



**PHASE I DESKTOP STUDY AND  
PRELIMINARY RISK ASSESSMENT  
REPORT  
AT  
MOORGATE FARM EAST, ROCHDALE  
FOR  
MORRIS CONSTRUCTION**

Report Reference: 2466-22 PI

GeoEnviro Solutions Ltd  
Unit 7, Springvale Works,  
Brookfoot Lane,  
Brighouse,  
HD6 2RA

[www: geoenvirosolutions.com](http://www.geoenvirosolutions.com)

## QUALITY ASSURANCE

|              | Name          | Position                   | Date           |
|--------------|---------------|----------------------------|----------------|
| Prepared by: | Lewis Waller  | Geo environmental Engineer | September 2022 |
| Reviewed by: | Richard Caine | Senior Engineer            | October 2022   |
| Approved by: | Rob Lewis     | Director                   | October 2022   |

## ISSUE STATUS

| Version | Date         | Description | Prepared | Reviewed | Approved |
|---------|--------------|-------------|----------|----------|----------|
| 1       | October 2022 | First Issue | -        | -        | -        |

## CONTENTS

|                                                                |           |
|----------------------------------------------------------------|-----------|
| <b>1. INTRODUCTION .....</b>                                   | <b>1</b>  |
| <b>2. SITE LOCATION AND DESCRIPTION .....</b>                  | <b>3</b>  |
| <b>3. ENVIRONMENTAL AND GEOLOGICAL SETTING .....</b>           | <b>4</b>  |
| <b>4. PAST LAND USE AND POTENTIAL CONTAMINANT SOURCES.....</b> | <b>8</b>  |
| <b>5. HISTORICAL MAPPING STUDY .....</b>                       | <b>15</b> |
| <b>6. FRAMEWORK FOR ASSESSMENT OF CONTAMINATION .....</b>      | <b>18</b> |
| <b>7. QUALITATIVE RISK ASSESSMENT .....</b>                    | <b>21</b> |
| <b>8. PRELIMINARY CONCEPTUAL SITE MODEL.....</b>               | <b>22</b> |
| <b>9. RECOMMENDATIONS .....</b>                                | <b>25</b> |
| <b>10. RELIANCE AND LIMITATIONS .....</b>                      | <b>28</b> |

## APPENDICES

| Appendix | Information                            |
|----------|----------------------------------------|
| 1        | Drawings and Plans                     |
| 2        | Groundsure Enviro + Geo Insight Report |
| 3        | Coal Authority Report                  |
| 4        | Historical Ordnance Survey Maps        |
| 5        | Risk Assessment Matrix                 |

## LIST OF ACRONYMS

| Acronym | Meaning                                              |
|---------|------------------------------------------------------|
| BGS     | British Geological Survey                            |
| BH      | Borehole                                             |
| CDM     | Construction Design and Management                   |
| CL:AIRE | Contaminated Land: Applications In Real Environments |
| CLR     | Contaminated Land Report                             |
| COSHH   | Control Of Substances Hazardous to Health            |
| CSM     | Conceptual Site Model                                |
| DCP     | Dynamic Cone Penetrometer                            |
| DEFRA   | Department for Environment Foods and Rural Affairs   |
| DoE     | Department of Environment                            |
| DP      | Dynamic Probe                                        |
| DWS     | Drinking Water Standard                              |
| EA      | Environment Agency                                   |
| EQS     | Environmental Quality Standard                       |
| GAC     | Generic Acceptance Criteria                          |
| HA      | Hand Auger                                           |
| HP      | Hand Pit                                             |
| LPA     | Local Planning Authority                             |
| LQM     | Land Quality Management                              |
| mbgl    | Metres Below Ground Level                            |
| MP      | Mackintosh Probe                                     |
| NGR     | National Grid Reference                              |
| NPPF    | National Planning Policy Framework                   |
| OS      | Ordnance Survey                                      |
| SGV     | Soil Guideline Value                                 |
| SPOSH   | Significant Possibility of Significant Harm          |
| SPT     | Standard Penetration Test                            |
| SPZ     | Source Protection Zone                               |
| SSSI    | Site of Special Scientific Interest                  |
| SSV     | Soil Screening Value                                 |
| TP      | Trial Pit                                            |
| TT      | Trial Trench                                         |
| WS      | Windowless Sample / Window Sample                    |
| WSV     | Water Screening Value                                |

# 1. INTRODUCTION

---

## 1.1 BACKGROUND AND INSTRUCTION

GeoEnviro Solutions Limited (GES) was instructed by Morris Construction (the Client) to produce a Phase I: Desktop Study and Preliminary Risk Assessment Report for the site located at Moorgate East Farm, Broad Lane, Rochdale OL16 4QL.

A site location plan is presented as Drawing No. GES 2466-22/01 in **Appendix 1**.

This report is written in accordance with the guidance set out in Land Contamination Risk Management (LCRM), Guiding Principles for Land Contamination (GPLC) 1 – 3, and the National Planning Policy Framework (NPPF).

## 1.2 PROPOSED DEVELOPMENT

GES have not been provided with any proposed development plans at this stage.

It is understood that the current proposal for the site is to convert an existing barn into a two storey, three-bedroom dwelling, within the same footprint; as part of the development various lean-to buildings are to be removed.

As such, this risk assessment has been based upon the most likely scenario, 'Residential with Homegrown Produce', based on the locale and environmental setting of the site.

Once a development proposal has been finalised it may be necessary to review this risk assessment in light of the future development.

## 1.3 OBJECTIVES

The objectives of this Phase I report are to:

- Gain an understanding of any concerns of the regulatory authorities (Local Authority Planning, Building Control and Environmental Health departments and the Environment Agency) regarding local land filling, flooding, mining, quarrying and other concerns.
- Establish the environmental setting, including sensitivity in relation to human health, surface water, groundwater, and ecological receptors.
- Review historical and recent uses to assess the potential for contamination to be present from past and current land-use.
- Assess by qualitative means the potential nature and extent of contamination from those uses and the environmental risk and liabilities which may affect the site redevelopment.
- Identify the prevalent source-pathway-receptor linkages present on site by means of a Tier 1 contamination risk assessment which incorporates the formulation of a Conceptual Site Model.

## 1.4 INFORMATION SOURCES

During the production of this report the following primary information sources have been utilised:

- Enviro + Geo Insight data obtained from Groundsure (4C Group Ltd).
- Historical Ordnance Survey mapping at scales ranging from 1:1,250 to 1:10,560, obtained from Groundsure.
- BGS Open Geoscience online geological mapping tool.
- OS Open Data online mapping tool.
- Coal Authority Online interactive map.
- Coal Mining Consultants Report.

## 1.5 PREVIOUS INVESTIGATIONS

GES have not been provided with any previous investigation reports and are unaware that any have been carried out to date.

Review of the Rochdale Borough Council Planning Portal has identified a Structural Assessment of the existing on-site building, undertaken by Healey Consulting Structural Engineering Consultants, Ref. R2924, dated 2021.

The main point of interest within the report is that “the property does not appear to exhibit any major settlement or subsidence problems. Given that the proposals do not significantly increase dead loads, we (Healey Consulting) are of the opinion that the existing ‘foundations’ will be adequate for the proposed use”.

## 2. SITE LOCATION AND DESCRIPTION

### 2.1 SITE LOCATION

The site is located at land off Moorgate East Farm, Broad Lane, Rochdale OL16 4QL, at approximate National Grid Reference (NGR) SD 9200 1044 (centre of the site).

### 2.2 SITE DESCRIPTION

At this stage, a site reconnaissance has not been carried out; as such the site description has been taken in part from Google Earth and Google Street View imagery, as well as information provided by the client.

A site walkover will be carried out either prior to or during any Phase II investigation and will be reported accordingly.

The site comprises an irregular shaped piece of land with an approximate area of 0.1 Ha, which is accessed directly off Broad Lane and the topography of which is generally flat.

The site comprises a barn and associated lean to type buildings in the south, stables in the west and north.

The barn is of stone construction, with various areas of repair, partly roofed with slates and partly with possible asbestos fibre cement sheets.

The stables are of mixed construction, with mixed slate, metal roof sheets and possible asbestos fibre cement sheet roofs.

Between the stables and the barn is an area of bound macadam and concrete hardstanding in the north and east of the site, and appears to be loose soil / hardcore in the south of the site.

An approximate distribution of the surface covering is given below in Table 2.1.

*Table 2.1: Site Surface Covering*

| Type of Surface Cover                      | Distribution (%) |
|--------------------------------------------|------------------|
| Soft Ground (grassed and landscaped areas) | 0                |
| Hardstanding                               | 40               |
| Roadways                                   | 0                |
| Buildings                                  | 60               |
| Water (ponds, streams)                     | 0                |

The site is bound by Broad Lane to the east, agricultural fields to the west and farm buildings to the north and south.

#### Surrounding Area

The current surrounding land use to the site is generally agricultural land, with a small number of residential properties or farm buildings.

The topography of the surrounding area is slopes to the northwest.

### 3. ENVIRONMENTAL AND GEOLOGICAL SETTING

Information on the environmental and geological setting of the site is presented in a Groundsure Enviro + Geo Insight Report prepared for the site; a copy of this report is presented in [Appendix 3](#).

#### 3.1 SITE GEOLOGY

The site geology has been assessed by reference to information from British Geological Survey (BGS) mapping summarised in the Groundsure Enviro + Geo Insight data. Information from these sources referenced in this report has been predominantly limited to that identified within 50 m of the site (underlying geology) or 250 m of the site (structural features, borehole records), in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

##### Artificial / Made Ground

There are no records of artificial deposits underlying the site.

There are six records of Made Ground, Worked Ground and Infilled Ground within 250 m of the site, the closest record is located 30 m northeast of the site and relates to Made Ground; a void is recorded 39 m southeast of the site.

##### Superficial Ground and Drift Deposits

The superficial ground deposits underlying the study site comprise of the Hummocky (Moundy) Glacial Deposits, which is generally described as *'rock debris, clayey till and poorly- to well-stratified sand and gravel'* (BGS Lexicon Description).

##### Bedrock Geology

Underlying the superficial drift deposits is bedrock comprises of Pennine Lower Coal Measure (PLCM) Formation, which is generally described as *'interbedded grey mudstone, siltstone and pale grey sandstone, commonly with mudstone containing marine fossils in the lower part and more numerous and thicker coal seam in the upper part'* (BGS Lexicon Description).

##### Landslips

There are no records within 250 m.

##### Linear Features

The Groundsure report shows an inferred coal seam on-site and another inferred coal seam 18 m to the northwest of the site.

Review of the BGS Geological Map (Sheet 85, Manchester) indicates that one of the above seams is the Arley Coal seam; no thickness is provided.

The BGS Memoir<sup>1</sup> for the local area indicates that the seam is of significant value and has been worked across the northern and central areas of the above map sheet, and at Royley Mine, had a section comprising an upper coal 1 feet 6 inches (0.46 m) thick, 7 inches of clay (0.18 m) and a bottom coal 2 feet 8 inches (0.81 m) thick.

The separation of the seam into an upper and lower section may explain why two seams are recorded in the vicinity of the site, though no second seam is named.

---

<sup>1</sup> The Geology of the Country Around Oldham, Including Manchester and its Suburbs. E. Hull., 1864.

A second BGS Memoir<sup>2</sup> indicates that the Arley Coal seam ranges between 0.9 and 2.0 m in thickness, and has been worked via deep mining, crop working and surface mine (opencast) methods.

### Natural Ground Subsidence

The following hazard ratings applicable to the site and land within 50 m are presented in the Enviro + Geo Insight Report:

- |                                        |             |
|----------------------------------------|-------------|
| • Shrink / swell clays:                | Low.        |
| • Running sands:                       | Very low.   |
| • Compressible deposits:               | Negligible. |
| • Collapsible deposits:                | Very low.   |
| • Landslides:                          | Low.        |
| • Ground dissolution of soluble rocks: | Negligible. |

## 3.2 BOREHOLE RECORDS

There are no BGS boreholes recorded within 50 m of the site. However, there is one borehole recorded within 150 m of the site: 392116 410531, 122m northeast of the site, BGS reference SD91SW22 and drilled July 1969.

This borehole records the following made ground of 'Tarmac Road Waste' to 0.91 mbgl, overlying 'brown clay and stones' to 10.66 mbgl, overlying 'yellow sand' to 14.93 mbgl, these deposits have been classified as 'drift'. Below the drift deposits are 'shale and sandstone beds' to 60.96 mbgl which overlie 'shale' to 76.20 where the borehole terminated.

## 3.3 HYDROGEOLOGY

These records are derived by Groundsure from Environment Agency and British Geological Survey data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report. Information from these sources referenced in this report have been predominantly limited to those identified within 250 m of the site (or 1000 m of the site for abstractions), in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

The Environment Agency aquifer designations used within the following sections are summarised in Table 3.1, overleaf.

### Aquifer within Superficial Deposits

As a consequence of the superficial geology underlying the site, one aquifer has been identified and designed as Secondary (A).

### Permeability of Superficial Deposits

The minimum and maximum permeability are recorded as being low to high respectively, and the flow type is recorded as mixed.

---

<sup>2</sup> Geology of the Manchester district: a brief explanation of the geological map Sheet 85 Manchester. R. G. Crofts et. al., 2012.

### Aquifer within Bedrock Geology

As a result of the bedrock geology underlying the site, one aquifer has been identified and designated as Secondary (A).

The site is within the Northern Manchester Carboniferous Aquifers water framework directive groundwater body, which had a *poor* overall, *poor* chemical and *good* quantitative rating in 2019.

### Permeability of Bedrock Deposits

The minimum and maximum permeability are recorded as being low to moderate respectively and the flow type is recorded as fracture.

Table 3.1: Aquifer Designations

| Definition                                | Description                                                                                                                                                                                                                                                     |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Principal Aquifer</b>                  | Layers with high intergranular and/or secondary permeability capable of supporting water supplies at strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as Major Aquifers. |
| <b>Secondary (A) Aquifer</b>              | 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.                         |
| <b>Secondary (B) Aquifer</b>              | Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water bearing parts of former Non-Aquifers.            |
| <b>Secondary Undifferentiated Aquifer</b> | Layers that cannot be attributed to a category A or B rock type. These layers could have previously been described as a minor or a non-aquifer due to their variable characteristics.                                                                           |
| <b>Unproductive strata</b>                | Rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.                                                                                                                                      |

### Groundwater Vulnerability

The site is recorded to be located within an area where the EA considers the groundwater within the superficial deposits to have a high vulnerability to mobile pollutants and the groundwater within the bedrock to have a low vulnerability to mobile pollutants, as summarised in Table 3.2 below.

Table 3.2: Groundwater Vulnerability Definitions

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

### Groundwater Abstraction Licences

There are two historical licenced groundwater abstraction points within 500 m of the site, both of which are located 230 m northeast of the site, noted to be in general use relating to secondary category (medium loss).

### Potable Water Abstraction Licences

There are no potable abstractions within 500 m.

### Source Protection Zones

There is no Source Protection Zone within 500 m.

## 3.4 HYDROLOGY

These records are derived by Groundsure from Environment Agency and British Geological Survey data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report. Information from these sources referenced in this report have been predominantly limited to that identified within 250 m of the site (aquifers, surface water) or 1000 m of the site (abstractions), in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

### Ordnance Survey Water Network

There are no entries in the Ordnance Survey Water Network register within 250 m of the site.

### Surface Water Features

There are no major surface water courses within 250 m of the site.

### Water Framework Directive Surface Water Bodies and Catchments

The site is within Roch (Spodden to Irwell) water body catchment, which had a *moderate* overall, *fail* chemical and *moderate* ecological rating in 2019.

### Surface Water Abstraction Licences

There are no licenced surface water abstraction points within 500 m of the site. There are a further six licensed surface water abstraction points between 500 and 2000 m of the site, four at historical and two are active. The active two surface abstraction points are both 1582m to the northeast of the site.

## 3.5 ENVIRONMENTALLY SENSITIVE AREAS

These records are derived by Groundsure from Environment Agency, Natural England, Historic England, English Heritage, Forestry Commission and UK Government data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report.

Information from these sources referenced in this report have been predominantly limited to that identified within 500 m of the site (environmental designations) or 250 m of the site (habitat, visual and cultural designations), in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

### Environmental and Habitat Designations

The site is recorded to be within the Merseyside and Greater Manchester green belt.

There are no other environmental or habitat designations within 250 m of site.

### Visual and Cultural Designations

There are two visual or cultural designations recorded within 250 m of the site, both for listed buildings, the closest of which is 13m to the southwest at Moorgate East Farmhouse and No. 3. Balderstone. The furthest is 60m to the northeast at Burnedge Farmhouse.

## 4. PAST LAND USE AND POTENTIAL CONTAMINANT SOURCES

Information on past land use and potential contaminant sources is presented in a Groundsure Enviro + Geo Insight Report prepared for the site; a copy of this report is reproduced in [Appendix 3](#).

### 4.1 LAND USE RECORDS

These records are derived by Groundsure from historical mapping and each record corresponds to a particular map revision date. Thus, several records may refer to the same feature where it is present over time. Groundsure has in some cases grouped such records in the Enviro + Geo Insight report. Differences in distances quoted from the study site may be due to expansion of the feature over time or geolocation errors.

Information from these sources referenced in this report have been predominantly limited to that identified within 250 m of the site, in order to focus on the information directly relevant to the site. Information from outside this radius will be referenced when deemed relevant.

#### Historical Industrial Land Uses

There are no recorded historical industrial land uses on site. There are five records of potentially contaminative land uses within 100m of the site, which are summarised in Table 4.1 below:

*Table 4.1: Historical Industrial land uses within 100m of the site*

| Distance | Direction | Land Use          | Dates Recorded |
|----------|-----------|-------------------|----------------|
| 11m      | Southwest | Pump              | 1851           |
| 87m      | Southwest | Unspecified Mill  | 1967-1976      |
| 90m      | Southwest | Unspecified Mills | 1954           |
| 91m      | Southwest | Cotton Mill       | 1851           |
| 92m      | Southwest | Unspecified Mills | 1891-1938      |

A further 30 records potentially contaminative land uses are recorded between 100 and 500m of the site. These comprise similar uses to those on site and in addition include uses such as unspecified pit, unspecified ground workings, sandstone quarry, unspecified quarry, unspecified old quarry, unspecified yard, unspecified heap, sand pit, wood yard, tramway sidings, coal pit, unspecified tank, old colliery, unspecified diffused shaft, and unspecified old shaft.

There are likely to be duplicates of the same entry within these records.

#### Historical Tanks

There are seven records of historical tanks within 500 m of the site, the closest of which is an unspecified tank located 124 m southwest of the site.

These are likely to be duplicates of the same entry within these records.

#### Historical Energy Features

There are two records of historical energy features, which are both electrical substations located 125 m southwest of the site, mapped between 1955 and 1987. Due to the distance from the site and the local geology, they are considered to present a very low risk to the site.

### **Historical Petrol Stations**

There are no records of historical petrol stations within 500 m.

### **Historical Garages**

There are no records of historical garages within 500 m.

### **Historical Military Land**

There are no records of historical military land within 500 m.

### **Current or Recent Industrial Land Uses**

There are no records of current or recent industrial land uses within 500 m.

### **Current or Recent Petrol Stations**

There are no records of current or recent petrol stations within 500 m.

### **Electricity Cables**

There are no records of high voltage (HV) underground electricity cables within 500 m.

### **Gas and / or Oil Pipelines**

There are no records of medium- or high-pressure underground gas or oil supply pipelines within 500 m of the site.

### **Railway Infrastructure**

There are no records of railway infrastructure within 500 m.

## **4.2 ENVIRONMENTAL PERMITS, INCIDENTS AND REGISTERS**

These records are derived by Groundsure from local authority, Health and Safety Executive and Environment Agency data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report. Information from these sources referenced in this report have been predominantly limited to that identified within 250 m of the site, in order to focus on the information directly relevant to the site. Information from outside this radius will be referenced when deemed relevant.

### **Sites Determined as Contaminated Land**

There are no records of sites determined as contaminated land under Part 2A of the Environmental Protection Act 1990 within 250 m.

### **Control of Major Accident Hazards (COMAH)**

There are no records within 250 m of the site.

### **Regulated Explosive Sites**

There are no records within 250 m of the site.

### **Planning Hazardous Substances Consents**

There are no records within 250 m of the site.

### **Records of Historic IPC Licensed Activities**

There are no records within 250 m of the site.

### **Records of Part A (1) Licensed Activities**

There are no records within 250 m of the site.

### **Records of Part A (2)/B Licensed Activities and Pollutant Release**

There are no records within 250 m of the site.

### **Records of Radioactive Substance Authorisations**

There are no records within 250 m of the site.

### **Licensed Discharges to Controlled Waters**

There is one record within 250 m of the site, located 158 m west of the site, relating to the discharge of final / treated effluent to Suddon Brook on the 10<sup>th</sup> April 1970.

### **Pollutant release to Surface Waters (Red List)**

There are no records within 250 m of the site.

### **Pollutant Release to Public Sewer**

There are no records within 250 m of the site.

### **List 1 and List 2 Dangerous Substances**

There are no records within 250 m of the site.

### **Substantiated Pollution Incidents**

There are no records within 250 m of the site.

### **Pollution Inventory Substances**

There are no records within 250 m of the site.

### **Pollution Inventory Waste transfers**

There are no records within 250 m of the site.

### **Pollution Inventory Radioactive Waste**

There are no records within 250 m of the site.

## **4.3 WASTE AND LANDFILL**

These records are derived by Groundsure from Environment Agency, British Geological Survey, Ordnance Survey (interpreted by Groundsure) and local authority data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report.

Information from these sources referenced in this report have been predominantly limited to that identified within 500 m of the site (landfills) or 250 m of the site (non-landfill waste operations), in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

### **Active or Recent Landfill**

There are no records within 500 m of the site.

### **Historic Landfill**

There is one record of a historical landfill records within 500 m of the site, the record is located 184m to the west of the site at Burnedge Mill, no other information on the record is available.

### **Non-Landfill Waste Records**

Waste exemptions are made available for certain specified activities considered to pose a low risk to the environment and allowable waste types and quantities are limited. There is one waste exemption records at 283m to the west for use of waste in construction.

## 4.4 MINING, GROUND WORKINGS AND NATURAL CAVITIES

These records are derived by from British Geological Survey, Ordnance Survey (interpreted by Groundsure), Coal Authority, Peter Brett Associates, Johnson Poole and Bloomer, Cheshire Brine Subsidence Compensation Board, British Gypsum, Mining Searches UK, Kaolin and Ball Clay Association and local authority data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report.

Information from these sources referenced in this report have been predominantly limited to that identified within 250 m of the site, in order to focus on the information directly relevant to the site. Information from outside these radii will be referenced when deemed relevant.

### Natural Cavities

There are no records within 250 m of the site.

### Mining Cavities

There are no records within 250 m of the site.

### BritPits Data (Surface and Underground Mineral Workings)

There are two records within 250 m of the site, the closets of which is located 195 m east of the site named Burn Edghe Sand Pit, which is recorded to be ceased. The second record is located 205 m west of the site, which is also recorded to be a ceased sandstone working.

### Historical Mineral Planning Areas

There are no records within 250 m of the site.

### Surface Ground Workings

There are 21 records within 250 m of the site. The closest seven records relate to ponds / reservoirs located between 129 and 136 m southwest of the site, mapped between 1851 and 1967.

### Non-Coal Mining

There are no records within 250 m for brine extraction, gypsum, tin or clay mining.

## 4.5 COAL MINING RISK ASSESSMENT

The site is located within a coal mining reporting area, as such a Coal Authority Consultants Report (CACR) has been commissioned from the Coal Authority. This report is provided in [Appendix 3](#) and summarized below.

### Development High Risk Area

Review of the CA online view indicates that the site is located within a development high risk area.

### Underground Workings

There are seven records within 500 m of the site, the closest of which is located 451m to the southwest of the site, relating to an old colliery, the remaining records are located between 484 and 488 m to the southwest of the site, relating to an unspecified old shaft / unspecified disused shaft.

### Underground Coal Mining

The CACR identifies no past records of underground coal mining.

### Probable Unrecorded Shallow Workings

The site is within an area of probable unrecorded shallow coal workings.

### Spine Roadways at Shallow Depth

There are no records beneath the site.

### Mine Entries (shafts and adits)

The CACR records that there is one mine entry, described as a shaft, located 97 m to the southeast of the site, referenced 392410-001 and grid reference 392069 410395.

### Coal Mining Geology

The CA do not record any faults, fissures or break lines. The Coal Authority map shows a single seam passing through the site.

Based upon the location of the shaft, it is considered that the coal seam(s) are likely to be dipping towards the southeast.

There are two coal outcrops on the site which are summarised in table 4.2 below

Table 4.2: Coal Outcrops

| Seam Name | Mineral | Seam workable | Distance to outcrop (m) | Direction to outcrop (m) | Bearing of outcrop | Dip of outcrop |
|-----------|---------|---------------|-------------------------|--------------------------|--------------------|----------------|
| Arley     | Coal    | Yes           | Within                  | N/A                      | 63                 | N/A            |
| Arley     | Coal    | Yes           | Within                  | N/A                      | 237                | N/A            |

### Surface Mining

The CACR states that there are no opencast mines recorded within 500 m of the site.

### Coal Mining Subsidence

The CA has not received a damage notice or claim for the subject property of any property within 50 m of the enquiry boundary since 31<sup>st</sup> October 1994.

### Mine Gas Emissions

The CACR states that no mine gas is recorded within 500 m of the enquiry boundary.

### Assessment of Site-Specific Coal Mining Risks

Table 4.3 below and overleaf summarises the potential risks associated with coal mining legacy for the proposed development site, identified from the preceding information, as well as information from Section 3.1.

Table 4.3: Coal Mining Risk Assessment

| Coal Mining Issue                                    | Present? |    | Risk Assessment                                                                                       |
|------------------------------------------------------|----------|----|-------------------------------------------------------------------------------------------------------|
|                                                      | Yes      | No |                                                                                                       |
| Underground coal mining (recorded at shallow depths) |          | X  | The mining report indicates no underground mining at a shallow depth at the site.<br><b>Low risk.</b> |

| Coal Mining Issue                                    | Present? |    | Risk Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------|----------|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                      | Yes      | No |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Underground coal mining (probable at shallow depths) | X        |    | The CACR indicates that the site is located within an area of probable unrecorded shallow mining.<br><b>Moderate</b> risk.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Surface Mining (opencast workings)                   |          | X  | No opencast workings are recorded within 500 m of the site.<br><b>Low</b> risk.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Mine Entries (shafts and adits)                      |          | X  | One mine entry record within 97m to the south of the site boundary. This is no considered to be a risk.<br><b>Low</b> risk.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Coal mining geology                                  | X        |    | <p>The Arley Coal seam is inferred to outcrop on-site (CA and BGS map) and to the immediate northwest of the site (BGS map).</p> <p>The BGS memoirs indicate that the Arley Coal seam has been extensively worked across the area of the map sheet (Sheet 85, Manchester).</p> <p>Based on the location of the coal seams, the probably shallow workings are considered likely to have been undertaken as surface excavations rather than underground workings.</p> <p>There has been no record of subsidence recorded within 50 metres of the site boundary since 1994.</p> <p>The structural assessment of the on-site building indicates that no major settlement or subsidence features were identified during the assessment.</p> <p>The proposed development doesn't include any new construction or significantly increase dead loads within the building to be redevelopment.</p> <p>It is understood that the on-site building and surrounding buildings along the line of the coal outcrop have been present since at least 1851.</p> <p><b>Moderate</b> risk.</p> |
| Mine Gas Emissions                                   |          | X  | No record of past mine gas emissions/problems in vicinity of site.<br><b>Low</b> risk.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Recorded coal mining surface hazard                  |          | X  | No hazard identified on site.<br><b>Low</b> risk.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## 4.6 RADON

These records are derived by Groundsure from British Geological Survey and Public Health England data. Details of the source and coverage of specific records are provided in the Enviro + Geo Insight Report. Information from these sources referenced in this report have been predominantly limited to that identified on or within 50 m of the site.

The study site is not located within a Radon Affected Area, as less than 1% of properties are above the Radon Action Level. No radon protection measures are required.

## 4.7 BACKGROUND SOIL CHEMISTRY

Values estimated by BGS for background concentrations of six potentially harmful elements are provided as follows:

- Arsenic: 25-35 mg/kg.
- Lead: 100 mg/kg.
- Bioaccessible lead: 60-120 mg/kg.
- Cadmium: 1.8 mg/kg.
- Chromium: 60-90 mg/kg.
- Nickel: 15-30 mg/kg.

These values are not considered to be elevated with respect to guideline values for a 'Residential with Homegrown Produce' end-use.

## 5. HISTORICAL MAPPING STUDY

### 5.1 HISTORICAL MAPPING

The object of this search was to report on the evidence of site history and redevelopment of the site and its environs from available County Series and Ordnance Survey Maps at scales ranging from 1:1,250 to 1:10,560 dating from 1851 to the present day, and Getmapping PLC aerial photography dating from the 2000 to the recent past, as provided by Groundsure.

Information in the historical mapping study has been predominantly limited to that identified on the site or within 100m of the site, in order to focus on the information directly relevant to the site. Information from outside this radius will be referenced when deemed relevant.

Each map or photographs only represents a “snap-shot” of the site and its environs at the date of the survey. Changes that had occurred at other times may not have been recorded on the maps and could represent an unidentified hazard to the site.

The information reported might not represent all pertinent information that could be obtained. The interpretation of the maps and/or other data commented on in this report is subjective.

The Historical Ordnance Survey Maps were obtained from Groundsure and are available for review within [Appendix 4](#) and are summarised in Table 5.1 below.

*Table 5.1: Historical Mapping Review*

| Date      | Scale    | On-Site                                                                                                                | Offsite                                                                                                                                                                                                                                                                                                                |
|-----------|----------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1851      | 1:10,560 | The site boundary appears to miss located.<br><br>A building is present to the immediate west of Broad Lane.           | Buildings are present to the immediate northeast and southwest of the site.<br><br>A pump is recorded approximately 10 m south of the site.<br><br>There is a cotton mill approximately 95m to the southwest of the site.<br><br>The surrounding land generally comprises undeveloped land and residential properties. |
| 1890-1891 | 1:2,500  | A cluster of five buildings are present in the south of the site. The remainder of the site appears to be undeveloped. | The buildings to the immediate northeast of the site are no longer shown.                                                                                                                                                                                                                                              |
| 1891      | 1:10,560 | No significant change from the previous map.                                                                           | No significant change from the previous map.                                                                                                                                                                                                                                                                           |
| 1907-1908 | 1:10,560 | A building is present in the north centre of the site.                                                                 | There is a rectangular feature (possible mine shaft) is located approximately 95m southeast of the site.<br><br>A pond is present approximately 50m to the north of the site.                                                                                                                                          |
| 1910      | 1:2,500  | No significant change from the previous map.                                                                           | No significant change from the previous map.                                                                                                                                                                                                                                                                           |
| 1928      | 1:10,560 | There is no significant change compared to the previous map                                                            | A spring is recorded approximately 20 m north of the site                                                                                                                                                                                                                                                              |
| 1930      | 1:2,500  | A building is present in the northeast of the site.                                                                    | No significant change from the previous map.                                                                                                                                                                                                                                                                           |
| 1936-1937 | 1:2,500  | No significant change from the previous map.                                                                           | The possible mine shaft is no longer present.                                                                                                                                                                                                                                                                          |

| Date      | Scale    | On-Site                                                                                                                    | Offsite                                                                                                                              |
|-----------|----------|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1938      | 1:10,560 | No significant change from the previous map.                                                                               | No significant change from the previous map.                                                                                         |
| 1954-1956 | 1:10,560 | No significant change from the previous map.                                                                               | No significant change from the previous map.                                                                                         |
| 1966-1967 | 1:10,560 | The buildings in the north of the site appear to have been combined.                                                       | The spring is no longer shown.<br>A building is present to the immediate northeast of the site.                                      |
| 1974-1976 | 1:10,000 | A new building has been built at the across the northern end of the site.                                                  | A well is marked approximately 100m to the east, the two reservoirs approximately 150m to the east are no longer present on the map. |
| 1987-1992 | 1:1,250  | Two buildings are shown in the northwest of the site.<br>The buildings in the northeast of the site are no longer present. | There is no significant change compared to the previous map                                                                          |
| 2001      | 1:10,000 | No significant change from the previous map.                                                                               | No significant change from the previous map.                                                                                         |
| 2003      | 1:1,250  | No significant change from the previous map.                                                                               | No significant change from the previous map.                                                                                         |
| 2010      | 1:10,000 | No significant change from the previous map.                                                                               | No significant change from the previous map.                                                                                         |
| 2022      | 1:10,000 | No significant change from the previous map.                                                                               | No significant change from the previous map.                                                                                         |

## 5.2 AERIAL PHOTOGRAPHY

### 2000 Aerial Photo

The 2000 aerial photo is generally unclear; however, buildings are recorded in the southeast and northwest of the site. Agricultural land is present to the immediate northwest and southeast of the site, while residential properties / farm buildings are present to the northeast and southwest of the site.

### 2011 Aerial Photo

The 2011 aerial photograph is generally clear and show no significant change on-site or within the surrounding area compared to the previous photograph.

### 2018 Aerial Photo

The 2018 aerial photograph is generally clear and show no significant change on-site or within the surrounding area compared to the previous photograph.

### Recent Aerial Photograph:

Recent aerial photography shows no significant change on-site or within the surrounding area compared to the previous photograph.

The aerial photographs are included in the Groundsure Enviro + Geo Insight Report and are available for review within [Appendix 4](#).

## 5.3 SUMMARY

Review of available historical ordinance surveys maps indicates that buildings have been present in the southeast of the site from at least 1851, with various other buildings constructed and demolished across the site until the early 1990s, after which no significant changes were noted on-site.

The area to the northeast and southwest of the site has variably been developed with properties from at least 1851, while the land to the northwest and southeast of the site has been undeveloped since at least 1851.

## 6. FRAMEWORK FOR ASSESSMENT OF CONTAMINATION

---

Environmental risks are assessed within the risk management framework established in Part IIA of the Environmental Protection Act (EPA) 1990 introduced by Section 57 of the Environment Act 1995 which provides a statutory definition of contaminated land. To fall within this definition it is necessary that, as a result of the condition of the land, substances may be present on or under the land such that:

*(a) Significant harm is being caused or there is a significant possibility of such harm being caused.*

or

*(b) Pollution of controlled water is being, or is likely to be, caused.*

Risk from contamination is assessed by consideration of possible linkages between contaminant sources and potential receptors which could be harmed or polluted.

The key aspect of the framework is the development of a Conceptual Site Model (CSM) which illustrates the spatial interaction between the potential sources and receptors on site.

The information presented in this report was collated and evaluated to develop an initial CSM to assess ground contamination issues at the site.

For a risk of pollution or environmental harm to occur as a result of ground contamination, **all** of the following elements must be present:

- A source, i.e., a substance that is capable of causing pollution or harm.
- A receptor, i.e., something which could be adversely affected by the contaminant.
- A pathway, i.e., a route by which the contaminant can reach the receptor.

If one of these elements is absent there can be no significant risk. If all are present then the magnitude of the risk is a function of the magnitude and mobility of the source, the sensitivity of the receptor and the nature of the migration pathway.

Potential sources, pathways and receptors are identified in the sections below and the risks associated with possible pollutant linkages outlined.

### 6.1 SOURCES

#### On-Site Sources

The following possible on-site sources have been identified from the historical study and the Enviro + Geo Insight:

- Historical Made Ground (associated with historical construction / demolition activities and probable shallow surface coal workings).

The following contaminants are potentially associated with the on-site sources:

- Heavy Metals and Metalloids
- Inorganics
- PAH
- TPH
- Asbestos

- Ground Gas

### Offsite Sources

There are potential offsite sources of contamination entries present, but these are considered far enough from the site to pose no risk, based on distance and topography of the area.

## 6.2 PATHWAYS

For contaminants to reach potential receptors, there must be a viable **pathway** for the contaminant. Potential pathways that may affect the migration of contaminants are listed in Table 6.1, below.

Table 6.1: Pathways

| Pathway                                                            | Medium                       | Properties                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Direct Contact</b>                                              | Dust, solid and liquid phase | There may be direct contact with potentially impacted soil and Made Ground across the site. There is a possibility of dust fumes being produced during earthworks in the construction phase. Dermal contact and ingestion of potentially contaminated soils during construction or operational phase of the site. |
| <b>Leaching through Made Ground</b>                                | Unsaturated flow             | Potential for leaching and migration of potential contaminants along preferential flow paths in the ground.                                                                                                                                                                                                       |
| <b>Foundations and Underground Infrastructure and Obstructions</b> | Preferential flow            | Contaminants will flow the path of least resistance which can be gaps around foundations, services, and floor construction                                                                                                                                                                                        |
| <b>Migration of Ground Gas and Radon</b>                           | Gaseous flow                 | Infilled land material is likely to be variable in composition. Migration through granular material within superficial deposits is possible.                                                                                                                                                                      |

## 6.3 RECEPTORS

The site-specific **receptors** that could be potentially affected by the contamination hazards identified during this preliminary appraisal are summarised in Table 6.2, below.

Table 6.2: Receptors

| Category                                | Receptor                                                   | Properties                                                                                                                                                                      |
|-----------------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Humans                                  | End users (such as residents and visitors)                 | Potential contact with contaminated soils is likely limited given the commercial end use planned.<br>Potential contact with ground gas within enclosed buildings                |
|                                         | Construction workers                                       | Reworking of contaminant impacted materials in underlying soil during construction works can expose workers to contamination.                                                   |
| Property                                | Materials and site structures                              | Foundations and site services may be damaged by potentially aggressive compounds present in soils.                                                                              |
| Controlled Waters                       | Underlying superficial / bedrock Aquifer and surface water | The site is recorded as having a Secondary (A) Aquifer within the superficial deposits and bedrock underlying the site.                                                         |
| Plant (species and uptake) and Wildlife | Various                                                    | Attributes will be influenced by factors such as relative quality, scale, rarity and substitutability; however, it is understood that the site is proposed to be hard surfaced. |

## 7. QUALITATIVE RISK ASSESSMENT

---

Potential pollutant linkages are identified using the source-pathway-receptor framework detailed above. An assessment of the potential significance of each linkage is then made by consideration of the likely magnitude and mobility of the source, the sensitivity of the receptor and nature of the migration/exposure pathways.

This qualitative risk assessment has been undertaken in accordance with Annex 4 of the National House Building Council/Environment Agency/Chartered Institute of Environmental Health R&D publication 66, Guidance for the Safe Development of Housing on Land Affected by Contamination (NHBC/EA/CIEH, 2008) which updates and supersedes CIRIA C552: Contaminated Land Risk Assessment, A Guide to Good Practice (Rudland et al., 2001).

A summary of the risk assessment protocols, and subsequent risk assessment matrix is provided in **Appendix 5**.

An assessment of the likelihood of the risk being realised and the magnitude of potential risk is presented below to give an estimation of the significance of each potential pollutant linkage identified. Where it is considered that there is no credible linkage, this is indicated in the table. In accordance with the R&D66 guidance, if there is no pollution linkage then there is no need to apply tests for probability and consequence.

The assessment is undertaken based on the current proposals for the site, at the time of issuing this report, which would be classed as a generic end land use of 'Residential with Homegrown Produce' Any change in the development proposals for the site involving a change in end use class may result in a requirement for this assessment to be revised.

## 8. PRELIMINARY CONCEPTUAL SITE MODEL

| Contaminant Source                                                                                                      | Pathways                                                                   | Receptor                                                   | Pollutant Linkage             | Classification of Probability | Classification of Consequence | Level of Risk | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| On-Site:<br>Made Ground soils on site possibly containing elevated metals, other organics such as TPH, PAH and phenols. | Ingestion, dermal contact, inhalation of dusts/vapours                     | Future end users and site visitors                         | Considered potentially active | Unlikely                      | Mild                          | Very low<br>● | Made Ground may be present associated with historic construction / demolition activities, along with potential shallow coal mining activities.<br><br>Contact is likely limited between future occupiers/visitors and contaminants due to the Residential end use.                                                                                                                                                                               |
|                                                                                                                         |                                                                            | Construction Workers                                       | Considered potentially active | Low Likelihood                | Mild                          | Low<br>●      | Construction workers are likely to come into direct contact with soils during groundworks. Safe working practices should be implemented, and appropriate personal protective equipment (PPE) should be used to mitigate any potential risk from contact with soils and shallow/perched groundwater.<br><br>The proposed development comprises the redevelopment on an existing building, so excavation of shallow soils is likely to be limited. |
|                                                                                                                         | Leaching through soils and migration via groundwater or soil pore moisture | Controlled Waters                                          | Considered potentially active | Low Likelihood                | Mild                          | Low<br>●      | Secondary (A) Aquifers are recorded within the superficial and bedrock deposits.<br><br>Cohesive bands within the superficial deposits are likely to limit the vertical migration of contaminants.<br><br>The site is currently floored by various hardstanding, limiting the vertical migration of contaminants.                                                                                                                                |
|                                                                                                                         | Permeation of water pipes                                                  | Construction materials, future end users and site visitors | Considered potentially active | Unlikely                      | Mild                          | Very low<br>● | Hydrocarbons, especially aromatics are known to permeate plastic pipes. Provision of water supply pipes and connectors formed from proprietary "barrier pipe" materials (e.g., polyethylene-aluminium-polyethylene) may be required by the water supply company.                                                                                                                                                                                 |
|                                                                                                                         | Uptake                                                                     | Plant and Wildlife                                         | Considered potentially active | Low Likelihood                | Mild                          | Low<br>●      | A low risk rating has been assessed due to the limited history of potentially contaminative land uses on site. Contact is likely limited between future occupiers/visitors                                                                                                                                                                                                                                                                       |

| Contaminant Source                                                                                                                     | Pathways                                                                   | Receptor                                  | Pollutant Linkage             | Classification of Probability | Classification of Consequence | Level of Risk | Justification                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                        |                                                                            |                                           |                               |                               |                               |               | and contaminants due to the Residential with Homegrown Produce end use.                                                                                                                                                                                                       |
| On-Site:<br>Asbestos at/near ground surface in Made Ground soils.                                                                      | Inhalation of fibres in airborne dust                                      | Future end users and site visitors        | Considered potentially active | Low Likelihood                | Mild                          | Low<br>●      | Made Ground may be present associated with historic construction / demolition activities, along with potential shallow coal mining activities.<br><br>Contact is likely limited between future occupiers/visitors and contaminants due to the Residential end use.            |
|                                                                                                                                        |                                                                            | Construction Workers                      | Considered potentially active | Low Likelihood                | Mild                          | Low<br>●      | It is understood possible ACM are present within the roof of the existing barn.<br><br>The proposed development comprises the redevelopment on an existing building, so excavation of shallow soils is likely to be limited.                                                  |
| On-Site:<br>Ground Gases (CH <sub>4</sub> , CO <sub>2</sub> , CO, H <sub>2</sub> S) from on-site Made Ground.                          | Gas migration and build up within buildings (explosion/asphyxiation risk)  | Future end users and building structures. | Considered potentially active | Low Likelihood                | Mild                          | Low<br>●      | Current guidance indicates that Made Ground is generally classified as low risk in terms of potential for gas generation.<br><br>The risk to the site will be re-assessed in accordance with CL:AIRE RB17 and associated guidance on completion of the ground investigation.. |
| Offsite:<br>Historical land uses and activities, Made Ground/infill ed material possibly containing elevated metals, other inorganics, | Leaching through soils and migration via groundwater or soil pore moisture | Future end users and site visitors        | Considered inactive           | -                             | -                             | Very low<br>● | No source identified.                                                                                                                                                                                                                                                         |
|                                                                                                                                        | Ingestion, dermal contact, inhalation of dusts/vapours                     | Future end users and site visitors        | Considered inactive           | -                             | -                             | Very low<br>● | No source identified.                                                                                                                                                                                                                                                         |

| Contaminant Source                                                                                                                   | Pathways                                                                  | Receptor                                  | Pollutant Linkage   | Classification of Probability | Classification of Consequence | Level of Risk | Justification         |
|--------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------|---------------------|-------------------------------|-------------------------------|---------------|-----------------------|
| TPH, PAH, and phenols.                                                                                                               |                                                                           |                                           |                     |                               |                               |               |                       |
| Offsite:<br>Ground Gases (CH <sub>4</sub> , CO <sub>2</sub> , CO, H <sub>2</sub> S) from off-site historical landfilling activities. | Gas migration and build up within buildings (explosion/asphyxiation risk) | Future end users and building structures. | Considered inactive | -                             | -                             | Very low<br>● | No source identified. |

## 9. RECOMMENDATIONS

### 9.1 PROPOSED SITE INVESTIGATION

Based on the information obtained for the formation of this report it is recommended that a suitable Phase II environmental ground investigation is carried out at the site to establish the presence of any contamination at the site.

The intrusive investigation may reveal on-site sources of contamination that were not established by the Phase I Desk Study, thus requiring modification of the conceptual site model.

The proposed scope of investigation is outlined below.

#### Scope of Proposed Investigation

A service search should be completed prior to any subsequent investigation to determine the service locations by lifting any manhole/drain covers; therefore, locations may be subject to change depending upon these results.

The Phase II Investigation should be undertaken within any areas proposed to be converted to soft landscaping, to confirm the ground conditions present and assess their chemical suitability for re-use on-site.

The ground investigation should incorporate initially the drilling of window sampler boreholes on each corner of the existing building to enable adequate analysis of the soil conditions. This will be completed to a maximum depth of 4-5 m below ground level (mbgl), or refusal, or where groundwater is encountered. In addition, a series of hand dug pits, excavated to a minimum depth of 0.60 mbgl, should be undertaken within areas of proposed soft landscaping, to allow confirm the suitability for use within garden areas.

As part of the investigation, it is recommended to install at least three ground gas and groundwater monitoring standpipes.

On completion of the ground investigation the ground conditions will be assessed in line with CL:AIRE RB17, if a risk is present, it is considered that six return gas and groundwater monitoring visits over a period of three months, in accordance with CIRIA C665 would be required to determine and monitor concentrations of ground gases and levels of groundwater on site.

All positions should be logged, and samples removed in accordance with current protocol for environmental testing to assess any potential contaminative land on the site. In addition, groundwater conditions, if encountered, shall be logged and visual/olfactory observations noted.

We would recommend that the test locations be based on the findings contained with this report, to enable a combination of targeted testing along with a broad coverage of the site.

#### Testing Regime

The testing regime has been devised in accordance with BS10175:2017 Guidelines for the Code of Practice for Contaminated Land and CLR Report No. 4 Sampling Strategies. The objective at this stage of the report is to attempt to identify the extent of any possible contamination that may exist at the site by using intrusive soil sampling and testing techniques.

#### Laboratory Analysis

An appropriate and consistent analytical suite of contaminants should be applied to any soil samples retrieved from the site.

Based on the findings contained within this report, we would recommend that a comprehensive range of testing should be undertaken to comprise of heavy metals, metalloids, inorganics, speciated Total Petroleum Hydrocarbons (TPH CWG Aromatic/aliphatic split) and speciated Polycyclic Aromatic Hydrocarbons (PAH) including the more carcinogenic benzo(a)pyrene (BaP) and naphthalene, soil organic matter (SOM) content, pH and sulphates and Asbestos.

In addition, if Made Ground is encountered, selected samples retrieved from the Made Ground should be submitted for testing to determine the presence, or otherwise, of Asbestos.

It should be noted that not all samples retrieved from the proposed investigative works will be laboratory analysed and a UKAS and MCERTS accredited laboratory testing organisation should carry out all analysis.

### **Guidance**

The results from the proposed ground investigation shall be compared against standards, such as the revised LQM/CIEH S4UL criteria<sup>3</sup> where available.

Groundwater analysis, if encountered, would be compared against the Drinking Water Standards (DWS) or Environmental Quality Standards (EQS) for the United Kingdom (UK).

## **9.2 CONSULTEEES**

It is highly recommended that this report be forwarded to the relevant Local Authority Environmental Health and Planning Departments to seek their comments and subsequent approval, otherwise further works may be required.

## **9.3 FLOOD RISK ASSESSMENT**

This report does not replace a full hydrogeological survey and specialist studies may need to be undertaken to ascertain the risks posed from flooding. Further details on site flood information can be found within the appendices.

## **9.4 COAL MINING RISK ASSESSMENT**

The Coal Mining Risk Assessment undertaken within this report has identified a moderate risk to the site from underground coal mining (probable at shallow depth) and coal mining geology.

The proposed window sampler boreholes will allow the assessment of the shallow ground conditions and confirm the presence or absence of the Arley Coal seam beneath the site.

On completion of the ground investigation, the Coal Mining Risk Assessment should be re-assessed.

## **9.5 INVASIVE PLANT SURVEY**

Any concerns relating to the possible presence of invasive plants should be undertaken by an appropriately qualified surveyor.

---

<sup>3</sup> Nathanail et al. (2015) The LQM/CIEH S4ULs for Human Health Risk Assessment. Land Quality Press, 2015. Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3495

## 9.6 ASBESTOS SURVEY

Any concerns relating to the possible presence of Asbestos or Asbestos Containing Material (ACM) should be undertaken by an appropriately qualified surveyor. GES would recommend that this be completed due to the potential presence of Asbestos on the site.

## 10. RELIANCE AND LIMITATIONS

---

This report has been prepared by GES with all reasonable skill, care and diligence. The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources, together with a site walkover inspection of the site.

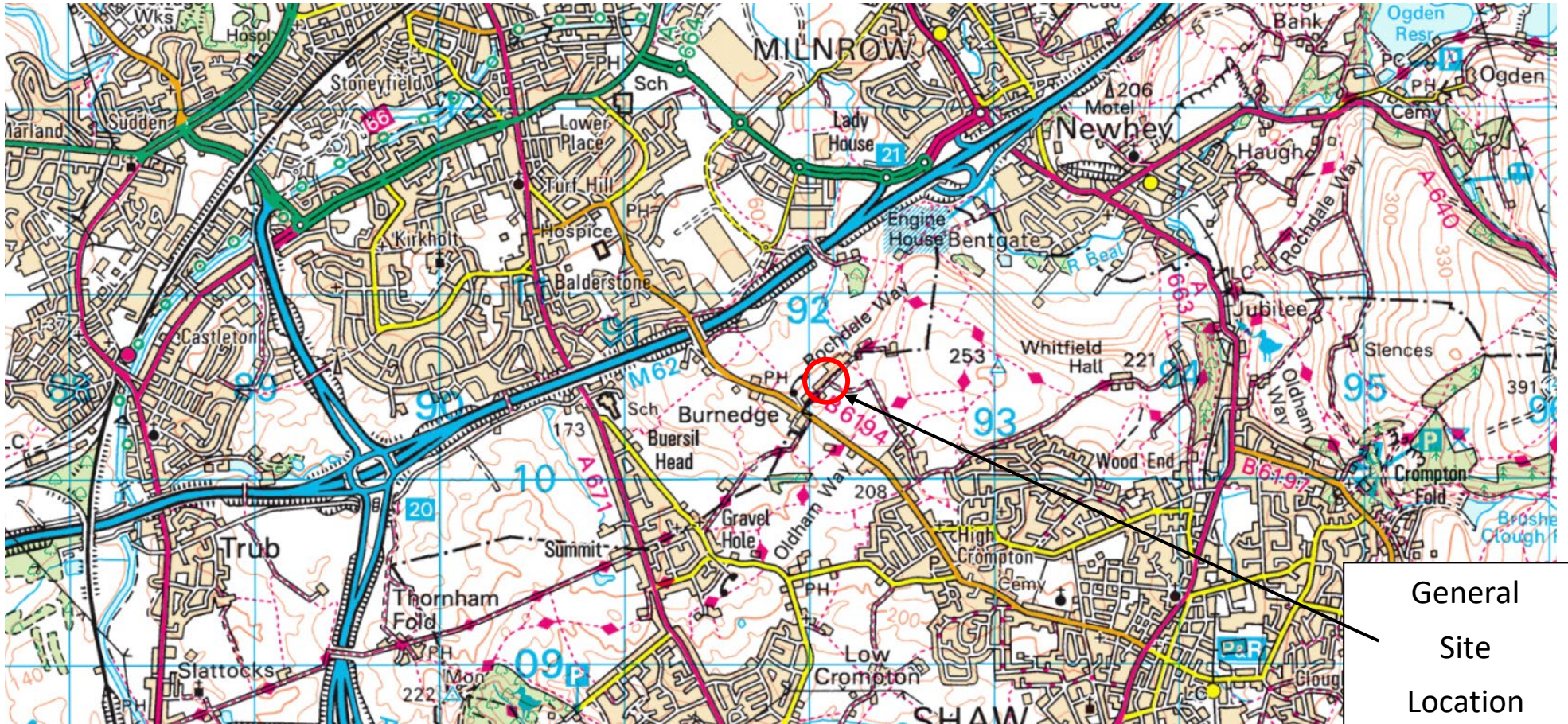
The opinions given in this report have been dictated by the finite data on which are they based and are relevant only to the purpose for which the report was commissioned.

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

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site. This is an environmental Phase 1 report and does not consider the geotechnical implications for the site, its redevelopment and proposed future use. Further advice should be sought on geotechnical investigation requirements for the proposed development.



APPENDIX 1  
DRAWINGS AND PLANS



General  
Site  
Location



GeoEnviro Solutions Ltd  
Unit 7 Springvale Works  
Brighouse  
West Yorkshire  
HD6 2RA  
Tel: 01484 986010  
Email: [info@geoenvirosolutions.com](mailto:info@geoenvirosolutions.com)  
Web: [www.geoenvirosolutions.com](http://www.geoenvirosolutions.com)



|                       |                              |
|-----------------------|------------------------------|
| <b>PROJECT NAME</b>   | Moorgate Farm East, Rochdale |
| <b>PROJECT NUMBER</b> | 2466-22                      |
| <b>TITLE</b>          | Site Location Plan           |

|                    |            |
|--------------------|------------|
| <b>DRAWING NO.</b> | 2246-22/01 |
|--------------------|------------|

|              |       |
|--------------|-------|
| <b>SCALE</b> | N.T.S |
|--------------|-------|

|             |                |
|-------------|----------------|
| <b>DATE</b> | September 2022 |
|-------------|----------------|

|                 |    |
|-----------------|----|
| <b>DRAWN BY</b> | LW |
|-----------------|----|

## APPENDIX 2

### GROUNDSURE ENVIRO + GEO INSIGHT REPORT

**MOORGATE EAST FARM, BROAD LANE, ROCHDALE, OL16 4QL****Order Details****Date:** 28/09/2022**Your ref:** 2466-22**Our Ref:** GS-9085007**Site Details****Location:** 392001 410452**Area:** 0.1 ha**Authority:** [Rochdale Metropolitan Borough Council](#),  
[Oldham Metropolitan Borough Council](#)**Summary of findings**

p. 2

**Aerial image**

p. 8

**OS MasterMap site plan**

p.12

[groundsure.com/insightuserguide](https://groundsure.com/insightuserguide)

Contact us with any questions at:

[info@groundsure.com](mailto:info@groundsure.com)

08444 159 000

## Summary of findings

| Page             | Section           | Past land use                                      | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
|------------------|-------------------|----------------------------------------------------|---------|-------|---------|----------|-----------|
| <b><u>13</u></b> | <b><u>1.1</u></b> | <b><u>Historical industrial land uses</u></b>      | 0       | 1     | 18      | 16       | -         |
| <b><u>15</u></b> | <b><u>1.2</u></b> | <b><u>Historical tanks</u></b>                     | 0       | 0     | 1       | 6        | -         |
| <b><u>16</u></b> | <b><u>1.3</u></b> | <b><u>Historical energy features</u></b>           | 0       | 0     | 2       | 0        | -         |
| 16               | 1.4               | Historical petrol stations                         | 0       | 0     | 0       | 0        | -         |
| 16               | 1.5               | Historical garages                                 | 0       | 0     | 0       | 0        | -         |
| 17               | 1.6               | Historical military land                           | 0       | 0     | 0       | 0        | -         |
| Page             | Section           | Past land use - un-grouped                         | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| <b><u>18</u></b> | <b><u>2.1</u></b> | <b><u>Historical industrial land uses</u></b>      | 0       | 1     | 27      | 25       | -         |
| <b><u>20</u></b> | <b><u>2.2</u></b> | <b><u>Historical tanks</u></b>                     | 0       | 0     | 3       | 13       | -         |
| <b><u>21</u></b> | <b><u>2.3</u></b> | <b><u>Historical energy features</u></b>           | 0       | 0     | 4       | 0        | -         |
| 22               | 2.4               | Historical petrol stations                         | 0       | 0     | 0       | 0        | -         |
| 22               | 2.5               | Historical garages                                 | 0       | 0     | 0       | 0        | -         |
| Page             | Section           | Waste and landfill                                 | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| 23               | 3.1               | Active or recent landfill                          | 0       | 0     | 0       | 0        | -         |
| 23               | 3.2               | Historical landfill (BGS records)                  | 0       | 0     | 0       | 0        | -         |
| 24               | 3.3               | Historical landfill (LA/mapping records)           | 0       | 0     | 0       | 0        | -         |
| <b><u>24</u></b> | <b><u>3.4</u></b> | <b><u>Historical landfill (EA/NRW records)</u></b> | 0       | 0     | 1       | 0        | -         |
| 24               | 3.5               | Historical waste sites                             | 0       | 0     | 0       | 0        | -         |
| 24               | 3.6               | Licensed waste sites                               | 0       | 0     | 0       | 0        | -         |
| <b><u>25</u></b> | <b><u>3.7</u></b> | <b><u>Waste exemptions</u></b>                     | 0       | 0     | 0       | 1        | -         |
| Page             | Section           | Current industrial land use                        | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
| 26               | 4.1               | Recent industrial land uses                        | 0       | 0     | 0       | -        | -         |
| 26               | 4.2               | Current or recent petrol stations                  | 0       | 0     | 0       | 0        | -         |
| 27               | 4.3               | Electricity cables                                 | 0       | 0     | 0       | 0        | -         |
| 27               | 4.4               | Gas pipelines                                      | 0       | 0     | 0       | 0        | -         |
| 27               | 4.5               | Sites determined as Contaminated Land              | 0       | 0     | 0       | 0        | -         |



| 27        | 4.6         | Control of Major Accident Hazards (COMAH)              | 0                        | 0     | 0       | 0        | -         |
|-----------|-------------|--------------------------------------------------------|--------------------------|-------|---------|----------|-----------|
| 27        | 4.7         | Regulated explosive sites                              | 0                        | 0     | 0       | 0        | -         |
| 28        | 4.8         | Hazardous substance storage/usage                      | 0                        | 0     | 0       | 0        | -         |
| 28        | 4.9         | Historical licensed industrial activities (IPC)        | 0                        | 0     | 0       | 0        | -         |
| 28        | 4.10        | Licensed industrial activities (Part A(1))             | 0                        | 0     | 0       | 0        | -         |
| 28        | 4.11        | Licensed pollutant release (Part A(2)/B)               | 0                        | 0     | 0       | 0        | -         |
| 28        | 4.12        | Radioactive Substance Authorisations                   | 0                        | 0     | 0       | 0        | -         |
| <b>29</b> | <b>4.13</b> | <b><u>Licensed Discharges to controlled waters</u></b> | 0                        | 0     | 1       | 0        | -         |
| 29        | 4.14        | Pollutant release to surface waters (Red List)         | 0                        | 0     | 0       | 0        | -         |
| 29        | 4.15        | Pollutant release to public sewer                      | 0                        | 0     | 0       | 0        | -         |
| 29        | 4.16        | List 1 Dangerous Substances                            | 0                        | 0     | 0       | 0        | -         |
| 30        | 4.17        | List 2 Dangerous Substances                            | 0                        | 0     | 0       | 0        | -         |
| <b>30</b> | <b>4.18</b> | <b><u>Pollution Incidents (EA/NRW)</u></b>             | 0                        | 0     | 0       | 2        | -         |
| 30        | 4.19        | Pollution inventory substances                         | 0                        | 0     | 0       | 0        | -         |
| 31        | 4.20        | Pollution inventory waste transfers                    | 0                        | 0     | 0       | 0        | -         |
| 31        | 4.21        | Pollution inventory radioactive waste                  | 0                        | 0     | 0       | 0        | -         |
| Page      | Section     | Hydrogeology                                           | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
| <b>32</b> | <b>5.1</b>  | <b><u>Superficial aquifer</u></b>                      | Identified (within 500m) |       |         |          |           |
| <b>34</b> | <b>5.2</b>  | <b><u>Bedrock aquifer</u></b>                          | Identified (within 500m) |       |         |          |           |
| <b>36</b> | <b>5.3</b>  | <b><u>Groundwater vulnerability</u></b>                | Identified (within 50m)  |       |         |          |           |
| 37        | 5.4         | Groundwater vulnerability- soluble rock risk           | None (within 0m)         |       |         |          |           |
| 37        | 5.5         | Groundwater vulnerability- local information           | None (within 0m)         |       |         |          |           |
| <b>38</b> | <b>5.6</b>  | <b><u>Groundwater abstractions</u></b>                 | 0                        | 0     | 2       | 0        | 7         |
| <b>41</b> | <b>5.7</b>  | <b><u>Surface water abstractions</u></b>               | 0                        | 0     | 0       | 0        | 6         |
| 43        | 5.8         | Potable abstractions                                   | 0                        | 0     | 0       | 0        | 0         |
| 43        | 5.9         | Source Protection Zones                                | 0                        | 0     | 0       | 0        | -         |
| 43        | 5.10        | Source Protection Zones (confined aquifer)             | 0                        | 0     | 0       | 0        | -         |
| Page      | Section     | Hydrology                                              | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
| 44        | 6.1         | Water Network (OS MasterMap)                           | 0                        | 0     | 0       | -        | -         |



| 44        | 6.2          | Surface water features                          | 0                                      | 0     | 0       | -        | -         |
|-----------|--------------|-------------------------------------------------|----------------------------------------|-------|---------|----------|-----------|
| <b>45</b> | <b>6.3</b>   | <b><u>WFD Surface water body catchments</u></b> | 1                                      | -     | -       | -        | -         |
| <b>45</b> | <b>6.4</b>   | <b><u>WFD Surface water bodies</u></b>          | 0                                      | 0     | 0       | -        | -         |
| <b>46</b> | <b>6.5</b>   | <b><u>WFD Groundwater bodies</u></b>            | 1                                      | -     | -       | -        | -         |
| Page      | Section      | River and coastal flooding                      | On site                                | 0-50m | 50-250m | 250-500m | 500-2000m |
| 47        | 7.1          | Risk of flooding from rivers and the sea        | None (within 50m)                      |       |         |          |           |
| 47        | 7.2          | Historical Flood Events                         | 0                                      | 0     | 0       | -        | -         |
| 47        | 7.3          | Flood Defences                                  | 0                                      | 0     | 0       | -        | -         |
| 48        | 7.4          | Areas Benefiting from Flood Defences            | 0                                      | 0     | 0       | -        | -         |
| 48        | 7.5          | Flood Storage Areas                             | 0                                      | 0     | 0       | -        | -         |
| 49        | 7.6          | Flood Zone 2                                    | None (within 50m)                      |       |         |          |           |
| 49        | 7.7          | Flood Zone 3                                    | None (within 50m)                      |       |         |          |           |
| Page      | Section      | Surface water flooding                          |                                        |       |         |          |           |
| <b>50</b> | <b>8.1</b>   | <b><u>Surface water flooding</u></b>            | 1 in 30 year, 0.1m - 0.3m (within 50m) |       |         |          |           |
| Page      | Section      | Groundwater flooding                            |                                        |       |         |          |           |
| <b>52</b> | <b>9.1</b>   | <b><u>Groundwater flooding</u></b>              | Low (within 50m)                       |       |         |          |           |
| Page      | Section      | Environmental designations                      | On site                                | 0-50m | 50-250m | 250-500m | 500-2000m |
| 53        | 10.1         | Sites of Special Scientific Interest (SSSI)     | 0                                      | 0     | 0       | 0        | 0         |
| 54        | 10.2         | Conserved wetland sites (Ramsar sites)          | 0                                      | 0     | 0       | 0        | 0         |
| 54        | 10.3         | Special Areas of Conservation (SAC)             | 0                                      | 0     | 0       | 0        | 0         |
| 54        | 10.4         | Special Protection Areas (SPA)                  | 0                                      | 0     | 0       | 0        | 0         |
| 54        | 10.5         | National Nature Reserves (NNR)                  | 0                                      | 0     | 0       | 0        | 0         |
| 55        | 10.6         | Local Nature Reserves (LNR)                     | 0                                      | 0     | 0       | 0        | 0         |
| 55        | 10.7         | Designated Ancient Woodland                     | 0                                      | 0     | 0       | 0        | 0         |
| 55        | 10.8         | Biosphere Reserves                              | 0                                      | 0     | 0       | 0        | 0         |
| 55        | 10.9         | Forest Parks                                    | 0                                      | 0     | 0       | 0        | 0         |
| 56        | 10.10        | Marine Conservation Zones                       | 0                                      | 0     | 0       | 0        | 0         |
| <b>56</b> | <b>10.11</b> | <b><u>Green Belt</u></b>                        | 1                                      | 1     | 0       | 0        | 3         |
| 56        | 10.12        | Proposed Ramsar sites                           | 0                                      | 0     | 0       | 0        | 0         |



| 56        | 10.13        | Possible Special Areas of Conservation (pSAC)  | 0                        | 0        | 0        | 0        | 0         |
|-----------|--------------|------------------------------------------------|--------------------------|----------|----------|----------|-----------|
| 57        | 10.14        | Potential Special Protection Areas (pSPA)      | 0                        | 0        | 0        | 0        | 0         |
| 57        | 10.15        | Nitrate Sensitive Areas                        | 0                        | 0        | 0        | 0        | 0         |
| <b>57</b> | <b>10.16</b> | <b><u>Nitrate Vulnerable Zones</u></b>         | 0                        | 0        | 0        | 0        | <b>1</b>  |
| <b>58</b> | <b>10.17</b> | <b><u>SSSI Impact Risk Zones</u></b>           | <b>1</b>                 | -        | -        | -        | -         |
| 59        | 10.18        | SSSI Units                                     | 0                        | 0        | 0        | 0        | 0         |
| Page      | Section      | Visual and cultural designations               | On site                  | 0-50m    | 50-250m  | 250-500m | 500-2000m |
| 60        | 11.1         | World Heritage Sites                           | 0                        | 0        | 0        | -        | -         |
| 61        | 11.2         | Area of Outstanding Natural Beauty             | 0                        | 0        | 0        | -        | -         |
| 61        | 11.3         | National Parks                                 | 0                        | 0        | 0        | -        | -         |
| <b>61</b> | <b>11.4</b>  | <b><u>Listed Buildings</u></b>                 | 0                        | <b>1</b> | <b>1</b> | -        | -         |
| 62        | 11.5         | Conservation Areas                             | 0                        | 0        | 0        | -        | -         |
| 62        | 11.6         | Scheduled Ancient Monuments                    | 0                        | 0        | 0        | -        | -         |
| 62        | 11.7         | Registered Parks and Gardens                   | 0                        | 0        | 0        | -        | -         |
| Page      | Section      | Agricultural designations                      | On site                  | 0-50m    | 50-250m  | 250-500m | 500-2000m |
| <b>63</b> | <b>12.1</b>  | <b><u>Agricultural Land Classification</u></b> | Grade 4 (within 250m)    |          |          |          |           |
| 64        | 12.2         | Open Access Land                               | 0                        | 0        | 0        | -        | -         |
| 64        | 12.3         | Tree Felling Licences                          | 0                        | 0        | 0        | -        | -         |
| 64        | 12.4         | Environmental Stewardship Schemes              | 0                        | 0        | 0        | -        | -         |
| 64        | 12.5         | Countryside Stewardship Schemes                | 0                        | 0        | 0        | -        | -         |
| Page      | Section      | Habitat designations                           | On site                  | 0-50m    | 50-250m  | 250-500m | 500-2000m |
| 65        | 13.1         | Priority Habitat Inventory                     | 0                        | 0        | 0        | -        | -         |
| 65        | 13.2         | Habitat Networks                               | 0                        | 0        | 0        | -        | -         |
| 65        | 13.3         | Open Mosaic Habitat                            | 0                        | 0        | 0        | -        | -         |
| 65        | 13.4         | Limestone Pavement Orders                      | 0                        | 0        | 0        | -        | -         |
| Page      | Section      | Geology 1:10,000 scale                         | On site                  | 0-50m    | 50-250m  | 250-500m | 500-2000m |
| <b>66</b> | <b>14.1</b>  | <b><u>10k Availability</u></b>                 | Identified (within 500m) |          |          |          |           |
| <b>67</b> | <b>14.2</b>  | <b><u>Artificial and made ground (10k)</u></b> | 0                        | 2        | 4        | 2        | -         |
| <b>69</b> | <b>14.3</b>  | <b><u>Superficial geology (10k)</u></b>        | 1                        | 0        | 0        | 9        | -         |



| <b>70</b> | <b>14.4</b>  | <b><u>Landslip (10k)</u></b>                                 | 0                        | 0     | 0       | 1        | -         |
|-----------|--------------|--------------------------------------------------------------|--------------------------|-------|---------|----------|-----------|
| <b>71</b> | <b>14.5</b>  | <b><u>Bedrock geology (10k)</u></b>                          | 1                        | 1     | 2       | 4        | -         |
| <b>72</b> | <b>14.6</b>  | <b><u>Bedrock faults and other linear features (10k)</u></b> | 1                        | 1     | 1       | 5        | -         |
| Page      | Section      | Geology 1:50,000 scale                                       | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
| <b>73</b> | <b>15.1</b>  | <b><u>50k Availability</u></b>                               | Identified (within 500m) |       |         |          |           |
| 74        | 15.2         | Artificial and made ground (50k)                             | 0                        | 0     | 0       | 0        | -         |
| 74        | 15.3         | Artificial ground permeability (50k)                         | 0                        | 0     | -       | -        | -         |
| <b>75</b> | <b>15.4</b>  | <b><u>Superficial geology (50k)</u></b>                      | 1                        | 0     | 0       | 1        | -         |
| <b>76</b> | <b>15.5</b>  | <b><u>Superficial permeability (50k)</u></b>                 | Identified (within 50m)  |       |         |          |           |
| 76        | 15.6         | Landslip (50k)                                               | 0                        | 0     | 0       | 0        | -         |
| 76        | 15.7         | Landslip permeability (50k)                                  | None (within 50m)        |       |         |          |           |
| <b>77</b> | <b>15.8</b>  | <b><u>Bedrock geology (50k)</u></b>                          | 1                        | 1     | 2       | 2        | -         |
| <b>78</b> | <b>15.9</b>  | <b><u>Bedrock permeability (50k)</u></b>                     | Identified (within 50m)  |       |         |          |           |
| <b>78</b> | <b>15.10</b> | <b><u>Bedrock faults and other linear features (50k)</u></b> | 1                        | 1     | 1       | 4        | -         |
| Page      | Section      | Boreholes                                                    | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
| <b>80</b> | <b>16.1</b>  | <b><u>BGS Boreholes</u></b>                                  | 0                        | 0     | 1       | -        | -         |
| Page      | Section      | Natural ground subsidence                                    |                          |       |         |          |           |
| <b>81</b> | <b>17.1</b>  | <b><u>Shrink swell clays</u></b>                             | Low (within 50m)         |       |         |          |           |
| <b>82</b> | <b>17.2</b>  | <b><u>Running sands</u></b>                                  | Very low (within 50m)    |       |         |          |           |
| <b>83</b> | <b>17.3</b>  | <b><u>Compressible deposits</u></b>                          | Negligible (within 50m)  |       |         |          |           |
| <b>84</b> | <b>17.4</b>  | <b><u>Collapsible deposits</u></b>                           | Very low (within 50m)    |       |         |          |           |
| <b>85</b> | <b>17.5</b>  | <b><u>Landslides</u></b>                                     | Low (within 50m)         |       |         |          |           |
| <b>87</b> | <b>17.6</b>  | <b><u>Ground dissolution of soluble rocks</u></b>            | Negligible (within 50m)  |       |         |          |           |
| Page      | Section      | Mining, ground workings and natural cavities                 | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
| 88        | 18.1         | Natural cavities                                             | 0                        | 0     | 0       | 0        | -         |
| <b>89</b> | <b>18.2</b>  | <b><u>BritPits</u></b>                                       | 0                        | 0     | 2       | 1        | -         |
| <b>89</b> | <b>18.3</b>  | <b><u>Surface ground workings</u></b>                        | 0                        | 0     | 21      | -        | -         |
| <b>90</b> | <b>18.4</b>  | <b><u>Underground workings</u></b>                           | 0                        | 0     | 0       | 7        | 0         |
| 91        | 18.5         | Historical Mineral Planning Areas                            | 0                        | 0     | 0       | 0        | -         |



| 91        | 18.6        | Non-coal mining                                       | 0                               | 0     | 0       | 0        | 0         |
|-----------|-------------|-------------------------------------------------------|---------------------------------|-------|---------|----------|-----------|
| 91        | 18.7        | Mining cavities                                       | 0                               | 0     | 0       | 0        | 0         |
| 92        | 18.8        | JPB mining areas                                      | None (within 0m)                |       |         |          |           |
| <b>92</b> | <b>18.9</b> | <b><u>Coal mining</u></b>                             | <b>Identified (within 0m)</b>   |       |         |          |           |
| 92        | 18.10       | Brine areas                                           | None (within 0m)                |       |         |          |           |
| 92        | 18.11       | Gypsum areas                                          | None (within 0m)                |       |         |          |           |
| 92        | 18.12       | Tin mining                                            | None (within 0m)                |       |         |          |           |
| 93        | 18.13       | Clay mining                                           | None (within 0m)                |       |         |          |           |
| Page      | Section     | Radon                                                 |                                 |       |         |          |           |
| <b>94</b> | <b>19.1</b> | <b><u>Radon</u></b>                                   | <b>Less than 1% (within 0m)</b> |       |         |          |           |
| Page      | Section     | Soil chemistry                                        | On site                         | 0-50m | 50-250m | 250-500m | 500-2000m |
| <b>95</b> | <b>20.1</b> | <b><u>BGS Estimated Background Soil Chemistry</u></b> | 3                               | 3     | -       | -        | -         |
| 95        | 20.2        | BGS Estimated Urban Soil Chemistry                    | 0                               | 0     | -       | -        | -         |
| 96        | 20.3        | BGS Measured Urban Soil Chemistry                     | 0                               | 0     | -       | -        | -         |
| Page      | Section     | Railway infrastructure and projects                   | On site                         | 0-50m | 50-250m | 250-500m | 500-2000m |
| 97        | 21.1        | Underground railways (London)                         | 0                               | 0     | 0       | -        | -         |
| 97        | 21.2        | Underground railways (Non-London)                     | 0                               | 0     | 0       | -        | -         |
| 97        | 21.3        | Railway tunnels                                       | 0                               | 0     | 0       | -        | -         |
| 97        | 21.4        | Historical railway and tunnel features                | 0                               | 0     | 0       | -        | -         |
| 97        | 21.5        | Royal Mail tunnels                                    | 0                               | 0     | 0       | -        | -         |
| 98        | 21.6        | Historical railways                                   | 0                               | 0     | 0       | -        | -         |
| 98        | 21.7        | Railways                                              | 0                               | 0     | 0       | -        | -         |
| 98        | 21.8        | Crossrail 1                                           | 0                               | 0     | 0       | 0        | -         |
| 98        | 21.9        | Crossrail 2                                           | 0                               | 0     | 0       | 0        | -         |
| 98        | 21.10       | HS2                                                   | 0                               | 0     | 0       | 0        | -         |

## Recent aerial photograph

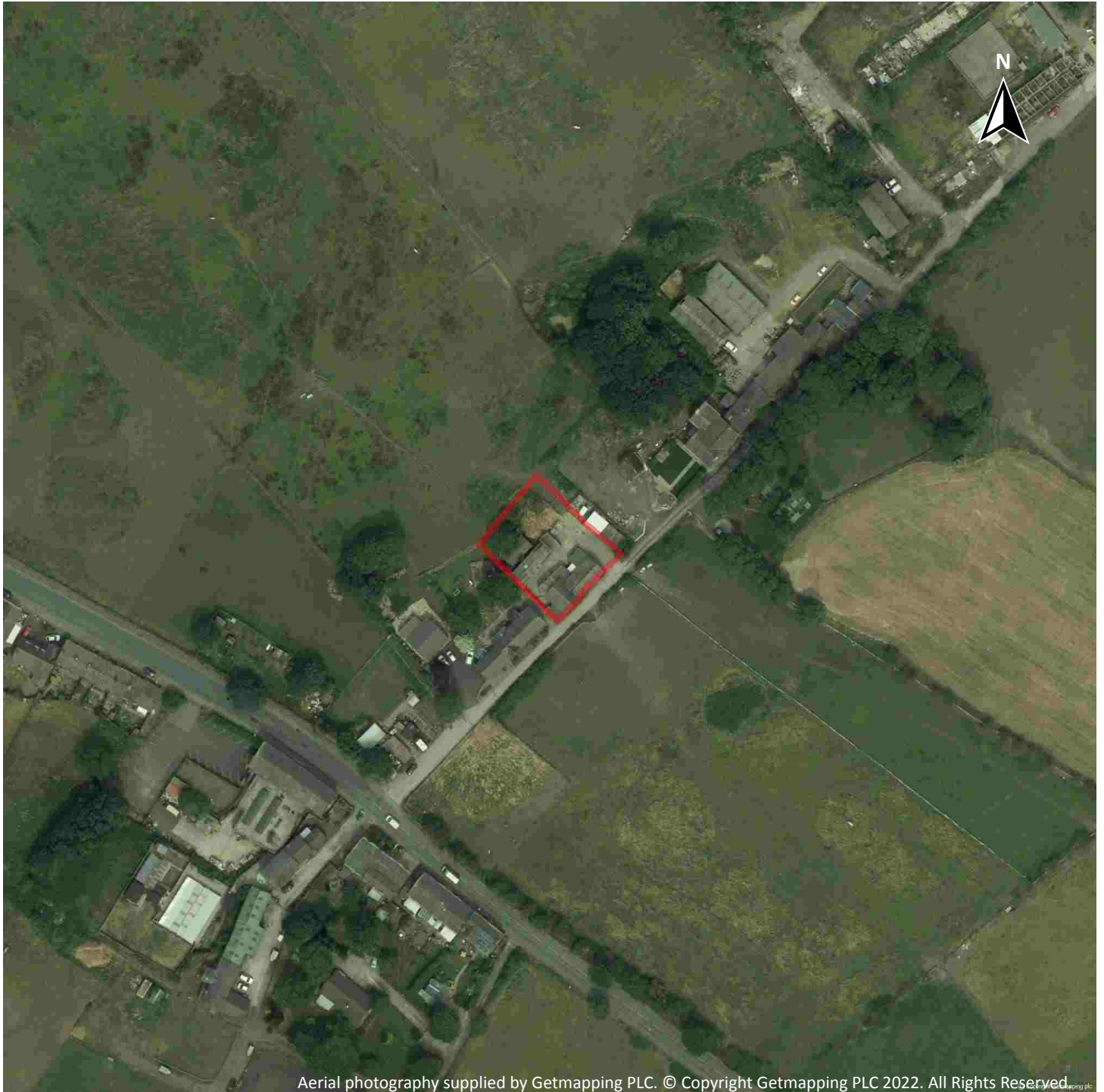


Capture Date: 23/05/2019

Site Area: 0.1ha



## Recent site history - 2018 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2022. All Rights Reserved.

Capture Date: 01/07/2018

Site Area: 0.1ha



## Recent site history - 2011 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2022. All Rights Reserved.

Capture Date: 02/05/2011

Site Area: 0.1ha



## Recent site history - 2000 aerial photograph



Capture Date: 19/06/2000

Site Area: 0.1ha



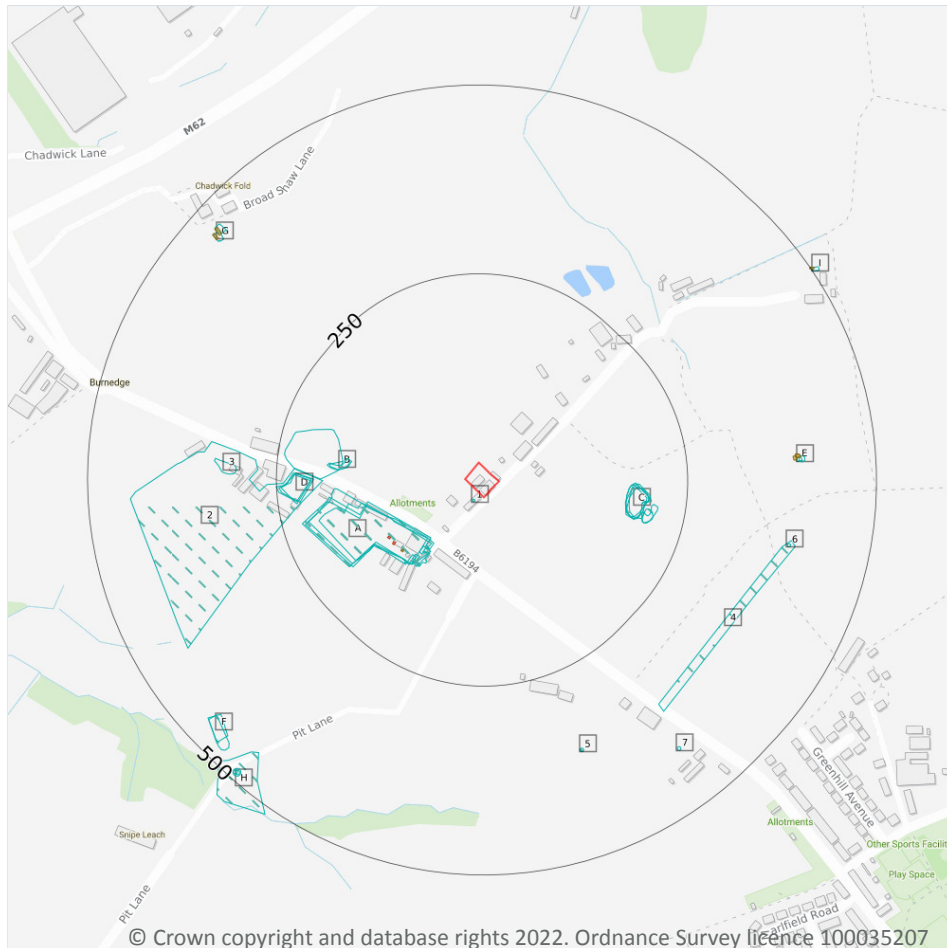
## OS MasterMap site plan



Site Area: 0.1ha



## 1 Past land use



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

### 1.1 Historical industrial land uses

#### Records within 500m

35

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

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

| ID | Location | Land use | Dates present | Group ID |
|----|----------|----------|---------------|----------|
| 1  | 11m SW   | Pump     | 1851          | 675616   |



| ID | Location | Land use                    | Dates present | Group ID |
|----|----------|-----------------------------|---------------|----------|
| A  | 87m SW   | Unspecified Mill            | 1967 - 1976   | 735228   |
| A  | 90m SW   | Unspecified Mill            | 1954          | 708965   |
| A  | 91m SW   | Cotton Mill                 | 1851          | 644449   |
| A  | 92m SW   | Unspecified Mill            | 1891 - 1938   | 713154   |
| B  | 152m W   | Unspecified Pit             | 1954          | 691373   |
| B  | 155m W   | Unspecified Ground Workings | 1907 - 1938   | 766166   |
| B  | 164m W   | Sandstone Quarry            | 1851          | 687593   |
| C  | 170m E   | Unspecified Quarry          | 1891          | 667825   |
| C  | 170m E   | Unspecified Old Quarry      | 1907          | 681205   |
| C  | 170m E   | Unspecified Pit             | 1928 - 1938   | 737850   |
| C  | 173m E   | Unspecified Pit             | 1967          | 784053   |
| C  | 174m E   | Unspecified Pit             | 1954          | 725780   |
| 2  | 189m W   | Unspecified Yard            | 1891          | 675811   |
| C  | 194m E   | Unspecified Heap            | 1928 - 1938   | 701948   |
| C  | 196m E   | Sand Pit                    | 1851          | 643884   |
| D  | 201m W   | Wood Yard                   | 1954          | 790596   |
| D  | 204m W   | Wood Yard                   | 1928 - 1938   | 700989   |
| D  | 204m W   | Wood Yard                   | 1907          | 730477   |
| 3  | 303m W   | Sandstone Quarry            | 1851          | 687592   |
| 4  | 348m SE  | Tramway Sidings             | 1851          | 670792   |
| 5  | 356m S   | Coal Pit                    | 1851          | 654362   |
| 6  | 391m E   | Coal Pit                    | 1851          | 654358   |
| E  | 394m E   | Unspecified Tank            | 1928 - 1938   | 741666   |
| E  | 398m E   | Unspecified Tank            | 1954          | 746989   |
| 7  | 419m SE  | Coal Pit                    | 1851          | 654359   |
| F  | 449m SW  | Unspecified Heap            | 1967 - 1976   | 743892   |
| G  | 449m NW  | Unspecified Tank            | 1907 - 1954   | 756177   |
| H  | 451m SW  | Old Colliery                | 1891          | 654547   |



| ID | Location | Land use                  | Dates present | Group ID |
|----|----------|---------------------------|---------------|----------|
| F  | 454m SW  | Unspecified Heap          | 1907          | 734034   |
| G  | 455m NW  | Unspecified Tank          | 1976          | 752196   |
| H  | 484m SW  | Unspecified Disused Shaft | 1967 - 1976   | 747502   |
| H  | 486m SW  | Unspecified Old Shaft     | 1954          | 771147   |
| H  | 488m SW  | Unspecified Old Shaft     | 1907 - 1938   | 766699   |
| I  | 500m NE  | Unspecified Tank          | 1928 - 1954   | 719180   |

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.2 Historical tanks

### Records within 500m

7

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

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

| ID | Location | Land use         | Dates present | Group ID |
|----|----------|------------------|---------------|----------|
| A  | 124m SW  | Unspecified Tank | 1955 - 1966   | 93362    |
| E  | 391m E   | Unspecified Tank | 1930 - 1936   | 99433    |
| E  | 394m E   | Unspecified Tank | 1970          | 89617    |
| E  | 394m E   | Unspecified Tank | 1954          | 101073   |
| G  | 455m NW  | Unspecified Tank | 1910 - 1937   | 97455    |
| G  | 456m NW  | Unspecified Tank | 1955 - 1976   | 93915    |
| I  | 499m NE  | Unspecified Tank | 1930 - 1936   | 91307    |

*This data is sourced from Ordnance Survey / Groundsure.*



### 1.3 Historical energy features

Records within 500m

2

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

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

| ID | Location | Land use               | Dates present | Group ID |
|----|----------|------------------------|---------------|----------|
| A  | 125m SW  | Electricity Substation | 1987          | 45550    |
| A  | 125m SW  | Electricity Substation | 1955 - 1966   | 56402    |

*This data is sourced from Ordnance Survey / Groundsure.*

### 1.4 Historical petrol stations

Records within 500m

0

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

*This data is sourced from Ordnance Survey / Groundsure.*

### 1.5 Historical garages

Records within 500m

0

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

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.6 Historical military land

Records within 500m

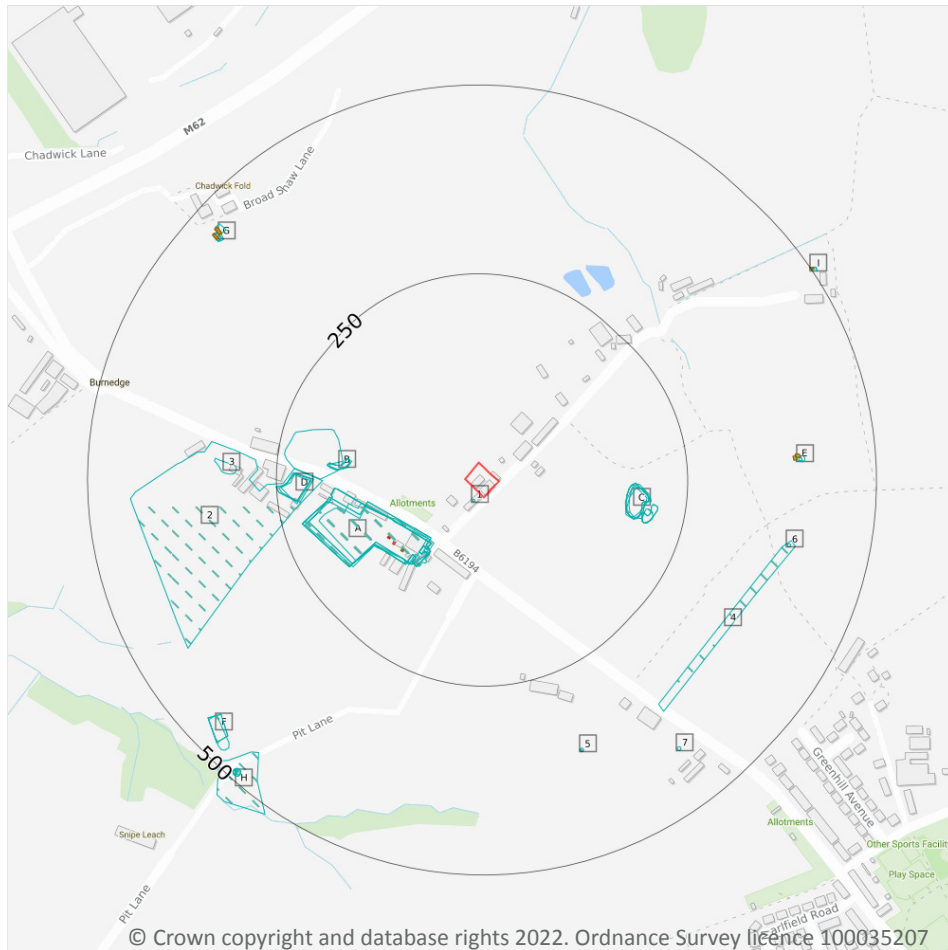
0

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

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



## 2 Past land use - un-grouped



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

### 2.1 Historical industrial land uses

Records within 500m

53

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

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

| ID | Location | Land Use         | Date | Group ID |
|----|----------|------------------|------|----------|
| 1  | 11m SW   | Pump             | 1851 | 675616   |
| A  | 87m SW   | Unspecified Mill | 1976 | 735228   |
| A  | 87m SW   | Unspecified Mill | 1967 | 735228   |



| ID | Location | Land Use                    | Date | Group ID |
|----|----------|-----------------------------|------|----------|
| A  | 90m SW   | Unspecified Mill            | 1954 | 708965   |
| A  | 91m SW   | Cotton Mill                 | 1851 | 644449   |
| A  | 92m SW   | Unspecified Mill            | 1938 | 713154   |
| A  | 92m SW   | Unspecified Mill            | 1928 | 713154   |
| A  | 92m SW   | Unspecified Mill            | 1907 | 713154   |
| A  | 92m SW   | Unspecified Mill            | 1891 | 713154   |
| B  | 152m W   | Unspecified Pit             | 1954 | 691373   |
| B  | 155m W   | Unspecified Ground Workings | 1938 | 766166   |
| B  | 155m W   | Unspecified Ground Workings | 1928 | 766166   |
| B  | 155m W   | Unspecified Ground Workings | 1907 | 766166   |
| B  | 164m W   | Sandstone Quarry            | 1851 | 687593   |
| C  | 170m E   | Unspecified Quarry          | 1891 | 667825   |
| C  | 170m E   | Unspecified Pit             | 1938 | 737850   |
| C  | 170m E   | Unspecified Pit             | 1928 | 737850   |
| C  | 170m E   | Unspecified Old Quarry      | 1907 | 681205   |
| C  | 173m E   | Unspecified Pit             | 1967 | 784053   |
| C  | 174m E   | Unspecified Pit             | 1954 | 725780   |
| 2  | 189m W   | Unspecified Yard            | 1891 | 675811   |
| C  | 194m E   | Unspecified Heap            | 1938 | 701948   |
| C  | 194m E   | Unspecified Heap            | 1928 | 701948   |
| C  | 196m E   | Sand Pit                    | 1851 | 643884   |
| D  | 201m W   | Wood Yard                   | 1954 | 790596   |
| D  | 204m W   | Wood Yard                   | 1938 | 700989   |
| D  | 204m W   | Wood Yard                   | 1928 | 700989   |
| D  | 204m W   | Wood Yard                   | 1907 | 730477   |
| 3  | 303m W   | Sandstone Quarry            | 1851 | 687592   |
| 4  | 348m SE  | Tramway Sidings             | 1851 | 670792   |
| 5  | 356m S   | Coal Pit                    | 1851 | 654362   |



| ID | Location | Land Use                  | Date | Group ID |
|----|----------|---------------------------|------|----------|
| 6  | 391m E   | Coal Pit                  | 1851 | 654358   |
| E  | 394m E   | Unspecified Tank          | 1938 | 741666   |
| E  | 394m E   | Unspecified Tank          | 1928 | 741666   |
| E  | 398m E   | Unspecified Tank          | 1954 | 746989   |
| 7  | 419m SE  | Coal Pit                  | 1851 | 654359   |
| F  | 449m SW  | Unspecified Heap          | 1976 | 743892   |
| F  | 449m SW  | Unspecified Heap          | 1967 | 743892   |
| G  | 449m NW  | Unspecified Tank          | 1954 | 756177   |
| H  | 451m SW  | Old Colliery              | 1891 | 654547   |
| G  | 452m NW  | Unspecified Tank          | 1938 | 756177   |
| G  | 452m NW  | Unspecified Tank          | 1928 | 756177   |
| G  | 452m NW  | Unspecified Tank          | 1907 | 756177   |
| F  | 454m SW  | Unspecified Heap          | 1907 | 734034   |
| G  | 455m NW  | Unspecified Tank          | 1976 | 752196   |
| H  | 484m SW  | Unspecified Disused Shaft | 1976 | 747502   |
| H  | 484m SW  | Unspecified Disused Shaft | 1967 | 747502   |
| H  | 486m SW  | Unspecified Old Shaft     | 1954 | 771147   |
| H  | 488m SW  | Unspecified Old Shaft     | 1938 | 766699   |
| H  | 488m SW  | Unspecified Old Shaft     | 1928 | 766699   |
| H  | 488m SW  | Unspecified Old Shaft     | 1907 | 766699   |
| I  | 500m NE  | Unspecified Tank          | 1938 | 719180   |
| I  | 500m NE  | Unspecified Tank          | 1928 | 719180   |

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.2 Historical tanks

### Records within 500m

16

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



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

| ID | Location | Land Use         | Date | Group ID |
|----|----------|------------------|------|----------|
| A  | 124m SW  | Unspecified Tank | 1955 | 93362    |
| A  | 124m SW  | Unspecified Tank | 1966 | 93362    |
| A  | 124m SW  | Unspecified Tank | 1955 | 93362    |
| E  | 391m E   | Unspecified Tank | 1930 | 99433    |
| E  | 391m E   | Unspecified Tank | 1936 | 99433    |
| E  | 394m E   | Unspecified Tank | 1970 | 89617    |
| E  | 394m E   | Unspecified Tank | 1954 | 101073   |
| G  | 455m NW  | Unspecified Tank | 1910 | 97455    |
| G  | 455m NW  | Unspecified Tank | 1930 | 97455    |
| G  | 455m NW  | Unspecified Tank | 1937 | 97455    |
| G  | 456m NW  | Unspecified Tank | 1976 | 93915    |
| G  | 456m NW  | Unspecified Tank | 1955 | 93915    |
| G  | 457m NW  | Unspecified Tank | 1966 | 93915    |
| G  | 457m NW  | Unspecified Tank | 1955 | 93915    |
| I  | 499m NE  | Unspecified Tank | 1930 | 91307    |
| I  | 499m NE  | Unspecified Tank | 1936 | 91307    |

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.3 Historical energy features

### Records within 500m

4

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

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

| ID | Location | Land Use               | Date | Group ID |
|----|----------|------------------------|------|----------|
| A  | 125m SW  | Electricity Substation | 1987 | 45550    |
| A  | 125m SW  | Electricity Substation | 1955 | 56402    |
| A  | 126m SW  | Electricity Substation | 1966 | 56402    |



| ID | Location | Land Use               | Date | Group ID |
|----|----------|------------------------|------|----------|
| A  | 126m SW  | Electricity Substation | 1955 | 56402    |

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.4 Historical petrol stations

Records within 500m

0

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

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.5 Historical garages

Records within 500m

0

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

*This data is sourced from Ordnance Survey / Groundsure.*





### 3.3 Historical landfill (LA/mapping records)

Records within 500m

0

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

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

### 3.4 Historical landfill (EA/NRW records)

Records within 500m

1

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

Features are displayed on the Waste and landfill map on **page 23**

| ID | Location | Details                                                            |                                                                                                                                                                                                  |                                                                                                                 |
|----|----------|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| 1  | 184m W   | Site Address: Burnedge Mill, Rochdale<br>Licence Holder Address: - | Waste Licence: Yes<br>Site Reference: D050, RD/LIC/303/83<br>Waste Type: Inert<br>Environmental Permitting Regulations (Waste) Reference: -<br>Licence Issue: 05/04/1984<br>Licence Surrender: - | Operator: -<br>Licence Holder: Richardson and Carroll<br>First Recorded 01/05/1984<br>Last Recorded: 31/12/1986 |

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

### 3.5 Historical waste sites

Records within 500m

0

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

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

### 3.6 Licensed waste sites

Records within 500m

0

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

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

### 3.7 Waste exemptions

#### Records within 500m

**1**

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

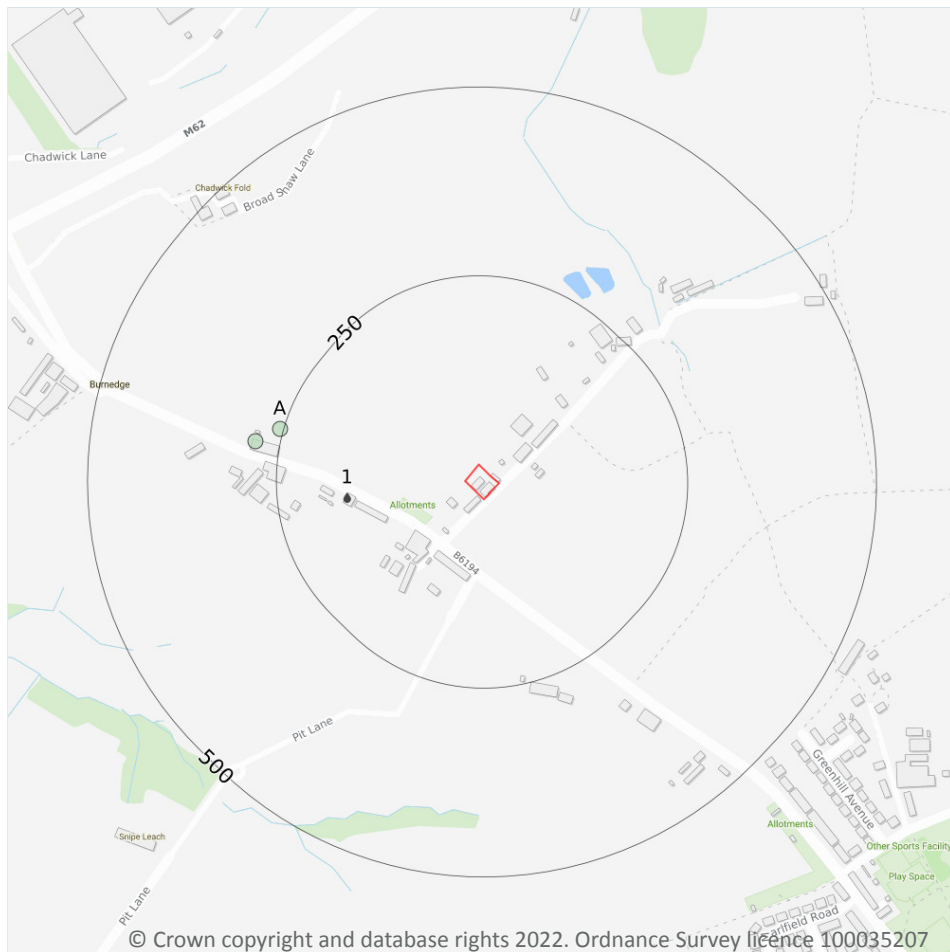
Features are displayed on the Waste and landfill map on **page 23**

| ID | Location | Site                                        | Reference | Category                 | Sub-Category  | Description                  |
|----|----------|---------------------------------------------|-----------|--------------------------|---------------|------------------------------|
| 2  | 283m W   | BROAD LANE, BURNEDGE,<br>ROCHDALE, OL16 4QQ | WEX259077 | Using waste<br>exemption | Not on a farm | Use of waste in construction |

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



## 4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Licensed Discharges to controlled waters
- Pollution Incidents (EA/NRW)

### 4.1 Recent industrial land uses

Records within 250m

0

Current potentially contaminative industrial sites.

*This data is sourced from Ordnance Survey.*

### 4.2 Current or recent petrol stations

Records within 500m

0

Open, closed, under development and obsolete petrol stations.

*This data is sourced from Experian.*



### 4.3 Electricity cables

**Records within 500m****0**

High voltage underground electricity transmission cables.

*This data is sourced from National Grid.*

### 4.4 Gas pipelines

**Records within 500m****0**

High pressure underground gas transmission pipelines.

*This data is sourced from National Grid.*

### 4.5 Sites determined as Contaminated Land

**Records within 500m****0**

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

*This data is sourced from Local Authority records.*

### 4.6 Control of Major Accident Hazards (COMAH)

**Records within 500m****0**

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

*This data is sourced from the Health and Safety Executive.*

### 4.7 Regulated explosive sites

**Records within 500m****0**

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

*This data is sourced from the Health and Safety Executive.*

## 4.8 Hazardous substance storage/usage

Records within 500m

0

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

*This data is sourced from Local Authority records.*

## 4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

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

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

## 4.10 Licensed industrial activities (Part A(1))

Records within 500m

0

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

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

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

Records within 500m

0

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

*This data is sourced from Local Authority records.*

## 4.12 Radioactive Substance Authorisations

Records within 500m

0

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

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

## 4.13 Licensed Discharges to controlled waters

### Records within 500m

**1**

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

Features are displayed on the Current industrial land use map on **page 26**

| ID | Location | Address                                                       | Details                                                                                                                                                               |                                                                                                                                                         |
|----|----------|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | 158m W   | 19 BROAD LANE,<br>BURNEDGE, ROCHDALE,<br>LANCASHIRE, OL16 4QQ | Effluent Type: SEWAGE DISCHARGES -<br>FINAL/TREATED EFFLUENT - NOT WATER<br>COMPANY<br>Permit Number: 0170/1207<br>Permit Version: 1<br>Receiving Water: SUDDON BROOK | Status: PRE NRA LEGISLATION WHERE<br>ISSUE DATE 01-SEP-89 (HISTORIC ONLY)<br>Issue date: 10/04/1970<br>Effective Date: 10/04/1970<br>Revocation Date: - |

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

## 4.14 Pollutant release to surface waters (Red List)

### Records within 500m

**0**

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

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

## 4.15 Pollutant release to public sewer

### Records within 500m

**0**

Discharges of Special Category Effluents to the public sewer.

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

## 4.16 List 1 Dangerous Substances

### Records within 500m

**0**

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

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



## 4.17 List 2 Dangerous Substances

Records within 500m

0

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

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

## 4.18 Pollution Incidents (EA/NRW)

Records within 500m

2

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

Features are displayed on the Current industrial land use map on **page 26**

| ID | Location | Details                                                                                                                                                                           |                                                                                                                     |
|----|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| A  | 255m W   | Incident Date: 20/05/2002<br>Incident Identification: 79980<br>Pollutant: Sewage Materials<br>Pollutant Description: Final Effluent                                               | Water Impact: Category 3 (Minor)<br>Land Impact: Category 4 (No Impact)<br>Air Impact: Category 4 (No Impact)       |
| A  | 282m W   | Incident Date: 21/12/2020<br>Incident Identification: 1872389<br>Pollutant: Inert Materials and Wastes<br>Pollutant Description: Construction and Demolition Materials and Wastes | Water Impact: Category 4 (No Impact)<br>Land Impact: Category 2 (Significant)<br>Air Impact: Category 4 (No Impact) |

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

## 4.19 Pollution inventory substances

Records within 500m

0

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

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

## 4.20 Pollution inventory waste transfers

Records within 500m

0

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

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

## 4.21 Pollution inventory radioactive waste

Records within 500m

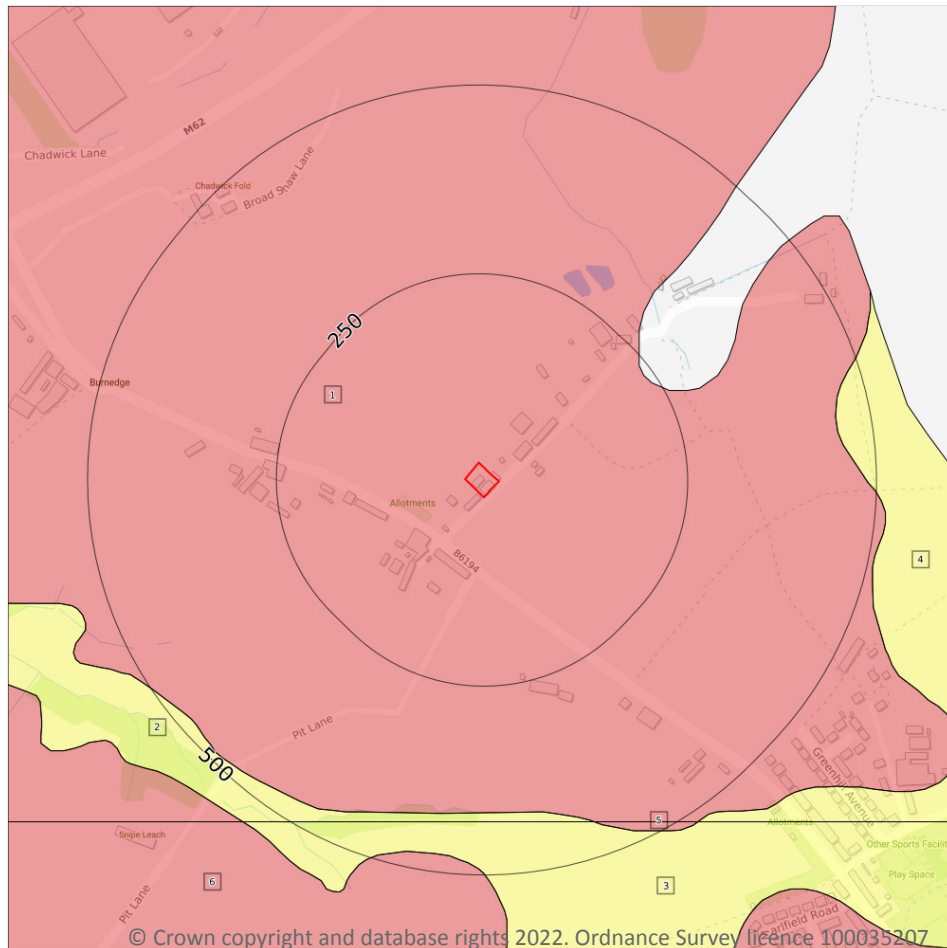
0

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

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



## 5 Hydrogeology - Superficial aquifer



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

### 5.1 Superficial aquifer

Records within 500m

6

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 32**

| ID | Location | Designation                | Description                                                                                                                                                                                                                                             |
|----|----------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | On site  | Secondary A                | Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers                  |
| 2  | 418m S   | Secondary Undifferentiated | Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type |

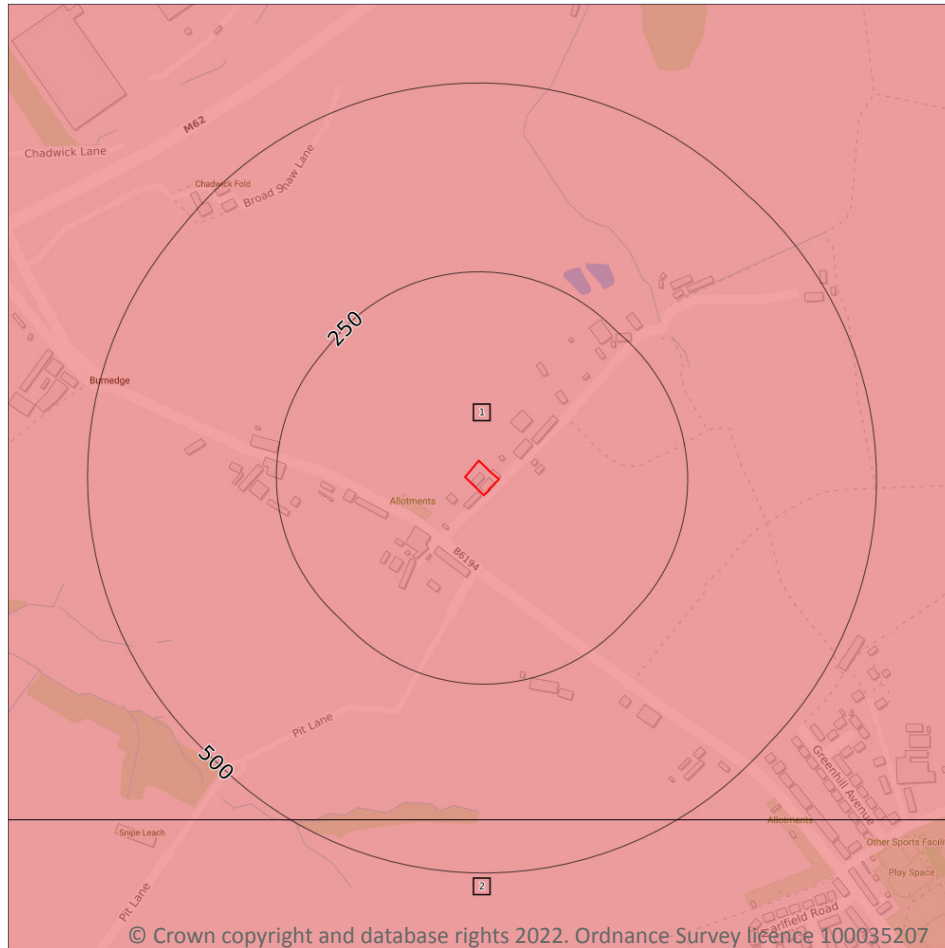


| ID | Location | Designation                | Description                                                                                                                                                                                                                                             |
|----|----------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3  | 430m S   | Secondary Undifferentiated | Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type |
| 4  | 454m E   | Secondary Undifferentiated | Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type |
| 5  | 454m S   | Secondary A                | Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers                  |
| 6  | 476m S   | Secondary A                | Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers                  |

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



## Bedrock aquifer



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

### 5.2 Bedrock aquifer

#### Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 34**

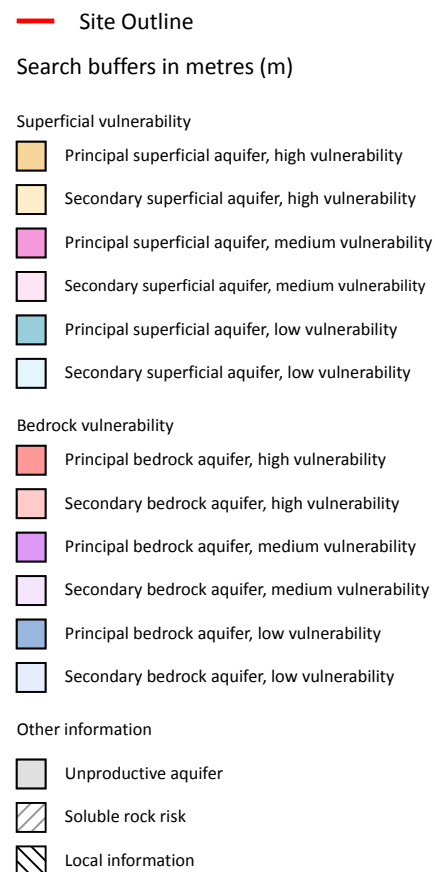
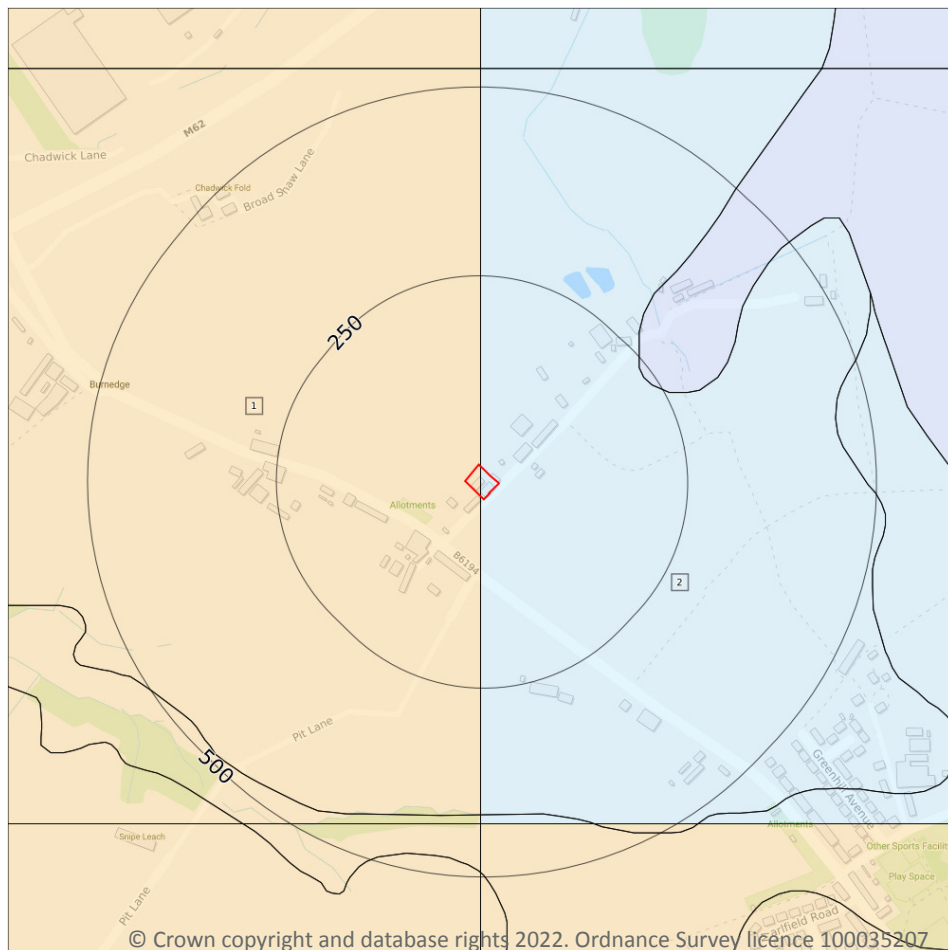
| ID | Location | Designation | Description                                                                                                                                                                                                                                   |
|----|----------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | On site  | Secondary A | <b>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</b> |
| 2  | 430m S   | Secondary A | Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers        |



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



## Groundwater vulnerability



### 5.3 Groundwater vulnerability

#### Records within 50m

2

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

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

Features are displayed on the Groundwater vulnerability map on **page 36**

| ID | Location | Summary                                                                                                                                                                                        | Soil / surface                                                                                             | Superficial geology                                                                                                                                        | Bedrock geology                                                                                                      |
|----|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| 1  | On site  | <b>Summary Classification:</b><br>Secondary superficial aquifer<br>- High Vulnerability<br><b>Combined classification:</b><br>Productive Bedrock Aquifer,<br>Productive Superficial<br>Aquifer | <b>Leaching class:</b> High<br><b>Infiltration value:</b><br>>70%<br><b>Dilution value:</b><br>>550mm/year | <b>Vulnerability:</b> High<br><b>Aquifer type:</b> Secondary<br><b>Thickness:</b> >10m<br><b>Patchiness value:</b> >90%<br><b>Recharge potential:</b> High | <b>Vulnerability:</b> Low<br><b>Aquifer type:</b><br>Secondary<br><b>Flow mechanism:</b> Well<br>connected fractures |
| 2  | On site  | <b>Summary Classification:</b><br>Secondary superficial aquifer<br>- Low Vulnerability<br><b>Combined classification:</b><br>Productive Bedrock Aquifer,<br>Productive Superficial<br>Aquifer  | <b>Leaching class:</b> Low<br><b>Infiltration value:</b><br><40%<br><b>Dilution value:</b><br>>550mm/year  | <b>Vulnerability:</b> Low<br><b>Aquifer type:</b> Secondary<br><b>Thickness:</b> >10m<br><b>Patchiness value:</b> <90%<br><b>Recharge potential:</b> High  | <b>Vulnerability:</b> Low<br><b>Aquifer type:</b><br>Secondary<br><b>Flow mechanism:</b> Well<br>connected fractures |

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

## 5.4 Groundwater vulnerability- soluble rock risk

|                        |          |
|------------------------|----------|
| <b>Records on site</b> | <b>0</b> |
|------------------------|----------|

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

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

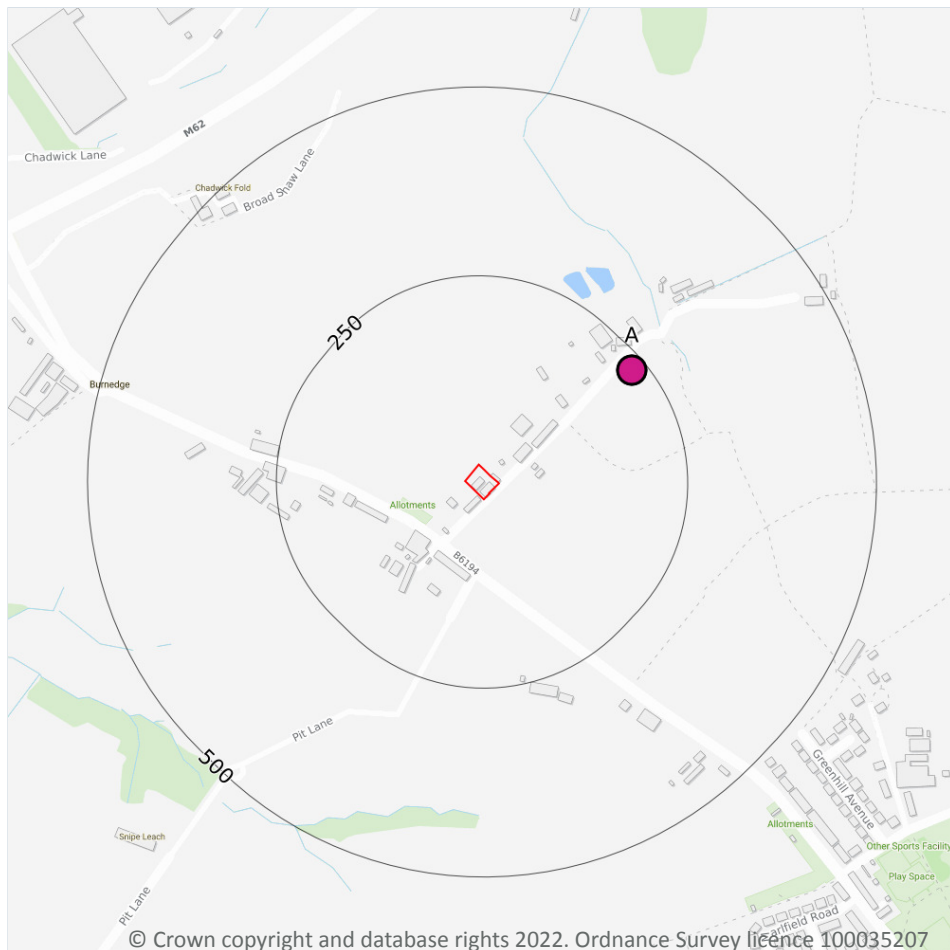
## 5.5 Groundwater vulnerability- local information

|                        |          |
|------------------------|----------|
| <b>Records on site</b> | <b>0</b> |
|------------------------|----------|

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

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

## Abstractions and Source Protection Zones



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

### 5.6 Groundwater abstractions

#### Records within 2000m

9

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 38**

| ID | Location | Details                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                          |
|----|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A  | 230m NE  | Status: Historical<br>Licence No: 2569002204<br>Details: General use relating to Secondary Category (Medium Loss)<br>Direct Source: Ground Water - North West Region<br>Point: "BOREHOLE AT PREMISES, OLD BARN FARM,BURNEDGE, ROCHDALE"<br>Data Type: Point<br>Name: CRYER<br>Easting: 392200<br>Northing: 410600 | Annual Volume (m <sup>3</sup> ): -<br>Max Daily Volume (m <sup>3</sup> ): -<br>Original Application No: -<br>Original Start Date: 24/04/1969<br>Expiry Date: -<br>Issue No: 100<br>Version Start Date: 24/04/1969<br>Version End Date: - |
| A  | 230m NE  | Status: Historical<br>Licence No: 2569002204<br>Details: General use relating to Secondary Category (Medium Loss)<br>Direct Source: Ground Water - North West Region<br>Point: BOREHOLE AT PREMISES, OLD BARN FARM,BURNEDGE, ROCHDALE<br>Data Type: Point<br>Name: CRYER<br>Easting: 392200<br>Northing: 410600   | Annual Volume (m <sup>3</sup> ): -<br>Max Daily Volume (m <sup>3</sup> ): -<br>Original Application No: -<br>Original Start Date: 24/04/1969<br>Expiry Date: -<br>Issue No: 100<br>Version Start Date: 24/04/1969<br>Version End Date: - |
| -  | 655m N   | Status: Historical<br>Licence No: 2569002086<br>Details: General use relating to Secondary Category (Medium Loss)<br>Direct Source: Ground Water - North West Region<br>Point: "WELL AT BROADSHAW FARM, MILNROW, ROCHDALE"<br>Data Type: Point<br>Name: CROSTON<br>Easting: 391800<br>Northing: 411100            | Annual Volume (m <sup>3</sup> ): -<br>Max Daily Volume (m <sup>3</sup> ): -<br>Original Application No: -<br>Original Start Date: 02/02/1966<br>Expiry Date: -<br>Issue No: 100<br>Version Start Date: 02/02/1966<br>Version End Date: - |
| -  | 655m N   | Status: Historical<br>Licence No: 2569002086<br>Details: General use relating to Secondary Category (Medium Loss)<br>Direct Source: Ground Water - North West Region<br>Point: WELL AT BROADSHAW FARM, MILNROW, ROCHDALE<br>Data Type: Point<br>Name: CROSTON<br>Easting: 391800<br>Northing: 411100              | Annual Volume (m <sup>3</sup> ): -<br>Max Daily Volume (m <sup>3</sup> ): -<br>Original Application No: -<br>Original Start Date: 02/02/1966<br>Expiry Date: -<br>Issue No: 100<br>Version Start Date: 02/02/1966<br>Version End Date: - |



| ID | Location | Details                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                          |
|----|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -  | 1186m NW | Status: Historical<br>Licence No: 2569002060<br>Details: General use relating to Secondary Category (Medium Loss)<br>Direct Source: Ground Water - North West Region<br>Point: "WELL AT CASTLE FARM, LOWER LANE, MILNROW"<br>Data Type: Point<br>Name: SANDERSON<br>Easting: 391400<br>Northing: 411500 | Annual Volume (m <sup>3</sup> ): -<br>Max Daily Volume (m <sup>3</sup> ): -<br>Original Application No: -<br>Original Start Date: 11/02/1966<br>Expiry Date: -<br>Issue No: 100<br>Version Start Date: 11/02/1966<br>Version End Date: - |
| -  | 1186m NW | Status: Historical<br>Licence No: 2569002060<br>Details: General use relating to Secondary Category (Medium Loss)<br>Direct Source: Ground Water - North West Region<br>Point: WELL AT CASTLE FARM, LOWER LANE, MILNROW<br>Data Type: Point<br>Name: SANDERSON<br>Easting: 391400<br>Northing: 411500   | Annual Volume (m <sup>3</sup> ): -<br>Max Daily Volume (m <sup>3</sup> ): -<br>Original Application No: -<br>Original Start Date: 11/02/1966<br>Expiry Date: -<br>Issue No: 100<br>Version Start Date: 11/02/1966<br>Version End Date: - |
| -  | 1273m NW | Status: Historical<br>Licence No: 2569002159<br>Details: General Farming & Domestic<br>Direct Source: Ground Water - North West Region<br>Point: "WELL AT FARM, LOWER LANE, MILNROW, ROCHDALE"<br>Data Type: Point<br>Name: HARTLE<br>Easting: 391400<br>Northing: 411600                               | Annual Volume (m <sup>3</sup> ): -<br>Max Daily Volume (m <sup>3</sup> ): -<br>Original Application No: -<br>Original Start Date: 01/02/1966<br>Expiry Date: -<br>Issue No: 100<br>Version Start Date: 01/02/1966<br>Version End Date: - |
| -  | 1273m NW | Status: Historical<br>Licence No: 2569002159<br>Details: General Farming & Domestic<br>Direct Source: Ground Water - North West Region<br>Point: WELL AT FARM, LOWER LANE, MILNROW, ROCHDALE<br>Data Type: Point<br>Name: HARTLE<br>Easting: 391400<br>Northing: 411600                                 | Annual Volume (m <sup>3</sup> ): -<br>Max Daily Volume (m <sup>3</sup> ): -<br>Original Application No: -<br>Original Start Date: 01/02/1966<br>Expiry Date: -<br>Issue No: 100<br>Version Start Date: 01/02/1966<br>Version End Date: - |



| ID | Location | Details                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                     |
|----|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -  | 1273m NW | Status: Historical<br>Licence No: 2569002159<br>Details: General Farming & Domestic<br>Direct Source: Ground Water - North West Region<br>Point: WELL AT FARM LOWER LANE MILNROW<br>ROCHDALE<br>Data Type: Point<br>Name: HARTLE<br>Easting: 391400<br>Northing: 411600 | Annual Volume (m <sup>3</sup> ): 5123.34<br>Max Daily Volume (m <sup>3</sup> ): 31.822<br>Original Application No: -<br>Original Start Date: 01/02/1966<br>Expiry Date: -<br>Issue No: 100<br>Version Start Date: 01/04/2007<br>Version End Date: - |

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

## 5.7 Surface water abstractions

### Records within 2000m

6

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 38**

| ID | Location | Details                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                          |
|----|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -  | 1582m NE | Status: Historical<br>Licence No: 2569002064<br>Details: Boiler Feed<br>Direct Source: "Surface, Non-Tidal - North West Region"<br>Point: "R BEAL AT NEWHEY, MILNROW, ROCHDALE"<br>Data Type: Point<br>Name: THE SECRETARY<br>Easting: 393000<br>Northing: 411700                                         | Annual Volume (m <sup>3</sup> ): -<br>Max Daily Volume (m <sup>3</sup> ): -<br>Original Application No: -<br>Original Start Date: 18/01/1966<br>Expiry Date: -<br>Issue No: 100<br>Version Start Date: 21/06/1993<br>Version End Date: - |
| -  | 1582m NE | Status: Historical<br>Licence No: 2569002064<br>Details: General Cooling (Existing Licences Only) (Low Loss)<br>Direct Source: "Surface, Non-Tidal - North West Region"<br>Point: "R BEAL AT NEWHEY, MILNROW, ROCHDALE"<br>Data Type: Point<br>Name: THE SECRETARY<br>Easting: 393000<br>Northing: 411700 | Annual Volume (m <sup>3</sup> ): -<br>Max Daily Volume (m <sup>3</sup> ): -<br>Original Application No: -<br>Original Start Date: 18/01/1966<br>Expiry Date: -<br>Issue No: 100<br>Version Start Date: 21/06/1993<br>Version End Date: - |



| ID | Location | Details                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                            |
|----|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -  | 1582m NE | Status: Historical<br>Licence No: 2569002064<br>Details: Boiler Feed<br>Direct Source: Surface, Non-Tidal - North West Region<br>Point: R BEAL AT NEWHEY, MILNROW, ROCHDALE<br>Data Type: Point<br>Name: THE SECRETARY<br>Easting: 393000<br>Northing: 411700                                               | Annual Volume (m <sup>3</sup> ): 327312<br>Max Daily Volume (m <sup>3</sup> ): 2954.9<br>Original Application No: -<br>Original Start Date: 18/01/1966<br>Expiry Date: -<br>Issue No: 100<br>Version Start Date: 21/06/1993<br>Version End Date: -         |
| -  | 1582m NE | Status: Historical<br>Licence No: 2569002064<br>Details: General Cooling (Existing Licences Only) (Low Loss)<br>Direct Source: Surface, Non-Tidal - North West Region<br>Point: R BEAL AT NEWHEY, MILNROW, ROCHDALE<br>Data Type: Point<br>Name: ELLENROAD TRUST LTD<br>Easting: 393000<br>Northing: 411700 | Annual Volume (m <sup>3</sup> ): 327312<br>Max Daily Volume (m <sup>3</sup> ): 2954.9<br>Original Application No: -<br>Original Start Date: 18/01/1966<br>Expiry Date: -<br>Issue No: 101<br>Version Start Date: 11/09/2008<br>Version End Date: -         |
| -  | 1582m NE | Status: Active<br>Licence No: 2569002233<br>Details: General Cooling (Existing Licences Only) (Low Loss)<br>Direct Source: Surface, Non-Tidal - North West Region<br>Point: R BEAL AT MILNROW<br>Data Type: Point<br>Name: SUN CHEMICAL LTD<br>Easting: 393000<br>Northing: 411700                          | Annual Volume (m <sup>3</sup> ): 66,370<br>Max Daily Volume (m <sup>3</sup> ): 181.80<br>Original Application No: 2725<br>Original Start Date: 13/08/1986<br>Expiry Date: -<br>Issue No: 102<br>Version Start Date: 01/01/2005<br>Version End Date: -      |
| -  | 1582m NE | Status: Active<br>Licence No: 2569002064<br>Details: Non-Evaporative Cooling<br>Direct Source: Surface, Non-Tidal - North West Region<br>Point: R BEAL AT NEWHEY, MILNROW, ROCHDALE<br>Data Type: Point<br>Name: ELLENROAD TRUST LTD<br>Easting: 393000<br>Northing: 411700                                 | Annual Volume (m <sup>3</sup> ): 3,520<br>Max Daily Volume (m <sup>3</sup> ): 350<br>Original Application No: NPS/WR/015275<br>Original Start Date: 18/01/1966<br>Expiry Date: -<br>Issue No: 103<br>Version Start Date: 30/01/2014<br>Version End Date: - |

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



## 5.8 Potable abstractions

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

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

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

## 5.9 Source Protection Zones

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

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

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

## 5.10 Source Protection Zones (confined aquifer)

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

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

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



## 6 Hydrology



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

### 6.1 Water Network (OS MasterMap)

Records within 250m

0

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

*This data is sourced from the Ordnance Survey.*

### 6.2 Surface water features

Records within 250m

0

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



*This data is sourced from the Ordnance Survey.*

## 6.3 WFD Surface water body catchments

### Records on site

1

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

Features are displayed on the Hydrology map on **page 44**

| ID | Location | Type  | Water body catchment     | Water body ID  | Operational catchment | Management catchment |
|----|----------|-------|--------------------------|----------------|-----------------------|----------------------|
| 2  | On site  | River | Roch (Spodden to Irwell) | GB112069064600 | Roch Irk Medlock      | Irwell               |

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

## 6.4 WFD Surface water bodies

### Records identified

1

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

Features are displayed on the Hydrology map on **page 44**

| ID | Location | Type  | Name                     | Water body ID                  | Overall rating | Chemical rating | Ecological rating | Year |
|----|----------|-------|--------------------------|--------------------------------|----------------|-----------------|-------------------|------|
| -  | 1415m W  | River | Roch (Spodden to Irwell) | <a href="#">GB112069064600</a> | Moderate       | Fail            | Moderate          | 2019 |

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



## 6.5 WFD Groundwater bodies

### Records on site

**1**

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

Features are displayed on the Hydrology map on **page 44**

| ID | Location | Name                                       | Water body ID                         | Overall rating | Chemical rating | Quantitative | Year |
|----|----------|--------------------------------------------|---------------------------------------|----------------|-----------------|--------------|------|
| 1  | On site  | Northern Manchester Carboniferous Aquifers | <a href="#"><u>GB41202G101800</u></a> | Poor           | Poor            | Good         | 2019 |

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



## 7 River and coastal flooding

### 7.1 Risk of flooding from rivers and the sea

**Records within 50m****0**

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

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

### 7.2 Historical Flood Events

**Records within 250m****0**

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

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

### 7.3 Flood Defences

**Records within 250m****0**

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

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

## 7.4 Areas Benefiting from Flood Defences

Records within 250m

0

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

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

## 7.5 Flood Storage Areas

Records within 250m

0

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

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



## River and coastal flooding - Flood Zones

### 7.6 Flood Zone 2

Records within 50m

0

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

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

### 7.7 Flood Zone 3

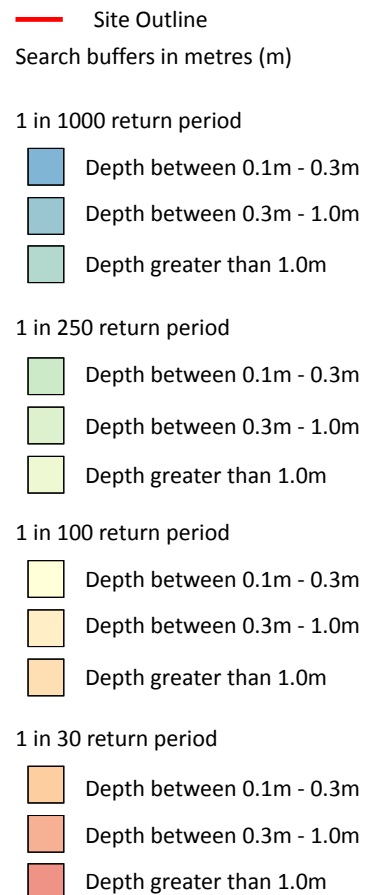
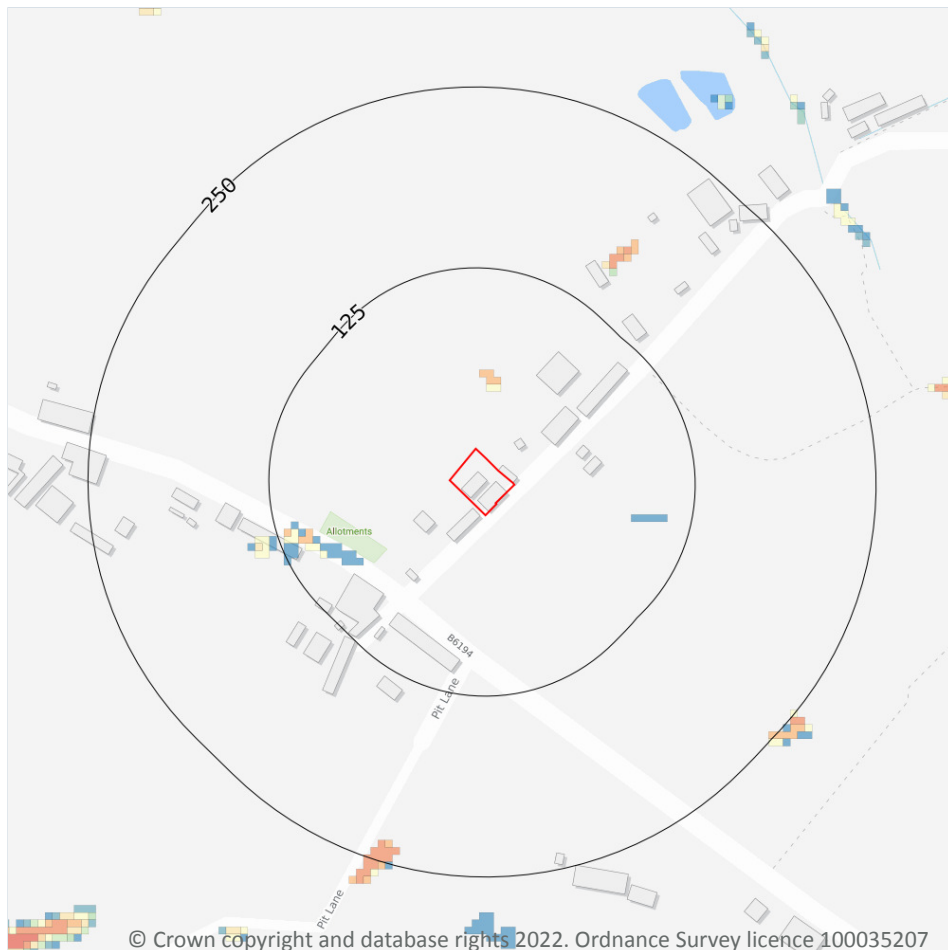
Records within 50m

0

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

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

## 8 Surface water flooding



### 8.1 Surface water flooding

**Highest risk on site**

**Negligible**

**Highest risk within 50m**

**1 in 30 year, 0.1m - 0.3m**

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

Features are displayed on the Surface water flooding map on **page 50**

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

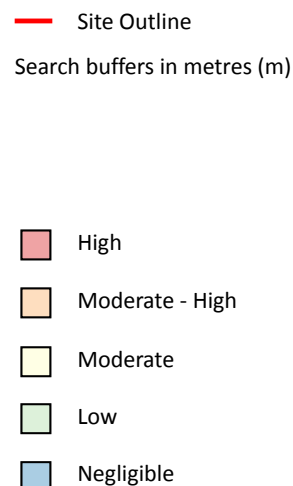
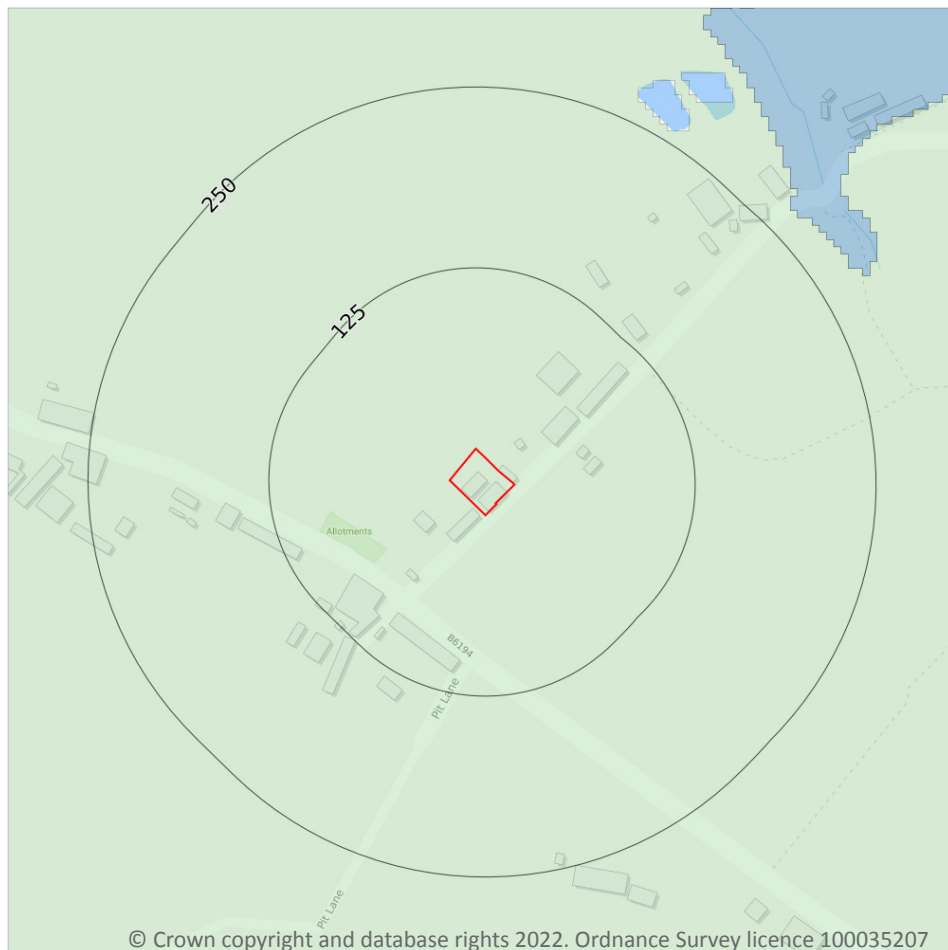
The table below shows the maximum flood depths for a range of return periods for the site.

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

*This data is sourced from Ambiantal Risk Analytics.*



## 9 Groundwater flooding



### 9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

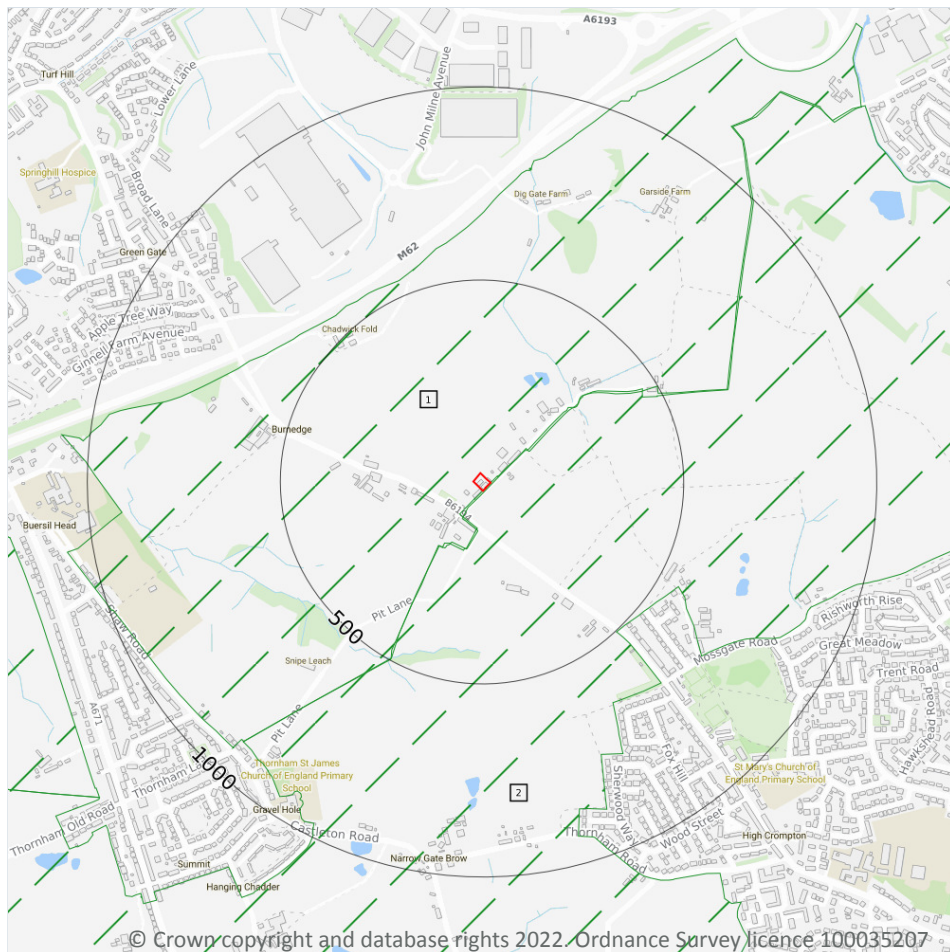
Low

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

Features are displayed on the Groundwater flooding map on **page 52**

*This data is sourced from Ambiantal Risk Analytics.*

## 10 Environmental designations



— Site Outline  
Search buffers in metres (m)  
Green Belt

### 10.1 Sites of Special Scientific Interest (SSSI)

#### Records within 2000m

0

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

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

## 10.2 Conserved wetland sites (Ramsar sites)

**Records within 2000m****0**

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

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

## 10.3 Special Areas of Conservation (SAC)

**Records within 2000m****0**

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

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

## 10.4 Special Protection Areas (SPA)

**Records within 2000m****0**

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

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

## 10.5 National Nature Reserves (NNR)

**Records within 2000m****0**

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

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

## 10.6 Local Nature Reserves (LNR)

**Records within 2000m****0**

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

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

## 10.7 Designated Ancient Woodland

**Records within 2000m****0**

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

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

## 10.8 Biosphere Reserves

**Records within 2000m****0**

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

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

## 10.9 Forest Parks

**Records within 2000m****0**

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

*This data is sourced from the Forestry Commission.*

## 10.10 Marine Conservation Zones

Records within 2000m

0

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

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

## 10.11 Green Belt

Records within 2000m

5

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

Features are displayed on the Environmental designations map on **page 53**

| ID | Location | Name                              | Local Authority name |
|----|----------|-----------------------------------|----------------------|
| 1  | On site  | Merseyside and Greater Manchester | Rochdale             |
| 2  | 4m SE    | Merseyside and Greater Manchester | Oldham               |
| 3  | 1176m W  | Merseyside and Greater Manchester | Rochdale             |
| -  | 1660m NE | Merseyside and Greater Manchester | Rochdale             |
| -  | 1789m NE | Merseyside and Greater Manchester | Rochdale             |

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

## 10.12 Proposed Ramsar sites

Records within 2000m

0

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

*This data is sourced from Natural England.*

## 10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

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



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

## 10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

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

*This data is sourced from Natural England.*

## 10.15 Nitrate Sensitive Areas

Records within 2000m

0

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

*This data is sourced from Natural England.*

## 10.16 Nitrate Vulnerable Zones

Records within 2000m

1

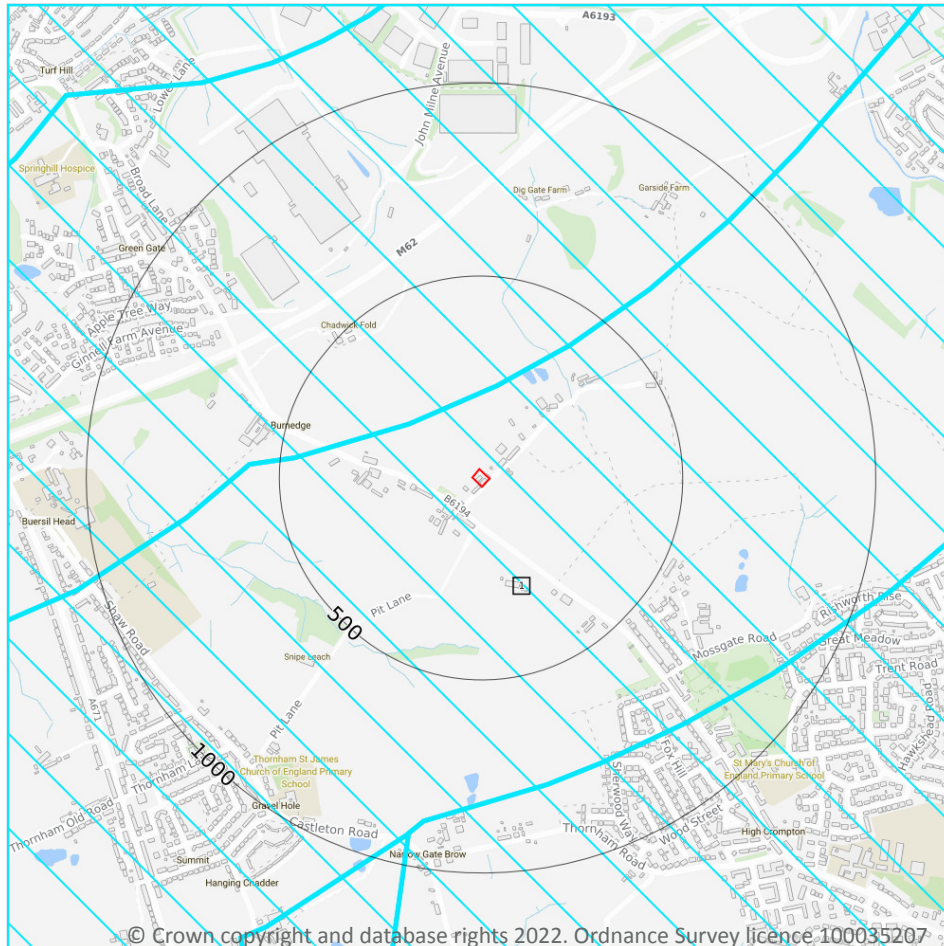
Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

| Location | Name                                         | Type          | NVZ ID | Status   |
|----------|----------------------------------------------|---------------|--------|----------|
| 854m SW  | River Irk (Moston Brook to River Irwell) NVZ | Surface Water | 638    | Existing |

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



## SSSI Impact Zones and Units



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

### 10.17 SSSI Impact Risk Zones

#### Records on site

1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 58**

| ID | Location | Type of developments requiring consultation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | On site  | <p>Infrastructure - Airports, helipads and other aviation proposals.</p> <p>Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, review of minerals permissions (romp), extensions, variations to conditions etc. oil &amp; gas exploration/extraction.</p> <p>Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock &amp; poultry units with floorspace &gt; 500m<sup>2</sup>, slurry lagoons &amp; digestate stores &gt; 750m<sup>2</sup>, manure stores &gt; 3500t).</p> <p>Combustion - General combustion processes &gt;50mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.</p> <p>Discharges - Any discharge of water or liquid waste of more than 5m<sup>3</sup>/day to ground (ie to seep away) or to surface water, such as a beck or stream.</p> |

*This data is sourced from Natural England.*

## 10.18 SSSI Units

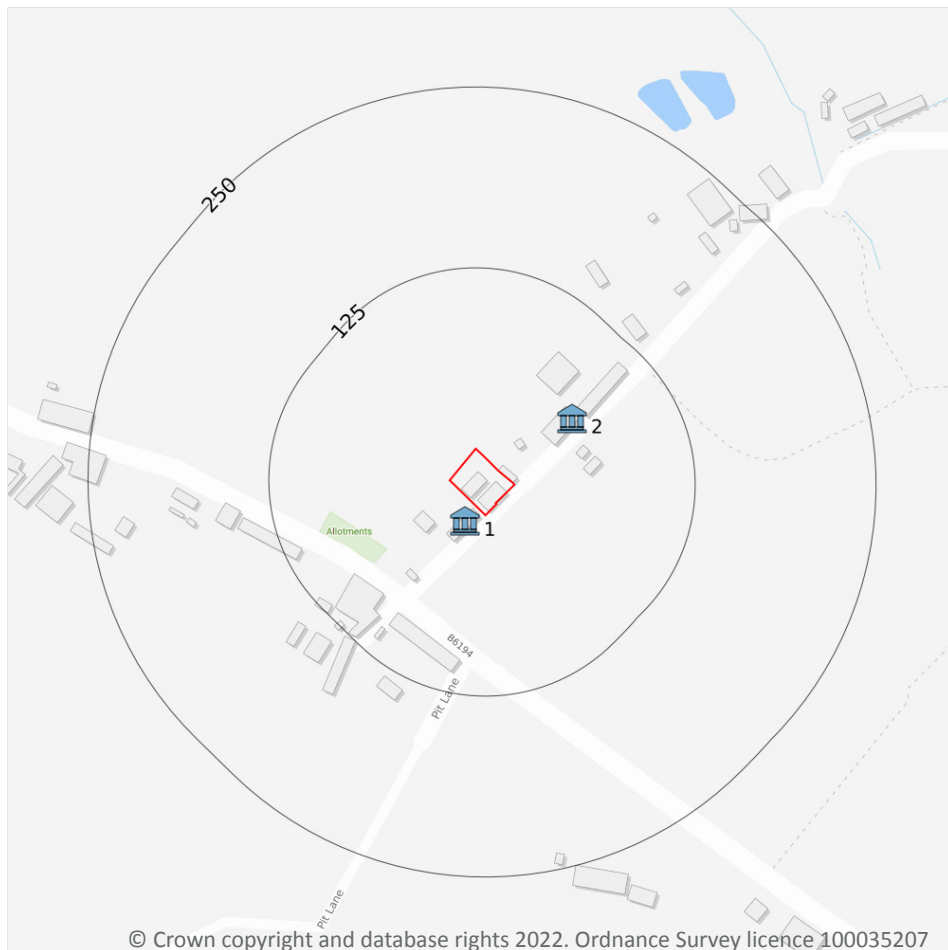
|                      |   |
|----------------------|---|
| Records within 2000m | 0 |
|----------------------|---|

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

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



## 11 Visual and cultural designations



- Site Outline
- Search buffers in metres (m)
- Listed buildings
- Conservation areas
- Conservation areas - no data
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites

### 11.1 World Heritage Sites

Records within 250m

0

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

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

## 11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

## 11.3 National Parks

Records within 250m

0

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

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

## 11.4 Listed Buildings

Records within 250m

2

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

Features are displayed on the Visual and cultural designations map on **page 60**

| ID | Location | Name                                                                        | Grade | Reference Number | Listed date |
|----|----------|-----------------------------------------------------------------------------|-------|------------------|-------------|
| 1  | 13m SW   | Moorgate East Farmhouse and No. 3, Balderstone and Kirkholt, Rochdale, OL16 | II    | 1162450          | 24/01/1967  |
| 2  | 60m NE   | Burnedge Farmhouse, Balderstone and Kirkholt, Rochdale, OL16                | II    | 1309637          | 18/08/1976  |

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



## 11.5 Conservation Areas

Records within 250m

0

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

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

## 11.6 Scheduled Ancient Monuments

Records within 250m

0

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

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

## 11.7 Registered Parks and Gardens

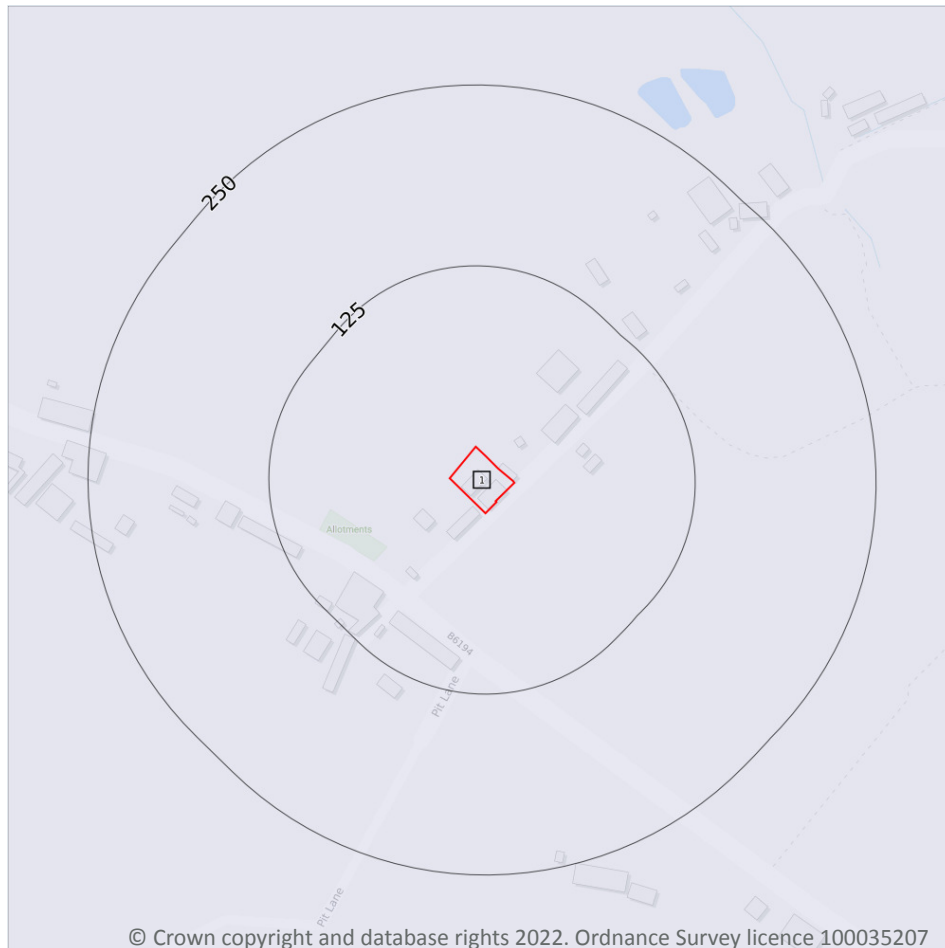
Records within 250m

0

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

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

## 12 Agricultural designations



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

### 12.1 Agricultural Land Classification

Records within 250m

1

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

Features are displayed on the Agricultural designations map on **page 63**

| ID | Location | Classification | Description                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----|----------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | On site  | Grade 4        | Poor quality agricultural land. Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land. |



*This data is sourced from Natural England.*

## 12.2 Open Access Land

**Records within 250m**

**0**

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

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

## 12.3 Tree Felling Licences

**Records within 250m**

**0**

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

*This data is sourced from the Forestry Commission.*

## 12.4 Environmental Stewardship Schemes

**Records within 250m**

**0**

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

*This data is sourced from Natural England.*

## 12.5 Countryside Stewardship Schemes

**Records within 250m**

**0**

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

*This data is sourced from Natural England.*



## 13 Habitat designations

### 13.1 Priority Habitat Inventory

Records within 250m

0

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

*This data is sourced from Natural England.*

### 13.2 Habitat Networks

Records within 250m

0

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

*This data is sourced from Natural England.*

### 13.3 Open Mosaic Habitat

Records within 250m

0

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

*This data is sourced from Natural England.*

### 13.4 Limestone Pavement Orders

Records within 250m

0

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

*This data is sourced from Natural England.*



## 14 Geology 1:10,000 scale - Availability



— Site Outline  
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

### 14.1 10k Availability

#### Records within 500m

2

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

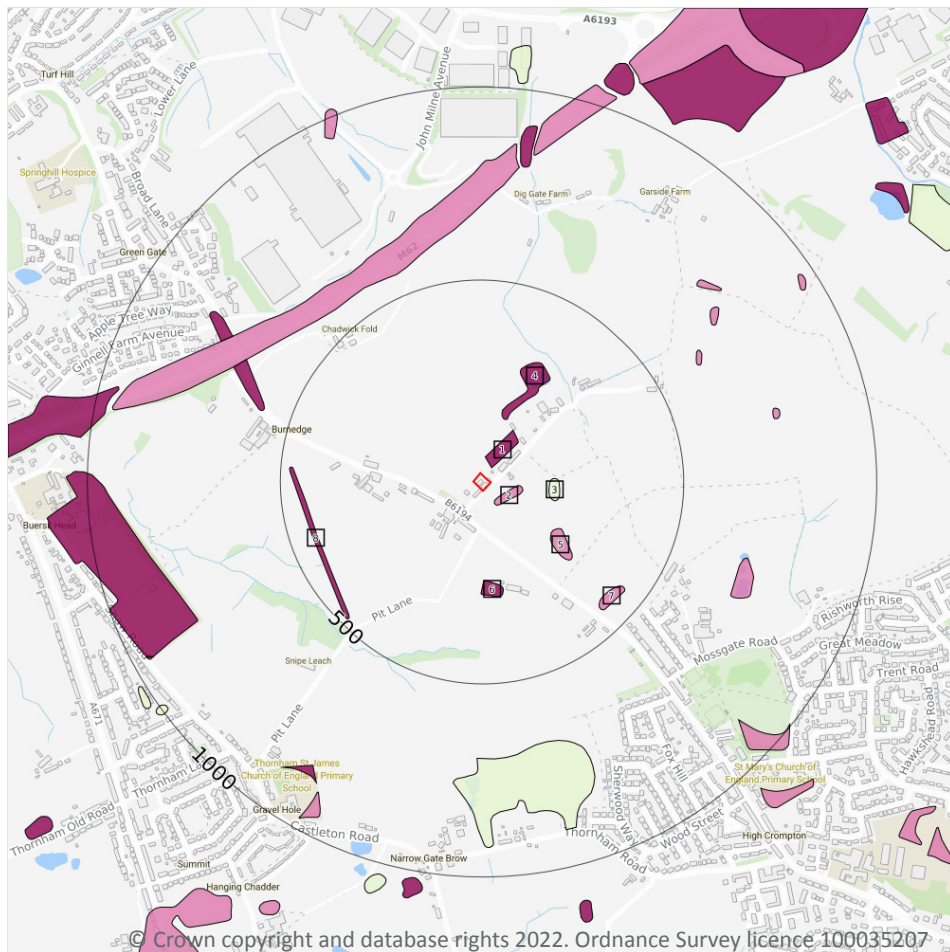
Features are displayed on the Geology 1:10,000 scale - Availability map on **page 66**

| ID | Location | Artificial | Superficial | Bedrock | Mass movement | Sheet No. |
|----|----------|------------|-------------|---------|---------------|-----------|
| 1  | On site  | Full       | Full        | Full    | Full          | SD91SW    |
| 2  | 430m S   | Full       | Full        | Full    | Full          | SD90NW    |

*This data is sourced from the British Geological Survey.*



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



- Site Outline
- Search buffers in metres (m)
- Reclaimed ground
  - Made ground
  - Worked ground
  - Infilled ground
  - Disturbed ground
  - Landscaped ground

### 14.2 Artificial and made ground (10k)

#### Records within 500m

8

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

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 67**

| ID | Location | LEX Code   | Description               | Rock description   |
|----|----------|------------|---------------------------|--------------------|
| 1  | 30m NE   | MGR-ARTDP  | Made Ground (Undivided)   | Artificial Deposit |
| 2  | 39m SE   | WGR-VOID   | Worked Ground (Undivided) | Void               |
| 3  | 152m E   | WMGR-ARTDP | Infilled Ground           | Artificial Deposit |
| 4  | 153m NE  | MGR-ARTDP  | Made Ground (Undivided)   | Artificial Deposit |

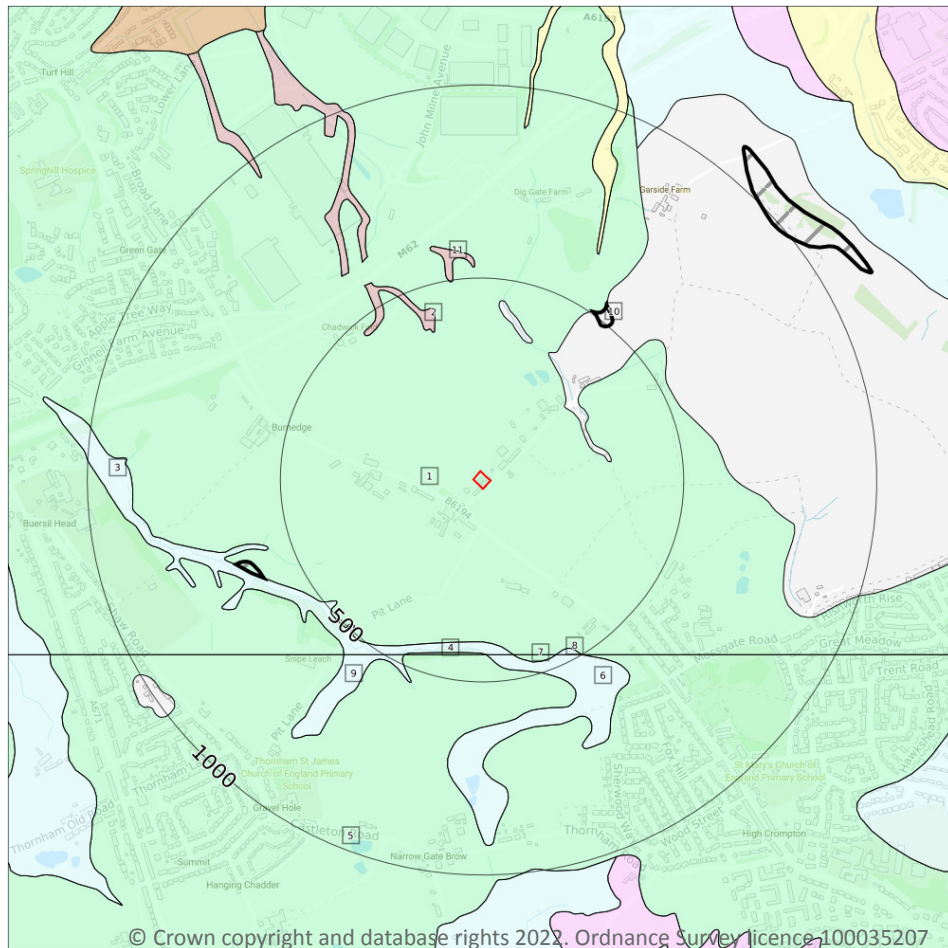


| ID | Location | LEX Code  | Description               | Rock description   |
|----|----------|-----------|---------------------------|--------------------|
| 5  | 203m SE  | WGR-VOID  | Worked Ground (Undivided) | Void               |
| 6  | 232m S   | MGR-ARTDP | Made Ground (Undivided)   | Artificial Deposit |
| 7  | 413m SE  | WGR-VOID  | Worked Ground (Undivided) | Void               |
| 8  | 428m W   | MGR-ARTDP | Made Ground (Undivided)   | Artificial Deposit |

*This data is sourced from the British Geological Survey.*



## Geology 1:10,000 scale - Superficial



- Site Outline
- Search buffers in metres (m)
- Landslip (10k)
- Superficial geology (10k)  
Please see table for more details.

### 14.3 Superficial geology (10k)

Records within 500m

10

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 69**

| ID | Location | LEX Code   | Description                                               | Rock description            |
|----|----------|------------|-----------------------------------------------------------|-----------------------------|
| 1  | On site  | HMGDD-DMTN | Hummocky (moundy) Glacial Deposits, Devensian - Diamicton | Diamicton                   |
| 2  | 380m N   | HEAD-XCZSV | Head - Clay, Silt, Sand And Gravel                        | Clay, Silt, Sand And Gravel |
| 3  | 396m S   | TILLD-DMTN | Till, Devensian - Diamicton                               | Diamicton                   |



| ID | Location | LEX Code   | Description                                               | Rock description            |
|----|----------|------------|-----------------------------------------------------------|-----------------------------|
| 4  | 426m S   | HMGDD-DMTN | Hummocky (moundy) Glacial Deposits, Devensian - Diamicton | Diamicton                   |
| 5  | 430m S   | HMGDD-DMTN | Hummocky (moundy) Glacial Deposits, Devensian - Diamicton | Diamicton                   |
| 6  | 430m S   | TILLD-DMTN | Till, Devensian - Diamicton                               | Diamicton                   |
| 7  | 437m S   | HMGDD-DMTN | Hummocky (moundy) Glacial Deposits, Devensian - Diamicton | Diamicton                   |
| 8  | 466m SE  | TILLD-DMTN | Till, Devensian - Diamicton                               | Diamicton                   |
| 9  | 475m SW  | TILLD-DMTN | Till, Devensian - Diamicton                               | Diamicton                   |
| 11 | 496m N   | HEAD-XCZSV | Head - Clay, Silt, Sand And Gravel                        | Clay, Silt, Sand And Gravel |

*This data is sourced from the British Geological Survey.*

## 14.4 Landslip (10k)

### Records within 500m

1

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

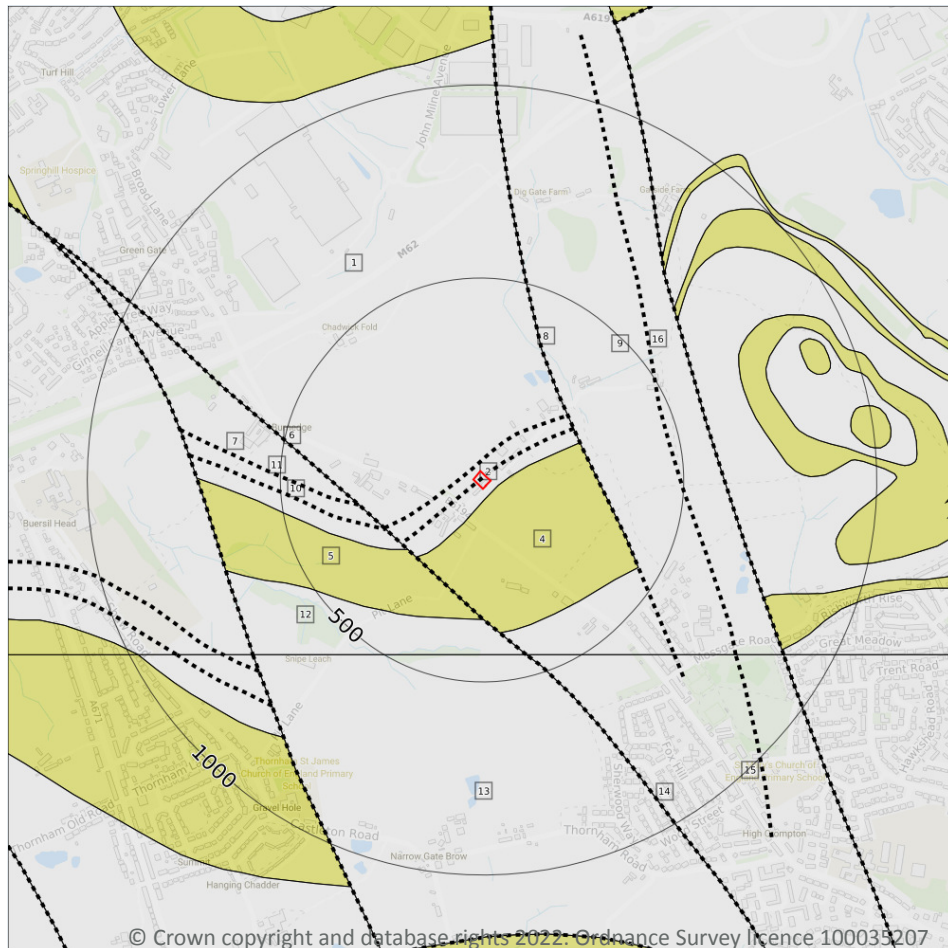
Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 69**

| ID | Location | LEX Code     | Description        | Rock description           |
|----|----------|--------------|--------------------|----------------------------|
| 10 | 490m NE  | SLIP-UNKNOWN | Landslide Deposits | Unknown/unclassified Entry |

*This data is sourced from the British Geological Survey.*



## Geology 1:10,000 scale - Bedrock



**Site Outline**

Search buffers in metres (m)

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

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

### 14.5 Bedrock geology (10k)

#### Records within 500m

8

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 71**

| ID | Location | LEX Code  | Description                                                               | Rock age            |
|----|----------|-----------|---------------------------------------------------------------------------|---------------------|
| 1  | On site  | PLCM-MDSS | Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone | Langsettian Sub-age |
| 4  | 22m SE   | RYSA-SDST | Royley Sandstone - Sandstone                                              | Langsettian Sub-age |
| 5  | 247m SW  | RYSA-SDST | Royley Sandstone - Sandstone                                              | Langsettian Sub-age |



| ID | Location | LEX Code  | Description                                                               | Rock age            |
|----|----------|-----------|---------------------------------------------------------------------------|---------------------|
| 7  | 248m SW  | PLCM-MDSS | Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone | Langsettian Sub-age |
| 9  | 251m NE  | PLCM-MDSS | Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone | Langsettian Sub-age |
| 12 | 338m S   | PLCM-MDSS | Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone | Langsettian Sub-age |
| 13 | 430m S   | PLCM-MDSS | Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone | Langsettian Sub-age |
| 15 | 444m S   | PLCM-MDSS | Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone | Langsettian Sub-age |

*This data is sourced from the British Geological Survey.*

## 14.6 Bedrock faults and other linear features (10k)

|                            |          |
|----------------------------|----------|
| <b>Records within 500m</b> | <b>8</b> |
|----------------------------|----------|

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

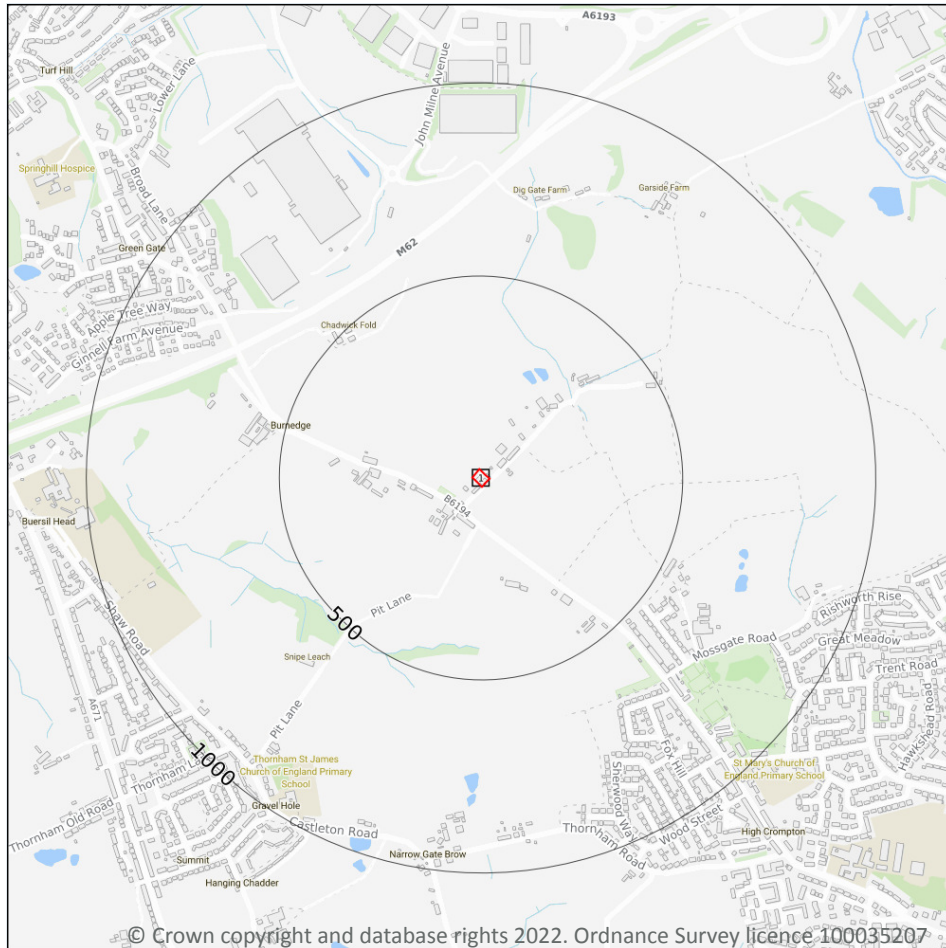
Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 71**

| ID       | Location       | Category    | Description                                          |
|----------|----------------|-------------|------------------------------------------------------|
| <b>2</b> | <b>On site</b> | <b>ROCK</b> | <b>Coal seam, inferred</b>                           |
| 3        | 18m NW         | ROCK        | Coal seam, inferred                                  |
| 6        | 247m SW        | FAULT       | Normal fault, inferred; crossmarks on downthrow side |
| 8        | 251m NE        | FAULT       | Normal fault, inferred; crossmarks on downthrow side |
| 10       | 261m SW        | ROCK        | Coal seam, inferred                                  |
| 11       | 304m W         | ROCK        | Coal seam, inferred                                  |
| 14       | 444m S         | FAULT       | Normal fault, inferred; crossmarks on downthrow side |
| 16       | 472m E         | FAULT       | Normal fault, inferred; crossmarks on downthrow side |

*This data is sourced from the British Geological Survey.*



## 15 Geology 1:50,000 scale - Availability



- Site Outline
- Search buffers in metres (m)
- Geological map tile

### 15.1 50k Availability

#### Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 73**

| ID | Location | Artificial  | Superficial | Bedrock | Mass movement | Sheet No.           |
|----|----------|-------------|-------------|---------|---------------|---------------------|
| 1  | On site  | No coverage | Full        | Full    | No coverage   | EW085_manchester_v4 |

*This data is sourced from the British Geological Survey.*



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

### 15.2 Artificial and made ground (50k)

Records within 500m

0

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

*This data is sourced from the British Geological Survey.*

### 15.3 Artificial ground permeability (50k)

Records within 50m

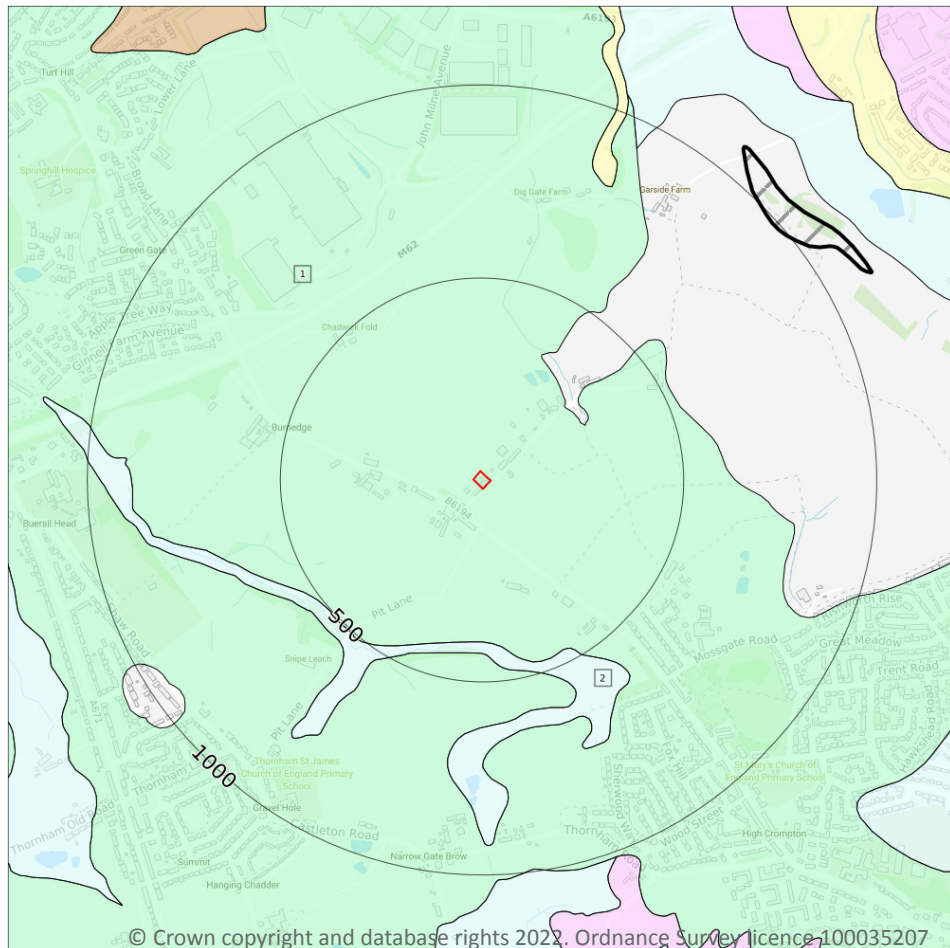
0

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

*This data is sourced from the British Geological Survey.*



## Geology 1:50,000 scale - Superficial



**Site Outline**

**Search buffers in metres (m)**

**Landslip (50k)**

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

### 15.4 Superficial geology (50k)

#### Records within 500m

2

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 75**

| ID | Location | LEX Code   | Description                                   | Rock description |
|----|----------|------------|-----------------------------------------------|------------------|
| 1  | On site  | HMGDD-DMTN | HUMMOCKY (MOUNDY) GLACIAL DEPOSITS, DEVENSIAN | DIAMICTON        |
| 2  | 397m S   | TILLD-DMTN | TILL, DEVENSIAN                               | DIAMICTON        |

*This data is sourced from the British Geological Survey.*



## 15.5 Superficial permeability (50k)

Records within 50m

1

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

| Location | Flow type | Maximum permeability | Minimum permeability |
|----------|-----------|----------------------|----------------------|
| On site  | Mixed     | High                 | Low                  |

*This data is sourced from the British Geological Survey.*

## 15.6 Landslip (50k)

Records within 500m

0

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

*This data is sourced from the British Geological Survey.*

## 15.7 Landslip permeability (50k)

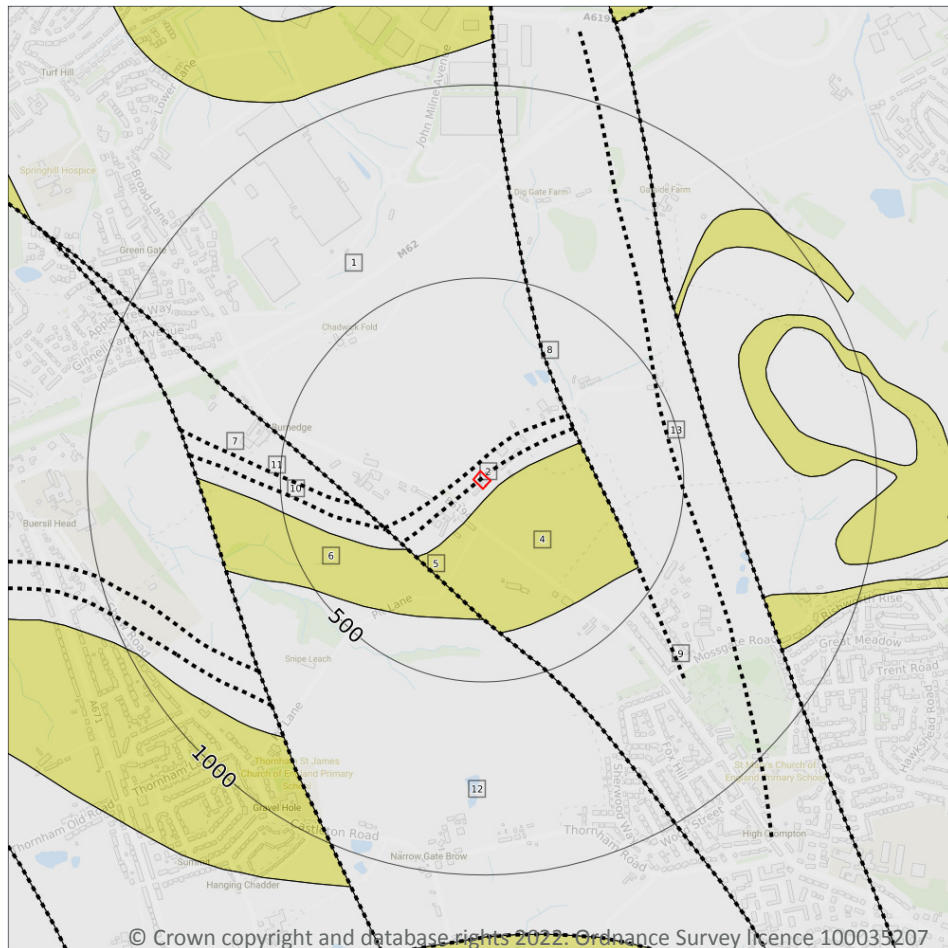
Records within 50m

0

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

*This data is sourced from the British Geological Survey.*

## Geology 1:50,000 scale - Bedrock



**Site Outline**

Search buffers in metres (m)

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

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

### 15.8 Bedrock geology (50k)

#### Records within 500m

6

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 77**

| ID | Location | LEX Code  | Description                                                               | Rock age    |
|----|----------|-----------|---------------------------------------------------------------------------|-------------|
| 1  | On site  | PLCM-MDSS | PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |
| 4  | 23m SE   | RYSA-SDST | ROYLEY SANDSTONE - SANDSTONE                                              | WESTPHALIAN |
| 6  | 247m SW  | RYSA-SDST | ROYLEY SANDSTONE - SANDSTONE                                              | WESTPHALIAN |



| ID | Location | LEX Code  | Description                                                               | Rock age    |
|----|----------|-----------|---------------------------------------------------------------------------|-------------|
| 7  | 248m SW  | PLCM-MDSS | PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |
| 9  | 252m E   | PLCM-MDSS | PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |
| 12 | 338m S   | PLCM-MDSS | PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |

*This data is sourced from the British Geological Survey.*

## 15.9 Bedrock permeability (50k)

### Records within 50m

2

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

| Location       | Flow type       | Maximum permeability | Minimum permeability |
|----------------|-----------------|----------------------|----------------------|
| <b>On site</b> | <b>Fracture</b> | <b>Moderate</b>      | <b>Low</b>           |
| 22m SW         | Fracture        | High                 | Moderate             |

*This data is sourced from the British Geological Survey.*

## 15.10 Bedrock faults and other linear features (50k)

### Records within 500m

7

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 77**

| ID       | Location       | Category    | Description                |
|----------|----------------|-------------|----------------------------|
| <b>2</b> | <b>On site</b> | <b>ROCK</b> | <b>Coal seam, inferred</b> |
| 3        | 18m NW         | ROCK        | Coal seam, inferred        |
| 5        | 247m SW        | FAULT       | Fault, inferred            |
| 8        | 251m NE        | FAULT       | Fault, inferred            |
| 10       | 261m SW        | ROCK        | Coal seam, inferred        |
| 11       | 304m W         | ROCK        | Coal seam, inferred        |

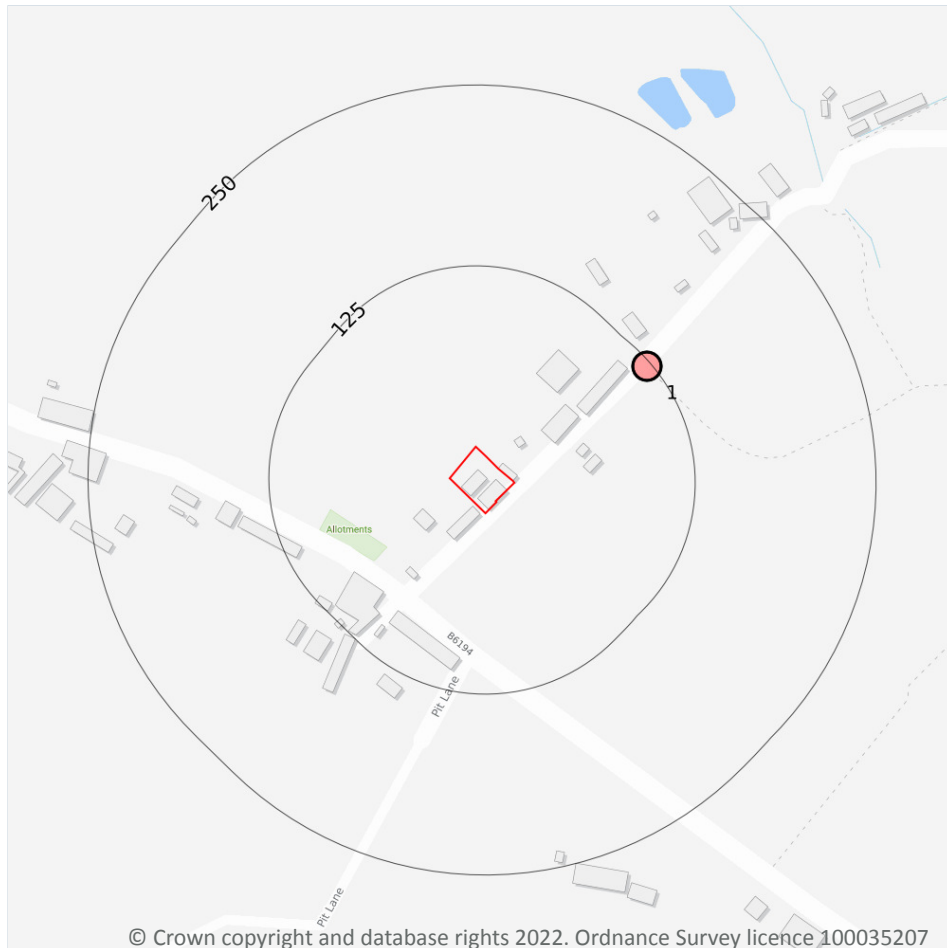


| ID | Location | Category | Description     |
|----|----------|----------|-----------------|
| 13 | 472m E   | FAULT    | Fault, inferred |

*This data is sourced from the British Geological Survey.*



## 16 Boreholes



— Site Outline  
Search buffers in metres (m)

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

### 16.1 BGS Boreholes

#### Records within 250m

1

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

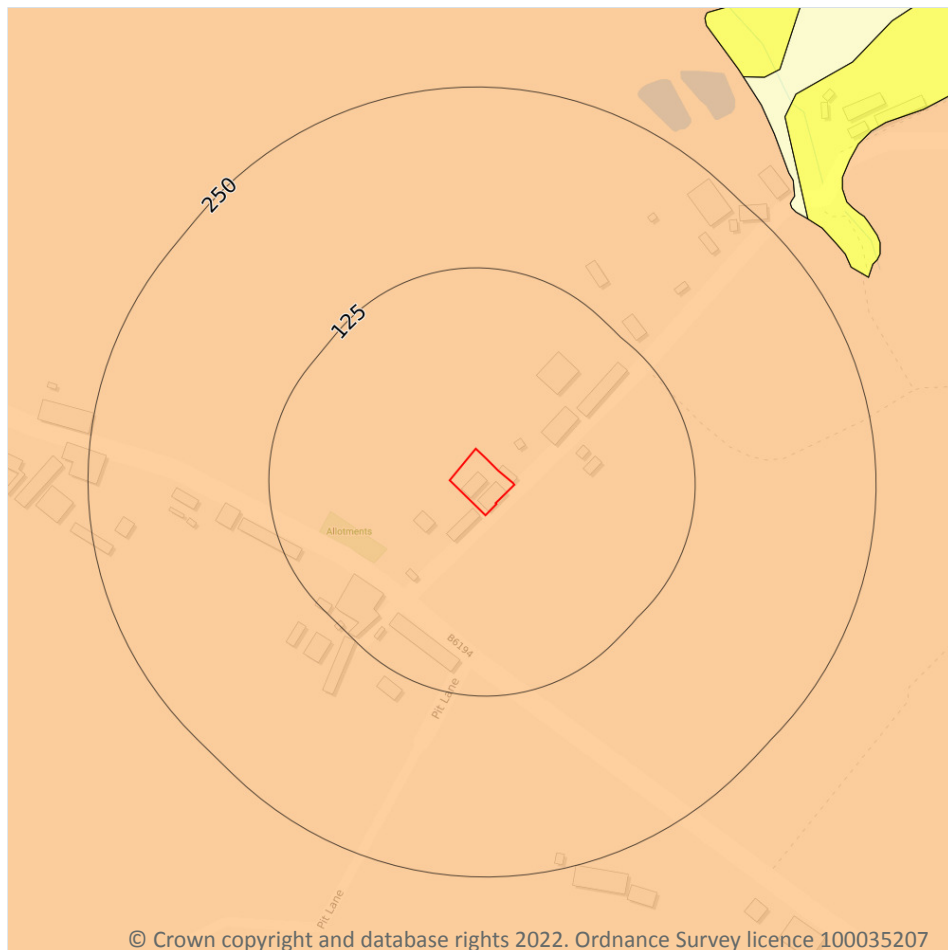
Features are displayed on the Boreholes map on **page 80**

| ID | Location | Grid reference | Name          | Length | Confidential | Web link              |
|----|----------|----------------|---------------|--------|--------------|-----------------------|
| 1  | 122m NE  | 392116 410531  | OLD BARN FARM | 76.2   | N            | <a href="#">35154</a> |

*This data is sourced from the British Geological Survey.*



## 17 Natural ground subsidence - Shrink swell clays



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

### 17.1 Shrink swell clays

#### Records within 50m

1

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

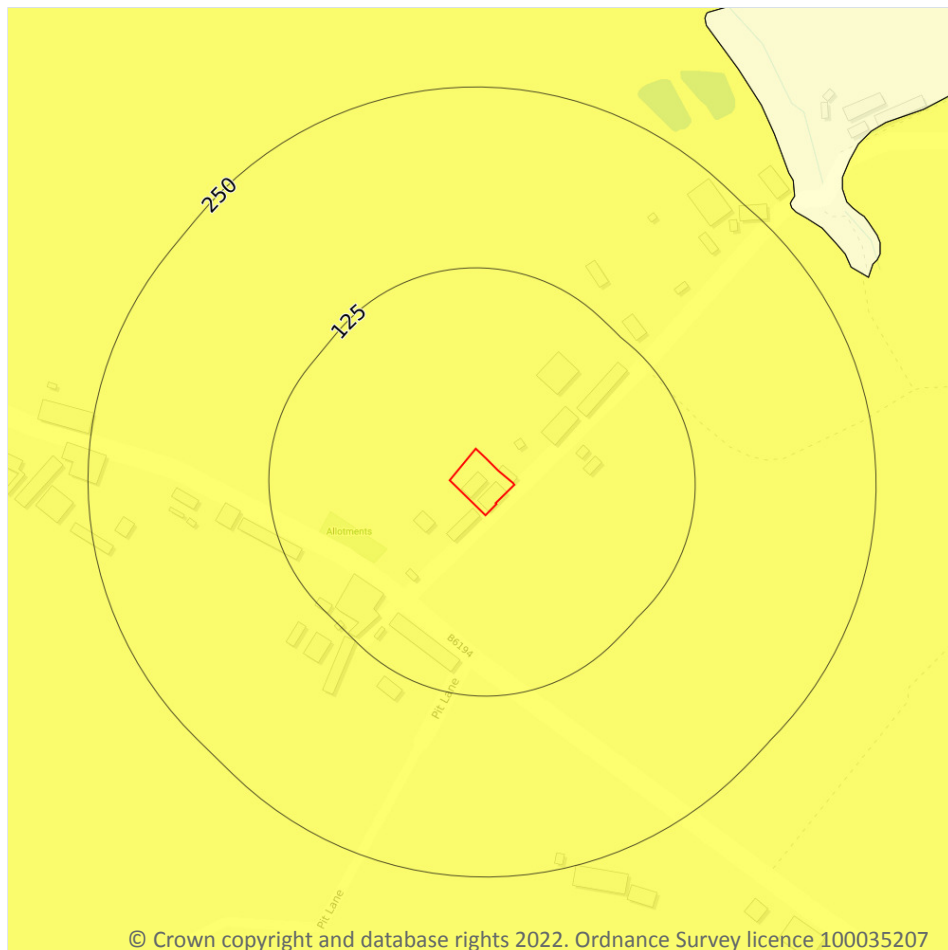
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 81**

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

*This data is sourced from the British Geological Survey.*



## Natural ground subsidence - Running sands



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

© Crown copyright and database rights 2022. Ordnance Survey licence 100035207

### 17.2 Running sands

#### Records within 50m

1

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

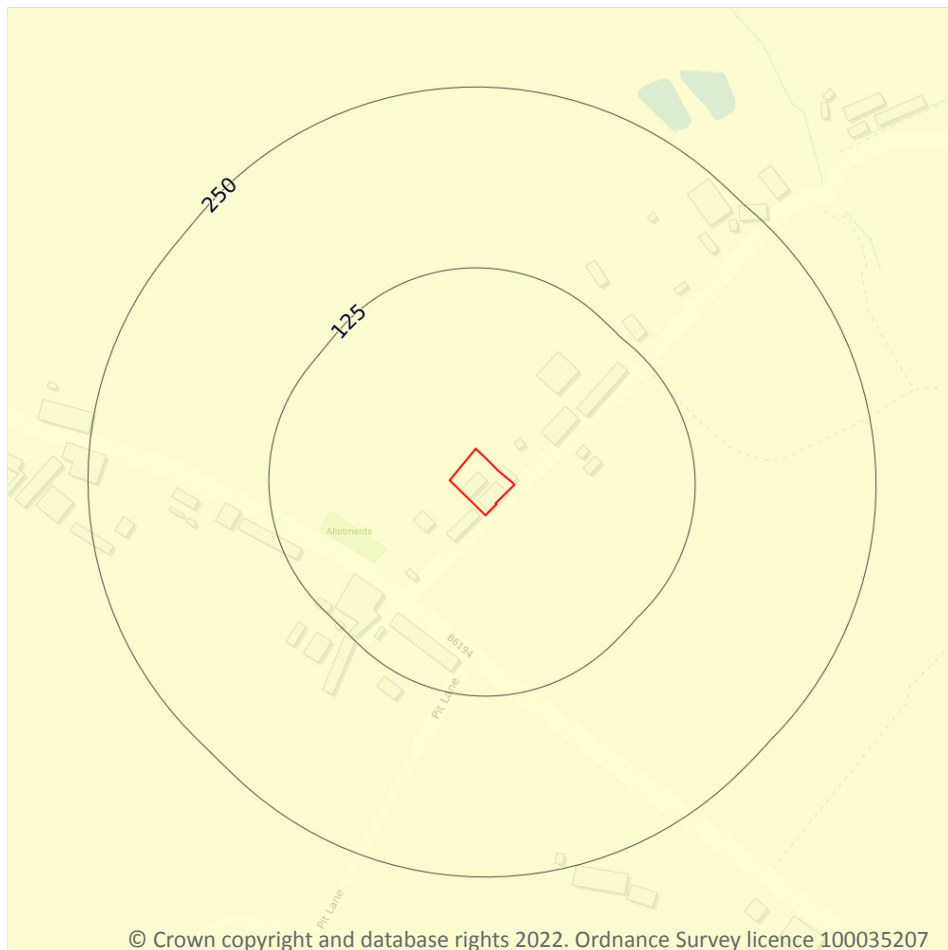
Features are displayed on the Natural ground subsidence - Running sands map on **page 82**

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

*This data is sourced from the British Geological Survey.*



## Natural ground subsidence - Compressible deposits



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

© Crown copyright and database rights 2022. Ordnance Survey licence 100035207

### 17.3 Compressible deposits

#### Records within 50m

1

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

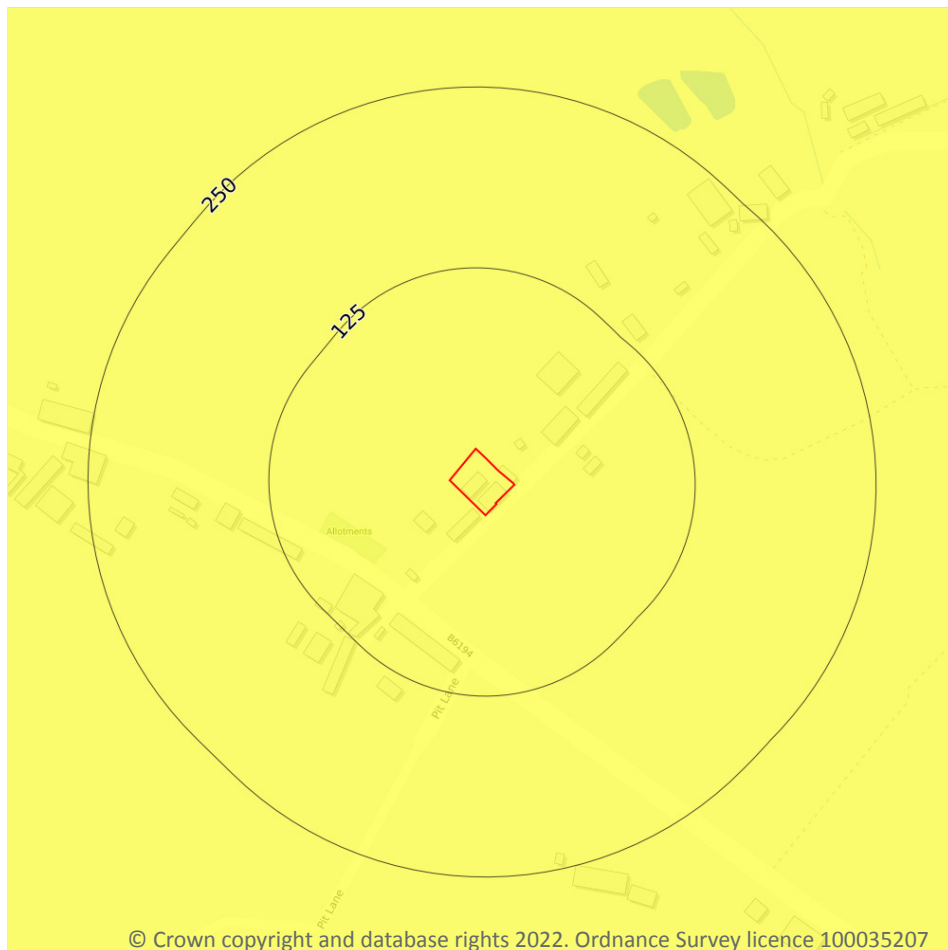
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 83**

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

*This data is sourced from the British Geological Survey.*



## Natural ground subsidence - Collapsible deposits



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

© Crown copyright and database rights 2022. Ordnance Survey licence 100035207

### 17.4 Collapsible deposits

#### Records within 50m

1

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

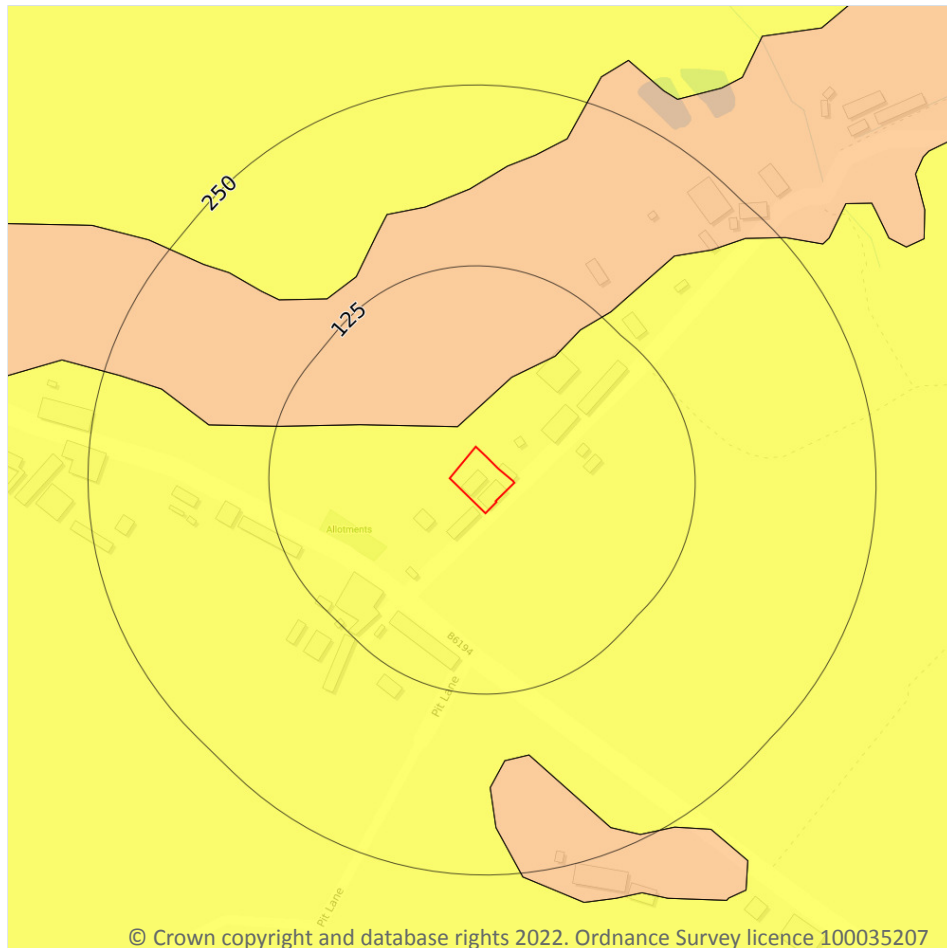
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 84**

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

*This data is sourced from the British Geological Survey.*



## Natural ground subsidence - Landslides



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

© Crown copyright and database rights 2022. Ordnance Survey licence 100035207

### 17.5 Landslides

#### Records within 50m

2

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

Features are displayed on the Natural ground subsidence - Landslides map on **page 85**

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

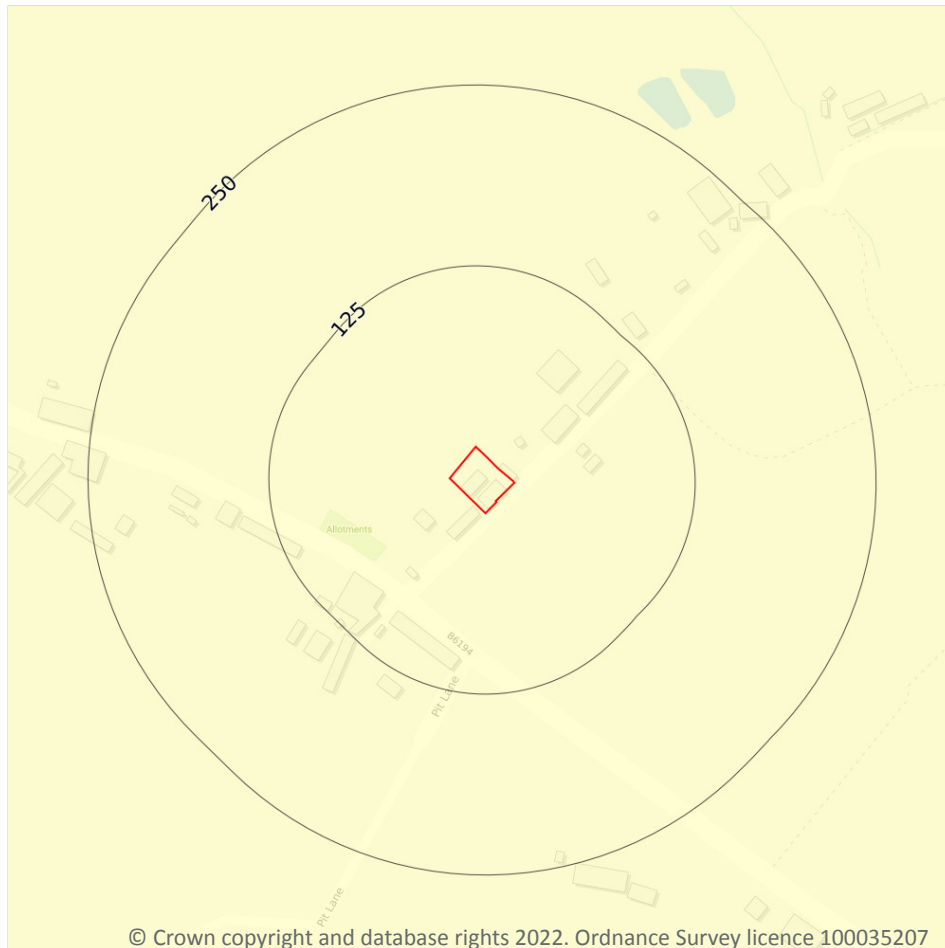


| Location | Hazard rating | Details                                                                                                                                    |
|----------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 19m NW   | Low           | Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site. |

*This data is sourced from the British Geological Survey.*



## Natural ground subsidence - Ground dissolution of soluble rocks



— Site Outline  
Search buffers in metres (m)

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

### 17.6 Ground dissolution of soluble rocks

#### Records within 50m

1

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

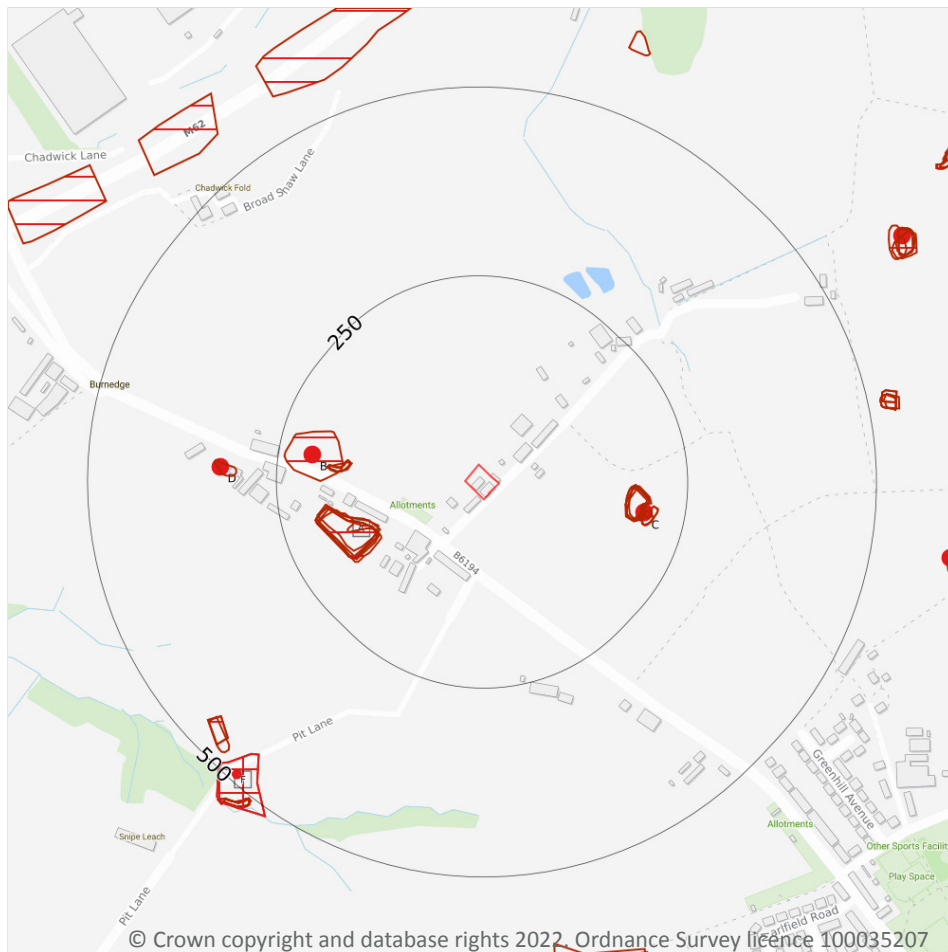
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 87**

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

*This data is sourced from the British Geological Survey.*



## 18 Mining, ground workings and natural cavities



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

### 18.1 Natural cavities

Records within 500m

0

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

*This data is sourced from Stantec UK Ltd.*

## 18.2 BritPits

### Records within 500m

**3**

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 88**

| ID | Location | Details                                                                                     | Description                                                                                                                                                                                                                                                                                                                              |
|----|----------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| C  | 195m E   | Name: Burn Edghe Sand Pit<br>Address: SHAW, Lancashire<br>Commodity: Sand<br>Status: Ceased | Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site<br>Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority |
| B  | 205m W   | Name: Burn Edge<br>Address: SHAW, Lancashire<br>Commodity: Sandstone<br>Status: Ceased      | Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site<br>Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority |
| D  | 325m W   | Name: Burn Edge<br>Address: SHAW, Lancashire<br>Commodity: Sandstone<br>Status: Ceased      | Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site<br>Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority |

*This data is sourced from the British Geological Survey.*

## 18.3 Surface ground workings

### Records within 250m

**21**

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 88**

| ID | Location | Land Use   | Year of mapping | Mapping scale |
|----|----------|------------|-----------------|---------------|
| A  | 129m SW  | Ponds      | 1891            | 1:10560       |
| A  | 130m SW  | Reservoirs | 1967            | 1:10560       |
| A  | 133m SW  | Ponds      | 1851            | 1:10560       |



| ID | Location | Land Use                    | Year of mapping | Mapping scale |
|----|----------|-----------------------------|-----------------|---------------|
| A  | 133m SW  | Reservoirs                  | 1954            | 1:10560       |
| A  | 136m SW  | Reservoirs                  | 1938            | 1:10560       |
| A  | 136m SW  | Reservoirs                  | 1928            | 1:10560       |
| A  | 136m SW  | Reservoirs                  | 1907            | 1:10560       |
| B  | 152m W   | Unspecified Pit             | 1954            | 1:10560       |
| B  | 155m W   | Unspecified Ground Workings | 1938            | 1:10560       |
| B  | 155m W   | Unspecified Ground Workings | 1928            | 1:10560       |
| B  | 155m W   | Unspecified Ground Workings | 1907            | 1:10560       |
| B  | 164m W   | Sandstone Quarry            | 1851            | 1:10560       |
| C  | 170m E   | Unspecified Quarry          | 1891            | 1:10560       |
| C  | 170m E   | Unspecified Pit             | 1938            | 1:10560       |
| C  | 170m E   | Unspecified Pit             | 1928            | 1:10560       |
| C  | 170m E   | Unspecified Old Quarry      | 1907            | 1:10560       |
| C  | 173m E   | Unspecified Pit             | 1967            | 1:10560       |
| C  | 174m E   | Unspecified Pit             | 1954            | 1:10560       |
| C  | 194m E   | Unspecified Heap            | 1938            | 1:10560       |
| C  | 194m E   | Unspecified Heap            | 1928            | 1:10560       |
| C  | 196m E   | Sand Pit                    | 1851            | 1:10560       |

*This is data is sourced from Ordnance Survey/Groundsure.*

## 18.4 Underground workings

### Records within 1000m

7

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 88**

| ID | Location | Land Use                  | Year of mapping | Mapping scale |
|----|----------|---------------------------|-----------------|---------------|
| F  | 451m SW  | Old Colliery              | 1891            | 1:10560       |
| F  | 484m SW  | Unspecified Disused Shaft | 1976            | 1:10000       |



| ID | Location | Land Use                  | Year of mapping | Mapping scale |
|----|----------|---------------------------|-----------------|---------------|
| F  | 484m SW  | Unspecified Disused Shaft | 1967            | 1:10560       |
| F  | 486m SW  | Unspecified Old Shaft     | 1954            | 1:10560       |
| F  | 488m SW  | Unspecified Old Shaft     | 1938            | 1:10560       |
| F  | 488m SW  | Unspecified Old Shaft     | 1928            | 1:10560       |
| F  | 488m SW  | Unspecified Old Shaft     | 1907            | 1:10560       |

*This is data is sourced from Ordnance Survey/Groundsure.*

## 18.5 Historical Mineral Planning Areas

**Records within 500m**

**0**

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

*This data is sourced from the British Geological Survey.*

## 18.6 Non-coal mining

**Records within 1000m**

**0**

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

*This data is sourced from the British Geological Survey.*

## 18.7 Mining cavities

**Records within 1000m**

**0**

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

*This data is sourced from Stantec UK Ltd.*



## 18.8 JPB mining areas

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

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

*This data is sourced from Johnson Poole and Bloomer.*

## 18.9 Coal mining

|                 |   |
|-----------------|---|
| Records on site | 1 |
|-----------------|---|

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

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

*This data is sourced from the Coal Authority.*

## 18.10 Brine areas

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

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

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

## 18.11 Gypsum areas

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

Generalised areas that may be affected by gypsum extraction.

*This data is sourced from British Gypsum.*

## 18.12 Tin mining

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

Generalised areas that may be affected by historical tin mining.

*This data is sourced from Groundsure.*



## 18.13 Clay mining

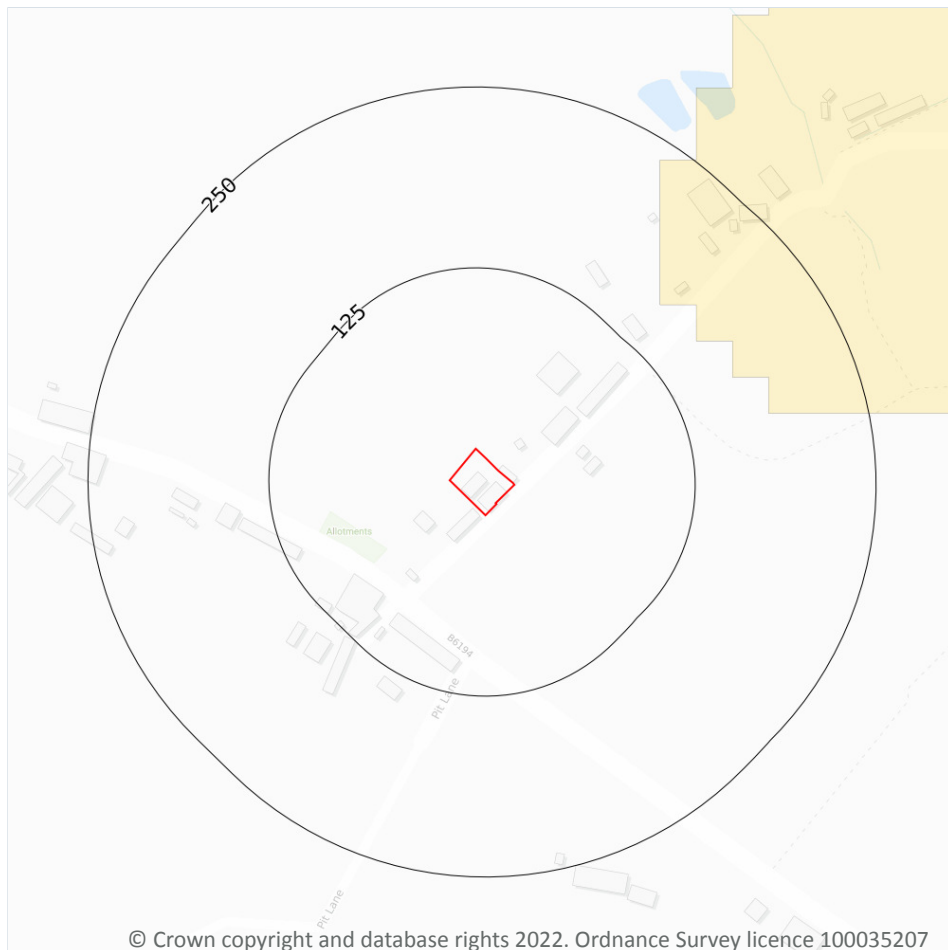
|                 |   |
|-----------------|---|
| Records on site | 0 |
|-----------------|---|

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

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



## 19 Radon



- Site Outline
- Search buffers in metres (m)
- Greater than 30%
  - Between 10% and 30%
  - Between 5% and 10%
  - Between 3% and 5%
  - Between 1% and 3%
  - Less than 1%

© Crown copyright and database rights 2022. Ordnance Survey licence 100035207

### 19.1 Radon

#### Records on site

1

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

Features are displayed on the Radon map on **page 94**

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

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



## 20 Soil chemistry

### 20.1 BGS Estimated Background Soil Chemistry

Records within 50m

6

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

| Location | Arsenic       | Bioaccessible Arsenic | Lead            | Bioaccessible Lead | Cadmium   | Chromium      | Nickel        |
|----------|---------------|-----------------------|-----------------|--------------------|-----------|---------------|---------------|
| On site  | 25 - 35 mg/kg | No data               | 100 mg/kg       | 60 mg/kg           | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site  | 25 - 35 mg/kg | No data               | 100 - 200 mg/kg | 60 - 120 mg/kg     | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| On site  | 25 - 35 mg/kg | No data               | 100 mg/kg       | 60 mg/kg           | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| 24m NW   | 25 - 35 mg/kg | No data               | 100 - 200 mg/kg | 60 - 120 mg/kg     | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| 25m N    | 25 - 35 mg/kg | No data               | 200 - 300 mg/kg | 120 - 240 mg/kg    | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |
| 25m N    | 25 - 35 mg/kg | No data               | 100 - 200 mg/kg | 60 - 120 mg/kg     | 1.8 mg/kg | 60 - 90 mg/kg | 15 - 30 mg/kg |

*This data is sourced from the British Geological Survey.*

### 20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

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

*This data is sourced from the British Geological Survey.*



## 20.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

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

*This data is sourced from the British Geological Survey.*



## 21 Railway infrastructure and projects

### 21.1 Underground railways (London)

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

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

*This data is sourced from publicly available information by Groundsure.*

### 21.2 Underground railways (Non-London)

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

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

*This data is sourced from publicly available information by Groundsure.*

### 21.3 Railway tunnels

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

Railway tunnels taken from contemporary Ordnance Survey mapping.

*This data is sourced from the Ordnance Survey.*

### 21.4 Historical railway and tunnel features

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

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

*This data is sourced from Ordnance Survey/Groundsure.*

### 21.5 Royal Mail tunnels

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

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



*This data is sourced from Groundsure/the Postal Museum.*

## 21.6 Historical railways

**Records within 250m**

**0**

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

*This data is sourced from OpenStreetMap.*

## 21.7 Railways

**Records within 250m**

**0**

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

*This data is sourced from Ordnance Survey and OpenStreetMap.*

## 21.8 Crossrail 1

**Records within 500m**

**0**

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

*This data is sourced from publicly available information by Groundsure.*

## 21.9 Crossrail 2

**Records within 500m**

**0**

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

*This data is sourced from publicly available information by Groundsure.*

## 21.10 HS2

**Records within 500m**

**0**

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

*This data is sourced from HS2 Ltd.*



## Data providers

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

## Terms and conditions

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

