



Wicken Hall Mill, Ogden Lane, Newhey

Phase 1 Geo-Environmental Investigation

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1.0 INTRODUCTION

This Phase 1 Geo-Environmental Investigation report has been prepared at the request of Leigh Kelly.

Instructions to proceed were received in September 2022. Phase 1 desk study work was undertaken between 4th and 21st October 2022.

Proposed Development

This Phase 1 Geo-Environmental Investigation is to be used for submission to the Local Authority as part of a planning application. It is the Client's intention to develop the site into a low-rise residential development comprising 2 No. detached dwellings with associated private gardens, soft landscaping and access roads.

A proposed development plan is contained in Appendix 10.

1.1 Brief

The brief was to carry out a Phase 1 Geo-Environmental Investigation for the site based upon the proposed development outlined in Section 1.0. The site area is shown on the site location plan contained in Appendix 2.

The investigation was to include the following:

- a) Assess the probable ground conditions and contaminated land conditions on and below the site based on existing and historic site uses and relevant off-site activities, this is to include a site walkover.
- b) Identify probable contaminants / sources of contamination that may be present at the site using current contaminated land guidance and develop a conceptual site model for potential human health, ground gas and controlled waters receptors.

- c) Undertake a Preliminary Risk Assessment – which will determine the requirement for further environmental (contaminated land) investigation and assessment.
- d) Design on the basis of the anticipated ground conditions appropriate ground investigation works and discuss potential development issues (i.e. sub-surface features – obstructions, infilling, compressible ground, faulting, mineral extraction, mining and land instability).

A summary of the information / data sources is detailed in Section 2.2. A report was to be provided to summarise findings and to provide recommendations.

The limitations of this investigation work and report are included in Appendix 1.

1.2 Third Parties

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2.0 SCOPE OF INVESTIGATION WORKS

2.1 Walkover Survey

The site was visited on 4th October 2022 in clear weather conditions and the objectives of the site walkover were, where applicable:

- to identify and assess visual and olfactory evidence of contamination (e.g. staining of concrete / soils, odours, presence of gas protection measures etc.);
- to identify locations of potential sources of contamination and assess their conditions (i.e. tank location, presence / condition of secondary containment / bunds, location of fill points, process areas);
- to identify surrounding land uses and any potentially contaminating activities;
- to identify / verify the presence of potential receptors (on- and off-site) which may be affected by identified sources;
- to obtain information on activities / procedures and standards of housekeeping etc.;
- to assess site access and potential investigation locations and constraints; and
- to assess any visual subsurface geotechnical features / anomalies (e.g. foundations, Made Ground, subsidence etc.).

Photographs were taken of the site during the walkover survey and these photographs, together with a plan indicating their location and direction, are contained in Appendix 3.

2.2 Documentation

The following documents were obtained and examined during the desk study:

- a) A combined Enviro + Geo Insight report was obtained from Groundsure, an environmental database company, which provides a list of recorded past and present activities at or adjacent to the site which could have an impact on the levels of contamination in the soils and groundwater at the site. The report is contained in Appendix 5.

- b) Aerial photographs of the site dated: May 2019, March 2012, May 2001 and May 2000. The photographs are contained within the Groundsure Enviro + Geo Insight report in Appendix 5.
- c) Historical Ordnance Survey maps dated between 1851 and 2022, at scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.
- d) Groundsure maps, all dated 2022, as follows:
- Historical Land Use map;
 - Environmental Permits, Incidents and Registers map;
 - Landfill and other Waste Sites map;
 - Current Land Use map;
 - Hydrogeology and Hydrology maps;
 - Environment Agency / Natural Resources Wales flood maps;
 - Designated Environmentally Sensitive Sites map;
 - Geological maps and Ground Working map;
 - Mining, Extraction & Natural Cavities map;
 - Natural Ground Subsidence maps;
 - Borehole Records map;
 - Railways and Tunnels map.

These maps are contained within the Enviro + Geo Insight report in Appendix 5.

- e) The following sources were obtained and examined from the British Geological survey. All items were copied under licence; [C18/01] British Geological Survey ©UKRI. All rights reserved:
- The British Geological Survey (BGS) 1:50,000 solid and drift geological maps (Sheet 85 dated 2011).
 - The BGS Geological Memoir – The geology of the country around Oldham, including Manchester and its Suburbs. Dated 1864.
 - The BGS Geological Memoir – The geology of Manchester and the south-east Lancashire Coalfield. Dated 1931.

- 3 No. BGS Borehole logs were also obtained (Ref: SD91SE12-13 and SD91SE15B).

f) A Zetica UXO Risk Map is included in Appendix 7.

3.0 FINDINGS

3.1 Site Location and Description

This report pertains to a c. 0.16Ha site located 480m south of the Higher Ogden Village, c. 5.5km south-east of Rochdale Town Centre, at the approximate post code OL16 3TG. The National Ordnance Survey Grid Reference for the centre of the site is 395463E, 411806N.

The site currently comprises derelict land, with on-site private cabins and established trees along site boundaries. The site is bound by established trees to the north and east, industrial and agricultural buildings to the southeast and an access road to the west and south. Access to the site is off the local access road in the south of the site. An aerial photo of the site is included below:



Figure 1: Aerial image of the site dated April 2021.

3.2 Walkover Survey

The walkover survey was carried out on 4th October 2022 during overcast weather conditions. During the walkover survey the following features were noted.

The site currently comprises derelict land, with on-site cabins and established trees along site boundaries. The ground underfoot was noted to be Made Ground across the site, with some areas of grass and shrubbery, mainly in the north and north-east site sections. Established trees are noted along the northern and eastern site boundaries. Numerous portable cabins are present in the eastern and south-eastern site sections, some noted to be used as a dog kennel with an area of palisade fencing noted around the cabins.



Figure 2: Photograph showing the extent of the site, looking north.

The topography of the site gently falls from c. 232m in the eastern site section to c. 230m AOD in the northern site section, before steeply sloping down towards the northern boundary to c. 223m to the north of the site. A c. 10m tall man-made slope (1:1 gradient) partially formed by a retaining wall is present in the northern site section and along the northern boundary. A densely vegetated natural slope (c. 1:2 - 1-3) is also recorded along the eastern boundary forming the valley wall bearing signs of suspected past landslips and land movement. A second retaining wall approx. 2m tall, was noted along the western site boundary, constructed to form car parking bays along the western site boundary.



Figure 3: Photographs showing the topography of the northern site section dropping off steeply, looking northeast (left photo) and of the 2m retaining wall along the western boundary (right photo)

A contour plan based on the 1m DTM LiDAR data is included below for reference, showing the locations of the slopes mentioned above

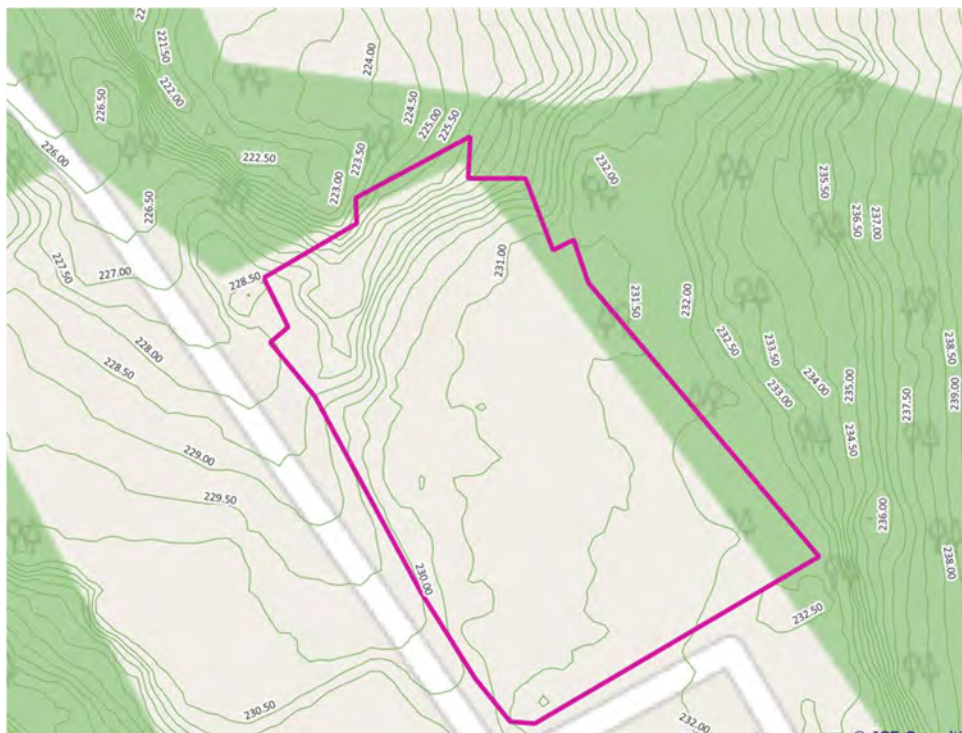


Figure 4; Extract of the LiDAR Plan showing the site topography and slopes to the north and east of the site.

A culverted stream has been noted in the western site section, oriented NW-SE. The water level was recorded at 6.10m below site surface, the base of the culvert could not be determined during site walkover. A retaining wall is present at the northern terminus of the culvert, with a steep slope above it, indicating past significant upfill of the site. Anecdotal evidence suggests that the culvert has been diverted in recent

years to facilitate the development of residential dwellings to the south if of the site, therefore the route in the southern site section may have changed.



Figure 5: Photographs showing the culvert access point on-site in the western site section (left) and the northern retaining wall where the culvert ends (right).

Overhead power cables were noted along the western and southern site boundaries. A few manholes were also recorded, one in the western site section, associated with the culverted stream, as well as in the eastern site section.



Figure 6: Photograph showing the overhead electricity lines in the southwestern site corner, looking northeast.

Contamination

Evidence for the burning of materials was noted on-site, potentially acting as a contaminative hotspot in the centre of the site. The contents of the 2 No cabins found

on-site are unknown, however, one of them was noted to be used as a dog kennel. No other significant contaminative sources were noted on-site (i.e. tanks).



Figure 7: Photograph showing the possible contaminative hotspot in the centre of the site, looking east.

Obstructions

The remnants of the historical industrial buildings are present on site and could potentially influence the future on-site developments. The most notable features are present in the northern site section where a small brick building of unknown use is present. Evidence of possible subterranean concrete construction were also noted, possibly former floor slabs or foundations and walls.



Figure 8: Photograph showing the remnants of historical structures: a concrete floor slab (left) and an unknown rectangular structure in the northern site section (right).

3.3 Site History

The site development history has been researched by reference to historical maps, street plans and aerial photographs. The historical maps are included in Appendix 4 to this report and the principal observations which are divided into on-site history and off-site history are summarised below:

On-Site History

Date	Site Feature
1851 – 1888	On the earliest historical map, the site is recorded as a field in the Higher Ogden village with unspecified buildings present in the middle site section, recorded from 1888. An unnamed stream is noted to run along the western site boundary, which appears to be culverted under the site.
1888 - 1909	A gasometer is recorded in the northern site section, later recorded as a tank. Filter beds and/or tanks are also noted in the northern site section.
1909 - 1928	Evidence for potential site uplift is now recorded on the historical maps, could possibly also signify a potential refuse heap.
1928 – 1992	A building which is a part of the Wicken Hall Print Works is present on-site from 1928, with the main print works buildings located to the south, recorded as an unspecified Mill since the mid-1960s. Filter tanks are noted in the northern site section near the gasometer. The former gasometer is no longer recorded. The evidence for site uplift/refuse tip is not recorded from 1930 following site development.
1992 – Present	The building associated with the Wicken Hall Print Works is no longer recorded on-site. Unknown buildings are recorded in the southern site section, not noted after 2003. The site appears to have remained relatively unchanged since.

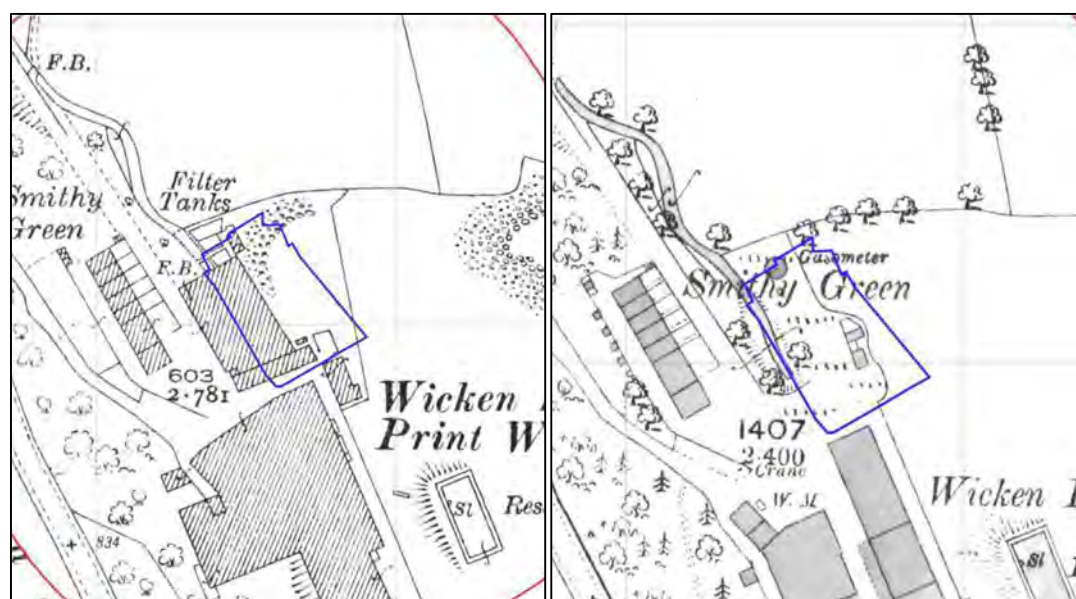




Figure 9: Extracts of the OS historical maps dated 1892, 1930, 1992 and 2003 from left to right, top to bottom

Off Site History

Date	Site Feature	Distance (m)	Direction
1907 - 1992	Wicken Hall Print Works , industrial buildings are noted to the south of the site, later recorded as Works or Mill, with time the site becomes an extension of the works, no longer present since 1992.	10 – 80	S
1851 – 1907	Fulling Mill , recorded as Wicken Hall Bleach and Dye Works in 1907 are recorded in the late 19 th century before expansion and rebranding into the above Print Works.	10 – 80	S
1930 – 1992	A relatively large Refuse Tip is noted to the east of the site between Wicken Hall Print Works and Wicken Hall Farm.	70	E
1892 – Present	A rectangular Reservoir is noted on one of the earliest historical records, and it is still currently present and active.	80	SE
1851 – 1928	A small Reservoir is noted in the vicinity of the site and two larger reservoirs. It is disused and presumably infilled by the 1930s.	100	S
1892 – 1992	A Chimney is noted to the south-east of the site along the local access road. It has been presumably disused and demolished in the early 1990s as it does not appear on historical records.	130	SE
1851 – Present	Two additional Reservoirs are found within 100 – 250m of the site. Since the earliest historical records, they remained unchanged until the present day. The larger one is now noted to contain much less water than before.	130 - 250	SE
1930 – 1992	A cluster of four Refuse Tips is recorded to the west of the site. The refuse tips have been active until the early 1990s.	200	W
1892 – 1992	Two Old Quarries are recorded to the south west of the site. They have been active for a century before being disused in the early 1990s.	200 – 300	SW
1909 – 1992	An additional Refuse Tip was recorded to the south of the site in the vicinity of one of the Old Quarries.	240	S

1888 – Present	Spring Mill , an industrial mill of unknown type is noted to the north of the site. It has been active the late 19 th century and remains active in the present times.	480	N
1851 - 1979	A Coal Pit , later referred to as Old Shaft, is present to the south-west of the site, associated with the nearby coal workings.	750	SW

3.4 Geology

3.4.1 BGS Geological Map

The BGS 1:50,000 Solid and Drift Geological Maps of the area (Sheet No: 76, both dated 2008) indicate that the site is underlain by superficial deposits comprising **Glacial Till** which typically comprises a heterogenous mixture of clays, sands and gravels. The superficial deposits are underlain by variable bedrock. The majority of the site is underlain by bedrock of the **Rough Rock**, comprising coarse, cross-bedded sandstone. The westernmost site section along the western site boundary is underlain by Rossendale Formation, comprising mudstone and siltstone.



Figure 10: Extracts of the BGS 1:50,000 Drift (left) and Solid (right) Geological Maps. Light blue = Glacial Till, Dark Pink = Rough Rock, Light Pink = Rossendale Formation, Black Dotted, Grey and Green = Pennine Lower Coal Measures Formation

The BGS geological maps record worked ground within 50m of the site (pink on the below extract), anticipated to be associated with the construction of the reservoirs to the south of the site. An area of worked ground / void is also recorded to the north of the site (light green on below extract).



Figure 11: Extract showing the location of the infilled ground (light green) and worked ground (pink)

A bedrock dip of 10° west is recorded on the 1:50,000 geological map. No faults are recorded in close proximity to the site.

3.4.2 BGS Borehole Logs

There were no available BGS boreholes on-site. There were 3 No. BGS boreholes available in close proximity to the site within a comparable geological setting, however, these borehole logs did not contain relevant information pertaining to the geology of the site. However, information regarding the coal mining in the vicinity was included within the BGS borehole logs, discussed in Section 3.5.1.

3.4.3 BGS Geohazards

Data Type	Details
Ground Stability Data	➤ The Potential for Shrinking or Swelling Clay Ground Stability Hazards is regarded as very low. ➤ The Potential for Landslide Ground Stability Hazards is regarded as very low to moderate. ➤ The Potential for Dissolution Ground Stability Hazards is regarded as negligible. ➤ The Potential for Compressible Ground Stability Hazards is regarded as negligible. ➤ The Potential for Collapsible Ground Stability Hazards is regarded as very low. ➤ The Potential for Running Sand Ground Stability Hazards is regarded as very low.

3.4.4 BGS Estimated Soil Chemistry

The BGS have estimated that the superficial deposits across the site to naturally comprise of the following determinands:

- Arsenic – 15mg/kg - 25mg/kg
- Cadmium – 1.8mg/kg – 2.2mg/kg
- Chromium – 60mg/kg – 90mg/kg
- Nickel – 15mg/kg – 45mg/kg
- Lead – 200mg/kg – 300mg/kg
- Bioaccessible Lead – 120mg/kg – 240mg/kg

3.5 Mining

3.5.1 Coal Mining

The site lies within a Coal Authority Coal Mining Reporting Area. There are no outcrops, mine entries or development high risk areas recorded on-site, however, a coal seam, suspected to be the Margery Coal, outcrops 70m west from the site, which continuous along the hillside to the south and east of the site, an extract of the BGS 1:50,000 geological map is included below. Development High Risk Areas also exist to the east and west in the vicinity of the site and are associated with the nearby coal outcrops.

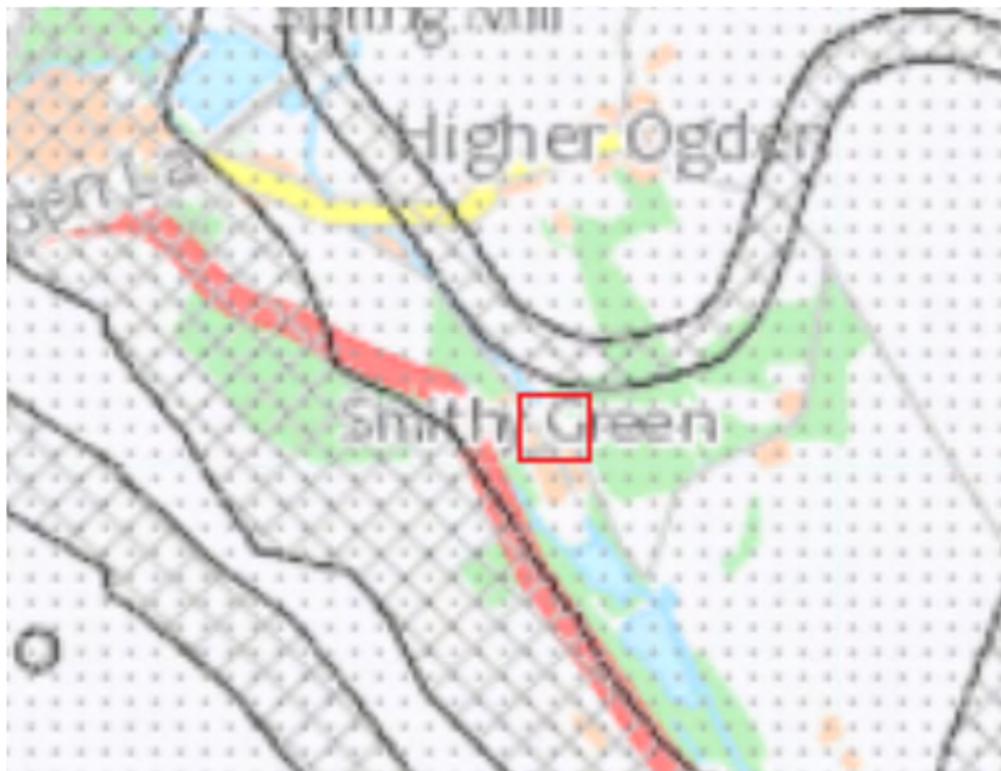


Figure 12: Extract showing the location of the near Development High Risk Areas associated with the outcropping coal seams within approx. 80m from site.

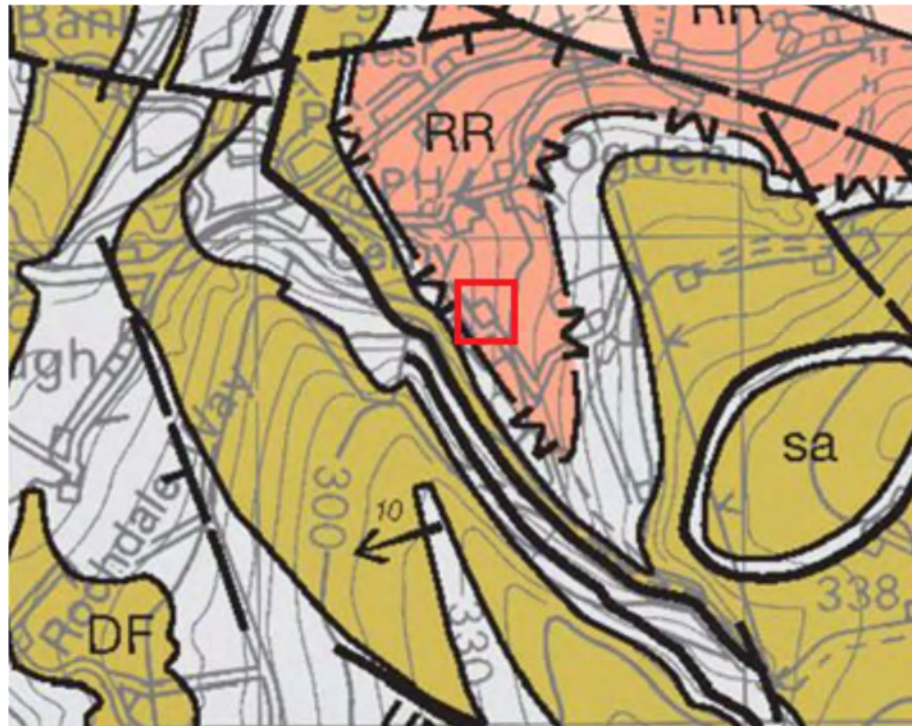


Figure 13: Extract showing the location of the outcropping coal seams (dark, dashed line) and a fossil horizon / marine band (light dashed line) and extract of the BGS 1:10,500 geological map (right) showing the unnamed Coal Seam cropping out near the south-western site boundary, in relation to the site location (red).

The bedrock found on-site comprises Rough Rock, which lies beneath the Pennine Lower Coal Measures in the geological sequence. The bedrock dips west at approx. 10°. Although the bedrock was recorded to dip westward, the Pennine Lower Coal Measures are not anticipated beneath the site due to the topography as well as the geological sequence and bedrock dip. The site is located at the bottom of a valley, with the Pennine Lower Coal Measures found on either side of the valley in the hillside. However, based on GVS, there are 2 No. coal seams potentially underlying the Rough Rock bedrock, which are the Six Inch Mine and the Sand Rock Mine seams, therefore, coal seams may be present at shallow depths beneath the site. An extract of the 1:50,000 BGS geological map generalised vertical section is included below for context:

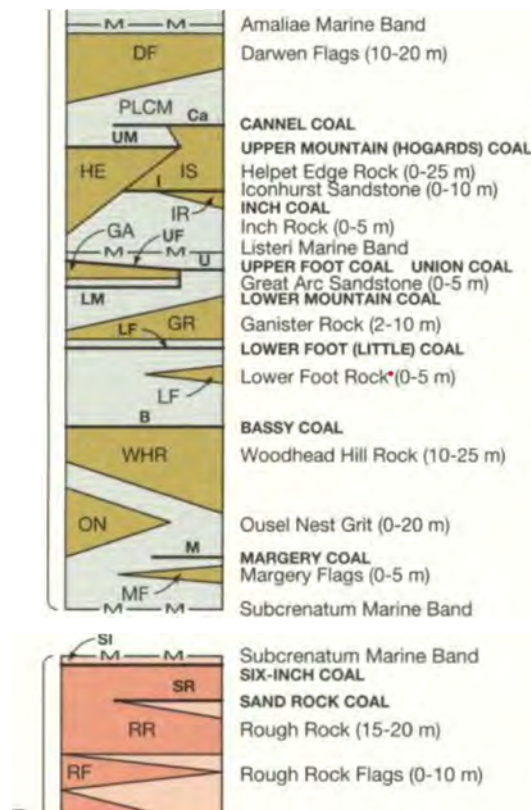


Figure 14; Extract of the BGS generalised vertical section

BGS Borehole Logs, Ref.: SD91SE12-13, and SD91SE15/A

3 No. BGS boreholes are present in close proximity to the site (205m – 417m) the BGS boreholes do not contain information regarding the ground conditions beneath the site, however, do contain information regarding coal workings in the vicinity of the site, pertaining to Wicken Hall Colliery (205m SE), Ogden Colliery (400m NW), and South Wicken Hall Colliery (417m SW).

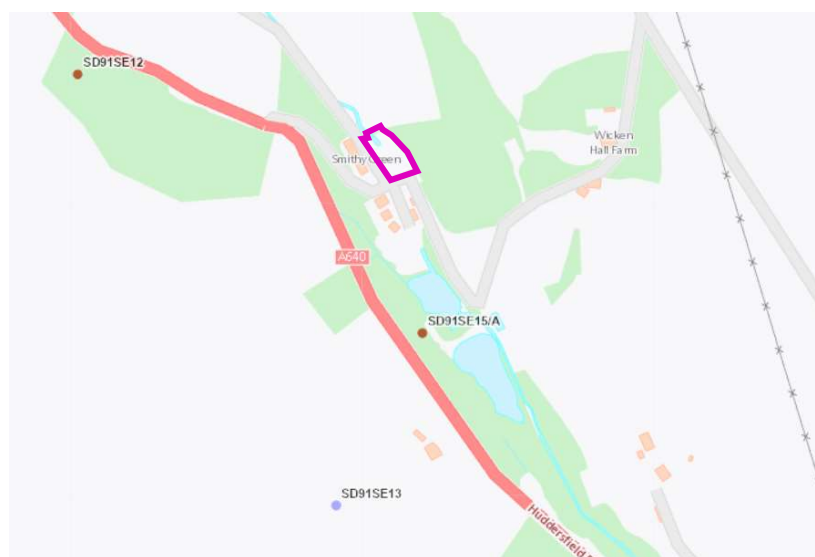


Figure 84: Extract showing the locations of the BGS Boreholes in relation to the approximate site boundary (pink).

The BGS boreholes logs indicate that coal seams have been worked in the hillside to the west of the site within numerous coal seams including the Mountain Mine, Half Yard Mine, Yard Mine, Foot Coal and Little Mine. The records also confirm that the strata are dipping towards the west and no faults are associated with the occurrence of the coal seams. Based on the GVS included above and the topography of the area, these coal seams are limited to the hills above the site and not anticipated to be present beneath the site.

BGS Memoirs

The BGS memoirs '*The geology of the country around Oldham, including Manchester and its Suburbs*' and '*The geology of Manchester and the south-east Lancashire Coalfield*', Dated 1864 and 1931, respectively, have been reviewed for further information regarding the influence of coal mining on the site area.

The geological memoirs refer to the Six Inch Mine (also referred to as First Coal or Feather Edge Coal) and Sand Rock Mine coal seams, which lie immediately above and below the Rough Rock formation and may be present at shallow depth beneath the site. The memoirs generally describe these coal seams as thin, not more than 1ft (0.30m) in thickness, but also either absent or not workable in the Rochdale and Milnrow area. Based on the geology and topography of the site, it is deemed unlikely that the Six Inch Mine is present beneath the site as it occurs above the Rough Rock, however, the Sand Rock Coal seam may be present at shallow depth beneath the site. These coal seams are associated with the occurrence of economically viable fireclay, and although the clay has not been worked near the site, its occurrence below site cannot be discounted.

Consequently, based on the above information, the Sand Rock Mine may be present beneath the site. Although the coal seam is thin and is not considered to be of significant value in the area, there is potential for the coal to have been worked (i.e. through daypits) if present at shallow depth. It is recommended that intrusive works including rotary open holes are undertaken to determine the presence or absence of coal seams and associated workings at shallow depth beneath the site or

consideration of possible ground instability is factored into the foundation design i.e. use of full stiff rafts.

3.5.2 Non-Coal Mining

The Groundsure Enviro + Geo Insight report (contained in Appendix 5) indicates that mining of fireclay has been undertaken within 87m south-west from site, pertaining to the Haugh Hey fireclay extraction site.

3.5.3 Salt Mining / Brine Extraction

The site does not lie within the Cheshire Brine Subsidence Compensation Board Compensation District.

3.5.4 Historical Surface Excavations

Due to the presence of numerous nearby reservoirs, the presence of unrecorded historical excavations on-site cannot be discounted.

3.5.5 Mineral Safeguarding

Where mineral resources are present the mineral planning authority may designate areas as Mineral Safeguarding Areas (MSA) and Mineral Consultation Areas (MCA). These are aimed to safeguard mineral resource areas from unnecessary sterilization by non-mineral development. The BGS Mineral Resources maps designate the areas of potential mineral resources and where active / lapsed planning permission was granted for mineral extraction.

The BGS Mineral Resources Map for Lancashire indicates that the site lies within an area designated as containing shallow coal, fireclay and sandstone resources. There is an underground planning permission for resources other than coal in Haugh Hey, approx. 85m W from site, and pertains to the extraction of fireclay, however, no planning permissions are present on-site. The Greater Manchester Joints Mineral Plan Mineral Safeguarding Map indicate that mineral safeguarding areas for sandstone, coal and brick clay exists on-site. However, the development is not considered to sterilise these minerals. This is as significant coal and fireclay resources are not anticipated beneath the site as the possible shallow coal seams

are thin and may have already been worked, and any fireclay associated will also likely have been extracted. The quarrying of the underlying sandstone is not anticipated to be feasible as the site is a very small area which lies within a steep valley. Additionally the presence of deep Made Ground and a culverted stream will make quarrying sandstone unfeasible on-site.

The BGS mineral resource map for Greater Manchester and the Greater Manchester Joints Mineral Plan Mineral Safeguarding Map are contained in Appendix 6.

3.6 Hydrology and Hydrogeology

Environmental data relevant to the site and its immediately surrounding area has been obtained from sources available in the public domain. In addition, an environmental report was obtained from Groundsure. The Enviro + Geo Insight report and associated maps that have been inspected are presented in Appendix 5 and the principal observations in relation to waters and flooding can be summarised as follows:

Data Type	Details
Flooding	➤ With respect to rivers and seas, the site lies within Flood Zone 1. ➤ Localised areas of the site, primarily along the western site boundary near the culverted stream, are recorded to be susceptible to surface water flooding, the highest risk pertaining to a 1 in 30 year event with a floodwater depth of greater than 1.0m. ➤ The risk of groundwater flooding on-site is deemed to be low.
Surface Water Features	➤ The Wicken Hall Clough stream, tributary of the Piethorne Brook is present in the western site section, oriented SE-NW, now culverted beneath the site.
Surface Water Abstractions	➤ There are no licensed surface water abstractions located on-site. ➤ There are 16 No. licensed surface water abstractions located within 2km of the site, both historical and active. The nearest active license is located 183m south and pertains to the abstraction of water for a fish pond and Cress Pond throughflow.
Superficial Aquifer	➤ The site is underlain by superficial deposits classified as a Secondary Undifferentiated Aquifer.
Bedrock Aquifer	➤ The underlying bedrock is classified as a Secondary A Aquifer - <i>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.</i>
Groundwater Abstractions	➤ There are no recorded groundwater abstraction licenses located on-site. ➤ There are 15 No. groundwater abstraction licenses located within 2km of the site, the majority are historical. The nearest active groundwater abstraction is located 1826m north west of the site and pertains to the abstraction of groundwater from a borehole at Tunshill Golf Club for spray irrigation.
Source Protection Zones	➤ There are no recorded Source Protection Zones recorded on-site.

	➤ There are 2 No. records of Source Protection Zones within 500m of the site, pertaining to Zone 2 located 118m south-west and Zone 3 located 202m west from site.
Nitrate Vulnerable Zones	➤ There are no Nitrate Vulnerable Zones recorded on-site or within 500m of the site.
Licensed Discharge Consents	➤ There is a single recorded licensed discharge consent to controlled waters located on-site. It has been revoked and pertains to trade discharges into the Piethorne Brook at Wickenhall Fish Farm. ➤ There are further 13 No. recorded licensed discharge consents to controlled waters located within 500m of the site. 2 No. have been revoked. All pertain to the sewage discharges into the Wickenhall Clough culvert, Wickenhall Brook and Piethorne Brook.
Pollution Incidents to Controlled Waters	➤ There are no recorded pollution incidents to controlled waters located on-site. ➤ There is a single pollution incident recorded within 500m of the site, located 456m north-west of the site and pertains to an incident in December 2001 involving hydrocarbons. The incident was recorded as a Category 4 (No Impact) incident to controlled waters.

3.7 Hazardous Installations, Landfill and Waste

The following information relating to hazardous installations, landfill and waste obtained from the Groundsure Enviro + Geo Insight report, published information and the walkover survey can be summarised as follows:

Data Type	Details
Environment Agency Recorded Active Landfill Sites	➤ There are no Environment Agency recorded landfill sites located on-site or within 500m of the site.
Environment Agency Recorded Historic Landfill Sites	➤ There are no Environment Agency recorded historical landfill sites located on-site or within 500m of the site.
BGS Recorded Historic Landfill Sites	➤ There are no BGS recorded landfill sites located on-site or within 500m of the site.
Local Authority Recorded Landfill Sites	➤ There are no Local Authority recorded landfill sites located on-site. ➤ There are 10 No. Local Authority recorded landfill sites located within 500m of the site, all pertain to refuse tips surveyed in 1961, the closest is located 51m north-east from site.
Local Authority Pollution Prevention and Control (Part A(2) and Part B Activities and Enforcements)	➤ There are no Local Authority Part A2 or Part B Activities or Enforcements located on-site or within 500m of the site.
Registered Radioactive Substances	➤ There are no Registered Radioactive Substances recorded on-site or within 500m of the site.
Registered Waste Treatment, Transfer or Disposal Sites	➤ There are no waste exemption, treatments, transfers or disposals recorded on-site. ➤ There are 21 No. waste exemptions recorded within 500m of the site, the nearest is located 227m north of the site and pertains to the use of waste in construction.
Industrial Land Use	➤ There are no current industrial land uses recorded on-site. ➤ There are 2 No. recent industrial uses recorded within 500m of the site, the nearest is located 125m south-east and pertains to an industrial chimney. ➤ There are no petrol / fuel stations recorded on-site or within 500m of the site.

	➤ There are 15 No. historic industrial site uses recorded on-site pertaining to an unspecified mill, unspecified tanks, unspecified works, refuse heaps, print works and bleach and dye works. ➤ There are an additional 158 No. historic industrial land-uses recorded within 500m of the site, pertaining to refuse heaps, unspecified ground workings, chimneys, coal levels, unspecified pits, unspecified quarries, unspecified mills, spring mill, coal pits, overflow tanks, an old air shaft and more.
Dangerous Substances	➤ There are no recorded discharges of dangerous substances on-site or within 500m of the site.
Hazardous Building Materials	➤ No hazardous building materials may be present on-site due to the historically industrial nature of the site.

3.8 Radon

The Indicative Atlas of Radon in England and Wales produced by the Health Protection Agency and British Geological Survey indicates the site lies within a lower probability area as less than 1% of homes are above the action level. Consequently, BR211 (2015) indicates that no radon protection measures are required.

3.9 Services

Overhead power lines were noted along the site boundary in the south-western corner and a deep culvert is present in the western site section, running parallel to the western site boundary, oriented N-S, the approximate locations of both features are noted on the Site Features Plan, contained in Appendix 8, full service plans should be obtained prior to any intrusive works.

3.10 Unexploded Ordnance (UXO)

The Zetica UXO risk map, contained in Appendix 7, indicates that the site lies within an area of low risk.

3.11 Animal Burial Sites

The Animal Health and Veterinary Laboratories Agency (AHVLA) no longer routinely respond to consultations relating to records of animal burial sites. Based upon a review of the site history it is considered unlikely that the site has been subject to recorded animal burials.

3.12 Archaeology

We do not anticipate that the site will be affected by archaeological issues, however consultation with the county archaeologist is recommended.

4.0 CONCLUSIONS

4.1 General

The site has historically been used as a print works and mill until the late 20th Century. The site is now derelict land with 2 No. portable cabins on-site of unknown use. A culverted stream, the Wicken Hall Clough runs approx. 7.00m below the site, oriented NW-SE, indicating that site levels have been raised during development of the site.

4.2 Ground Conditions

The anticipated typical ground conditions across the site are as follows:

- Widespread **Made Ground** of unknown composition (possibly deep in especially in northern site section to c. 7m bgl), underlain by;
- **Glacial Till** comprising firm to stiff, slightly gravelly, slightly sandy **clay** to an unknown depth, anticipated to be only c. 1m thick based on BGS drift thickness model, to an unknown depth, underlain by;
- **Rough Rock and Rossendale Formation** comprising sandstone, and mudstone and siltstone respectively, and rare coal seams.

4.2.1 Geotechnical Hazard Identification

Potential geotechnical hazards based on the expected ground conditions that may require further consideration at the site are outlined below:

Factors	Remarks	Considerations	Risk
Made Ground	Made Ground is widely expected on-site due to the industrial history of the site anticipated to be deep due to the suspected raising of the site levels during development, possibly to c. 7m bgl.	Made Ground may settle variably, have highly inconsistent bearing capacity and may suffer significant movements that may be problematic for foundations, externals and infrastructure elements without treatment. The presence of Made Ground may be problematic for foundations as there may be loose / soft spots within the Made Ground and it may not be suitable to utilise traditional foundations.	High

Aggressive Ground and Groundwater	While the risk posed from the natural strata is anticipated to be very low, given the expected presence of widespread Made Ground there is potential for aggressive ground conditions to be present on-site.	Acidic ground / groundwater and sulphate may attack the concrete and steel used in foundations and react with aggregates. The oxidation of pyrite and other sulphides can also occur due to geotechnical activities. This can lead to the generation of high concentrations of sulphate and low pH that attacks construction materials and may lead to the precipitation of gypsum resulting in the heave of foundations and floor slabs. Pyrite oxidation can also be triggered by mixing susceptible materials with lime or cement resulting in high pH that can lead to the expansion of some sulphates that cause heave of stabilised soils.	Moderate
Shrink and Swell Clays	Established are present along the site boundaries and along field boundaries. Cohesive Glacial Till deposits may be present however are not anticipated at shallow depth due to the anticipated presence of deep Made Ground.	Some types of ground (e.g., clay soils) can change volume due to changes in moisture content that may be induced by weather variations (e.g., drought), vegetation (e.g., growth or removal of trees) or man-made activities (e.g., changes to local drainage). This shrink / swell behaviour typically causes ground movement to a depth of approx. 3m potentially damaging building foundations, externals, pipes or services by differential movements.	Low
Slope Stability	Steep slopes are present on-site, including a 1:1 c. 10m tall man-made slope along the northern boundary. And a natural c. 1:2 - 1:4 slope forming the valley walls along the eastern boundary.	A relatively rapid outward and downward movement of a mass of rock or soil on a slope due to the force of gravity. Typically slope instability is caused by either a decrease in soil strength or an increase in shear stress. Numerous factors are involved but usually loading on or at the crest of the slope, increasing the amount of water entering the slope or cutting at the toe of the slope cause failure. Damage by landslide can occur through the removal of supporting ground from under structures, externals or services or by the movement of material onto property.	High
Retaining Walls	There are 2 No. distinct retaining walls along the northern and western site boundaries. The northern wall is approx. 6m tall with a 1:1 slope above and either side. The western wall is approx. 2m tall and appears to be newly constructed and in good condition.	The retaining wall will need to be inspected and remedial measures undertaken prior to development, subject to an assessment of the impact upon Third Party assets.	Moderate
Soft Spots	Soft spots may be present across the site associated with localised excavations i.e., historical re-routing of the Wicken Hall Clough stream and its culverting.	Soft spots may cause differential settlement of foundations therefore there will be a requirement for localised deepening of foundations where soft spots are present.	Low to Moderate
Possible Shallow Coal Workings	Possible coal workings may be present beneath the site at shallow depth associated with Six Inch Mine and Sand Rock Mine coal seams.	The site does not lie within a coal mining area, however, there is a potential for workings to have taken place within the underlying coal seams. Workings can result in collapses and surface ground movement. The depth of the underlying seam will need to be established prior to development.	Moderate
Ground Obstructions	Former building slabs, foundations, tank bases may still be in place, evidence of cobbles and boulders noted during walkover as well as relict masonry buildings. The Wicken Hall Clough stream culvert is known to have been rerouted during development of adjacent houses.	May act as obstructions to excavations and / or the chosen foundation solution or act as 'hard spots' within the ground if left in-situ.	Moderate

4.3 Sources of Contamination and Probable Contaminants

Based on the desk study information the following potentially contaminative on-site sources have been identified:

Potentially Contaminative Source	Associated Determinands	Remarks	Risk
On-Site Made Ground Including On-Site Possible Historical Refuse Heap/Site Upfilling (1909 – 1930)	Unknown, anticipated to be metals, semi-metals, PAHs, TPH, asbestos. Ground Gas – carbon dioxide, methane, hydrogen sulphide, VOCs	Made Ground is present on-site and is anticipated to be very deep (possibly c. 7m bgl based on culvert depth). Historical evidence of raising levels or significant upfill is noted as well as evidence of burning of materials on-site. Therefore, based on the above and the historic al site uses significant contamination may be present. A refuse heap has been recorded on-site in the early 20 th century, no longer identified on the records following the industrial development of the site, anticipated to be infilling of the site to raise the site levels. Widespread contamination as well as contaminative hotspots may be present within the material.	Moderate to High
On-Site Historical Gasometer and Filter Beds / Tanks (1892 - 1992)	Unknown, anticipated to be compounds associated with ground gas processing, e.g., glycols, resins and others, fuels, metals and metal compounds, inorganic compounds, e.g., sulphates, phosphates and others, asbestos. Ground Gas – carbon dioxide, methane, hydrogen sulphide, VOCs.	A gasometer, possibly associated with the Wicken Hall Bleach and Dye works, was recorded in the northern site section. Adjacent filter beds and filter tanks were noted from 1930 as part of the Wicken Hall Print Works. It should be noted that gas works were not noted on-site or in close proximity, therefore the gasometer may have been a gas holder only with no gas being produced on site. However, this cannot be discounted.	Moderate to High
Adjacent Fulling Mill/ Wicken Hall Bleach & Dye Works (1888 – 1907)	Unknown, anticipated to be metals and metalloids, e.g., lead, chromium, mercury and others, chlorinated organic solvents, sizing agents, soaps and detergents, bonding and stabilising agents, inorganic compounds, e.g., phosphates, cyanides and others.	The Wicken Hall Bleach and Dye Works was present adjacent to the southern boundary of the site, formerly the Fulling Mill. However, given the presence of the gasometer and 2 No small buildings of unknown use the site may have been used as a yard area.	Moderate to High
On-Site Wicken Hall Print Works (1907 – 1992)	Unknown, anticipated to be pigments, dyes, extenders and binders, solvents, driers, catalysts, surfactants, antioxidants, asbestos, PCBs, fuels.	The Wicken Hall Print Works have been recorded on-site and site adjacent since the early 20 th century, replacing the previous Bleach and Dye Works off-site and being extended on-site. A building was developed across the majority of the site.	Moderate to High

Possible Shallow Coal Workings	Ground Gas – <u>carbon monoxide</u> , carbon dioxide, methane, hydrogen sulphide, VOCs.	1 or 2 No. coal seams may be present at shallow depth beneath the site, which may have been worked historically.	Low to Moderate
Off-Site Infilled Ground (47m NE) and Off-Site Reservoirs (73m SE)		Infilled ground and voids have been identified near the site, associated with a former reservoir (73m south-east) and infilled terrain to the north of the site (47m north-east) potentially associated with raising of the ground levels. The infilling likely occurred from 1930s - 1950s based on historical mapping.	Low to Moderate
Former Route of On-Site Stream	Ground Gas – carbon dioxide, methane, hydrogen sulphide, VOCs.	Organic material may be present in association with the historical route of the Wicken Hall Clough stream, which has been historically re-routed.	Moderate

It should be noted that potentially contaminative unrecorded historic activities may have occurred (e.g. the use or deposition of Made Ground from off-site during historic on-site developments) and in this event, further contaminative sources may be present.

4.3.1 Unknowns

Following the desk study, the areas of uncertainty are summarised as follows:

- Depth to bedrock
- Extent and depth of the underlying Made Ground
- Extent of historical buildings and features acting as obstructions
- Presence of the Six Inch Mine and Sand Rock Mine coal seams below site and the status of their past exploitation

4.4 Pathways for Contamination

4.4.1 Human Health

The pathways along which contamination could potentially reach the receptors on-site during use and after completion of development works are detailed in 'Updated Technical Background to the CLEA Model' (Environment Agency 2009) but can be summarised as follows:

End Users (Residential Land Use Scenario):

- Ingestion of soil directly and indoor dust* including on home-grown produce;
- Inhalation of soil dust (indoor and outdoor);

- Dermal contact with soil (indoor and outdoor);
- Inhalation of soil vapours (indoor and outdoor);
- Oral background;
- Inhalation background.

** Treated as one pathway*

4.4.2 Controlled Waters

The pathways along which contamination could potentially reach the controlled waters receptors during use and after completion of development works are as follows:

- Vertical migration along future foundations and pooling at base / beneath foundations.
- Vertical migration through possible granular Made Ground and granular lenses in natural cohesive deposits.
- Lateral migration along low permeability natural deposits and pooling at relative low points.
- Negligible infiltration through low-permeability natural cohesive deposits.
- Migration through porous sandstone bedrock.
- Migration along groundwater flow.
- Overland flow

4.4.3 Ground Gas Pathways

The pathways along which ground gas could potentially reach the receptors on-site during use and after completion of the development works are as follows;

- Migration through fractures and fissures in bedrock
- Preferential migration along foundations, service ducts / trenches
- Migration within groundwater
- Ingress through wall cavities and floors and accumulation
- Inhalation of ground gas and vapours

4.5 **Receptors of Contamination**

Human Health receptors for these pathways include the following:

- End Users (residential land use scenario)
- Construction workers.
- The general public and adjacent site users.

Controlled waters receptors for these pathways include the following:

- Groundwater contained within the underlying Secondary Undifferentiated Aquifer and Secondary A Aquifer.
- Surface Water – On-site culverted stream (Wicken Hall Clough)

Other receptors for these pathways include the following:

- Subsurface plastic (e.g. potable plastic water pipe).
- Building fabric (e.g. concrete foundations, etc.)

4.6 Conceptual Model

4.6.1 Conceptual Model for Human Health Assessment

A site conceptual model in the form of a linkage table for the purposes of a preliminary risk assessment for the human health of site occupants has been produced as a result of the probable contaminants, pathways and receptors identified above.

Sources of Contamination	Pathway	Receptor	Hazard (severity)	Likelihood	Risk
Made Ground Historical Gasometer and Filter Beds/Tanks (1892 - 1992) On-Site and Off-Site Fulling Mill / Wicken Hall Bleach and Dye Works (1888 – 1907)	Ingestion of contaminated soil and dust (indoor and outdoor) Dermal contact with contaminated soil (outdoor and indoor) Inhalation of contaminated dust (indoor and outdoor)	End users and general public	Effect on human health (Medium)	Likely: Significant contamination is anticipated, both widespread and as hotspots due to the presence of the deep made ground and historical industrial use and tanks/gasometer. Localized contaminative hotspots associated with historical tanks may also be present. Migration of contaminants from off-site contaminative sources including the historical bleach works may also have occurred. Ingestion, dermal and inhalation pathways will be a feasible pathway sitewide, as the majority of the site will comprise soft landscaping. Private gardens and areas of soft landscaping will be at increased risk.	Moderate to High

On-Site and Off-Site Wicken Hall Print Works (1907 – 1992)		Construction workers		Likely: Construction workers will be at increased risk due to their acute interaction with soils. Given the abundance of identified potentially contaminative sources the risk has been assessed as moderate. The appropriate use of PPE, Good Practice and Health and Safety Measures will reduce the risk.	Moderate to High
	Inhalation of soil vapours (indoors and outdoors)	End users and general public		Low Likelihood: Possible sources of VOCs have been identified, given the industrial nature of the site. If localised contaminative hotspots of VOCs are present (i.e. from possible substance spillages), given their relative mobility and volatility VOCs are unlikely to remain at significant concentrations.	Low to Moderate
		Construction workers		Low Likelihood: Construction workers at increased risk if any disturbance of soil occurs as this may generate a temporary increase in the release of soil vapours. The risk has been assessed as low to moderate.	Low to Moderate

A diagram of the conceptual site model is contained within Appendix 9.

4.6.2 Conceptual Model for Ground Gas Risk Assessment

A conceptual model in the form of a linkage table for the purposes of a preliminary risk assessment for ground gas has been produced as a result of the probable contaminants, pathways and targets identified above as follows:

Source	Pollutant	Pathway	Receptor	Hazard (severity)	Likelihood of Occurrence	Risk
Made Ground Including 'refuse heap'	Methane	Preferential migration along foundations, service ducts / trenches	Human occupants	Effect on human health (Mild to Severe*)	Likely: Deep Made Ground is anticipated across the site. Although the Made Ground is likely to have little organic rich or putrescible deposits, the former stream bed may contain organic rich material.	Moderate
Infilled Ground and Reservoirs	Carbon Dioxide	Ingress through wall cavities and floors and accumulation	Site Workers		There is also potential shallow coal workings beneath the site.	
Six Inch Mine and Sand Rock Mine Coal Seams	Hydrogen Sulphide	Inhalation of ground gas			Off-site infilled features are present within close proximity to the site, based on historical mapping the reservoir was infilled by 1930s. It is unclear when other worked ground in the area was infilled, however, based on the BS8576 (2013)	

			Building and Structures	Damage to building (Mild)	Figure 6 Decision Matrix tool the ground gas generation potential of the off-site infilled land is anticipated to be low to moderate. Consequently, given the presence of numerous ground gas sources, the highest risk pertaining to the on-site deep made ground / refuse heap. The ground gas risk is deemed moderate as migration of ground gas into the proposed dwellings is possible.	
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*Due to the risk of explosion.

A diagram of the conceptual site model is included within Appendix 9.

4.6.3 Conceptual Model for Waters Risk Assessment

A site conceptual model in the form of a linkage table for the purposes of a preliminary risk assessment for pollution of waters has been produced as a result of the probable contaminants, pathways and targets identified above as follows:

Source	Pathway	Receptor	Hazard (severity)	Likelihood of Occurrence	Risk
Made Ground	Vertical migration along current and future foundations	Groundwater within the Secondary Undifferentiated and Secondary A Aquifers	Effects to controlled waters (Mild)	Pre-Development Site Likely: Widespread deep Made Ground is anticipated across site and may contain determinands at elevated concentrations. The presence of cohesive Glacial Till deposits is recorded on site, however their extent and depth are not certain and are anticipated to be limited. These deposits will reduce vertical migration into the underlying aquifers, but their lateral continuity and thickness are currently unknown therefore pathways may be present. The depth of groundwater is also unknown. Due to the presence of significant sources of contamination and contaminative hotspots due to the historical printworks, bleach and dye works, tanks and gasometers, the risk was assessed as high to controlled waters.	Moderate to High
Historical Gasometer and Filter Beds/Tanks (1892 - 1992)	Vertical migration through granular Made Ground and / or natural deposits				
On-Site and Off-Site Fulling Mill / Wicken Hall Bleach and Dye Works (1888 – 1907)	Negligible infiltration through low permeability cohesive deposits				Moderate to High
On-Site and Off-Site Wicken Hall Print Works (1907 – 1992)	Migration through porous bedrock			Post Development Site Likely: Following development there will be an increase in hardstanding however contaminative pathways remain. If any contamination is encountered, then remedial measures may be undertaken for human health purposes (i.e. possible removal of source) possibly reducing the risk to controlled waters.	

	Lateral migration along low permeability cohesive deposits	Surface water courses (On-Site Culverted Wicken Hall Clough Stream)	Effects to controlled waters: (Mild)	Pre-Development Site: Likely: Lateral migration of contaminants to surface water features are feasible due to the presence of the culverted Wicken Hall Clough on-site which is an open stream adjacent to the northern boundary of the site. Glacial Till is also anticipated beneath the thick Made Ground on-site which will facilitate lateral migration. Consequently, due to the presence of contamination sources and potential contaminative linkages, the risk remains moderate.	Moderate to High
	Lateral migration along historic drainage			Post Development Site: Likely: The potential for lateral migration of contaminants will be reduced following development given the increased presence of hardstanding significantly reducing infiltration of water into the underlying ground, however, cannot be discounted at this stage as much of the Made Ground is likely to remain in-situ.	Moderate
	Migration along groundwater flow	Surface water courses (On-Site Culverted Wicken Hall Clough Stream)	Effects to controlled waters: (Mild)	Pre-Development Site: Likely: Wicken Hall Clough is culverted beneath the site and becomes an open stream adjacent to the northern boundary. Overland flow into the stream as well as into the open manhole of the culvert is possible, however, widespread hardstanding is not present on-site therefore overland flow is reduced. However, a moderate risk remains as significant widespread contamination may be present within the Made Ground.	Moderate
	Overland flow			Post Development Site: Likely: Although the presence of hardstanding is likely to increase following development, the risk remains moderate, due to the widespread contaminative sources and hotspots due to the past historical use of the site.	Moderate

A diagram of the conceptual site model is included within Appendix 9.

4.7 Preliminary Risk Assessment Summary

Human Health

Based on the human health conceptual model the risk to human health is deemed moderate to high to end users as significant contamination as well as contaminative linkages may be present on-site. Although the risk to construction workers is increased due to their acute interaction with site soils, it is envisaged that with appropriate PPE and site management, risks to construction workers can be mitigated therefore the risk remains low.

Ground Gas

Numerous ground gas sources have been identified on-site and in close proximity to the site, including infilled features, including reservoirs and deep made ground / refuse heaps; it also lies in the proximity of coal seams anticipated at shallow depths. Based on the contaminative sources and feasible pathways identified on-site and the ground gas conceptual model, the ground gas risk is deemed moderate. It is recommended that ground gas monitoring is undertaken with a minimum of 6 visits over a period of 3 months.

If any organic rich Made Ground deposits are identified or if previously unrecorded potential ground gas sources are recorded during the ground investigation works, then ground gas monitoring may be required. The length and frequency of the ground gas monitoring regime and the sampling method, initial results and alterations to the conceptual model are subject to the findings of the ground investigation works and development constraints (i.e. development timescales and liaison with the local authority).

Controlled Waters

Sensitive receptors have been identified on-site (Secondary Undifferentiated and Secondary A Aquifers and culverted Wicken Hall Clough stream). Feasible contaminative linkages have been identified for the potential contaminative sources, therefore the risk to controlled waters is deemed moderate to high, with slight variations between types of flow and associated risks.

If unrecorded contaminative sources are noted, the above conceptual models may require re-assessment / re-appraisal.

4.8 Scope of Phase 2 Intrusive Geo-Environmental Ground Investigation

As a result of the preliminary risk assessment a Phase 2 intrusive geo-environmental ground investigation should be carried out to quantify the identified risks. This intrusive ground investigation works should include the collection of appropriate

samples – solid, leachate and / or liquid, if deemed necessary, across the site for appropriate chemical testing as detailed above.

Furthermore, to determine the geotechnical and geological properties of the underlying ground conditions, appropriate intrusive works and associated testing should be undertaken. The rationale and aims for these Phase 2 environmental, geotechnical and geological investigative works are detailed below.

In order to provide adequate assessment in terms of both environmental and geotechnical site parameters, ground investigation works will be required on a spatial basis and targeting the following features:

- Historical Filter Beds/Tanks and Historical Gasometer
- The extent of the Historical Wicken Hall Print Works
- Six Inch Mine and Sand Rock Mine Coal Seams

The proposed initial ground investigation works should comprise the following:

- Cable Percussive Boreholes
- Trial Pits
- Rotary Open Hole Boreholes

The rationale for the exploratory holes is discussed below:

- To allow the collection of samples from the Made Ground and natural deposits for chemical laboratory testing (solid samples) for an appropriate suite of determinands and for soluble sulfate (2:1 extract) and / or total sulfate and pH testing to determine the suitable concrete classification in associated with relevant guidance e.g. BRE Special Digest 1.
- To determine the extent, composition and depth of any Made Ground deposits.
- To determine the nature, thickness and extent of superficial deposits.
- Enable in-situ and ex-situ geotechnical testing, including density testing (SPTs), hand shear vane (HSV) testing and undrained shear strengths of the underlying Made Ground and natural deposits for the purposes of sub-structure design;

- Cable percussive boreholes for pile design and to allow installation of ground gas monitoring wells.
- Rotary open holes to 30m bgl to determine presence of coal and or workings at shallow depth.

5.0 RECOMMENDATIONS

- 5.1 As a result of the information gathered and the risks identified in this report, there is a moderate to high risk to human health and controlled waters on the basis that feasible contaminative linkages have been identified.
- 5.2 A moderate ground gas risk has been identified based on ground gas sources and potential migration pathways. Ground gas monitoring with a minimum of 6 No. visits over a period of 3 months is recommended. On the basis that the site lies within an area where between less than 1% of homes are above the action level no radon protection measures are necessary.
- 5.3 Due to geotechnical requirements, ground investigation works should be undertaken in order to determine the ground conditions with a greater degree of certainty and allow design of the proposed development, drainage, services and immediate external areas to be undertaken. It is therefore recommended that exploratory holes are constructed where access is permitted across the site. The use of soakaways is unlikely to be suitable given the presence of low-permeability shallow Glacial Till across the site.
- 5.4 From the results of the Phase 2 ground investigation work – if this report identifies a potential risk and / or a requirement for further detailed site-specific assessment, a Phase 3 environmental investigation report and / or a Remedial Strategy (informing on potential remediation solutions) may be required.
- 5.5 The nature and extent of the proposed targeted chemical and environmental testing should be confirmed, if time / commercial constraints allow, with the relevant Local Authority Environmental Health Officer and the Environment Agency prior to undertaking works on-site. Proceeding without agreement between regulatory authorities may result in further assessment being required.
- 5.6 It should be noted that, if any visual or olfactory evidence of contamination is encountered during remediation or construction work, then the Local Authority

Environmental Health Officer and Environment Agency should be contacted immediately in order to agree any necessary remediation measures.

- 5.7 Given the possibility of services on-site, full service plans should be obtained prior to any intrusive ground investigation works.
- 5.8 Due to the presence of established along site boundaries and the presence of cohesive deposits, an arboricultural survey is recommended.
- 5.9 It is recommended that rotary open hole boreholes are undertaken to confirm the risk posed by possible shallow coal seams and workings.
- 5.10 It is recommended that a slope stability assessment is undertaken and the retaining walls are inspected by an appropriately qualified structural engineer.

APPENDIX 1

LIMITATIONS OF INVESTIGATION WORK AND REPORT AND CONTAMINATED LAND LEGISLATIVE FRAMEWORK

LIMITATIONS OF REPORT

This consultancy report was compiled and carried out by IGE Consulting Limited ('IGE') for the client, as defined in the main report (the 'client'), on the basis of a defined programme and scope of works and the terms of a contract between IGE and the client. IGE undertook this with all reasonable skill and care, taking into account the limits of the scope of works required by the client, the prevailing site conditions, the time scale involved and the resources, including financial and manpower resources, agreed between IGE and the client. IGE cannot accept responsibility to any parties whatsoever, following the issue of this report, for any matters arising which may be considered outwith the agreed scope of works.

Unless otherwise agreed this report has been prepared exclusively for the use and reliance of the client in accordance with generally accepted consulting practices. This report may not be relied upon, or transferred to, by any other party without the written agreement of its author. If a third party relies on this report, it does so wholly at its own and sole risk and IGE disclaims any liability to such parties.

It is IGE's understanding that this report is to be used for the purpose described in the 'Brief' section of this report. That purpose was a significant factor in determining the scope and the services to be provided. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of, or reliance upon the report in those circumstances by the client without IGE's review and advice shall be at the client's sole and own risk.

The information contained in this report is protected by disclosure under Part 3 of the Environmental Information Regulations 2004 pursuant to the provisions of Regulation 12(5) without the consent in writing of a Director of IGE.

This report is a function of the date it was written and should be read in light of any subsequent changes in legislation, statutory requirements and industry practices. Ground conditions can also change over time and further investigations or assessment should be made if there is any significant delay in acting on the findings of this report. The passage of time may result in changes in site conditions, regulatory or other legal

provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of IGE. In the absence of such written advice of IGE, reliance on the report in the future shall be at the client's own and sole risk. Should IGE be requested to review the report in the future, IGE shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between IGE and the client.

The observations and conclusions described in this report are based solely upon the scope of works agreed between the client and IGE. IGE has not performed any observations, investigations, studies or testing not specifically set out or mentioned within this report. IGE is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the agreed scope of works. For the avoidance of doubt, this report is strictly limited to the nature of contamination contained within the ground and groundwater at the site. The report does not cover environmental aspects such as air or noise pollution and ground vibrations and the like. In addition, ecological matters relating to wildlife, flora and fauna have not been investigated as part of this report. In particular, the site has not been inspected for the presence or otherwise of invasive species (e.g. Japanese Knotweed). It is recommended that the client appoints a specialist in this subject to carry out a detailed inspection / survey of the site if its presence is suspected. Where mention has been made to the suspected presence asbestos or asbestos-containing materials this is for indicative purposes only and does not constitute or replace full and proper surveys.

Throughout the report the term 'geotechnical' is used to describe aspects relating to the physical nature of the site (such as foundation requirements) and the term 'geo-environmental' is used to describe aspects relating to ground-related environmental issues (such as potential contamination). However, it should be appreciated that this is an integrated investigation and these two main aspects are inter-related. The geo-environmental sections are written in broad agreement with BS 10175:2011+A2 2017.

LIMITATIONS OF INVESTIGATION WORK

Desk Study References

This report is based upon IGE's observations of existing physical conditions at the site gained from a walkover survey of the site together with IGE's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. Reliance has been placed on this publicly available data obtained from the sources identified in the main report. When using the information, it has been assumed that it is correct. The findings and recommendations contained in this report are based in part upon information provided by third parties, and whilst IGE have no reason to doubt the accuracy and that it has been provided in full from those it was requested from, the items relied on have not been verified. No responsibility can be accepted for errors within third party items presented in this report. IGE did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services. IGE is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to IGE and including the doing of any independent investigation of the information provided to IGE except when otherwise provided in the terms of the contract between the client and IGE.

Historical Mapping

Historical Ordnance Survey maps do not provide a comprehensive description of a site history. They provide details of the site from a date prior to the publication of the map (i.e. a snapshot in time). The period between map editions can be substantial (i.e. several decades). Not all map series are available for every date range in many areas of the UK and therefore there will be gaps in this mapped record for some sites. Potentially contaminative land uses could have been present and removed during such periods and may therefore not form a part of this particular record. In addition, there will be potentially contaminative land uses which are not identified on the map records such as small scale storage / use of hazardous materials, illegal / unlicensed

waste disposal activities etc. Different map series identify different features utilising different symbols which can result in features that remain on-site being removed from maps. Some features are also not mapped for security reasons (e.g. airfields and other military installations). These areas are mostly shown as blank areas on historical maps.

Site Walkover

During the site walkover reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not been made known or accessible.

Flooding

Flooding in this report is defined as flooding caused by the sea, ditches, rivers, streams, ponds, lakes, reservoirs and the like. It does not extend to flooding caused by surcharged piped drainage systems and investigations into flooding of this nature are excluded from this report.

Extent of Contamination Studies

Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.

The conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the reporting in full. The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the site.

PLANNING CONTEXT

The National Planning Policy Framework (NPPF, 2019) states that the purpose of the planning system is to contribute to the achievement of sustainable development. In order to do this the planning system has three overarching objectives, one of which directly relates to the potential for pollution and contaminated land:

- *‘environmental objective - to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy’.*

In accordance with this environmental objective, Paragraph 118 clarifies that ‘making effective use of land’ includes to:

- *‘give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs, and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land’.*

In accordance with this environmental objective, Paragraph 170 clarifies that ‘conserving and enhancing the natural environment includes:

- *‘preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability’; and*
- *‘remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate’.*

Paragraph 178 of the NPPF states that planning policies and decisions for developments should also ensure that:

- *‘a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation)’; and,*

- *'after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990'; and*
- *'adequate site investigation information, prepared by a competent person, is available to inform these assessments'.*

This report has been prepared and authorised by staff that are competent as defined in the NPPF.

CONTAMINATED LAND LEGISLATIVE FRAMEWORK

Environmental risks are assessed in accordance with Contaminated Land (England) (Amendment) Regulations (2012), Part IIA of the Environmental Protection Act 1990, and Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance, DEFRA (2012). Part IIA 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) Significant pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused.

Risk from contamination is assessed by consideration of possible linkages between contaminant sources and potential receptors which could be harmed or polluted and the potential pathways between them – known as the Contaminant Linkage. 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 – a substance that is capable of causing pollution or harm;
- A receptor – something which could be adversely affected by the contaminant;
- A pathway – 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.

The Environment Agency Land Contamination: Risk Management (LCRM 2020) provides the technical framework for structured decision making about land contaminations. LCRM (2020) advocates a phased approach to risk assessment comprising:

- Preliminary Risk Assessment (PRA) – desk study and qualitative assessment;

- Generic Quantitative Risk Assessment (GQRA) – assessment of contaminant concentrations against generic assessment criteria;
- Detailed Quantitative Risk Assessment (DQRA) – detailed site-specific risk assessment and development of site-specific assessment criteria.

Each of these phases follows the same basic steps but adds site specific details and further certainty into the assessment as the stages progress. The basic steps are:

- Hazard Identification and hazard assessment- development or refinement of the source – pathway – receptor conceptual model, and identification of potential pollutant linkages;
- Risk Estimation – qualitative risk estimation predicting magnitude and probability of potential consequences that may arise as a result of a hazard.
- Risk Evaluation – deciding whether a risk is unacceptable.

The key to the classification is that the designation of risk is based upon the consideration of both:

- (a) The magnitude of the potential consequence which takes into account both the potential severity of the hazard and the sensitivity of the receptor;
- (b) The magnitude of probability which takes into account both the presence of the hazard and receptor and the integrity of the pathway.

Generic Quantitative Risk Assessment (GQRA) will utilise generic assessment criteria (GAC) for the purposes of screening allowable concentrations in comparison to the measured site concentrations. The GAC are defined based on the critical receptors identified at the site. Receptors are considered in relation to:

- Human health receptors (e.g. site users) via measured solid concentrations;
- The water environment (e.g. groundwater and surface water) via measured leachate / water concentrations.

Additional receptors may be relevant dependant on the site e.g. flora/fauna, water supply pipes, buried concrete.

The GAC adopted for assessment of soils in relation to Human Health are based on published Soil Guideline Values (SGV) in 2009 for those compounds for which published criteria are available for varying scenarios (residential, commercial, allotment). In the absence of SGVs the following GAC defining documents are adopted - LQM/CIEH S4ULs (2015), CL:AIRE Soil GAC for Human Health Assessment (2010) and Category 4 Screening Levels (C4SL's) (2014).

GACs for waters must be selected to assess potential risks to the identified environmental receptors. There are numerous UK and European guidelines for waters based on the site situation and different receptors. GACs utilised include - The River Basin Districts Typology, Standards and Groundwater threshold values (Water Framework Directive) (England and Wales) Directions 2009 (Part 7: Groundwater Threshold Values), UK Drinking Water Standards (2000), Environmental Quality Standards, World Health Organisation concentrations, Environment Agency guidance concentrations and United States Environmental Protection Agency – Region 9 GACs.

APPENDIX 2

SITE LOCATION PLAN



FOR GUIDANCE PURPOSES ONLY

Approximate Site Boundary



Rev	Drawn	Date	Description
Drawing Status: Information			
Contract: Wicken Hall Mill			
For: Leigh Kelly			
Drawing Title: Site Location Plan			
IGE consulting Office 11, Bartle House, Manchester, M2 3WQ Email: contact@igeconsulting.co.uk Web: www.igeconsulting.co.uk Tel: 0161 914 9170			
Scale: 1:1700 @A3		Date: Oct 2022	
Drawn: AS		Checked: AE	
Contract No.	Drawing No.		
3865	SI - 01	P1	

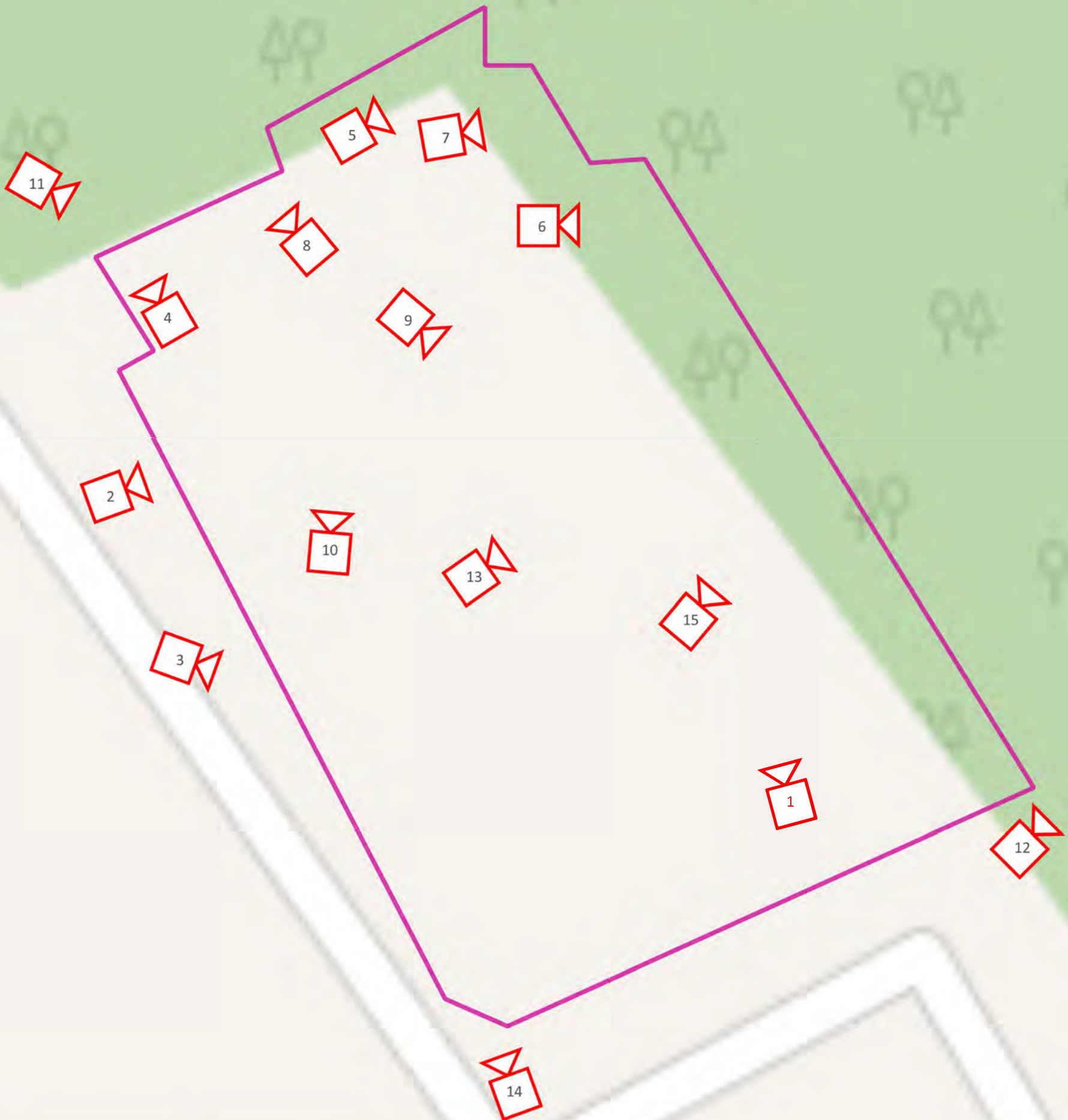
APPENDIX 3

WALKOVER SURVEY PHOTOGRAPHS AND PHOTOGRAPH LOCATION PLAN



FOR GUIDANCE PURPOSES ONLY

Approximate Site Boundary



Rev	Drawn	Date	Description
Drawing Status: Information			
Contract: Wicken Hall Mill			
For: Reno Degisi			
Drawing Title: Walkover Photograph Location Plan			
IGE consulting			
Office 11, Bartle House, Manchester, M2 3WQ Email: contact@igeconsulting.co.uk Web: www.igeconsulting.co.uk Tel: 0161 914 9170			
Scale: 1:250 @A3		Date: Oct 2022	
Drawn: AS		Checked: AE	
Contract No. 3865		Drawing No. SI - 02	P1

SITE WALKOVER PHOTOGRAPHS – 4th October 2022



Figure 1 – The central and northern site sections, looking north.



Figure 2 – A retaining wall along the western site boundary, looking east.



Figure 3 – An industrial electric outlet for buildings along the western site boundary, looking south-east.



Figure 4 – The exit of the Wicken Hall Clough culvert near the northern site boundary, looking north.



Figure 5 – Steep slopes in the northern site section, looking northeast.



Figure 6 – On-site heaps with landslips visible in the distance, looking east.

SITE WALKOVER PHOTOGRAPHS – 4th October 2022



Figure 7 – Steep slopes with associated land slips and established trees in the northeastern site section, looking east.



Figure 8 – Historical structures near the northern site boundary, looking north.



Figure 9 – Remnants of the historical industrial buildings in the top middle section of the site, looking southeast.



Figure 10 – The on-site culverted stream, at approx. 7.00m depth in the western site section.



Figure 11 – Looking south, a retaining wall near the northern site boundary, looking south.



Figure 12 – Retaining walls off-site near the southeastern site boundary, looking east.

SITE WALKOVER PHOTOGRAPHS – 4th October 2022



Figure 13 – Evidence for the burning of materials on site in the centre, looking east.



Figure 14 – Overhead power lines noted along the southern and western site boundaries, looking north-east.



Figure 15 – Agricultural and industrial buildings along the eastern site boundary, looking east.

APPENDIX 4

HISTORICAL ORDNANCE SURVEY MAPS

Site Details:

WICKENHALL MILL, OGDEN
LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: County Series

Map date: 1892

Scale: 1:2,500

Printed at: 1:2,500



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

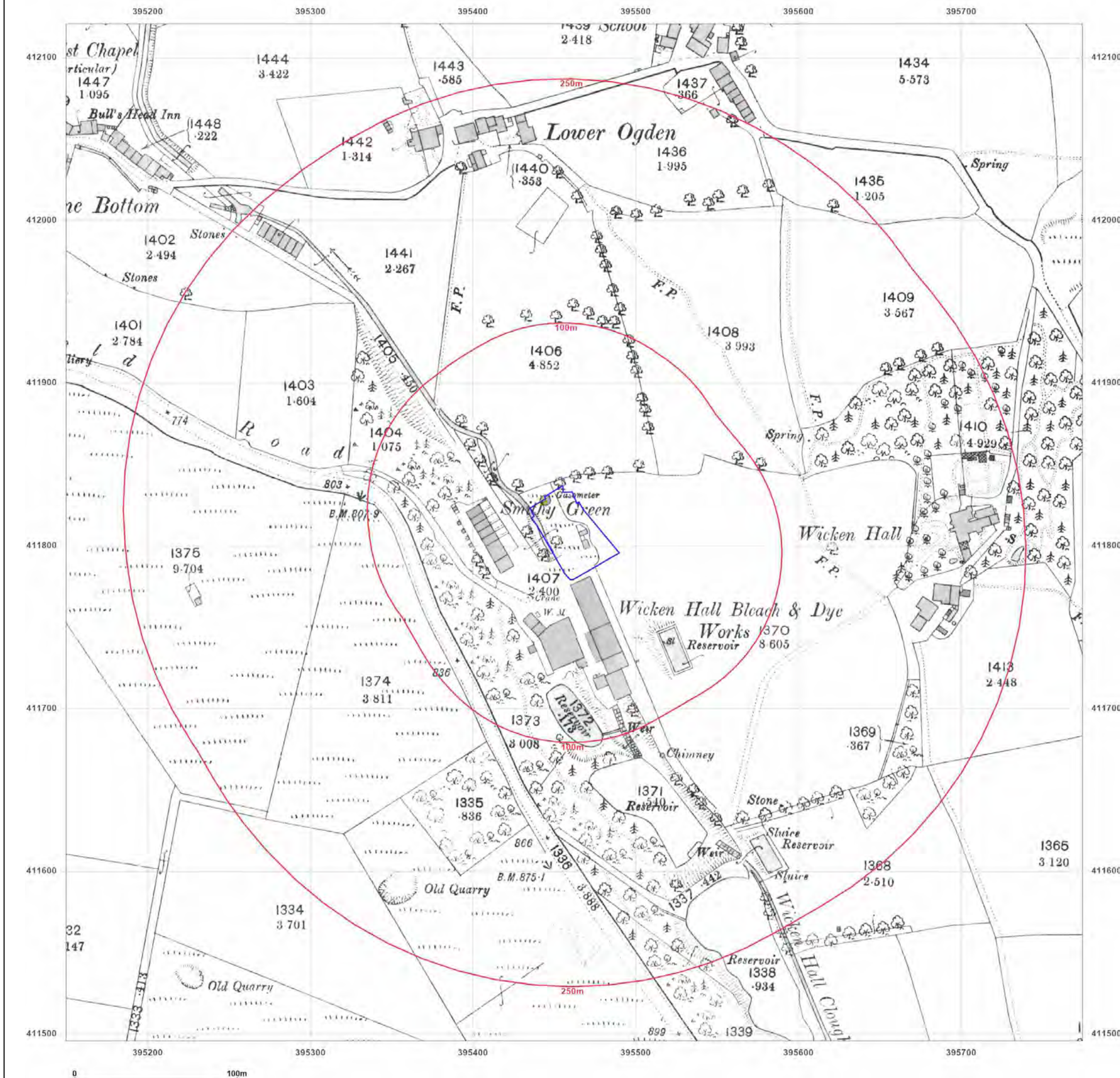


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Production date: 30 September 2022

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



Site Details:

WICKENHALL MILL, OGDEN
LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: County Series

Map date: 1909

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1909
Revised 1909
Edition N/A
Copyright N/A
Levelled N/A

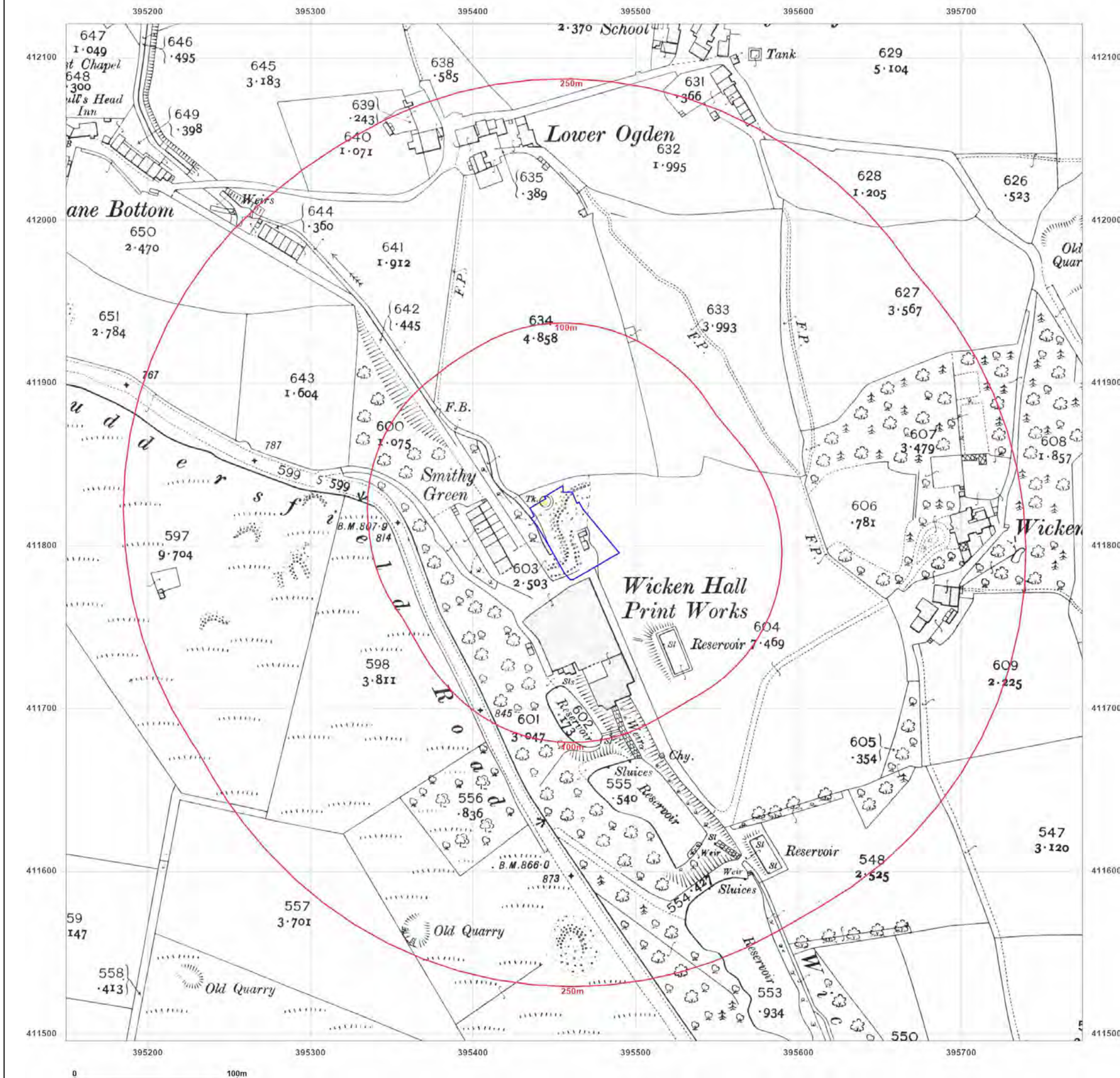


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Site Details:

WICKENHALL MILL, OGDEN LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: County Series

Map date: 1930

Scale: 1:2,500

Printed at: 1:2,500



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

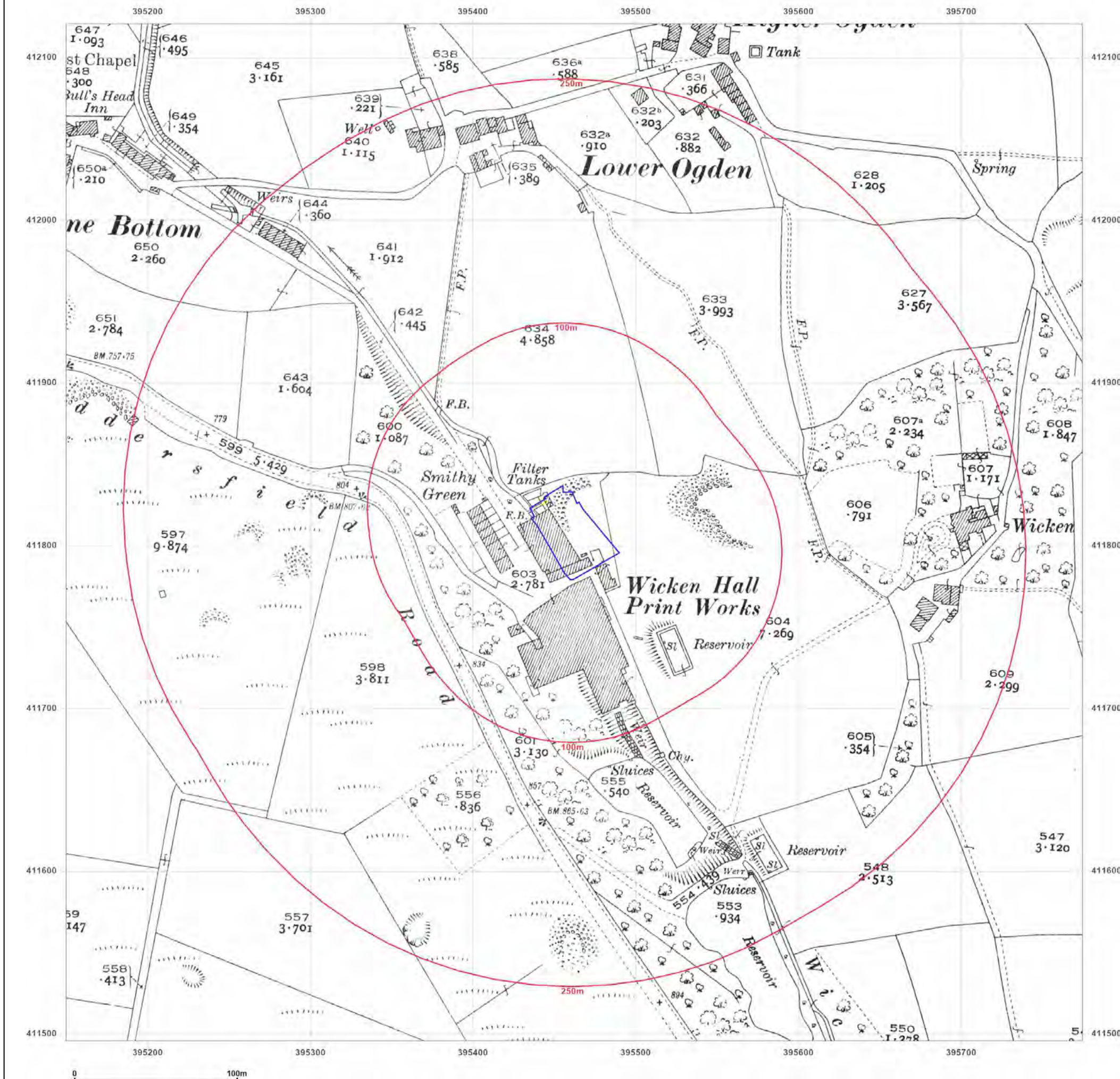


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Site Details:

WICKENHALL MILL, OGDEN
LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: National Grid

Map date: 1963-1964

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1962
Revised 1962
Edition N/A
Copyright 1964
Levelled 1962

Surveyed 1961
Revised 1961
Edition 1963
Copyright 1963
Levelled 1956

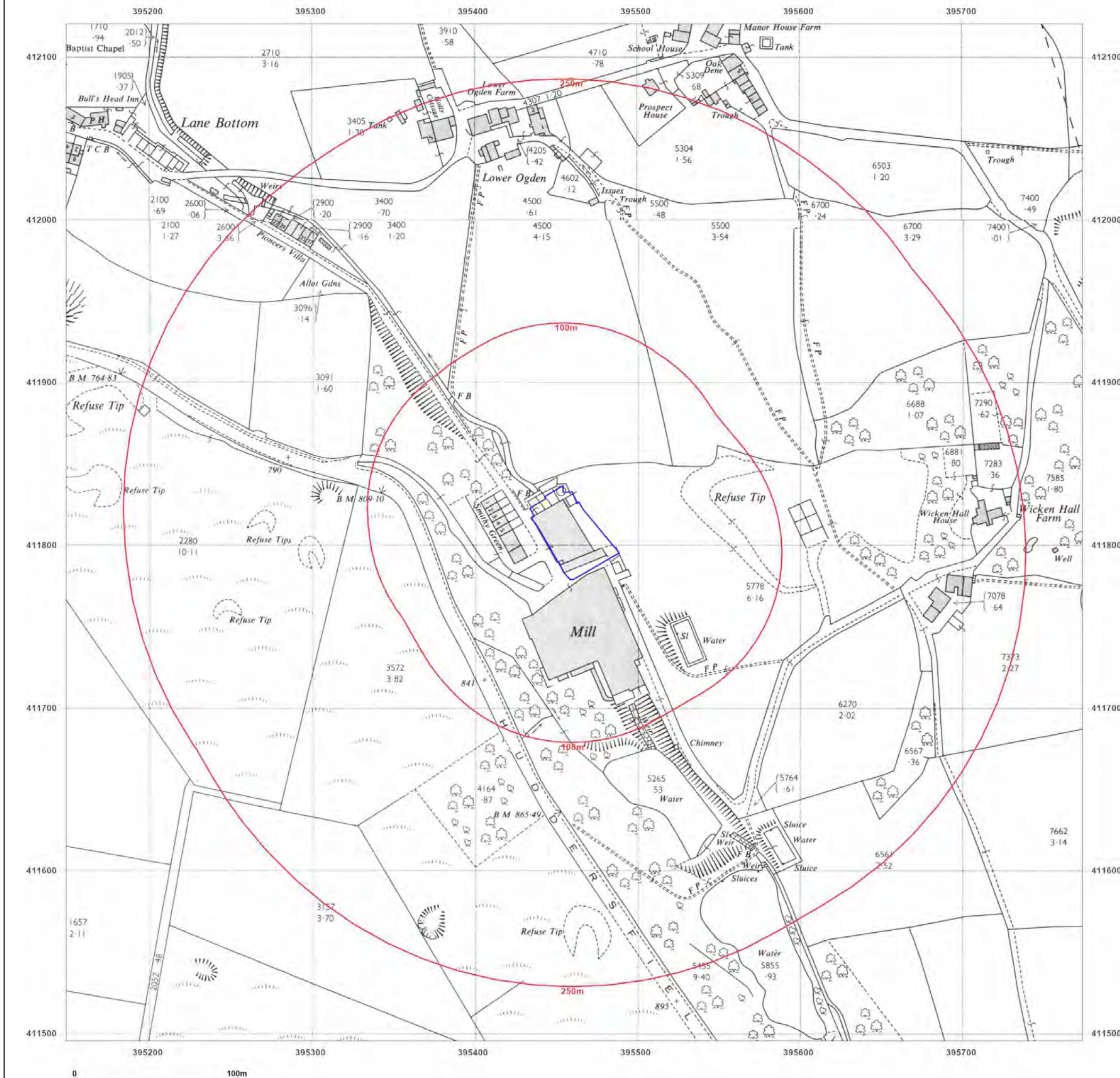


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Site Details:

WICKENHALL MILL, OGDEN LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: National Grid

Map date: 1963-1964

Scale: 1:2,500

Printed at: 1:2,500



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

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

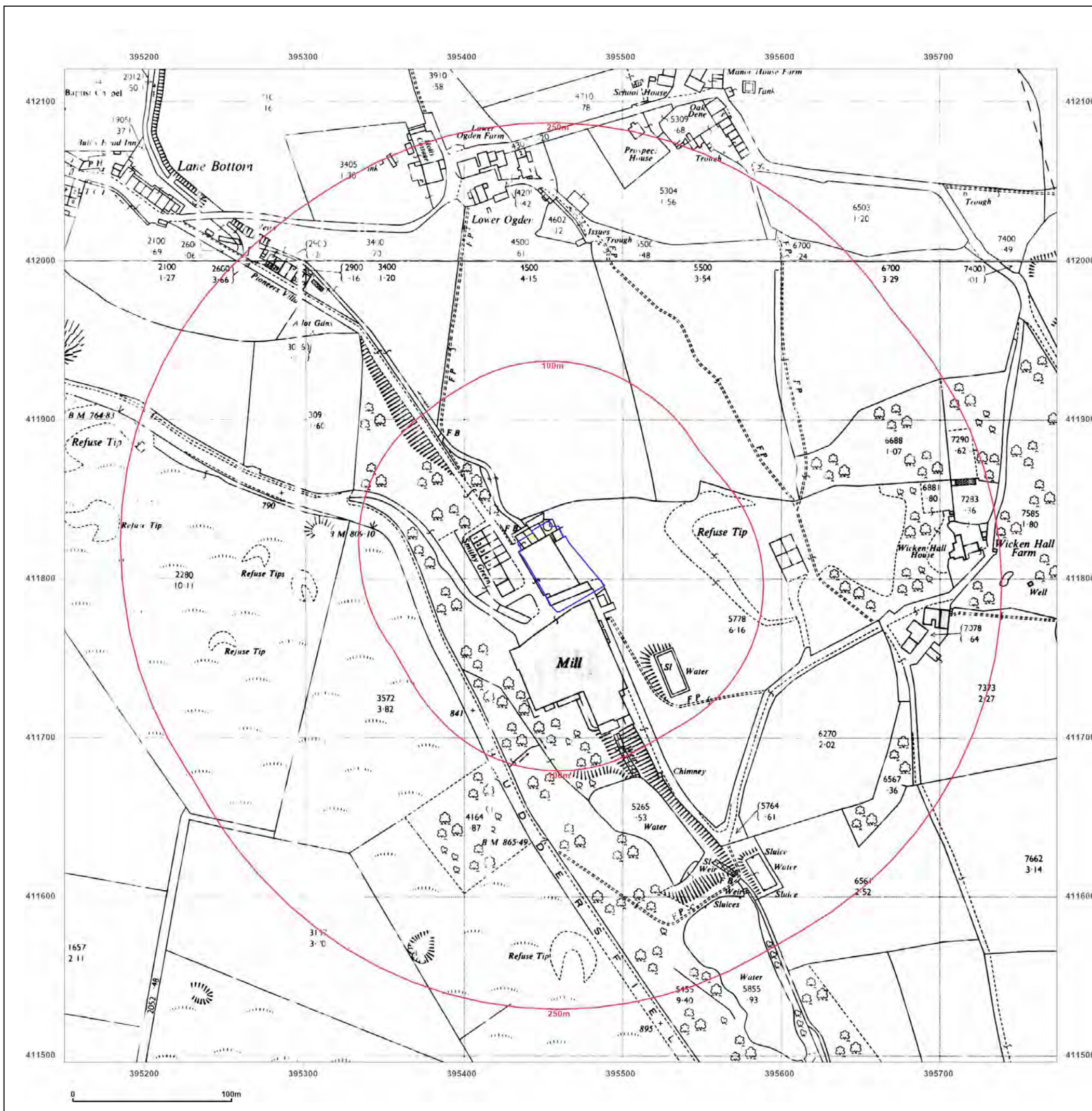


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Site Details:

WICKENHALL MILL, OGDEN
LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: National Grid

Map date: 1985

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1956
Revised 1985
Edition N/A
Copyright 1985
Levelled 1956

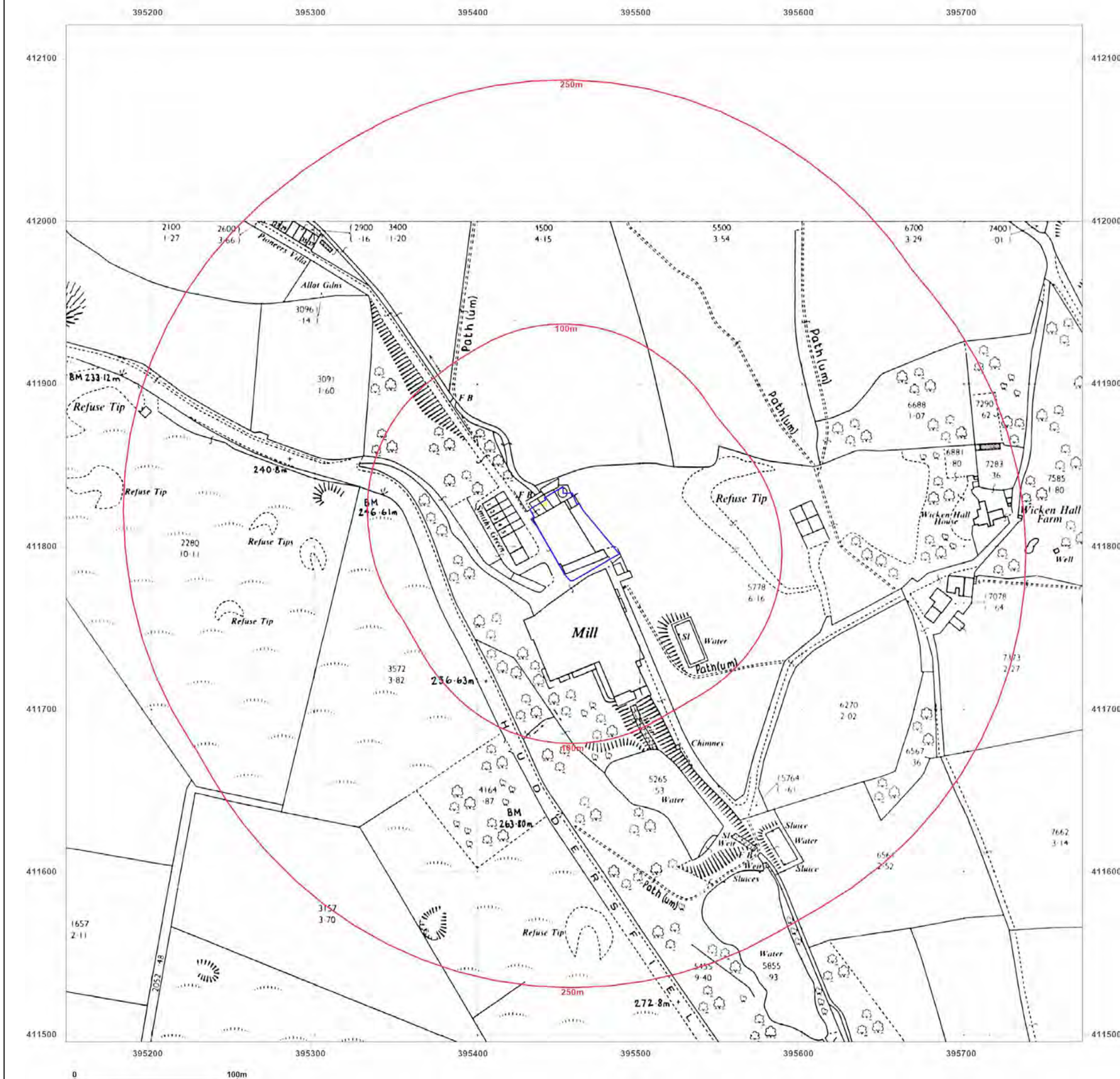


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Site Details:

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LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: LandLine

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Printed at: 1:1,250

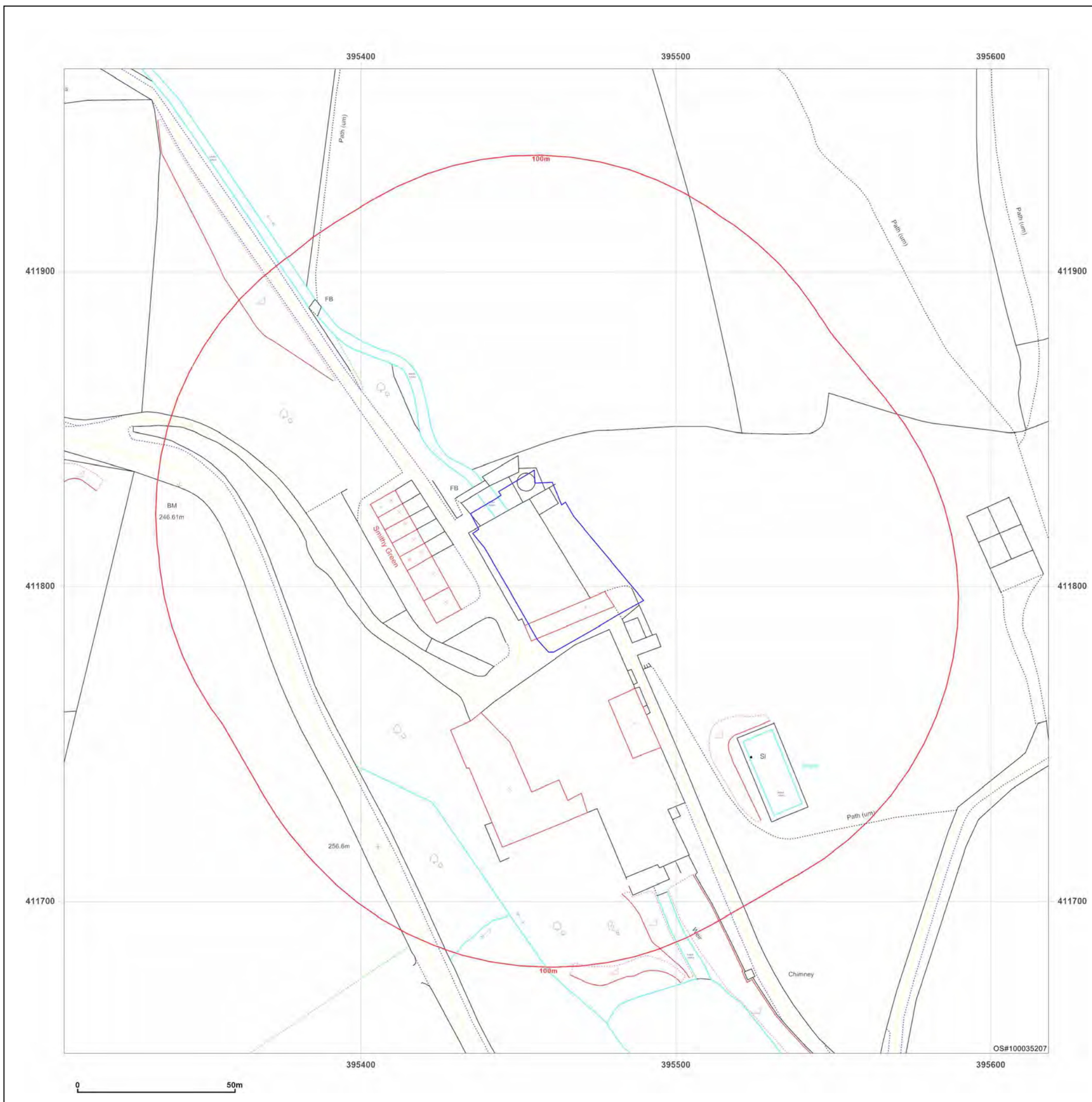


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Site Details:

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LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: County Series

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Printed at: 1:10,560



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

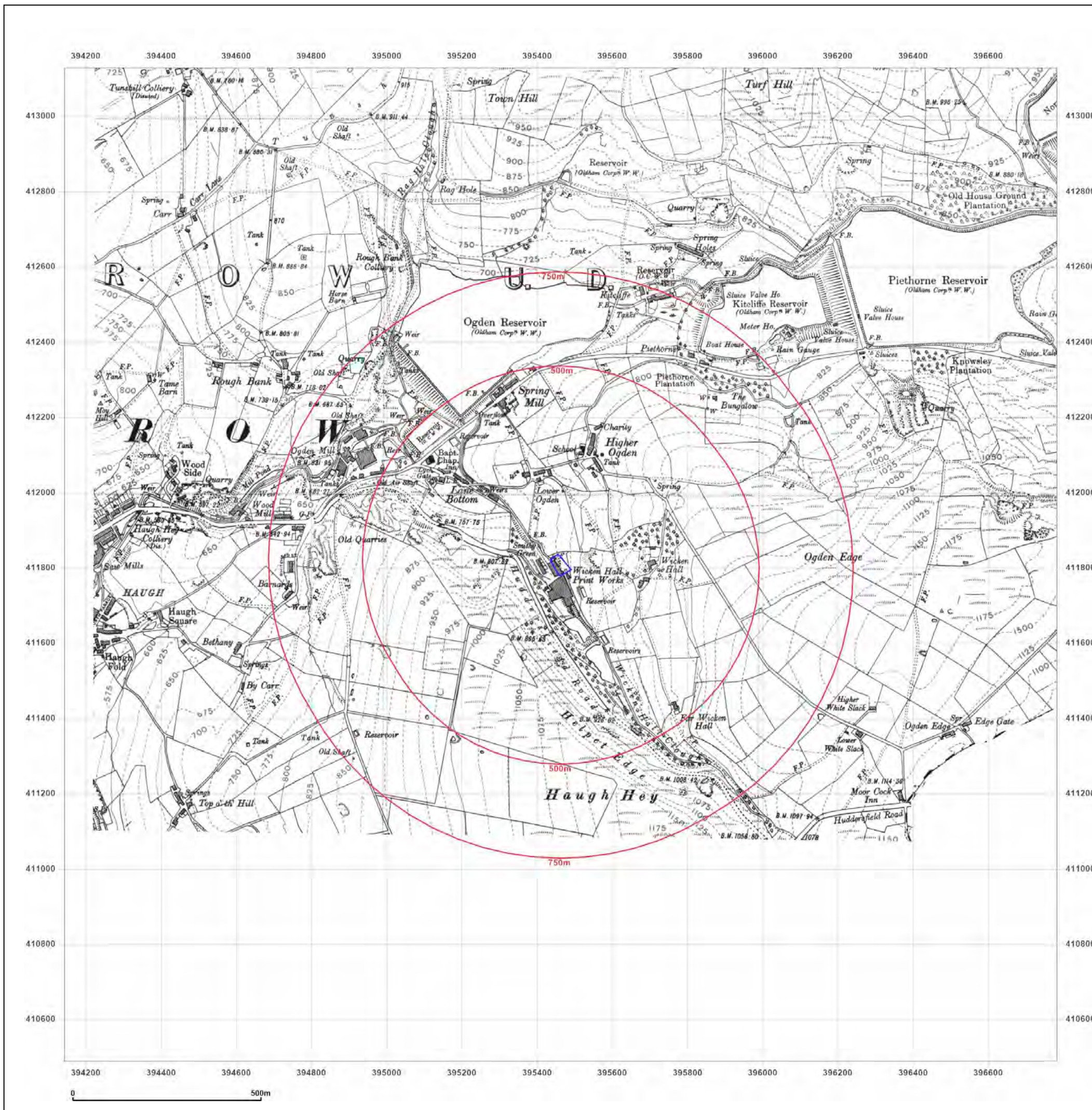


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Site Details:

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Report Ref: GS-9092353
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Map Name: County Series

Map date: 1888

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Printed at: 1:10,560



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

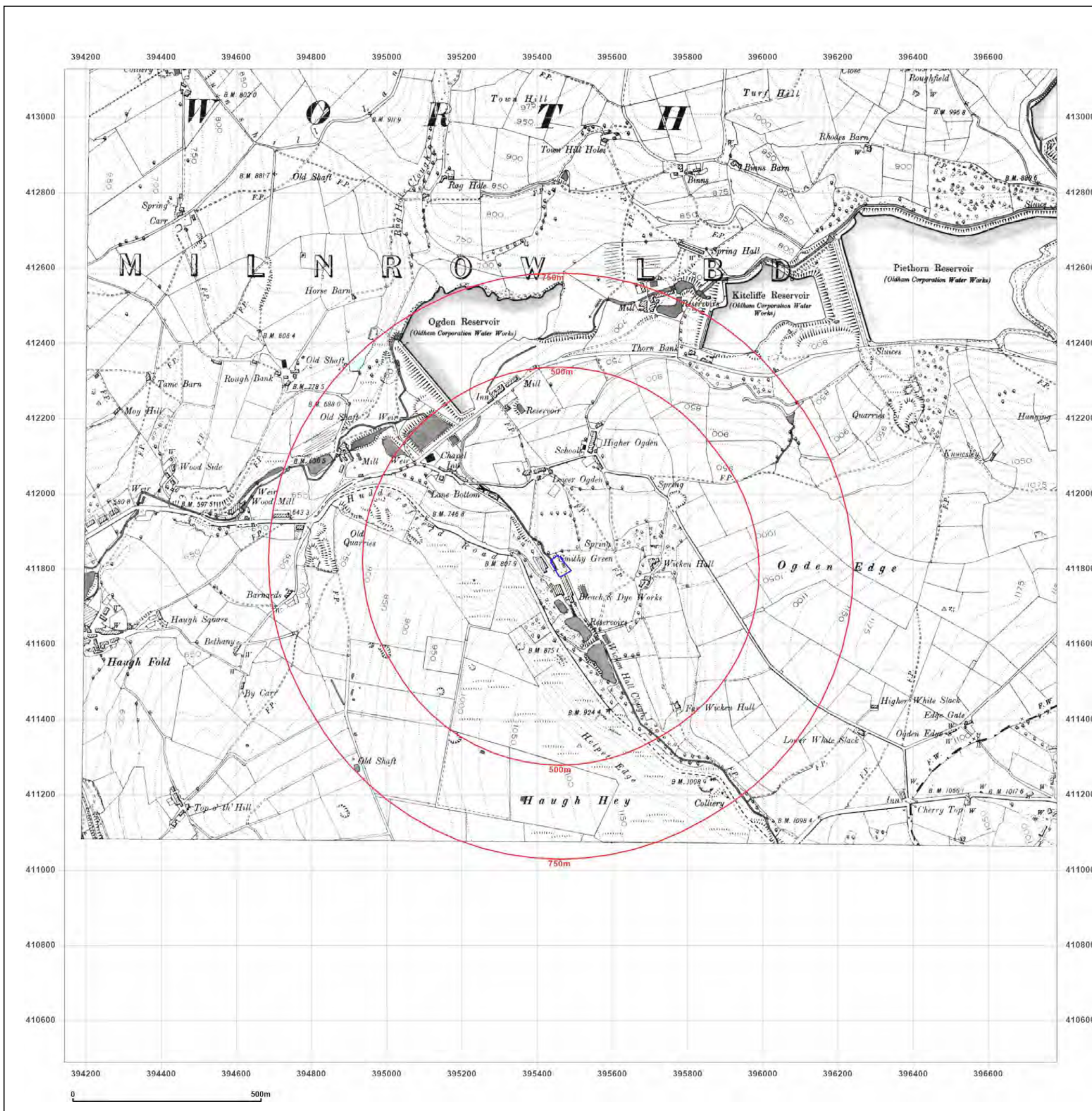


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LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: County Series

Map date: 1890-1892

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1890
Revised 1890
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1891
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Surveyed 1892
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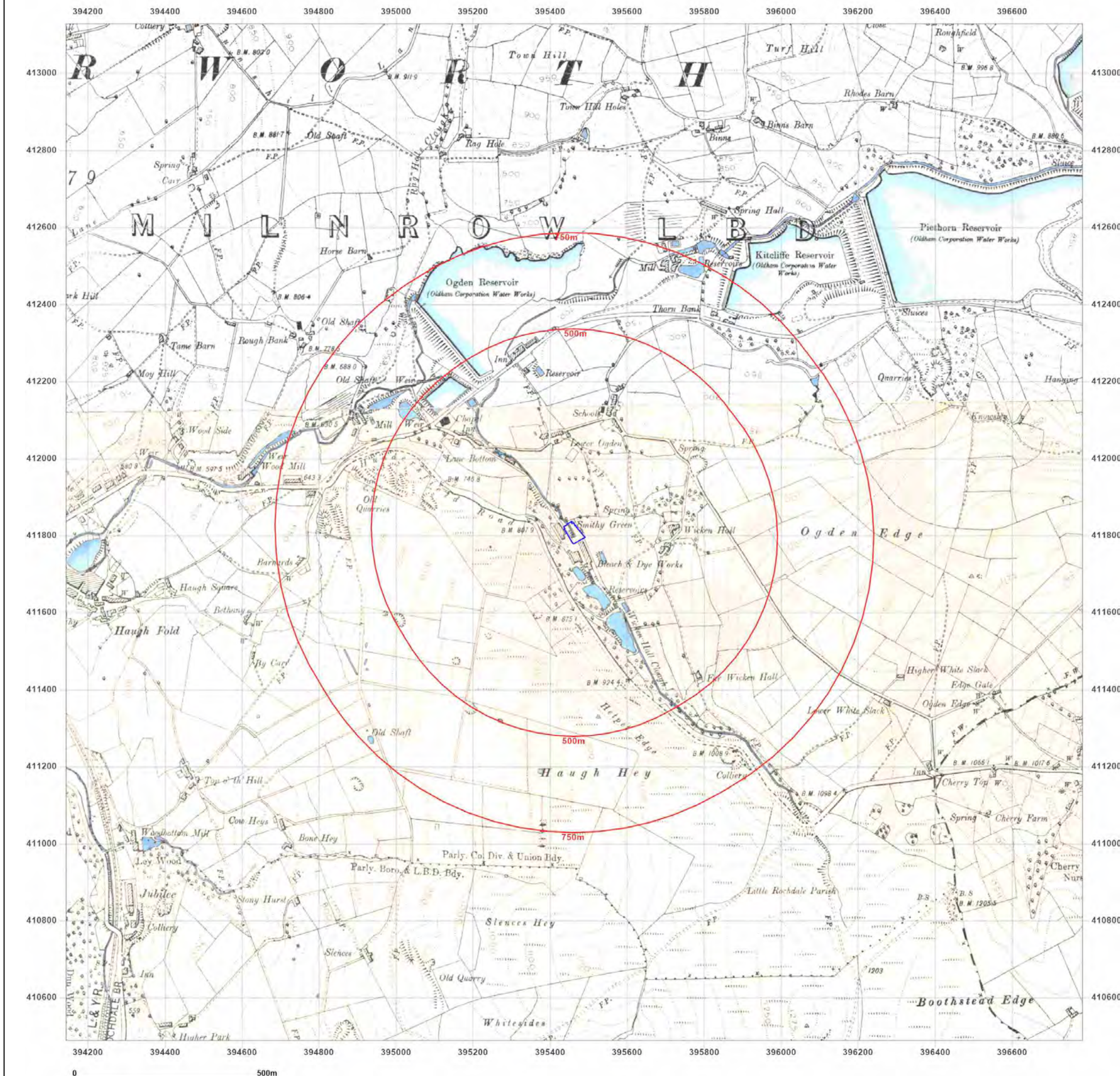


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LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: County Series

Map date: 1891-1892

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1891
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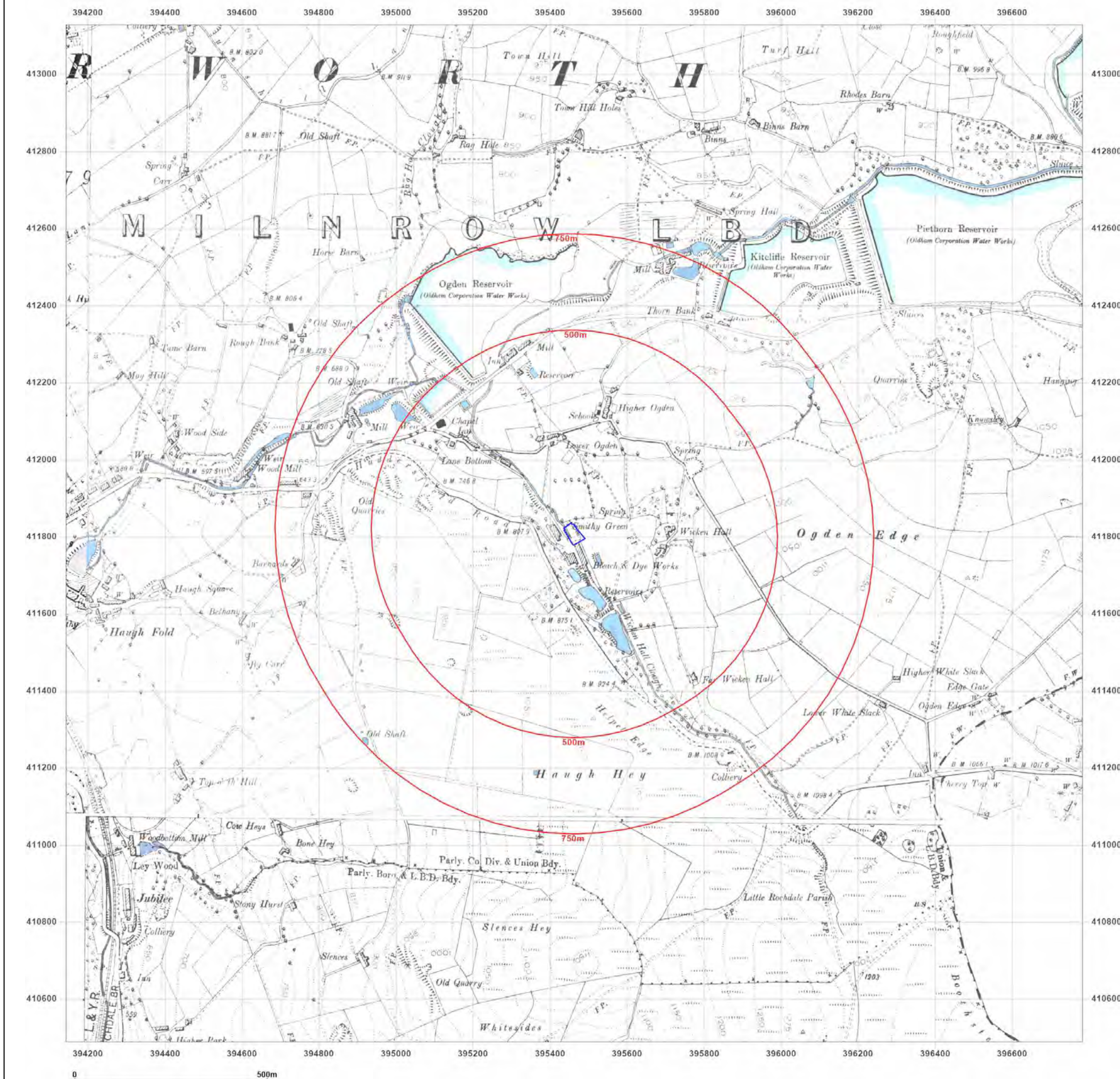


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Client Ref: 3865
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Map Name: County Series

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Printed at: 1:10,560



Surveyed 1848
Revised 1907
Edition N/A
Copyright N/A
Levelled N/A

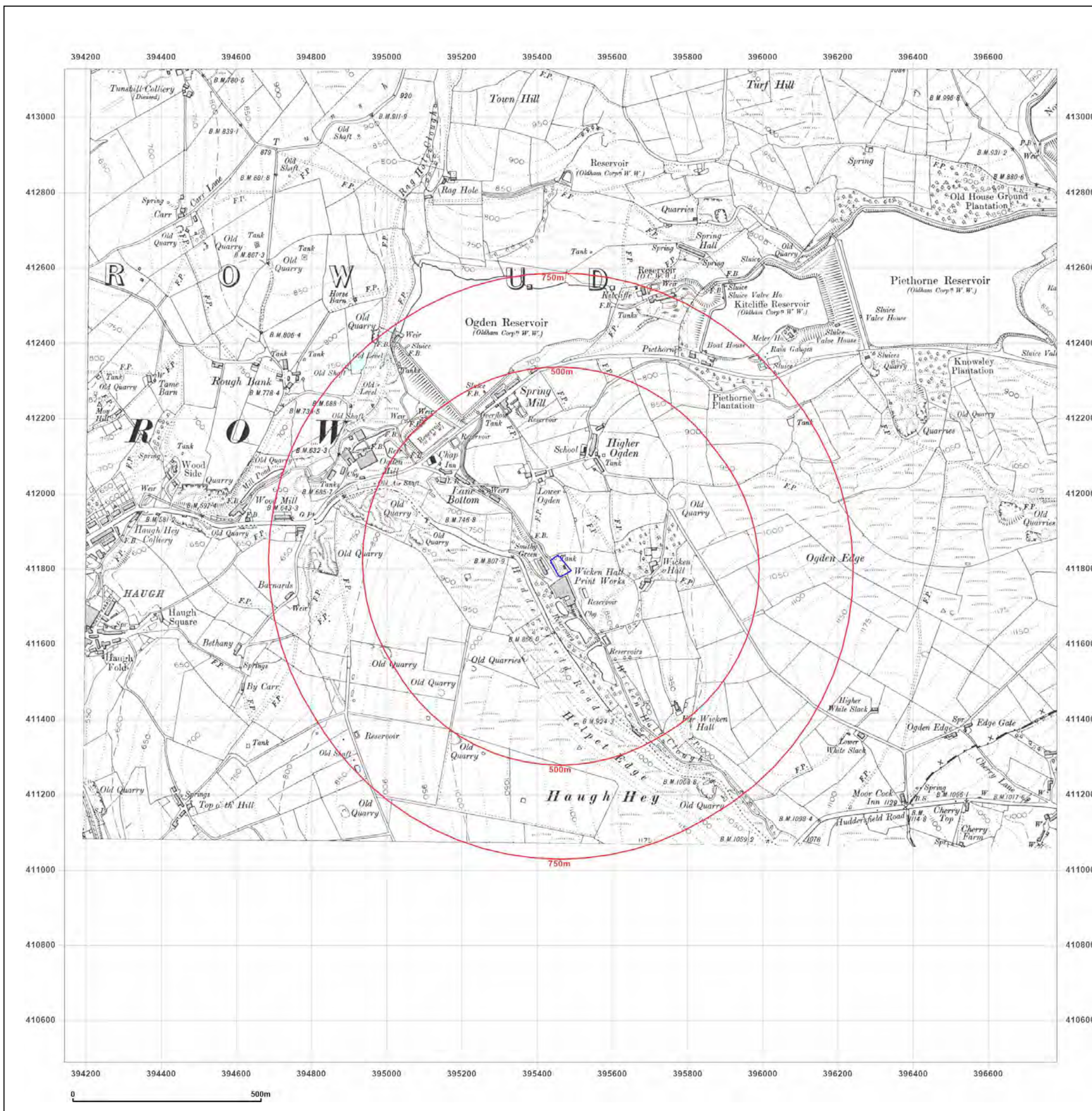


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Client Ref: 3865
Report Ref: GS-9092353
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Map Name: County Series

Map date: 1907-1908

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848 Revised 1908 Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A
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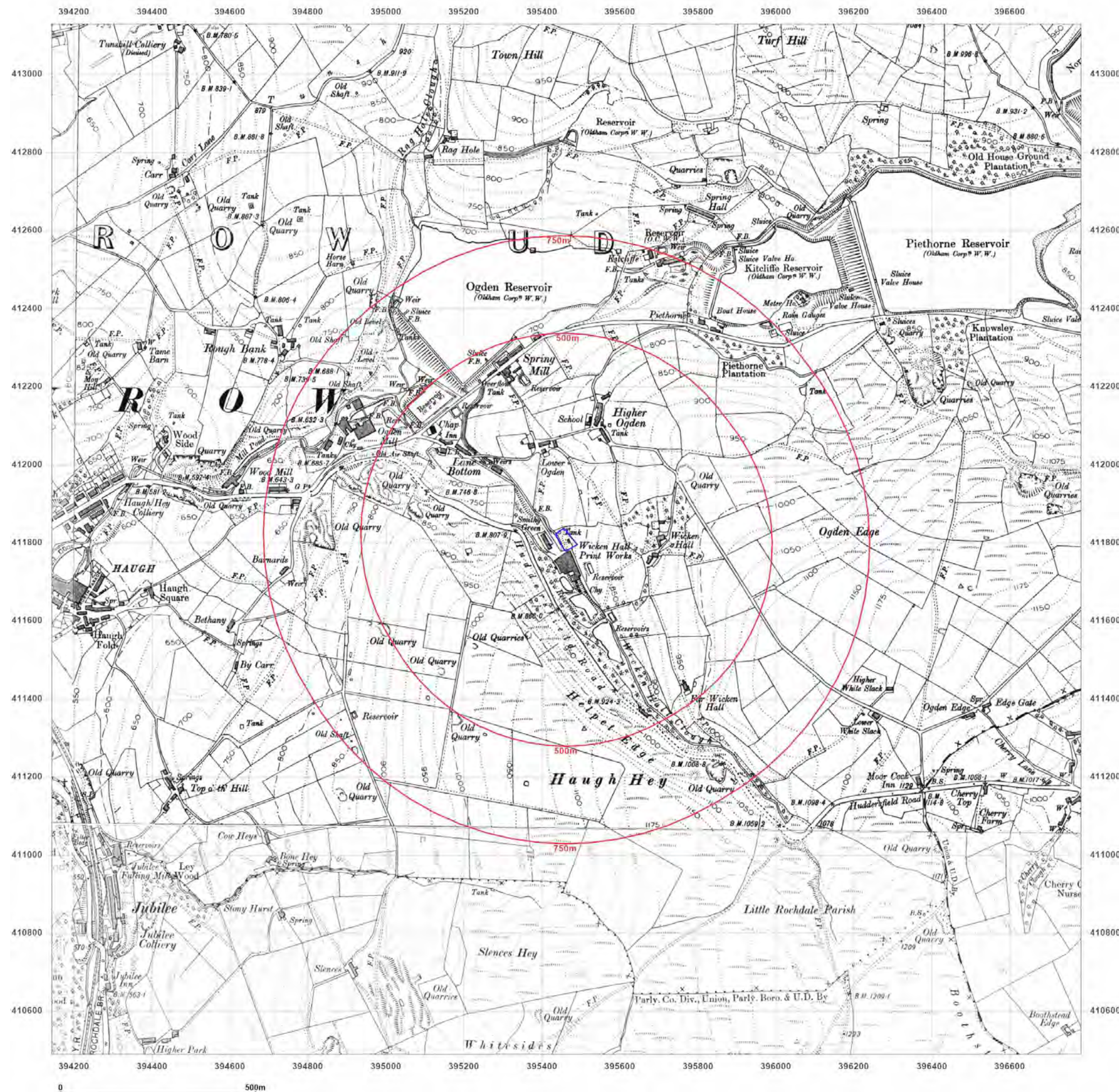


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Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: County Series

Map date: 1910

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1910
Edition 1910
Copyright N/A
Levelled N/A

Surveyed 1850
Revised 1910
Edition N/A
Copyright N/A
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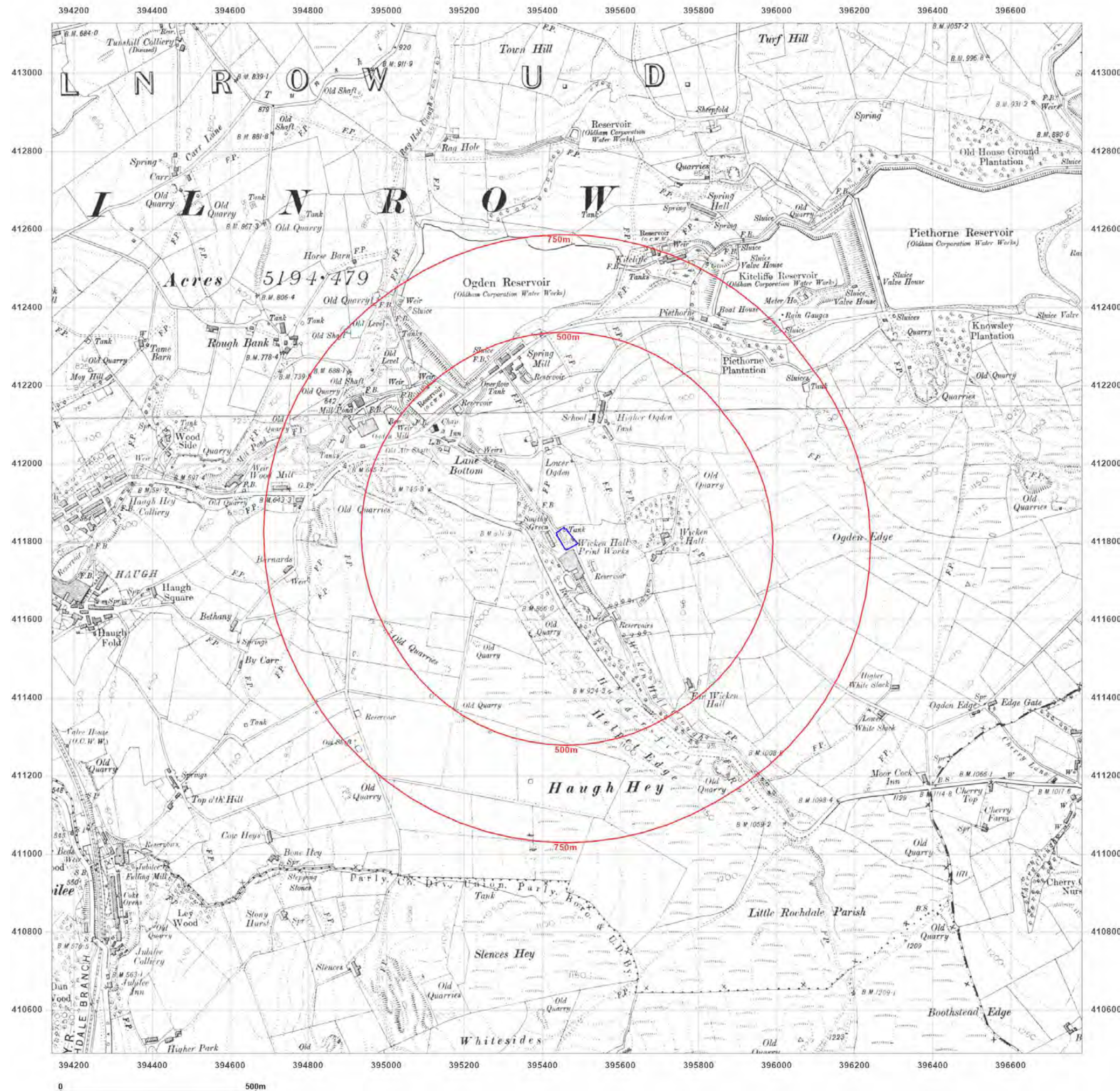


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Site Details:

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Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: County Series

Map date: 1910

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848
 Revised 1910
 Edition N/A
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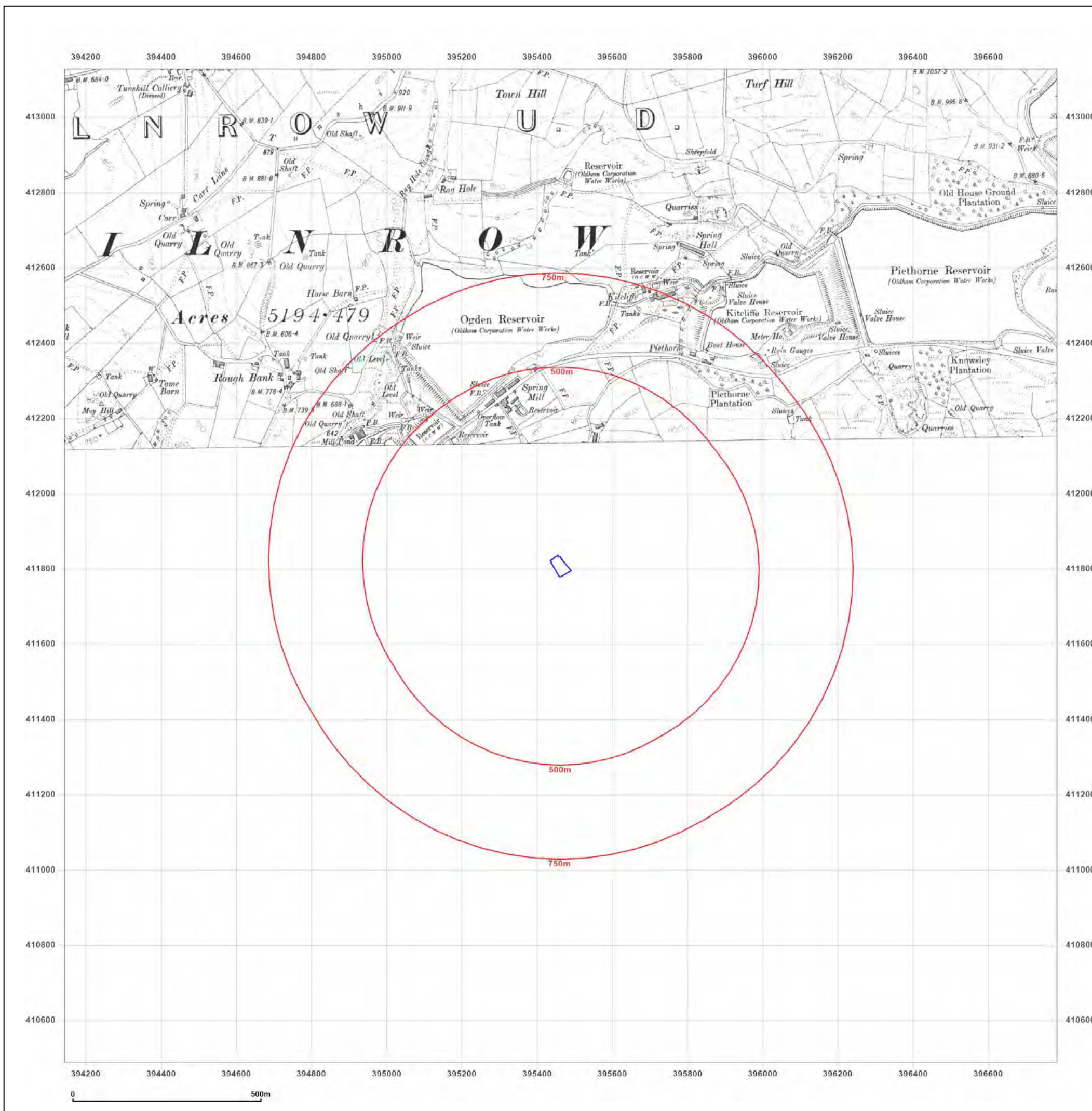


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Site Details:

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Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: County Series

Map date: 1928

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Printed at: 1:10,560



Surveyed 1848
Revised 1928
Edition N/A
Copyright N/A
Levelled N/A

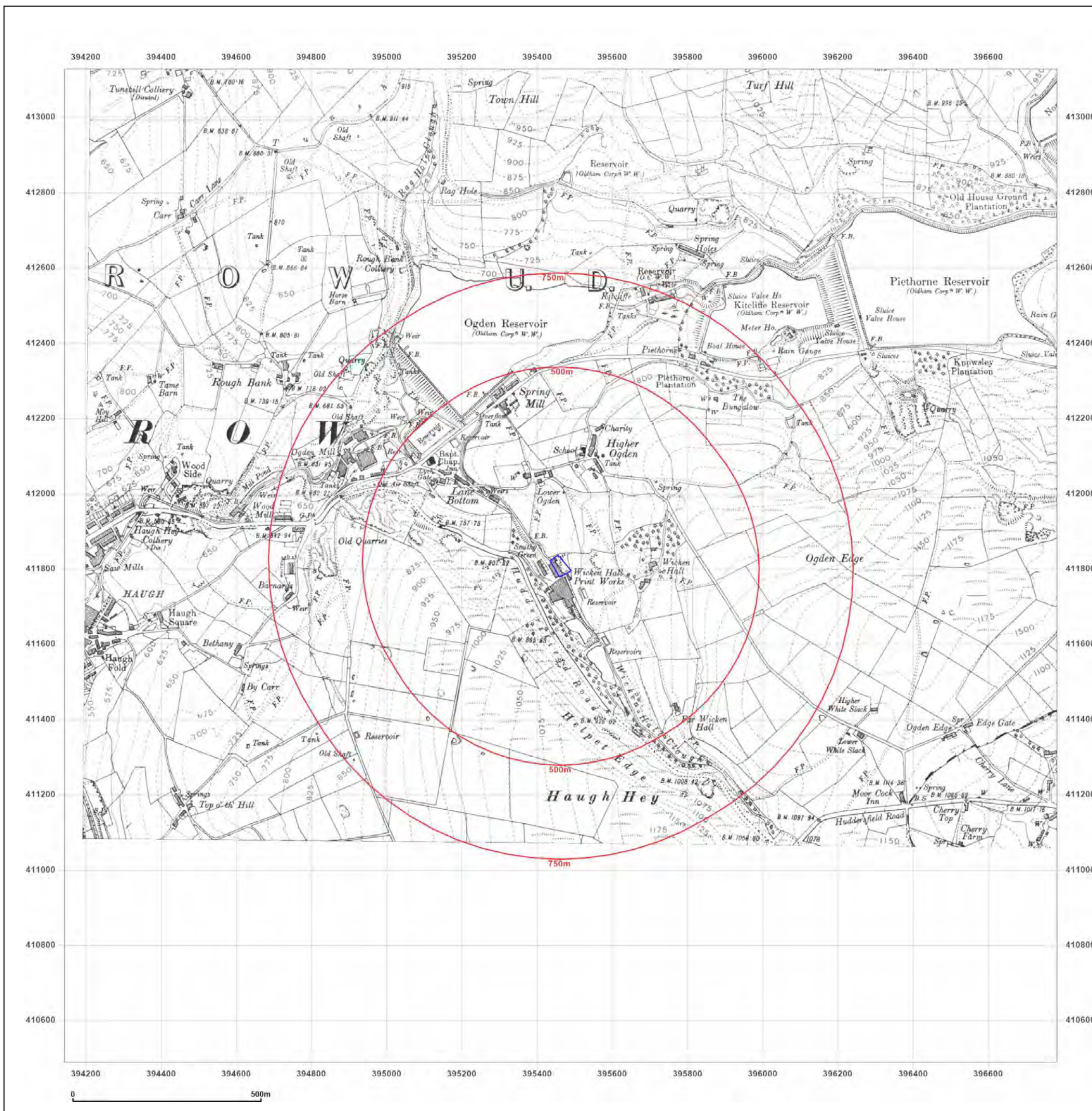


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Site Details:

WICKENHALL MILL, OGDEN LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: County Series

Map date: 1928-1932

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848
Revised 1928
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1928
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
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Copyright N/A
Levelled N/A

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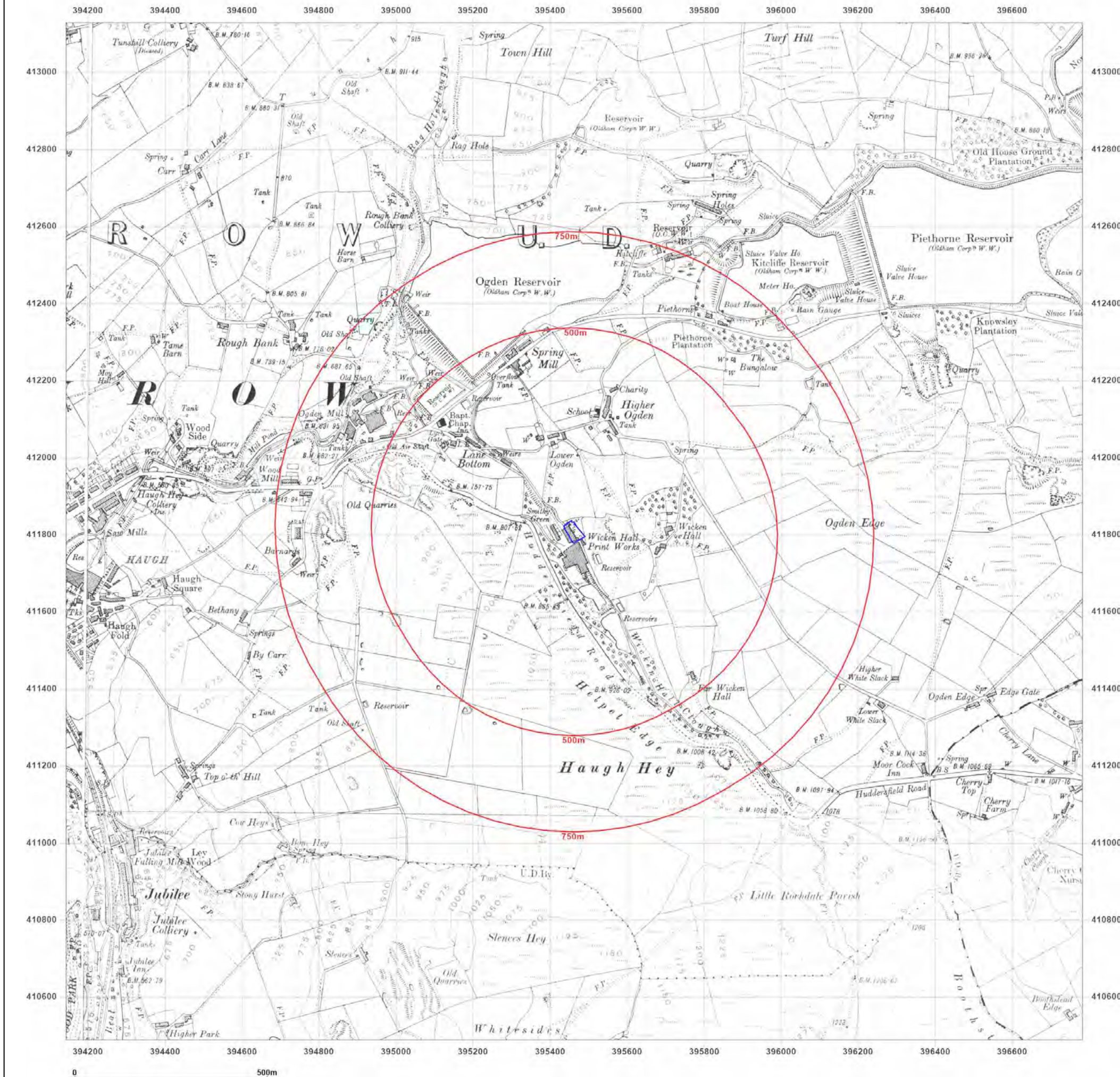


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Site Details:

WICKENHALL MILL, OGDEN LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: Provisional

Map date: 1954-1956

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1954
Revised 1954
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised 1955
Edition N/A
Copyright 1956
Levelled N/A

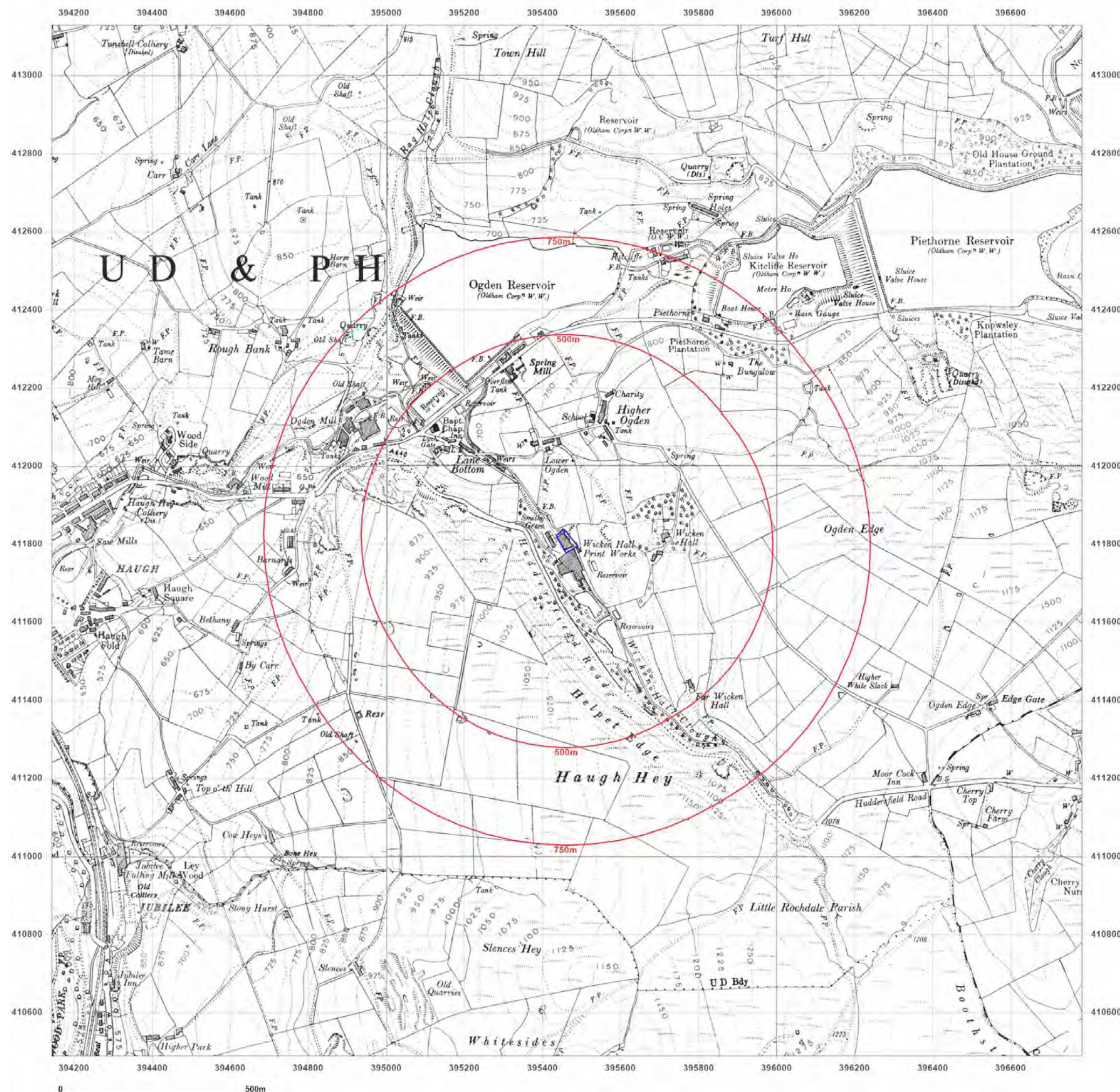


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Site Details:

WICKENHALL MILL, OGDEN LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: Provisional

Map date: 1967-1972

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1967
Revised 1967
Edition N/A
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Levelled N/A

Surveyed N/A
Revised 1972
Edition N/A
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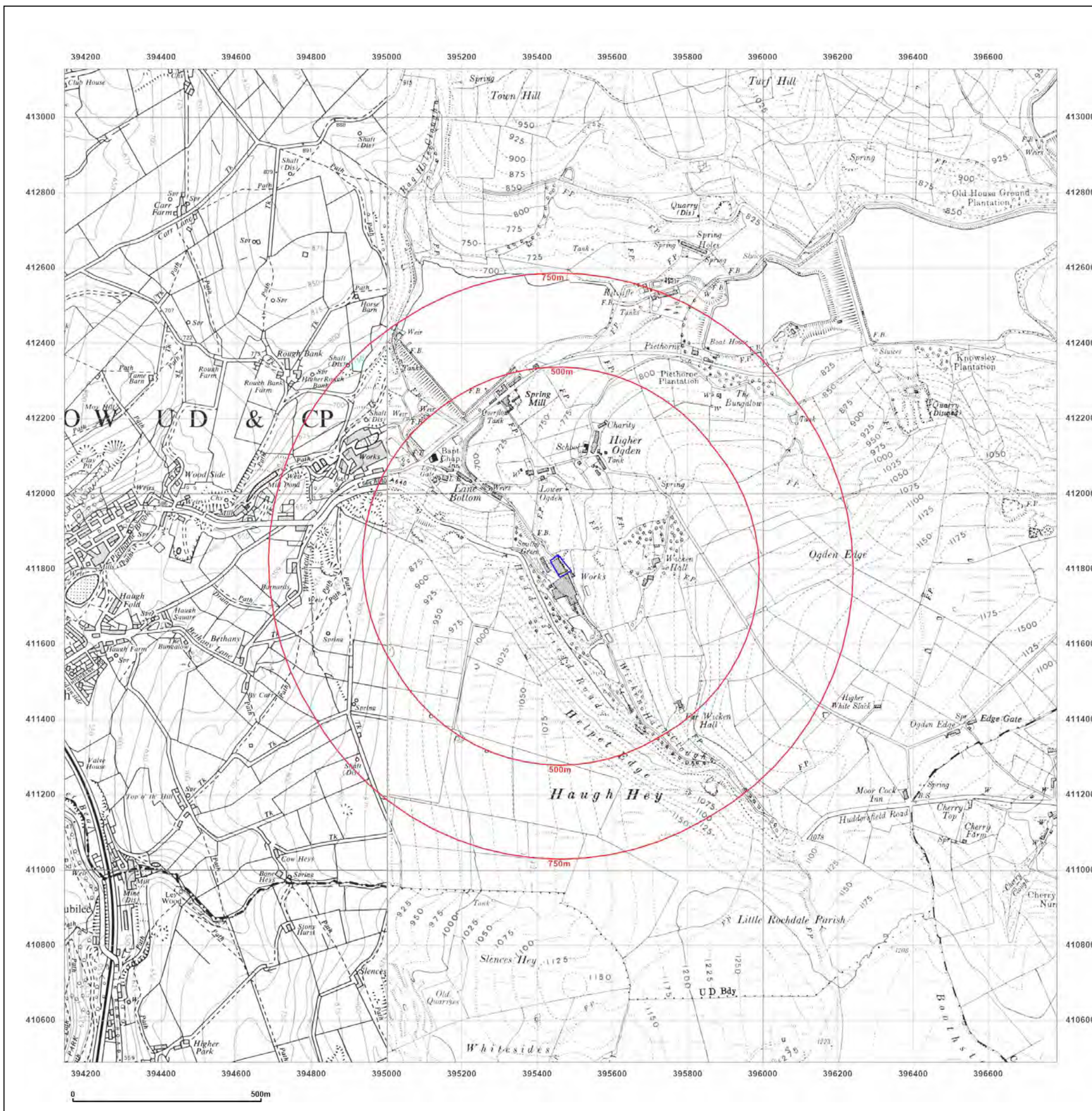


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Site Details:

WICKENHALL MILL, OGDEN LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: National Grid

Map date: 1976-1979

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1976
 Revised 1976
 Edition N/A
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Surveyed 1979
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 Edition N/A
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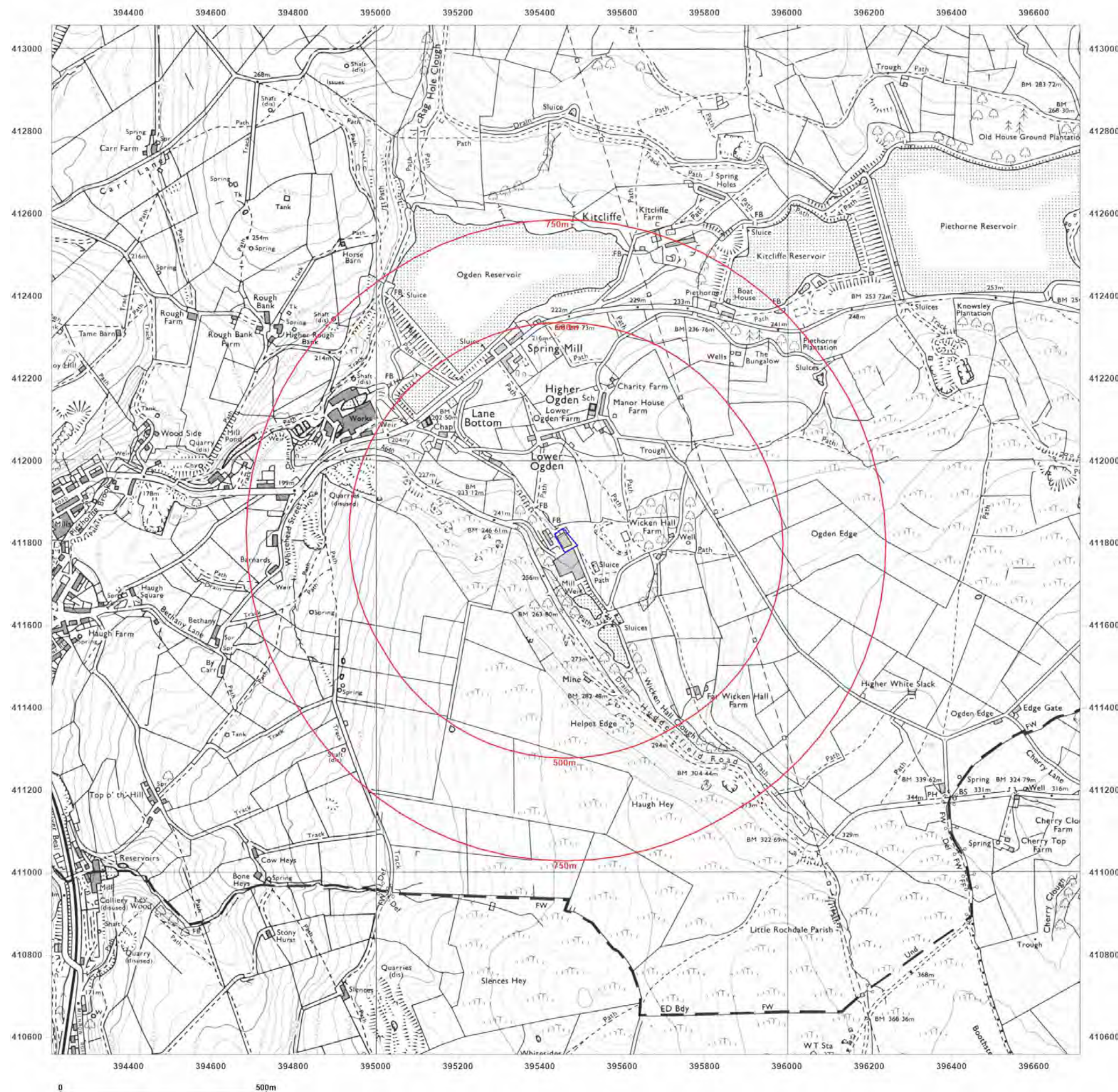


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Site Details:

WICKENHALL MILL, OGDEN
LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000

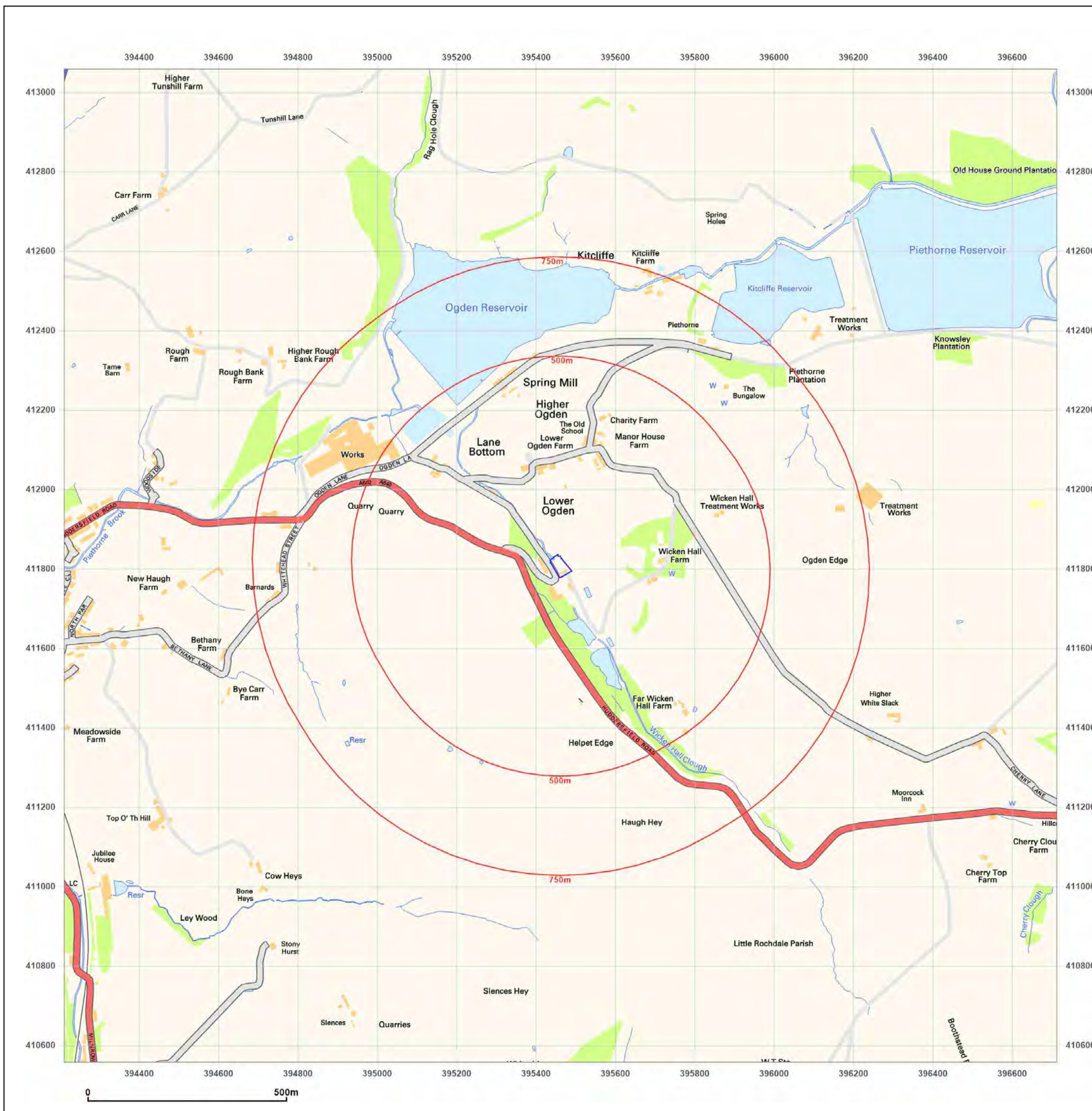


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Site Details:

WICKENHALL MILL, OGDEN
LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000

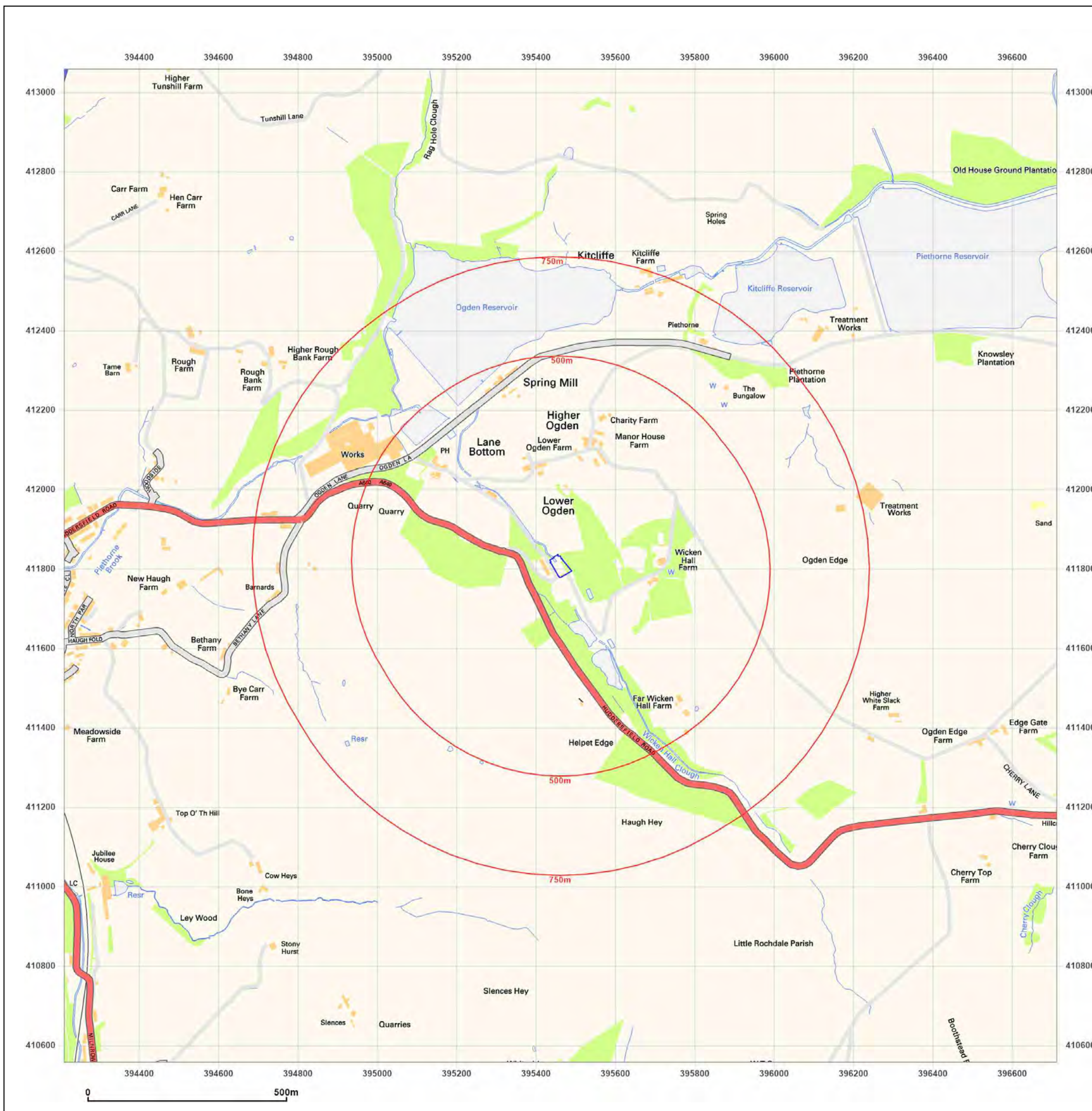


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Site Details:

WICKENHALL MILL, OGDEN
LANE, MILNROW, OL16 3UR

Client Ref: 3865
Report Ref: GS-9092353
Grid Ref: 395462, 411808

Map Name: National Grid

Map date: 2022

Scale: 1:10,000

Printed at: 1:10,000

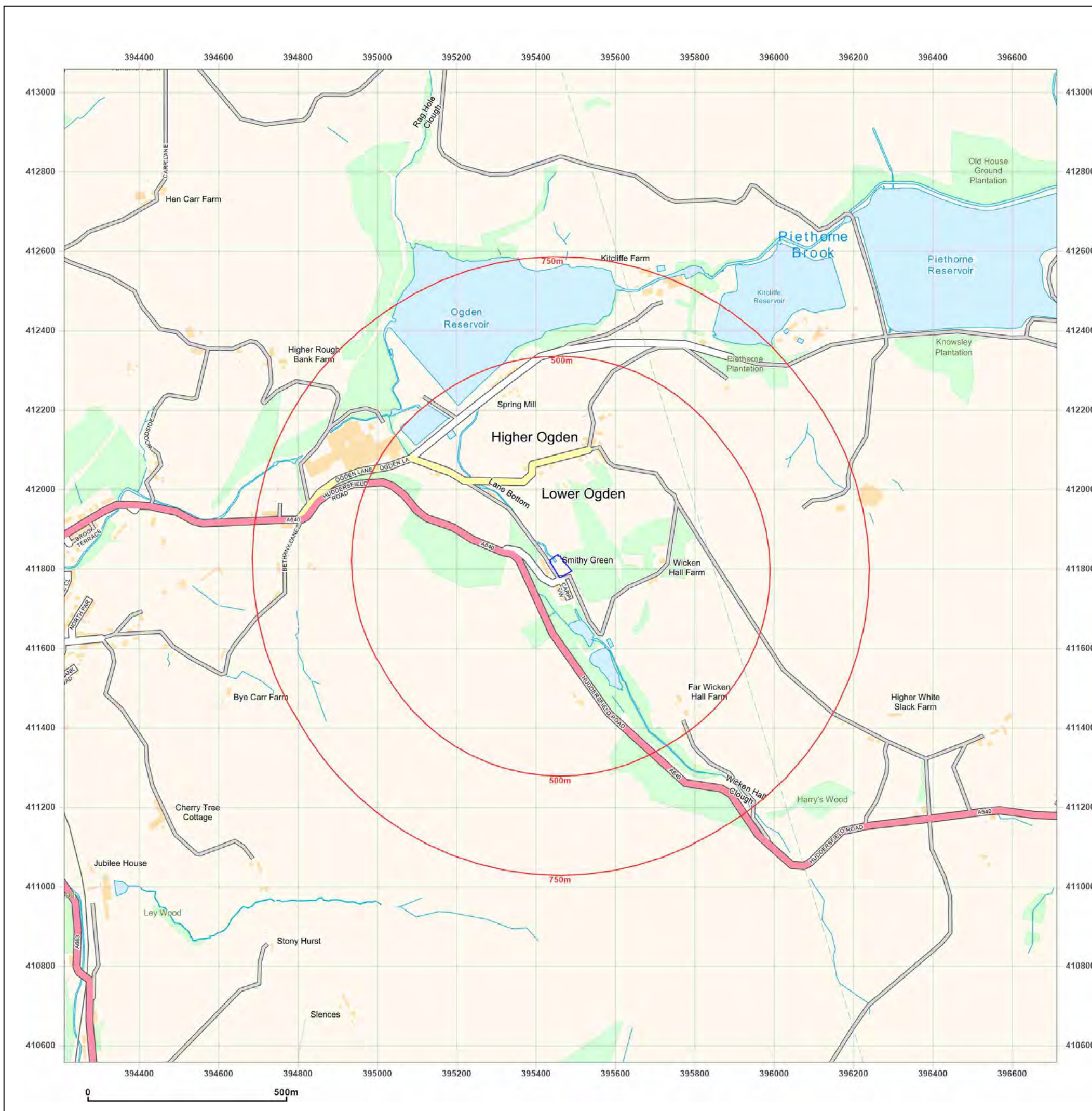


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APPENDIX 5

GROUNDSURE COMBINED ENVIRO AND GEO – INSIGHT REPORT

WICKENHALL MILL, OGDEN LANE, MILNROW, OL16 3UR

Order Details

Date: 30/09/2022

Your ref: 3865

Our Ref: GS-9092354

Site Details

Location: 395451 411828

Area: 0.16 ha

Authority: [Rochdale Metropolitan Borough Council](#)



Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

p.12

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Contact us with any questions at:

info@groundsure.com

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Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	1.1	Historical industrial land uses	15	3	42	113	-
20	1.2	Historical tanks	5	0	3	13	-
21	1.3	Historical energy features	1	0	0	0	-
21	1.4	Historical petrol stations	0	0	0	0	-
22	1.5	Historical garages	0	0	0	0	-
22	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
23	2.1	Historical industrial land uses	17	5	50	141	-
31	2.2	Historical tanks	6	0	4	16	-
32	2.3	Historical energy features	1	0	0	0	-
33	2.4	Historical petrol stations	0	0	0	0	-
33	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
34	3.1	Active or recent landfill	0	0	0	0	-
34	3.2	Historical landfill (BGS records)	0	0	0	0	-
35	3.3	Historical landfill (LA/mapping records)	0	0	6	4	-
35	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
35	3.5	Historical waste sites	0	0	0	0	-
36	3.6	Licensed waste sites	0	0	0	0	-
36	3.7	Waste exemptions	0	0	8	13	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
38	4.1	Recent industrial land uses	0	0	2	-	-
39	4.2	Current or recent petrol stations	0	0	0	0	-
39	4.3	Electricity cables	0	0	0	0	-
39	4.4	Gas pipelines	0	0	0	0	-
39	4.5	Sites determined as Contaminated Land	0	0	0	0	-



39	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
40	4.7	Regulated explosive sites	0	0	0	0	-
40	4.8	Hazardous substance storage/usage	0	0	0	0	-
40	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
40	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
40	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
41	4.12	Radioactive Substance Authorisations	0	0	0	0	-
41	4.13	<u>Licensed Discharges to controlled waters</u>	1	1	1	11	-
43	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
43	4.15	Pollutant release to public sewer	0	0	0	0	-
44	4.16	List 1 Dangerous Substances	0	0	0	0	-
44	4.17	List 2 Dangerous Substances	0	0	0	0	-
44	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	0	0	1	-
44	4.19	Pollution inventory substances	0	0	0	0	-
45	4.20	Pollution inventory waste transfers	0	0	0	0	-
45	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
46	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
48	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
50	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
51	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
51	5.5	Groundwater vulnerability- local information	None (within 0m)				
52	5.6	<u>Groundwater abstractions</u>	0	0	0	0	15
56	5.7	<u>Surface water abstractions</u>	0	0	4	2	10
61	5.8	<u>Potable abstractions</u>	0	0	1	0	6
63	5.9	<u>Source Protection Zones</u>	0	0	2	0	-
63	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
64	6.1	<u>Water Network (OS MasterMap)</u>	3	0	12	-	-



66	6.2	<u>Surface water features</u>	1	0	5	-	-
66	6.3	<u>WFD Surface water body catchments</u>	1	-	-	-	-
66	6.4	<u>WFD Surface water bodies</u>	0	0	0	-	-
67	6.5	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
68	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
68	7.2	Historical Flood Events	0	0	0	-	-
68	7.3	Flood Defences	0	0	0	-	-
69	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
69	7.5	Flood Storage Areas	0	0	0	-	-
70	7.6	Flood Zone 2	None (within 50m)				
70	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
71	8.1	<u>Surface water flooding</u>	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding					
73	9.1	<u>Groundwater flooding</u>	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
74	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
75	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
75	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
75	10.4	Special Protection Areas (SPA)	0	0	0	0	0
75	10.5	National Nature Reserves (NNR)	0	0	0	0	0
76	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
76	10.7	Designated Ancient Woodland	0	0	0	0	0
76	10.8	Biosphere Reserves	0	0	0	0	0
76	10.9	Forest Parks	0	0	0	0	0
77	10.10	Marine Conservation Zones	0	0	0	0	0
77	10.11	<u>Green Belt</u>	1	0	0	0	2
77	10.12	Proposed Ramsar sites	0	0	0	0	0



77	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
78	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
78	10.15	Nitrate Sensitive Areas	0	0	0	0	0
78	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
79	<u>10.17</u>	<u>SSSI Impact Risk Zones</u>	1	-	-	-	-
80	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
81	11.1	World Heritage Sites	0	0	0	-	-
82	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
82	11.3	National Parks	0	0	0	-	-
82	<u>11.4</u>	<u>Listed Buildings</u>	0	0	3	-	-
83	<u>11.5</u>	<u>Conservation Areas</u>	0	0	1	-	-
83	11.6	Scheduled Ancient Monuments	0	0	0	-	-
83	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
84	<u>12.1</u>	<u>Agricultural Land Classification</u>	Grade 5 (within 250m)				
85	<u>12.2</u>	<u>Open Access Land</u>	0	0	2	-	-
85	12.3	Tree Felling Licences	0	0	0	-	-
85	12.4	Environmental Stewardship Schemes	0	0	0	-	-
85	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
87	<u>13.1</u>	<u>Priority Habitat Inventory</u>	3	2	6	-	-
88	13.2	Habitat Networks	0	0	0	-	-
88	<u>13.3</u>	<u>Open Mosaic Habitat</u>	0	1	0	-	-
89	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
90	<u>14.1</u>	<u>10k Availability</u>	Identified (within 500m)				
91	<u>14.2</u>	<u>Artificial and made ground (10k)</u>	0	1	5	8	-
93	<u>14.3</u>	<u>Superficial geology (10k)</u>	1	0	1	0	-

94	14.4	<u>Landslip (10k)</u>	0	0	1	0	-
95	14.5	<u>Bedrock geology (10k)</u>	2	2	3	5	-
96	14.6	<u>Bedrock faults and other linear features (10k)</u>	0	1	4	1	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
97	15.1	<u>50k Availability</u>	Identified (within 500m)				
98	15.2	Artificial and made ground (50k)	0	0	0	0	-
98	15.3	Artificial ground permeability (50k)	0	0	-	-	-
99	15.4	<u>Superficial geology (50k)</u>	1	0	0	0	-
100	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
100	15.6	<u>Landslip (50k)</u>	0	0	1	0	-
100	15.7	Landslip permeability (50k)	None (within 50m)				
101	15.8	<u>Bedrock geology (50k)</u>	1	2	2	2	-
102	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
102	15.10	<u>Bedrock faults and other linear features (50k)</u>	0	1	2	1	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
104	16.1	<u>BGS Boreholes</u>	0	0	1	-	-
Page	Section	Natural ground subsidence					
105	17.1	<u>Shrink swell clays</u>	Very low (within 50m)				
107	17.2	<u>Running sands</u>	Very low (within 50m)				
109	17.3	<u>Compressible deposits</u>	Negligible (within 50m)				
110	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
111	17.5	<u>Landslides</u>	Moderate (within 50m)				
113	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
115	18.1	Natural cavities	0	0	0	0	-
116	18.2	<u>BritPits</u>	0	0	1	6	-
117	18.3	<u>Surface ground workings</u>	5	5	74	-	-
120	18.4	<u>Underground workings</u>	0	0	0	2	36
122	18.5	<u>Historical Mineral Planning Areas</u>	0	0	1	0	-



<u>122</u>	<u>18.6</u>	<u>Non-coal mining</u>	0	0	1	0	0
123	18.7	Mining cavities	0	0	0	0	0
<u>123</u>	<u>18.8</u>	<u>JPB mining areas</u>	Identified (within 0m)				
<u>123</u>	<u>18.9</u>	<u>Coal mining</u>	Identified (within 0m)				
124	18.10	Brine areas	None (within 0m)				
124	18.11	Gypsum areas	None (within 0m)				
124	18.12	Tin mining	None (within 0m)				
124	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
<u>125</u>	<u>19.1</u>	<u>Radon</u>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
<u>126</u>	<u>20.1</u>	<u>BGS Estimated Background Soil Chemistry</u>	2	5	-	-	-
126	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
127	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
128	21.1	Underground railways (London)	0	0	0	-	-
128	21.2	Underground railways (Non-London)	0	0	0	-	-
128	21.3	Railway tunnels	0	0	0	-	-
128	21.4	Historical railway and tunnel features	0	0	0	-	-
128	21.5	Royal Mail tunnels	0	0	0	-	-
129	21.6	Historical railways	0	0	0	-	-
129	21.7	Railways	0	0	0	-	-
129	21.8	Crossrail 1	0	0	0	0	-
129	21.9	Crossrail 2	0	0	0	0	-
129	21.10	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 23/05/2019

Site Area: 0.16ha



Recent site history - 2018 aerial photograph



Capture Date: 01/07/2018

Site Area: 0.16ha



Recent site history - 2012 aerial photograph



Capture Date: 26/03/2012

Site Area: 0.16ha



Recent site history - 2000 aerial photograph



Capture Date: 19/06/2000

Site Area: 0.16ha



OS MasterMap site plan

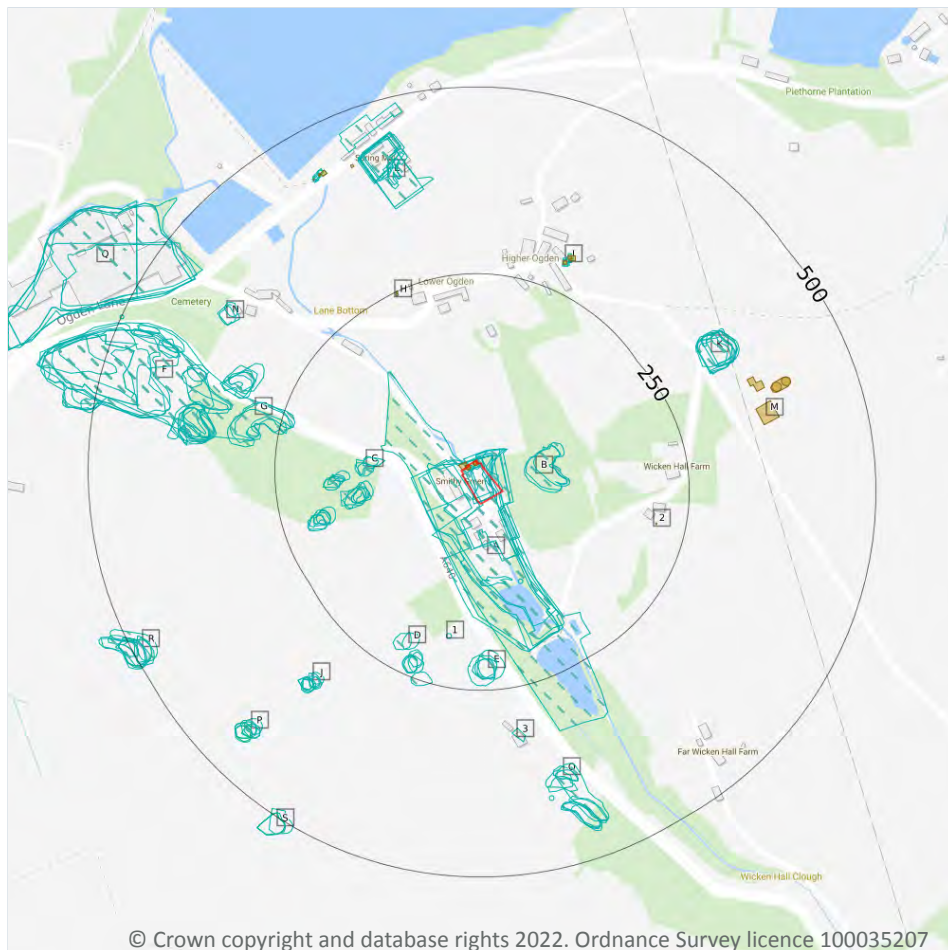


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Site Area: 0.16ha



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

173

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
A	On site	Unspecified Mill	1979	657149



ID	Location	Land use	Dates present	Group ID
A	On site	Unspecified Tank	1910	674634
A	On site	Unspecified Tank	1907	674635
A	On site	Unspecified Works	1949	678995
A	On site	Refuse Heap	1845	697819
A	On site	Refuse Heap	1910 - 1928	703241
A	On site	Refuse Heap	1907	703814
A	On site	Refuse Heap	1949	718536
A	On site	Print Works	1949	744307
A	On site	Print Works	1845	752793
A	On site	Print Works	1907	768499
A	On site	Bleach and Dye works	1892	770479
A	On site	Print Works	1928	770630
A	On site	Print Works	1910	774108
A	On site	Print Works	1928	779554
A	34m S	Fulling Mill	1851	655356
B	37m NE	Refuse Heap	1928 - 1949	749215
B	41m NE	Refuse Heap	1928 - 1949	723930
B	54m NE	Refuse Heap	1845	741092
A	98m S	Unspecified Ground Workings	1928 - 1949	719438
C	104m W	Refuse Heap	1928 - 1949	732755
C	112m W	Refuse Heap	1949	771555
A	114m SE	Chimney	1907	684583
C	117m W	Refuse Heap	1907	770287
C	117m W	Refuse Heap	1928	707955
C	121m W	Refuse Heap	1845	719536
C	126m W	Refuse Heap	1949	716863
C	127m W	Refuse Heap	1949	731639
C	129m W	Refuse Heap	1907	694472



ID	Location	Land use	Dates present	Group ID
C	131m W	Refuse Heaps	1910	653444
C	133m W	Refuse Heap	1928	747611
C	149m W	Refuse Heap	1845	762723
C	156m W	Refuse Heap	1949	788266
C	158m W	Refuse Heap	1928 - 1949	740483
C	159m W	Refuse Heap	1907	748940
C	164m W	Refuse Heap	1928	782130
C	177m W	Refuse Heap	1845	734448
1	179m S	Coal Level	1851	658298
C	185m W	Refuse Heap	1949	750633
C	185m W	Refuse Heap	1928 - 1949	743199
C	187m W	Refuse Heap	1910	754585
C	192m W	Refuse Heap	1928	784437
C	194m W	Refuse Heap	1907	783078
D	194m SW	Unspecified Pit	1892	690632
E	196m S	Refuse Heap	1845	788010
D	198m SW	Unspecified Quarry	1892	667835
E	203m S	Refuse Heap	1928	712525
E	204m S	Refuse Heap	1949	750046
E	208m S	Refuse Heap	1910	708540
E	208m S	Refuse Heap	1949	781977
D	213m SW	Unspecified Pit	1949	729750
D	216m S	Unspecified Pit	1928 - 1949	701171
D	222m SW	Unspecified Old Quarry	1910	681215
D	222m SW	Unspecified Quarry	1928	667836
D	223m SW	Unspecified Old Quarries	1907	658072
F	232m W	Unspecified Old Quarries	1845	711802
G	234m W	Refuse Heap	1949	773287



ID	Location	Land use	Dates present	Group ID
G	236m W	Refuse Heap	1928 - 1949	711454
D	238m S	Quarry	1851	665336
G	240m W	Refuse Heap	1928	700450
I	284m NE	Unspecified Tank	1910 - 1949	710228
I	285m NE	Unspecified Tank	1907	763438
I	288m NE	Unspecified Tank	1928	710171
F	293m NW	Refuse Heap	1845 - 1949	773523
I	295m NE	Unspecified Tank	1949	699106
I	295m NE	Unspecified Tank	1845	731724
F	300m W	Refuse Heap	1928	747511
F	300m NW	Refuse Heap	1910	783033
F	302m NW	Refuse Heap	1949	715257
F	303m W	Refuse Heap	1907	730709
3	305m S	Unspecified Mine	1979	691540
J	313m SW	Unspecified Pit	1845	718060
K	316m NE	Unspecified Pit	1892	746594
J	317m SW	Unspecified Pit	1928 - 1949	705857
F	319m W	Refuse Heap	1907 - 1910	717284
J	319m SW	Unspecified Pit	1949	756205
J	319m SW	Unspecified Pit	1892	771260
K	320m NE	Unspecified Ground Workings	1928	781746
K	320m NE	Unspecified Pit	1928 - 1949	758170
F	321m W	Unspecified Old Quarries	1928	715455
K	321m NE	Unspecified Old Quarry	1907 - 1910	764945
F	324m W	Unspecified Ground Workings	1928	777431
J	326m SW	Unspecified Old Quarry	1910	681216
J	328m SW	Unspecified Old Quarries	1907	658073
J	328m SW	Unspecified Quarry	1892	667834



ID	Location	Land use	Dates present	Group ID
J	328m SW	Unspecified Pit	1928	723948
K	331m NE	Unspecified Pit	1949	780398
K	332m NE	Unspecified Ground Workings	1845	740037
F	332m W	Unspecified Old Quarries	1892	771319
F	334m W	Unspecified Old Quarries	1910	756181
F	335m W	Unspecified Pit	1949	690631
K	335m NE	Unspecified Pit	1892	725337
F	337m W	Unspecified Ground Workings	1949	729343
F	339m W	Unspecified Old Quarry	1907	681218
F	341m W	Unspecified Ground Workings	1928	765942
F	342m W	Unspecified Old Quarries	1892	739663
F	353m W	Quarry	1851	665335
L	353m N	Unspecified Mill	1907	715101
L	357m N	Spring Mill	1910	746209
N	360m NW	Refuse Heap	1910 - 1928	769350
F	363m W	Refuse Heap	1949	784795
F	363m W	Refuse Heap	1928 - 1949	776014
N	364m NW	Refuse Heap	1907	774589
N	366m NW	Refuse Heap	1949	710444
O	367m S	Refuse Heap	1949	750145
O	367m S	Refuse Heaps	1845	653446
O	371m S	Refuse Heap	1928	746885
O	374m S	Refuse Heap	1949	720296
L	379m N	Unspecified Ground Workings	1928 - 1949	718019
O	380m S	Refuse Heap	1907 - 1910	788117
L	385m N	Unspecified Ground Workings	1928 - 1949	766443
L	395m N	Spring Mill	1928 - 1949	785433
L	396m N	Unspecified Mill	1979	770074



ID	Location	Land use	Dates present	Group ID
L	397m N	Unspecified Mill	1845 - 1928	730165
L	398m N	Unspecified Mill	1910	727453
F	399m W	Unspecified Ground Workings	1949	740966
F	400m W	Unspecified Old Quarries	1910 - 1928	704618
L	401m N	Unspecified Mill	1949	735059
O	402m S	Old Coal Pit	1851	682302
F	404m W	Unspecified Old Quarry	1907	681213
F	404m NW	Refuse Heaps	1949	653442
F	406m NW	Refuse Heap	1949	756536
F	407m W	Refuse Heap	1928	780334
F	410m W	Refuse Heap	1907	743052
O	410m S	Refuse Heap	1949	744425
P	414m SW	Unspecified Pit	1845	758143
O	415m S	Refuse Heap	1928 - 1949	737410
O	417m S	Refuse Heap	1928	781200
O	418m S	Refuse Heap	1907	722587
P	420m SW	Unspecified Pit	1892	752353
P	422m SW	Unspecified Pit	1928 - 1949	775316
P	423m SW	Unspecified Pit	1949	750382
O	423m S	Refuse Heap	1910	738611
P	424m SW	Unspecified Old Quarries	1910	658074
P	428m SW	Unspecified Old Quarry	1907	681217
P	428m SW	Unspecified Pit	1892	750936
L	430m NW	Overflow Tank	1928	656683
L	431m NW	Unspecified Tank	1907 - 1910	718668
P	431m SW	Unspecified Pit	1928	779664
L	433m NW	Overflow Tank	1845 - 1949	696895
L	433m NW	Unspecified Tank	1928	742981



ID	Location	Land use	Dates present	Group ID
L	435m NW	Unspecified Tank	1949	757935
Q	439m NW	Unspecified Mill	1928	736120
Q	440m NW	Unspecified Mill	1910	784893
Q	441m NW	Unspecified Mill	1892	724239
Q	442m NW	Unspecified Mill	1928	701865
Q	442m NW	Unspecified Mill	1907	743190
F	443m W	Unspecified Disused Quarries	1976	681452
F	443m W	Unspecified Ground Workings	1967	764478
F	444m NW	Refuse Heap	1949	762027
L	446m NW	Unspecified Mill	1892	657148
F	450m W	Unspecified Ground Workings	1954	737426
F	451m NW	Refuse Heap	1907	768802
R	468m SW	Unspecified Pits	1845	790864
R	474m SW	Unspecified Pit	1949	707911
R	475m SW	Unspecified Pits	1892	728532
R	476m SW	Unspecified Pit	1928 - 1949	711062
F	480m W	Sandstone Quarry	1851	687647
R	482m SW	Unspecified Old Quarries	1910	658075
R	484m SW	Unspecified Pits	1928	790165
R	485m SW	Unspecified Old Quarry	1907	681214
R	485m SW	Unspecified Pit	1892	717475
S	487m SW	Unspecified Pit	1892	699190
F	489m W	Unspecified Heap	1928 - 1954	713498
R	491m SW	Unspecified Ground Workings	1954	647890
R	492m SW	Sand Stone Quarry	1851	672591
Q	492m NW	Unspecified Mill	1954	697238
F	493m W	Refuse Heaps	1910	653440
S	494m SW	Unspecified Old Quarry	1907 - 1910	770317



ID	Location	Land use	Dates present	Group ID
S	495m SW	Unspecified Pit	1928	741587
S	495m SW	Unspecified Pit	1892	742196
Q	496m NW	Unspecified Works	1967 - 1976	725762
F	497m NW	Old Air Shaft	1910	652021

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	21
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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	On site	Gasometer	1892	78081
A	On site	Unspecified Tank	1909	84377
A	On site	Filter Tanks	1930	88273
A	On site	Unspecified Tank	1985 - 1996	91685
A	On site	Unspecified Tank	1961	93920
2	209m E	Unspecified Tank	1892	84376
H	244m NW	Unspecified Tank	1993	97857
H	248m NW	Unspecified Tank	1962	84378
I	286m NE	Unspecified Tank	1909 - 1930	102447
I	295m NE	Unspecified Tank	1845	95911
I	296m NE	Unspecified Tank	1962	89485
M	357m E	Unspecified Tank	1985	84373
M	360m NE	Unspecified Tank	1985	99723
M	385m E	Tanks	1996	87630



ID	Location	Land use	Dates present	Group ID
M	386m E	Unspecified Tank	1985	84374
M	401m E	Unspecified Tank	1985	84372
L	426m NW	Unspecified Tank	1892	84364
L	433m NW	Overflow Tank	1845	85910
L	434m NW	Over Flow Tank	1909 - 1930	96949
L	434m NW	Unspecified Tank	1993	84366
L	436m NW	Unspecified Tank	1962	84365

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

1

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	On site	Gasometer	1892	46133

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

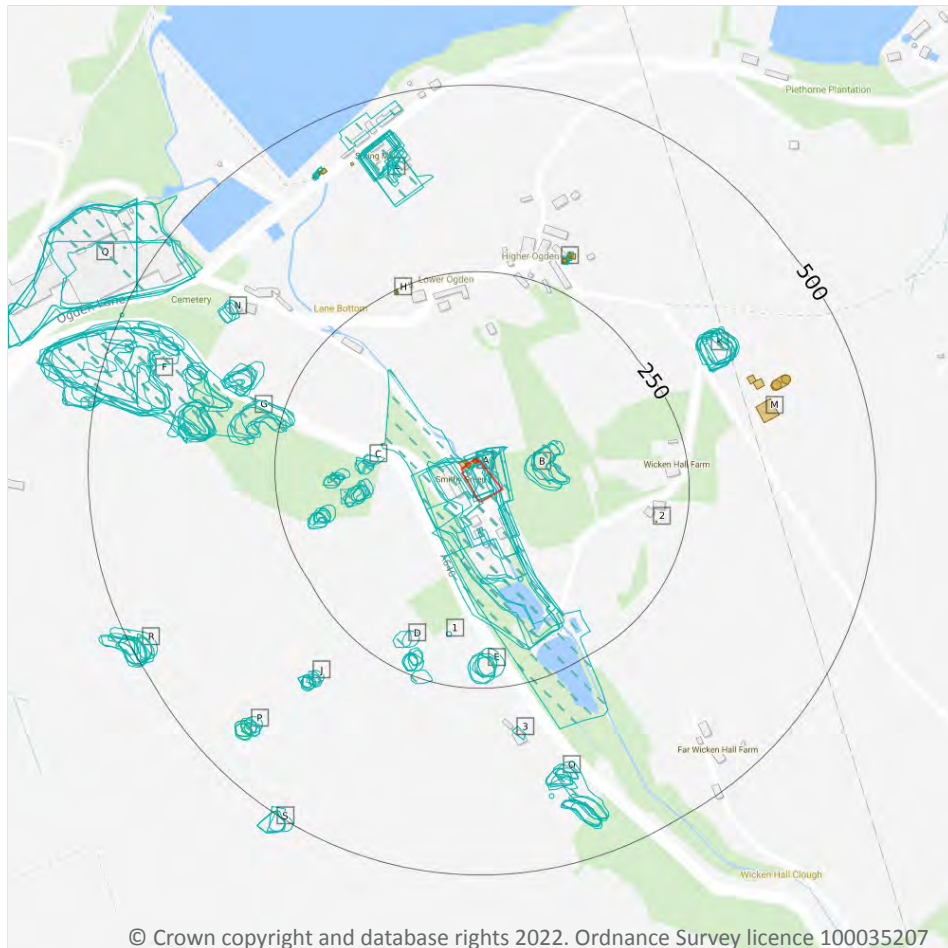
0

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

213

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 23**

ID	Location	Land Use	Date	Group ID
A	On site	Refuse Heap	1928	703241
A	On site	Refuse Heap	1907	703814
A	On site	Print Works	1928	779554

ID	Location	Land Use	Date	Group ID
A	On site	Unspecified Tank	1907	674635
A	On site	Print Works	1907	768499
A	On site	Bleach and Dye works	1892	770479
A	On site	Bleach and Dye works	1892	770479
A	On site	Refuse Heap	1845	697819
A	On site	Print Works	1845	752793
A	On site	Print Works	1928	770630
A	On site	Print Works	1949	744307
A	On site	Unspecified Works	1949	678995
A	On site	Refuse Heap	1949	718536
A	On site	Unspecified Mill	1979	657149
A	On site	Unspecified Tank	1910	674634
A	On site	Print Works	1910	774108
A	On site	Refuse Heap	1910	703241
A	34m S	Fulling Mill	1851	655356
B	37m NE	Refuse Heap	1928	749215
B	41m NE	Refuse Heap	1928	723930
B	48m NE	Refuse Heap	1949	723930
B	50m NE	Refuse Heap	1949	749215
B	54m NE	Refuse Heap	1845	741092
A	98m S	Unspecified Ground Workings	1949	719438
A	102m S	Unspecified Ground Workings	1928	719438
C	104m W	Refuse Heap	1949	732755
C	112m W	Refuse Heap	1949	771555
A	114m SE	Chimney	1907	684583
C	114m W	Refuse Heap	1928	732755
C	117m W	Refuse Heap	1907	770287
C	117m W	Refuse Heap	1928	707955



ID	Location	Land Use	Date	Group ID
C	121m W	Refuse Heap	1845	719536
C	126m W	Refuse Heap	1949	716863
C	127m W	Refuse Heap	1949	731639
C	129m W	Refuse Heap	1907	694472
C	131m W	Refuse Heaps	1910	653444
C	133m W	Refuse Heap	1928	747611
C	135m W	Refuse Heap	1928	747611
C	149m W	Refuse Heap	1845	762723
C	156m W	Refuse Heap	1949	788266
C	158m W	Refuse Heap	1949	740483
C	159m W	Refuse Heap	1907	748940
C	163m W	Refuse Heap	1928	740483
C	164m W	Refuse Heap	1928	782130
C	177m W	Refuse Heap	1845	734448
1	179m S	Coal Level	1851	658298
C	185m W	Refuse Heap	1949	750633
C	185m W	Refuse Heap	1949	743199
C	187m W	Refuse Heap	1910	754585
C	191m W	Refuse Heap	1928	743199
C	192m W	Refuse Heap	1928	784437
C	194m W	Refuse Heap	1907	783078
D	194m SW	Unspecified Pit	1892	690632
E	196m S	Refuse Heap	1845	788010
D	198m SW	Unspecified Quarry	1892	667835
E	203m S	Refuse Heap	1928	712525
E	204m S	Refuse Heap	1949	750046
E	206m S	Refuse Heap	1928	712525
E	208m S	Refuse Heap	1910	708540



ID	Location	Land Use	Date	Group ID
E	208m S	Refuse Heap	1949	781977
D	213m SW	Unspecified Pit	1949	729750
D	216m S	Unspecified Pit	1949	701171
D	222m SW	Unspecified Old Quarry	1910	681215
D	222m SW	Unspecified Quarry	1928	667836
D	223m SW	Unspecified Pit	1928	701171
D	223m SW	Unspecified Old Quarries	1907	658072
F	232m W	Unspecified Old Quarries	1845	711802
G	234m W	Refuse Heap	1949	773287
G	236m W	Refuse Heap	1949	711454
D	238m S	Quarry	1851	665336
G	240m W	Refuse Heap	1928	700450
G	242m W	Refuse Heap	1928	711454
I	284m NE	Unspecified Tank	1928	710228
I	285m NE	Unspecified Tank	1907	763438
I	288m NE	Unspecified Tank	1928	710171
I	291m NE	Unspecified Tank	1910	710228
F	293m NW	Refuse Heap	1845	773523
I	295m NE	Unspecified Tank	1845	731724
I	295m NE	Unspecified Tank	1949	699106
I	296m NE	Unspecified Tank	1949	710228
F	300m W	Refuse Heap	1928	747511
F	300m NW	Refuse Heap	1910	783033
F	302m W	Refuse Heap	1928	747511
F	302m NW	Refuse Heap	1949	715257
F	302m W	Refuse Heap	1949	773523
F	303m W	Refuse Heap	1907	730709
3	305m S	Unspecified Mine	1979	691540



ID	Location	Land Use	Date	Group ID
J	313m SW	Unspecified Pit	1845	718060
K	316m NE	Unspecified Pit	1892	746594
J	317m SW	Unspecified Pit	1949	705857
F	319m W	Refuse Heap	1910	717284
J	319m SW	Unspecified Pit	1949	756205
J	319m SW	Unspecified Pit	1892	771260
K	320m NE	Unspecified Ground Workings	1928	781746
K	320m NE	Unspecified Pit	1928	758170
F	321m W	Unspecified Old Quarries	1928	715455
K	321m NE	Unspecified Old Quarry	1907	764945
K	323m NE	Unspecified Old Quarry	1910	764945
F	324m W	Unspecified Ground Workings	1928	777431
F	325m W	Refuse Heap	1907	717284
J	326m SW	Unspecified Old Quarry	1910	681216
K	327m NE	Unspecified Pit	1949	758170
J	328m SW	Unspecified Pit	1928	723948
J	328m SW	Unspecified Quarry	1892	667834
J	328m SW	Unspecified Old Quarries	1907	658073
J	329m SW	Unspecified Pit	1928	705857
K	331m NE	Unspecified Pit	1949	780398
K	332m NE	Unspecified Ground Workings	1845	740037
F	332m W	Unspecified Old Quarries	1892	771319
F	334m W	Unspecified Old Quarries	1910	756181
F	335m W	Unspecified Pit	1949	690631
K	335m NE	Unspecified Pit	1892	725337
F	337m W	Unspecified Ground Workings	1949	729343
F	339m W	Unspecified Old Quarry	1907	681218
F	341m W	Unspecified Ground Workings	1928	765942



ID	Location	Land Use	Date	Group ID
F	342m W	Unspecified Old Quarries	1892	739663
F	353m W	Quarry	1851	665335
L	353m N	Unspecified Mill	1907	715101
L	357m N	Spring Mill	1910	746209
N	360m NW	Refuse Heap	1910	769350
F	363m W	Refuse Heap	1949	784795
F	363m W	Refuse Heap	1949	776014
N	364m NW	Refuse Heap	1907	774589
N	366m NW	Refuse Heap	1949	710444
F	367m W	Refuse Heap	1928	776014
O	367m S	Refuse Heap	1949	750145
O	367m S	Refuse Heaps	1845	653446
N	367m NW	Refuse Heap	1928	769350
O	371m S	Refuse Heap	1928	746885
O	372m S	Refuse Heap	1928	746885
O	374m S	Refuse Heap	1949	720296
L	379m N	Unspecified Ground Workings	1928	718019
O	380m S	Refuse Heap	1907	788117
L	385m N	Unspecified Ground Workings	1928	766443
O	386m S	Refuse Heap	1910	788117
L	391m N	Unspecified Ground Workings	1949	718019
L	391m N	Unspecified Ground Workings	1949	766443
L	395m N	Spring Mill	1928	785433
L	396m N	Unspecified Mill	1979	770074
L	397m N	Unspecified Mill	1928	730165
L	398m N	Unspecified Mill	1910	727453
L	398m N	Unspecified Mill	1845	730165
F	399m W	Unspecified Ground Workings	1949	740966



ID	Location	Land Use	Date	Group ID
F	400m W	Unspecified Old Quarries	1910	704618
F	400m W	Unspecified Ground Workings	1949	740966
L	401m N	Unspecified Mill	1949	735059
L	402m N	Spring Mill	1949	785433
O	402m S	Old Coal Pit	1851	682302
F	404m W	Unspecified Old Quarry	1907	681213
F	404m W	Unspecified Old Quarries	1928	704618
F	404m NW	Refuse Heaps	1949	653442
F	406m NW	Refuse Heap	1949	756536
F	407m W	Refuse Heap	1928	780334
F	410m W	Refuse Heap	1907	743052
O	410m S	Refuse Heap	1949	744425
P	414m SW	Unspecified Pit	1845	758143
O	415m S	Refuse Heap	1949	737410
O	416m S	Refuse Heap	1928	737410
O	417m S	Refuse Heap	1928	781200
O	418m S	Refuse Heap	1907	722587
P	420m SW	Unspecified Pit	1892	752353
F	422m W	Unspecified Old Quarries	1892	771319
P	422m SW	Unspecified Pit	1949	775316
P	423m SW	Unspecified Pit	1949	750382
O	423m S	Refuse Heap	1910	738611
P	424m SW	Unspecified Old Quarries	1910	658074
P	428m SW	Unspecified Pit	1892	750936
P	428m SW	Unspecified Old Quarry	1907	681217
L	430m NW	Overflow Tank	1928	656683
L	431m NW	Unspecified Tank	1907	718668
P	431m SW	Unspecified Pit	1928	775316



ID	Location	Land Use	Date	Group ID
P	431m SW	Unspecified Pit	1928	779664
L	433m NW	Overflow Tank	1845	696895
L	433m NW	Unspecified Tank	1928	742981
L	433m NW	Unspecified Tank	1910	718668
L	433m NW	Unspecified Tank	1910	718668
L	435m NW	Unspecified Tank	1949	757935
L	436m NW	Overflow Tank	1949	696895
Q	439m NW	Unspecified Mill	1928	736120
Q	440m NW	Unspecified Mill	1910	784893
Q	441m NW	Unspecified Mill	1892	724239
Q	442m NW	Unspecified Mill	1928	701865
Q	442m NW	Unspecified Mill	1907	743190
F	443m W	Unspecified Ground Workings	1967	764478
F	443m W	Unspecified Disused Quarries	1976	681452
F	444m NW	Refuse Heap	1949	762027
L	446m NW	Unspecified Mill	1892	657148
F	450m W	Unspecified Ground Workings	1954	737426
F	451m NW	Refuse Heap	1907	768802
R	468m SW	Unspecified Pits	1845	790864
R	474m SW	Unspecified Pit	1949	707911
R	475m SW	Unspecified Pits	1892	728532
R	476m SW	Unspecified Pit	1949	711062
F	480m W	Sandstone Quarry	1851	687647
R	482m SW	Unspecified Old Quarries	1910	658075
R	484m SW	Unspecified Pit	1928	711062
R	484m SW	Unspecified Pits	1928	790165
R	485m SW	Unspecified Pit	1892	717475
R	485m SW	Unspecified Old Quarry	1907	681214



ID	Location	Land Use	Date	Group ID
S	487m SW	Unspecified Pit	1892	699190
F	489m W	Unspecified Heap	1954	713498
R	491m SW	Unspecified Ground Workings	1954	647890
R	492m SW	Sand Stone Quarry	1851	672591
Q	492m NW	Unspecified Mill	1954	697238
F	493m W	Refuse Heaps	1910	653440
S	494m SW	Unspecified Old Quarry	1910	770317
S	495m SW	Unspecified Pit	1928	741587
S	495m SW	Unspecified Pit	1892	742196
S	495m SW	Unspecified Old Quarry	1907	770317
Q	496m NW	Unspecified Works	1976	725762
Q	496m NW	Unspecified Works	1967	725762
F	497m NW	Old Air Shaft	1910	652021
F	498m W	Unspecified Heap	1928	713498

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

26

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 23**

ID	Location	Land Use	Date	Group ID
A	On site	Gasometer	1892	78081
A	On site	Unspecified Tank	1909	84377
A	On site	Filter Tanks	1930	88273
A	On site	Unspecified Tank	1961	93920
A	On site	Unspecified Tank	1985	91685
A	On site	Unspecified Tank	1996	91685



ID	Location	Land Use	Date	Group ID
2	209m E	Unspecified Tank	1892	84376
H	244m NW	Unspecified Tank	1993	97857
H	244m NW	Unspecified Tank	1993	97857
H	248m NW	Unspecified Tank	1962	84378
I	286m NE	Unspecified Tank	1909	102447
I	286m NE	Unspecified Tank	1930	102447
I	295m NE	Unspecified Tank	1845	95911
I	296m NE	Unspecified Tank	1962	89485
M	357m E	Unspecified Tank	1985	84373
M	360m NE	Unspecified Tank	1985	99723
M	365m NE	Unspecified Tank	1985	99723
M	385m E	Tanks	1996	87630
M	386m E	Unspecified Tank	1985	84374
M	401m E	Unspecified Tank	1985	84372
L	426m NW	Unspecified Tank	1892	84364
L	433m NW	Overflow Tank	1845	85910
L	434m NW	Over Flow Tank	1909	96949
L	434m NW	Over Flow Tank	1930	96949
L	434m NW	Unspecified Tank	1993	84366
L	436m NW	Unspecified Tank	1962	84365

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

1

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 23**



ID	Location	Land Use	Date	Group ID
A	On site	Gasometer	1892	46133

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0
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Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

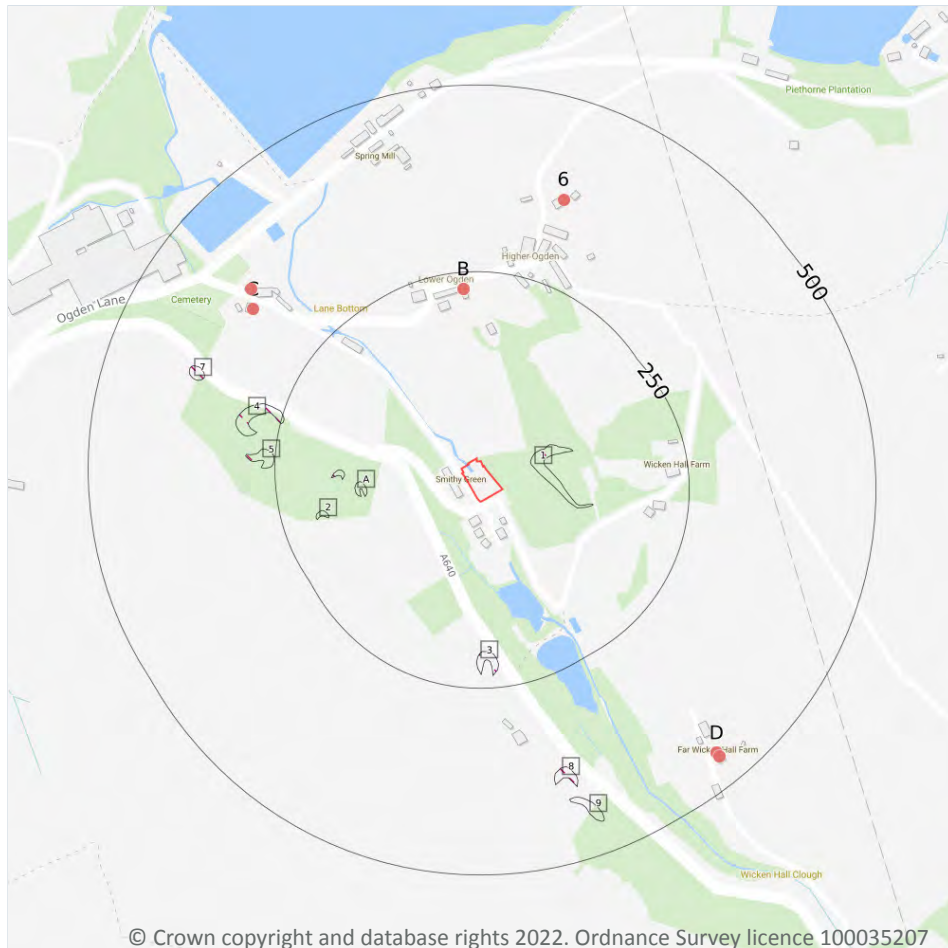
Records within 500m	0
---------------------	---

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

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- X Historical landfill (LA/OS)
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m

10

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

Features are displayed on the Waste and landfill map on **page 34**

ID	Location	Site address	Source	Data type
1	51m NE	Refuse Tip	1961 mapping	Polygon
A	130m W	Refuse Tips	1961 mapping	Polygon
A	157m W	Refuse Tips	1961 mapping	Polygon
2	187m W	Refuse Tip	1961 mapping	Polygon
3	201m S	Refuse Tip	1961 mapping	Polygon
4	247m W	Refuse Tip	1961 mapping	Polygon
5	251m W	Refuse Tip	1961 mapping	Polygon
7	365m W	Refuse Tip	1961 mapping	Polygon
8	373m S	Refuse Tips	1961 mapping	Polygon
9	415m S	Refuse Tips	1961 mapping	Polygon

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

3.4 Historical landfill (EA/NRW records)

Records within 500m

0

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

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

3.5 Historical waste sites

Records within 500m

0

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

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



3.6 Licensed waste sites

Records within 500m

0

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

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

3.7 Waste exemptions

Records within 500m

21

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 34**

ID	Location	Site	Reference	Category	Sub-Category	Description
B	227m N	3, LANE BOTTOM, NEWHEY, ROCHDALE, OL16 3TD	WEX207624	Using waste exemption	Not on a farm	Use of waste in construction
B	227m N	3, LANE BOTTOM, NEWHEY, ROCHDALE, OL16 3TD	WEX207624	Using waste exemption	Not on a farm	Burning of waste as a fuel in a small appliance
B	227m N	3, LANE BOTTOM, NEWHEY, ROCHDALE, OL16 3TD	WEX207624	Treating waste exemption	Not on a farm	Recovery of scrap metal
B	227m N	3, LANE BOTTOM, NEWHEY, ROCHDALE, OL16 3TD	WEX207624	Treating waste exemption	Not on a farm	Sorting mixed waste
B	227m N	3, LANE BOTTOM, NEWHEY, ROCHDALE, OL16 3TD	WEX048287	Treating waste exemption	Not on a farm	Sorting mixed waste
B	227m N	3, LANE BOTTOM, NEWHEY, ROCHDALE, OL16 3TD	WEX048287	Treating waste exemption	Not on a farm	Recovery of scrap metal
B	227m N	3, LANE BOTTOM, NEWHEY, ROCHDALE, OL16 3TD	WEX048287	Using waste exemption	Not on a farm	Use of waste in construction
B	227m N	3, LANE BOTTOM, NEWHEY, ROCHDALE, OL16 3TD	WEX048287	Using waste exemption	Not on a farm	Burning of waste as a fuel in a small appliance
C	352m NW	The Castle, Lower Ogden, Newhey, Rochdale, OL163TD	WEX314722	Using waste exemption	On a Farm	Use of waste in construction



ID	Location	Site	Reference	Category	Sub-Category	Description
6	365m N	HIGHER OGDEN, 2 CHARITY FARM, LANE BOTTOM, NEWHEY, ROCHDALE, OL16 3TD	WEX220668	Using waste exemption	On a Farm	Use of waste in construction
C	370m NW	3 Lane Bottom ROCHDALE Lancashire OL16 3TD	EPR/UE5187G F/A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of waste in construction
D	455m SE	HUDDERSFIELD ROAD, NEWHEY, ROCHDALE, OL16 3TG	WEX209331	Storing waste exemption	On a Farm	Storage of waste in a secure place
D	455m SE	HUDDERSFIELD ROAD, NEWHEY, ROCHDALE, OL16 3TG	WEX209331	Using waste exemption	On a Farm	Spreading waste on agricultural land to confer benefit
D	455m SE	HUDDERSFIELD ROAD, NEWHEY, ROCHDALE, OL16 3TG	WEX209331	Disposing of waste exemption	On a Farm	Disposal by incineration
D	455m SE	HUDDERSFIELD ROAD, NEWHEY, ROCHDALE, OL16 3TG	WEX209331	Disposing of waste exemption	On a Farm	Burning waste in the open
D	455m SE	HUDDERSFIELD ROAD, NEWHEY, ROCHDALE, OL16 3TG	WEX052661	Disposing of waste exemption	On a farm	Disposal by incineration
D	455m SE	HUDDERSFIELD ROAD, NEWHEY, ROCHDALE, OL16 3TG	WEX052661	Disposing of waste exemption	On a farm	Burning waste in the open
D	455m SE	HUDDERSFIELD ROAD, NEWHEY, ROCHDALE, OL16 3TG	WEX052661	Storing waste exemption	On a farm	Storage of waste in a secure place
D	455m SE	HUDDERSFIELD ROAD, NEWHEY, ROCHDALE, OL16 3TG	WEX052661	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
D	461m SE	far wickenhall farm huddersfield road rochdale lancs ol16 3tj	EPR/YH0773R X/A001	Disposing of waste exemption	Agricultural Waste Only	Burning waste in the open
D	461m SE	far wickenhall farm huddersfield road rochdale lancs ol16 3tj	EPR/YH0773R X/A001	Storing waste exemption	Agricultural Waste Only	Storage of waste in a secure place

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



4 Current industrial land use



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

4.1 Recent industrial land uses

Records within 250m

2

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 38**

ID	Location	Company	Address	Activity	Category
3	125m SE	Chimney	Greater Manchester, OL16	Chimneys	Industrial Features
A	249m NW	Tank	Greater Manchester, OL16	Tanks (Generic)	Industrial Features

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

14

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 38**

ID	Location	Address	Details	
1	On site	WICKENHALL FISH FARM, ROCHDALE, GREATER MANCHESTER	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: 016990455 Permit Version: 1 Receiving Water: PIETHORNE BROOK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 05/08/1983 Revocation Date: 10/01/2001
2	34m SE	WICKENHALL MILL, OGDEN, NR MILNROW, LANCASHIRE, OL16 3TG	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 016993820 Permit Version: 1 Receiving Water: WICKEN HALL CLOUGH CULVERT	Status: SURRENDERED UNDER EPR 2010 Issue date: 20/01/2006 Effective Date: 20/11/2006 Revocation Date: 21/08/2015
4	182m E	ICKENHALL BARNS, HUDDERSFIELD ROAD, MILNROW, ROCHDALE, OL16 3TQ	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 016993919 Permit Version: 1 Receiving Water: CULVERT TO WICKENHALL BROOK	Status: REVOKED (WRA 91, S88 & SCHD 10 AS AMENDED BY ENV ACT 1995) Issue date: 25/01/2007 Effective Date: 25/01/2007 Revocation Date: 08/03/2010
A	254m NW	27 PIONEER VILLAS, OGDEN, NEWHEY, NR. ROCHDALE, LANCASHIRE, OL16 3TE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 0171/1346 Permit Version: 1 Receiving Water: WICKENHALL BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 09/03/1971 Effective Date: 09/03/1971 Revocation Date: -



ID	Location	Address	Details	
A	254m NW	27 PIONEER VILLAS, OGDEN, NEWHEY, NR. ROCHDALE, LANCASHIRE, OL16 3TE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 0171/1346 Permit Version: 1 Receiving Water: WICKENHALL BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 09/03/1971 Effective Date: 09/03/1971 Revocation Date: -
A	254m NW	27 PIONEER VILLAS, OGDEN, NEWHEY, NR. ROCHDALE, LANCASHIRE, OL16 3TE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 0171/1346 Permit Version: 1 Receiving Water: WICKENHALL BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 09/03/1971 Effective Date: 09/03/1971 Revocation Date: -
A	254m NW	27 PIONEER VILLAS, OGDEN, NEWHEY, NR. ROCHDALE, LANCASHIRE, OL16 3TE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 0171/1346 Permit Version: 1 Receiving Water: WICKENHALL BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 09/03/1971 Effective Date: 09/03/1971 Revocation Date: -
A	254m NW	27 PIONEER VILLAS, OGDEN, NEWHEY, NR. ROCHDALE, LANCASHIRE, OL16 3TE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 0171/1346 Permit Version: 1 Receiving Water: WICKENHALL BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 09/03/1971 Effective Date: 09/03/1971 Revocation Date: -
A	254m NW	27 PIONEER VILLAS, OGDEN, NEWHEY, NR. ROCHDALE, LANCASHIRE, OL16 3TE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 0171/1346 Permit Version: 1 Receiving Water: WICKENHALL BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 09/03/1971 Effective Date: 09/03/1971 Revocation Date: -
B	385m NW	BULLS HEAD INN, LANEBOTTOM OGDEN LANE, NEW HEY, ROCHDALE, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 01M/180 Permit Version: 1 Receiving Water: PIETHORN BROOK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 01/04/1991 Revocation Date: 31/12/1994



ID	Location	Address	Details	
B	385m NW	BULLS HEAD INN, LANEBOTTOM OGDEN LANE, NEW HEY, ROCHDALE, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 01M/180 Permit Version: 2 Receiving Water: PIETHORN BROOK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: -
C	438m NW	WATER WORKS ROAD STP, WATER WORKS ROAD, OGDEN, MILNROW, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016950382 Permit Version: 1 Receiving Water: TRIB PIETHORNE BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: - Effective Date: 23/11/1982 Revocation Date: -
C	439m NW	OGDEN LANE WASTEWATER TREATMENT WRK, OGDEN VILLAGE, NEAR NEWHEY, ROCHDALE, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016983319 Permit Version: 1 Receiving Water: WICKENHALL CLOUGH	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 18/02/1999 Effective Date: 18/02/1999 Revocation Date: -
6	488m N	OGDEN RESERVOIR STP, MILNROW, ROCHDALE, LANCASHIRE, OL16 3TQ	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 010000119 Permit Version: 1 Receiving Water: -	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 27/03/1961 Effective Date: 27/03/1961 Revocation Date: -

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

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

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

4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

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



4.16 List 1 Dangerous Substances

Records within 500m

0

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

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

4.17 List 2 Dangerous Substances

Records within 500m

0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m

1

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

Features are displayed on the Current industrial land use map on **page 38**

ID	Location	Details	
5	456m NW	Incident Date: 17/12/2001 Incident Identification: 48503 Pollutant: Organic Chemicals/Products Pollutant Description: Hydrocarbons	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

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

4.19 Pollution inventory substances

Records within 500m

0

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

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

4.20 Pollution inventory waste transfers

Records within 500m

0

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

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

4.21 Pollution inventory radioactive waste

Records within 500m

0

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

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

