



EARTH ENVIRONMENTAL
& GEOTECHNICAL

PHASE I & II COMBINED GEO-
ENVIRONMENTAL SITE
INVESTIGATION

142 WHITLEY WOOD LANE

READING

BERKSHIRE

RG2 8PP

Project Ref: R4210/25

February 2025



Earth Environmental & Geotechnical
(Southern) Ltd
Suite 18
Wyvols Court, Swallowfield
Reading
RG7 1WY

Tel : 01183 734000

Email south@earthenvironmental.co.uk
www.earthenvironmental.co.uk

**COMBINED PHASE I & PHASE II
GEO-ENVIRONMENTAL SITE
INVESTIGATION**

142 WHITLEY WOOD LANE

READING

RG2 8PP

REPORT REF: R4210/GI/25

FEBRUARY 2025

Prepared on Behalf of:

K.P.S.G LTD

By:

Earth Environmental & Geotechnical (Southern) Ltd
Suite 18
Wyvols Court
Swallowfield
Reading
RG7 1WY

DISTRIBUTION:

1 Electronic copy TNM Design Group Ltd

**COMBINED PHASE I & PHASE II GEO-ENVIRONMENTAL & GEOTECHNICAL
SITE INVESTIGATION****142 WHITLEY WOOD LANE, READING, RG2 8PP**

Report Reference: R4210/24
Version A0
Date: 17th February 2025
Prepared for: K.P.S.G LTD

Prepared by: Earth Environmental & Geotechnical (Southern) Ltd
Suite 18
Wyvols Court
Swallowfield
Reading
RG7 1WY

Definition of Version Code:

- D. Applied during initial drafting of the report before it has been reviewed.
- C. Applied after the report has been reviewed but before it has been approved by the Project Manager.
- B. Applied after the Project Manager has approved the report ready for issue to the client.
- A. Applied to reports after external/internal review.

The version number starts at "0" and is raised by "1" at each re-type.



Written by: **Ashley Thorne**
Senior Geo-Environmental Consultant



Approved by: **John Grace**
Director

TABLE OF CONTENTS

1.0	EXECUTIVE SUMMARY	3
2.0	INTRODUCTION	4
2.1	BACKGROUND.....	4
2.2	TERMS OF REFERENCE.....	4
2.3	REPORT SCOPE.....	4
2.4	LIMITATIONS OF THE STUDY	4
3.0	THE SITE	5
3.1	SITE LOCATION & DESCRIPTION	5
3.2	PROPOSED DEVELOPMENT	7
4.0	GEOLOGICAL SETTING	8
4.1	GEOLOGY.....	8
4.2	GROUND STABILITY	8
4.3	RADON POTENTIAL	8
4.4	MINING, GROUND WORKINGS & NATURAL CAVITIES	9
5.0	ENVIRONMENTAL SETTING	10
5.1	INDUSTRIAL LAND USE INFORMATION	10
5.2	WASTE AND LANDFILL SITES.....	10
5.3	ENVIRONMENTAL PERMITS, INCIDENTS AND REGISTERS	10
5.4	HYDROGEOLOGY AND HYDROLOGY	11
5.5	GROUNDWATER SOURCE PROTECTION ZONES AND ABSTRACTIONS	11
5.6	ENVIRONMENTAL DESIGNATIONS	11
5.7	UXO RISK	11
5.8	ARCHAEOLOGY.....	11
5.9	POTENTIAL FLOOD RISKS	11
5.10	PREVIOUS SITE INVESTIGATIONS	12
6.0	SITE HISTORY	13
7.0	PRELIMINARY CONTAMINATION RISK ASSESSMENT	16
7.1	INTRODUCTION	16
7.2	POTENTIAL SOURCES	17
7.3	POTENTIAL RECEPTORS	17
7.4	POTENTIAL PATHWAYS.....	18
7.5	PRELIMINARY RISK ASSESSMENT	20
8.0	SITE INVESTIGATION	21
8.1	EXPLORATORY FIELDWORK.....	21
8.2	LABORATORY TESTING PROGRAMME	22
8.2.1	<i>Environmental Testing</i>	<i>22</i>
9.0	GROUND CONDITIONS ENCOUNTERED & ENGINEERING PROPERTIES	23
9.1	SOIL PROFILE ENCOUNTERED	23
9.2	OBSERVABLE INDICATIONS OF CONTAMINATION	23
9.3	OBSTRUCTIONS	23
9.4	GROUNDWATER	23
10.0	SOIL CONTAMINATION RISK ASSESSMENT	25
10.1	GENERAL	25
10.2	ASBESTOS.....	28
10.3	SOIL CONTAMINATION ASSESSMENT	28
12.0	REVIEW OF CONCEPTUAL SITE MODEL.....	31
13.0	CONCLUSIONS AND RECOMMENDATIONS	34
13.1	GROUND CONDITIONS	34

13.2	CONTAMINATION ASSESSMENT	34
13.3	GROUND GAS.....	34
13.4	REMEDIAL WORKS.....	35
13.5	SITE PERSONNEL.....	35
13.6	OTHER MATTERS	35

FIGURES

Figure 1	Aerial Image Showing Site Location
Figure 2	Site photographs
Figure 3	Proposed Development Plan
Figure 4	Historical Map Extracts
Figure 5	Exploratory Hole Location Plan

TABLES

Table 1	Geohazards Risk Ratings
Table 2	Summary of Industrial Land Use
Table 3	Summary of Site History
Table 4	Consequence, Probability and Risk
Table 5	Estimation of Level of Risk by Comparison of Consequence and Probability
Table 6	Preliminary Conceptual Model
Table 7	Summary of Exploratory Holes Undertaken
Table 8	Soil Results Comparison with Defra C4SL HCV/LLTC Values
Table 9	Soil Results Comparison with LQM/CIEH S4UL
Table 10	Ground Gas Risk Screening Table
Table 11	Characteristic gas situation by site characteristic hazardous gas flow rate
(BS 8485)	
Table 12	Revised Conceptual Site Model

APPENDICES

Appendix 1	Groundsure Report
Appendix 2	Exploratory Borehole and Hand Pit Logs
Appendix 3	Laboratory Testing Results (Chemical)
Appendix 4	Ground Gas Monitoring Data
Appendix 5	Report Limitations

1.0 EXECUTIVE SUMMARY

Appointment	A combined phase I and phase II geo-environmental site investigation has been commissioned by TNM Design Group on behalf of K.P.S.G LTD (the client).
The Site	The assessment site is located at 142 Whitley Wood Lane, Reading RG2 8PP and is centred on National Grid Reference SU 71985 69251 (N: 169152, E: 472112).
Proposed Development	At the time of writing EEGSL understands that the proposed development includes the renovation of the existing pub into a house of multiple occupancy and the construction of three residential properties with soft landscaping and associated car parking spaces in the west of the site where the existing workshop is situated.
Site Geology	The BGS states that the site is underlain directly by Bedrock geology of the London Clay Formation.
Site History	A review of historical maps and current day information has proven the site was part of an open field in 1877 which was then redeveloped into two residential properties and a post office by the 1930s. This remained unchanged until the site was redeveloped in 1986 into the current pub and garages / workshop. Surrounding development has comprised of mostly residential housing from the 1910's onwards.
Identified Sources of Contamination	The former garages and workshop on site have been identified as potential sources of contamination, alongside the potential for made ground to be present due to the site's historical redevelopment
The Investigation	The investigation comprised 4nr window sample boreholes drilled to 4mbgl and 1nr hand dug trial pit to 1.24mbgl. 9 soil samples were collected for chemical analysis.
Confirmed Ground Conditions	Ground investigation works have proven that the ground conditions generally comprise Made Ground proven to a base depth of 1.20mbgl overlying Clays of the London Clay Formation proven to a maximum base depth of 4.00mbgl.
Human Health Risk Assessment	From the assessment of potential human health risk, it is proposed that a <u>Low Risk</u> is present to current and adjacent site users and construction site workers, however a <u>Moderate Risk</u> is present to future site users. Ground investigation works have found elevated levels of Lead, Mercury, Beryllium and Asbestos within shallow Made Ground deposits. Given the levels of contamination present, a clean cover system is recommended for all soft landscaping and gardens areas.
Ground Gas Risk Assessment	A total of four rounds of ground gas monitoring have been completed to date from boreholes WS01, WS02 and WS04 between the 17th September 2024 and the 7th October 2024. The results of the gas monitoring indicated that hazardous ground gas flow rates fall well within the bounds of a Characteristic Situation 1 scenario. Therefore, ground gas protection measures are not expected to be required.
<i>This sheet is intended to provide a summary only. It does not provide a definitive analysis and should not be relied upon without full review of the following report and associated appendices.</i>	

2.0 INTRODUCTION

2.1 Background

A Combined Phase I Desk Study and Phase II Geo-Environmental Site Investigation has been commissioned by TNM Design Group on behalf of K.P.S.G LTD (the Client) at 142 Whitley Wood Lane, Reading (herein referred to as the 'assessment site').

2.2 Terms of Reference

Earth Environmental and Geotechnical (Southern) Ltd (EEGSL) was commissioned by the Client to undertake a combined Phase I Desk Study and Geo-environmental Site Investigation in accordance with project proposal R4210 dated 29th August 2024.

The objectives of this investigation are as follows:

- *Complete a Phase I Desk Study.*
- *Undertake ground investigation works to assess the presence and likely extent of any potential environmental hazards (soil contamination) within the area of investigation.*
- *Provide a combined Phase I Desk Study and Phase II Factual & Interpretive Ground Investigation Report.*
- *Provide a Remediation Method Statement.*

2.3 Report Scope

This report presents full factual records of the site work carried out, the ground conditions encountered in the exploratory holes and the in-situ and laboratory test results. All information collected has been used to provide an interpretation of the ground conditions together with a human health risk assessment.

2.4 Limitations of the Study

The report is written in the context of an agreed scope of work and budget and should not be used in a different context. New information, improved practices or changes in legislation may require a reinterpretation of the report in whole or in part.

EEGSL reserves the right to amend either conclusions or recommendations in light of any further information that may become available. The report is provided for the sole use by the Client and is confidential to them.

Recommendations within this report are also based on exploratory records and examination of samples and, where applicable, laboratory tests. No liability can be accepted for conditions not revealed by the boreholes, particularly at intervening locations.

Whilst every effort is made to ensure accuracy of data supplied, all opinions expressed as to the spatial distribution of strata between sampling locations is for guidance only and no responsibility is accepted as to its accuracy.

3.0 THE SITE

3.1 Site Location & Description

The assessment site is located at 142 Whitely Wood Lane, Reading. The approximate National Grid Reference for the centre of the site is SU 71985 69251 (N: 169152, E: 472112) with the closest postcode being RG2 8PP.

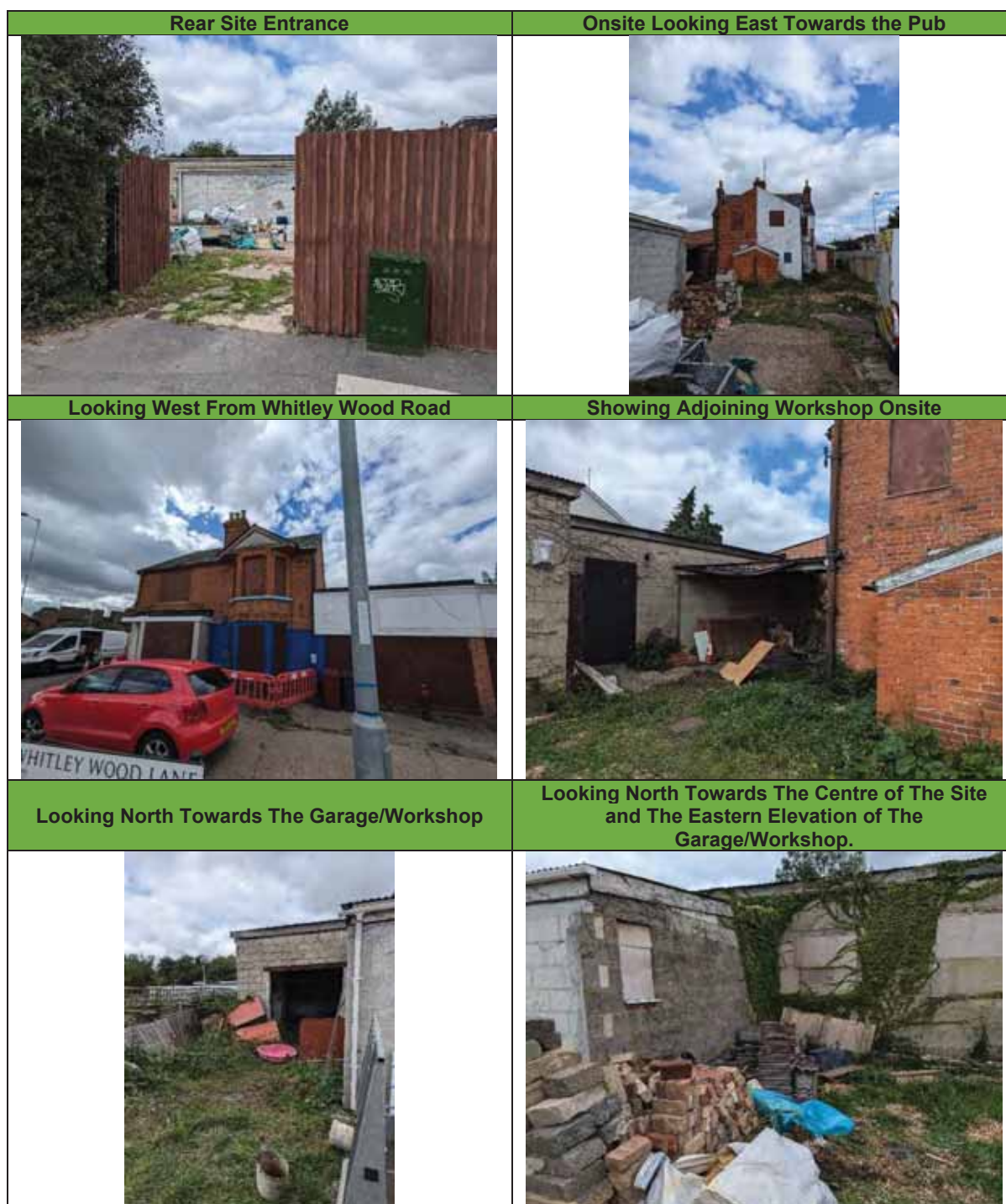
The assessment site has an area of 0.08ha and currently consists of a vacant Public House and a set of attached workshops/garages.

The general surrounding area comprises of mostly residential properties, with some small scale commercial uses also. The assessment site is approximately 4.3km south of the centre of Reading, Berkshire. A plan showing the site boundary can be seen in Figure 1 and photographs showing the current site condition are presented in Figures 2 and 3.

Figure 1: Aerial Image Showing Site Location



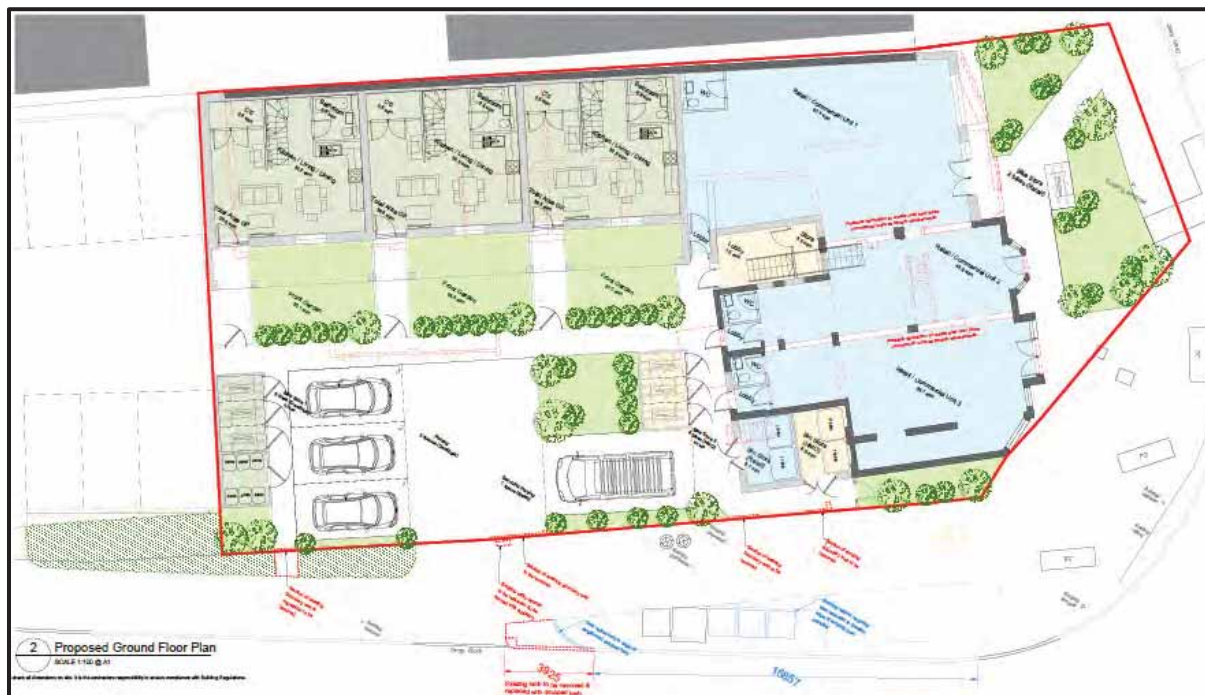
Figure 2: Site Photographs



3.2 Proposed Development

At the time of writing EEGSL understands that the proposed development includes the renovation of the existing pub into a house of multiple occupancy and the construction of three residential properties with soft landscaping and associated car parking spaces in the west of the site where the existing workshop is situated. A proposed development plan is presented in Figure 3.

Figure 3: Proposed Development Plan



4.0 GEOLOGICAL SETTING

The geology of the assessment site is covered by British Geological Survey (BGS) online data and the site-specific Groundsure Insight Report (Appendix 1).

4.1 Geology

The BGS states that the assessment site is not underlain by infilled, artificial ground (Made Ground) or superficial deposits.

The site is directly underlain by bedrock geology of the London Clay formation which consists of Clay and Silt.

There are no recorded geological faults, linear features or land slips located within 500m of the assessment site.

There are 12 BGS borehole records within 250m of the assessment site. The closest readable record refers to a 2m deep borehole SU76NW123 located 69m south of the assessment site. The ground conditions encountered were as follows:

- Topsoil from ground level to 0.40mbgl.
- Firm brown sandy CLAY from 0.40mbgl to 0.60mbgl.
- Firm brown sandy CLAY with pockets of coarse clayey SAND from 0.60mbgl to 1.10mbgl.
- Firm to Stiff mottled brown, grey fissured CLAY with pockets and layers of brown clayey SAND from 1.10mbgl to 2.00mbgl.

4.2 Ground Stability

Hazard ratings for different geohazards present at the assessment site shown in Table 1:

Table 1 – Geohazards Risk Ratings

Geohazards:	Potential Risk
Highly Compressible Ground	Negligible Risk
Collapsible Soils	Very Low Risk
Shrink Swell Clays	Low Risk
Running Sand	Very low Risk
Ground Dissolution	Negligible Risk
Landslides	Very Low Risk
Mining & Quarrying	No mining or quarrying is recorded as taking place on-site. The site is not located within a Coal Mining Reporting Area.

4.3 Radon Potential

The assessment site is in an area where the less than 1% of properties are expected to be above the Radon Action Level. Therefore, radon protection measures are not likely to be required.

4.4 Mining, Ground Workings & Natural Cavities

There are three records of surface ground workings within 250 meters of the assessment site.

The three records all refer to the same pond located 177/178m north of the assessment site, with records dating from 1898, 1913 and 1938.

There are no records of mining cavities, natural cavities, brine areas, gypsum areas, coal mining, tin mining or clay mining within 250m of site.

There are also no records of non-coal mining related activities record within 250m of the assessment site.

There are no British Pit records located within 250m of the site.

5.0 ENVIRONMENTAL SETTING

Environmental conditions are covered by Environment Agency (EA) and British Geological Survey (BGS) online data, and the site-specific Groundsure Insight Report (Appendix 1).

The following sections are generally limited to locations within 250m of the site boundary unless it is considered that installations or activities beyond that range could potentially have an impact on the assessment site or be affected by its redevelopment.

5.1 Industrial Land Use Information

Historical and current industrial land usage on-site and within 250m of the assessment site is summarised in Table 1 below:

Table 2: Summary of Industrial Land Use

Description	On-Site	Records within 250m of site	Details of nearest Record
Historical Industrial Land Uses	0	0	-
Historical Tanks	0	0	-
Historical Energy Features	0	0	-
Historical Petrol Station	0	0	-
Historical Garage	0	0	-
Historical Military Land	0	0	-
Historical Railway and Tunnel Features	0	0	-
Historical Railways	0	0	-
Recent Industrial Land Use	0	2	<u>Nearest off-site:</u> 79m E Electricity Substation
Current/Recent Petrol Stations	0	0	-
Electricity Cables	0	0	-
Gas Pipelines	0	0	-
Current Railway Features	0	0	-

5.2 Waste and Landfill Sites

There are no active or recent landfill sites within 250m of the assessment site.

There are no historical landfills within 250m of the assessment site.

There is no historical waste sites identified within 250m of the assessment site.

There are also no known current licensed waste sites within 250m of the assessment site.

There are no waste exemptions within 250m of the assessment site.

5.3 Environmental Permits, Incidents and Registers

According to The Groundsure Report, there are no records of environmental permits, incidents and registers within 250m of the assessment site.

5.4 Hydrogeology and Hydrology

The underlying bedrock geology is classed as an Unproductive Aquifer by the Environment Agency. The EA definition for an Unproductive Aquifer is given below:

“These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow”

Based on the above information, it is recommended that the groundwater vulnerability of the site should be classified as low.

5.5 Groundwater Source Protection Zones and Abstractions

The assessment site is not located within a groundwater Source Protection Zone (SPZ).

There are no records of active or historic surface water abstraction licenses within 250m of the assessment site.

There are no records of active or historic groundwater abstraction or potable water licenses within 250m of the assessment site.

There are no records of surface water features within 250m of the assessment site.

Given the above information it is recommended that the controlled waters vulnerability be classed as low.

5.6 Environmental Designations

There are no records of sites of special scientific interest (SSSI), Conserved wetland sites, Special Areas of Conservation (SAC), Special Protection Areas (SPA), Local Nature Reserves (LNR), National Nature Reserves (NNR) or Designated Ancient Woodland located within 500m of the site.

5.7 UXO Risk

Review of available UXO risk maps indicate that the site is in an area of low risk for unexploded ordnance.

5.8 Archaeology

An archaeological assessment falls outside the brief of this report. Where considered necessary, advice should be sought from an archaeological specialist.

5.9 Potential Flood Risks

A comprehensive flood risk assessment is not within the scope of this report. However, based on a preliminary examination of flood data, the following observations can be made:

- Risk of flooding from rivers and the sea is recorded as Negligible on-site and within 50m of the site.
- No historical flood events are recorded within 250m of the site.
- On the assessment site itself, the risk of surface water flooding is 1 in 1000 years, 0.1m – 0.3m and within 50m of the site.

- The assessment site does not fall within a Flood Zone 2 or Flood Zone 3 area.
- There is a moderate risk of groundwater flooding on-site and within 50m of the assessment site.

There are no records of flood defences, areas benefitting from flood defences, and no flood storage areas within 250m of the assessment site.

5.10 Previous Site Investigations

At the time of writing, EEGSL are not aware of any previous site investigation works undertaken at the assessment site.

6.0 SITE HISTORY

The historical development of the assessment site has been determined by reference to historical maps and plans and Google Earth imagery. The reviewed historical maps and plans comprise only readily available records and may be limited; however, the information available to date indicates that additional searches are unlikely to add to our understanding of the site.

The earliest available historical mapping covering the site dates to 1877-1879. The site history is summarised in Table 3.

Table 3: Summary of Site History

Date	Site	Surrounding Land Use (Within 250m of Site)
1877-1879	The site comprises of an open field likely used for agriculture.	The site is surrounded to the north, west and south by open fields and a cross roads to the east with residential properties beyond.
1899	No significant change has occurred.	No significant change has occurred.
1911	Two semi-detached residential buildings now occupy the site with a detached outbuilding / garage present in the southwest.	The area surrounding the site to the north, west and east is now occupied by mainly semi-detached residential properties which extend to the north by 100m and northwest by 250m.
1937	No significant structural change has occurred, however the southern of the two semi-detached houses is now referred to as a Post Office.	Surrounding residential development has extended in all directions around site.
1959	No significant change has occurred.	No significant change has occurred.
1966	No significant change has occurred.	No significant change has occurred.
1974	No significant change has occurred.	A surgery is noted 120m northwest
1986	The site has been redeveloped and now comprises two semi-detached buildings (No.142 and No.144) with an attached workshop or garage located mainly to the rear of No.142 but also partly behind No.144.	No significant change has occurred.
1988	No significant change has occurred.	The site is surrounded by residential properties in all directions.
1994	No significant change has occurred.	An Electricity Substation is located ~85m east.
2003-2024	No significant change has occurred.	No significant change has occurred.

Selected extracts from historical maps and aerial photography are presented in Figure 4.

Figure 4: Historical Map Extracts

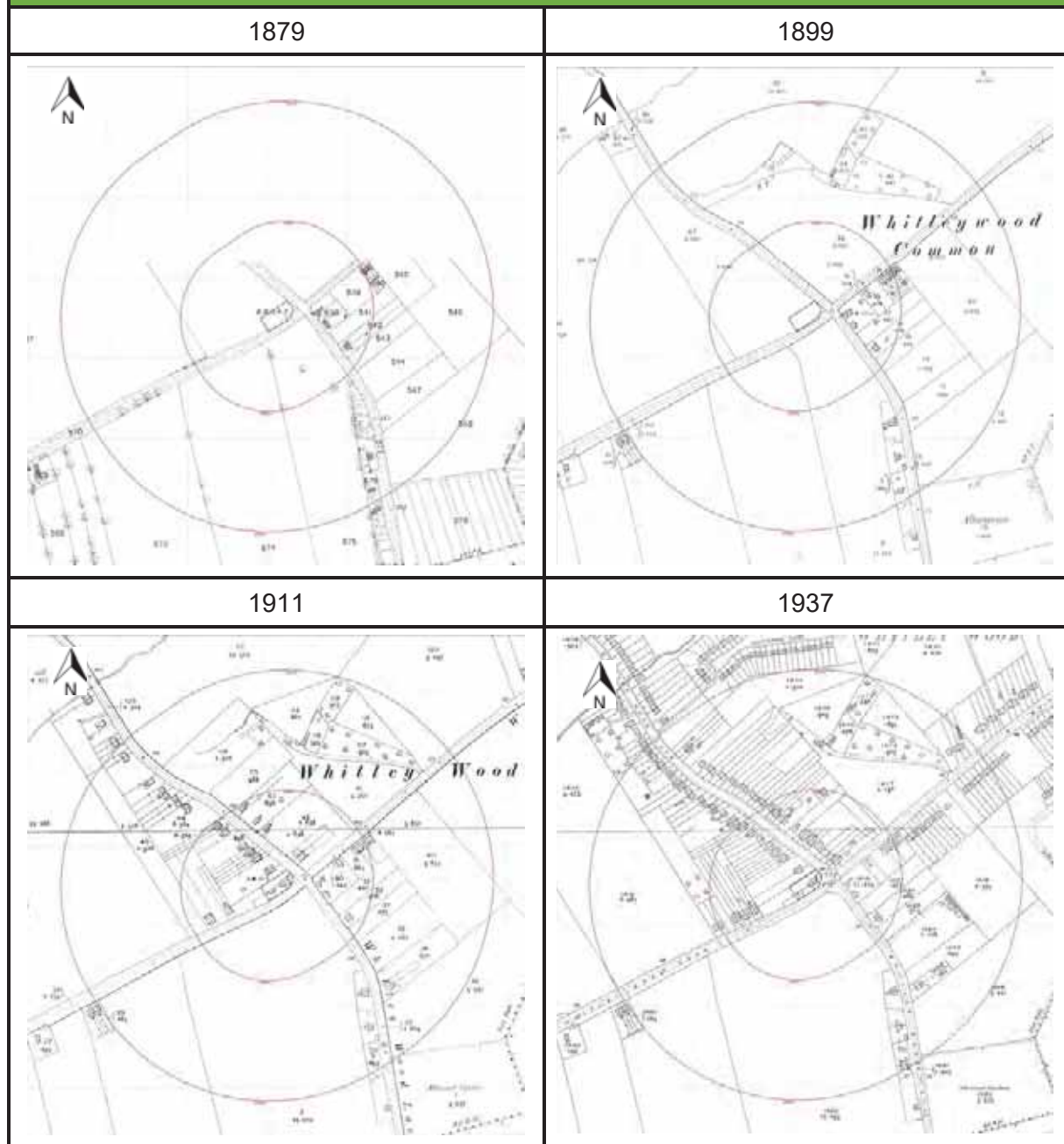
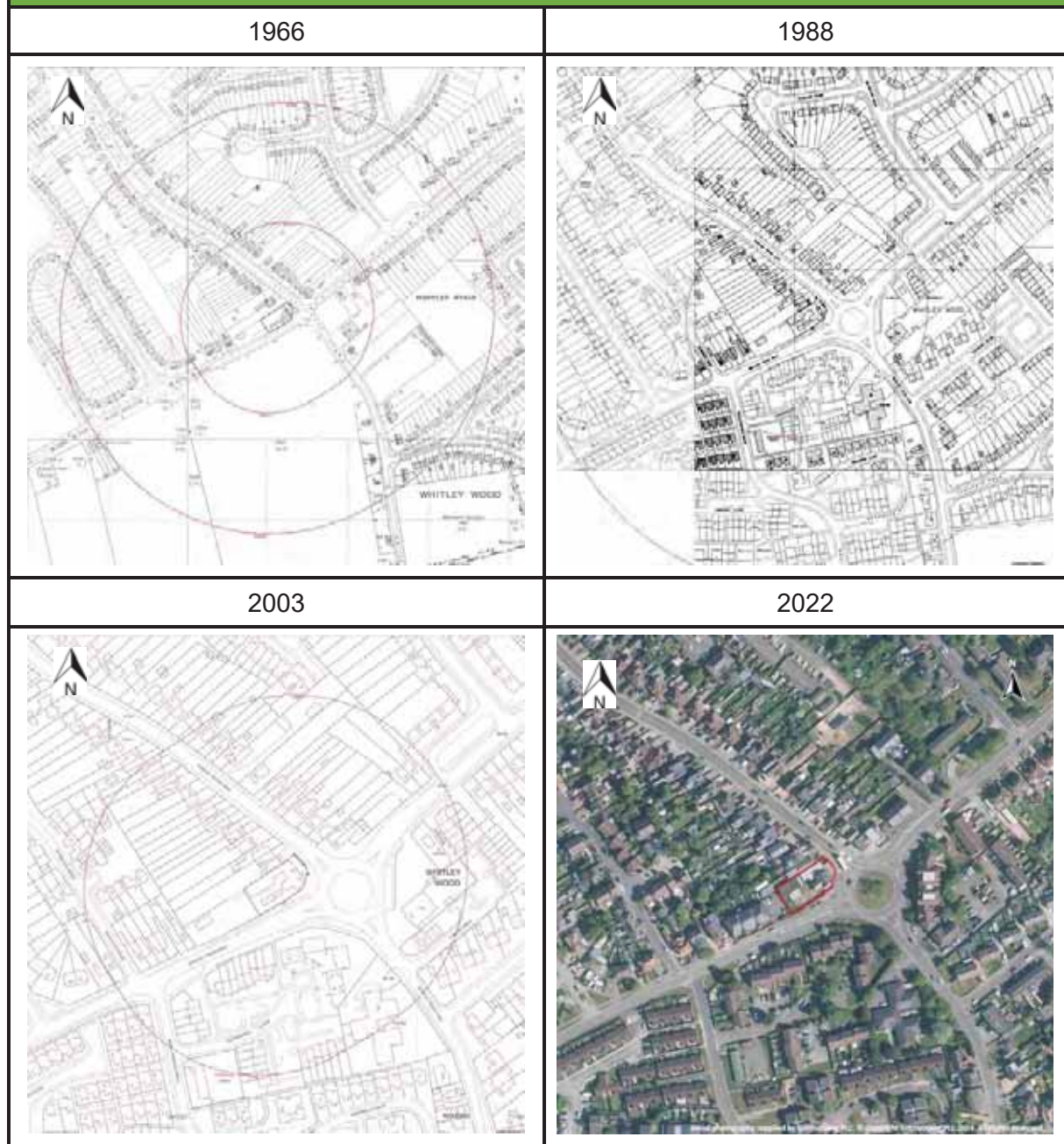


Figure 4 continued: Historical Map Extracts



7.0 PRELIMINARY CONTAMINATION RISK ASSESSMENT

7.1 Introduction

The following sections outline a Preliminary Risk Assessment (PRA) for the assessment site based on the above desk study information as defined by DEFRA and the EA Model Procedures for the Management of Land Contamination, CLR11(2004).

Table 6 provides a Preliminary Conceptual Model (PCM) which considers the source-pathway-receptor linkages present alongside the likelihood, severity and risk level as defined within Table 4 and Table 5. The assessment of probability, a modified risk table, and certain consequence definitions are based on CIRIA C552 and CLR11.

Table 6 considers whether a pollution linkage is potentially present and provides a preliminary qualitative assessment of risk based on the information currently available. Where a possible linkage is identified, it does not necessarily mean that a significant risk exists but indicates that further information is required through appropriate site investigation to substantiate the conceptual model.

The PCM/PRA is based on a residential end use scenario.

Table 4: Consequence, Probability and Risk

Probability	Consequence,	Risk
High Likelihood- There is a pollution linkage and an event either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution	Very High – acute risk to the human health likely to result in significant harm. Risk of severe or irreversible effect on ground/surface water quality. Catastrophic damage to buildings / property.	Very High – there is a high potential that the source-pathway-receptor scenarios may give rise to harm to human health or the environment and remedial action is likely to be required.
Likely – there is a pollution linkage and all the elements are present, which means that it is probable an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.	High – Severe or irreversible effect on human health. Temporary severe or irreversible effect on ground/surface water quality. Reduction of water quality rendering groundwater or surface water unfit to drink and/or substantial adverse impact on groundwater dependant environmental receptors.	High – it is likely that the source-pathway-receptor scenarios may give rise to an impact on human health or the environment, which may require remediation and/or control measures to mitigate risks
Low likelihood– there is a pollutant linkage and circumstances are possible for an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term	Moderate – Long term or short term moderate effect on human health. Moderate effect on ground/surface water quality, reversible with time. Reduced reliability of a supply at a groundwater or surface water abstraction source	Moderate – it is possible that the source-pathway-receptor scenarios may give rise to an impact on human health or the environment, however it is either relatively unlikely that such would be severe, or if any harm were to occur it is more likely that harm would be mild.
Unlikely – there is a pollution linkage, but circumstances are such that it is doubtful that an event would occur even in the very long term.	Low – Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc.) Slight effect on ground/surface water quality, reversible with time. Marginal reduced reliability of a supply at a groundwater or surface water abstraction source.	Low – it is possible that harm could arise at the source, however it is likely that they would at worst be mild.
		Very Low – it is unlikely that the source-pathway-receptor scenarios will give rise to an impact on human health or the environment.

Table 5: Estimation of Level of Risk by Comparison of Consequence and Probability

		Consequence			
		High	Moderate	Low	Very low
Probability	High Likelihood	Very High	High risk	Moderate risk	Moderate to low risk
	Likely	High risk	Moderate risk	Moderate to low risk	Low risk
	Low Likelihood	Moderate risk	Moderate to low risk	Low risk	Very low risk
	Unlikely	Moderate to low risk	Low risk	Very low risk	Very low risk

7.2 Potential Sources

The following potential sources have been considered for the assessment site.

On Site:

- The site has been through two main phases of development, the first in 1911 where two semi-detached houses were developed onsite, and then in 1986 when the houses (one also working as a Post Office) were redeveloped into the current site layout (Pub with attached workshop and garages). Prior to 1911 the site was part of an open field. Given the historical development onsite, there is likely to be some made ground present, and potentially some contamination due to the former workshops and garages. Given the most recent redevelopment was in the 1980's, asbestos containing materials are likely to be present. When considering the site's history, the main onsite contaminants of concern include asbestos (used in construction) and heavy metals and hydrocarbons from the former garages and workshop.

Off Site:

- During this assessment limited historic off-site sources of contamination have been reviewed.
- The only source of contamination off-site identified was an Electricity Substation identified in 1994 and located 79m east of the assessment site.

When considering the historical offsite sources, the electricity substation is deemed unlikely to have caused significant contamination to be present on-site due to the distance between the source and the assessment site.

Based on the above assessment it is considered that no significant offsite sources of contamination are present.

7.3 Potential Receptors

The following receptors have been considered as part of this assessment.

- Current site users.
- Adjacent land users.
- Future land users.
- Construction workers during site development works.

7.4 Potential Pathways

The following pathways have been considered as part of this assessment.

- Direct / dermal contact, ingestion, inhalation pathways of potentially contaminated soils.
- Vertical or horizontal migration of contamination within shallow soils.

Table 6: Preliminary Conceptual Model

Source	Pathway	Receptor	Probability	Consequence	Risk	Comment
Onsite Sources						
Potential contamination associated with historical and current site uses.	Dermal contact, ingestion and inhalation of soils dust	Current Site Users	Unlikely	Low	Very Low Risk	Despite the potential for some contamination to be present on site due to historical development and the former onsite garages and workshop, the site is currently not in use, therefore there is a lack of current site users to act as receptors. Based on no current site users being present, the risk to current site users is deemed as VERY LOW.
		Adjacent Land Users	Low Likelihood	Low	Low Risk	Despite the potential for some contamination to be present on site due to historical development and the former onsite garages and workshop, there is expected to be a LOW risk to adjacent site users. This low risk considers the limited and sporadic nature of the expected contamination, the cohesive nature of the underlying geology and the likely lack of shallow groundwater. Given the conditions noted above, it is expected that contamination migration pathways will be significantly retarded and if if contamination is present, it is unlikely that it will migrate significantly off site.
		Future Site Users	Low Likelihood	Moderate	Moderate to Low Risk	There is a possibility that some contamination may be present in the shallow made ground at site from the previous redevelopment and workshop and garages. The proposed residential development will be highly sensitive, and exposure within areas of proposed soft landscaping cannot be rules out at this stage. Given the potential risk, a MODERATE risk to future site users is currently considered appropriate.
		Construction Workers	Low Likelihood	Low	Low Risk	There is a possibility that some contamination may be present in the shallow soils onsite, however given the low exposure duration expected for construction workers, and assuming standard PPE and good working practices will be maintained (in line with CDM regulations) then the risk to construction workers is expected to be LOW.

7.5 Preliminary Risk Assessment

From review of historical maps and current day information, it has been identified that the assessment site comprised of an open field in 1879 which was then developed into 2 semi-detached properties in 1911. The southern of the two properties was later labelled as Post Office 1937. The site remained the same until 1986 when it was redeveloped into the current layout, with a public house facing Whiley Wood Road with an attached workshop and garages to the rear.

Given the site's history, it is suggested that some contamination may be present due to Made Ground deposits formed during redevelopment works and from the use of site as a workshop and garages.

There was a lack of significant off-site sources of contamination noted, with only an electricity substation identified 79m east of the site appearing in 1994.

Based on the information above, and the proposed development, a conceptual site model (Table 6) has been produced and the impacts on sites users assessed.

From the assessment of potential risk, it is proposed that a **VERY LOW to LOW** risk is present to Current site users, Adjacent site users and Construction site workers, whilst a **LOW to MODERATE** risk is present to Future site users.

Given the potential risks detailed above, EEGSL were also commissioned to complete ground investigation works across the assessment site.

Details of the ground investigation works undertaken, including a human health risk assessment are detailed within the following sections.

8.0 SITE INVESTIGATION

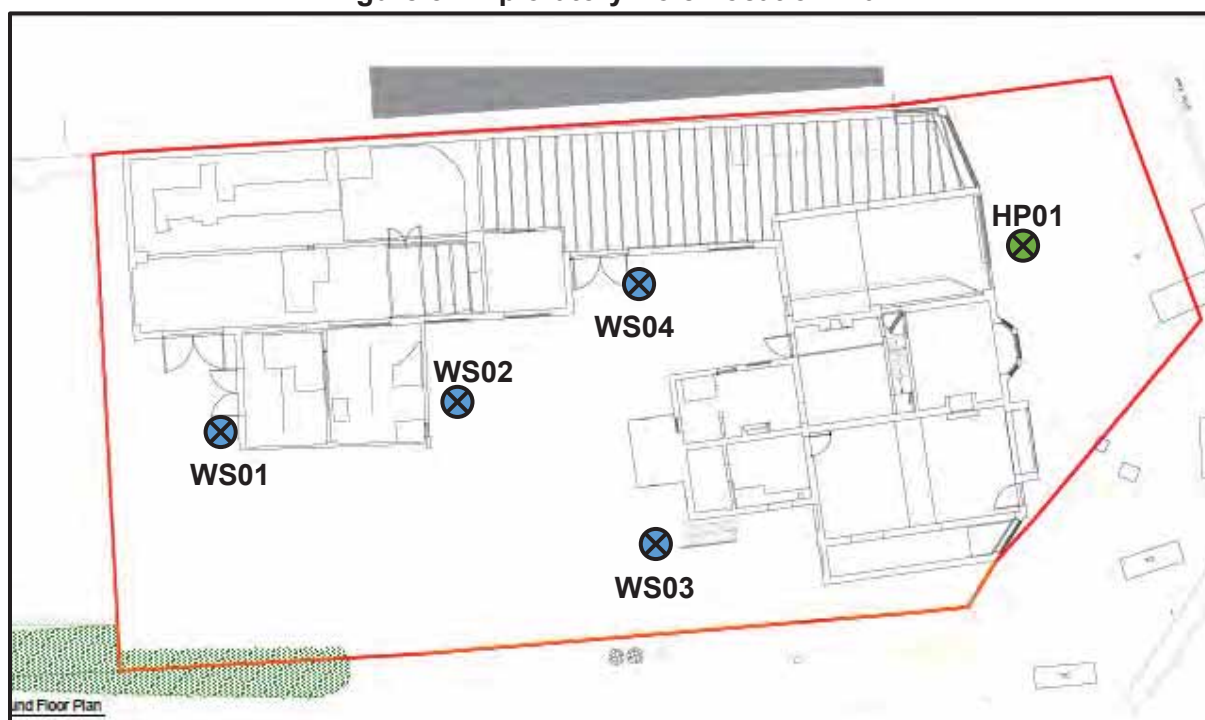
8.1 Exploratory Fieldwork

Fieldwork was carried out by EEGSL on the 11th September 2024 and comprised:

- 4 No. window sample boreholes (designated WS01 – WS04) were sunk to a depth of 4.0m below existing ground level. The window sampler boring was carried out using a standard window sample drilling rig. The rig uses a chain-driven trip hammer to drive sampling tubes or penetrometers into the ground. These tools are coupled to the anvil of the hammer by solid drill rods. Sampling tubes comprise “windowless samplers”, which are plain sampler tubes in which a continuous disturbed sample is recovered within a semi-rigid plastic liner. In order to reduce friction within the borehole, sampling tubes of progressively smaller diameter are used as the borehole depth increases. Sampler diameters generally range from between approximately 90mm to 50mm. Groundwater observations were noted where possible. These observations relate to the time of the investigation only, and do not necessarily reflect seasonal fluctuations. The boreholes were backfilled with arisings on completion. Window Sample logs are included in Appendix 2.
- 1 No. Hand dug trial pit (HP01) was dug to a depth of 1.24m below existing ground level. Hand Pit Logs are included in Appendix 2.

The investigation locations completed are shown approximately on the Exploratory Hole Location Plan below (Figure 5)

Figure 5: Exploratory Hole Location Plan



Each exploratory location was scanned using a Cable Avoidance Tool (CAT) to locate unrecorded underground services, and the exploratory locations were repositioned if necessary. On completion, all samples recovered from the site were taken to specialist laboratories for testing.

All site investigation work was supervised full time by a representative of EEGSL. The logging of soils and rocks has been carried out in accordance with BS5930^(2015+A1:2020) except where superseded by the soil and rock description methodology in BS EN14688-1⁽²⁰⁰²⁾, BS EN 14688-2⁽²⁰⁰⁴⁾ and BS EN 14689-1⁽²⁰⁰³⁾.

A summary of exploratory holes undertaken during the investigation is presented in Table 7.

Table 7: Summary of Exploratory Holes Undertaken

Hole	Type*	Depth (m)	Date Started	Date Finished	Monitoring Standpipe Response Zone	Backfill Details**
HP01	HP	1.24	11/09/2024	11/09/2024	-	A
WS01	WS	4.00	11/09/2024	11/09/2024	1.00mbgl – 4.00mbgl	Installed to 4.00mbgl
WS02	WS	4.00	11/09/2024	11/09/2024	0.50mbgl – 1.00mbgl	Installed to 1.00mbgl
WS03	WS	4.00	11/09/2024	11/09/2024	-	A
WS04	WS	4.00	11/09/2024	11/09/2024	1.00mbgl – 4.00mbgl	Installed to 4.00mbgl

*WS = Window Sample Borehole, HP = Hand Pit **A = Arisings

8.2 Laboratory Testing Programme

8.2.1 Environmental Testing

The environmental chemistry of the ground was investigated by specialist chemical analysis of selected samples, scheduled by EEGSL and carried out by DETS Ltd.

Chemical analyses were carried out on 9 soil samples. Each sample was submitted for our general contamination suite, which includes:

- *Asbestos Screen, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Vanadium, Zinc, Cyanide, Sulphate (SO₄), Sulphide, pH, Sulphur, Soil Organic Matter, Phenol, speciated Petroleum Hydrocarbons (TPH) and speciated Polyaromatic Hydrocarbons (PAH)*

The results of the soils laboratory chemical tests are discussed in Section 11 and included in Appendix 3.

9.0 GROUND CONDITIONS ENCOUNTERED & ENGINEERING PROPERTIES

The following sections describe the ground conditions identified during the investigation and discusses the engineering properties of the soils based on in-situ testing results and laboratory analysis.

9.1 Soil Profile Encountered

The sequence of strata encountered beneath the site consisted of:

Made Ground comprising:

- CONCRETE/CONCRETE SLAB encountered to a maximum depth of 0.12mbgl. Observed in HP01 and WS03 only.
- Clayey sandy GRAVEL of brick, concrete, clinker and quartzite encountered to a maximum depth of 0.20mbgl. Observed in HP01 only.
- Grass over brown clayey slightly gravelly SAND encountered to a maximum depth of 0.28mbgl. Observed in WS01, WS02 and WS03 only.
- Gravelly sandy CLAY encountered to a maximum depth of 1.20mbgl. Encountered in all locations.

London Clay Formation comprising:

- Soft becoming firm / stiff slightly gravelly CLAY encountered to a maximum depth of 4.00mbgl. Encountered in all locations

The depths at which each stratum was encountered in each exploratory hole is provided within the borehole logs presented within Appendix 2.

The generalised ground model can be described as Made Ground proven to a base depth of 1.20mbgl overlying Clay of the London Clay Formation proven to a maximum base depth of 4.00mbgl.

9.2 Observable Indications of Contamination

No observable indications of contamination were encountered at the site. However limited quantities of Made Ground were encountered in all locations.

9.3 Obstructions

No underground man-made obstructions were encountered in any exploratory locations.

9.4 Groundwater

During the site investigation works, groundwater was not encountered in any of the boreholes during drilling.

During the ground gas monitoring rounds, shallow groundwater was recorded between 0.28mbgl and 1.71mbgl in WS01, WS02 and WS04. Given the cohesive nature of the underlying London Clay, these groundwater strikes are thought to represent pockets of shallow perched groundwater within the made ground beneath site.

10.0 SOIL CONTAMINATION RISK ASSESSMENT

10.1 General

The following sections provide a Human Health Risk Assessment, based on chemical laboratory testing of samples collected from exploratory boreholes.

As part of the contamination assessment, the chemical results obtained from 9 soil samples have been screened against accepted compliance criteria, namely:

- Defra C4SL Health Criteria Values, where available; and
- Tier 1 assessment values - based on LQM/CIEH Sutable 4 Use Levels (S4ULs).

As a preliminary screening assessment, all results have been compared to Residential with Plant Uptake end use criteria.

The comparison of results is summarised in Table 8 and Table 9.

Table 8: Soil Results Comparison with Defra C4SL HCV/LLTC Values

Determinant	C4SL (mg/kg)*			Min. (mg/kg)	Max. (mg/kg)	No. of Samples with Exceedances
	Residential with home grown produce (1)	Residential without home grown produce (2)	Commercial (3)			
Arsenic	37	40	640	10	30	0/9
Benzo(a)pyrene	2.4	5.3	36	<0.1	1.09	0/9
Cadmium	14	150	220	<0.2	1.4	0/9
Chromium VI	6	21	33	<2	<2	0/9
Lead	200	310	2300	17	763	2/9 (WS01 0.2m-0.4m & WS02 0.6m-0.8m)
Naphthalene	15	15	1600	<0.1	<0.1	0/9
*Minimal risk Health Criteria Values, Red = GAC value has been exceeded.						

The comparison within Table 8 has shown elevated levels of Lead in two of the nine samples tested above the relevant residential with plant uptake screening criteria.

The two Lead exceedances are located at WS01 and WS02 and were from samples within the underlying shallow Made Ground. Additional samples of the underlying natural soils have shown a lack of Lead contamination indicating the contamination is confined within the Made Ground only.

For contaminants not covered by the Defra C4SLs, reference is made to the Sutable for Use Levels (S4ULs) derived by The Land Quality Management Ltd & Chartered Institute of Environmental Health⁽²⁰¹⁵⁾ and summarised in Table 9. The S4ULs are based on 1% Soil Organic Matter (SOM) as this represents the most conservative approach.

Table 9: Soil Results Comparison with LQM/CIEH S4UL

Determinant	Suitable 4 Use Levels (mg/kg)*			Min. (mg/kg)	Max. (mg/kg)	No of Exceedances
	Residential		Commercial (3)			
	with homegrown produce (1)	without homegrown produce (2)				
Metals						
Beryllium	1.7	1.7	12	<0.5	3.8	1/9 (WS02 0.60m – 0.80m)
Boron	290	11000	240000	<1	2.1	0
Chromium III	910	910	8600	19	34	0
Copper	2400	7100	68000	13	299	0
Mercury	1.2	1.2	58	<1	1.5	1/9 (WS01 0.80 – 1.00m)
Nickel	180	180	980	9	40	0
Selenium	250	430	12000	<2	<2	0
Vanadium	410	1200	9000	35	58	0
Zinc	3700	4000	730000	49	496	0
Polycyclic Aromatic Hydrocarbons						
Naphthalene	2.3	2.3	190	<0.1	<0.1	0
Acenaphthylene	170	2900	83000	<0.1	<0.1	0
Acenaphthene	210	3000	84000	<0.1	<0.1	0
Fluorene	170	2800	63000	<0.1	<0.1	0
Phenanthrene	95	1300	22000	<0.1	0.45	0
Anthracene	2400	31000	520000	<0.1	<0.1	0
Fluoranthene	280	1500	23000	<0.1	1.55	0
Pyrene	620	3700	54000	<0.1	1.47	0
Benz(a)anthracene	7.2	11	170	<0.1	0.83	0
Chrysene	15	30	350	<0.1	0.94	0
Benzo(b)fluoranthene	2.6	3.9	44	<0.1	1.16	0
Benzo(k)fluoranthene	77	110	1200	<0.1	0.43	0

Indeno(1,2,3-cd)pyrene	27	45	500	<0.1	0.54	0
Dibenz(a,h)anthracene	0.24	0.31	3.5	<0.1	0.13	0
Benzo(ghi)perylene	320	360	3900	<0.1	0.47	0
Speciated TPH						
Aliphatic >C5 - C6	42	42	3200	<0.01	<0.01	0
Aliphatic >C6 - C8	100	100	7800	<0.05	<0.05	0
Aliphatic >C8 - C10	27	27	2000	<2	<2	0
Aliphatic >C10 - C12	130	130	9700	<2	<2	0
Aliphatic >C12 - C16	1100	1100	59000	<3	<3	0
Aliphatic >C16 - C21	65000	65000	260000	<3	<3	0
Aromatic >C5 - C7	70	370	26000	<0.01	<0.01	0
Aromatic >C7 - C8	130	860	56000	<0.05	<0.05	0
Aromatic >C8 - C10	34	47	3500	<2	<2	0
Aromatic >C10 - C12	74	250	16000	<2	<2	0
Aromatic >C12 - C16	140	1800	36000	<2	<2	0
Aromatic >C16 - C21	260	1900	28000	<3	7	0
Aromatic >C21 - C35	1100	1900	28000	<10	17	0
BTEX						
Benzene	0.087	0.38	27	<0.002	<0.002	0
Toluene	130	880	56000	<0.005	<0.005	0
Ethylbenzene	47	83	5700	<0.002	<0.002	0
m & p-xylene	56	88	6600	<0.002	<0.002	0
o-Xylene	60	82	6200	<0.002	<0.002	0
MTBE	56	79	5900	<0.005	<0.005	0
Red = GAC value has been exceeded.						

The comparison within Table 9 has shown localised elevated concentrations of Beryllium and Mercury that exceed the relevant residential with plants screening criteria. The Beryllium exceedance occurred in WS02 (0.60m – 0.80m) and the Mercury exceedance occurred in WS01 (0.80m – 1.00m). All exceedances are confined to the shallow made ground, with corresponding samples from the underlying natural soils showing a lack of contamination present.

10.2 Asbestos

Asbestos was detected in one sample (WS01 0.20m – 0.40m) and was identified as Chrysotile bundles.

10.3 Soil Contamination Assessment

The screening assessments completed in Tables 15 and 16 have shown exceedances of Lead, Beryllium and Mercury above the relevant residential screening criteria. Asbestos was also found present in WS01.

Given the presence of contamination within the underlying Made Ground, and considering the intrinsic difficulties regarding zoning of Made Ground across a development site, it is considered that in this instance, the results within WS01 and WS02 indicate the potential for similar contamination to be present within all Made Ground deposits across the site.

Taking the above information into consideration, a revised conceptual site model has been developed.

In this instance it is considered that some remedial works will be required prior to the site being occupied. A discussion regarding remedial works is presented within Section 13.4.

11.0 GROUND GAS CONTAMINATION RISK ASSESSMENT

A preliminary ground gas risk assessment has been completed for the assessment site based on monitoring data collected from the installations constructed as part of the recent ground investigation works. The installations have slotted sections screened across the underlying natural soils.

A total of four rounds of ground gas monitoring have been completed to date from boreholes WS01, WS02 and WS03 between the 17th of September 2024 and the 7th October 2024. Wherever possible, monitoring rounds were targeted to coincide with falling atmospheric pressure events. Detailed results from the monitoring are provided within Appendix 4.

During monitoring the atmospheric pressure was recorded as between 992-1024mb and the following ranges of gas concentrations were identified: Oxygen (O₂) levels ranging from 18.4 – 20.7% by volume, Carbon Dioxide (CO₂) levels ranging from <0.1-2.4% by volume. Elevated concentrations of Methane (CH₄), Carbon Monoxide (CO) Hydrogen Sulphide (H₂S) and VOCs were not detected during all four rounds of monitoring.

A maximum positive stabilised gas flow of 0.1 l/hr was recorded alongside a differential borehole pressure of 1 pa.

The potential risk associated with ground gases (whether from natural or man-made sources) is dependent on the concentration of gas and its flow rate to the surface. These factors are assessed by the monitoring of borehole installations over varying atmospheric conditions. The variable nature of gas generation and the effect of barometric pressure on gas flow, means that the volume of gas potentially reaching the ground surface can vary over time.

For the assessment of development sites, in terms of the potential for ground gas to present a hazard, the risk-based methodology detailed in BS8485 has been used. This is a risk-based approach that is designed to allow the design of gas protection measures for development by comparing hazardous gas flow rates (Qhgs) to Characteristic Situations as detailed within Table 1 of BS8485 (reproduced in Table 12 for reference). The Qhgs are calculated as the borehole flow rate multiplied by the concentration in the air stream of the particular gas being considered.

For the purposes of this evaluation, the calculations will be carried out for both Carbon Dioxide (CO₂) and Methane (CH₄). From the monitoring works the flow rate and gas concentration in each borehole from each round has been used to calculate Qhgs for each individual borehole for Carbon Dioxide and Methane. This analysis will give the best representative assessment of the risks posed by ground gasses at the assessment site. A table summarising the Qhgs and the associated Characteristic Situations is presented in Table 10.

Table 10: Ground Gas Risk Screening Table

Monitoring Round	Ground Gas data	WS01	WS02	WS04
1	Max Flow	0.1	<0.1	<0.1
	Max CO2	1.6	1.5	1.7
	Max CH4	<0.1	<0.1	<0.1
	Qhgs CO2	0.0016	0.0015	0.0017
	Qhgs CH4	0.0001	0.0001	0.0001
	Characteristic Situation	1	1	1
2	Max Flow	0.1	0.1	<0.1
	Max CO2	0.2	0.3	1.2
	Max CH4	<0.1	<0.1	<0.1
	Qhgs CO2	0.0002	0.0003	0.0012
	Qhgs CH4	0.0001	0.0001	0.0001
	Characteristic Situation	1	1	1
3	Max Flow	<0.1	<0.1	<0.1
	Max CO2	0.2	<0.1	2.4
	Max CH4	<0.1	<0.1	<0.1
	Qhgs CO2	0.0002	0.0001	0.0024
	Qhgs CH4	0.0001	0.0001	0.0001
	Characteristic Situation	1	1	1
4	Max Flow	<0.1	<0.1	<0.1
	Max CO2	<0.1	<0.1	<0.1
	Max CH4	<0.1	<0.1	<0.1
	Qhgs CO2	0.0001	0.0001	0.0001
	Qhgs CH4	0.0001	0.0001	0.0001
	Characteristic Situation	1	1	1

As can be seen from Table 11, the calculated hazardous gas flow rates all sit well within the bounds of a Characteristic Situation 1 Scenario.

Given the above, it is recommended that the site be classed as a Characteristic Gas Situation 1 (Very Low Risk), with no ground gas protection measures required.

Table 11: Characteristic gas situation by site characteristic hazardous gas flow rate (BS 8485)

Characteristic Gas Situation	Hazard Potential	Site characteristic hazardous gas flow rate, Qhgs (lh-1)	Additional Factors
1	Very Low Risk	<0.07	Typically, methane $\leq 1\%v/v$ and/or carbon dioxide $\leq 5\% v/v$. Otherwise consider increase to Situation 2.
2	Low Risk	<0.7	Borehole flow rate not to exceed 70l/hr. Otherwise characteristic gas regime.
3	Moderate Risk	<3.5	
4	Moderate to High Risk	<15	
5	High Risk	<70	
6	Very High Risk	>70	

12.0 REVIEW OF CONCEPTUAL SITE MODEL

The following section reviews the preliminary conceptual model, created for the desk study, based on the findings of the intrusive investigation.

Table 12 below provides a Revised Conceptual Model which supersedes the preliminary conceptual model created during the desk-based research for this assessment site.

The Revised Conceptual Model considers whether a pollution linkage is potentially present and provides a qualitative assessment of risk based on the information currently available.

Table 12: Revised Conceptual Model

Source	Pathway	Receptor	Probability	Consequence	Risk	Comment
Onsite Sources						
Potential contamination associated with historical development	Dermal contact, ingestion and inhalation of soils dust	Current Site Users	Unlikely	Moderate	Low Risk	Despite exceedances of the residential GACs for Lead, Mercury, Beryllium and the presence of asbestos being identified in the made ground at the site, the vacant nature of the site means there is currently a lack of current receptors. Therefore, the risk to current site users is deemed LOW.
		Adjacent Land Users	Unlikely	Moderate	Low Risk	Despite some contamination being found present within the shallow Made Ground, the contaminants present are known to have a low mobility within the sub-surface environment and the underlying impermeable London Clay formation will also further reduce the likelihood of offsite migration. Given the inert nature of the contamination found present, and cohesive nature of the underlying geology, the risk to adjacent site users is considered LOW.
		Future Site Users	Likely	Moderate	Moderate Risk	Several exceedances for toxic metals, PAHs and asbestos have been identified within the shallow Made Ground on site. Given the proposed residential site use with soft landscaping, it's suggested that a Moderate risk will be present to future site users. In this instance some remediation will therefore be required prior to occupation of the site.

Source	Pathway	Receptor	Probability	Consequence	Risk	Comment
		Construction Workers	Low Likelihood	Moderate	Low to Moderate Risk	Given the contamination found present, it is recommended that groundworkers are made aware of the potential risk from elevated metals and PAHs, however no metals or PAHs have currently been found above commercial screening values. With regards to asbestos, all groundworkers need to be made aware of the potential risk, and appropriate mitigation measures will need to be applied (work specific risk assessments, wearing of RPE and using dust suppression etc).

13.0 CONCLUSIONS AND RECOMMENDATIONS

EEGSL were commissioned by the client to undertake Ground Investigation works to complete a Human Health Risk Assessment for the proposed redevelopment at the 142 Whitley Wood Lane, Reading RG2 8PP.

The following section provides a summary of the conclusions and recommendations based on the findings of the investigation works undertaken and laboratory testing results.

13.1 Ground conditions

From the ground investigation undertaken, the generalised ground model can be described as Made Ground proven to a base depth of 1.20mbgl overlying Clays of the London Clay Formation proven to a maximum base depth of 4.00mbgl.

Groundwater was not encountered during the drilling process, however shallow groundwater was recorded between 0.28mbgl and 1.71mbgl in WS01, WS02 and WS04 during subsequent monitoring rounds.

Given the cohesive nature of the underlying London Clay, these groundwater strikes are thought to represent pockets of shallow perched groundwater within the made ground beneath site, and are not expected to represent a continuous groundwater body.

13.2 Contamination Assessment

As discussed in Section 10 of this report, chemical testing of nine soil samples has been undertaken, and the results of which are provided within Appendix 3.

Screening of the results against currently accepted residential screening criteria has found several toxic metals exceedances and one instance of asbestos localised beneath WS01 and WS02. The exceedances were all associated with the shallow Made Ground materials, with deeper samples in the natural soils showing no signs of contamination.

Given the presence of contamination within the Made Ground beneath WS01 and WS02 and considering the intrinsic difficulties regarding zoning of Made Ground across a development site, it is considered that in this instance, the results within WS01 and WS02 indicate the potential for similar contamination to be present within all Made Ground deposits across the site.

Taking the above into account, it is suggested that some remedial works will be required prior to the site being occupied. Without remedial works it is deemed that an unacceptable risk to future site users would be present.

13.3 Ground Gas

A total of four rounds of ground gas monitoring have been completed to date from boreholes WS01, WS02 and WS04 between the 17th September 2024 and the 7th October 2024.

The results of the gas monitoring indicated that hazardous ground gas flow rates fall well within the bounds of a Characteristic Situation 1 scenario. Therefore, ground gas protection measures are not expected to be required.

13.4 Remedial Works

Given the levels of contamination found present, it is recommended that removal of shallow Made Ground materials and the implementation of a clean cover system should be undertaken across all proposed soft landscaping and garden areas.

No remedial works will be required in areas of proposed permanent hardstanding or where the proposed buildings will be constructed. This is due to the hardstanding or proposed buildings acting as a physical barrier between the contaminated Made Ground and any future residential receptors.

The clean cover system for soft landscaping and garden areas should involve the removal of Made Ground materials down to a depth of 600mm, the installation of a no dig / hi vis geotextile membrane, and the replacement of clean imported topsoil and subsoil.

The capping materials (topsoil and subsoil) must be sourced from a reputable supplier (EEGSL recommends British Sugar plc) and come with confirmation that they have been independently tested and verified as uncontaminated prior to import. All topsoil materials should also be compliant with BS3882:2015.

In addition to the above, it is recommended that a watching brief is implemented by the ground works contractor and should any signs of unknown contamination be found present during development, EEGSL should be contacted and a suitable investigation be completed to determine any possible risks which may impact current and future receptors.

13.5 Site Personnel

As with all construction sites, personnel working on the site during the construction period should be encouraged to maintain a high standard of personal hygiene and on-site washing facilities should be available. This report should be included within the sites health and safety file and the potential for asbestos contamination within the ground should be highlighted to all construction site staff and groundworkers.

13.6 Other Matters

Due diligence is required during the construction period, and should any future evidence of contamination be found, appropriate investigation and assessment should be taken. The significance of any contamination not discovered by this investigation is outside the scope of this report.

APPENDIX 1

GROUNDSURE REPORT

142, WHITLEY WOOD LANE, READING, RG2 8PP

Order Details

Date: 10/09/2024
Your ref: R4210
Our Ref: GS-M7N-DTL-56H-8EG

Site Details

Location: 472112 169152
Area: 0.08 ha
Authority: [Reading Borough Council](#) ↗



[Summary of findings](#)

[p. 2 >](#)

[Aerial image](#)

[p. 9 >](#)

[OS MasterMap site plan](#)

[p.14 >](#)

[Insight User Guide](#) ↗

Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	0	0	0	2	-
16 >	1.2 >	Historical tanks >	0	0	0	1	-
16 >	1.3 >	Historical energy features >	0	0	2	17	-
17 >	1.4 >	Historical petrol stations >	0	0	0	3	-
18	1.5	Historical garages	0	0	0	0	-
18	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
19 >	2.1 >	Historical industrial land uses >	0	0	0	3	-
20 >	2.2 >	Historical tanks >	0	0	0	3	-
20 >	2.3 >	Historical energy features >	0	0	4	39	-
22 >	2.4 >	Historical petrol stations >	0	0	0	4	-
22	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
23	3.1	Active or recent landfill	0	0	0	0	-
23	3.2	Historical landfill (BGS records)	0	0	0	0	-
24	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
24	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
24	3.5	Historical waste sites	0	0	0	0	-
24	3.6	Licensed waste sites	0	0	0	0	-
24 >	3.7 >	Waste exemptions >	0	0	0	4	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
26 >	4.1 >	Recent industrial land uses >	0	0	2	-	-
27 >	4.2 >	Current or recent petrol stations >	0	0	0	1	-
27	4.3	Electricity cables	0	0	0	0	-
27	4.4	Gas pipelines	0	0	0	0	-
27	4.5	Sites determined as Contaminated Land	0	0	0	0	-



27	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
28	4.7	Regulated explosive sites	0	0	0	0	-
28	4.8	Hazardous substance storage/usage	0	0	0	0	-
28	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
28	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
28 >	4.11 >	<u>Licensed pollutant release (Part A(2)/B) ></u>	0	0	0	1	-
29	4.12	Radioactive Substance Authorisations	0	0	0	0	-
29	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
29	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
29	4.15	Pollutant release to public sewer	0	0	0	0	-
30	4.16	List 1 Dangerous Substances	0	0	0	0	-
30	4.17	List 2 Dangerous Substances	0	0	0	0	-
30 >	4.18 >	<u>Pollution Incidents (EA/NRW) ></u>	0	0	0	2	-
30	4.19	Pollution inventory substances	0	0	0	0	-
31	4.20	Pollution inventory waste transfers	0	0	0	0	-
31	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
32	5.1	Superficial aquifer	None (within 500m)				
33 >	5.2 >	<u>Bedrock aquifer ></u>	Identified (within 500m)				
34 >	5.3 >	<u>Groundwater vulnerability ></u>	Identified (within 50m)				
35	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
35	5.5	Groundwater vulnerability- local information	None (within 0m)				
36 >	5.6 >	<u>Groundwater abstractions ></u>	0	0	0	0	19
41 >	5.7 >	<u>Surface water abstractions ></u>	0	0	0	0	1
42	5.8	Potable abstractions	0	0	0	0	0
42	5.9	Source Protection Zones	0	0	0	0	-
42	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
43	6.1	Water Network (OS MasterMap)	0	0	0	-	-



43	6.2	Surface water features	0	0	0	-	-
44 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
44 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
45	6.5	WFD Groundwater bodies	0	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
46	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
46	7.2	Historical Flood Events	0	0	0	-	-
46	7.3	Flood Defences	0	0	0	-	-
47	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
47	7.5	Flood Storage Areas	0	0	0	-	-
48	7.6	Flood Zone 2	None (within 50m)				
48	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
49 >	8.1 >	Surface water flooding >	1 in 1000 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding >					
51 >	9.1 >	Groundwater flooding >	Moderate (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
52	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
53	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
53	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
53	10.4	Special Protection Areas (SPA)	0	0	0	0	0
53	10.5	National Nature Reserves (NNR)	0	0	0	0	0
54 >	10.6 >	Local Nature Reserves (LNR) >	0	0	0	0	1
54 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	8
55	10.8	Biosphere Reserves	0	0	0	0	0
55	10.9	Forest Parks	0	0	0	0	0
55	10.10	Marine Conservation Zones	0	0	0	0	0
55	10.11	Green Belt	0	0	0	0	0
55	10.12	Proposed Ramsar sites	0	0	0	0	0



56	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
56	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
56	10.15	Nitrate Sensitive Areas	0	0	0	0	0
56 >	10.16 >	Nitrate Vulnerable Zones >	1	0	0	0	0
58 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
59	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
60	11.1	World Heritage Sites	0	0	0	-	-
60	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
60	11.3	National Parks	0	0	0	-	-
60	11.4	Listed Buildings	0	0	0	-	-
61	11.5	Conservation Areas	0	0	0	-	-
61	11.6	Scheduled Ancient Monuments	0	0	0	-	-
61	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
62 >	12.1 >	Agricultural Land Classification >	Grade 4 (within 250m)				
63	12.2	Open Access Land	0	0	0	-	-
63	12.3	Tree Felling Licences	0	0	0	-	-
63	12.4	Environmental Stewardship Schemes	0	0	0	-	-
64	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
65	13.1	Priority Habitat Inventory	0	0	0	-	-
65	13.2	Habitat Networks	0	0	0	-	-
65	13.3	Open Mosaic Habitat	0	0	0	-	-
65	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
66 >	14.1 >	10k Availability >	Identified (within 500m)				
67 >	14.2 >	Artificial and made ground (10k) >	0	0	0	6	-
69	14.3	Superficial geology (10k)	0	0	0	0	-



69	14.4	Landslip (10k)	0	0	0	0	-
70 >	14.5 >	Bedrock geology (10k) >	1	0	0	0	-
71	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
72 >	15.1 >	50k Availability >	Identified (within 500m)				
73	15.2	Artificial and made ground (50k)	0	0	0	0	-
73	15.3	Artificial ground permeability (50k)	0	0	-	-	-
74	15.4	Superficial geology (50k)	0	0	0	0	-
74	15.5	Superficial permeability (50k)	None (within 50m)				
74	15.6	Landslip (50k)	0	0	0	0	-
74	15.7	Landslip permeability (50k)	None (within 50m)				
75 >	15.8 >	Bedrock geology (50k) >	1	0	0	0	-
76 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
76	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
77 >	16.1 >	BGS Boreholes >	0	1	11	-	-
Page	Section	Natural ground subsidence >					
79 >	17.1 >	Shrink swell clays >	Low (within 50m)				
80 >	17.2 >	Running sands >	Very low (within 50m)				
81 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
82 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
83 >	17.5 >	Landslides >	Very low (within 50m)				
84 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
86	18.1	BritPits	0	0	0	0	-
87 >	18.2 >	Surface ground workings >	0	0	3	-	-
87	18.3	Underground workings	0	0	0	0	0
87	18.4	Underground mining extents	0	0	0	0	-
87	18.5	Historical Mineral Planning Areas	0	0	0	0	-

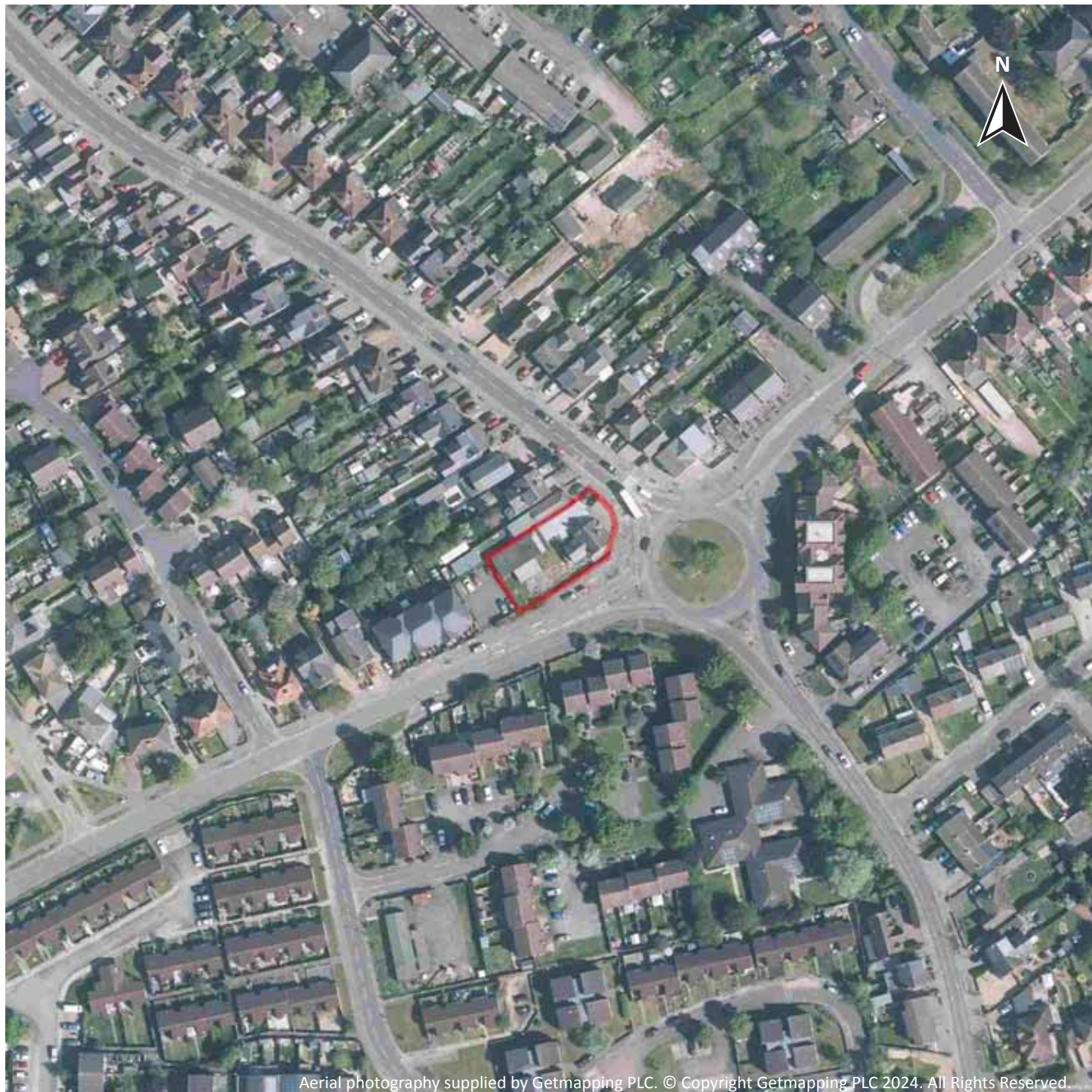


88 >	18.6 >	Non-coal mining >	0	0	0	0	2
88	18.7	JPB mining areas	None (within 0m)				
88	18.8	The Coal Authority non-coal mining	0	0	0	0	-
89	18.9	Researched mining	0	0	0	0	-
89	18.10	Mining record office plans	0	0	0	0	-
89	18.11	BGS mine plans	0	0	0	0	-
89	18.12	Coal mining	None (within 0m)				
89	18.13	Brine areas	None (within 0m)				
90	18.14	Gypsum areas	None (within 0m)				
90	18.15	Tin mining	None (within 0m)				
90	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
91	19.1	Natural cavities	0	0	0	0	-
91	19.2	Mining cavities	0	0	0	0	0
91	19.3	Reported recent incidents	0	0	0	0	-
91	19.4	Historical incidents	0	0	0	0	-
92	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
93 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
95 >	21.1 >	BGS Estimated Background Soil Chemistry >	1	0	-	-	-
95	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
95	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
96	22.1	Underground railways (London)	0	0	0	-	-
96	22.2	Underground railways (Non-London)	0	0	0	-	-
96	22.3	Railway tunnels	0	0	0	-	-
96	22.4	Historical railway and tunnel features	0	0	0	-	-
96	22.5	Royal Mail tunnels	0	0	0	-	-



97	22.6	Historical railways	0	0	0	-	-
97	22.7	Railways	0	0	0	-	-
97	22.8	Crossrail 1	0	0	0	0	-
97	22.9	Crossrail 2	0	0	0	0	-
97	22.10	HS2	0	0	0	0	-

Recent aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

Capture Date: 30/04/2022

Site Area: 0.08ha



Recent site history - 2019 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

Capture Date: 29/06/2019

Site Area: 0.08ha



Recent site history - 2013 aerial photograph



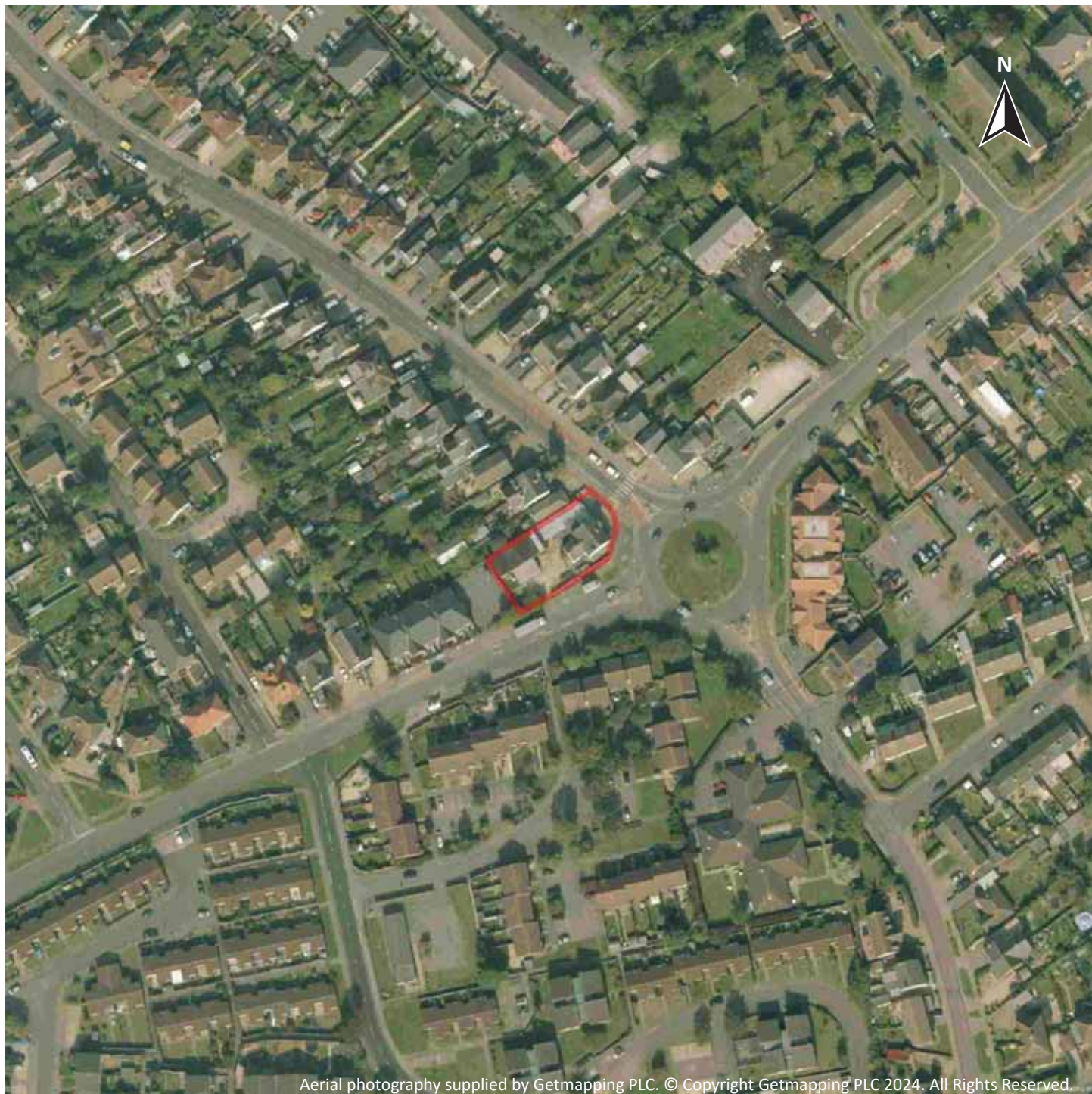
Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

Capture Date: 11/07/2013

Site Area: 0.08ha



Recent site history - 2010 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

Capture Date: 22/09/2010

Site Area: 0.08ha



Recent site history - 1999 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

Capture Date: 04/09/1999

Site Area: 0.08ha



OS MasterMap site plan



© Crown copyright and database rights 2024. Ordnance Survey licence 100035207

Site Area: 0.08ha



1 Past land use



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

1.1 Historical industrial land uses

Records within 500m

2

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

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
B	328m SW	Unspecified Depot	1976	1928850



ID	Location	Land use	Dates present	Group ID
B	328m SW	Unspecified Depot	1983 - 1988	1935839

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	1
----------------------------	----------

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

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
D	424m W	Unspecified Tank	1974 - 1983	339701

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	19
----------------------------	-----------

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

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
A	67m E	Electricity Substation	1986 - 1994	223822
A	69m E	Electricity Substation	1970	222737
1	252m N	Electricity Substation	1970 - 1994	233810
2	289m S	Electricity Substation	1983 - 1997	216603
3	330m SE	Electricity Substation	1975 - 1997	230407
4	339m E	Electricity Substation	1988 - 1994	212721



ID	Location	Land use	Dates present	Group ID
5	343m N	Electricity Substation	1970 - 1994	231940
C	347m NW	Electricity Substation	1974 - 1994	231363
C	365m NW	Electricity Substation	1983	210059
E	413m E	Electricity Substation	1973 - 1986	229186
E	418m E	Electricity Substation	1994	209013
F	425m NE	Electricity Substation	1988	228711
F	425m NE	Electricity Substation	1982 - 1986	230465
F	425m NE	Electricity Substation	1994	217001
6	440m W	Electricity Substation	1983 - 1994	220276
B	459m SW	Electricity Substation	1994	233706
B	459m SW	Electricity Substation	1972 - 1975	218826
B	459m SW	Electricity Substation	1980	233694
B	460m SW	Electricity Substation	1986	218080

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

3

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

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
D	411m W	Filling Station	1994	3655
D	423m W	Filling Station	1983	3534
D	424m W	Filling Station	1974 - 1983	3680

This data is sourced from Ordnance Survey / Groundsure.



1.5 Historical garages

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

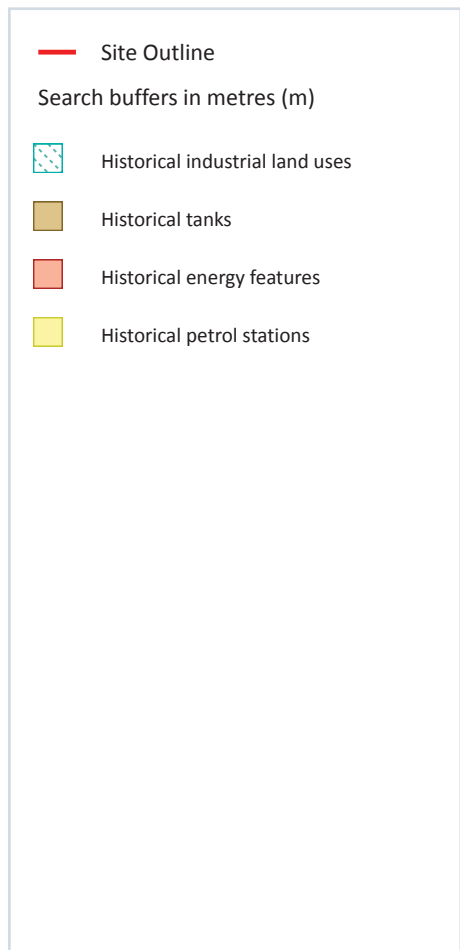
0

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

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



2 Past land use - un-grouped



2.1 Historical industrial land uses

3

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

Features are displayed on the Past land use - un-grouped map on [page 19](#) >

ID	Location	Land Use	Date	Group ID
D	328m SW	Unspecified Depot	1988	1935839
D	328m SW	Unspecified Depot	1976	1928850
D	328m SW	Unspecified Depot	1983	1935839

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

3

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

Features are displayed on the Past land use - un-grouped map on [page 19 >](#)

ID	Location	Land Use	Date	Group ID
I	424m W	Unspecified Tank	1983	339701
I	425m W	Unspecified Tank	1974	339701
I	425m W	Unspecified Tank	1983	339701

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

43

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

Features are displayed on the Past land use - un-grouped map on [page 19 >](#)

ID	Location	Land Use	Date	Group ID
A	67m E	Electricity Substation	1988	223822
A	68m E	Electricity Substation	1986	223822
A	68m E	Electricity Substation	1994	223822
A	69m E	Electricity Substation	1970	222737
B	252m N	Electricity Substation	1986	233810
B	252m N	Electricity Substation	1970	233810
B	253m N	Electricity Substation	1988	233810
B	253m N	Electricity Substation	1994	233810
C	289m S	Electricity Substation	1983	216603



ID	Location	Land Use	Date	Group ID
C	289m S	Electricity Substation	1983	216603
C	289m S	Electricity Substation	1994	216603
C	289m S	Electricity Substation	1997	216603
E	330m SE	Electricity Substation	1983	230407
E	330m SE	Electricity Substation	1983	230407
E	330m SE	Electricity Substation	1994	230407
E	330m SE	Electricity Substation	1997	230407
E	331m SE	Electricity Substation	1975	230407
F	339m E	Electricity Substation	1988	212721
F	340m E	Electricity Substation	1994	212721
G	343m N	Electricity Substation	1994	231940
G	343m N	Electricity Substation	1970	231940
H	347m NW	Electricity Substation	1974	231363
H	347m NW	Electricity Substation	1983	231363
H	347m NW	Electricity Substation	1994	231363
H	365m NW	Electricity Substation	1983	210059
J	413m E	Electricity Substation	1986	229186
J	413m E	Electricity Substation	1973	229186
J	413m E	Electricity Substation	1982	229186
J	418m E	Electricity Substation	1994	209013
K	425m NE	Electricity Substation	1988	228711
K	425m NE	Electricity Substation	1986	230465
K	425m NE	Electricity Substation	1986	230465
K	425m NE	Electricity Substation	1994	217001
K	426m NE	Electricity Substation	1982	230465
K	426m NE	Electricity Substation	1994	217001
L	440m W	Electricity Substation	1983	220276
L	441m W	Electricity Substation	1994	220276



ID	Location	Land Use	Date	Group ID
L	441m W	Electricity Substation	1983	220276
D	459m SW	Electricity Substation	1994	233706
D	459m SW	Electricity Substation	1975	218826
D	459m SW	Electricity Substation	1980	233694
D	460m SW	Electricity Substation	1972	218826
D	460m SW	Electricity Substation	1986	218080

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m

4

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

Features are displayed on the Past land use - un-grouped map on [page 19](#) >

ID	Location	Land Use	Date	Group ID
I	411m W	Filling Station	1994	3655
I	423m W	Filling Station	1983	3534
I	424m W	Filling Station	1974	3680
I	424m W	Filling Station	1983	3680

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



— Site Outline
Search buffers in metres (m)
● Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m**0**

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m**0**

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

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

3.5 Historical waste sites

Records within 500m**0**

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

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

3.6 Licensed waste sites

Records within 500m**0**

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

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

3.7 Waste exemptions

Records within 500m**4**

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

Features are displayed on the Waste and landfill map on [page 23 >](#)

ID	Location	Site	Reference	Category	Sub-Category	Description
1	367m W	-	WEX364998	Storing waste exemption	Not on a farm	Storage of waste in a secure place



ID	Location	Site	Reference	Category	Sub-Category	Description
A	433m NE	534 Northumberland Avenue Reading Berkshire Rg2 8ny	EPR/RE5080PB /A001	Treating waste exemption	Non-agricultural waste only	Sorting and de-naturing of controlled drugs for disposal
A	433m NE	534, Northumberland Avenue, Reading, Rg2 8ny	WEX018384	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
2	485m W	Kier Highways, Motorway Compound Whitley Wood, Toro Way, Whitley Wood, Rg2 8tx	WEX237560	Storing waste exemption	Not on a farm	Storage of waste in a secure place

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



4 Current industrial land use



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

4.1 Recent industrial land uses

Records within 250m

2

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 26](#) >

ID	Location	Company	Address	Activity	Category
1	79m E	Electricity Sub Station	Berkshire, RG2	Electrical Features	Infrastructure and Facilities
2	82m SW	J W's Executive Cars Ltd	1, Copenhagen Close, Reading, Berkshire, RG2 8UH	Vehicle Hire and Rental	Hire Services

This data is sourced from Ordnance Survey.



4.2 Current or recent petrol stations

Records within 500m**1**

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on [page 26](#) >

ID	Location	Company	Address	LPG	Status
B	417m W	SHELL	585, Basingstoke Road, Reading, Reading, RG2 OTA	Yes	Open

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m**0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m**0**

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

This data is sourced from the Health and Safety Executive.



4.7 Regulated explosive sites

Records within 500m**0**

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m**0**

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m**0**

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

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

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

Records within 500m**1**

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

Features are displayed on the Current industrial land use map on [page 26](#) >



ID	Location	Address	Details	
B	442m W	Shell (UK) Limited, Fairfield Service Station, 585 Basingstoke Road, Reading, RG2 0TA	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

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

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

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

4.13 Licensed Discharges to controlled waters

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

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

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

4.14 Pollutant release to surface waters (Red List)

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

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

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

4.15 Pollutant release to public sewer

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

Discharges of Special Category Effluents to the public sewer.

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



4.16 List 1 Dangerous Substances

Records within 500m

0

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

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

4.17 List 2 Dangerous Substances

Records within 500m

0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m

2

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

Features are displayed on the Current industrial land use map on [page 26 >](#)

ID	Location	Details	
A	327m S	Incident Date: 19/11/2001 Incident Identification: 43736 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Other General Biodegradable Material or Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
A	345m S	Incident Date: 08/09/2003 Incident Identification: 188509 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Vegetable Cuttings and Deposits	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m

0

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



available.

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

4.20 Pollution inventory waste transfers

Records within 500m

0

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

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

4.21 Pollution inventory radioactive waste

Records within 500m

0

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

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



5 Hydrogeology - Superficial aquifer

5.1 Superficial aquifer

Records within 500m

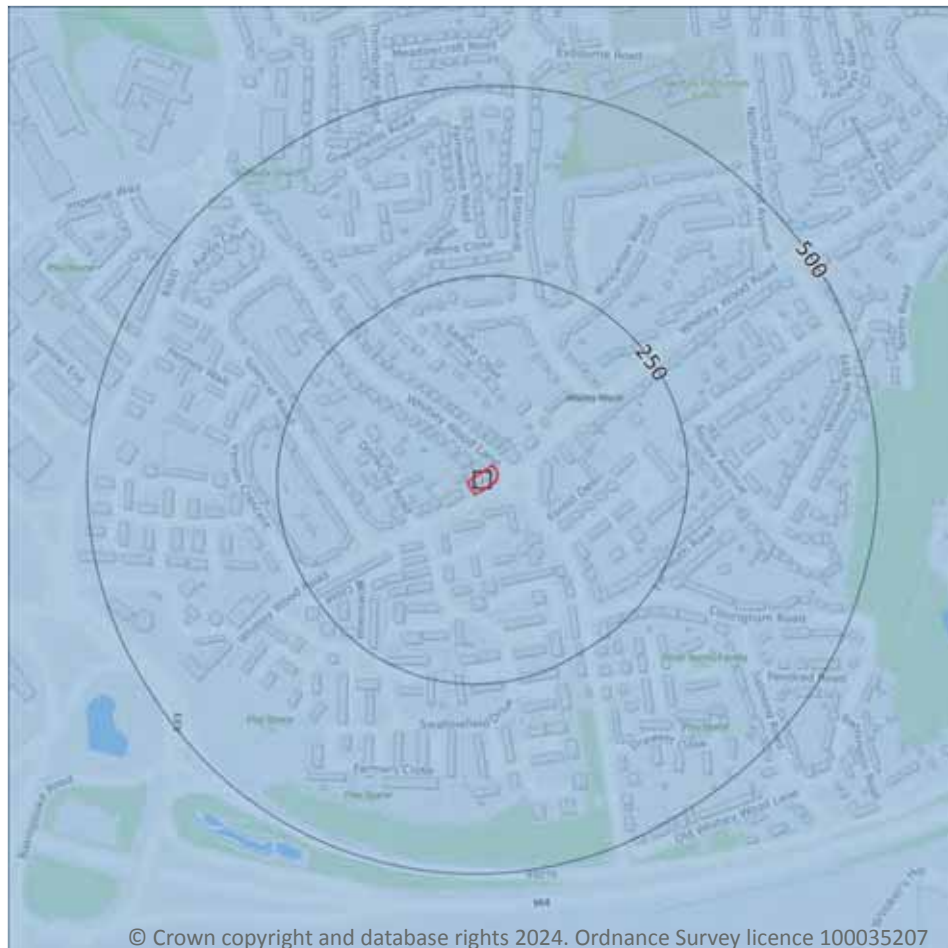
0

Aquifer status of groundwater held within superficial geology.

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



Bedrock aquifer



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

5.2 Bedrock aquifer

Records within 500m

1

Aquifer status of groundwater held within bedrock geology.

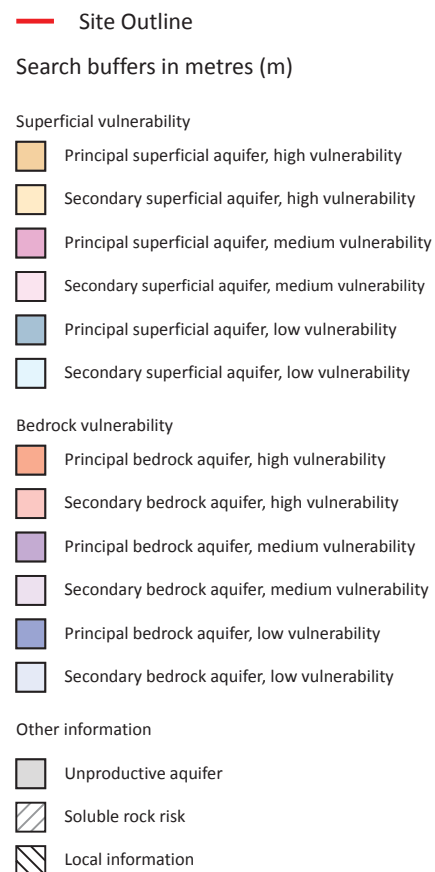
Features are displayed on the Bedrock aquifer map on [page 33](#) >

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

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



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

1

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

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

Features are displayed on the Groundwater vulnerability map on [page 34](#) >



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

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

5.4 Groundwater vulnerability- soluble rock risk

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

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

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

5.5 Groundwater vulnerability- local information

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

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

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

Abstractions and Source Protection Zones



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

5.6 Groundwater abstractions

Records within 2000m

19

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

Features are displayed on the Abstractions and Source Protection Zones map on [page 36 >](#)

ID	Location	Details	
-	831m W	Status: Historical Licence No: 28/39/22/0601 Details: Make-Up or Top Up Water Direct Source: THAMES GROUNDWATER Point: READING INTERNATIONAL BUSINESS PARK Data Type: Point Name: AKELER DEVELOPMENTS LTD Easting: 471320 Northing: 168840	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 10/11/2000 Expiry Date: - Issue No: 1 Version Start Date: 10/11/2000 Version End Date: -
-	974m W	Status: Historical Licence No: 28/39/22/0614 Details: Process Water Direct Source: THAMES GROUNDWATER Point: BERKSHIRE BREWERY - POINT 'A' Data Type: Point Name: Heineken UK Ltd Easting: 471130 Northing: 168990	Annual Volume (m ³): 3000000 Max Daily Volume (m ³): 9550 Original Application No: - Original Start Date: 01/01/2002 Expiry Date: 31/12/2011 Issue No: 4 Version Start Date: 23/11/2009 Version End Date: -
-	1022m W	Status: Historical Licence No: 28/39/22/0556 Details: General use relating to Secondary Category (Medium Loss) Direct Source: THAMES GROUNDWATER Point: BERKSHIRE BREWERY POINT 'A' Data Type: Point Name: SCOTTISH COURAGE BREWING LTD Easting: 471100 Northing: 168900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: 31/12/2001 Issue No: 100 Version Start Date: 09/05/2000 Version End Date: -
-	1110m NW	Status: Historical Licence No: 28/39/22/0614 Details: Process Water Direct Source: THAMES GROUNDWATER Point: BERKSHIRE BREWERY - POINT 'E' Data Type: Point Name: Heineken UK Ltd Easting: 471100 Northing: 169650	Annual Volume (m ³): 3000000 Max Daily Volume (m ³): 9550 Original Application No: - Original Start Date: 01/01/2002 Expiry Date: 31/12/2011 Issue No: 4 Version Start Date: 23/11/2009 Version End Date: -
-	1190m W	Status: Historical Licence No: 28/39/22/0644/R01 Details: General Use Relating To Secondary Category (Low Loss) Direct Source: THAMES GROUNDWATER Point: SELECT CAR LEASING STADIUM, READING - 424 WELLPOINTS Data Type: Poly4 Name: THE READING FOOTBALL CLUB PLC Easting: 470695 Northing: 170046	Annual Volume (m ³): 189735 Max Daily Volume (m ³): 519 Original Application No: NPS/WR/06576 Original Start Date: 18/05/2023 Expiry Date: 31/03/2035 Issue No: 1 Version Start Date: 18/05/2023 Version End Date: -



ID	Location	Details	
-	1202m W	Status: Historical Licence No: 28/39/22/0614 Details: Process Water Direct Source: THAMES GROUNDWATER Point: BERKSHIRE BREWERY - POINT 'C' Data Type: Point Name: Heineken UK Ltd Easting: 470890 Northing: 169100	Annual Volume (m ³): 3000000 Max Daily Volume (m ³): 9550 Original Application No: - Original Start Date: 01/01/2002 Expiry Date: 31/12/2011 Issue No: 4 Version Start Date: 23/11/2009 Version End Date: -
-	1209m NW	Status: Active Licence No: 28/39/22/0644/R01 Details: General Use Relating To Secondary Category (Low Loss) Direct Source: THAMES GROUNDWATER Point: CAR LEASING STADIUM READING #2 Data Type: Poly4 Name: The Reading Football Club Limited Easting: 470664 Northing: 169705	Annual Volume (m ³): 189735 Max Daily Volume (m ³): 519 Original Application No: NPS/WR/036576 Original Start Date: 18/05/2023 Expiry Date: 31/03/2035 Issue No: 1 Version Start Date: 18/05/2023 Version End Date: -
-	1218m NW	Status: Historical Licence No: 28/39/22/0644 Details: General Use Relating To Secondary Category (Low Loss) Direct Source: THAMES GROUNDWATER Point: MADEJSKI STADIUM COMPLEX - 424 WELLPOINTS Data Type: Poly4 Name: READING FOOTBALL CLUB PLC Easting: 470720 Northing: 170020	Annual Volume (m ³): 189735 Max Daily Volume (m ³): 518.4 Original Application No: WRW/A/1220 Original Start Date: 28/07/2008 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 28/07/2008 Version End Date: -
-	1235m W	Status: Historical Licence No: 28/39/22/0578 Details: General Use Relating To Secondary Category (Low Loss) Direct Source: THAMES GROUNDWATER Point: MADEJSKI STADIUM WELLPOINTS Data Type: Poly4 Name: READING FOOTBALL CLUB PLC Easting: 470520 Northing: 169900	Annual Volume (m ³): 189734 Max Daily Volume (m ³): 518.4 Original Application No: - Original Start Date: 08/06/1998 Expiry Date: 30/06/2008 Issue No: 100 Version Start Date: 08/06/1998 Version End Date: -



ID	Location	Details	
-	1292m W	Status: Historical Licence No: 28/39/22/0556 Details: General use relating to Secondary Category (Medium Loss) Direct Source: THAMES GROUNDWATER Point: BERKSHIRE BREWERY POINT 'C' Data Type: Point Name: SCOTTISH COURAGE BREWING LTD Easting: 470800 Northing: 169100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: 31/12/2001 Issue No: 100 Version Start Date: 09/05/2000 Version End Date: -
-	1353m W	Status: Historical Licence No: 28/39/22/0614 Details: Process Water Direct Source: THAMES GROUNDWATER Point: BERKSHIRE BREWERY POINT 'D' Data Type: Point Name: Heineken UK Ltd Easting: 470740 Northing: 169220	Annual Volume (m ³): 3000000 Max Daily Volume (m ³): 9550 Original Application No: - Original Start Date: 01/01/2002 Expiry Date: 31/12/2011 Issue No: 4 Version Start Date: 23/11/2009 Version End Date: -
-	1392m W	Status: Historical Licence No: 28/39/22/0556 Details: General use relating to Secondary Category (Medium Loss) Direct Source: THAMES GROUNDWATER Point: BERKSHIRE BREWERY POINT 'D' Data Type: Point Name: SCOTTISH COURAGE BREWING LTD Easting: 470700 Northing: 169200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: 31/12/2001 Issue No: 100 Version Start Date: 09/05/2000 Version End Date: -
-	1428m SE	Status: Historical Licence No: 28/39/24/0008 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: READING UNIVERSITY HORTICULTURAL STATION BOREHOLE Data Type: Point Name: UNIVERSITY OF READING Easting: 473400 Northing: 168500	Annual Volume (m ³): 19728 Max Daily Volume (m ³): 272.76 Original Application No: - Original Start Date: 13/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 13/05/1968 Version End Date: -



ID	Location	Details	
-	1428m SE	Status: Historical Licence No: 28/39/24/0008 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: READING UNIVERSITY HORTICULTURAL STATION BOREHOLE Data Type: Point Name: UNIVERSITY OF READING Easting: 473400 Northing: 168500	Annual Volume (m ³): 19728 Max Daily Volume (m ³): 272.76 Original Application No: - Original Start Date: 13/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 13/05/1968 Version End Date: -
-	1428m SE	Status: Historical Licence No: 28/39/24/0008 Details: Spray Irrigation - Spray Irrigation Definition Order Direct Source: THAMES GROUNDWATER Point: READING UNIVERSITY HORTICULTURAL STATION BOREHOLE Data Type: Point Name: UNIVERSITY OF READING Easting: 473400 Northing: 168500	Annual Volume (m ³): 19728 Max Daily Volume (m ³): 272.76 Original Application No: - Original Start Date: 13/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 13/05/1968 Version End Date: -
-	1455m NW	Status: Historical Licence No: 28/39/22/0612 Details: Laundry Use Direct Source: THAMES GROUNDWATER Point: DARWIN CLOSE, WHITLEY, READING, BERKSHIRE Data Type: Point Name: CLEAN LINEN SERVICES LTD Easting: 471360 Northing: 170410	Annual Volume (m ³): 181840 Max Daily Volume (m ³): 655 Original Application No: - Original Start Date: 01/01/2002 Expiry Date: 31/03/2017 Issue No: 1 Version Start Date: 01/01/2002 Version End Date: -
-	1467m NW	Status: Active Licence No: 28/39/22/0644/R01 Details: General Use Relating To Secondary Category (Low Loss) Direct Source: THAMES GROUNDWATER Point: CAR LEASING STADIUM READING #1 Data Type: Poly4 Name: The Reading Football Club Limited Easting: 470333 Northing: 169655	Annual Volume (m ³): 189735 Max Daily Volume (m ³): 519 Original Application No: NPS/WR/036576 Original Start Date: 18/05/2023 Expiry Date: 31/03/2035 Issue No: 1 Version Start Date: 18/05/2023 Version End Date: -



ID	Location	Details	
-	1479m NW	Status: Historical Licence No: 28/39/22/0525 Details: Laundry Use Direct Source: THAMES GROUNDWATER Point: DARWIN CLOSE, WHITLEY, READING Data Type: Point Name: CLEAN LINEN SERVICES LTD Easting: 471300 Northing: 170400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: 31/12/2001 Issue No: 101 Version Start Date: 01/04/2000 Version End Date: -
-	1808m W	Status: Historical Licence No: 28/39/22/0166 Details: General Farming & Domestic Direct Source: THAMES GROUNDWATER Point: HARTLEY COURT FARM, THREE MILE CROSS Data Type: Point Name: HEWISON Easting: 470300 Northing: 168900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 05/09/1966 Expiry Date: - Issue No: 100 Version Start Date: 21/11/1985 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	1
-----------------------------	----------

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

Features are displayed on the Abstractions and Source Protection Zones map on [page 36 >](#)

ID	Location	Details	
-	1891m W	Status: Historical Licence No: 28/39/22/0232 Details: Spray Irrigation - Direct Direct Source: THAMES SURFACE WATER - NON TIDAL Point: FOUNDRY BROOK AT HARTLEY COURT FARM Data Type: Line Name: Hewison Farms limited Easting: 470200 Northing: 168600	Annual Volume (m ³): 18184 Max Daily Volume (m ³): 681.91 Original Application No: - Original Start Date: 14/11/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2016 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m

0

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

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

5.9 Source Protection Zones

Records within 500m

0

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

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m

0

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

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



6 Hydrology



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

6.1 Water Network (OS MasterMap)

Records within 250m

0

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

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

0

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



This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

1

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

Features are displayed on the Hydrology map on [page 43](#) >

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	River	Foudry Brook (West End Brook to M4)	GB106039017380	Kennet	Kennet and Trib

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

6.4 WFD Surface water bodies

Records identified

1

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

Features are displayed on the Hydrology map on [page 43](#) >

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1551m NW	River	Foudry Brook (West End Brook to M4)	GB106039017380 ↗	Poor	Fail	Poor	2019

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



6.5 WFD Groundwater bodies

Records on site

0

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

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



7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m**0**

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

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

7.2 Historical Flood Events

Records within 250m**0**

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

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

7.3 Flood Defences

Records within 250m**0**

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

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



7.4 Areas Benefiting from Flood Defences

Records within 250m

0

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

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

7.5 Flood Storage Areas

Records within 250m

0

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

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



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

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

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

7.7 Flood Zone 3

Records within 50m

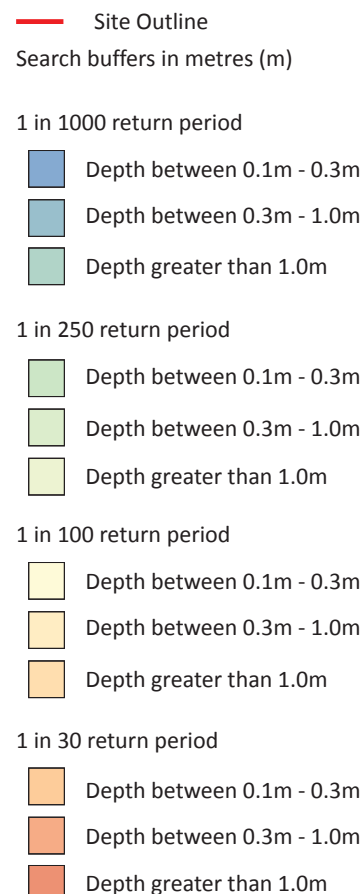
0

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

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



8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

Negligible

Highest risk within 50m

1 in 1000 year, 0.1m - 0.3m

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

Features are displayed on the Surface water flooding map on [page 49 >](#)

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



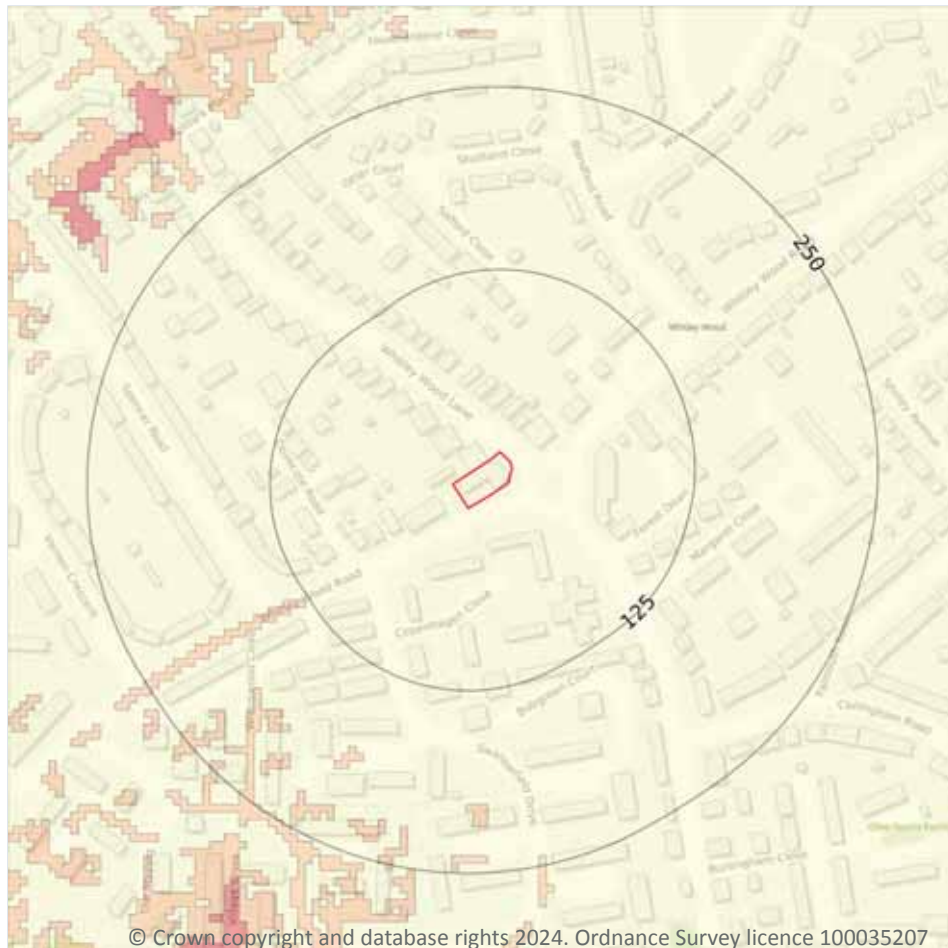
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

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

9.1 Groundwater flooding

Highest risk on site

Moderate

Highest risk within 50m

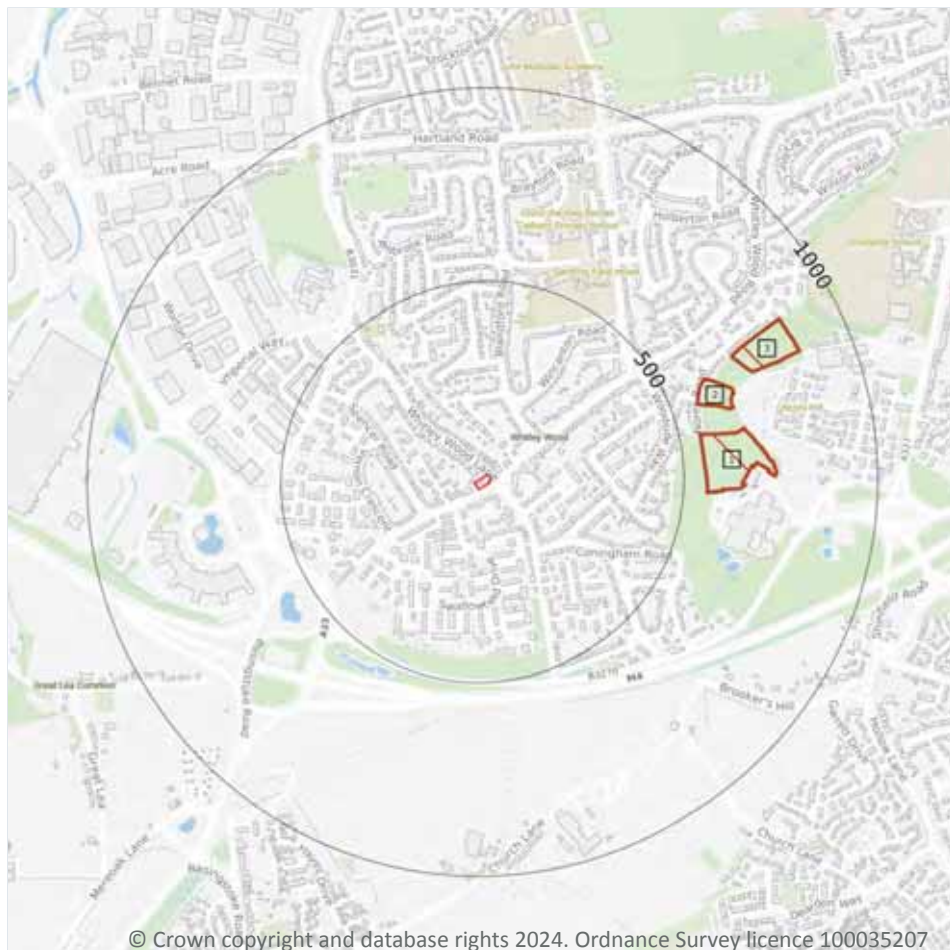
Moderate

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

Features are displayed on the Groundwater flooding map on [page 51](#) >

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- + Local Nature Reserves (LNR)
- ▨ Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m**0**

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m**0**

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m**0**

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m**0**

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m

1

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

Features are displayed on the Environmental designations map on [page 52 >](#)

ID	Location	Name	Data source
-	1206m E	Pearman's Copse	Natural England

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

10.7 Designated Ancient Woodland

Records within 2000m

8

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

Features are displayed on the Environmental designations map on [page 52 >](#)

ID	Location	Name	Woodland Type
1	553m E	Nores Hill (Tithe Map: Nores Hill Coppice)(tithe:noves Hill Coppice)	Ancient & Semi-Natural Woodland
2	568m E	(Tithe Map: Little Whitley Wood Coppice)(tithe:little Whitley Wood Coppice)	Ancient & Semi-Natural Woodland
3	698m NE	(Tithe Map: Great Whitley Wood Coppice)(tithe:great Whitley Wood Coppice)	Ancient & Semi-Natural Woodland
4	1304m E	(Tithe:coppice Adjoining Home Close)	Ancient & Semi-Natural Woodland
-	1386m E	(Tithe:the Shaw)	Ancient & Semi-Natural Woodland
-	1400m E	Pearman's Copse (Tithe Map: Pearmans Coppice)(tithe:pearmans Coppice)	Ancient & Semi-Natural Woodland
-	1407m E	(Tithe: The Shaw)	Ancient & Semi-Natural Woodland
-	1983m SE	High Copse (Tithe Map: High Coppice)(tithe:high Coppice)	Ancient & Semi-Natural Woodland



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

10.8 Biosphere Reserves

Records within 2000m

0

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

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

10.9 Forest Parks

Records within 2000m

0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

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

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

10.11 Green Belt

Records within 2000m

0

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

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

10.12 Proposed Ramsar sites

Records within 2000m

0

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

This data is sourced from Natural England.



10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m

1

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

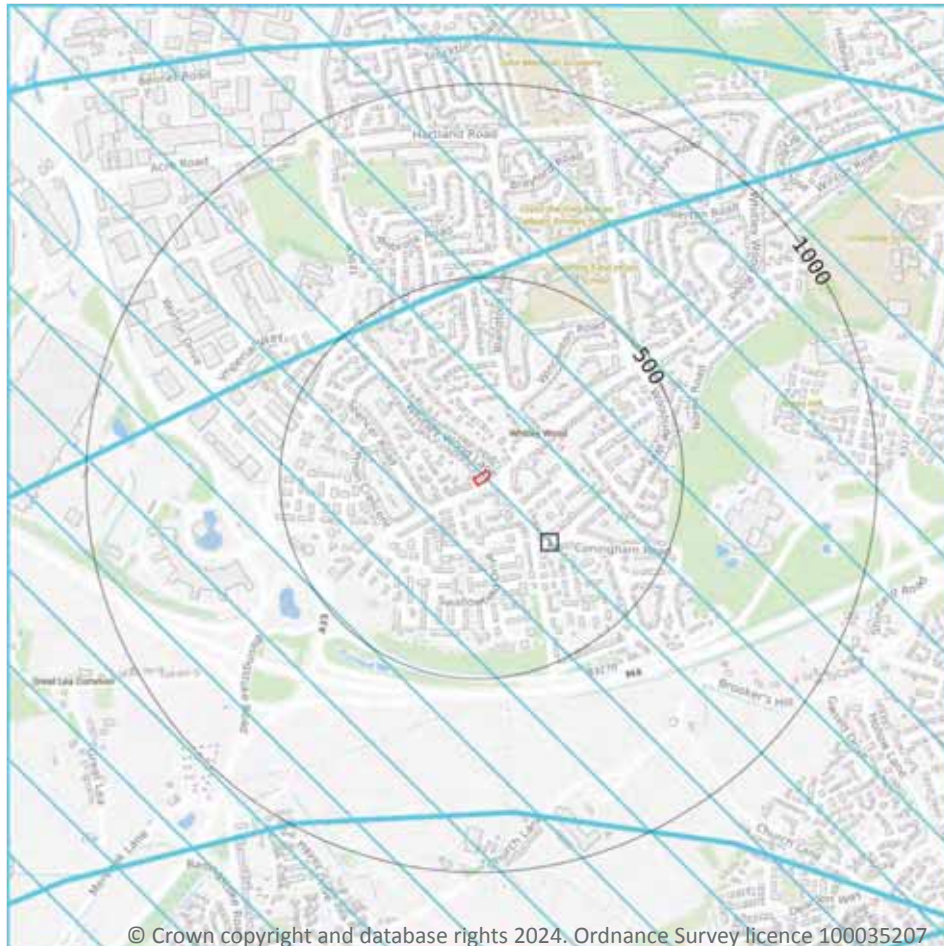
Location	Name	Type	NVZ ID	Status
On site	Foudry Brook (West End Brook to M4) NVZ	Surface Water	459	Existing



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



SSSI Impact Zones and Units



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

10.17 SSSI Impact Risk Zones

Records on site

1

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

Features are displayed on the SSSI Impact Zones and Units map on [page 58 >](#)

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Airports, helipads and other aviation proposals. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t. Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Notes: Strategic solutions for recreational impacts are in place. Please contact your Local Planning Authority as they have the information to advise on specific requirements.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0
----------------------	---

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

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

11.3 National Parks

Records within 250m

0

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

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

11.4 Listed Buildings

Records within 250m

0

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



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

11.5 Conservation Areas

Records within 250m

0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m

0

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

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

11.7 Registered Parks and Gardens

Records within 250m

0

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

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



12 Agricultural designations



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

12.1 Agricultural Land Classification

Records within 250m

2

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

Features are displayed on the Agricultural designations map on [page 62](#) >

ID	Location	Classification	Description
1	On site	Urban	-



ID	Location	Classification	Description
2	220m S	Grade 4	Poor quality agricultural land. Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0
----------------------------	----------

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

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

12.3 Tree Felling Licences

Records within 250m	0
----------------------------	----------

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0
----------------------------	----------

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

0

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

This data is sourced from Natural England.



13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m

0

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m

0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m

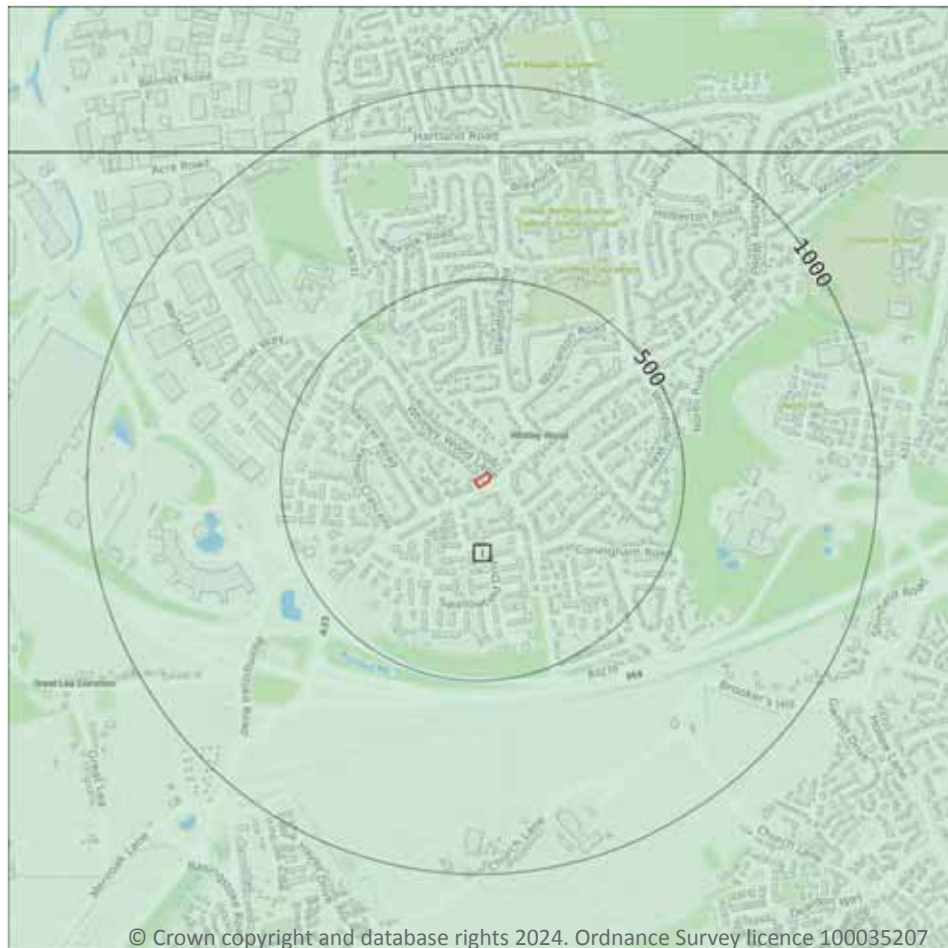
0

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

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

1

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

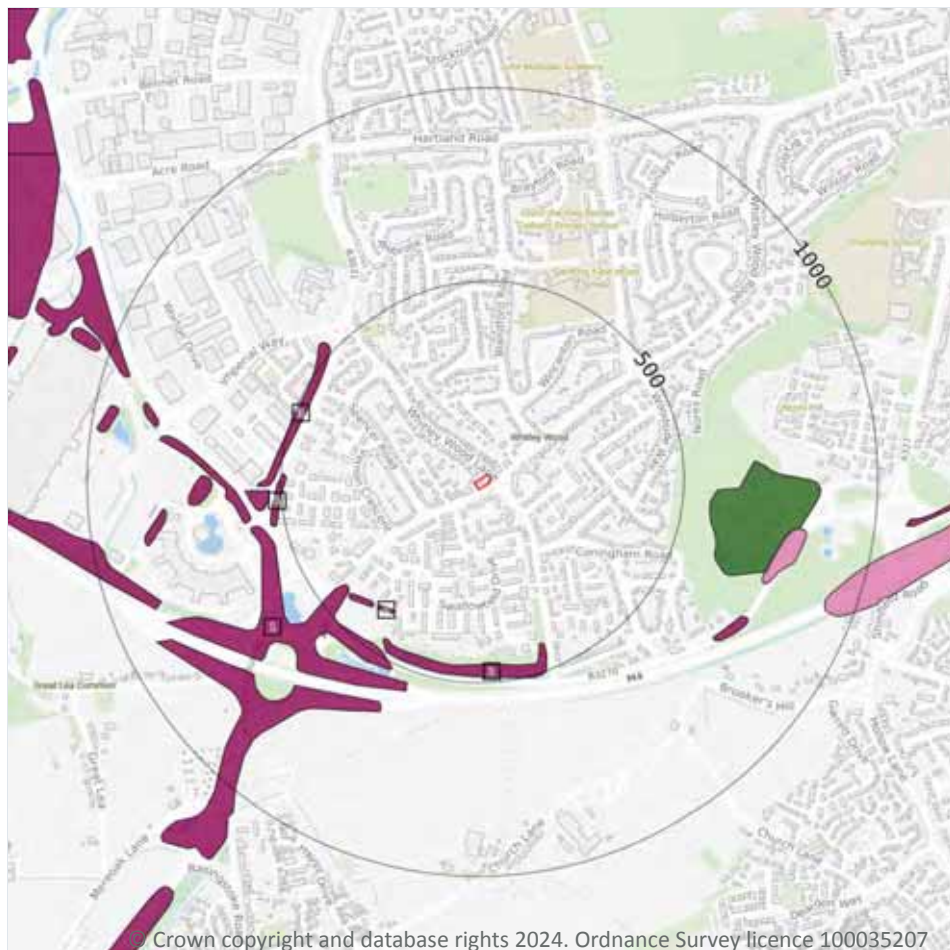
Features are displayed on the Geology 1:10,000 scale - Availability map on [page 66](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	SU76NW

This data is sourced from the British Geological Survey.



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



— Site Outline
Search buffers in metres (m)

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

© Crown copyright and database rights 2024. Ordnance Survey licence 100035207

14.2 Artificial and made ground (10k)

Records within 500m

6

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

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on [page 67](#) >

ID	Location	LEX Code	Description	Rock description
A	382m SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	399m SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
1	420m SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	429m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit



ID	Location	LEX Code	Description	Rock description
3	472m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
B	486m W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

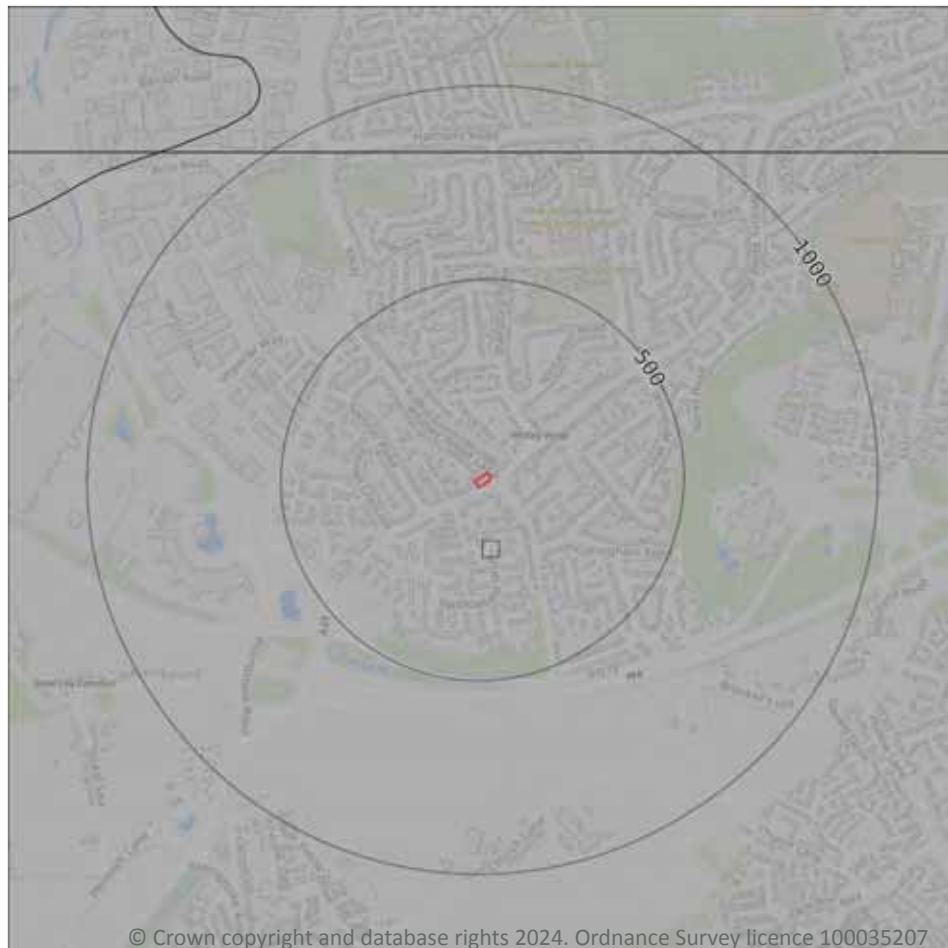
0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

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

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

14.5 Bedrock geology (10k)

Records within 500m

1

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 70 >](#)

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

This data is sourced from the British Geological Survey.



14.6 Bedrock faults and other linear features (10k)

Records within 500m

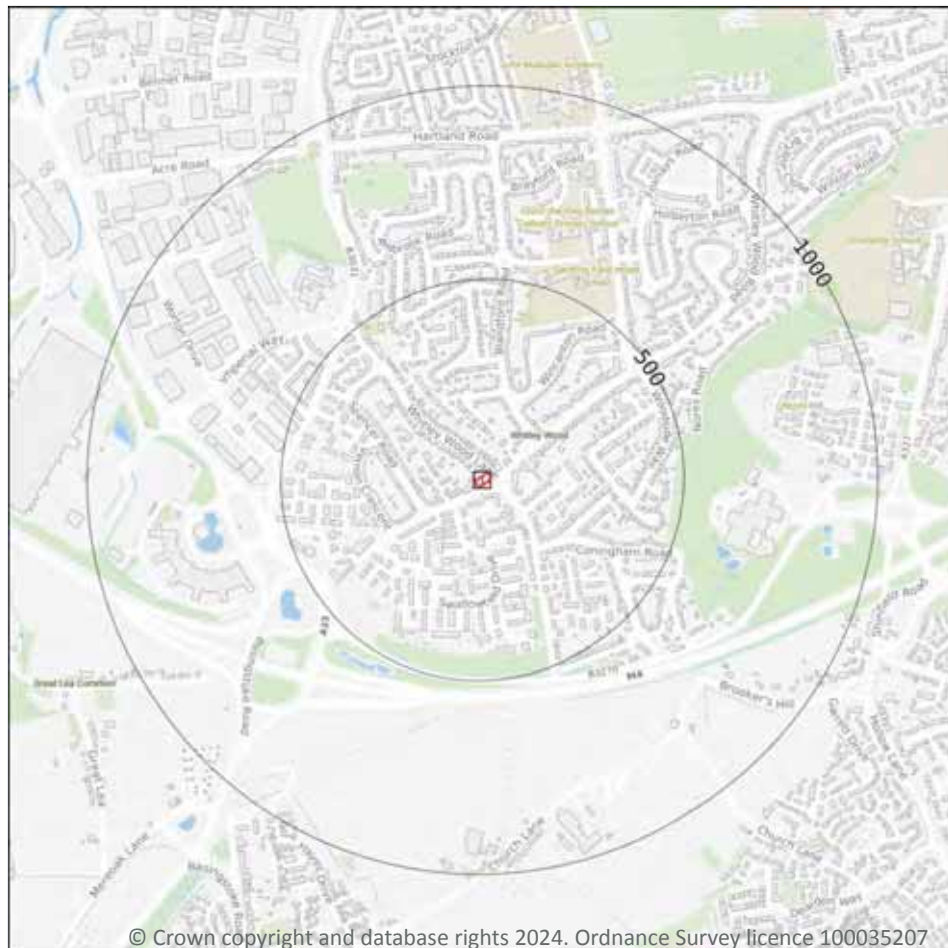
0

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

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 72](#) >

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

This data is sourced from the British Geological Survey.



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

15.2 Artificial and made ground (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial

15.4 Superficial geology (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m

0

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m

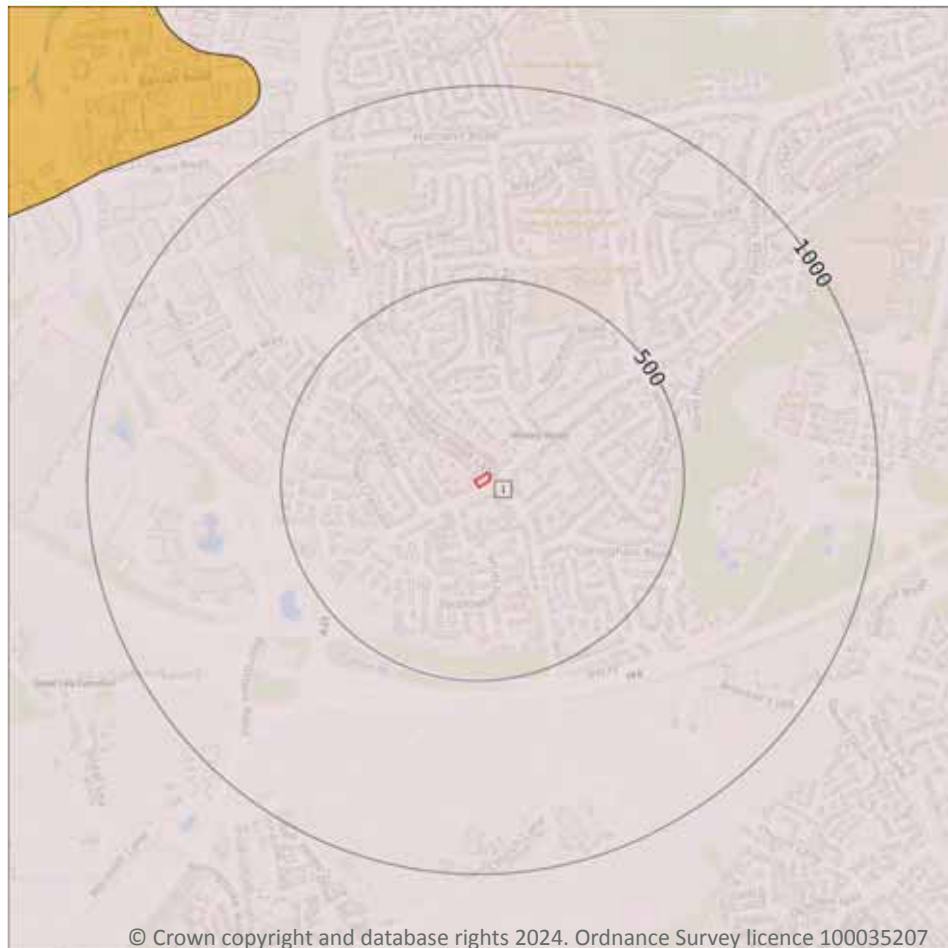
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

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

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

15.8 Bedrock geology (50k)

Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 75 >](#)

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

This data is sourced from the British Geological Survey.



15.9 Bedrock permeability (50k)

Records within 50m

1

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

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

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

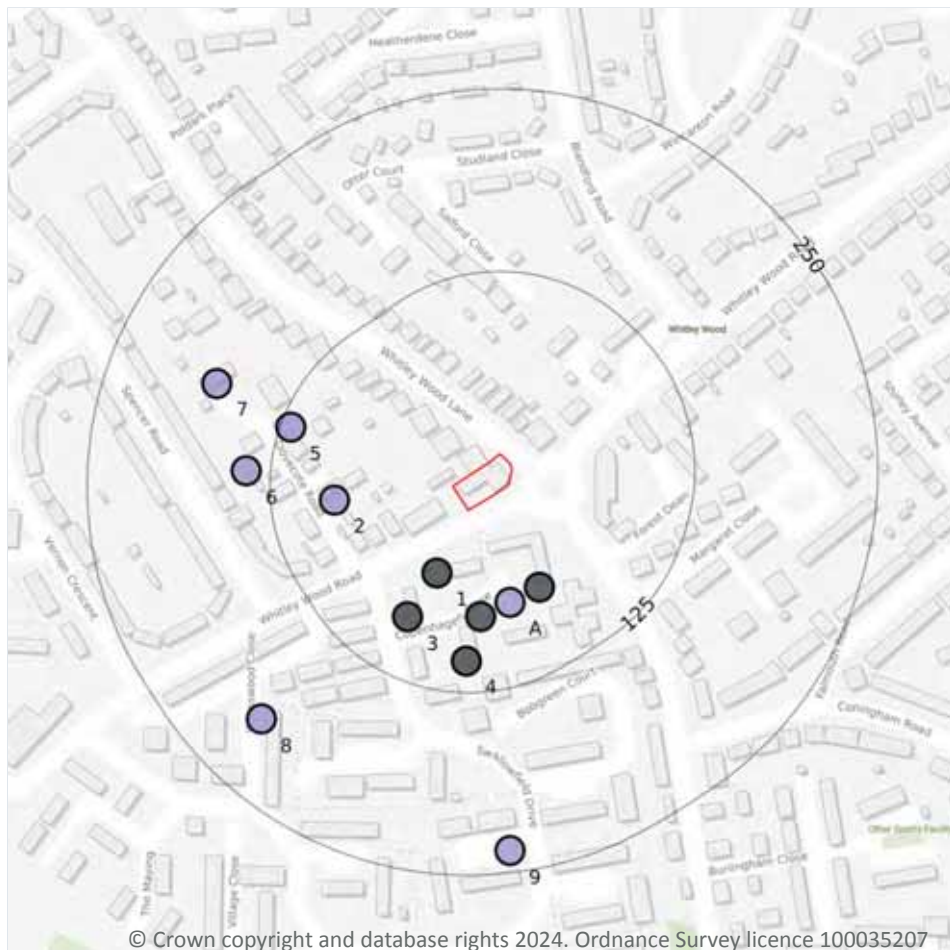
0

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

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

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

16.1 BGS Boreholes

Records within 250m

12

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

Features are displayed on the Boreholes map on [page 77](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	48m SW	472080 169090	WHITLEY WOOD ROAD TP 1	-	Y	N/A
A	69m S	472130 169070	WHITLEY WOOD HOUSING SCHEME	2.0	N	427230 ↗
A	70m SE	472150 169080	WHITLEY WOOD ROAD TP 2	-	Y	N/A

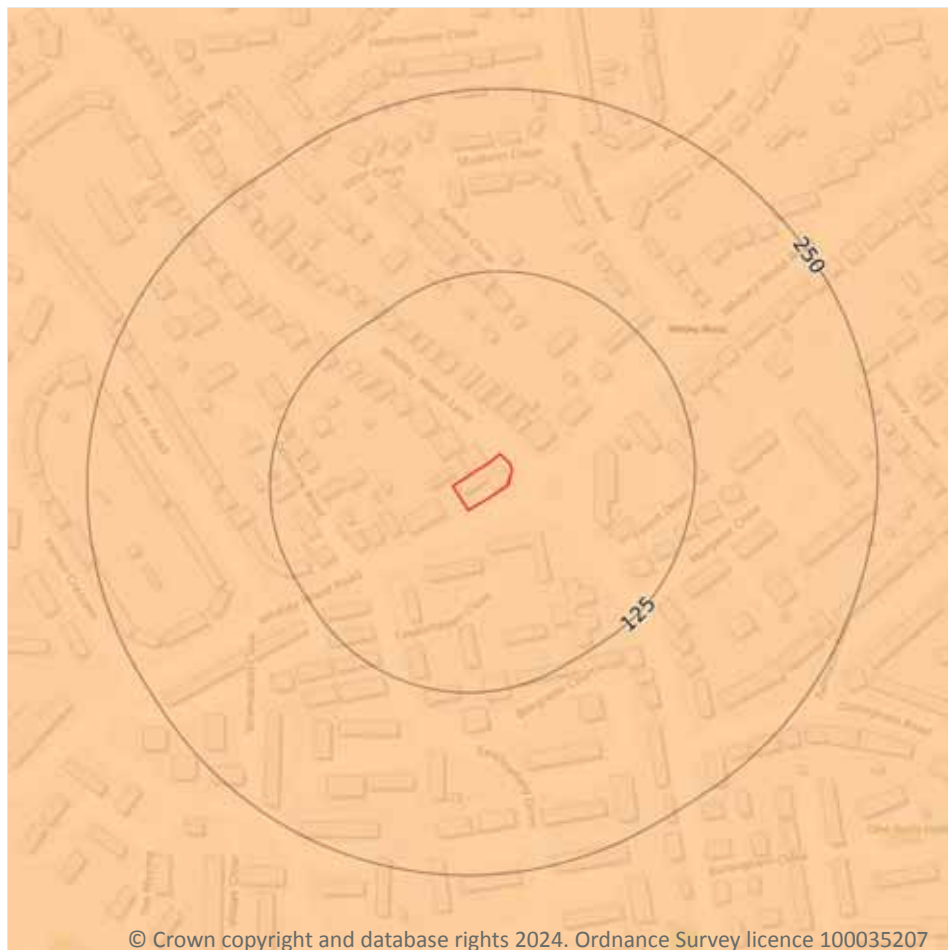


ID	Location	Grid reference	Name	Length	Confidential	Web link
A	74m S	472110 169060	WHITLEY WOOD ROAD TP 5	-	Y	N/A
2	82m W	472010 169140	250 WHITLEY WOOD ROAD READING TP1	2.0	N	15046867 ↗
3	84m SW	472060 169060	WHITLEY WOOD ROAD TP 4	-	Y	N/A
4	103m S	472100 169030	WHITLEY WOOD ROAD TP 3	-	Y	N/A
5	118m W	471980 169190	250 WHITLEY WOOD ROAD READING TP4	2.1	N	15046872 ↗
6	142m W	471950 169160	250 WHITLEY WOOD ROAD READING TP2	2.0	N	15046870 ↗
7	176m W	471930 169220	250 WHITLEY WOOD ROAD READING TP3	1.7	N	15046871 ↗
8	201m SW	471960 168990	WHITLEY WOOD HOUSING SCHEME	2.0	N	427234 ↗
9	235m S	472130 168900	WHITLEY WOOD HOUSING SCHEME	2.0	N	427231 ↗

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



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

17.1 Shrink swell clays

Records within 50m

1

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

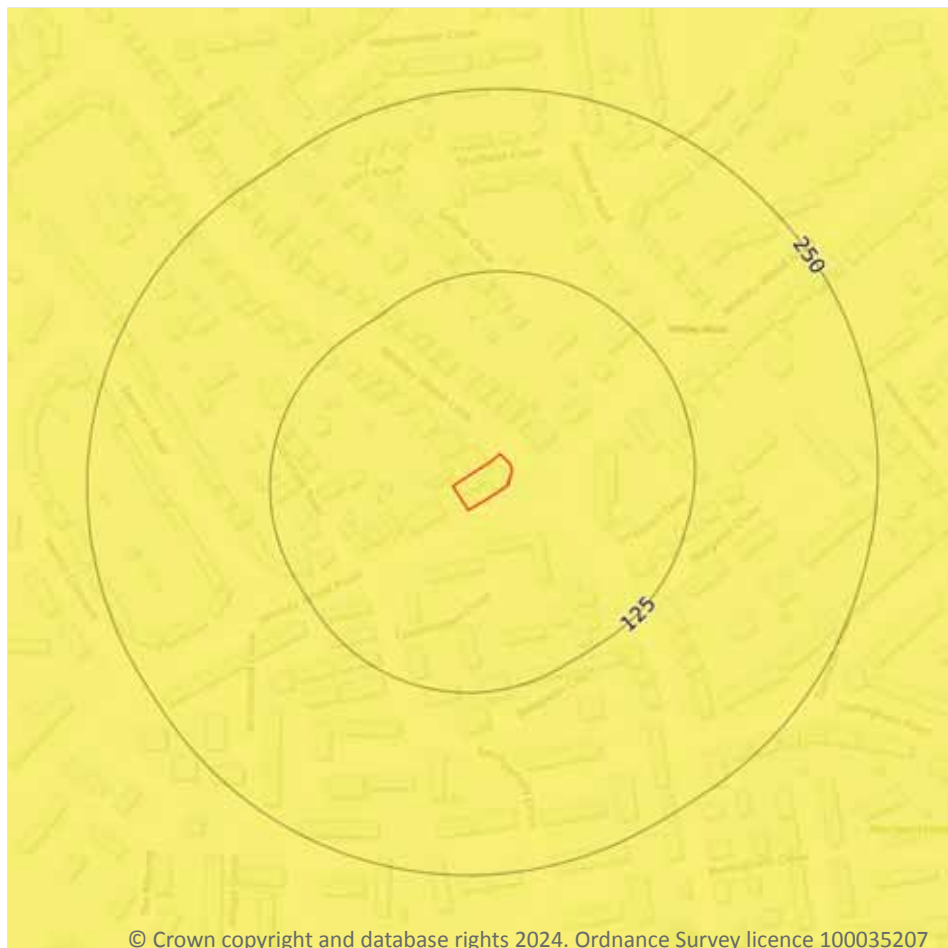
Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 79 >](#)

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



© Crown copyright and database rights 2024. Ordnance Survey licence 100035207

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

17.2 Running sands

Records within 50m

1

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

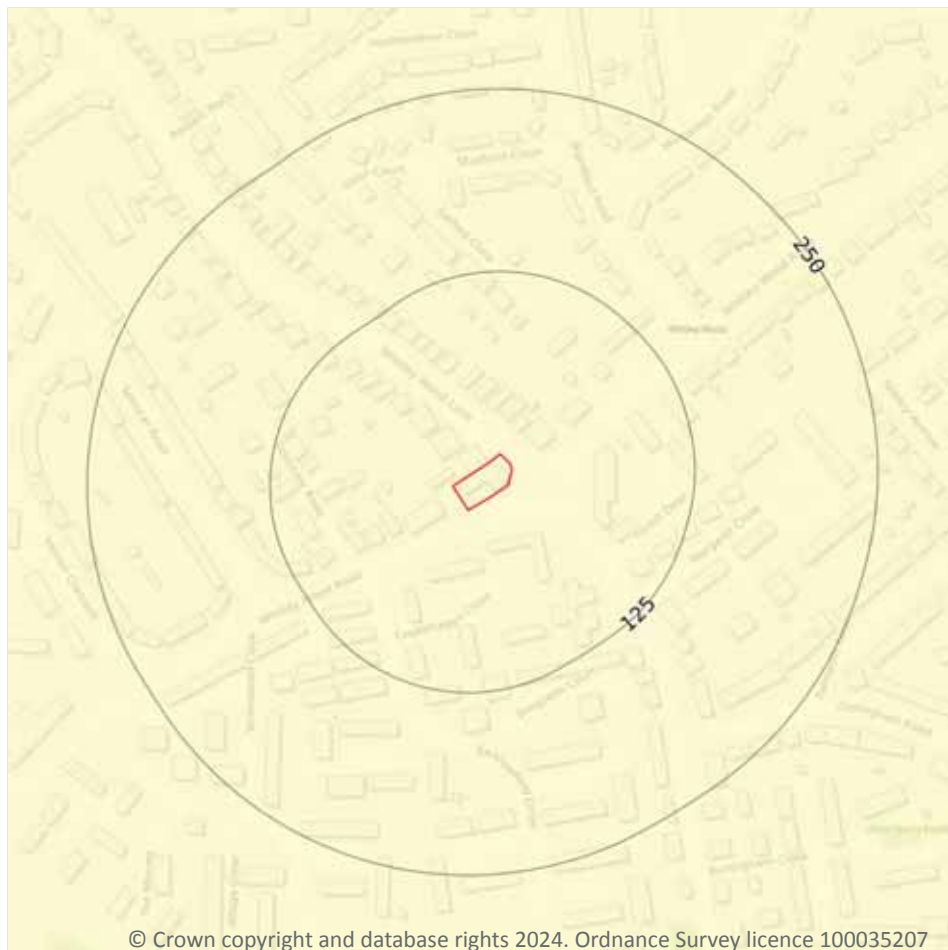
Features are displayed on the Natural ground subsidence - Running sands map on [page 80](#) >

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



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

17.3 Compressible deposits

Records within 50m

1

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

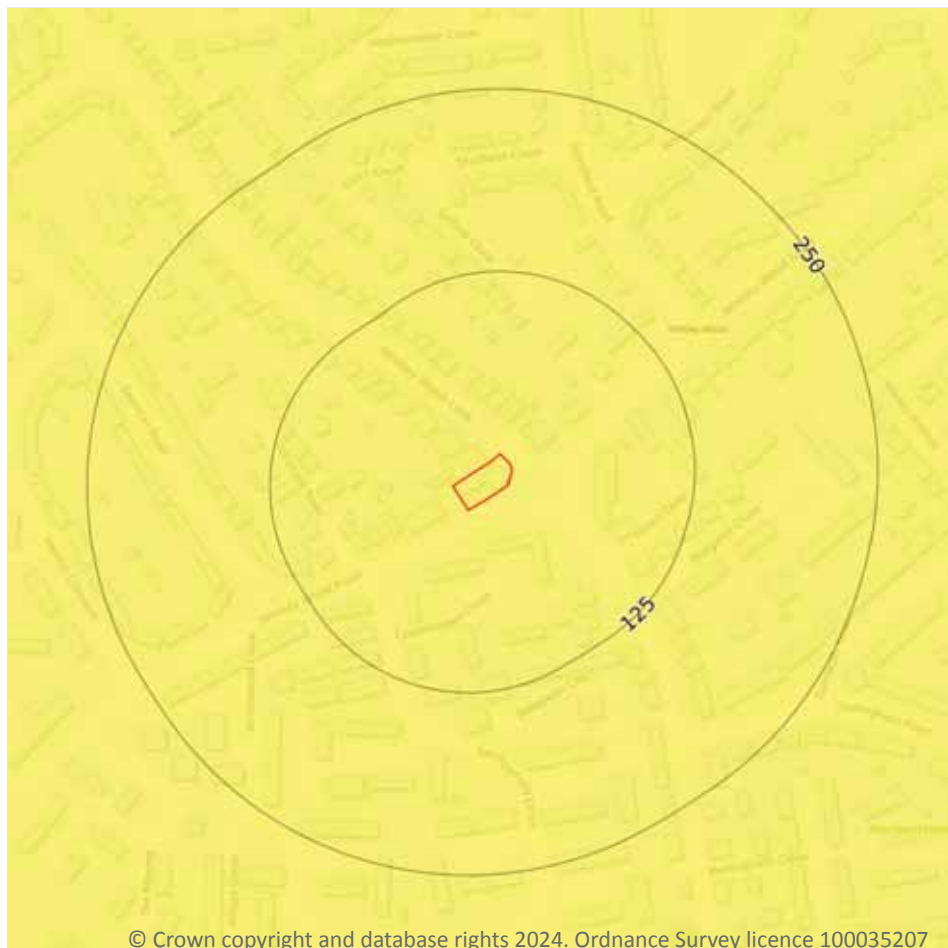
Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 81](#) >

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



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

17.4 Collapsible deposits

Records within 50m

1

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

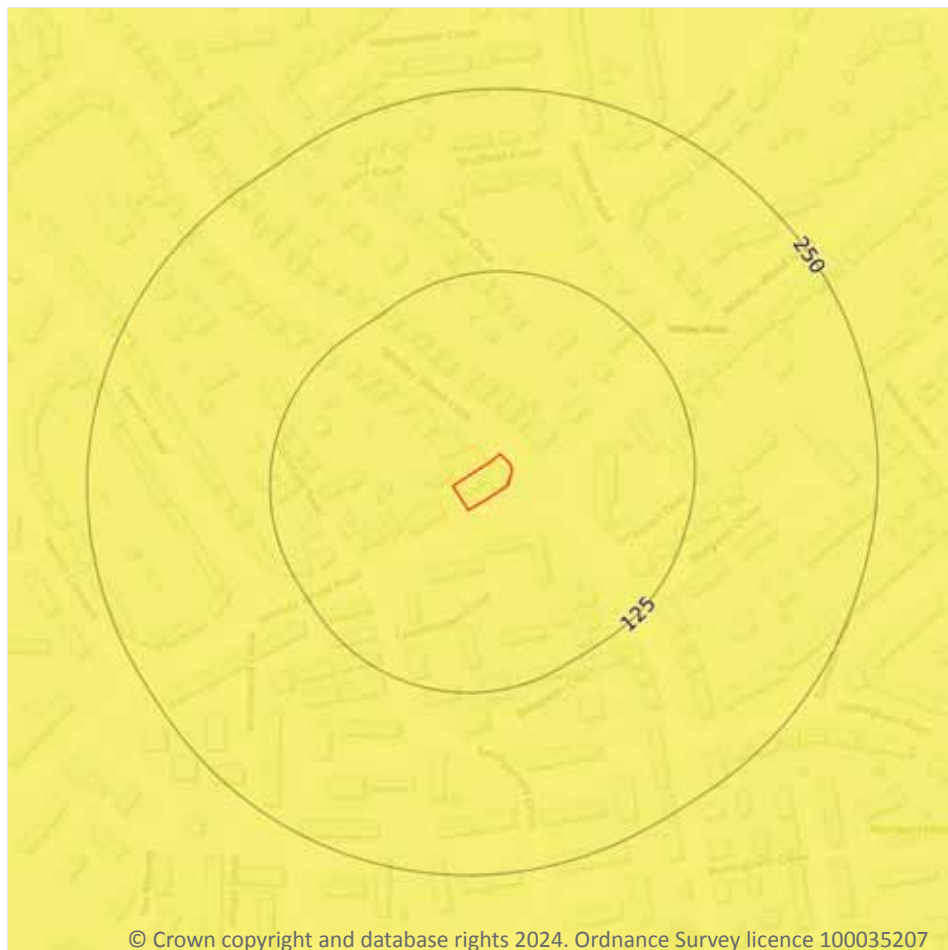
Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 82 >](#)

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



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

© Crown copyright and database rights 2024. Ordnance Survey licence 100035207

17.5 Landslides

Records within 50m

1

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

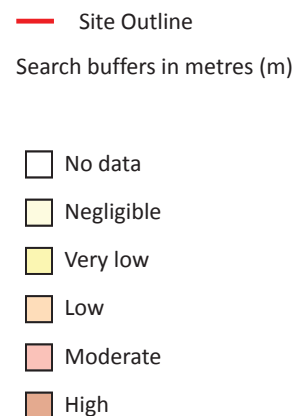
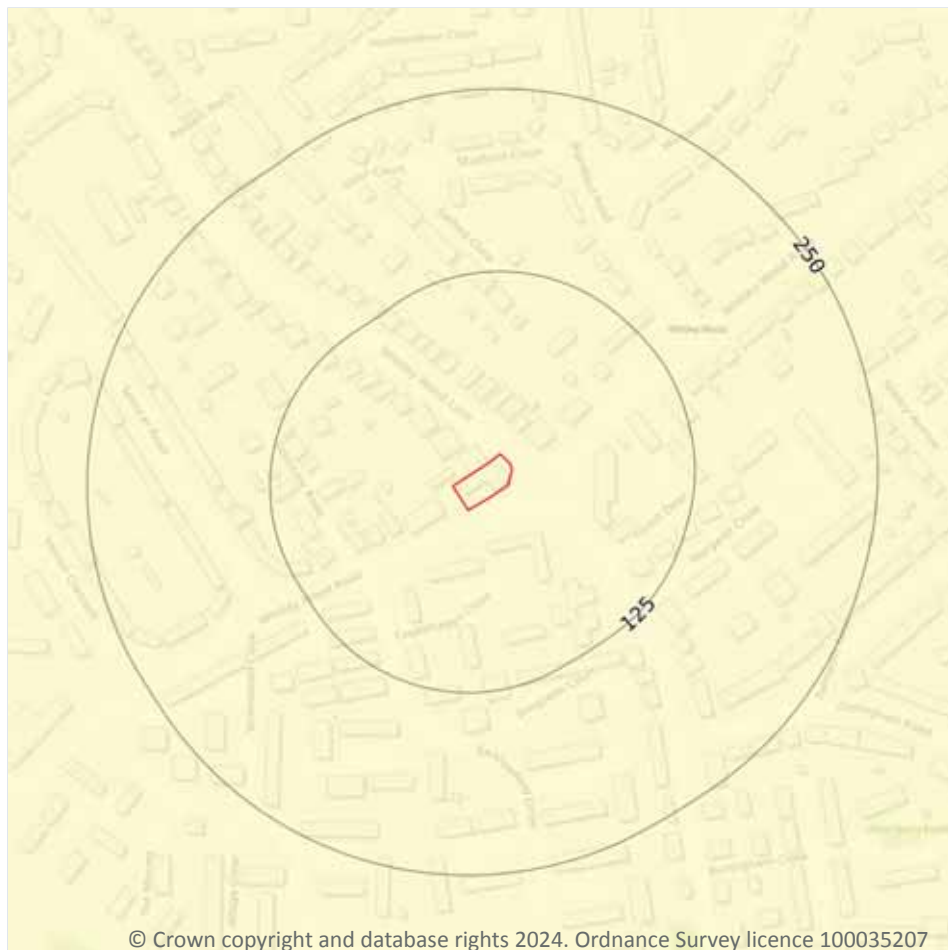
Features are displayed on the Natural ground subsidence - Landslides map on [page 83](#) >

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



17.6 Ground dissolution of soluble rocks

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on [page 84](#) >

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



This data is sourced from the British Geological Survey.



18 Mining and ground workings



- Site Outline
- Search buffers in metres (m)
- BritPits
- Surface ground workings
- Underground workings
- Underground mining extents
- Historical mineral planning areas
- TCA non-coal mining
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m

3

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

Features are displayed on the Mining and ground workings map on [page 86 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
A	177m N	Pond	1938	1:10560
A	177m N	Pond	1898	1:10560
A	178m N	Pond	1913	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m

0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m

0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

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

This data is sourced from the British Geological Survey.



18.6 Non-coal mining

Records within 1000m

2

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

Features are displayed on the Mining and ground workings map on [page 86 >](#)

ID	Location	Name	Commodity	Class	Likelihood
1	620m NW	Not available	Chalk	C	Underground mine workings may have occurred in the past, or current mines may be operating to modern engineering standards. Potential for difficult ground conditions should be considered.
-	840m N	Not available	Chalk	C	Underground mine workings may have occurred in the past, or current mines may be operating to modern engineering standards. Potential for difficult ground conditions should be considered.

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site

0

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

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m

0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.



18.9 Researched mining

Records within 500m

0

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m

0

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m

0

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 Coal mining

Records on site

0

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

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site

0

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

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



18.14 Gypsum areas

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

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

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

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

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

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

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

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m

0

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

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m

0

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

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m

0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m

0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.



This data is sourced from Groundsure.

19.5 National karst database

Records within 500m

0

This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

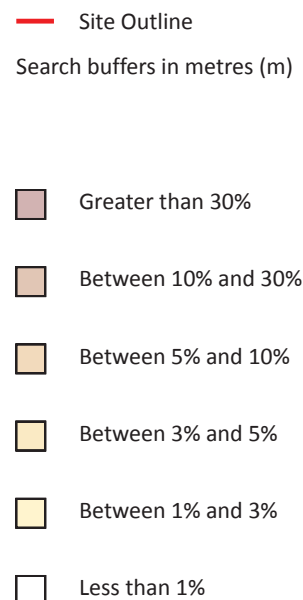
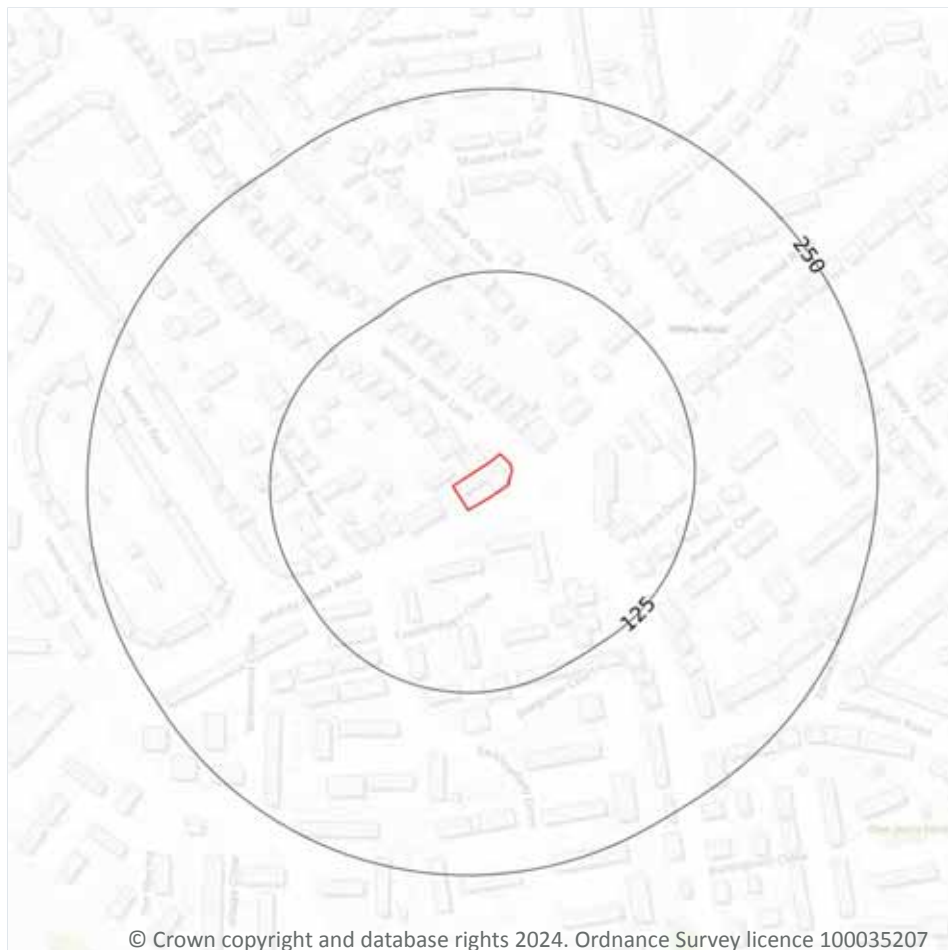
Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

This data is sourced from the British Geological Survey.



20 Radon



20.1 Radon

Records on site

1

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

Features are displayed on the Radon map on [page 93](#) >

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



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



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

1

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

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

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.



22 Railway infrastructure and projects

22.1 Underground railways (London)

Records within 250m**0**

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m**0**

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

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m**0**

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m**0**

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

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m**0**

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



This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m

0

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

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m

0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 1

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

22.9 Crossrail 2

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

22.10 HS2

Records within 500m

0

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

This data is sourced from HS2 Ltd.



Data providers

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

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: www.groundsure.com/terms-and-conditions-april-2023/ ↗.



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: County Series

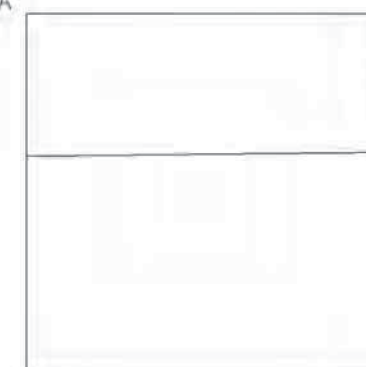
Map date: 1872

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1872
Revised 1872
Edition N/A
Copyright N/A
Levelled N/A

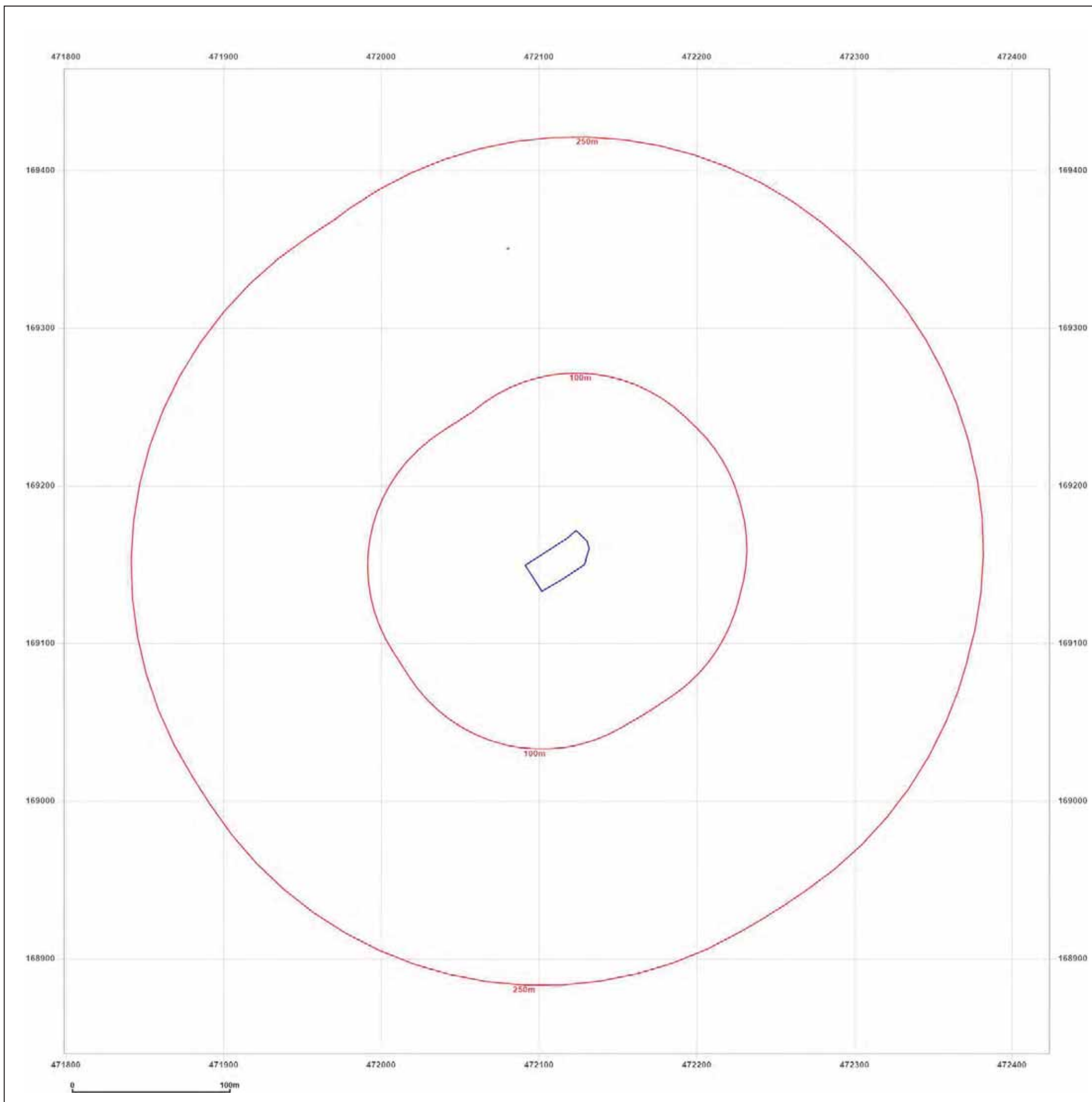


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: County Series

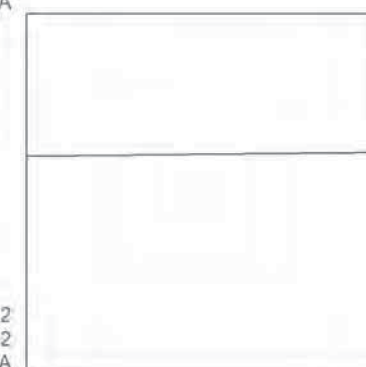
Map date: 1872-1877

Scale: 1:2,500

Printed at: 1:2,500



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



Surveyed 1872
Revised 1872
Edition N/A
Copyright N/A
Levelled N/A

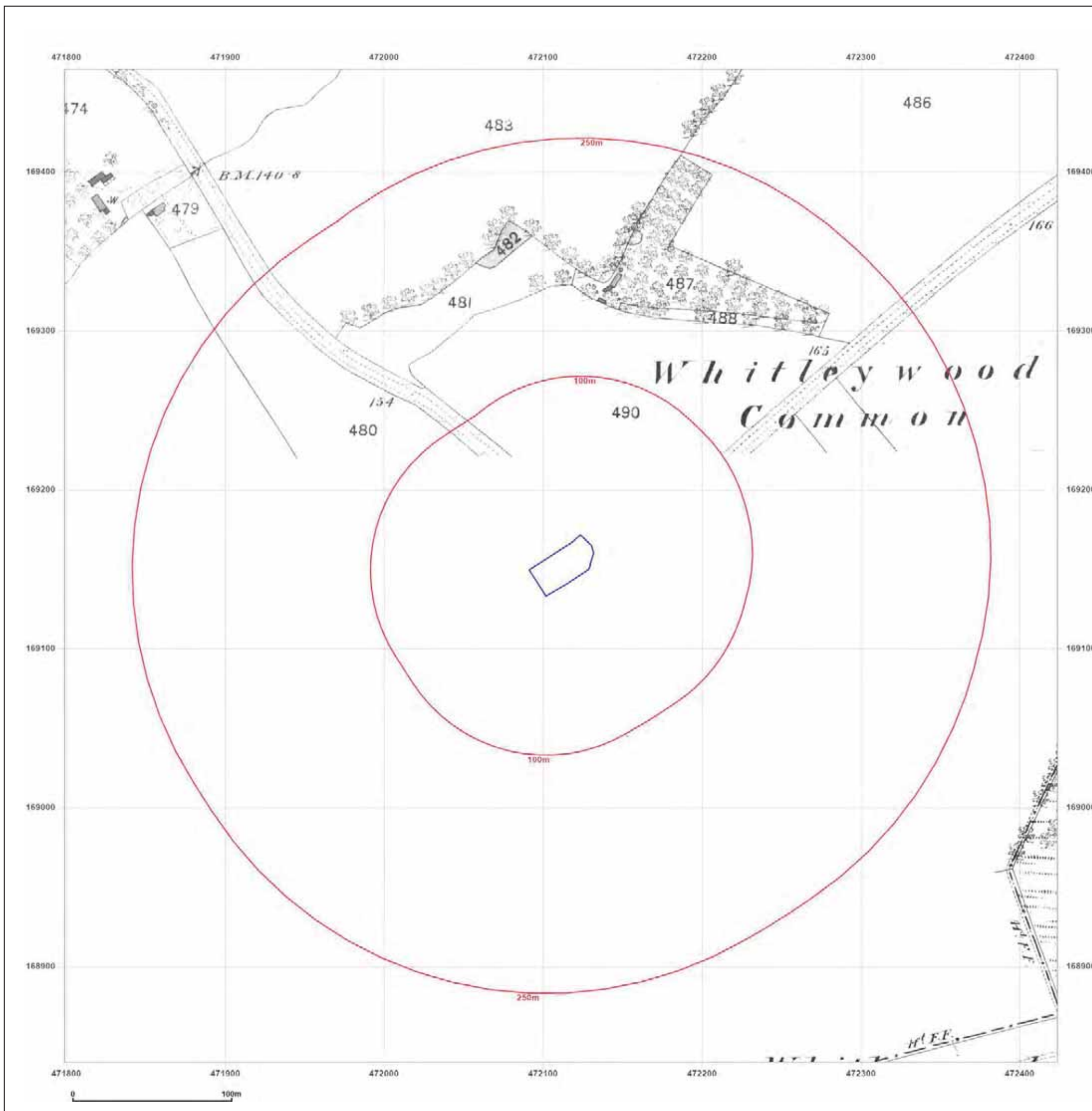


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: County Series

Map date: 1879

Scale: 1:2,500

Printed at: 1:2,500



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

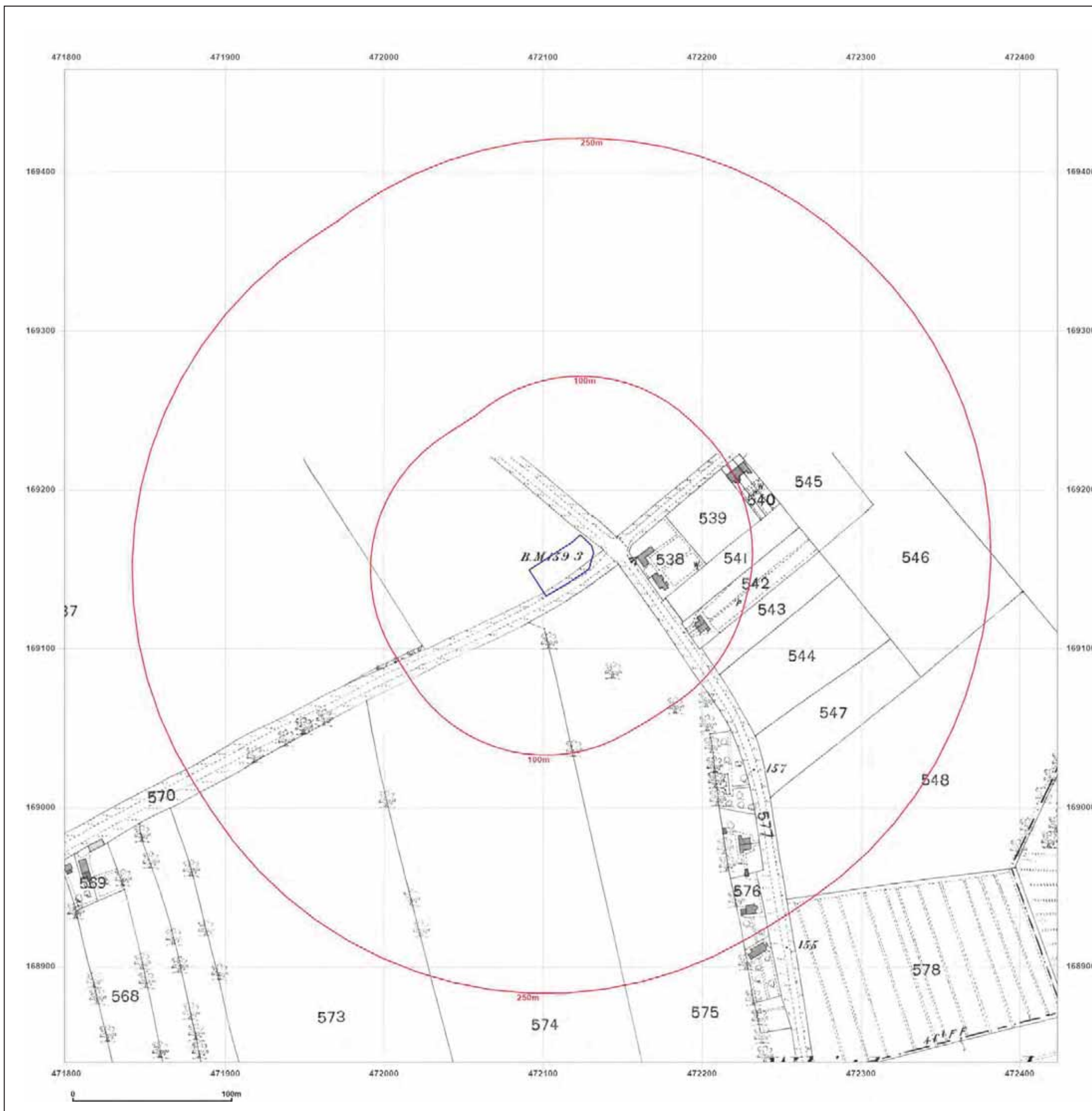


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: County Series

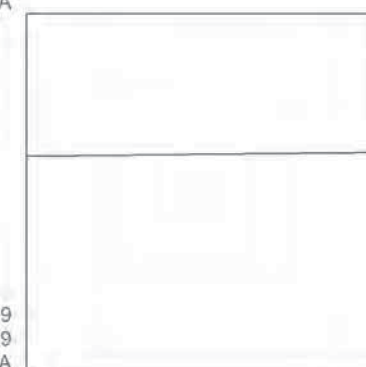
Map date: 1899

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

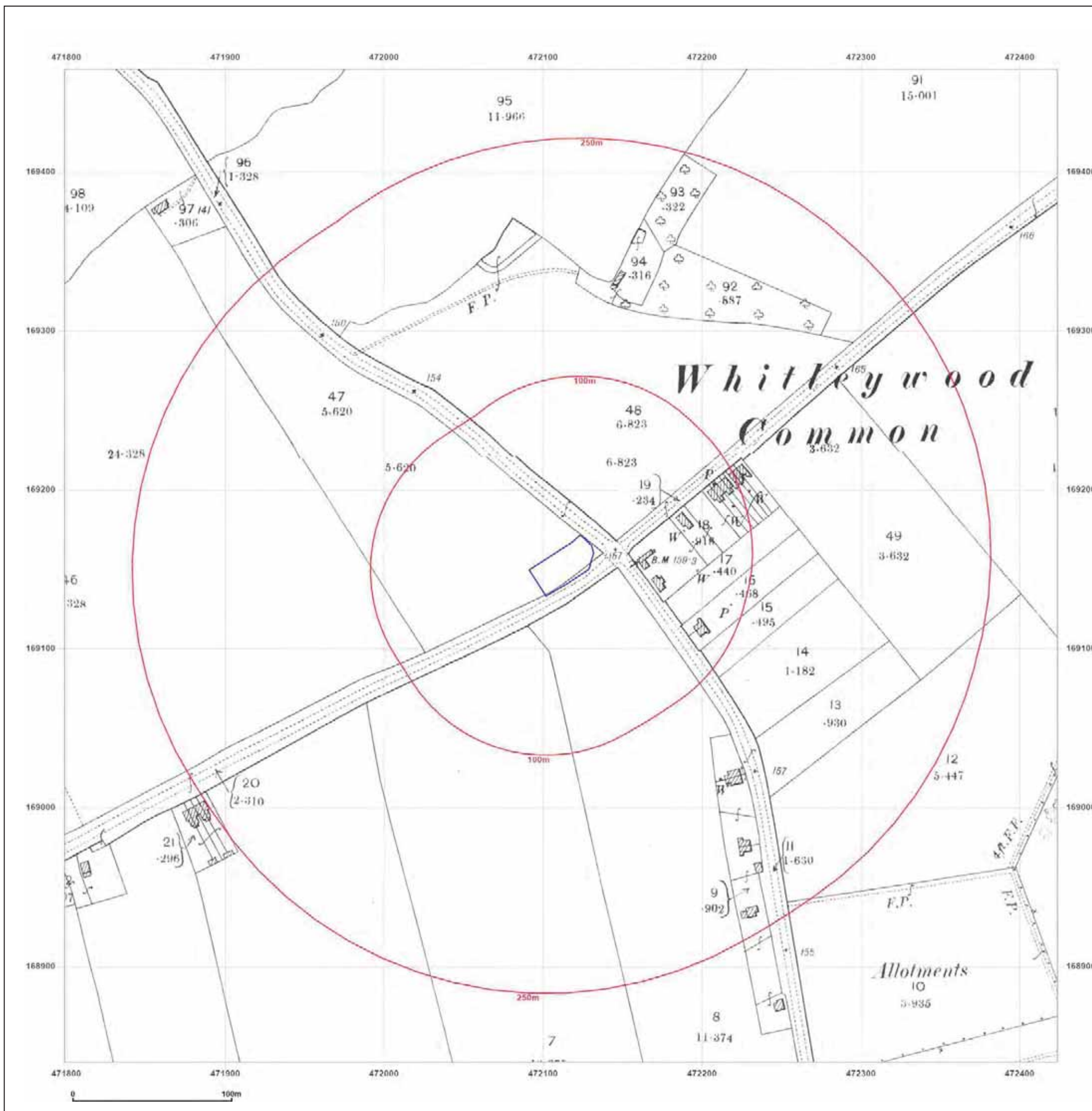


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: County Series

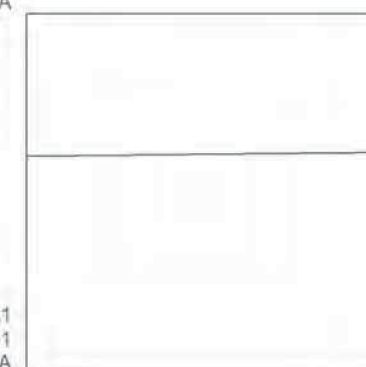
Map date: 1911

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1911
Revised 1911
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1911
Revised 1911
Edition N/A
Copyright N/A
Levelled N/A

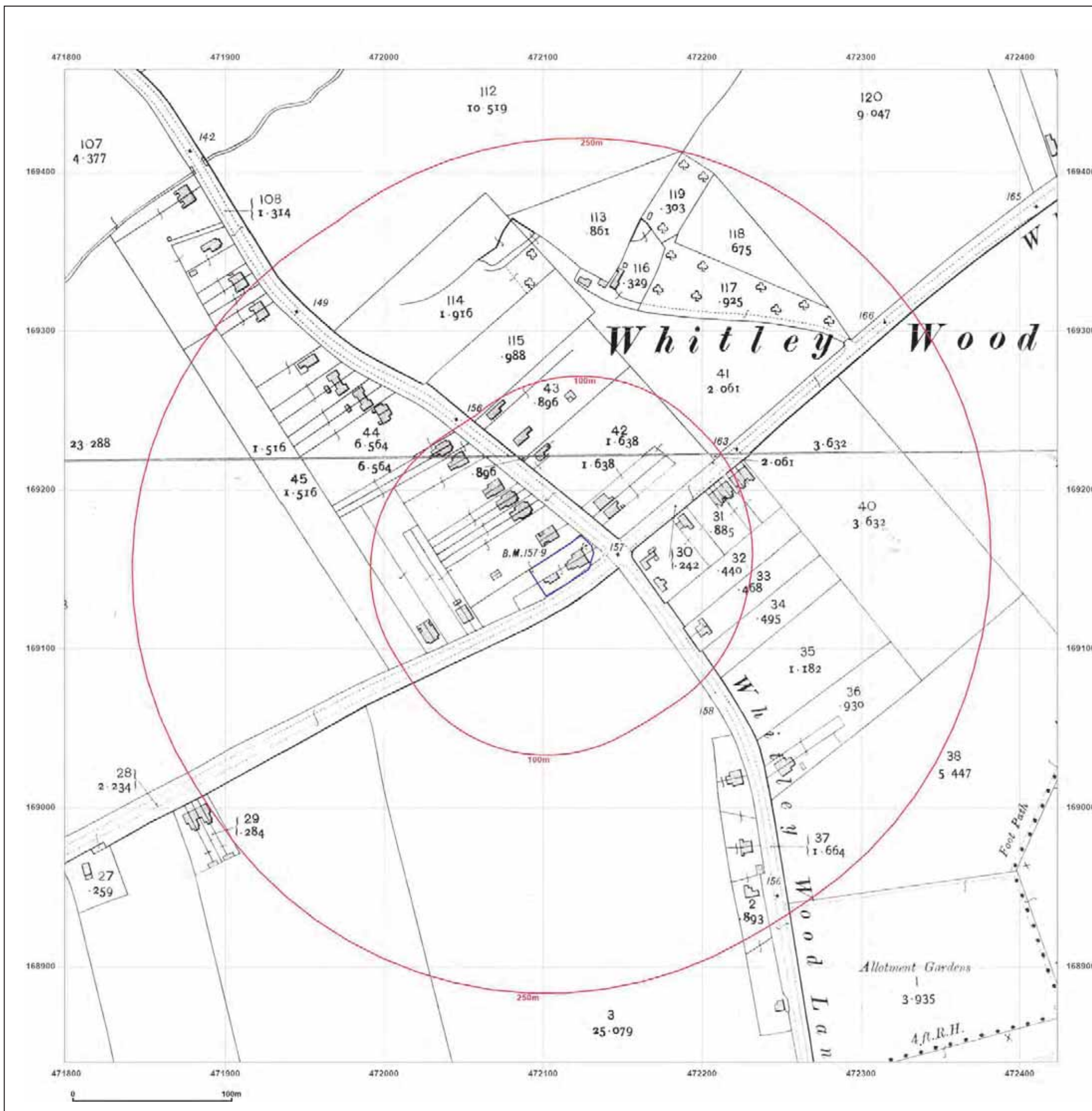


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: County Series

Map date: 1936-1937

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1936
Revised 1936
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1937
Revised 1937
Edition N/A
Copyright N/A
Levelled N/A

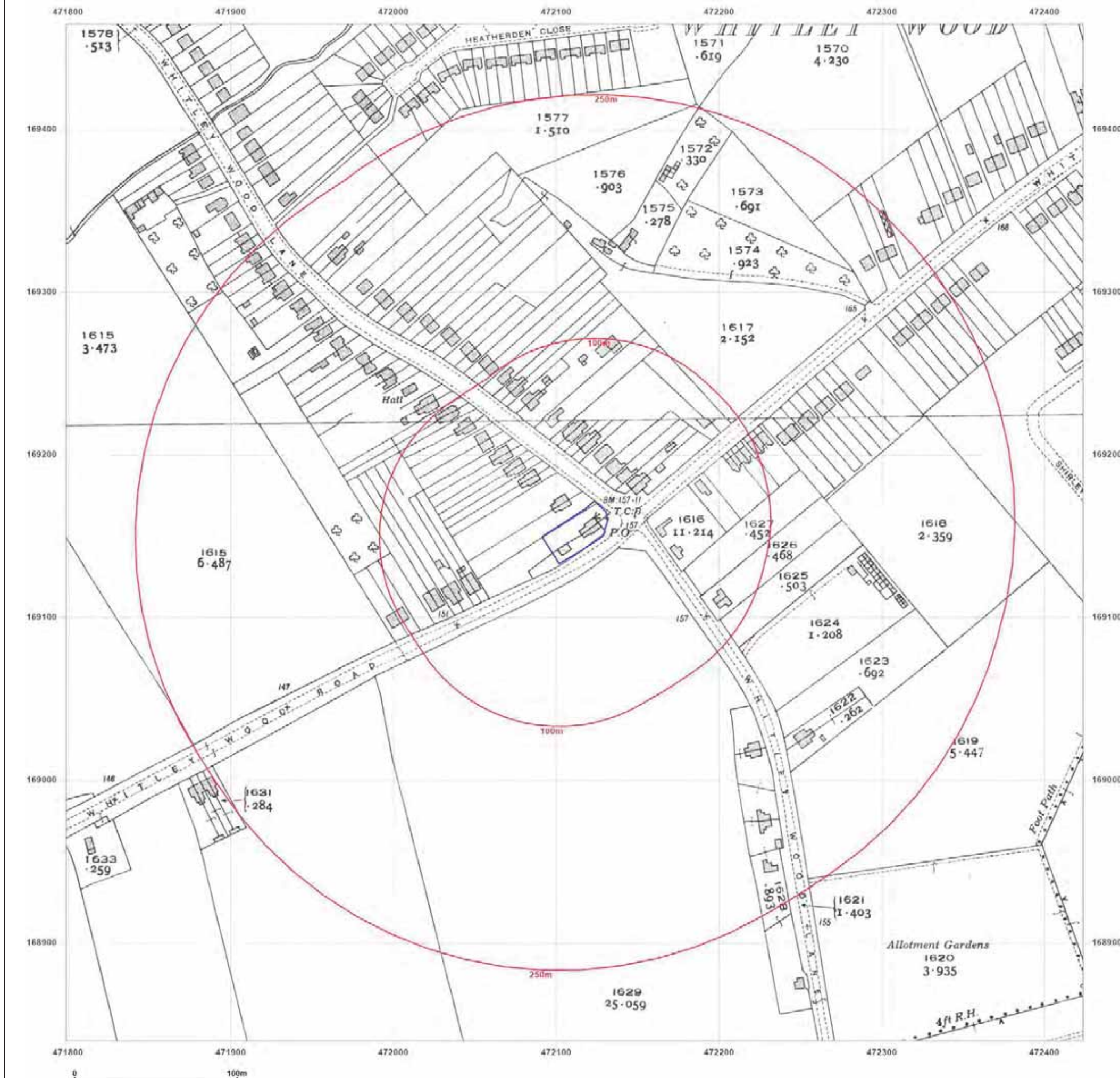


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: National Grid

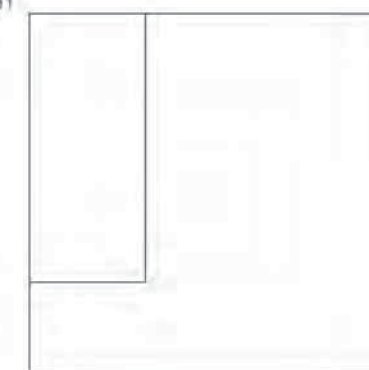
Map date: 1958

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1958
Revised 1958
Edition 1951
Copyright N/A
Levelled 1951

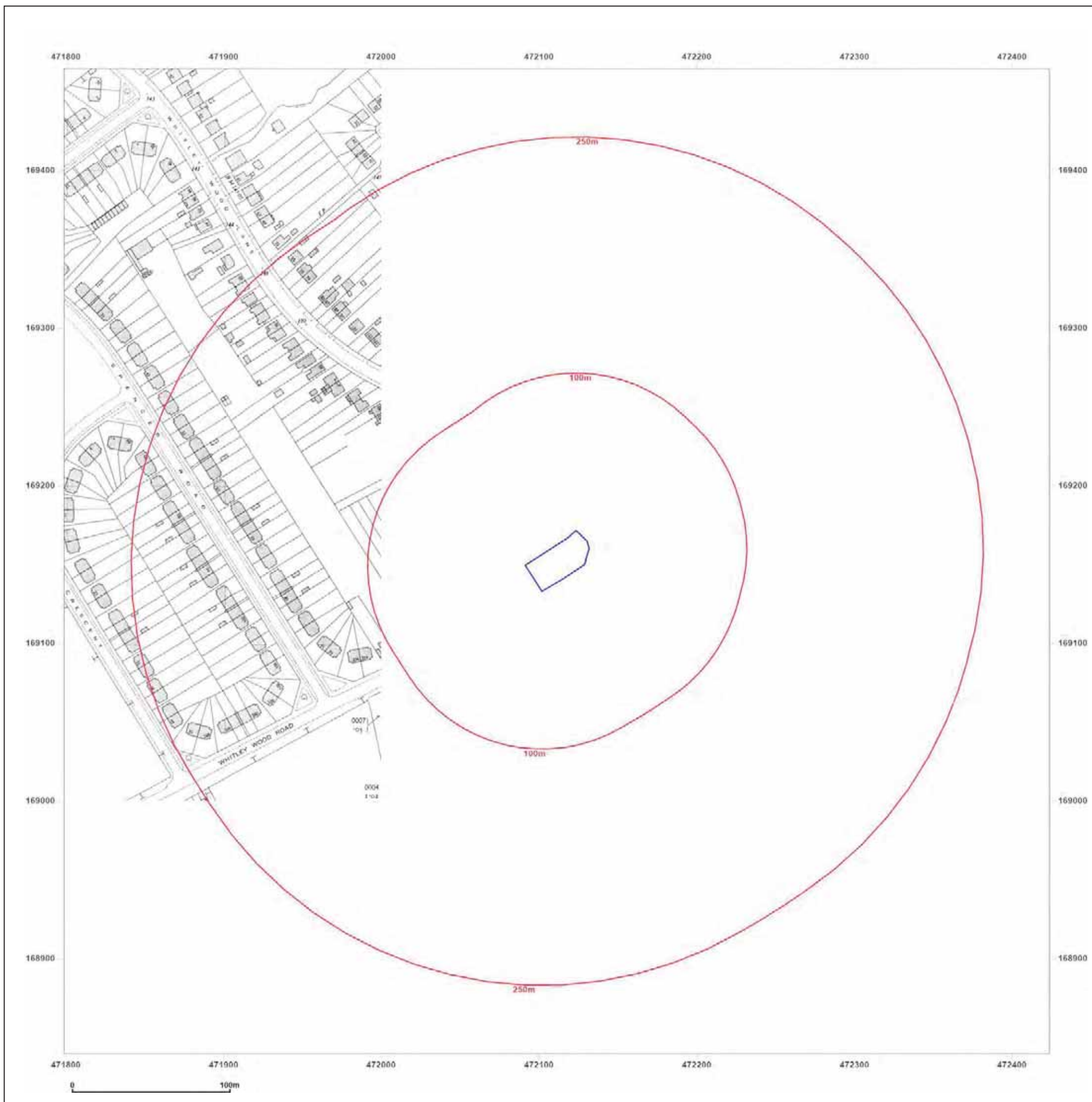


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: National Grid

Map date: 1958-1959

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1958
Revised 1958
Edition N/A
Copyright N/A
Levelled 1951

Surveyed 1958
Revised 1958
Edition N/A
Copyright 1959
Levelled 1951



Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

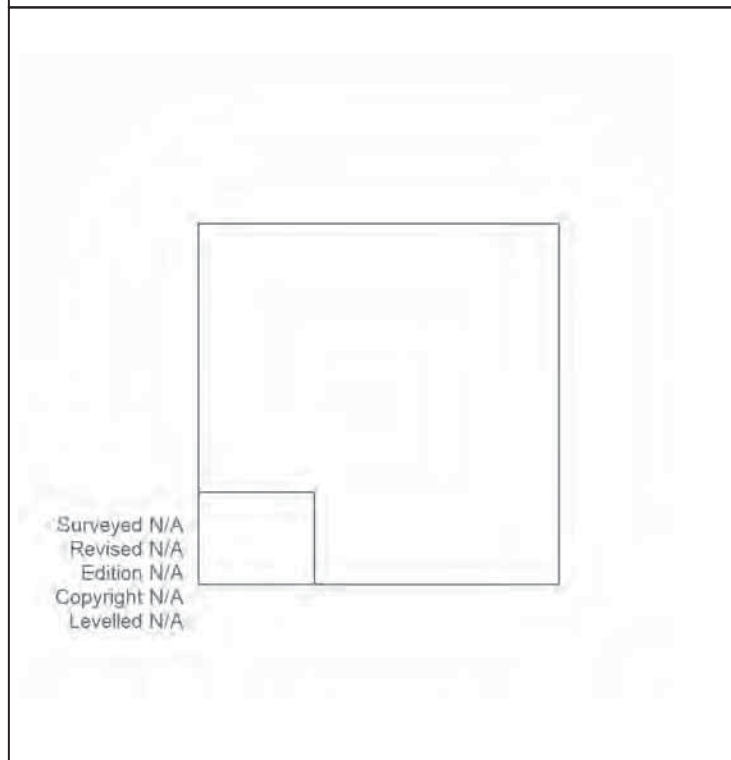
Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: National Grid

Map date: 1965

Scale: 1:2,500

Printed at: 1:2,500

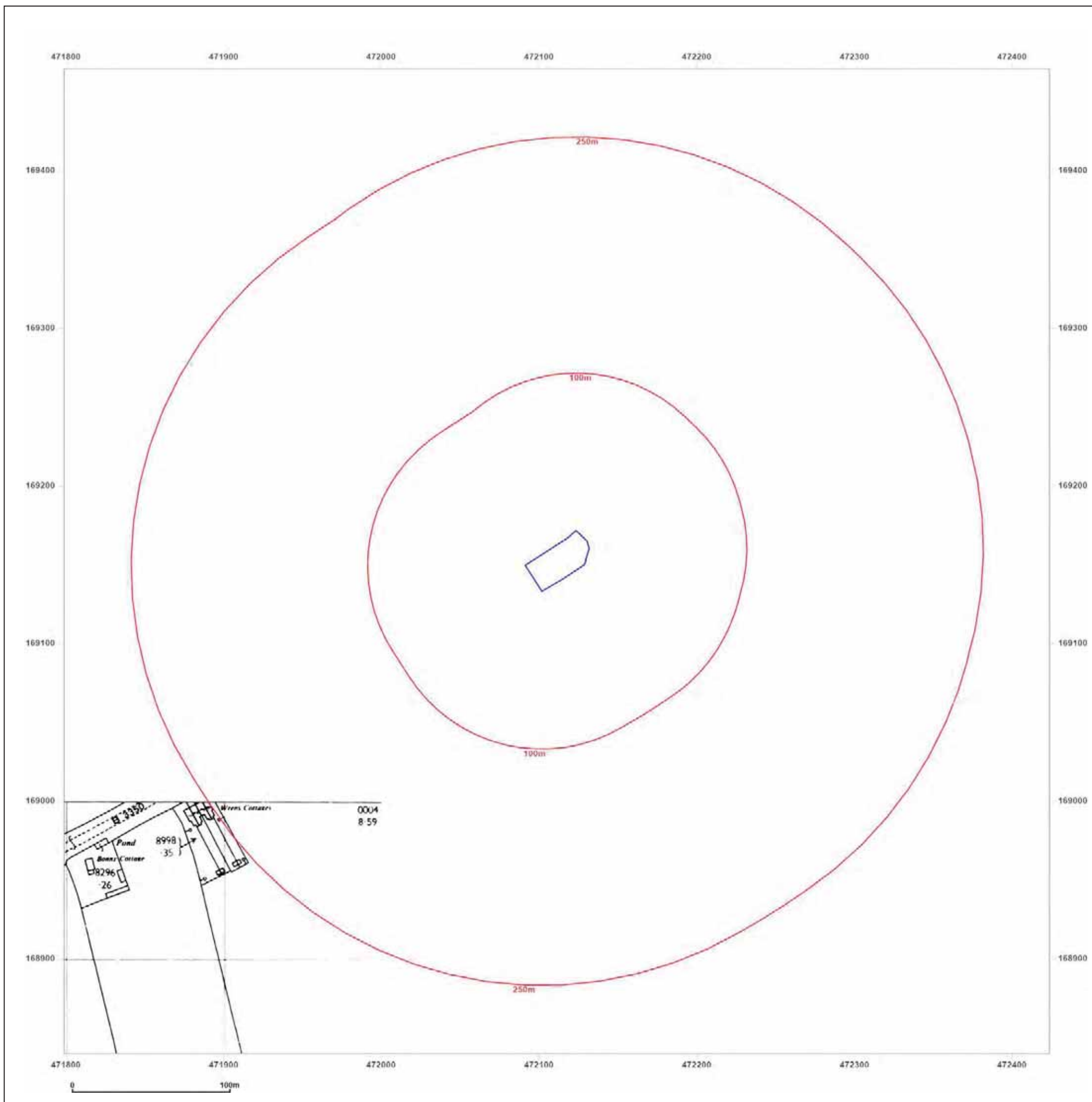


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: National Grid

Map date: 1965-1966

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1958
Revised 1965
Edition N/A
Copyright 1966
Levelled 1951

Surveyed 1965
Revised 1965
Edition 1965
Copyright 1965
Levelled 1951

Surveyed 1965
Revised 1965
Edition N/A
Copyright 1965
Levelled 1951

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

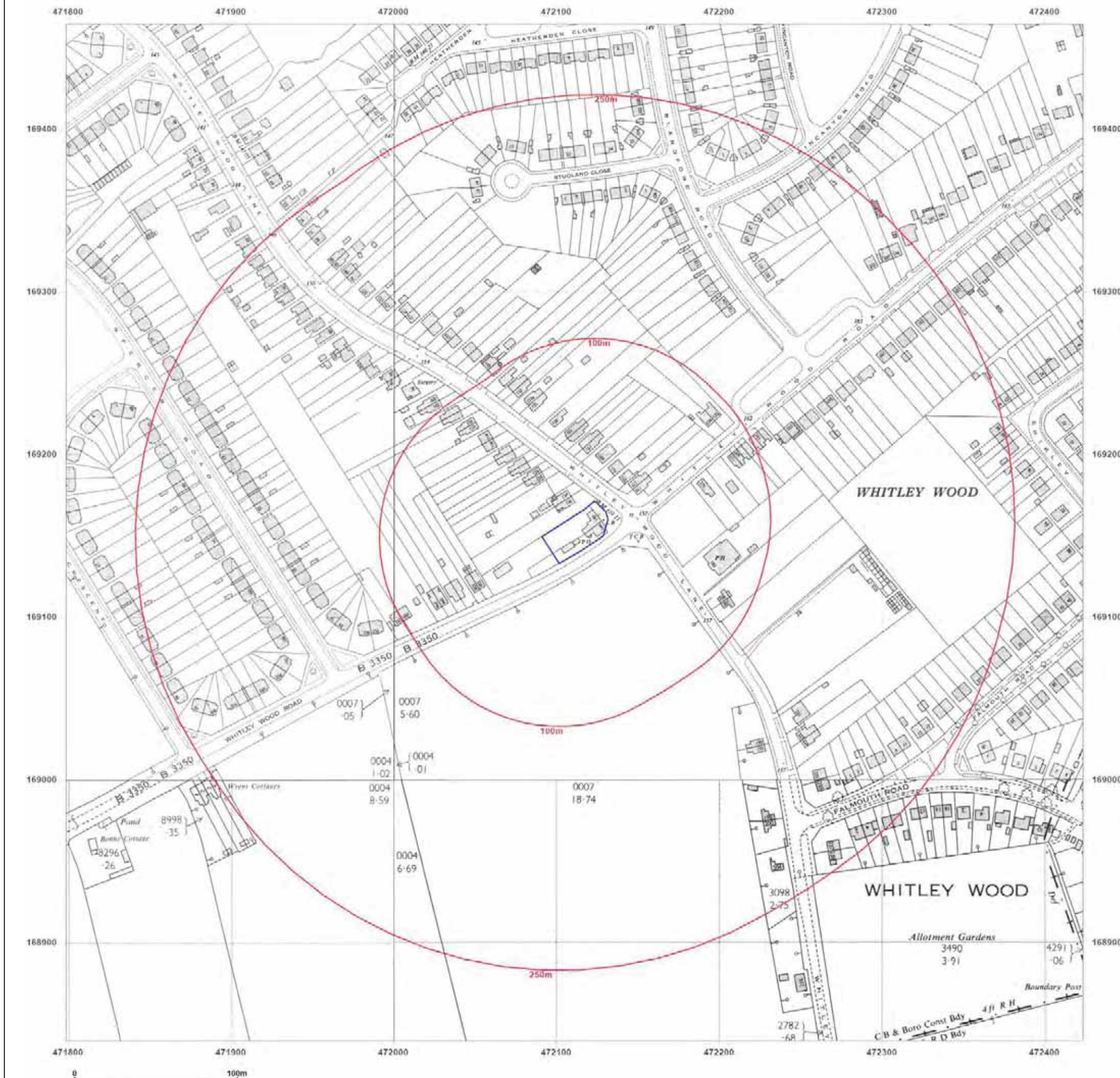


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: National Grid

Map date: 1972

Scale: 1:2,500

Printed at: 1:2,500



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

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

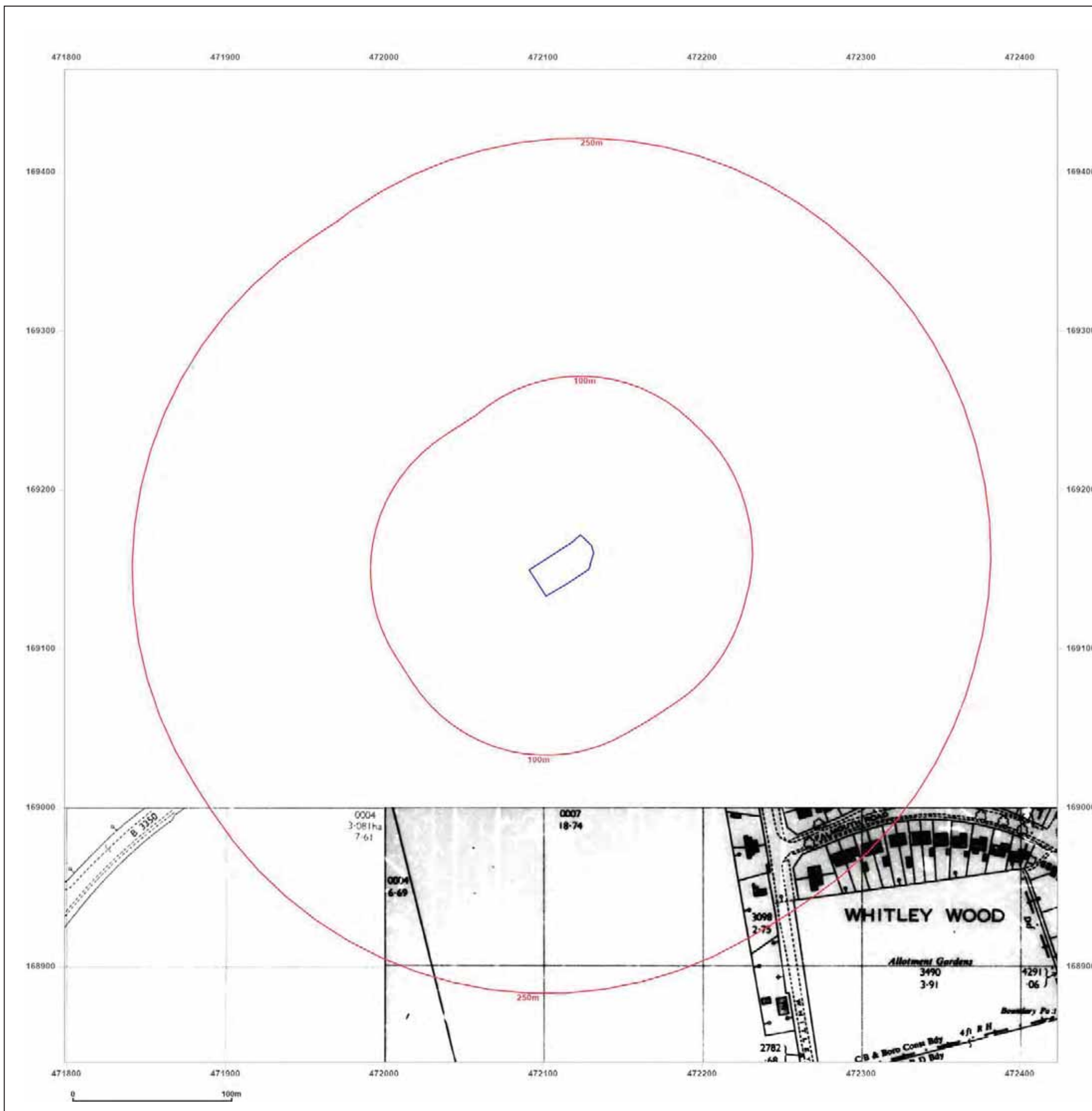


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: National Grid

Map date: 1970-1974

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1958
Revised 1974
Edition N/A
Copyright 1974
Levelled 1974

Surveyed 1958
Revised 1969
Edition N/A
Copyright 1970
Levelled 1951

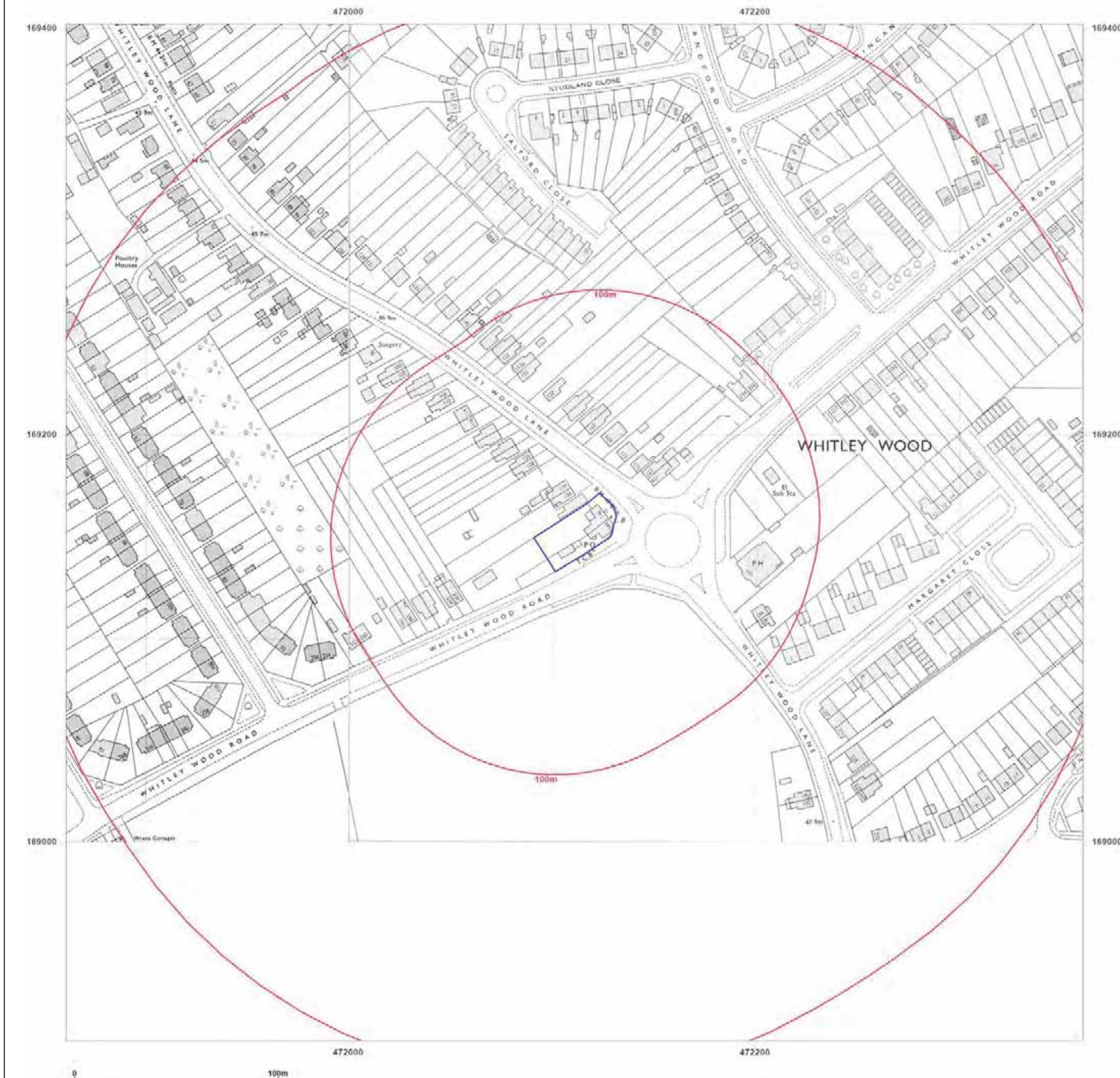


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: National Grid

Map date: 1975

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1974
Revised 1974
Edition N/A
Copyright 1975
Levelled 1972

Surveyed 1974
Revised 1974
Edition N/A
Copyright 1975
Levelled 1973

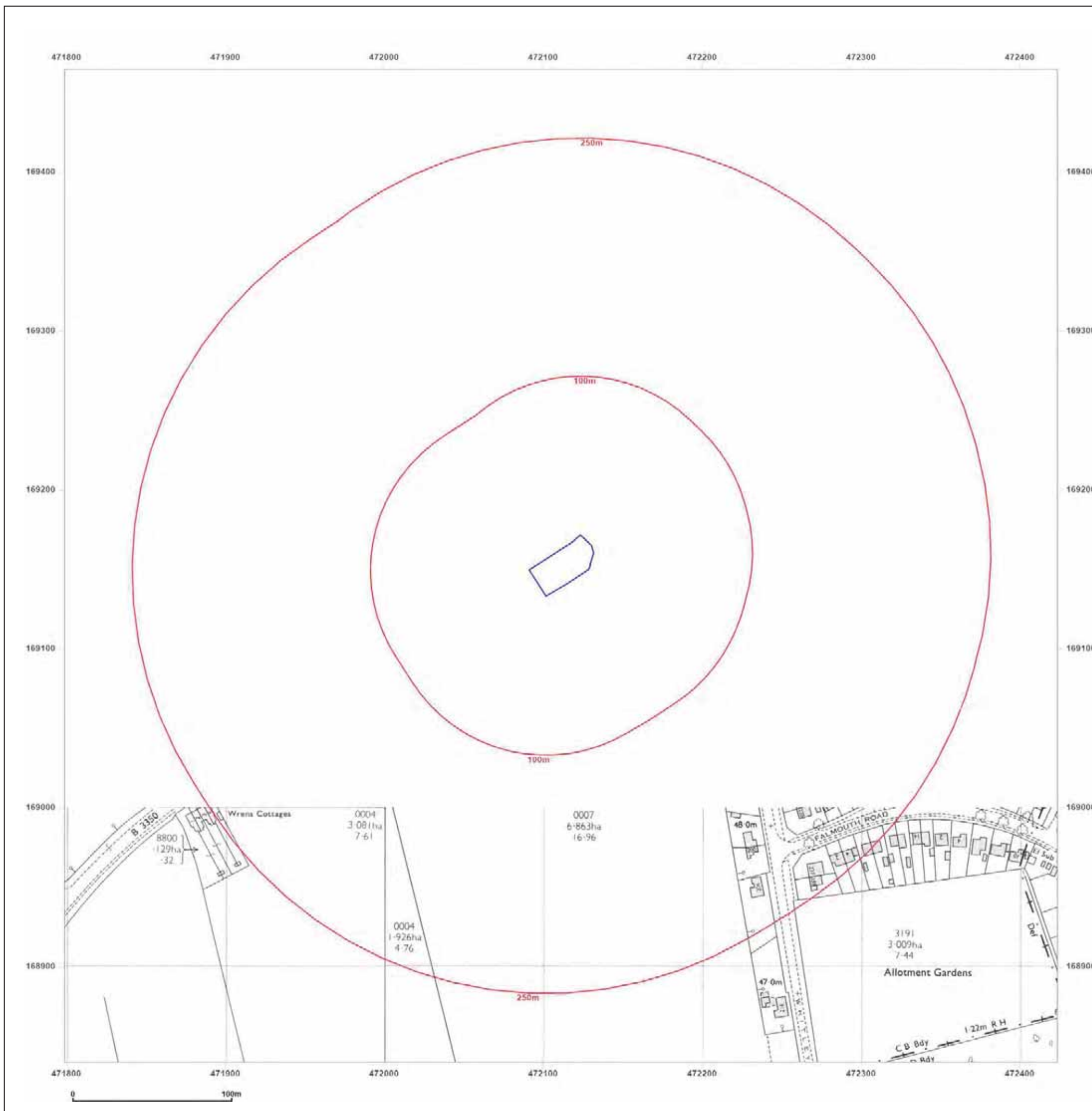


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: National Grid

Map date: 1983-1986

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1958
Revised 1982
Edition N/A
Copyright 1983
Levelled 1973

Surveyed 1958
Revised 1984
Edition N/A
Copyright 1986
Levelled 1973

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

Surveyed 1982
Revised 1982
Edition N/A
Copyright 1983
Levelled 1973



Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: National Grid

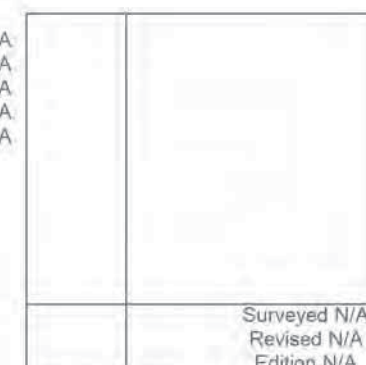
Map date: 1985-1986

Scale: 1:1,250

Printed at: 1:2,000



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



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

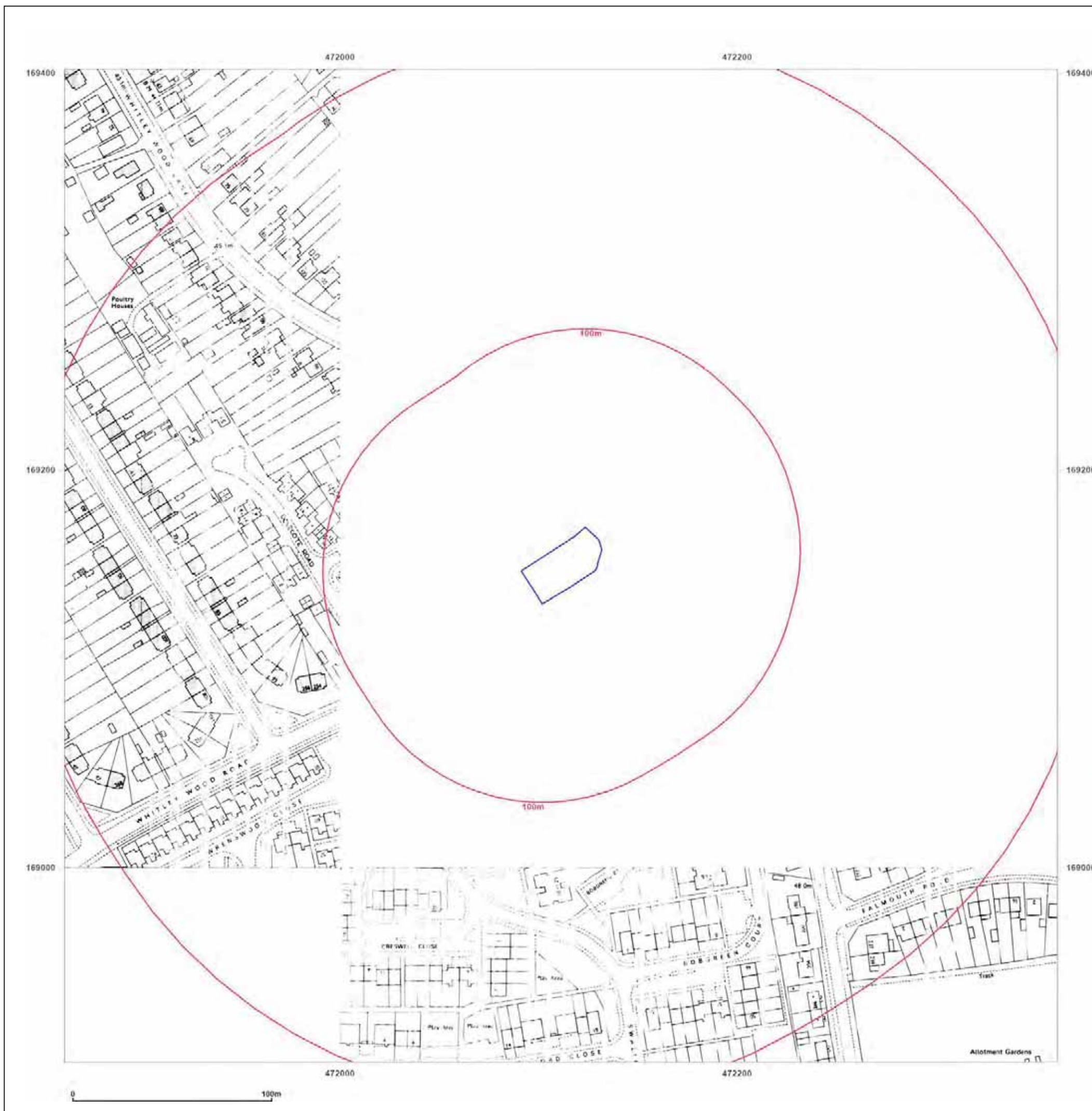


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000



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

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

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

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



Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

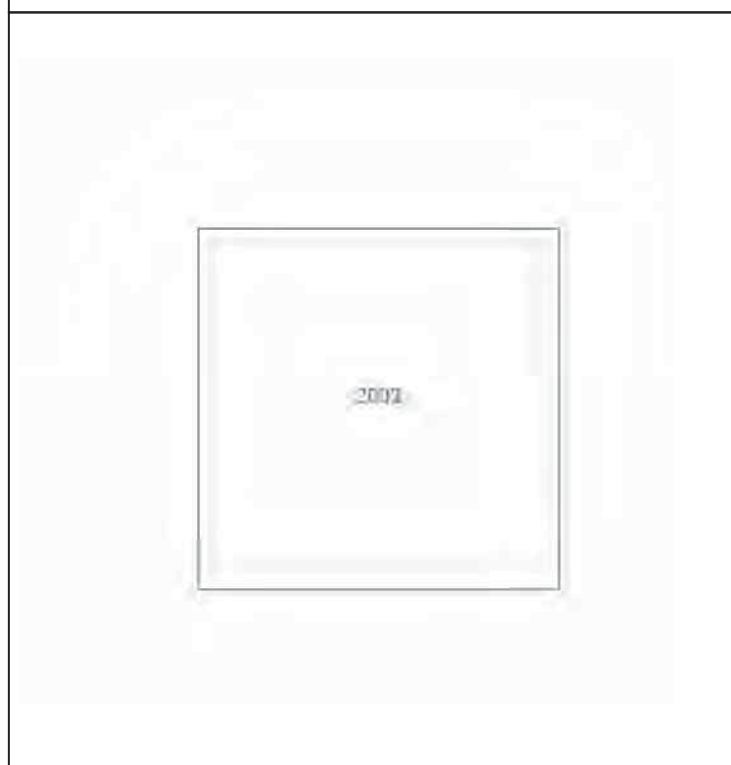
Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: County Series

Map date: 1898

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1876
Revised 1898
Edition N/A
Copyright N/A
Levelled N/A

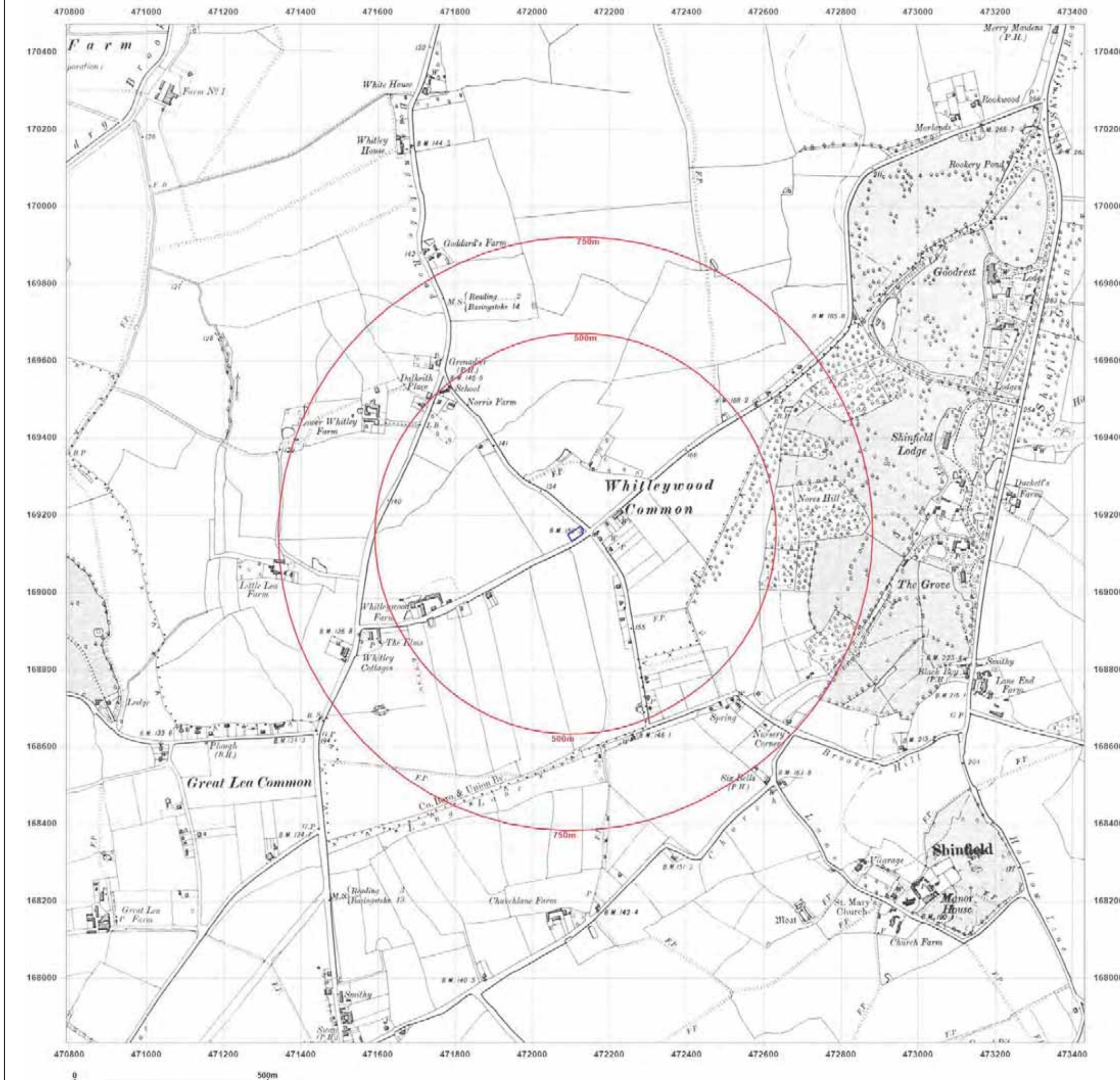


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: County Series

Map date: 1913

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1876
Revised 1913
Edition 1913
Copyright N/A
Levelled N/A

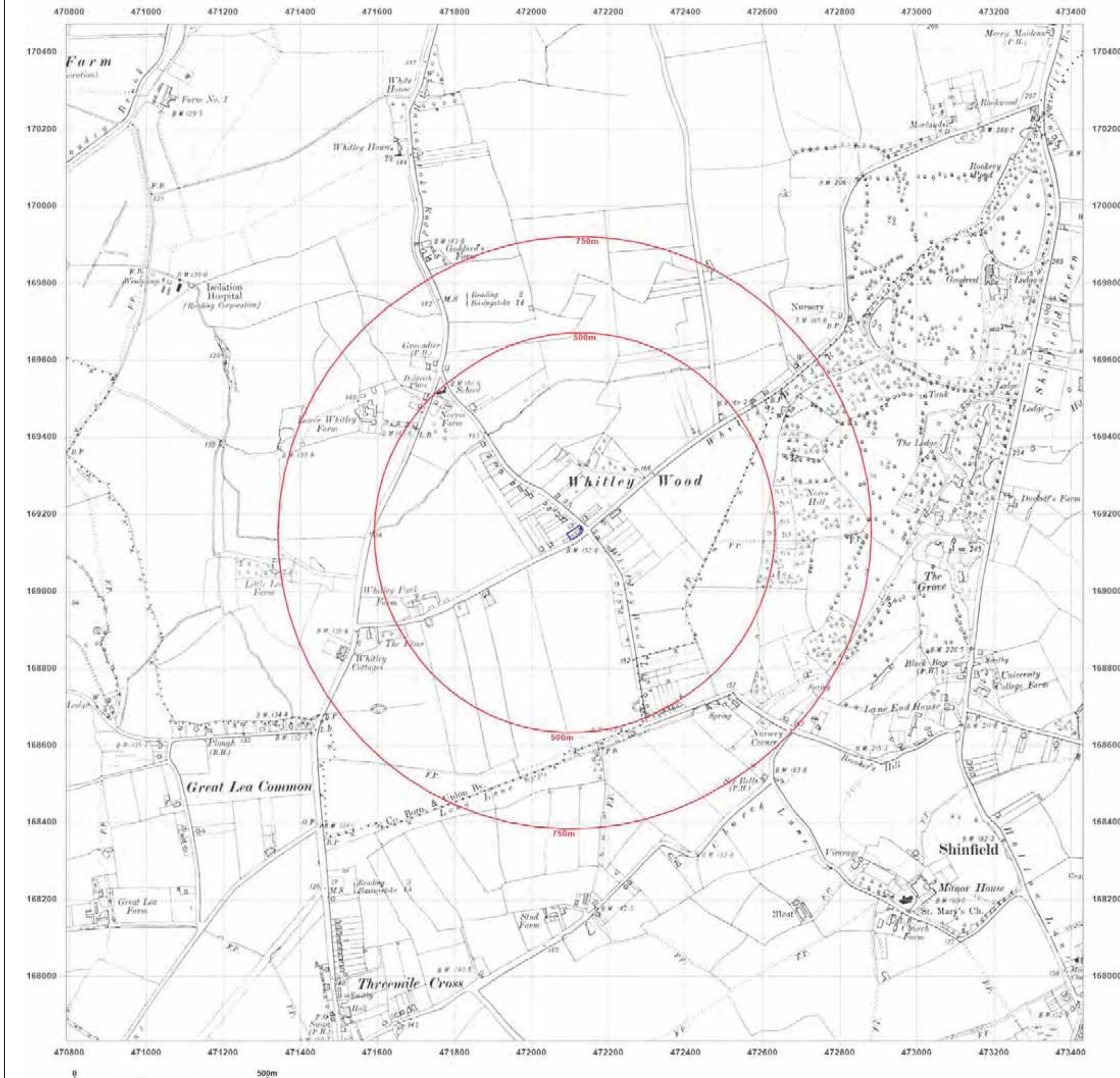


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1876
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

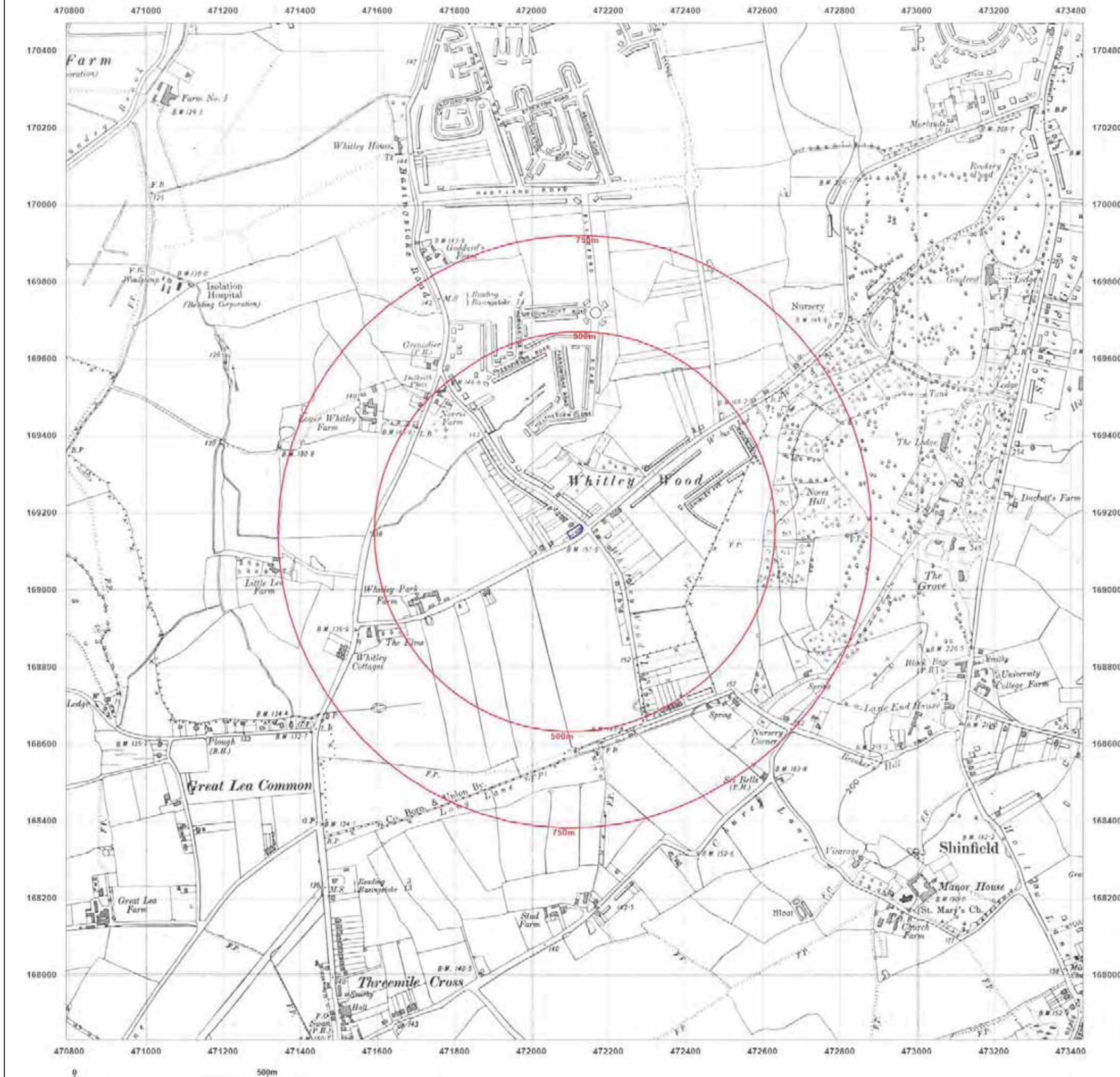


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: Provisional

Map date: 1961

Scale: 1:10,560

Printed at: 1:10,560



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

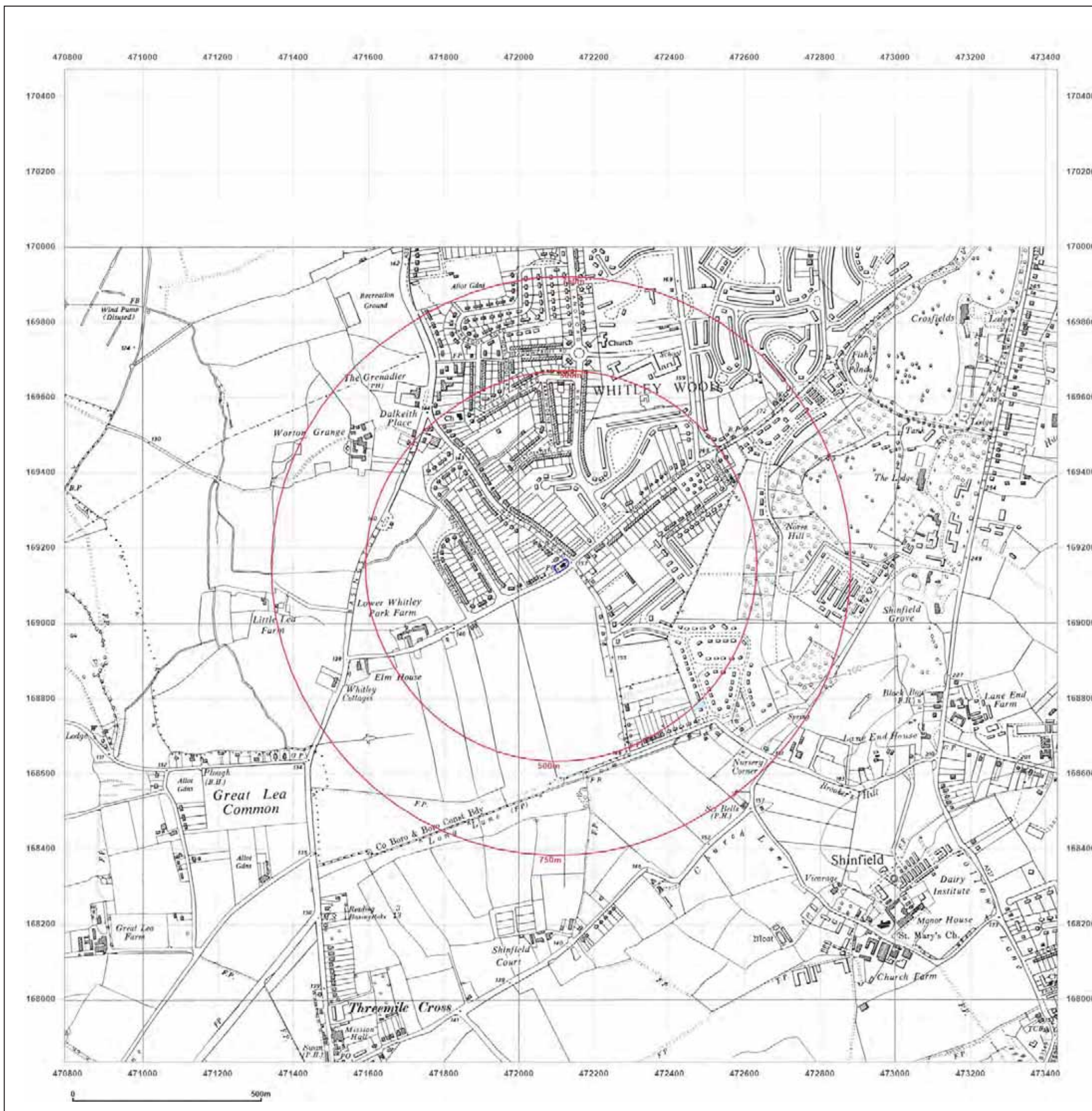


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: National Grid

Map date: 1969

Scale: 1:10,000

Printed at: 1:10,000



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

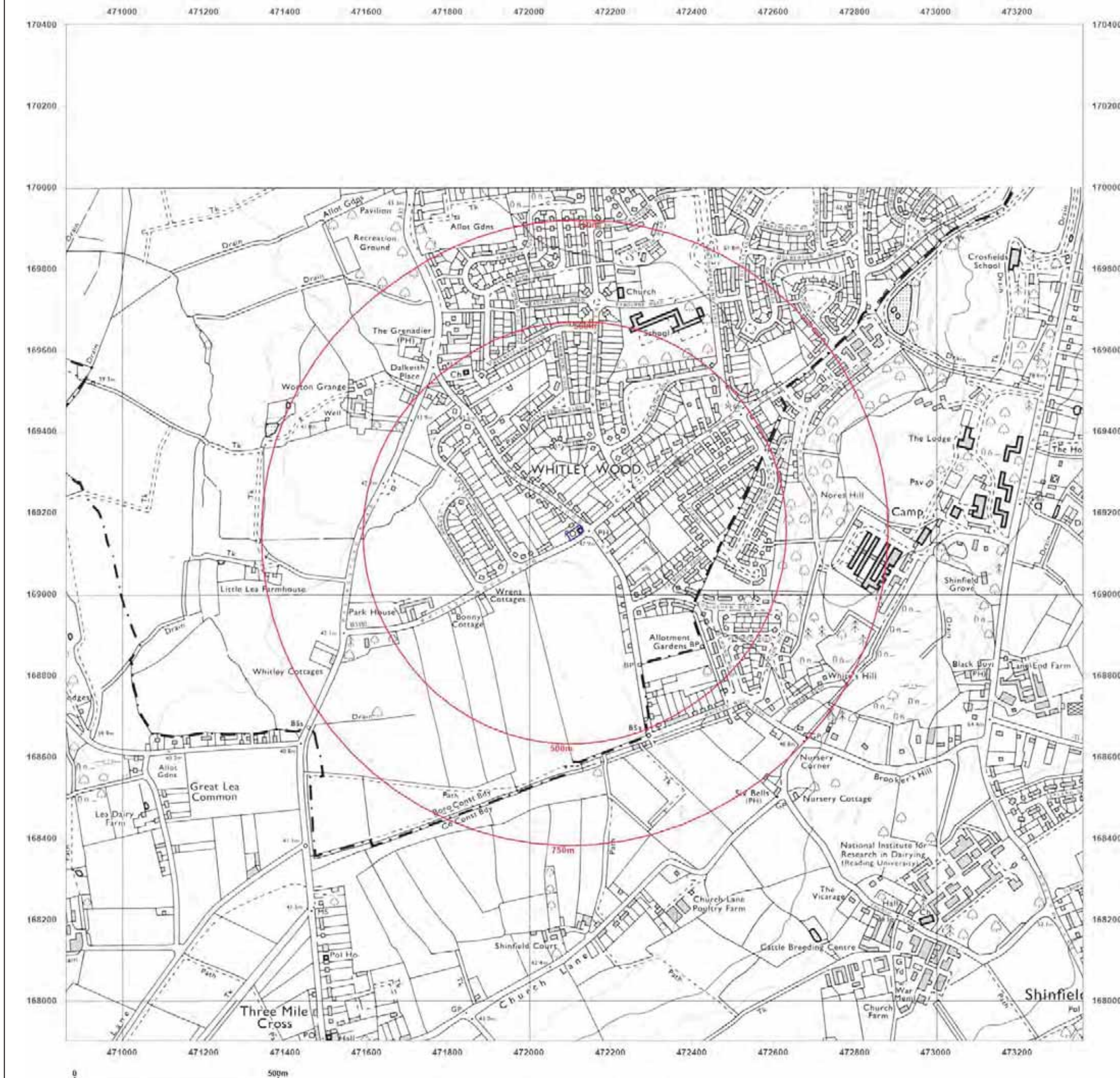


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: National Grid

Map date: 1973-1976

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1970
Revised 1973
Edition N/A
Copyright 1973
Levelled N/A

Surveyed 1975
Revised 1976
Edition N/A
Copyright 1976
Levelled 1969

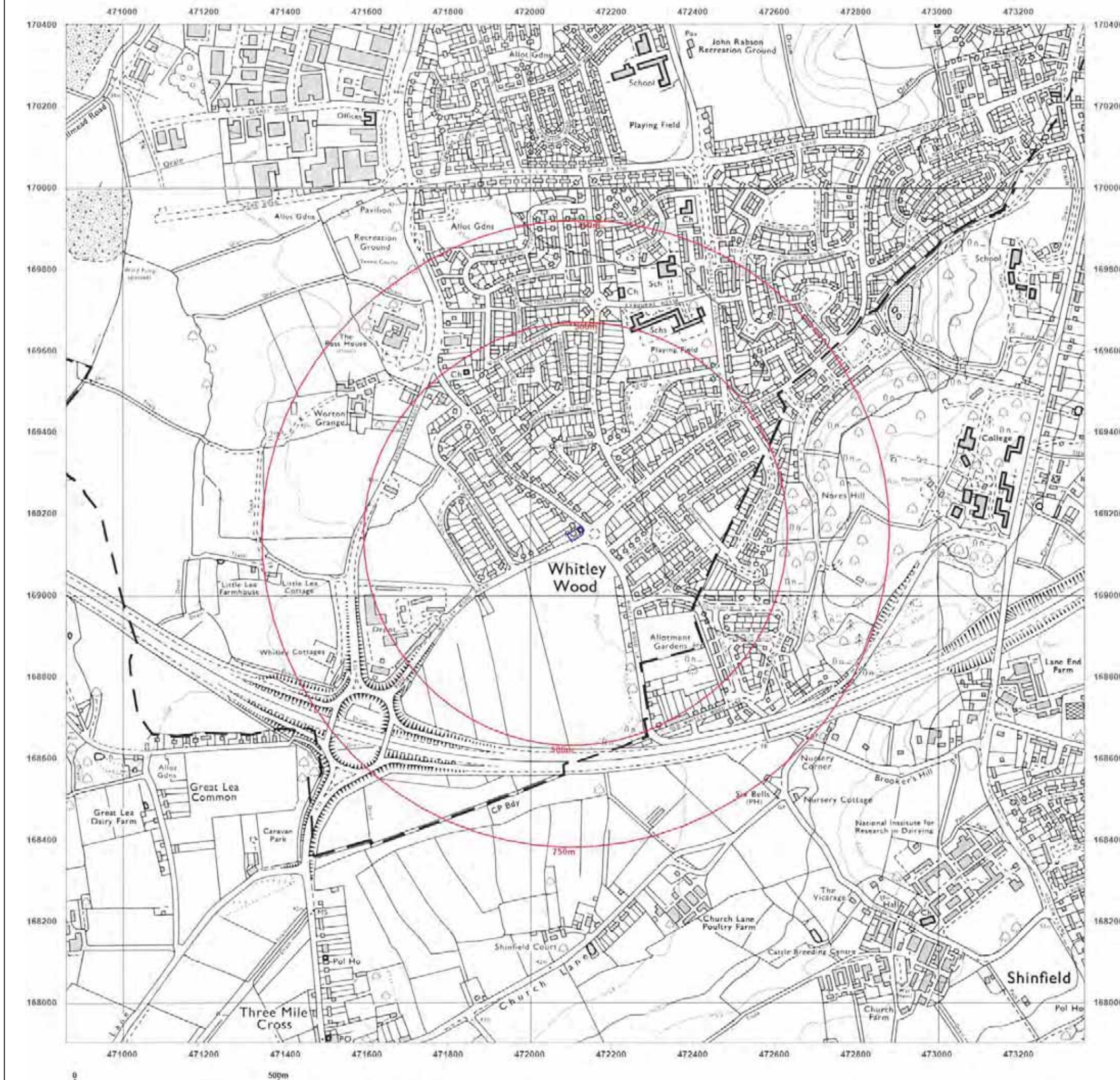


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: County Series

Map date: 1976

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1976
Revised 1898
Edition 1900
Copyright N/A
Levelled N/A

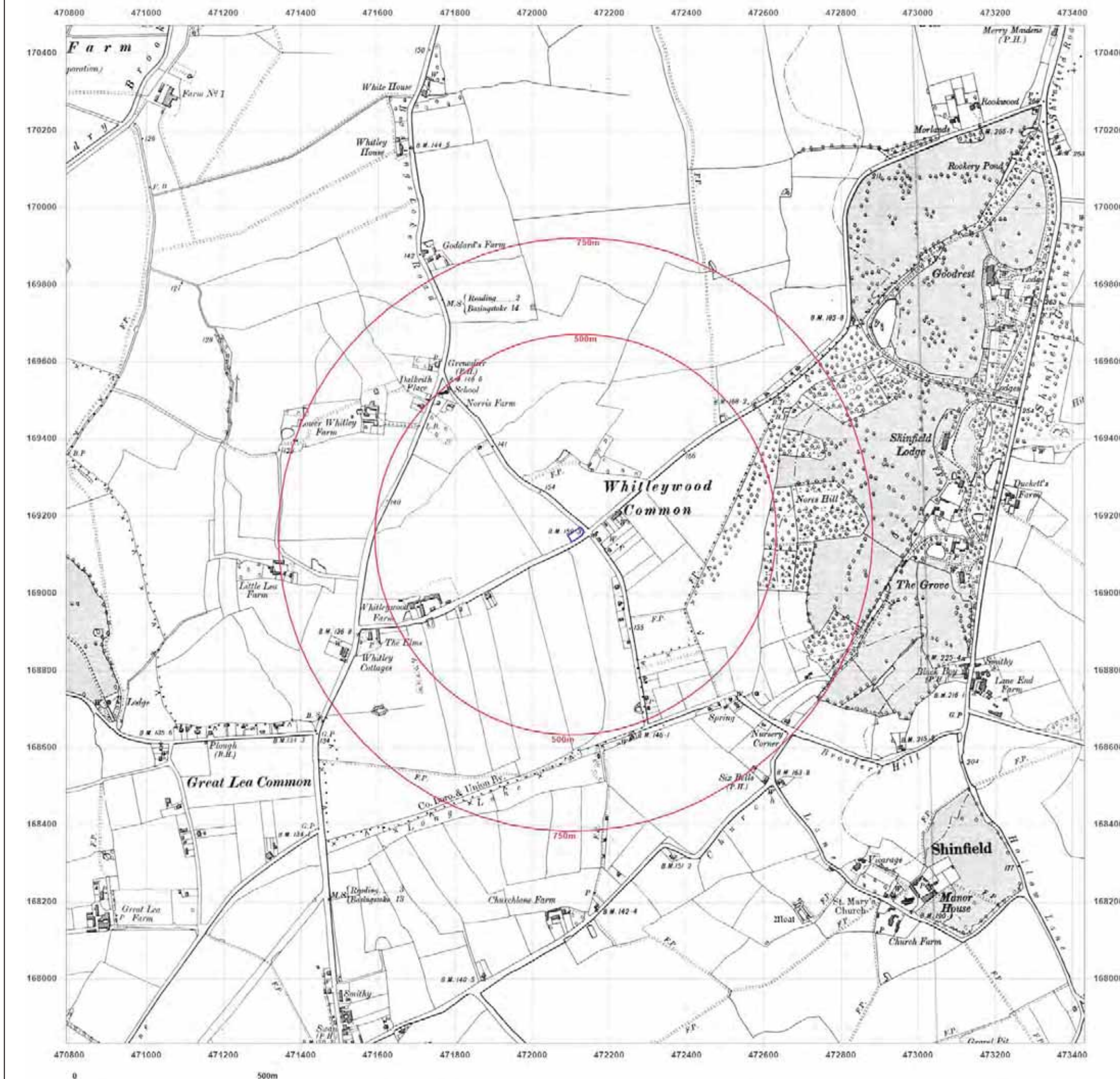


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: National Grid

Map date: 1979-1983

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1977
Revised 1979
Edition N/A
Copyright 1979
Levelled 1969

Surveyed 1982
Revised 1983
Edition N/A
Copyright N/A
Levelled N/A



Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

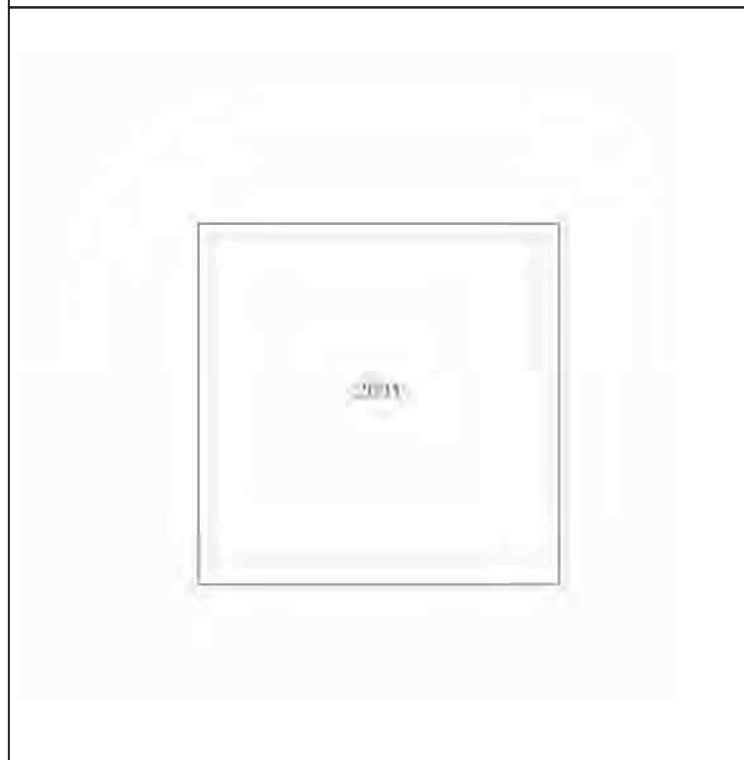
Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000

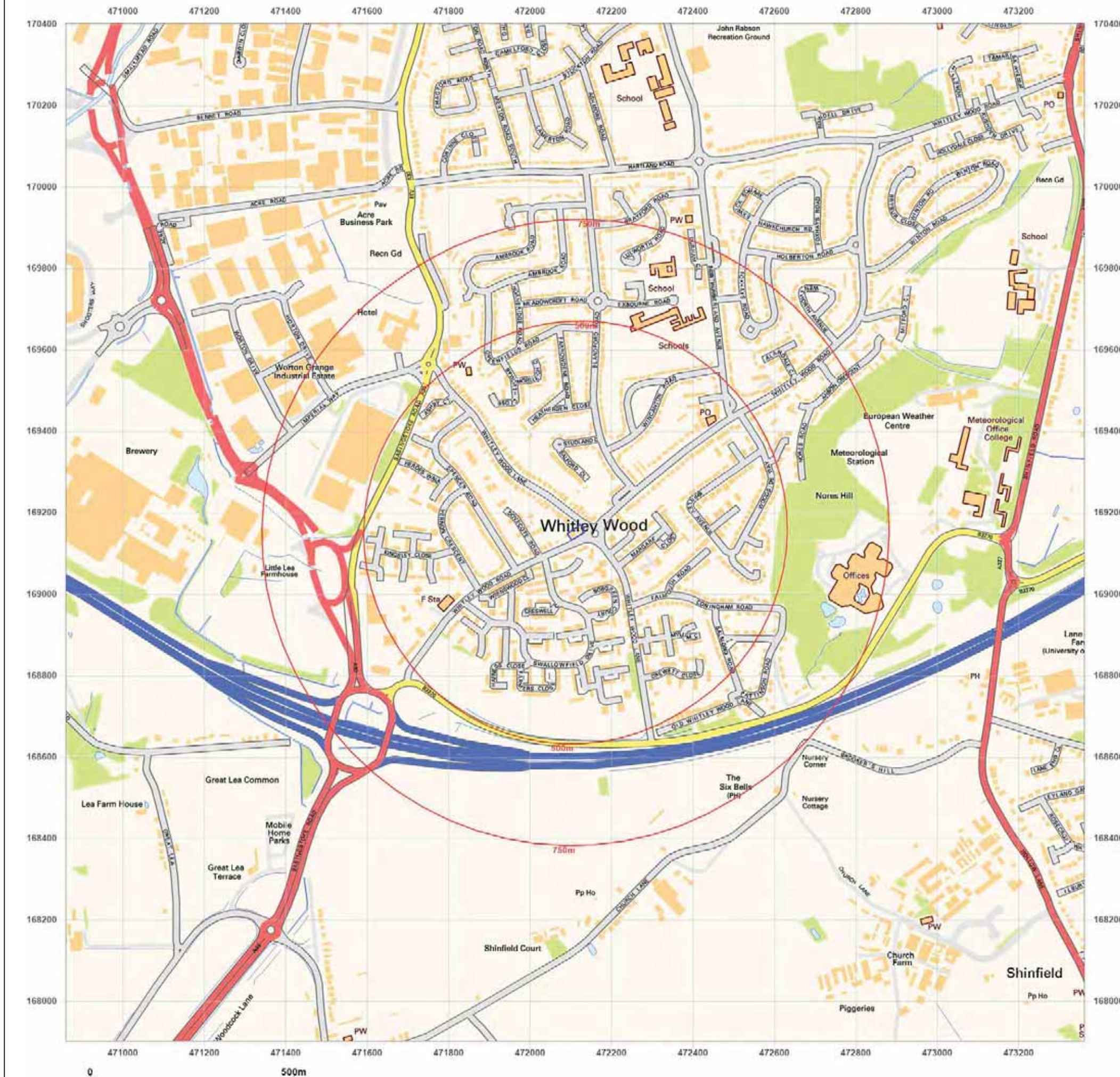


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

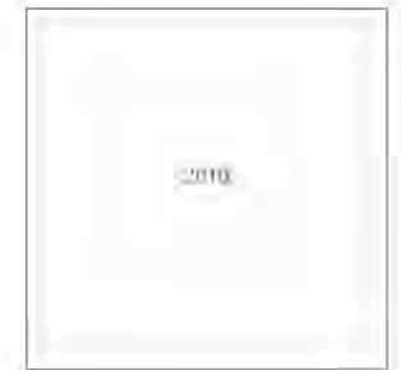
Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000

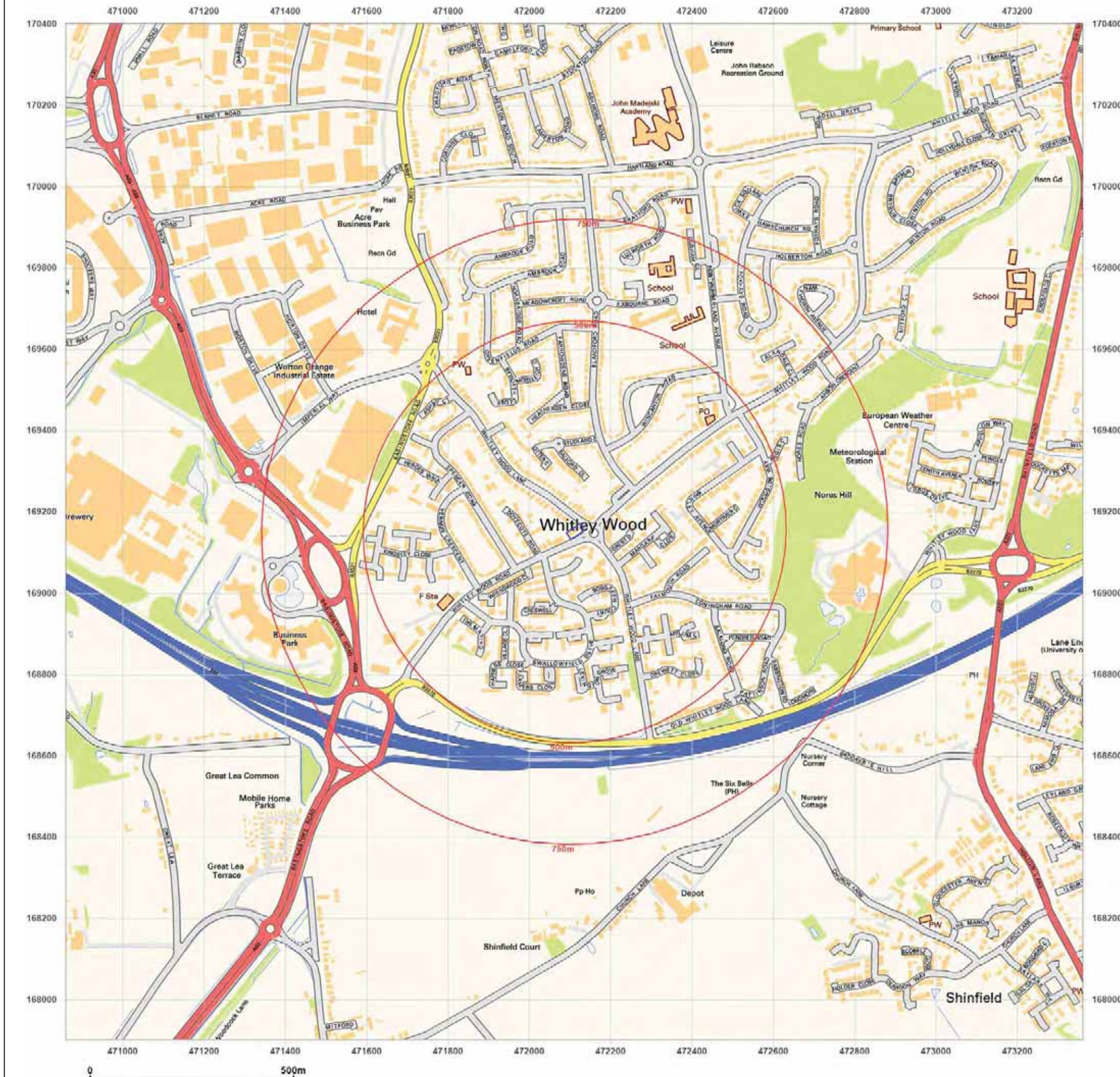


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



Site Details:

142, WHITLEY WOOD LANE,
READING, RG2 8PP

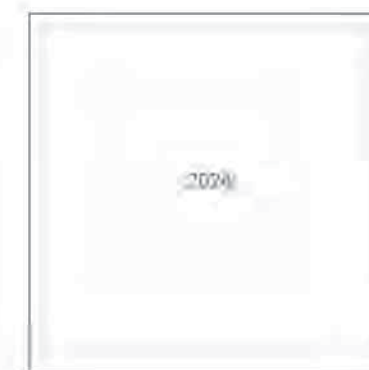
Client Ref: R4210
Report Ref: GS-ZV7-699-JAS-9T5
Grid Ref: 472111, 169152

Map Name: National Grid

Map date: 2024

Scale: 1:10,000

Printed at: 1:10,000

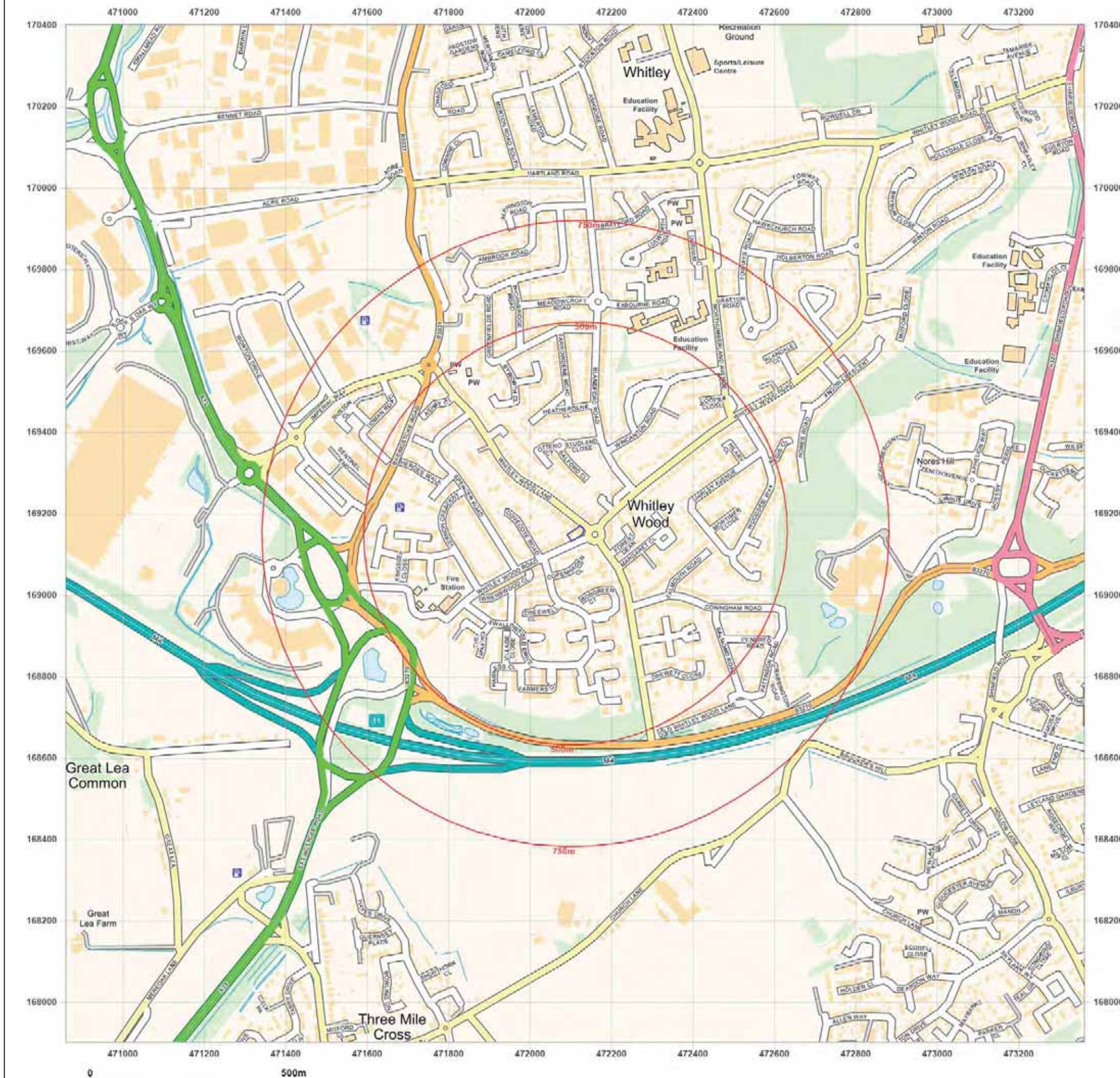


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Production date: 10 September 2024

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



APPENDIX 2

EXPLORATORY BOREHOLE AND HAND PIT LOGS



Trial Pit Log

Project Name: Whitley Wood Road		Client: NAAM Investments		Date: 11/09/2024	
Location: 142 Whitley Wood Lane, Reading, RG2 8PP		Contractor: PM Sampling			
Project No. : R4210		Crew Name: LP		Equipment: Hand Tools	
Location Number HP01	Location Type TP	Level	Logged By AT	Scale 1:10	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.15	ES		0.05			MADE GROUND: CONCRETE	1
					0.20			MADE GROUND: Grey mottled yellow clayey sandy angular to subrounded fine to coarse GRAVEL of brick, concrete, clinker and quartzite. Sand is fine to coarse.	
		0.60 - 0.80	ES					MADE GROUND: Soft brownish grey gravelly slightly sandy CLAY. Gravel is angular to subrounded fine to coarse brick, quartzite and clinker. Sand is fine to coarse.	
		1.00 - 1.20	ES		0.85			Soft brown mottled grey CLAY. (LONDON CLAY FORMATION)	
					1.24			End of Borehole at 1.240m	2

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks 1. Hole location scanned with CAT. 2. Hole terminated the target depth of 1.24mbgl. 3. Groundwater was not encountered. 4. Hole backfilled with arisings.							
--	--	--	--	--	--	--	--



Window Sample Log

Project Name: Whitley Wood Road		Client: NAAM Investments		Date: 11/09/2024	
Location: 142 Whitley Wood Lane, Reading, RG2 8PP		Contractor: PM Sampling			
Project No. : R4210		Crew Name: LP		Drilling Equipment: Dart Competitor	
Borehole Number WS01	Hole Type WS	Level	Logged By AT	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20 - 0.40	ES		0.15			MADE GROUND: Grass over brown clayey slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to medium brick and quartzite. Occasional rootlets. MADE GROUND: Soft brown sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse brick, quartzite and clinker. Sand is fine to coarse. Occasional glass fragments.	
		0.80 - 1.00	ES		0.70			MADE GROUND: Soft grey mottled brown gravelly CLAY. Gravel is angular to subrounded fine to coarse, quartzite and brick. Occasional glass fragments.	
		1.20 - 1.40	ES		1.00			Firm grey mottled brown CLAY. (LONDON CLAY FORMATION)	1
		2.80 - 3.00	ES		4.00			becomes brown mottled grey at 2.0mbgl. becomes stiff at 3.0mbgl.	2 3
								End of Borehole at 4.000m	4 5

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
1. Hole location scanned with CAT. 2. Borehole terminated at the target depth of 4mbgl. 3. Groundwater not encountered 4. Borehole installed to 4mbgl with 50mm HDPE standpipe.





Window Sample Log

Project Name: Whitley Wood Road		Client: NAAM Investments		Date: 11/09/2024	
Location: 142 Whitley Wood Lane, Reading, RG2 8PP		Contractor: PM Sampling			
Project No. : R4210		Crew Name: LP		Drilling Equipment: Dart Competitor	
Borehole Number WS02	Hole Type WS	Level	Logged By AT	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30 - 0.40	ES		0.20			MADE GROUND: Grass over brown clayey slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to medium brick, clinker and quartzite. Occasional rootlets. MADE GROUND: Soft brown sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse brick, quartzite and clinker. Sand is fine to coarse. MADE GROUND: Soft orangish brown mottled grey gravelly slightly sandy CLAY. Gravel is angular to subrounded fine to coarse brick and quartzite. Occasional timber fragments.	1
		0.60 - 0.80	ES		0.50				
					1.20				
		1.50 - 1.70	ES					Firm orange mottled grey slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium quartzite. (LONDON CLAY FORMATION)	2
		2.50 - 2.70	ES		2.30 2.40			Extremely weak red MUDSTONE. (LONDON CLAY FORMATION) Stiff orangish brown mottled grey CLAY. (LONDON CLAY FORMATION)	3
					4.00			End of Borehole at 4.000m	4
									5

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Hole location scanned with CAT. 2. Borehole terminated at the target depth of 4mbgl. 3. Groundwater not encountered 4. Borehole installed to 1mbgl with 50mm HDPE standpipe.										
--	--	--	--	--	--	--	--	--	--	--



Window Sample Log

Project Name: Whitley Wood Road		Client: NAAM Investments		Date: 11/09/2024	
Location: 142 Whitley Wood Lane, Reading, RG2 8PP		Contractor: PM Sampling			
Project No. : R4210		Crew Name: LP		Drilling Equipment: Dart Competitor	
Borehole Number WS03	Hole Type WS	Level	Logged By AT	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.15 - 0.25	ES		0.12			MADE GROUND: CONCRETE SLAB.	
		0.40 - 0.60	ES		0.28			MADE GROUND: Brownish grey gravelly slightly clayey fine to coarse SAND. Gravel is angular to subrounded fine to coarse brick, quartzite and clinker.	
		0.80 - 1.00	ES		0.75			MADE GROUND: Soft brown mottled grey gravelly sandy CLAY. Gravel is angular to subrounded fine to medium brick and quartzite. Sand is fine to coarse.	
		1.80 - 2.00	ES					Firm bluish grey mottled brown slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse quartzite. (LONDON CLAY FORMATION)	1
								becomes brown mottled grey at 1.8mbgl.	
								becomes stiff at 2.0mbgl.	2
					3.00			Stiff bluish grey mottled orange CLAY. (LONDON CLAY FORMATION)	3
					3.70			Extremely weak red MUDSTONE. (LONDON CLAY FORMATION)	
					3.90			Stiff bluish grey mottled orange CLAY. (LONDON CLAY FORMATION)	
					4.00			End of Borehole at 4.000m	4
									5

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
1. Hole location scanned with CAT. 2. Borehole terminated at the target depth of 4mbgl. 3. Groundwater not encountered 4. Borehole backfilled with arisings.





Window Sample Log

Project Name: Whitley Wood Road		Client: NAAM Investments		Date: 11/09/2024	
Location: 142 Whitley Wood Lane, Reading, RG2 8PP		Contractor: PM Sampling			
Project No. : R4210		Crew Name: LP		Drilling Equipment: Dart Competitor	
Borehole Number WS04	Hole Type WS	Level	Logged By AT	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description						
		Depth (m)	Type	Results										
		0.10 - 0.20	ES		0.24		MADE GROUND: Vegetation over soft brown sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse brick, concrete, quartzite and clinker. Sand is fine to coarse.	1						
		0.30 - 0.50	ES				Soft brown slightly sandy CLAY. Sand is fine to coarse. (LONDON CLAY FORMATION)							
		0.80 - 1.00	ES		0.65		Firm brown mottled grey slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse quartzite. (LONDON CLAY FORMATION)		2					
		2.00 - 2.20	ES				becomes grey mottled orange at 2.0mbgl.							
							becomes stiff at 2.5mbgl.							
							no gravel present beyond 3.0mbgl.			3				

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
1. Hole location scanned with CAT. 2. Borehole terminated at the target depth of 4mbgl. 3. Groundwater not encountered 4. Borehole installed to 4mbgl with 50mm HDPE standpipe.



APPENDIX 3

LABORATORY TESTING RESULTS (CHEMICAL)



John Grace
Earth Environmental & Geotechnical (Southern Ltd)
Suite 18
Wyvols Court
Reading
RG7 1WY

Normec DETS Limited
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 24-10669

Site Reference: Whitley Wood

Project / Job Ref: R4210

Order No: R4210/11/09/2024/AT

Sample Receipt Date: 12/09/2024

Sample Scheduled Date: 12/09/2024

Report Issue Number: 1

Reporting Date: 18/09/2024

Authorised by:

Steve Knight
Customer Support Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate						
DETS Report No: 24-10669	~ Date Sampled	11/09/24	11/09/24	11/09/24	11/09/24	11/09/24
Earth Environmental & Geotechnical (Southern Ltd)	~ Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~ Site Reference: Whitley Wood	~ TP / BH No	HP01	WS01	WS01	WS01	WS02
~ Project / Job Ref: R4210	~ Additional Refs	MG	MG	MG	CLAY	MG
~ Order No: R4210/11/09/2024/AT	~ Depth (m)	0.60 - 0.80	0.20 - 0.40	0.80 - 1.00	1.20 - 1.40	0.30 - 0.40
Reporting Date: 18/09/2024	DETS Sample No	737690	737691	737692	737693	737694

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Detected	Not Detected	Not Detected	Not Detected
Sample Matrix ^(S)	Material Type	N/a	NONE		Chrysotile bundles present			
Asbestos Type ^(S)	PLM Result	N/a	ISO17025		Chrysotile			
pH	pH Units	N/a	MCERTS	7.6	7.6	7.6	8.1	7.8
Total Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Complex Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO ₄	mg/kg	< 200	MCERTS	220	644	< 200	< 200	588
Total Sulphate as SO ₄	%	< 0.02	MCERTS	0.02	0.06	< 0.02	< 0.02	0.06
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	142	11	13	21	20
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.14	0.01	0.01	0.02	0.02
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Organic Matter (SOM)	%	< 0.1	MCERTS	2.3	4.7	1.8	1.2	7.5
Arsenic (As)	mg/kg	< 2	MCERTS	10	21	13	14	30
Barium (Ba)	mg/kg	< 2.5	MCERTS	39	172	59	73	589
Beryllium (Be)	mg/kg	< 0.5	MCERTS	0.5	1.1	0.6	0.9	3.8
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	2.1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	1.4	0.3	< 0.2	1
Chromium (Cr)	mg/kg	< 2	MCERTS	19	21	24	30	24
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	13	52	21	26	299
Lead (Pb)	mg/kg	< 3	MCERTS	29	239	65	20	763
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	1.5	1.1	1.1
Nickel (Ni)	mg/kg	< 3	MCERTS	9	28	12	34	40
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	37	37	46	56	50
Zinc (Zn)	mg/kg	< 3	MCERTS	49	496	147	64	488
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

~ Sample details provided by customer and can affect the validity of results

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate						
DETS Report No: 24-10669	~ Date Sampled	11/09/24	11/09/24	11/09/24	11/09/24	
Earth Environmental & Geotechnical (Southern Ltd)	~ Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
~ Site Reference: Whitley Wood	~ TP / BH No	WS02	WS02	WS03	WS04	
~ Project / Job Ref: R4210	~ Additional Refs	MG	CLAY	MG	MG	
~ Order No: R4210/11/09/2024/AT	~ Depth (m)	0.60 - 0.80	1.50 - 1.70	0.40 - 0.60	0.30 - 0.50	
Reporting Date: 18/09/2024	DETS Sample No	737695	737696	737697	737698	

Determinand	Unit	RL	Accreditation	(n)			
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected
Sample Matrix ^(S)	Material Type	N/a	NONE				
Asbestos Type ^(S)	PLM Result	N/a	ISO17025				
pH	pH Units	N/a	MCERTS	7.8	8.1	7.7	7.4
Total Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1
Complex Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1
Free Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1
Total Sulphate as SO ₄	mg/kg	< 200	MCERTS	255	373	< 200	< 200
Total Sulphate as SO ₄	%	< 0.02	MCERTS	0.03	0.04	< 0.02	< 0.02
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	18	23	111	19
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.02	0.02	0.11	0.02
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5	< 5
Organic Matter (SOM)	%	< 0.1	MCERTS	2.3	0.9	1	2.5
Arsenic (As)	mg/kg	< 2	MCERTS	17	12	15	12
Barium (Ba)	mg/kg	< 2.5	MCERTS	84	56	48	68
Beryllium (Be)	mg/kg	< 0.5	MCERTS	0.8	0.8	0.9	0.6
W/S Boron	mg/kg	< 1	NONE	1.4	1.4	1.7	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.2	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	23	26	34	19
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	24	24	21	20
Lead (Pb)	mg/kg	< 3	MCERTS	72	17	20	72
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	1.2	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	13	28	20	14
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	48	50	58	35
Zinc (Zn)	mg/kg	< 3	MCERTS	79	54	56	60
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

~ Sample details provided by customer and can affect the validity of results



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-10669	~ Date Sampled	11/09/24	11/09/24	11/09/24	11/09/24	11/09/24
Earth Environmental & Geotechnical (Souther	~ Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~ Site Reference: Whitley Wood	~ TP / BH No	HP01	WS01	WS01	WS01	WS02
~ Project / Job Ref: R4210	~ Additional Refs	MG	MG	MG	CLAY	MG
~ Order No: R4210/11/09/2024/AT	~ Depth (m)	0.60 - 0.80	0.20 - 0.40	0.80 - 1.00	1.20 - 1.40	0.30 - 0.40
Reporting Date: 18/09/2024	DETS Sample No	737690	737691	737692	737693	737694

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	0.17	0.28	< 0.1	< 0.1	0.45
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	0.48	0.87	< 0.1	< 0.1	1.55
Pyrene	mg/kg	< 0.1	MCERTS	0.44	0.83	< 0.1	< 0.1	1.47
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.28	0.47	< 0.1	< 0.1	0.83
Chrysene	mg/kg	< 0.1	MCERTS	0.27	0.55	< 0.1	< 0.1	0.94
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.28	0.65	< 0.1	< 0.1	1.16
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.22	< 0.1	< 0.1	0.43
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.29	0.68	< 0.1	< 0.1	1.09
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.15	0.36	< 0.1	< 0.1	0.54
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.13
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.13	0.31	< 0.1	< 0.1	0.47
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	2.5	5.2	< 1.6	< 1.6	9.1

~ Sample details provided by customer and can affect the validity of results

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-10669	~ Date Sampled	11/09/24	11/09/24	11/09/24	11/09/24	
Earth Environmental & Geotechnical (Souther	~ Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
~ Site Reference: Whitley Wood	~ TP / BH No	WS02	WS02	WS03	WS04	
~ Project / Job Ref: R4210	~ Additional Refs	MG	CLAY	MG	MG	
~ Order No: R4210/11/09/2024/AT	~ Depth (m)	0.60 - 0.80	1.50 - 1.70	0.40 - 0.60	0.30 - 0.50	
Reporting Date: 18/09/2024	DETS Sample No	737695	737696	737697	737698	

Determinand	Unit	RL	Accreditation	(n)				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Phenanthrene	mg/kg	< 0.1	MCERTS	0.29	< 0.1	< 0.1	< 0.1	
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Fluoranthene	mg/kg	< 0.1	MCERTS	0.49	< 0.1	< 0.1	< 0.1	
Pyrene	mg/kg	< 0.1	MCERTS	0.42	< 0.1	< 0.1	< 0.1	
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.12	< 0.1	< 0.1	< 0.1	
Chrysene	mg/kg	< 0.1	MCERTS	0.16	< 0.1	< 0.1	< 0.1	
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	

~ Sample details provided by customer and can affect the validity of results



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 24-10669	~Date Sampled	11/09/24	11/09/24	11/09/24	11/09/24	11/09/24
Earth Environmental & Geotechnical (Southern)	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Whitley Wood	~TP / BH No	HP01	WS01	WS01	WS01	WS02
~Project / Job Ref: R4210	~Additional Refs	MG	MG	MG	CLAY	MG
~Order No: R4210/11/09/2024/AT	~Depth (m)	0.60 - 0.80	0.20 - 0.40	0.80 - 1.00	1.20 - 1.40	0.30 - 0.40
Reporting Date: 18/09/2024	DETS Sample No	737690	737691	737692	737693	737694

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS 1D MS AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8 : HS 1D MS AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10 : EH CU 1D AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12 : EH CU 1D AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16 : EH CU 1D AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21 : EH CU 1D AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34 : EH CU 1D AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	16	< 10
Aliphatic (C5 - C34) : HS 1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7 : HS 1D MS AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8 : HS 1D MS AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10 : EH CU 1D AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12 : EH CU 1D AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16 : EH CU 1D AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21 : EH CU 1D AR	mg/kg	< 3	MCERTS	< 3	7	< 3	< 3	7
Aromatic >C21 - C35 : EH CU 1D AR	mg/kg	< 10	MCERTS	< 10	12	< 10	< 10	17
Aromatic (C5 - C35) : HS 1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	24
Total >C5 - C35 : HS 1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42

~Sample details provided by customer and can affect the validity of results

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 24-10669	~ Date Sampled	11/09/24	11/09/24	11/09/24	11/09/24
Earth Environmental & Geotechnical (Southern)	~ Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
~ Site Reference: Whitley Wood	~ TP / BH No	WS02	WS02	WS03	WS04
~ Project / Job Ref: R4210	~ Additional Refs	MG	CLAY	MG	MG
~ Order No: R4210/11/09/2024/AT	~ Depth (m)	0.60 - 0.80	1.50 - 1.70	0.40 - 0.60	0.30 - 0.50
Reporting Date: 18/09/2024	DETS Sample No	737695	737696	737697	737698

Determinand	Unit	RL	Accreditation	(n)				
Aliphatic >C5 - C6 : HS 1D MS AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Aliphatic >C6 - C8 : HS 1D MS AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Aliphatic >C8 - C10 : EH CU 1D AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aliphatic >C10 - C12 : EH CU 1D AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aliphatic >C12 - C16 : EH CU 1D AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	
Aliphatic >C16 - C21 : EH CU 1D AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	
Aliphatic >C21 - C34 : EH CU 1D AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Aliphatic (C5 - C34) : HS 1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	
Aromatic >C5 - C7 : HS 1D MS AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Aromatic >C7 - C8 : HS 1D MS AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Aromatic >C8 - C10 : EH CU 1D AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aromatic >C10 - C12 : EH CU 1D AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aromatic >C12 - C16 : EH CU 1D AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aromatic >C16 - C21 : EH CU 1D AR	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	
Aromatic >C21 - C35 : EH CU 1D AR	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Aromatic (C5 - C35) : HS 1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	
Total >C5 - C35 : HS 1D_MS+EH_CU_1D_Total	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	

~ Sample details provided by customer and can affect the validity of results



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-10669	~Date Sampled	11/09/24	11/09/24	11/09/24	11/09/24	11/09/24
Earth Environmental & Geotechnical (Souther	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
~Site Reference: Whitley Wood	~TP / BH No	HP01	WS01	WS01	WS01	WS02
~Project / Job Ref: R4210	~Additional Refs	MG	MG	MG	CLAY	MG
~Order No: R4210/11/09/2024/AT	~Depth (m)	0.60 - 0.80	0.20 - 0.40	0.80 - 1.00	1.20 - 1.40	0.30 - 0.40
Reporting Date: 18/09/2024	DETS Sample No	737690	737691	737692	737693	737694

Determinand	Unit	RL	Accreditation					
Benzene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene : HS 1D MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE : HS 1D MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

~Sample details provided by customer and can affect the validity of results

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-10669	~Date Sampled	11/09/24	11/09/24	11/09/24	11/09/24	
Earth Environmental & Geotechnical (Souther	~Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
~Site Reference: Whitley Wood	~TP / BH No	WS02	WS02	WS03	WS04	
~Project / Job Ref: R4210	~Additional Refs	MG	CLAY	MG	MG	
~Order No: R4210/11/09/2024/AT	~Depth (m)	0.60 - 0.80	1.50 - 1.70	0.40 - 0.60	0.30 - 0.50	
Reporting Date: 18/09/2024	DETS Sample No	737695	737696	737697	737698	

Determinand	Unit	RL	Accreditation	(n)			
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5

- Sample details provided by customer and can affect the validity of results



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 24-10669	
Earth Environmental & Geotechnical (Southern Ltd)	
~Site Reference: Whitley Wood	
~Project / Job Ref: R4210	
~Order No: R4210/11/09/2024/AT	
Reporting Date: 18/09/2024	

DETS Sample No	~TP / BH No	~Additional Refs	~Depth (m)	Moisture Content (%)	Sample Matrix Description
737690	HP01	MG	0.60 - 0.80	18.3	Grey clay
737691	WS01	MG	0.20 - 0.40	10.1	Brown loamy sand with stones and glass
737692	WS01	MG	0.80 - 1.00	17.7	Orange clay
737693	WS01	CLAY	1.20 - 1.40	19.1	Light brown clay
737694	WS02	MG	0.30 - 0.40	15.6	Brown loamy sand with vegetation
737695	WS02	MG	0.60 - 0.80	16.5	Light brown clay with vegetation
737696	WS02	CLAY	1.50 - 1.70	15.9	Light brown clay
737697	WS03	MG	0.40 - 0.60	18.4	Light brown clay
737698	WS04	MG	0.30 - 0.50	15.3	Brown sandy clay with stones

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{I/S}

Unsuitable Sample ^{U/S}

~Sample details provided by customer and can affect the validity of results



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 24-10669

Earth Environmental & Geotechnical (Southern Ltd)

~Site Reference: Whitley Wood

~Project / Job Ref: R4210

~Order No: R4210/11/09/2024/AT

Reporting Date: 18/09/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphénylcarbazine followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

~Sample details provided by customer and can affect the validity of results



Normec DETS Limited
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



List of HWOL Acronyms and Operators
DETS Report No: 24-10669
Earth Environmental & Geotechnical (Southern Ltd)
~Site Reference: Whitley Wood
~Project / Job Ref: R4210
~Order No: R4210/11/09/2024/AT
Reporting Date: 18/09/2024

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH 2D Total but with humics mathematically subtracted
#2	EH 2D Total but with fatty acids mathematically subtracted
	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS Total or EH CU+HS Total
~	Sample details provided by customer and can affect the validity of results

Benzene - HS 1D MS
Ethylbenzene - HS 1D MS
MTBE - HS 1D MS
TPH CWG - Aliphatic >C10 - C12 - EH CU 1D AL
TPH CWG - Aliphatic >C12 - C16 - EH CU 1D AL
TPH CWG - Aliphatic >C16 - C21 - EH CU 1D AL
TPH CWG - Aliphatic >C21 - C34 - EH CU 1D AL
TPH CWG - Aliphatic >C5 - C6 - HS 1D MS AL
TPH CWG - Aliphatic >C6 - C8 - HS 1D MS AL
TPH CWG - Aliphatic >C8 - C10 - EH CU 1D AL
TPH CWG - Aliphatic C5 - C34 - HS 1D MS+EH CU 1D AL
TPH CWG - Aromatic >C10 - C12 - EH CU 1D AR
TPH CWG - Aromatic >C12 - C16 - EH CU 1D AR
TPH CWG - Aromatic >C16 - C21 - EH CU 1D AR
TPH CWG - Aromatic >C21 - C35 - EH CU 1D AR
TPH CWG - Aromatic >C5 - C35 - HS 1D MS+EH CU 1D AR
TPH CWG - Aromatic >C5 - C7 - HS 1D MS AR
TPH CWG - Aromatic >C7 - C8 - HS 1D MS AR
TPH CWG - Aromatic >C8 - C10 - EH CU 1D AR
TPH CWG - Total >C5 - C35 - HS 1D MS+EH CU 1D Total
Toluene - HS 1D MS
m & p-xylene - HS 1D MS
o-Xylene - HS 1D MS

APPENDIX 4

GROUND GAS MONITORING DATA

Gas Monitoring Record

Project Number:	R4210
Project Name:	142 Whitley Wood Lane
Date:	17/09/2024
Logger	JL

Weather:	Sunny, Mild, Dry
----------	------------------

*mbgl - Meters below Ground Level

			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl*)	Borehole Base (mbgl*)	Comments
Borehole ID	WS01	CH4 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			1.71	3.87	
Flow Rate (l/hr)	0	CO2 (%)	0.6	0.8	0.9	1	1.1	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.6	Flow Rate (l/hr)	0.1			
Atmospheric Pressure (mbar)	1024	O2 (%)	19.5	19.8	19.6	19.3	19.2	19.1	19.1	19	19	19	19	19	19	19	18.9	18.9	18.9	18.7	Atmospheric Pressure (mbar)	1024			
Borehole Pressure (Pa)	0	CO (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Borehole Pressure (Pa)	1			
Time	15:40	H2S (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Time	15:47			
Peak VOC		LEL (%)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	Peak VOC				
			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl*)	Borehole Base (mbgl*)	Comments
Borehole ID	WS02	CH4 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0.72	0.99	
Flow Rate (l/hr)	0	CO2 (%)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4	Flow Rate (l/hr)	0			
Atmospheric Pressure (mbar)	1023	O2 (%)	18.9	18.7	18.7	18.8	18.9	19.1	19.1	19.1	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.3	19.1	Atmospheric Pressure (mbar)	1023			
Borehole Pressure (Pa)	0	CO (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Borehole Pressure (Pa)	0			
Time	15:52	H2S (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Time	15:59			
Peak VOC		LEL (%)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	Peak VOC				
			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl*)	Borehole Base (mbgl*)	Comments
Borehole ID	WS04	CH4 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0.93	3.93	
Flow Rate (l/hr)	0	CO2 (%)	1.2	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6	Flow Rate (l/hr)	0			
Atmospheric Pressure (mbar)	1023	O2 (%)	19.6	19.5	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	Atmospheric Pressure (mbar)	1023			
Borehole Pressure (Pa)	0	CO (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Borehole Pressure (Pa)	0			
Time	16:01	H2S (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Time	16:08			
Peak VOC		LEL (%)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	Peak VOC				
			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl*)	Borehole Base (mbgl*)	Comments
Borehole ID		CH4 (%)																							
Flow Rate (l/hr)		CO2 (%)																				Flow Rate (l/hr)			
Atmospheric Pressure (mbar)		O2 (%)																				Atmospheric Pressure (mbar)			
Borehole Pressure (Pa)		CO (ppm)																				Borehole Pressure (Pa)			
Time		H2S (ppm)																				Time			
Peak VOC		LEL (%)																				Peak VOC			
			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl*)	Borehole Base (mbgl*)	Comments
Borehole ID		CH4 (%)																							
Flow Rate (l/hr)		CO2 (%)																				Flow Rate (l/hr)			
Atmospheric Pressure (mbar)		O2 (%)																				Atmospheric Pressure (mbar)			
Borehole Pressure (Pa)		CO (ppm)																				Borehole Pressure (Pa)			
Time		H2S (ppm)																				Time			
Peak VOC		LEL (%)																				Peak VOC			

Gas Monitoring Record

Project Number:	R4210
Project Name:	142 Whitley Wood Lane
Date:	24/09/2024
Logger	JL

Weather:	Cloudy, Mild, Dry
----------	-------------------

*mbgl - Meters below Ground Level

			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl ^o)	Borehole Base (mbgl ^o)	Comments
Borehole ID	WS01	CH4 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0.32	3.88	
Flow Rate (l/hr)	0	CO2 (%)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	Flow Rate (l/hr)	0.1			
Atmospheric Pressure (mbar)	999	O2 (%)	19.4	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.6	19.6	19.6	19.6	19.6	19.9	Atmospheric Pressure (mbar)	999				
Borehole Pressure (Pa)	0	CO (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Borehole Pressure (Pa)	1				
Time	12:33	H2S (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Time	12:40				
Peak VOC		LEL (%)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	Peak VOC					
			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl ^o)	Borehole Base (mbgl ^o)	Comments
Borehole ID	WS02	CH4 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0.52	1.04	
Flow Rate (l/hr)	0	CO2 (%)	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	Flow Rate (l/hr)	0.1			
Atmospheric Pressure (mbar)	1000	O2 (%)	19.9	19.7	19.6	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	Atmospheric Pressure (mbar)	999				
Borehole Pressure (Pa)	0	CO (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Borehole Pressure (Pa)	0				
Time	12:45	H2S (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Time	12:52				
Peak VOC		LEL (%)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	Peak VOC					
			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl ^o)	Borehole Base (mbgl ^o)	Comments
Borehole ID	WS04	CH4 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			1.12	3.93	
Flow Rate (l/hr)	0	CO2 (%)	0.3	0.3	0.6	0.6	0.6	1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	Flow Rate (l/hr)	0			
Atmospheric Pressure (mbar)	999	O2 (%)	20	19.7	19.8	19.8	19.7	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	Atmospheric Pressure (mbar)	999				
Borehole Pressure (Pa)	0	CO (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Borehole Pressure (Pa)	0				
Time	12:55	H2S (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Time	13:02				
Peak VOC		LEL (%)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	Peak VOC					
			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl ^o)	Borehole Base (mbgl ^o)	Comments
Borehole ID		CH4 (%)																							
Flow Rate (l/hr)		CO2 (%)																			Flow Rate (l/hr)				
Atmospheric Pressure (mbar)		O2 (%)																			Atmospheric Pressure (mbar)				
Borehole Pressure (Pa)		CO (ppm)																			Borehole Pressure (Pa)				
Time		H2S (ppm)																			Time				
Peak VOC		LEL (%)																			Peak VOC				
			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl ^o)	Borehole Base (mbgl ^o)	Comments
Borehole ID		CH4 (%)																							
Flow Rate (l/hr)		CO2 (%)																			Flow Rate (l/hr)				
Atmospheric Pressure (mbar)		O2 (%)																			Atmospheric Pressure (mbar)				
Borehole Pressure (Pa)		CO (ppm)																			Borehole Pressure (Pa)				
Time		H2S (ppm)																			Time				
Peak VOC		LEL (%)																			Peak VOC				

Gas Monitoring Record

Project Number:	R4210
Project Name:	142 Whitley Wood Lane
Date:	01/10/2024
Logger	JL

Weather:	Cloudy, Wet, Mild
----------	-------------------

*mbgl - Meters below Ground Level

			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl ^o)	Borehole Base (mbgl ^o)	Comments
Borehole ID	WS01	CH4 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0.39	3.87	
Flow Rate (l/hr)	0	CO2 (%)	0	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	Flow Rate (l/hr)	0			
Atmospheric Pressure (mbar)	1003	O2 (%)	19.9	20.7	20.6	20.6	20.7	20.6	20.6	20.6	20.6	20.6	20.7	20.6	20.6	20.7	20.7	20.6	20.7	Atmospheric Pressure (mbar)	1003				
Borehole Pressure (Pa)	0	CO (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Borehole Pressure (Pa)	0				
Time	11:05	H2S (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Time	11:12				
Peak VOC		LEL (%)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	Peak VOC					
			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl ^o)	Borehole Base (mbgl ^o)	Comments
Borehole ID	WS02	CH4 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0.48	1.12	
Flow Rate (l/hr)	0	CO2 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Flow Rate (l/hr)	0			
Atmospheric Pressure (mbar)	1003	O2 (%)	20.3	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.5	20.5	20.5	20.4	Atmospheric Pressure (mbar)	1003			
Borehole Pressure (Pa)	0	CO (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Borehole Pressure (Pa)	0			
Time	11:18	H2S (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Time	11:25			
Peak VOC		LEL (%)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	Peak VOC				
			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl ^o)	Borehole Base (mbgl ^o)	Comments
Borehole ID	WS04	CH4 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0.28	3.93	
Flow Rate (l/hr)	0	CO2 (%)	0	1.3	1.8	2	2.2	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.2	Flow Rate (l/hr)	0			
Atmospheric Pressure (mbar)	1003	O2 (%)	20.3	20.1	19.4	19.1	18.9	18.6	18.5	18.5	18.4	18.5	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	Atmospheric Pressure (mbar)	1002			
Borehole Pressure (Pa)	0	CO (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Borehole Pressure (Pa)	0			
Time	11:30	H2S (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Time	11:37			
Peak VOC		LEL (%)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	Peak VOC				
			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl ^o)	Borehole Base (mbgl ^o)	Comments
Borehole ID		CH4 (%)																							
Flow Rate (l/hr)		CO2 (%)																			Flow Rate (l/hr)				
Atmospheric Pressure (mbar)		O2 (%)																			Atmospheric Pressure (mbar)				
Borehole Pressure (Pa)		CO (ppm)																			Borehole Pressure (Pa)				
Time		H2S (ppm)																			Time				
Peak VOC		LEL (%)																			Peak VOC				
			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl ^o)	Borehole Base (mbgl ^o)	Comments
Borehole ID		CH4 (%)																							
Flow Rate (l/hr)		CO2 (%)																			Flow Rate (l/hr)				
Atmospheric Pressure (mbar)		O2 (%)																			Atmospheric Pressure (mbar)				
Borehole Pressure (Pa)		CO (ppm)																			Borehole Pressure (Pa)				
Time		H2S (ppm)																			Time				
Peak VOC		LEL (%)																			Peak VOC				

Gas Monitoring Record

Project Number:	R4210
Project Name:	142 Whitley Wood Lane
Date:	07/10/2024
Logger	JL

Weather:	Cloudy, Wet, Mild
----------	-------------------

*mbgl - Meters below Ground Level

			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl*)	Borehole Base (mbgl*)	Comments
Borehole ID	WS01	CH4 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0.45	3.86	
Flow Rate (l/hr)	0	CO2 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Flow Rate (l/hr)	0			
Atmospheric Pressure (mbar)	993	O2 (%)	19.8	19.9	20	20	20	20	20	20	20	20	20	20	20	19.9	19.9	19.9	19.9		Atmospheric Pressure (mbar)	992			
Borehole Pressure (Pa)	0	CO (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Borehole Pressure (Pa)	0			
Time	10:53	H2S (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Time	11:00			
Peak VOC		LEL (%)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	Peak VOC				
			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl*)	Borehole Base (mbgl*)	Comments
Borehole ID	WS02	CH4 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0.55	1.11	
Flow Rate (l/hr)	0	CO2 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Flow Rate (l/hr)	0			
Atmospheric Pressure (mbar)	992	O2 (%)	20.7	20.5	20.3	20.3	20.3	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.1		Atmospheric Pressure (mbar)	992			
Borehole Pressure (Pa)	0	CO (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Borehole Pressure (Pa)	0			
Time	11:05	H2S (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Time	11:12			
Peak VOC		LEL (%)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	Peak VOC				
			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl*)	Borehole Base (mbgl*)	Comments
Borehole ID	WS04	CH4 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0.34	3.92	
Flow Rate (l/hr)	0	CO2 (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Flow Rate (l/hr)	0			
Atmospheric Pressure (mbar)	992	O2 (%)	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5		Atmospheric Pressure (mbar)	992			
Borehole Pressure (Pa)	0	CO (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Borehole Pressure (Pa)	0			
Time	11:18	H2S (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Time	11:25			
Peak VOC		LEL (%)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	Peak VOC				
			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl*)	Borehole Base (mbgl*)	Comments
Borehole ID		CH4 (%)																							
Flow Rate (l/hr)		CO2 (%)																				Flow Rate (l/hr)			
Atmospheric Pressure (mbar)		O2 (%)																				Atmospheric Pressure (mbar)			
Borehole Pressure (Pa)		CO (ppm)																				Borehole Pressure (Pa)			
Time		H2S (ppm)																				Time			
Peak VOC		LEL (%)																				Peak VOC			
			Initial	10 secs	20 secs	30 secs	40 secs	50 secs	60 secs	70 secs	80 secs	90 secs	100 secs	110 secs	120 secs	130 secs	140 secs	150 secs	180 secs	300 secs	Steady State Flow Readings (taken after gas readings)		Groundwater Level (mbgl*)	Borehole Base (mbgl*)	Comments
Borehole ID		CH4 (%)																							
Flow Rate (l/hr)		CO2 (%)																				Flow Rate (l/hr)			
Atmospheric Pressure (mbar)		O2 (%)																				Atmospheric Pressure (mbar)			
Borehole Pressure (Pa)		CO (ppm)																				Borehole Pressure (Pa)			
Time		H2S (ppm)																				Time			
Peak VOC		LEL (%)																				Peak VOC			

APPENDIX 5

REPORT LIMITATIONS

REPORT LIMITATIONS

This contract was completed by Earth Environmental & Geotechnical Ltd on the basis of a defined programme and scope of works and terms and conditions agreed with the client. This report was compiled with all reasonable skill, and care, bearing in mind the project objectives, the agreed scope of works, the prevailing site conditions, the budget and staff resources allocated to the project.

Other than that, expressly contained in the above paragraph, Earth Environmental & Geotechnical Ltd provides no other representation or warranty whether express or implied, is made in relation to the services. Unless otherwise agreed this report has been prepared exclusively for the use and reliance of the client in accordance with generally accepted consulting practices and for the intended purposes as stated in the agreement under which this work was completed. This report may not be relied upon, or transferred to, by any other party without the written agreement of a Director of Earth Environmental & Geotechnical Ltd.

If a third party relies on this report, it does so wholly at its own and sole risk and Earth Environmental & Geotechnical Ltd disclaims any liability to such parties.

It is Earth Environmental & Geotechnical Ltd understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was an important factor in determining the scope and level of the services. Should the purpose for which the report is used, or the proposed use of the site change, this report will no longer be valid and any further use of, or reliance upon the report in those circumstances by the client without Earth Environmental & Geotechnical Ltd review and advice shall be at the client's sole and own risk.

The report was written in 2025 and should be read in light of any subsequent changes in legislation, statutory requirements and industry best practices. Ground conditions can also change over time and further investigations or assessment should be made if there is any significant delay in acting on the findings of this report. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of Earth Environmental & Geotechnical Ltd. In the absence of such written advice of Earth Environmental & Geotechnical Ltd, reliance on the report in the future shall be at the client's own and sole risk. Should Earth Environmental & Geotechnical Ltd be requested to review the report in the future, Earth Environmental & Geotechnical Ltd shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between Earth Environmental & Geotechnical Ltd and the client.

The observations and conclusions described in this report are based solely upon the services that were provided pursuant to the agreement between the client and Earth Environmental & Geotechnical Ltd. Earth Environmental & Geotechnical Ltd has not performed any observations, investigations, studies or testing not specifically set out or mentioned within this report.

Earth Environmental & Geotechnical Ltd is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, Earth Environmental & Geotechnical Ltd did not seek to evaluate the presence on or off the site of electromagnetic fields, lead paint, radon gas or other radioactive materials.

The services are based upon Earth Environmental & Geotechnical Ltd observations of existing physical conditions at the site gained from a walkover survey of the site together with Earth Environmental & Geotechnical Ltd interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The findings and recommendations contained in this report are based in part upon information provided by third parties, and whilst Earth Environmental & Geotechnical Ltd have no reason to doubt the accuracy and that it has been provided in full from those it was requested from, the items relied on have not been verified.

No responsibility can be accepted for errors within third party items presented in this report. Further Earth Environmental & Geotechnical Ltd was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the services. Earth Environmental & Geotechnical Ltd is not liable for any inaccurate information, misrepresentation of data or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to Earth Environmental & Geotechnical Ltd and including the doing of any independent investigation of the information provided to Earth Environmental & Geotechnical Ltd save as otherwise provided in the terms of the contract between the client and Earth Environmental & Geotechnical Ltd.

Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable and as investigation excavations only allow examination of the ground at discrete locations. The potential exists for ground conditions to be encountered which are different to those considered in this report. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and Earth Environmental & Geotechnical Ltd] based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The normal speed of investigation usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan but is (are) used to present the general relative locations of features on, and surrounding, the site.