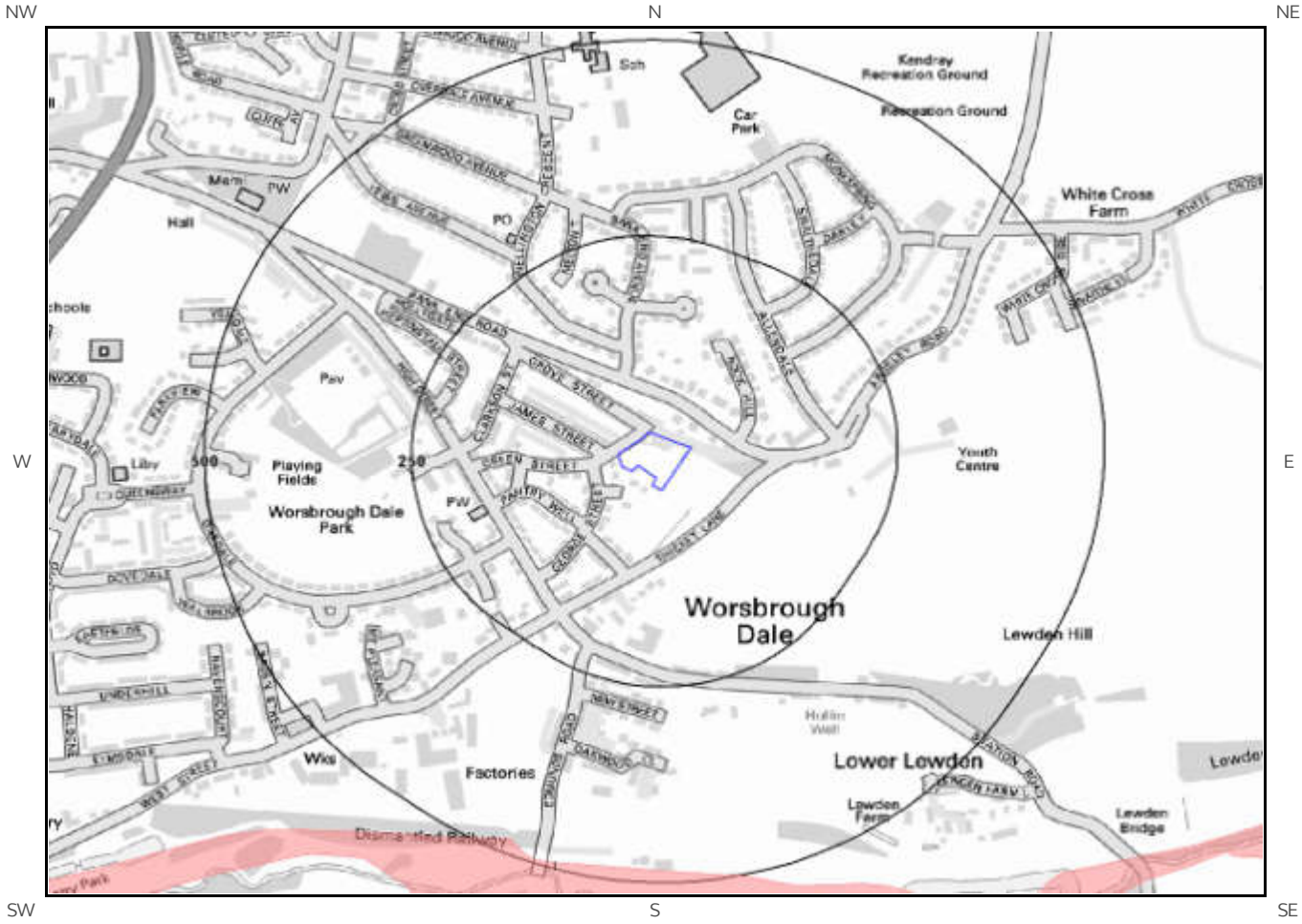
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE
WE-SDST	WOOLLEY EDGE ROCK	SANDSTONE

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

6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



Site Outline

250 — 500 — Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

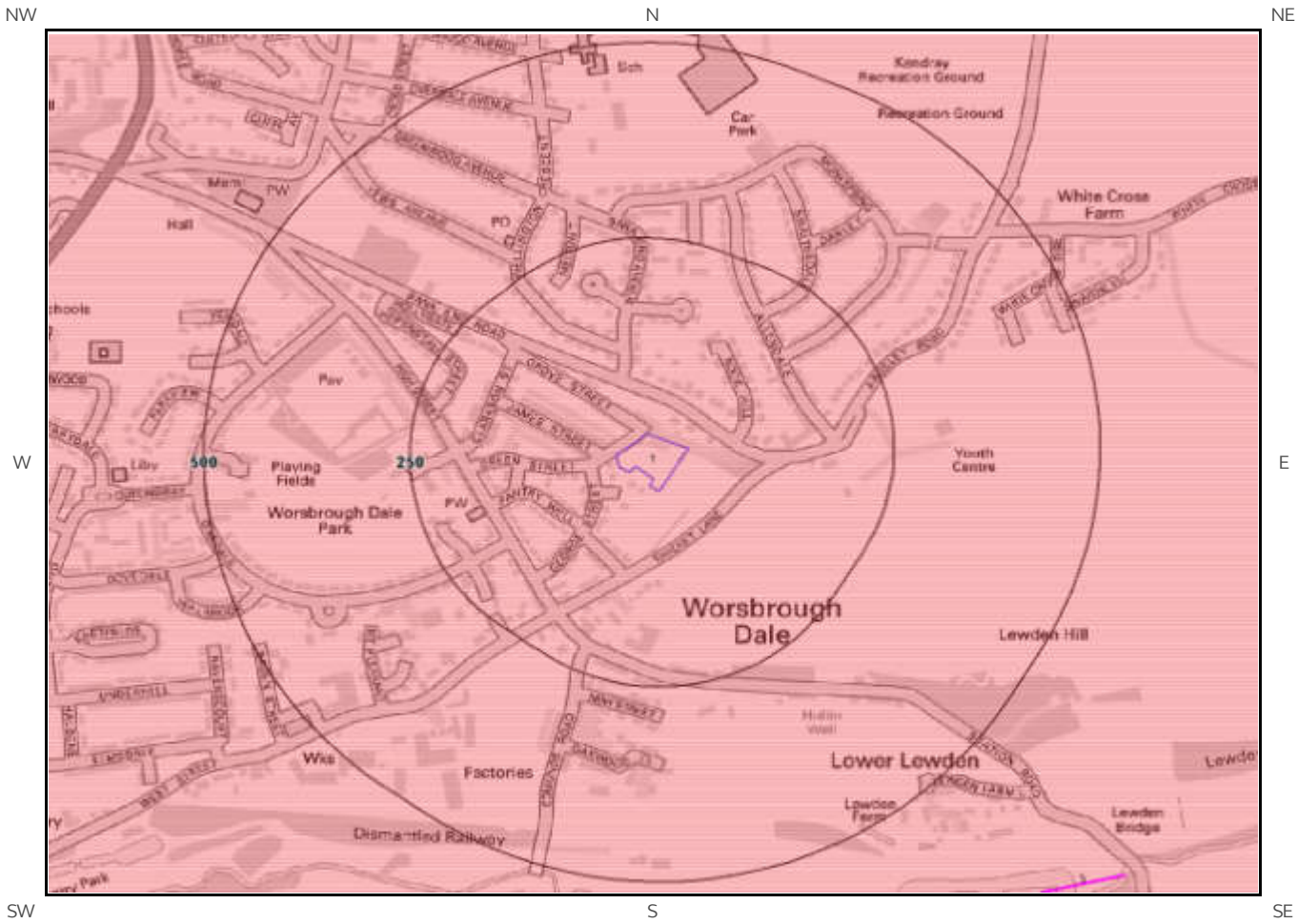
Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

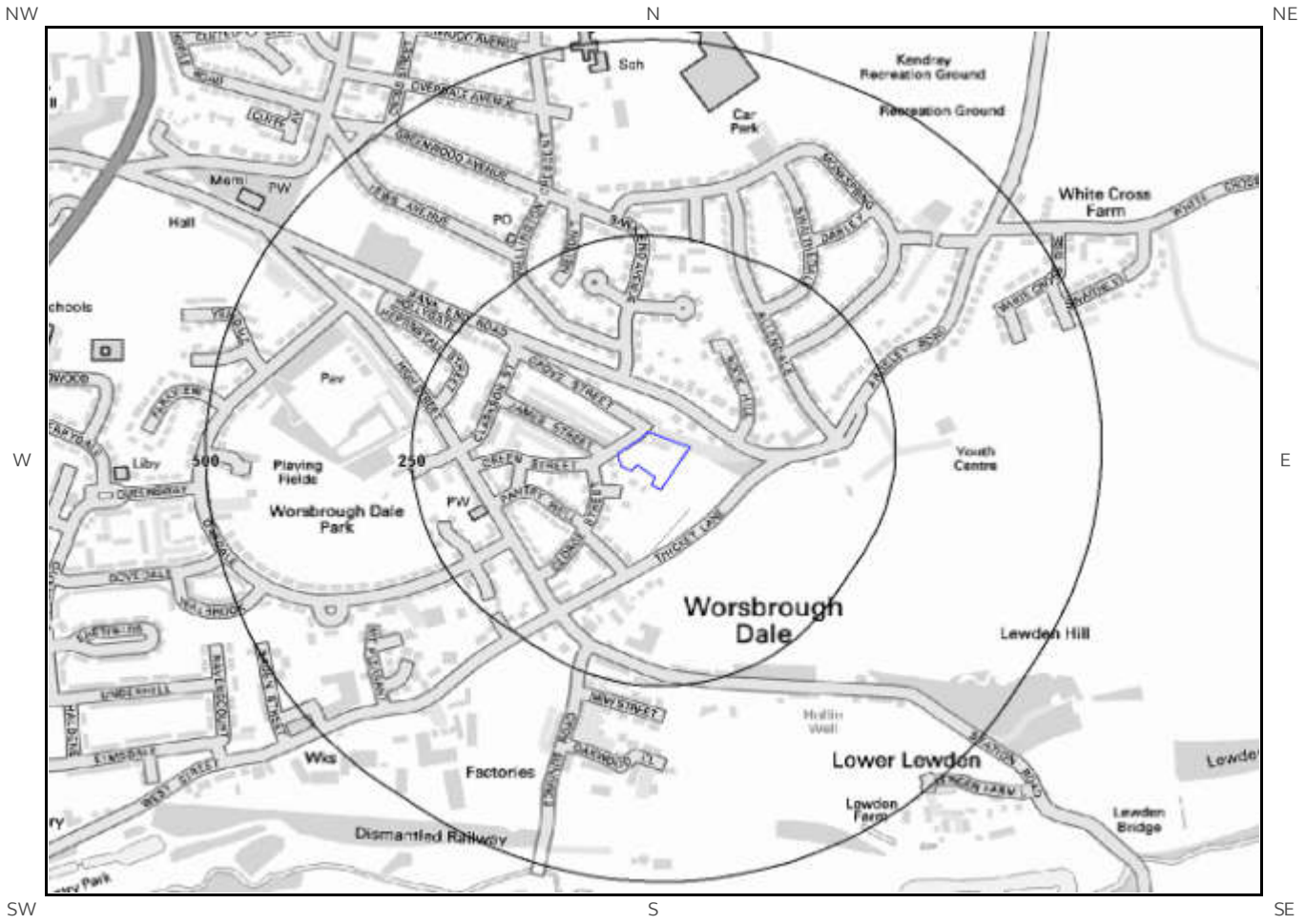
Unproductive

Unknown (lakes and landslip)

6b. Aquifer Within Bedrock Geology and Abstraction Licenses



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



Site Outline

250 Search Buffers (m)
500

Source Protection Zone 1 - Inner Catchment

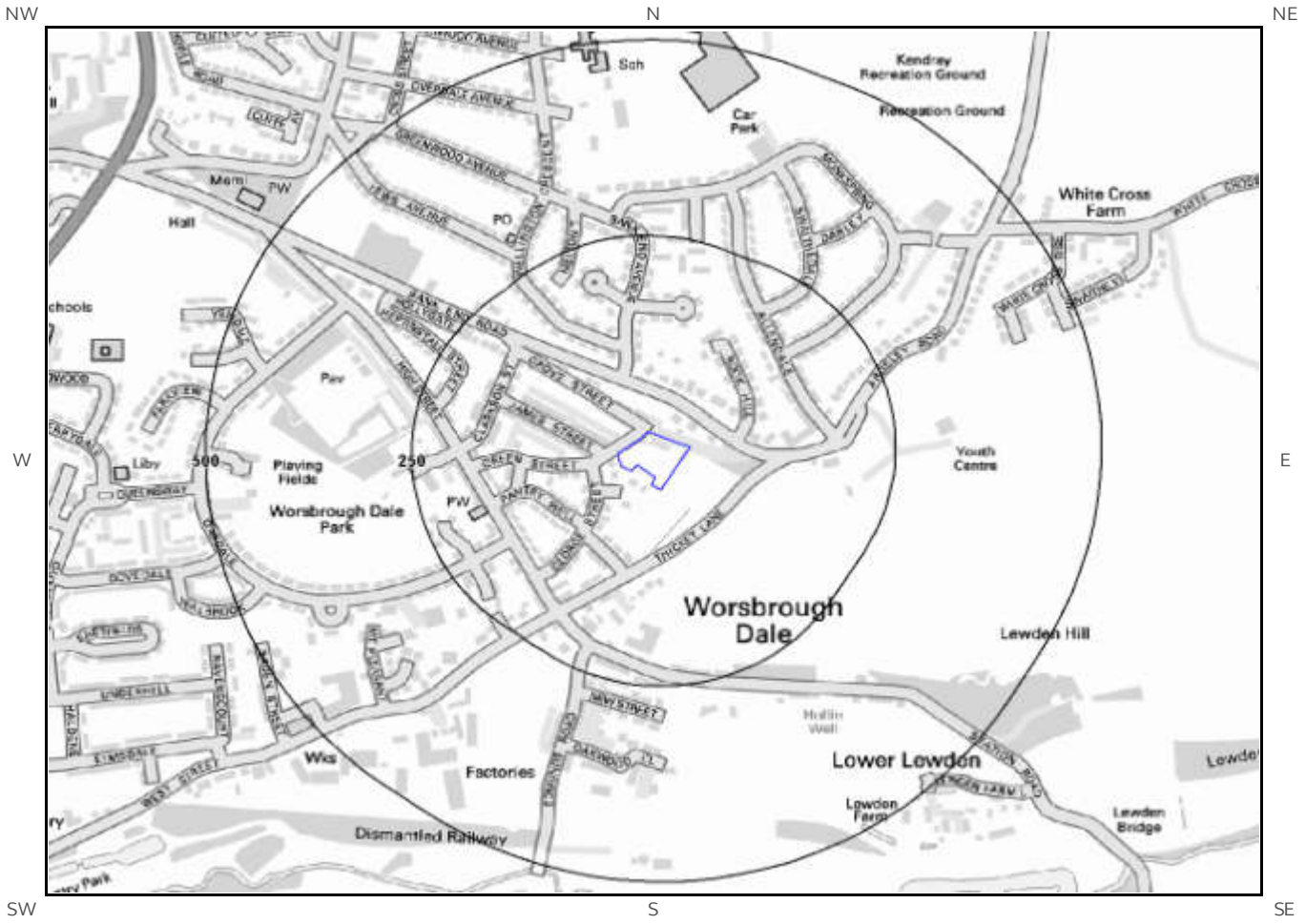
Source Protection Zone 2 - Outer Catchment

Source Protection Zone 3 - Total Catchment

Source Protection Zone 4 - Zone of Special Interest

Potable Water Abstraction Licence

6d. Hydrogeology – Source Protection Zones within confined aquifer



Site Outline

250 — 500 — Search Buffers (m)

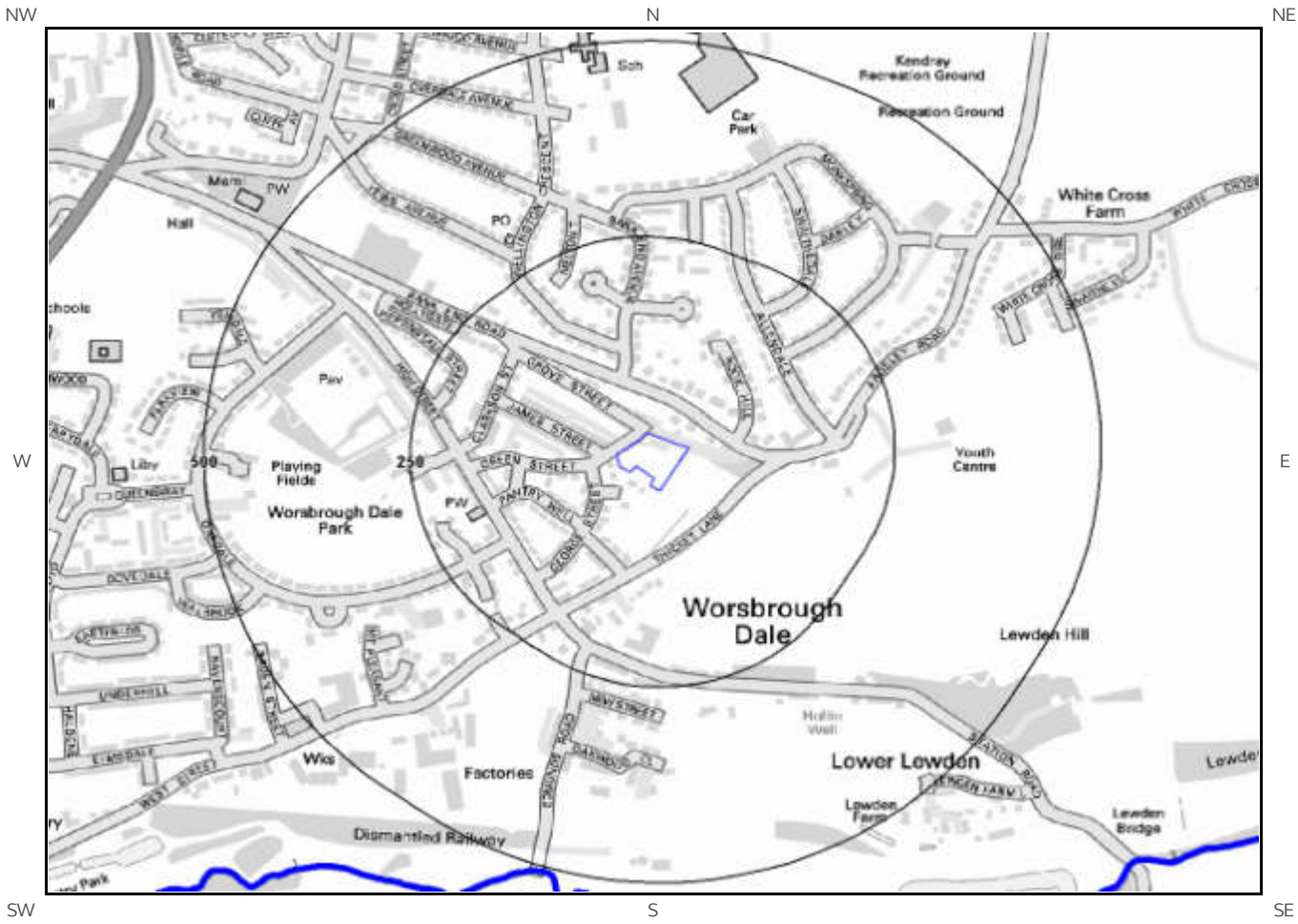
Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2C - Outer Catchment within Confined Aquifer

Source Protection Zone 3C - Total Catchment within Confined Aquifer

Potable Water Abstraction Licence

6e. Hydrology – Detailed River Network and River Quality



6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Are there records of strata classification within the superficial geology at or in proximity to the property? Yes

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

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

ID	Distance (m)	Direction	Designation	Description
1	480	S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.2 Aquifer within Bedrock Deposits

Are there records of strata classification within the bedrock geology at or in proximity to the property?Yes

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

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

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

6.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? Yes

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

ID	Distance (m)	Direction	NGR	Details	
3	621	SE	436550 403450	Status: Historical Licence No: 2/27/08/128 Details: Make-Up or Top Up Water Direct Source: Surface Water Point: Inland Water - River Dove Data Type: Line Name: NUTTALL	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: 8024 Original Start Date: 13/9/2002 Expiry Date: 31/3/2017 Issue No: 1 Version Start Date: 13/9/2002 Version End Date:
Not shown	1247	SW	435000 403300	Status: Historical Licence No: 2/27/08/129 Details: Spray Irrigation - Direct Direct Source: Surface Water Point: Inland Water - River Dove Data Type: Line Name: WORSBROUGH BRIDGE SPORTS & DEVELOPMENT ASSOCIATION	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 4/9/2002 Expiry Date: 31/3/2017 Issue No: 1 Version Start Date: 4/9/2002 Version End Date:
Not shown	1506	SW	434900 403300	Status: Historical Licence No: 2/27/08/118 Details: Milling & Water Power Other Than Electricity Generation Direct Source: Surface Water Point: Worsborough Mill Pond Data Type: Point Name: BARNSLEY METROPOLITAN BOROUGH COUNCIL	Annual Volume (m^3): 45359 Max Daily Volume (m^3): 633 Application No: 6681 Original Start Date: 4/7/1997 Expiry Date: 31/12/2007 Issue No: 102 Version Start Date: 1/8/2002 Version End Date:
Not shown	1506	SW	434900 403300	Status: Historical Licence No: 2/27/08/143 Details: Milling & Water Power Other Than Electricity Generation Direct Source: Surface Water Point: Worsborough Mill Pond Data Type: Point Name: BARNSLEY METROPOLITAN BOROUGH COUNCIL	Annual Volume (m^3): 45359 Max Daily Volume (m^3): 1125 Application No: 8294 Original Start Date: 14/2/2008 Expiry Date: 31/3/2017 Issue No: 1 Version Start Date: 14/2/2008 Version End Date:
Not shown	1594	SW	434800 403300	Status: Historical Licence No: 2/27/08/118 Details: Make-Up Or Top Up Water Direct Source: Surface Water Point: Worsborough Reservoir Data Type: Point Name: BARNSLEY METROPOLITAN BOROUGH COUNCIL	Annual Volume (m^3): 45359 Max Daily Volume (m^3): 633 Application No: 6681 Original Start Date: 4/7/1997 Expiry Date: 31/12/2007 Issue No: 102 Version Start Date: 1/8/2002 Version End Date:
Not shown	1594	SW	434800 403300	Status: Historical Licence No: 2/27/08/118 Details: Milling & Water power other than electricity generation Direct Source: Surface Water Point: Worsborough Reservoir Data Type: Point Name: BARNSLEY METROPOLITAN BOROUGH COUNCIL	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: 6681 Original Start Date: 4/7/1997 Expiry Date: 31/12/2007 Issue No: 100 Version Start Date: 4/7/1997 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1594	SW	434800 403300	Status: Historical Licence No: 2/27/08/143 Details: General Use Relating To Secondary Category (Very Low Loss) Direct Source: Surface Water Point: Worsborough Reservoir Data Type: Point Name: BARNSLEY METROPOLITAN BOROUGH COUNCIL	Annual Volume (m^3): 45359 Max Daily Volume (m^3): 1125 Application No: 8294 Original Start Date: 14/2/2008 Expiry Date: 31/3/2017 Issue No: 1 Version Start Date: 14/2/2008 Version End Date:
Not shown	1594	SW	434800 403300	Status: Historical Licence No: 2/27/08/118 Details: Lake & Pond Throughflow Direct Source: Surface Water Point: Worsborough Reservoir Data Type: Point Name: BARNSLEY METROPOLITAN BOROUGH COUNCIL	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: 06681 Original Start Date: 4/7/1997 Expiry Date: 31/12/2007 Issue No: 102 Version Start Date: 1/8/2002 Version End Date:

6.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

6.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site? No

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site? No

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

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

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

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
455	SW	Minor Aquifer/Low Leaching Potential	L	Soils in which pollutants are unlikely to penetrate the soil layer because either water movement is largely horizontal, or they have the ability to attenuate diffuse pollutants.

6.9 River Quality

Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site? Yes

6.9.1 Biological Quality:

Biological Quality data describes water quality in terms of 83 groups of macroinvertebrates, some of which are pollution sensitive. The results are graded from A ('Very Good') to F ('Bad').

The following Biological Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
Not shown	674	S	436230 403328	River Name: Dove Reach: Worsbrough Reservoir blacker Dyke End/Start of Stretch: End of Stretch NGR	C	C	C	C	C
Not shown	674	S	436230 403328	River Name: Dove Reach: Wombwell Stw River Dearne End/Start of Stretch: Start of Stretch NGR	D	D	D	C	C
Not shown	674	S	436230 403328	River Name: Dove Reach: Blacker Dyke Wombwell Stw End/Start of Stretch: Start of Stretch NGR	D	D	D	C	C

6.9.2 Chemical Quality:

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAHI). In England, each chemical sample is measured for ammonia and dissolved oxygen. In Wales, the samples are measured for biological oxygen demand (BOD), ammonia and dissolved oxygen. The results are graded from A ('Very Good') to F ('Bad').

The following Chemical Quality records are shown on the Hydrology Map (6e):

					Chemical Quality Grade				
ID	Distance (m)	Direction	NGR	River Quality Grade	2005	2006	2007	2008	2009
Not shown	674	S	436230 403328	River Name: River Dove Reach: Wombwell Stw River Dearne End/Start of Stretch: Start of Stretch NGR	B	B	B	B	B

6.10 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site? No

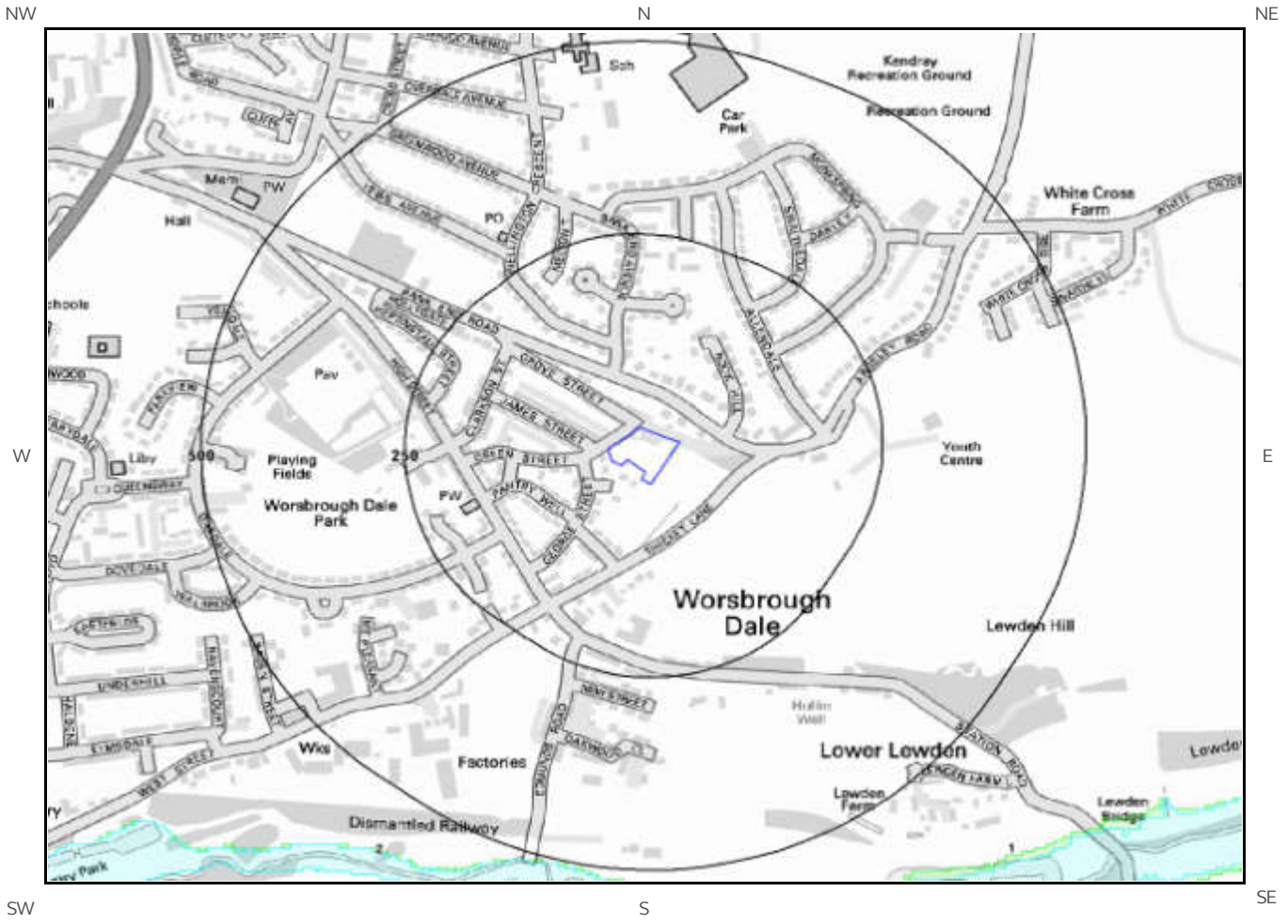
Database searched and no data found.

6.11 Surface Water Features

Are there any surface water features within 250m of the study site? No

Database searched and no data found.

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



Site Outline

Search Buffers (m) 100 250

Zone 2 Floodplain

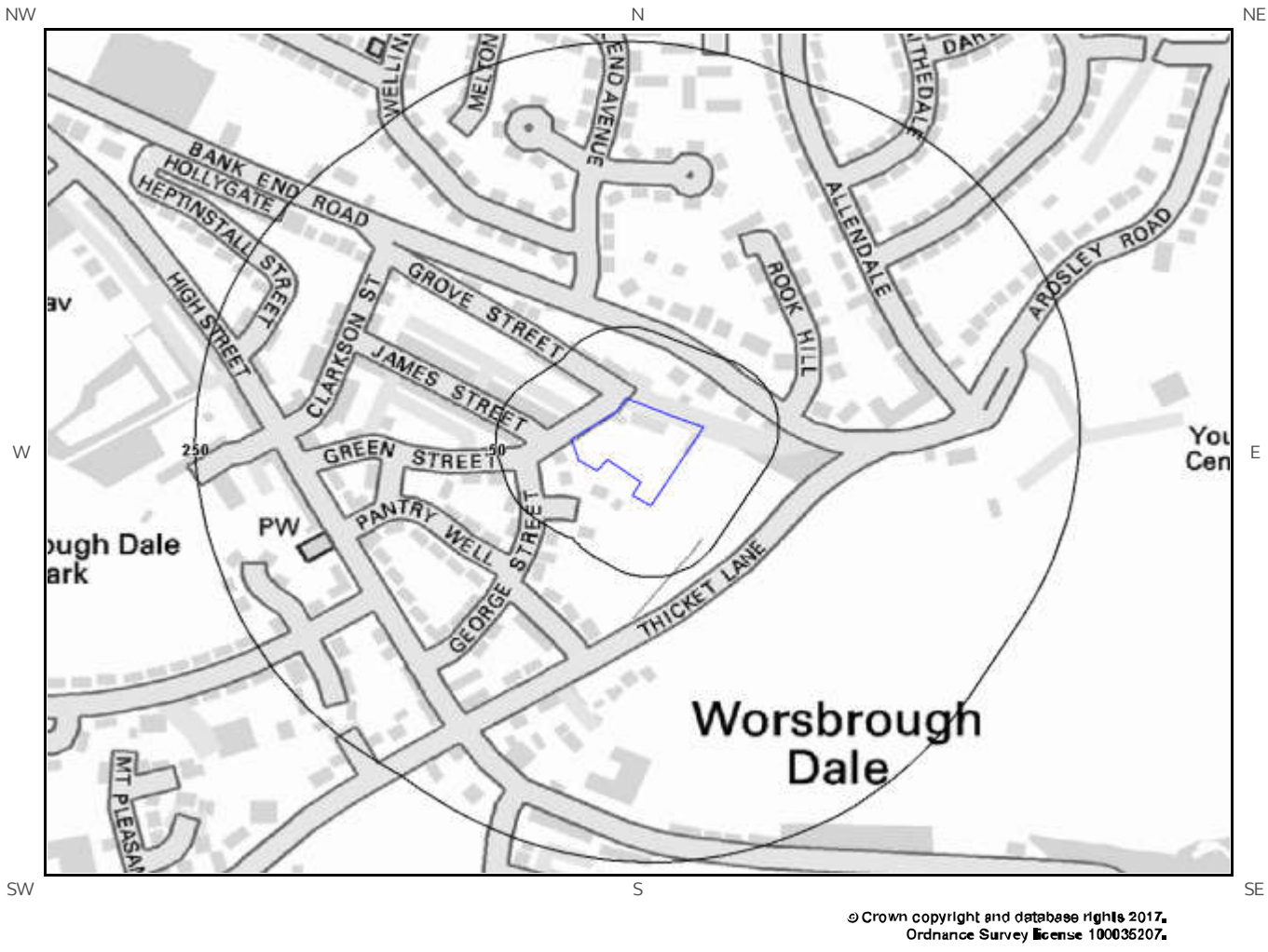
Zone 3 Floodplain

Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

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



Site Outline

100
250
Search Buffers (m)

RoFRaS Rating

- Very Low
- Low
- Medium
- High

7 Flooding

7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 2 floodplain? No

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

Database searched and no data found.

7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 3 floodplain? No

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

Database searched and no data found.

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

What is the highest risk of flooding onsite? Very Low

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

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

7.4 Flood Defences

Are there any Flood Defences within 250m of the study site? No

Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? No

7.6 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site? No

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? Yes

Does this relate to Clearwater Flooding or Superficial Deposits Flooding? Clearwater Flooding

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

7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?

Limited potential

Where limited potential for groundwater flooding to occur is indicated, this means that although given the geological conditions there may be a groundwater flooding hazard, unless other relevant information, e.g. records of previous flooding, suggests groundwater flooding has occurred before in this area, you need take no further action in relation to groundwater flooding hazard.

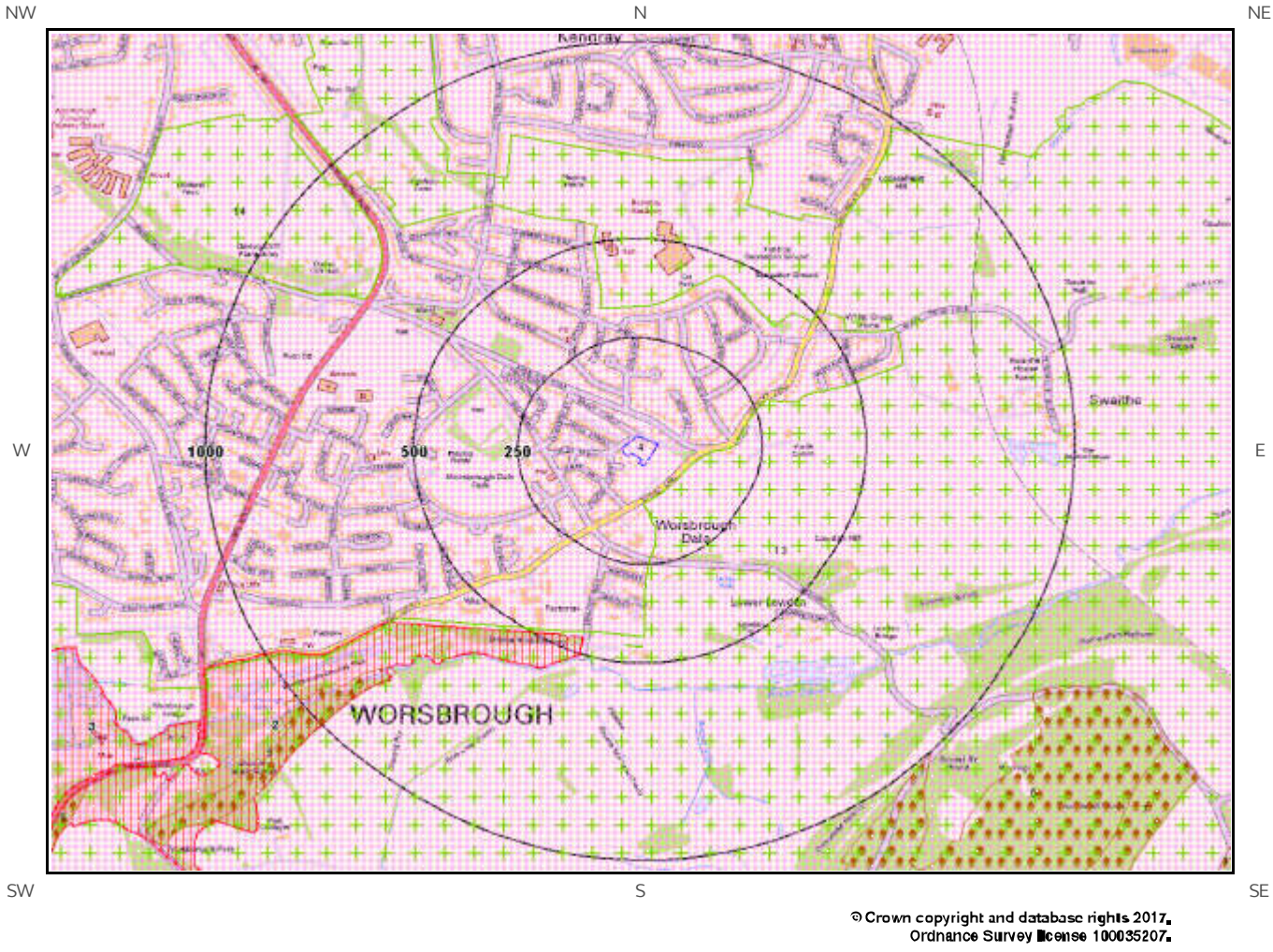
7.8 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result? Low

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

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

8. Designated Environmentally Sensitive Sites Map



Site Outline

100 250 Search Buffers (m)

AONB
National Park
SSSI
Special Protection Areas
Nitrate Vulnerable Zones
Green Belt
Environmentally Sensitive Areas
Special Areas of Conservation
World Heritage Sites
Nitrate Sensitive Areas
Ancient Woodland
National Nature Reserve
Local Nature Reserves
Ramsar Sites

8. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site? Yes

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

1

The following Site of Special Scientific Interest (SSSI) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SSSI Name	Data Source
Not shown	1991	NE	Stairfoot Brickworks	Natural England

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

8

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

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
5	778	SW	UNKNOWN	Ancient and Semi-Natural Woodland
6	1003	SE	UNKNOWN	Ancient and Semi-Natural Woodland
7	1432	SE	UNKNOWN	Ancient Replanted Woodland
8	1535	SW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1553	SE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1656	SE	UNKNOWN	Ancient and Semi-Natural Woodland
11	1705	SE	UNKNOWN	Ancient Replanted Woodland
Not shown	1802	SE	UNKNOWN	Ancient and Semi-Natural Woodland

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

2

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

ID	Distance (m)	Direction	LNR Name	Data Source
2	458	S	Worsborough Country Park	Natural England
3	1221	SW	Worsborough Country Park	Natural England

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

1

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
4	0	On Site	Existing	DEFRA

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

2

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

ID	Distance	Direction	Green Belt Name	Local Authority Name
13	79	SE	Liverpool, Manchester and West Yorks Greenbelt	Barnsley District (B)
14	719	NW	Liverpool, Manchester and West Yorks Greenbelt	Barnsley District (B)

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

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

9.1.1 Shrink Swell

What is the maximum Shrink-Swell** hazard rating identified on the study site? Very Low

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

Hazard
Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

9.1.2 Landslides

What is the maximum Landslide* hazard rating identified on the study site? Moderate

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

Hazard
Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.

9.1.3 Soluble Rocks

What is the maximum Soluble Rocks* hazard rating identified on the study site? Negligible

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

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

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

9.1.4 Compressible Ground

What is the maximum Compressible Ground* hazard rating identified on the study site? Negligible

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

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

9.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks* hazard rating identified on the study site? Very Low

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

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

9.1.6 Running Sand

What is the maximum Running Sand** hazard rating identified on the study site? Negligible

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

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

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.

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

9.2.2 Radon Protection

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

10. Mining

10.1 Coal Mining

Are there any coal mining areas within 75m of the study site? Yes

The following coal mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary? Yes

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

Distance (m)	Direction	Name	Commodity	Assessment of likelihood
0.0	On Site	Not available	Iron Ore (Bedded)	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
20.0	NE	Sheffield Area	Vein Mineral/Iron ore	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

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

10.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? No
Guidance: No Guidance Required.

Contact Details

emapsite
Telephone: 0118 9736883
sales@emapsite.com

British Geological Survey Enquiries
Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

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

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

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

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

Local Authority
Authority: Barnsley Metropolitan Borough Council
Phone: 01226 770770
Web: http://www.barnsley.gov.uk/
Address: PO Box 634, Barnsley, South Yorkshir, S70 9GG

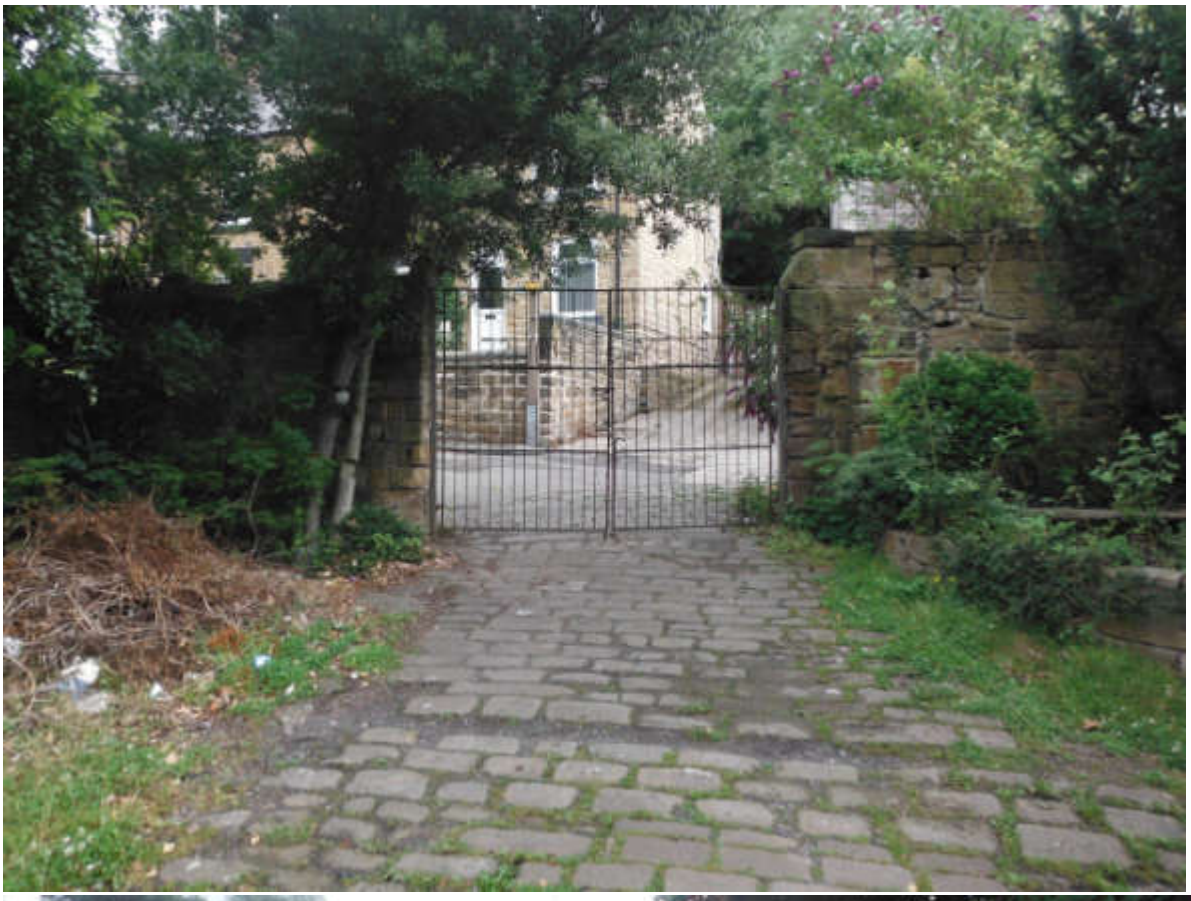
Gemapping PLC
Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444

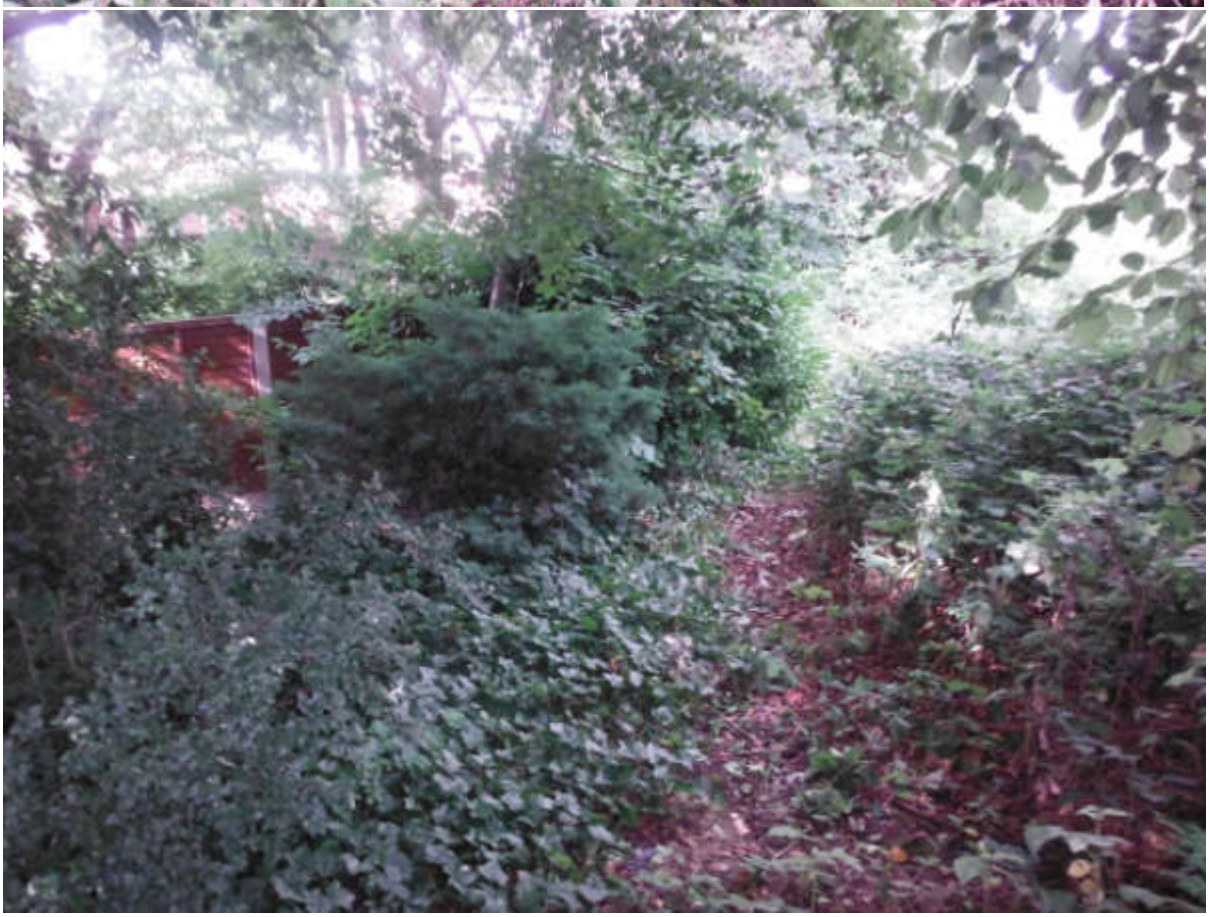
Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:
https://www.groundsure.com/terms-and-conditions-sept-2016

APPENDIX II

Walkover Photographs





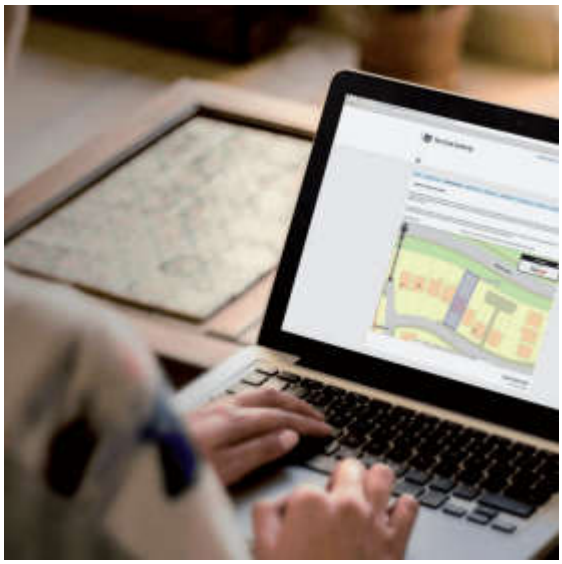
APPENDIX III

Coal Authority Report

The Coal Authority

Resolving the impacts of mining

CON29M Non-Residential Mining Report



DARLEY HOUSE
PANTRY HILL
WORSBROUGH DALE
BARNSLEY
S70 4RP

Date of enquiry:	03 August 2017
Date enquiry received:	03 August 2017
Issue date:	03 August 2017
Our reference:	51001538750003
Your reference:	PO-00342

CON29M Non-Residential Mining Report

This report is based on, and limited to, the records held by the Coal Authority and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

Client name

Met Engineers Ltd

Enquiry address

DARLEY HOUSE, PANTRY HILL, WORSBROUGH DALE, BARNSLEY, S70 4RP

Approximate position of property

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

/company/the-coal-authority
/thecoalauthority
/coalauthority

Summary

Has the search report highlighted evidence or potential of		
1	Past underground coal mining	Yes
2	Present underground coal mining	No
3	Future underground coal mining	Yes
4	Mine entries	Yes
5	Coal mining geology	No
6	Past opencast coal mining	No
7	Present opencast coal mining	No
8	Future opencast coal mining	No
9	Coal mining subsidence	Yes
10	Mine gas	No
11	Hazards related to coal mining	No
12	Withdrawal of support	No
13	Working facilities order	No
14	Payments to owners of former copyhold land	No
15	Information from the Cheshire Brine Subsidence Compensation Board	No

Further recommended reports
Coal mining subsidence claims 50m buffer report
Coal mining subsidence claims history

For detailed findings, please go to page 4.

Detailed findings

1. Past underground coal mining

The property is in a surface area that could be affected by underground mining in 11 seams of coal at 150m to 530m depth, and last worked in 1970.

Any movement in the ground due to coal mining activity should have stopped.

In addition the property is in an area where the Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered prior to any site works or future development activity. Your attention is drawn to the Comments on the Coal Authority information section of the report.

2. Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3. Future underground coal mining

The property is not in an area where the Coal Authority has plans to grant a licence to remove coal using underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

4. Mine entries

There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

There may however be mine entries/additional mine entries in the local area which the Coal Authority has no knowledge of.

5. Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6. Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7. Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8. Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9. Coal mining subsidence

There are 1 claim(s) within 50 metres of the property boundary that do not match the property address. These are shown on the enquiry boundary plot.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

If further subsidence damage claims information is required, please visit www.groundstability.com.

10. Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11. Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

12. Withdrawal of support

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

13. Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14. Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

15. Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

Comments on the Coal Authority information

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In view of the mining circumstances a prudent developer would seek appropriate technical advice before any works are undertaken.

Therefore if development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. Developers should be aware that the investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.

Additional remarks

Information provided by the Coal Authority in this report is compiled in response to the Law Society's Con29M Coal Mining and Brine Subsidence Claim enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. Please note that Brine Subsidence Claim enquiries are only relevant for England and Wales. This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority and Cheshire Brine Board's Terms and Conditions applicable at the time the report was produced.

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Alternative formats

If you would like this report in an alternative format, please contact our communications team.

Enquiry boundary

Key

Approximate position of enquiry boundary shown

Coal claims

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

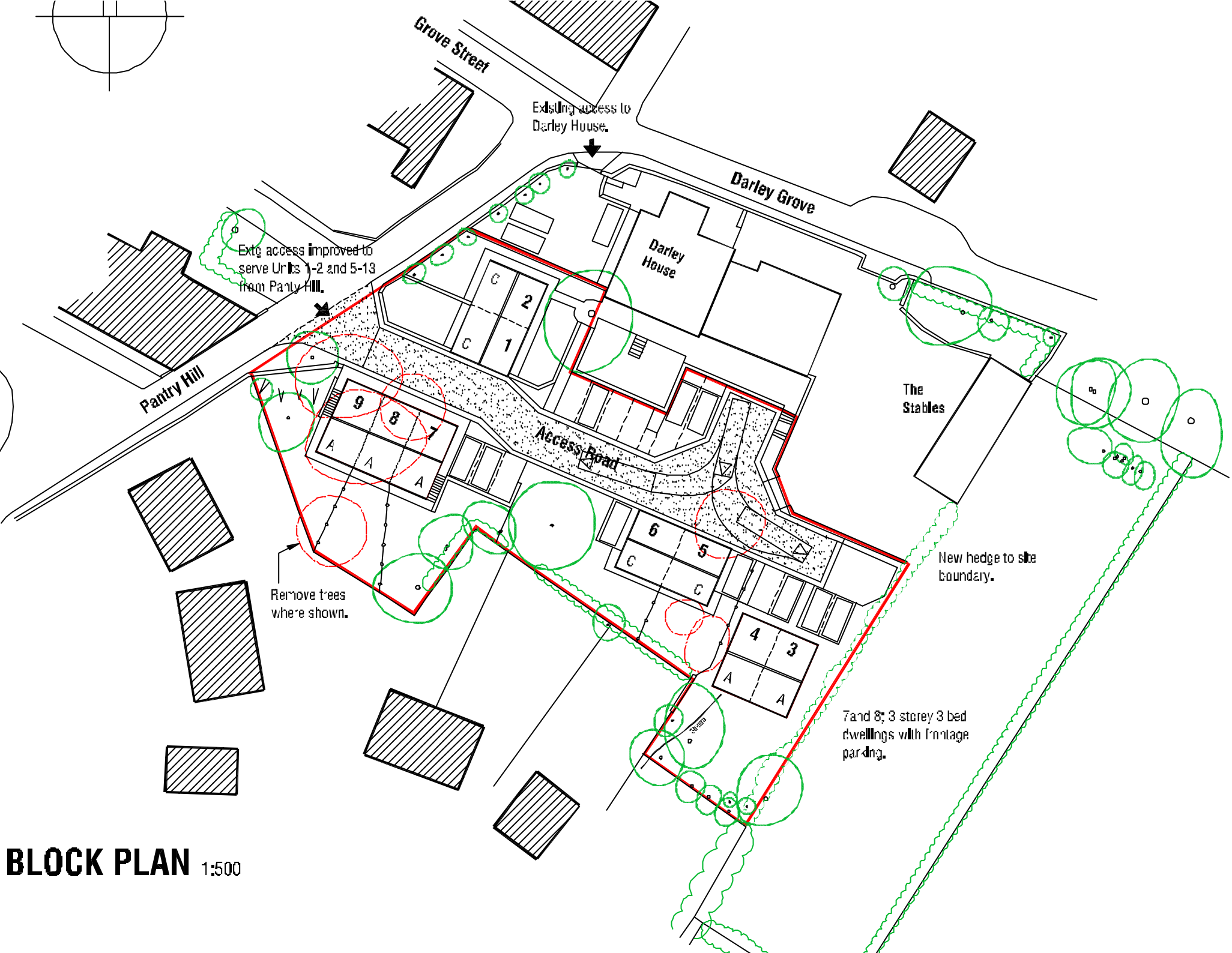
200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

/company/the-coal-authority
/thecoalauthority
/coalauthority

APPENDIX IV

Proposed Site Layout



BLOCK PLAN 1:500

APPENDIX V

Risk Matrix

Severity	Consequence
Very Low	Nil or slight injury/ illness *(possibly requiring first aid treatment on site),* property damage or environmental issue.
Low	Minor injury/ illness *(requiring medical treatment off site),* property damage or environmental issue.
Moderate	Moderate injury or illness *(including those where a person would be off work for up to 7 days or would be on light duties),* property damage or environmental issue.
High	Major injury or illness *(including those where a person would be off work for more than 7 days)* property damage or environmental issue.
Very High	Fatal or long term disabling injury or illness. Massive property damage or environmental issue.

Potential Risk		Likelihood				
		Very Low	Low	Moderate	High	Very High
Severity	Very Low	Very Low	Low	Low	Moderate	Moderate
	Low	Low	Low	Low/Moderate	Moderate	Moderate/High
	Moderate	Low	Low/Moderate	Moderate	Moderate/High	High
	High	Moderate	Moderate	Moderate/High	High	High/Very High
	Very High	Moderate	Moderate/High	High	High/Very High	Very High