



# Hamson Barron Smith



HBS

## **Land off Billingley View, Bolton Upon Dearne Preliminary Land Contamination and Geotechnical Risk Assessment**



On behalf of Barnsley Metropolitan Borough Council

Report 23-12-101909/DSR1

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## Executive Summary

SITE INFORMATION	
Client	Barnsley Metropolitan Borough Council.
Site	Land off Billingley View.
Location	Billingley View, Bolton Upon Dearne, S63 8BP. NGR 444631, 403001.
Approximate area	0.45Ha
Topography	Slight fall from 44m OD in the south to 40m OD in the north.
Current land use	Grazing land for horses.
Proposed development	Low rise residential.

SITE SETTING	
Geology	Mexborough Rock (sandstone). No superficial deposits shown.
Radon	No radon protective measures are required.
Hydrogeology	Secondary A Aquifer. The site does not lie in a source protection zone.
Hydrology	No surface water within 250m of the site.
Landfill sites	No landfills located within 250m of the site.
History	The site comprises an area of undeveloped land. Originally, it was part of a larger agricultural field. More recently, the site has been partitioned off and is utilised for the grazing of horses.
Previous site investigations	HBS have not been made aware of any previous investigations at this site.
Anticipated ground conditions	Sandstone bedrock at shallow depth. Depth to groundwater is unknown.

<b>GEOTECHNICAL</b>	
Foundations	Shallow spread foundations should be suitable. Bearing capacity to be determined from site investigation, but is likely to be sufficient for conventional low rise structures.
Shrinkable soils	Soils are likely to be non shrinkable.
Buried concrete	Significant concrete protection measures unlikely to be required.
Floor slabs	Ground bearing floor slab may be suitable.
Slope stability	Site falls gently to the north. Current gradients are considered generally stable but careful assessment of changes of elevation or construction near existing slopes would still be needed.
Pavement	CBR values likely to be adequate for road and car park construction.
Soakaways	Underlying geology may be suitable for soakaway drainage, subject to full scale testing to confirm and calculate infiltration rates.
Natural cavities	None expected.
Mining	Shallow coal mining is considered to be unlikely.

<b>CONTAMINATION</b>	
Human health	No significant sources of contamination identified. Risks to human health are low.
Controlled waters	No significant sources of contamination identified. Risks to controlled water are considered low.
Gas protection	No significant sources of ground gas identified. Risks are considered low and gas protection is subject to investigation unlikely to be required. . No radon protective measures are required.
Water supply pipes	No significant risks identified, standard pipework likely to be suitable.

# 1 Introduction

In July 2019, Hamson Barron Smith (HBS) was commissioned by Barnsley Metropolitan Borough Council to undertake a Preliminary Land Contamination and Geotechnical Risk Assessment at Land off Billingley View, Bolton Upon Dearne for the proposed redevelopment of the site.

The site comprises land currently used for grazing of horses. The location of the site is shown on Figure 1. A site topographic survey is included in Appendix A.

It is understood that the site is being considered for residential redevelopment. A provisional development layout has been provided by NPS Barnsley (reference drawing number 19-01-1080-PL-A-03 dated March 2019) and is presented in Appendix B.

## 1.1 Project Requirements

The purpose of this Phase 1 assessment is to determine the potential risks from contamination and to identify potential geotechnical risks and constraints.

The objectives of the Phase 1 report are to:

- Establish the environmental setting, including sensitivity in relation to human health, surface water, groundwater and ecological receptors.
- Review historical and recent land uses to assess the potential for contamination to be present from past and current land-use.
- Qualitatively assess the potential nature and extent of contamination from those uses and the environmental risks and liabilities that may be posed to the identified receptors (human health and the environment).
- Assess any potential geotechnical risks including mining risk.

## 1.2 Information Sources

During the production of this report the following sources have been reviewed:

- An EnviroInsight Report prepared by Groundsure (Report Number GS6173259 dated 16<sup>th</sup> July 2019).

- A GeoInsight Report prepared by Groundsure (Report Number GS6173260 dated 16<sup>th</sup> July 2019).
- A CON29M Coal Mining Report prepared by The Coal Authority (Report Number 51002155873001 dated 16<sup>th</sup> July 2019).
- Historic Ordnance Survey maps.
- British Geological Survey maps.
- British Geological Survey borehole records.
- Environment Agency landfill records.
- Environment Agency groundwater data.

### 1.3 Previous Investigations

HBS has not been made aware of any previous investigations at this site.

## 2 Site Location

Address: Land off Billingley View, Bolton Upon Dearne.

Post Code: S63 8BP.

National Grid Reference: 444631, 403001.

The site location is shown on Figure 1 and a more detailed plan on Figure 2.

Full details of the site's features and land use are presented in Section 3.

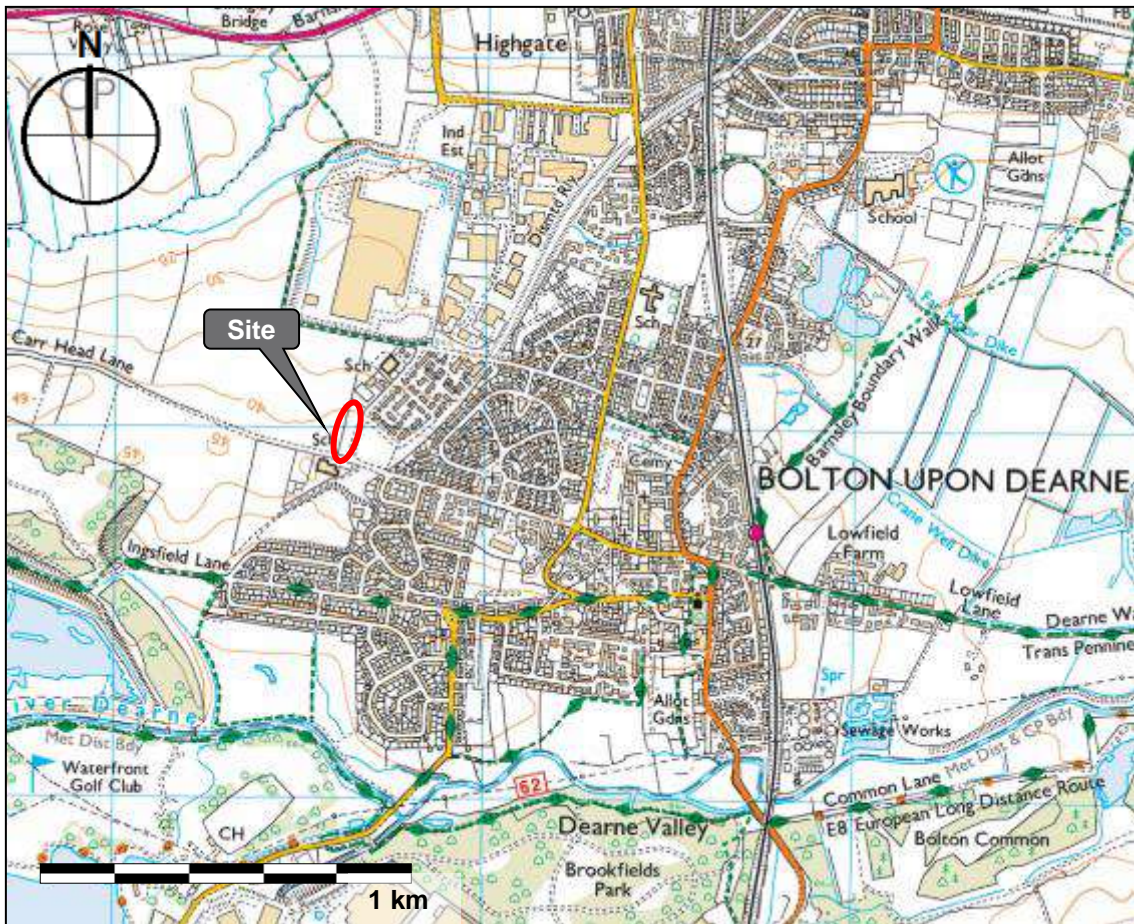


Figure 1 Site location plan

### **3 Site Description**

The site is located to the west of Billingley View located on the western edge of Bolton Upon Dearne. The site occupies an area of 0.45Ha and there is a slight fall in topography from 44.5m in the south to 40.2m in the north.

Access to the site is gained from the north east off Billingley View and to the south off Carr Head Lane. The site comprises an area of rough pasture which is utilised for the grazing of horses. The site has been portioned into a series of small fields. There is a small stable building made of corrugated iron in the north.

There are small ditches running south along the western and eastern boundaries of the site.

#### **3.1 Adjacent land Use**

The site is bounded to the north by Heather Garth Primary School, to the west by an agricultural field, to the south by Lacewood primary school and to the east by public open space.

Figure 2 shows the site setting.

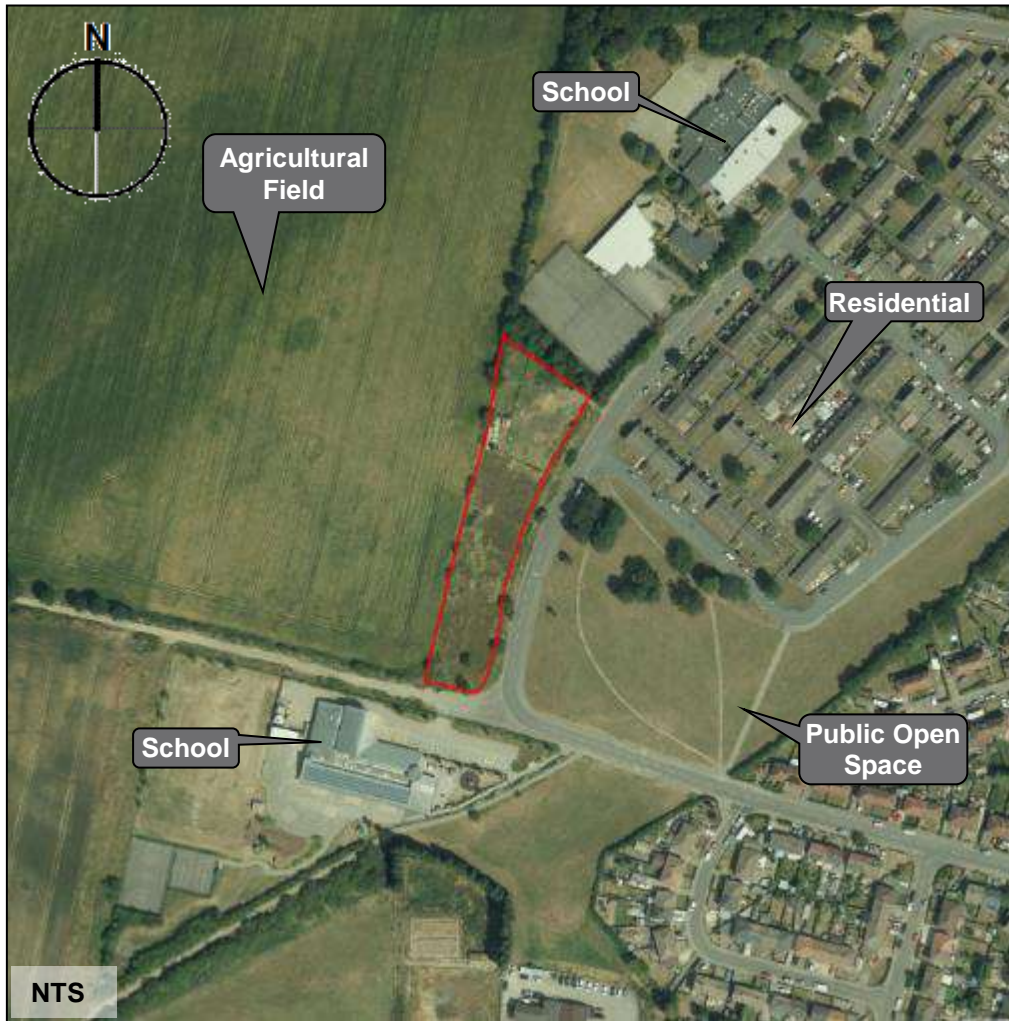


Figure 2 Site layout

### 3.2 Photographs

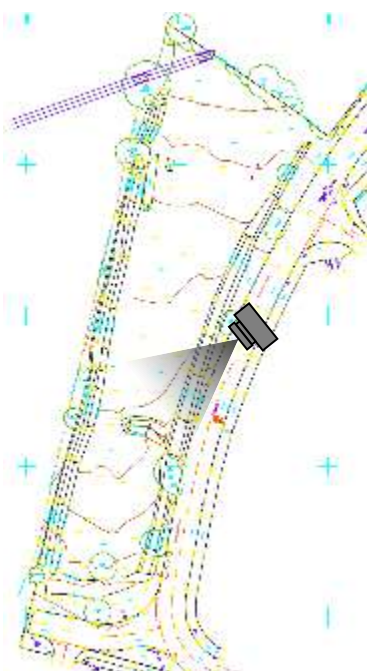


Photograph 1 The southern access into the site from Carr Head Lane, looking north.



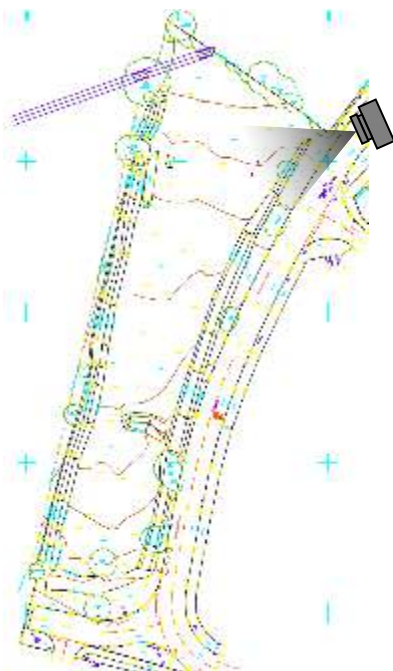


Photograph 2 The central area of the site, looking south west.





Photograph 3 The northern access road into the site from Billingley View, looking south west.



## 4 Environmental Setting

### 4.1 Geology

The 1:50,000 scale British Geological Survey (BGS) geological mapping indicates the site to be underlain the bedrock geology of Mexborough Rock, a sandstone flag of the Pennine Middle Coal Measures Formation. No superficial deposits are shown. Infilled ground is marked 60m to the south east.

The Pennine Middle Coal Measures Formation is described by the BGS as “*Interbedded grey mudstone, siltstone, pale grey sandstone and commonly coal seams*”.

There is an east west trending fault (Darfield Fault) present circa 95m south of the site. The site lies in the down thrown side of the fault. There are no coal seams marked on the 1:50,000 mapping. The 1:10,000 mapping shows a localised coal seam outcropping circa 75m south.

The closest borehole record (Ref: SE40SW438) lies approximately 25m to the north of the site (elevation of 37.2m OD) proved the following sequence:

- *Topsoil* to 0.30m bgl (36.90m OD)
- *Firm light yellow brown very sandy stoney clay roots* to 0.50m bgl (36.70m OD)
- *Pale yellow and brown medium grained highly weathered sandstone* to 2.00m bgl (35.206m OD)

The natural strata encountered in this borehole are considered to be the Mexborough Rock. The sequence encountered is expected to be similar to that beneath the site.

### 4.2 Soil Geochemistry

The BGS “Normal Background Concentrations of Contaminants in English Soils” included as part of the Groundsure GeolInsight report indicates the typical estimated concentrations of each determinant in topsoil in the locality of the site, as summarised in Table 1.

**Table 1: Summary of BGS Estimated Soil Geochemistry**

Determinant	Concentration Range (mg/kg)
Arsenic	15 – 25
Cadmium	<1.8
Chromium	60 – 90
Lead	<100
Nickel	15 – 30

### 4.3 Hydrogeology

The Environment Agency classifies the Mexborough Rock at the site to be Secondary A Aquifer. The site does not lie within a Source Protection Zone.

The depth to groundwater is not known. The BGS borehole indicated no groundwater to the base of the hole at 2.00m bgl.

It is considered that groundwater would be of moderate sensitivity to any potential on site sources of contamination.

### 4.4 Hydrology

No surface water lies within 250m of the site. Surface water is therefore considered to be of low sensitivity to any potential on site sources of contamination.

### 4.5 Landfill Sites

No recorded current or historical landfills are known to exist within 250m of the site. No organic soils, evidence of buried biodegradable materials or other potential sources of ground gas are anticipated on the site.

### 4.6 Radon

The Groundsure GeoInsight report states that the site is in an area where the estimated probability of homes being above the action level of 200Bqm<sup>-3</sup> is between 1% and 5%. Therefore, no radon protective measures are required in the construction of new buildings.

Confirmation of any protection measures should be agreed with the local authority building control and / or warranty provider.

## 4.7 Statutory Authority Records

A review of public registers contained within the Groundsure EnviroInsight report has been undertaken. These entries relate to trade directories, pollution control registers, hazardous sites, enforcement notices etc. None of the entries are considered to be of relevance to the, for full details of all entries, reference should be made to the EnviroInsight report in Appendix D.

## 4.8 Sensitive Land Uses and Designated Areas

The sites lies within a Nitrate Vulnerable Zone and within the Liverpool, Manchester and West Yorkshire Greenbelt.

## 4.9 Land Use History

The historical land uses of the site and its surrounding area have been established from superseded editions of Ordnance Survey maps and are detailed in Table 2.

Copies of the maps are included in Appendix C.

**Table 2: Summary of Historical Maps**

Date	On Site	Offsite
1850-1854	The site is part of a larger undeveloped agricultural field.	The general surrounding land use agricultural, with Carr Head Lane present immediately south of the site.
1890-1892	No significant changes are evident.	No significant changes are evident.
1901-1906	No significant changes are evident.	A railway line (in cutting) lies c.50m south east
1929-1930	No significant changes are evident.	Wath brickworks lies c.95m+ south of the site.
1938-1939	No significant changes are evident.	No significant changes are evident.
1948-1951	No significant changes are evident.	By 1951, the brickworks is no longer marked.
1961-1967	No significant changes are evident.	The railway line is marked as dismantled. A new residential estate has been constructed to the east of the railway line. The former brickworks is marked as a recreational ground.
1973-1978	No significant changes are evident.	Residential housing has been constructed to the north east. The railway line appears to have been infilled and landscaped. A sports and social club has been constructed on the former brickworks site. By 1978 the school has been constructed to the north,

Date	On Site	Offsite
1988	No significant changes are evident.	No significant changes are evident.
1993-1994	No significant changes are evident.	No significant changes are evident.
2002	No significant changes are evident.	No significant changes are evident.
2010	No significant changes are evident.	A primary school has been constructed to the south.
2014	No significant changes are evident.	No significant changes are evident.

#### 4.9.1 Summary of Development History

##### On site

The site comprises an area of undeveloped land. Originally, it was part of a larger agricultural field. More recently, the site has been partitioned off and is utilised for the grazing of horses.

##### Off Site

The surrounding land use was typically undeveloped farmland becoming a mixture of agricultural land. A railway line was present in a cutting circa 50m south east from the early 1900s until the 1960s. The cutting appears to have been infilled in the 1970s; the materials used to infill the cutting are unknown.

A former brickworks, including clay pit was located >95m south of the site from the 1920s until the 1960s when the clay pit was infilled and the land converted to a recreational ground. The material used to infill the clay pit are unknown.

## 5 Geotechnical Assessment

The 1:50,000 scale British Geological Survey (BGS) geological mapping indicates the site to be underlain by superficial deposits comprising None (clay, silt, sand and gravel) overlying the bedrock geology of Mexborough Rock.

An assessment of potential geotechnical risks based on the information from the Groundsure GeoInsight Report and available geological information is presented in the following sections. The risks are summarised in Table 4. The Groundsure GeoInsight Report is reproduced in Appendix E.

### 5.1 Deep Made Ground

It is possible that limited Made Ground would be present in the location of the stables. Deep Made Ground resulting from infilling or significant raising of levels is considered unlikely however.

### 5.2 Buried Structures

Foundations associated with the stables may be present.

### 5.3 Compressible Soils

The Groundsure GeoInsight report states that the Compressible Ground risk at the site is “negligible”. Based on the expected geology, compressible soils are not anticipated.

### 5.4 Shrinking / Swelling Clay

The Groundsure GeoInsight report states that the Shrinking or Swelling Clay risk at the site is “negligible”. Based on the expected geology shrinkable clays are not anticipated.

### 5.5 Collapsible soils

The Groundsure GeoInsight report states that the Collapsible Ground risk at the site is “very low”. Based on the anticipated ground conditions, collapsible soils are not expected.

## 5.6 Aggressive Ground Conditions for Concrete

Based on the published geology, the anticipated soils are not expected to contain significantly elevated concentrations of soluble sulphates or pyritic materials which may oxidise to form soluble sulphates.

## 5.7 Running Sands / Excavation Instability

The Groundsure GeoInsight report states that the Running Sand risk at the site is “negligible”. Based on the anticipated ground conditions, running sands are not expected.

## 5.8 Groundwater

The depth to groundwater is unknown. Historical BGS boreholes located immediately north of the site were recorded as dry to 2.0m bgl.

## 5.9 Slope Stability

The site slopes very gently to the north with a fall of circa 4m over the length of the site. Provided no significant alterations to the site’s topography are made no issues with stability are anticipated. Any proposed slopes or temporary cutting for retaining systems should be carefully assessed however.

## 5.10 Solution Features / Natural Cavities

The site is expected to be underlain by sandstone of the Mexborough Rock which is not prone to dissolution.

The Groundsure GeoInsight report states that the Ground Dissolution risk at the site is “negligible” and no solution features are recorded within 1km.

## 5.11 Underground Mining

The GeoInsight report states that the site is within an area affected by coal mining. A Coal Authority Mining Report was obtained by HBS, this report confirmed:

- The property is in the likely zone of influence from workings in four seams of coal at 220m to 650m depth, and last worked in 1950. Any movement due to coal mining activity associated with these workings should have ceased.
- There are no known mine entries on or within 20m of the site.
- The Authority is not aware of any evidence of damage arising due to geological faults or other lines of weakness that have been affected by coal mining.
- The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.
- There are no coal mining subsidence claims within 50 metres of the property boundary.
- There is no record of a mine gas emission requiring action by the Coal Authority within the boundary of the property.

Published geology indicates that there are no outcropping coal seams in the vicinity of the site.

The Coal Authority interactive mapping indicates the site does not lie within a Development High Risk Area and that no possible or probable shallow coal mine workings are anticipated beneath the site.

Given the presence of the sandstone flag beneath the site and the above review, it is considered that the shallow coal workings are unlikely to be present beneath the site.

The Coal Authority Report is presented in Appendix F.

## 6 Contamination Risk Assessment

### 6.1 Legislative Background

The primary legislative mechanism for contaminated land management in the UK is Part 2A of the Environmental Protection Act, 1990 (EPA). Part 2A was introduced into the EPA under Section 57 of the Environment Act 1995 to help deal with the substantial legacy of land contamination. Local authorities are the principal regulator for inspection of land under Part 2A. In England, Part 2A is described fully in DEFRA Circular 01/2006, which also contains the statutory guidance (DEFRA, 2006). Part 2A defines contaminated land as:

*‘...any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that*

- a. significant harm is being caused or there is a significant possibility of such harm being caused; or*
- b. Pollution of controlled waters is being, or is likely to be, caused.’*

In applying the definition of Contaminated Land, Part 2A states that ‘the Local Authority must:

- Identify a ‘Pollution Linkage’. That is, a linkage between a contaminant and a receptor, by means of a pathway(s).
- Determine if the contaminant is causing significant harm to that receptor, or there is a significant possibility of such harm being caused by that contaminant to that receptor.

If any one element of the pollutant linkage is not present then the land should not be identified as ‘contaminated land’.

Part 2A is designed to ‘enable the identification and remediation of land on which contamination is causing unacceptable risks to human health or the wider environment. It does not necessarily include all land where contamination is present, even though such contamination may be relevant in the context of other regimes’. It is not directed

to assessing risks in relation to a future use of the land that would require a specific grant of planning permission.

The control of development and land use in the future is the responsibility of the planning system. A fundamental principle of sustainable development is that the condition of land, its use and its development should be protected from potential hazards. The National Planning Policy Framework (NPPF) states that *'to prevent unacceptable risks from pollution and land instability, planning policies and decisions should ensure that new development is appropriate for its location.'*

Planning policies and decisions should also ensure that the site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining, pollution arising from previous uses and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation.

NPPF also states that after any required remediation, the land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990.

## 6.2 Preliminary Conceptual Site Model (CSM)

Following a review of the desk based geo-environmental information on the site and a site reconnaissance, a preliminary CSM has been formulated to identify potential sources of contamination, likely receptors and potential pathways on and in the immediate vicinity of the site.

It should be noted that some uncertainties exist due to the limited site specific data available. However, potential contaminants and receptors have been identified based on this Phase 1 desk study review. Pathways have been established on reasonable scientific knowledge of the behaviour of the contaminants in the ground.

It should also be noted that because the assessment is based on documentary evidence contaminants may be identified, which in practice are not present and contaminants may be present which have not been identified.

The guidance provided in CLR11 indicates the CSM should identify those contaminants, pathways and receptors which are 'likely' to represent an 'unacceptable' risk either to human health or the surrounding environment.

## 6.3 Potential Contaminant Sources

### 6.3.1 Onsite

No significant areas of potential concern were identified from the desk based assessment.

### 6.3.2 Off site

The surrounding land use was a mixture of undeveloped farmland becoming a mix of farmland and residential properties with only limited historical industrial land.

Historical industrial land uses include the former railway line (cutting) circa 50m south and the former brickworks including clay pit >95m south. The materials used to infill the railway cutting and clay pit are unknown and there are no landfill licences associated with the two sites. If the materials used to backfill the site contain putrescible materials then there is the potential for the filled cutting (circa 300m x30m) and pit (circa 130m x 70m) to act as a source of landfill gas.

Although there is the potential for the landfilling of materials to act as source of gas it is considered that the impermeable nature of the underlying soils (mudstone) are likely to inhibit ground gas movement and therefore they are unlikely to represent significant on-going source of landfill gas. However, it would therefore be prudent to undertake gas monitoring to confirm the risk assessment.

### 6.3.3 Potential Contaminants of Concern

In the absence of any specific potential sources, a general suite of common contaminants should suffice in assessing actual risks.

## 6.4 Receptors

It is understood that the site will be redeveloped with low rise residential properties. Future Residents are assumed therefore to occupy the site full time and may be

exposed directly to soils within the site. Construction workers would be directly exposed to soils, however this would only be short term.

- Future Residents
- Construction workers
- Construction materials (including services)
- Groundwater – Secondary A Aquifer.
- Surface Water - none within 250m
- Flora and fauna.

## 6.5 Preliminary Risk Assessment

A preliminary risk assessment was undertaken based on a qualitative assessment of the likely presence of a pollutant linkage. A pollutant linkage is the relationship between a source (or contaminant), a pathway and a target (or receptor). Unless all three elements of a pollutant linkage are present, a significant risk is not considered to exist. The approach adopted is to screen each site based on assigning a simple low, medium or high category.

The preliminary risk assessment is shown in Table 3 overleaf.

**Table 3 Site Conceptual Model**

Potential Source and Pollutant	Receptor	Pathway	Potential Pollutant Linkage?	Probability of exposure, consequence and magnitude of risk.
No significant on or off-site sources were identified.	Human Health – future residents.	Direct contact - Dermal contact, soil ingestion and dust inhalation.	Unlikely – no significant sources identified.	Probability: Unlikely Consequence: Medium Magnitude: <b>Low Risk</b>
		Indirect Contact - Vapour inhalation.	Unlikely – no significant sources identified.	Probability: Unlikely Consequence: Medium Magnitude: <b>Low Risk</b>
		Hydrocarbon tainting of potable water supply pipes.	Unlikely – no significant sources identified.	Probability: Unlikely Consequence: Medium Magnitude: <b>Low Risk</b>
	Human Health – Construction workers	Direct contact - Dermal contact, soil ingestion and dust inhalation.	Unlikely – no significant sources identified.	Probability: Unlikely Consequence: Medium Magnitude: <b>Low Risk</b>
		Indirect Contact - Vapour inhalation.	Unlikely – no significant sources identified.	Probability: Unlikely Consequence: Medium Magnitude: <b>Low Risk</b>
	Controlled Waters – groundwater (Secondary A Aquifer)	Leaching and percolation.	Unlikely – no significant sources identified.	Probability: Unlikely Consequence: Low Magnitude: <b>Low Risk</b>
	Controlled Waters – No surface water lies within 250m of the site.	Groundwater migration & run-off to surface waters carrying entrained sediment or diffuse contamination	Unlikely – no significant sources identified.	Probability: Unlikely Consequence: Low Magnitude: <b>Low Risk</b>
	Buried structures – Aggressive ground conditions	Direct contact and/or leaching (sulphate, pH).	Unlikely - underlying geology unlikely to be aggressive.	Probability: Unlikely Consequence: Medium Magnitude: <b>Low Risk</b>

Potential Source and Pollutant	Receptor	Pathway	Potential Pollutant Linkage?	Probability of exposure, consequence and magnitude of risk.
	Ecology - existing trees and landscaping on site.	Plant uptake.	Unlikely – no significant sources identified.	Probability: Unlikely Consequence: Low Magnitude: <b>Low Risk</b>
Ground gases.	Human Health – future residents.	Permeation through ground and intrusion into buildings and structures.	Possible – two potential sources identified. Risk is dependant on composition of fill materials.	Probability: Possible Consequence: High Magnitude: <b>Low Risk</b>
	Flora	Displacement of oxygen from root systems	Possible – two potential sources identified. Risk is dependant on composition of fill materials.	Probability: Possible Consequence: Low Magnitude: <b>Low Risk</b>
Radon.	Human Health – future residents.	Permeation through ground floor.	Unlikely - No protection measures required.	Probability: Unlikely Consequence: Medium Magnitude: <b>Low Risk</b>

## 7 Conclusions and Recommendations

### 7.1 Geotechnical Risks

The potential for geotechnical hazards are summarised in Table 4.

**Table 4: Summary of Geotechnical Hazards.**

Potential Geological Hazard	Impact on proposed development	Likelihood of presence
Deep Made Ground	High	Unlikely
Buried structures	Moderate	Possible
Compressible ground	Moderate	Unlikely
Shrinking / swelling clay	Moderate	Unlikely
Collapsible ground	High	Unlikely
Aggressive ground conditions for concrete	Low	Unlikely
Running sands / excavation instability	Moderate	Unlikely
High water table / groundwater inflows.	High	Unlikely
Slope stability	Moderate	Unlikely
Underground mining	High	Unlikely
Ground dissolution / natural cavities	High	Unlikely

Based on the anticipated ground conditions, conventional spread foundations should be suitable for the proposed development.

The near surface soils are not anticipated to be shrinkable and foundations are therefore unlikely to require deepening in the vicinity of trees. A ground bearing ground floor slab may be suitable.

The soils anticipated to be present may be sufficiently permeable to allow soakaway drainage to be used. The Local Authority are likely to require full scale testing in accordance with BRE 365 (2016) obtain infiltration rates for design.

### 7.2 Land Contamination

The site appears to have always comprised undeveloped land, with no evidence of potentially contaminative processes or materials within or adjacent to the site.

Therefore, the site is considered to be low risk with regards to contamination.

The assessment has indicated no potential sources of contaminants with the potential to attack plastics and as such standard pipework may be suitable for the site. Confirmation should be sought from the water supply company at the earliest opportunity.

The potential risks are based on the worst case assumption that the sources may have caused contaminants to ingress into the underlying soils. It must be noted that there is no evidence to suggest that this may have occurred.

## 7.3 Ground Gas

### 7.3.1 Landfill gas

No recorded current or historical landfills are known to exist within 250m of the site. No organic soils are anticipated to lie beneath the site. It is noted that a former railway cutting and clay pit were located circa 50m and >95m respectively south of the site; the cutting and clay pit appear to have been filled in the 1960s or early 1970s. The materials used to fill the cutting and pit are not known.

Although there is the potential for the landfilling of materials to act as source of gas it is considered that the impermeable nature of the underlying soils (mudstone) are likely to inhibit ground gas movement and therefore they are unlikely to represent significant on-going source of landfill gas.

Consequently the risks to end users from explosive or asphyxiating gases is considered low. However, it would therefore be prudent to undertake gas monitoring to confirm the risk assessment.

### 7.3.2 Radon

The Groundsure GeolInsight report states that the site is in an area where the estimated probability of homes being above the action level of  $200\text{Bqm}^{-3}$  is between 1% and 3%. Therefore, no radon protective measures are required in the construction of new buildings. Confirmation of any protection measures should be agreed with the local authority building control and / or warranty provider.

## 7.4 Coal Mining

The site lies on the Mexborough Rock, a sandstone flag of the Pennine Middle Coal Measures.

The Coal Authority report indicates that the site is in the likely zone of influence from workings in four seams of coal at 220m to 650m depth, and last worked in 1950. Any movement due to coal mining activity associated with these workings should have ceased.

Published geology indicates that there are no outcropping coal seams in the vicinity of the site.

The Coal Authority interactive mapping indicates the site does not lie within a Development High Risk Area and that no possible or probable shallow coal mine workings are anticipated beneath the site.

Given the presence of the sandstone flag beneath the site and the above review, it is considered that the shallow coal workings are unlikely to be present beneath the site.

## 7.5 Summary

The aim of this report was to assess the potential geotechnical and geo-environmental issues at the proposed development site. No potential sources of contamination have been identified from the Preliminary Risk Assessment. To enable the knowledge of the contaminating potential and land quality of this site to be developed further a Phase 2 Site Investigation would be required.

## **8 Notes, Limitations and Uncertainties**

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The report and /or opinion will be prepared for the specific purpose stated in the document and in relation to the nature and extent of proposals made available to us at the time of your enquiry. The recommendations should not be used for other schemes on or adjacent to the site without further reference to HBS. The assessment of the factual data will be provided to assist the client and his Engineer and/or advisors in the preparation of their designs.

It should be noted that the levels of risk identified in this report are perceived risks based on the information reviewed. No physical investigation or testing has been carried out; actual risks can only be assessed following a physical investigation of the site. Further work, including physical investigation, laboratory testing and ground gas monitoring may be required by the appropriate regulators to confirm actual conditions.

The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true representative data with respect to site conditions. Should additional information become available that may influence the opinions expressed in this report, HBS reserves the right to review such information and, if warranted, to alter the opinions accordingly.

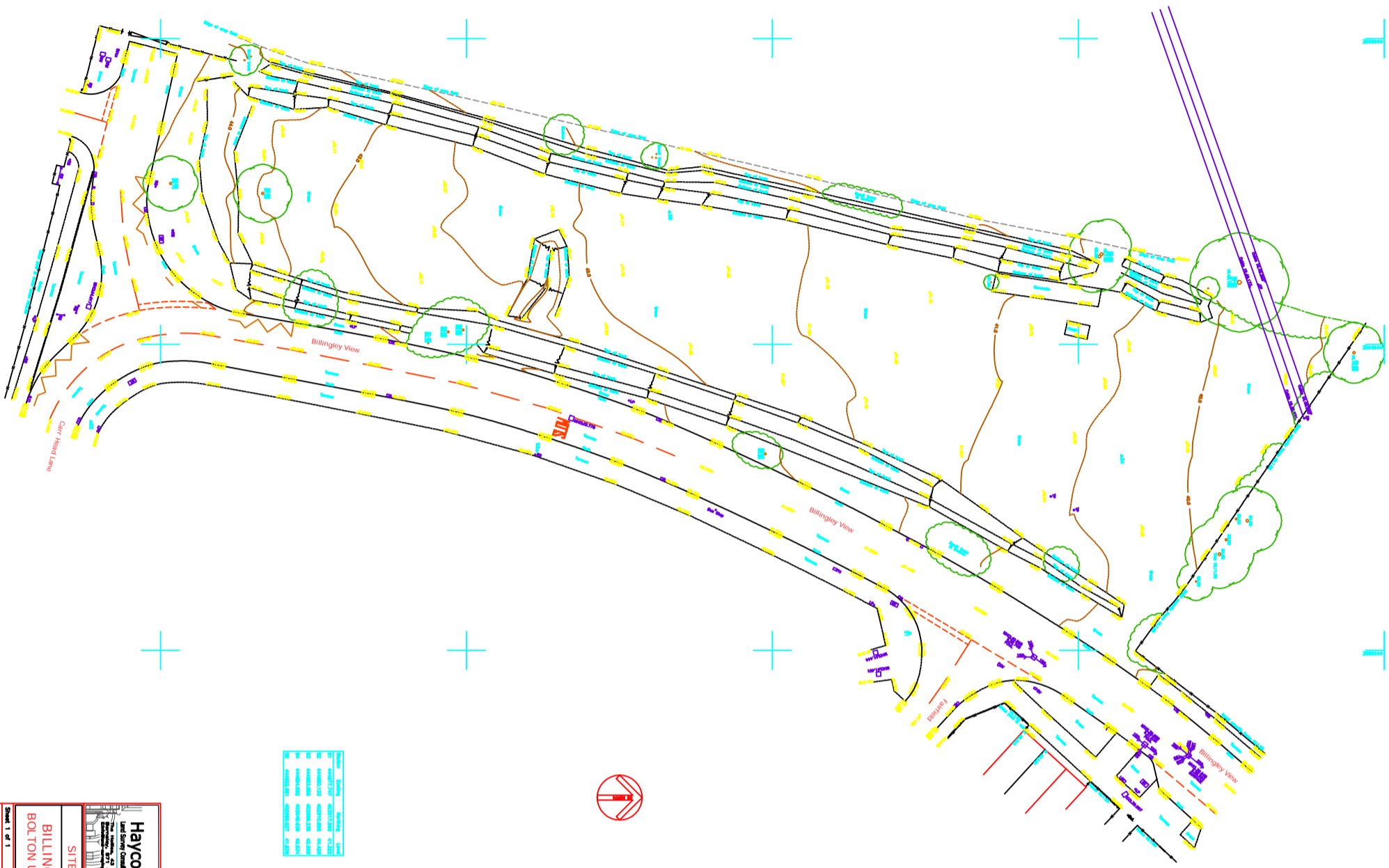
The evaluation and conclusions do not preclude the existence of other site conditions and contamination, which could not reasonably have been revealed by the site

investigation works undertaken at the time of writing. This report should be used for information purposes only and should not be construed as a comprehensive characterisation of all site conditions or potential contaminants.

The economic viability of the proposals referred to in the report, or of the solutions put forward to any problems encountered, will depend on very many factors in addition to geotechnical considerations hence its evaluation will be outside the scope of the report.

# Appendix A

## Site Topographic Survey



Station	Coordinates
1	444687.727
2	444688.128
3	444688.529
4	444688.930
5	444689.331
6	444689.732
7	444690.133
8	444690.534
9	444690.935
10	444691.336
11	444691.737
12	444692.138
13	444692.539
14	444692.940
15	444693.341
16	444693.742
17	444694.143
18	444694.544
19	444694.945
20	444695.346
21	444695.747
22	444696.148
23	444696.549
24	444696.950
25	444697.351
26	444697.752
27	444698.153
28	444698.554
29	444698.955
30	444699.356
31	444699.757
32	444700.158
33	444700.559
34	444700.960
35	444701.361
36	444701.762
37	444702.163
38	444702.564
39	444702.965
40	444703.366
41	444703.767
42	444704.168
43	444704.569
44	444704.970
45	444705.371
46	444705.772
47	444706.173
48	444706.574
49	444706.975
50	444707.376
51	444707.777
52	444708.178
53	444708.579
54	444708.980
55	444709.381
56	444709.782
57	444710.183
58	444710.584
59	444710.985
60	444711.386
61	444711.787
62	444712.188
63	444712.589
64	444712.990
65	444713.391
66	444713.792
67	444714.193
68	444714.594
69	444714.995
70	444715.396
71	444715.797
72	444716.198
73	444716.599
74	444716.900
75	444717.301
76	444717.702
77	444718.103
78	444718.504
79	444718.905
80	444719.306
81	444719.707
82	444720.108
83	444720.509
84	444720.910
85	444721.311
86	444721.712
87	444722.113
88	444722.514
89	444722.915
90	444723.316
91	444723.717
92	444724.118
93	444724.519
94	444724.920
95	444725.321
96	444725.722
97	444726.123
98	444726.524
99	444726.925
100	444727.326



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 14th Floor, 25, Abchurch Lane, London EC4N 3DF  
 Tel: 020 7424 2000 Fax: 020 7424 2001  
 Email: info@haycock-todd.co.uk

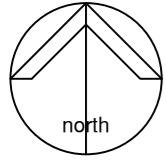
**SITE SURVEY**  
**BILLINGLEY VIEW**  
**BOLTON UPON DEARNE**

Station	Coordinates
1	444687.727
2	444688.128
3	444688.529
4	444688.930
5	444689.331
6	444689.732
7	444690.133
8	444690.534
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86	444721.712
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88	444722.514
89	444722.915
90	444723.316
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94	444724.920
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96	444725.722
97	444726.123
98	444726.524
99	444726.925
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Sheet 1 of 1  
 Drawn by: DM  
 Date of Survey: June 2018  
 Scale: 1/2500  
 Survey Job No.: S9435

# Appendix B

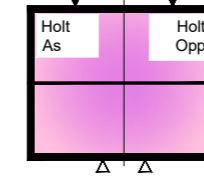
## Proposed Development Plan



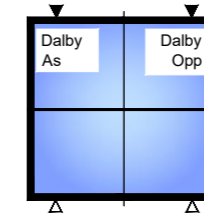
# Billingley View, Bolton on Dearne



### House Type Legend



**Holt - Holt**  
2 Bedroom Semi  
Detached Dwelling  
10No (62%)



**Holt - Dalby**  
3 Bedroom Semi  
Detached Dwelling  
6No (38%)

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Property Design and Management Services

CLIENT  
**Bernesial Homes**

PROJECT  
**Billingley View  
Bolton on Dearne  
Housing Development**

TITLE

**Proposed Site Plan**

SCALES	DATE	DRAWN	CHECKED
1:500	25/03/19	IKC	

FILE / DRAWING NAME	ZONE	LEVEL	TYPE	ROLE	UNIQUE NR	REV CODE
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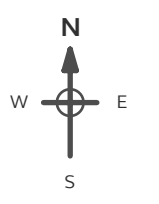
# Appendix C

## Historic Maps

**Site Details:**  
 BILLINGLEY VIEW, BOLTON  
 UPON DEARNE, BARNSELY,  
 S63 8BP

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**Report Ref:** GS-6173261  
**Grid Ref:** 444638, 403000

**Map Name:** County Series  
**Map date:** 1890-1892  
**Scale:** 1:2,500  
**Printed at:** 1:2,500



Surveyed 1892 Revised 1892 Edition N/A Copyright N/A Levelled N/A	Surveyed 1892 Revised 1892 Edition N/A Copyright N/A Levelled N/A
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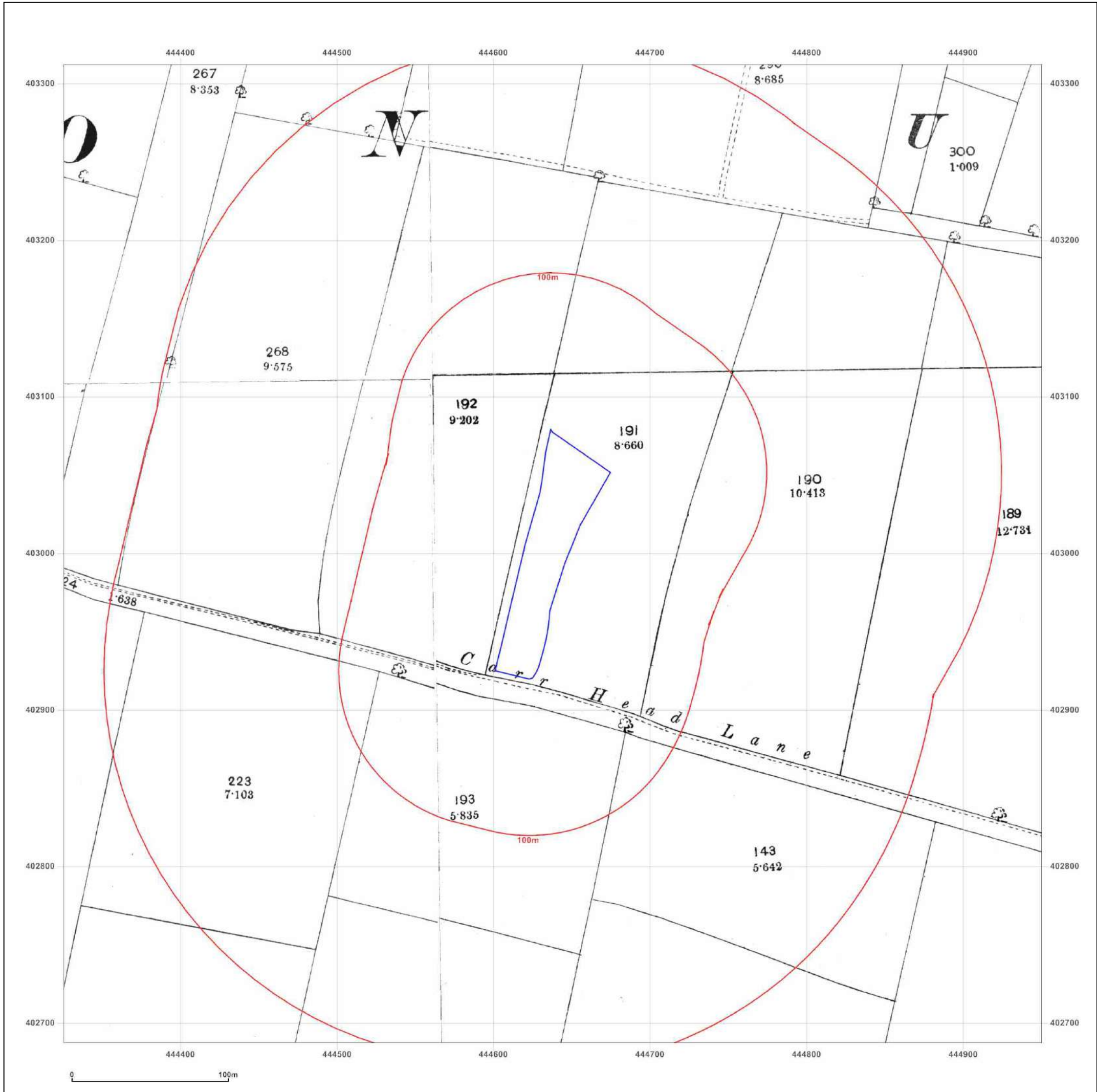


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**Site Details:**

BILLINGLEY VIEW, BOLTON  
UPON DEARNE, BARNSELY,  
S63 8BP

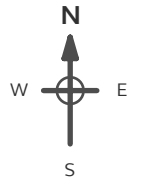
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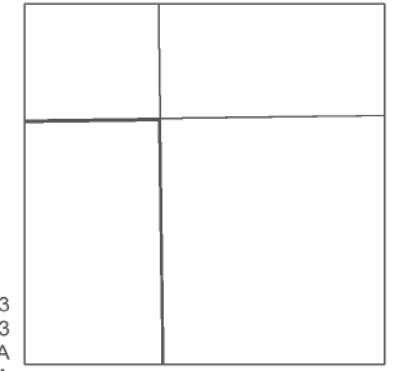
**Map date:** 1903-1906

**Scale:** 1:2,500

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Revised 1906  
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Revised 1903  
Edition N/A  
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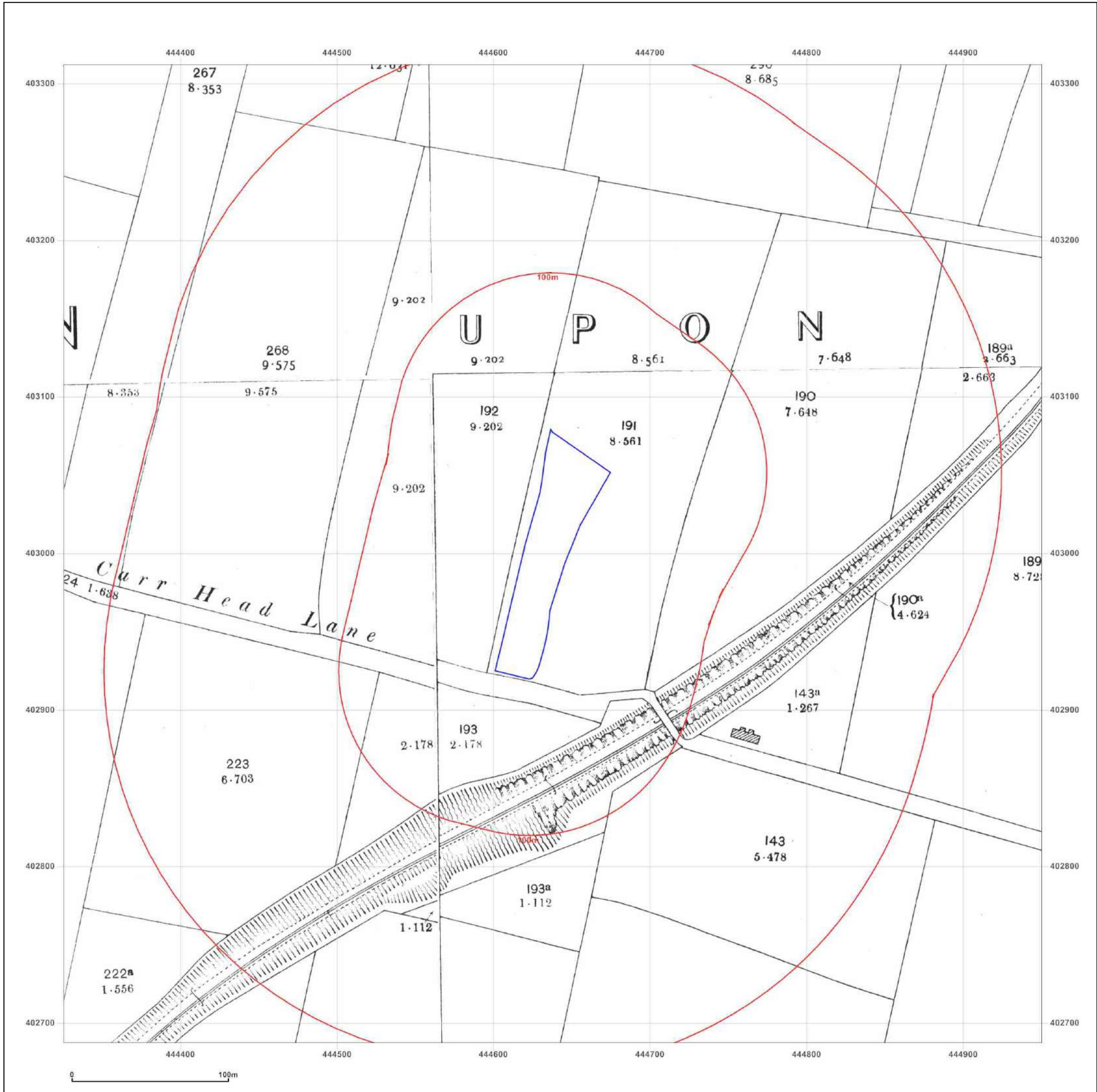


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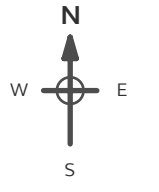
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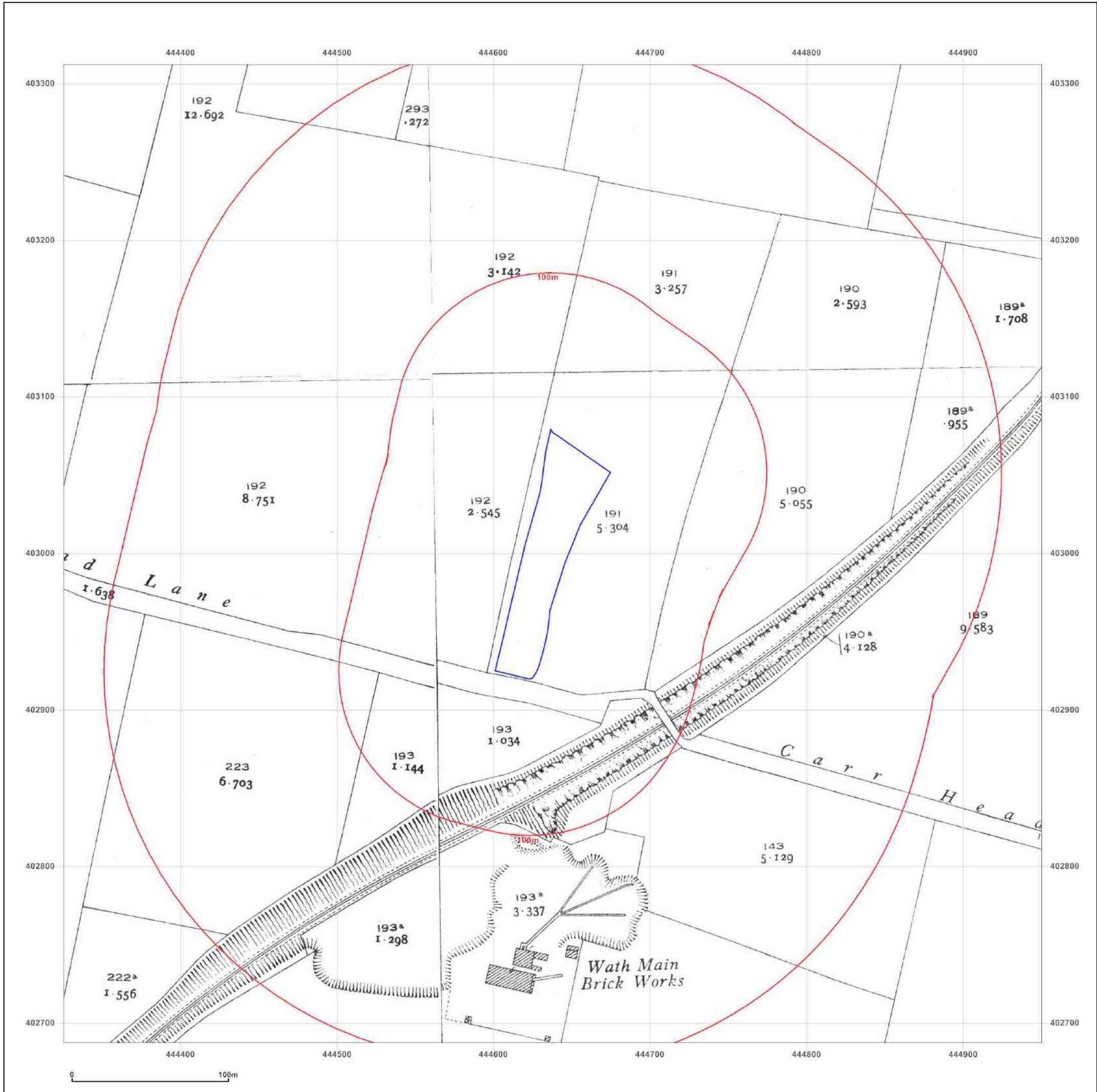
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 BILLINGLEY VIEW, BOLTON  
 UPON DEARNE, BARNSELY,  
 S63 8BP

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**Printed at:** 1:2,500



Surveyed 1930 Revised 1930 Edition N/A Copyright N/A Levelled N/A	Surveyed 1930 Revised 1930 Edition N/A Copyright N/A Levelled N/A
Surveyed 1930 Revised 1930 Edition N/A Copyright N/A Levelled N/A	Surveyed 1930 Revised 1930 Edition N/A Copyright N/A Levelled N/A



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**Site Details:**

BILLINGLEY VIEW, BOLTON  
UPON DEARNE, BARNSELY,  
S63 8BP

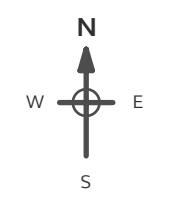
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**Map Name:** National Grid

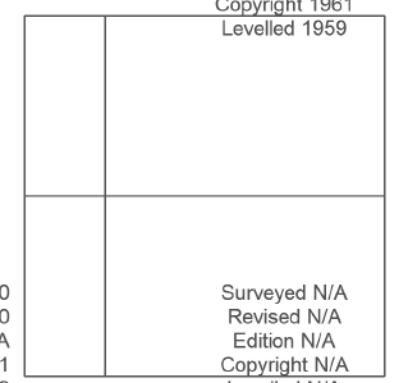
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Surveyed 1960  
Revised 1960  
Edition N/A  
Copyright 1961  
Levelled 1959



Surveyed 1960  
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**Site Details:**

BILLINGLEY VIEW, BOLTON  
UPON DEARNE, BARNSELY,  
S63 8BP

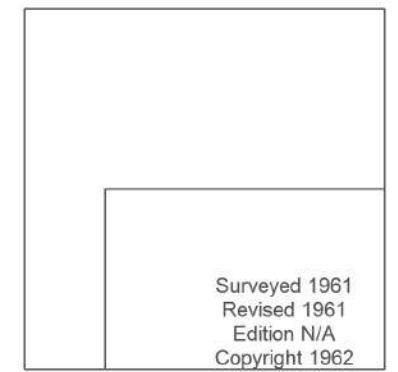
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**Map Name:** National Grid

**Map date:** 1962

**Scale:** 1:1,250

**Printed at:** 1:2,000



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**Site Details:**

BILLINGLEY VIEW, BOLTON  
UPON DEARNE, BARNSELY,  
S63 8BP

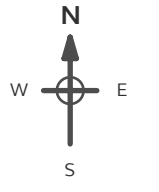
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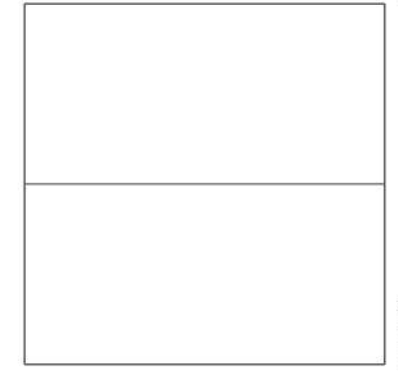
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**Site Details:**

BILLINGLEY VIEW, BOLTON  
UPON DEARNE, BARNSELY,  
S63 8BP

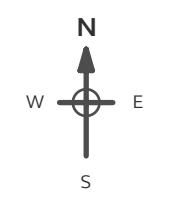
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**Map Name:** National Grid

**Map date:** 1973-1977

**Scale:** 1:1,250

**Printed at:** 1:2,000



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Surveyed 1960 Revised 1976 Edition N/A Copyright 1977 Levelled 1964	Surveyed 1961 Revised 1976 Edition N/A Copyright 1977 Levelled 1964



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**Site Details:**

BILLINGLEY VIEW, BOLTON  
UPON DEARNE, BARNSELY,  
S63 8BP

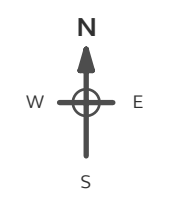
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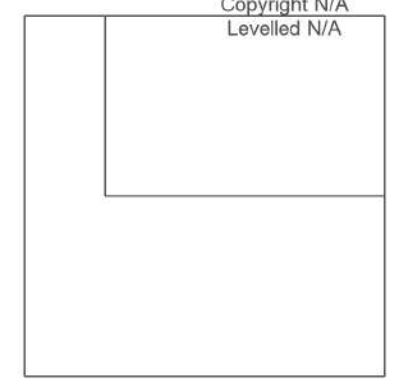
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Revised N/A  
Edition N/A  
Copyright N/A  
Levelled N/A

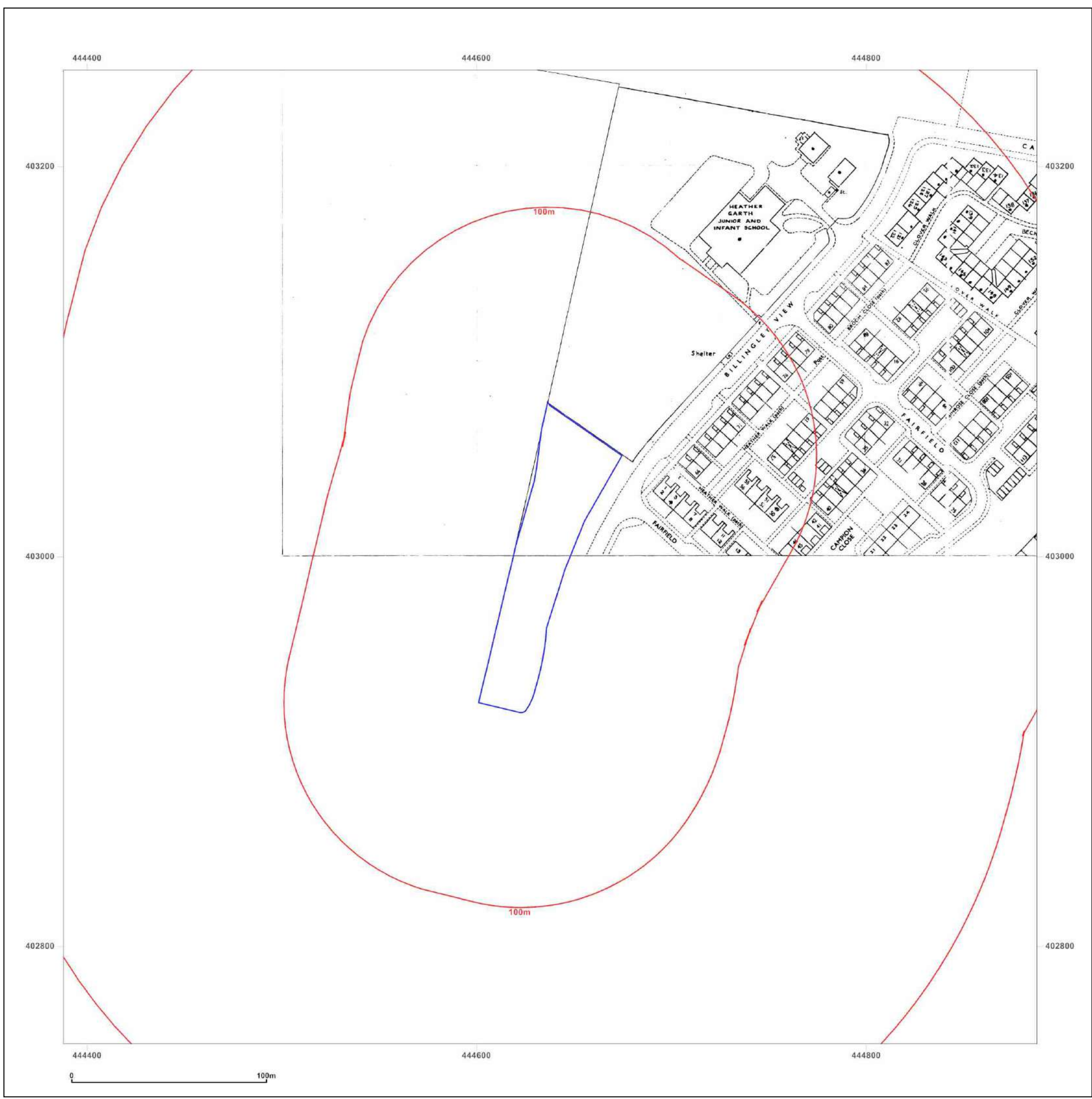


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**Site Details:**

BILLINGLEY VIEW, BOLTON  
UPON DEARNE, BARNSELY,  
S63 8BP

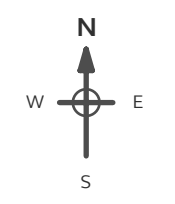
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**Map Name:** National Grid

**Map date:** 1993

**Scale:** 1:1,250

**Printed at:** 1:2,000



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



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**Site Details:**

BILLINGLEY VIEW, BOLTON  
UPON DEARNE, BARNSELY,  
S63 8BP

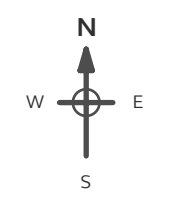
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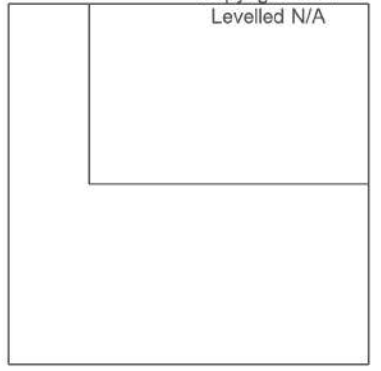
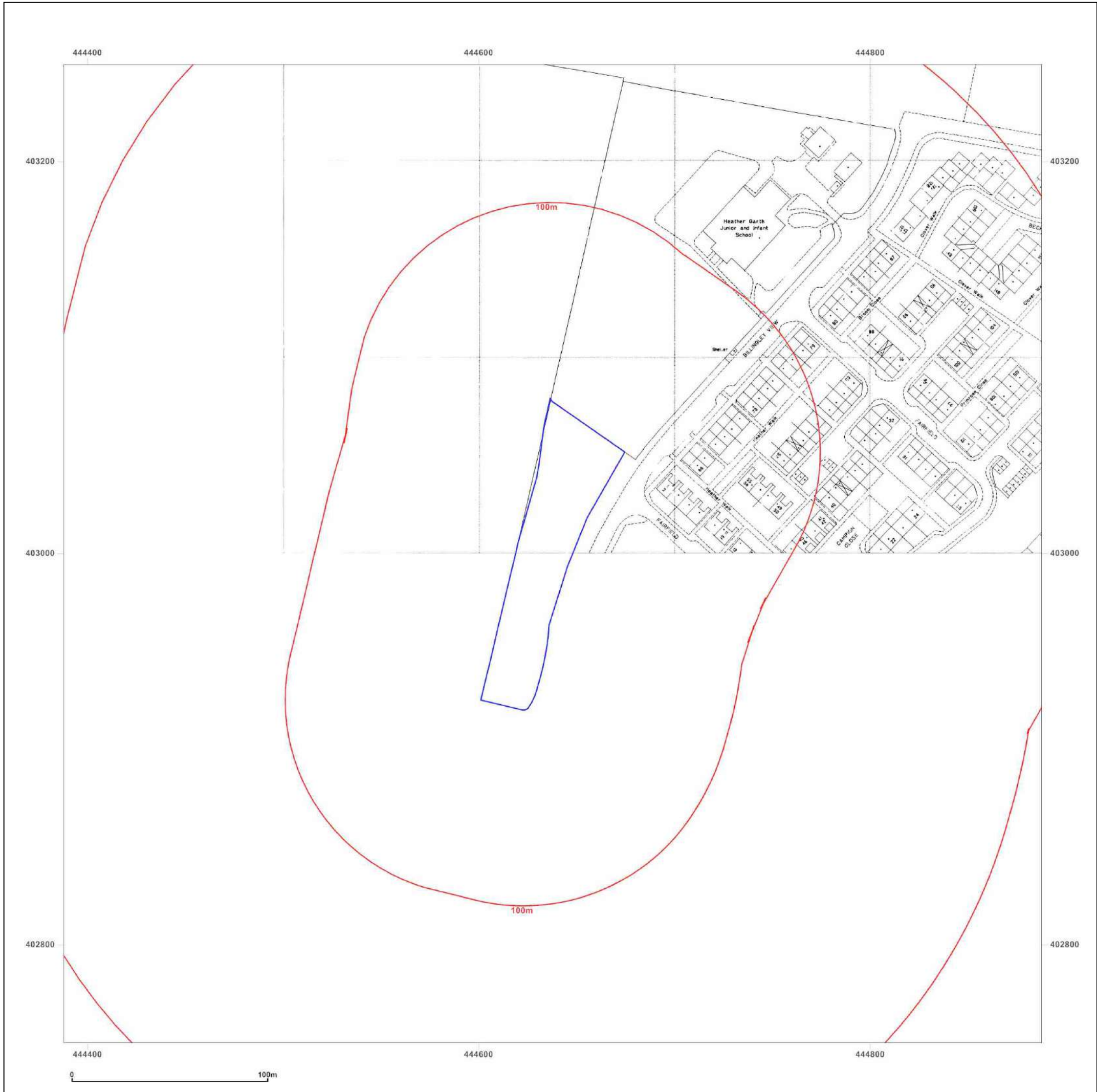
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Edition N/A  
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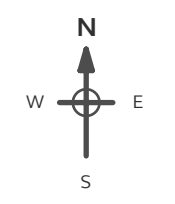
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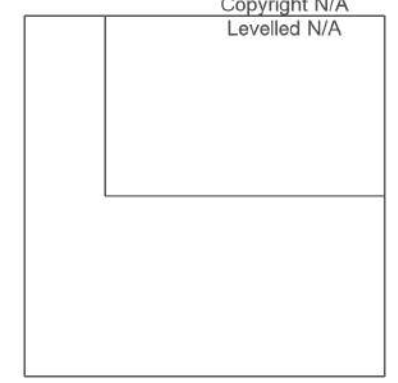
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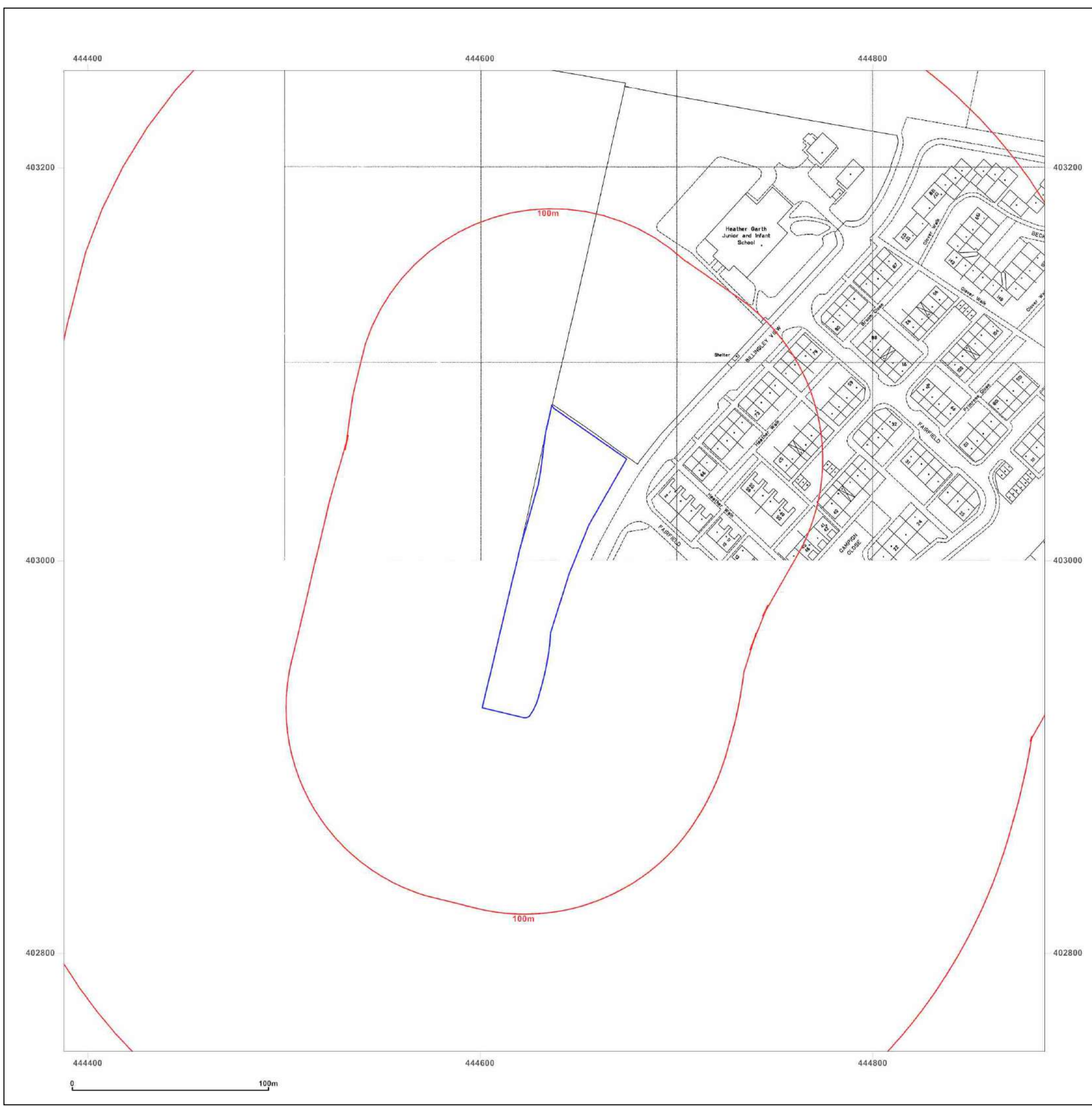


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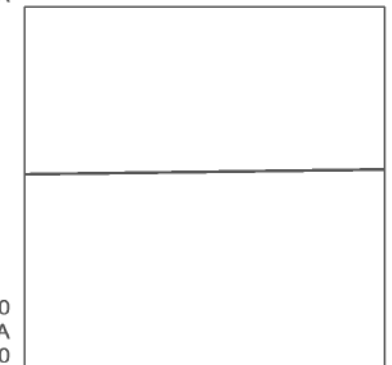
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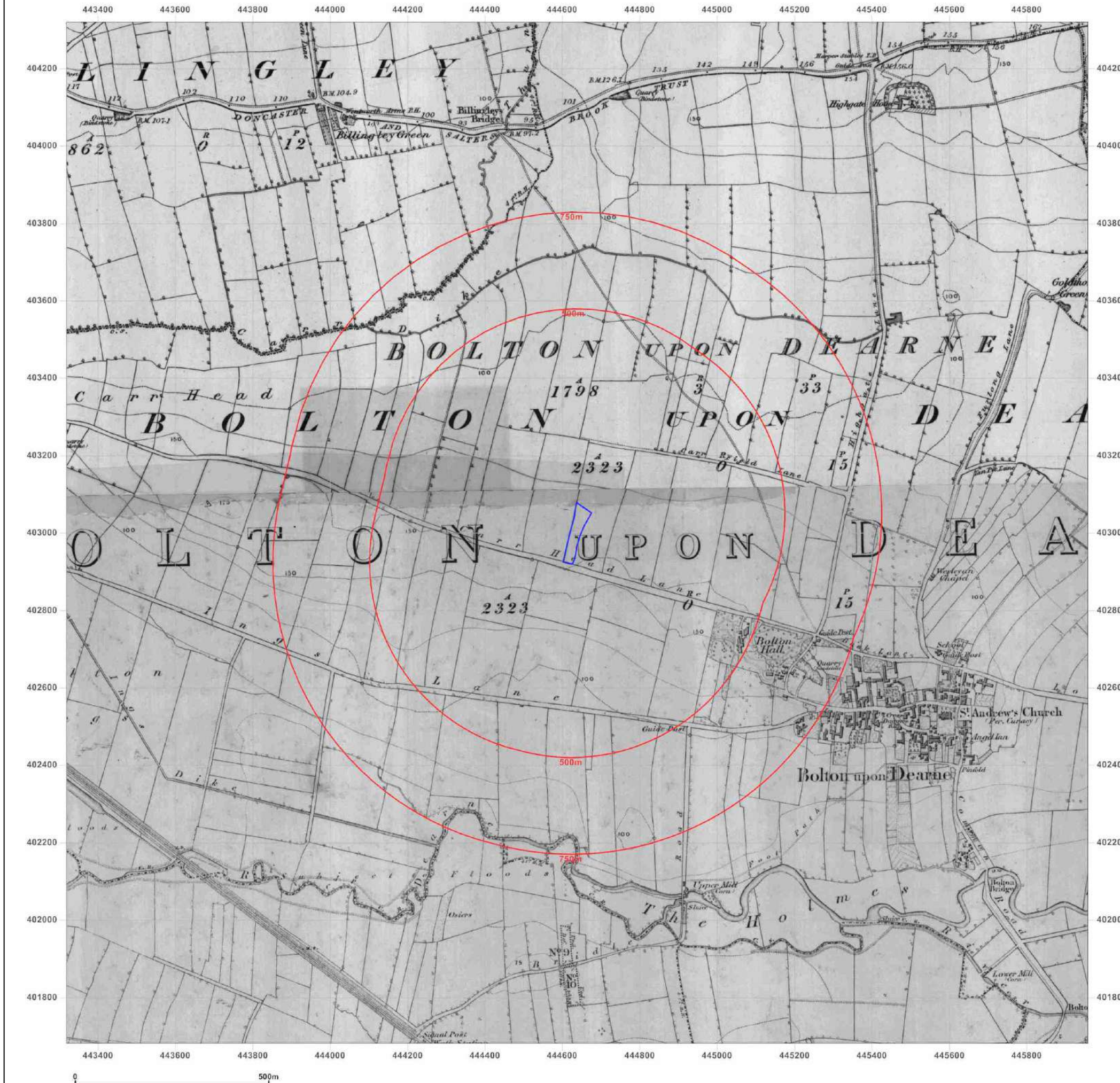


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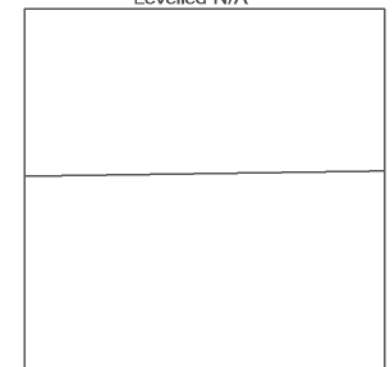
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**Scale:** 1:10,560

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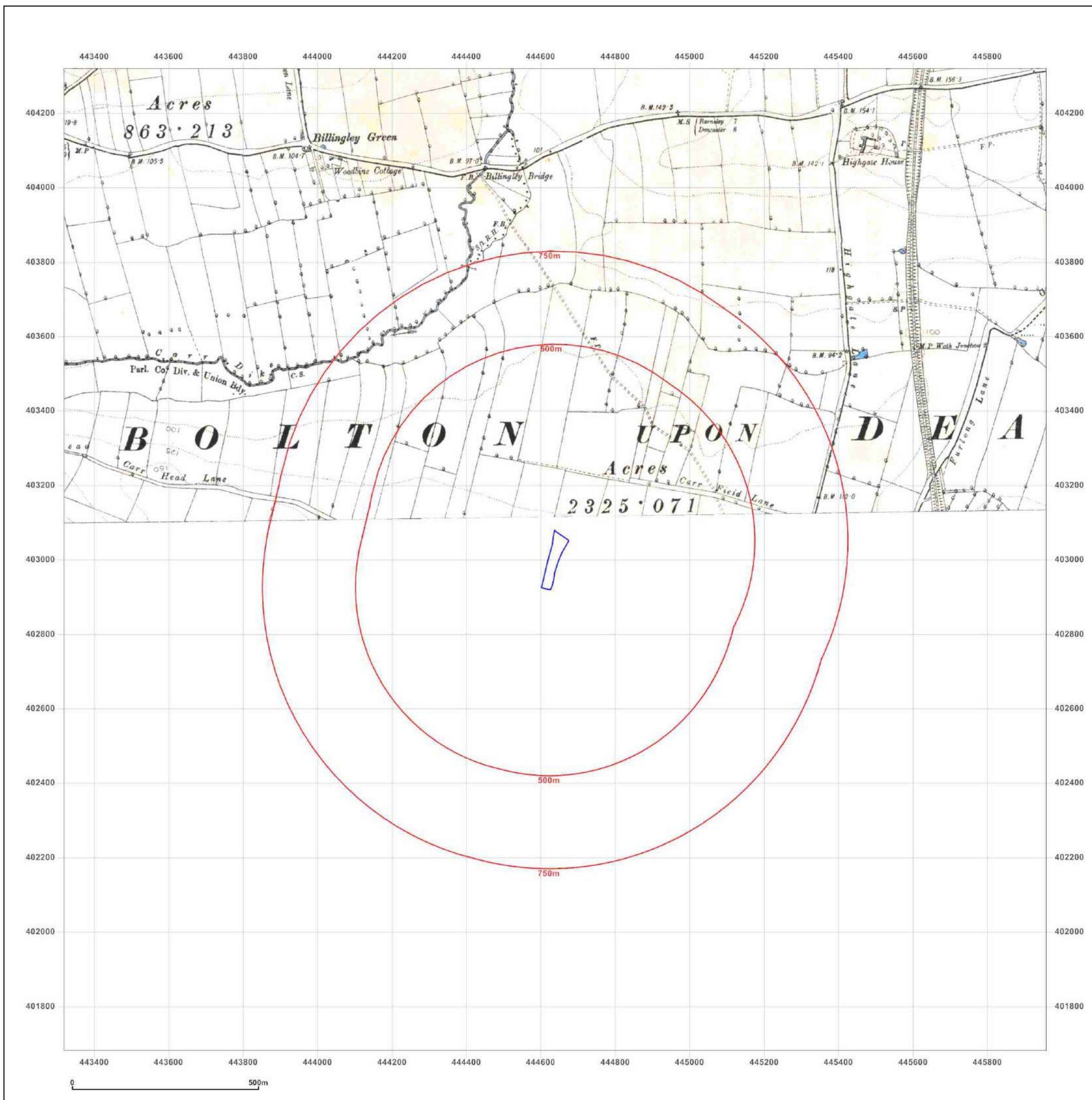


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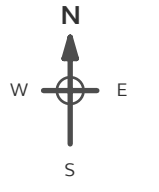
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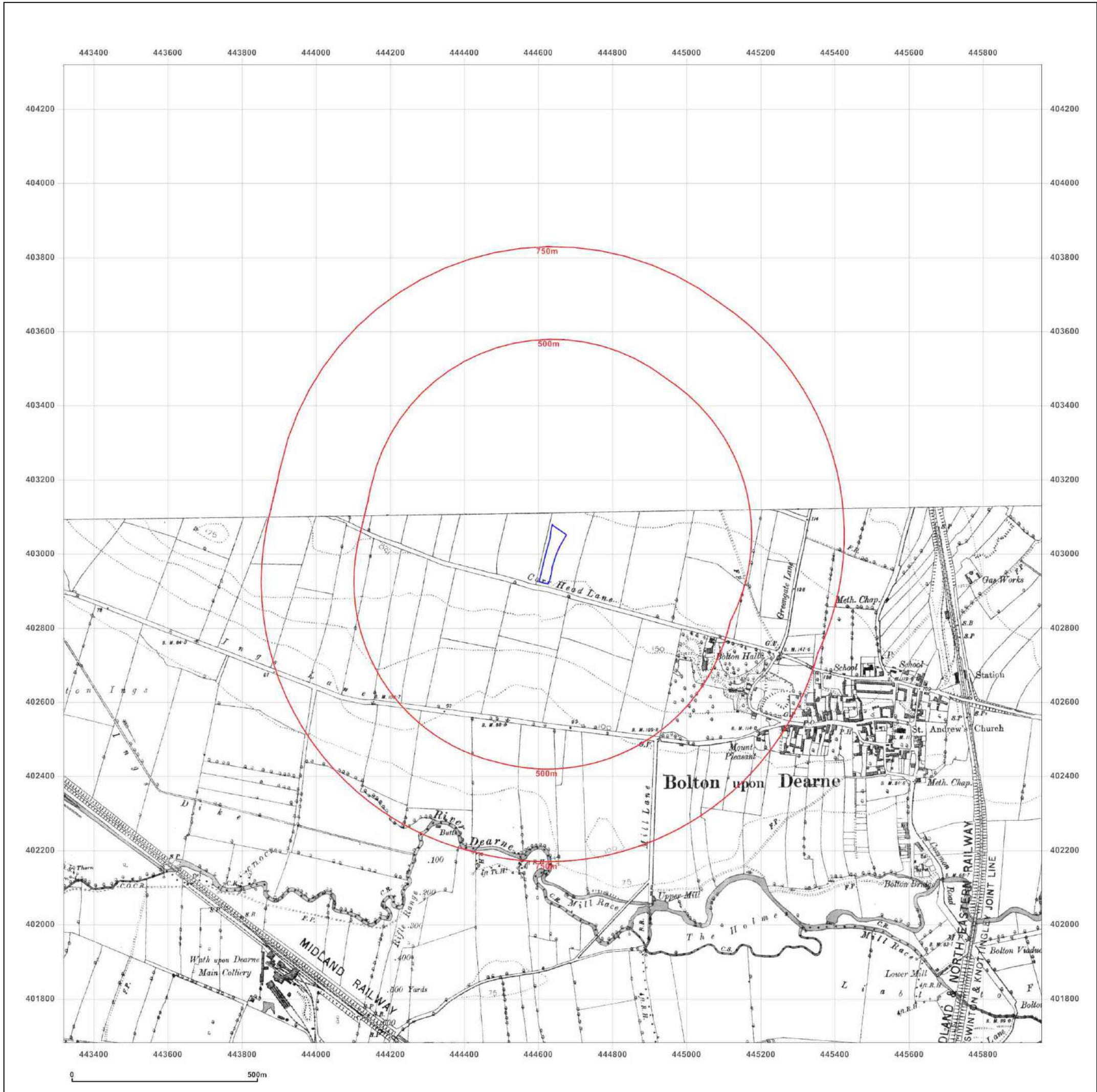


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**Grid Ref:** 444638, 403000

**Map Name:** County Series

**Map date:** 1901-1904

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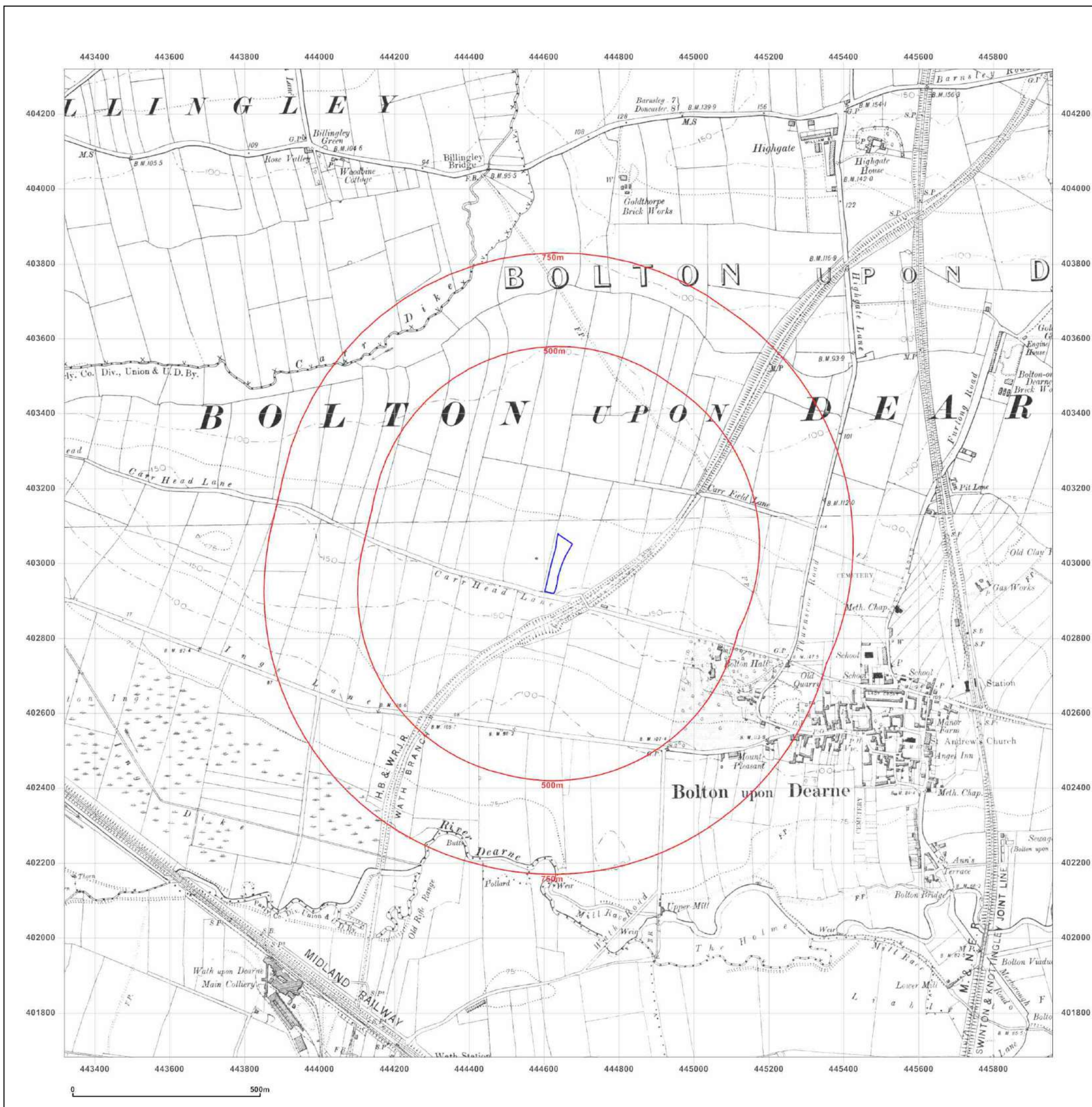


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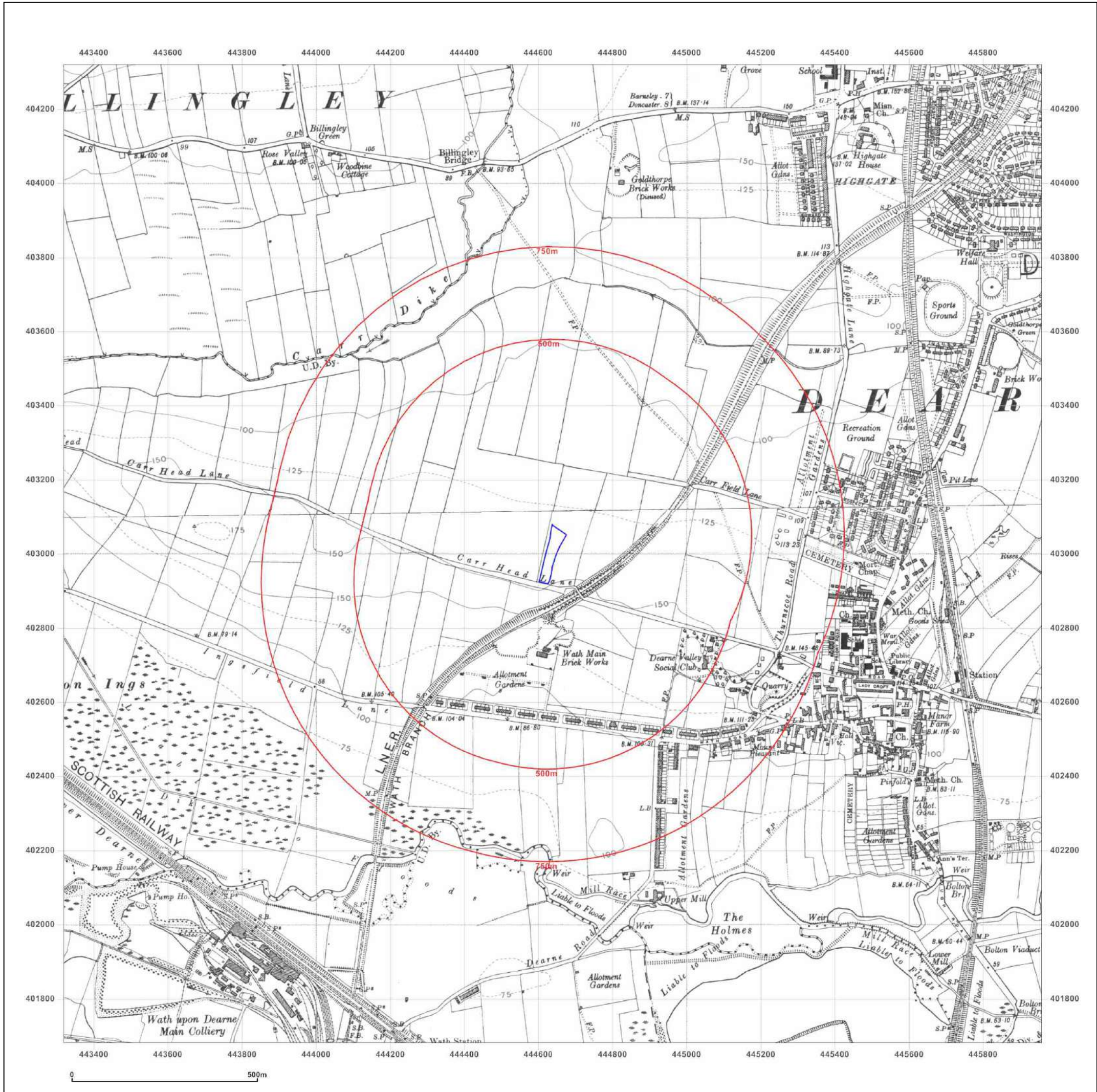


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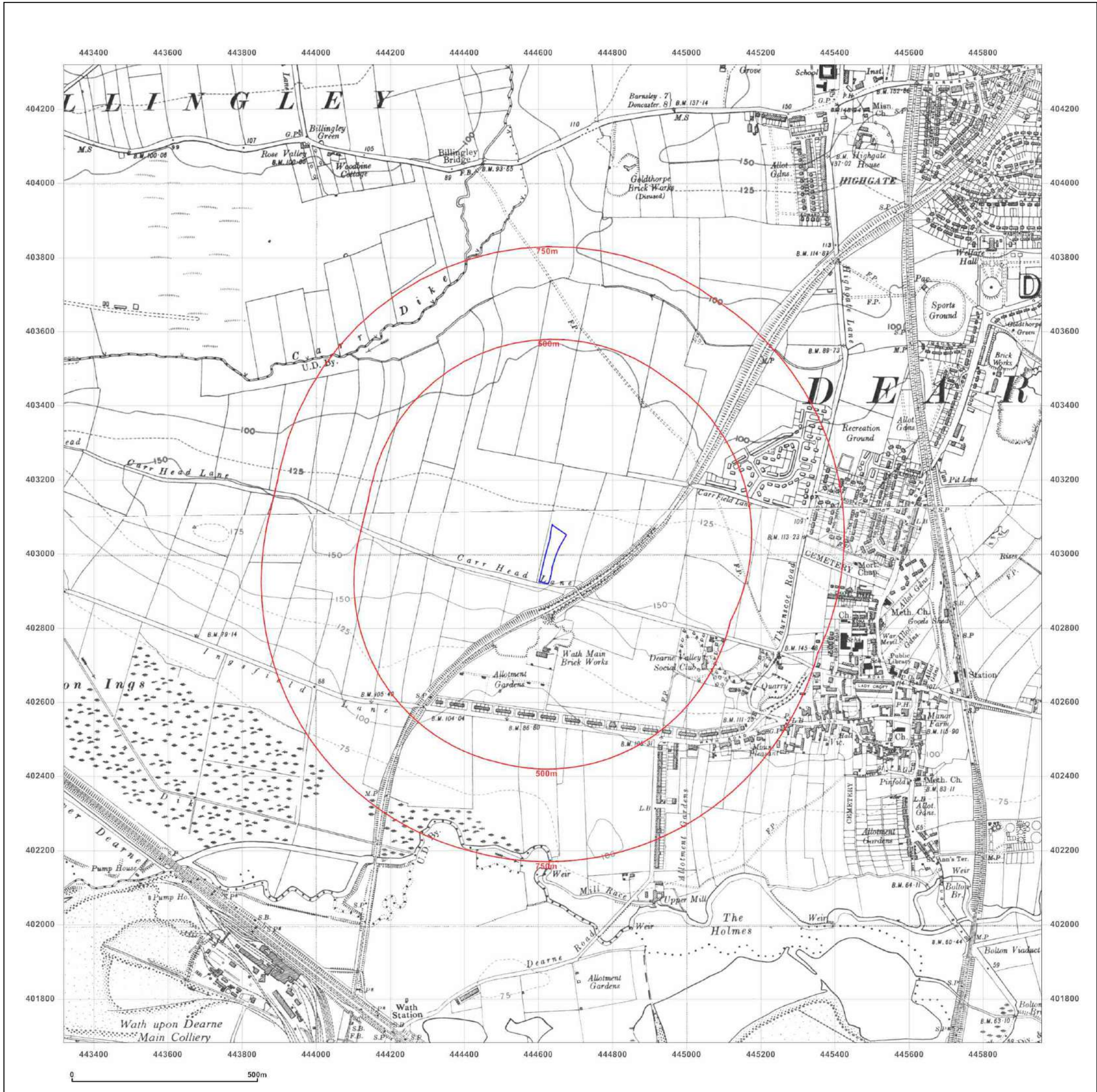


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**Map Name:** Provisional

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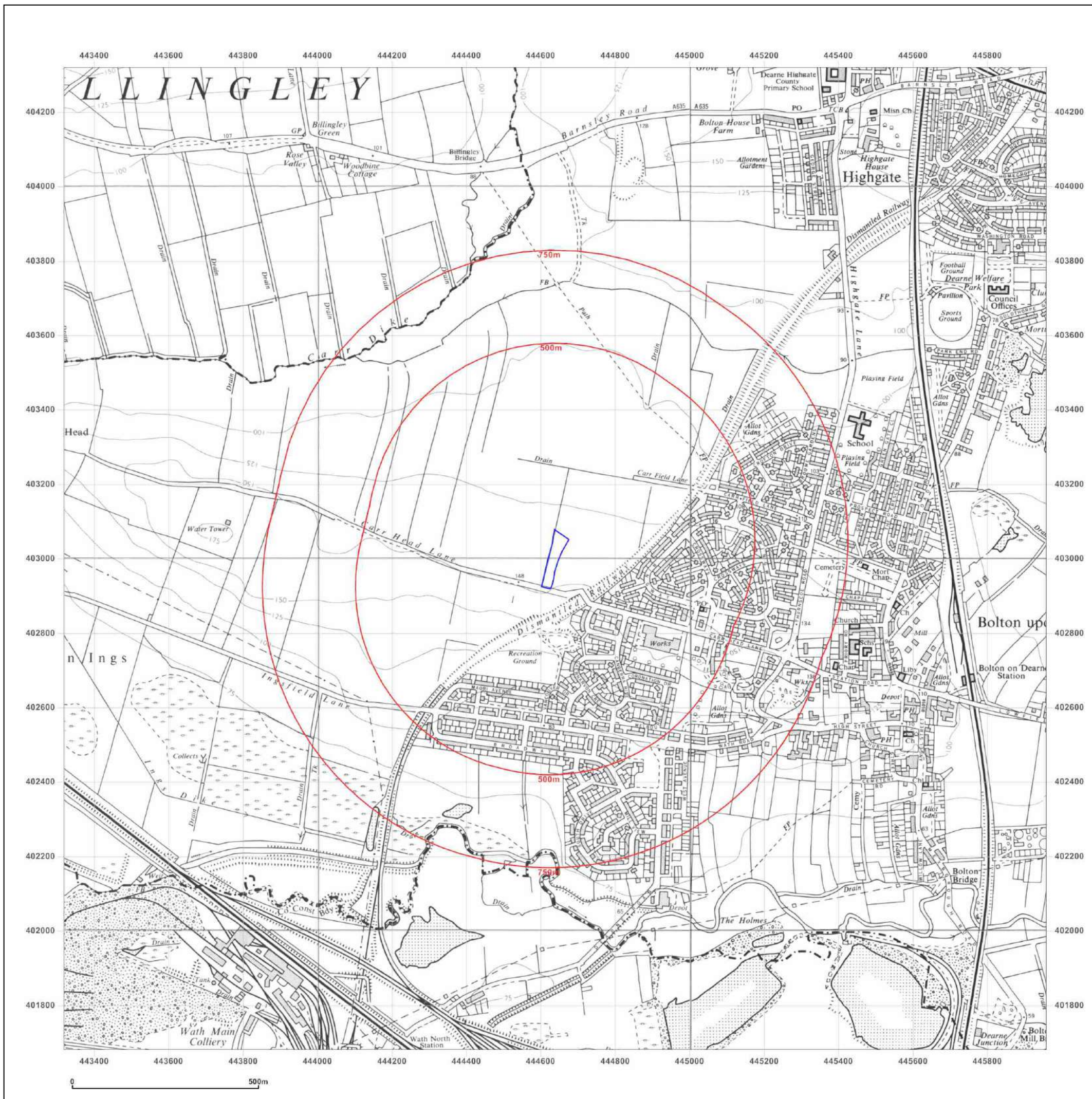


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**Map date:** 1976-1977

**Scale:** 1:10,000

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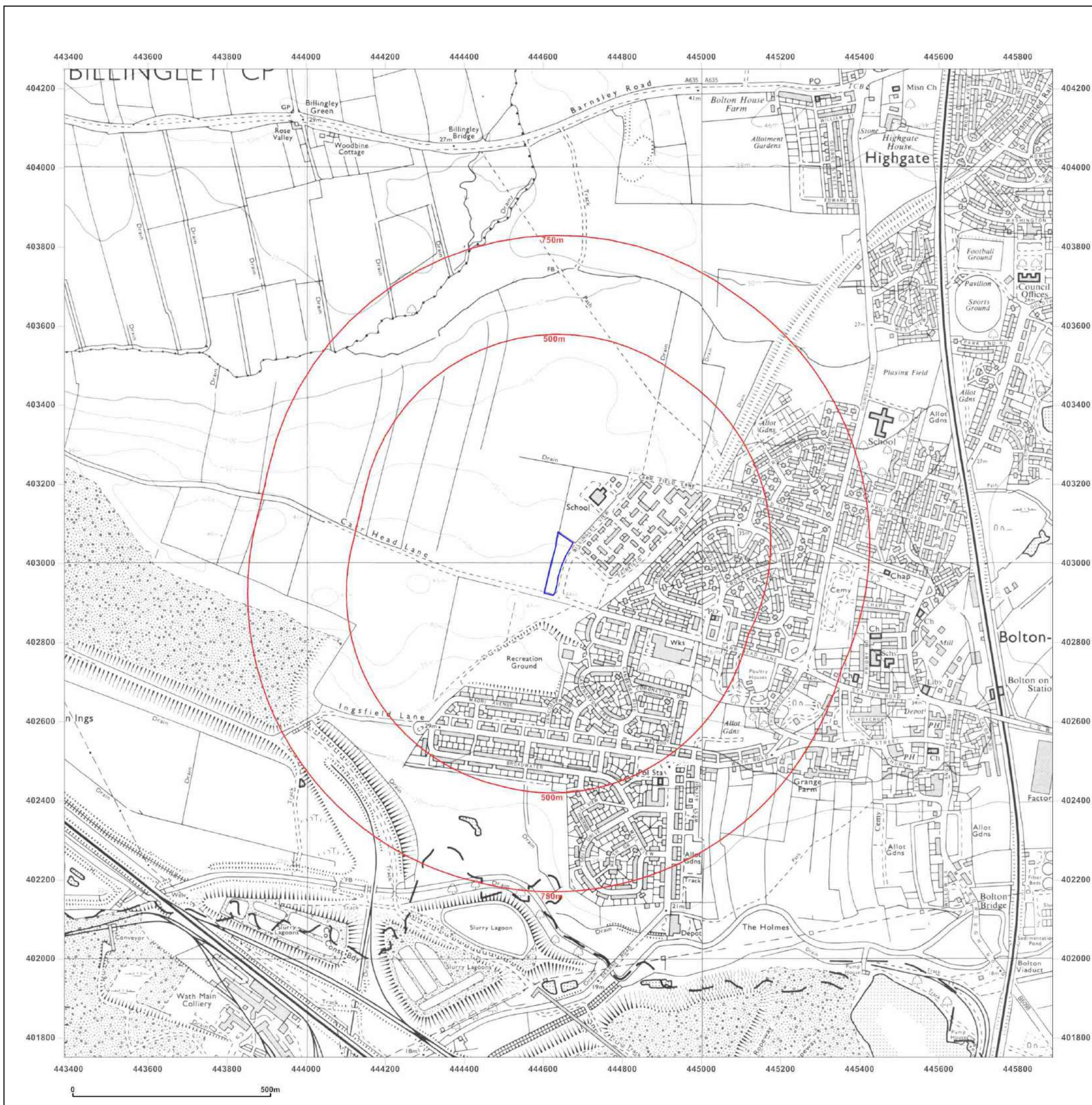


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**Map Name:** National Grid

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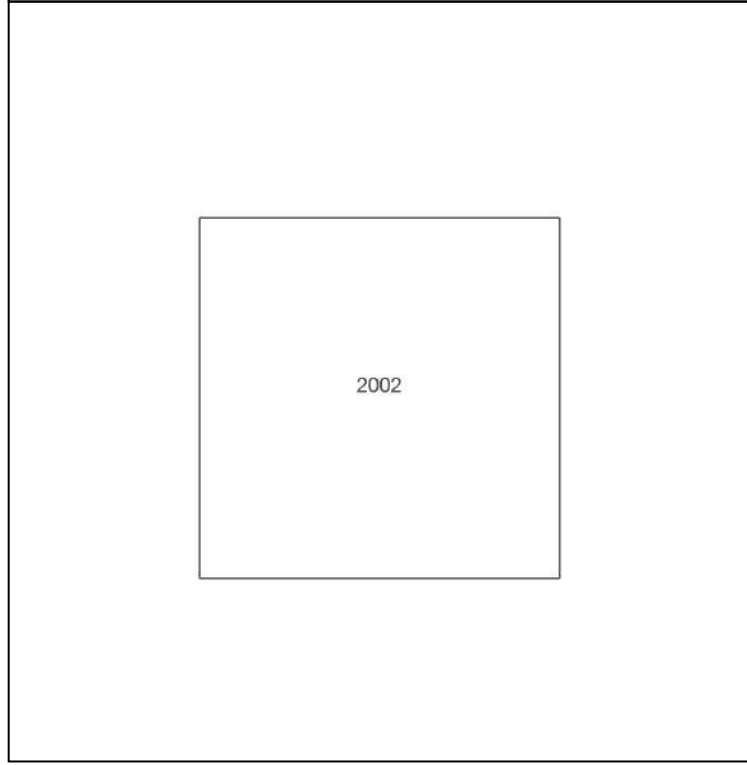
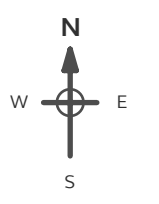


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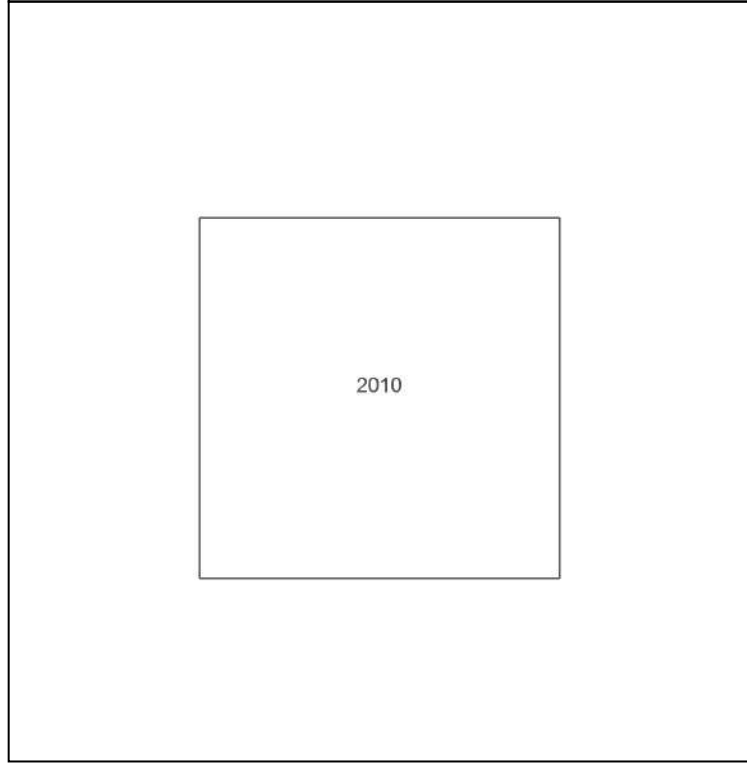
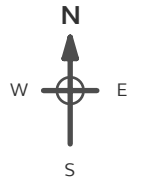
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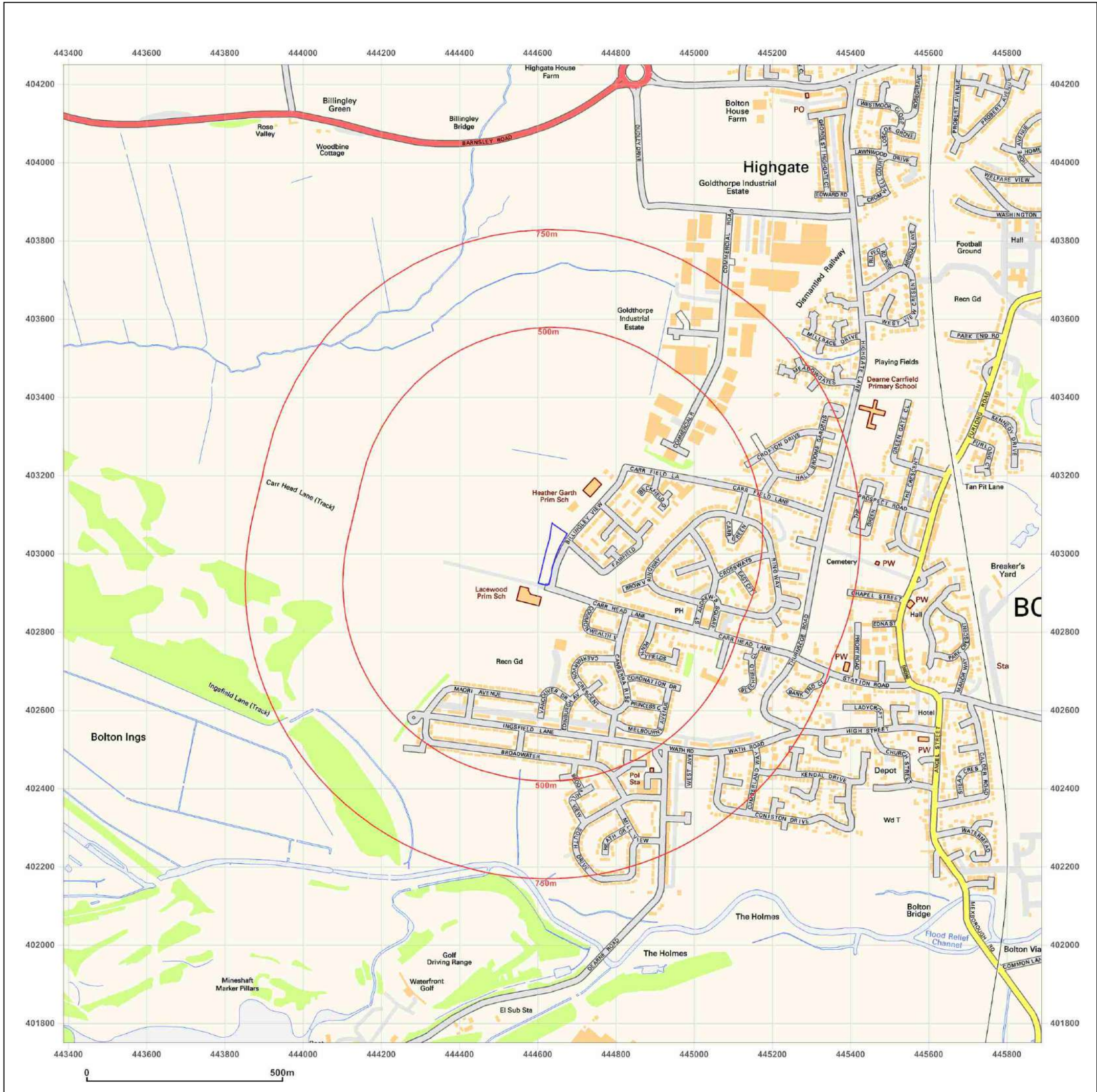


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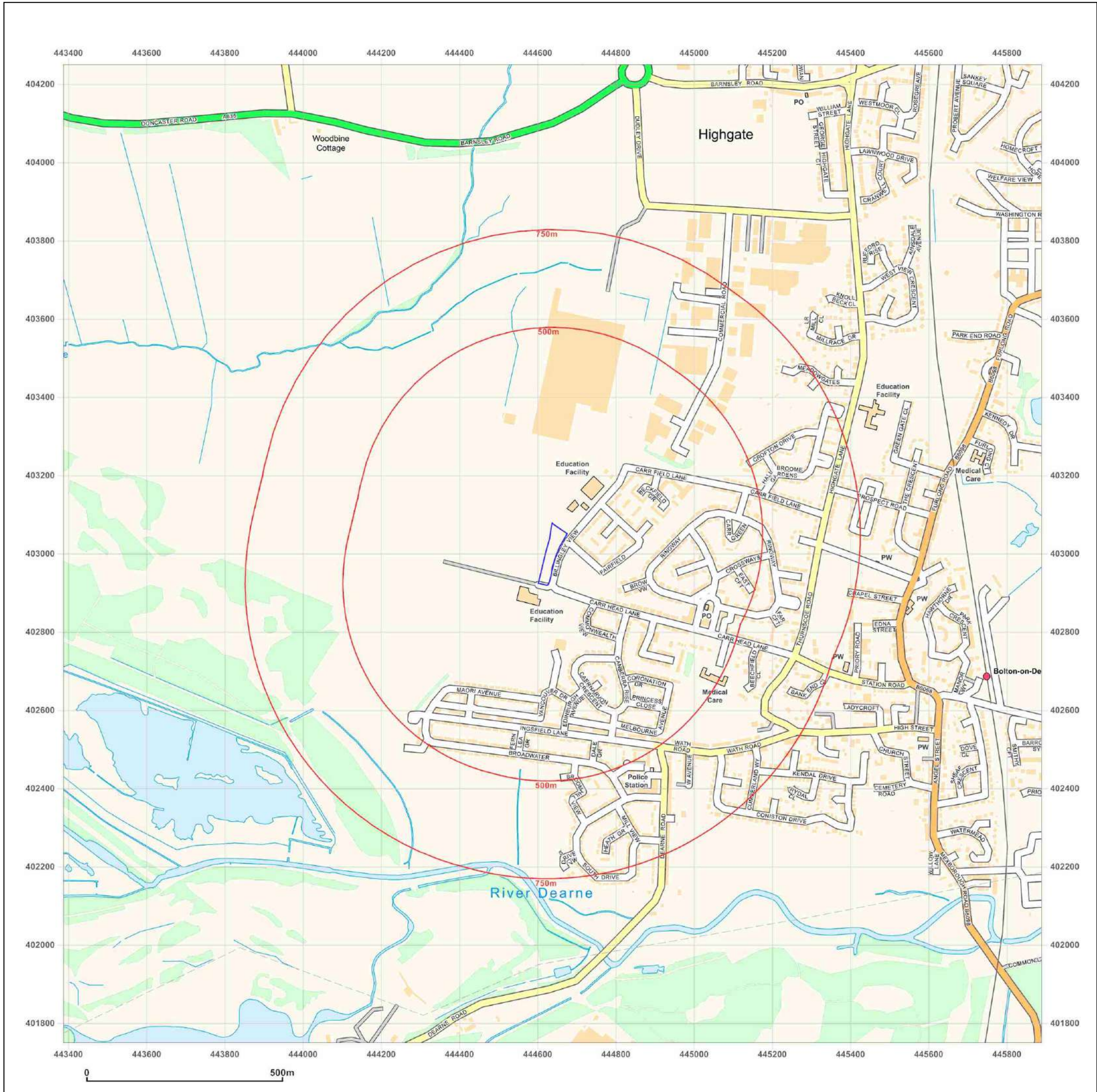
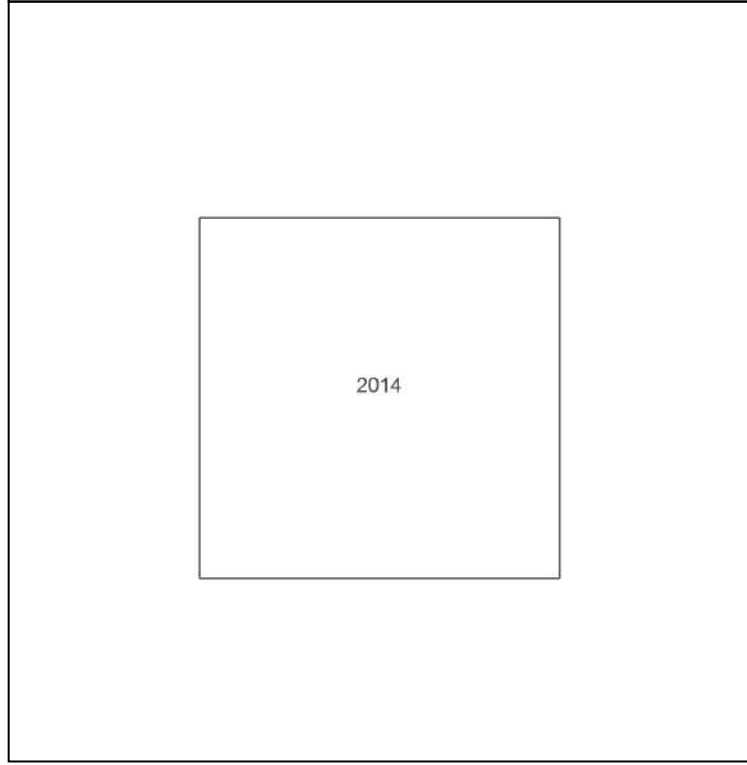
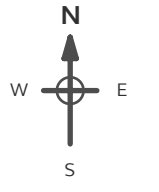
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## Appendix D

# Groundsure EnviroInsight Report



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16 CENTRAL AVENUE, ST. ANDREWS  
BUSINESS PARK,  
NORWICH, NR7 0HR

Groundsure Reference: GS-6173259  
Your Reference: 101909\_Billingley\_View\_PO23003918  
Report Date: 16 Jul 2019  
Report Delivery Method: Email - pdf

## Enviro Insight

Address: BILLINGLEY VIEW, BOLTON UPON DEARNE, BARNESLEY, S63 8BP

Dear Sir/ Madam,

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

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

Managing Director  
Groundsure Limited

Enc.  
Groundsure Enviroinsight

**Address:** BILLINGLEY VIEW, BOLTON UPON DEARNE, BARNSELY, S63 8BP  
**Date:** 16 Jul 2019  
**Reference:** GS-6173259  
**Client:** Hamson Barron Smith Ltd

NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 07-Jun-2013  
Grid Reference: 444631,403001  
Site Size: 0.4487ha

Report Reference: GS-6173259  
Client Reference: 101909\_Billingley\_View\_PO23003918

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# Overview of Findings

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

<b>Section 1: Historical Industrial Sites</b>	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	0	4	17	1
1.2 Additional Information – Historical Tank Database	0	0	0	1
1.3 Additional Information – Historical Energy Features Database	0	0	1	3
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	4	13	0
<b>Section 2: Environmental Permits, Incidents and Registers</b>	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	1
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	0
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	1
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	1	0	0
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
<b>3.1 Landfill Sites</b>						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	1	1	2
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	1
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	1
<b>3.2 Landfill and Other Waste Sites Findings</b>						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	2	7

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	0	3	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Records of Artificial Ground and Made Ground present beneath the study site	None identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	None identified
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology	0-500m					
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	None identified					
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified					
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	6
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	1	0	1	Not searched	Not searched

## Section 6: Hydrogeology and Hydrology

0-500m

	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	No	Yes	Yes
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	0	0	0	6	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	Yes	Not searched	Not searched	Not searched

## Section 7: Flooding

7.1 Environment Agency Zone 2 floodplains within 250m of the study site	None identified					
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	None identified					
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Very Low					
7.4 Flood Defences within 250m of the study site	None identified					
7.5 Areas benefiting from Flood Defences within 250m of the study site	None identified					
7.6 Areas used for Flood Storage within 250m of the study site	None identified					
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Limited potential					
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Low					

## Section 8: Designated Environmentally Sensitive Sites

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

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	1	0	0	0	0	0
8.14 Records of Green Belt land	1	0	0	0	2	1

## Section 9: Natural Hazards

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

## Section 10: Mining

10.1 Coal mining areas within 75m of the study site	Identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	None identified
10.3 Brine affected areas within 75m of the study site	None identified

# Using this report

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

## 1. Historical Industrial Sites

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

## 2. Environmental Permits, Incidents and Registers

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

## 3. Landfills and Other Waste Sites

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

## 4. Current Land Uses

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

## 5. Geology

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

## 6. Hydrogeology and Hydrology

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

## 7. Flooding

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

## 8. Designated Environmentally Sensitive Sites

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

## 9. Natural Hazards

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

## 10. Mining

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

## 11. Contacts

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

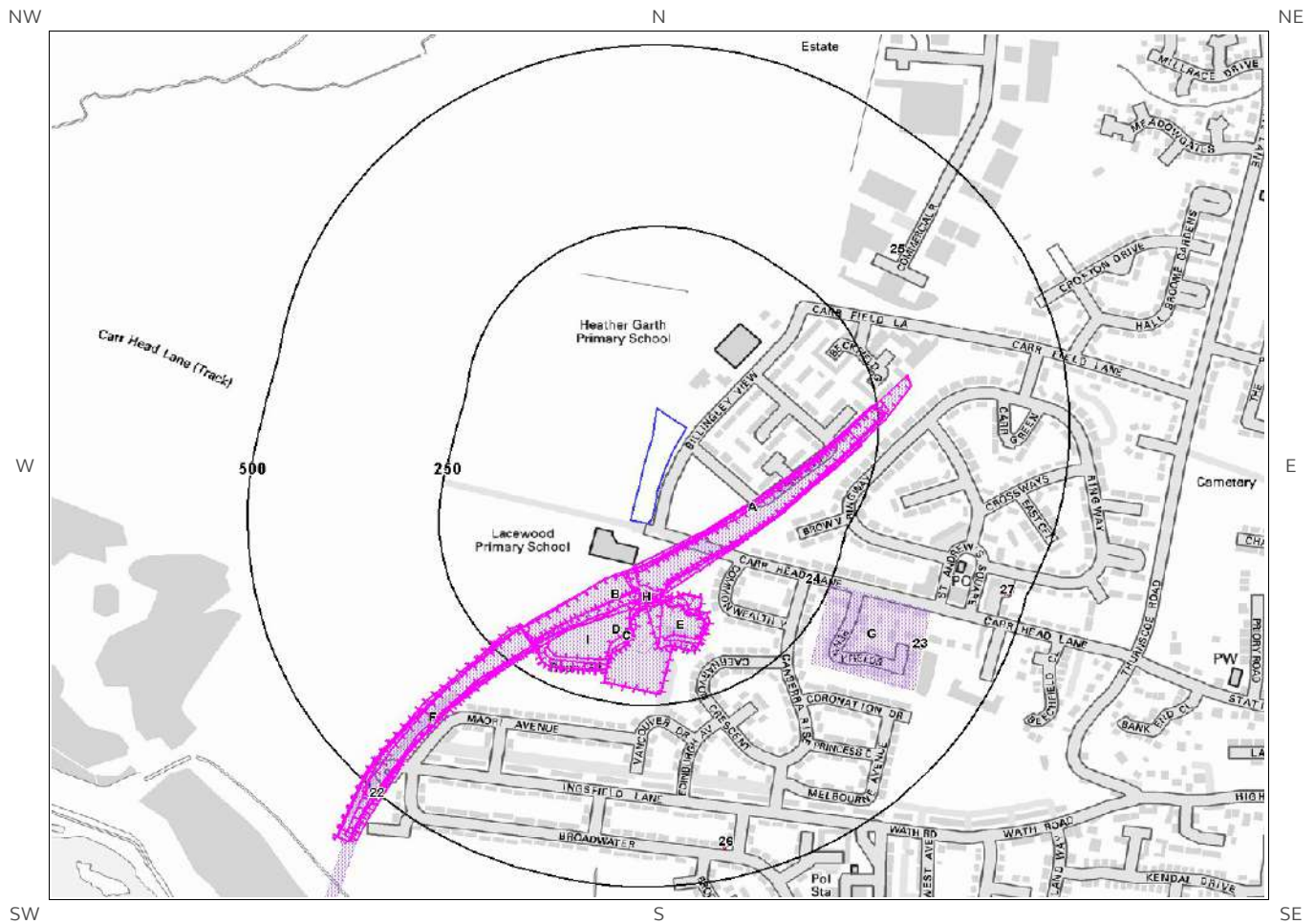
### Note: Maps

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

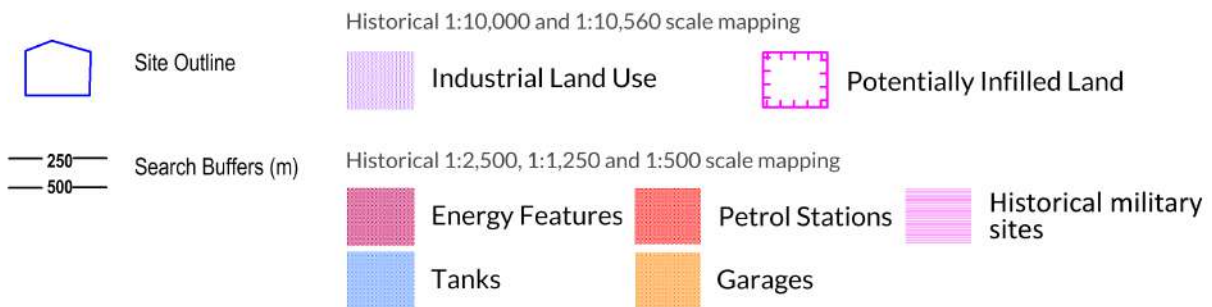
Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

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

# 1. Historical Land Use



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# 1. Historical Industrial Sites

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

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

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 22

ID	Distance [m]	Direction	Use	Date
1A	43	SE	Cuttings	1951
2B	47	SE	Cuttings	1901
3A	49	SE	Cuttings	1938
4A	49	SE	Cuttings	1948
5B	52	SE	Cuttings	1967
6C	93	S	Brick Works	1938
7D	96	S	Unspecified Ground Workings	1948
8C	96	S	Brick Works	1948
9D	96	S	Brick Works	1948
10C	96	S	Unspecified Ground Workings	1948
11H	96	S	Refuse Heap	1938
12C	103	S	Unspecified Ground Workings	1951
13E	111	S	Unspecified Pit	1938
14I	118	S	Unspecified Pit	1938
15E	123	S	Railway Sidings	1938
16F	205	SW	Cuttings	1938
17F	206	SW	Cuttings	1951
18F	207	SW	Cuttings	1948
19G	250	E	Unspecified Works	1988
20G	250	E	Unspecified Works	1967
21G	250	E	Unspecified Works	1977
22	367	SW	Railway Sidings	1967

## 1.2 Additional Information – Historical Tank Database

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

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

1

ID	Distance (m)	Direction	Use	Date
23	391	SE	Unspecified Tank	1977

### 1.3 Additional Information – Historical Energy Features Database

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

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

4

ID	Distance (m)	Direction	Use	Date
24	225	E	Electricity Substation	1977
25	364	NE	Electricity Substation	1994
26	448	S	Electricity Substation	1972
27	473	E	Electricity Substation	1973

### 1.4 Additional Information – Historical Petrol and Fuel Site Database

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

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

0

Database searched and no data found.

### 1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

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

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

0

Database searched and no data found.

## 1.6 Historical military sites

Certain military installations were not noted on historic mapping for security reasons. Whilst not all military land is necessarily of concern, Groundsure has researched and digitised a number of Ordnance Factories and other military industrial features (e.g. Ordnance Depots, Munitions Testing Grounds) which may be of contaminative concern. This research was drawn from a number of different sources, and should not be regarded as a definitive or exhaustive database of potentially contaminative military installations. The boundaries of sites within this database have been estimated from the best evidence available to Groundsure at the time of compilation.

Records of historical military sites within 500m of the search boundary: 0

Database searched and no data found.

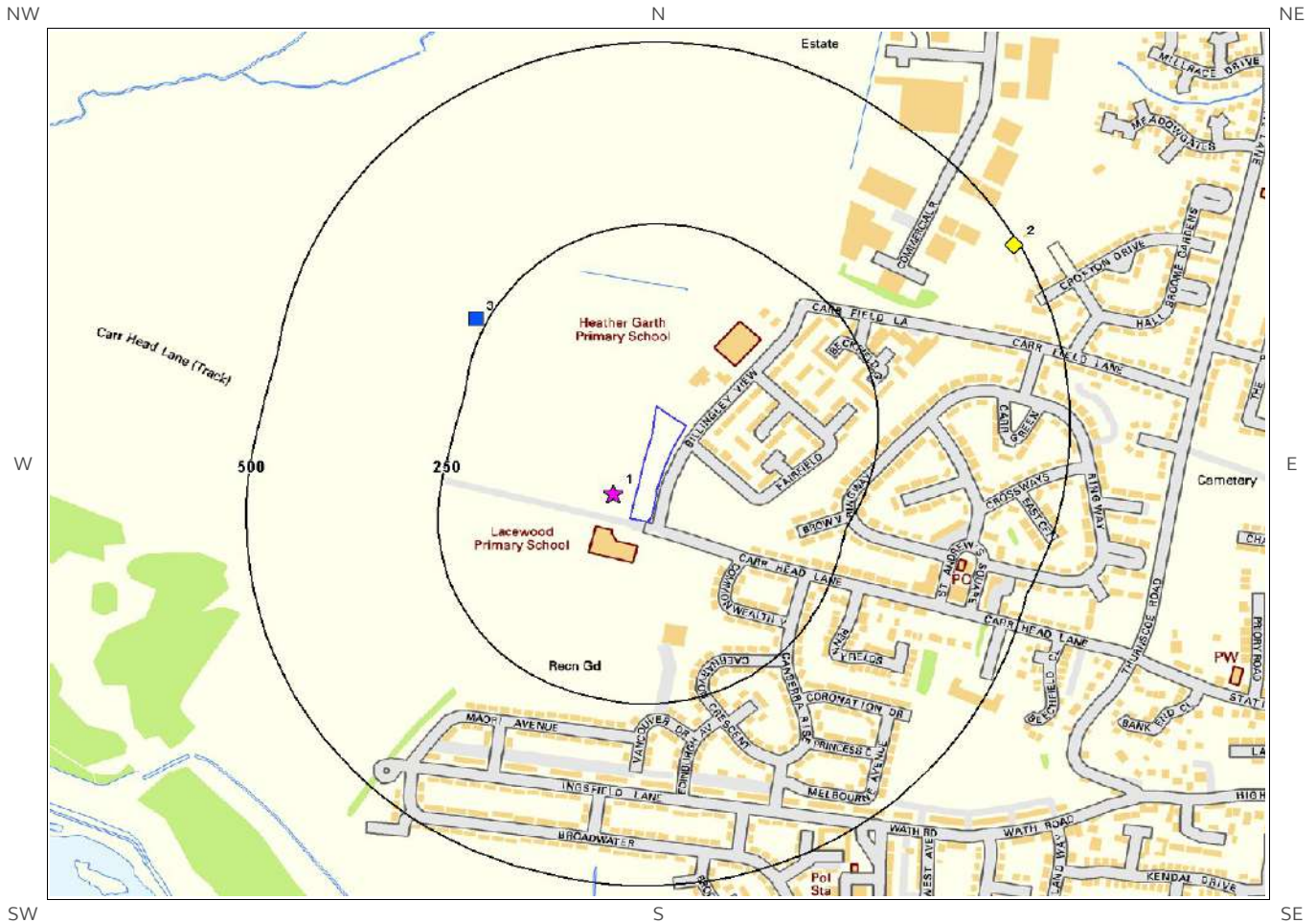
## 1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 17

















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

ID	Distance(m)	Direction	Use	Date
28A	43	SE	Cuttings	1951
29B	47	SE	Cuttings	1901
30A	49	SE	Cuttings	1938
31A	49	SE	Cuttings	1948
32B	52	SE	Cuttings	1967
33C	93	S	Brick Works	1938
34C	96	S	Unspecified Ground Workings	1948
35C	96	S	Unspecified Ground Workings	1948
36C	96	S	Brick Works	1948
37C	96	S	Brick Works	1948
38H	96	S	Refuse Heap	1938
39C	103	S	Unspecified Ground Workings	1951
40E	111	S	Unspecified Pit	1938
41I	118	S	Unspecified Pit	1938
42F	205	SW	Cuttings	1938
43F	206	SW	Cuttings	1951
44F	207	SW	Cuttings	1948

# 2. Environmental Permits, Incidents and Registers Map



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

# 2. Environmental Permits, Incidents and Registers

## 2.1 Industrial Sites Holding Licences and/or Authorisations

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

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

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

0

Database searched and no data found.

---

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

1

The following List 2 Dangerous Substance Inventory Site records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
2	493	NE	445100	Name: Granville Oil And Chemicals,	Authorised Substances: Chromium,

ID	Distance (m)	Direction	NGR	Details
			403300	Goldthorpe Rotherham Status: Not Active Receiving Water: - Copper, Lead, Zinc

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

0

Database searched and no data found.

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

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

1

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

ID	Distance (m)	Direction	NGR	Details
3	265	NW	444400 403200	Address: WOODBINE Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: WRA7193 Permit Version: 1 Receiving Water: CARR DYKE Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 26/01/1996 Effective Date: 26-Jan-1996 Revocation Date: 11/06/1999

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

0

Database searched and no data found.

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

0

Database searched and no data found.

## 2.2 Dangerous or Hazardous Sites

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

Database searched and no data found.

---

## 2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

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

1

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

ID	Distance (m)	Direction	NGR	Details	
1	30	W	444578.0 402959.0	Incident Date: 10-Jan-2003 Incident Identification: 130216.0 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

---

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

0

Database searched and no data found.

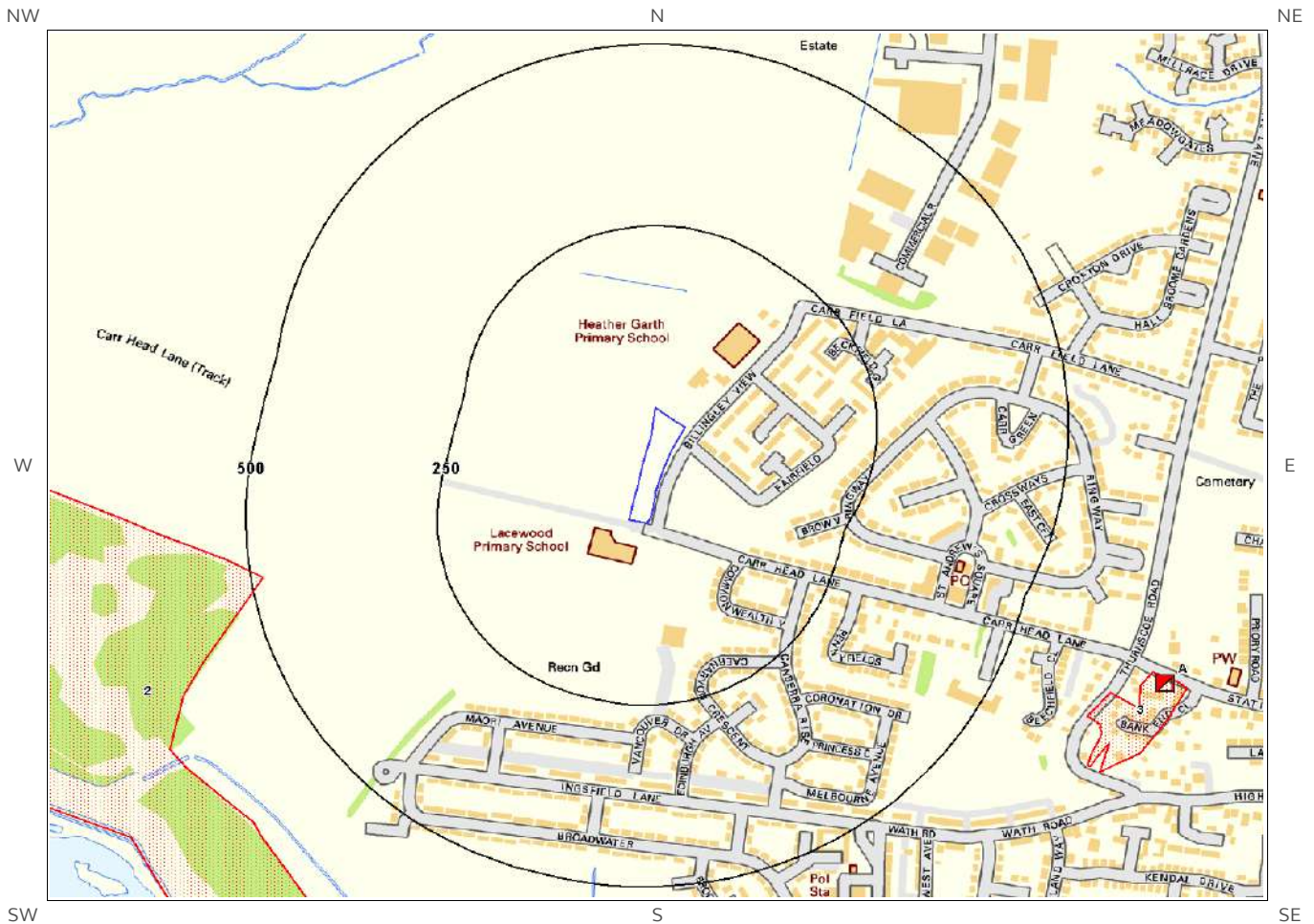
---

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










Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site 0

Database searched and no data found.

# 3. Landfill and Other Waste Sites Map



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- |   |                        |   |                           |   |   |
|---|------------------------|---|---------------------------|---|---|
|  | Site Outline           |  | EA/NRW Active Landfill    |  | Historic and Planned Waste Sites                    |
|  | 250 Search Buffers (m) |  | EA/NRW Historic Landfill  |  | EA/NRW Licensed Waste Site                          |
|  | 500 Search Buffers (m) |  | BGS / DoE Survey Landfill |  | Local Authority/Historical Mapping Landfill Records |

# 3. Landfill and Other Waste Sites

## 3.1 Landfill Sites

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

0

Database searched and no data found.

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

4

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

ID	Distance (m)	Direction	NGR	Details
2	484	W		<p>Site Address: Wath Colliery, Manvers Central Coal Preparation Plant Waste Licence: Yes Site Reference: WD20 R161, 4400/R161, 20R161 Waste Type: Liquid sludge Environmental Permitting Regulations (Waste) Reference: -</p> <p>Licence Issue: 20-Dec-1977 Licence Surrendered: 26-Oct-1983 Licence Holder Address: Golden Smithies Lane, Wath upon Dearne, Rotherham Operator: - Licence Holder: National Coal Board South Yorkshire Area First Recorded: - Last Recorded: -</p>
3	632	SE		<p>Site Address: Station Road, Bolton on Dearne, Rotherham Waste Licence: Yes Site Reference: WD20 B191, 4400/B191, 20B191(17) Waste Type: Inert, Industrial, Commercial Environmental Permitting Regulations (Waste) Reference: -</p> <p>Licence Issue: 13-Mar-1979 Licence Surrendered: 12-Apr-1985 Licence Holder Address: Station Road, Bolton on Dearne, Rotherham, South Yorkshire Operator: Wath Skip Hire Limited Licence Holder: Wath Skip Hire Limited First Recorded: 31-Mar-1979 Last Recorded: 12-Apr-1985</p>
Not shown	1334	SW		<p>Site Address: Land at the former Wath Marshalling Yards, Between Pontefract Road to the West and Moor Road to the East, Leeds Waste Licence: - Site Reference: WD2 R023, WD2 R23, 4400/R23 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -</p> <p>Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: Director of Engineering, Rotherham Metropolitan Borough Council Licence Holder: - First Recorded: - Last Recorded: -</p>
Not shown	1370	SE		<p>Site Address: Wath Manvers Former Coal Preparation Site, Off Bolton Road, Wath Upon Dearne, Rotherham, South</p> <p>Licence Issue: 03-Aug-1994 Licence Surrendered: 12-Oct-2005 Licence Holder Address: Norfolk House,</p>

ID	Distance (m)	Direction	NGR	Details
				<p>Yorkshire Waste Licence: Yes Site Reference: WD20/R1099, 4400/R1099, NE2175 Waste Type: Industrial, Commercial, Household Environmental Permitting Regulations (Waste) Reference: YQ1/L/ROT003</p> <p>Walker Place, Rotherham, South Yorkshire Operator: Rotherham Metropolitan Borough Council Licence Holder: Rotherham Metropolitan Borough Council First Recorded: - Last Recorded: -</p>

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

1

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

ID	Distance (m)	Direction	NGR	Details
Not shown	1019	NW	444200.0 404000.0	<p>Address: Mary Lane, Darfield, nr Barnsley, S. Yorks BGS Number: 19.0</p> <p>Risk: Risk not recorded Waste Type: Domestic Refuse</p>

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

1

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

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
Not shown	1283	S	444130 401694	Refuse Tip	1971 mapping	Polygon

## 3.2 Other Waste Sites

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

0

Database searched and no data found.

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

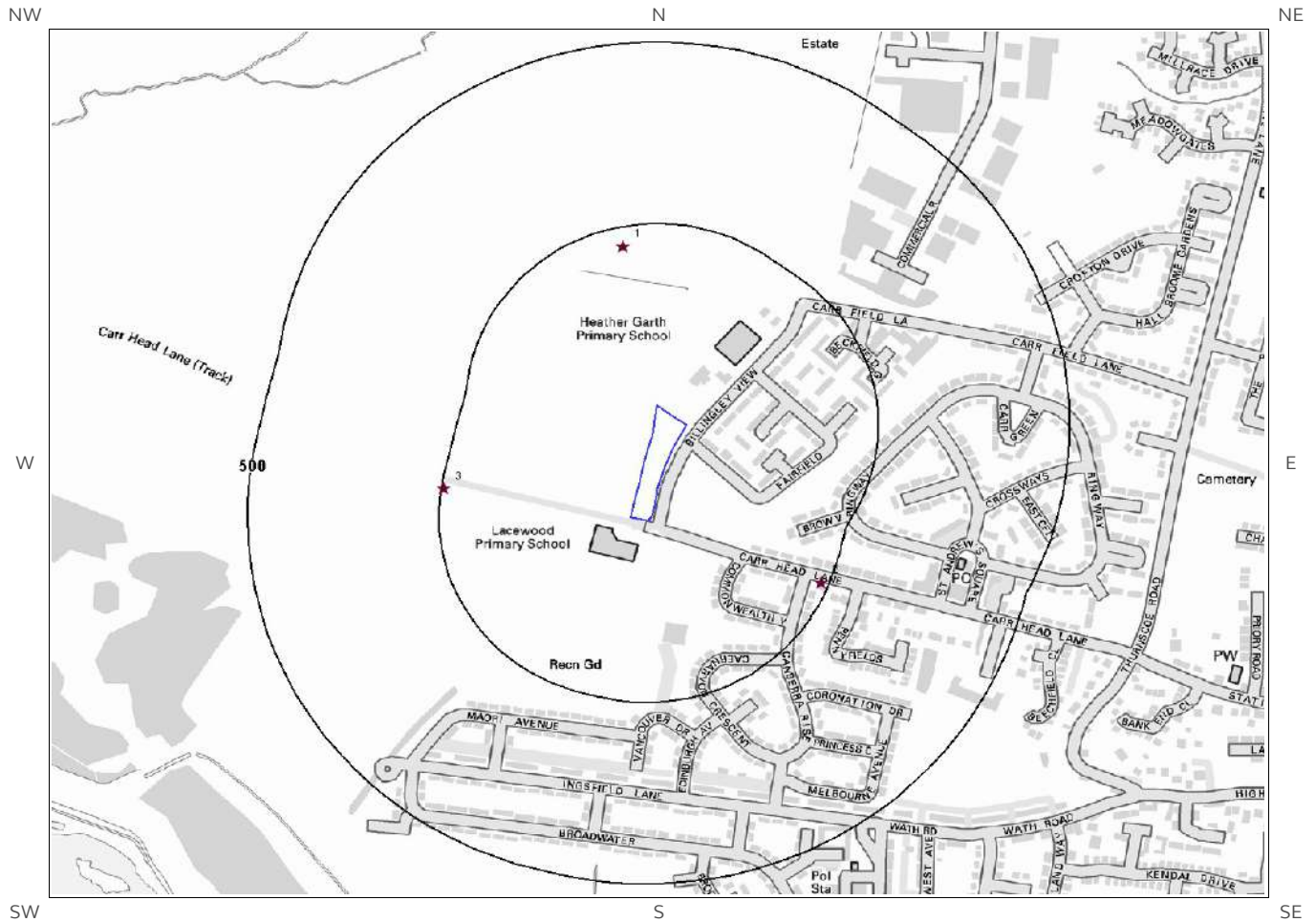
9

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

ID	Distance (m)	Direction	NGR	Details
6A	709	E	445300 402700	<p>Site Address: Land At Station Road, Station Road, Bolton Upon Dearne, Rotherham, S Yorks</p> <p>Type: Household, Commercial &amp; Industrial Waste T Stn</p> <p>Size: Unknown</p> <p>Environmental Permitting Regulations (Waste) Licence Number: BRY002</p> <p>EPR reference: -</p> <p>Operator: Bryan Hargreaves Ltd</p> <p>Waste Management licence No: 60600</p> <p>Annual Tonnage: 0.0</p> <p>Issue Date: 30/10/1992</p> <p>Effective Date: -</p> <p>Modified: -</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Issued</p> <p>Site Name: Bryan Hargreaves Ltd</p> <p>Correspondence Address: 1, Wath Wood Road, Wath Upon Dearne, Rotherham, S Yorks, S63 7PW</p>
7A	709	E	445300 402700	<p>Site Address: Land At Station Road, Station Road, Bolton Upon Dearne, Rotherham, South Yorkshire, S63</p> <p>Type: Household, Commercial &amp; Industrial Waste T Stn</p> <p>Size: &lt; 25000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: BRY002</p> <p>EPR reference: EA/EPR/JP3090ZP/A001</p> <p>Operator: Bryan Hargreaves Ltd</p> <p>Waste Management licence No: 60600</p> <p>Annual Tonnage: 25000.0</p> <p>Issue Date: 30/10/1992</p> <p>Effective Date: -</p> <p>Modified: -</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Expired</p> <p>Site Name: Bryan Hargreaves Ltd</p> <p>Correspondence Address: -</p>
Not shown	1081	E	445750 402940	<p>Site Address: Lowfield Road, Bolton On Dearne, Barnsley, S Yorks</p> <p>Type: Metal Recycling Site (Vehicle Dismantler)</p> <p>Size: &lt; 25000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: LEA001</p> <p>EPR reference: -</p> <p>Operator: Leach Mr</p> <p>Waste Management licence No: 60544</p> <p>Annual Tonnage: 0.0</p> <p>Issue Date: 09/06/1993</p> <p>Effective Date: -</p> <p>Modified: -</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Issued</p> <p>Site Name: Leach Bros</p> <p>Correspondence Address: 71, Calder Road, Bolton On Dearne, Barnsley, S Yorks, S63 8JH</p>
Not shown	1081	E	445750 402940	<p>Site Address: Leach Bros, Lowfield Road, Bolton-on-dearne, Rotherham, South Yorkshire, S63 8JD</p> <p>Type: Metal Recycling Site (Vehicle Dismantler)</p> <p>Size: &lt; 25000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: DES002</p> <p>EPR reference: AP3291EP/T001</p> <p>Operator: Desbro Paul</p> <p>Waste Management licence No: 60544</p> <p>Annual Tonnage: 5000.0</p> <p>Issue Date: 09/06/1993</p> <p>Effective Date: 29/04/2009</p> <p>Modified: -</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Transferred</p> <p>Site Name: Leach Bros</p> <p>Correspondence Address: -</p>
Not shown	1081	E	445750 402940	<p>Site Address: Lowfield Road, Bolton-on-dearne, Rotherham, South Yorkshire, S63 8JD</p> <p>Type: Metal Recycling Site (Vehicle Dismantler)</p> <p>Size: &lt; 25000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: PIL010</p> <p>EPR reference: EA/EPR/GP3194SP/T001</p> <p>Issue Date: 09/06/1993</p> <p>Effective Date: 07/06/2010</p> <p>Modified: -</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Transferred</p> <p>Site Name: Lowfield Road Dismantlers</p> <p>Correspondence Address: -</p>

ID	Distance (m)	Direction	NGR	Details	
				Operator: Lowfield Road Dismantlers Ltd Waste Management licence No: 60544 Annual Tonnage: 5000.0	
Not shown	1156	E	445820 402900	Site Address: Lowfield Road, Side Of Railway Station, Bolton On Dearne, South Yorkshir Type: Metal Recycling Site (Vehicle Dismantler) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WRI001 EPR reference: EA/EPR/JP3190ZS/S002 Operator: Wright Sid Waste Management licence No: 60612 Annual Tonnage: 5000.0	Issue Date: 09/09/1993 Effective Date: - Modified: - Surrendered Date: Nov 1 2000 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Bolton Car Spares Correspondence Address: -
Not shown	1349	SE	445200 401700	Site Address: Off Bolton Road, Wath Upon Dearne, Rotherham, S Yorks, S60 1QT Type: Other Landfill Site taking Special Waste Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ROT003 EPR reference: - Operator: Rotherham Metropolitan Borough Council Waste Management licence No: 61558 Annual Tonnage: 0.0	Issue Date: 03/08/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Wath Manvers Former Coal Preparation Site Correspondence Address: Norfolk House, Walker Place, Rotherham, S Yorks, S60 1QT
Not shown	1349	SE	445200 401700	Site Address: Off Bolton Road, Wath Upon Dearne, Rotherham, S Yorks, S60 1QT Type: Household, Commercial & Industrial Waste Landfill Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ROT003 EPR reference: - Operator: Rotherham Metropolitan Borough Council Waste Management licence No: 61558 Annual Tonnage: 0.0	Issue Date: 03/08/1994 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Wath Manvers Former Coal Preparation Site Correspondence Address: Norfolk House, Walker Place, Rotherham, S Yorks, S60 1QT
Not shown	1349	SE	445200 401700	Site Address: Off Bolton Road, Wath Upon Dearne, Rotherham, South Yorkshire, S60 1QT Type: Household, Commercial & Industrial Waste Landfill Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ROT003 EPR reference: EA/EPR/RP3595ZM/S002 Operator: Rotherham Metropolitan Borough Council Waste Management licence No: 61558 Annual Tonnage: 4999.0	Issue Date: 03/08/1994 Effective Date: - Modified: - Surrendered Date: Oct 12 2005 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Wath Manvers Former Coal Preparation Site Correspondence Address: -

# 4. Current Land Use Map



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- |   |                    |   |                          |  |                                 |
|---|--------------------|---|--------------------------|--|---------------------------------|
|  | Site Outline       |  | Current Industrial Sites |  | Electricity Transmission Cables |
|  | Search Buffers (m) |  | Petrol & Fuel Sites      |  | Gas Transmission Pipelines      |

# 4. Current Land Uses

## 4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 3

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	225	N	Electricity Sub Station	444590 403299	South Yorkshire, S63	Electrical Features	Infrastructure and Facilities
2	239	E	Electricity Sub Station	444849 402836	South Yorkshire, S63	Electrical Features	Infrastructure and Facilities
3	247	W	Pylon	444357 402965	South Yorkshire, S63	Electrical Features	Infrastructure and Facilities

## 4.2 Petrol and Fuel Sites

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

Database searched and no data found.

## 4.3 National Grid High Voltage Underground Electricity Transmission Cables

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

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

Database searched and no data found.

#### 4.4 National Grid High Pressure Gas Transmission Pipelines

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

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

Database searched and no data found.

---

# 5. Geology

## 5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

---

## 5.2 Superficial Ground and Drift Geology

Database searched and no data found.

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

---

## 5.3 Bedrock and Solid Geology

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

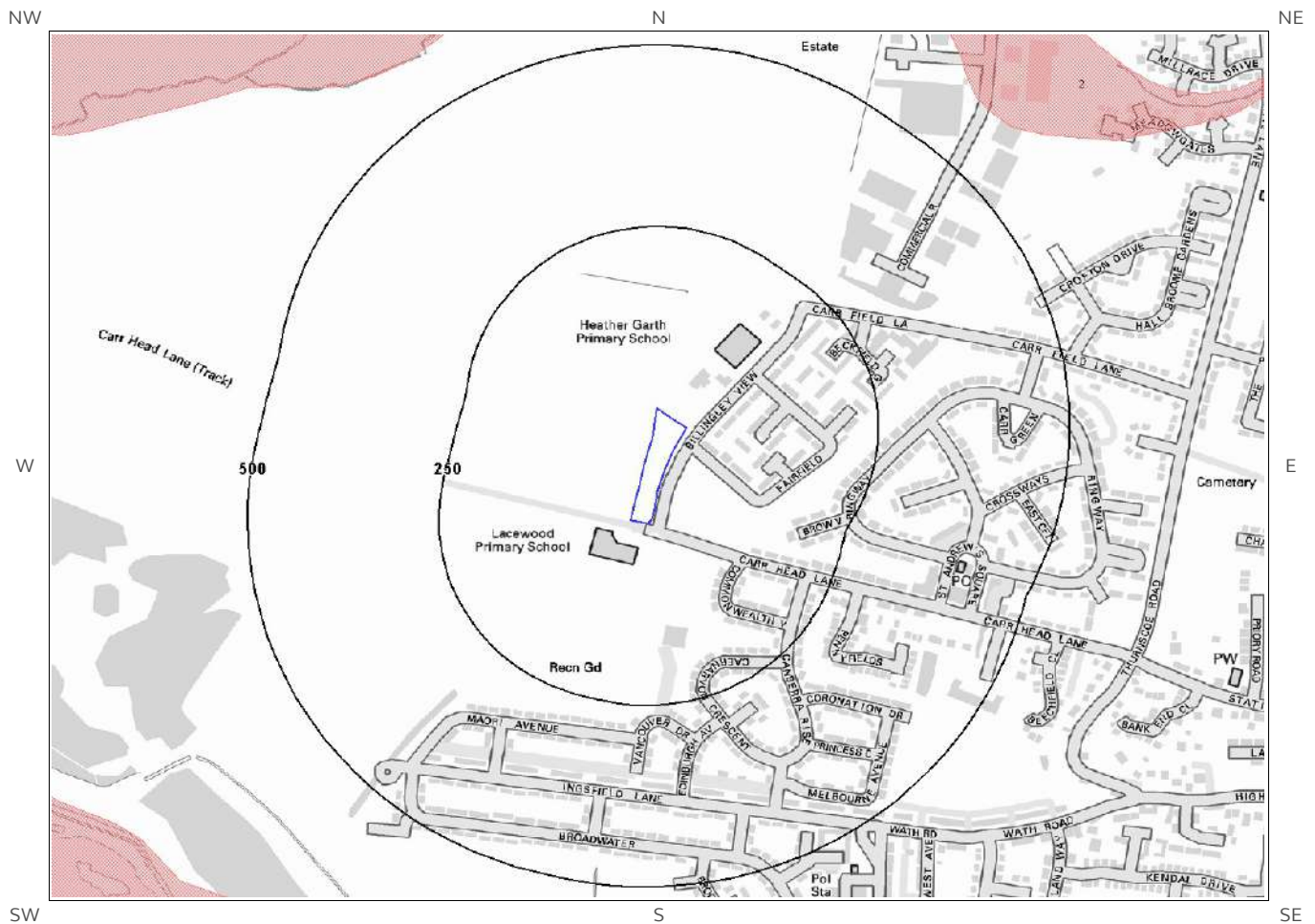
Lex Code	Description	Rock Type
MXR-SDST	MEXBOROUGH ROCK	SANDSTONE

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

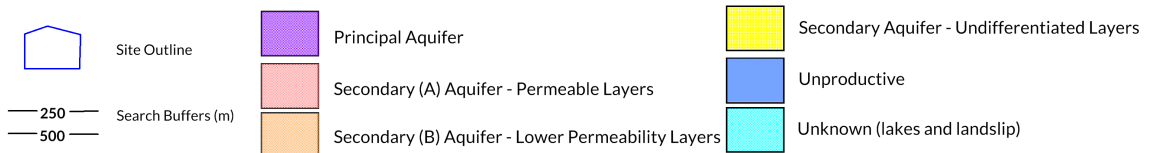
---

# 6 Hydrogeology and Hydrology

## 6a. Aquifer Within Superficial Geology



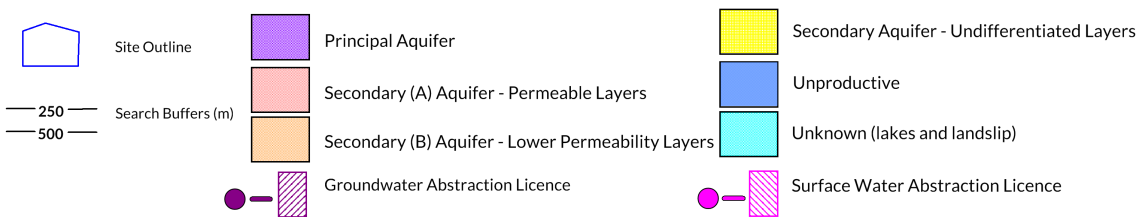
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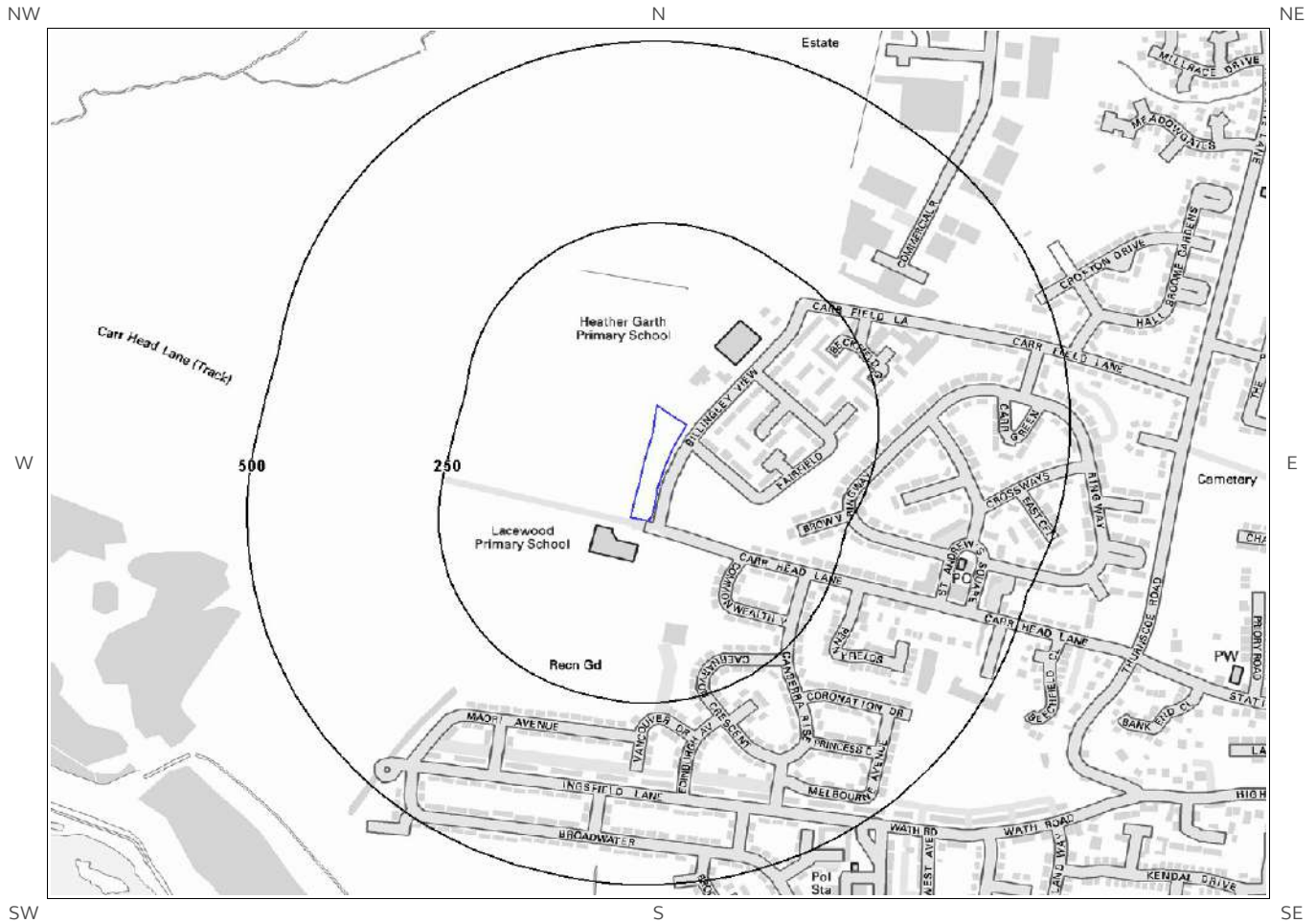
# 6b. Aquifer Within Bedrock Geology and Abstraction Licences



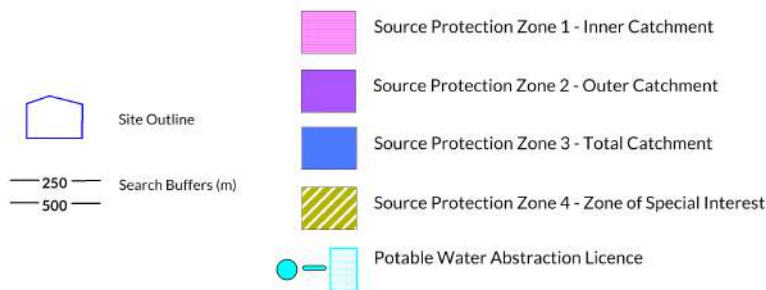
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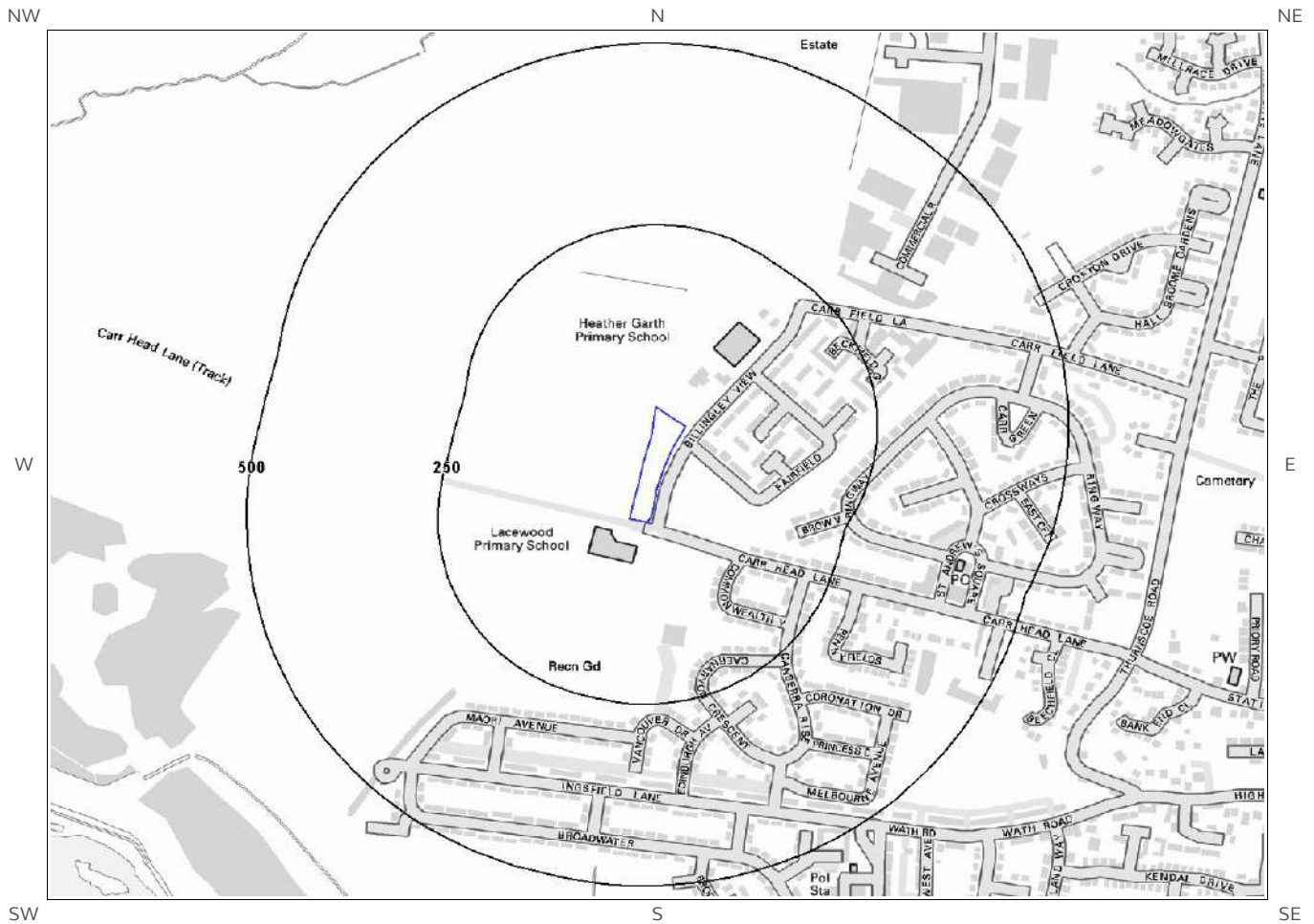
# 6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



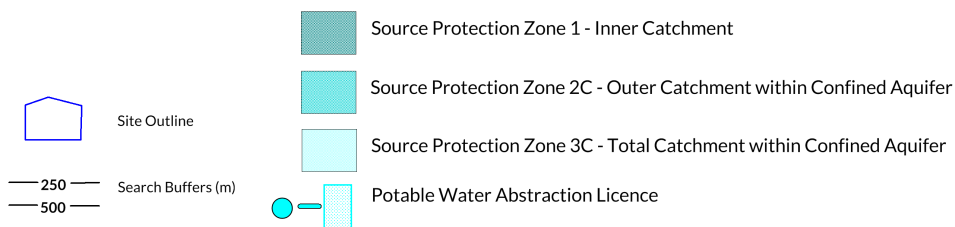
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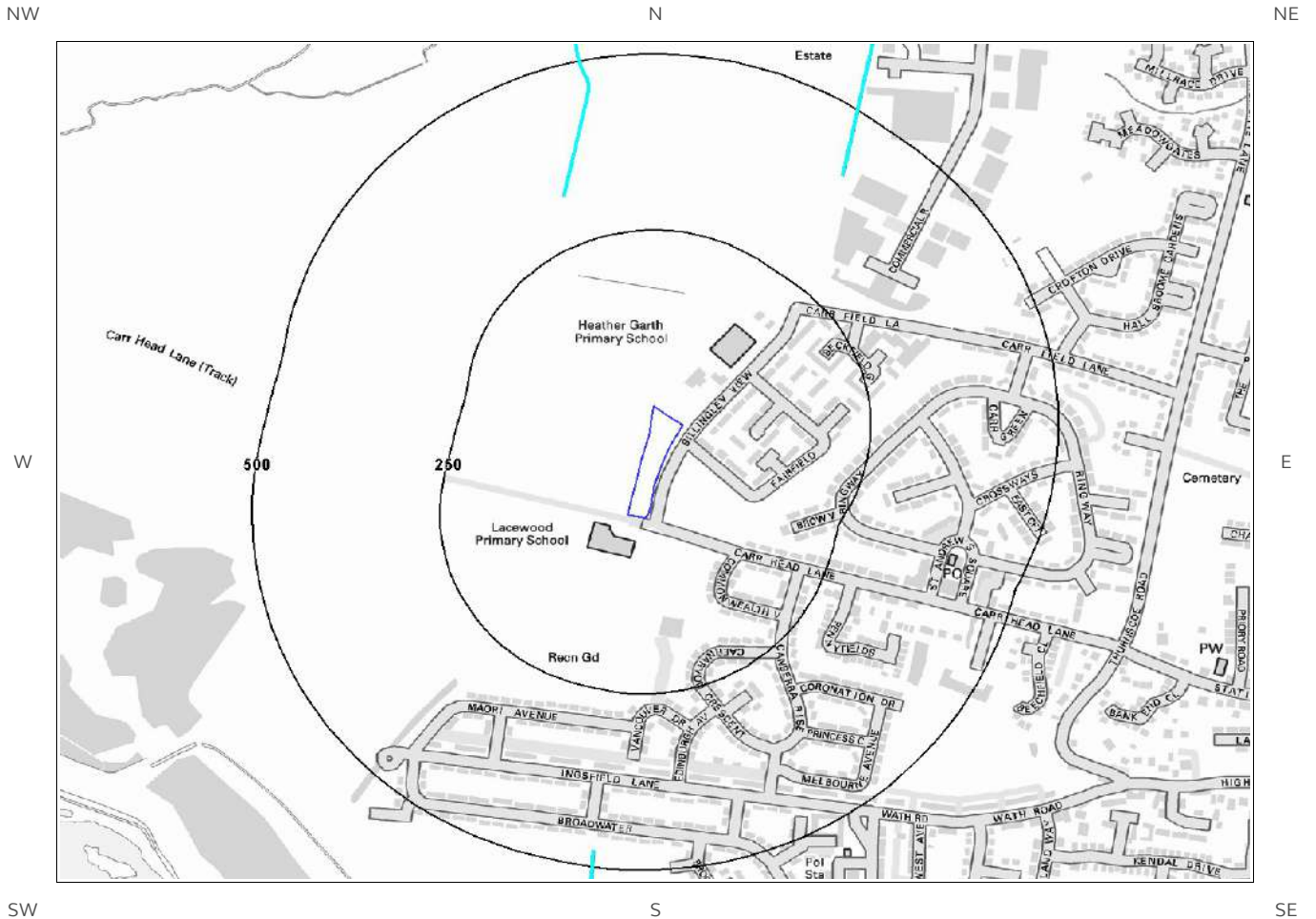
# 6d. Hydrogeology – Source Protection Zones within confined aquifer



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# 6e. Hydrology – Watercourse Network and River Quality



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# 6. Hydrogeology and Hydrology

## 6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property No

Database searched and no data found.

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

## 6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

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

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

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	326	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

## 6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site None identified

Database searched and no data found.

## 6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site

Identified

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

ID	Distance (m)	Direction	NGR	Details
Not shown	1352	SW	444030 401700	<p>Status: Historical Licence No: 2/27/08/142 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER Point: KNOLL BECK - WATH UPON DEARNE Data Type: Point Name: Frank Houlgate at Waterfront Golf Ltd</p> <p>Annual Volume (m<sup>3</sup>): 18900 Max Daily Volume (m<sup>3</sup>): 90 Application No: - Original Start Date: 03/05/2007 Expiry Date: 31/03/2017 Issue No: 4 Version Start Date: 02/08/2016 Version End Date:</p>
Not shown	1570	SE	445970 402110	<p>Status: Historical Licence No: 2/27/08/125 Details: Make-Up or Top Up Water Direct Source: SURFACE WATER Point: RIVER DEARNE-LOWFIELD LANE-WATH ON DEARNE Data Type: Point Name: NASH</p> <p>Annual Volume (m<sup>3</sup>): - Max Daily Volume (m<sup>3</sup>): - Application No: - Original Start Date: 20/09/1999 Expiry Date: 31-Dec-09 Issue No: 2 Version Start Date: 30/08/2002 Version End Date:</p>
Not shown	1570	SE	445970 402110	<p>Status: Historical Licence No: 2/27/08/125 Details: Make-Up or Top Up Water Direct Source: SURFACE WATER Point: INLAND WATER - RIVER DEARNE Data Type: Point Name: NASH</p> <p>Annual Volume (m<sup>3</sup>): - Max Daily Volume (m<sup>3</sup>): - Application No: - Original Start Date: 20/09/1999 Expiry Date: 31/12/2009 Issue No: 2 Version Start Date: 30/08/2002 Version End Date:</p>
Not shown	1570	SE	445970 402110	<p>Status: Historical Licence No: 2/27/08/125 Details: Make-Up or Top Up Water Direct Source: SURFACE WATER Point: RIVER DEARNE Data Type: Point Name: NASH</p> <p>Annual Volume (m<sup>3</sup>): - Max Daily Volume (m<sup>3</sup>): - Application No: - Original Start Date: 20/09/1999 Expiry Date: 31/12/2009 Issue No: 1 Version Start Date: 20/09/1999 Version End Date:</p>
Not shown	1573	SE	445900 402000	<p>Status: Historical Licence No: 2/27/08/127 Details: Dust suppression Direct Source: SURFACE WATER Point: INLAND WATER - TRIBUTARY OF RIVER DEARNE Data Type: Point Name: GATEWAYS FUELS LTD</p> <p>Annual Volume (m<sup>3</sup>): - Max Daily Volume (m<sup>3</sup>): - Application No: - Original Start Date: 02/08/2002 Expiry Date: 31/03/2017 Issue No: 1 Version Start Date: 02/08/2002 Version End Date:</p>
Not shown	1655	SE	446000 402000	<p>Status: Historical Licence No: 2/27/08/120 Details: General use relating to Secondary Category (High Loss) Direct Source: SURFACE WATER Point: RIVER DEARNE Data Type: Line Name: A OGDEN &amp; SONS LTD</p> <p>Annual Volume (m<sup>3</sup>): - Max Daily Volume (m<sup>3</sup>): - Application No: - Original Start Date: 25/06/1997 Expiry Date: 31/12/2006 Issue No: 101 Version Start Date: 15/03/2000 Version End Date:</p>

## 6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

---

## 6.6 Source Protection Zones

Source Protection Zones within 500m of the study site

None identified

Database searched and no data found.

---

## 6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site

None identified

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

Database searched and no data found.

---

## 6.8 Groundwater Vulnerability and Soil Leaching Potential

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

Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
47	S	Minor Aquifer/Low Leaching Potential	L	Soils in which pollutants are unlikely to penetrate the soil layer because either water movement is largely horizontal, or they have the ability to attenuate diffuse pollutants.
498	S	Minor Aquifer/High Leaching Potential	H1	Soils which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.

## 6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site Identified

### 6.9.1 Biological Quality:

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

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

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
Not shown	992	SW	443983 402149	River Name: Dearne Reach: Knoll Beck Ings Dike End/Start of Stretch: End of Stretch NGR	D	D	D	D	D
Not shown	992	SW	443983 402149	River Name: Dearne Reach: Ings Dike Brook Dike End/Start of Stretch: Start of Stretch NGR	D	D	D	D	D
Not shown	993	S	444911 401970	River Name: Dearne Reach: Brook Dike Hound Hill Dyke End/Start of Stretch: Start of Stretch NGR	D	D	D	D	D
Not shown	993	S	444911 401970	River Name: Brook Dike Reach: Wath Sewage Works River Dearne End/Start of Stretch: End of Stretch NGR	D	C	C	C	B
Not shown	993	S	444911 401970	River Name: Dearne Reach: Ings Dike Brook Dike End/Start of Stretch: End of Stretch NGR	D	D	D	D	D
Not shown	1338	SW	443569 402073	River Name: Dearne Reach: Bulling Dike Knoll Beck End/Start of Stretch: End of Stretch NGR	D	D	D	D	D
Not shown	1338	SW	443569 402073	River Name: Dearne Reach: Knoll Beck Ings Dike End/Start of Stretch: Start of Stretch NGR	D	D	D	D	D
Not shown	1377	N	444528 404452	River Name: Houghton Beck Reach: Great Houghton Sewagcarr Dike End/Start of Stretch: End of Stretch NGR	C	D	D	D	C
Not shown	1377	N	444528 404452	River Name: Ings/carr/thurnscoe Dikes Reach: Hickleton Main Collihoughton Beck End/Start of Stretch: End of Stretch NGR	D	D	D	D	D

## 6.9.2 Chemical Quality:

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

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

ID	Distance (m)	Direction	NGR	River Quality Grade	Chemical Quality Grade				
					2005	2006	2007	2008	2009
Not shown	992	SW	443983 402149	River Name: River Dearne Reach: Ings Dike Brook Dike End/Start of Stretch: Start of Stretch NGR	C	C	C	C	C
Not shown	992	SW	443983 402149	River Name: River Dearne Reach: Knoll Beck Ings Dike End/Start of Stretch: End of Stretch NGR	C	C	C	C	C
Not shown	993	S	444911 401970	River Name: River Dearne Reach: Ings Dike Brook Dike End/Start of Stretch: End of Stretch NGR	C	C	C	C	C
Not shown	993	S	444911 401970	River Name: River Dearne Reach: Brook Dike Hound Hill Dyke End/Start of Stretch: Start of Stretch NGR	C	C	C	C	C
Not shown	1338	SW	443569 402073	River Name: River Dearne Reach: Bulling Dike Knoll Beck End/Start of Stretch: End of Stretch NGR	C	C	C	C	C
Not shown	1338	SW	443569 402073	River Name: River Dearne Reach: Knoll Beck Ings Dike End/Start of Stretch: Start of Stretch NGR	C	C	C	C	C
Not shown	1353	SE	445700 402100	River Name: River Dearne Reach: Knoll Beck Ings Dike End/Start of Stretch: Sample Point NGR	C	C	C	C	C
Not shown	1353	SE	445700 402100	River Name: River Dearne Reach: River Dove Bulling Dike End/Start of Stretch: Sample Point NGR	C	C	C	C	C
Not shown	1353	SE	445700 402100	River Name: River Dearne Reach: Ings Dike Brook Dike End/Start of Stretch: Sample Point NGR	C	C	C	C	C
Not shown	1353	SE	445700 402100	River Name: River Dearne Reach: Brook Dike Hound Hill Dyke End/Start of Stretch: Sample Point NGR	C	C	C	C	C
Not shown	1353	SE	445700 402100	River Name: River Dearne Reach: Bulling Dike Knoll Beck End/Start of Stretch: Sample Point NGR	C	C	C	C	C

## 6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
1	321 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Don and Rother Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	321 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Don and Rother Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
2	412 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Don and Rother Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	412 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Don and Rother Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
3	477 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Don and Rother Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
Not shown	477 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Don and Rother Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1

## 6.11 Surface Water Features

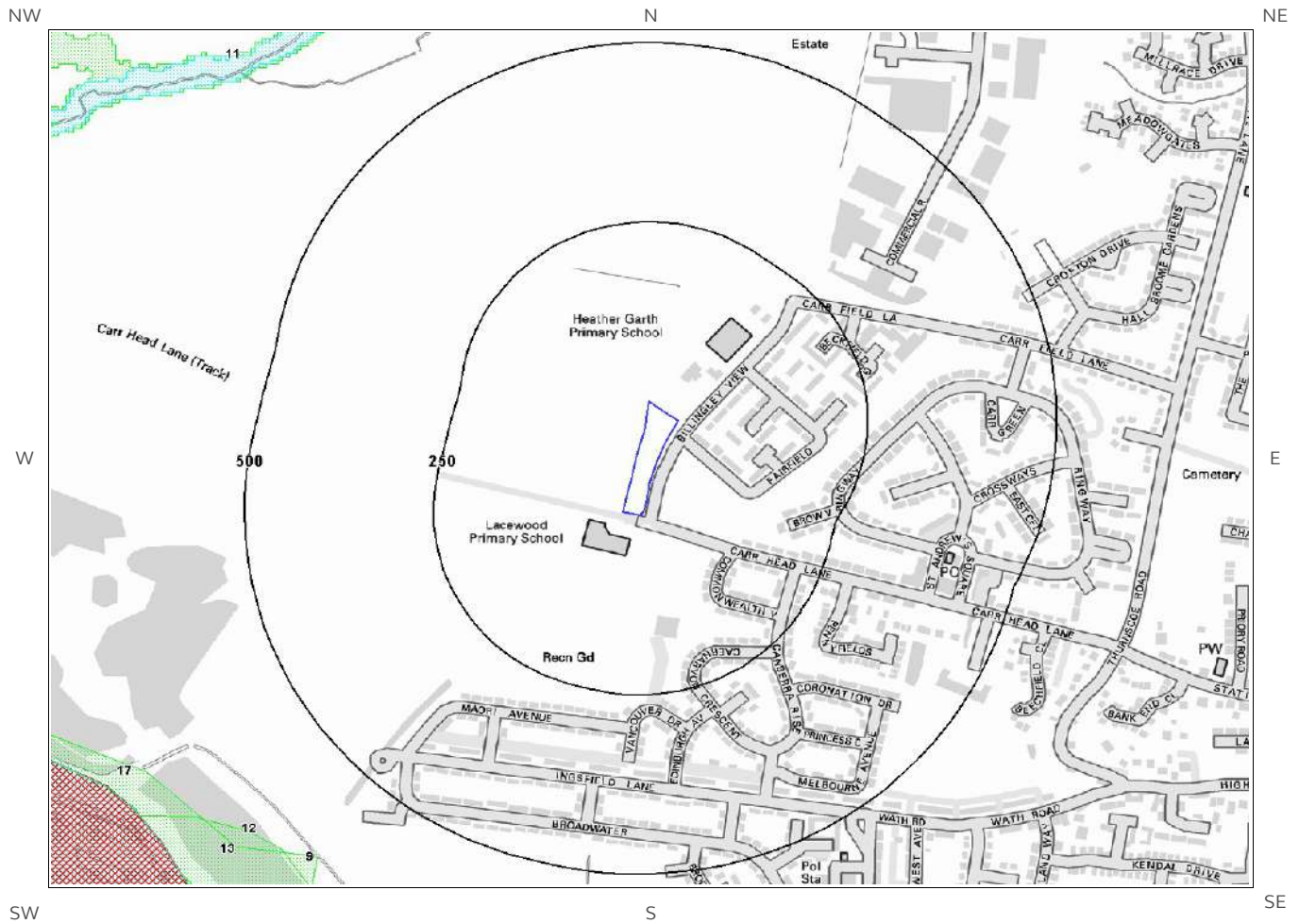
Surface water features within 250m of the study site

Identified

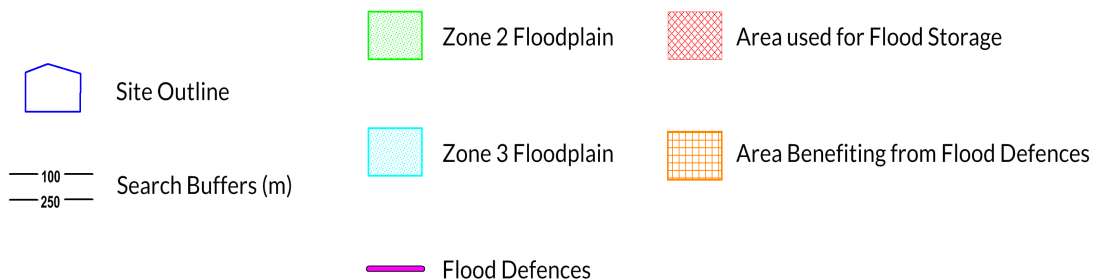
The following surface water records are not represented on mapping:

Distance (m)	Direction
165	N

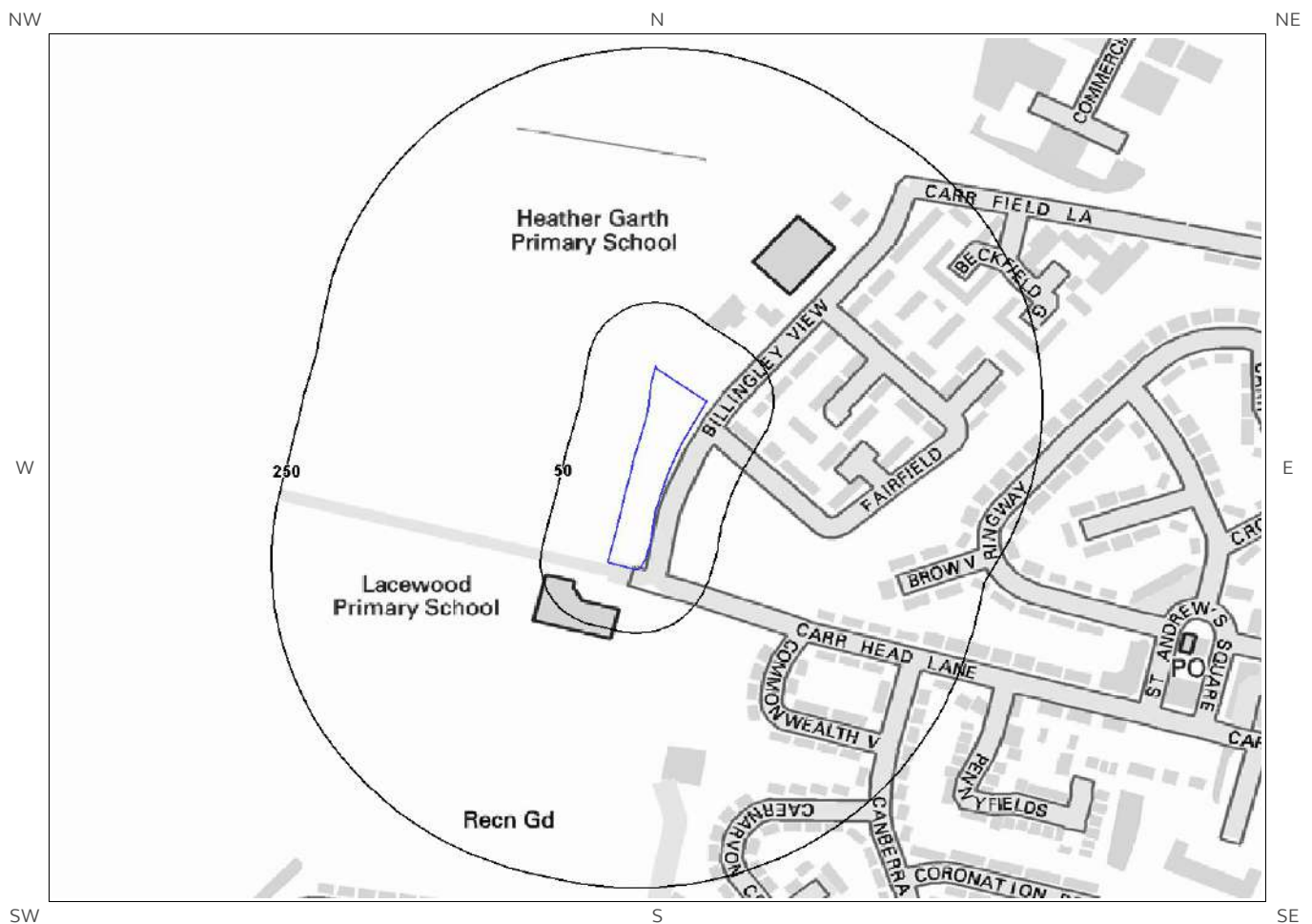
# 7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



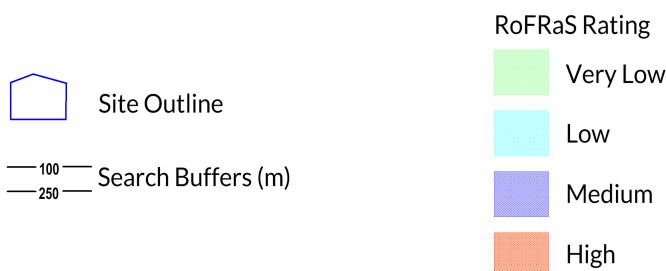
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# 7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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# 7 Flooding

## 7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m None identified

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

Database searched and no data found.

---

## 7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m None identified

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

Database searched and no data found.

---

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

Highest risk of flooding onsite Very Low

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

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

---

## 7.4 Flood Defences

Flood Defences within 250m of the study site None identified  
Database searched and no data found.

---

## 7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site None identified

---

## 7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site None identified

---

## 7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site Identified

Clearwater Flooding or Superficial Deposits Flooding Clearwater Flooding

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

---

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Limited potential

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

---

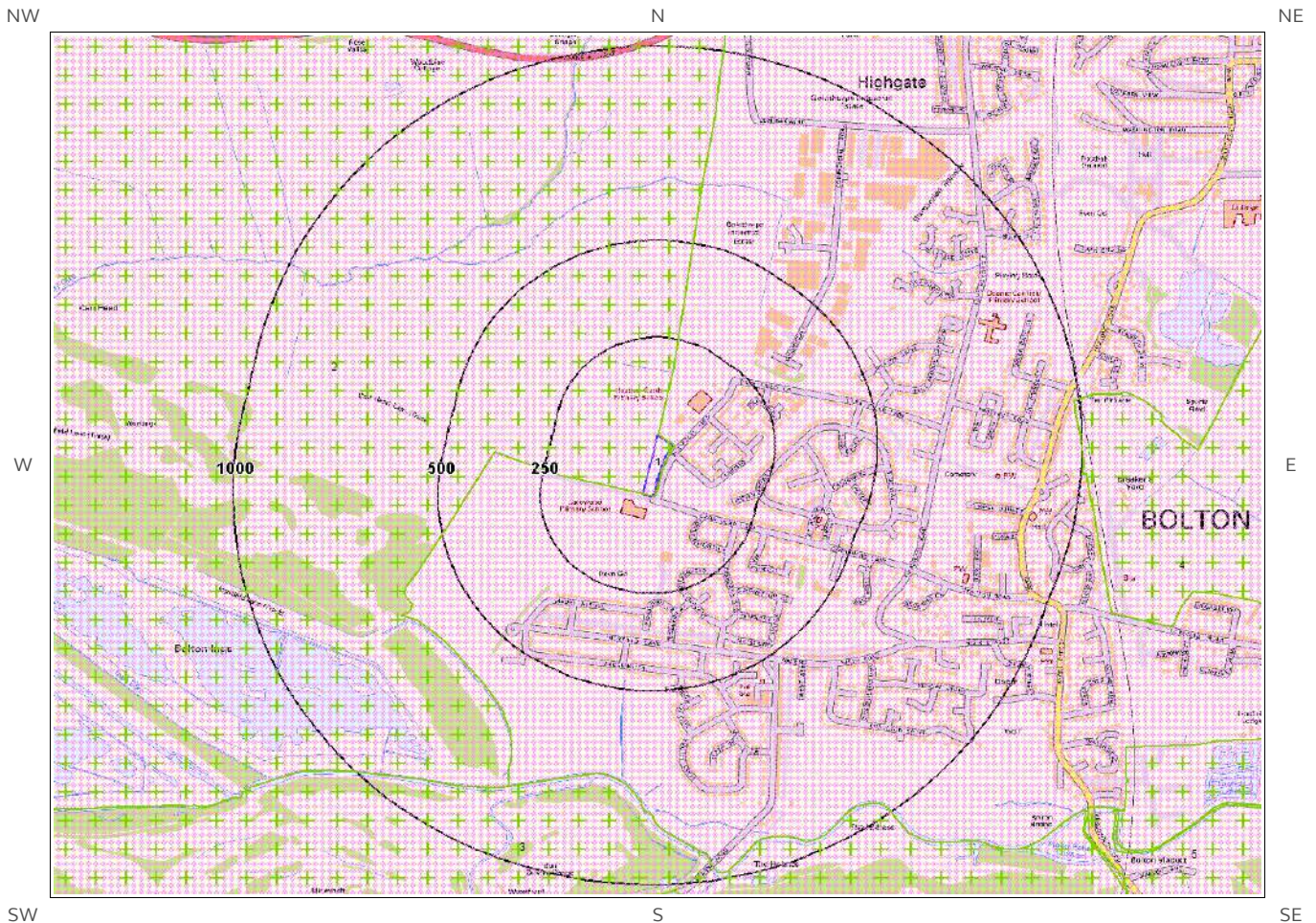
## 7.8 Groundwater Flooding Confidence Areas

British Geological Survey confidence rating in this result Low

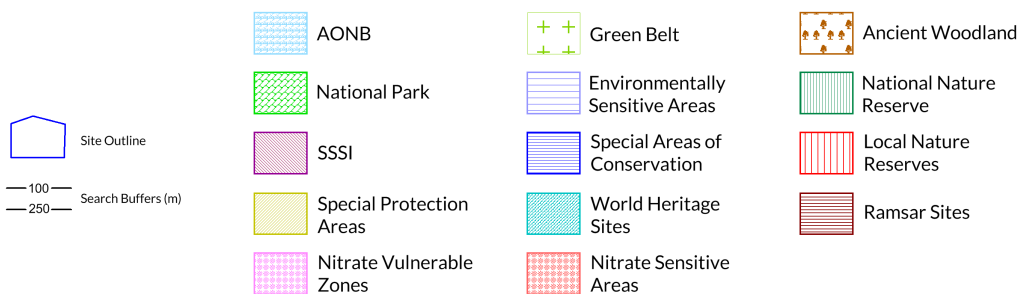
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

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

# 8. Designated Environmentally Sensitive Sites Map



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# 8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site

Identified

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

Database searched and no data found.

---

0

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

Database searched and no data found.

---

0

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

Database searched and no data found.

---

0

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

Database searched and no data found.

---

0

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

Database searched and no data found.

---

0

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

Database searched and no data found.

---

0

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

Database searched and no data found.

---

0

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

1

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

ID	Distance (m)	Direction	NVZ Name	Data Source
1	0	On Site	Existing	DEFRA

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

4

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

ID	Distance	Direction	Green Belt Name	Local Authority Name
2	0	On Site	Liverpool, Manchester and West Yorks Greenbelt	Barnsley District (B)
3	725	S	Liverpool, Manchester and West Yorks Greenbelt	Rotherham
4	987	E	Liverpool, Manchester and West Yorks Greenbelt	Barnsley District (B)
5	1334	SE	Liverpool, Manchester and West Yorks Greenbelt	Doncaster District (B)

# 9. Natural Hazards Findings

## 9.1 Detailed BGS GeoSure Data

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

### 9.1.1 Shrink Swell

Maximum Shrink-Swell\*\* hazard rating identified on the study site Negligible

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

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

### 9.1.2 Landslides

Maximum Landslide\* hazard rating identified on the study site Very Low

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

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

### 9.1.3 Soluble Rocks

Maximum Soluble Rocks\* hazard rating identified on the study site Negligible

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

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

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

### 9.1.4 Compressible Ground

Maximum Compressible Ground\* hazard rating identified on the study site

Negligible

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

---

**Hazard**

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

---

### 9.1.5 Collapsible Rocks

Maximum Collapsible Rocks\* hazard rating identified on the study site

Very Low

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

---

**Hazard**

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

---

### 9.1.6 Running Sand

Maximum Running Sand\*\* hazard rating identified on the study site

Negligible

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

---

**Hazard**

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

---



---

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

## 9.2 Radon

### 9.2.1 Radon Affected Areas

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

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

---

### 9.2.2 Radon Protection

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

# 10. Mining

## 10.1 Coal Mining

Coal mining areas within 75m of the study site

Identified

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

Distance (m)	Direction	Details
0	On Site	The site lies in or in proximity to the coal mining reporting area as defined by the Coal Authority

## 10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary

None identified

Database searched and no data found.

## 10.3 Brine Affected Areas

Brine affected areas within 75m of the study site

None identified

Guidance: No Guidance Required.

# Contact Details

**Groundsure Helpline**  
Telephone: 08444 159 000  
info@groundsure.com

## British Geological Survey Enquiries

Kingsley Dunham Centre  
Keyworth, Nottingham NG12 5GG  
Tel: 0115 936 3143.  
Fax: 0115 936 3276.  
Email:

Web: [www.bgs.ac.uk](http://www.bgs.ac.uk)

BGS Geological Hazards Reports and general geological enquiries:  
[enquiries@bgs.ac.uk](mailto:enquiries@bgs.ac.uk)

## Environment Agency

National Customer Contact Centre, PO Box 544  
Rotherham, S60 1BY  
Tel: 03708 506 506

Web: [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)

## Public Health England

Public information access office  
Public Health England, Wellington House  
133-155 Waterloo Road, London, SE1 8UG  
[www.gov.uk/phe](http://www.gov.uk/phe)

Email: [enquiries@phe.gov.uk](mailto:enquiries@phe.gov.uk)  
Main switchboard: 020 7654 8000

## The Coal Authority

200 Lichfield Lane  
Mansfield  
Notts NG18 4RG  
Tel: 0345 7626 848  
DX 716176 Mansfield 5  
[www.coal.gov.uk](http://www.coal.gov.uk)

## Ordnance Survey

Adanac Drive, Southampton  
SO16 0AS  
Tel: 08456 050505

## Local Authority

Authority: Barnsley Metropolitan Borough Council  
Phone: 01226 773555

Web: <http://www.barnsley.gov.uk/>

Address: PO Box 634, Barnsley, South Yorkshire, S70 9GG

## Gemapping PLC

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



Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England/Natural Resources Wales who retain the Copyright and Intellectual Property Rights for the data.

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# Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:

<https://www.groundsure.com/terms-and-conditions-feb11-2019>

# Appendix E

## Groundsure GeoInsight Report



# Groundsure

LOCATION INTELLIGENCE

Hamson Barron Smith Ltd  
16 CENTRAL AVENUE, ST. ANDREWS  
BUSINESS PARK,  
NORWICH, NR7 0HR

Groundsure Reference: GS-6173260  
Your Reference: 101909\_Billingley\_View\_PO23003918  
Report Date: 16 Jul 2019  
Report Delivery Method: Email - pdf

## Geo Insight

Address: BILLINGLEY VIEW, BOLTON UPON DEARNE, BARNSELY, S63 8BP

Dear Sir/ Madam,

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

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

Managing Director  
Groundsure Limited

Enc.  
Groundsure Geo Insight

**Address:** BILLINGLEY VIEW, BOLTON UPON DEARNE, BARNSELY, S63 8BP  
**Date:** 16 Jul 2019  
**Reference:** GS-6173260  
**Client:** Hamson Barron Smith Ltd

NW N NE



SW S SE

Aerial Photograph Capture date: 07-Jun-2013  
Grid Reference: 444631,403001  
Site Size: 0.4487ha

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# Overview of Findings

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

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

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

Section 1: Geology 1:10,000 Scale		
1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	No
	1.2.2 Are there any records of landslip within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	Yes
Section 2: Geology 1:50,000 Scale		
2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	No
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	No
	2.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

## Section 2: Geology 1:50,000 Scale

### 2.3 Bedrock, Solid Geology and linear features

2.3.1 For records of Bedrock and Solid Geology beneath the study site\* see the detailed findings section.

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

Yes

2.3.3 Are there any records of linear features within 500m of the study site boundary?

Yes

## Section 3: Radon

### 3. Radon

3.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?

The property is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.

3.2 Radon Protection

No radon protective measures are necessary.

## Section 4: Ground Workings

	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	4	13	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	1	0	3

## Section 5: Mining, Extraction & Natural Cavities

	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	0
5.2 Coal Mining	1	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	0	0	0	0	0
5.5 Non-Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	0

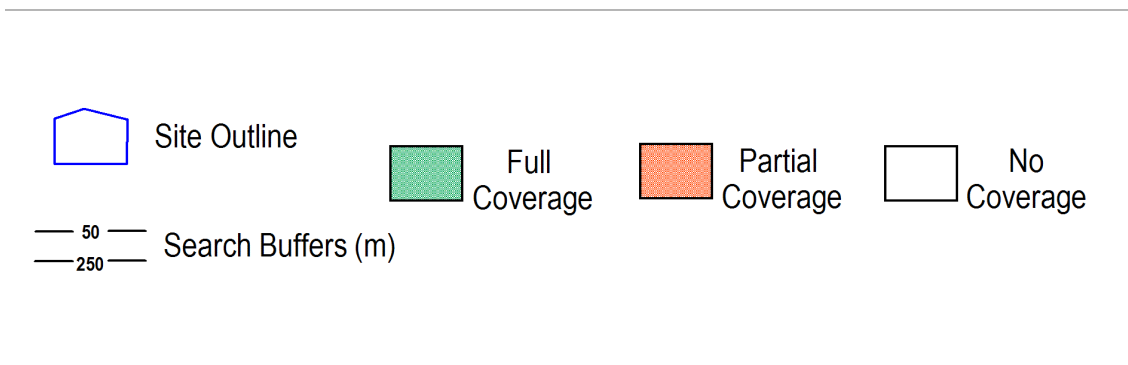
Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Cornwall and Devon Metalliferous Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0
Section 6: Natural Ground Subsidence	On-site				
6.1 Shrink-Swell Clay	Negligible				
6.2 Landslides	Very Low				
6.3 Ground Dissolution of Soluble Rocks	Negligible				
6.4 Compressible Deposits	Negligible				
6.5 Collapsible Deposits	Very Low				
6.5 Running Sand	Negligible				
Section 7: Borehole Records	On-site	0-50m	51-250		
7 BGS Recorded Boreholes	0	2	14		
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
8 Records of Background Soil Chemistry	2	0	0		
Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500	
9.1 Tunnels	0	0	0	Not Searched	
9.2 Historical Railway and Tunnel Features	0	0	3	Not Searched	
9.3 Historical Railways	0	0	0	Not Searched	
9.4 Active Railways	0	0	0	Not Searched	
9.5 Railway Projects	0	0	0	0	

# 1:10,000 Scale Availability



1\_10,000 Availability Legend

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# Availability of 1:10,000 Scale Geology Mapping

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

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	Some deposits are mapped	Full	Full	No coverage
2	326.0	Some deposits are mapped	Full	Full	Some deposits are mapped
N3	1921.0	Some deposits are mapped	Full	Full	No coverage
N4	1955.0	Some deposits are mapped	Full	Full	No coverage

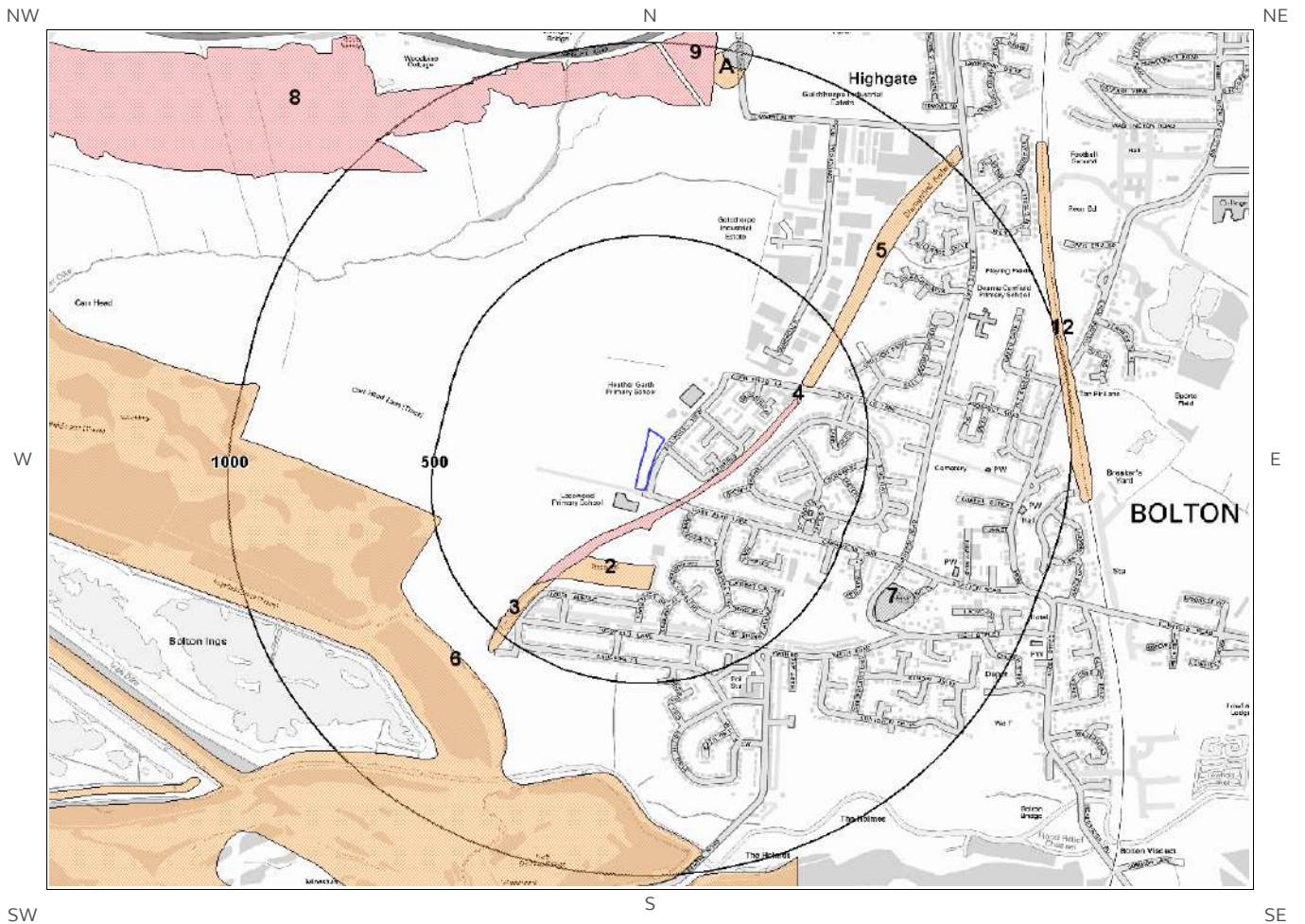
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not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

The definitions of coverage are as follows:

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

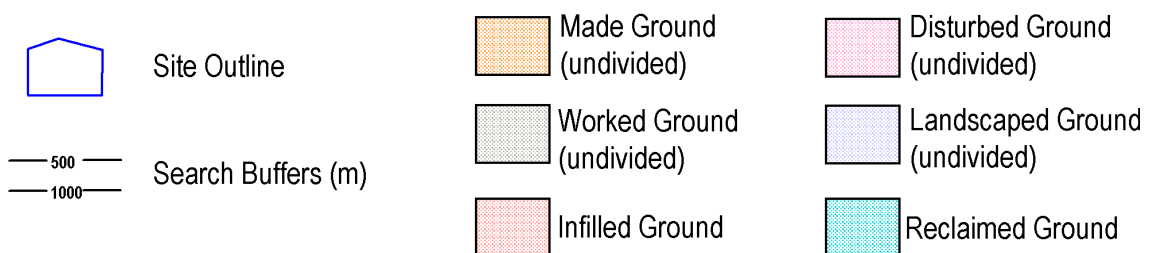
# 1 Geology (1:10,000 scale).

## 1.1 Artificial Ground map (1:10,000 scale)



**Artificial Ground Legend**

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# 1. Geology 1:10,000 scale

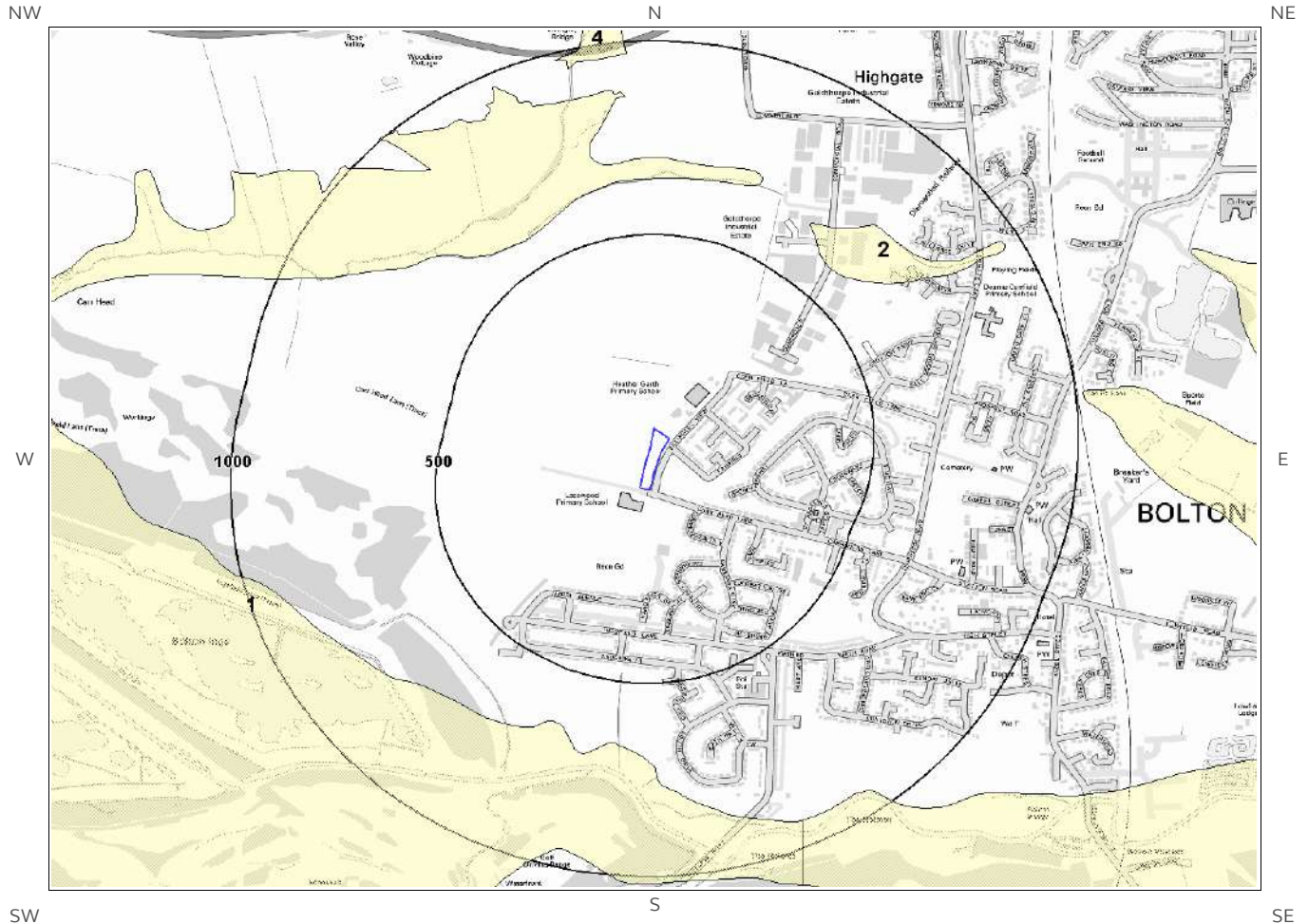
## 1.1 Artificial Ground

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

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




ID	Distance	Direction	LEX Code	Description	Rock Description
1	60.0	SE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
2	193.0	S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	304.0	SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	338.0	E	WMGR-ARTDP	Infilled Ground	Artificial Deposit
5	368.0	NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
6	482.0	W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

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



**Artificial Ground Legend**

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-  Site Outline
-  500
-  1000 Search Buffers (m)

# 1.2 Superficial Deposits and Landslips

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

## 1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

---

## 1.2.2 Landslip

Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

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

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

---



# 1.3 Bedrock and linear features

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

## 1.3.1 Bedrock/ Solid Geology

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

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	MXR-SDST	Mexborough Rock - Sandstone	Bolsovian Sub-age
2	94.0	S	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
3	326.0	E	MXR-SDST	Mexborough Rock - Sandstone	Bolsovian Sub-age
4	461.0	SE	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age

## 1.3.2 Linear features

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

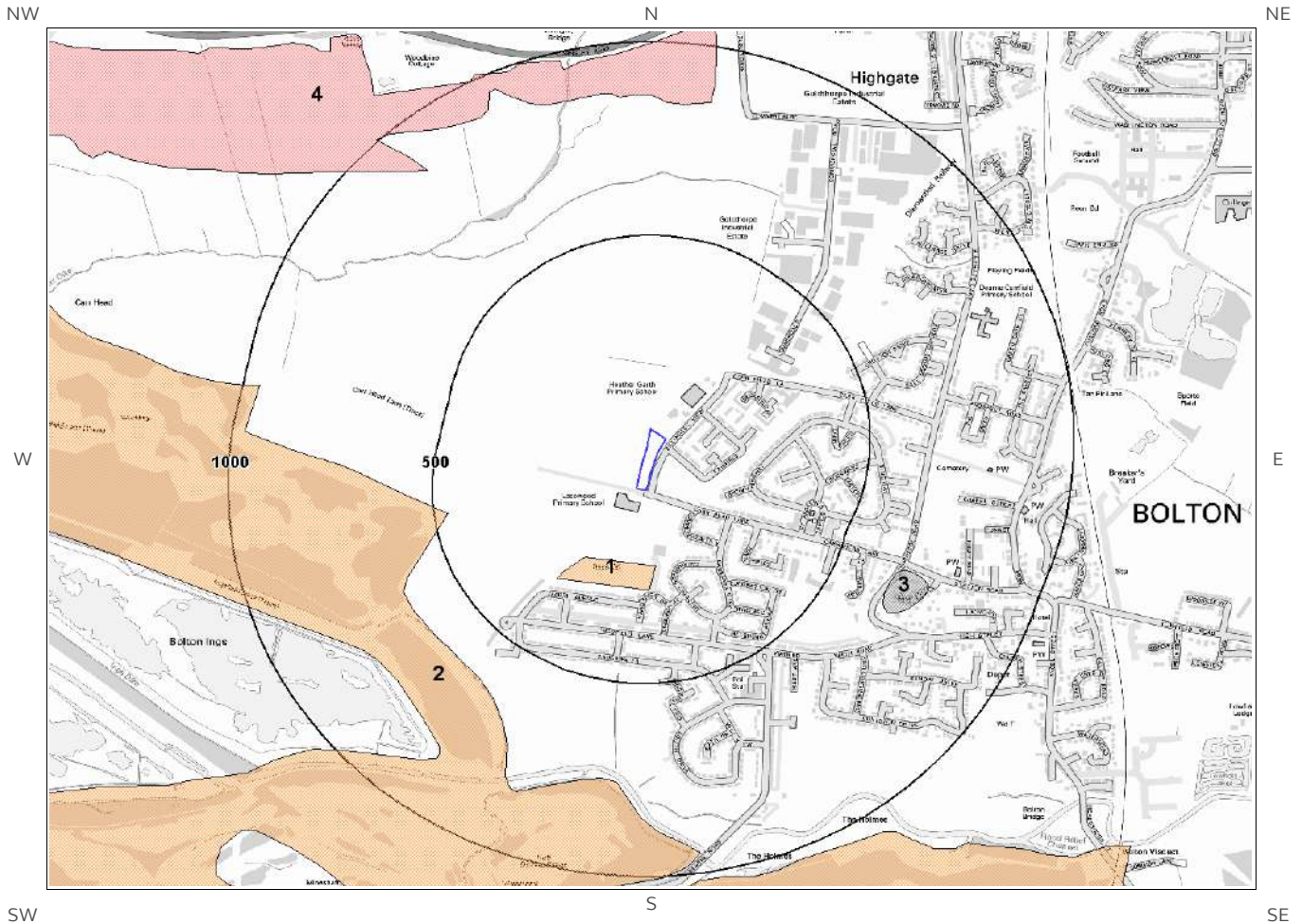
ID	Distance (m)	Direction	Category Description	Feature Description
9	76.0	S	ROCK	Coal seam, observed
10	94.0	S	FAULT	Normal fault, inferred
11	155.0	S	ROCK	Coal seam, observed
12	223.0	S	FAULT	Normal fault, inferred
13	304.0	SW	ROCK	Coal seam, inferred
14	461.0	SE	FAULT	Normal fault, inferred

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

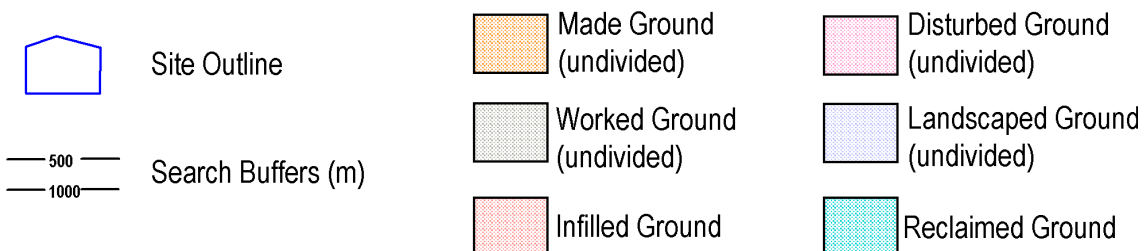
This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

# 2 Geology 1:50,000 Scale

## 2.1 Artificial Ground map



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## 2. Geology 1:50,000 scale

### 2.1 Artificial Ground

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

#### 2.1.1 Artificial/ Made Ground

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

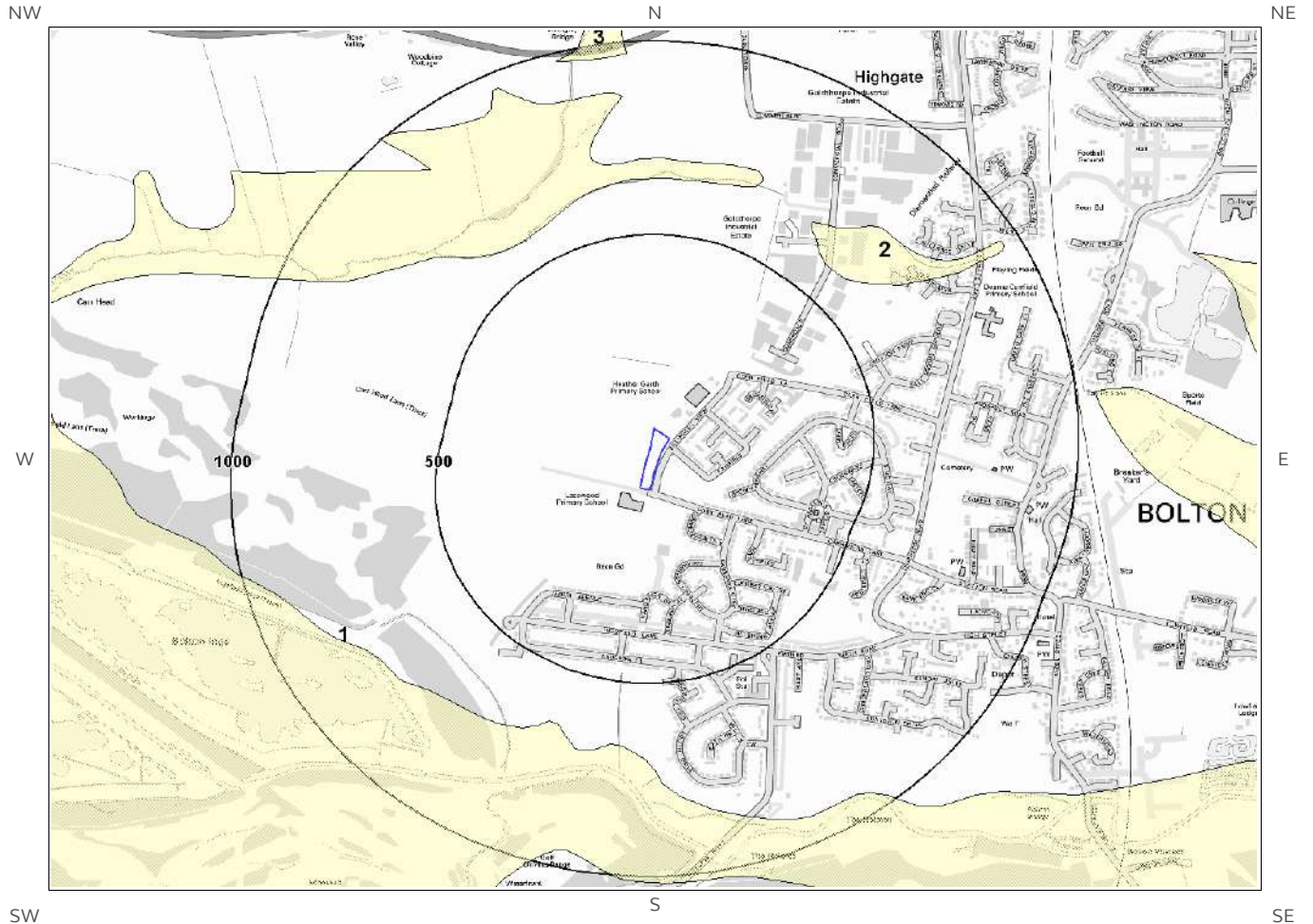
ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	191.0	S	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	467.0	W	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

#### 2.1.2 Permeability of Artificial Ground

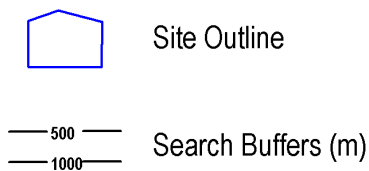
Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

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



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## 2.2 Superficial Deposits and Landslips

### 2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? No

Database searched and no data found.

---

### 2.2.2 Permeability of Superficial Ground

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

Database searched and no data found.

---

### 2.2.3 Landslip

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

Database searched and no data found.

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

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

---

### 2.2.4 Landslip Permeability

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

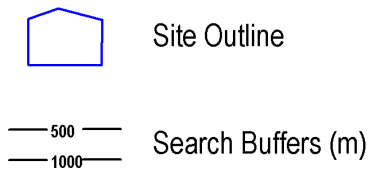
Database searched and no data found.

---

# 2.3 Bedrock and linear features map (1:50,000 scale)



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## 2.3 Bedrock, Solid Geology & linear features

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

### 2.3.1 Bedrock/Solid Geology

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

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	MXR-SDST	MEXBOROUGH ROCK - SANDSTONE	WESTPHALIAN
2	95.0	S	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

### 2.3.2 Permeability of Bedrock Ground

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

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

### 2.3.3 Linear features

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

ID	Distance	Direction	Category Description	Feature Description
6	94.0	S	FAULT	Fault, inferred
7	223.0	S	FAULT	Fault, inferred

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

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

# 3 Radon Data

## 3.1 Radon Affected Areas

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

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

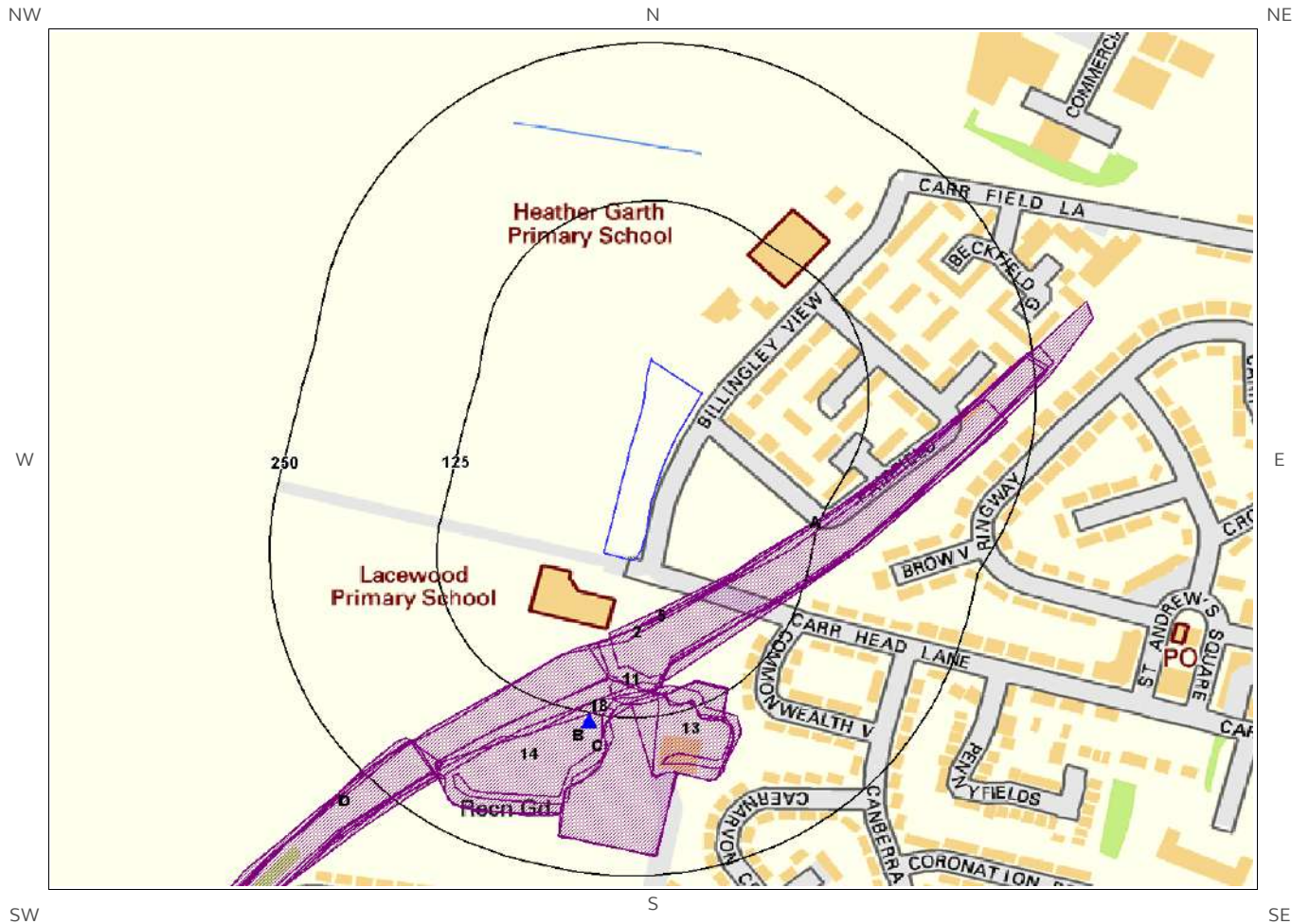
---

## 3.2 Radon Protection

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





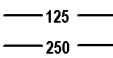
---

# 4 Ground Workings map



Ground Workings Legend

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-  Site Outline
-  Historic Surface Ground Workings
-  Historic Underground Workings
-  Current Ground Workings
-  Search Buffers (m)

# 4 Ground Workings

## 4.1 Historical Surface Ground Working Features derived from Historical Mapping

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

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

ID	Distance (m)	Direction	NGR	Use	Date
1A	43.0	SE	444771 402958	Cuttings	1951
2	47.0	SE	444527 402793	Cuttings	1901
3A	49.0	SE	444765 402949	Cuttings	1938
4A	49.0	SE	444788 402950	Cuttings	1948
5	52.0	SE	444543 402804	Cuttings	1967
6C	93.0	S	444586 402757	Brick Works	1938
7B	96.0	S	444587 402773	Unspecified Ground Workings	1948
8B	96.0	S	444587 402773	Unspecified Ground Workings	1948
9C	96.0	S	444587 402756	Brick Works	1948
10C	96.0	S	444587 402756	Brick Works	1948
11	96.0	S	444624 402815	Refuse Heap	1938
12	103.0	S	444603 402774	Unspecified Ground Workings	1951
13	111.0	S	444668 402779	Unspecified Pit	1938
14	118.0	S	444542 402760	Unspecified Pit	1938
15D	205.0	SW	444316 402630	Cuttings	1938
16D	206.0	SW	444315 402636	Cuttings	1951
17D	207.0	SW	444315 402630	Cuttings	1948

## 4.2 Historical Underground Working Features derived from Historical Mapping

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

Are there any Historical Underground Working Features within 1000m of the study site boundary? No

Database searched and no data found.

---

## 4.3 Current Ground Workings

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

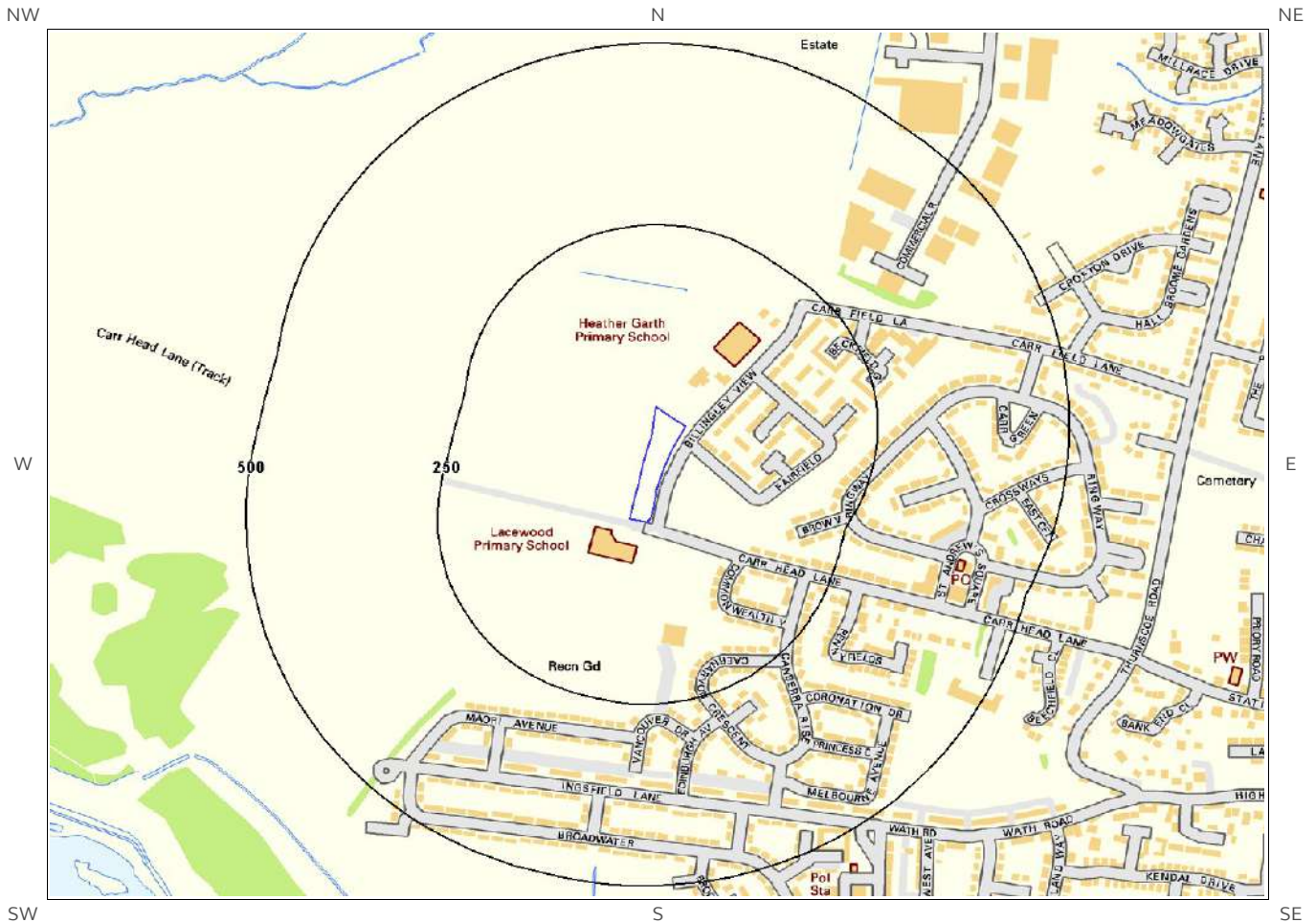
Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

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

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
18	131.0	S	444590 402793	Clay & Shale	Wath Main Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	660.0	SE	445228 402651	Sandstone	Bolton Hall Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	923.0	N	444700 404000	Coal, Surface Mined	Woodbine Extension Phase 1 OCCS	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	973.0	N	444820 404035	Clay & Shale	Goldthorpe Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

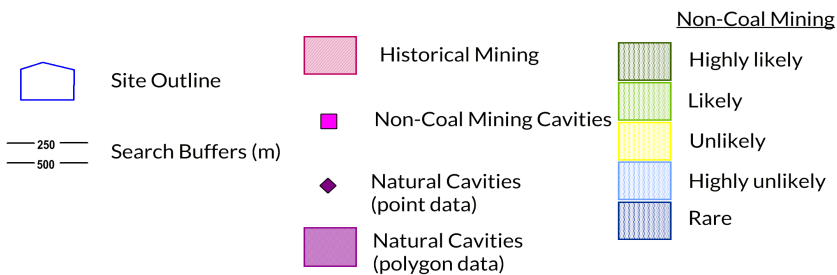
---

# 5 Mining, Extraction & Natural Cavities map



Mining, Extraction and Natural Cavities Legend

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# 5 Mining, Extraction & Natural Cavities

## 5.1 Historical Mining

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

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

Database searched and no data found.

---

## 5.2 Coal Mining

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

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

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

Distance (m)	Direction	Details
0.0	On Site	The site lies in or in proximity to the coal mining reporting area as defined by the Coal Authority

---

## 5.3 Johnson Poole and Bloomer

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

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

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

---

## 5.4 Non-Coal Mining

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

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

Database searched and no data found.

---

## 5.5 Non-Coal Mining Cavities

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

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

Database searched and no data found.

---

## 5.6 Natural Cavities

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

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

Database searched and no data found.

---

## 5.7 Brine Extraction

This data provides information from the Cheshire Brine Subsidence Compensation Board.

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

Database searched and no data found.

---

## 5.8 Gypsum Extraction

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

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

Database searched and no data found.

---

## 5.9 Cornwall and Devon Metalliferous Mining

This dataset provides information on metalliferous mining areas in Cornwall/Devon and is derived from records held by Mining Searches UK.

Are there any Cornwall and Devon Metalliferous Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

---

## 5.10 Clay Mining

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

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

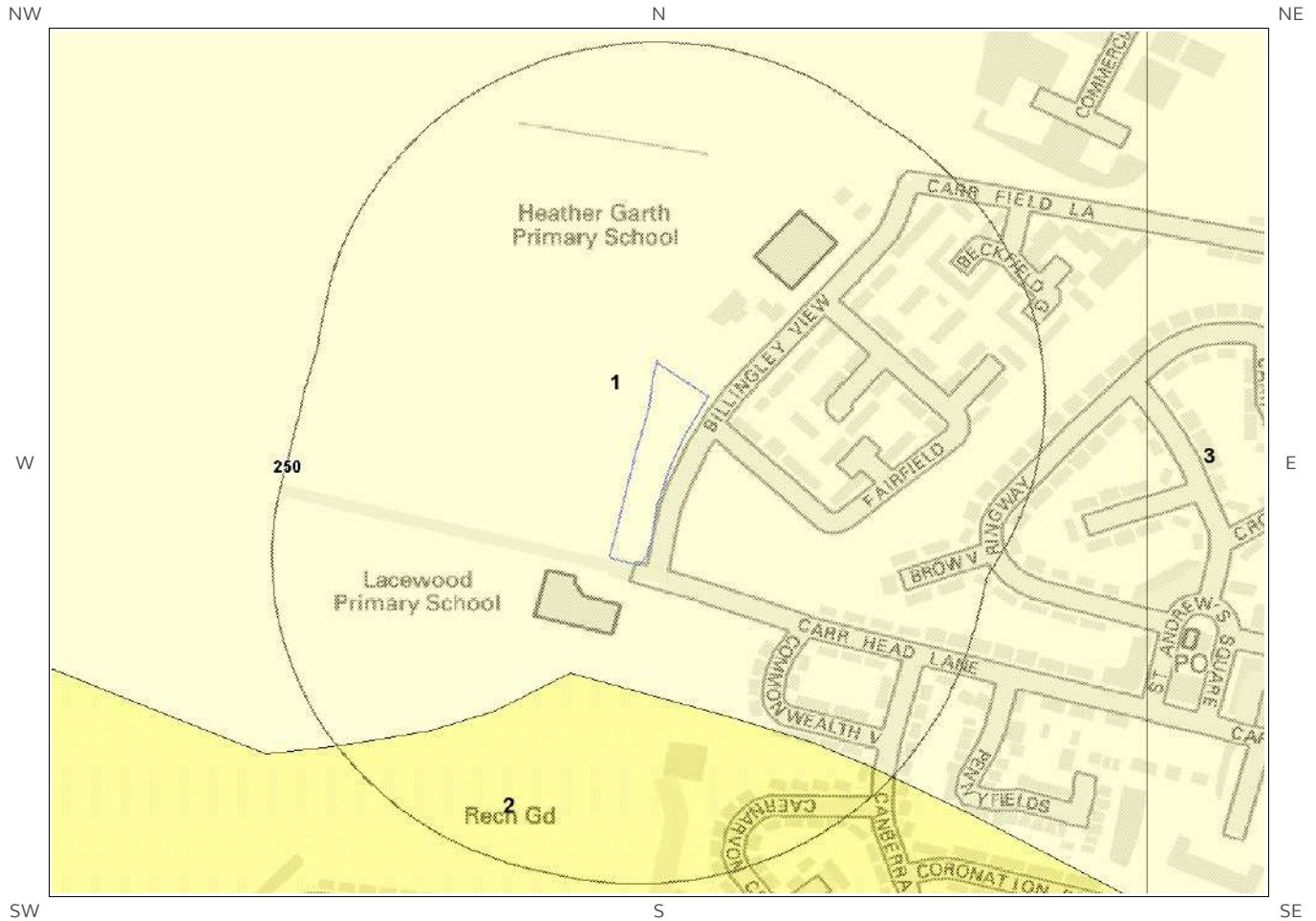
No

Database searched and no data found.

---

# 6 Natural Ground Subsidence

## 6.1 Shrink-Swell Clay map



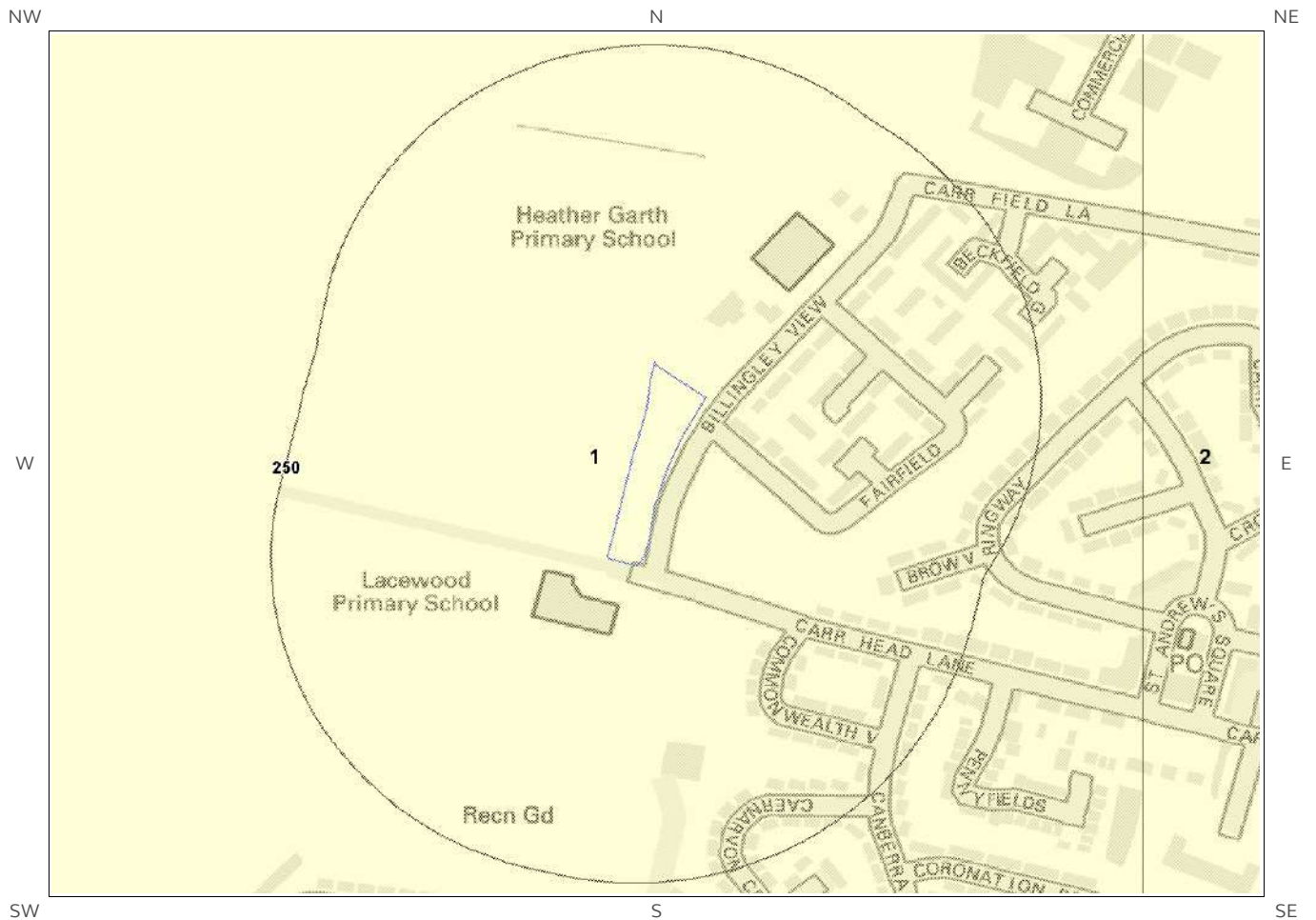
Shrink Swell Clay Legend

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# 6.3 Ground Dissolution of Soluble Rocks map



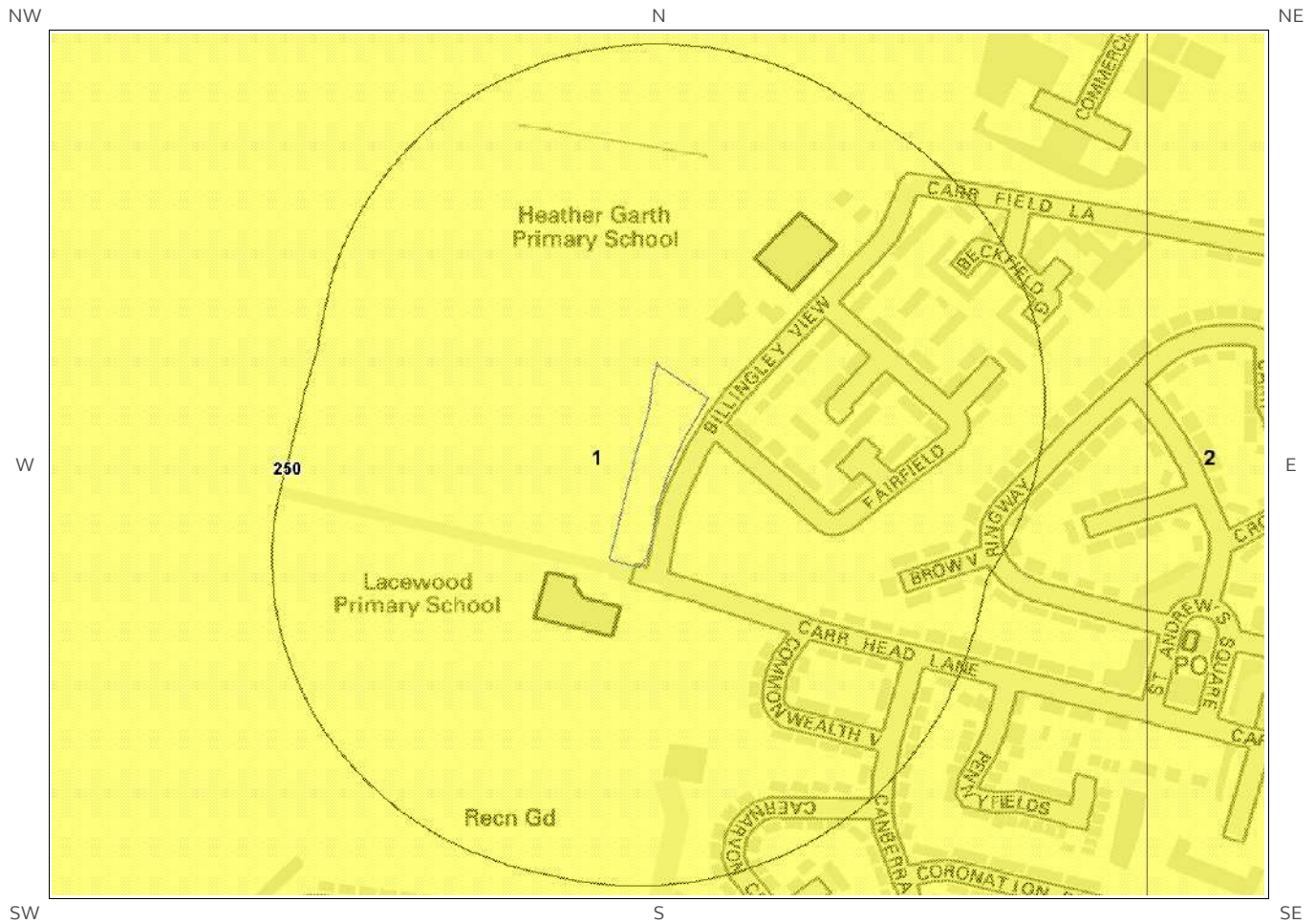
Ground Dissolution  
Soluble Rocks Legend

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# 6.5 Collapsible Deposits map



Collapsible Deposits Legend

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# 6 Natural Ground Subsidence

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

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

What is the maximum hazard rating of natural subsidence within the study site\*\* boundary? Very Low

## 6.1 Shrink-Swell Clays

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

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

## 6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

## 6.3 Ground Dissolution of Soluble Rocks

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

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

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

## 6.4 Compressible Deposits

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

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

## 6.5 Collapsible Deposits

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

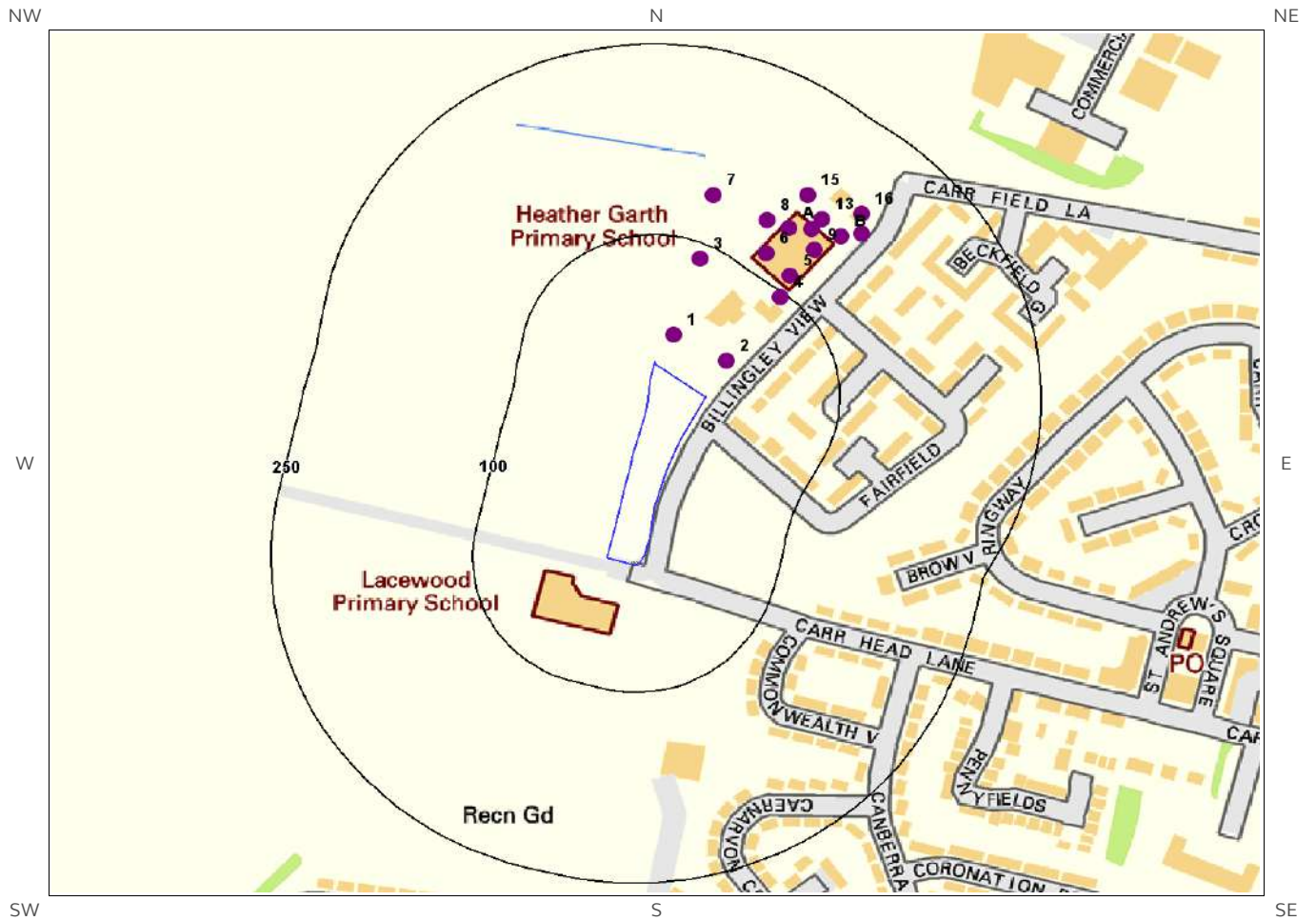
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible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

## 6.6 Running Sands

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



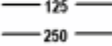
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due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

# 7 Borehole Records map



Borehole Records Legend

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-  Site Outline
-  Borehole Locations
-  Search Buffers (m)

# 7 Borehole Records

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

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

16

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	25.0	NE	444650 403100	SE40SW438	2	BOLTON ON DEARNE JUNIOR AND INFANTS SCHOOL 1
2	32.0	NE	444690 403080	SE40SW442	2	BOLTON ON DEARNE JUNIOR AND INFANTS SCHOOL 5
3	87.0	NE	444670 403160	SE40SW439	2	BOLTON ON DEARNE JUNIOR AND INFANTS SCHOOL 2
4	96.0	NE	444730 403130	SE40SW443	2	BOLTON ON DEARNE JUNIOR AND INFANTS SCHOOL 6
5	114.0	NE	444737 403147	SE40SW577	Not available	CARFIELD LANE BOLTON ON DEARNE 8
6	118.0	NE	444719 403164	SE40SW576	Not available	CARFIELD LANE BOLTON ON DEARNE 7
7	138.0	N	444680 403210	SE40SW440	3	BOLTON ON DEARNE JUNIOR AND INFANTS SCHOOL 3
8	139.0	NE	444720 403190	SE40SW441	2	BOLTON ON DEARNE JUNIOR AND INFANTS SCHOOL 4
9	141.0	NE	444755 403167	SE40SW574	Not available	CARFIELD LANE BOLTON ON DEARNE 5
10A	144.0	NE	444736 403184	SE40SW575	Not available	CARFIELD LANE BOLTON ON DEARNE 6
11A	153.0	NE	444753 403183	SE40SW573	Not available	CARFIELD LANE BOLTON ON DEARNE 4
12B	161.0	NE	444775 403178	SE40SW571	Not available	CARFIELD LANE BOLTON ON DEARNE 2
13	164.0	NE	444761 403191	SE40SW572	Not available	CARFIELD LANE BOLTON ON DEARNE 3
14B	173.0	NE	444790 403180	SE40SW445	2	BOLTON ON DEARNE JUNIOR AND INFANTS SCHOOL 8
15	173.0	NE	444750 403210	SE40SW444	2	BOLTON ON DEARNE JUNIOR AND INFANTS SCHOOL 7
16	184.0	NE	444790 403195	SE40SW570	Not available	CARFIELD LANE BOLTON ON DEARNE 1

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

- #1: [scans.bgs.ac.uk/sobi\\_scans/boreholes/106601](https://scans.bgs.ac.uk/sobi_scans/boreholes/106601)
  - #2: [scans.bgs.ac.uk/sobi\\_scans/boreholes/106605](https://scans.bgs.ac.uk/sobi_scans/boreholes/106605)
  - #3: [scans.bgs.ac.uk/sobi\\_scans/boreholes/106602](https://scans.bgs.ac.uk/sobi_scans/boreholes/106602)
  - #4: [scans.bgs.ac.uk/sobi\\_scans/boreholes/106606](https://scans.bgs.ac.uk/sobi_scans/boreholes/106606)
  - #7: [scans.bgs.ac.uk/sobi\\_scans/boreholes/106603](https://scans.bgs.ac.uk/sobi_scans/boreholes/106603)
  - #8: [scans.bgs.ac.uk/sobi\\_scans/boreholes/106604](https://scans.bgs.ac.uk/sobi_scans/boreholes/106604)
  - #14B: [scans.bgs.ac.uk/sobi\\_scans/boreholes/106608](https://scans.bgs.ac.uk/sobi_scans/boreholes/106608)
  - #15: [scans.bgs.ac.uk/sobi\\_scans/boreholes/106607](https://scans.bgs.ac.uk/sobi_scans/boreholes/106607)
-

# 8 Estimated Background Soil Chemistry

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

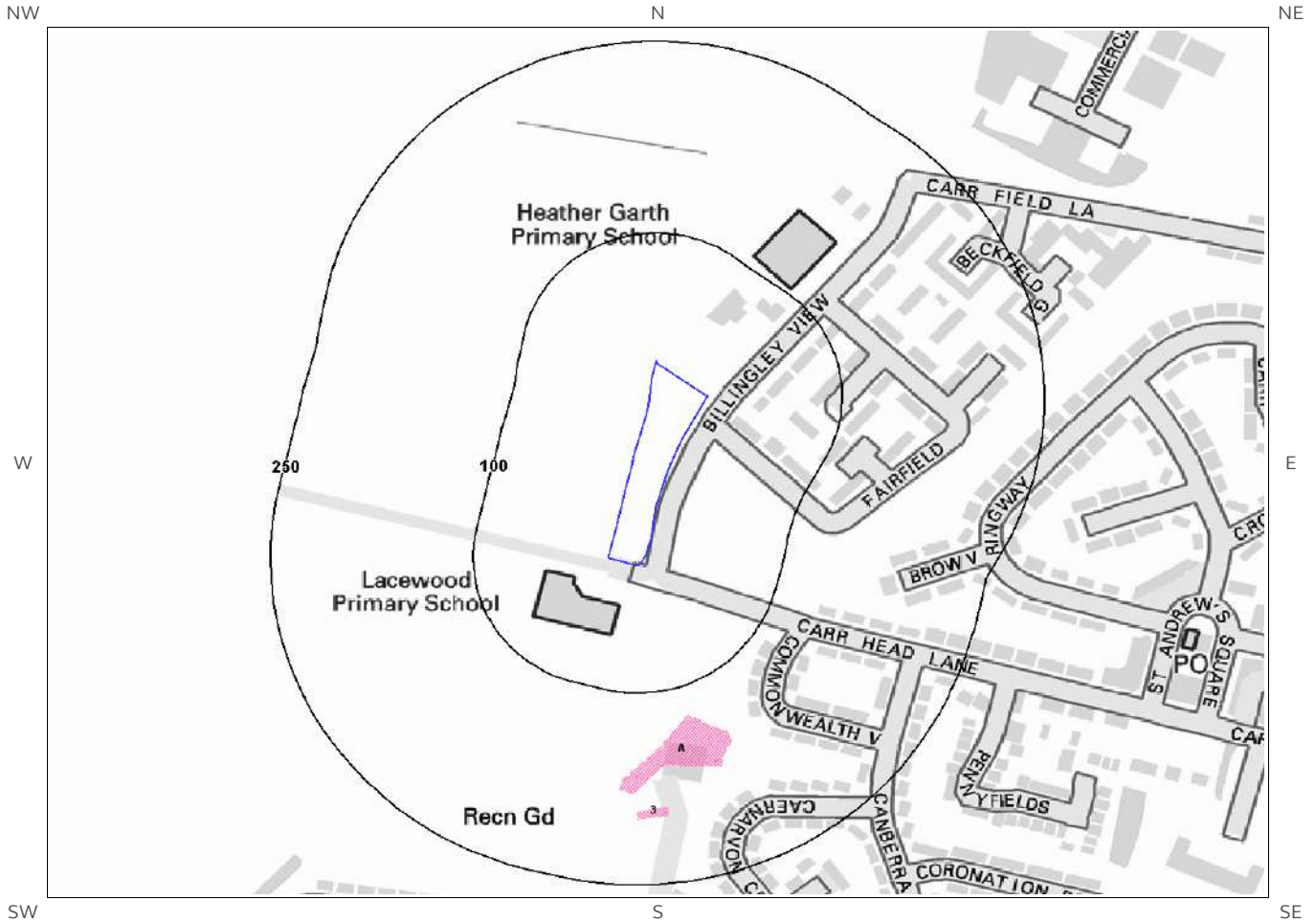
2

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

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg













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

# 9 Railways and Tunnels map



Railways and Tunnels Legend

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	Site Outline		Underground or Partially Underground Railway / Subway System		Railway Track (OpenStreetMap)
	Railway Tunnel (OS Mapping)		High Speed 2		High Speed 2 Revised Proposed Route
	250 Search Buffers (m)		Abandoned or Dismantled Railway (OpenStreetMap)		Crossrail 1
	500 Search Buffers (m)		Railway Track (OS Mapping)		Railway and/or Tunnel Feature from Historical Mapping

# 9 Railways and Tunnels

## 9.1 Tunnels

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

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

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

Database searched and no data found.

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

---

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

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

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

Database searched and no data found.

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

---

## 9.2 Historical Railway and Tunnel Features

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

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

Have any historical railway or tunnel features been identified within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Details	Date
1A	123	S	444651 402772	Railway Sidings	1938
2A	125	S	444652 402772	Railway Sidings	1930
3	190	S	444634 402726	Railway Sidings	1930

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

---

### 9.3 Historical Railways

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

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

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

Database searched and no data found.

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

---

### 9.4 Active Railways

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

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

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

Database searched and no data found.

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

---

### 9.5 Railway Projects

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

Is the study site within 5km of the route of the High Speed 2 rail project? Yes

Is the study site within 500m of the route of the Crossrail 1 rail project? No

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

---

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

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

# Contact Details

Groundsure Helpline  
Telephone: 08444 159 000  
info@groundsure.com



## British Geological Survey Enquiries

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Web: [www.bgs.ac.uk](http://www.bgs.ac.uk)

BGS Geological Hazards Reports and general geological enquiries



## British Gypsum

British Gypsum Ltd  
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Loughborough  
Leicestershire  
LE12 6HX



## The Coal Authority

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Notts NG18 4RG  
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DX 716176 Mansfield 5  
[www.coal.gov.uk](http://www.coal.gov.uk)



## Public Health England

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# Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:  
<https://www.groundsure.com/terms-and-conditions-feb11-2019>

# Appendix F

## Coal Mining Report



The Coal  
Authority

# CON29M

## coal mining report

BILLINGLEY VIEW, BOLTON UPON DEARNE, BARNSLEY, S63 8BP, SOUTH YORKSHIRE



### Known or potential coal mining risks

Past underground coal mining	Page 3
Future underground coal mining	Page 3
Withdrawal of support	Page 5



### Further action

No further reports from the Coal Authority are required. Further information on any next steps can be found in our Professional opinion.

For more information on our reports please visit [www.groundstability.com](http://www.groundstability.com)



### Professional opinion

According to the official mining information records held by the Coal Authority at the time of this search, evidence of, or the potential for, coal mining related features have been identified. It is unlikely that these features will impact on the stability of the enquiry boundary.

Your reference: **GS-6173262**  
Our reference: **51002155873001**  
Date: **16 July 2019**

Client name:  
**GROUNDSURE LIMITED**

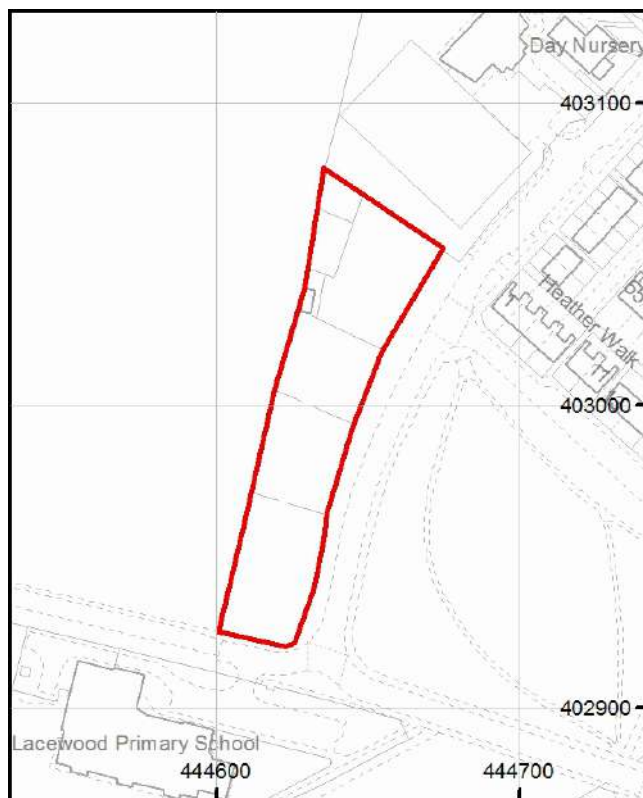
If you require any further assistance please contact our experts on:  
**0345 762 6848**  
[groundstability@coal.gov.uk](mailto:groundstability@coal.gov.uk)



# Enquiry boundary

## Key

Approximate position of enquiry boundary shown



We can confirm that the location is **on the coalfield**



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This report is prepared in accordance with the latest Law Society's Guidance Notes 2018, the User Guide 2018 and the Coal Authority's Terms and Conditions applicable at the time the report was produced.



## Accessibility

If you would like this information in an alternative format, please contact our communications team on 0345 762 6848 or email [communications@coal.gov.uk](mailto:communications@coal.gov.uk).

# Detailed findings

Information provided by the Coal Authority in this report is compiled in response to the Law Society's CON29M Coal Mining enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL.

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## 1 Past underground coal mining

The property is in a surface area that could be affected by underground mining in 4 seams of coal at 220m to 650m depth, and last worked in 1950.

Any movement in the ground due to coal mining activity associated with these workings should have stopped by now.

## 2 Present underground coal mining

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

## 3 Future underground coal mining

The property is not in an area where the Coal Authority has received an application for, and is currently considering whether to grant a licence to remove or work coal by underground methods.

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

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

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

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

## 4 Mine entries

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

## 5 Coal mining geology

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

## 6 Past opencast coal mining

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

## 7 Present opencast coal mining

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

## 8 Future opencast coal mining

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

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

## 9 Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

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

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

## 10 Mine gas

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

## 11 Hazards related to coal mining

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

## 12 Withdrawal of support

The property is in an area where notices to withdraw support were given in 1942 and 1983.

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

## 13 Working facilities order

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

## 14 Payments to owners of former copyhold land

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

# Statutory cover



## Coal mining subsidence

In the unlikely event of any coal mining related subsidence damage, the Coal Authority or the mine operator has a duty to take remedial action in respect of subsidence caused by the withdrawal of support from land or property in connection with lawful coal mining operations.

When the works are the responsibility of the Coal Authority, our dedicated public safety and subsidence team will manage the claim. The house or land owner ("the owner") is covered for these works under the terms of the Coal Mining Subsidence Act 1991 (as amended by the Coal Industry Act 1994). Please note, this Act does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

If you believe your land or property is suffering from coal mining subsidence damage and you need more information on what to do next, please use the following link to our website which sets out what your rights are and what you need to consider before making a claim.

[www.gov.uk/government/publications/coal-mining-subsidence-damage-notice-form](http://www.gov.uk/government/publications/coal-mining-subsidence-damage-notice-form)



## Coal mining hazards

Our public safety and subsidence team provide a 24 hour a day, 7 days a week hazard reporting service, to help protect the public from hazards caused by past coal workings, such as a mine shaft or shallow working collapse. To report any hazards please call **01623 646 333**. Further information can be found on our website: [www.gov.uk/coalauthority](http://www.gov.uk/coalauthority).

# Glossary



## Key terms

**adit** - horizontal or sloped entrance to a mine

**coal mining subsidence** - ground movement caused by the removal of coal by underground mining

**Coal Mining Subsidence Act 1991** - the Act setting out the duties of the Coal Authority to repair damage caused by coal mining subsidence

**coal mining subsidence damage** - damage to land, buildings or structures caused by the removal of coal by underground mining

**coal seams** - bed of coal of varying thickness

**future opencast coal mining** - a licence granted, or licence application received, by the Coal Authority to excavate coal from the surface

**future underground coal mining** - a licence granted, or licence application received, by the Coal Authority to excavate coal underground. Although it is unlikely, remaining coal reserves could create a possibility for future mining, which would be licensed by the Coal Authority

**mine entries** - collective name for shafts and adits

**payments to owners of former copyhold land** - historically, copyhold land gave rights to coal to the copyholder. Legislation was set up to allow others to work this coal, but they had to issue a notice and pay compensation if a copyholder came forward

**shaft** - vertical entry into a mine

**site investigation** - investigations of coal mining risks carried out with the Coal Authority's permission

**stop notice** - a delay to repairs because further coal mining subsidence damage may occur and it would be unwise to carry out permanent repairs

**subsidence claim** - a formal notice of subsidence damage to the Coal Authority since it was established on 31 October 1994

**withdrawal of support** - a historic notice informing landowners that the coal beneath their property was going to be worked

**working facilities orders** - a court order which gave permission, restricted or prevented coal mine workings