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Geo-environmental
Ground Investigation Report

ON

PROPOSED RESIDENTIAL DEVELOPMENT

AT

THE WILLOWS, HALLAS ROAD, KIRKBURTON

FOR

Mr S Joyce

AUGUST 2023

E23/8073/R001

Haigh Huddleston Associates is the trading name of Haigh Huddleston Associates Limited
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INDEX

0.0 EXECUTIVE SUMMARY

SITE	The site is located in the front garden and parking area to The Willows bungalow on Hallas Road. The land to the north and The Willows to the east are retained above the site by terraced garden retaining walls. The site is retained above the land to the south. Access to the site is from Hallas Road to the west.
HISTORY	Development area shown as a quarry in 1892 and no longer shown by 1904. The Willows bungalow constructed by 1977. Primarily residential properties have been built in the immediate vicinity of the site.
GEOLOGY	No superficial deposits or artificial ground are recorded on the site. The site is underlain by the Kirkburton Sandstone Formation, consisting of Sandstone. There are no fault lines shown crossing the site. The site work has proven up to 7.8m of stoney clay fill, ashy fill and a mudstone/sandstone/clay fill overlying a sandstone bedrock. High wall features have been confirmed to the northern, eastern and southern edges of the former quarry.
MINING/QUARRYING	The Coal Mining Risk Assessment states that the potential risk to surface stability from historic coal workings beneath the site is very low. The historical plans show a former sandstone quarry was located on site in 1892.
HYDROLOGY	The nearest surface water feature is a watercourse 87m south of the site. The site is not located within any Environment Agency defined flood zones or shown to be at risk of flooding from rivers or the sea.
HYDROGEOLOGY	The groundwater vulnerability map for the area indicates that the site overlies rocks designated as a Secondary 'A' Aquifer. minor aquifer. No groundwater was recorded during the trial pit excavations. No groundwater has been recorded during the gas monitoring.
HAZARDOUS GAS	No radon protective measures are required. Gas monitoring is ongoing and recorded no methane and a maximum carbon dioxide concentration of 0.6%. Due to the low levels of carbon dioxide levels and flow rates on site, we would recommend the gas regime on this site be currently classified as **CS1** by BS 8485:2015 Table 2.

	The gas monitoring is ongoing and a final report confirming any gas protection measures required will be prepared when the monitoring is completed.
CONTAMINATION	Elevated levels of Lead and Arsenic in the ashy fill material and topsoil. Elevated calorific values in the ashy fill material on site.
REMEDIATION	Due to the high calorific values recorded in the ashy fill material, a minimum of 1m thick clean inert capping will be required over the fill material to reduce the risk of combustion. It is recommended that samples are taken of the stoney clay fill material to confirm this is free from contaminants and suitable for re-use as sub-soils in the clean capping layer. As there is no suitable topsoil on site, clean material will need to be imported to site. Further investigation work will be required to confirm the construction of the retaining wall and the temporary works required to accommodate the proposed site construction.
FOUNDATIONS	Due to the depth of infilled quarry on site, we would recommend that the proposed residential properties are constructed with pre-drilled piles socketed a minimum of 1m into the underlying sandstone bedrock.

1.0 INTRODUCTION

1.1 As requested by Mr S Joyce, this practice carried out ground and contamination investigation works for the proposed residential development at The Willows, Hallas Road, Kirkburton.

1.2 The purpose of the report was to:-

1.2.1 Identify the nature of the near surface strata, in order to enable recommendations to be made as to the most economic foundation solution for the proposed residential development.

1.2.2 To identify any areas of contaminated ground.

1.2.3 Propose a suitable outline remediation strategy, which will enable the site to be developed safely, to the satisfaction of the overseeing regulators and in compliance with the current environmental standards.

1.2.4 Determine if the historical quarry on site would adversely affect the development.

1.2.5 Determine if ground gas migration from infilled land on site would adversely affect the property.

1.3 Soil sampling was undertaken via trial pits to determine the near surface strata. Distributed samples were taken for testing to ascertain the nature of the soils and fills present.

1.4 The conclusions and recommendations made in this report are limited to the findings of the preliminary Geotechnical Survey. The report is made on condition that Haigh Huddleston Associates will not in any circumstances be liable for loss, arising directly or indirectly from ground conditions encountered between trial pits and bore holes, which have not been revealed by the investigation.

1.5 Any opinion given on the possible configuration of strata between trial pit and bore hole locations and below maximum depth of the investigation is for guidance only. Any remarks on groundwater conditions made are based solely on observations made at the time of investigation. Kindly note that levels may differ from those reported due to seasonal variations or other influences.

1.6 Furthermore, there is the possibility that any trial pits or bore holes undertaken as part of the investigatory works may be within the influence of existing or proposed foundations or excavations. Haigh Huddleston Associates cannot be held responsible

for any failure of any excavations, foundations or structures within the influence of the trial pits.

2.0 THE SITE

2.1 The site is located at The Willows, Hallas Road, Kirkburton and lies around OS Grid Reference 419815, 412870. A site location plan is attached in Appendix A at the rear of the report.

2.2 The area to be developed is rectangular and covers an area of 0.06ha. The shorter western boundary is formed by Hallas Road. To the north and south are residential properties and to the east is The Willows, an existing bungalow.

2.3 The western third of the site consists of a tarmacked parking area and single storey stone garage. To the east of this, there is a lawned area retained approximately 1m above the parking area. To the north and east of the lawned area, there are terraced retaining walls supporting the adjacent property to the north and The Willows to the east. Access to The Willows is via a footpath running alongside the northern boundary at high level, with steps up from the parking area. To the south of the lawned area, and separated by a dry stone wall, a grassed access track runs from Hallas Road in the west to the rear garden area of The Willows in the east.

2.4 The boundaries to the site are formed by stone retaining walls. The property to the north is retained approximately 4-5m above the lawned garden area, while The Willows is retained approximately 5.5m above the lawn by terraced retaining walls. The grassed access track to the south of the lawn is retained approximately 4m above the property to the south. There is a level access with Hallas Road on the western boundary, however due to the steep nature of Hallas Road, the highway is retained above the site in the north western corner and the site is retained above the highway in the south western corner. Aside from the retaining walls, the site has a general fall of 1 in 30 from east to west.

2.5 It is understood that the site is to be developed for two split level detached properties with tarmacked paring areas in the west of the site and a soft landscaped area in the east.

3.0 SITE HISTORY

A number of historical Ordnance Survey plans from 1854-2023 have been consulted. These are contained for reference within Appendix E to the rear of the report. Below is a brief description outlining the significant developments that may affect future construction of the site.

Date	Historical uses on site	Historical findings within 100m perimeter of the site	Historical findings further than 100m perimeter of the site
1854	i) Site is shown as open field	i) Highway shown to the western and southern boundaries. ii) Open field shown to the north and east. iii) Residential property south west of site.	i) Residential properties of Kirkburton shown 25m to the south west. ii) Sandstone quarries shown 200m south east, 225m east and 300m north west of site.
1892	i) Western half of site shown as Old Quarry.	i) Highway no longer shown to south of site.	i) Quarry no longer shown 225m east of site.
1904	i) Quarry no longer shown on site. ii) Small buildings shown in west and east of site.	i) No significant land use changes within 100m of the site.	i) Quarry shown 125m east of site. ii) Quarry 200m south east no longer labelled..
1938-1955	i) Building no longer shown in east. ii) Two small buildings shown in west of site.	i) No significant land use changes within 100m of the site.	i) New quarry 200m east of site shown as disused.
1967	i) Buildings no longer shown on site.	i) Residential development north of site.	i) Quarries no longer shown 200m south east and 300m north west of site.
1977-2023	i) The Willows Bungalow shown in current location to east of development area. ii) Garage constructed in west of site by 1992.	i) No significant land use changes within 100m of the site.	i) No significant land use changes further than 100m from the site

4.0 SITE GEOLOGY & MINING

4.1 The BGS Digital Geological map of Great Britain at 1:10,000 has been consulted and we would report as follows:-

4.2 No artificial or superficial deposits are shown directly overlying the site.

4.3 The site is underlain by the Kirkburton Sandstone Formation, consisting of Sandstone.

4.4 There are no fault lines indicated crossing the site, or in the immediate vicinity of the site.

4.5 A Coal Mining Risk Assessment has previously been undertaken by Arc Environmental Ltd (Ref: 22-347.01L dated 26th April 2022) and states that *"the potential risk to surface stability from historic coal workings beneath the site is very low"*.

4.6 The historical sandstone quarry Dean Top was located in the proposed area of the site to be developed. The historical plans indicate that former the former quarry was present in 1892 and subsequently infilled.

4.7 There are no deep BGS boreholes recorded in the vicinity of the site.

5.0 ENVIRONMENTAL CONSIDERATIONS

5.1 Radon

The property is not in a Radon Affected Area, as less than 1% of properties are above the action level.

No Radon Protective Measures are required for the development.

5.2 Landfill Sites

There are no recorded historical, active or recent landfills within 500m of the site.

However, the area to be developed is shown to be over an historical quarry, shown on the 1892 historical plan, and there are no records of what material has been used as infill.

5.3 Flood Risk

The site is not located in a currently defined Environment Agency floodzone or at risk of flooding from rivers and the sea.

5.4 Groundwater

The groundwater vulnerability map for the area indicates that the site overlies rocks designated as a Secondary 'A' Aquifer. These are 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.

The site is not within a currently defined (Groundwater) Source Protection Zone (SPZ).

There are no licensed discharge consents to controlled waters recorded within 500m of the site.

There are no licensed groundwater or surface water abstractions within 250m of the site.

There are four recorded pollution incidents to controlled waters within 250m of the site. Three of these are category 3 (minor) incidents involving vehicle and plant washings 113m west of the site in February 2003. The fourth was a category 2 (significant) incident involving sewage material 133m south west of the site in 2010. None of these incidents appear to be linked to the site.

The nearest recorded surface water feature is a watercourse recorded 87m south of the site. This is an inland river not influenced by normal tidal action.

6.0 PRELIMINARY CONCEPTUAL SITE MODEL

6.1 The initial stage in assessing the risks posed from contaminated land during the redevelopment of a site is to prepare a conceptual model. A generalised conceptual model can be developed highlighting the main pollutant linkages through a contaminant ► pathway ►receptor model for a residential development. In order to prepare the conceptual model for a particular site the following parameters need to be reviewed as discussed below.

6.2 Contamination of existing land can be caused by a number of factors, including:-

i) Possible historical/current industrial activities.
ii) Disposal of waste materials.
iii) Storage of materials.
iv) A number of natural processes can also lead to hazardous gases and elevated heavy metals.

6.3 Potential pathways can include ground and surface water, permeable strata, existing services providing a conduit and voided ground. Potential receptors can include human health, ecosystems, controlled waters and building structures. There are a number of ways that a receptor can be exposed to the contaminant these include, inhalation, direct contact, ingestion, dermal contact and uptake.

6.4 Sources of potential contamination, that could affect the proposed development, from either on or off site activities would include the following:-

i) Potential made ground from levelling the site entrance area and driveway.
ii) Infill material to the former quarry on site.
ii) Potential ground gas migration from infill material to former quarry on site.

Based on the above activities the potential for some contamination to exist on site is considered to be moderate.

6.5 Considering the proposed residential end use, there will be two possible human receptor groups exposed to the existing onsite contamination:-

a) Site operatives during development.
b) End users, future site residents (the critical receptor is a 6 year-old girl).

6.6 Human receptors may be exposed to site contamination by a number of possible pathways. These pathways are summarised in Table 1 below.

Table 1- Potential Human Exposure Pathways

Human Exposure Pathway	Site Residents	Construction Workers
Soil Ingestion	YES	YES
Consumption of Home Grown Vegetables	YES	NO
Dermal Contact	YES	YES
Dust Inhalation	YES	YES
Gases/Vapours	YES	NO

6.7 The construction workers will come into contact with any contaminated soil to a far greater extent than future residents. The exposure pathways are generally through dermal contact and indirect ingestion. However their exposure will be for a limited time and the provision and correct use of personnel protective equipment and adequate welfare facilities during construction should restrict their risks to acceptable levels.

6.8 Future site residents can be protected in the long term development of the site via a suitable remediation strategy that ensures any proposed contaminated materials remaining on-site are suitably isolated beneath an effective capping layer.

6.9 The risk of pollution to controlled waters by existing contamination is considered low. There have been no historical uses of the site, or in the immediate vicinity of the site, likely to cause contamination. There are no surface water features recorded in the vicinity of the site.

6.10 No specific areas of ecological importance have been identified in the initial desk top study. Therefore the site is considered to be in a low risk environmental setting. The potential for phototoxic materials to exist at shallow depth should be considered, these could pose a potential risk to new planting and soft landscaping areas within the proposed development.

6.11 The proposed planning drawings indicate residential properties with private garden areas and hard paved site access and parking areas. The presence of elevated sulphates and hydrocarbons could affect the long term integrity of buried concrete

structures, including foundations and drainage pipes. Plastic water supply pipes can also be damaged by the presence of hydrocarbon contamination.

7.0 FIELDWORK

7.1 Initial trial pit investigations were undertaken on 6th June 2023 using a 3 tonne tracked excavator with 400mm wide bucket. A total of four trial pits were undertaken to allow for soil samples to be taken.

7.2 A rotary borehole investigation to determine the depth of the former quarry was undertaken on 7th July 2023. A total of ten rotary boreholes were undertaken to a maximum depth of 9.3m below existing ground levels. Three of these boreholes were only undertaken to a depth of 3m to allow the installation of standpipes for gas monitoring.

7.3 Materials encountered in the trial pits were examined and categorised. Trial pit and borehole logs are contained within Appendix B of the report.

7.4 The site investigation works were designed to achieve comprehensive site coverage within the proposed development area.

7.5 Soil samples were removed from the natural and made ground deposits within the trial pits. The samples were removed by operatives wearing gloves and placed into airtight clean plastic containers and glass bottles for transportation to the laboratory.

7.6 A total of four samples from the natural and made ground deposits were recovered from the trial holes for chemical analysis and a further two samples were taken from a topsoil stockpile from a site scrape.

7.7 The testing was carried out by a UKAS accredited laboratory to nationally or accredited in-house methods. The results of the contamination testing are contained within Appendix C of this report.

7.8 A suite of common potential contaminants consisting of heavy metals, phytotoxic metals, sulphates, sulphides and poly-aromatic hydrocarbons was analysed for, including asbestos and calorific value.

7.9 All samples were stored in airtight containers within cool boxes at approximately 4°c until delivery to the laboratory within 48 hours.

8.0 RESULTS OF THE INVESTIGATION

8.1 GEOTECHNICAL INVESTIGATION

8.1.1 A copy of the trial hole and borehole logs providing a complete record of strata encountered beneath the proposed development is presented in Appendix B.

8.1.2 The fieldwork generally proved a shallow depth of topsoil overlying a clay/ash fill with a more stoney clay fill underneath. The rotary boreholes proved a sandstone bedrock beneath the fill material.

8.1.3 The surface of the trial pits consisted of rough grass over 0.2-0.4m of topsoil with numerous roots from small shrubs noted in TP04.

8.1.4 Beneath the topsoil in TP02-TP04 there was 0.5-1.1m thick layer of re-engineered soft gravelly clay. In TP02 and TP03 this was underlain by a layer of ashy made ground that contained occasional bricks, gravels and glass and was noted to be loosely compacted. This extended to the base of TP02 and TP03 at 2.3-3.2m below existing ground levels.

8.1.5 Beneath the topsoil of TP01, and the re-engineered clays of TP04, a loosely compacted fill consisting of sandstone flags, cobbles and gravels occasionally in a clay matrix was encountered. This was encountered at 0.2-0.9m below existing ground levels and proved difficult to excavate with the plant available and the trial pits were terminated at 1.1-2.1m below existing ground levels.

8.1.6 The sides of the trial pits remained stable during the excavation works. However, it should be noted that the trial pits were only left open a short period of time for samples to be taken and the strata logged.

8.1.7 The rotary boreholes undertaken on site proved up to 4.8m of clay and ash fill overlying compacted mudstone, sandstone and clay fill containing occasional boulders. The base of the former quarry was encountered at 7.7-7.8m below existing ground levels. The high wall perimeter to the quarry was encountered adjacent the existing retaining walls to the north and east, and near the site boundary on the south. No high wall feature was proved on the western boundary of the quarry.

8.1.8 The results of the borehole investigation are summarised in Table 2 below:

Table 2 Summary of rotary borehole investigation

BH No.	Tarmac	Clay Fill	Ash Fill	Clay/Sandstone/ Mudstone Fill	Sandstone
1	-	0-1.1m	1.1-4.8m	-	4.8-7.5m
1A	-	0-0.6m	-	-	0.6-3.0m
2	-	0-1.8m	1.8-3.2m	3.2-7.8m	7.8-9.3m
2G	-	0-1.3m	1.3-2.6m	2.6-2.8m	2.8-3.0m
3G	-	-	-	0-1.6m	1.6-3.0m
3	-	0-1.1m	1.1-3.7m	3.7-7.7m	7.7-9.0m
4	-	0-1.1m	1.1-3.3m	3.3-4.2m	4.2-8.0m
5	0-0.1m	-	-	0.1-5.8m	5.8-8.0m
5G	0-0.1m	-	-	0.1-3.0m	-
6	-	-	0-2.4m	2.4-7.7m	7.7-9.0m

8.1.9 Standard Penetration Test 'N' values taken at 1.0m depth increments within the borehole 6 to determine how well compacted the fill material was and are summarised in Table 2 below:-

Table 3 Summary of SPT (N Values)

Depth (m)	1.00-1.45	2.00-2.45	3.00-3.45	4.00-4.45	5.00-5.45	6.00-6.45	7.00-7.35
BH06	4	4	3	23	18	22	REFUSAL

8.1.10 The SPT results showed the overlying clay and ash fill to be loosely compacted, with the clay/mudstone/sandstone fill well compacted and a refusal noted towards the base of the fill, potentially on a boulder.

8.2 GROUNDWATER

8.2.1 No groundwater was encountered during the trial pit or rotary borehole investigation.

8.2.2 No groundwater has been encountered during the gas monitoring to date.

8.2.3 It should be recognised that ground water levels may vary throughout the year. During periods of heavy rainfall the groundwater levels may be substantially higher than the results revealed in these investigations.

8.3 GAS MONITORING

8.3.1 As discussed previously BH02G, BH03G and BH05G were installed with gas standpipes and lockable covers. Gas testing is currently being undertaken on site and to-date the wells have been monitored on a single occasion following the installation of the standpipes.

8.3.2 A standard gas monitoring procedure has been followed in accordance with CIRIA guidance, including measurement of the following:-

i) Methane, Oxygen and Carbon Dioxide concentrations.
ii) Atmospheric Pressure.
iii) Gas Flow Rate.
iv) Standing water level.

8.3.3 The result of the monitoring undertaken to-date is summarised in Table 4 below. A complete set of results will be reported on completion of the intended testing programme.

Table 4 - Summary of Recorded Gas Levels.

Borehole No.	Date	Oxygen %	Carbon Dioxide %	Methane %	Flow Rate (l/hr)	Depth to Water (m)	Atmospheric Pressure (mb)
BH02G	26.07.23	19.9	0.6	ND	ND	DRY	997
BH03G	26.07.23	20.3	0.1	ND	ND	DRY	997
BH05G	26.07.23	20.2	0.3	ND	ND	DRY	996

8.3.4 The reading was undertaken during falling atmospheric pressure. During the monitoring to date, a maximum carbon dioxide concentration of 0.6% has been recorded in BH02G. No methane or flow rates have been recorded on site.

8.3.5 Due to the low levels of carbon dioxide levels and flow rates on site, we would recommend the gas regime on this site be currently classified as **CS1** by BS 8485:2015 Table 2.

8.3.6 The gas monitoring is ongoing and a final report confirming any gas protection measures required will be prepared when the monitoring is completed.

9.0 CONTAMINATION

9.1 HUMAN HEALTH RISK ASSESSMENT

9.1.1 The appraisal of contaminated land within the UK is based on a risk assessment approach. The method involves the principle of defining a source ► pathway ►receptor, linkage to establish a human health risk. For any risk to exist to a potential receptor from an identified contaminant there must be an unbroken source ► pathway ►target relationship.

9.1.2 In the first instance site data for the contaminant levels are compared against guidance such as the CLEA values published by DEFRA. Should the site values exceed the guidance criteria, the contamination levels are recognised to have the potential to pose a risk to human health. Two scenarios are then available:-

a) To break or remove one of the source ► pathway ►receptor linkages, by specifying an appropriate level of remedial work. Examples of remedial action may include the removal of the contaminated material or alternatively specifying a sufficient capping layer.

b) The alternative approach is to provide a more detailed human health site specific risk assessment. This will involve examining factors such as soil properties, exposure assumptions, groundwater flows and contamination composition.

9.2 CONTAMINATION RESULTS

9.2.1 As stated above, in order to put the analytical results into context, the data has in the first instance been assessed in relation to several sets of guidelines: -

9.2.2 The analytical results have been assessed via an initial screening assessment with regard to the current Contaminated Land Exposure Assessment model (CLEA UK) for human health, which has been produced for the Environment Agency and the Department of Environment, Food and Rural Affairs (DEFRA). The CLEA model provides Soil Guideline Values (SGVs) for a limited range of contaminants only, and these are based on risk to human health. As such they do not take into account potential risks to other receptors eg groundwater and third party land.

9.2.3 It is proposed to redevelop the site for residential properties with private garden areas. Soil results have therefore been assessed against Generic Assessment Criteria (GAC) based on guidelines from the Chartered Institute of Environmental Health (CIEH) and Land Quality Management Ltd (LQM) S4UL document. Where there is no GAC, guidance limits have been adopted from sources referenced in the table below.

9.2.4 In addition to the above, the calculation of SGVs based on an acceptably low level of risk is currently being undertaken. These Category 4 Screening Levels (C4SL) have been calculated for six substances to date by modifying the toxilogical/exposure parameters within CLEA. C4SLs have been used as tier 1 trigger levels within this assessment, superseding the previous CIEH and LQM SGVs.

9.2.5 Assessment of risk is considered as a tiered approach. Assessment based on non intrusive means is considered Tier 1 assessment, comparison against SGVs and GACs is a Tier 2 assessment, and the generation of and comparison with Site Specific Assessment Criteria (SSAC) is a Tier 3 assessment and is conducted where deemed appropriate following the Tier 2 assessment.

9.2.6 The sulphate and acid concentrations have been compared against the BRE digest “Concrete in Aggressive Ground” parts 1-4. This will enable the concrete class to be specified in relation to possible contact with aggressive soils.

9.2.7 The results of the chemical analysis are presented on the laboratory analysis sheets with Appendix C. A summary of the significance of the results is presented in Table 5.

Table 5

Comparison of contaminant against accepted guidance values for residential use with plant uptake

CONTAMINANT	SGV MG/KG	CONCENTRATION IN ALL SOILS. MG/KG	No. OF SAMPLES EXCEEDING GUIDANCE VALUES	PERCENTAGE OF SAMPLES EXCEEDING GUIDELINE VALUE
Arsenic	37 (4)	16-110	2/4	50%
Cadmium	22 (4)	0.1-0.7	0/4	
Chromium (Total)	130 (2)	12-30	0/4	
Lead	200 (4)	63-450	2/4	50%
Mercury (Total)	40 (1,5)	0.23-1.4	0/4	
Selenium	250 (1)	0.6-1.4	0/4	
Copper	2400 (1)	33-200	0/4	
Nickel	180 (1)	23-45	0/4	
Zinc	3700 (1)	49-270	0/4	
Sulphate	0.24 (3)	0.03-0.46	0/4	
Thiocyanate	50	1.1-2.8	0/4	
Sulphide	250	12-74	0/4	
Naphthalene	2.3 (1)	<0.1-0.3	0/4	
Benzo(a)pyrene	5 (4)	0.2-2.0	0/4	
PAH (Total)	40	2.1-19	0/4	
EPH (Total)	250	52-83	0/2	
Phenols	760 (1)	<0.3-0.4	0/4	
Asbestos	No fibres	None	0/4	
Calorific Value	7 MJ/kg	11.0-13.2	2/2	100%
pH	6-8	6.0-7.8	0/4	16.7%

(2) DEFRA CLR SGV's withdrawn used for initial comparison

(3) BS 8110 1985 Table 6.1

(4) Category 4 Screening Levels

(5) Unless there is considered to be historical site usage that would result in elemental and methylmercury compounds to be present, the inorganic mercury SGV is used as this is the most prevalent for of mercury present in the natural environment.

9.2.8 The samples of ashy fill material from TP02 and TP03 proved elevated levels of Arsenic of 110mg/kg and 160mg/kg respectively. This is over three times the tier 1 trigger level.

9.2.9 The sample of ashy fill material from TP03 and of topsoil from TP04 proved elevated levels of Lead of 450 mg/kg and 280mg/kg respectively.

9.2.10 There were no elevated levels of PAH (Total) or individual PAH compounds recorded in the strata on site.

9.2.11 There were no elevated levels of EPH (Total) in the samples taken from site.

9.2.12 The samples of ashy fill material on site proved calorific values of 11.0MJ/kg and 13.2 MJ/kg. It is considered likely that materials whose calorific value exceed 10MJ/kg are almost certainly combustible.

9.2.13 There was no asbestos recorded in the samples taken from site.

9.2.14 An elevated level of sulphate of 0.46% was recorded in the fill material at a depth of 0.7m below existing ground levels, with pH levels as low as 6.0. This corresponds to a design sulphate class DS-2, ACEC class AC-3z, when compared against the BRE Special Digest 1 “Concrete in aggressive ground”.

9.3 QUALITATIVE RISK ASSESSMENT

9.3.1 The Qualitative Risk Assessment is based upon the previously discussed source ► pathway ►receptor principle. In relation to the proposed site these may be described as follows:-

9.3.2 **SOURCE**

i) Elevated levels of Lead and Arsenic in the ashy fill material and topsoil.
ii) Elevated calorific values of the ashy fill material on site.
iii) No elevated levels of ground gases.

9.3.3 **PATHWAYS**

i) Ingestion of contamination material.
ii) Inhalation of contaminated particles.
iii) Dermal contact with the known contamination.
iv) Leaching to controlled waters.

9.3.4 **RECEPTORS**

i) Residential site users.

ii) Construction and maintenance workers.

iii) Controlled waters.

iv) The building structure.

9.3.5 Each of the receptors will now be appraised and attribute the likely risks involved.

i) Residential site users.

Based on the chemical results obtained it is considered that there is currently a **moderate** risk to end users from ground contamination on-site.

Elevated levels of Lead (450 mg/kg) and Arsenic (160 mg/kg) were identified in the ashy fill material and topsoil on site.

The samples of ashy fill material on site recorded calorific values of up to 13.2 MJ/kg. It is considered likely that materials whose calorific value exceed 10MJ/kg are almost certainly combustible.

There were no elevated levels of PAH (Total) or individual PAH compounds recorded in the strata on site.

There were no elevated levels of EPH (Total) in the samples taken from site.

No asbestos was recorded in the samples taken from site.

Due to the high calorific values recorded in the ashy fill material, a minimum of 1m thick clean inert capping will be required over the fill material to reduce the risk of combustion. It is therefore recommended that the existing fill material is removed to a minimum of 1m below final proposed ground levels to allow the construction of the capping layer. The capping layer should consist of 150mm clean topsoils and 850mm clean inert sub-soils for a total clean capping thickness of 1.0m.

It is recommended that samples are taken of the stoney clay fill material to confirm this is free from contaminants and suitable for re-use as sub-soils in the clean capping layer.

As there is no suitable topsoil on site, clean material will need to be imported to site. Following completion of the clean capping layer, trial pits will be required to confirm the depth of the capping layer.

Due to the low levels of carbon dioxide levels and flow rates on site, we would recommend the gas regime on this site be currently classified as **CS1** by BS 8485:2015 Table 2. The gas monitoring is ongoing and a final report confirming any gas protection measures required will be prepared when the monitoring is completed.

ii) Construction and Maintenance Workers.

It is considered that there is a **moderate** risk to construction and maintenance workers from the redevelopment of the site.

Due to the potential for the ashy fill material to combust, during all construction and excavation works, there are to be no nearby sources of combustion.

Construction workers should always wear PPE including overalls, boots and gloves when handling the contaminated materials onsite. In addition eating, drinking and smoking should be restricted to designated areas where the above hygiene facilities are available.

iii) Controlled Waters

There have been no recorded historical instances of groundwater contamination from the materials on site, and there are no discharge consents or surface water features in the immediate vicinity of the site. It is therefore considered unlikely that there is a risk to groundwater and controlled waters from existing contamination on site.

iv) Building Structures.

Service providers should be forwarded the final validated chemical levels in order for them to provide an accurate specification for the apparatus to be provided. New services should be surrounded and backfilled with clean material to afford some protection to the apparatus and allow any future maintenance work to be undertaken in clean material.

10.0 CONCLUSIONS AND RECOMMENDATIONS

10.1 GEOTECHNICAL ASSESSMENT

10.1.1 The fieldwork generally proved a shallow depth of topsoil overlaying ashy clay fill and re-engineered clay, mudstone and sandstone fill material up to a depth of 7.8m below existing ground levels. Beneath the fill material a sandstone bedrock was encountered.

10.1.2 The re-engineered clays and ashy fill material are not considered a suitable foundation material and therefore all loadings should be taken through these materials onto suitable underlying strata.

10.1.3 We would therefore suggest that the proposed properties should be constructed on piled foundations with a reinforced concrete suspended groundbeam. The following general comments relating to piling are provided for guidance, and further advice should be sought from a specialist-piling contractor.

10.1.4 Piled foundations should extend and be socketed a minimum of 1m into the underlying sandstone bedrock. Pile records should be checked to ensure a minimum 3m pile length and that similar pile lengths are achieved throughout a plot and between adjacent structures. Care should be taken that no piles kick-off from the high wall and that they are satisfactorily socketed into the sandstone bedrock. With the additional risk of boulders within the fill material to the former quarry, it is recommended that consideration be given to pre-drilled piles.

10.1.5 The safe working load that may be supported on a pile is dependent on the pile diameter, its founding depth and the method of installation. As piles would be founded in bedrock, they will be essentially end bearing, although there may also be some shaft adhesion within the infilled materials. It is essential that pile design allows for negative skin friction.

10.1.6 It is recommended that flexible service connections are used on this site, especially where they enter the buildings, in order to avoid any possible damage due to self-settlement of the weak strata once the site is developed.

10.1.7 Driven piles may lessen the volume of potentially contaminated fill material requiring off-site disposal, compared with continuous flight auger piled foundations. However, driving can induce some ground vibration. Assessment of any vibration risk to adjacent structures and/or existing site features should be undertaken by pile designer.

10.1.8 On completion of the piling works, pile testing should be undertaken to confirm the adequacy and load carrying capacity of the installed piles.

10.1.9 Should any shallow obstructions occur, i.e. large boulders, they should either be grubbed-up, or alternatively replacement piles installed. The pile logs should be checked prior to the piling rig departing site, to ensure consistent pile lengths are installed throughout the site. Due to the possibility of boulders, and the high wall to the quarry, it is recommended that consideration is given to pre-drilled piling.

10.1.10 The new houses can be built off ring beams designed to span the piles. In order to bond them to the piles, the tops of the piles must be tied to the reinforcement within the ground beams. This can be achieved by a variety of methods dependent upon the type of piles adopted.

10.1.11 For piled foundations suspended floor slabs should be utilised. A pre-cast 'Beam and Block' concrete ground floor construction could be utilised, and suspended across the ring beams.

10.1.12 In some circumstances pile foundations can provide a pathway for the vertical migration of contamination. The pile design should be undertaken in accordance with the Environment Agency's guidance "Piling into Contaminated Sites".

10.1.13 The designs for the foundations will need to take into account the existing terraced retaining walls on the northern boundary of the site, which retains the adjacent property approximately 4-5m above the ground floor level of the proposed properties. In addition to this, The Willows to the east is retained approximately 7m above the ground floor level of the proposed properties. Further investigation work will be required to confirm the construction of the retaining wall and the temporary works required to accommodate the proposed site construction.

10.1.14 At present it is not anticipated that excessive ground water control measures will be required. Please note that ground water flows can vary throughout the year and a further assessment should be undertaken if construction work is proposed following a prolonged rainfall event.

10.1.15 An elevated level of sulphate of 0.46% was recorded in the fill material at a depth of 0.7m below existing ground levels, with pH levels as low as 6.0. This corresponds to a design sulphate class DS-2, ACEC class AC-3z, when compared against the BRE Special Digest 1 “Concrete in aggressive ground”.

10.2 GROUND FLOOR SLAB – GAS MEASURES

10.2.1 As discussed previously, gas monitoring stations were installed in three of the borehole locations on site due to the possibility of ground gas migration the infilled quarry on site.

10.2.2 A maximum carbon dioxide concentration of 0.6% has been recorded on site. No methane has been recorded. No steady flow rates have been detected during the monitoring.

10.2.3 The proposed development consists of low rise residential housing and therefore the gas regime has been characterised in accordance with Type A buildings as defined in BS 8485:2015 Table 3. Due to the low carbon dioxide levels on site, we would recommend the gas regime on this site be currently classified as **CS1** by BS 8485:2015 Table 2.

10.2.4 No Radon Protection measures are required for the site.

10.2.5 A detailed analysis of the results and any gas protection measures required will be confirmed on completion of the on-site gas testing in a separate report.

10.3 CONTAMINATION ASSESSMENT

10.3.1 Elevated levels of Lead (450 mg/kg) and Arsenic (160 mg/kg) were identified in the ashy fill material and topsoil on site.

10.3.2 The samples of ashy fill material on site recorded calorific values of up to 13.2 MJ/kg. It is considered likely that materials whose calorific value exceed 10MJ/kg are almost certainly combustible.

10.3.3 There were no elevated levels of PAH (Total) or individual PAH compounds recorded in the strata on site.

10.3.4 There were no elevated levels of EPH (Total) in the samples taken from site.

10.3.5 No asbestos was recorded in the samples taken from site.

10.3.6 As there is no suitable topsoil on site, clean material will need to be imported to provide a growing medium for the garden areas. Due to the presence of the ashy fill material with elevated calorific values on site, the clean capping layer should consist of a minimum of 150mm topsoil overlying 850mm of inert subsoils for a total clean cover of 1000mm.

10.3.7 Where made ground is removed to the underlying natural strata, a reducing capping layer of 150mm topsoil and 150mm subsoil may be used to provide a minimum of 300mm growing medium to soft landscaped areas.

10.3.8 Should any further suspected areas of contamination be exposed during site strip/construction, an engineer should be contacted to determine if additional chemical testing should be undertaken. The on-site staff should maintain a photographic record and dates of any exposed contaminated material.

10.3.9 It is recommended that samples are taken of the stoney clay fill material to confirm this is free from contaminants and suitable for re-use as sub-soils in the clean capping layer. Should this material prove unsuitable after testing, clean subsoils will need to be imported.

10.3.10 As there are no available topsoils on site, suitable clean material should be imported to site to provide a suitable growing medium. All material should be tested and certified prior to bringing to site to confirm it is free from contaminants.

10.3.11 If the imported material is from a Greenfield site, a minimum of 3 samples or 1 per 250m3 of imported material should be taken for testing, whichever is greater. If it is

from a brownfield site, a minimum of 6 samples, or 1 per 100m3 of imported material should be taken for testing, whichever is greater. Material provided by a commercial supplier should be certified to the same level of testing, with the certificate less than two months old.

10.3.12 All imported certified material should be placed immediately. If this is not possible, or the material is not certified and sampling is to be carried out prior to being laid, it should be securely stored on site prior to use to prevent possible contamination from any materials on site.

10.3.13 If any areas of made ground are removed off site, they should be taken to a licensed waste site and full documentation should be obtained. Any material to be taken off-site should be suitably quarantined prior to removal to prevent cross contamination. Any relevant chemical test results should be given to the landfill operator, so that they can determine if this material is suitable to be disposed of in their licensed landfill.

11.0 SUGGESTED FURTHER WORK

11.1 Gas monitoring to be completed and gas regime for the site confirmed.

11.2 Samples to be taken of the stoney clay fill to confirm it is suitable for re-use on site.

11.3 Validation of 1m clean capping to soft landscaped areas over ashy fill.

12.0 APPROVALS

12.1 Proposals for the remediation of contaminated land may require the approval of numerous bodies.

These include:

a) Kirklees Council Environmental Health Department as required by the building and planning regulations.

b) The NHBC or similar as they will provide the insurance costs to cover the property.

c) The Environment Agency if there are risks of contamination to ground or surface water systems. They will also require notification if material is removed from site and taken to an appropriate tip.

d) Relevant highways and drainage authorities and other service companies may also wish to know about the level of contaminants.

Prepared by

M.Dean. BSc(Hons) HND

Checked by

M. Huddleston. MEng

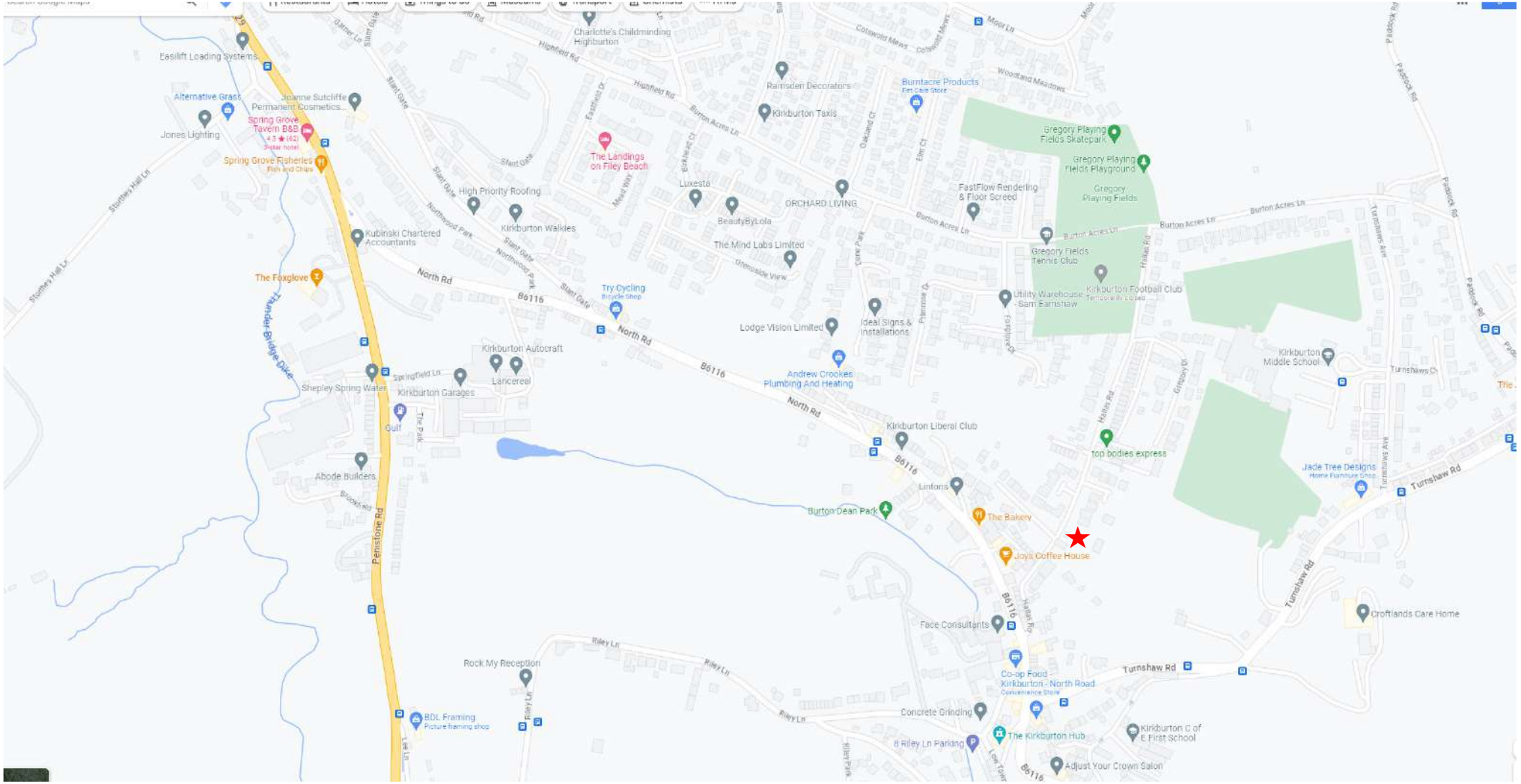
Aug 2023

APPENDIX A

Site Location Plan

Site Investigation Plan

Typical Site Conceptual Model

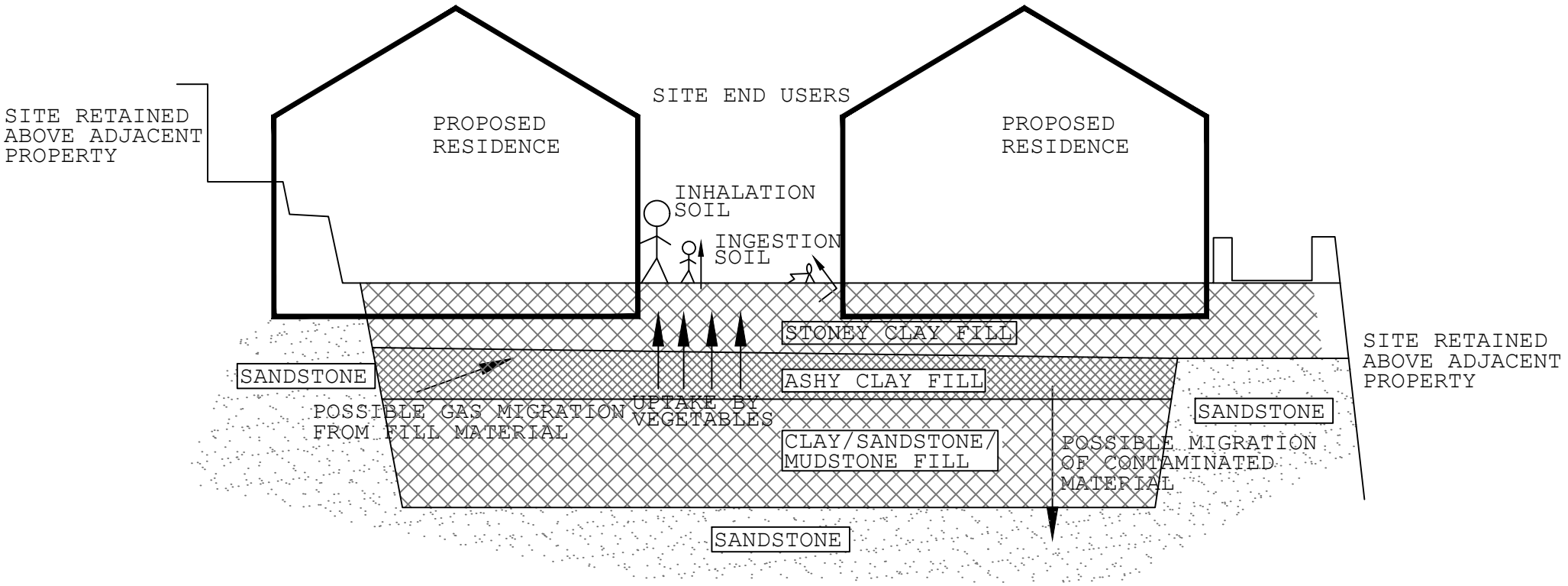


The Willows

Hallas Road

Kirkburton

HD8 0QG



Haigh Huddleston & Associates

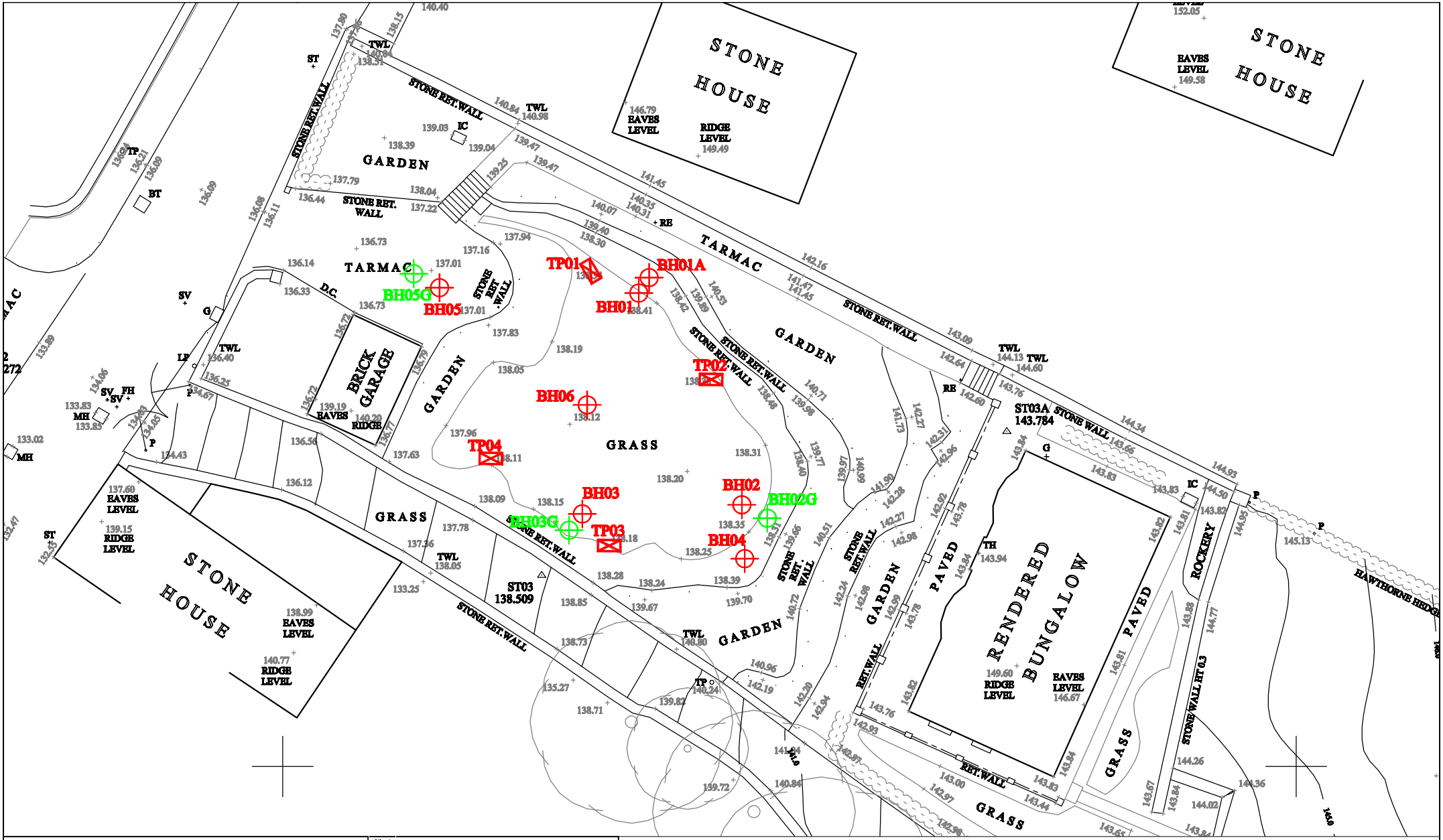
Civil Structural Engineering Consultants

Firth Buildings, 99 - 101 Leeds Rd, Dewsbury, WF12 7BU t 01924 464342 f 01924 450662

e martin@haighhuddleston.co.uk

Client	SHAUN JOYCE
Project	HALLAS ROAD, KIRKBURTON
Detail	Typical Site Conceptual Model

Scale	Dwn	Chkd	Date	Dwg No.
NTS	MD		Jul'21	E23/8073/32



Haigh Huddleston & Associates

Civil Structural Engineering Consultants

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Client	SHAUN JOYCE
Project	HALLAS ROAD, KIRKBURTON
Detail	TRIAL PIT LOCATION PLAN

Scale	Dwn	Chkd	Date	Dwg No.
1:250@A4	SR		JUN'23	E23/6073/203A

Rev A Borehole locations added 13.07.23 MD

APPENDIX B

Trial Hole Logs

Borehole Logs

TRIAL HOLE NO. 1

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Client :	**SHAUN JOYCE**	**Job No :**	**8073**
Site :	**HALLAS ROAD, KIRKBURTON**	**Date :**	**06 JUNE 2023**

0.0

0.2 Grass over light brown topsoil.

Loose backfill material consisting of angular sandstone cobbles and gravels within a sandy clayey matrix.

Sample taken at 0.9m.

2.1

REMARKS:

Ground water encountered during excavation	NO
Sample taken	YES at 0.9m.
Sides of excavation remained stable	YES
Level	……

NOTES:

……

……

TRIAL HOLE NO. 2

Haigh Huddleston & Associates
Civil & Structural Engineering Consultants
Firth Buildings, 99 - 101 Leeds Road, Dewsbury, WF12 7BU
t 01924 464342 f 01924 450662 e martin@haighhuddleston.co.uk

Client :	**SHAUN JOYCE**	**Job No :**	**8073**
Site :	**HALLAS ROAD, KIRKBURTON**	**Date :**	**06 JUNE 2023**

0.0		
	0.2	Grass over light brown subsoil/topsoil.
0.5	**0.7**	Light brown stoney clay. Sample taken at 0.7m.
1.0		Made ground. Dark grey ashy material with occasional bricks, gravels and glass.
1.5		
2.0		
	2.3	
2.5		
3.0		
3.5		
4.0		

REMARKS:

Ground water encountered during excavation	NO
Sample taken	YES at 0.7m
Sides of excavation remained stable	YES
Level	……

NOTES:

……

……

TRIAL HOLE NO. 3

Haigh Huddleston & Associates
Civil & Structural Engineering Consultants
Firth Buildings, 99 - 101 Leeds Road, Dewsbury, WF12 7BU
t 01924 464342 f 01924 450662 e martin@haighhuddleston.co.uk

Client :	**SHAUN JOYCE**	**Job No :**	**8073**
Site :	**HALLAS ROAD, KIRKBURTON**	**Date :**	**06 JUNE 2023**

0.0		
	0.4	Grass over light grey subsoil.
0.5		Light brown/grey stoney clay (made ground).
1.0		
1.5	**1.5**	Sample taken at 1.5m.
2.0		Made ground. Dark grey ashy material with occasional bricks, stone, glass inclusions. Well compacted, sides stable.
2.5		
3.0		
	3.2	
3.5		
4.0		

REMARKS:

Ground water encountered during excavation	NO
Sample taken	YES at 1.5m.
Sides of excavation remained stable	YES
Level	……

NOTES:

……

……

TRIAL HOLE NO. 4

Haigh Huddleston & Associates
Civil & Structural Engineering Consultants
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t 01924 464342 f 01924 450662 e martin@haighhuddleston.co.uk

Client :	**SHAUN JOYCE**	**Job No :**	**8073**
Site :	**HALLAS ROAD, KIRKBURTON**	**Date :**	**06 JUNE 2023**

0.0		
	0.2	Grass over light brown/grey subsoil with numerous roots. Sample taken at 0.2m.
0.5	**0.9**	Light grey stoney clay.
1.0	**1.1**	Loose backfill consisting of sandstone flags and gravels. Difficult to excavate further.
1.5		
2.0		
2.5		
3.0		
3.5		
4.0		

REMARKS:

Ground water encountered during excavation	NO
Sample taken	YES at 0.2m.
Sides of excavation remained stable	YES
Level	……

NOTES:

……

……

STRATIGRAPHY GROUND ENGINEERS

DAILY DRILLING LOG

Site	**HALLAS ROAD, KIRKBURTON**	**Date:**	**07/07/2023**
Driller	**G LEE**	**Flush**	**AIR**

bh	depth	description		bh	depth	description
1	GL to 1.10	Brown Clay Fill		3G	GL to 1.60	Clay/Sandstone/Mudstone Fill
	1.10 to 4.80	Ash Fill			1.60 to 3.00	Brown Sandstone
	4.80 to 7.50	Brown/ Grey Sandstone				Install 2m slotted, 1m plain
						Flush cover
2	GL to 1.80	Brown Clay Fill				
	1.80 to 3.20	Ash Fill		3	GL to 1.10	Brown Clay Fill
	3.20 to 7.80	Clay/Sandstone/Mudstone Fill			1.10 to 3.70	Clay/Ash Fill
	7.80 to 9.30	Brown/ Grey Sandstone			3.70 to 7.70	Very loose fill with occasional boulder
					7.70 to 9.00	Brown/ Grey Sandstone
2G	GL to 1.30	Clay/Sandstone/Mudstone Fill				
	1.30 to 2.60	Ash Fill		4	GL to 1.10	Brown Clay Fill
	2.60 to 2.80	Clay/Sandstone/Mudstone Fill			1.10 to 3.30	Ash Fill
	2.80 to 3.00	Brown weathered Sandstone			3.30 to 4.20	Clay/Sandstone/Mudstone Fill
					4.20 to 5.80	Brown weathered Sandstone
2G		Install 2m slotted, 2m plain			5.80 to 8.00	Brown/ Grey Sandstone
		No cover				

TODAYS TOTAL _____ PREVIOUS TOTAL _____

TOTAL TO DATE _____ TOTAL CASING _____

STRATIGRAPHY GROUND ENGINEERS

DAILY DRILLING LOG

Site	**HALLAS ROAD, KIRKBURTON**	**Date:**	**07/07/2023**
Driller	**G LEE**	**Flush**	**AIR**

bh	depth	description		bh	depth	description
1A	GL to 0.60	Clay Fill				
	0.60 to 3.00	Brown Sandstone				
5	GL to 0.10	Tarmac				
	0.10 to 5.80	Clay/Sandstone/Mudstone Fill				
	5.80 to 8.00	Brown/Grey Sandstone				
5G	GL to 0.10	Tarmac				
	0.10 to 3.00	Clay/Sandstone/Mudstone Fill				
		Install 2m slotted, 1m plain				
		Flush Cover				
6	GL to 2.40	Ash Fill				
	2.40 to 7.70	Clay/Sandstone/Mudstone Fill				
	7.70 to 9.00	Brown/Grey Sandstone				

TODAYS TOTAL _____ PREVIOUS TOTAL _____

TOTAL TO DATE _____ TOTAL CASING _____

STRATIGRAPHY GROUND ENGINEERS

HALLAS ROAD, KIRKBURTON
BH 6 07/07/2023

Sample no	Type	Depth from	Depth to	Drilled (m)	Recovered (m)	Casing Size depth	Water depth	SPT Seat		SPT test			
1	SPT	1.00	1.45					1	1	1	1	1	1
2	SPT	2.00	2.45					1	1	1	1	1	1
3	SPT	3.00	3.45					2	2	1	0	1	1
4	SPT	4.00	4.45					3	4	8	7	4	4
5	SPT	5.00	5.45					2	2	4	6	5	3
6	SPT	6.00	6.45					3	3	4	7	6	5
7	SPT	7.00	7.35					10	15for50mm	24	19	7	

TODAYS TOTAL ________________ PREVIOUS TOTAL ________________

TOTAL TO DATE ________________ TOTAL CASING ________________

APPENDIX C

Chemical Analysis of Samples

Certificate of Analysis

Certificate Number	23-13857	*Issued:*	22-Jun-23

Client Haigh Huddleston & Associates Ltd
Firth Buildings
99-101 Leeds Road
Dewsbury
WF12 7BU

Our Reference	23-13857
Client Reference	8073
Order No	(not supplied)
Contract Title	HALLAS ROAD
Description	4 Soil samples.
Date Received	13-Jun-23
Date Started	13-Jun-23
Date Completed	22-Jun-23
Test Procedures	Identified by prefix DETSn (details on request).

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

Approved By

Kirk Bridgewood
General Manager

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

ilac-MRA

UKAS TESTING
2139

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 23-13857
Client Ref 8073
Contract Title HALLAS ROAD

Sample ID	Depth	Lab No	Completed	Matrix Description
TP01	0.9	2185548	22/06/2023	Brown gravelly, sandy CLAY
TP02	0.7	2185549	22/06/2023	U/S (sample matrix outside MCERTS scope of accreditation)
TP03	1.5	2185550	22/06/2023	Brown gravelly, sandy CLAY
TP04	0.2	2185551	22/06/2023	Brown gravelly, sandy CLAY

Summary of Chemical Analysis
Soil Samples

Our Ref 23-13857
Client Ref 8073
Contract Title HALLAS ROAD

			Lab No	2185548	2185549	2185550	2185551
			.Sample ID	TP01	TP02	TP03	TP04
			Depth	0.90	0.70	1.50	0.20
			Other ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sampling Date	06/06/2023	06/06/2023	06/06/2023	06/06/2023
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	16	110	160	30
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.1	0.7	0.5
Chromium	DETSC 2301#	0.15	mg/kg	18	12	30	22
Copper	DETSC 2301#	0.2	mg/kg	33	61	200	72
Lead	DETSC 2301#	0.3	mg/kg	63	190	450	280
Mercury	DETSC 2325#	0.05	mg/kg	0.23	0.29	1.4	0.29
Nickel	DETSC 2301#	1	mg/kg	29	23	45	22
Selenium	DETSC 2301#	0.5	mg/kg	1.4	0.6	0.6	0.7
Zinc	DETSC 2301#	1	mg/kg	73	49	270	200
Inorganics							
pH	DETSC 2008#		pH	7.8	7.6	6.6	6.0
Calorific Value	DETSC 5008	1	MJ/kg		13.2	11.0	
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.2	1.1	2.5	2.8
Total Organic Carbon	DETSC 2084#	0.5	%	1.5	38	33	6.4
Sulphide	DETSC 2024*	10	mg/kg	12	74	43	16
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.03	0.46	0.17	0.06
Petroleum Hydrocarbons							
EPH (C10-C40)	DETSC 3311#	10	mg/kg		52	83	
PAHs							
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	0.3	0.1	0.2
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	0.4	0.2	0.3
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	0.2	0.2	0.2
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	0.2	0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	0.2	1.0	1.2	1.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.2	0.2	0.2
Fluoranthene	DETSC 3301	0.1	mg/kg	0.4	0.7	2.6	2.7
Pyrene	DETSC 3301	0.1	mg/kg	0.4	0.9	2.6	2.8
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.2	0.5	1.3	1.4
Chrysene	DETSC 3301	0.1	mg/kg	0.2	0.4	1.5	2.7
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	0.3	0.3	1.0	2.4
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	0.2	0.6	0.7
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	0.2	0.5	1.3	2.0
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.7	0.8
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2	0.2
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	0.1	< 0.1	0.6	0.7
PAH 16 Total	DETSC 3301	1.6	mg/kg	2.1	5.8	14	19
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.4	0.4	0.4

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Asbestos Analysis
Soil Samples

Our Ref 23-13857
Client Ref 8073
Contract Title HALLAS ROAD

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2185548	TP01 0.90	SOIL	NAD	none	Barry Kelly
2185549	TP02 0.70	SOIL	NAD	none	Barry Kelly
2185550	TP03 1.50	SOIL	NAD	none	Barry Kelly
2185551	TP04 0.20	SOIL	NAD	none	Barry Kelly

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 23-13857
Client Ref 8073
Contract HALLAS ROAD

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2185548	TP01 0.90 SOIL	06/06/23	GJ 250ml, PT 1L		
2185549	TP02 0.70 SOIL	06/06/23	GJ 250ml, PT 1L		
2185550	TP03 1.50 SOIL	06/06/23	GJ 250ml, PT 1L		
2185551	TP04 0.20 SOIL	06/06/23	GJ 250ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

End of Report

APPENDIX D

Groundsure Report

Historical Plans

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

THE WILLOWS, HALLAS ROAD, KIRKBURTON, HUDDERSFIELD, HD8 0QG

Order Details

Date: 19/05/2023

Your ref: JOYCE_8073

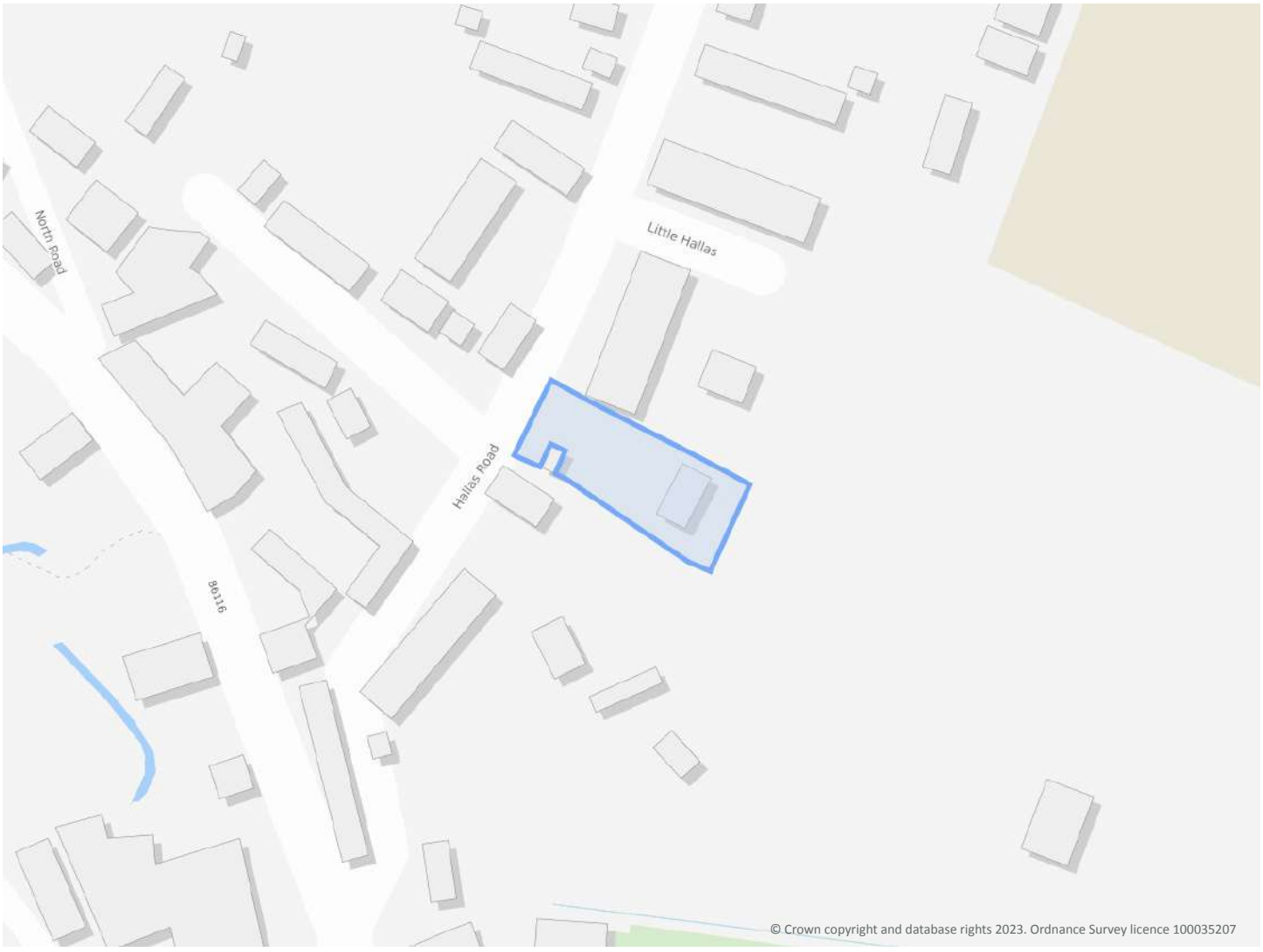
Our Ref: GS-Z76-U5Q-T7M-ESE

Site Details

Location: 419814 412870

Area: 0.12 ha

Authority: Kirklees Council ↗



Contact us with any questions at:
info@groundsure.com ↗
01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
13 >	1.1 >	Historical industrial land uses >	1	0	21	26	-
15 >	1.2 >	Historical tanks >	0	0	0	4	-
16 >	1.3 >	Historical energy features >	0	0	2	8	-
17 >	1.4 >	Historical petrol stations >	0	0	0	0	-
17 >	1.5 >	Historical garages >	0	0	2	0	-
17 >	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
18 >	2.1 >	Historical industrial land uses >	1	0	29	35	-
21 >	2.2 >	Historical tanks >	0	0	0	9	-
22 >	2.3 >	Historical energy features >	0	0	3	17	-
23 >	2.4 >	Historical petrol stations >	0	0	0	0	-
23 >	2.5 >	Historical garages >	0	0	3	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
24 >	3.1 >	Active or recent landfill >	0	0	0	0	-
24 >	3.2 >	Historical landfill (BGS records) >	0	0	0	0	-
25 >	3.3 >	Historical landfill (LA/mapping records) >	0	0	0	0	-
25 >	3.4 >	Historical landfill (EA/NRW records) >	0	0	0	0	-
25 >	3.5 >	Historical waste sites >	0	0	0	1	-
25 >	3.6 >	Licensed waste sites >	0	0	0	0	-
26 >	3.7 >	Waste exemptions >	0	0	0	2	-
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	11	-	-
28 >	4.2 >	Current or recent petrol stations >	0	0	1	0	-
29 >	4.3 >	Electricity cables >	0	0	0	0	-
29 >	4.4 >	Gas pipelines >	0	0	0	0	-
29 >	4.5 >	Sites determined as Contaminated Land >	0	0	0	0	-

29 >	4.6 >	Control of Major Accident Hazards (COMAH) >	0	0	0	0	-
29 >	4.7 >	Regulated explosive sites >	0	0	0	0	-
30 >	4.8 >	Hazardous substance storage/usage >	0	0	0	0	-
30 >	4.9 >	Historical licensed industrial activities (IPC) >	0	0	0	0	-
30 >	4.10 >	Licensed industrial activities (Part A(1)) >	0	0	0	0	-
30 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	0	0	0	-
30 >	4.12 >	Radioactive Substance Authorisations >	0	0	0	0	-
31 >	4.13 >	Licensed Discharges to controlled waters >	0	0	0	0	-
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	-
31 >	4.16 >	List 1 Dangerous Substances >	0	0	0	0	-
31 >	4.17 >	List 2 Dangerous Substances >	0	0	0	0	-
32 >	4.18 >	Pollution Incidents (EA/NRW) >	0	0	4	2	-
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 >	None (within 500m)				
35 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
37 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
38 >	5.4 >	Groundwater vulnerability- soluble rock risk >	None (within 0m)				
38 >	5.5 >	Groundwater vulnerability- local information >	None (within 0m)				
39 >	5.6 >	Groundwater abstractions >	0	0	0	2	25
46 >	5.7 >	Surface water abstractions >	0	0	0	0	7
48 >	5.8 >	Potable abstractions >	0	0	0	0	9
50 >	5.9 >	Source Protection Zones >	0	0	0	0	-
50 >	5.10 >	Source Protection Zones (confined aquifer) >	0	0	0	0	-

Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
51 >	6.1 >	Water Network (OS MasterMap) >	0	0	15	-	-

53 >	6.2 >	Surface water features >	0	0	4	-	-
53 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
53 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
54 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	**River and coastal flooding >**	On site	0-50m	50-250m	250-500m	500-2000m
55 >	7.1 >	Risk of flooding from rivers and the sea >	None (within 50m)				
56 >	7.2 >	Historical Flood Events >	0	0	1	-	-
56 >	7.3 >	Flood Defences >	0	0	0	-	-
56 >	7.4 >	Areas Benefiting from Flood Defences >	0	0	0	-	-
56 >	7.5 >	Flood Storage Areas >	0	0	0	-	-
57 >	7.6 >	Flood Zone 2 >	None (within 50m)				
57 >	7.7 >	Flood Zone 3 >	None (within 50m)				
Page	Section	**Surface water flooding >**					
58 >	8.1 >	Surface water flooding >	Negligible (within 50m)				
Page	Section	**Groundwater flooding >**					
59 >	9.1 >	Groundwater flooding >	Negligible (within 50m)				
Page	Section	**Environmental designations >**	On site	0-50m	50-250m	250-500m	500-2000m
60 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	0	0	0
61 >	10.2 >	Conserved wetland sites (Ramsar sites) >	0	0	0	0	0
61 >	10.3 >	Special Areas of Conservation (SAC) >	0	0	0	0	0
61 >	10.4 >	Special Protection Areas (SPA) >	0	0	0	0	0
61 >	10.5 >	National Nature Reserves (NNR) >	0	0	0	0	0
62 >	10.6 >	Local Nature Reserves (LNR) >	0	0	0	0	0
62 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	13
63 >	10.8 >	Biosphere Reserves >	0	0	0	0	0
63 >	10.9 >	Forest Parks >	0	0	0	0	0
63 >	10.10 >	Marine Conservation Zones >	0	0	0	0	0
63 >	10.11 >	Green Belt >	0	0	1	0	0
64 >	10.12 >	Proposed Ramsar sites >	0	0	0	0	0

64 >	10.13 >	Possible Special Areas of Conservation (pSAC) >	0	0	0	0	0
64 >	10.14 >	Potential Special Protection Areas (pSPA) >	0	0	0	0	0
64 >	10.15 >	Nitrate Sensitive Areas >	0	0	0	0	0
65 >	10.16 >	Nitrate Vulnerable Zones >	0	0	0	0	1
66 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
67 >	10.18 >	SSSI Units >	0	0	0	0	0
Page	Section	**Visual and cultural designations >**	On site	0-50m	50-250m	250-500m	500-2000m
68 >	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	-	-
69 >	11.5 >	Conservation Areas >	0	1	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	0	-	-
72 >	12.5 >	Countryside Stewardship Schemes >	0	0	0	-	-
Page	Section	**Habitat designations >**	On site	0-50m	50-250m	250-500m	500-2000m
73 >	13.1 >	Priority Habitat Inventory >	0	0	12	-	-
74 >	13.2 >	Habitat Networks >	0	0	0	-	-
74 >	13.3 >	Open Mosaic Habitat >	0	0	0	-	-
74 >	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	8	4	-
79 >	14.3 >	Superficial geology (10k) >	0	0	0	0	-

79 >	14.4 >	Landslip (10k) >	0	0	0	0	-
80 >	14.5 >	Bedrock geology (10k) >	1	0	2	5	-
81 >	14.6 >	Bedrock faults and other linear features (10k) >	0	0	2	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
82 >	15.1 >	50k Availability >	Identified (within 500m)				
83 >	15.2 >	Artificial and made ground (50k) >	0	0	0	0	-
83 >	15.3 >	Artificial ground permeability (50k) >	0	0	-	-	-
84 >	15.4 >	Superficial geology (50k) >	0	0	0	0	-
84 >	15.5 >	Superficial permeability (50k) >	None (within 50m)				
84 >	15.6 >	Landslip (50k) >	0	0	0	0	-
84 >	15.7 >	Landslip permeability (50k) >	None (within 50m)				
85 >	15.8 >	Bedrock geology (50k) >	2	0	2	6	-
86 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
86 >	15.10 >	Bedrock faults and other linear features (50k) >	0	0	2	1	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
88 >	16.1 >	BGS Boreholes >	0	0	12	-	-
Page	Section	Natural ground subsidence >					
90 >	17.1 >	Shrink swell clays >	Negligible (within 50m)				
91 >	17.2 >	Running sands >	Negligible (within 50m)				
92 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
93 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
94 >	17.5 >	Landslides >	Very 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
97 >	18.1 >	Natural cavities >	0	0	0	0	-
98 >	18.2 >	BritPits >	1	0	4	4	-
99 >	18.3 >	Surface ground workings >	1	0	17	-	-
100 >	18.4 >	Underground workings >	0	0	0	0	17
101 >	18.5 >	Historical Mineral Planning Areas >	0	0	0	0	-

101 >	18.6 >	Non-coal mining >	0	0	0	0	0
102 >	18.7 >	Mining cavities >	0	0	0	0	0
102 >	18.8 >	JPB mining areas >	None (within 0m)				
102 >	18.9 >	Coal mining >	Identified (within 0m)				
102 >	18.10 >	Brine areas >	None (within 0m)				
103 >	18.11 >	Gypsum areas >	None (within 0m)				
103 >	18.12 >	Tin mining >	None (within 0m)				
103 >	18.13 >	Clay mining >	None (within 0m)				
Page	Section	**Radon** >					
104 >	19.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	**Soil chemistry** >	On site	0-50m	50-250m	250-500m	500-2000m
106 >	20.1 >	BGS Estimated Background Soil Chemistry >	2	0	-	-	-
106 >	20.2 >	BGS Estimated Urban Soil Chemistry >	0	0	-	-	-
106 >	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
107 >	21.1 >	Underground railways (London) >	0	0	0	-	-
107 >	21.2 >	Underground railways (Non-London) >	0	0	0	-	-
107 >	21.3 >	Railway tunnels >	0	0	0	-	-
107 >	21.4 >	Historical railway and tunnel features >	0	0	0	-	-
107 >	21.5 >	Royal Mail tunnels >	0	0	0	-	-
108 >	21.6 >	Historical railways >	0	0	0	-	-
108 >	21.7 >	Railways >	0	0	0	-	-
108 >	21.8 >	Crossrail 1 >	0	0	0	0	-
108 >	21.9 >	Crossrail 2 >	0	0	0	0	-
108 >	21.10 >	HS2 >	0	0	0	0	-

Recent aerial photograph

Capture Date: 30/05/2021

Site Area: 0.12ha

Recent site history - 2018 aerial photograph

Capture Date: 01/07/2018

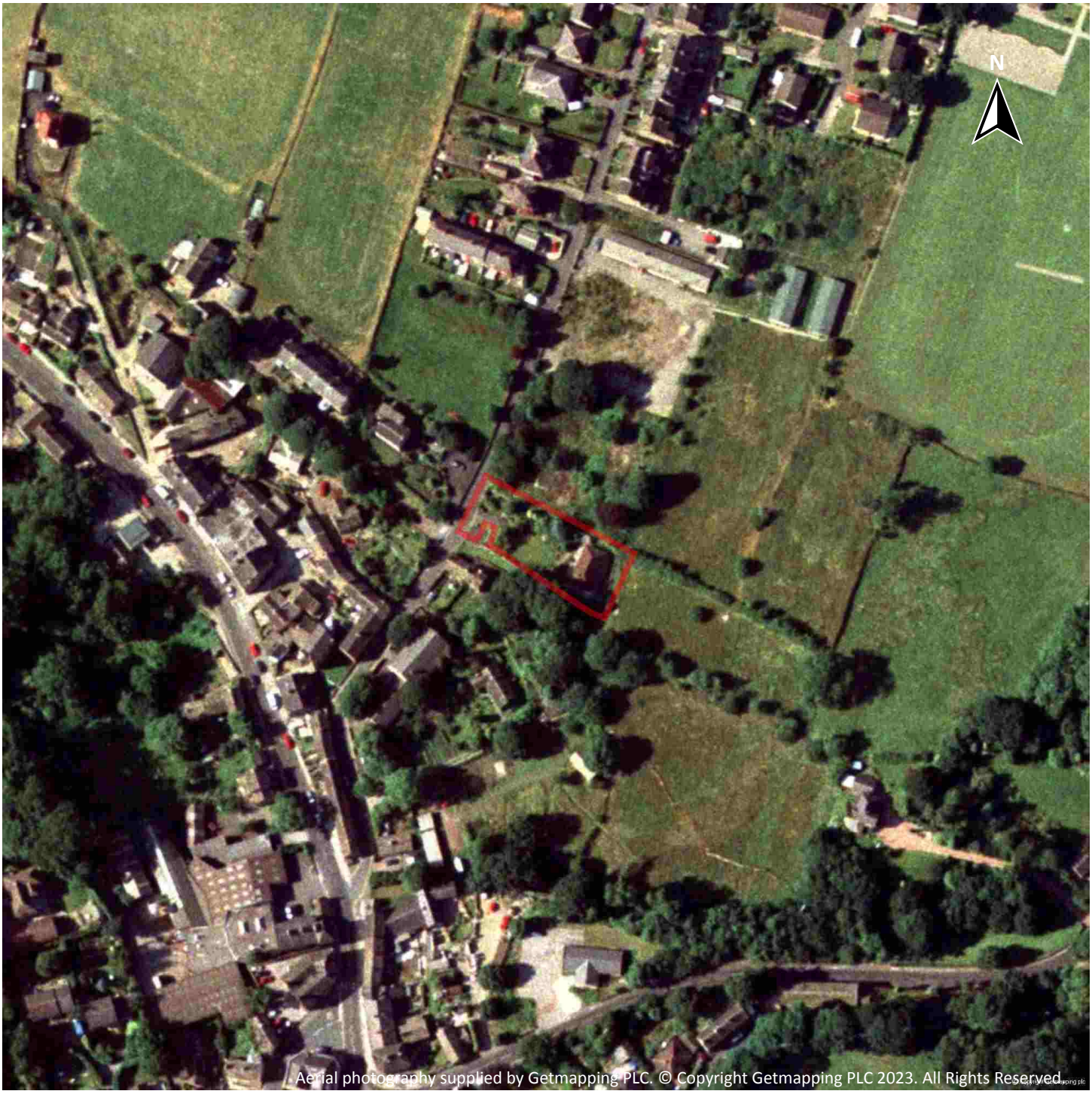
Site Area: 0.12ha

Recent site history - 2012 aerial photograph

Capture Date: 26/03/2012

Site Area: 0.12ha

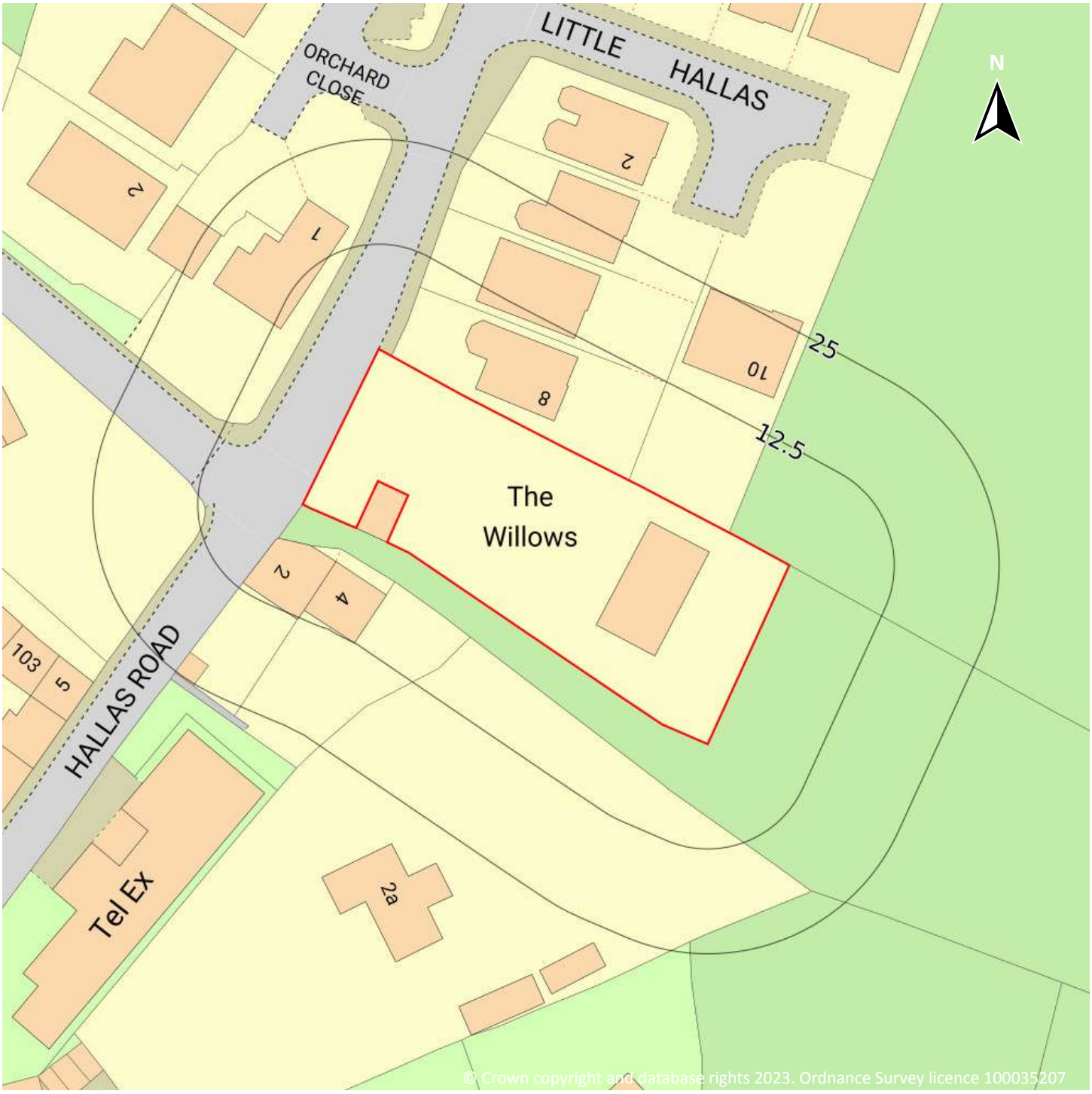
Recent site history - 1999 aerial photograph



Capture Date: 10/07/1999

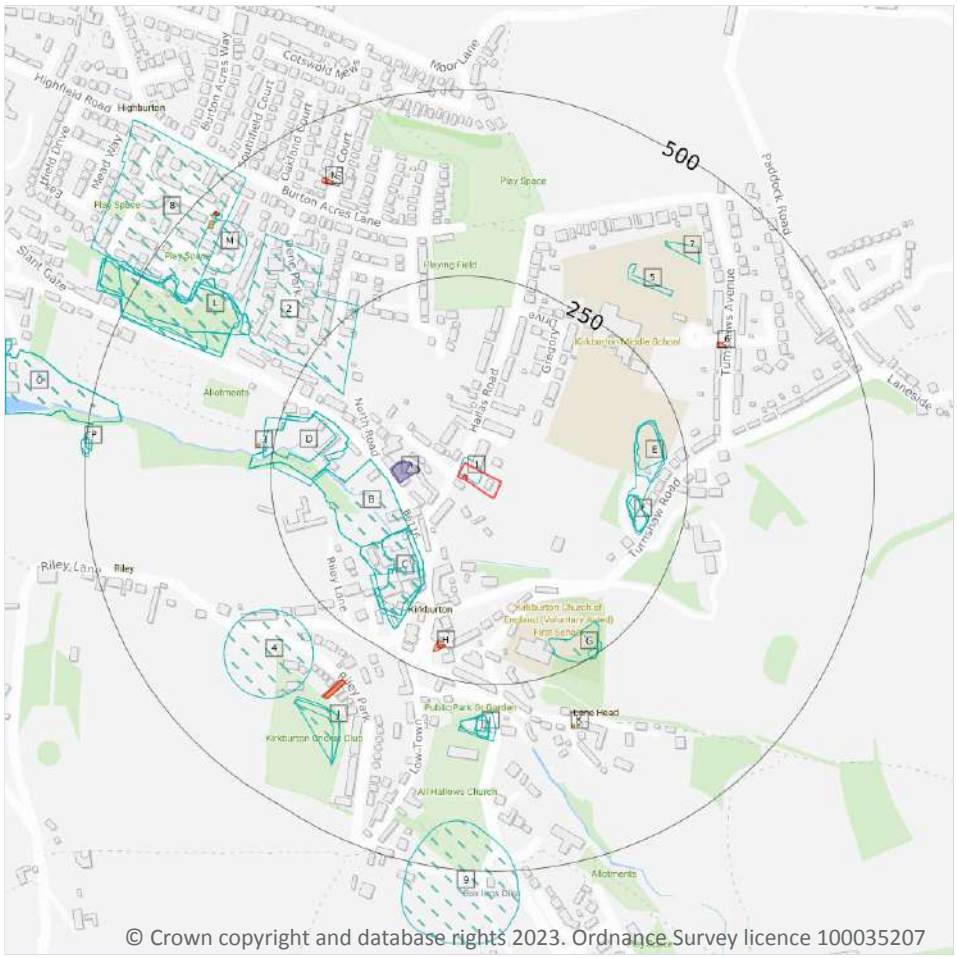
Site Area: 0.12ha

OS MasterMap site plan



Site Area: 0.12ha

1 Past land use



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 13 >**

ID	Location	Land use	Dates present	Group ID
1	**On site**	**Unspecified Old Quarry**	**1892**	**1440824**

ID	Location	Land use	Dates present	Group ID
B	88m W	Unspecified Commercial/Industrial	1977	1410507
B	88m W	Unspecified Mills	1968	1419278
C	94m SW	Unspecified Works	1951	1507426
C	94m SW	Unspecified Works	1968 - 1990	1537180
C	101m SW	Unspecified Works	1938	1487211
C	101m SW	Unspecified Works	1904	1500376
C	129m SW	Unspecified Works	1948	1492501
D	153m W	Unspecified Commercial/Industrial	1977	1410508
D	153m W	Unspecified Mill	1968	1421657
D	153m W	Unspecified Disused Mill	1948 - 1951	1470863
E	170m E	Unspecified Disused Quarry	1951	1465116
F	170m E	Unspecified Quarry	1938	1523453
F	170m E	Unspecified Heap	1948	1519142
D	171m W	Unspecified Works	1904	1438198
D	171m W	Unspecified Disused Mill	1938	1501795
F	174m E	Unspecified Quarry	1904	1510104
E	180m E	Unspecified Disused Quarry	1938 - 1948	1493654
E	185m E	Unspecified Disused Quarry	1967 - 1979	1513658
2	186m NW	Isolation Hospital	1938 - 1948	1529911
G	203m SE	Unspecified Quarry	1892 - 1904	1482639
G	241m SE	Refuse Heap	1938	1436598
I	287m S	Police Station	1990	1510127
4	287m SW	Unspecified Old Shaft	1904	1418279
I	291m S	Police Station	1938	1497252
I	293m S	Police Station	1948	1502671
I	297m S	Police Station	1951	1525072
I	297m S	Police Station	1968 - 1977	1536349
5	322m NE	Unspecified Ground Workings	1979 - 1993	1516074

ID	Location	Land use	Dates present	Group ID
L	336m NW	Unspecified Quarry	1968	1502779
L	336m NW	Unspecified Disused Quarry	1977 - 1990	1516350
L	336m NW	Unspecified Disused Quarry	1948 - 1951	1543334
L	355m NW	Unspecified Disused Quarry	1938	1484828
L	355m NW	Unspecified Quarry	1904	1551068
L	355m NW	Unspecified Quarry	1892	1462441
J	356m SW	Unspecified Ground Workings	1948	1551330
J	356m SW	Unspecified Heap	1938	1415148
7	386m NE	Unspecified Pit	1979 - 1993	1478327
M	401m NW	Unspecified Mill	1990	1503125
8	424m NW	Unspecified Mill	1968 - 1977	1541386
9	435m S	Disused Colliery	1904	1500073
O	456m W	Unspecified Mill	1968	1421656
O	456m W	Unspecified Mills	1951	1499295
O	456m W	Unspecified Commercial/Industrial	1977 - 1990	1510572
M	462m NW	Chimney	1977	1448231
P	492m W	Unspecified Heap	1951	1550429
P	495m W	Unspecified Heap	1938	1540217
P	495m W	Unspecified Heap	1948	1480755

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**4**

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 13 >**

ID	Location	Land use	Dates present	Group ID
3	268m W	Unspecified Tank	1913	223376
K	321m S	Unspecified Tank	1913	223373
K	322m S	Unspecified Tank	1960	223374
M	461m NW	Tanks	1977 - 1991	234596

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**10**

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'.

Features are displayed on the Past land use map on **page 13 >**

ID	Location	Land use	Dates present	Group ID
H	204m S	Electricity Substation	1990 - 1995	140742
H	207m S	Electricity Substation	1976	136996
J	313m SW	Electricity Substation	1990 - 1995	144481
J	313m SW	Electricity Substation	1976	137299
6	341m NE	Electricity Substation	1977 - 1990	142644
N	412m NW	Electricity Substation	1977 - 1988	134600
N	418m NW	Electricity Substation	1991	139417
M	466m NW	Electricity Substations	1977	137931
M	468m NW	Electricity Substation	1991	129052
M	470m NW	Electricity Substations	1978 - 1988	142535

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	2

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'.

Features are displayed on the Past land use map on **page 13 >**

ID	Location	Land use	Dates present	Group ID
A	52m W	Garage	1990	43339
A	64m W	Garage	1960 - 1976	45326

This data is sourced from Ordnance Survey / Groundsure.

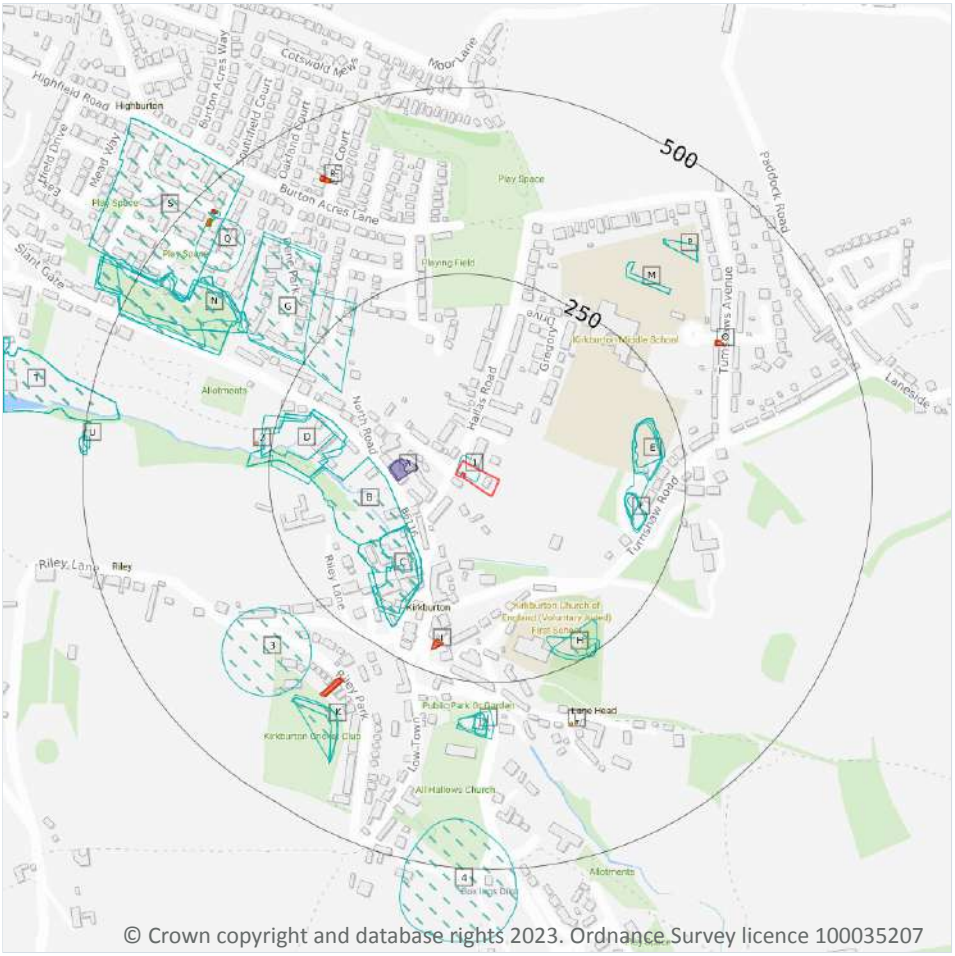
1.6 Historical military land

Records within 500m	0

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

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

2 Past land use - un-grouped



2.1 Historical industrial land uses

Records within 500m	65

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 18 >**

ID	Location	Land Use	Date	Group ID
1	**On site**	**Unspecified Old Quarry**	**1892**	**1440824**
B	88m W	Unspecified Mills	1968	1419278
B	88m W	Unspecified Commercial/Industrial	1977	1410507

ID	Location	Land Use	Date	Group ID
C	94m SW	Unspecified Works	1968	1537180
C	94m SW	Unspecified Works	1977	1537180
C	94m SW	Unspecified Works	1990	1537180
C	94m SW	Unspecified Works	1951	1507426
C	101m SW	Unspecified Works	1938	1487211
C	101m SW	Unspecified Works	1904	1500376
C	129m SW	Unspecified Works	1948	1492501
D	153m W	Unspecified Mill	1968	1421657
D	153m W	Unspecified Commercial/Industrial	1977	1410508
D	153m W	Unspecified Disused Mill	1951	1470863
D	154m W	Unspecified Disused Mill	1948	1470863
E	170m E	Unspecified Disused Quarry	1951	1465116
F	170m E	Unspecified Quarry	1938	1523453
F	170m E	Unspecified Heap	1948	1519142
F	170m E	Unspecified Heap	1948	1519142
D	171m W	Unspecified Disused Mill	1938	1501795
D	171m W	Unspecified Works	1904	1438198
F	174m E	Unspecified Quarry	1904	1510104
E	180m E	Unspecified Disused Quarry	1948	1493654
E	181m E	Unspecified Disused Quarry	1938	1493654
E	185m E	Unspecified Disused Quarry	1979	1513658
E	185m E	Unspecified Disused Quarry	1967	1513658
G	186m NW	Isolation Hospital	1938	1529911
H	203m SE	Unspecified Quarry	1892	1482639
H	213m SE	Unspecified Quarry	1904	1482639
H	241m SE	Refuse Heap	1938	1436598
G	248m NW	Isolation Hospital	1948	1529911
J	287m S	Police Station	1990	1510127

ID	Location	Land Use	Date	Group ID
3	287m SW	Unspecified Old Shaft	1904	1418279
J	291m S	Police Station	1938	1497252
J	293m S	Police Station	1948	1502671
J	297m S	Police Station	1968	1536349
J	297m S	Police Station	1977	1536349
J	297m S	Police Station	1951	1525072
M	322m NE	Unspecified Ground Workings	1993	1516074
M	322m NE	Unspecified Ground Workings	1979	1516074
N	336m NW	Unspecified Quarry	1968	1502779
N	336m NW	Unspecified Disused Quarry	1977	1516350
N	336m NW	Unspecified Disused Quarry	1990	1516350
N	336m NW	Unspecified Disused Quarry	1951	1543334
N	351m NW	Unspecified Disused Quarry	1948	1543334
N	355m NW	Unspecified Disused Quarry	1938	1484828
N	355m NW	Unspecified Quarry	1904	1551068
N	355m NW	Unspecified Quarry	1892	1462441
K	356m SW	Unspecified Ground Workings	1948	1551330
K	356m SW	Unspecified Ground Workings	1948	1551330
K	356m SW	Unspecified Heap	1938	1415148
P	386m NE	Unspecified Pit	1993	1478327
P	386m NE	Unspecified Pit	1979	1478327
Q	401m NW	Unspecified Mill	1990	1503125
S	424m NW	Unspecified Mill	1968	1541386
S	424m NW	Unspecified Mill	1977	1541386
4	435m S	Disused Colliery	1904	1500073
T	456m W	Unspecified Mill	1968	1421656
T	456m W	Unspecified Commercial/Industrial	1977	1510572
T	456m W	Unspecified Commercial/Industrial	1990	1510572

ID	Location	Land Use	Date	Group ID
T	456m W	Unspecified Mills	1951	1499295
Q	462m NW	Chimney	1977	1448231
U	492m W	Unspecified Heap	1951	1550429
U	495m W	Unspecified Heap	1938	1540217
U	495m W	Unspecified Heap	1948	1480755
U	495m W	Unspecified Heap	1948	1480755

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**9**

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 18 >**

ID	Location	Land Use	Date	Group ID
2	268m W	Unspecified Tank	1913	223376
L	321m S	Unspecified Tank	1913	223373
L	322m S	Unspecified Tank	1960	223374
Q	461m NW	Tanks	1977	234596
Q	461m NW	Tanks	1991	234596
Q	463m NW	Tanks	1983	234596
Q	463m NW	Tanks	1978	234596
Q	463m NW	Tanks	1985	234596
Q	463m NW	Tanks	1988	234596

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**20**

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

Features are displayed on the Past land use - un-grouped map on **page 18 >**

ID	Location	Land Use	Date	Group ID
I	204m S	Electricity Substation	1995	140742
I	206m S	Electricity Substation	1990	140742
I	207m S	Electricity Substation	1976	136996
K	313m SW	Electricity Substation	1995	144481
K	313m SW	Electricity Substation	1976	137299
K	314m SW	Electricity Substation	1990	144481
O	341m NE	Electricity Substation	1990	142644
O	342m NE	Electricity Substation	1977	142644
R	412m NW	Electricity Substation	1977	134600
R	413m NW	Electricity Substation	1983	134600
R	413m NW	Electricity Substation	1978	134600
R	413m NW	Electricity Substation	1985	134600
R	413m NW	Electricity Substation	1988	134600
R	418m NW	Electricity Substation	1991	139417
Q	466m NW	Electricity Substations	1977	137931
Q	468m NW	Electricity Substation	1991	129052
Q	470m NW	Electricity Substations	1983	142535
Q	470m NW	Electricity Substations	1978	142535
Q	470m NW	Electricity Substations	1985	142535
Q	470m NW	Electricity Substations	1988	142535

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	3

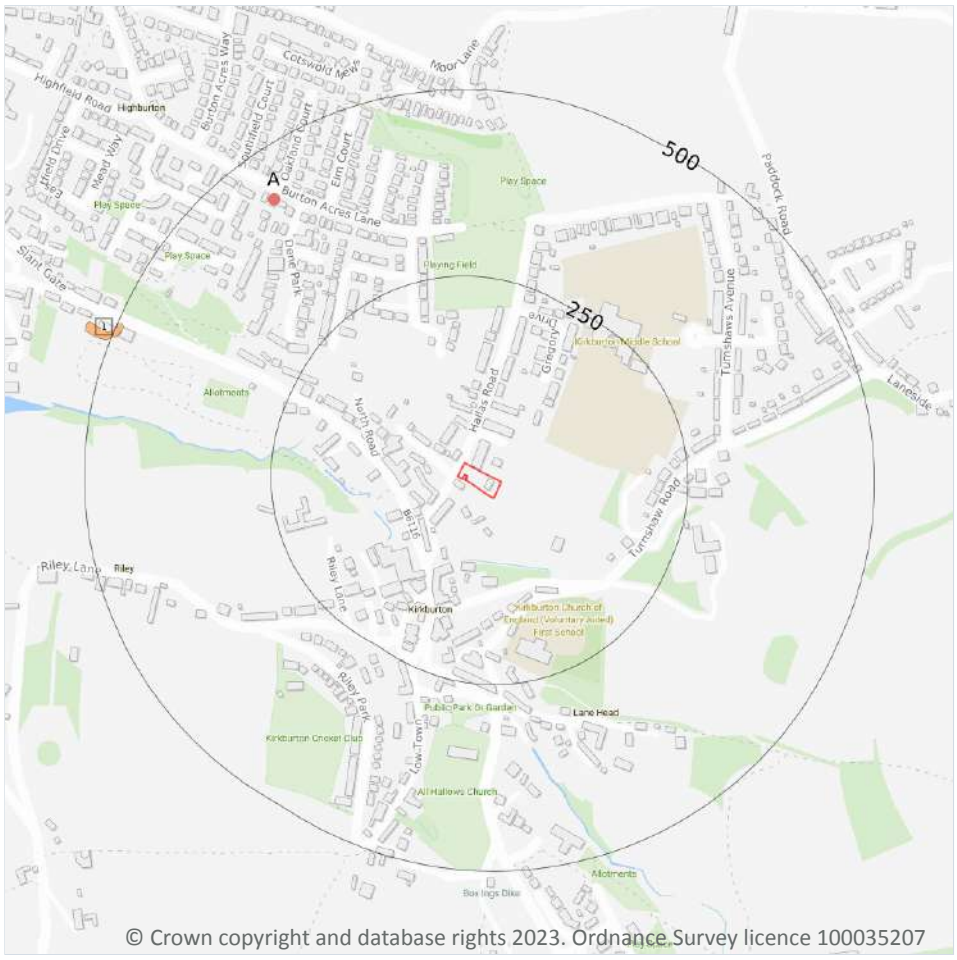
Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 18 >**

ID	Location	Land Use	Date	Group ID
A	52m W	Garage	1990	43339
A	64m W	Garage	1976	45326
A	64m W	Garage	1960	45326

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



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	1

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

Features are displayed on the Waste and landfill map on **page 24 >**

ID	Location	Address	Further Details	Date
1	490m NW	Site Address: N/A	Type of Site: Ground Workings and Refuse Heap Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1960

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	2

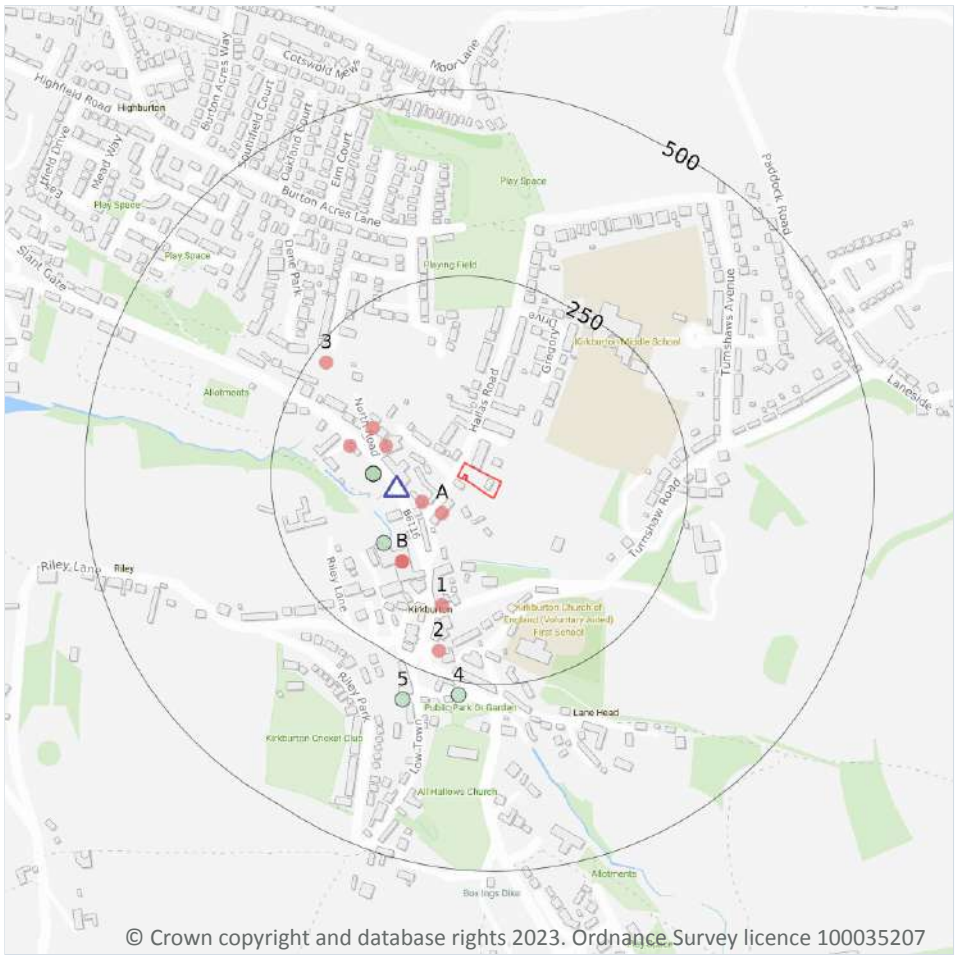
Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 24 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	435m NW	Springields, Burton Acres Lane, Kirkburton, Huddersfield, HD8 0QR	WEX123278	Using waste exemption	Not on a farm	Use of waste in construction
A	435m NW	Springields, Burton Acres Lane, Kirkburton, Huddersfield, HD8 0QR	WEX123278	Using waste exemption	Not on a farm	Use of mulch

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

4 Current industrial land use



4.1 Recent industrial land uses

Records within 250m	11

Current potentially contaminative industrial sites.

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

ID	Location	Company	Address	Activity	Category
A	53m SW	Telephone Exchange	West Yorkshire, HD8	Telecommunications Features	Infrastructure and Facilities
A	59m W	N T Systems	Burton House, North Road, Kirkburton, Huddersfield, West Yorkshire, HD8 0RL	Electronic Equipment	Industrial Products
A	104m W	Works	West Yorkshire, HD8	Unspecified Works Or Factories	Industrial Features

ID	Location	Company	Address	Activity	Category
A	131m NW	Electricity Sub Station	West Yorkshire, HD8	Electrical Features	Infrastructure and Facilities
B	136m SW	Face Consultants Ltd	Dene House, North Road, Kirkburton, Huddersfield, West Yorkshire, HD8 0RW	Construction Completion Services	Construction Services
B	136m SW	C G Flooring Systems Ltd	Dene House, North Road, Kirkburton, Huddersfield, West Yorkshire, HD8 0RW	Construction Completion Services	Construction Services
B	136m SW	Concrete Grinding Ltd	Dene House, North Road, Kirkburton, Huddersfield, West Yorkshire, HD8 0RW	Construction Completion Services	Construction Services
A	150m W	Northern Fibre	38, North Road, Kirkburton, Huddersfield, West Yorkshire, HD8 0RH	Cable, Wire and Fibre Optics	Industrial Products
1	160m S	Kirk Burton Hardware	155, North Road, Kirkburton, Huddersfield, West Yorkshire, HD8 0RR	General Construction Supplies	Industrial Products
2	217m S	Electricity Sub Station	West Yorkshire, HD8	Electrical Features	Infrastructure and Facilities
3	229m NW	Sewage Pumping Station	West Yorkshire, HD8	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 **1**

Open, closed, under development and obsolete petrol stations.

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

ID	Location	Company	Address	LPG	Status
A	84m W	OBSOLETE	North Road, Kirkburton, Huddersfield, West Yorkshire, HD8 0QE	Not Applicable	Obsolete

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	0

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

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

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

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

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	0

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

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

4.17 List 2 Dangerous Substances

Records within 500m	0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	6

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	
A	113m W	Incident Date: 24/02/2003 Incident Identification: 139026 Pollutant: Inert Materials and Wastes Pollutant Description: Other Inert Material or Waste	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
A	113m W	Incident Date: 24/02/2003 Incident Identification: 139026 Pollutant: Inert Materials and Wastes:Contaminated Water Pollutant Description: Other Inert Material or Waste:Vehicle and Plant Washings	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
A	113m W	Incident Date: 24/02/2003 Incident Identification: 139026 Pollutant: Contaminated Water Pollutant Description: Vehicle and Plant Washings	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
B	133m SW	Incident Date: 31/08/2010 Incident Identification: 817887 Pollutant: Sewage Materials Pollutant Description: Other Sewage Material	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
4	268m S	Incident Date: 19/12/2005 Incident Identification: 366755 Pollutant: Sewage Materials Pollutant Description: Grey Water	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
5	296m S	Incident Date: 05/09/2001 Incident Identification: 29072 Pollutant: Sewage Materials Pollutant Description: Grey Water	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

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

4.19 Pollution inventory substances

Records within 500m	0

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

available.

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer

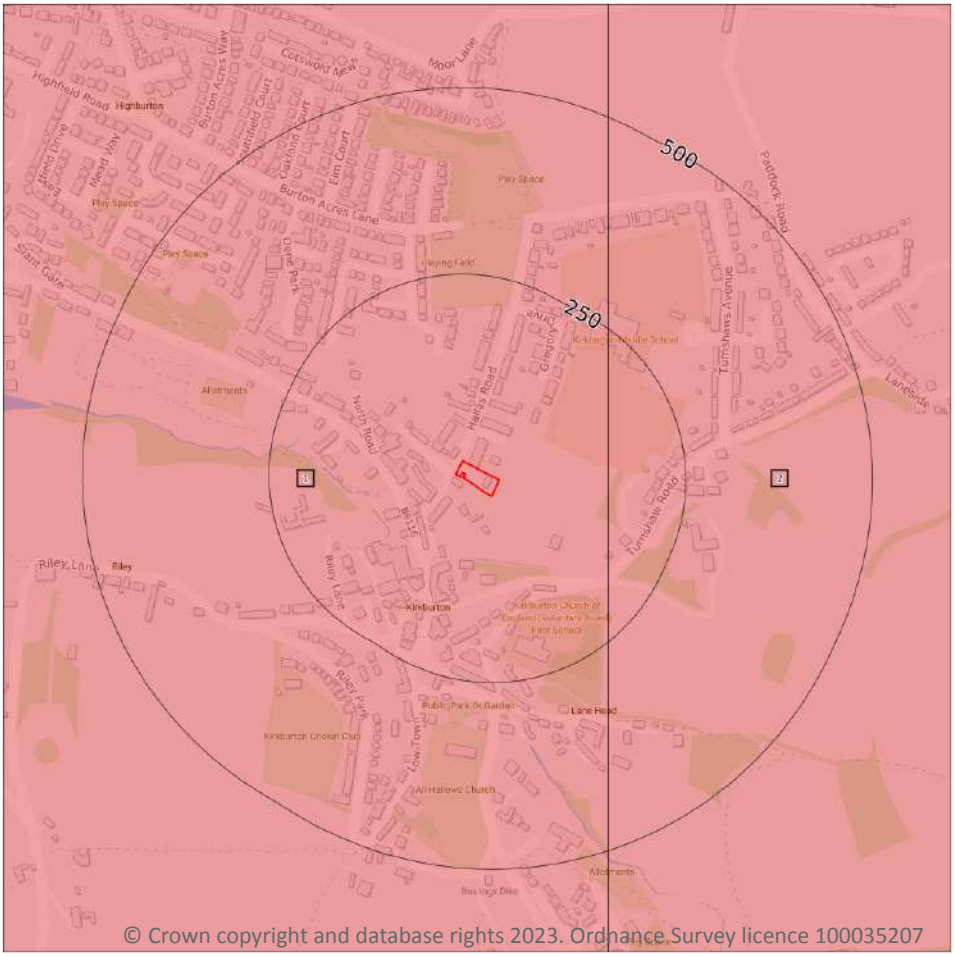
5.1 Superficial aquifer

Records within 500m	0

Aquifer status of groundwater held within superficial geology.

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

Bedrock aquifer



Site Outline

Search buffers in metres (m)

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

5.2 Bedrock aquifer

Records within 500m	2

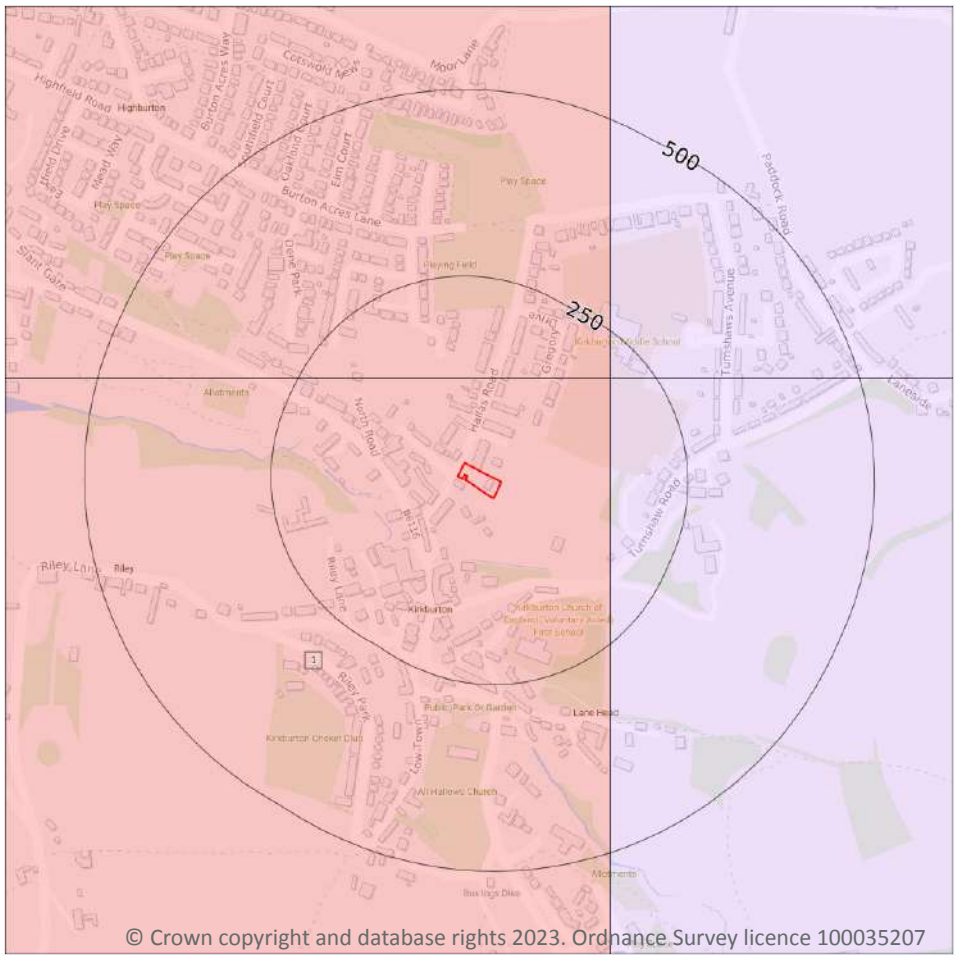
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 35 >**

ID	Location	Designation	Description
1	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**
2	146m E	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.

Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m	1

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

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

Features are displayed on the Groundwater vulnerability map on **page 37 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	**On site**	**Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: High 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.

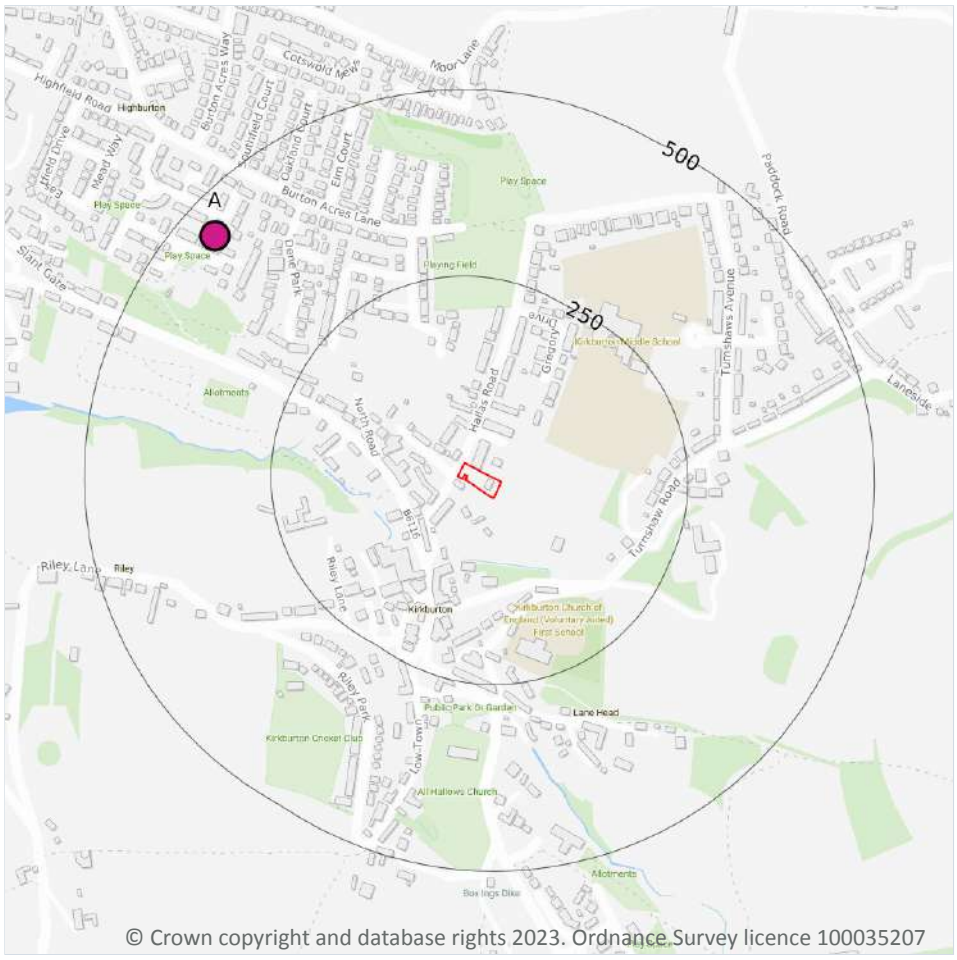
5.5 Groundwater vulnerability- local information

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



5.6 Groundwater abstractions

Records within 2000m	27

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 39 >**

ID	Location	Details	
A	452m NW	Status: Historical Licence No: 2/27/11/181 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: THOMAS BIRKHEAD & SONS LIMITED Easting: 419470 Northing: 413190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/12/1997 Expiry Date: - Issue No: 100 Version Start Date: 17/12/1997 Version End Date: -
A	452m NW	Status: Historical Licence No: 2/27/11/181 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - HIGH BURTON Data Type: Point Name: THOMAS BIRKHEAD & SONS LIMITED Easting: 419470 Northing: 413190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/12/1997 Expiry Date: - Issue No: 100 Version Start Date: 17/12/1997 Version End Date: -
-	792m W	Status: Historical Licence No: 2/27/11/167 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE-LOWER COAL MEAURES-BROOKFIELD MILL-HIGHBURTON Data Type: Point Name: WHITLEY WILLOWS LTD Easting: 419010 Northing: 412970	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 103 Version Start Date: 08/09/2005 Version End Date: -
-	792m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE-LOWER COAL MEAURES-BROOKFIELD MILL-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 419010 Northing: 412970	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 104 Version Start Date: 26/07/2006 Version End Date: -

ID	Location	Details	
-	792m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE A-LOWER COAL MEAURES-BROOKFIELD MILL-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 419010 Northing: 412970	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 106 Version Start Date: 17/08/2016 Version End Date: -
-	834m W	Status: Active Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE B3-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418989 Northing: 413081	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 1440 Original Application No: NPS/WR/032946 Original Start Date: 08/01/1982 Expiry Date: - Issue No: 109 Version Start Date: 06/10/2021 Version End Date: -
-	860m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418940 Northing: 412960	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 104 Version Start Date: 26/07/2006 Version End Date: -
-	860m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE B-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418940 Northing: 412960	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 107 Version Start Date: 17/08/2016 Version End Date: -

ID	Location	Details	
-	866m W	Status: Active Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE B1-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418941 Northing: 413009	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 1440 Original Application No: NPS/WR/032946 Original Start Date: 08/01/1982 Expiry Date: - Issue No: 109 Version Start Date: 06/10/2021 Version End Date: -
-	868m W	Status: Active Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE B2-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418949 Northing: 413061	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 1440 Original Application No: NPS/WR/032946 Original Start Date: 08/01/1982 Expiry Date: - Issue No: 109 Version Start Date: 06/10/2021 Version End Date: -
-	878m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE - LOWER COAL MEASURES - BROOKFIELD MILLS Data Type: Point Name: PENMOOR UK LTD Easting: 418964 Northing: 413151	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 107 Version Start Date: 17/08/2016 Version End Date: -
-	886m W	Status: Historical Licence No: 2/27/11/167 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE-LOWER COAL MEASURES-KIRKBURTON Data Type: Point Name: WHITLEY WILLOWS LTD Easting: 418910 Northing: 412900	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 103 Version Start Date: 08/09/2005 Version End Date: -

ID	Location	Details	
-	896m W	Status: Historical Licence No: 2/27/11/167 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - LOWER COAL MEASURES - KIRKBURTON Data Type: Point Name: WHITLEY WILLOWS LTD Easting: 418900 Northing: 412900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 102 Version Start Date: 01/02/2002 Version End Date: -
-	1337m W	Status: Historical Licence No: 2/27/11/177 Details: Raw Water Supply Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - KIRKBURTON Data Type: Point Name: UNIVERSITY OF HUDDERSFIELD Easting: 418500 Northing: 413200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/10/1995 Expiry Date: - Issue No: 102 Version Start Date: 31/07/1999 Version End Date: -
-	1344m W	Status: Historical Licence No: 2/27/11/177 Details: Raw Water Supply Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-KIRKBURTON Data Type: Point Name: UNIVERSITY OF HUDDERSFIELD Easting: 418510 Northing: 413260	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/10/1995 Expiry Date: - Issue No: 103 Version Start Date: 08/11/2002 Version End Date: -
-	1344m W	Status: Active Licence No: 2/27/11/177 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-KIRKBURTON Data Type: Point Name: UBRIQUE INVESTMENTS LTD Easting: 418510 Northing: 413260	Annual Volume (m^3): 71000 Max Daily Volume (m^3): 210 Original Application No: 6690 Original Start Date: 10/10/1995 Expiry Date: - Issue No: 105 Version Start Date: 15/06/2006 Version End Date: -
-	1705m SE	Status: Historical Licence No: 2/27/11/178 Details: General Farming & Domestic Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: DEARNLEY Easting: 420900 Northing: 411500	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 07/11/1995 Expiry Date: - Issue No: 100 Version Start Date: 07/11/1995 Version End Date: -

ID	Location	Details	
-	1705m SE	Status: Active Licence No: 2/27/11/178 Details: General Farming & Domestic Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - SHELLEY Data Type: Point Name: DEARNLEY Easting: 420900 Northing: 411500	Annual Volume (m^3): 9855 Max Daily Volume (m^3): 27 Original Application No: 6692 Original Start Date: 07/11/1995 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -
-	1714m NW	Status: Historical Licence No: 2/27/11/077 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-FENAY BRIDGE Data Type: Point Name: RELIANCE PRECISION LTD Easting: 418850 Northing: 414310	Annual Volume (m^3): 59099 Max Daily Volume (m^3): 286.4 Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 102 Version Start Date: 20/04/2005 Version End Date: -
-	1714m NW	Status: Historical Licence No: 2/27/11/077 Details: Process Water Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-FENAY BRIDGE Data Type: Point Name: RELIANCE PRECISION LTD Easting: 418850 Northing: 414310	Annual Volume (m^3): 360000 Max Daily Volume (m^3): 1200 Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 103 Version Start Date: 22/06/2006 Version End Date: -
-	1714m NW	Status: Historical Licence No: 2/27/11/077 Details: Non-Evaporative Cooling Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-FENAY BRIDGE Data Type: Point Name: RELIANCE PRECISION LTD Easting: 418850 Northing: 414310	Annual Volume (m^3): 360000 Max Daily Volume (m^3): 1200 Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 103 Version Start Date: 22/06/2006 Version End Date: -
-	1715m NW	Status: Active Licence No: 2/27/11/077 Details: Non-Evaporative Cooling Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-FENAY BRIDGE Data Type: Point Name: RELIANCE PRECISION LTD Easting: 418848 Northing: 414310	Annual Volume (m^3): 85000 Max Daily Volume (m^3): 1200 Original Application No: NPS/WR/016706 Original Start Date: 17/03/1966 Expiry Date: - Issue No: 104 Version Start Date: 13/10/2014 Version End Date: -

ID	Location	Details	
-	1715m NW	Status: Active Licence No: 2/27/11/077 Details: Process Water Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-FENAY BRIDGE Data Type: Point Name: RELIANCE PRECISION LTD Easting: 418848 Northing: 414310	Annual Volume (m^3): 85000 Max Daily Volume (m^3): 1200 Original Application No: NPS/WR/016706 Original Start Date: 17/03/1966 Expiry Date: - Issue No: 104 Version Start Date: 13/10/2014 Version End Date: -
-	1734m NW	Status: Historical Licence No: 2/27/11/077 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: SPRINGWOOD ENGINEERING CO LTD Easting: 418800 Northing: 414300	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 23/12/1981 Version End Date: -
-	1734m NW	Status: Historical Licence No: 2/27/11/077 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - FENAY BRIDGE Data Type: Point Name: RELIANCE GEAR CO LTD Easting: 418800 Northing: 414300	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 03/07/2001 Version End Date: -
-	1942m SE	Status: Historical Licence No: 2/27/08/126 Details: General Farming & Domestic Direct Source: GROUNDWATERS Point: UNDERGROUND STRATA - COAL MEASURES Data Type: Point Name: T R & C HALL Easting: 421550 Northing: 411910	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 11/10/2000 Expiry Date: - Issue No: 2 Version Start Date: 18/09/2002 Version End Date: -
-	1942m SE	Status: Active Licence No: 2/27/08/126 Details: General Farming & Domestic Direct Source: GROUNDWATERS Point: BOREHOLE- COAL MEASURES - SHELLEY Data Type: Point Name: C & M HALL Easting: 421550 Northing: 411910	Annual Volume (m^3): 32225 Max Daily Volume (m^3): 89 Original Application No: NPS/WR/021610 Original Start Date: 11/10/2000 Expiry Date: - Issue No: 4 Version Start Date: 31/10/2016 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	**7**

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 39 >**

ID	Location	Details	
-	896m W	Status: Historical Licence No: 2/27/11/168 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: SHEPLEY DYKE Data Type: Point Name: PENMOOR UK LTD Easting: 418900 Northing: 412900	Annual Volume (m^3): 10500 Max Daily Volume (m^3): 136 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 103 Version Start Date: 26/07/2006 Version End Date: -
-	896m W	Status: Historical Licence No: 2/27/11/168 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: SHEPLEY DYKE - HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418900 Northing: 412900	Annual Volume (m^3): 10500 Max Daily Volume (m^3): 136 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 103 Version Start Date: 16/03/2015 Version End Date: -
-	1446m NW	Status: Historical Licence No: 2/27/11/078 Details: General use relating to Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: BELDON BROOK Data Type: Point Name: SPRINGWOOD ENGINEERING CO LTD Easting: 419200 Northing: 414200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 30/06/1980 Version End Date: -

ID	Location	Details	
-	1446m NW	Status: Historical Licence No: 2/27/11/078 Details: Lake & Pond Throughflow Direct Source: SURFACE WATER Point: BELDON BROOK - FENAY BRIDGE Data Type: Point Name: RELIANCE GEAR COMPANY LIMITED Easting: 419200 Northing: 414200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 102 Version Start Date: 18/06/2002 Version End Date: -
-	1446m NW	Status: Historical Licence No: 2/27/11/078 Details: Lake & Pond Throughflow Direct Source: SURFACE WATER Point: BELDON BROOK - FENAY BRIDGE Data Type: Point Name: RELIANCE GEAR CO LTD Easting: 419200 Northing: 414200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 102 Version Start Date: 18/06/2002 Version End Date: -
-	1455m NW	Status: Historical Licence No: 2/27/11/174 Details: General use relating to Secondary Category (Medium Loss) Direct Source: SURFACE WATER Point: WOODSOME BECK Data Type: Point Name: KIRKLEES METROPOLITAN COUNCIL & KIRKLEES COUNTRYSIDE UNIT Easting: 418680 Northing: 413810	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 14/07/1994 Expiry Date: - Issue No: 100 Version Start Date: 14/07/1994 Version End Date: -
-	1459m NW	Status: Historical Licence No: 2/27/11/078 Details: Lake & Pond Throughflow Direct Source: SURFACE WATER Point: BELDON BROOK-FENAY BRIDGE-HUDDERSFIELD Data Type: Point Name: MALLINSON Easting: 419190 Northing: 414210	Annual Volume (m^3): 7728 Max Daily Volume (m^3): 254.58 Original Application No: - Original Start Date: 17/03/1966 Expiry Date: - Issue No: 103 Version Start Date: 20/06/2004 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	9

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 39 >**

ID	Location	Details	
-	792m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE-LOWER COAL MEAURES-BROOKFIELD MILL-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 419010 Northing: 412970	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 104 Version Start Date: 26/07/2006 Version End Date: -
-	792m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE A-LOWER COAL MEAURES-BROOKFIELD MILL-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 419010 Northing: 412970	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 106 Version Start Date: 17/08/2016 Version End Date: -
-	834m W	Status: Active Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE B3-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418989 Northing: 413081	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 1440 Original Application No: NPS/WR/032946 Original Start Date: 08/01/1982 Expiry Date: - Issue No: 109 Version Start Date: 06/10/2021 Version End Date: -

ID	Location	Details	
-	860m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418940 Northing: 412960	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 104 Version Start Date: 26/07/2006 Version End Date: -
-	860m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE B-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418940 Northing: 412960	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 107 Version Start Date: 17/08/2016 Version End Date: -
-	866m W	Status: Active Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE B1-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418941 Northing: 413009	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 1440 Original Application No: NPS/WR/032946 Original Start Date: 08/01/1982 Expiry Date: - Issue No: 109 Version Start Date: 06/10/2021 Version End Date: -
-	868m W	Status: Active Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE B2-LOWER COAL MEASURES-HIGHBURTON Data Type: Point Name: PENMOOR UK LTD Easting: 418949 Northing: 413061	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 1440 Original Application No: NPS/WR/032946 Original Start Date: 08/01/1982 Expiry Date: - Issue No: 109 Version Start Date: 06/10/2021 Version End Date: -

ID	Location	Details	
-	878m W	Status: Historical Licence No: 2/27/11/167 Details: Water Bottling Direct Source: GROUNDWATERS Point: BOREHOLE - LOWER COAL MEASURES - BROOKFIELD MILLS Data Type: Point Name: PENMOOR UK LTD Easting: 418964 Northing: 413151	Annual Volume (m^3): 225000 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/01/1982 Expiry Date: - Issue No: 107 Version Start Date: 17/08/2016 Version End Date: -
-	1344m W	Status: Active Licence No: 2/27/11/177 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-KIRKBURTON Data Type: Point Name: UBRIQUE INVESTMENTS LTD Easting: 418510 Northing: 413260	Annual Volume (m^3): 71000 Max Daily Volume (m^3): 210 Original Application No: 6690 Original Start Date: 10/10/1995 Expiry Date: - Issue No: 105 Version Start Date: 15/06/2006 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.

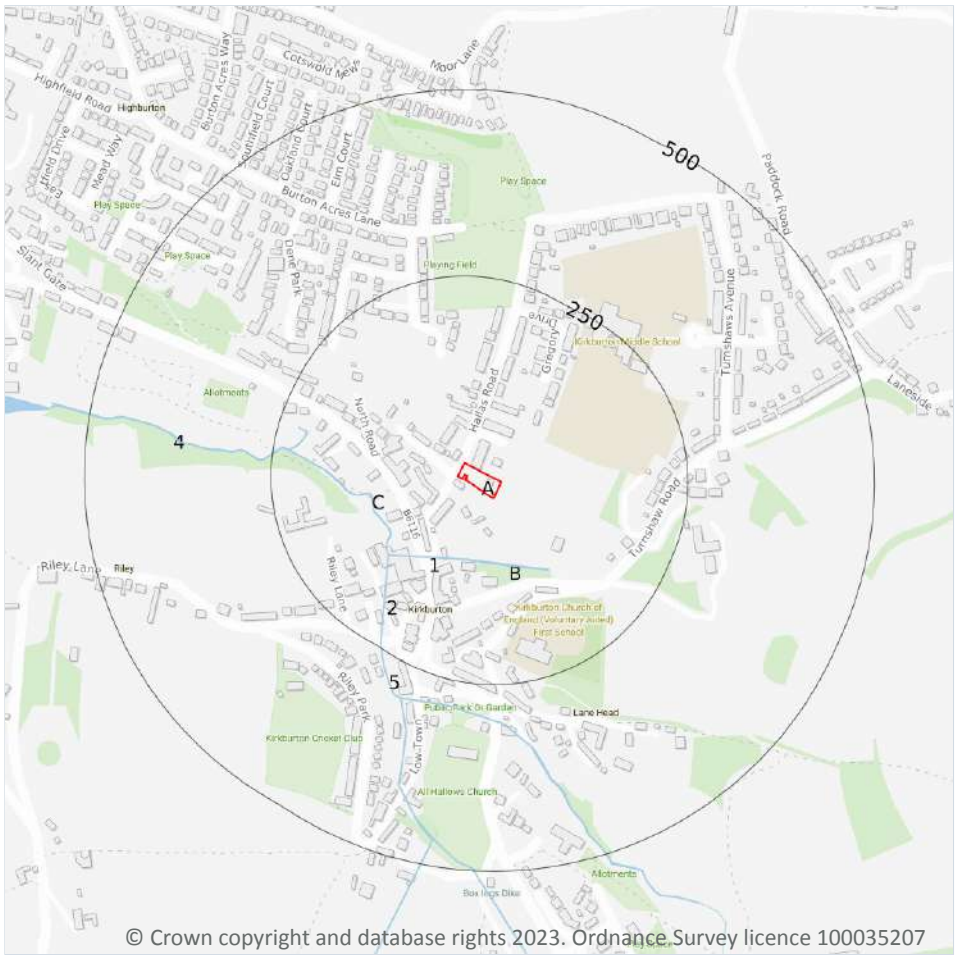
5.10 Source Protection Zones (confined aquifer)

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



6.1 Water Network (OS MasterMap)

Records within 250m	15

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 51 >**

ID	Location	Type of water feature	Ground level	Permanence	Name
B	87m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
1	90m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	115m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Box Ings Dike
C	126m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Box Ings Dike
C	131m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Box Ings Dike
2	140m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Box Ings Dike
C	178m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Dean Bottom Dike
C	196m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Dean Bottom Dike
C	210m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	210m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	210m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
C	213m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
C	215m W	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
4	229m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Dean Bottom Dike

ID	Location	Type of water feature	Ground level	Permanence	Name
5	246m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Box Ings Dike

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	4

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 51 >**

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 51 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River**	**Fenay beck from Source to River Colne**	**GB104027063340**	**Colne and Holme**	**Aire and Calder**

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 51 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	828m W	River	Fenay beck from Source to River Colne	GB104027063340 ↗	Moderate	Fail	Moderate	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 51 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**Aire & Calder Carb Limestone / Millstone Grit / Coal Measures.**	GB40402G700400 ↗	**Poor**	**Poor**	**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	0

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

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

7.2 Historical Flood Events

Records within 250m	1

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

Features are displayed on the River and coastal flooding map on **page 55 >**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
E	218m SW	Low Gate Lane, Kirkburton	2008-01-10 2008-01-10	Main river	Obstruction/blockage - culvert	Fluvial

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

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

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

7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding

8.1 Surface water flooding

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

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.

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding

Site Outline

Search buffers in metres (m)

High

Moderate - High

Moderate

Low

Negligible

9.1 Groundwater flooding

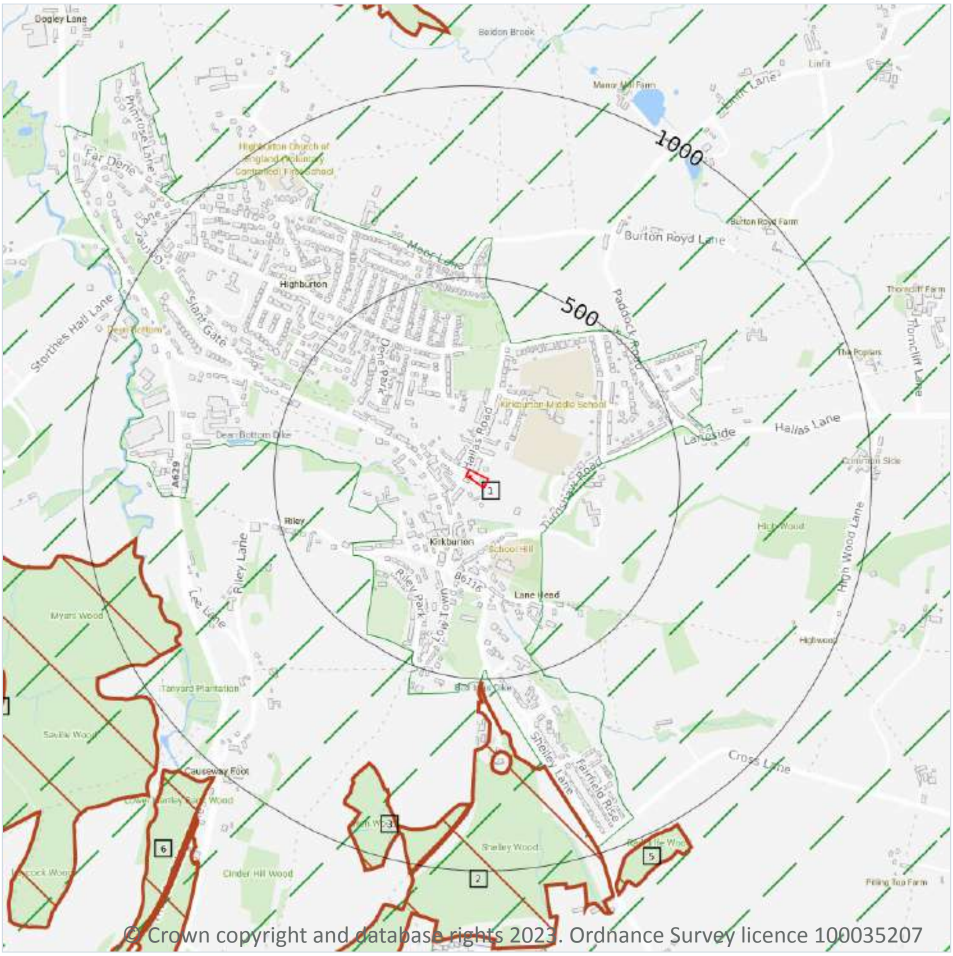
Highest risk on site	**Negligible**
Highest risk within 50m	**Negligible**

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 59 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

Designated Ancient Woodland

Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

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

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

10.7 Designated Ancient Woodland

Records within 2000m	13

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 60 >**

ID	Location	Name	Woodland Type
2	510m S	Shelley Wood	Ancient & Semi-Natural Woodland
3	780m S	Shelley Wood	Ancient & Semi-Natural Woodland
4	846m SW	Hartley Bank Wood	Ancient Replanted Woodland
5	1010m SE	Shelley Wood	Ancient Replanted Woodland
6	1025m SW	Hartley Bank Wood	Ancient Replanted Woodland
7	1137m SW	Hartley Bank Wood	Ancient Replanted Woodland
8	1141m N	Lepton Great Wood	Ancient & Semi-Natural Woodland
-	1459m W	North Spring Wood	Ancient Replanted Woodland
-	1548m W	Carr Wood	Ancient & Semi-Natural Woodland
-	1757m SW	Hartley Bank Wood	Ancient Replanted Woodland
-	1986m S	Shepley Mill Wood	Ancient & Semi-Natural Woodland
-	1990m S	Shepley Mill Wood	Ancient & Semi-Natural Woodland
-	1991m S	Shepley Mill 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	1

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

Features are displayed on the Environmental designations map on **page 60 >**

ID	Location	Name	Local Authority name
1	191m SE	South and West Yorkshire	Kirklees

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

10.12 Proposed Ramsar sites

Records within 2000m	0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

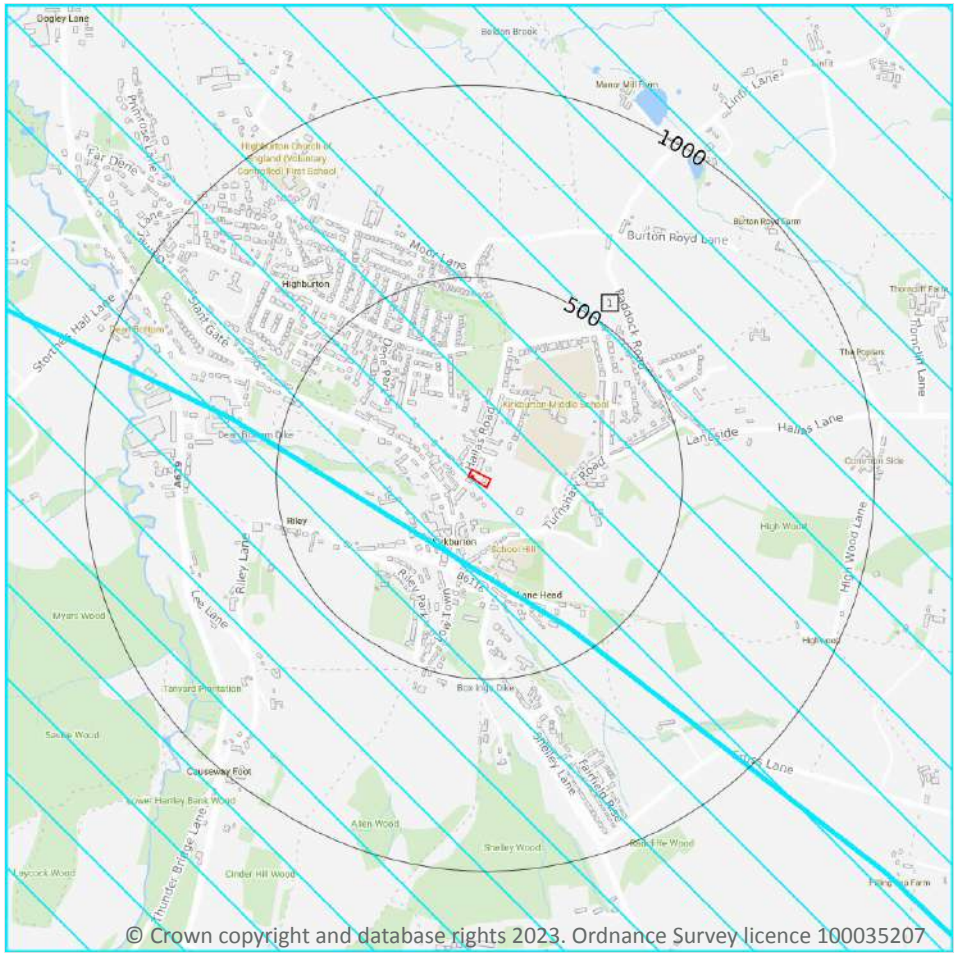
Records within 2000m	1

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

Location	Name	Type	NVZ ID	Status
1403m SE	River Dearne NVZ	Surface Water	278	Existing

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site	1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 66 >**

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

This data is sourced from Natural England.

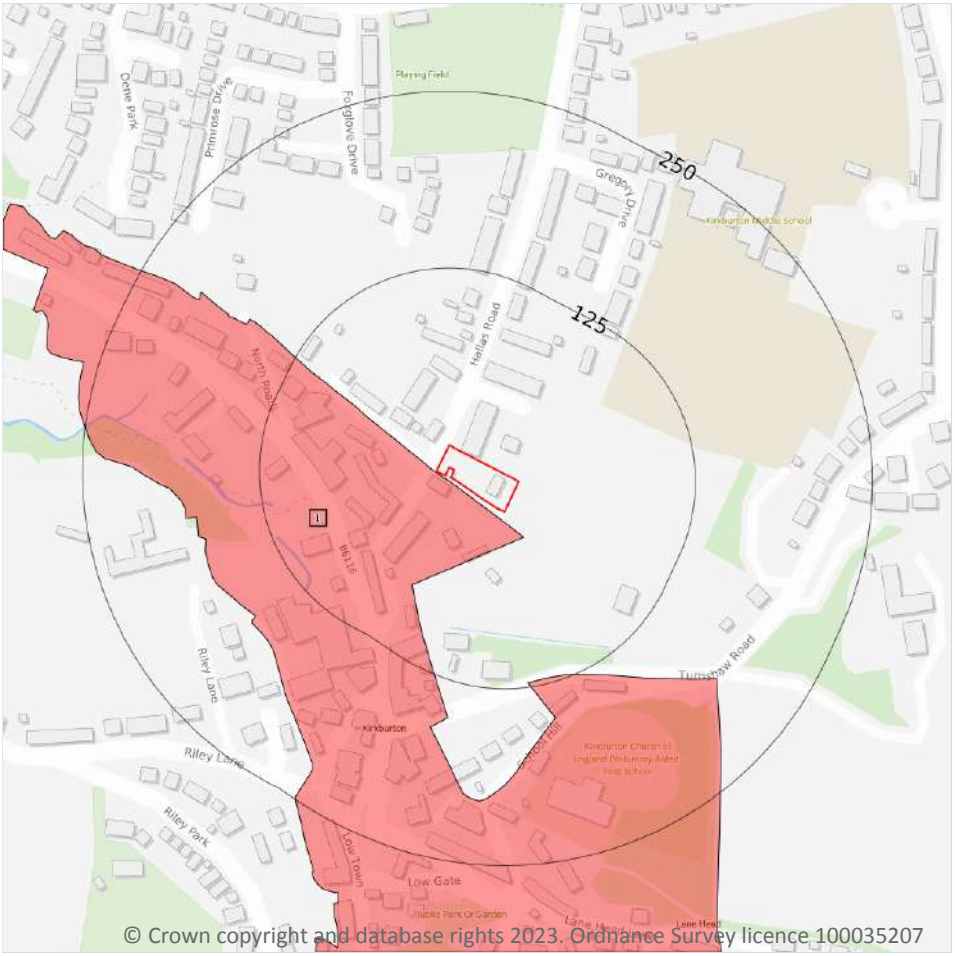
10.18 SSSI Units

Records within 2000m	0

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

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

11 Visual and cultural designations



Site Outline

Search buffers in metres (m)

- Listed buildings
- Conservation areas
- Conservation areas - no data
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	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	1

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.

Features are displayed on the Visual and cultural designations map on **page 68 >**

ID	Location	Name	District	Date of designation
1	1m W	Kirkburton	Kirklees	01/08/1980

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

11.6 Scheduled Ancient Monuments

Records within 250m	**0**

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

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

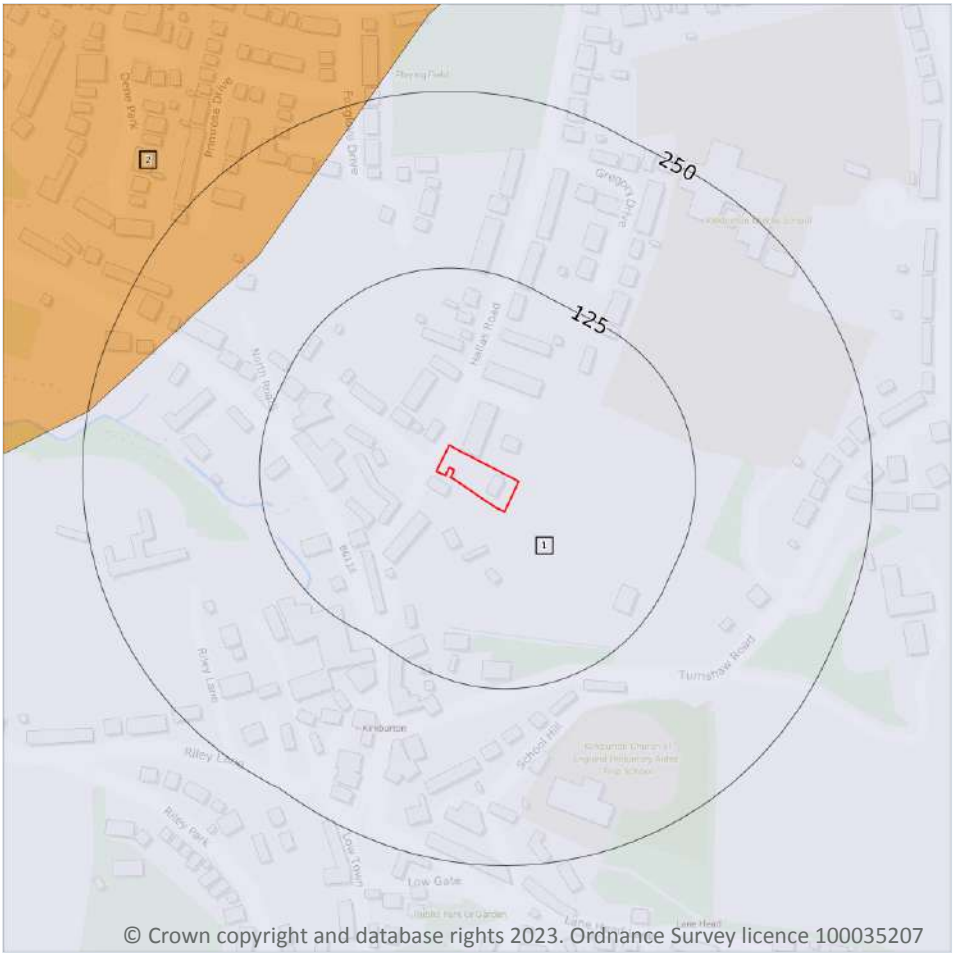
11.7 Registered Parks and Gardens

Records within 250m	**0**

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	2

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

Features are displayed on the Agricultural designations map on **page 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	190m NW	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	0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

13 Habitat designations

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	12

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 73 >**

ID	Location	Main Habitat	Other habitats
1	87m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	88m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	105m N	No main habitat but additional habitats present	Additional: TORCH (INV 50%)
A	108m N	Traditional orchard	Overruled by Traditional Orchards HAP Inventory dataset

ID	Location	Main Habitat	Other habitats
3	148m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	192m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	194m W	No main habitat but additional habitats present	Main habitat: DWOOD (INV > 50%)
B	195m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
5	197m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
6	212m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	214m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
7	239m W	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

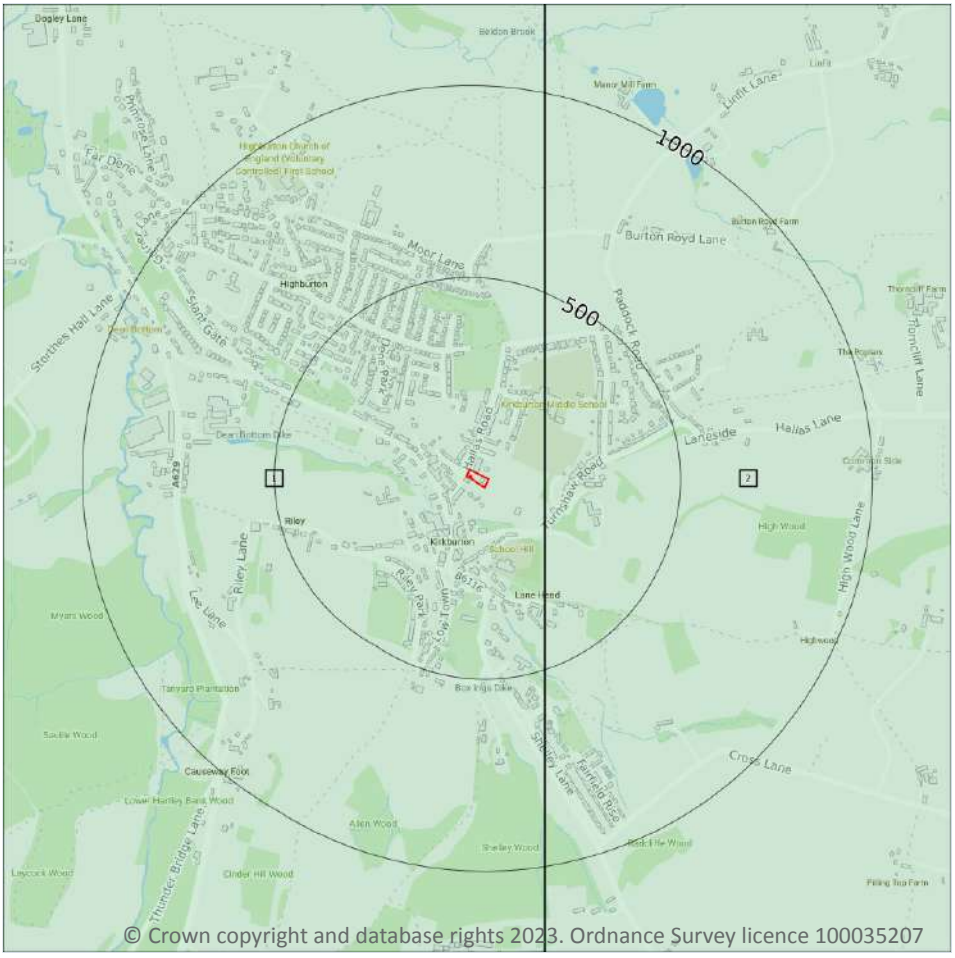
Records within 250m	**0**

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 **2**

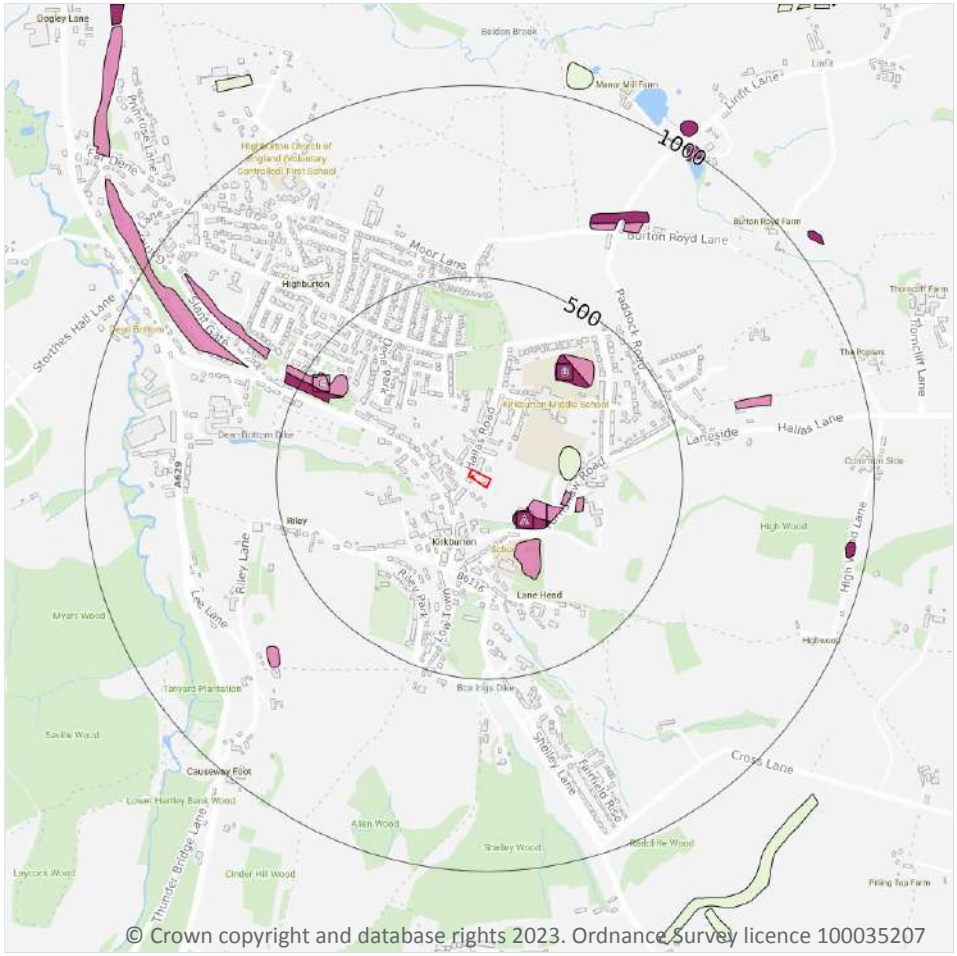
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

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**	**Full**	**Full**	**Full**	**Full**	**SE11SE**
2	146m E	Full	Full	Full	Full	SE21SW

This data is sourced from the British Geological Survey.

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



Site Outline

Search buffers in metres (m)

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

14.2 Artificial and made ground (10k)

Records within 500m	12

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

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 77 >**

ID	Location	LEX Code	Description	Rock description
A	99m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	119m SE	WGR-VOID	Worked Ground (Undivided)	Void
A	160m E	WGR-VOID	Worked Ground (Undivided)	Void
A	166m SE	WGR-VOID	Worked Ground (Undivided)	Void

ID	Location	LEX Code	Description	Rock description
A	178m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	182m E	WMGR-ARTDP	Infilled Ground	Artificial Deposit
A	194m E	WGR-VOID	Worked Ground (Undivided)	Void
A	230m E	WGR-VOID	Worked Ground (Undivided)	Void
B	314m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
B	354m NE	WGR-VOID	Worked Ground (Undivided)	Void
C	383m NW	WGR-VOID	Worked Ground (Undivided)	Void
C	385m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

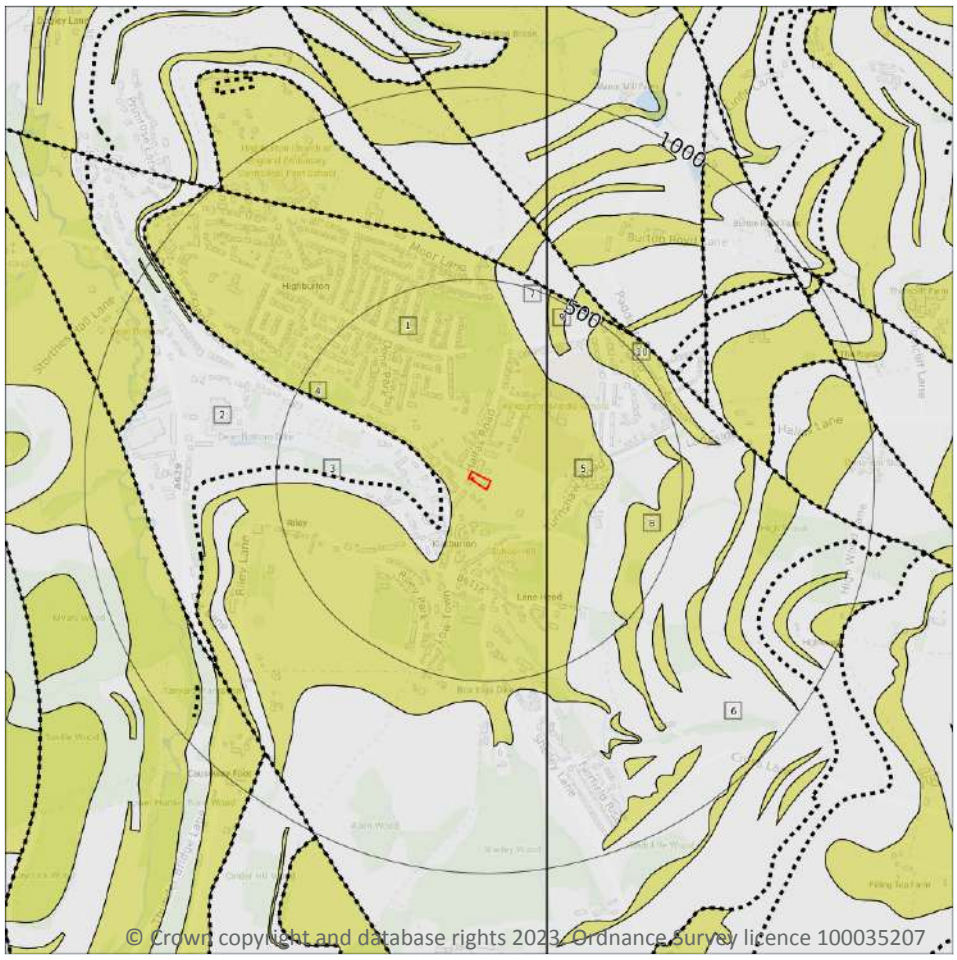
14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

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

14.5 Bedrock geology (10k)

Records within 500m	8

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 80 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**KKBS-SDST**	**Kirkburton Sandstone - Sandstone**	**Langsettian Sub-age**
2	60m W	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
5	146m E	KKBS-SDST	Kirkburton Sandstone - Sandstone	Langsettian Sub-age

ID	Location	LEX Code	Description	Rock age
6	272m E	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
7	309m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
8	365m E	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
9	372m NE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
10	417m NE	CLRK-SDST	Clifton Rock - Sandstone	Langsettian Sub-age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	**2**

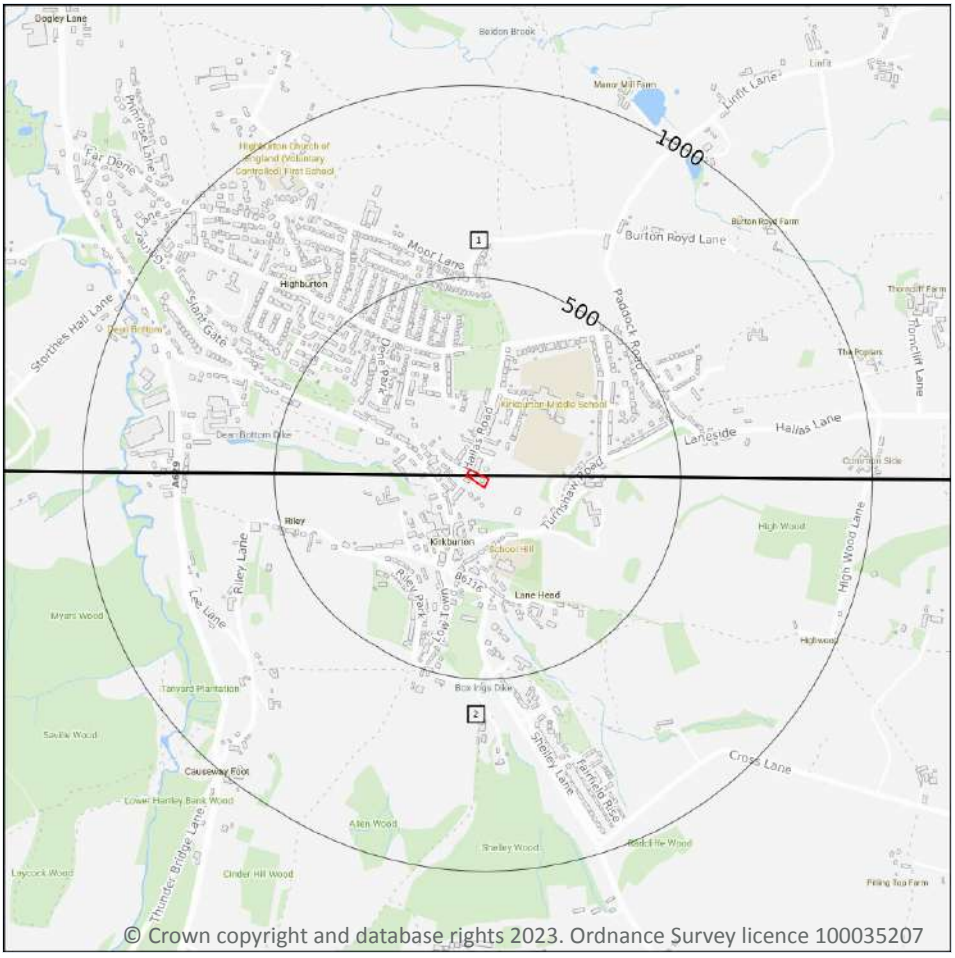
Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 80 >**

ID	Location	Category	Description
3	77m W	ROCK	Coal seam, inferred
4	128m W	ROCK	Coal seam, inferred

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	2

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 82 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW077_huddersfield_v4
2	On site	Full	Full	Full	Full	EW086_glossop_v4

This data is sourced from the British Geological Survey.

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

15.2 Artificial and made ground (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial

15.4 Superficial geology (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

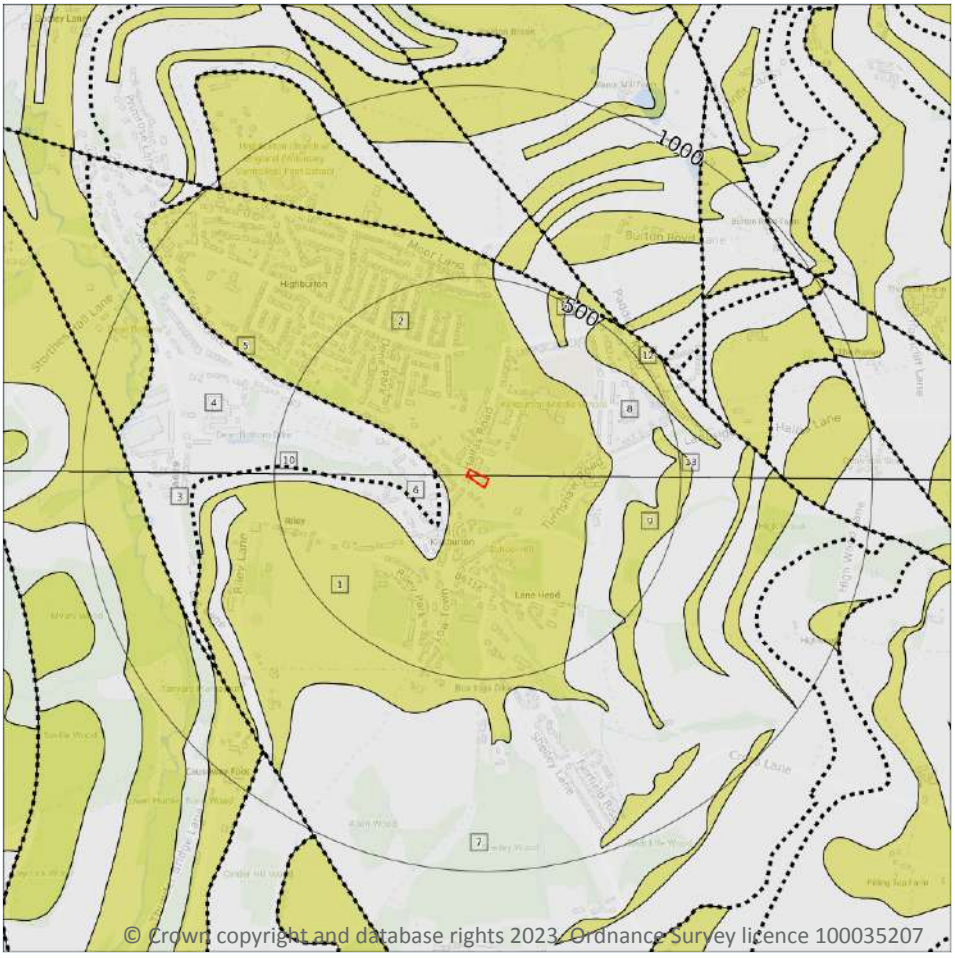
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m	10

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 85 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**KKBS-SDST**	**KIRKBURTON SANDSTONE - SANDSTONE**	**WESTPHALIAN**
2	**On site**	**KKBS-SDST**	**KIRKBURTON SANDSTONE - SANDSTONE**	**WESTPHALIAN**
3	60m W	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

ID	Location	LEX Code	Description	Rock age
4	75m W	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
7	272m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
8	299m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
9	365m E	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
11	391m NE	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
12	419m NE	CLRK-SDST	CLIFTON ROCK - SANDSTONE	WESTPHALIAN
13	441m E	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	**1**

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**High**	**Moderate**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	**3**

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.

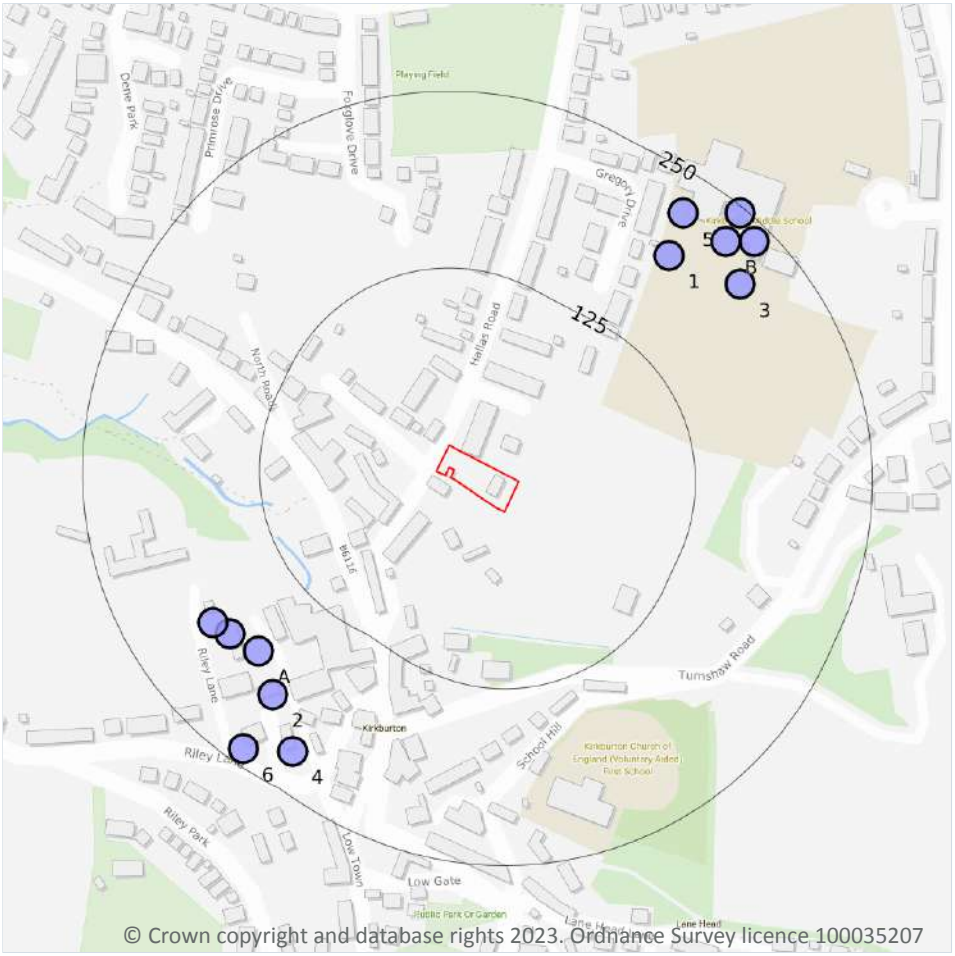
Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 85 >**

ID	Location	Category	Description
5	75m W	ROCK	Coal seam, inferred

ID	Location	Category	Description
6	78m W	ROCK	Coal seam, inferred
10	375m W	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

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

16.1 BGS Boreholes

Records within 250m	12

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

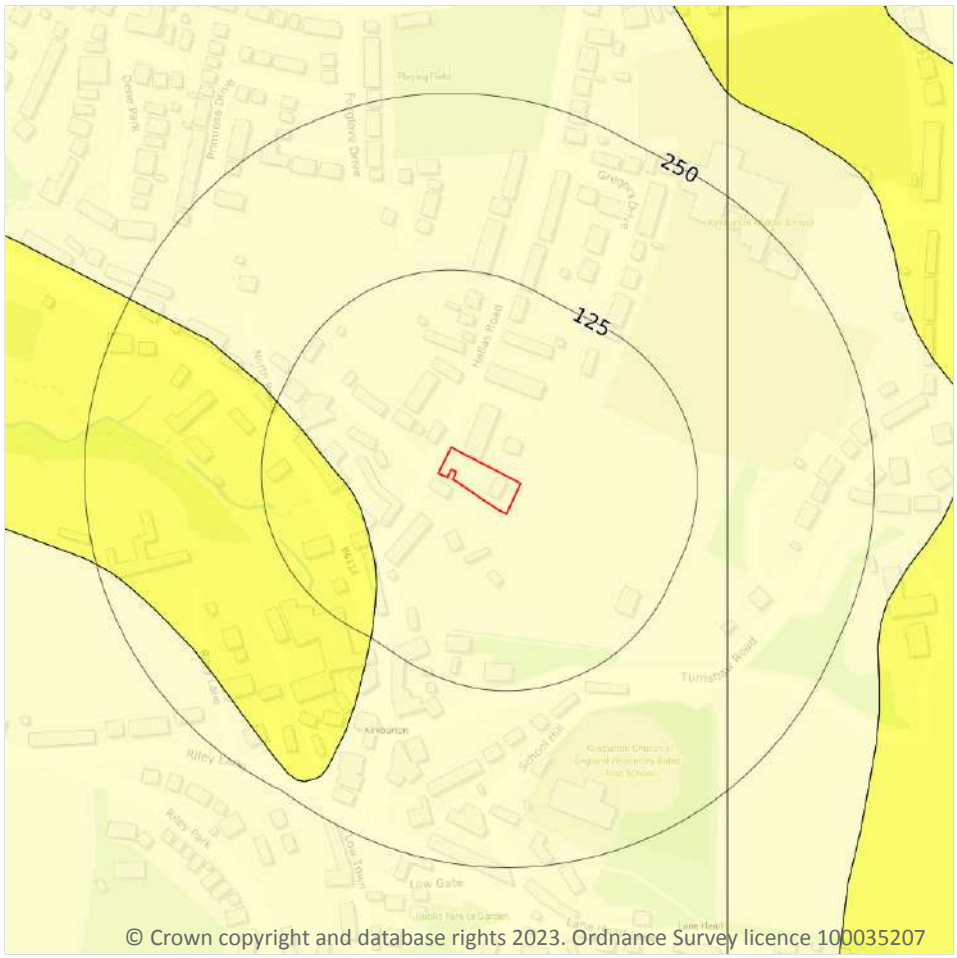
Features are displayed on the Boreholes map on **page 88 >**

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	178m SW	419670 412741	KIRKBURTON MENTAL HOME 2	4.25	N	41469 ↗
A	185m SW	419650 412753	KIRKBURTON MENTAL HOME 3	4.5	N	41470 ↗
A	190m SW	419638 412761	KIRKBURTON MENTAL HOME 1	4.5	N	41468 ↗

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	192m NE	419960 413020	KIRKBURTON MID SCHOOL 7	2.44	N	41495 ↗
2	196m SW	419680 412710	KIRKBURTON MENTAL HOME 4	3.15	N	41471 ↗
3	210m NE	420010 413000	KIRKBURTON MID SCHOOL 8	2.74	N	57172 ↗
4	222m SW	419694 412670	KIRKBURTON MENTAL HOME 6	3.0	N	41473 ↗
5	223m NE	419970 413050	KIRKBURTON MID SCHOOL 4	2.13	N	41494 ↗
B	224m NE	420000 413030	KIRKBURTON MID SCHOOL 6	3.05	N	57171 ↗
B	238m NE	420020 413030	KIRKBURTON MID SCHOOL 5	2.44	N	57170 ↗
6	239m SW	419659 412672	KIRKBURTON MENTAL HOME 5	4.25	N	41472 ↗
B	246m NE	420010 413050	KIRKBURTON MID SCHOOL 3	2.74	N	57169 ↗

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	1

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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 90 >**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands

17.2 Running sands

Records within 50m	1

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

Features are displayed on the Natural ground subsidence - Running sands map on **page 91 >**

Location	Hazard rating	Details
On site	**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

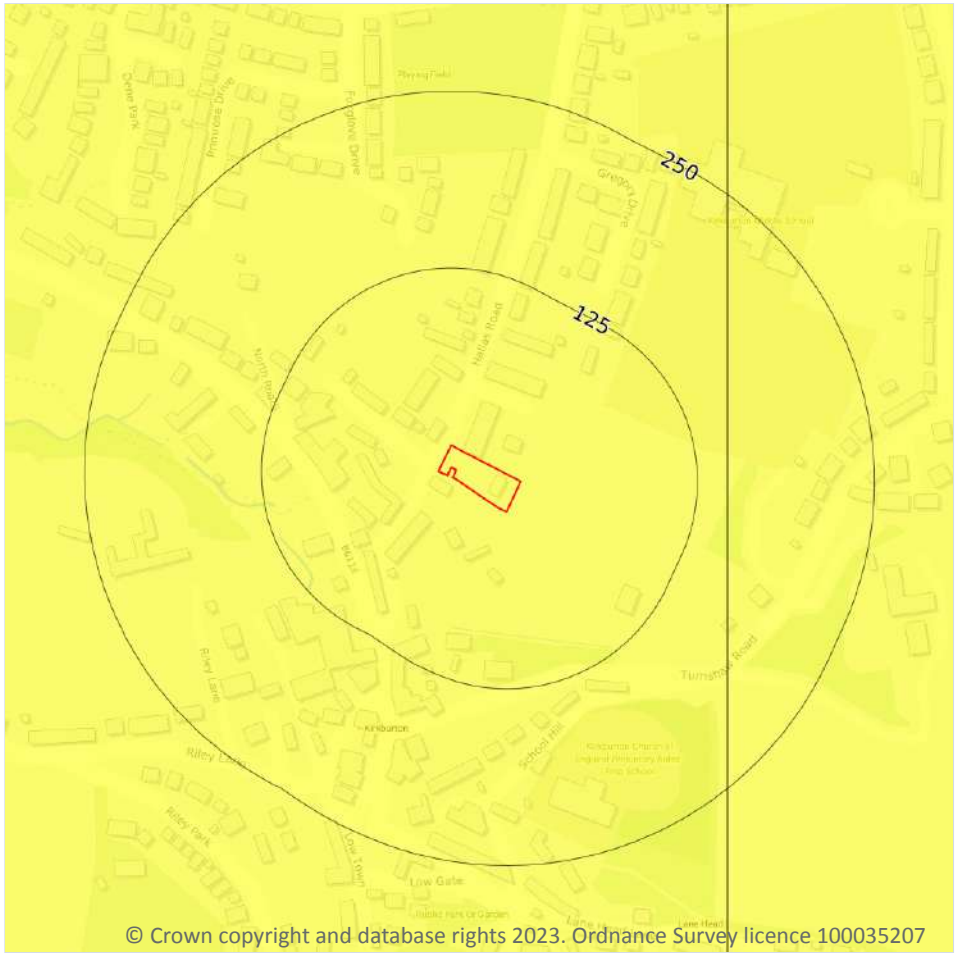
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

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

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

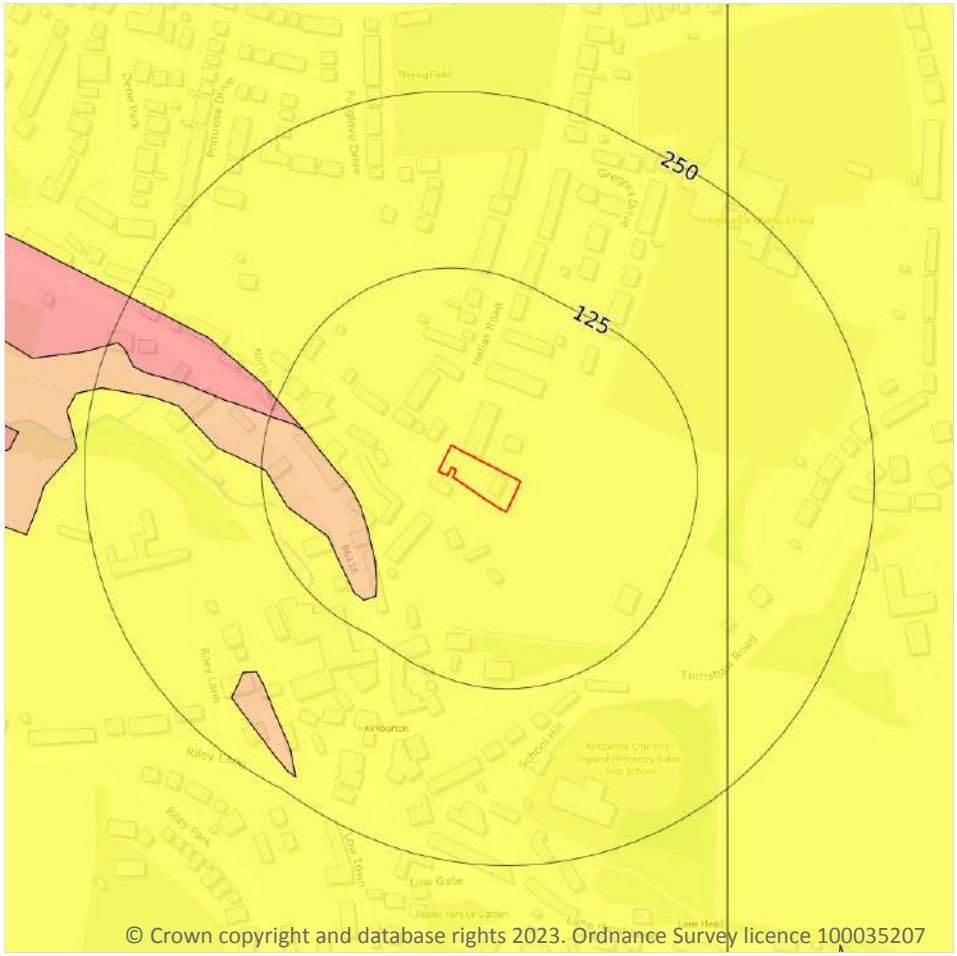
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 93 >**

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	1

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

Features are displayed on the Natural ground subsidence - Landslides map on **page 94 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks

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

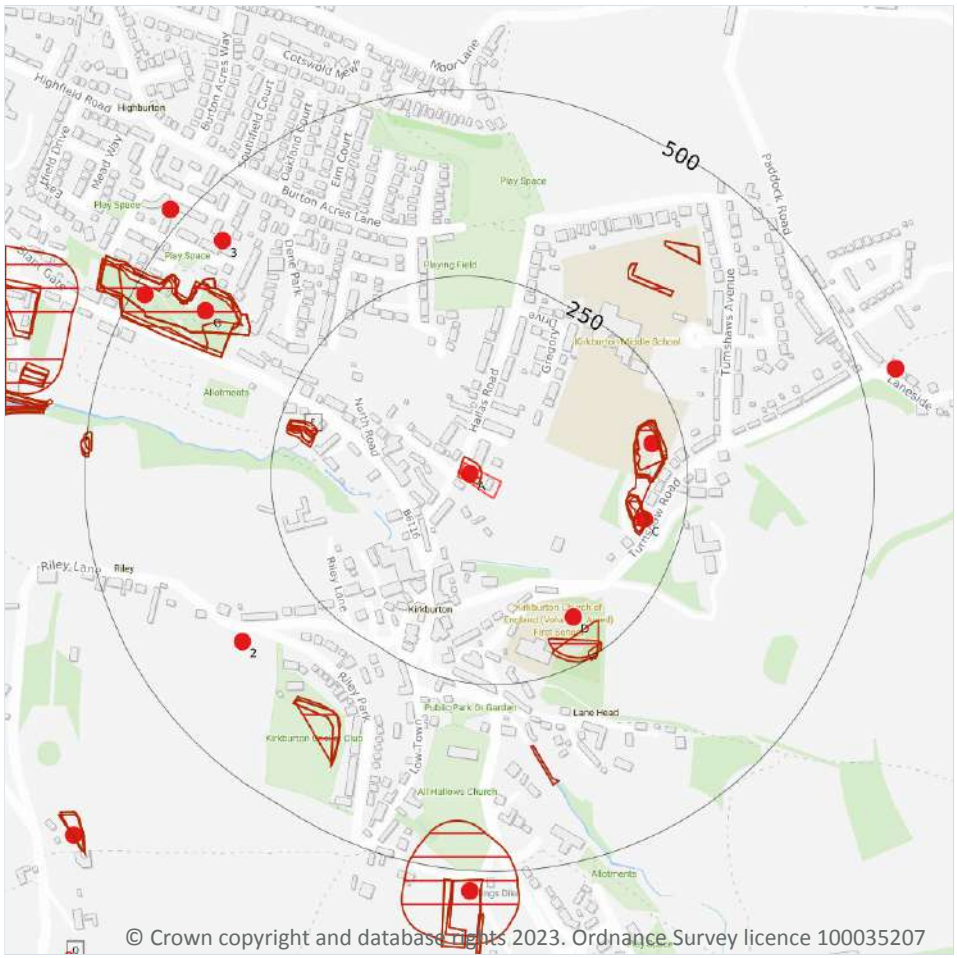
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

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



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	9

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 97 >**

ID	Location	Details	Description
A	**On site**	**Name: Dean Top** **Address: Kirkburton, HUDDERSFIELD, West Yorkshire** **Commodity: Sandstone** **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**
D	191m SE	Name: Little Bretton Address: Kirkburton, HUDDERSFIELD, West Yorkshire Commodity: Sandstone 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
C	197m E	Name: Dene House Address: Kirkburton, HUDDERSFIELD, West Yorkshire Commodity: Sandstone 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	208m E	Name: Shepley Side Address: Kirkburton, HUDDERSFIELD, West Yorkshire Commodity: Sandstone 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
C	218m E	Name: Little Bretton Address: Kirkburton, HUDDERSFIELD, West Yorkshire Commodity: Sandstone 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

ID	Location	Details	Description
2	363m SW	Name: Riley Pit Address: Kirkburton, HUDDERSFIELD, West Yorkshire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) 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
G	402m NW	Name: Burton Dean Address: Highburton, HUDDERSFIELD, West Yorkshire Commodity: Sandstone 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
3	440m NW	Name: Blind Lane Quarries Address: Highburton, HUDDERSFIELD, West Yorkshire Commodity: Sandstone 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
G	484m NW	Name: Burton Dean Address: Highburton, HUDDERSFIELD, West Yorkshire Commodity: Sandstone 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 **18**

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 97 >**

ID	Location	Land Use	Year of mapping	Mapping scale
A	**On site**	**Unspecified Old Quarry**	**1892**	**1:10560**
B	170m E	Unspecified Disused Quarry	1951	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
C	170m E	Unspecified Quarry	1938	1:10560
C	170m E	Unspecified Heap	1948	1:10560
C	170m E	Unspecified Heap	1948	1:10560
C	174m E	Unspecified Quarry	1904	1:10560
B	180m E	Unspecified Disused Quarry	1948	1:10560
B	181m E	Unspecified Disused Quarry	1938	1:10560
B	185m E	Unspecified Disused Quarry	1979	1:10000
B	185m E	Unspecified Disused Quarry	1967	1:10560
E	197m W	Reservoirs	1951	1:10560
E	198m W	Ponds	1892	1:10560
E	199m W	Reservoirs	1948	1:10560
E	199m W	Reservoir	1938	1:10560
E	199m W	Ponds	1904	1:10560
D	203m SE	Unspecified Quarry	1892	1:10560
D	213m SE	Unspecified Quarry	1904	1:10560
D	241m SE	Refuse Heap	1938	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m **17**

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 97 >**

ID	Location	Land Use	Year of mapping	Mapping scale
-	686m N	Unspecified Shaft	1904	1:10560
-	691m N	Unspecified Old Shaft	1938	1:10560
-	698m N	Unspecified Disused Shaft	1968	1:10560
-	698m N	Unspecified Disused Shaft	1977	1:10000

ID	Location	Land Use	Year of mapping	Mapping scale
-	698m N	Unspecified Disused Shaft	1990	1:10000
-	698m N	Unspecified Old Shaft	1951	1:10560
-	751m N	Air Shaft	1938	1:10560
-	751m N	Air Shaft	1904	1:10560
-	759m N	Air Shaft	1951	1:10560
Q	821m SW	Air Shaft	1968	1:10560
-	824m SW	Air Shaft	1951	1:10560
-	831m SW	Air Shaft	1948	1:10560
-	831m SW	Air Shaft	1904	1:10560
-	916m SE	Unspecified Mine	1967	1:10560
-	925m SE	Disused Colliery	1948	1:10560
-	944m E	Unspecified Old Level	1951	1:10560
-	945m E	Unspecified Old Level	1938	1:10560

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	**0**

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).

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	1

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

Location	Details
On site	**The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.**

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.

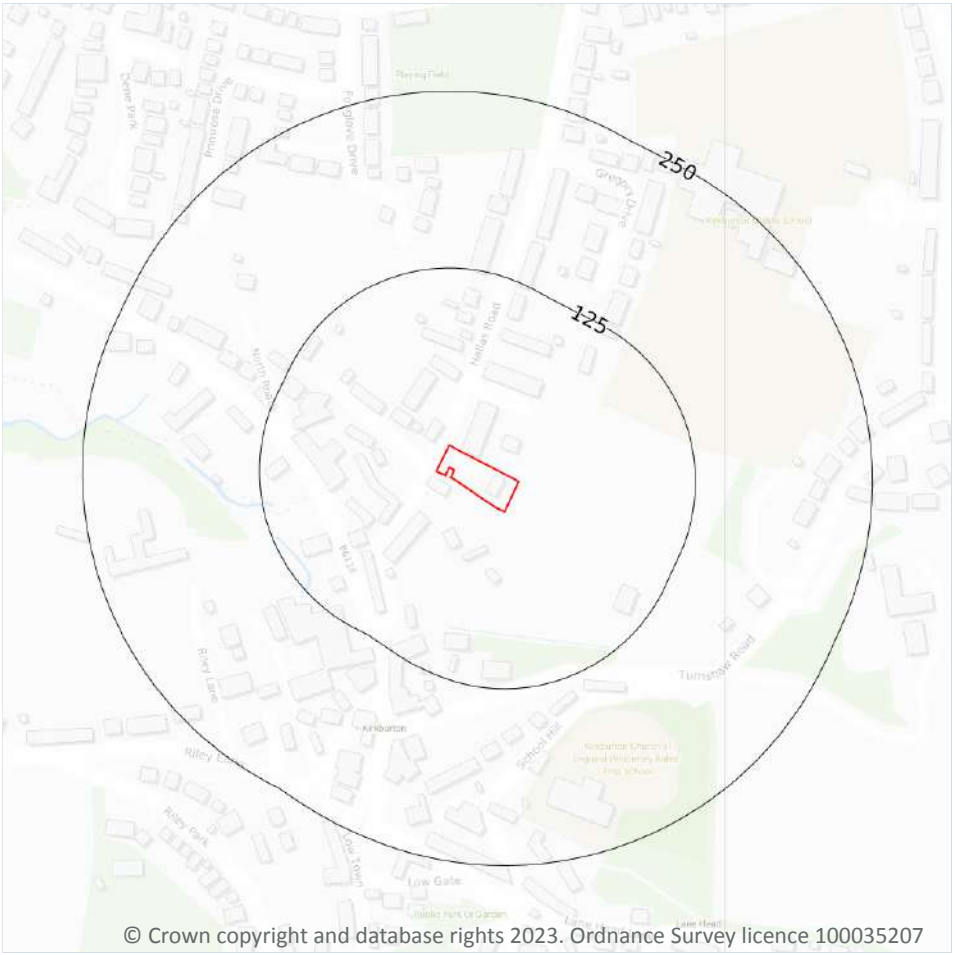
18.13 Clay mining

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

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

Features are displayed on the Radon map on **page 104 >**

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

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

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	2

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	**25 - 35 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**25 - 35 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 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 ↗.

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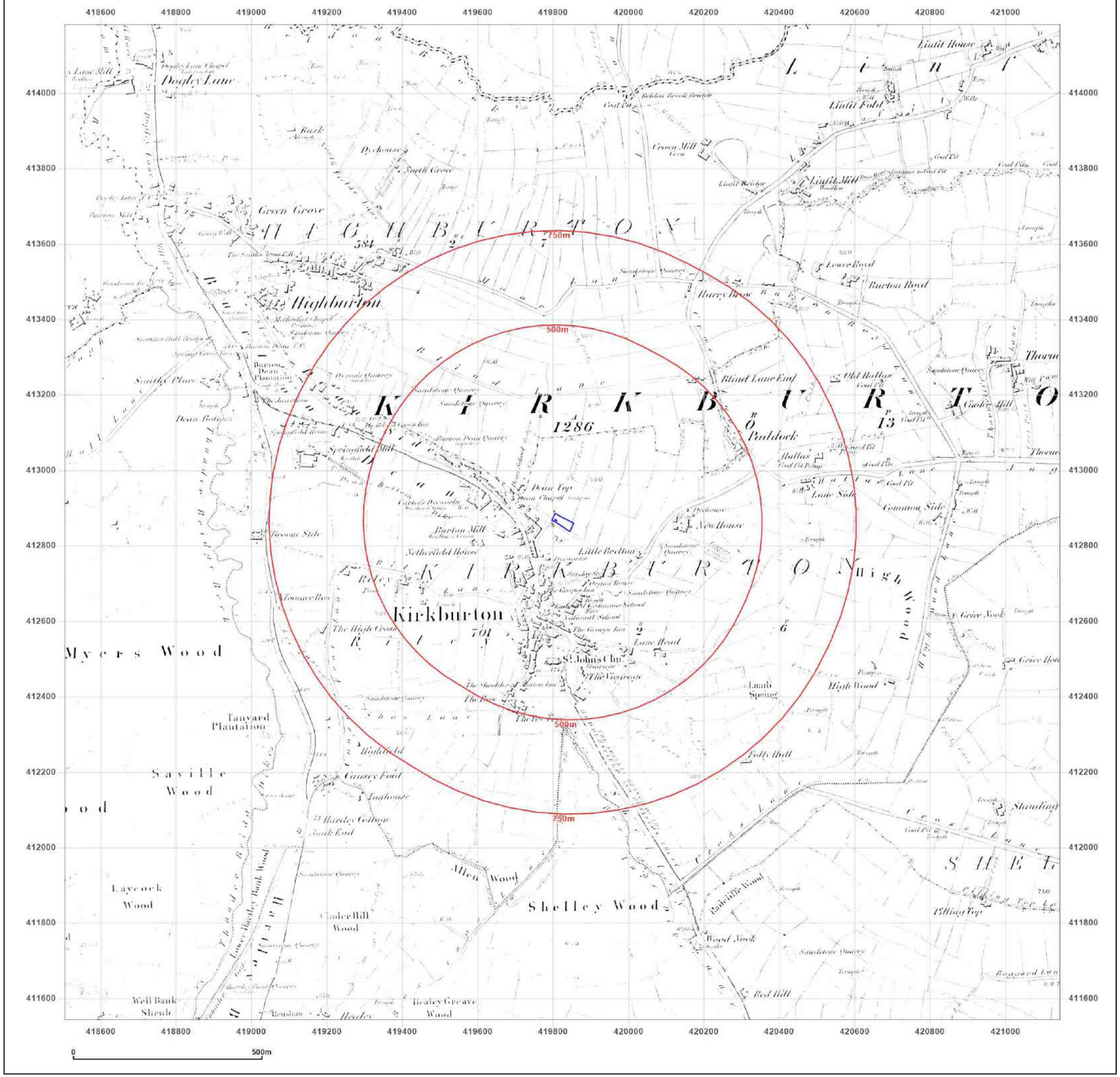

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Site Details:

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HD8 0QG

Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: County Series

Map date: **1854**

Scale: 1:10,560

Printed at: 1:10,560

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Revised N/A
Edition 1854
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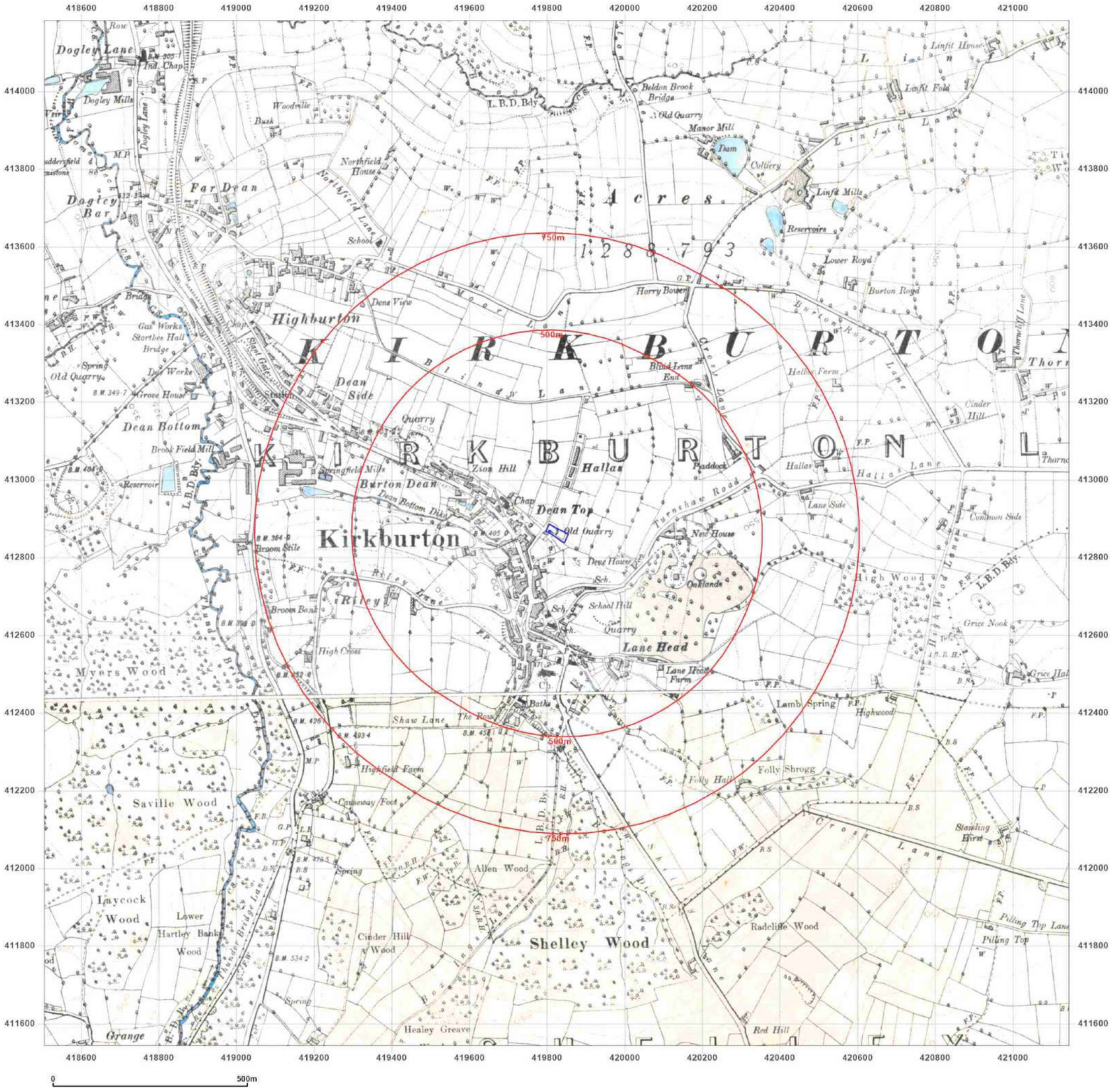

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Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: County Series

Map date: **1892**

Scale: 1:10,560

Printed at: 1:10,560

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Grid Ref: 419824, 412862

Map Name: County Series

Map date: **1904**

Scale: 1:10,560

Printed at: 1:10,560

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Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: County Series

Map date: **1930-1932**

Scale: 1:10,560

Printed at: 1:10,560

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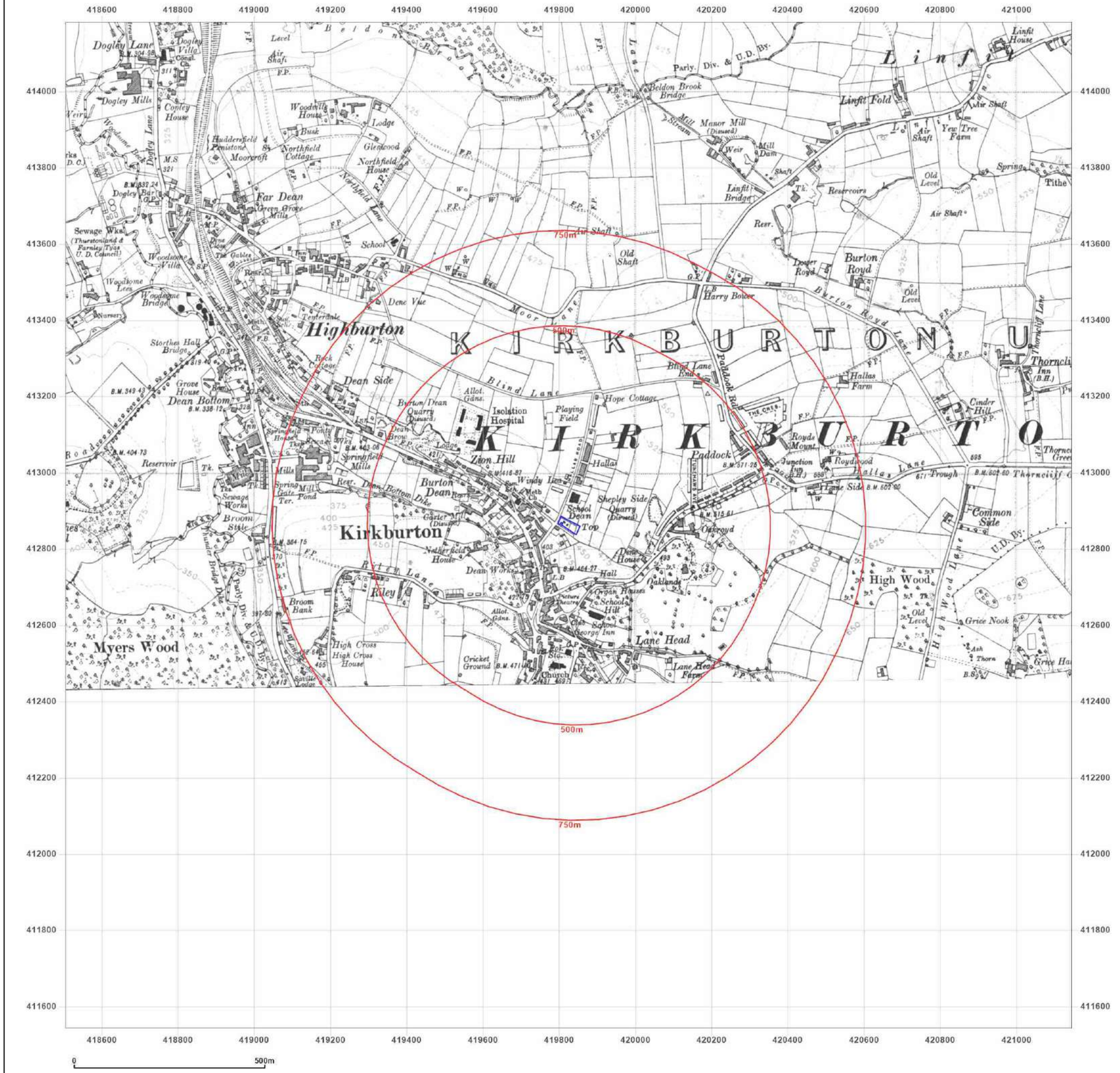

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Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

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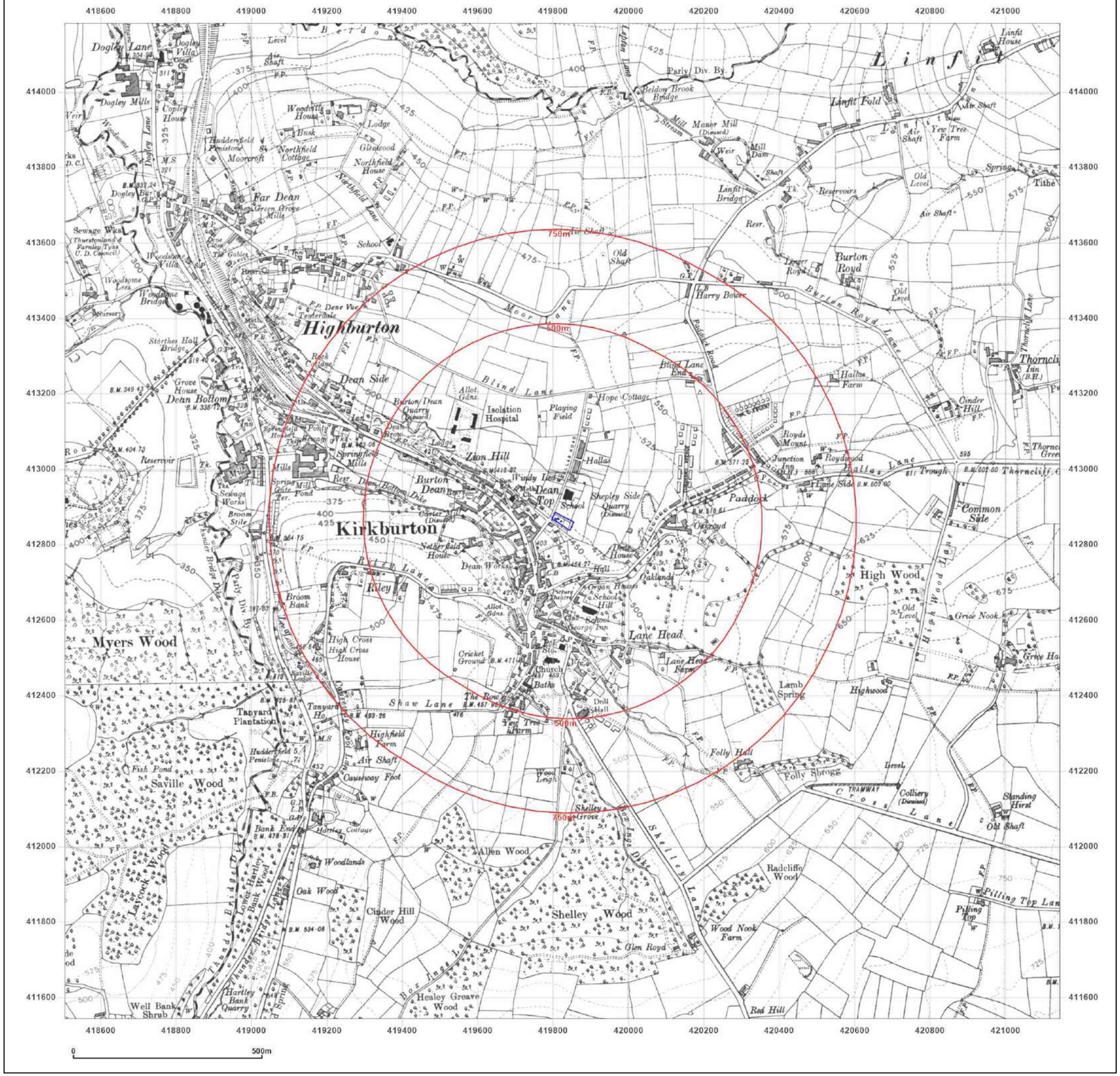

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Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: County Series

Map date: **1948**

Scale: 1:10,560

Printed at: 1:10,560

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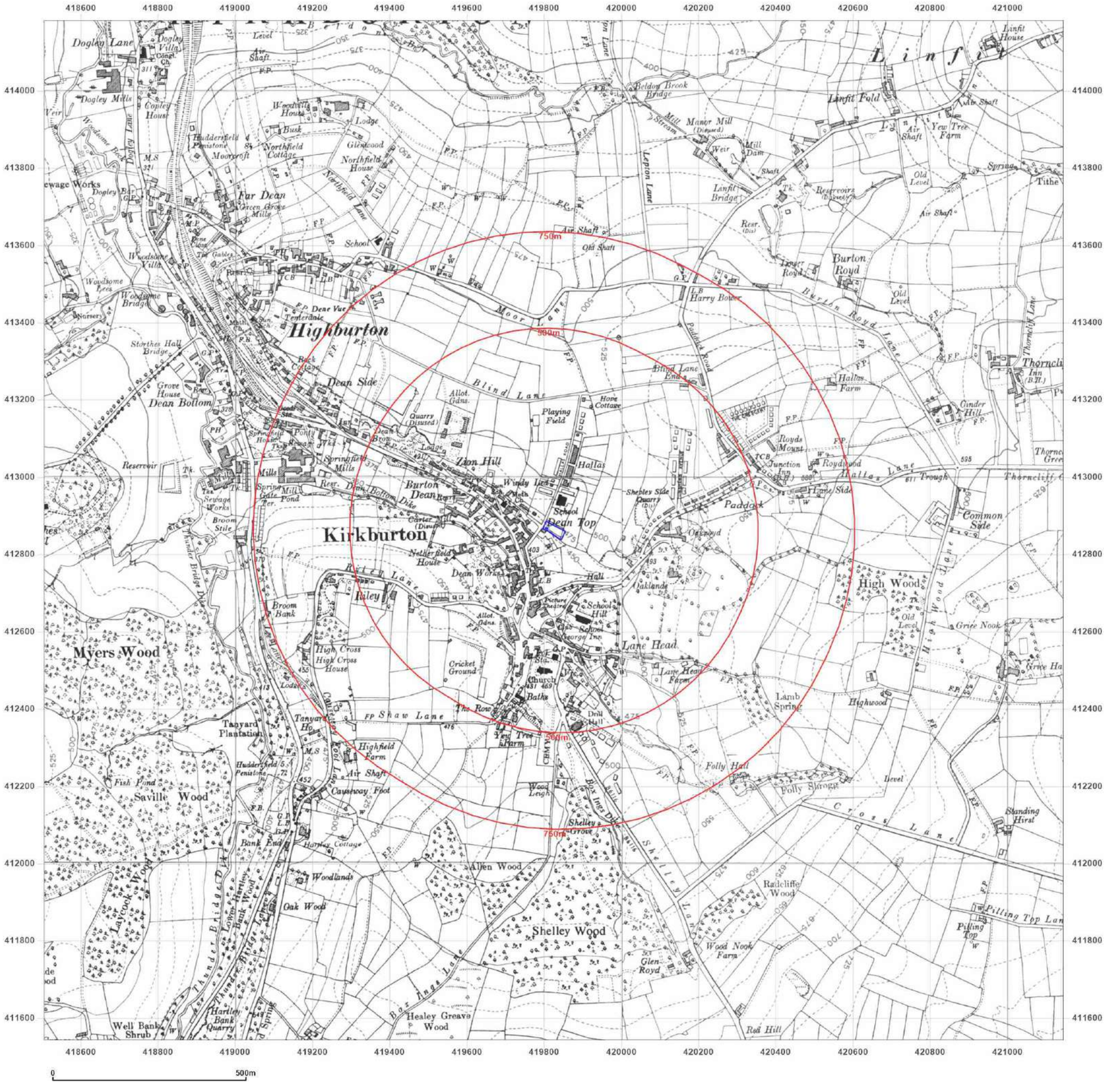

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Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: Provisional

Map date: **1955**

Scale: 1:10,560

Printed at: 1:10,560

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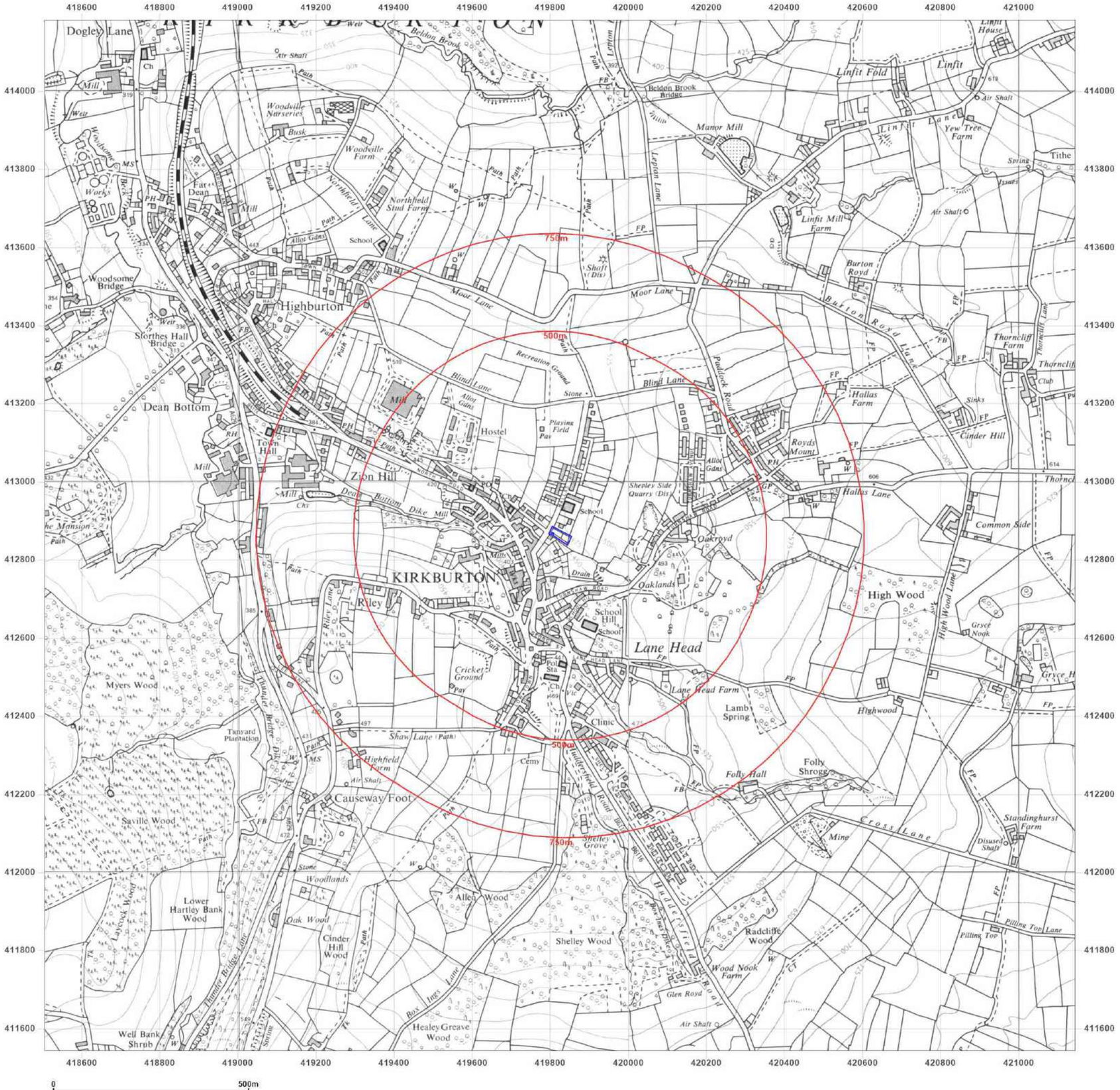

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Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: Provisional
Map date: **1967-1968**
Scale: 1:10,560
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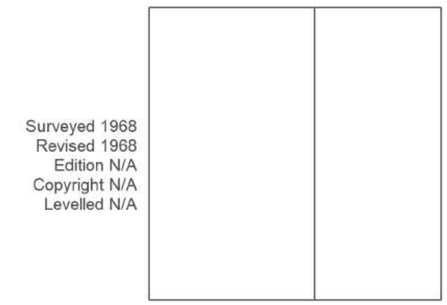

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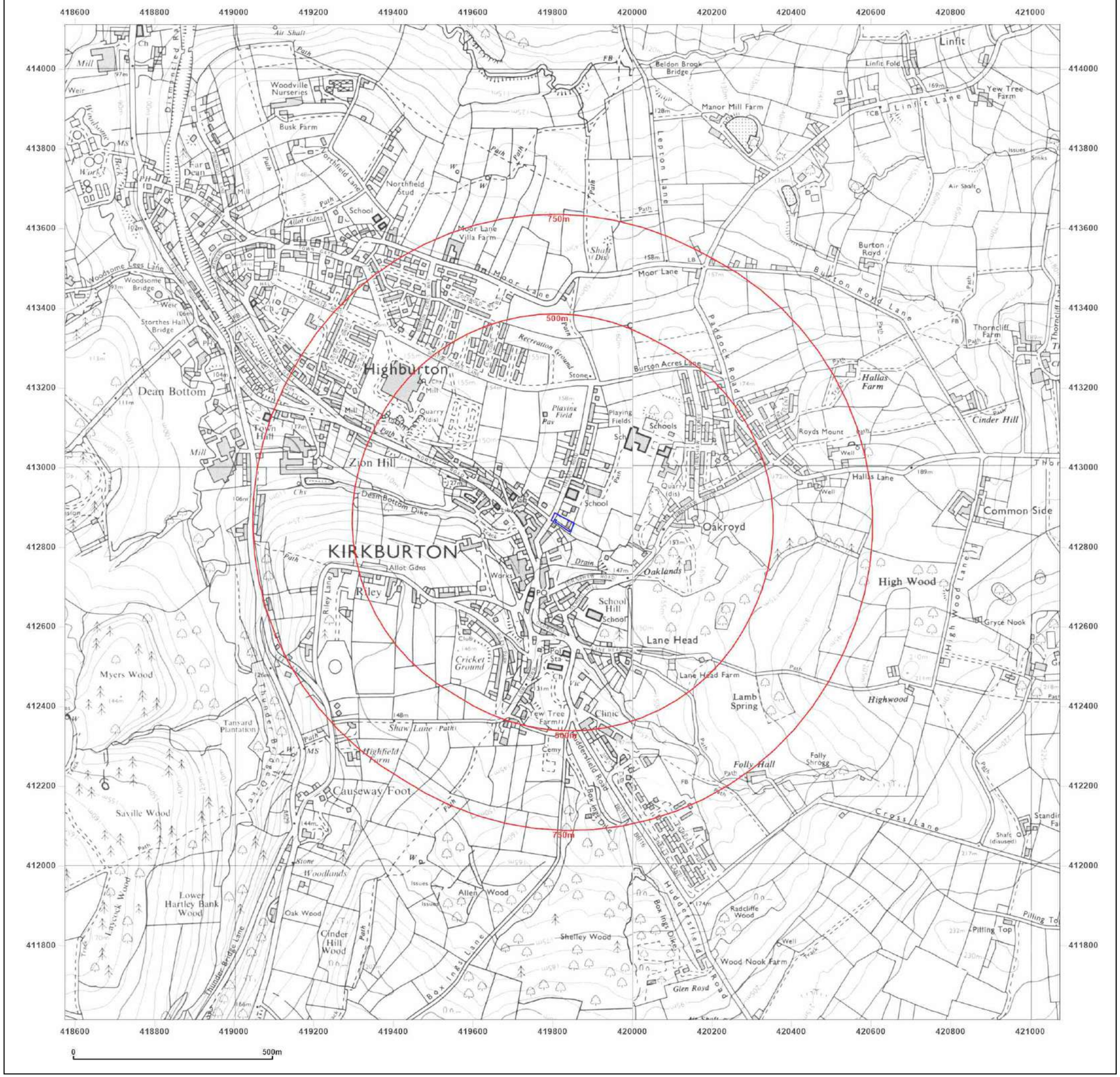

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Client Ref: JOYCE_8073
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Grid Ref: 419824, 412862

Map Name: National Grid

Map date: **1977-1979**

Scale: 1:10,000

Printed at: 1:10,000

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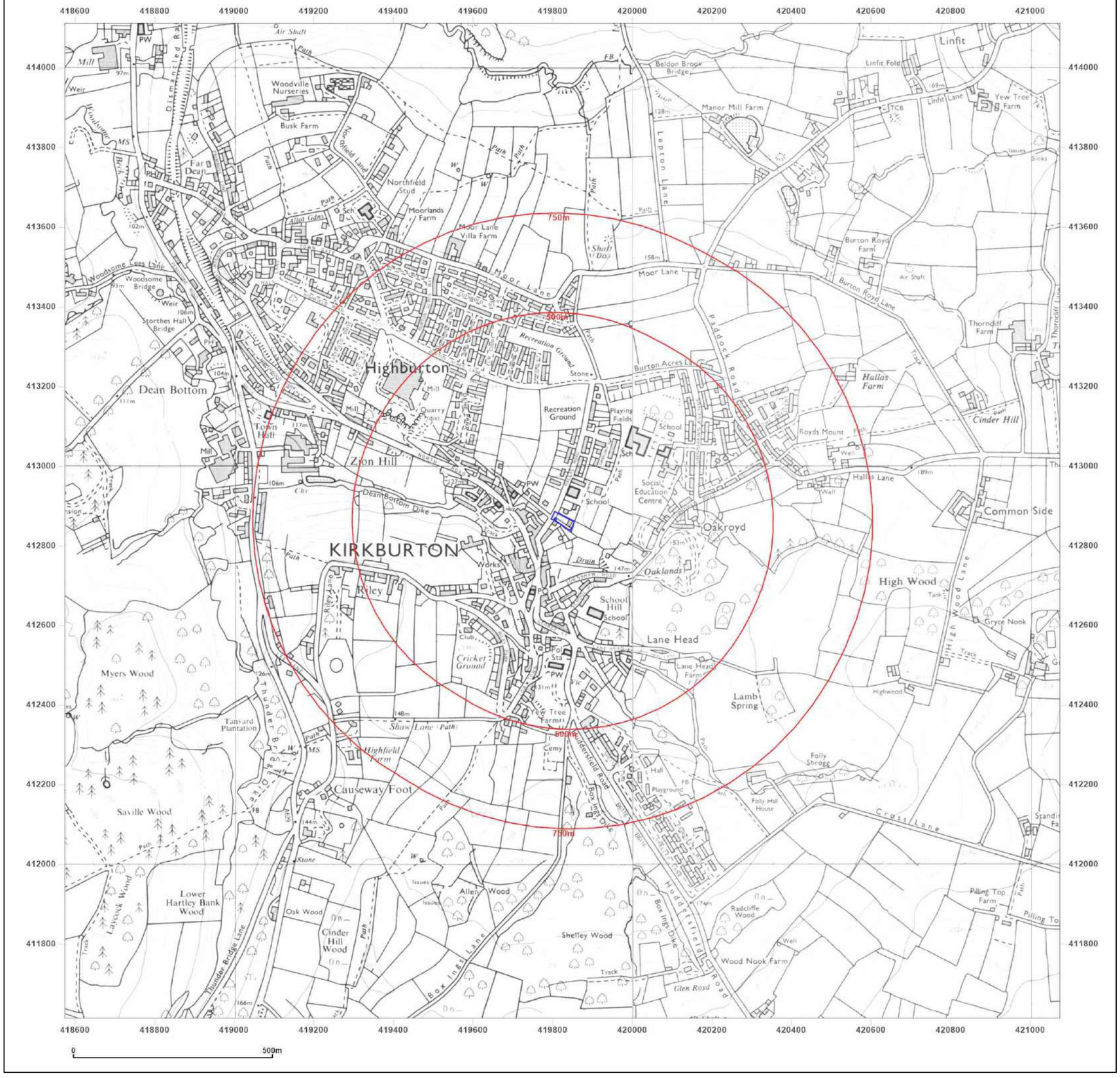

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Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: National Grid

Map date: **1990-1993**

Scale: 1:10,000

Printed at: 1:10,000

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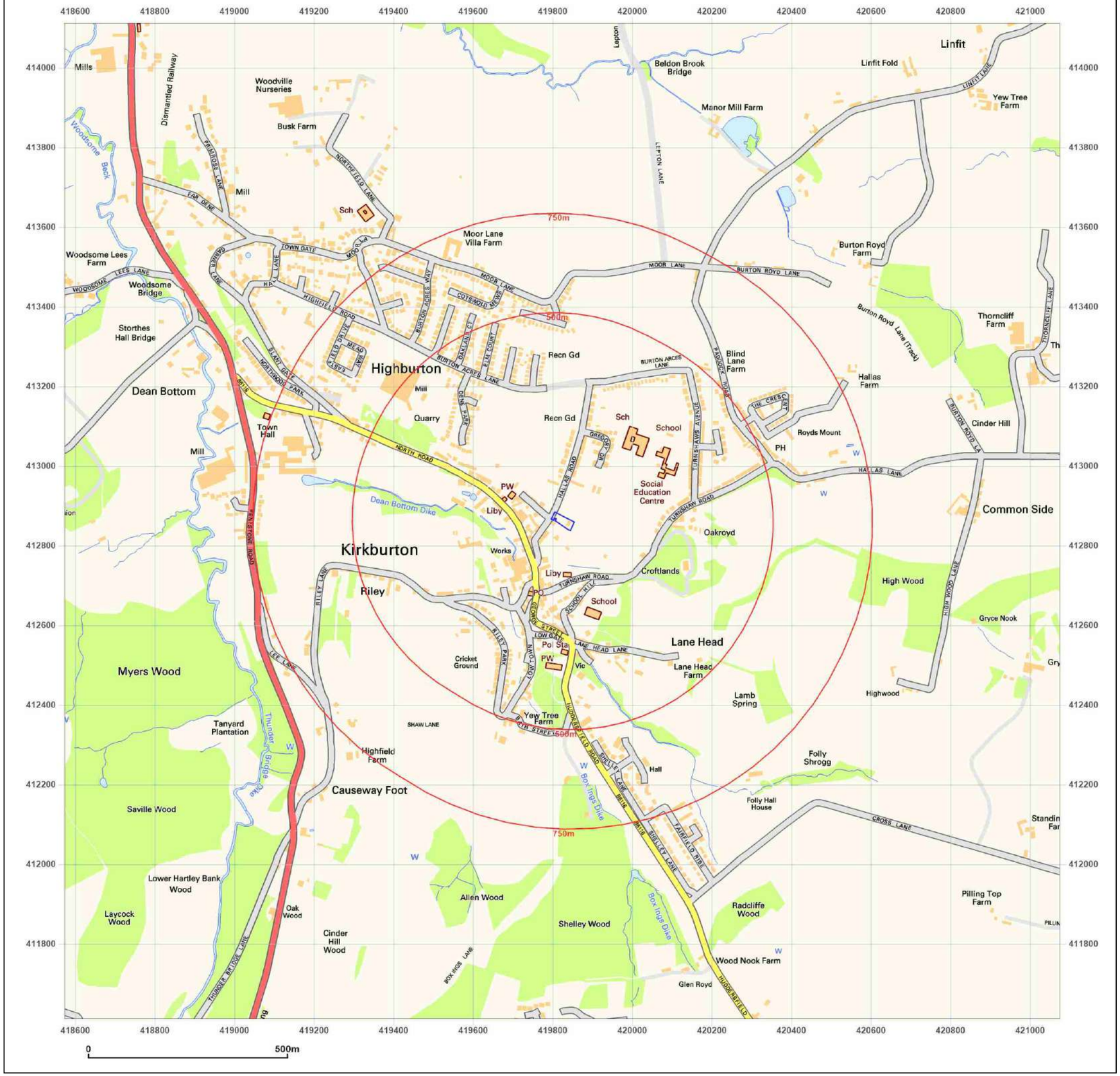

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KIRKBURTON, HUDDERSFIELD,
HD8 0QG

Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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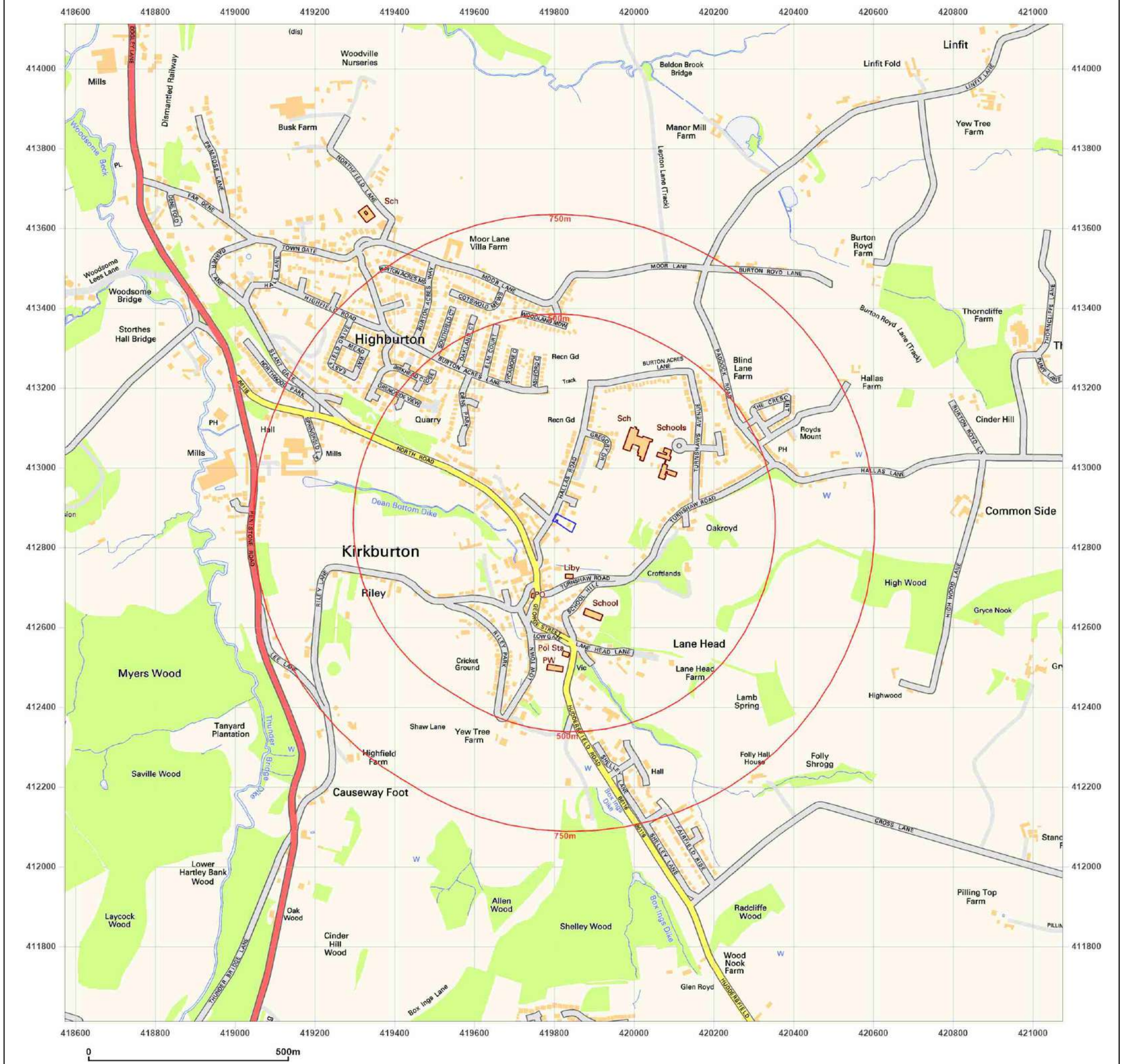

Groundsure INSIGHTS

Site Details:

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KIRKBURTON, HUDDERSFIELD,
HD8 0QG

Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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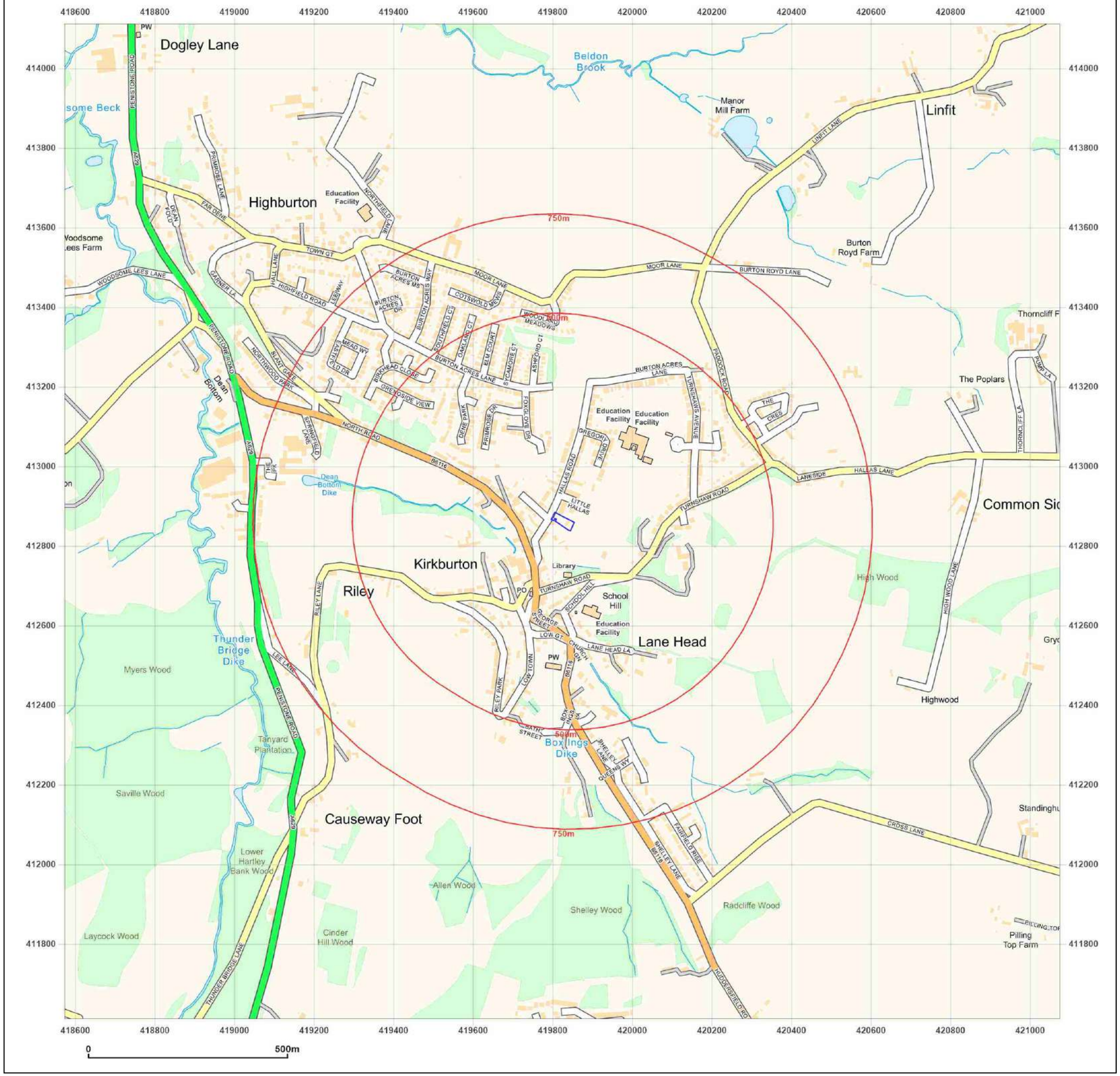

Site Details:

THE WILLOWS, HALLAS ROAD,
KIRKBURTON, HUDDERSFIELD,
HD8 0QG

Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: National Grid

Map date: **2023**

Scale: 1:10,000

Printed at: 1:10,000

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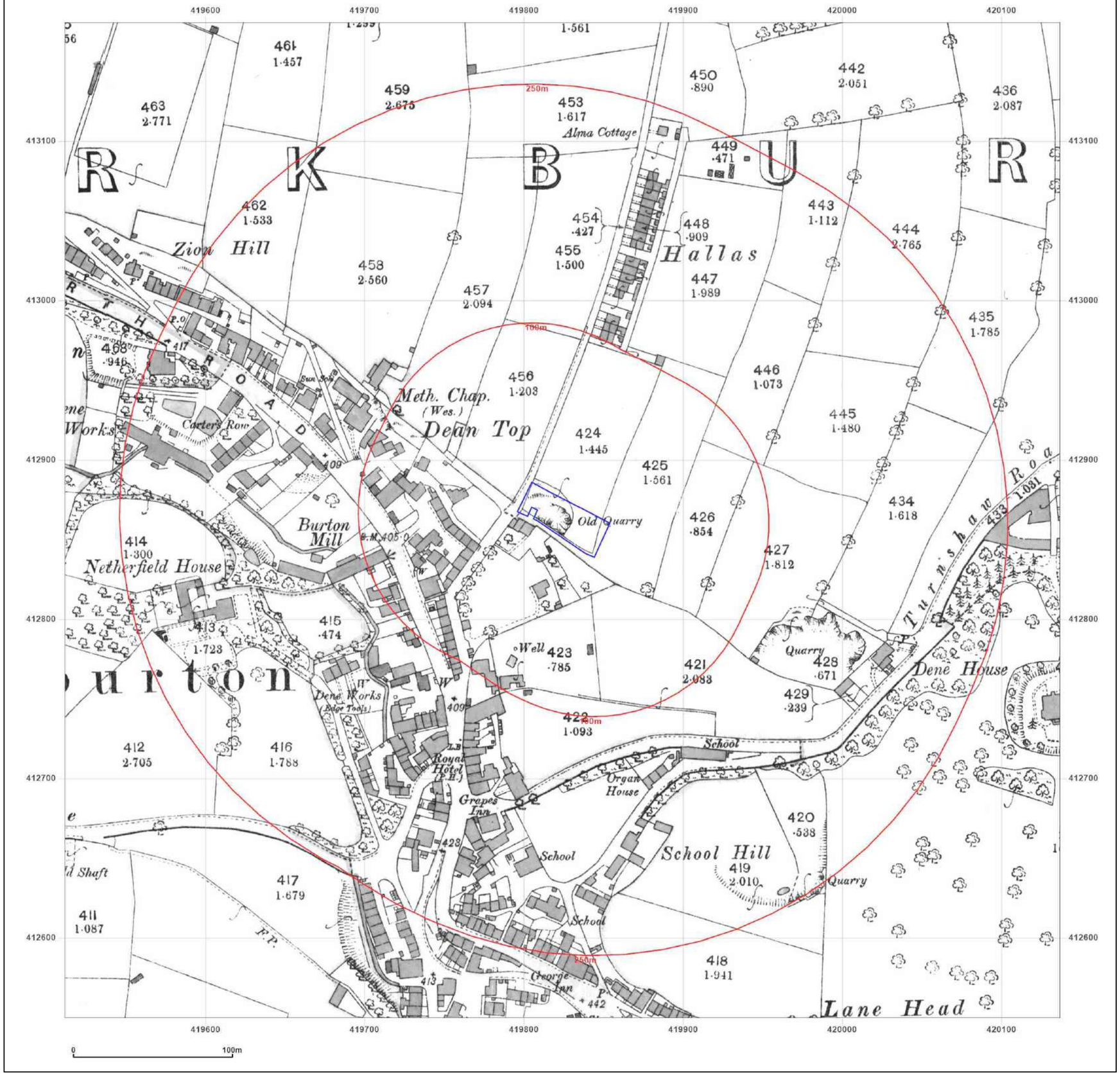

Groundsure INSIGHTS

Site Details:

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KIRKBURTON, HUDDERSFIELD,
HD8 0QG

Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: County Series

Map date: **1893**

Scale: 1:2,500

Printed at: 1:2,500

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Revised 1893
Edition N/A
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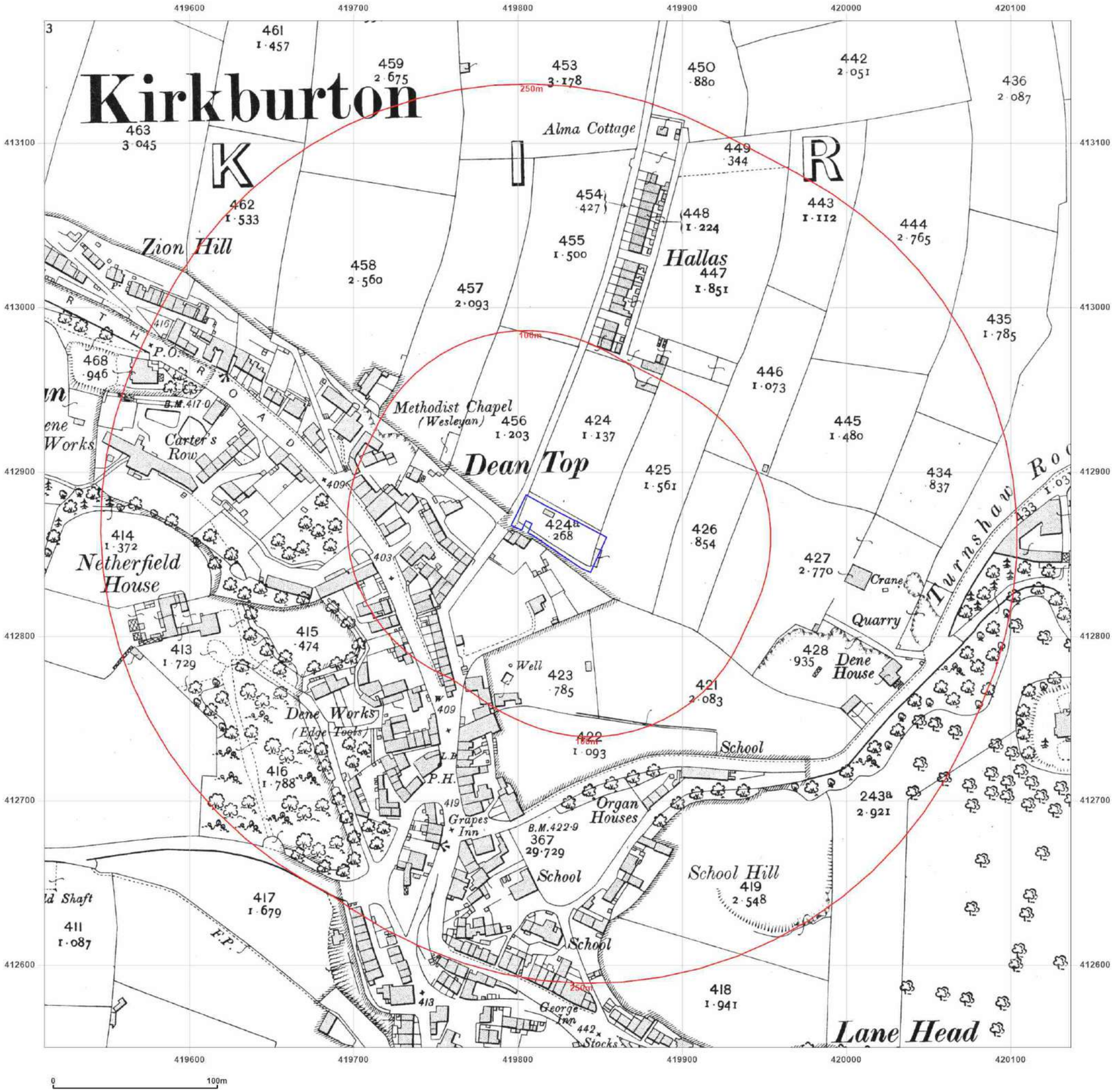

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Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: County Series
Map date: **1906**
Scale: 1:2,500
Printed at: 1:2,500

N
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Surveyed 1906
Revised 1906
Edition N/A
Copyright N/A
Levelled N/A

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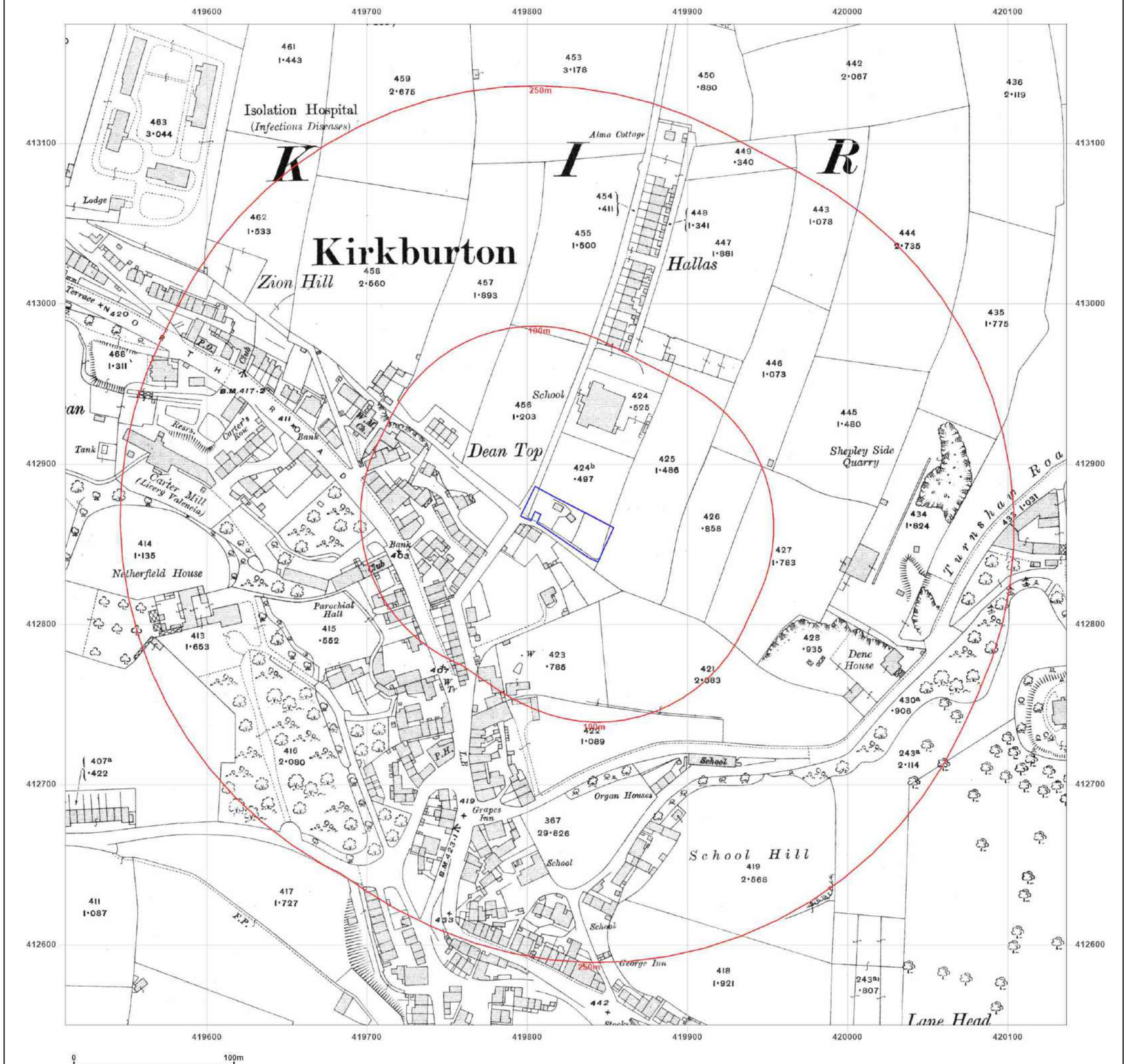

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Site Details:

THE WILLOWS, HALLAS ROAD,
KIRKBURTON, HUDDERSFIELD,
HD8 0QG

Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: County Series

Map date: **1913**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1913
Revised 1913
Edition N/A
Copyright N/A
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Groundsure INSIGHTS

Site Details:

THE WILLOWS, HALLAS ROAD,
KIRKBURTON, HUDDERSFIELD,
HD8 0QG

Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: National Grid

Map date: **1960-1961**

Scale: 1:2,500

Printed at: 1:2,500

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

Surveyed 1960
Revised 1960
Edition N/A
Copyright 1960
Levelled 1931

Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
Levelled 1931

Surveyed 1960
Revised 1960
Edition N/A
Copyright 1960
Levelled 1931

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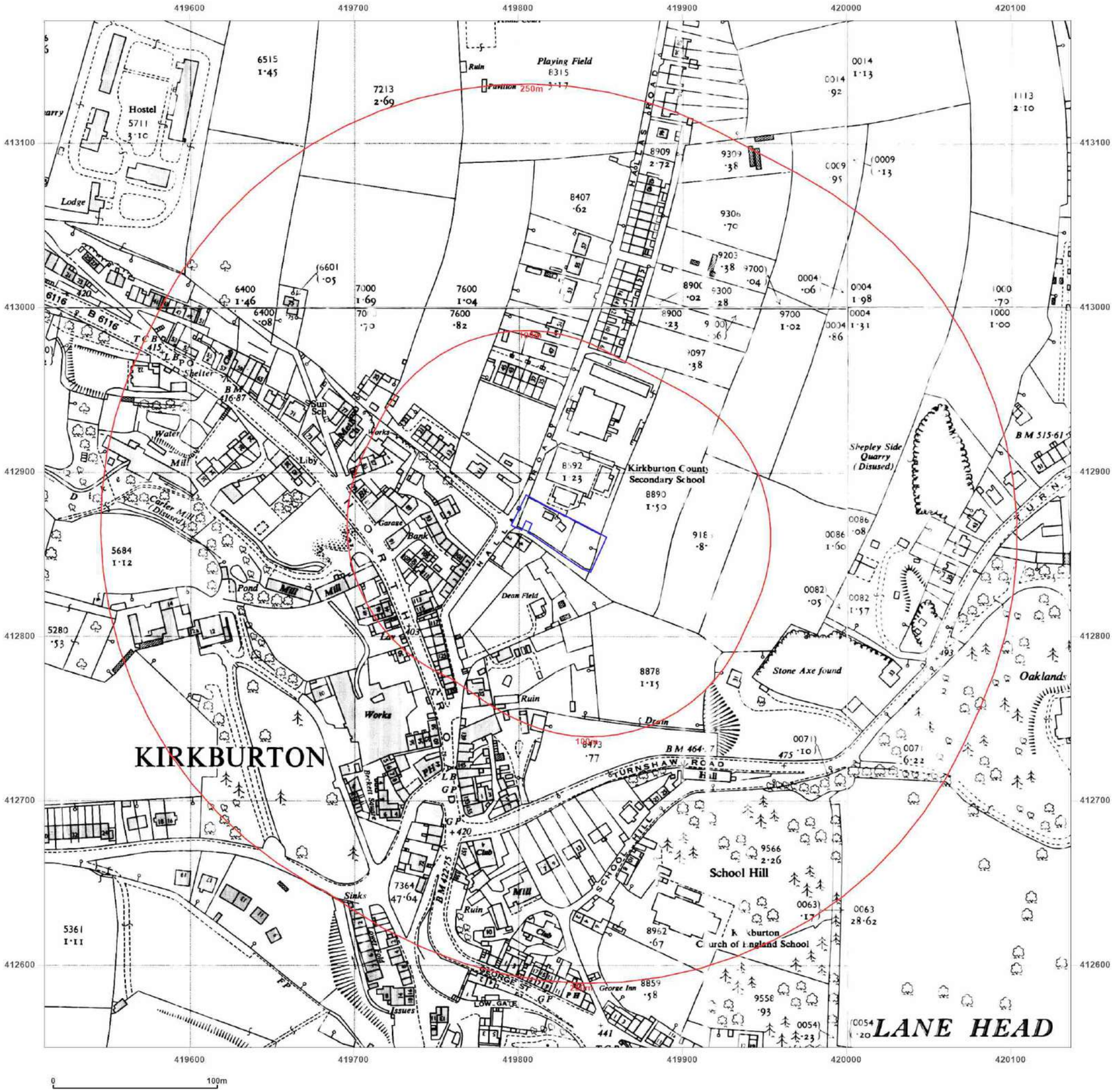

Groundsure INSIGHTS

Site Details:

THE WILLOWS, HALLAS ROAD,
KIRKBURTON, HUDDERSFIELD,
HD8 0QG

Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: National Grid

Map date: **1960-1961**

Scale: 1:2,500

Printed at: 1:2,500

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

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

Surveyed N/A
Revised N/A
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Groundsure INSIGHTS

Site Details:

THE WILLOWS, HALLAS ROAD,
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HD8 0QG

Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: National Grid
Map date: **1978**
Scale: 1:2,500
Printed at: 1:2,500

N
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Surveyed 1977
Revised 1977
Edition N/A
Copyright 1978
Levelled 1959

Surveyed 1977
Revised 1977
Edition N/A
Copyright 1978
Levelled 1959

Surveyed 1976
Revised 1976
Edition N/A
Copyright 1978
Levelled 1959

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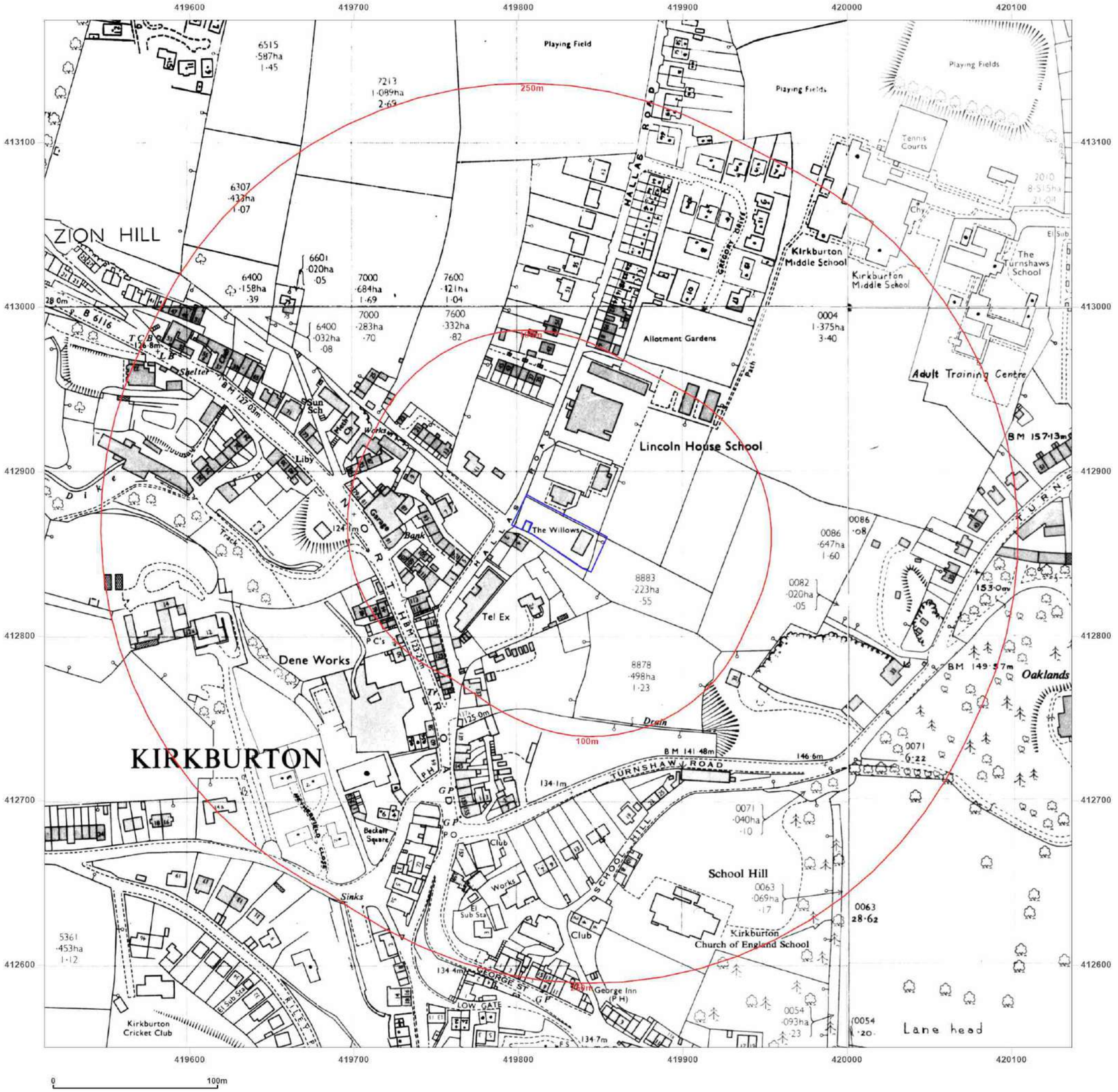

Groundsure INSIGHTS

Site Details:

THE WILLOWS, HALLAS ROAD,
KIRKBURTON, HUDDERSFIELD,
HD8 0QG

Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: National Grid
Map date: **1985-1990**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1959
Revised 1985
Edition N/A
Copyright 1985
Levelled 1959

Surveyed 1990
Revised 1990
Edition N/A
Copyright 1990
Levelled N/A

Surveyed 1959
Revised 1990
Edition N/A
Copyright 1990
Levelled 1959

Surveyed 1990
Revised 1990
Edition N/A
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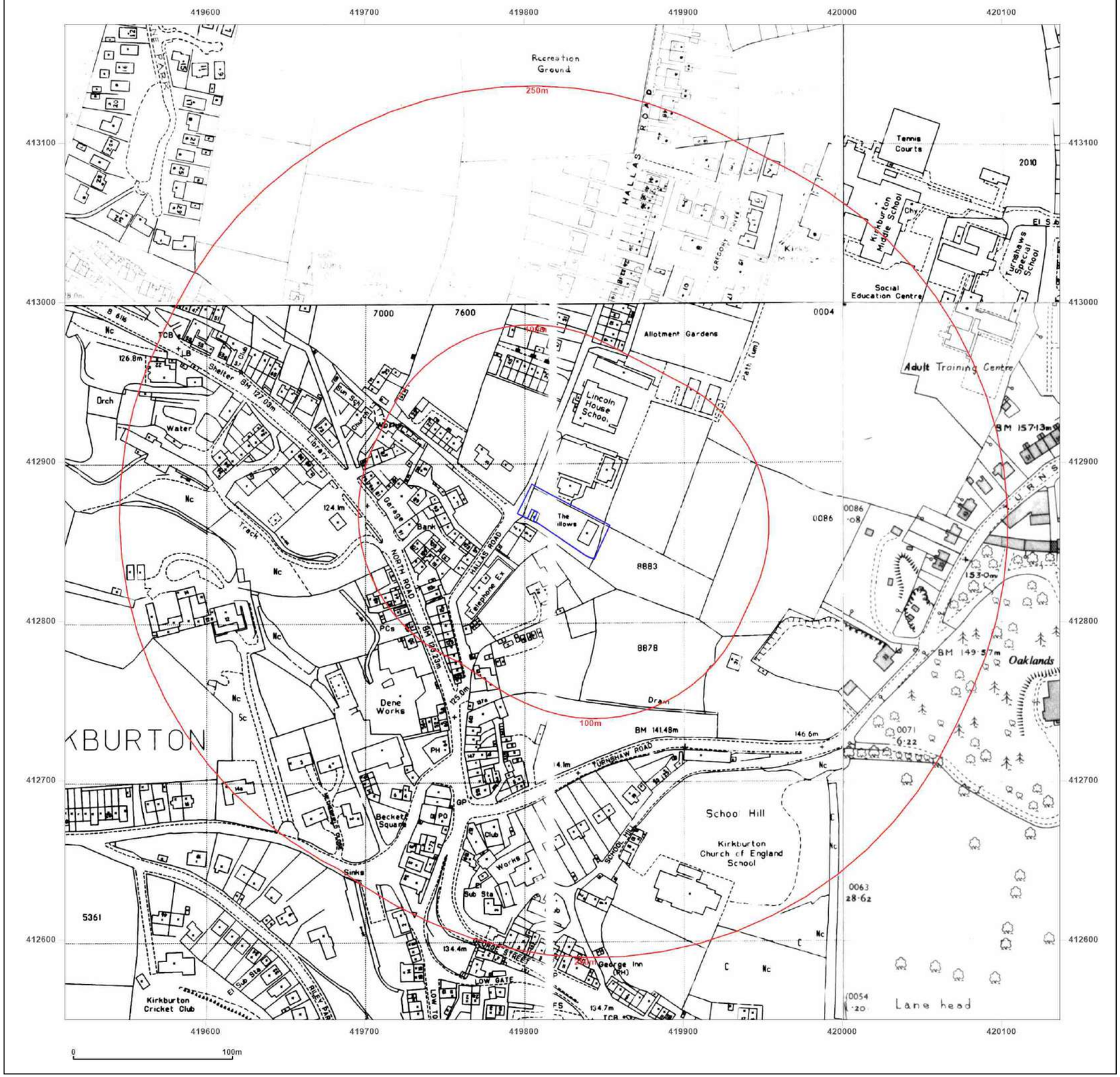

Groundsure INSIGHTS

Site Details:

THE WILLOWS, HALLAS ROAD,
KIRKBURTON, HUDDERSFIELD,
HD8 0QG

Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: National Grid
Map date: **1988-1992**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed N/A Revised N/A Edition N/A Copyright 1992 Levelled N/A	Surveyed 1990 Revised 1990 Edition N/A Copyright 1990 Levelled N/A

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Site Details:

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HD8 0QG

Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: National Grid
Map date: **1992-1995**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1992
Levelled N/A

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

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1992
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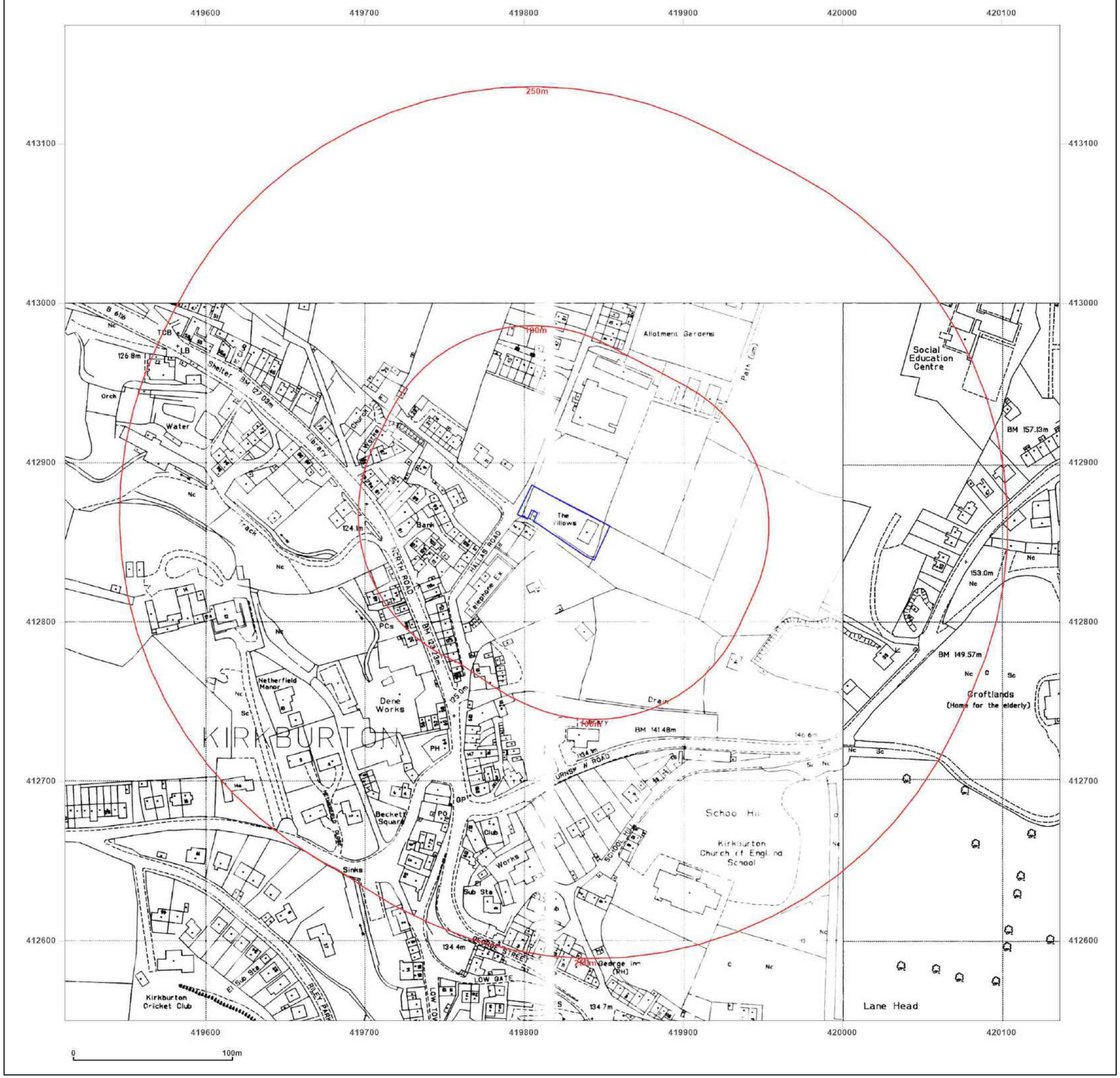

Groundsure INSIGHTS

Site Details:

THE WILLOWS, HALLAS ROAD,
KIRKBURTON, HUDDERSFIELD,
HD8 0QG

Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

Map Name: National Grid

Map date: **1994-1995**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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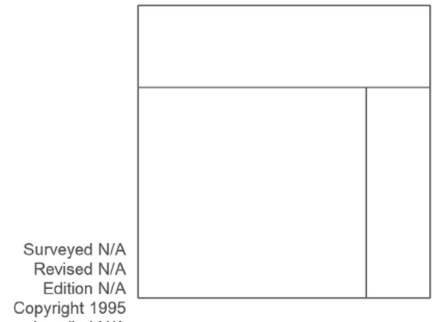

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Revised N/A
Edition N/A
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Surveyed 1994
Revised 1994
Edition N/A
Copyright 1994
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Site Details:

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KIRKBURTON, HUDDERSFIELD,
HD8 0QG

Client Ref: JOYCE_8073
Report Ref: GS-RQ6-773-ZYS-UXV
Grid Ref: 419824, 412862

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

N
W E
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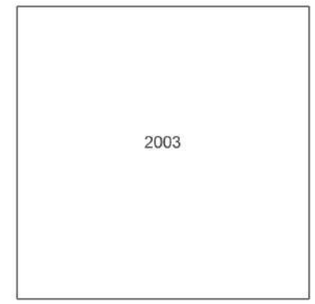

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