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UPPER & LOWER BARNS, MILLOM

Phase 1 - Preliminary Risk Assessment

Report Prepared For

Barns Lux Ltd

Report Ref: BEK-22093-1

July 2022

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Project Quality Assurance Information Sheet

Site	Upper & Lower Barns, Millom
Report Title	Preliminary Risk Assessment
Report Status	Final
Report No	BEK-22093-1
Date	July 2022
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Preliminary Risk Assessment

PROJECT NO: 22093

REPORT REF: BEK-22093-1

DATE: July 2022

REVISION STATUS / HISTORY

Rev	Date	Issue / Comment	Prepared	Checked

GENERAL REPORT LIMITATIONS

BEK Enviro Limited (BEK) has prepared this report for the sole use of the client, showing reasonable skill and care, for the intended purposes as stated in the agreement under which this work was completed. The report may not be relied upon by any other party without the express agreement of the client and BEK. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by BEK for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

No part of this report may be copied or duplicated without the express permission of BEK and the party for whom it was prepared. 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.

Unless explicitly agreed otherwise, in writing, this report has been prepared under BEK's limited standard Terms and Conditions as included within our proposal to the Client.

The report needs to be considered in the light of the BEK proposal and associated limitations of scope. The report needs to be read in full and isolated sections cannot be used without full reference to other elements of the report and any previous works referenced within the report.

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1. INTRODUCTION

1.1 Appointment

1.1.1 BEK Enviro (BEK) has been commissioned by Barns Lux Ltd to prepare a Preliminary Risk Assessment (PRA) for the site known as Mill Farm (Lower Barn), The Green, Millom (hereafter referred to as 'the site'). The PRA will assess the potential risks associated with contamination with respect to the redevelopment of the site for residential use (with homegrown produce).

1.1.2 The existing site location is presented on BEK Drawing No 22093-1, a copy of which is presented in Appendix E.

1.2 Proposed Development

1.2.1 This report has been prepared to support the conversion of the existing barn to a residential dwelling with associated infrastructure.

1.2.2 A proposed development plan has not been made available to BEK at the time of the writing of this report. This report assumes that private gardens will be present on site.

1.3 Objective & Scope of Works

1.3.1 This report provides the details of the works undertaken by BEK to assess the potential risks from contamination considering the change of use to residential.

1.3.2 To achieve the objective BEK will undertake the following:

- Carry out a site inspection and collect photographs
- Review the available relevant background information for the site, including:
  - Recent Ordnance Survey Maps
  - Site Specific GroundSure Reports
  - Site Specific Historical Maps
  - Magic Maps
  - Available Google Earth Images
  - Zetica UXO Information
- Develop a preliminary conceptual site model in accordance with guidance to identify potentially significant pollutant linkages specific to the proposed development
- Establish areas of potential concern based on identified risks and/or potential risks
- Identify any actions required to assess or reduce the risks identified

1.4 Limitations

1.4.1 The conclusions and recommendations presented in this report are the result of our professional interpretation of the information currently available. BEK reserves the right to amend the conclusions and recommendations if further information becomes available.

1.4.2 However, it should be noted that much of the information has been derived from reports written by others and BEK takes no responsibility for the accuracy of that information. Notwithstanding the above, the reports reviewed have all been written by professional environmental consultants with a duty of care to provide relevant and accurate information.

1.4.3 The assessment of invasive plant species is outside the remit of this report

2. SITE DESCRIPTION

2.1 Site Location

2.1.1 The site is located to the east of the junction encompassing the A5093/The Green and to the south of Beckstones Brewery approximately 5.3 km north of Millom centre and some 6.5 km south-west of Broughton-in-Furness.

2.1.2 The National Grid Reference for the centre of the site is 317855, 484714. The site location plan is shown on BEK Drawing No 22093-1 presented in Appendix E.

2.2 Site Layout & Description

2.2.1 A walkover/inspection was conducted by an engineer from BEK on 23rd June 2022. A selection of photographs illustrating the existing site layout are presented in Appendix D. The site layout is shown on Figure 1.

2.2.2 The site occupies an irregular shaped plot of approximately 600 m^2. A cluster of two attached farm buildings of stone construction with slate roofs are situated in the north-west of the site. At the time of the site walkover, access to the barns was not possible. However, photographs taken through gaps in the boarded windows indicate the barns were empty. The floor surface of the barns were part concrete and part bare soils.

2.2.3 Hardstanding concrete occupies the southern half of the site. The north-eastern flank of the site is overlain by long grasses and weeds. It appears the north-east may have represented a farm track which is now in poor condition.

2.2.4 Barns line the northern section of the western boundary, the northern boundary with stone walls lining all remaining boundaries. Access to the site is in the southern section of the western boundary of the site.

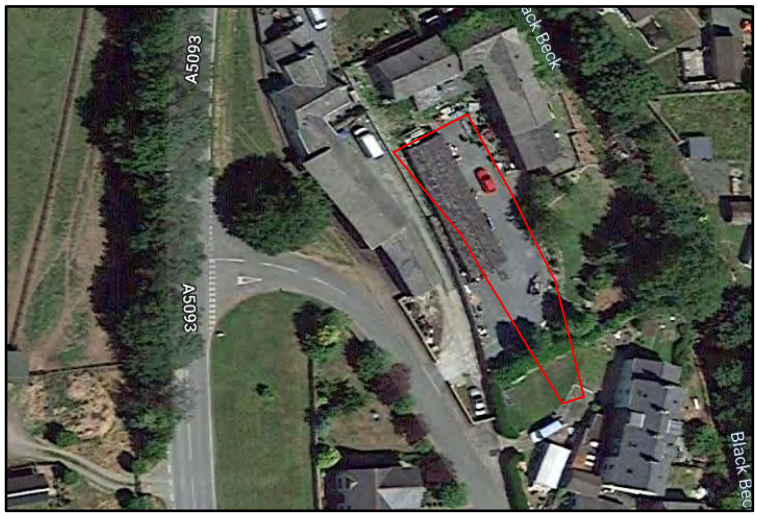


Figure 1: *Aerial Image of Site Layout*

2.3 Surrounding Land Use

2.3.1 A road lies immediately west of the site and residential properties lies to the south. Mill Farm (converted barn) lies immediately north of the site. A small batch brewery is situated east of the site.

3. SITE HISTORY

3.1 The history of the site has been established using historical OS maps supplied by Groundsure. Note the boundary of the site on the historical maps is mis-aligned slightly when compared with the planning boundary. Where necessary, reasonable adjustments have been made to account for this. A selection of historical OS maps reviewed is presented in Appendix A.

1860 – 1863

3.2 The 1860 and 1863 maps show the site to form part of Higher Beckstones Mill (corn) complex. A cluster of 4 attached buildings lie in the north-west (large building to the north and three outbuildings in the south). A small structure (possible tank) lies in the south-western part of the cluster of buildings on site. The eastern flank and southern half of the site is vacant. A road lies immediately west of the site. The building in the north of the site extends north of the site and a further large mill building is situated 10 m north-east of the site. A mill race lies 30 m north-east of the site. All form part of Higher Beckstones Mill complex. A small cluster of housing lies 20 m south and the Punch Bowl pub is located 20 m south. A watercourse is situated 45 m east and a further mill race lies 90 m east. Arnaby Mill lies 95 m south-east. A cluster of residential properties denoted as Rising Hill are located approximately 180 m south. A cluster of residential buildings (marked Lower Beckstones) are situated approximately 240 m south-east of the site

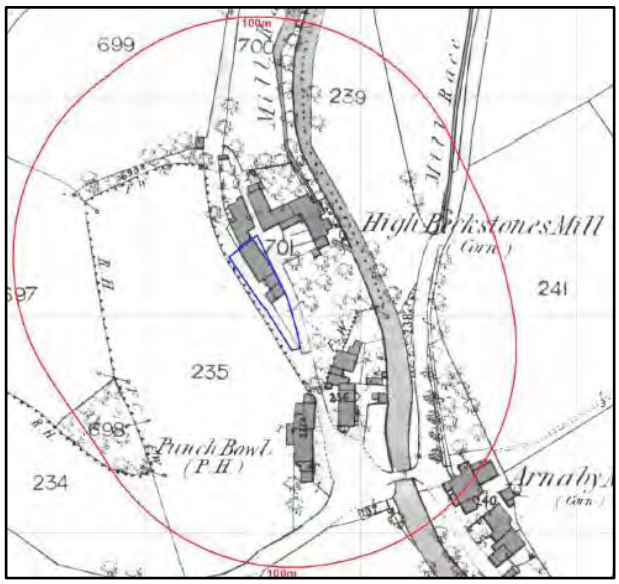


Figure 2: *Extract from 1860 map*

1898

3.3 The 1898 maps show no significant changes to the site. A post office is located some 80 m south-east. An Old Quarry lies circa 105 m south-west. Mill Inn lies 110 m south-east. A smithy is situated circa 180 m south of the site.

1924

3.4 The 1924 maps show no significant changes to the site or the areas surrounding the site.

1977

3.5 The 1977 maps show the small structure in the south-west of the cluster of buildings on site to be no longer present. The site which is no longer marked Higher Beckstones Mill otherwise remains in the same configuration. Belsfield (large residential property) lies 50 m north. Extensive residential development has taken place 55 m north-east and 80 m east of the site. A sewage works lies 110 m south-west of the site where a tank is also present. Unspecified barns lies 170 m north. Oaks Farm is situated approximately 210 m north.

1995

3.6 There are no significant changes to the site or the areas surrounding the site.

2010 – 2022

3.7 There are no significant changes to the site or the areas surrounding the site. Further residential development is situated some 170 m north-east of the site.

4. ENVIRONMENTAL SETTING

4.0.1 An Enviro & GeoInsight Report has been obtained from Groundsure and information provided in these reports has been used within this section. A copy of the report is presented in Appendix B.

4.1 Geology

4.1.1 The site geology is illustrated in the Enviro & Geoinsight Report which has sourced data from several sources including British Geological Society (BGS), BRITPITS database and the Coal Authority. A copy of the report is presented in Appendix B.

4.1.2 Furthermore, site investigation information has been sought from the British Geological Society (BGS) website where 6 boreholes were available to view within 250 m of the site. However, none of these boreholes were available to view.

Made Ground

4.1.3 According to the GeoInsight report there is no artificial ground below the site or within 250 m of the site.

4.1.4 As the site has been subject to historic development as a mill the presence of made ground on site is considered likely.

Superficial Geology

4.1.5 The GeoInsight Report states that the superficial deposits underlying the site comprise of Devensian Till (Boulder Clay) which is laterally continuous on a regional scale (with absent deposits in some locations surrounding the site). This strata generally has low permeability.

Bedrock

4.1.6 The Geoinsight Report states that bedrock underlying the northernmost tip of the site comprises the Barrowdale Sill Suite which comprises 'Basalt'.

4.1.7 The Waberthwaite Tuff Formation underlies the majority of the site (except the northern tip). This strata is generally described as 'a pyroclastic-rock in which the average size of more than 75% of the pyroclastic fragments is less than 64 mm.'

Linear Features

4.1.8 There are no linear features located on site. One linear feature is situated 16 m south of the site as is described as an 'Axial plane trace of major syncline'.

4.2 Mining & Ground Stability

4.2.1 Information in the Enviro&GeoInsight Report indicates that the site is not located in an area that is likely to have been affected by coal mining.

4.2.2 Notwithstanding, the site has also been subjected to 'vein mineral mining.' However, this is noted to have been 'localised small scale underground mining' with the 'potential for difficult ground conditions being unlikely or localized and at a level where they need not be considered.'

4.2.3 The Britpits database suggests that a surface mineral working for Igneous & Metamorphic Rock took place some 124 m south-west of the site. Extraction of mineral has been considered closed by the operator. However, the site may be consider to have active/dormant/expired planning permission by Mineral Planning Authorities.

4.2.4 Furthermore, a number of surface ground workings have been located within 250 m of the site. These are summarised within Table 1.

Distance/Direction	Feature	Date Feature Present (on 1:10,000/10,560 maps)
39 m East	Sewage Works	1978
102 m South-West	Unspecified Pit	1951
110 – 115 m South-West	Unspecified Quarry/Pit	1898 - 1951
126 m South-West	Unspecified Old Quarry	1919

Table 1: *Summary of Ground Workings located within 250 m of the Site*

4.2.5 The Enviro&GeoInsight Report provides hazard ratings associated with ground subsidence at the site, as summarised below:

Shrink-Swell Clay:	Very Low
Landslides:	Low
Ground Dissolution of Soluble Rocks:	Negligible
Compressible Deposits:	Negligible
Collapsible Deposits:	Very Low
Running Sands:	Very Low

4.2.6 It can be seen from the above that the site is unlikely to be affected by natural ground instability.

4.3 Hydrogeology

4.3.1 The superficial deposits are classified by the EA as 'Secondary Undifferentiated Aquifer' which are 'assigned where it is not possible to attribute either category A or B to a rock type.'

4.3.2 The underlying bedrock is classified by the EA as 'Secondary B Aquifer' which is described as having 'Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.'

4.3.3 The Geo&EnviroInsight Report (Appendix B) indicates the site is not located within a groundwater source protection zone.

4.3.4 There are no groundwater abstractions located within 250 m of the site.

4.4 Hydrology

4.4.1 The EnviroInsight Report shows there are no surface water features on site. Black Beck runs north-east to south-east of the site being approximately 25 m east at its closest point. A tributary of Black Beck appears to run 156 m south of the site.

4.4.2 A total of 8 no. registered licensed discharge consents are located within 250 m of the site. These appear to represent three distinct consents under a number of permit versions.

Distance/Direction	Effluent Type	Permit Number (Version)	Receiving Water	Dates
29 m South-East	Sewage Discharges	011200 (Ver 1)	Black Beck	27/09/1962 27/09/1962
35 m South-East	Sewage Discharges	011602 (Ver 1)	Black Brook	18/04/1968 01/06/1970
124 m South-East	Sewage Discharges	017470021 (Ver 1)	Black Beck	28/12/1979 30/01/1985
124 m South-East	Sewage Discharges	017470021 (Ver 2)	Black Beck	31/01/1985 25/07/1989
124 m South-East	Sewage Discharges	017470021 (Ver 3)	Black Beck	26/07/1989 N/A

Table 2: Summary of Licensed Discharge Consents Located within 250 m of the Site

4.4.3 The Environment Agency flood map indicates that the site is located within Flood Zone 1. However, an area 28 m north-east is located within Flood Zone 2 & 3 (Fluvial/Tidal Models).

4.4.4 The pluvial (rainfall flood maps) suggest that the site is at risk from surface water flooding by a 1 in 30 year rainfall event to a depth of 0.1 m to 0.3 m.

4.5 Contaminated Land & Landfill Activities

4.5.1 Information provided in the EnviroInsight Report indicates that there are no current/historic landfill or waste management facilities located within 250 m of the site.

4.5.2 There are 19 waste exemptions registered within 250 m of the site. The closest refers to 'burning waste in the open' some 31 m south-east of the site.

4.5.3 There are no EA recorded pollution incidents located within 250 m of the site.

4.5.4 The EnviroInsight Report has no recorded Part A(1), A(2), Part B or IPC Authorised Activities within 250 m of the site.

4.5.5 There is one current potentially contaminative industrial sites located within 250 m of the study site, the closest of which refers to 'sewage works' some 115 m east of the site.

4.6 Sensitive Land Uses

4.6.1 The site is not affected by any of the ecological systems identified as a statutory receptor in the DETR Circular 01/2006.

4.7 Radon

4.7.1 Groundsure reports that 'less than 1% of properties are above the Action Level' and that 'no radon protection measures are required at the site.'

4.8 Unexploded Ordnance

4.8.1 The regional unexploded bomb risk map from Zetica (2014) indicates that the site is in an area of Lancashire at LOW risk from possible Unexploded Ordnance (UXO) resulting from the Second World War.

5. POTENTIAL POLLUTANT LINKAGES

5.1 General

5.1.1 This section identifies the potential sources of contamination along with specific contaminants of concern, pathways and receptors that may be associated with the site based on its known history and the current condition and with respect to the re-development of the site for residential use (with homegrown produce).

5.1.2 This information is used to develop a preliminary conceptual model which is a qualitative description of potential sources of environmental pollutants, the pathways by which they are transported and the receptors:

i) Potential sources of contamination: these include any actual or potentially contaminating materials and activities, located either on or in the vicinity of the site

ii) Potential pathways for contamination migration: these comprise the routes or mechanisms by which contaminants may migrate from the source to the receptor including environmental migration pathways and human health exposure pathways

iii) Potential receptors of contamination: these include future land users, ecological systems, water resources and property

5.1.3 If no potential sources of contamination are identified as part of the assessment, then there are no risks associated with contamination to potential receptors associated with the site.

5.2 Potential Contaminants of Concern

5.2.1 Based on the earliest available maps dating from 1863 the site was noted to form part of Higher Beckstones Mill (corn) complex. At this time a cluster of 4 attached buildings were noted to lie in the north-west of the site (large building to the north and three outbuildings in the south). At this time a small structure (possible tank) was noted to lie in the south-western part of the cluster of buildings on site. The eastern flank and southern half of the site is vacant.

5.2.2 The 1977 maps show the small structure in the south-west of the cluster of buildings on site to be no longer present with the site no longer marked Higher Beckstones Mill but otherwise remaining in the same configuration. It is possible that the site changed use to a farm given that the converted building to the north is denoted as ‘Mill Farm’.

5.2.3 Based on the site history and current site condition, the potential for significant contamination is considered to be low to medium.

5.2.4 The most significant source of contamination is likely to be made ground that could have been imported into to the site to facilitate the development or possibly from demolition of previous buildings on site. The extent and nature of any made ground present is unknown.

5.2.5 It is possible that a tank was present in the south-west of the cluster of buildings on site. This may have resulted in localised hydrocarbon contamination in this area.

5.2.6 The potential contaminants of concern are listed below:

Contaminants Associated with Former Corn Mill /Farmand General Made Ground	
Arsenic	Zinc
Cadmium	Sulphate
Chromium	Cyanide
Copper	Phenols
Lead	Polycyclic Aromatic Hydrocarbons (PAHs)
Mercury	Asbestos
Nickel	pH
Selenium	
Contaminants associated with historic kerosene tanks/oil fired boilers	
Petroleum Hydrocarbons (TPHCWG)	Volatile Organic Compounds (VOCs)
BTEX Compounds	Semi Volatile Organic Compounds (VOCs)

Table 3: *Potential Contaminants of Concern*

5.2.5 It should be noted that the above list represents a broad range of potential contaminants of concern. Additional contaminants of concern may be present if ground conditions differ from those anticipated.

5.2.6 Given the age of the building on site, it is possible that the fabric of the building on site includes (in part) asbestos containing materials.

5.2.7 Based on the available background information, made ground within the infilled pond on site represents a potential source of ground gas. If made ground is present at a thickness of in excess of 3 m and/or with a high organic content it will be necessary to assess risks from ground gas. Organic rich natural strata can also represent a source of ground gas at the site.

5.2.8 Off site sources of ground gas include a surface ground working 102 m south-west of the site, although this area has now been redevelopment for residential use suggesting that risks are low or the area has been remediated. Other mitigating factors which limited the migration of landfill gas to the site include time that has surpassed since the construction of the houses >40 years and the presence of laterally continuous Boulder Clay across the region.

5.3 Potential Pathways

5.3.1 The pathways through which contaminants may reach receptors are in part dependent by the nature and behaviour of the contaminant and the intended end use of the site.

5.3.2 The following potential pathways have been identified with respect to the existing site condition, the environmental setting and the re-development of the site to residential housing and associated infrastructure; all of which are assessed in the conceptual model:

- Ingestion of contaminated soil/home grown vegetables
- Inhalation of contamination dust
- Dissolution or suspension (leaching) of contaminants into pore waters affecting plant growth
- Indoor inhalation of organic vapours and ground gas
- Dermal contact
- Dissolution or suspension (leaching) of contaminants from site soils leading to contamination of groundwater and surface waters
- Dissolution or suspension (leaching) of contaminants from site soils leading to lateral migration within perched waters to off-site receptors. Potential significant pathways include more permeable layers within the made ground/natural strata, underground services and piles/foundations.
- Contamination affecting the integrity of service pipelines by direct contact
- Buildings affected by direct contact with elevated concentrations of sulphate and/or extreme pH.

5.4 Receptors

5.4.1 Potential site specific receptors that may be affected by contamination at the site are listed below:

Future Site Users

5.4.2 Future occupants of the site could be at risk from contamination present at the site.

5.4.3 Potential risks are associated with ingestion of soil and as well as inhalation of contaminated dust and or asbestos and dermal contact with contaminants of concern.

5.4.4 These risks are all associated with any communal landscaped areas of the new development.

5.4.5 In addition, risks associated with indoor inhalation of organic vapours and/or ground gas needs to be considered.

Construction Workers

5.4.6 The primary risks to construction workers are associated with shallow excavations as asbestos could be present. Asbestos fibers (if present) can be released into the atmosphere during earthworks in the yard area of the development.

5.4.7 Standard personal protective equipment and site specific risk assessments and method statements should reduce risks associated with other contaminants of concern due to short exposure duration.

Off Site Receptors

5.4.8 Off site receptors include nearby home owners, business users and business owners. Human health could be at risk if asbestos fibres are released during the re-development.

Flora

5.4.9 Heavy metals can be phytotoxic and if present can represent a potential risk to flora in the garden areas.

Buildings & Services

5.4.10 Concrete used for the construction of buildings can be affected by high levels of sulphate and extreme pH.

5.4.11 The integrity of service pipes can be affected by concentrations of organic contamination. However, it is unlikely new services will be required at the site.

Controlled Waters

5.4.12 The Geo&EnviroInsight Report shows there are no surface water features on site. Black Beck runs north-east to south-east of the site being approximately 25 m east at its closest point which represents a potentially significant receptor. A tributary of Black Beck appears to run 156 m south of the site. The distance of the tributary from the stie precludes this watercourse as a potential receptor.

5.4.13 The superficial aquifer (Boulder Clay) is classified by the Environment Agency as a 'Secondary Aquifer (undifferentiated)'. This strata is relatively impermeable and any water trapped/ held within the deposits are not considered to represent a sensitive receptor. The underlying bedrock is classified as a Secondary B Aquifer. The presence of laterally continuous low permeable superficial deposits across the site (anticipated to be clay) will likely inhibit vertical migration of contamination to the underlying bedrock.

5.4.14 The site is not located within a source protection zone and there are no groundwater abstractions within 250 m of the site.

5.5 Preliminary Conceptual Model

5.5.1 The identified potential sources of contaminants, pathways and receptors have been assessed to establish plausible pollutant linkages. All potentially significant pollutant linkages are detailed in Table B, in Appendix C.

5.6 Potentially Significant Pollutant Linkages

5.6.1 A number of possible 'significant pollutant linkages' have been identified associated with the site.

5.6.2 Potential risks relating to the potential harm to the health of humans and/or domestic pets both on and off site due to the potential for direct contact with contaminants in the made ground and the ingestion of contaminated soil/dust **(Link 1).**

5.6.3 There is also the possibility of windblown particulates being inhaled by people/animals both on site and off site **(Link 2).**

5.6.4 Home grown produce could be affected by ground contamination **(Link 3)** and human health could be at risk by the ingestion of home grown produce affected by contamination **(Link 4).**

5.6.5 Human health could be at risk by the inhalation of ground gases **(Link 5)** and/or volatile contamination migrating into properties on site **(Link 6).**

5.6.6 Property (including services, flora and fauna) could be affected by direct contact to high concentrations of contaminants **(Link 7).**

5.6.7 Dissolution or suspension (leaching) of contaminants from site soils leading to lateral migration within perched permeable layers within the made ground/natural strata, underground services and foundations leading to impact on surface water quality in Black Beck located some 25 m east of the site. **(Link 8).**

5.6.8 Dissolution or suspension (leaching) of contaminants from site soils leading to impact on the underlying Secondary B Aquifer within the bedrock **(Link 9).**

5.6.9 Site investigation is required to identify site specific conditions and assess the risks associated with each identified pollutant linkage.

6. CONCLUSIONS & RECOMMENDATIONS

6.1 Based on the findings of the Preliminary Risk Assessment herein, a number of potential risks associated with contamination have been identified with respect to the proposed change of use to residential (with homegrown produce).

6.2 Risks have been identified to human health, property (including services) and controlled waters. At this stage, risks from ground gas appear very low. This will require confirmation following site investigation works which are required to characterise shallow ground conditions and quantify the potential risks identified.

6.3 To assess the potential risk associated with contamination and ground gas at the site, BEK recommends that the following works should be undertaken:

Refurbishment Asbestos Survey

6.4 All buildings should be subject to an asbestos survey and where present, this should be removed by a specialist contractor removed from site and disposed of at a licensed facility.

Site Investigation

6.5 The investigation will comprise the excavation of a series of trial pits/window sample boreholes to prove the nature and thickness of any made ground present and characterise the natural strata. Exploratory locations will provide indicative across the whole site and at specific locations, based on historical activities/features. The depth of the made ground across the site should be proven.

6.6 The site investigation should be supervised by an experienced engineer who will be responsible for recording ground conditions encountered.

6.7 Representative samples will be recovered for chemical testing. All samples will be collected in appropriate sampling vessels, stored in a precooled cool box and dispatched to the laboratory within 24 hours.

Laboratory Testing

6.8 Following a review of the ground conditions encountered, a selection of samples will be tested for total concentrations of the contaminants of concern listed in Table 3 of this report. If visual or olfactory evidence of contamination is encountered during the site investigation then it may be necessary to undertake additional testing.

6.9 At this stage it is considered unlikely that samples will need to be tested for leachable concentrations. However, if the initial finding confirm significant contamination is present then these tests will be required as part of a controlled waters risk assessment.

6.10 Based on ground conditions encountered and initial test results it may be necessary to test for leachable contaminants of concern.

6.11 In addition, if soils are to be removed from site to facilitate the development works then it may be necessary to test soils for Waste Acceptance Criteria (WAC).

6.12 All testing will be carried out by a UKAS accredited laboratory to MCERTS standard (where applicable).

Reporting

6.13 The investigation findings should be assessed in accordance with current UK policy and guidance to identify any potentially significant pollutant linkages and determine the requirements for mitigation and/or remediation.

6.14 The works undertaken will be detailed in a Site Investigation & Contamination Assessment report along with full justifications for the assessment and the conclusions/recommendations.

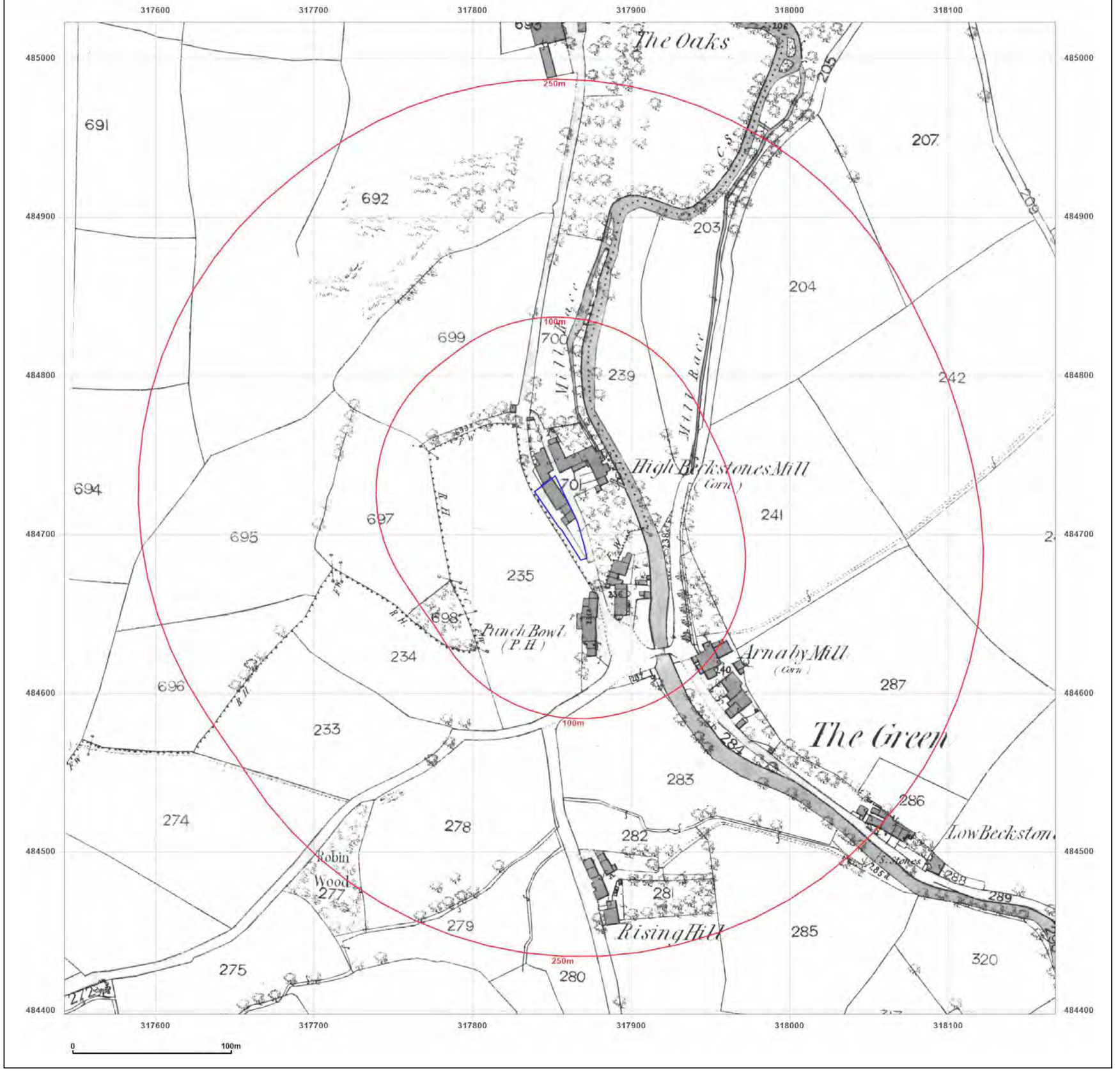
Other Considerations

6.15 We recommend that the site investigation works consider the requirements for a full geotechnical assessment to provide recommendations for foundation design as well as to quantify the potential risks from contamination. This may include in-situ testing (shear vane) and sample recovery for geotechnical testing.

6.16 We would also recommend that consideration is given to the requirements of the water supply service provider and the completion of the UKWIR risk assessment for water pipe selection.

APPENDIX A

Historical OS Maps



Groundsure INSIGHTS

Site Details:

Upper & Lower Barns, THE GREEN, THE GREEN, LA18 5HJ

Client Ref: 7528-22093-J
Report Ref: GS-8898334
Grid Ref: 317855, 484710

Map Name: County Series

Map date: **1863**

Scale: 1:2,500

Printed at: 1:2,500

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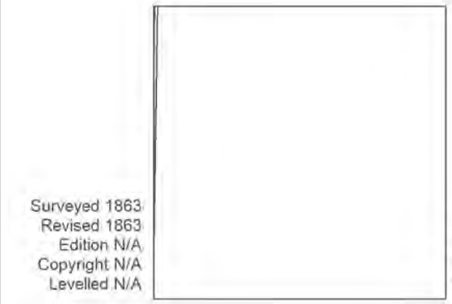

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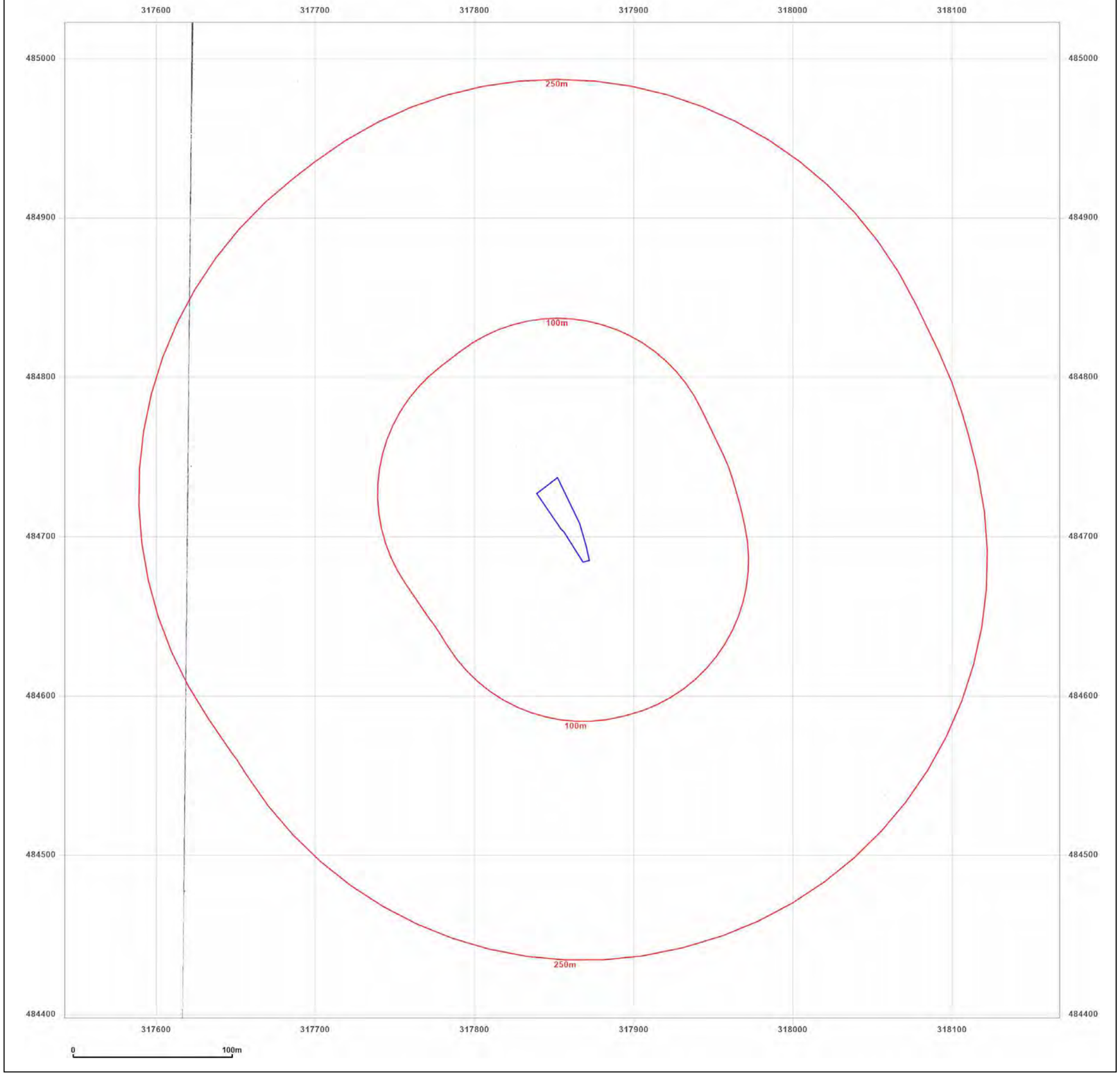

Groundsure INSIGHTS

Site Details:

Upper & Lower Barns, THE GREEN, THE GREEN, LA18 5HJ

Client Ref: 7528-22093-J
Report Ref: GS-8898334
Grid Ref: 317855, 484710

Map Name: County Series

Map date: **1890**

Scale: 1:2,500

Printed at: 1:2,500

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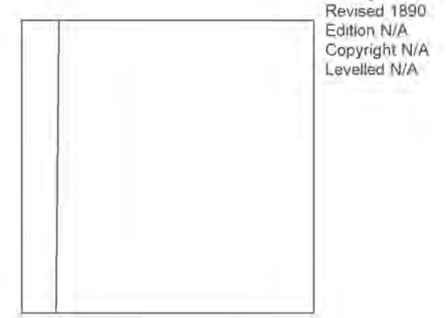

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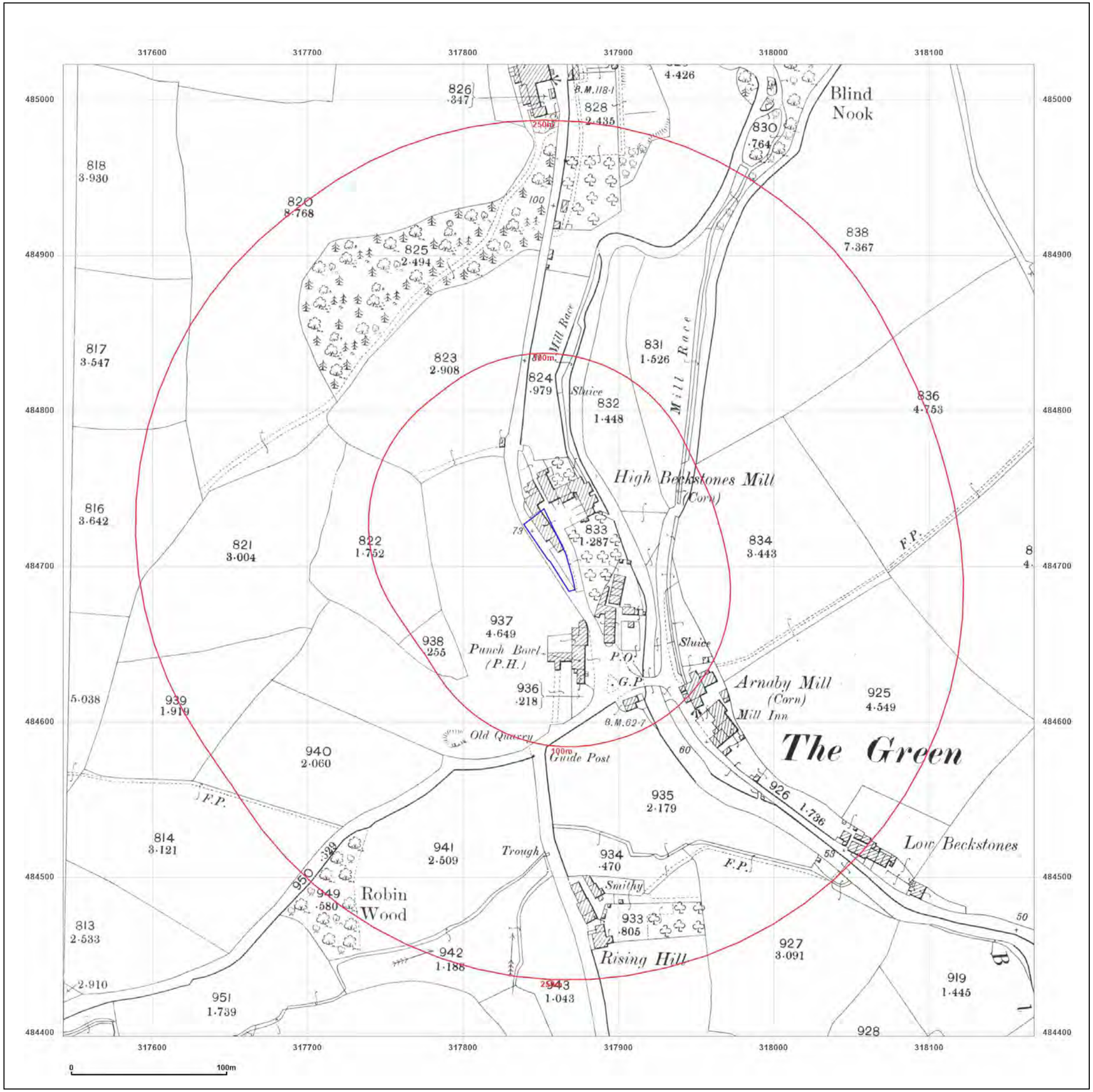

Groundsure INSIGHTS

Site Details:

Upper & Lower Barns, THE GREEN, THE GREEN, LA18 5HJ

Client Ref: 7528-22093-J
Report Ref: GS-8898334
Grid Ref: 317855, 484710

Map Name: County Series
Map date: **1898**
Scale: 1:2,500
Printed at: 1:2,500

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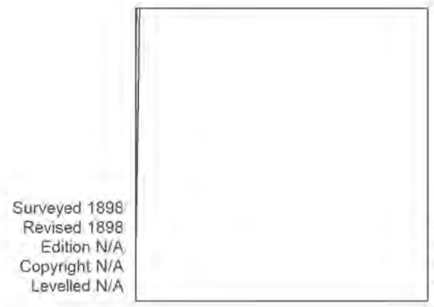

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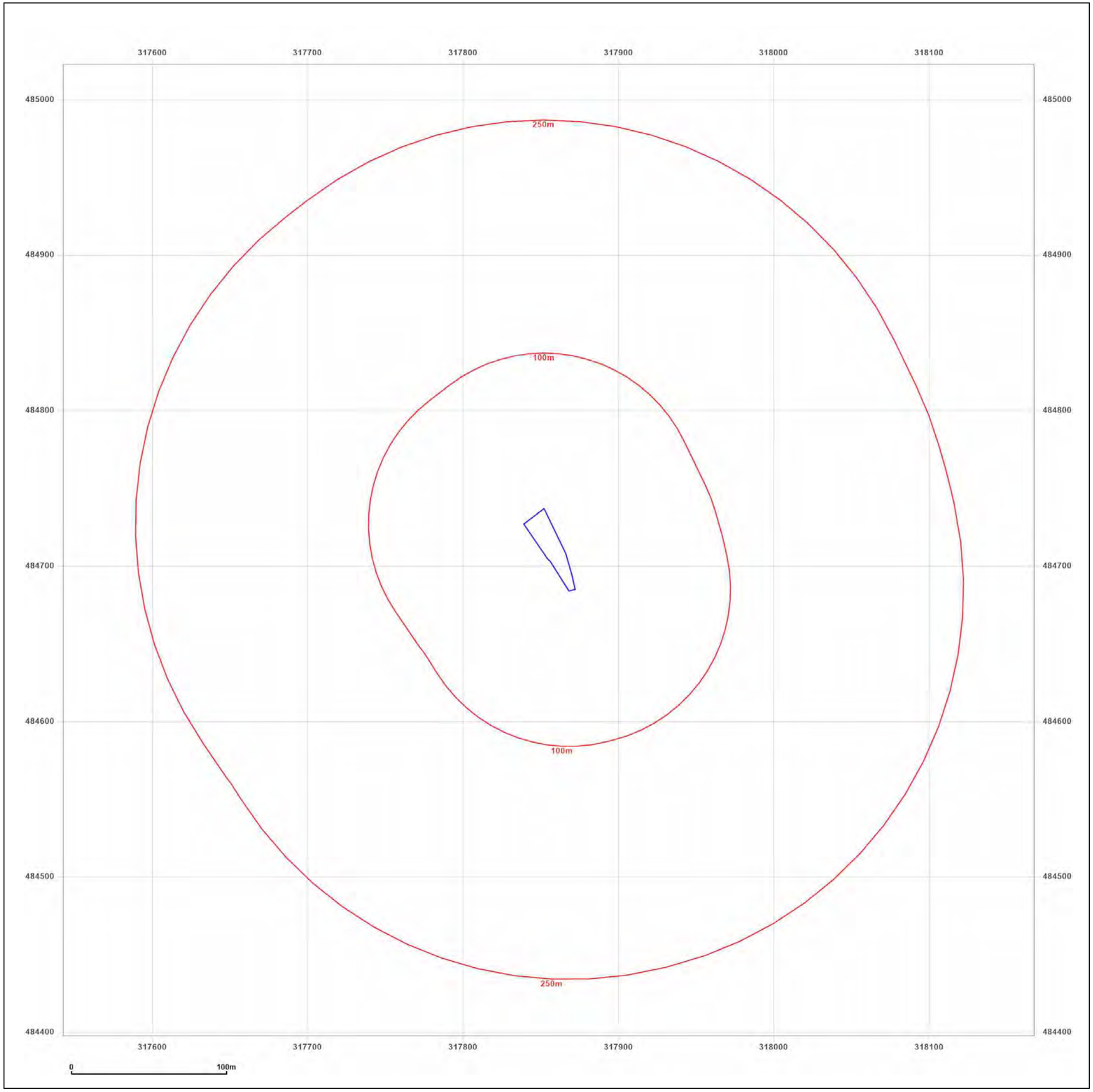

Groundsure INSIGHTS

Site Details:

Upper & Lower Barns, THE GREEN, THE GREEN, LA18 5HJ

Client Ref: 7528-22093-J
Report Ref: GS-8898334
Grid Ref: 317855, 484710

Map Name: County Series

Map date: **1913**

Scale: 1:2,500

Printed at: 1:2,500

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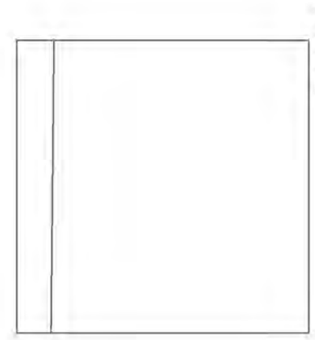

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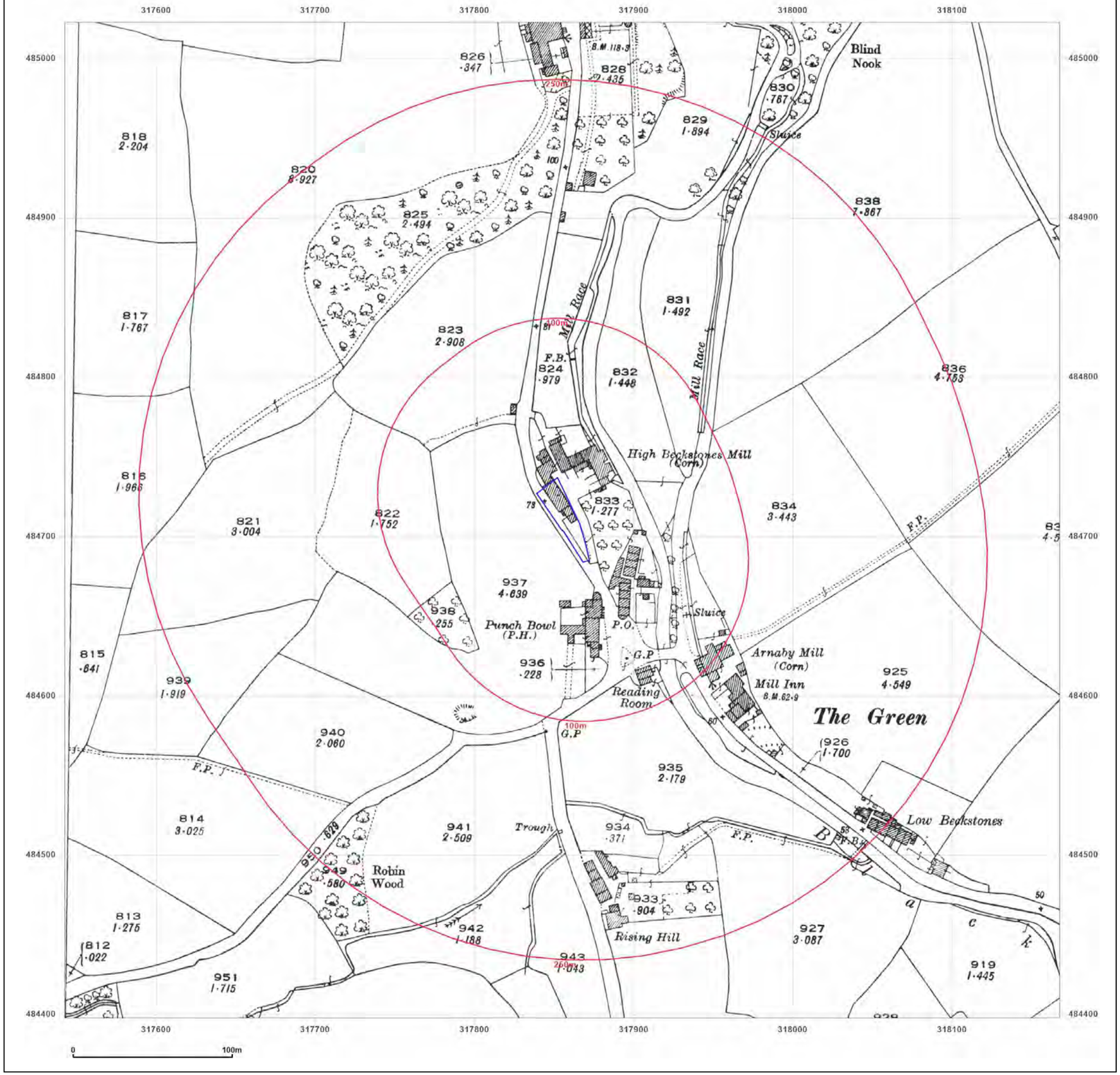

Groundsure INSIGHTS

Site Details:

Upper & Lower Barns, THE GREEN, THE GREEN, LA18 5HJ

Client Ref: 7528-22093-J
Report Ref: GS-8898334
Grid Ref: 317855, 484710

Map Name: County Series

Map date: **1924**

Scale: 1:2,500

Printed at: 1:2,500

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Edition N/A
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Surveyed 1924
Revised 1924
Edition N/A
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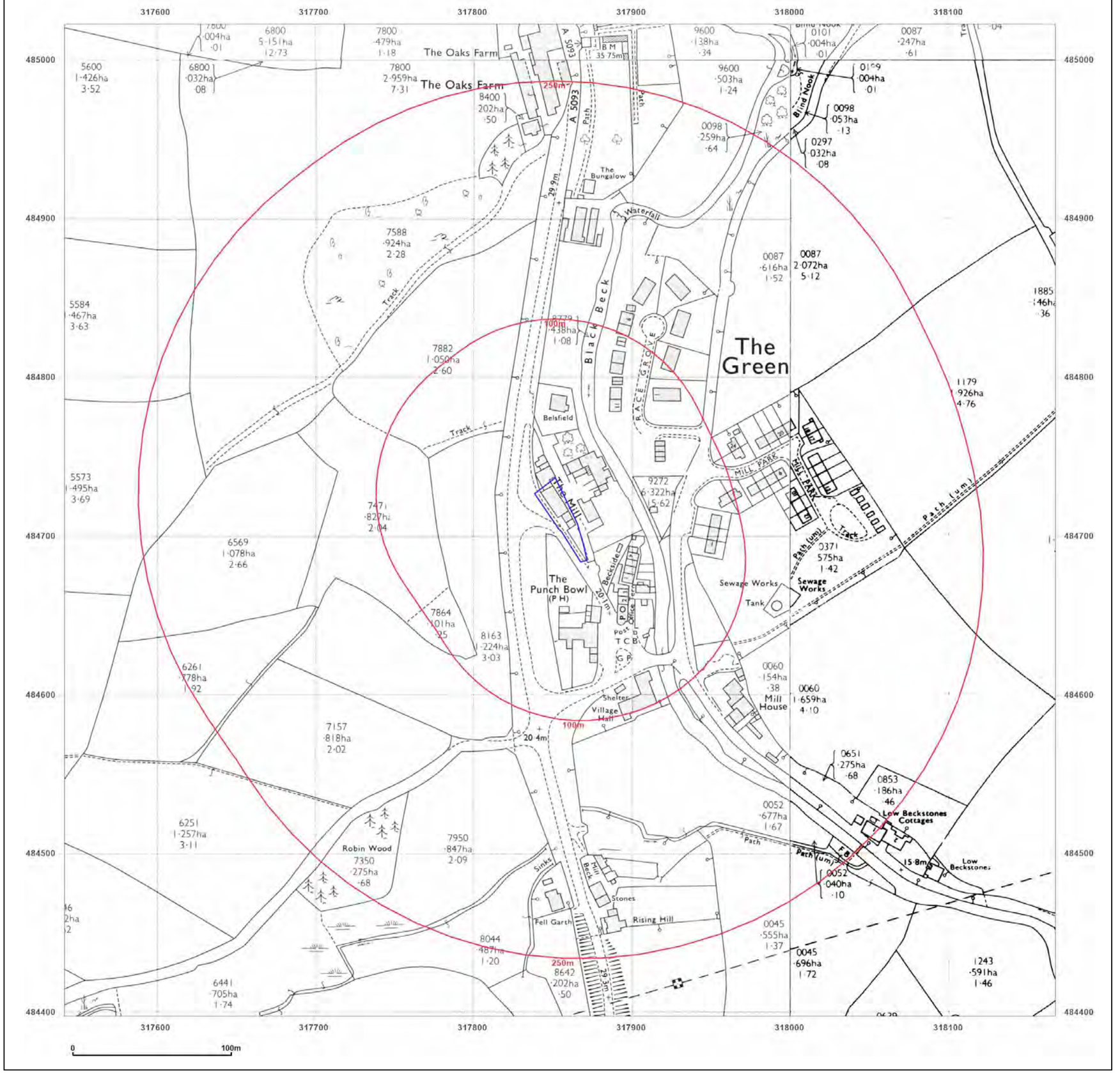

Groundsure INSIGHTS

Site Details:

Upper & Lower Barns, THE GREEN, THE GREEN, LA18 5HJ

Client Ref: 7528-22093-J
Report Ref: GS-8898334
Grid Ref: 317855, 484710

Map Name: National Grid

Map date: **1972-1977**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1976 Revised 1976 Edition N/A Copyright 1977 Levelled 1956	Surveyed 1972 Revised 1972 Edition N/A Copyright 1974 Levelled 1956
Surveyed 1971 Revised 1971 Edition N/A Copyright 1972 Levelled 1956	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A

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Production date: 12 July 2022

Map legend available at:
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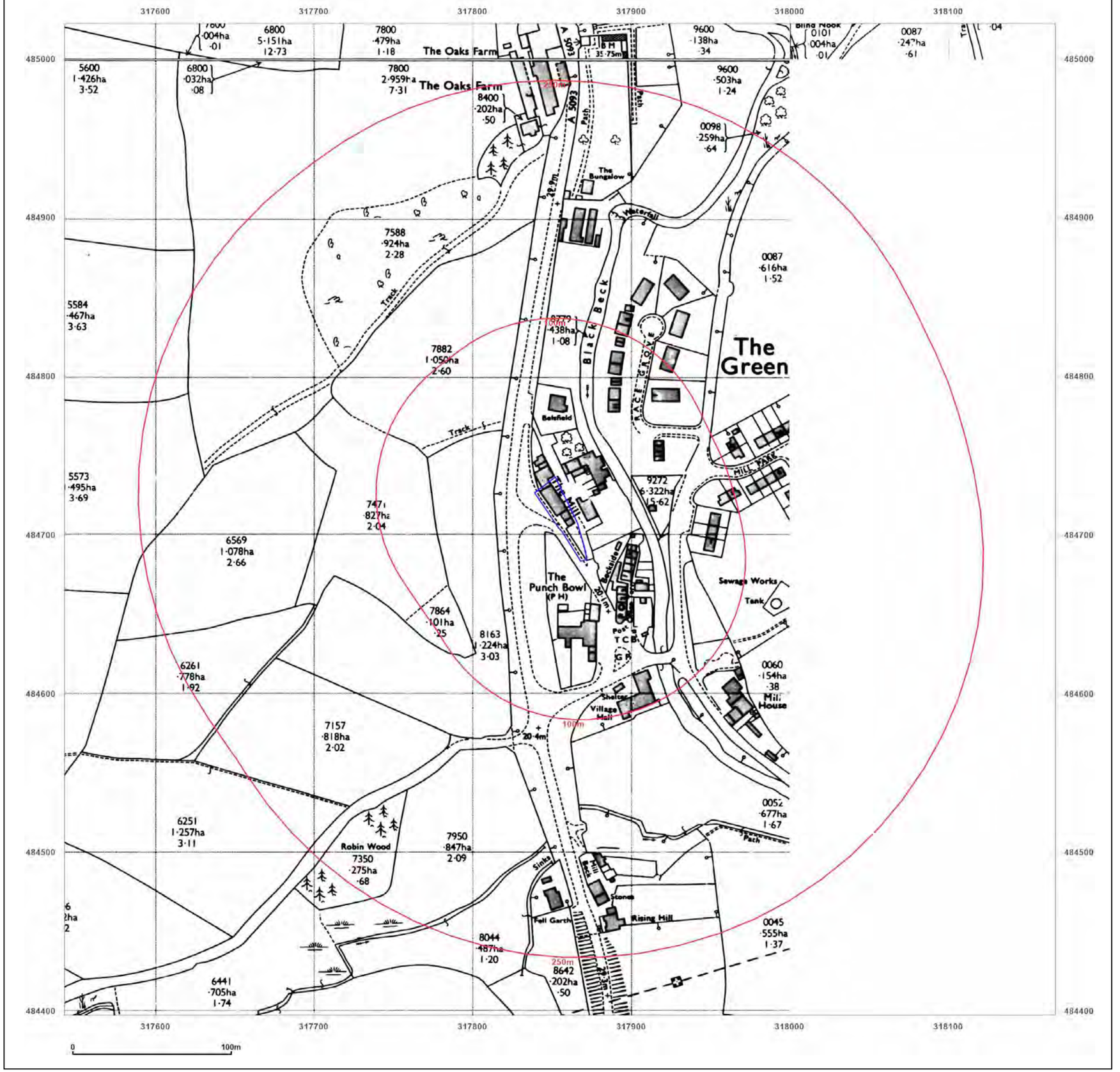

Groundsure INSIGHTS

Site Details:

Upper & Lower Barns, THE GREEN, THE GREEN, LA18 5HJ

Client Ref: 7528-22093-J
Report Ref: GS-8898334
Grid Ref: 317855, 484710

Map Name: National Grid

Map date: **1972-1977**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed N/A
Revised N/A
Edition N/A
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Production date: 12 July 2022

Map legend available at:
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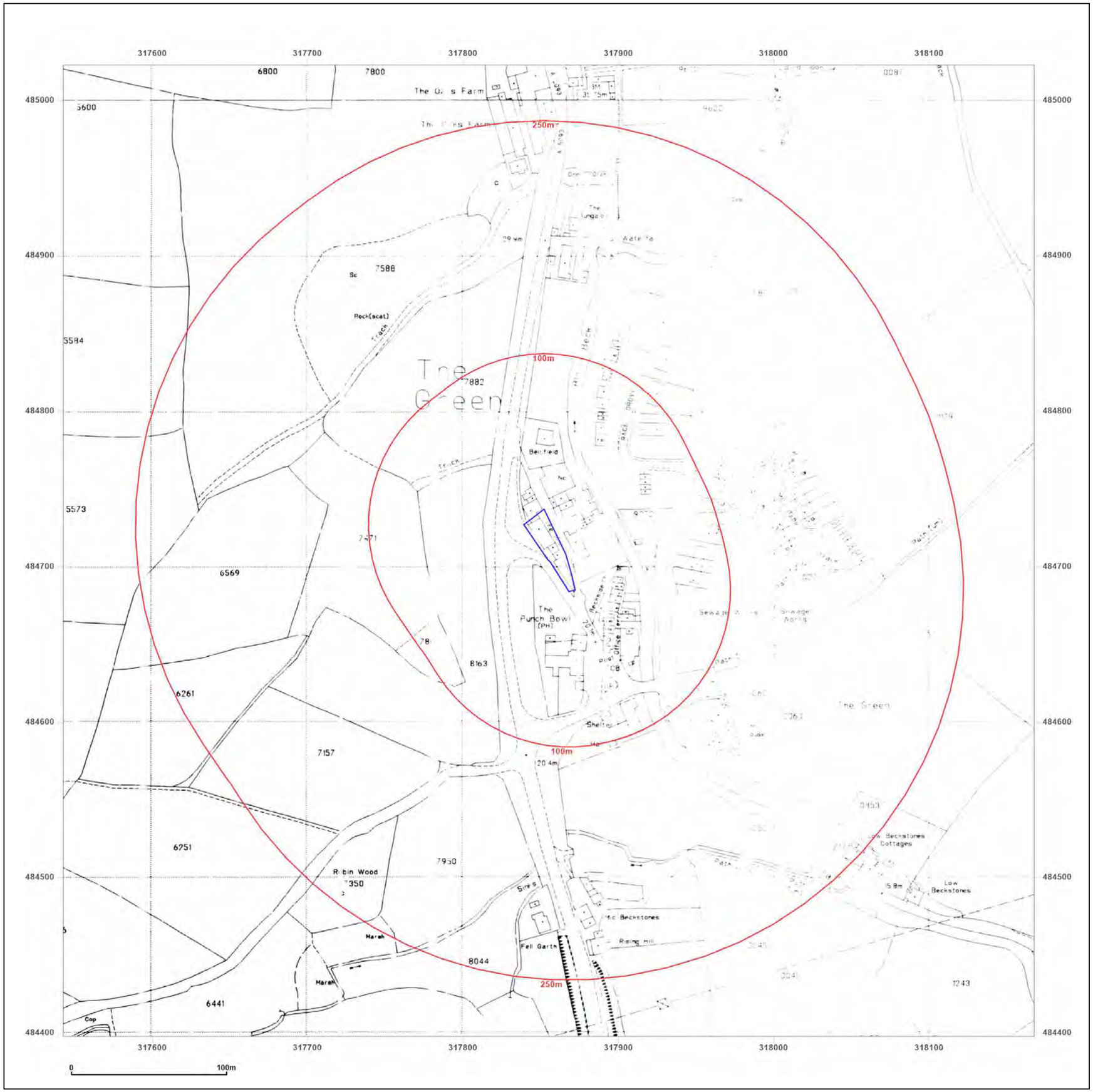

Groundsure INSIGHTS

Site Details:

Upper & Lower Barns, THE GREEN, THE GREEN, LA18 5HJ

Client Ref: 7528-22093-J
Report Ref: GS-8898334
Grid Ref: 317855, 484710

Map Name: National Grid

Map date: **1995**

Scale: 1:2,500

Printed at: 1:2,500

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Edition N/A
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Production date: 12 July 2022

Map legend available at:
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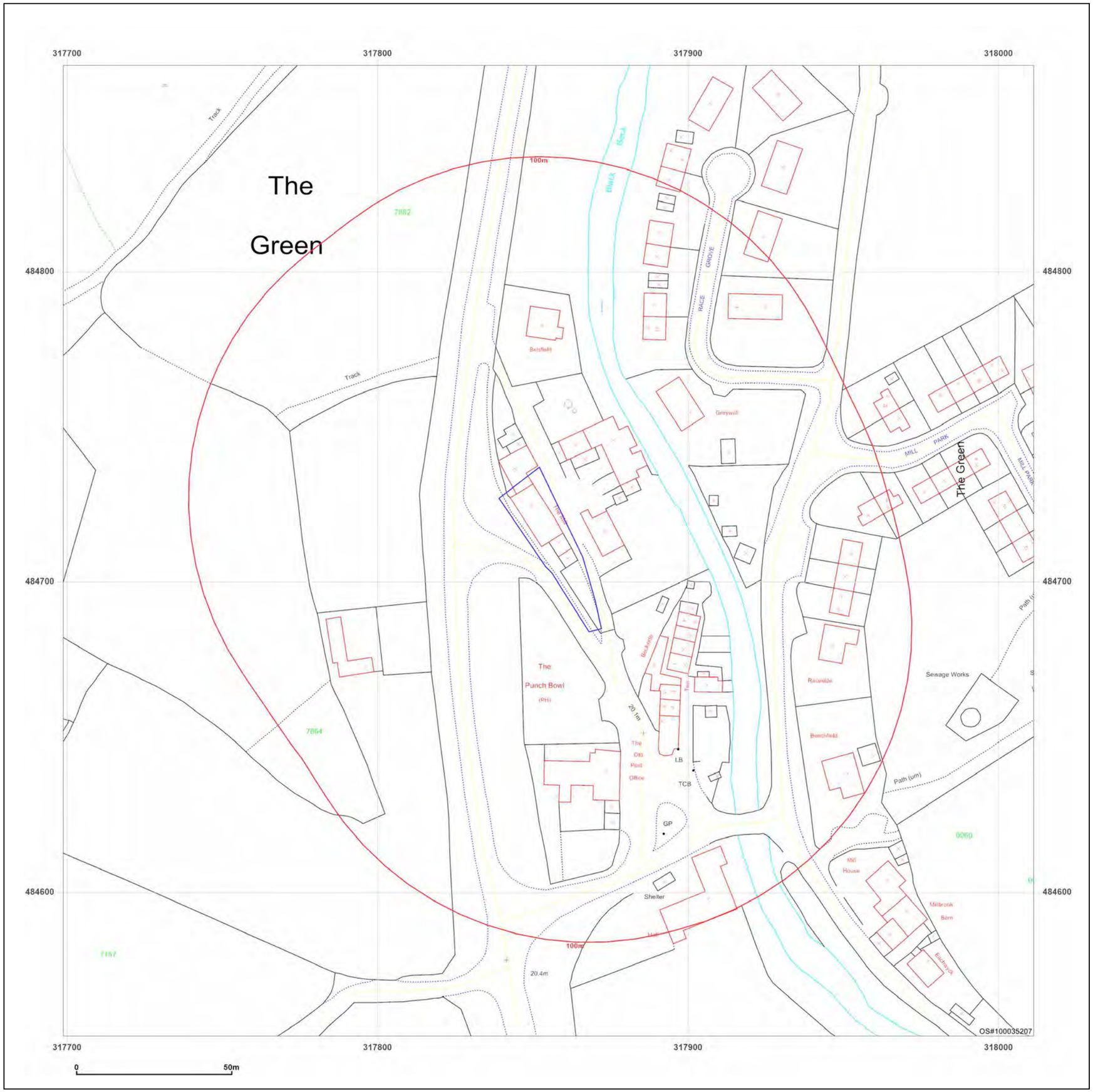

Groundsure INSIGHTS

Site Details:

Upper & Lower Barns, THE GREEN, THE GREEN, LA18 5HJ

Client Ref: 7528-22093-J
Report Ref: GS-8898334
Grid Ref: 317855, 484710

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

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Production date: 12 July 2022

Map legend available at:
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APPENDIX B

Enviro+GeoInsight Report

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

Upper & Lower Barns, THE GREEN, THE GREEN, LA18 5HJ

Order Details

Date: 12/07/2022

Your ref: 7528-22093-J

Our Ref: GS-8898335

Site Details

Location: 317855 484714

Area: 0.06 ha

Authority: Copeland Borough Council

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

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	**1.1**	**Historical industrial land uses**	9	3	16	20	-
16	**1.2**	**Historical tanks**	0	0	1	0	-
17	1.3	Historical energy features	0	0	0	0	-
17	1.4	Historical petrol stations	0	0	0	0	-
17	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**	10	3	19	23	-
22	**2.2**	**Historical tanks**	0	0	1	0	-
22	2.3	Historical energy features	0	0	0	0	-
22	2.4	Historical petrol stations	0	0	0	0	-
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	2	17	0	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
27	**4.1**	**Recent industrial land uses**	0	0	1	-	-
28	4.2	Current or recent petrol stations	0	0	0	0	-
28	4.3	Electricity cables	0	0	0	0	-
28	4.4	Gas pipelines	0	0	0	0	-
28	4.5	Sites determined as Contaminated Land	0	0	0	0	-

28	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
29	4.7	Regulated explosive sites	0	0	0	0	-
29	4.8	Hazardous substance storage/usage	0	0	0	0	-
29	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
29	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
29	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
30	4.12	Radioactive Substance Authorisations	0	0	0	0	-
30	**4.13**	**Licensed Discharges to controlled waters**	0	5	3	1	-
31	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
31	4.15	Pollutant release to public sewer	0	0	0	0	-
32	4.16	List 1 Dangerous Substances	0	0	0	0	-
32	4.17	List 2 Dangerous Substances	0	0	0	0	-
32	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	0	1	-
32	4.19	Pollution inventory substances	0	0	0	0	-
33	4.20	Pollution inventory waste transfers	0	0	0	0	-
33	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
34	**5.1**	**Superficial aquifer**	Identified (within 500m)				
36	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
38	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
39	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
39	5.5	Groundwater vulnerability- local information	None (within 0m)				
40	5.6	Groundwater abstractions	0	0	0	0	0
41	**5.7**	**Surface water abstractions**	0	0	0	0	5
42	**5.8**	**Potable abstractions**	0	0	0	0	5
44	5.9	Source Protection Zones	0	0	0	0	-
44	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
45	**6.1**	**Water Network (OS MasterMap)**	0	1	5	-	-

46	6.2	Surface water features	0	1	5	-	-
46	6.3	WFD Surface water body catchments	1	-	-	-	-
47	6.4	WFD Surface water bodies	0	1	0	-	-
47	6.5	WFD Groundwater bodies	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
48	7.1	Risk of flooding from rivers and the sea	High (within 50m)				
49	7.2	Historical Flood Events	0	0	0	-	-
49	7.3	Flood Defences	0	0	0	-	-
49	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
49	7.5	Flood Storage Areas	0	0	0	-	-
50	7.6	Flood Zone 2	Identified (within 50m)				
51	7.7	Flood Zone 3	Identified (within 50m)				
Page	Section	Surface water flooding					
52	8.1	Surface water flooding	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding					
54	9.1	Groundwater flooding	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
55	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	3
56	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	1
57	10.3	Special Areas of Conservation (SAC)	0	0	0	0	4
58	10.4	Special Protection Areas (SPA)	0	0	0	0	2
58	10.5	National Nature Reserves (NNR)	0	0	0	0	0
59	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
59	10.7	Designated Ancient Woodland	0	0	0	0	15
60	10.8	Biosphere Reserves	0	0	0	0	0
60	10.9	Forest Parks	0	0	0	0	0
60	10.10	Marine Conservation Zones	0	0	0	0	0
60	10.11	Green Belt	0	0	0	0	0
60	10.12	Proposed Ramsar sites	0	0	0	0	0

61	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
61	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
61	10.15	Nitrate Sensitive Areas	0	0	0	0	0
61	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
62	**10.17**	**SSSI Impact Risk Zones**	1	-	-	-	-
63	**10.18**	**SSSI Units**	0	0	0	0	8
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
69	11.1	World Heritage Sites	0	0	0	-	-
69	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
69	11.3	National Parks	0	0	0	-	-
69	11.4	Listed Buildings	0	0	0	-	-
70	11.5	Conservation Areas	0	0	0	-	-
70	11.6	Scheduled Ancient Monuments	0	0	0	-	-
70	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
71	**12.1**	**Agricultural Land Classification**	Grade 3 (within 250m)				
72	12.2	Open Access Land	0	0	0	-	-
72	12.3	Tree Felling Licences	0	0	0	-	-
72	**12.4**	**Environmental Stewardship Schemes**	0	0	5	-	-
73	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
74	**13.1**	**Priority Habitat Inventory**	0	0	2	-	-
75	13.2	Habitat Networks	0	0	0	-	-
75	13.3	Open Mosaic Habitat	0	0	0	-	-
75	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
76	**14.1**	**10k Availability**	Identified (within 500m)				
77	14.2	Artificial and made ground (10k)	0	0	0	0	-
78	14.3	Superficial geology (10k)	0	0	0	0	-

78	14.4	Landslip (10k)	0	0	0	0	-
79	14.5	Bedrock geology (10k)	0	0	0	0	-
79	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
80	**15.1**	**50k Availability**	Identified (within 500m)				
81	15.2	Artificial and made ground (50k)	0	0	0	0	-
81	15.3	Artificial ground permeability (50k)	0	0	-	-	-
82	**15.4**	**Superficial geology (50k)**	1	0	1	1	-
83	**15.5**	**Superficial permeability (50k)**	Identified (within 50m)				
83	15.6	Landslip (50k)	0	0	0	0	-
83	15.7	Landslip permeability (50k)	None (within 50m)				
84	**15.8**	**Bedrock geology (50k)**	2	0	0	5	-
85	**15.9**	**Bedrock permeability (50k)**	Identified (within 50m)				
85	**15.10**	**Bedrock faults and other linear features (50k)**	0	1	0	1	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
86	**16.1**	**BGS Boreholes**	0	0	6	-	-
Page	Section	Natural ground subsidence					
88	**17.1**	**Shrink swell clays**	Very low (within 50m)				
89	**17.2**	**Running sands**	Very low (within 50m)				
91	**17.3**	**Compressible deposits**	Negligible (within 50m)				
92	**17.4**	**Collapsible deposits**	Very low (within 50m)				
93	**17.5**	**Landslides**	Low (within 50m)				
95	**17.6**	**Ground dissolution of soluble rocks**	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
96	18.1	Natural cavities	0	0	0	0	-
97	**18.2**	**BritPits**	0	0	1	2	-
97	**18.3**	**Surface ground workings**	0	1	7	-	-
98	18.4	Underground workings	0	0	0	0	0
98	18.5	Historical Mineral Planning Areas	0	0	0	0	-

98	**18.6**	**Non-coal mining**	1	0	0	1	0
99	18.7	Mining cavities	0	0	0	0	0
99	18.8	JPB mining areas	None (within 0m)				
99	18.9	Coal mining	None (within 0m)				
99	18.10	Brine areas	None (within 0m)				
100	18.11	Gypsum areas	None (within 0m)				
100	18.12	Tin mining	None (within 0m)				
100	18.13	Clay mining	None (within 0m)				

Page	Section	Radon					
101	**19.1**	**Radon**	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
102	**20.1**	**BGS Estimated Background Soil Chemistry**	2	1	-	-	-
102	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
102	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
103	21.1	Underground railways (London)	0	0	0	-	-
103	21.2	Underground railways (Non-London)	0	0	0	-	-
103	21.3	Railway tunnels	0	0	0	-	-
103	21.4	Historical railway and tunnel features	0	0	0	-	-
103	21.5	Royal Mail tunnels	0	0	0	-	-
104	21.6	Historical railways	0	0	0	-	-
104	21.7	Railways	0	0	0	-	-
104	21.8	Crossrail 1	0	0	0	0	-
104	21.9	Crossrail 2	0	0	0	0	-
104	21.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 14/05/2019

Site Area: 0.06ha

Recent site history - 2016 aerial photograph

Capture Date: 31/05/2016

Site Area: 0.06ha

Recent site history - 2010 aerial photograph

Capture Date: 21/04/2010

Site Area: 0.06ha

Recent site history - 2000 aerial photograph

Capture Date: 16/06/2000

Site Area: 0.06ha

Recent site history - 1999 aerial photograph

Capture Date: 10/09/1999

Site Area: 0.06ha

OS MasterMap site plan

Site Area: 0.06ha

1 Past land use

Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

1.1 Historical industrial land uses

Records within 500m	48

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

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

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Mill**	**1923**	**664941**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Corn Mill**	**1919**	**694399**
A	**On site**	**Corn Mill**	**1860**	**696649**
A	**On site**	**Unspecified Mill**	**1927**	**704803**
A	**On site**	**Corn Mill**	**1914**	**710246**
A	**On site**	**Corn Mill**	**1919**	**719899**
A	**On site**	**Unspecified Mill**	**1898**	**777500**
A	**On site**	**Unspecified Mill**	**1951 - 1978**	**780793**
A	**On site**	**Unspecified Mill**	**1927**	**788127**
B	27m SE	Unspecified Mill	1927 - 1951	780293
B	32m SE	Corn Mill	1919	702139
C	39m E	Sewage Works	1978	659689
B	57m SE	Unspecified Mill	1898	737328
B	57m SE	Unspecified Mill	1927	752147
B	73m SE	Corn Mill	1860	710777
B	81m SE	Mill	1923	664939
B	81m SE	Corn Mill	1914 - 1919	751356
D	102m SW	Unspecified Pit	1951	744928
D	110m SW	Unspecified Quarry	1927	783070
D	111m SW	Unspecified Pit	1923	775219
D	115m SW	Unspecified Old Quarry	1898	755145
D	115m SW	Unspecified Quarry	1927	787803
D	121m SW	Old Quarry	1914	658724
D	126m SW	Unspecified Old Quarry	1919	694781
D	126m SW	Unspecified Quarry	1919	755013
E	141m S	Smithy	1914 - 1919	760986
E	160m S	Smithy	1898	698902
E	193m S	Smithy	1919	761645
F	364m SE	Old Limeklin	1914	654693

ID	Location	Land use	Dates present	Group ID
F	364m SE	Old Lime Kilns	1860	641195
F	365m SE	Old Lime Kiln	1919	671180
F	366m SE	Old Lime Kilns	1919	641194
F	390m SE	Gravel Pit	1927	727646
F	390m SE	Gravel Pit	1919	652575
F	390m SE	Gravel Pit	1923	735031
F	391m SE	Gravel Pit	1951	735721
F	395m SE	Gravel Pit	1919	761971
F	398m SE	Gravel Pit	1898	700632
F	417m SE	Gravel Pit	1951	768759
F	418m SE	Gravel Pit	1927	781954
F	419m SE	Gravel Pit	1927	785784
F	419m SE	Gravel Pit	1923	696353
F	433m SE	Gravel Pit	1914	652574
G	437m SW	Gravel Pit	1951	771164
F	459m SE	Saw Pit	1860	680277
G	495m SW	Gravel Pit	1898 - 1926	759179
H	495m NW	Unspecified Pit	1926 - 1951	785718
H	496m NW	Unspecified Old Quarry	1898	680840

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 un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

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

ID	Location	Land use	Dates present	Group ID
C	119m E	Unspecified Tank	1971	80767

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	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 un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m	0

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

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

2 Past land use - un-grouped

Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

2.1 Historical industrial land uses

Records within 500m	55

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

Features are displayed on the Past land use - un-grouped map on **page 19**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Corn Mill**	**1860**	**696649**
A	**On site**	**Unspecified Mill**	**1898**	**777500**
A	**On site**	**Corn Mill**	**1919**	**694399**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Unspecified Mill**	**1927**	**788127**
A	**On site**	**Mill**	**1923**	**664941**
A	**On site**	**Corn Mill**	**1914**	**710246**
A	**On site**	**Unspecified Mill**	**1978**	**780793**
A	**On site**	**Unspecified Mill**	**1951**	**780793**
A	**On site**	**Unspecified Mill**	**1927**	**704803**
A	**On site**	**Corn Mill**	**1919**	**719899**
B	27m SE	Unspecified Mill	1951	780293
B	32m SE	Corn Mill	1919	702139
C	39m E	Sewage Works	1978	659689
B	57m SE	Unspecified Mill	1898	737328
B	57m SE	Unspecified Mill	1927	752147
B	73m SE	Corn Mill	1860	710777
B	81m SE	Unspecified Mill	1927	780293
B	81m SE	Mill	1923	664939
B	81m SE	Corn Mill	1914	751356
B	84m SE	Corn Mill	1919	751356
D	102m SW	Unspecified Pit	1951	744928
D	110m SW	Unspecified Quarry	1927	783070
D	111m SW	Unspecified Pit	1923	775219
D	115m SW	Unspecified Old Quarry	1898	755145
D	115m SW	Unspecified Quarry	1927	787803
D	121m SW	Old Quarry	1914	658724
D	126m SW	Unspecified Old Quarry	1919	694781
D	126m SW	Unspecified Quarry	1919	755013
E	141m S	Smithy	1919	760986
E	160m S	Smithy	1898	698902
E	189m S	Smithy	1914	760986

ID	Location	Land Use	Date	Group ID
E	193m S	Smithy	1919	761645
F	364m SE	Old Limeklin	1914	654693
F	364m SE	Old Lime Kilns	1860	641195
F	365m SE	Old Lime Kiln	1919	671180
F	366m SE	Old Lime Kilns	1919	641194
F	390m SE	Gravel Pit	1927	727646
F	390m SE	Gravel Pit	1923	735031
F	390m SE	Gravel Pit	1919	652575
F	391m SE	Gravel Pit	1951	735721
F	392m SE	Gravel Pit	1927	727646
F	395m SE	Gravel Pit	1919	761971
F	398m SE	Gravel Pit	1898	700632
F	417m SE	Gravel Pit	1951	768759
F	418m SE	Gravel Pit	1927	781954
F	419m SE	Gravel Pit	1927	785784
F	419m SE	Gravel Pit	1923	696353
F	433m SE	Gravel Pit	1914	652574
G	437m SW	Gravel Pit	1951	771164
F	459m SE	Saw Pit	1860	680277
G	495m SW	Gravel Pit	1926	759179
G	495m SW	Gravel Pit	1898	759179
H	495m NW	Unspecified Pit	1951	785718
H	496m NW	Unspecified Pit	1926	785718
H	496m NW	Unspecified Old Quarry	1898	680840

This data is sourced from Ordnance Survey / Groundsure.

2.2 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. 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
C	119m E	Unspecified Tank	1971	80767

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	0

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'.

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	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	19

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
A	31m SE	The Stables, Punch Bowl, The Green, Millom, Cumbria, LA18 5HJ	WEX016432	Disposing of waste exemption	On a farm	Burning waste in the open
A	31m SE	The Stables, Punch Bowl, The Green, Millom, Cumbria, LA18 5HJ	WEX016432	Using waste exemption	On a farm	Use of waste for a specified purpose
B	61m SW	-	WEX175882	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
B	65m SW	stabels MILLOM Cumbria LA18 5HJ	EPR/FH0477GS/A001	Disposing of waste exemption	Agricultural Waste Only	Burning waste in the open
B	65m SW	stabels MILLOM Cumbria LA18 5HJ	EPR/FH0477GS/A001	Using waste exemption	Agricultural Waste Only	Use of waste for a specified purpose
C	222m N	OAKS FARM, THE GREEN, MILLOM, LA18 5HL	WEX287953	Storing waste exemption	On a farm	Storage of waste in a secure place
C	222m N	OAKS FARM, THE GREEN, MILLOM, LA18 5HL	WEX287953	Disposing of waste exemption	On a farm	Burning waste in the open
C	222m N	OAKS FARM, THE GREEN, MILLOM, LA18 5HL	WEX287953	Disposing of waste exemption	On a farm	Deposit of waste from dredging of inland waters
C	222m N	OAKS FARM, THE GREEN, MILLOM, LA18 5HL	WEX287953	Treating waste exemption	On a farm	Cleaning, washing, spraying or coating relevant waste
C	222m N	OAKS FARM, THE GREEN, MILLOM, LA18 5HL	WEX287953	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
C	222m N	OAKS FARM, THE GREEN, MILLOM, LA18 5HL	WEX287953	Using waste exemption	On a farm	Use of waste for a specified purpose
C	222m N	OAKS FARM, THE GREEN, MILLOM, LA18 5HL	WEX287953	Using waste exemption	On a farm	Use of waste in construction
C	222m N	OAKS FARM, THE GREEN, MILLOM, LA18 5HL	WEX148246	Using waste exemption	On a Farm	Use of waste in construction
C	222m N	OAKS FARM, THE GREEN, MILLOM, LA18 5HL	WEX148246	Treating waste exemption	On a Farm	Cleaning, washing, spraying or coating relevant waste
C	222m N	OAKS FARM, THE GREEN, MILLOM, LA18 5HL	WEX148246	Using waste exemption	On a Farm	Spreading waste on agricultural land to confer benefit

ID	Location	Site	Reference	Category	Sub-Category	Description
C	222m N	OAKS FARM, THE GREEN, MILLOM, LA18 5HL	WEX148246	Using waste exemption	On a Farm	Use of waste for a specified purpose
C	222m N	OAKS FARM, THE GREEN, MILLOM, LA18 5HL	WEX148246	Storing waste exemption	On a Farm	Storage of waste in a secure place
C	222m N	OAKS FARM, THE GREEN, MILLOM, LA18 5HL	WEX148246	Disposing of waste exemption	On a Farm	Deposit of waste from dredging of inland waters
C	222m N	OAKS FARM, THE GREEN, MILLOM, LA18 5HL	WEX148246	Disposing of waste exemption	On a Farm	Burning waste in the open

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

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	1

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 27**

ID	Location	Company	Address	Activity	Category
1	115m E	Sewage Works	Cumbria, LA18	Waste Storage, Processing and Disposal	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

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	0

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.

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	9

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

Features are displayed on the Current industrial land use map on **page 27**

ID	Location	Address	Details	
A	29m SE	1 & 3 BECKSIDE, THE GREEN, MILLOM, CUMBRIA, LA18 5HL	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 011200 Permit Version: 1 Receiving Water: BLACK BECK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 27/09/1962 Effective Date: 27/09/1962 Revocation Date: -
A	29m SE	1 & 3 BECKSIDE, THE GREEN, MILLOM, CUMBRIA, LA18 5HL	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 011200 Permit Version: 1 Receiving Water: BLACK BECK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 27/09/1962 Effective Date: 27/09/1962 Revocation Date: -
A	35m SE	1, 2 & 3 POST OFFICE TERRACE, THE GREEN, MILLOM, CUMBRIA, LA18 5HJ	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 011602 Permit Version: 1 Receiving Water: BLACK BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 18/04/1968 Effective Date: 01/06/1970 Revocation Date: -
A	35m SE	1, 2 & 3 POST OFFICE TERRACE, THE GREEN, MILLOM, CUMBRIA, LA18 5HJ	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 011602 Permit Version: 1 Receiving Water: BLACK BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 18/04/1968 Effective Date: 01/06/1970 Revocation Date: -
A	35m SE	1, 2 & 3 POST OFFICE TERRACE, THE GREEN, MILLOM, CUMBRIA, LA18 5HJ	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 011602 Permit Version: 1 Receiving Water: BLACK BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 18/04/1968 Effective Date: 01/06/1970 Revocation Date: -

ID	Location	Address	Details	
B	124m SE	THE GREEN (MILL PARK)STW, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 017470021 Permit Version: 1 Receiving Water: BLACK BECK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 28/12/1979 Revocation Date: 30/01/1985
B	124m SE	THE GREEN (MILL PARK)STW, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 017470021 Permit Version: 2 Receiving Water: BLACK BECK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 31/01/1985 Revocation Date: 25/07/1989
B	124m SE	THE GREEN (MILL PARK)STW, CUMBRIA	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 017470021 Permit Version: 3 Receiving Water: BLACK BECK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: - Effective Date: 26/07/1989 Revocation Date: -
3	348m N	THE OAKS, THE GREEN, MILLOM, CUMBRIA, LA18 5HL	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: NPSWQD007084 Permit Version: 1 Receiving Water: BLIND NOOK	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 16/06/2009 Effective Date: 16/06/2010 Revocation Date: -

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	1

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 27**

ID	Location	Details	
2	312m SE	Incident Date: 12/06/2002 Incident Identification: 84379 Pollutant: Agricultural Materials and Wastes Pollutant Description: Slurry and Dilute Slurry	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) 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.

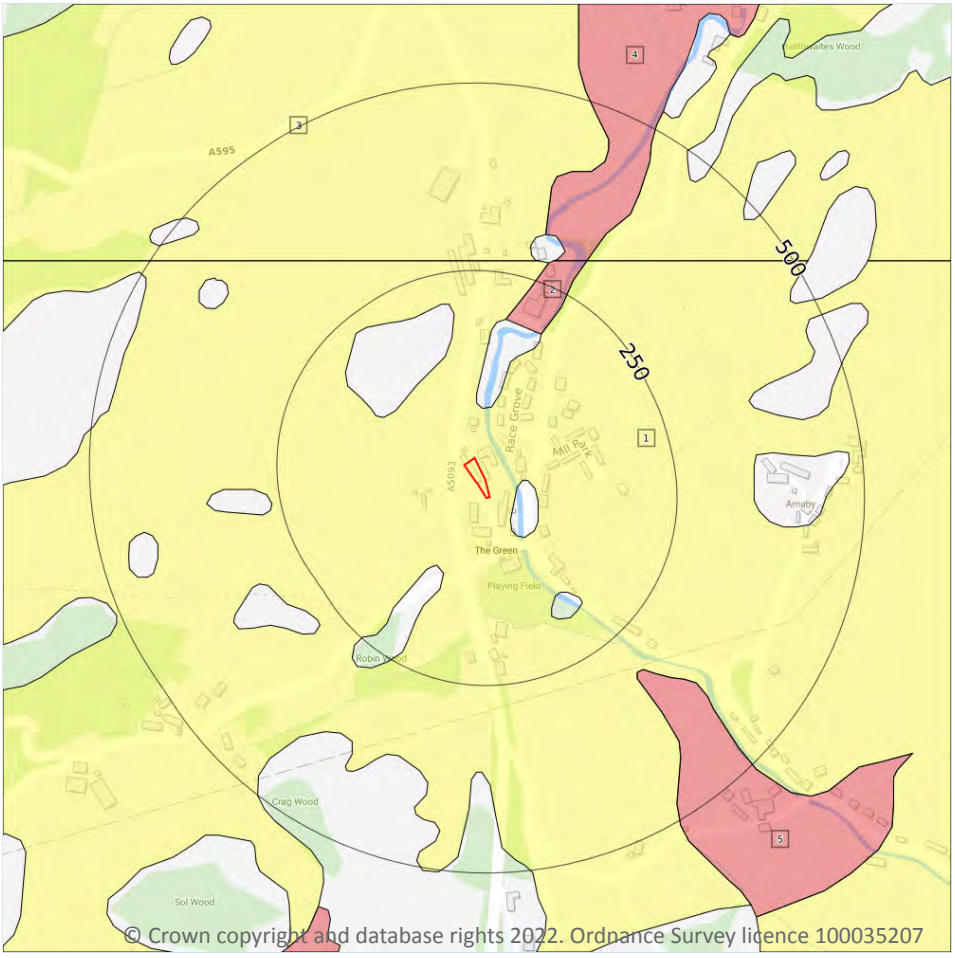
4.21 Pollution inventory radioactive waste

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



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive
- Unknown

5.1 Superficial aquifer

Records within 500m	5

Aquifer status of groundwater held within superficial geology.

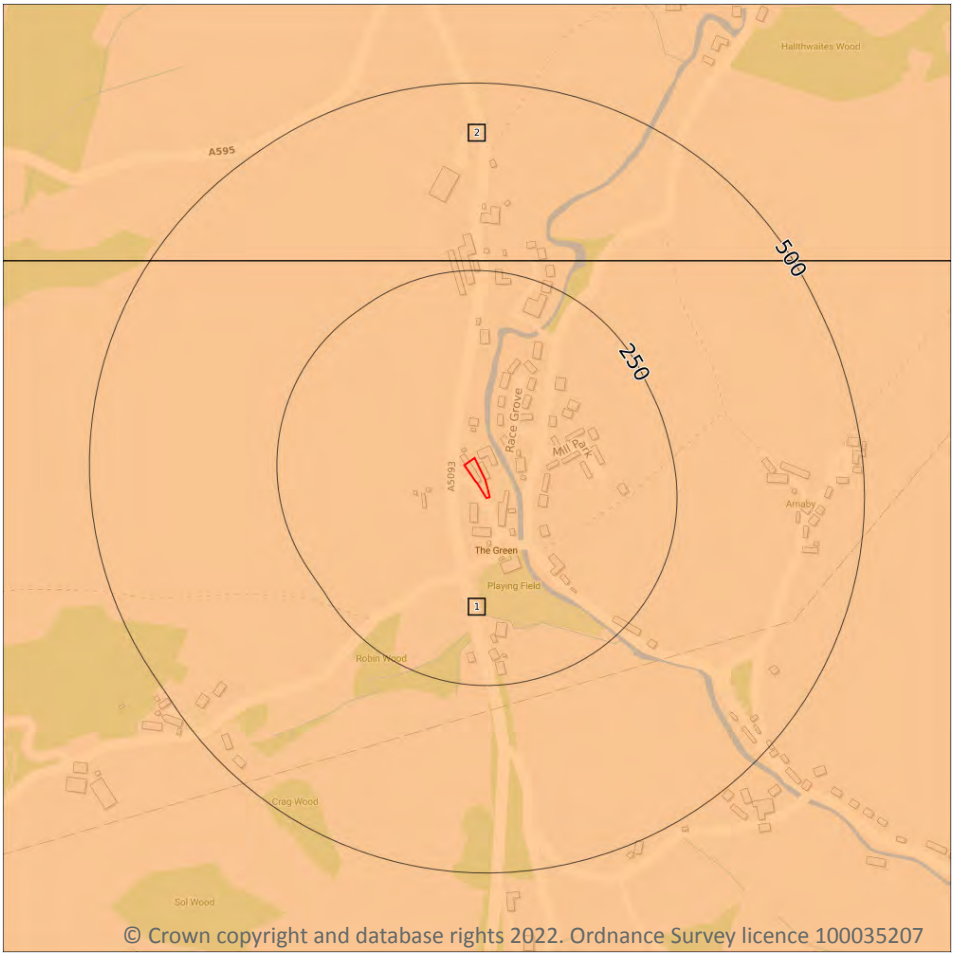
Features are displayed on the Hydrogeology map on **page 34**

ID	Location	Designation	Description
1	**On site**	**Secondary Undifferentiated**	**Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type**
2	187m NE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

ID	Location	Designation	Description
3	263m N	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
4	284m N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
5	306m SE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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	2

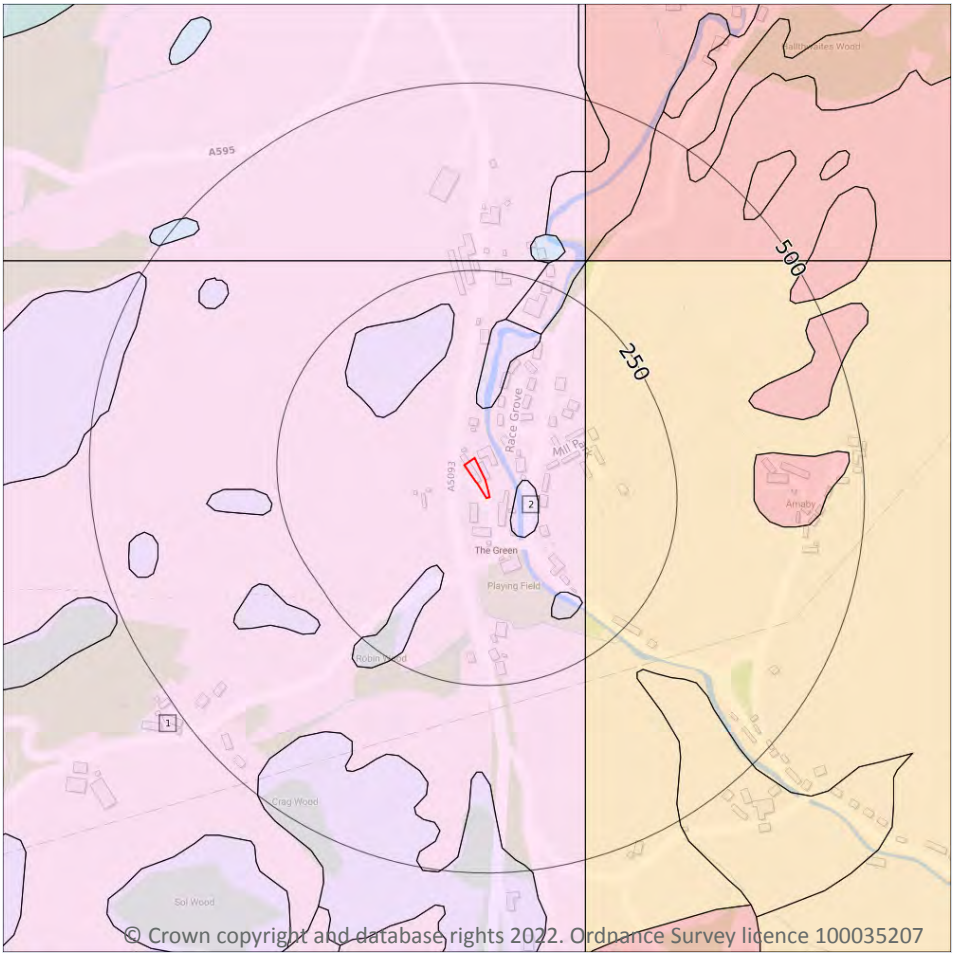
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 36**

ID	Location	Designation	Description
1	**On site**	**Secondary B**	**Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers**
2	263m N	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers

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

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

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

Bedrock vulnerability

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

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	2

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

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

Features are displayed on the Groundwater vulnerability map on **page 38**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	**On site**	**Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: High Infiltration value: 40-70% Dilution value: >550mm/year**	**Vulnerability: Medium Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: Low**	**Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures**
2	33m E	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: 40-70% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	**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
- 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	0

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

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

5.7 Surface water abstractions

Records within 2000m	**5**

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 40**

ID	Location	Details	
-	1385m NW	Status: Historical Licence No: 2674812003 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: BAYSTONE BANK RES STOUPDALE BECK INTAKE ON WITCHAM BECK Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 317100 Northing: 485900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 29/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 07/11/1995 Version End Date: -
-	1385m NW	Status: Historical Licence No: 2674812003 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: BAYSTONE BANK RES STOUPDALE BECK INTAKE ON WITCHAM BECK Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 317100 Northing: 485900	Annual Volume (m^3): - Max Daily Volume (m^3): 6318.94 Original Application No: - Original Start Date: 29/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 07/11/1995 Version End Date: -
-	1861m NW	Status: Historical Licence No: 2674812003 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: BAYSTONE BANK RES STOUPDALE BECK INTAKE ON WITCHAM B457 Data Type: Point Name: NORTH WEST WATER LTD Easting: 316700 Northing: 486200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 29/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 07/11/1995 Version End Date: -

ID	Location	Details	
-	1861m NW	Status: Historical Licence No: 2674812003 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: BAYSTONE BANK RES STOUPDALE BECK INTAKE ON WITCHAM B$457 Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 316700 Northing: 486200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 29/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 07/11/1995 Version End Date: -
-	1861m NW	Status: Historical Licence No: 2674812003 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: BAYSTONE BANK RES STOUPDALE BECK INTAKE ON WITCHAM BECK Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 316700 Northing: 486200	Annual Volume (m^3): - Max Daily Volume (m^3): 6318.94 Original Application No: - Original Start Date: 29/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 07/11/1995 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	**5**

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 40**

ID	Location	Details	
-	1385m NW	Status: Historical Licence No: 2674812003 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: BAYSTONE BANK RES STOUPDALE BECK INTAKE ON WITCHAM BECK Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 317100 Northing: 485900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 29/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 07/11/1995 Version End Date: -

ID	Location	Details	
-	1385m NW	Status: Historical Licence No: 2674812003 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: BAYSTONE BANK RES STOUPDALE BECK INTAKE ON WITCHAM BECK Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 317100 Northing: 485900	Annual Volume (m^3): - Max Daily Volume (m^3): 6318.94 Original Application No: - Original Start Date: 29/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 07/11/1995 Version End Date: -
-	1861m NW	Status: Historical Licence No: 2674812003 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: BAYSTONE BANK RES STOUPDALE BECK INTAKE ON WITCHAM B457 Data Type: Point Name: NORTH WEST WATER LTD Easting: 316700 Northing: 486200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 29/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 07/11/1995 Version End Date: -
-	1861m NW	Status: Historical Licence No: 2674812003 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: BAYSTONE BANK RES STOUPDALE BECK INTAKE ON WITCHAM B$457 Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 316700 Northing: 486200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 29/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 07/11/1995 Version End Date: -
-	1861m NW	Status: Historical Licence No: 2674812003 Details: Potable Water Supply - Direct Direct Source: Surface, Non-Tidal - North West Region Point: BAYSTONE BANK RES STOUPDALE BECK INTAKE ON WITCHAM BECK Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 316700 Northing: 486200	Annual Volume (m^3): - Max Daily Volume (m^3): 6318.94 Original Application No: - Original Start Date: 29/04/1966 Expiry Date: - Issue No: 100 Version Start Date: 07/11/1995 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	0

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

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

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

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

6 Hydrology

Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	**6**

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

Features are displayed on the Hydrology map on **page 45**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	31m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Black Beck

ID	Location	Type of water feature	Ground level	Permanence	Name
4	73m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Black Beck
C	80m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Black Beck
C	156m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	182m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	182m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	**6**

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

Features are displayed on the Hydrology map on **page 45**

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 45**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
2	**On site**	**River**	**Black Beck**	**GB112074069850**	**Duddon**	**South West Lakes**

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 45**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
3	32m NE	River	Black Beck	GB112074069850	Moderate	Fail	Good	2019

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

6.5 WFD Groundwater bodies

Records on site	1

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

Features are displayed on the Hydrology map on **page 45**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
1	**On site**	**South Cumbria Lower Palaeozoic and Carboniferous Aquifers**	**GB41202G102100**	**Good**	**Good**	**Good**	**2019**

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

7 River and coastal flooding

Site Outline

Search buffers in metres (m)

River and coastal flooding:

High

Medium

Low

Very Low

Historical Flood Events

Areas Used for Flood Storage

Areas Benefiting from Flood Defences

Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m	3

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).

Features are displayed on the River and coastal flooding map on **page 48**

Distance	Flood risk category
On site	**N/A**
0 - 50m	High

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

Site Outline

Search buffers in metres (m)

Flood zone 2

Flood zone 3

7.6 Flood Zone 2

Records within 50m	1

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

Features are displayed on the River and coastal flooding map on **page 48**

Location	Type
28m NE	Zone 2 - (Fluvial /Tidal Models)

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

7.7 Flood Zone 3

Records within 50m	1

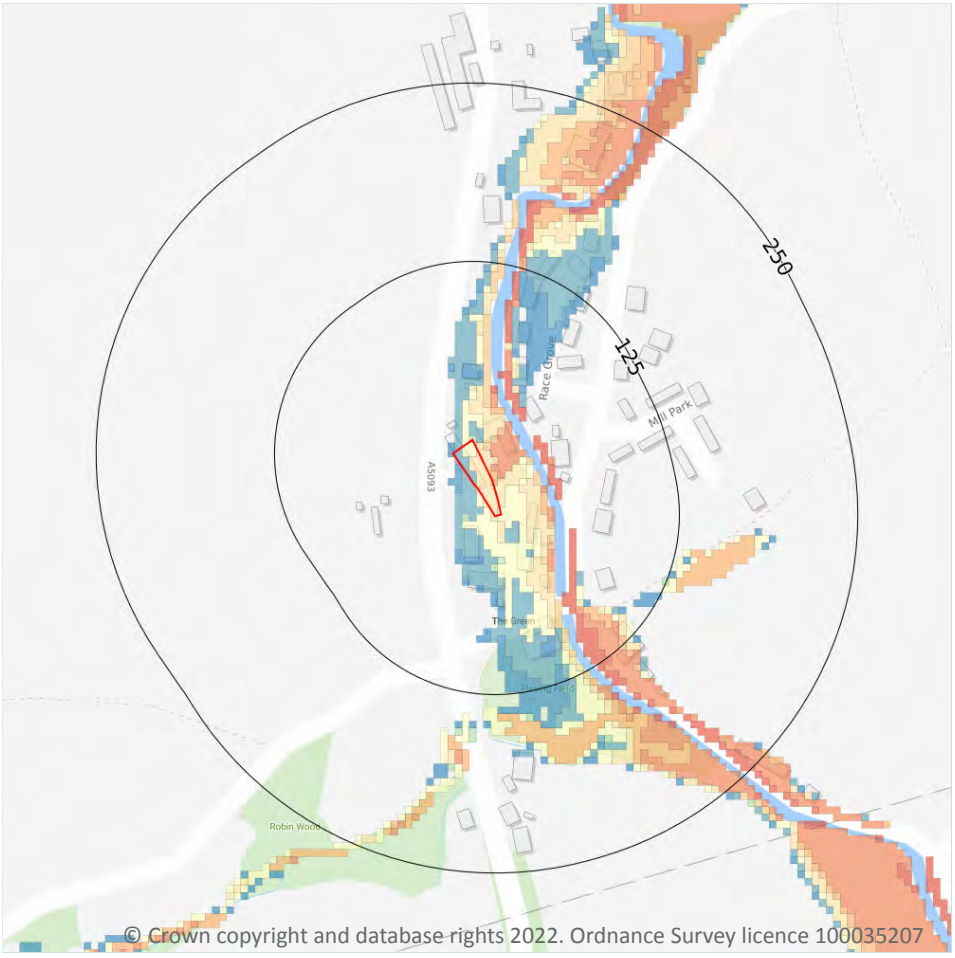
Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

Features are displayed on the River and coastal flooding map on **page 48**

Location	Type
28m NE	Zone 3 - (Fluvial Models)

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

8 Surface water flooding



Site Outline
Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site	**1 in 30 year, 0.1m - 0.3m**
Highest risk within 50m	**1 in 30 year, Greater than 1.0m**

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

Features are displayed on the Surface water flooding map on **page 52**

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	Greater than 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.1m and 0.3m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding

Site Outline

Search buffers in metres (m)

High

Moderate - High

Moderate

Low

Negligible

9.1 Groundwater flooding

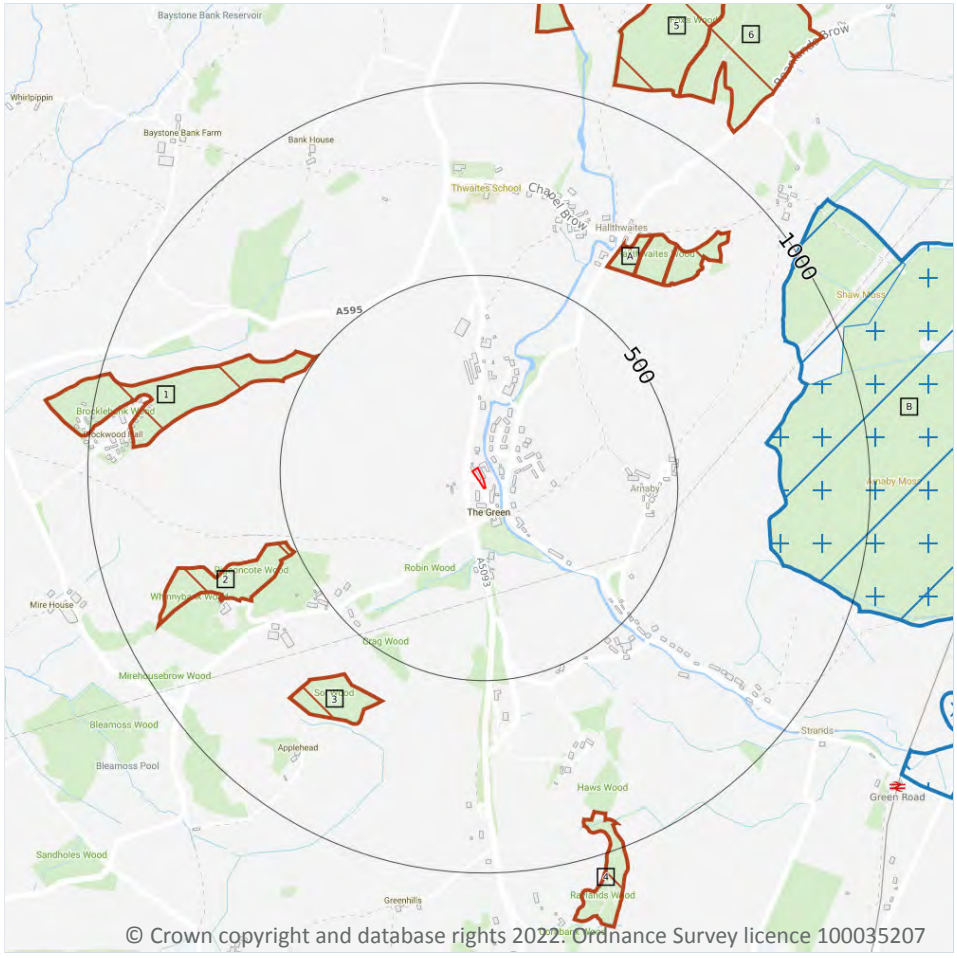
Highest risk on site	**Low**
Highest risk within 50m	**Low**

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

Features are displayed on the Groundwater flooding map on **page 54**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

- Sites of Special Scientific Interest (SSSI)
- Conserved wetland sites (Ramsar sites)
- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	3

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.

Features are displayed on the Environmental designations map on **page 55**

ID	Location	Name	Data source
B	740m E	Duddon Mosses	Natural England

ID	Location	Name	Data source
10	1287m E	Duddon Estuary	Natural England
-	1287m E	Duddon Mosses	Natural England

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	**1**

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.

Features are displayed on the Environmental designations map on **page 55**

ID	Location	Site	Details
11	1286m E	Name: Duddon Estuary Site status: Listed Data source: Natural England	Overview: Duddon Estuary is formed by the River Duddon and the smaller Kirkby Pool opening into the Irish Sea in south-western Cumbria. Most of the site consists of intertidal sand and mudflats, important for large numbers of wintering and passage waterfowl. A range of grazed and ungrazed saltmarsh habitats occur around the edge of the estuary, especially the sheltered inner section. The site is the most important in Cumbria for sand-dune communities including large areas of calcareous dunes at Sandscale and Haverigg Haws and contrasting acid dunes on North Walney. Artificial habitats include slag banks and a flooded mine working known as Hodbarrow Lagoon, the largest coastal lagoon in north-west England. Ramsar criteria: Ramsar criterion 2 Supports nationally important numbers of the rare natterjack toad Bufo calamita, near the north-western edge of its range (an estimated 18-24% of the British population). Supports a rich assemblage of wetland plants and invertebrates - at least one nationally scarce plant and at least two British Red Data Book invertebrates. Ramsar criterion 4 The site supports nationally important numbers of waterfowl during spring and autumn passage.

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	**4**

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.

Features are displayed on the Environmental designations map on **page 55**

ID	Location	Name	Features of interest	Habitat description	Data source
B	740m E	Duddon Mosses	Active raised bogs; Degraded raised bog.	Improved grassland; Dry grassland, Steppes; Bogs, Marshes, Water fringed vegetation, Fens	Natural England
9	1287m E	Morecambe Bay	Subtidal sandbanks; Estuaries; Intertidal mudflats and sandflats; Lagoons; Shallow inlets and bays; Reefs; Coastal shingle vegetation outside the reach of waves; Glasswort and other annuals colonising mud and sand; Cord-grass swards; Atlantic salt meadows; Shifting dunes; Shifting dunes with marram; Dune grassland; Coastal dune heathland; Dunes with creeping willow; Humid dune slacks; Great crested newt; Sea lamprey; Twaite shad; Grey seal.	Shingle, Sea cliffs, Islets; Marine areas, Sea inlets; Coastal sand dunes, Sand beaches, Machair	Natural England
-	1557m E	Morecambe Bay	Subtidal sandbanks; Estuaries; Intertidal mudflats and sandflats; Lagoons; Shallow inlets and bays; Reefs; Coastal shingle vegetation outside the reach of waves; Glasswort and other annuals colonising mud and sand; Cord-grass swards; Atlantic salt meadows; Shifting dunes; Shifting dunes with marram; Dune grassland; Coastal dune heathland; Dunes with creeping willow; Humid dune slacks; Great crested newt; Sea lamprey; Twaite shad; Grey seal.	Shingle, Sea cliffs, Islets; Marine areas, Sea inlets; Coastal sand dunes, Sand beaches, Machair	Natural England
-	1914m SE	Morecambe Bay	Subtidal sandbanks; Estuaries; Intertidal mudflats and sandflats; Lagoons; Shallow inlets and bays; Reefs; Coastal shingle vegetation outside the reach of waves; Glasswort and other annuals colonising mud and sand; Cord-grass swards; Atlantic salt meadows; Shifting dunes; Shifting dunes with marram; Dune grassland; Coastal dune heathland; Dunes with creeping willow; Humid dune slacks; Great crested newt; Sea lamprey; Twaite shad; Grey seal.	Shingle, Sea cliffs, Islets; Marine areas, Sea inlets; Coastal sand dunes, Sand beaches, Machair	Natural England

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

10.4 Special Protection Areas (SPA)

Records within 2000m	2

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.

Features are displayed on the Environmental designations map on **page 55**

ID	Location	Name	Species of interest	Habitat description	Data source
-	1283m E	Morecambe Bay and Duddon Estuary	Little egret; Whooper swan; Pink-footed goose; Common shelduck; Northern pintail; Eurasian oystercatcher; Ringed plover; European golden plover; Grey plover; Red knot; Sanderling; Ruff; Bar-tailed godwit; Eurasian curlew; Common redshank; Ruddy turnstone; Mediterranean gull; Lesser black-backed gull; Lesser black-backed gull; Herring gull; Sandwich tern; Common tern; Little tern; Black-tailed godwit; Dunlin	Marine areas, Sea inlets; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Salt marshes, Salt pastures, Salt steppes; Coastal sand dunes, Sand beaches, Machair; Shingle, Sea cliffs, Islets; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	Natural England
13	1298m SE	Morecambe Bay and Duddon Estuary	Little egret; Whooper swan; Pink-footed goose; Common shelduck; Northern pintail; Eurasian oystercatcher; Ringed plover; European golden plover; Grey plover; Red knot; Sanderling; Ruff; Bar-tailed godwit; Eurasian curlew; Common redshank; Ruddy turnstone; Mediterranean gull; Lesser black-backed gull; Lesser black-backed gull; Herring gull; Sandwich tern; Common tern; Little tern; Black-tailed godwit; Dunlin	Marine areas, Sea inlets; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Salt marshes, Salt pastures, Salt steppes; Coastal sand dunes, Sand beaches, Machair; Shingle, Sea cliffs, Islets; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	Natural England

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

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

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

10.7 Designated Ancient Woodland

Records within 2000m	15

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 55**

ID	Location	Name	Woodland Type
1	505m NW	Brocklebank Wood	Ancient Replanted Woodland
2	508m SW	Whinnybank Wood	Ancient & Semi-Natural Woodland
3	604m SW	Unknown	Ancient & Semi-Natural Woodland
A	621m NE	Hallthwaits Wood	Ancient & Semi-Natural Woodland
A	644m NE	Hallthwaits Wood	Ancient Replanted Woodland
A	676m NE	Hallthwaits Wood	Ancient & Semi-Natural Woodland
4	888m S	Raylands Wood	Ancient & Semi-Natural Woodland
5	1057m N	Foxs Wood	Ancient & Semi-Natural Woodland
6	1097m NE	Foxs Wood	Ancient Replanted Woodland
7	1144m N	Gibson Park Wood	Ancient & Semi-Natural Woodland
-	1300m W	Unknown	Ancient Replanted Woodland
-	1434m N	Gibson Park Wood	Ancient Replanted Woodland
-	1461m S	Cragfield Wood	Ancient Replanted Woodland
-	1468m NE	Foxs Wood	Ancient & Semi-Natural Woodland
-	1792m NE	Frith Wood	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.

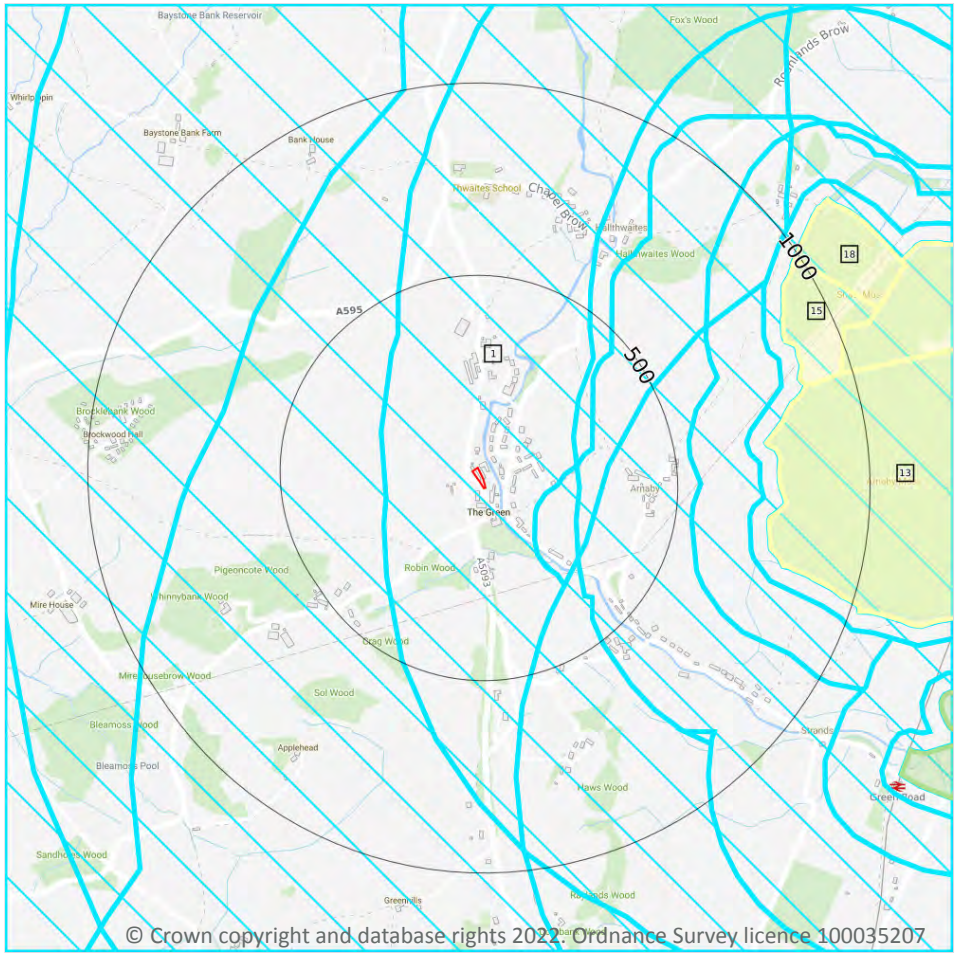
10.16 Nitrate Vulnerable Zones

Records within 2000m	0

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.

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 62**

ID	Location	Type of developments requiring consultation
1	On site	**Infrastructure - Pipelines, pylons and overhead cables. any transport proposal including road, rail and by water (excluding routine maintenance). airports, helipads and other aviation proposals. Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, review of minerals permissions (romp), extensions, variations to conditions etc. oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where net additional gross internal floorspace is > 1,000m² or footprint exceeds 0.2ha. Residential - Residential development of 50 units or more. Rural residential - Any residential development of 10 or more houses outside existing settlements/urban areas. Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t). Combustion - General combustion processes >20mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 500 tonnes maximum annual operational throughput. incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Discharges - Any discharge of water or liquid waste of more than 5m³/day to ground (ie to seep away) or to surface water, such as a beck or stream. Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply .**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	**8**

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.

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

ID:	13
Location:	740m E
SSSI name:	Duddon Mosses
Unit name:	Arnaby Moss [Within Sac]
Broad habitat:	Bogs - Lowland
Condition:	Unfavourable - Recovering
Reportable features:	

Feature name	Feature condition	Date of assessment
H7110 Active raised bogs	Unfavourable - Recovering	03/01/2020
H7120 Degraded raised bogs (still capable of natural regeneration)	Unfavourable - Recovering	03/01/2020
Invert. assemblage W311 open water in acid mire	Unfavourable - Recovering	03/01/2020
Invert. assemblage W312 sphagnum bog	Unfavourable - Recovering	03/01/2020
Raised bog (lowland)	Unfavourable - Recovering	03/01/2020

ID: 15
Location: 863m E
SSSI name: Duddon Mosses
Unit name: Shaw Moss [Non Sac]
Broad habitat: Bogs - Lowland
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Raised bog (lowland)	Unfavourable - Recovering	03/01/2020

ID: 17
Location: 971m E
SSSI name: Duddon Mosses
Unit name: Shaw Moss [Within Sac]
Broad habitat: Bogs - Lowland
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
H7110 Active raised bogs	Unfavourable - Recovering	03/01/2020
H7120 Degraded raised bogs (still capable of natural regeneration)	Unfavourable - Recovering	03/01/2020
Invert. assemblage W311 open water in acid mire	Unfavourable - Recovering	03/01/2020
Invert. assemblage W312 sphagnum bog	Unfavourable - Recovering	03/01/2020
Raised bog (lowland)	Unfavourable - Recovering	03/01/2020

ID: 18
Location: 972m NE
SSSI name: Duddon Mosses
Unit name: Shaw Moss [Non Sac]
Broad habitat: Bogs - Lowland
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Raised bog (lowland)	Unfavourable - Recovering	12/03/2014

ID: 26
Location: 1287m E
SSSI name: Duddon Estuary
Unit name: Millom Marsh
Broad habitat: Littoral Sediment
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Aggregations of non-breeding birds - Curlew, Numenius arquata	Favourable	01/02/2021
Aggregations of non-breeding birds - Dunlin, Calidris alpina alpina	Favourable	01/02/2021
Aggregations of non-breeding birds - Knot, Calidris canutus	Favourable	01/02/2021
Aggregations of non-breeding birds - Oystercatcher, Haematopus ostralegus	Favourable	01/02/2021
Aggregations of non-breeding birds - Pintail, Anas acuta	Favourable	01/02/2021
Aggregations of non-breeding birds - Red-breasted merganser, Mergus serrator	Favourable	01/02/2021
Aggregations of non-breeding birds - Redshank, Tringa totanus	Favourable	01/02/2021
Aggregations of non-breeding birds - Ringed plover, Charadrius hiaticula	Favourable	01/02/2021
Aggregations of non-breeding birds - Sanderling, Calidris alba	Favourable	01/02/2021
Aggregations of non-breeding birds - Shelduck, Tadorna tadorna	Favourable	01/02/2021
Assemblages of breeding birds - Sand-dunes and saltmarshes	Not Recorded	01/01/1900
H1130 Estuaries	Favourable	29/04/2010
H1140 Mudflats and sandflats not covered by seawater at low tide	Favourable	29/04/2010
H1160 Large shallow inlets and bays	Favourable	29/04/2010

Feature name	Feature condition	Date of assessment
H1310 Salicornia and other annuals colonising mud and sand	Favourable	29/04/2010
H1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	Favourable	29/04/2010
Natterjack toad, Bufo calamita	Not Recorded	01/01/1900
SM4-28 - Saltmarsh	Favourable	24/10/2010

ID: -
Location: 1287m E
SSSI name: Duddon Mosses
Unit name: Arnaby Moss Fen [Non Sac]
Broad habitat: Bogs - Lowland
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Lowland wetland including basin fen, valley fen, floodplain fen, waterfringe fen, spring/flush fen and raised bog lagg	Unfavourable - Recovering	27/02/2015

ID: -
Location: 1897m SE
SSSI name: Duddon Estuary
Unit name: Millom Marsh
Broad habitat: Littoral Sediment
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Aggregations of non-breeding birds - Curlew, Numenius arquata	Favourable	01/02/2021
Aggregations of non-breeding birds - Dunlin, Calidris alpina alpina	Favourable	01/02/2021
Aggregations of non-breeding birds - Knot, Calidris canutus	Favourable	01/02/2021
Aggregations of non-breeding birds - Oystercatcher, Haematopus ostralegus	Favourable	01/02/2021
Aggregations of non-breeding birds - Pintail, Anas acuta	Favourable	01/02/2021
Aggregations of non-breeding birds - Red-breasted merganser, Mergus serrator	Favourable	01/02/2021
Aggregations of non-breeding birds - Redshank, Tringa totanus	Favourable	01/02/2021
Aggregations of non-breeding birds - Ringed plover, Charadrius hiaticula	Favourable	01/02/2021

Feature name	Feature condition	Date of assessment
Aggregations of non-breeding birds - Sanderling, Calidris alba	Favourable	01/02/2021
Aggregations of non-breeding birds - Shelduck, Tadorna tadorna	Favourable	01/02/2021
Assemblages of breeding birds - Sand-dunes and saltmarshes	Not Recorded	01/01/1900
H1130 Estuaries	Favourable	11/05/2010
H1140 Mudflats and sandflats not covered by seawater at low tide	Favourable	11/05/2010
H1160 Large shallow inlets and bays	Favourable	11/05/2010
H1310 Salicornia and other annuals colonising mud and sand	Favourable	11/05/2010
H1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	Favourable	11/05/2010
Natterjack toad, Bufo calamita	Not Recorded	01/01/1900
SM4-28 - Saltmarsh	Favourable	24/06/2010

ID: -
Location: 1974m NE
SSSI name: Duddon Estuary
Unit name: Lady Hall Marsh
Broad habitat: Littoral Sediment
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Aggregations of non-breeding birds - Curlew, Numenius arquata	Favourable	01/02/2021
Aggregations of non-breeding birds - Dunlin, Calidris alpina alpina	Favourable	01/02/2021
Aggregations of non-breeding birds - Knot, Calidris canutus	Favourable	01/02/2021
Aggregations of non-breeding birds - Oystercatcher, Haematopus ostralegus	Favourable	01/02/2021
Aggregations of non-breeding birds - Pintail, Anas acuta	Favourable	01/02/2021
Aggregations of non-breeding birds - Red-breasted merganser, Mergus serrator	Favourable	01/02/2021
Aggregations of non-breeding birds - Redshank, Tringa totanus	Favourable	01/02/2021
Aggregations of non-breeding birds - Ringed plover, Charadrius hiaticula	Favourable	01/02/2021
Aggregations of non-breeding birds - Sanderling, Calidris alba	Favourable	01/02/2021
Aggregations of non-breeding birds - Shelduck, Tadorna tadorna	Favourable	01/02/2021
Assemblages of breeding birds - Sand-dunes and saltmarshes	Not Recorded	01/01/1900

Feature name	Feature condition	Date of assessment
H1130 Estuaries	Favourable	30/04/2010
H1140 Mudflats and sandflats not covered by seawater at low tide	Favourable	30/04/2010
H1160 Large shallow inlets and bays	Favourable	30/04/2010
H1310 Salicornia and other annuals colonising mud and sand	Favourable	30/04/2010
H1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	Favourable	30/04/2010
Natterjack toad, Bufo calamita	Not Recorded	01/01/1900
SM4-28 - Saltmarsh	Favourable	24/06/2010

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

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 71**

ID	Location	Classification	Description
1	On site	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.**

ID	Location	Classification	Description
2	244m SE	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

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	**5**

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.

Location	Reference	Scheme	Start Date	End date
108m NE	AG00579133	Entry Level Stewardship	01/05/2014	30/04/2019
126m S	AG00448078	Entry Level Stewardship	01/09/2013	31/08/2018
136m SW	AG00450296	Entry Level Stewardship	01/07/2013	30/06/2018
143m NW	AG00579133	Entry Level Stewardship	01/05/2014	30/04/2019
223m NE	AG00579133	Entry Level Stewardship	01/05/2014	30/04/2019

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

Site Outline

Search buffers in metres (m)

Priority Habitat Inventory
Open Mosaic Habitat
Limestone Pavement Orders

Habitat Networks
Primary Habitat
Restorable Habitat
Associated Habitats
Habitat Restoration-Creation
Network Enhancement Zone 1
Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m	2

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

Features are displayed on the Habitat designations map on **page 74**

ID	Location	Main Habitat	Other habitats
1	183m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	242m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

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 76**

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

This data is sourced from the British Geological Survey.

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

14.2 Artificial and made ground (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

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

14.5 Bedrock geology (10k)

Records within 500m	0

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.

This data is sourced from the British Geological Survey.

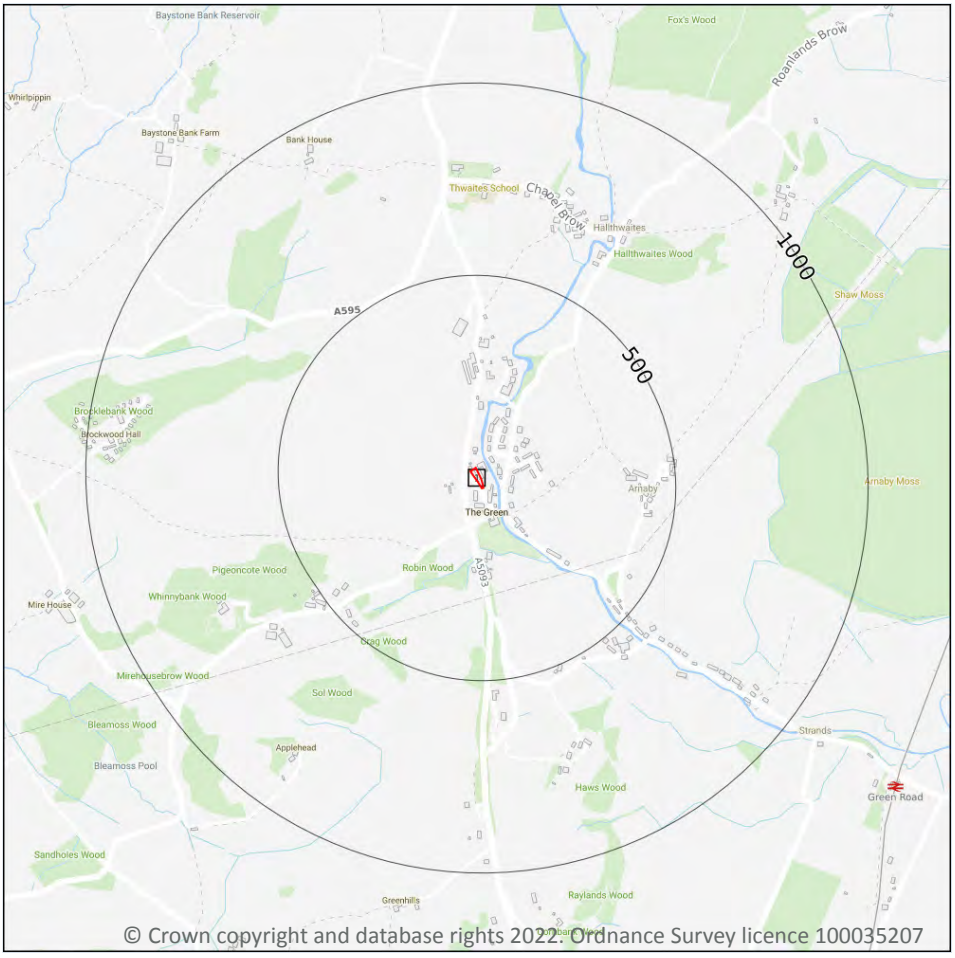
14.6 Bedrock faults and other linear features (10k)

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 80**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW048_ulverston_v4**

This data is sourced from the British Geological Survey.

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

15.2 Artificial and made ground (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

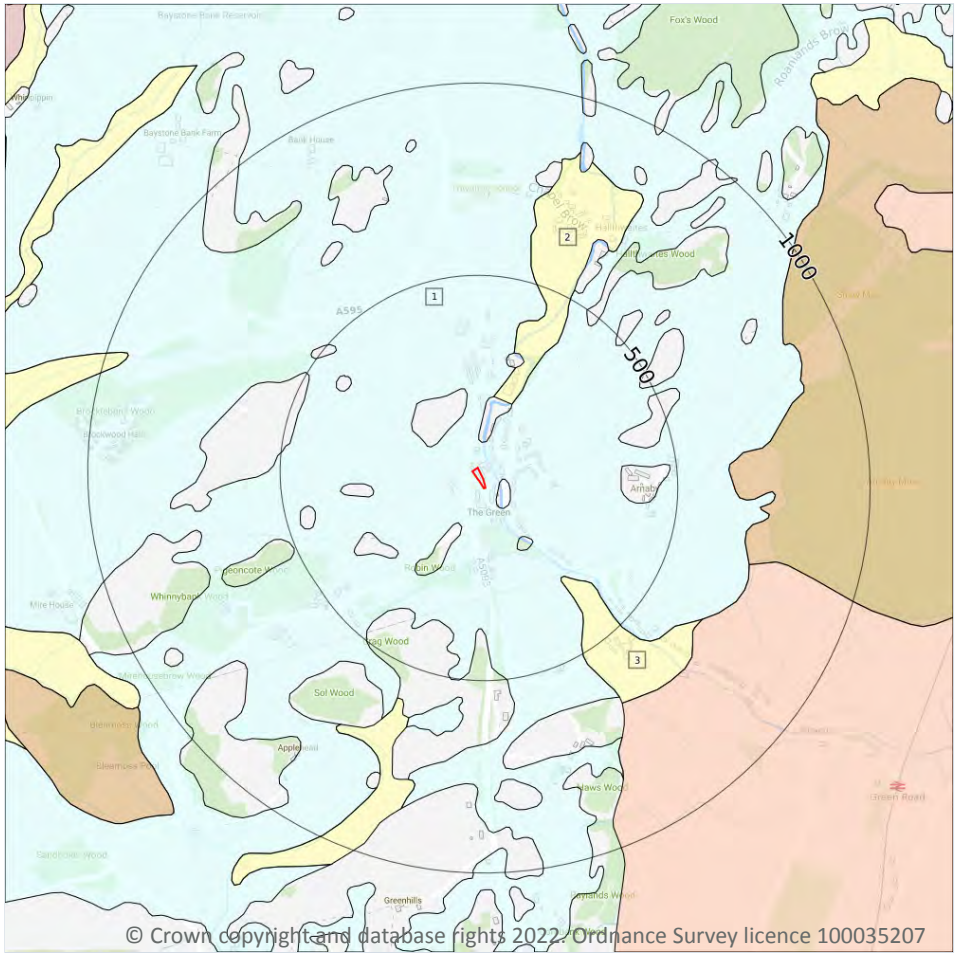
15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m **3**

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 82**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILLD-DMTN**	**TILL, DEVENSIAN**	**DIAMICTON**
2	187m NE	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
3	306m SE	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

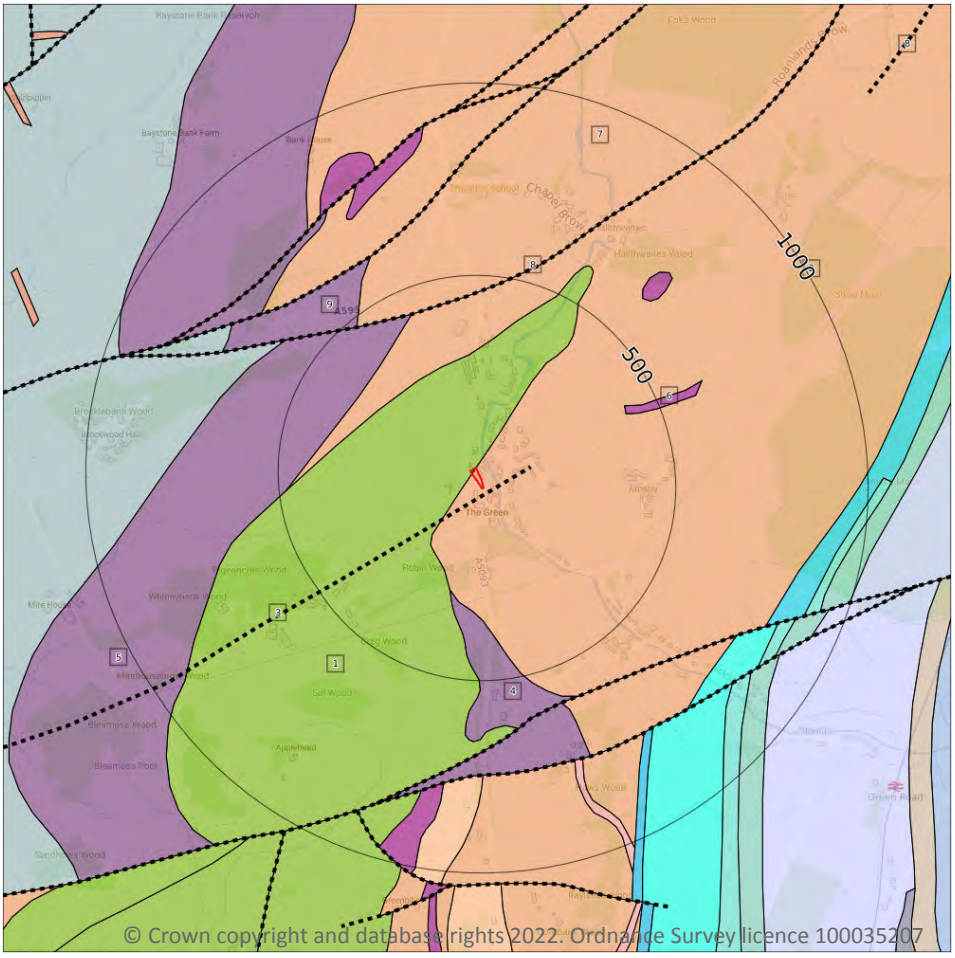
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m **7**

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 84**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**BVGS-BA**	**BORROWDALE SILL SUITE - BASALT**	**-**
2	**On site**	**WB-LPTUF**	**WABERTHWAITE TUFF FORMATION - LAPILLI-TUFF**	**-**
4	276m S	WNB-LPTUF	WHINNY BANK TUFF FORMATION - LAPILLI-TUFF	-
5	350m NW	WNB-LPTUF	WHINNY BANK TUFF FORMATION - LAPILLI-TUFF	-

ID	Location	LEX Code	Description	Rock age
6	413m NE	LDOMI-BAANDT	LAKE DISTRICT ORDOVICIAN MINOR INTRUSION SUITE - BASALTIC-ANDESITE (TAS)	-
7	431m N	WB-LPTUF	WABERTHWAITE TUFF FORMATION - LAPILLI-TUFF	-
9	477m NW	WNB-LPTUF	WHINNY BANK TUFF FORMATION - LAPILLI-TUFF	-

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m **2**

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**Low**	**Low**
On site	**Fracture**	**Low**	**Low**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m **2**

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.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 84**

ID	Location	Category	Description
3	16m SE	FOLD_AXIS	Axial plane trace of major syncline
8	431m N	FAULT	Fault, inferred, displacement unknown

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	6

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 86**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	64m SE	317897 484626	Hallthwaites, The Green and Strands First Time Regional Sewerage, Cumbria BH4	-	Y	N/A
2	81m SE	317928 484626	Hallthwaites, The Green and Strands First Time Regional Sewerage, Cumbria BH5	-	Y	N/A

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	120m S	317849 484565	Hallthwaites, The Green and Strands First Time Regional Sewerage, Cumbria BH3A	-	Y	N/A
A	121m S	317849 484564	Hallthwaites, The Green and Strands First Time Regional Sewerage, Cumbria BH3C	-	Y	N/A
A	126m S	317850 484559	Hallthwaites, The Green and Strands First Time Regional Sewerage, Cumbria BH3B	-	Y	N/A
3	138m E	318008 484660	Hallthwaites, The Green and Strands First Time Regional Sewerage, Cumbria BH10	-	Y	N/A

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays

Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	2

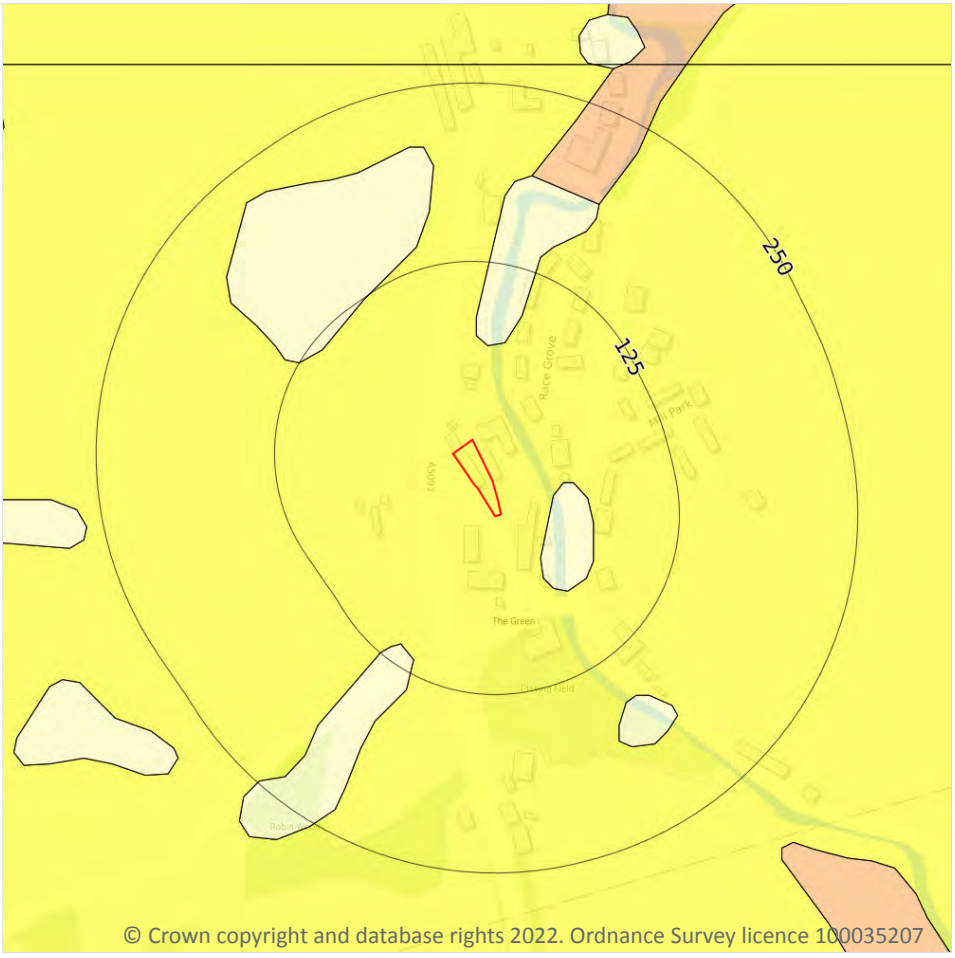
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 88**

Location	Hazard rating	Details
On site	**Very low**	**Ground conditions predominantly low plasticity.**
33m E	Negligible	Ground conditions predominantly non-plastic.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	2

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.

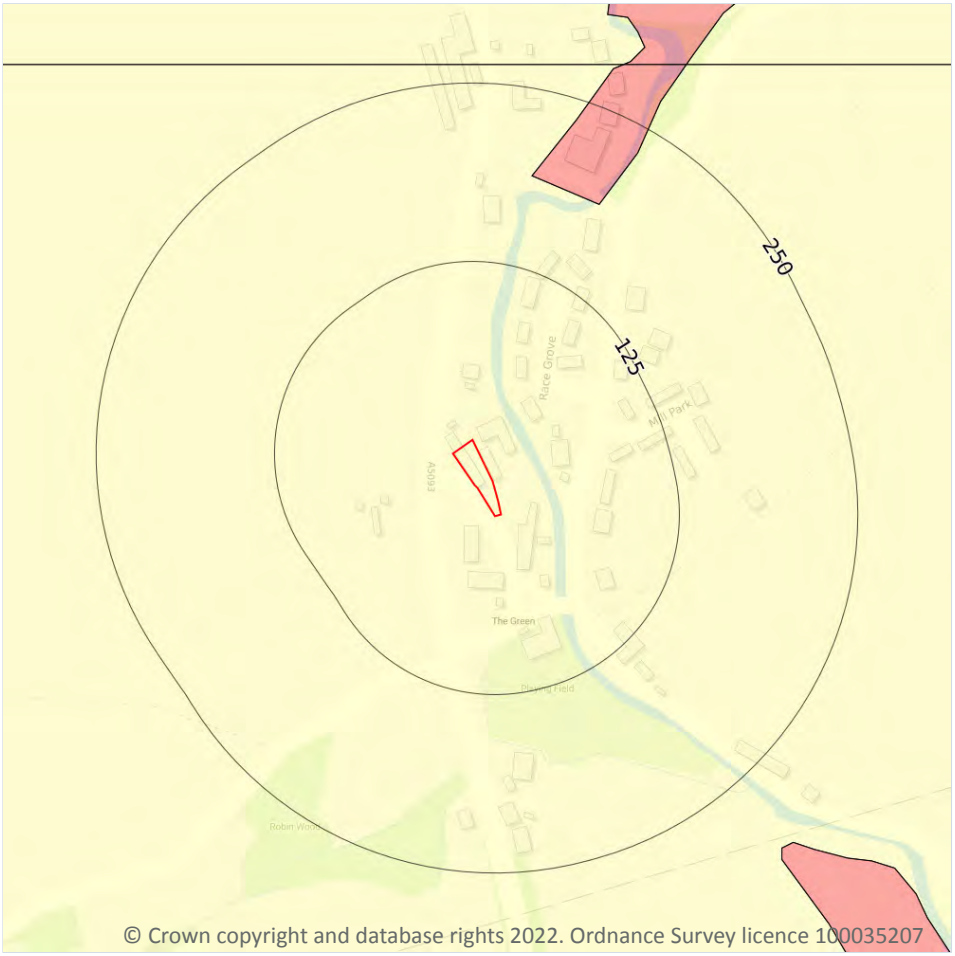
Features are displayed on the Natural ground subsidence - Running sands map on **page 89**

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.**

Location	Hazard rating	Details
33m E	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

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

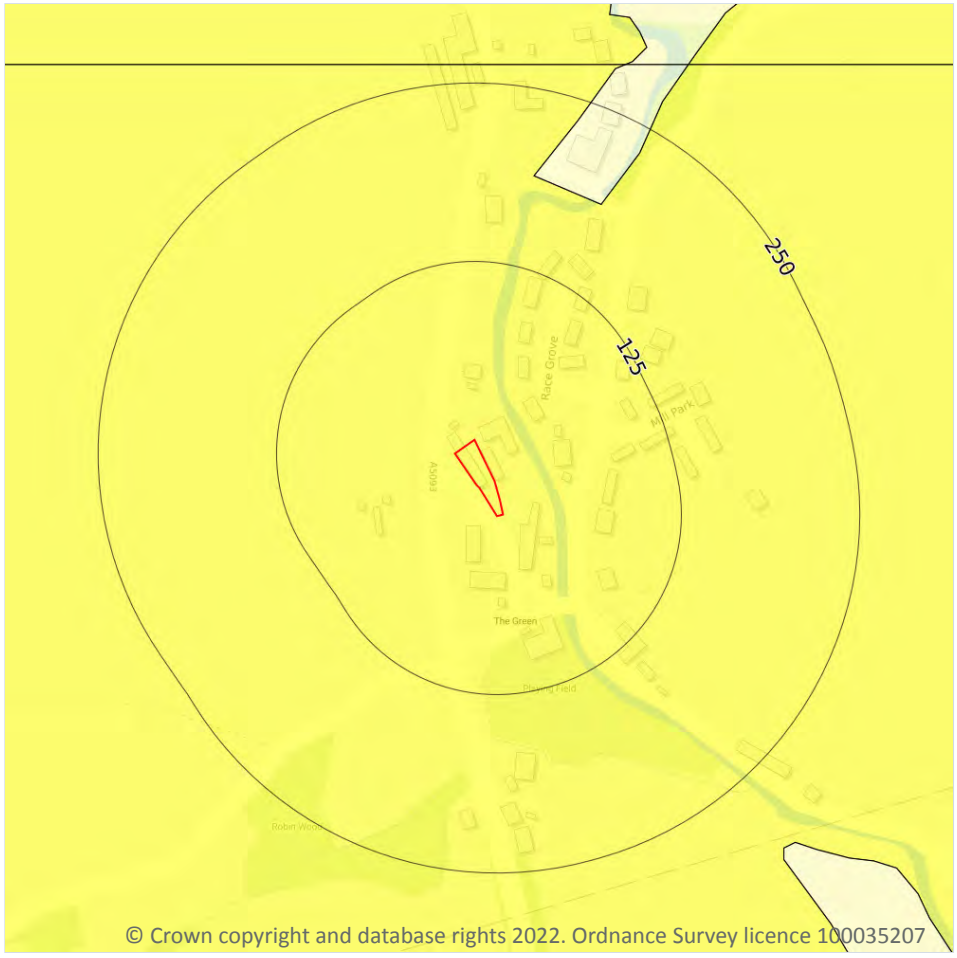
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 91**

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

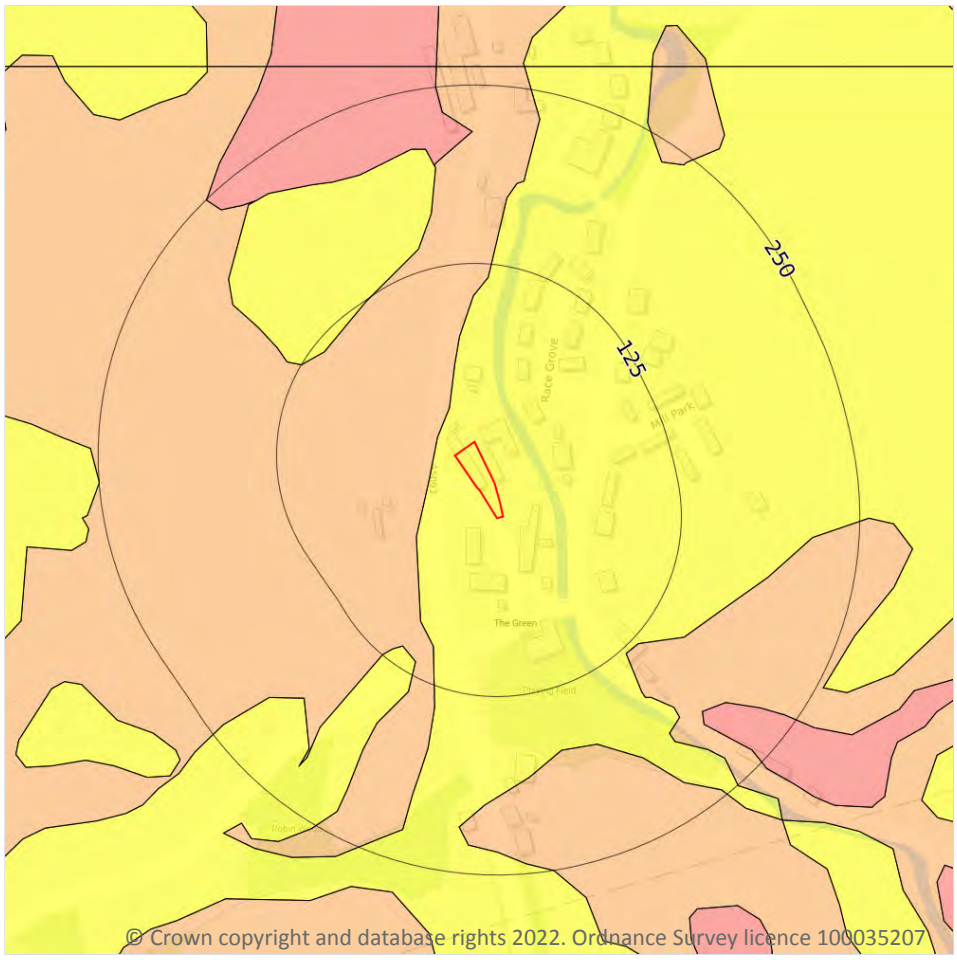
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 92**

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

17.5 Landslides

Records within 50m	2

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

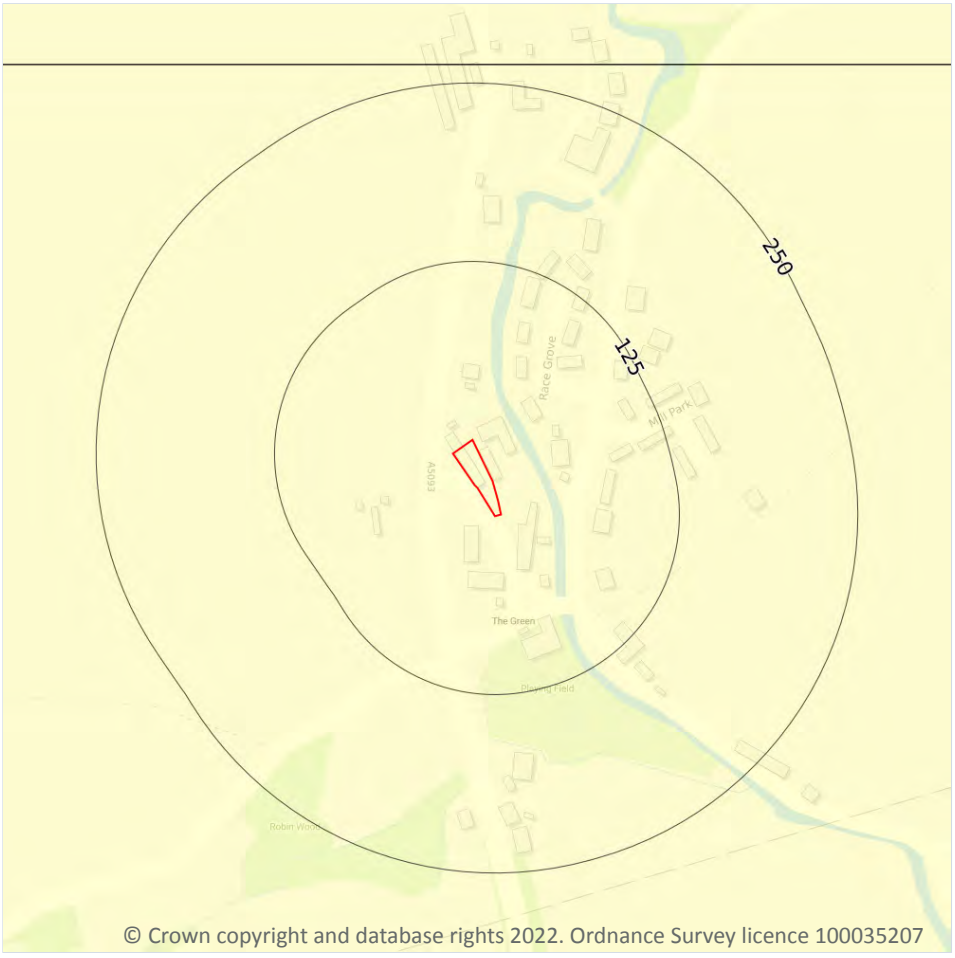
Features are displayed on the Natural ground subsidence - Landslides map on **page 93**

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

Location	Hazard rating	Details
15m W	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

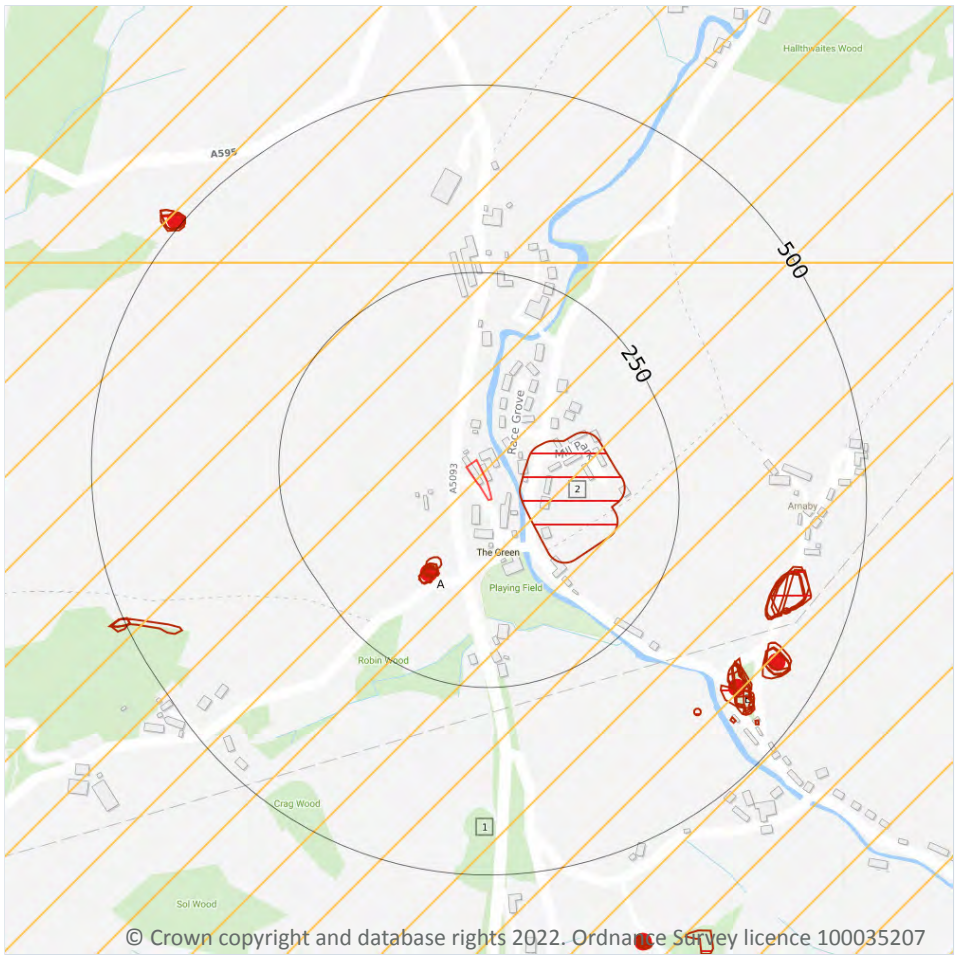
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 95**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

Natural cavities (Area)

Natural cavities (Point)

BritPits

Surface ground workings

Underground workings

Historical Mineral Planning Areas

Mining Cavities

Non Coal Mining

Sporadic underground mining of restricted extent possible

Localised small scale underground mining possible

Small scale mining possible

Underground mining known or likely within or in close proximity

Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	**3**

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.

Features are displayed on the Mining, ground workings and natural cavities map on **page 96**

ID	Location	Details	Description
A	124m SW	Name: The Green Address: The Green, MILLOM, Cumbria Commodity: Igneous & Metamorphic Rock Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
B	411m SE	Name: Stile Hill Gravel Pit Address: The Green, MILLOM, Cumbria Commodity: Sand & Gravel Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
B	437m SE	Name: Stile Hill Gravel Pit Address: The Green, MILLOM, Cumbria Commodity: Sand & Gravel Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	**8**

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 96**

ID	Location	Land Use	Year of mapping	Mapping scale
2	39m E	Sewage Works	1978	1:10000
A	102m SW	Unspecified Pit	1951	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
A	110m SW	Unspecified Quarry	1927	1:10560
A	111m SW	Unspecified Pit	1923	1:10560
A	115m SW	Unspecified Old Quarry	1898	1:10560
A	115m SW	Unspecified Quarry	1927	1:10560
A	126m SW	Unspecified Old Quarry	1919	1:10560
A	126m SW	Unspecified Quarry	1919	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	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, ground workings and natural cavities map on **page 96**

ID	Location	Name	Commodity	Class	Likelihood
1	**On site**	**Not available**	**Vein Mineral**	**B**	**Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered**
3	263m N	Not available	Vein Mineral	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	**0**

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	**0**

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	**0**

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	**0**

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

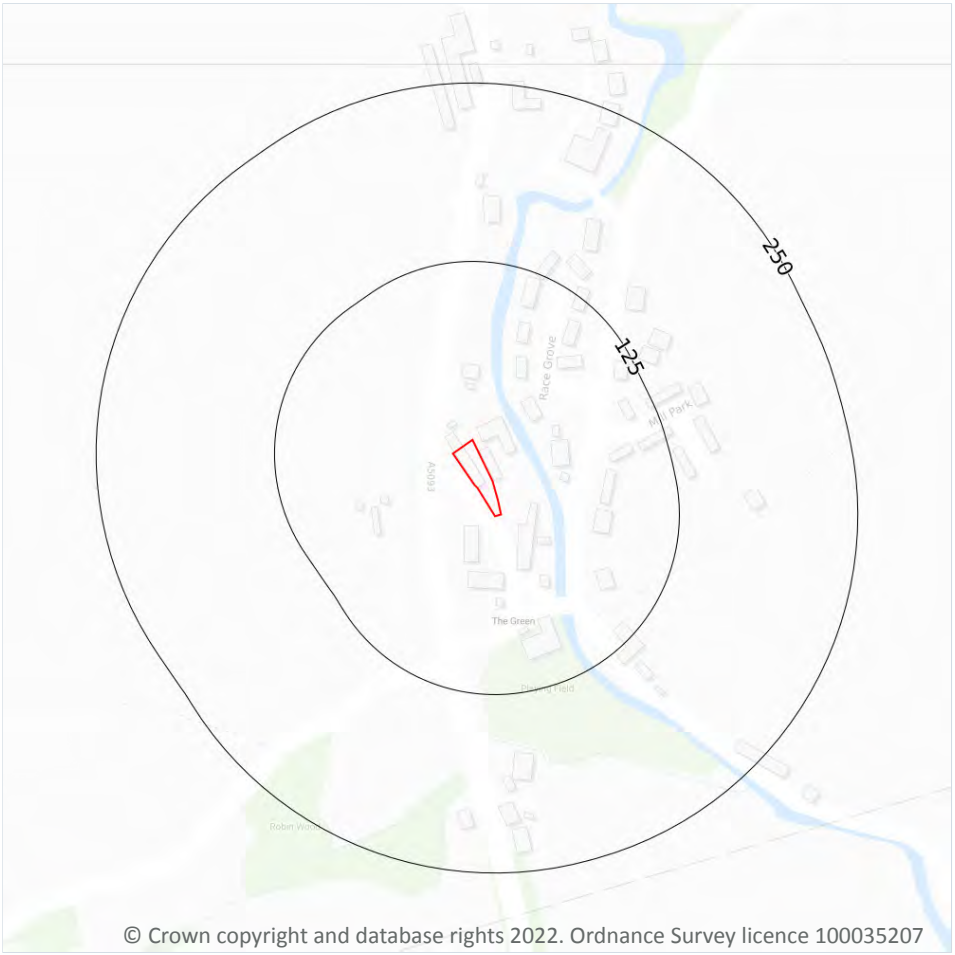
18.13 Clay mining

Records on site	0

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

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

19 Radon



Site Outline

Search buffers in metres (m)

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

19.1 Radon

Records on site	1

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

Features are displayed on the Radon map on **page 101**

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

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

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	3

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
33m SE	35 - 45 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

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

This data is sourced from HS2 ltd.

Data providers

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

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: https://www.groundsure.com/terms-and-conditions-jan-2020/.

APPENDIX C

Preliminary Conceptual Model

Table A: Potential Receptors to be considered in the Preliminary Conceptual Model

POTENTIAL RECEPTOR	COMMENTS	Include in PCM
PROPERTY: Other		
On Site		
Crops	None Intended on site	×
Domestic Produce	Possibly in residential gardens	✓
Livestock	None Intended on site	×
Domestic Animals	Possibly belonging to residential end users	✓
Game	None Intended on site	×
Off Site		
Crops	Unlikely	×
Domestic Produce	Possibly in fields surrounding the site	✓
Livestock	Possibly in fields surrounding the site	✓
Domestic Animals	May belong to adjacent residents	✓
Game	Not likely	×
PROPERTY: Buildings		
On Site		
	Residential Properties, services, flora	✓
Off Site		
	Residential Properties, services, flora	✓
HUMANS		
On Site		
Residents	Future Residents	✓
Construction Workers	During ground excavations	✓
Employees	Gardeners/Cleaners	✓
Surface water users	No surface water abstractions located on site	×
Off Site		
Residents	To north-east and south-east	✓
Groundwater users	No existing groundwater abstractions within 250 m.	×
Controlled Waters		
On Site		
Surface Waters	The Geo&EnviroInsight Report shows there are no surface water features on site.	×
Groundwater	The superficial aquifer (Boulder Clay) is classified by the Environment Agency as a 'Secondary Aquifer (undifferentiated)'. This strata is relatively impermeable and any water trapped/ held within the deposits are not considered to represent a sensitive receptor. The underlying bedrock is classified as a Secondary B Aquifer. The presence of laterally continuous low permeable superficial deposits across the site (anticipated to be clay) will likely inhibit vertical migration of contamination to the underlying bedrock.	✓
Off Site		
Controlled Waters	Black Beck runs north-east to south-east of the site being approximately 25 m east at its closest point which represents a potentially significant receptor.	✓
Ecological Systems		
On/Off Site		
SSSIs, national nature reserves	Not applicable to the site	×

Link	Source	Hazard	Transport Mechanism	Pathway	Medium of Exposure	Receptor	Risk Summary*
1	Contaminated soils	Direct contact /ingestion of soil or dust	Direct contact with contaminated soil	Dermal contact/ingestion of soil at surface	Soil	Humans (on-site/off-site), domestic pets	Low-Medium
2	Contaminated soils	Particulate inhalation	Wind blown particulates	Inhalation of particulates	Air	Humans (on-site/off-site), domestic pets	Low-Medium
3	Contaminated Soils	Impaired produce growth	Uptake of contaminants by homegrown produce resulting in loss	Uptake during growth	Vegetable produce	Property (domestic produce)	Low
4	Contaminated Soils	Ingestion of Contaminants	Uptake of contaminants by homegrown produce	Consumption of homegrown produce	Vegetable produce	Humans	Low
5	Contaminated Soils	Inhalation of Ground Gas	Degradation of contaminants generating ground gas through unsaturated zone to soil leading to inhalation	Inhalation of Gases	Air	Humans (on-site/ off-site, domestic pets)	Low
6	Contaminated Soils	Vapour Inhalation	Volatalisation of organic compounds through unsaturated zone of soil leading to inhalation	Inhalation of Gases	Air	Humans (on-site/ off-site, domestic pets)	Low
7	Contaminated Soils	Damage to structure/services	Direct contact of contaminants with building structures/services	Direct contact	Soil/Water	Flora, services	Low
8	Contaminated Soils	Degradation of perched water quality	Dissolution or suspension of contaminants into perched waters	Dissolution or Suspension	Water	Perched Waters, Black Beck 25 m east	Low
9	Contaminated Soils	Pollution of underlying groundwater	Dissolution or suspension of contaminants into groundwaters (Bedrock Aquifer)	Dissolution or Suspension	Water	Groundwaters	Low

Table B: *Preliminary Conceptual Model*

***Relative Risk Screening and Prioritisation for further Investigation & or Assessment**

High	Higher probability of occurrence and identification of primary sources of contamination with respect to most sensitive receptors.
Medium	Pollutant linkage generally dependent on the presence of other primary pollutant linkages and/or where pollutant linkage generally associated with less sensitive receptors.
Low	Lower probability of occurrence such as based on requirement for significant migration pathway or where pollutant linkage requires the presence of source contaminants at concentration likely to be much higher than other identified pollutant linkages.

APPENDIX D

Site Inspection Photographs

P1: A cluster of two attached farm buildings of stone construction with slate roofs are situated in the north-west of the site

P2: A cluster of two attached farm buildings of stone construction with slate roofs are situated in the north-west of the site

P3: Photographs taken through gaps in the boarded windows indicate the barns were empty

P4: Photographs taken through gaps in the boarded windows indicate the barns were empty

P5: Hardstanding concrete occupies the southern half of the site

P6: The north-eastern flank of the site is overlain by long grasses and weeds. It appears the north-east may have represented a farm track which is now in poor condition.

Comments:

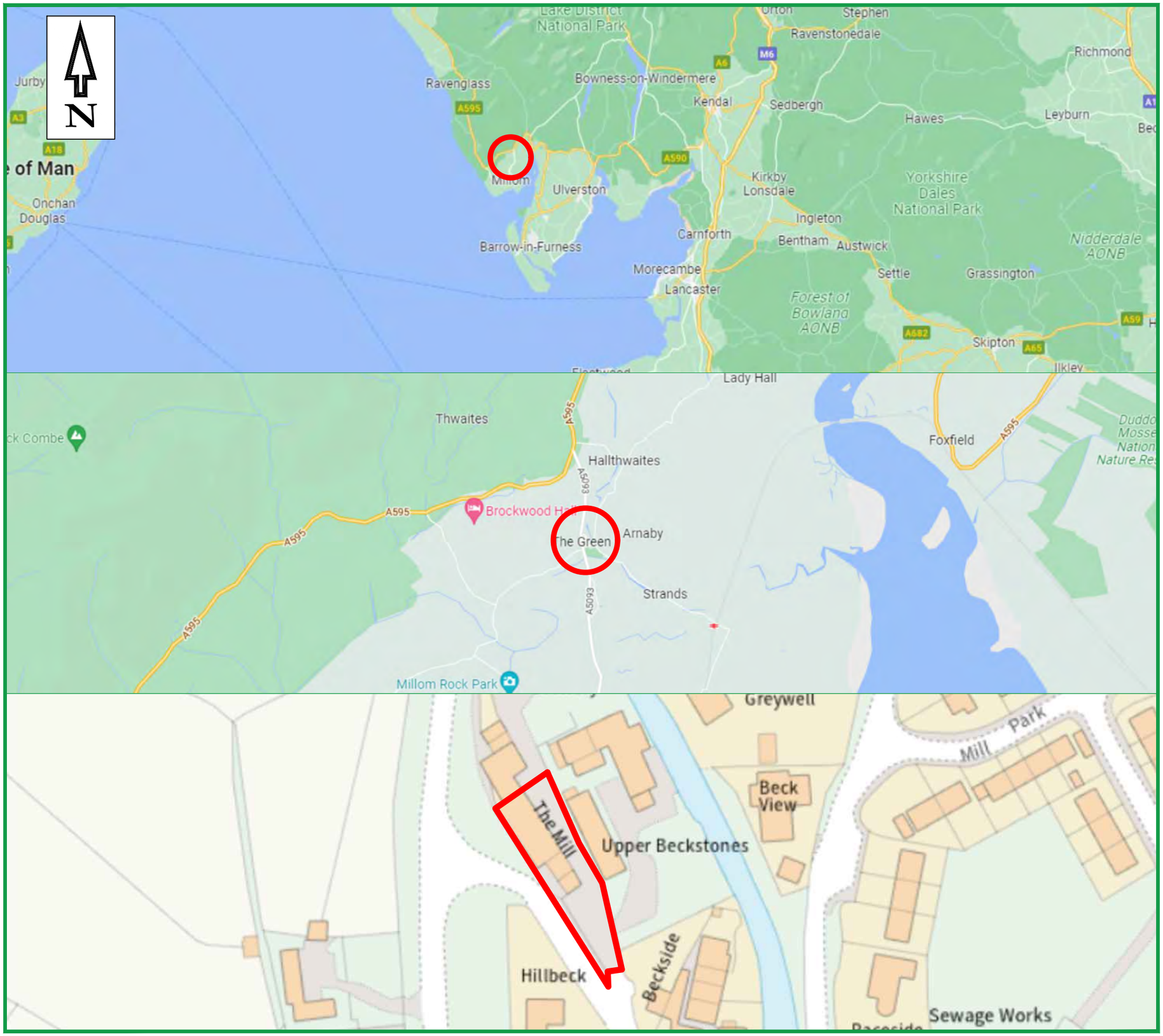
GEO-ENVIRONMENTAL CONSULTING ENGINEERS

Photographs 1 to 6

This appendix is for illustrative purposes only and is for use only in conjunction with associated reports relating to the project	**Site:** Upper & Lower Barns, Millom	**Project No:** 22093	**Created By:** J Mashiter	**Date:** 18/07/22
	Title: Appendix D – Site Photographs	**Client: Barns Lux Ltd**		

APPENDIX E

Drawings



LEGEND

SITE LOCATION

REV	DESCRIPTION	DATE	BY

GEO-ENVIRONMENTAL CONSULTING ENGINEERS
Suite One, No 3 Mitton Road Business Park, Mitton Road, Whalley, Lancashire BB7 9YE
Tel: 01254 377622 Mob: 07906753583
Email: mbuckley@bekenviro.co.uk
Web: www.bekenviro.co.uk

CLIENT.
BARNS LUX LTD

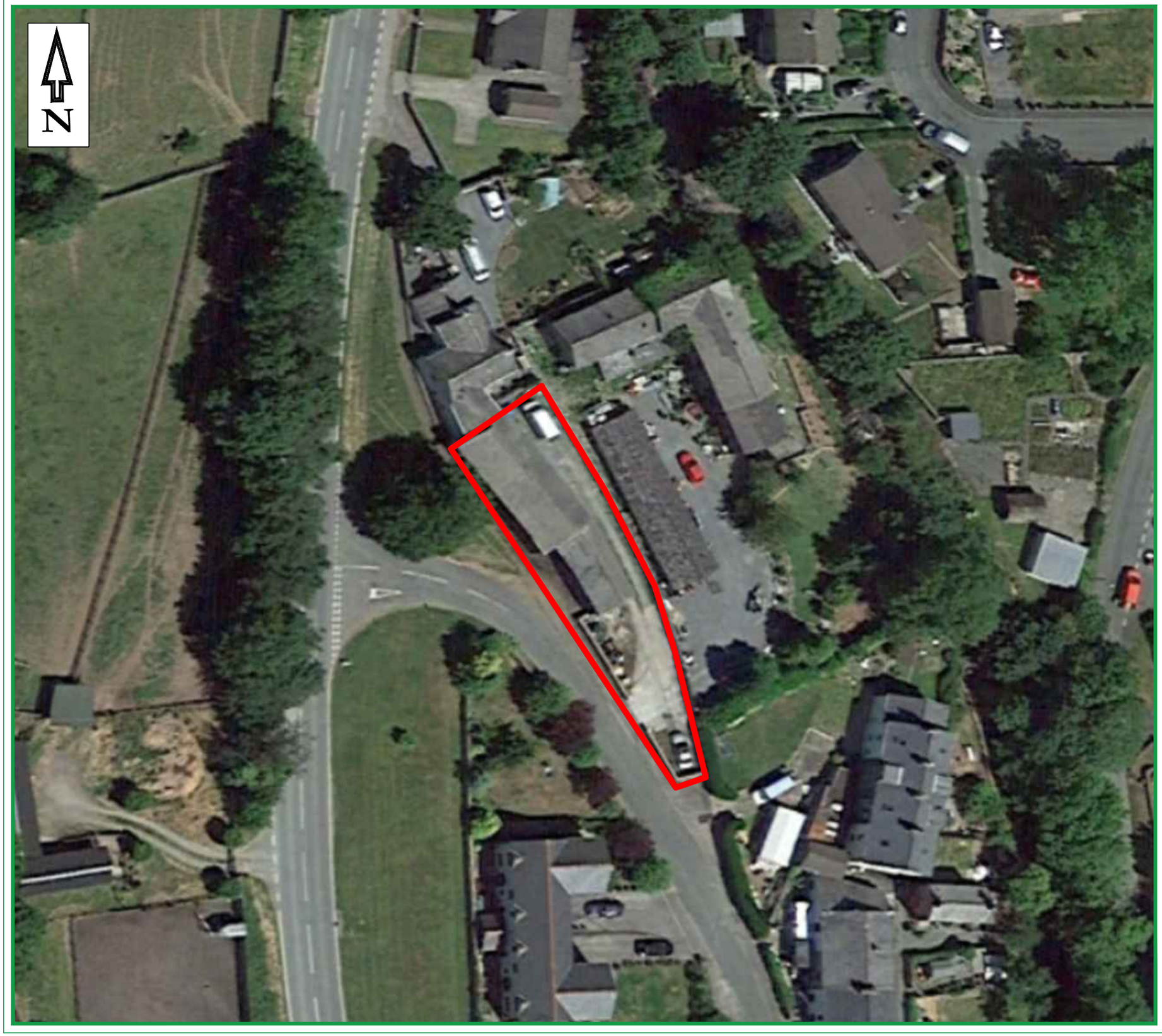
JOB TITLE.
UPPER & LOWER BARNS, THE GREEN, MILLOM

DRAWING TITLE.
SITE LOCATION PLAN

SCALE @ A3.	DRAWN BY.	APPROVED BY.	DATE.
NTS	D.E.	M.B.	06/07/22

DRAWING No. 22093-1

REV. -



LEGEND

SITE FOOTPRINT

REV	DESCRIPTION	DATE	BY

GEO-ENVIRONMENTAL CONSULTING ENGINEERS
Suite One, No 3 Mitton Road Business Park, Mitton Road, Whalley, Lancashire BB7 9YE
Tel: 01254 377622 Mob: 07906753583
Email: mbuckley@bekenviro.co.uk
Web: www.bekenviro.co.uk

CLIENT.

BARNS LUX LTD

JOB TITLE.

UPPER & LOWER BARNS, THE GREEN, MILLOM

DRAWING TITLE.

SITE LAYOUT PLAN

SCALE @ A3.	DRAWN BY.	APPROVED BY.	DATE.
NTS	D.E.	M.B.	06/07/22

DRAWING No.	REV.
22093-2	-