



GEOENVIRONMENTAL DESK STUDY REPORT

Plot 2 Birdwell Rockingham, Barnsley

Reference

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JPG. Rockingham, Plot 2, Birdwell, Barnsley. Rockingham OCCS Abandonment Plan Overlay - Dunsil (AU). Drawing no. 5419-JPG-SW-00-DR-G-0002 S2 P01. Dated 28 January 2021.

JPG. Rockingham, Plot 2, Birdwell, Barnsley. Rockingham OCCS Abandonment Plan Overlay - Swallow Wood Rider. Drawing no. 5419-JPG-SW-00-DR-G-0003 S2 P01. Dated 28 January 2021.

JPG. Rockingham, Plot 2, Birdwell, Barnsley. Rockingham OCCS Abandonment Plan Overlay - Swallow Wood. Drawing no. 5419-JPG-SW-00-DR-G-0004 S2 P01. Dated 28 January 2021.

JPG. Rockingham, Plot 2, Birdwell, Barnsley. Rockingham OCCS Abandonment Plan Overlay - Unnamed 3 (1AQ). Drawing no. 5419-JPG-SW-00-DR-G-0005 S2 P01. Dated 28 January 2021.

JPG. Rockingham, Plot 2, Birdwell, Barnsley. Rockingham Colliery Abandonment Plan Overlay - Lidgett Seam. Drawing no. 5419-JPG-SW-00-DR-G-0006 S2 P01. Dated 28 January 2021.

JPG. Rockingham, Plot 2, Birdwell, Barnsley. Geotechnical Constraints Plan. Drawing no. 5419-JPG-SW-00-DR-G-0007 S2 P01. Dated 29 January 2021.

The Harris Group. Proposed Industrial Development, Dearne Valley Parkway, Barnsley. Proposed Detailed Site Plan 1. Drawing no. 15315-114. Dated February 2021. Last revised 25 March 2021 (D).

The Harris Group. Proposed Industrial Development, Dearne Valley Parkway, Barnsley. Proposed Detailed Site Plan 1. Drawing no. 15315-115. Dated February 2021. Last revised 25 March 2021 (D).

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CONFIDENTIALITY STATEMENT

This report is addressed to and may be relied upon by the following:

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This report has been prepared for the sole use and reliance of the above-named party. This report shall not be relied upon or transferred to any other parties without the express written authorisation of JPG (Leeds) Limited. No responsibility will be accepted where this report is used, either in its entirety or in part, by any other party.

DOCUMENT HISTORY

Rev	Date	Revision Details	Status	Author(s)	Approved
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P02	26.03.2021	Second Issue - For planning	Information	JBW	GH



EXECUTIVE SUMMARY

Site Address	Plot 2, Birdwell, Rockingham, Barnsley
NGR	Approximate NGR 435280, 400720.
Current Site Use & Proposed Development	The site comprises a large field with no evidence of any above ground buildings or structures. The site surface is generally formed by undeveloped, undulating scrubland with a wooded area adjacent to the southern boundary. It is proposed to develop the site with three industrial units, service yards, car parking and associated access roads.
Site History	The earliest available historical plans show the site to comprise fields with a farm in the south west. By the 1890s, a large reservoir was located on the north east. By the early 1900s, sewage tanks and filter beds were located on the site. Opencast coal mining occurred on the site between January 1991 and October 1995. The land was subsequently restored.
Site Setting	Geology – Infilled ground, comprising backfilled opencast coal workings, are indicated across the majority of the site with only the southern flank not having been opencast. The infilled ground extends to the north, east and west, beyond the site boundary. No superficial deposits are shown to be present on the site. The underlying bedrock is shown to comprise the Pennine Middle Coal Measures Formation, which comprises interbedded mudstone, siltstone, and sandstone, with bands of named sandstone units. The Swallow Wood coal seam is seen to outcrop on the westernmost part of the site and dip below the site. The solid geology is indicated to dip at approximately seven degrees to the west. Mining – Underground coal mining is present in eight seams of coal at between 80m to 340m depth, and last worked in 1953. Any movement in the ground due to coal mining activity should have stopped by now. There are no known coal mine entries within, or within 20 metres of, the boundary of the property. The site is within the boundary of an opencast site from which coal has been removed by opencast methods. Hydrogeology – The underlying bedrock is classified as a Secondary A Aquifer. There are no active groundwater abstraction licences within 1km of the site. There are no potable water extraction licences within 2 km of the site. The site does not lie within an Environment Agency (EA) Groundwater Source Protection Zone. Hydrology – There are three unnamed watercourses classified as 'Inland Rivers' on the site. These are within the catchment of the Rother and the Don. These discharge to Shortbridge Dyke, located approximately 50m to the east of the site. There are no surface water abstraction licences within 2km of the site. Flooding – Information on the EA website and presented in the GS report indicates that the site does not lie within 250m of an EA Zone 2 or a Zone 3 floodplain. In addition, the site is at a very low risk of flooding from Rivers and the Sea. Landfill – There is one EA/NRW record of a historical landfill within 500m of the site, located approximately 150m to the west. Historical mapping records ground workings / refuse heaps located approximately 80m to the north west of the site and also 176m to the north east. Radon Risks – The property is in an area with less than 1% of properties affected by radon. Therefore, no radon protective measures will be required.
Environmental Risk Assessment	Based on the history of the site, the following potential sources of contamination may be present: • Development and maintenance workers could come into contact with made ground containing elevated concentrations of potential contaminants and associated hazardous gases. • Site end users could come into contact with made ground containing elevated concentrations of potential contaminants. They could also be exposed to hazardous gases associated with the made ground. • The underlying Secondary A Aquifer (bedrock) could become contaminated due to the leaching and migration of potential contaminants from the made ground into groundwater. • The surface water bodies both on and off site could become contaminated due to the leaching and migration of potential contaminants from the made ground. • Buildings and services could be affected by potentially aggressive contaminants in the soils; and • Planting in landscape areas could be affected by phytotoxic elements within the soils. Based on the potential pollutant linkages present on the site, the site should be considered to be low to moderate risk with respect to contamination for soils but moderate to high risk with respect to ground gas.
Preliminary Engineering Assessment	Mining – The risk of underground coal mining, both recorded and unrecorded, affecting the surface stability of the site has therefore been assessed as very low. There are no recorded mine entries on the site or within 20m of the site boundary. The potential for unrecorded mine entries is considered low. Foundation and floor design will need to take into consideration the presence of deep made ground associated with the backfilled opencast workings. It is recommended that



	buildings are not placed over the opencast highwall. Foundations - Ground conditions are likely to comprise colliery spoil made ground to depths of between 13.60m and 23.50m bgl. Based on information contained within the previous Abbeydale reports, the opencast infill was compacted under the full-time supervision of Mott MacDonald. Previous borehole and CPT investigation data indicate SPT N values of at least 18, suggesting allowable bearing capacities of greater than 100kN/m². On this basis, it may be possible to utilise a continuous reinforced strip footing founded on the engineered fill following cut/fill works. The top 1.5m of fill may need excavating and recompacting in areas where ground levels are to be raised. At present, only limited ground investigation has been carried out. Therefore, further ground investigation is required to confirm the geotechnical parameters of the underlying materials. This further assessment should target the footprints of the proposed structures. Ground Floor Construction - Depending on the loading associated with the proposed industrial units, some form of ground improvement of the shallow soils in order to accommodate ground-bearing slabs may be required. The requirements of any ground gas protection measures will also need to be taken into consideration in relation to ground floor design and construction. Groundwater - As part of the previous WSP ground investigation, groundwater was encountered at depths of between 6.26m and 11.82m. It may be expected that shallow perched groundwater will be encountered within the made ground and natural strata. The presence of groundwater will need to be assessed as part of any ground investigation and the potential for inundation settlement as part of the settlement analysis. Earthworks - It is likely that the earthworks will include the excavation of the upper portion of made ground. With importation of suitable fill materials or processing of site won materials, in order to form an appropriate development platform and also facilitate the use of ground-bearing floor slabs (if required). Obstructions - Based on the history of the site, the presence of significant obstructions within the made ground should be expected, particularly within the footprint of the backfilled opencast. Excavations - Excavations through any made ground and shallow natural ground may be unstable and temporary side support is likely to be required. The stability of the made ground and natural strata will need to be assessed as part of any ground investigation. Roads, Pavements and Hardstanding Surfaces - It is likely that earthworks/ground improvement will be carried out as part of the redevelopment works. This may result in changes to the sub-grade materials. The works should be designed to achieve a suitable CBR value for the proposed development. Chemical Attack on Buried Concrete - Samples of made and natural ground should be obtained and submitted to the laboratory for testing in order to assess the sulphate content and acidity and hence the concrete class required for buried concrete to the latest standard.
Further Work Required	On the basis that the proposed development will not be over the highwall of the former opencast site, it is recommended that the following site investigation works be carried out to assess the potential environmental and geotechnical constraints for future development. • Cable percussive boreholes with in-situ tests to provide geotechnical information in order to assess the nature of the subsurface and confirm the depth and distribution of any made ground below the proposed industrial units. These boreholes will facilitate the installation of gas and groundwater monitoring wells and allow soil samples to be obtained from depth. • Static cone penetrometer testing (CPT) using a tracked and wheeled CPT rig to assess the in situ geotechnical parameters of the backfilled opencast materials. • Chemical analysis of soil and water samples in order to confirm the concentrations of potential contamination on the site. • Geotechnical testing to classify materials and inform foundation design and chemical testing to assess the nature and extent of any contamination on the site and determine the Aggressive Chemical Environment for Concrete classification. • Monitoring of gas and groundwater wells for hazardous gases, methane, carbon dioxide, oxygen and flow rate to the requirements of the Local Authority.
This sheet is intended as a summary only of the assessment of the site in relation to ground condition. It does not provide a definitive engineering analysis.	



1.0 INTRODUCTION

1.1 Instruction

JPG (Leeds) Limited has been instructed by Gregory Projects Limited to carry out a geoenvironmental desk study for a proposed commercial development on land at Hoyland.

1.2 Objectives

The main objective of the geoenvironmental desk study is to identify potential geotechnical and environmental issues that may represent constraints to the proposed development of the site.

1.3 Scope of Works

The scope of works for the desk study included the following:

- Site inspection and description.
- Review of any previous reports provided.
- Review of contemporary and historical Ordnance Survey publications.
- Consultations with regulatory authorities where appropriate.
- Review of geological publications (including hydrology, hydrogeology and soil survey publications where appropriate).
- Obtain a Coal Authority Mining Report and Consultants Report.
- Review available Coal Authority Abandonment Plans.
- Review of the radon status of the site.
- An environmental database search.
- Outline environmental risk assessment.
- Preliminary engineering recommendations with respect to mining, foundations, ground floor and pavement design.
- Recommendations for further work where appropriate.
- Presentation of the findings in a tabular non-technical summary.

1.4 Location

The site is located approximately 500m to the north east of Junction 36 of the M1 motorway and immediately to the south of the A6195 (Dearne Valley Parkway), to the north of Hoyland Common and approximately 1.5km to the south of Birdwell village centre. The approximate centre of the site is located at NGR 435280, 400720.

A site location plan is given as Figure 1 in Appendix A.



1.5 Site Description and Topography

A site walkover inspection was carried out by a JPG engineer on 4 February 2121. At the time of the walkover, standing water was present locally at the surface.

The site is roughly rectangular in shape with an area of approximately 4.08ha.

Access to the site is from a recently constructed roundabout that abuts the south west. A low-lying earthbund to prevent vehicular access onto the site is present in this location.

The site comprises a large field with no evidence of any above ground buildings or structures. The site surface is generally formed by undeveloped, undulating scrubland with a wooded area adjacent to the southern boundary.

Ground levels generally fall from the south to the north, with levels at approximately 139m AOD in the south and 133m AOD in the north.

A drainage channel crosses the north of the site, with flow from west to east. This drainage channel discharges to a pond via a culvert beyond the site's eastern boundary. A further drainage channel extends from the southern boundary before bifurcating in the centre of the site, with one channel extending to the north east and the other to the north west. At the time of the walkover inspection, the drainage channels contained water, but flow direction was not noticeable.

The north-western boundary is formed by the A6195 (Dearne Valley Parkway), a dual carriageway. A wooded area is present beyond the north-eastern boundary, and a industrial estate including vehicle dismantlers is present beyond the wooded area to the south of the site. The site boundaries are generally formed by timber post and rail fences.

An aerial photograph of the site is presented as Figure 2 and selected photographs of the site are contained in Appendix B.

1.6 Development Proposals

It is proposed to develop the site with three industrial units, service yards, car parking and associated access roads.

Plans of the proposed development have been provided. These are referenced below, and copies are contained in Appendix A.

- The Harris Group. Proposed Industrial Development, Dearne Valley Parkway, Barnsley. Proposed Detailed Site Plan 1. Drawing no. 15315-114. Dated February 2021. Last revised 25 March 2021 (D).
- The Harris Group. Proposed Industrial Development, Dearne Valley Parkway, Barnsley. Proposed Detailed Site Plan 1. Drawing no. 15315-115. Dated February 2021. Last revised 25 March 2021 (D).



1.7 Previous Reports

The following previous reports have been forwarded to JPG for review.

- WSP. Phase 1 Ground Conditions Report. Land at Rockingham, Barnsley. Report ref. 70019822-001, dated March 2016, for HCA.
- WSP. Phase 2 Ground Conditions Report. Plot 2. Land at Rockingham, Barnsley. Report ref. 70018922-1602, dated October 2016, for HCA.
- Abbeydale Building Environment Consultants. Desk Study Report. HCA Land Plot 2, Birdwell, West Yorkshire. Report ref. 151066DS, dated January 2017, for Environment & Transport, Barnsley Council.
- Abbeydale Building Environment Consultants. Ground Investigation Report. Hoyland North, Barnsley, South Yorkshire. Report ref. 151087GI, dated September 2019, for Environment & Transport, Barnsley Council.

The Abbeydale desk study report includes additional parcels of land to the south west and also includes as an appendix a coal mining assessment report carried out by South Yorkshire Mining Advisory Services (SYMAS), referenced PJ/M3687/5 and dated 16 August 2013. The Abbeydale ground investigation report targets the footprint of a proposed highway, part of which crosses the south of the site.

Pertinent information contained within the reports referenced above has been incorporated into this assessment, where appropriate.

1.8 Limitations

The general limitations to the nature of the investigation are outlined in Appendix G.



2.0 SITE HISTORY

Historical maps for the site were obtained from GroundSure (GS). These have been reviewed in order to establish any former uses of the site and identify any potentially contaminative historical uses, or potential geotechnical constraints to the proposed development.

A summary of the relevant map information is presented in Table 2.0 and copies of relevant maps are presented in Appendix C.

Table 2.0 – Summary of Relevant Historical Map Information

Date(s) & Scale	Feature
1855 1:10,560	The site comprises several fields with a farm in the south west. A track, later annotated as Cross Keys Lane, extends from the farm in a northerly direction. A hedge, trending roughly north to south, bisects the site. This hedgeline is indicated to form a municipal boundary. Land to the east of the hedge is annotated Tankersley Common Side. A footbridge is indicated in the north and a well is shown in the south adjacent to the farmstead. A footpath extends along the southern boundary. The surrounding area is predominantly fields with locally woodland. A railway line (the Barnsley and Sheffield branch line of the South Yorkshire Railway) is shown just beyond the site's north-western boundary. Birdwell railway station is indicated approximately 450m to the west of the site. An old sandstone quarry is shown approximately 400m to the north east.
1893 - 1894 1:10,560, 1:2,500	A large reservoir encroaches onto the north east of the site. A 'Powder Magazine', possibly an explosive store, is shown approximately 10m to the east of the site. Rockingham Colliery is indicated to the north of the railway lines. The colliery includes coke ovens, railway sidings and two shafts. Rockingham Gas Works is indicated approximately 350m to the west of the site. A brickworks with associated clay pits is shown approximately 700m to the north east.
1903 1:10,560 1906 1:2,500	Filter beds are indicated in the north west and a small water feature in the south east. Infilled ground is indicated approximately 200m to the east.
1929 1:10,560 1931 1:2,500	The small water feature identified above is annotated 'Sewage Tanks (Hoyland Nether U.D.C.).' Infilled ground is indicated to the north of the reservoir and adjacent to the railway sidings associated with Rockingham Colliery.
1938 1:10,560	No significant changes are shown on or beyond the site.
1948 1:10,560	No significant changes are shown on the site. Several embankments/earthworks are shown approximately 100m to the north east of the site, immediately south of Rockingham Colliery. Further housing is also shown to the south of the site at Hoyland Common.
1955 1:1,250 1956 1:1,250 1956 1:10,560 1960 1:1,250	No significant changes are shown on the site. An aerial ropeway passes the north-western corner of the site and extends to Rockingham Colliery. A crane is shown in the centre-west. The filter beds and sewage tanks are no longer shown and are assumed to have been removed. Opencast mining is annotated approximately 400m to the east of the site (the extent of the opencast mining is not clear as no changes are shown to the field boundaries or topographical contours).
1966 1:10,560	No significant changes are shown on the site. A large area of infilled ground is shown in the location of the aforementioned embankments/earthworks located approximately 50m to the north east of the site. Further residential housing has been constructed approximately 50m to the south.
1980 1:10,000	Slurry ponds are shown in the south east, extending beyond the site's eastern boundary. An area of infilled ground is shown to the south west of the reservoir. The infilled ground to the east has increased in size, extending to the site's eastern boundary. Junction 36 of the M1 motorway is shown approximately 450m to the south west of the site. Further development is shown to the south of the site at Hoyland Common.
1986 1:1,250 1987 1:10,000	The reservoir in the north east is shown to have been infilled and is annotated as a disused tip. The farm in the south west is annotated Rockingham Farm House. A drain is shown on the southern margin of the infilled reservoir. The railway and sidings to the north have been dismantled. Disused workings are annotated in the location of the former Rockingham Colliery and also to the south of the infilled ground to the east of the site.
1992 1:10,000 1993 1:1,250	No significant changes are shown on the site. Works buildings are shown approximately 25m to the south of the site.



Date(s) & Scale	Feature
2001 1:10,000 2003 1:1,250	The farm is no longer shown in the south west. No development is shown on the site. Three drains are indicated on the site; these appear to drain into a watercourse located beyond the north-eastern site boundary. Beyond the site, the tip to the east is no longer shown; this area is shown to comprise fields. The A6195 dual carriageway (Dearne Valley Parkway), oriented south west to north east is shown immediately to the north in the location of the former railway, with a roundabout located immediately to the west of the site.
2010 1:10,000	No significant changes are shown on or beyond the site.
2021 1:10,000	No significant changes are shown on the site. A further roundabout is shown adjacent to the site's western boundary. Commercial development is present to the north and north west of the A6195.



3.0 SITE SETTING

3.1 Geology

The GroundSure (GS) report and the following geological publications have been consulted:

- British Geological Survey. Sheet 87. Barnsley. 1:50,000 Scale. Bedrock and Superficial Geology. Dated 2008.
- British Geological Survey. Sheet SE30SE. Wombwell. 1:10,000 Scale. Bedrock and Superficial Deposits. Dated 2005.

Made ground, comprising backfilled opencast workings, are shown across the site with the exception of the north west and south west. The made ground extends to the north, east and south, beyond the site boundary. Abandonment plans indicate the opencast workings extended across the majority of the site with only the southern flank not having been opencast (see Section 3.2).

No superficial deposits are shown to be present on the site.

The underlying bedrock is shown to comprise the Pennine Middle Coal Measures Formation, which comprises interbedded mudstone, siltstone, and sandstone, with bands of named sandstone units. An unnamed sandstone unit is indicated to be present below a central swathe of the site, trending north to south. A further unnamed sandstone unit is present below the easternmost part of the site.

The Swallow Wood coal seam is seen to outcrop on the westernmost part of the site and dip below the site. The solid geology is indicated to dip at approximately seven degrees to the west. The Generalised Vertical Section included on the 1:10,000 scale geology map indicates that the Swallow Wood coal seam is underlain by the Haigh Moor Rock (sandstone).

There are no geological faults shown on the site on mapping (however a fault is shown on abandonment plans for mine workings, see below).

There are no British Geological Survey (BGS) boreholes relating to the site.

3.2 Coal Mining

A Coal Mining Report has been obtained from the Coal Authority, which states the following:

- The property is in a surface area that could be affected by underground mining in eight seams of coal at 80m to 340m depth, and last worked in 1953. Any movement in the ground due to coal mining activity should have stopped by now.



- In addition, the property is in an area where the Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered prior to any site works or future development activity.
- The property is not within a surface area that could be affected by present underground mining.
- The property is not in an area where the Coal Authority has plans to grant or has granted a licence to remove coal using underground methods.
- However, reserves of coal exist in the local area which could be worked at some time in the future.
- No notices have been given under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.
- There are no known coal mine entries within, or within 20m of, the boundary of the property.
- There may however be mine entries/additional mine entries in the local area which the Coal Authority has no knowledge of.
- The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.
- The property is within the boundary of an opencast site from which coal has been removed by opencast methods.
- The property does not lie within 200m of the boundary of an opencast site from which coal is being removed by opencast methods.
- There are no licence requests outstanding to remove coal by opencast methods within 800m of the boundary.
- The property is not within 800m of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.
- The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994. A damage notice or claim for alleged subsidence damage was made in December 1994 for 124 Hoyland Road, Hoyland Common Hoyland, Barnsley, South Yorkshire, S74 0AS. However, the claim was rejected.
- There are a further two claim(s) within 50 metres of the property boundary that do not match the property address.
- The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.
- The Coal Authority has no record of a mine gas emission requiring action.
- The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

The Coal Authority mining reports obtained for the site are presented in Appendix C.

JPG have also obtained abandonment plans for the overall Rockingham Opencast Coal Site and overlaid the site boundary onto these plans.



The overlay plans are summarised below.

- JPG. Rockingham, Plot 2, Birdwell, Barnsley. Rockingham OCCS Abandonment Plan Overlay – Composite. Drawing No. 5419-JPG-SW-00-DR-G-0001 S2 P01. Dated 25 January 2021.

The above plan indicates opencast workings below the site in the Swallow Wood Rider (1AR), Swallow Wood (AR) and an unnamed coal seam (referenced 1AQ). In addition, opencast working of the Dunsil (AU) may have encroached onto the south-eastern corner of the site. The opencast highwall is indicated along the southern boundary, with shallow rock potentially present along the southern flank and the south-western corner of the site.

The abandonment plan shows that the opencast backfill to the coal workings was compacted. The opencast coal mining occurred on the site between January 1991 and October 1995, with the completion plan issued in February 1998.

- JPG. Rockingham, Plot 2, Birdwell, Barnsley. Rockingham OCCS Abandonment Plan Overlay – Dunsil (AU). Drawing No. 5419-JPG-SW-00-DR-G-0002 S2 P01. Dated 25 January 2021.

The abandonment plan indicates opencast workings in the Dunsil coal seam encroaching onto the south-easternmost part of the site and also a localised area in the south east. On the south eastern boundary, the bottom of the coal is at 132.43m AOD with a thickness of 0.10m (bottom leaf) and in the south east is at between 135.10m and 138.03m AOD with a bottom leaf thickness of 0.14m. It can be seen to be dipping to the east.

- JPG. Rockingham, Plot 2, Birdwell, Barnsley. Rockingham OCCS Abandonment Plan Overlay – Swallow Wood Rider (1AR). Drawing No. 5419-JPG-SW-00-DR-G-0003 S2 P01. Dated 25 January 2021.

The abandonment plan indicates opencast workings in the Swallow Wood Rider coal seam below the eastern third of the site. The bottom of the coal is at 136.75m AOD with a thickness of 0.10m in the south and at 132.08m AOD in the north with a thickness of 0.15m.

- JPG. Rockingham, Plot 2, Birdwell, Barnsley. Rockingham OCCS Abandonment Plan Overlay – Swallow Wood (AR). Drawing No. 5419-JPG-SW-00-DR-G-0004 S2 P01. Dated 25 January 2021.

The abandonment plan indicates opencast workings in the Swallow Wood coal seam below the majority of the site, with the exception of a small area in the north west and also the southern margin of the site where the highwall is present. The bottom of the coal is at approximately 131m AOD in the south west and 133m AOD in the north west and at approximately 114m AOD where the opencast coincides with the eastern site boundary. The coal seam varies from approximately 0.60m in the south to 0.43m in the north.



A fault trending approximately north west to south west with downthrown strata to the north east is shown to cross the site. The throw of the fault is indicated to be between 0.60m and 1.20m.

Previous underground coal workings are noted in this coal seam approximately 100m to the north of the site. In addition, possible bell pits are recorded approximately 550m to the north.

- JPG. Rockingham, Plot 2, Birdwell, Barnsley. Rockingham OCCS Abandonment Plan Overlay – Unnamed 3 (1AQ). Drawing No. 5419-JPG-SW-00-DR-G-0005 S2 P01. Dated 25 January 2021.

Bottom of coal contours indicate levels of between approximately 110m AOD in the east and 128m AOD in the west, with coal seam thicknesses of between 0.15m and 0.19m. The fault crossing the site is indicated to have a throw of approximately 1.30m in the south and 0.25m in the north.

The lowest point of opencast coal extraction is the south-eastern corner at an elevation of approximately 110m AOD, coinciding with a current ground level of approximately 138m AOD; this suggests a thickness of 28m of made ground at this location.

In addition, JPG has produced an overlay for the recorded underground workings in the Lidgett coal seam, as detailed below.

- JPG. Rockingham, Plot 2, Birdwell, Barnsley. Rockingham Colliery Abandonment Plan Overlay – Lidgett Seam. Drawing No. 5419-JPG-SW-00-DR-G-0006 S2 P01. Dated 27 January 2021.

The overlay confirms that underground coal workings, dating from 1942, are present below the south of the site.

The Coal Authority Consultants Report indicates that the Lidgett coal seam was worked beneath the site in 1942, at a recorded depth of 75m bgl. The recorded extraction thickness is 0.66m.

At this depth the recorded workings, either below the base of the opencast or outwith, do not have the potential to affect the surface stability of the site.

The GS report states that localised small-scale underground mining for iron ore may have occurred and that the potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered.

3.3 Hydrogeology

The bedrock underlying the site is classified as a Secondary A Aquifer of medium vulnerability. A Secondary A Aquifer is described as 'permeable layers capable of supporting water supplies at a local rather than strategic scale and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as Minor Aquifers'.



There are no active groundwater abstraction licences within 1km of the site.

There are no potable water extraction licences within 2km of the site.

There are no groundwater Source Protection Zones within 500m of the site.

3.4 Hydrology

There are three unnamed watercourses classified as 'Inland Rivers' on the site. These are within the catchment of the Rother and the Don. These discharge to Shortbridge Dyke, located approximately 50m to the east of the site.

There are 10 active licenced discharge consents to surface water within 500m of the site, three of which are listed as active. The active consents are detailed in Table 3.4.1, below.

Table 3.4.1. Records of Licensed Discharge Consents within 500m of the study site

Distance (m) and direction from the site	Site Address	Effluent type	Receiving Water	Status
57m, South East	G.B. Trucks Services Ltd, Cross Keys Works, Cross Keys Lane, Hoyland Land, Barnsley	Sewage Discharges - Final/Treated Effluent - Not Water Company	Short Wood Dike	Undetermined 1961 Application Issue Date: 19/05/1963 Effective Date: 19/05/1963
186m, South East	Tinker Lane Sewage Pumping Stn, Tinker Lane, Wombwell, Barnsley	Sewage Discharges - Sewer Storm Overflow - Water Company	Short Wood Dike	Modified - (WRA 91 Sched 10 - as Amended by Env Act 1995)
421m, South East	Valley Farm, Hutton Bonville, Northallerton	Sewage Discharges - Final/Treated Effluent - Not Water Company	River Wiske	New Consent (WRA 91, S88 & Sched 10 as Amended by Env Act 1995)

There are no surface water abstraction licences within 2km of the site.

Information on the EA website and presented in the GS report indicates that the site does not lie within 250m of an EA Zone 2 or a Zone 3 floodplain. In addition, the site is at a very low risk of flooding from Rivers and the Sea.

In addition, the GS Report states that the site is at negligible risk of groundwater flooding.

3.5 Pollution Incidents

There are two Environment Agency recorded Category 1 (major) and Category 2 (significant) pollution incidents within 500m of the site. Both of these recorded minor or no impact to water, land or air.



3.6 Landfill and Waste

The GS report includes information on active and former landfill sites supplied by the Environment Agency, BGS, DoE, Local Authority and historical mapping.

There is one EA/NRW record of a historical landfill within 500m of the site, located approximately 150m to the west. The record relates to a former railway cutting where inert waste was deposited under a waste licence. The licence was surrendered in 1992.

Historical mapping records ground workings/refuse heaps located approximately 80m to the north west of the site and also 176m to the north east.

There are four records relating to two licensed waste sites within 500m of the site, one located approximately 374m to the south west and the other approximately 420m to the west.

3.7 Environmental Permits, Incidents and Registers

There are no records of historic Integrated Pollution Control (IPC) authorisations within 500m of the site.

There are no records of any Part A(1) authorised industrial activities within 500m of the site.

There are five records of licensed pollutant releases (Part A(2)/B) within 500m of the site.

These are summarised in Table 3.7.1, below.

Table 3.7.1 – Part A(2)/B Permitted Activities within 500m of the study site

Distance (m) and direction from the site	Address	Process	Enforcement
57m, South East	G B Trucks Ltd, Cross Keys Lane, Hoyland, Barnsley, S74 0QA	Respraying of Road Vehicles	No Enforcement Notified
105m, West	The Kay Group Ltd - Rockingham Service Station, Unit 1e, Kestrel Way, Birdwell, Barnsley, S70 5SZ	Unloading of Petrol into Storage at Service Stations (current)	No Enforcement Notified
221m, South East	Cross Keys Garage (Barnsley) Ltd, Sheffield Road, Hoyland Common, Barnsley, S74 0PY	Unloading of Petrol into Storage at Service Stations (current)	No Enforcement Notified
348m, South	British Coal Corporation, Sheffield Road, Hoyland, Barnsley, S74 1DQ	Coal and coke (historical)	No Enforcement Notified
426m, West	Hartwood Exports (Machinery) Ltd, Hangmanstone Depot, Sheffield Rd, Birdwell, S70 5TR	Waste Oil Burner 0.4 MW	No Enforcement Notified

There are no records of Water Industry Referral (potentially harmful discharges to the public sewer) within 500m of the site.

There are no Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the site.



There are no records of List 1 or List 2 Dangerous Substances Inventory Sites within 500m of the site.

There are no current records of Category 3 or 4 Radioactive Substances Licences within 500m of the site.

There are no recorded Control of Major Accidents Hazard (COMAH) or Notification of Installations Handling Hazardous Substances (NIHHS) sites within 500m of the site.

There are no sites determined as contaminated Land under Part IIA EPA 1990 within 500m of the site.

3.8 Radon Risks

The property is in an area with less than 1% of properties affected by radon. Therefore, no radon protective measures will be required.

3.9 Additional Information

There are two historical garages within 500m of the site, one of which is located approximately 200m to the south east of the site and the other 466m to the west.

There are two active petrol stations within 500m of the site. These are located approximately 158m to the south west of the site and 220m to the south of the site located on Dearne Valley Parkway and Sheffield Road, Hoyland, respectively.

A large scrapyard (Hoyland Dismantling) is located immediately to the south of the site.



4.0 ENVIRONMENTAL RISK ASSESSMENT

4.1 Introduction

The presence of contaminated materials on a site is generally only of concern if an actual or potentially unacceptable risk exists. Within the context of current UK legislation i.e. Part 2A of the Environmental Protection Act 1990, implemented through Section 57 of the Environment Act 1995, the interpretation of a "significant risk" is termed to be one where:

- Significant harm is being caused, or there is a significant possibility of such harm being caused, (where harm is defined as harm to health of living organisms or other interference with the ecological systems of which they form a part and, in the case of man, includes harm to his property); and/or
- Pollution of controlled waters is being caused.

The potential for harm to occur requires three conditions to be satisfied:

- Presence of substances (potential contaminants/pollutants) that may cause harm (Sources).
- The presence of a receptor which may be harmed, e.g. the water environment or humans, buildings, fauna and flora (Receptors).
- The existence of a linkage between the Source and the Receptor (The Pathway).

In order to assess the contamination risk at the site, the above rationale has been applied and is discussed in the context of Contamination Sources and Potential Pollutant Linkages.

4.2 Potential Sources

The majority of the site has been subject to opencast extraction of coal and was restored in the 1990s. In addition, a farm was located in the south west, a large reservoir in the north east and tanks associated with sewage treatment works.

The previous 2016 WSP geoenvironmental report identified elevated ground gases (carbon dioxide and methane) on the site, corresponding to Characteristic Situation 3 – moderate risk. When chemical test results for soils were compared to screening values for a commercial end use, there were no exceedances. However, exceedances of contaminants were observed in groundwater obtained from below the site and also, to a lesser extent, within surface water samples obtained from Short Wood Dike, located to the east of the site, considered to be the most sensitive surface water receptor.

Based on the history of the site and a review of previous site investigation reports, the following potential sources of contamination may be present:

- Made ground associated with former buildings in the south west part of the site.
- Made ground associated with historical opencasting, backfilling and restoration.



- Made ground associated with adjacent land use, including railway land and adjacent opencast coal sites.
- Hazardous gases associated with the made ground, both onsite and adjacent.

Potential contaminants which could be present on the site are listed below:

- Metals, metalloids, and their compounds.
- Inorganic compounds, e.g. arsenic.
- Organic compounds, e.g. Poly Aromatic Hydrocarbons (PAH).
- Asbestos.
- Hazardous gases.

4.3 Potential Pathways

The site has been assessed in accordance with the proposed redevelopment of the site for a commercial/industrial end use, the following potential exposure pathways will require consideration, both during the redevelopment works and on completion of the construction:

- Ingestion and dermal contact with contaminated soil and groundwater.
- Inhalation of hazardous gases.
- Leaching/migration of contaminants from soil into groundwater via groundwater flow.
- Leaching/migration of contaminants from soil into surface water via surface water flow.
- Permeation of water supply pipes and other services by organic and aggressive contaminants.
- Uptake of contaminants by planting in landscape areas.

4.4 Potential Receptors

The potential receptors considered are:

- Development workers and future maintenance workers involved in excavations, e.g. foundations or where services are being installed or repaired following development.
- Site end users (i.e. workers).
- The underlying Secondary A Aquifer (bedrock).
- The existing drainage channels on the site and proposed drainage.
- The adjacent surface water courses, including Short Wood Dike.
- Buildings and services.
- Planting in landscape areas.



4.5 Pollutant Linkage Assessment

A potential pollutant linkage assessment has been completed and is summarised in the Conceptual Site Model which is presented as Figure 3 in Appendix A. This is based on the proposed development of the site for an industrial end use.

On the basis of the proposed end use and known history of the site, the following potential pollutant linkages may be present:

- Development and maintenance workers could come into contact with made ground containing elevated concentrations of potential contaminants and associated hazardous gases.
- Site end users could come into contact with made ground containing elevated concentrations of potential contaminants. They could also be exposed to hazardous gases associated with the made ground.
- The underlying Secondary A Aquifer (bedrock) could become contaminated due to the leaching and migration of potential contaminants from the made ground into groundwater.
- The surface water bodies both on and off site could become contaminated due to the leaching and migration of potential contaminants from the made ground.
- Buildings and services could be affected by potentially aggressive contaminants in the soils; and
- Planting in landscape areas could be affected by phytotoxic elements within the soils.

These are based on current site conditions and do not consider exposure pathways following any remediation of the site.

If the site can be shown to pose no “significant harm” or pollution to controlled waters, then the site can be considered to be uncontaminated.

4.6 Risk Classification

Based on the potential pollutant linkages present on the site, the site should be considered to be **low to moderate risk with respect to contamination for soils but moderate to high risk with respect to ground gas**. This designation will be largely dependent on the nature of any made ground and potential presence of any significantly elevated concentrations of potential contaminants or hazardous gases.

In order to fully assess and classify the risks to human health, controlled waters and buildings/services, further Phase 2 Intrusive Investigation, including chemical testing of soils and groundwater and gas monitoring will be required.



5.0 PRELIMINARY ENGINEERING ASSESSMENT

5.1 Development Proposals

It is proposed to develop the site with three industrial units, service yards, car parking and associated access roads.

Plans of the proposed development have been provided. These are referenced below, and copies are contained in Appendix A.

- The Harris Group. Proposed Industrial Development, Dearne Valley Parkway, Barnsley. Proposed Detailed Site Plan 1. Drawing no. 15315-114. Dated February 2021. Last revised 25 March 2021 (D).
- The Harris Group. Proposed Industrial Development, Dearne Valley Parkway, Barnsley. Proposed Detailed Site Plan 1. Drawing no. 15315-115. Dated February 2021. Last revised 25 March 2021 (D).

5.2 Coal Mining Assessment

The Coal Authority report states that the property is within the boundary of an opencast site from which coal has been extracted by opencast methods.

The extent of the former opencast coal site and associated highwall is shown on the geotechnical constraints plan, JPG Drawing no. 5419-JPG-SW-00-DR-G-0007, included in Appendix C. The completion plan for the Rockingham opencast coal site indicates that the backfill was compacted. It is recommended that buildings are not placed over the opencast highwall.

Ground modelling of the available coal mining data by extraction of level information contained on digitised completion plans carried out by JPG indicates backfill depths of between approximately 7m in the west increasing to approximately 27m in the east. Boreholes carried out as part of the 2016 WSP ground investigation confirmed the base of the colliery spoil made ground to be between 13.60m and 23.50m bgl, in line with that predicted by the modelling. Foundation and floor design will need to take into consideration the presence of deep made ground associated with the backfilled opencast workings.

There are recorded underground coal workings in the Lidgett coal seam associated with Rockingham Colliery below the base of the opencast in the southern third of the site. These workings are at a recorded depth of 75m bgl with an extraction thickness of 0.66m and last worked in 1942. At this depth and coal seam thickness, the recorded workings are not considered to have the potential to affect the surface stability of the site.

The risk of underground coal mining, both recorded and unrecorded, affecting the surface stability of the site has therefore been assessed as very low.

There are no recorded mine entries on the site or within 20m of the site boundary. The potential for unrecorded mine entries is considered low as they would have been recorded at the time of opencasting.



A Coal Mining Risk Assessment (CMRA) report has been prepared for the site under separate cover. The CMRA report outlines the residual risks based on the coal mining legacy, makes recommendations for further investigation, and sets out the mitigation measures required to ensure the future stability of the site with respect to the proposed development.

5.3 Foundations

Based on the site layout plan referenced above, the industrial units are to be located wholly on the backfilled opencast.

Ground conditions are likely to comprise colliery spoil made ground to depths of between 13.60m and 23.50m bgl. Based on information contained within the previous Abbeydale reports, the opencast infill was compacted under the full-time supervision of Mott MacDonald. Previous borehole and CPT investigation data indicate SPT N values of at least 18, suggesting allowable bearing capacities of greater than 100kN/m².

On this basis, it may be possible to utilise a continuous reinforced strip footing founded on the engineered fill following cut/fill works. The top 1.5m of fill may need excavating and recompacting in areas where ground levels are to be raised.

At present, only limited ground investigation has been carried out. Therefore, further ground investigation is required to confirm the geotechnical parameters of the underlying materials. This further assessment should target the footprints of the proposed structures.

5.4 Ground Floor Construction

Depending on the loading associated with the proposed industrial units, some form of ground improvement of the shallow soils in order to accommodate ground-bearing slabs may be required.

The requirements of any ground gas protection measures will also need to be taken into consideration in relation to ground floor design and construction.

5.5 Groundwater

As part of the previous WSP ground investigation, groundwater was encountered at depths of between 6.26m and 11.82m.

It may be expected that shallow perched groundwater will be encountered within the made ground and natural strata. The presence of groundwater will need to be assessed as part of any ground investigation and the potential for inundation settlement as part of the settlement analysis.



5.6 Obstructions

Based on the history of the site, the presence of significant obstructions within the made ground should be expected, particularly within the footprint of the backfilled opencast.

5.7 Earthworks

Some form of earthworks and ground improvement is likely to be required in order to achieve a consistent formation with regard to the future industrial development.

It is likely that the earthworks will include the excavation of the upper portion of made ground. With importation of suitable fill materials or processing of site won materials, in order to form an appropriate development platform and also facilitate the use of ground-bearing floor slabs (if required).

Any earthworks should be carried out in accordance with the Manual of Contract Documents for Highway Works, Volume 1 Specification for Highway Works, Series 600 Earthworks.

In addition, the advice of a specialist contractor will be required to confirm that ground conditions are suitable for earthworks/ground improvement and that adequate bearing values and tolerable settlements can be achieved.

An assessment of the suitability of the made ground for re-use in earthworks will be required as part of the further ground investigation.

5.8 Excavations

Excavations through any made ground and shallow natural ground may be unstable and temporary side support is likely to be required. The stability of the made ground and natural strata will need to be assessed as part of any ground investigation.

5.9 Roads, Pavements and Hardstanding Surfaces

It is likely that earthworks/ground improvement will be carried out as part of the redevelopment works. This may result in changes to the sub-grade materials. The works should be designed to achieve a suitable CBR value for the proposed development.

5.10 Chemical Attack on Buried Concrete

Samples of made and natural ground should be obtained and submitted to the laboratory for testing in order to assess the sulphate content and acidity and hence the concrete class required for buried concrete to the latest standard.



6.0 FURTHER INVESTIGATIONS

On the basis that the proposed development will not be over the highwall of the former opencast site, it is recommended that the following site investigation works be carried out to assess the potential environmental and geotechnical constraints for future development.

- Cable percussive boreholes with in-situ tests to provide geotechnical information in order to assess the nature of the subsurface and confirm the depth and distribution of any made ground below the proposed industrial units. These boreholes will facilitate the installation of gas and groundwater monitoring wells and allow soil samples to be obtained from depth.
- Static cone penetrometer testing (CPT) using a tracked and wheeled CPT rig to assess the in situ geotechnical parameters of the backfilled opencast materials.
- Chemical analysis of soil and water samples in order to confirm the concentrations of potential contamination on the site.
- Geotechnical testing to classify materials and inform foundation design and chemical testing to assess the nature and extent of any contamination on the site and determine the Aggressive Chemical Environment for Concrete classification.
- Monitoring of gas and groundwater wells for hazardous gases, methane, carbon dioxide, oxygen, and flow rate to the requirements of the Local Authority.

JB Wilson
BEng (Hons) CSci
For and on behalf of JPG (Leeds) Limited

February 2021



Appendix A Figures/Drawings

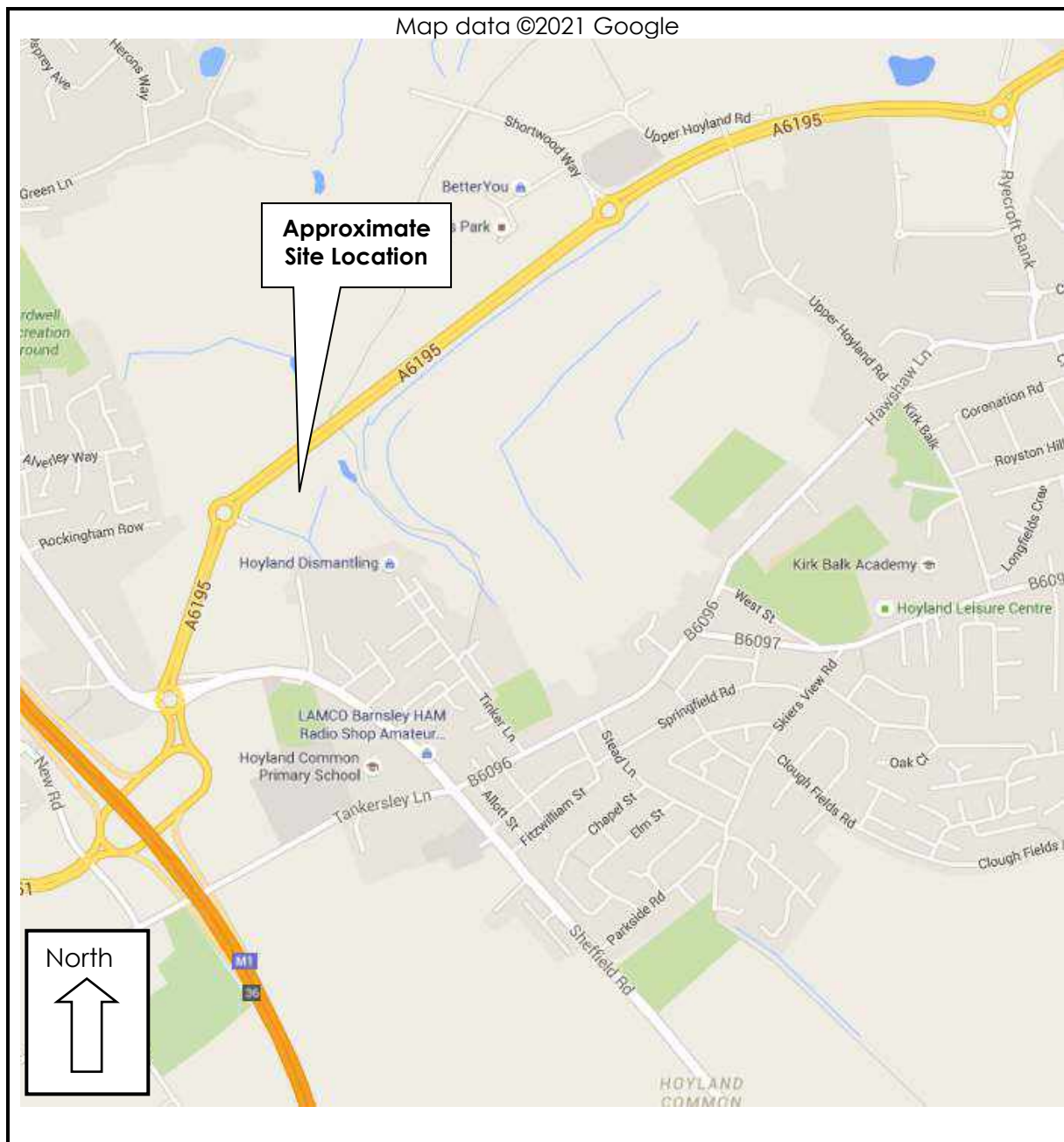


Figure 1 – Site Location Plan

Site	Plot 2 Birdwell, Rockingham, Barnsley
Client	Gregory Projects Limited
Job Number	5419
Scale	NTS



Figure 2 – Aerial Photograph

Site	Plot 2 Birdwell, Rockingham, Barnsley
Client	Gregory Projects Limited
Job Number	5419
Scale	NTS

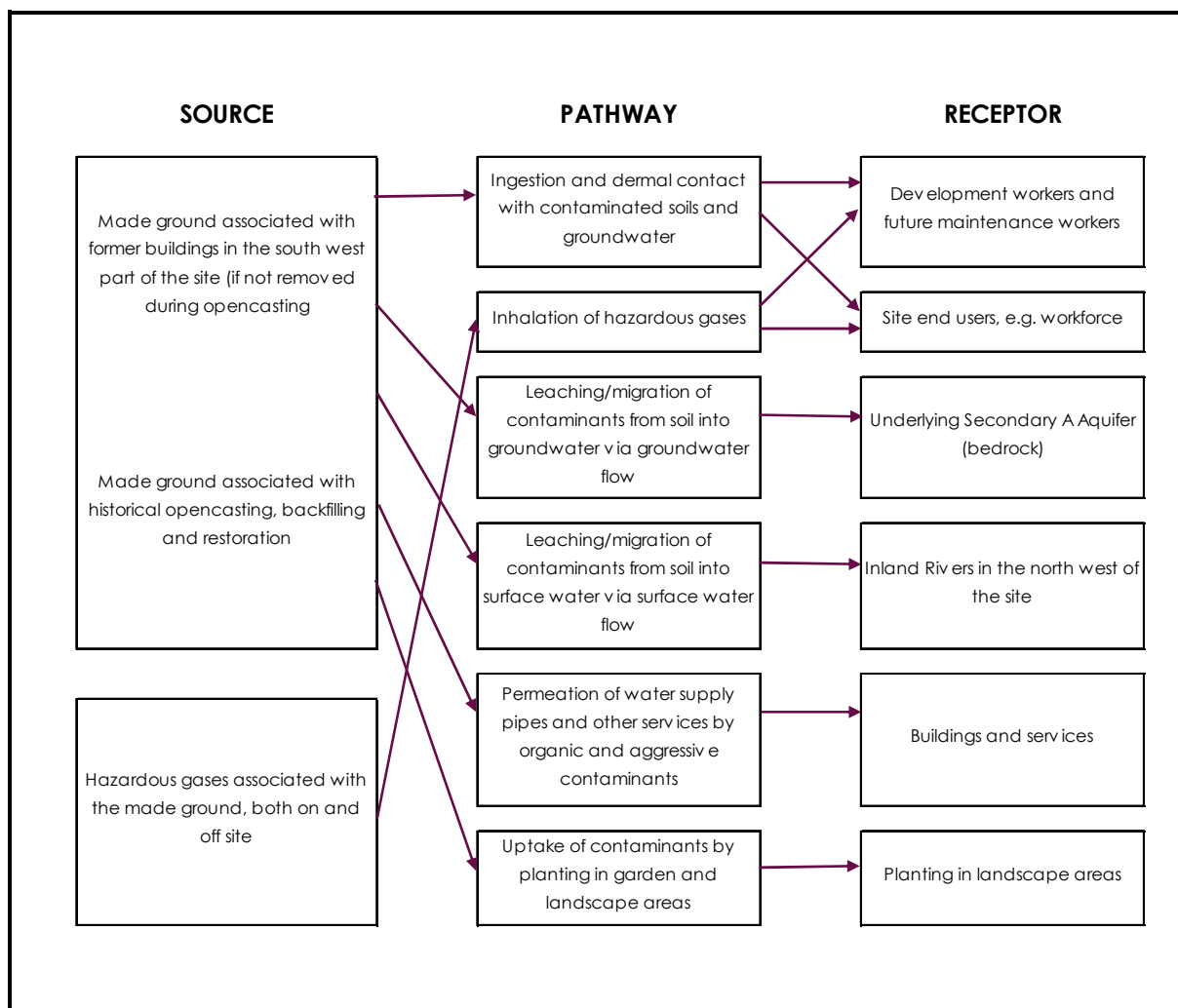
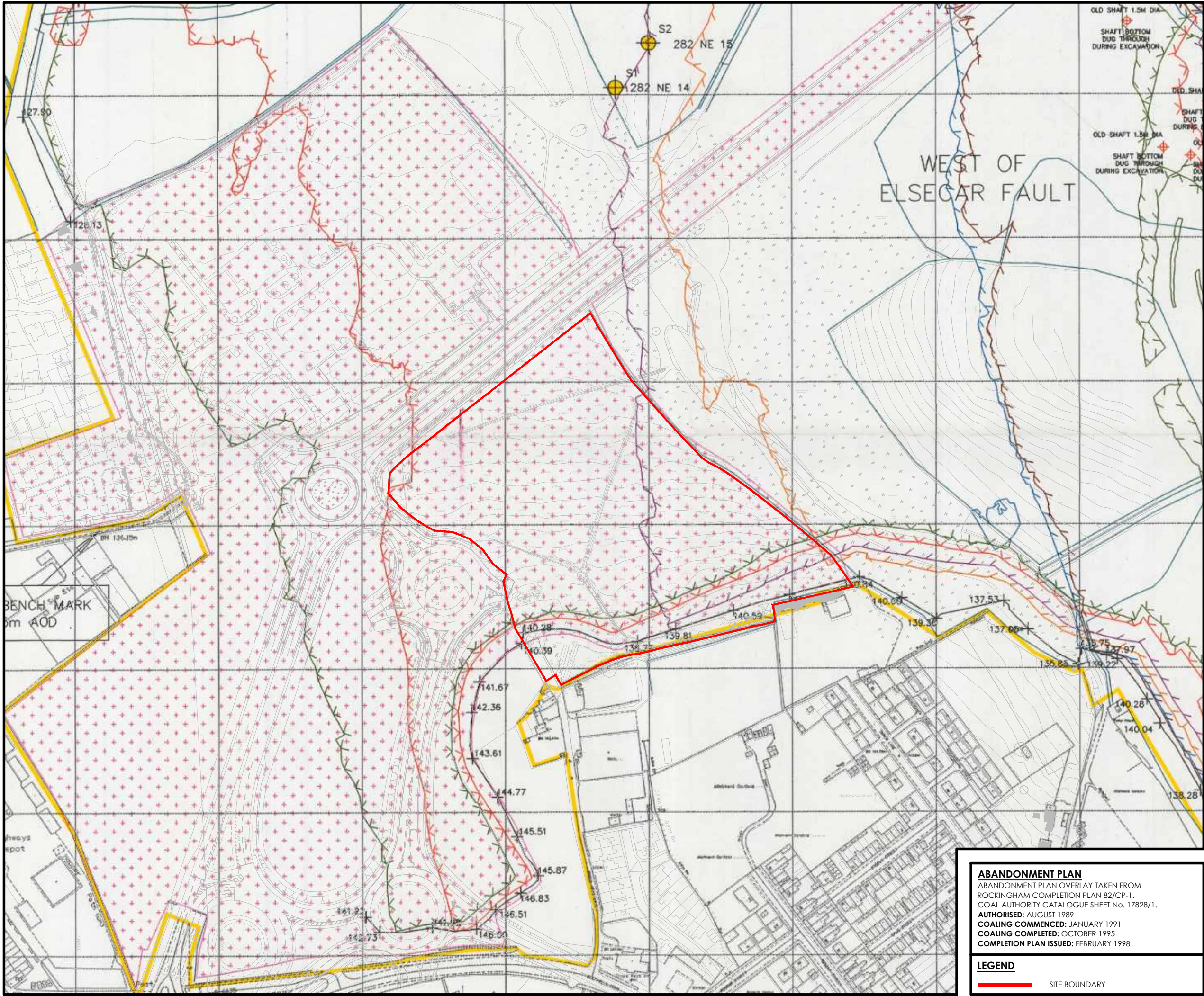


Figure 3 – Conceptual Site Model

Site	Plot 2 Birdwell, Rockingham, Barnsley
Client	Gregory Projects Limited
Job Number	5419
Scale	NTS



DO NOT SCALE (A3)

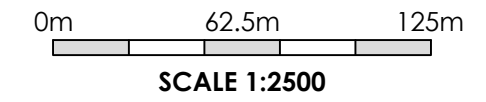
NOTES

Legend

- SITE BOUNDARY
- PERIMETER OF BATTER
- POSITION OF KNOWN OR SUSPECTED SHAFT
Refer to Shaft Register
- OLD SHAFT (DUG THROUGH DURING EXCAVATION)
- POSITION OF KNOWN OR SUSPECTED ADT
Refer to Shaft Register
- FAULT (Throw in Metres)
- OLD WORKINGS (Seam Colour)
- AREA OF COMPACTION (AT SURFACE)
Consulting Engineers - Mott MacDonald
- BOTTOM COAL CONTOUR (Seam Colour)
- L.P.E.
72.70
- LOWEST POINT OF EXCAVATION
- SL 125.8 + 11.5 ORIGINAL GROUND LEVEL (Metres)
- D.C. 124.3 + 11.5 BOTTOM OF COAL LEVEL WITH THICKNESS (Metres)
- SECTION
- ALL LEVELS RELATIVE TO NEWLIN DATUM

**AREA OF SEAM WORKED IN GEOLOGICAL
DESCENDING ORDER**

- BEAUSHAM BB
- HENTS THIN BA
- UNAMED 1AZ
- HENTS THICK AZ11
- UNAMED 1AY
- BARNSELEY RIDER UPPER AY2
- BARNSELEY RIDER LOWER AY1
- BARNSELEY AVE
- DUNSEL RIDER UPPER 2AU
- DUNSEL RIDER LOWER 1AU
- DUNSEL AD
- SHALLOW WOOD RIDER 1AR
- SHALLOW WOOD AR
- UNAMED 1AQ



P01	FIRST ISSUE	28.01.21	JBW	LSG
REV	DESCRIPTION	DATE	CHK	BY

Project
ROCKINGHAM
PLOT 2
BIRDWELL
BARNSELEY

Drawing Title
ROCKINGHAM OCCS ABANDONMENT
PLAN OVERLAY - COMPOSITE

INFORMATION ISSUE

JPG
www.jpg.group
Leeds - 0113 263 1155 | London - 0207 947 4148

ABANDONMENT PLAN
ABANDONMENT PLAN OVERLAY TAKEN FROM
ROCKINGHAM COMPLETION PLAN 82/CP-1.
COAL AUTHORITY CATALOGUE SHEET No. 17828/1.
AUTHORISED: AUGUST 1989
COALING COMMENCED: JANUARY 1991
COALING COMPLETED: OCTOBER 1995
COMPLETION PLAN ISSUED: FEBRUARY 1998

LEGEND

SITE BOUNDARY

DO NOT SCALE (A3)

NOTES

Legend

- SITE BOUNDARY
- PERIMETER OF BATTER
- POSITION OF KNOWN OR SUSPECTED SHAFT
Refer to Shaft Register
- OLD SHAFT DUG THROUGH DURING EXCAVATION
- POSITION OF KNOWN OR SUSPECTED ADIT
Refer to Shaft Register
- FAULT (Throw in Metres)
- OLD WORKINGS (Seam Colour)
- AREA OF COMPACTION (AT SURFACE)
Consulting Engineers - Mott MacDonald
- BOTTOM COAL BORDERS (Seam Colour)
- L.P.E.
72.78
- LOWEST POINT OF EXCAVATION
- R.L. 125.4 - X 162 ORIGINAL GROUND LEVEL (Metres)
- R.L. 124.8 - X 612 BOTTOM OF COAL LEVEL WITH THICKNESS (Metres)
- SECTION

ALL LEVELS RELATIVE TO NEWLIN DATUM

AREA OF SEAM WORKED IN GEOLOGICAL
DESCENDING ORDER

- BEAMSHAW BB
- KENTS THIN BA
- UNAMED 1A2
- KENTS THICK A211
- UNAMED 1A1
- BARNESLEY RIDGE UPPER A12
- BARNESLEY RIDGE LOWER A11
- BARNESLEY AXX
- DUNSL RIDGE UPPER 2AU
- DUNSL RIDGE LOWER 1AU
- DUNSL AU
- SWALLOW WOOD RIDGE 1AR
- SWALLOW WOOD AR
- UNAMED 1A3

0m 62.5m 125m

SCALE 1:2500

P01	FIRST ISSUE	28.01.21	JBW	LSG
REV	DESCRIPTION	DATE	CHK	BY

Project
ROCKINGHAM
PLOT 2
BIRDWELL
BARNSELY

Drawing Title
ROCKINGHAM OCCS ABANDONMENT
PLAN OVERLAY - DUNSIL (AU)

INFORMATION ISSUE

JPG

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5419-JPG-SW-00-DR-G-0002

S2

P01

DUNSIL (AU)

TOP LEAF 0.33m

PARTING 0.35m

BOTTOM LEAF 0.20m

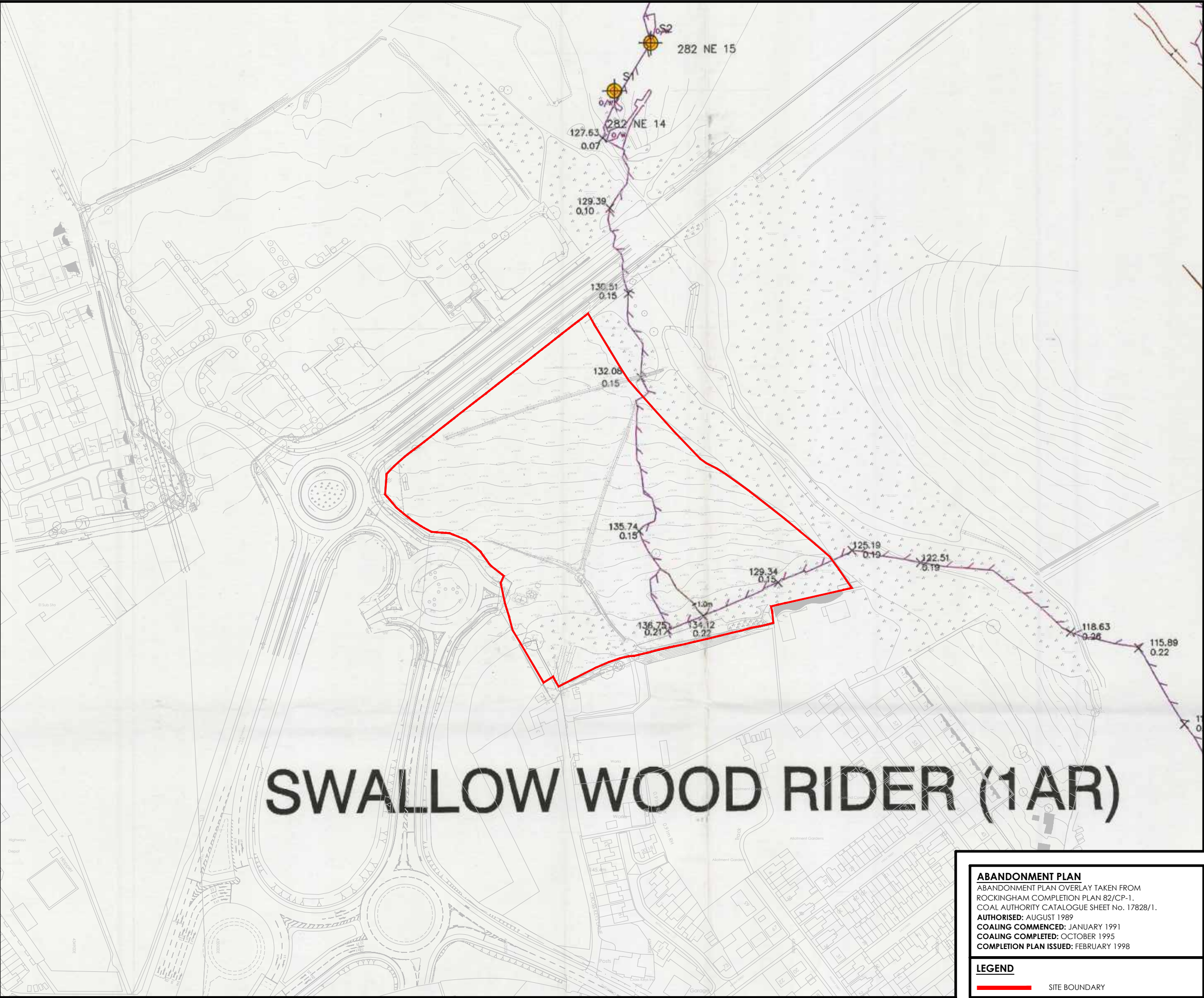
N.B BOTTOM LEAF THICKNESSES SHOWN

ABANDONMENT PLAN

ABANDONMENT PLAN OVERLAY TAKEN FROM
ROCKINGHAM COMPLETION PLAN 82/CP-3.
COAL AUTHORITY CATALOGUE SHEET No. 17828/3.
AUTHORISED: AUGUST 1989
COALING COMMENCED: JANUARY 1991
COALING COMPLETED: OCTOBER 1995
COMPLETION PLAN ISSUED: FEBRUARY 1998

LEGEND

SITE BOUNDARY



DO NOT SCALE (A3)

NOTES

Legend

- SITE BOUNDARY
- PERIMETER OF BATTER
- POSITION OF KNOWN OR SUSPECTED SHAFT
Refer to Shaft Register
- OLD SHAFT CUL THROUGH SURING EXCAVATION
- POSITION OF KNOWN OR SUSPECTED ADIT
Refer to Shaft Register
- FAULT (Throw in Metres)
- OLD WORKINGS (Seam Colour)
- AREA OF COMPACTION (AT SURFACE)
Consulting Engineers - Mott MacDonald
- BOTTOM COAL CONTOUR (Seam Colour)
- LOWEST POINT OF EXCAVATION

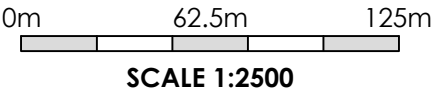
G.L. 128.6 x 118.8 ORIGINAL GROUND LEVEL (Metres)
B.C. 124.3 x 112.8 BOTTOM OF COAL LEVEL WITH THICKNESS (Metres)

SECTION

ALL LEVELS RELATIVE TO NEWLTH DATUM

**AREA OF SEAM WORKED IN GEOLOGICAL
DESCENDING ORDER**

- DEANSHAW RE
- KENTS THIN BA
- UNAMED 1A2
- KENTS THICK A211
- UNAMED 1A1
- BARNSELY RIDER UPPER AY2
- BARNSELY RIDER LOWER AY1
- BARNSELY AVX
- DUNSL RIDER UPPER 2AU
- DUNSL RIDER LOWER 1A2
- DUNSL AU
- SWALLOW WOOD RIDER 1AR
- SWALLOW WOOD AR
- UNAMED 1A0



P01	FIRST ISSUE	28.01.21	JBW	LSG
REV	DESCRIPTION	DATE	CHK	BY

Project
ROCKINGHAM
PLOT 2
BIRDWELL
BARNSELY

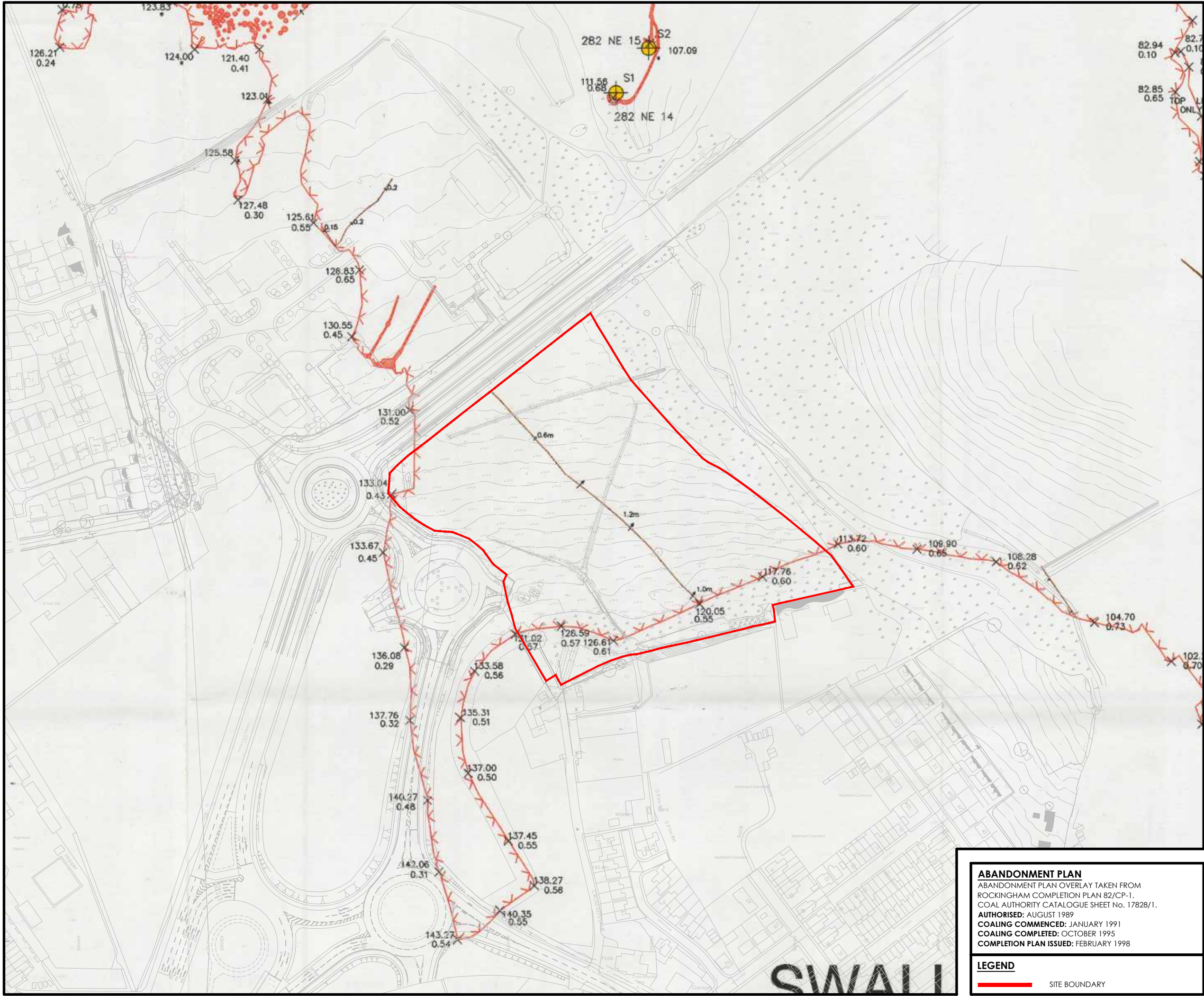
Drawing Title
ROCKINGHAM OCCS ABANDONMENT
PLAN OVERLAY - SWALLOW WOOD
RIDER (1AR)

INFORMATION ISSUE

JPG
www.jpg.group
Leeds - 0113 263 1155 | London - 0207 947 4148

ABANDONMENT PLAN
ABANDONMENT PLAN OVERLAY TAKEN FROM
ROCKINGHAM COMPLETION PLAN 82/CP-1.
COAL AUTHORITY CATALOGUE SHEET No. 17828/1.
AUTHORISED: AUGUST 1989
COALING COMMENCED: JANUARY 1991
COALING COMPLETED: OCTOBER 1995
COMPLETION PLAN ISSUED: FEBRUARY 1998

LEGEND
SITE BOUNDARY



DO NOT SCALE (A3)

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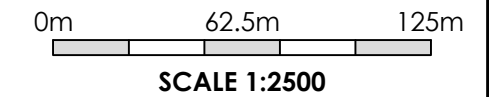
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- SITE BOUNDARY
- PERIMETER OF BATTER
- POSITION OF KNOWN OR SUSPECTED SHAFT
Refer to Shaft Register
- OLD SHAFT DIG THROUGH DURING EXCAVATION
- POSITION OF KNOWN OR SUSPECTED ADIT
Refer to Shaft Register
- FAULT (Throw in Metres)
- OLD WORKINGS (Seam Colour)
- AREA OF COMPACTION (AT SURFACE)
Consulting Engineers - Hill Midland
- BOTTOM COAL CONTOUR (Seam Colour)
- LOWEST POINT OF EXCAVATION

ALL LEVELS RELATIVE TO SEAM DATUM

**AREA OF SEAM WORKED IN GEOLOGICAL
DESCENDING ORDER**

- BEAMSHAW III
- KENTS THIN BA
- UNNAMED IAT
- KENTS THICK A21
- UNNAMED TAY
- BARNSELY RIDER UPPER AY2
- BARNSELY RIDER LOWER AY1
- BARNSELY AVX
- DUNSL RIDER UPPER 2AU
- DUNSL RIDER LOWER 1AU
- DUNSL AU
- SWALLOW WOOD RIDER IAR
- SWALLOW WOOD AR
- UNNAMED 1AO



P01	FIRST ISSUE	28.01.21	JBW	LSG
REV	DESCRIPTION	DATE	CHK	BY

Project
ROCKINGHAM
PLOT 2
BIRDWELL
BARNSELY

Drawing Title
ROCKINGHAM OCCS ABANDONMENT
PLAN OVERLAY - SWALLOW WOOD (AR)

INFORMATION ISSUE

JPG
www.jpg.group

Leeds - 0113 263 1155 | London - 0207 947 4148

ABANDONMENT PLAN
ABANDONMENT PLAN OVERLAY TAKEN FROM
ROCKINGHAM COMPLETION PLAN 82/CP-1.
COAL AUTHORITY CATALOGUE SHEET No. 17828/1.
AUTHORISED: AUGUST 1989
COALING COMMENCED: JANUARY 1991
COALING COMPLETED: OCTOBER 1995
COMPLETION PLAN ISSUED: FEBRUARY 1998

LEGEND

SITE BOUNDARY

DO NOT SCALE (A3)

NOTES

Legend

- SITE BOUNDARY
- PERIMETER OF BATTERY
- POSITION OF KNOWN OR SUSPECTED SHAFT
Refer to Shaft Register
- OLD SHAFT DUG THROUGH DURING EXCAVATION
- POSITION OF KNOWN OR SUSPECTED ADIT
Refer to Shaft Register
- FAULT (Throw in Metres)
- OLD WORKINGS (Seam Colour)
- AREA OF COMPACTION (AT SURFACE)
Consulting Engineers - Mott MacDonald
- BOTTOM COAL CONTOUR (Seam Colour)
- L.F.E.
73.76
- LOWEST POINT OF EXCAVATION
- SL 108.8 X 100 ORIGINAL GROUND LEVEL (Metres)
SL 104.3 X 100 BOTTOM OF COAL LEVEL WITH THICKNESS (Metres)
- SECTION
- ALL LEVELS RELATIVE TO NEWLYN DATUM

AREA OF SEAM WORKED IN GEOLOGICAL
DESCENDING ORDER

- SEANSHAW SB
- KENTS SHIN BA
- UNAMED 1A2
- KENTS THICK AZ1
- UNAMED TAY
- BARNSELY RIDER UPPER AY2
- BARNSELY RIDER LOWER AY1
- BARNSELY AVX
- DUNSL RIDER UPPER 2AU
- DUNSL RIDER LOWER 1AU
- DUNSL AU
- SWALLOW WOOD RIDER 1AR
- SWALLOW WOOD AR
- UNAMED 1AQ

0m 62.5m 125m

SCALE 1:2500

P01	FIRST ISSUE	28.01.21	JBW	LSG
REV	DESCRIPTION	DATE	CHK	BY

Project
ROCKINGHAM
PLOT 2
BIRDWELL
BARNSELY

Drawing Title
ROCKINGHAM OCCS ABANDONMENT
PLAN OVERLAY - UNNAMED 3 (1AQ)

INFORMATION ISSUE

JPG

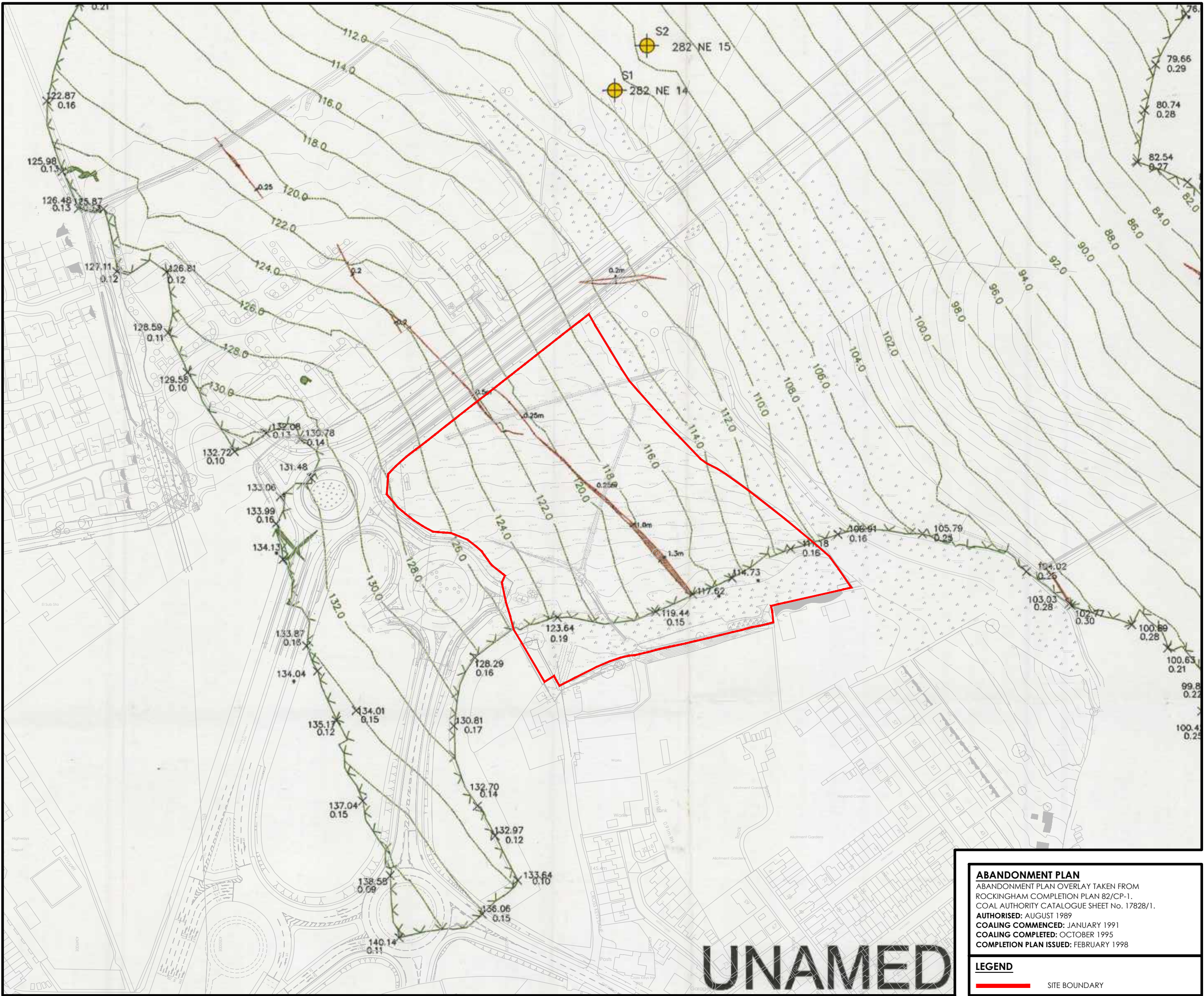
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S2

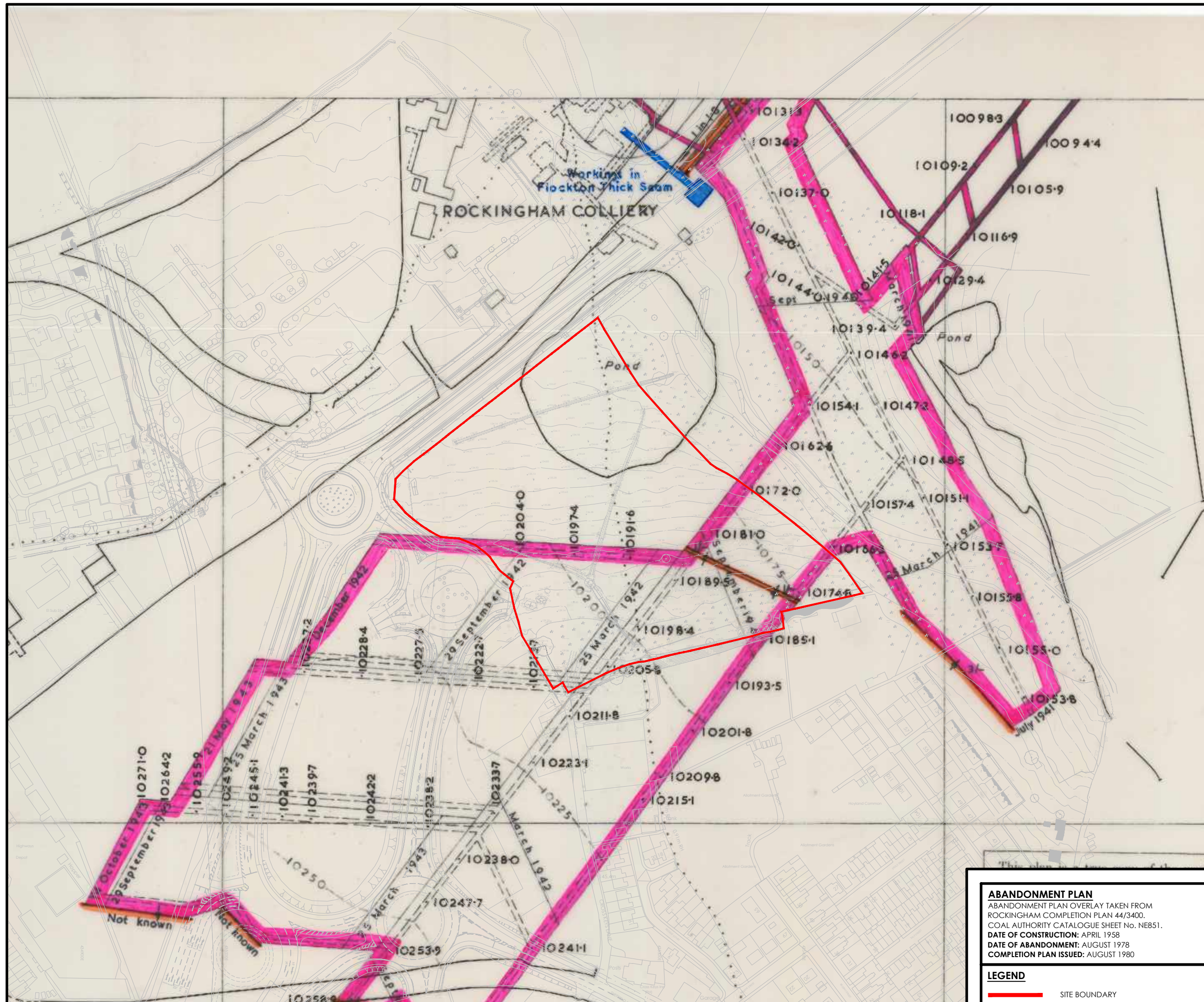
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ABANDONMENT PLAN
ABANDONMENT PLAN OVERLAY TAKEN FROM
ROCKINGHAM COMPLETION PLAN 82/CP-1.
COAL AUTHORITY CATALOGUE SHEET No. 17828/1.
AUTHORISED: AUGUST 1989
COALING COMMENCED: JANUARY 1991
COALING COMPLETED: OCTOBER 1995
COMPLETION PLAN ISSUED: FEBRUARY 1998

LEGEND

SITE BOUNDARY



0m 62.5m 125m

SCALE 1:2500

P01	FIRST ISSUE.	28.01.21	JBW	LSG
REV	DESCRIPTION	DATE	CHK	BY

Project
ROCKINGHAM
PLOT 2
BIRDWELL
BARNSLEY

Drawing Title
ROCKINGHAM COLLIERY
ABANDONMENT PLAN OVERLAY -
LIDGETT SEAM

INFORMATION ISSUE



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5419-JPG-SW-00-DR-G-0006	S2	P01
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DO NOT SCALE (A1)

NOTES

GENERAL NOTES

- ALL MATERIALS AND WORKMANSHIP IS TO COMPLY WITH JPG CONSULTANTS STANDARD SPECIFICATION & ALL RELEVANT BRITISH & EUROPEAN STANDARDS.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, M & E CONSULTANTS AND JPG CONSULTANTS DRAWINGS.
- ANY DISCREPANCIES SHOULD BE REPORTED TO THE ENGINEER IMMEDIATELY SO THAT CLARIFICATION CAN BE SOUGHT PRIOR TO COMMENCEMENT OF WORKS.
- CONJECTURED EXTENTS OF OPENCAST BACKFILL, HIGHWALLS, UNDERGROUND WORKINGS AND FAULTING HAVE BEEN DETERMINED USING LIMITED SITE INVESTIGATION AND HISTORICAL COAL SEAM EXTRACTION PLANS.
- FURTHER SITE INVESTIGATION IS REQUIRED PRIOR TO UNDERTAKING OF EARTHWORKS.

LEGEND

- DENOTES SITE BOUNDARY
- DENOTES EXTENTS OF ROCKINGHAM OCCS TAKEN FROM ROCKINGHAM COMPLETION PLAN B2/CP-1. COAL AUTHORITY CATALOGUE SHEET No. 17828/1.
- DENOTES WORKINGS IN SWALLOW WOOD RECORDED IN ROCKINGHAM COMPLETION PLAN B2/CP-2. COAL AUTHORITY CATALOGUE SHEET No. 17828/2.
- DENOTES CONJECTURED HIGHWALL LOCATION (ARROW INDICATING DIP DIRECTION)
- DENOTES CONJECTURED DEPTH OF MADE GROUND/ OPENCAST BACKFILL (DEPTH FROM TOPOGRAPHIC SURVEY TO BASE OF CONJECTURED OPENCAST)
- DENOTES CONJECTURED FAULTING IN UNNAMED SEAM 3 IAQ (ARROW INDICATING THROW DIRECTION)
- DENOTES CONJECTURED FAULTING IN LIDGETT SEAM (ARROW INDICATING THROW DIRECTION)

WSP SITE INVESTIGATION

AUGUST 2016

- P2CPT01A CONE PENETROMETER TEST
- BH01P2 BOREHOLE
- TP01P2 TRIAL PIT TO AS BUILT DIMENSIONS

ABBEYDALE SITE INVESTIGATION

JUNE 2019

- TP1A TRIAL PIT TO AS BUILT DIMENSIONS

PO1	FIRST ISSUE	29.01.21	JBW	LSG
REV	DESCRIPTION	DATE	CHK	BY

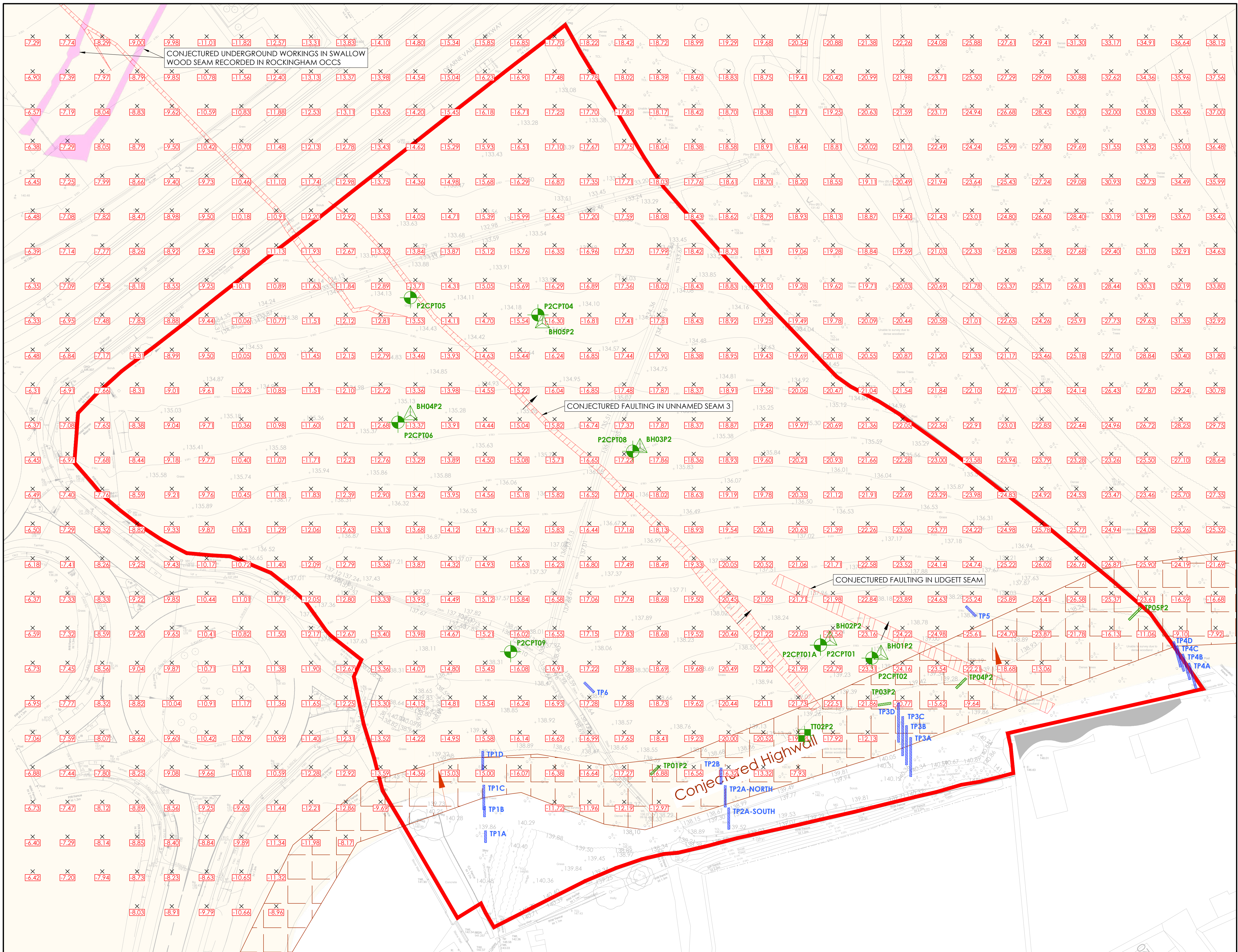
Project
ROCKINGHAM
PLOT 2
BIRDWELL
BARNSELY

Drawing Title
GEOTECHNICAL CONSTRAINTS PLAN

INFORMATION ISSUE

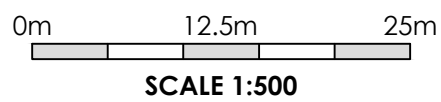


5419-JPG-SW-00-DR-G-0007 S2 PO1



JPG-GEOTECHNICAL CONSTRAINTS PLAN

SCALE 1:500





DEARNE VALLEY PARKWAY

DEARNE VALLEY PARKWAY

Unit 1
Total GIA - 37,750 sqft 3,507.1 sqm
Footprint - 35,000 sqft 3,251.6 sqm
Offices @ 1st 2,750 sqft 255.5 sqm

Unit 2
Total GIA - 64,500 sqft 5,992.3 sqm
Footprint - 60,000 sqft 5,574.2 sqm
Offices @ 1st 4,500 sqft 418.1 sqm

Unit 3
Total GIA - 43,000 sqft 3,994.8 sqm
Footprint - 40,000 sqft 3,716.1 sqm
Offices @ 1st 3,000 sqft 278.7 sqm

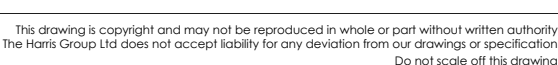
Note:
Information is based on OS map and received information and is subject to full topographical and building survey.
Assumed site boundary and the constraints subject to confirmation.
All legal agreements and extent of existing underground services, locations are subject to confirmation.

0 2.5 5 7.5 10 12.5m
SCALE 1:250

Rev	Date	Description	Rev	Date	Description
1	10/01/2021	Office Content amended	1	10/01/2021	Office Content amended
2	10/01/2021	Landscaping scheme added	2	10/01/2021	Landscaping scheme added
3	10/01/2021	Car and 6th Gate added	3	10/01/2021	Car and 6th Gate added
4	10/01/2021	Sub station added	4	10/01/2021	Sub station added

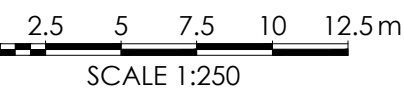
Project Title		PROPOSED INDUSTRIAL DEVELOPMENT	
Drawing No.		15315 - (P)114	
Client		Gregory Properties	
Status		PLANNING	
Scale		1:250	
Date		02/2021	
Drawn by		NBB	
Checked		PSM	

THE HARRIS PARTNERSHIP
ARCHITECTS
101 London Road
Reading RG1 1JH
T: 0118 707700
F: 0118 707701
E: info@harrispartnership.co.uk
www.harrispartnership.co.uk



Public Rights of Way
taken from Barnsley NMC Definitive Map

Note:
Information is based on OS map and received information and is subject to full topographical and building survey.
Assumed site boundary and site constraints subject to confirmation.
Legal easements and extent of existing underground services locations are subject to confirmation.



Office Content amended	NBB	PSM
Landscape Scheme added	NBB	PSM
Cut and Fill Updated	NBB	PSM
Sub station added	NBB	PSM
Description	Rev By	CHK'd by

PROPOSED DETAILED SITE PLAN 2	
15315 (B)115	Err D

Johns North,
Bedfield, WF1 3QA
924 291800
www.wirebox.co.uk, 77 Dole Street

**THE
HARRIS**

London Road,
Reading, RG1 5BY
Tel: 0118 9507700

Dees Court, St Christophers Place,
Reading, W1U 1JJ
Tel: 0118 4091215

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ARCHITECTS
www.hartpartnership.com

THE
HARRIS
PARTNERSHIP
ARCHITECTS
harrispartnership.com



Appendix B Site Photographs



Photograph 1: Exiting Access from Roundabout on Western Boundary



Photograph 2: Woodland in South West



Photograph 3: View from South West of Southern Half of Site



Photograph 4: Wooded Area on Southern Flank



Photograph 5: Drainage Channel in Centre of Site



Photograph 6: Northern Half of Site, Looking West



Photograph 7: Eastern Site Boundary



Photograph 8: Western Boundary, Looking West



Appendix C Historical Maps



Site Details:

Client Ref: 6775
Report Ref: CMAPS-JPG-931157-6775-150121HIS
Grid Ref: 435282, 400720

Map Name: County Series

Map date: 1855

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1851
Revised N/A
Edition 1855
Copyright N/A
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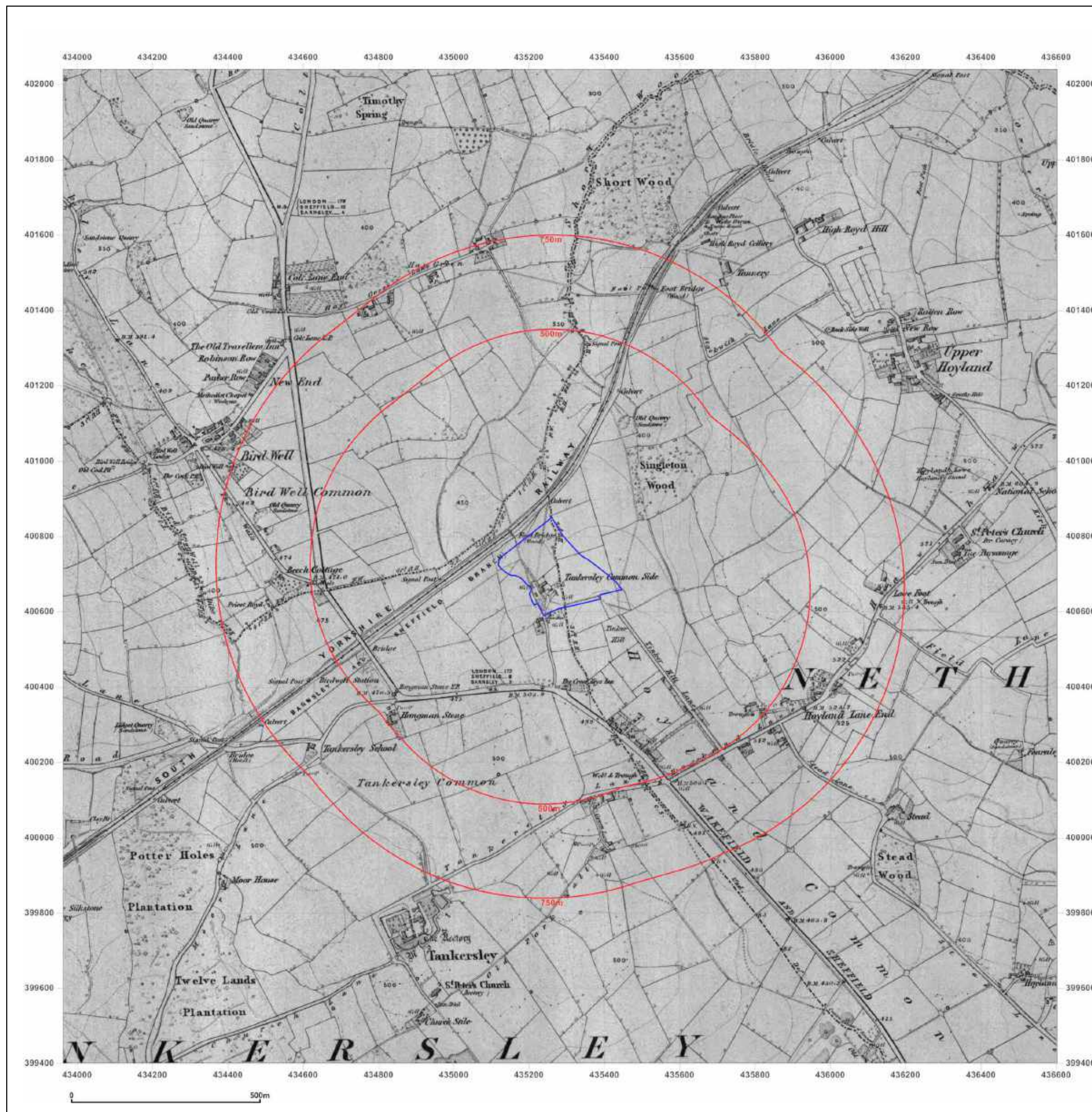


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Site Details:

Client Ref: 6775
Report Ref: CMAPS-JPG-931157-6775-150121HIS
Grid Ref: 435282, 400720

Map Name: County Series

Map date: 1891-1894

Scale: 1:10,560

Printed at: 1:10,560



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Edition 1891
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Surveyed 1891
Revised N/A
Edition 1894
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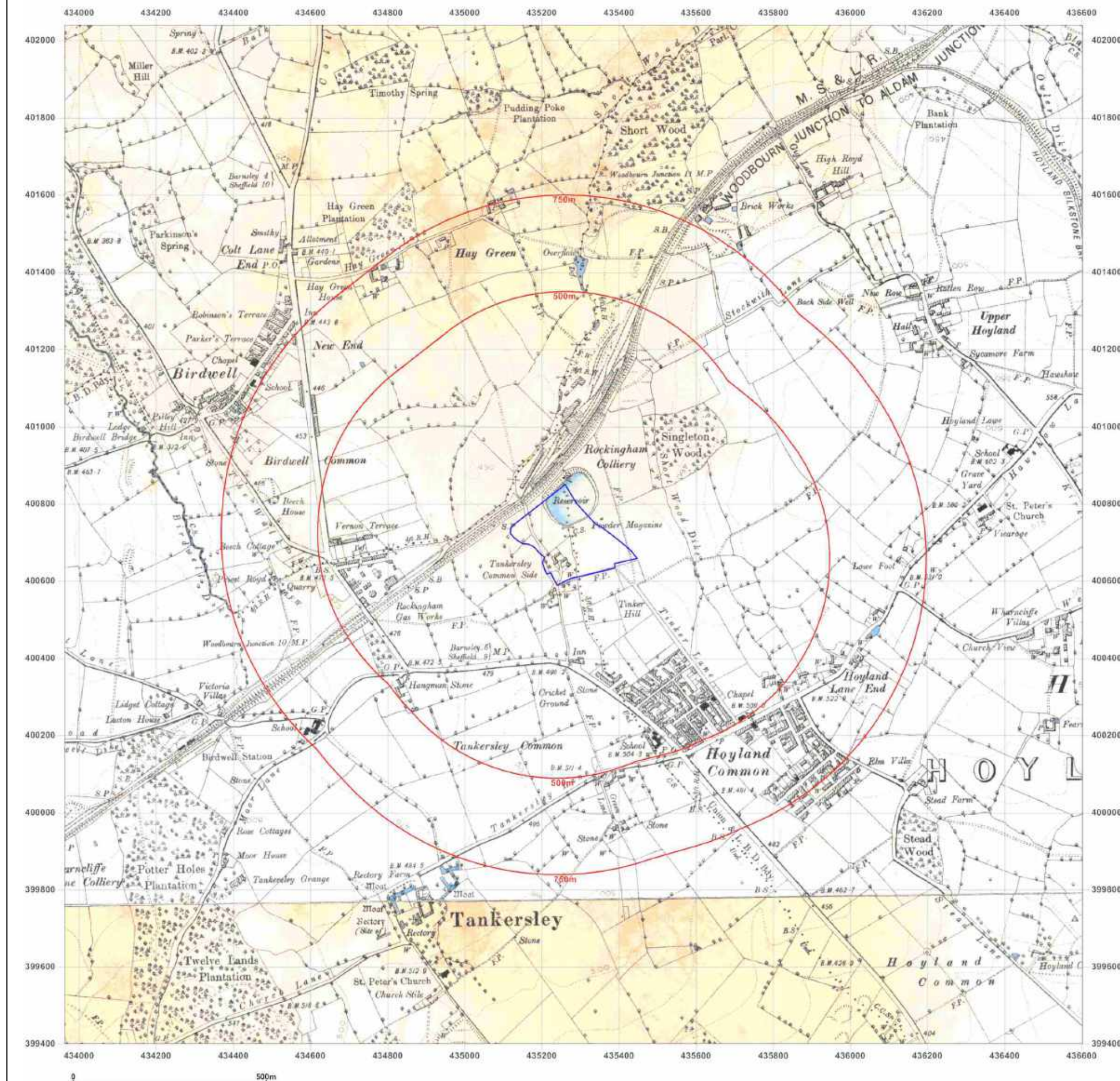


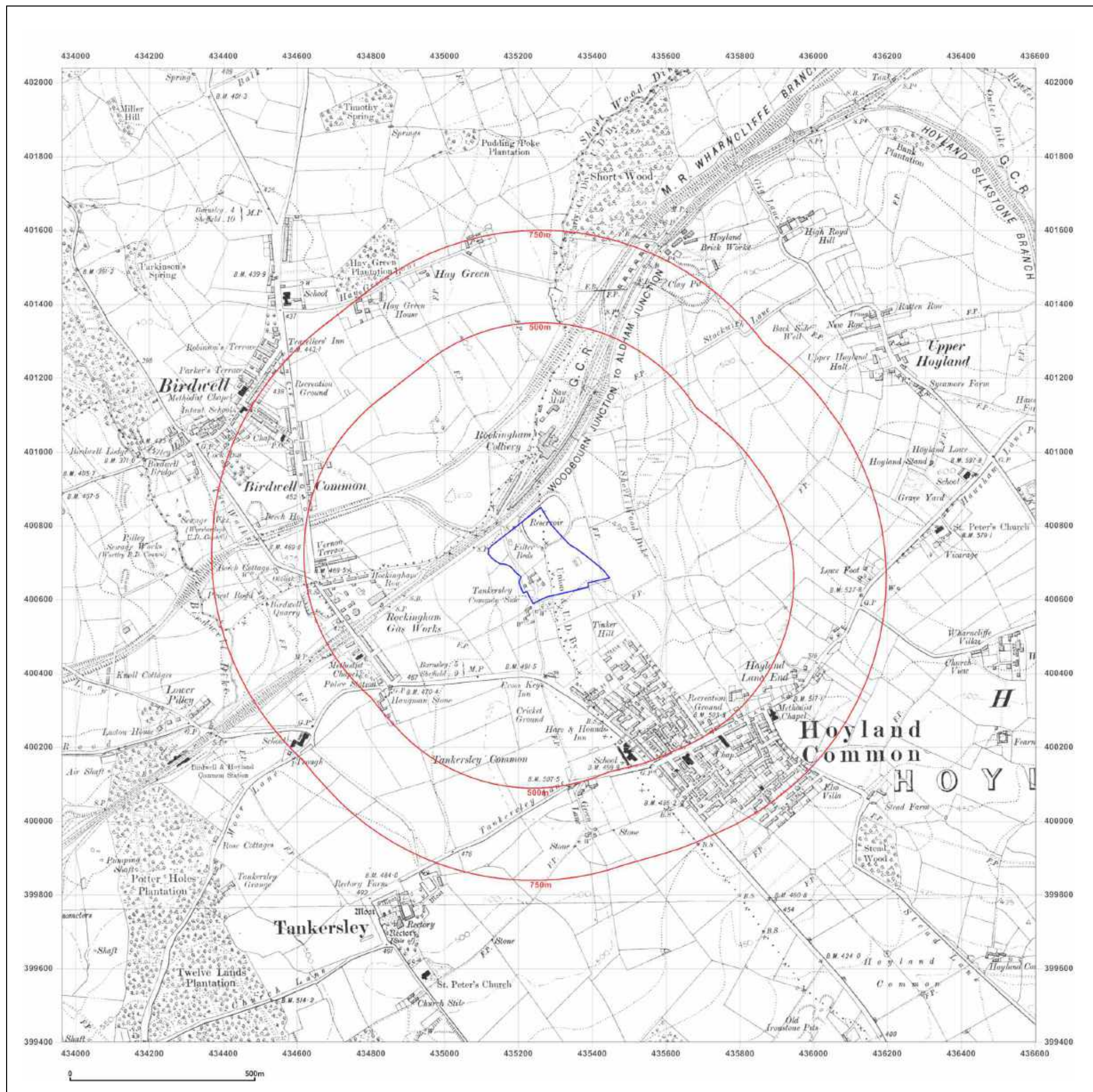
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Site Details:

Client Ref: 6775
Report Ref: CMAPS-JPG-931157-6775-150121HIS
Grid Ref: 435282, 400720

Map Name: County Series

Map date: 1903

Scale: 1:10,560

Printed at: 1:10,560



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Edition 1903
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Edition 1903
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Site Details:

Client Ref: 6775
Report Ref: CMAPS-JPG-931157-6775-150121HIS
Grid Ref: 435282, 400720

Map Name: County Series

Map date: 1929

Scale: 1:10,560

Printed at: 1:10,560



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 Revised 1929
 Edition 1929
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 Levelled 1915

Surveyed 1851
 Revised 1929
 Edition 1929
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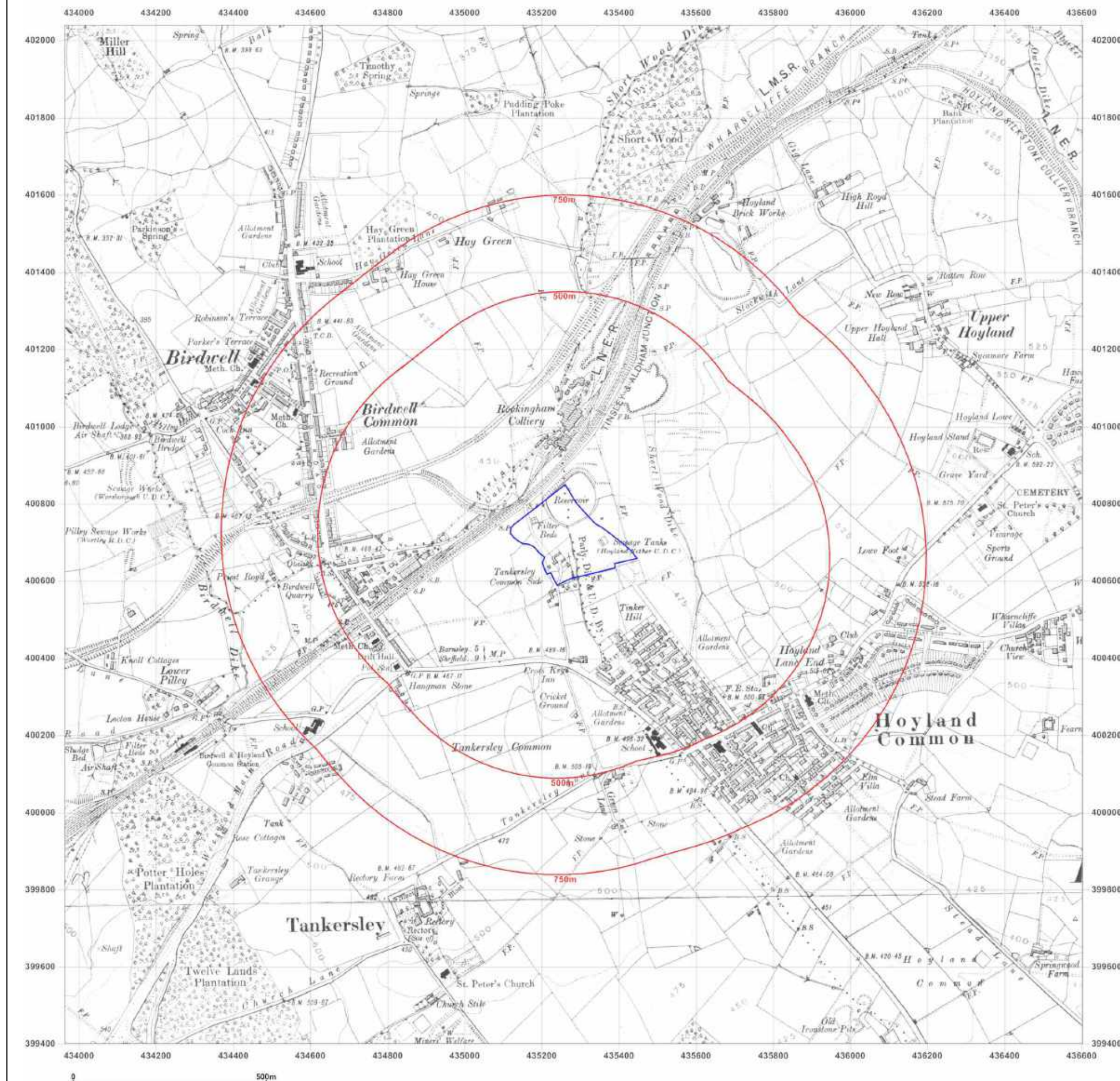


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Site Details:

Client Ref: 6775
Report Ref: CMAPS-JPG-931157-6775-150121HIS
Grid Ref: 435282, 400720

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



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Edition 1938
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Levelled 1929

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Revised 1938
Edition 1938
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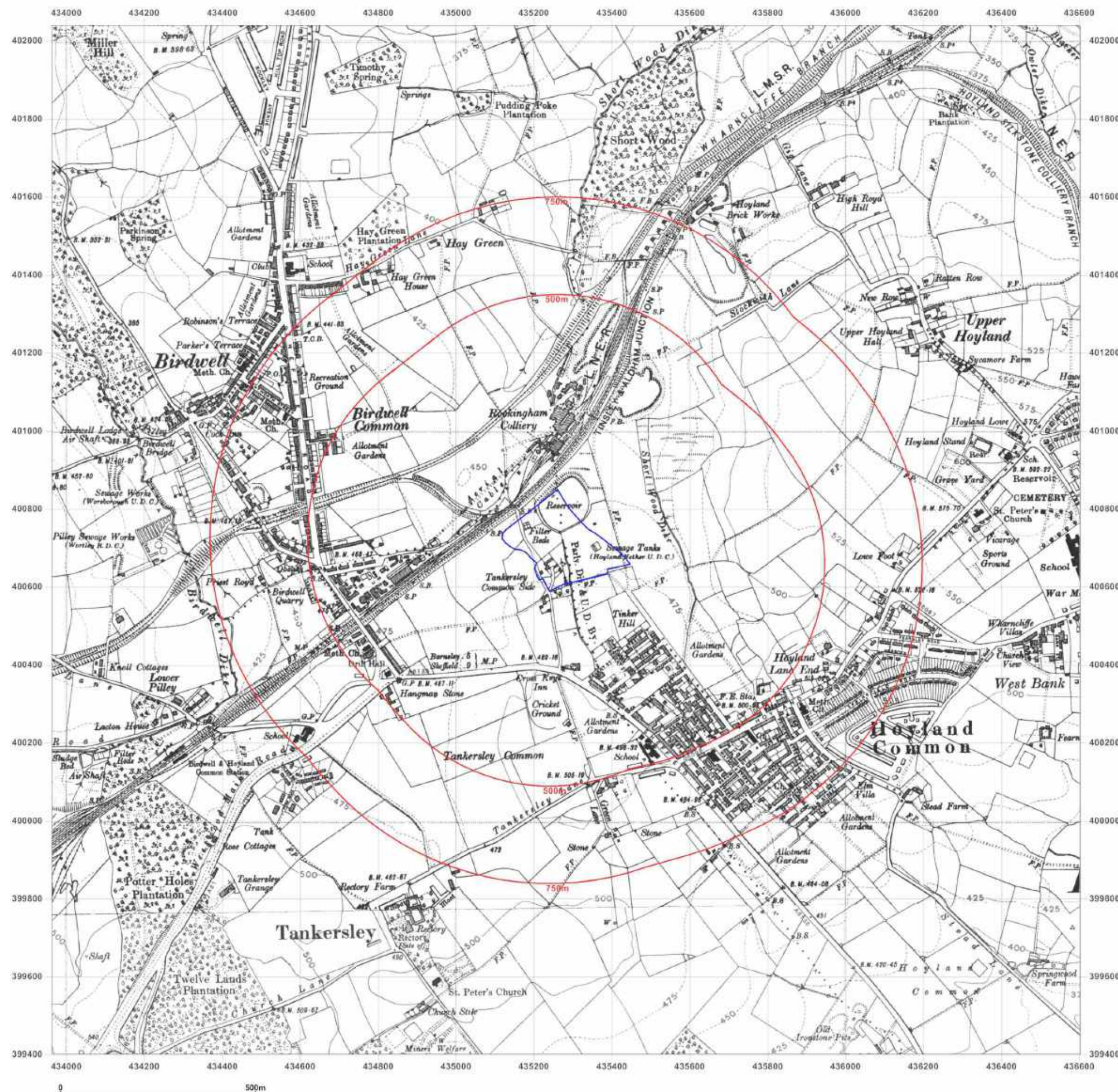


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Site Details:

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Report Ref: CMAPS-JPG-931157-6775-150121HIS
Grid Ref: 435282, 400720

Map Name: County Series

Map date: 1948

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1948
Edition 1948
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Levelled 1929

Surveyed 1851
Revised 1948
Edition 1948
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Levelled 1929



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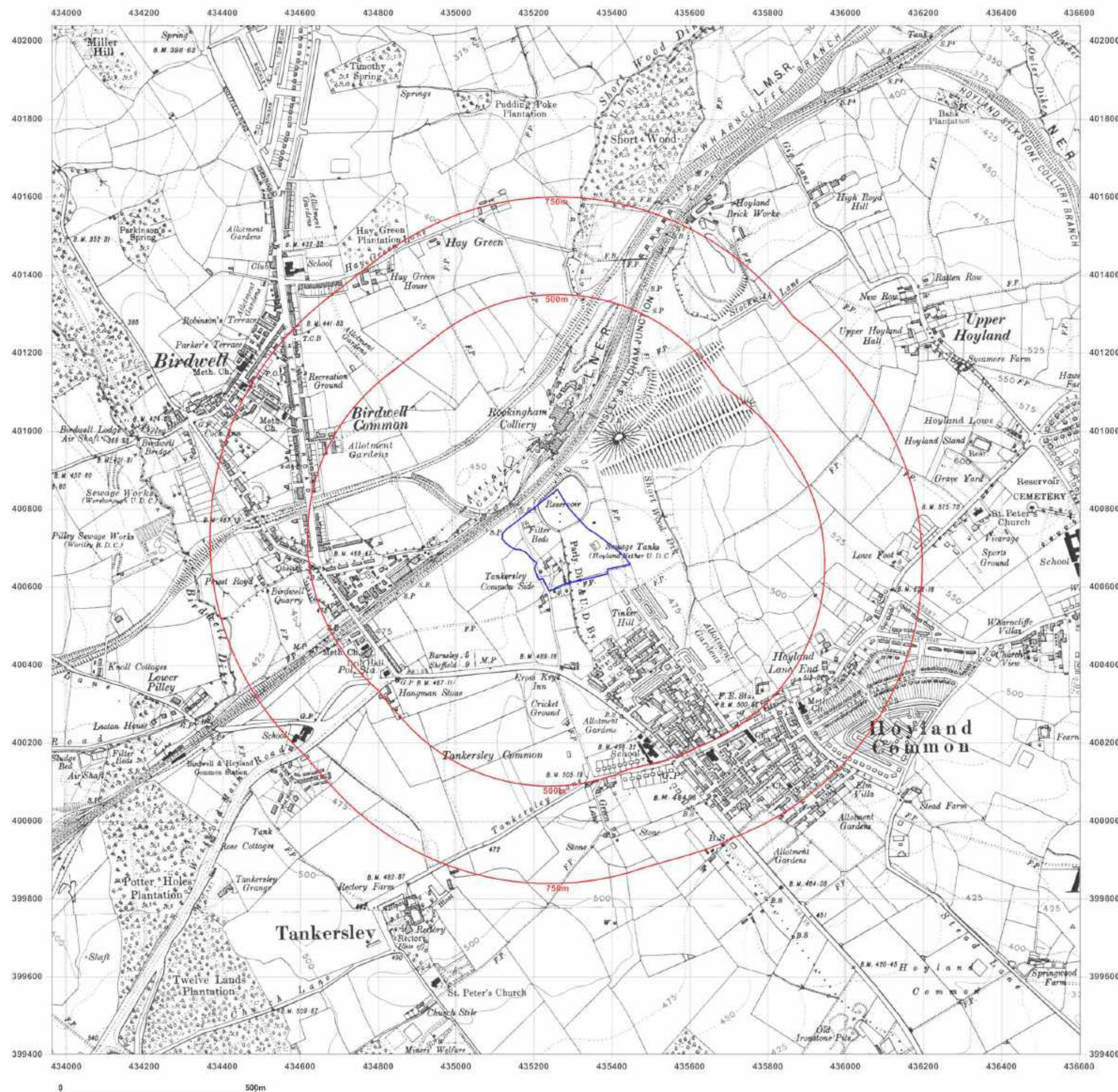


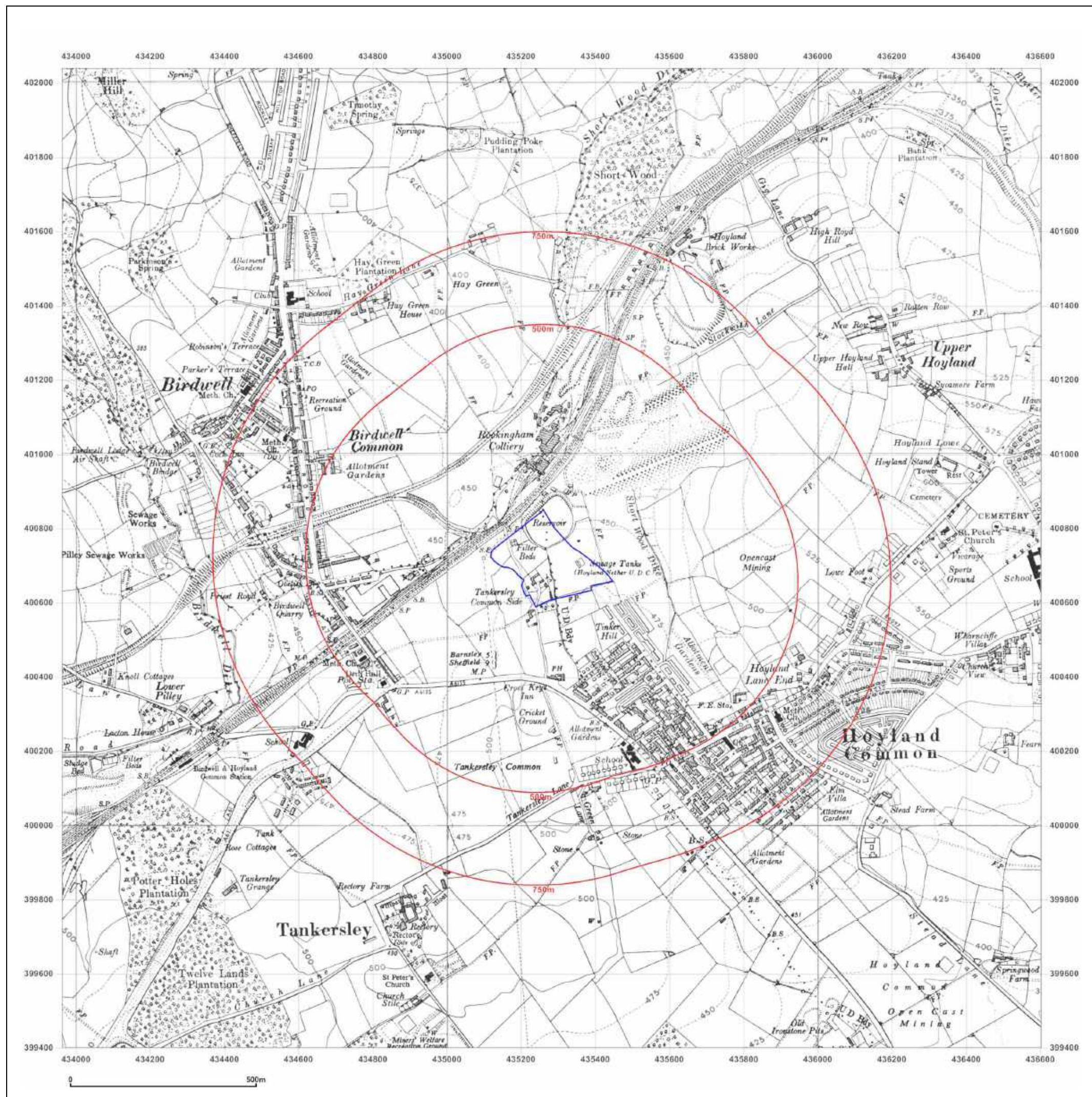
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Site Details:

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Report Ref: CMAPS-JPG-931157-6775-150121HIS
Grid Ref: 435282, 400720

Map Name: Provisional

Map date: 1951-1956

Scale: 1:10,560

Printed at: 1:10,560



Surveyed N/A
Revised 1955
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Edition N/A
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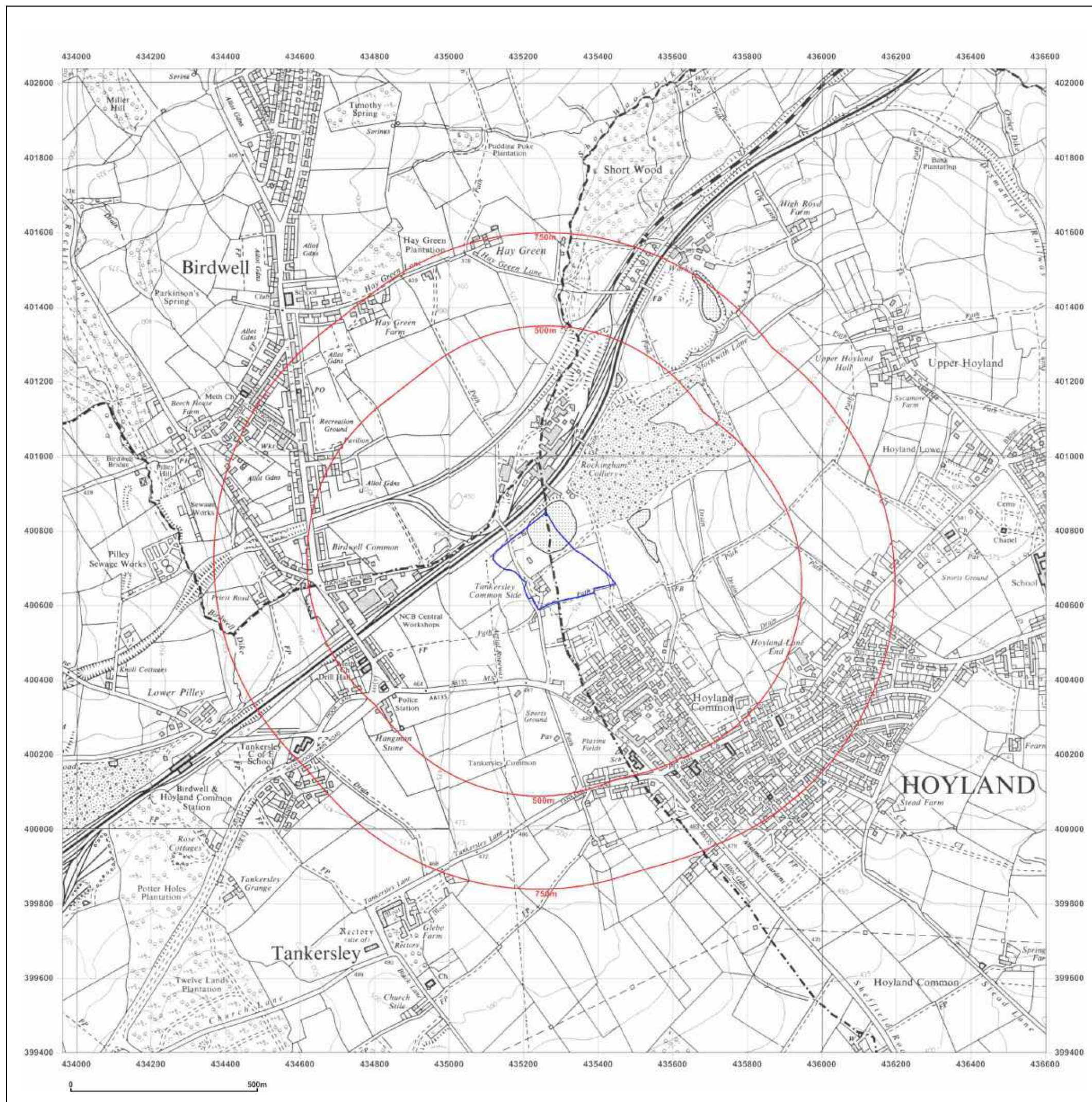


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Site Details:

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Report Ref: CMAPS-JPG-931157-6775-150121HIS
Grid Ref: 435282, 400720

Map Name: Provisional

Map date: 1965-1966

Scale: 1:10,560

Printed at: 1:10,560



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Edition N/A
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Revised 1966
Edition N/A
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Site Details:

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Report Ref: CMAPS-JPG-931157-6775-150121HIS
Grid Ref: 435282, 400720

Map Name: National Grid

Map date: 1977-1980

Scale: 1:10,000

Printed at: 1:10,000



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Revised 1977
Edition N/A
Copyright 1978
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Edition N/A
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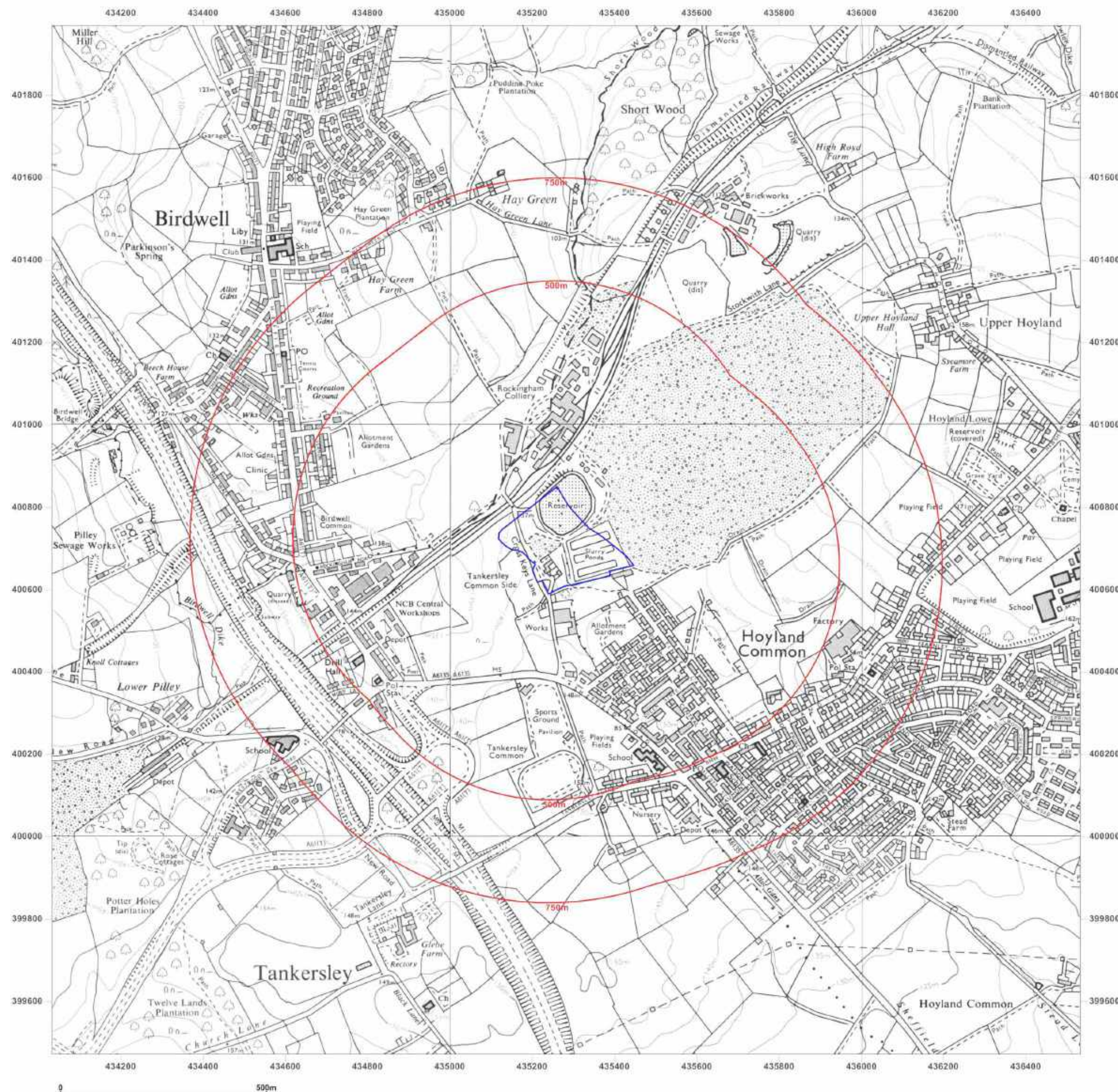


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Site Details:

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Report Ref: CMAPS-JPG-931157-6775-150121HIS
Grid Ref: 435282, 400720

Map Name: National Grid

Map date: 1987-1992

Scale: 1:10,000

Printed at: 1:10,000



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Revised 1992
Edition N/A
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Levelled N/A

Surveyed 1989
Revised 1991
Edition N/A
Copyright 1991
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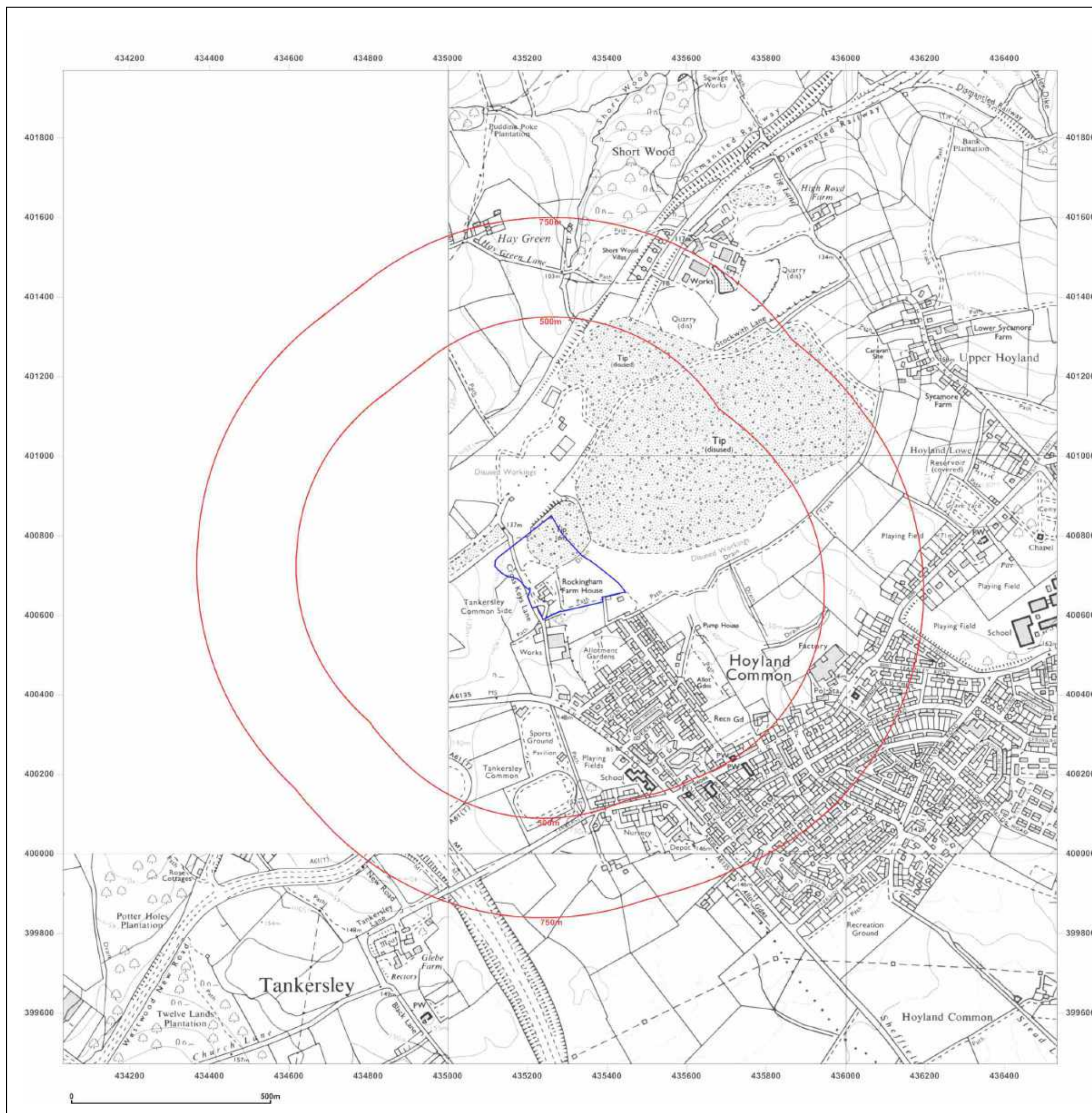


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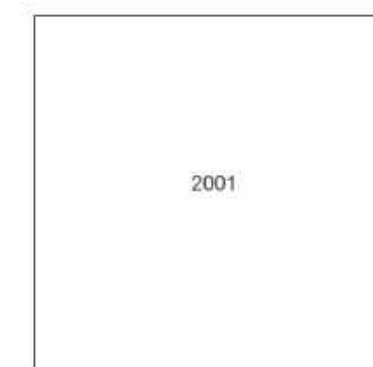
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Grid Ref: 435282, 400720

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000



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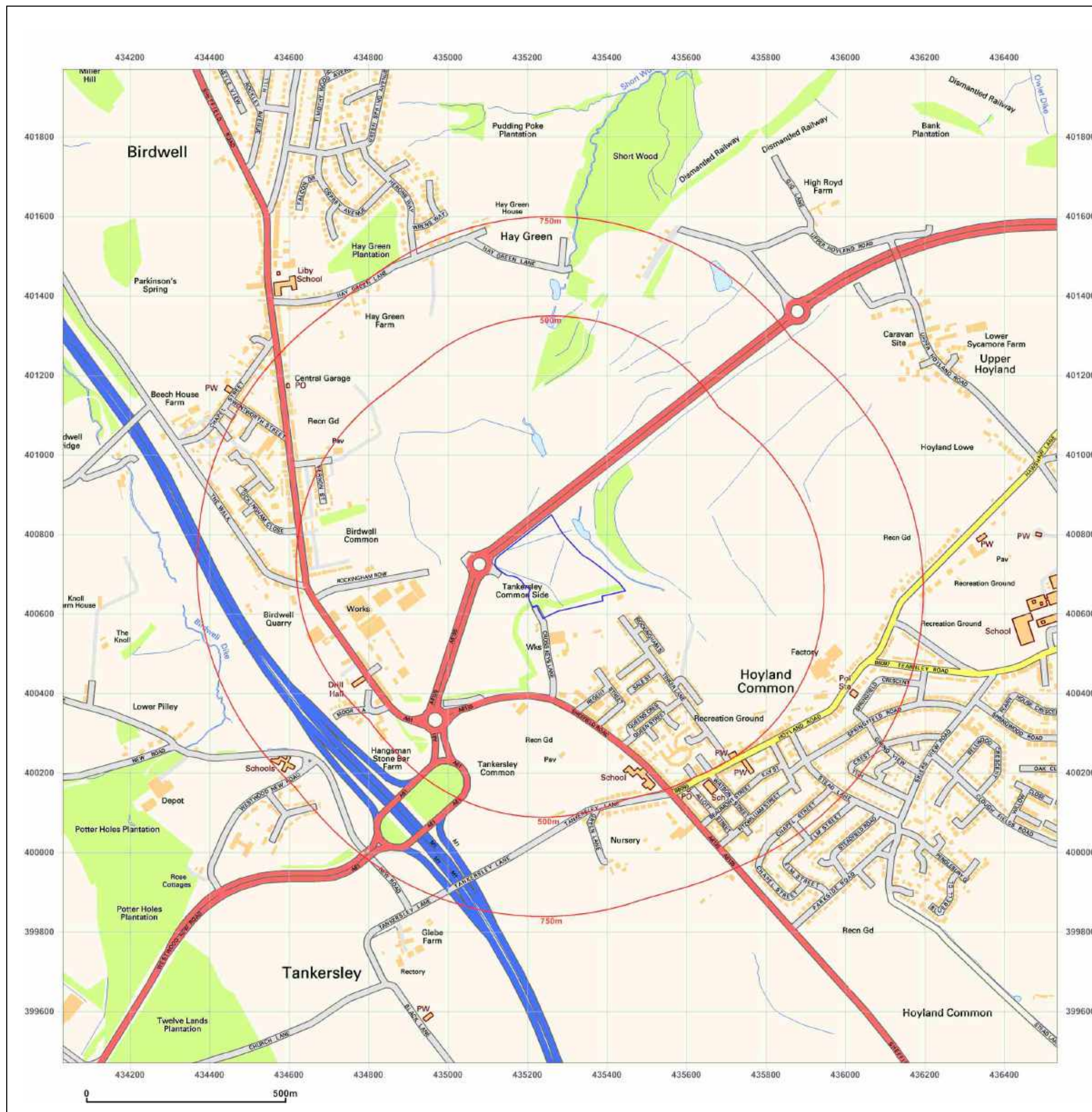


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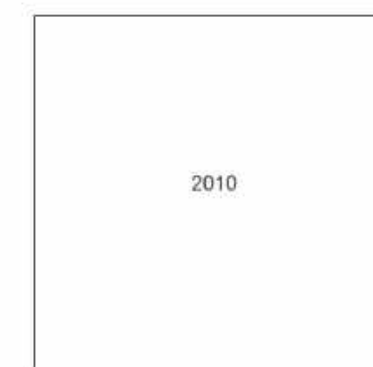
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Grid Ref: 435282, 400720

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



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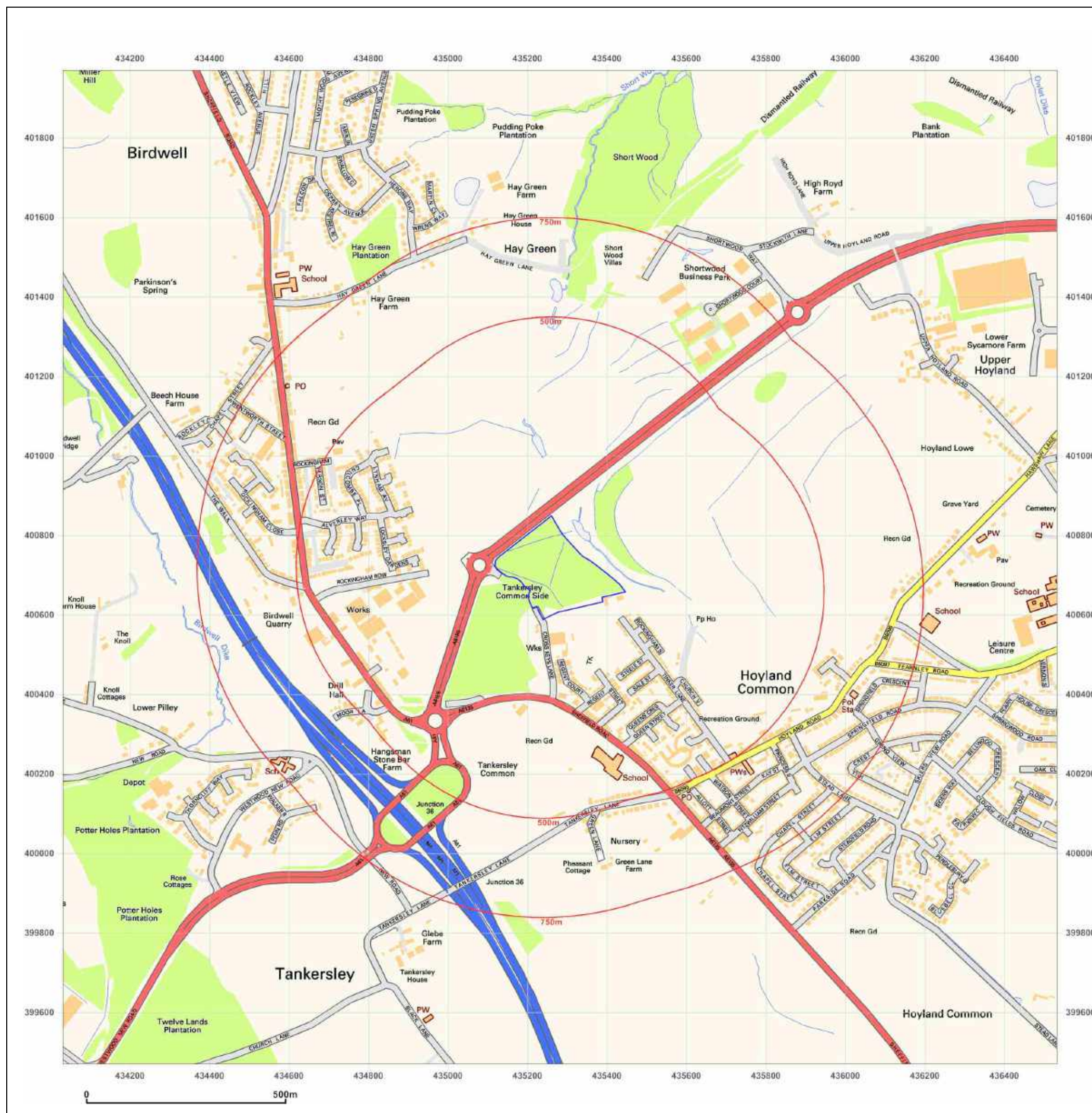


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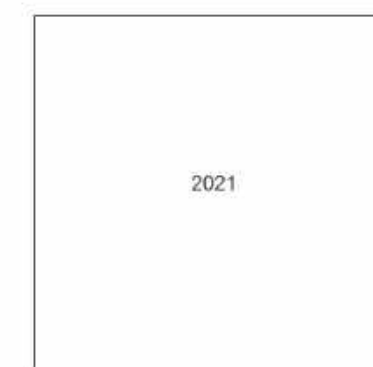
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Grid Ref: 435282, 400720

Map Name: National Grid

Map date: 2021

Scale: 1:10,000

Printed at: 1:10,000



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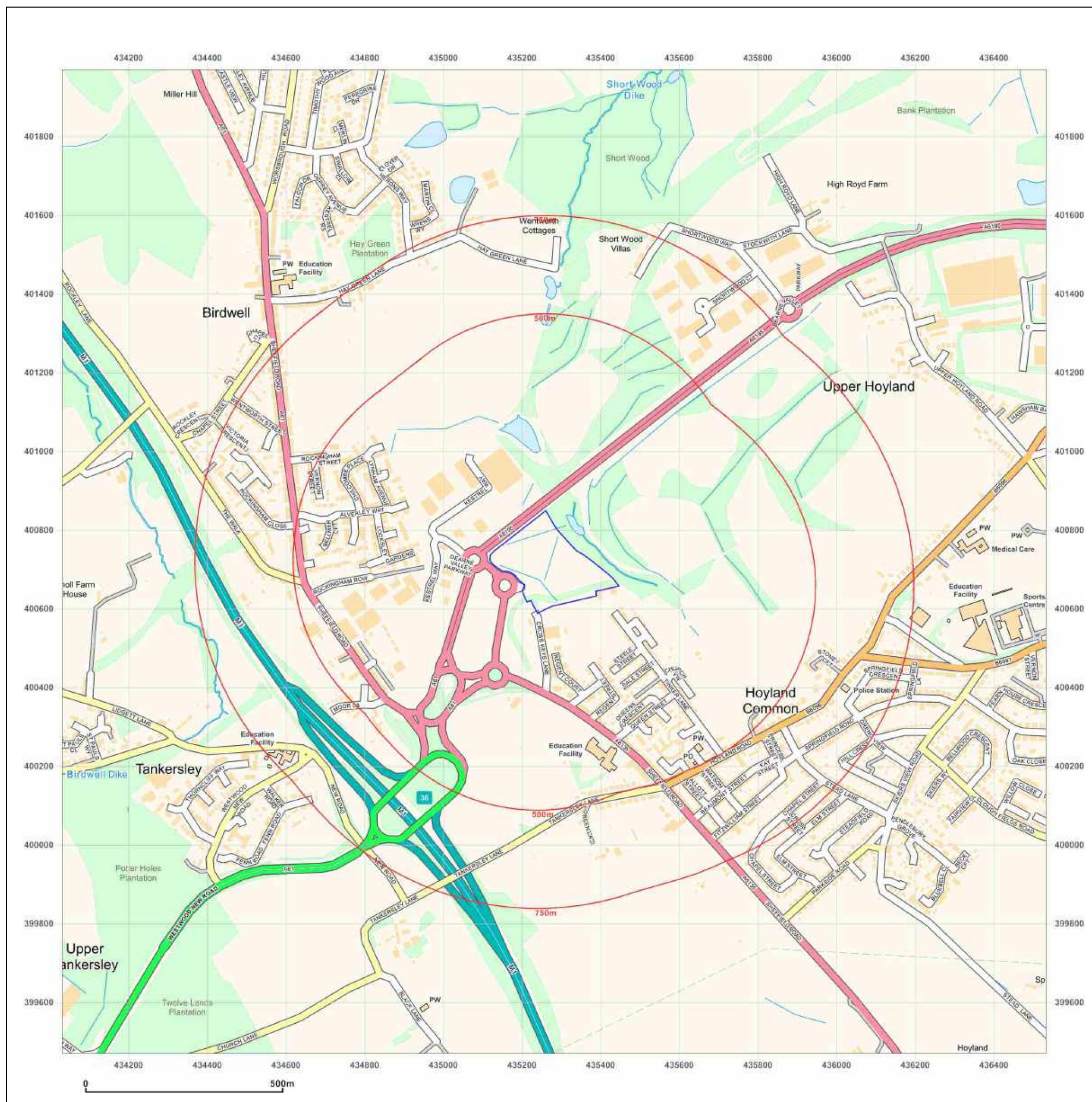


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Appendix D Coal Authority Reports



The Coal
Authority

CON29M

coal mining report

BIRDWELL, PLOT 2, DEARNE VALLEY PARKWAY, SOUTH YORKSHIRE



Known or potential coal mining risks

Past underground coal mining	Page 4
Future underground coal mining	Page 4
Mine entries	Page 5
Past opencast coal mining	Page 5



Further action

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

For more information on our reports please visit
www.groundstability.com



Professional opinion

According to the official mining information records held by the Coal Authority at the time of this search, evidence of, or the potential for, coal mining related features have been identified. In view of the coal mining circumstances we would recommend that any planned or future development should follow detailed technical advice before beginning work on site. Please see **page 3** for further details on **Future development**.

Your reference: **5419**
Our reference: **51002346941001**
Date: **15 January 2021**

Client name:
JPG (LEEDS) LIMITED

If you require any further assistance please
contact our experts on:
0345 762 6848
groundstability@coal.gov.uk

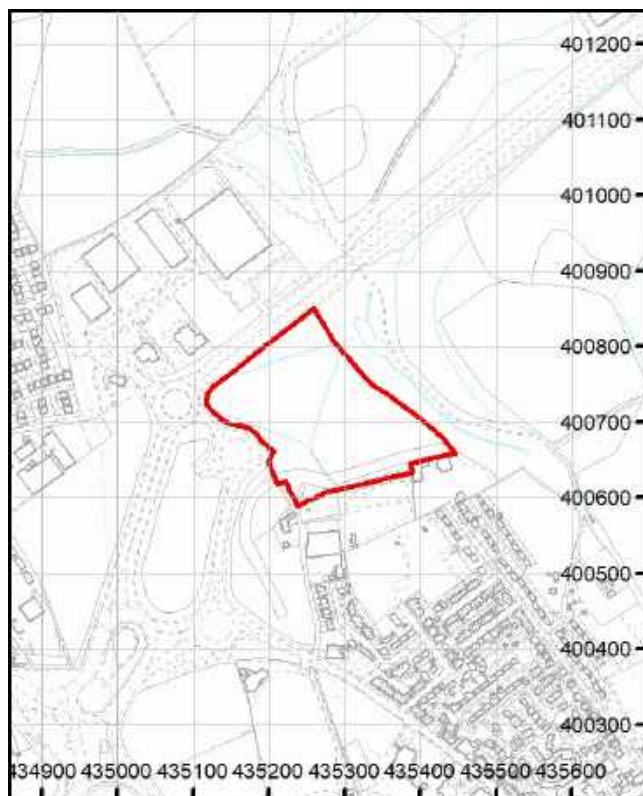


The Law
Society

Enquiry boundary

Key

Approximate position of enquiry boundary shown



We can confirm that the location is
on the coalfield



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



Accessibility

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

Professional opinion



Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed.

If you are looking to develop, or undertake works, within a coal mining development high risk area your Local Authority planning department may require a Coal Mining Risk Assessment to be undertaken by a qualified mining geologist or engineer. Should you require any additional information then please contact the Coal Authority on **0345 762 6848** or email **cmra@coal.gov.uk**.

Detailed findings

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

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1 Past underground coal mining

The property is in a surface area that could be affected by underground mining in 8 seams of coal at 80m to 340m depth, and last worked in 1953.

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

In addition the property is in an area where the Coal Authority believes there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered, particularly prior to any site works or future development activity, as ground movement could still be a risk. Your attention is drawn to the Professional opinion sections of the report.

2 Present underground coal mining

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

3 Future underground coal mining

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

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

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

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

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

4 Mine entries

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

This information is based on the information that the Coal Authority has at the time of this enquiry.

Based on the Coal Authority's knowledge of the mining circumstances at the time of this enquiry, there may be unrecorded mine entries in the local area that do not appear on Coal Authority records.

5 Coal mining geology

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

6 Past opencast coal mining

The property is within the boundary of the Rockingham opencast site from which coal has been removed by opencast methods.

The property is within the boundary of an opencast site from which coal has been removed by opencast methods.

The property is within the boundary of an opencast site from which coal has been removed by opencast methods.

7 Present opencast coal mining

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

8 Future opencast coal mining

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

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

9 Coal mining subsidence

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

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

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

10 Mine gas

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

11 Hazards related to coal mining

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

12 Withdrawal of support

The property is not in an area where a notice to withdraw support has been given.

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

13 Working facilities order

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

14 Payments to owners of former copyhold land

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

Statutory cover



Coal mining subsidence

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

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

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

www.gov.uk/government/publications/coal-mining-subsidence-damage-notice-form



Coal mining hazards

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

Glossary



Key terms

adit - horizontal or sloped entrance to a mine

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

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

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

coal seams - bed of coal of varying thickness

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

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

mine entries - collective name for shafts and adits

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

shaft - vertical entry into a mine

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

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

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

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

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

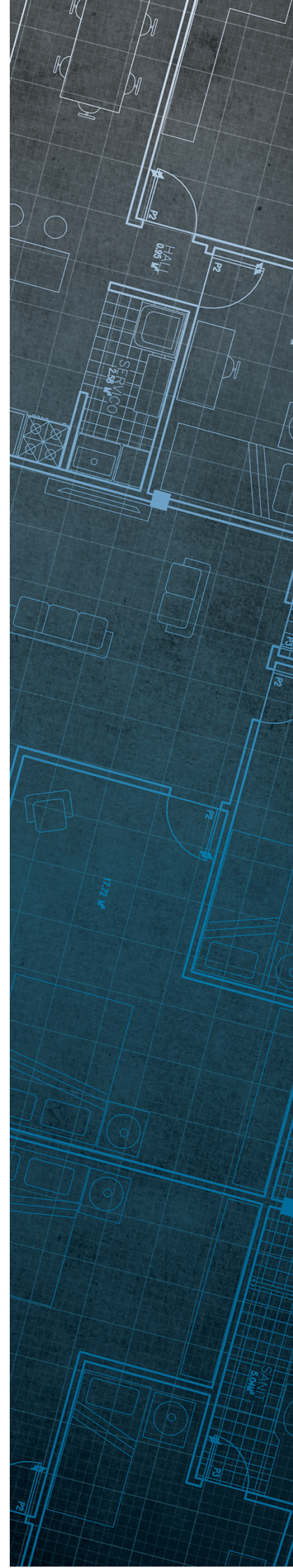


The Coal
Authority

Consultants Coal Mining Report

Birdwell, Plot 2, Dearne Valley
Parkway
South Yorkshire

Date of enquiry:	15 January 2021
Date enquiry received:	15 January 2021
Issue date:	15 January 2021
Our reference:	51002346941002
Your reference:	5419



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

JPG (LEEDS) LIMITED

Enquiry address

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Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
ROCKINGHAM	LIDGETT	Coal	64RA	75	Beneath Property	3.8	North-East	66	1942
ROCKINGHAM	FLOCKTON THICK	Coal	64RD	141	Beneath Property	2.9	North-East	104	1951
unnamed	TOP FENTON	Coal	64RG	185	North-West	3.4	North-East	109	1931
unnamed	TOP FENTON	Coal	64RH	191	Beneath Property	3.5	North-East	109	1920
ROCKINGHAM	LOW FENTON	Coal	64RK	195	Beneath Property	3.4	North-East	137	1953
unnamed	PARKGATE	Coal	64RQ	206	North-West	3.7	North-East	147	1890
unnamed	PARKGATE	Coal	64PM	211	Beneath Property	2.3	East	152	1888
unnamed	MIDDLETON MAIN	Coal	64RT	243	Beneath Property	3.7	North-East	102	1904
unnamed	MIDDLETON MAIN	Coal	6IH4	249	North	4.6	North-East	94	1918
UNAMED	SILKSTONE	Coal	64SB	290	Beneath Property	3.5	North-East	180	1918
unnamed	SILKSTONE	Coal	64SI	297	North-West	3.9	North-East	160	1909
unnamed	SILKSTONE	Coal	6IHB	301	North-West	4.7	North-East	147	1903
ROCKINGHAM	SILKSTONE	Coal	6IHA	309	North	3.9	North-East	180	1900
unnamed	WHINMOOR	Coal	64RY	338	South-West	3.8	East	91	1947

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

NE852	17828	NE274
NE855	NE853	NE856
12953	8805	NE851

Our records show we have more plans than those shown above which could affect the enquiry boundary.

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
SWALLOW WOOD	Coal	Yes	Within	N/A	9

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

Please refer to the "Summary of findings" map (on separate sheet) for details of any opencast areas within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

Distance to site investigation (m)	Direction
36.8	North-West

See Section 4 for further information.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

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

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

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

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

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

Withdrawal of support notices

The property is not in an area where a notice to withdraw support has been given.

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

Payments to owners of former copyhold land

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

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

Site investigations

The site is within an area of previous interest. It is close to where the Coal Authority has received information relating to past site investigations.

The site requires further investigation and may influence how you approach your risk assessment.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

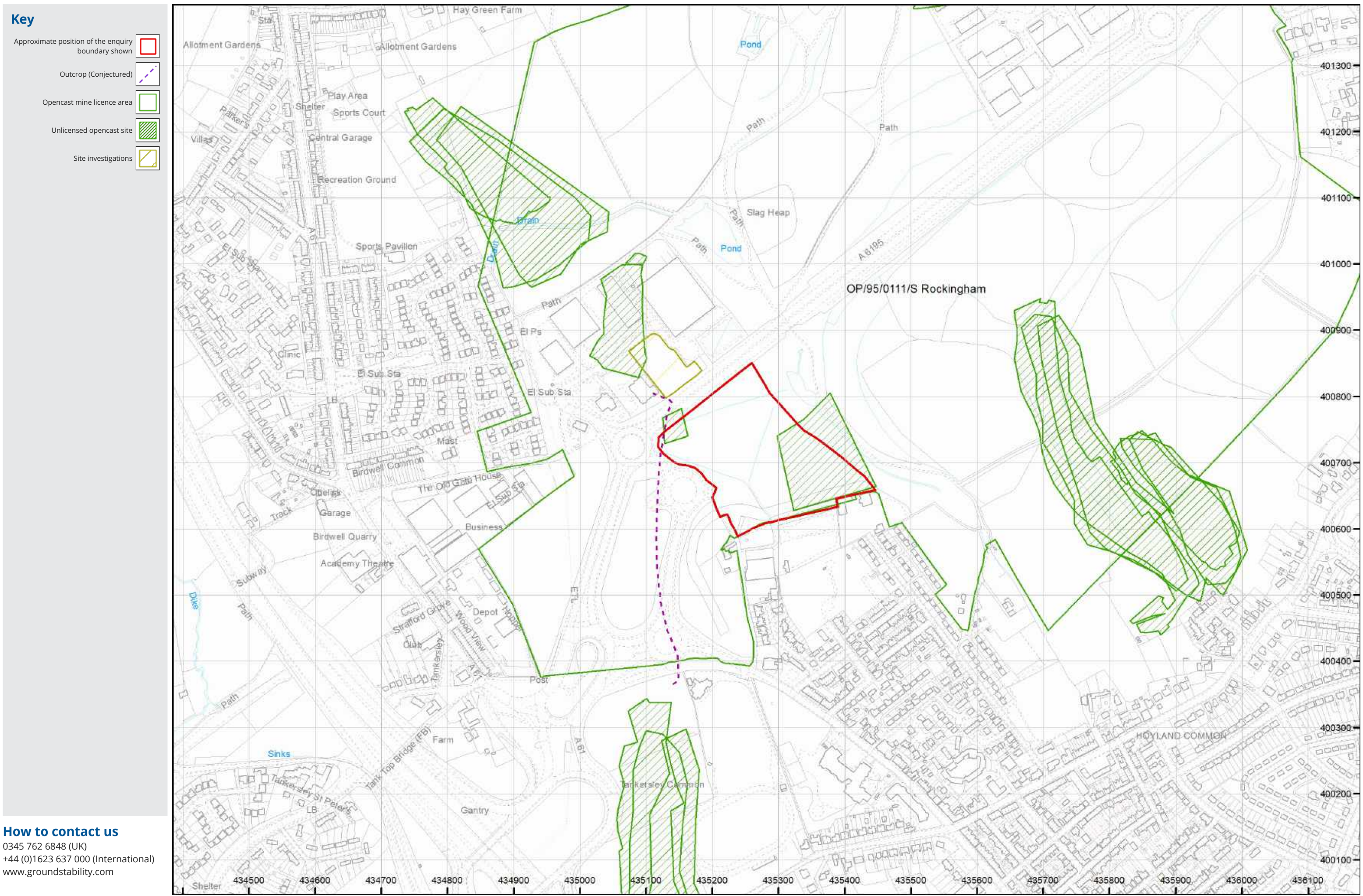
Withdrawal of support notices

Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land

Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

The map highlights any specific surface or subsurface features within or near to the boundary of the site.





Appendix E Notes on Limitations



General

JPG (Leeds) Ltd have prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from JPG (Leeds) Ltd; a charge may be levied against such approval.

JPG (Leeds) Ltd accepts no responsibility or liability for:

- a) the consequences of this document being used for any purpose or project other than for which it was commissioned, and
- b) this document to any third party with whom an agreement has not been executed.

Phase I Desk Study Reports

The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources (including the Client), together with (where appropriate) a brief walk over inspection of the site and meetings and discussions with relevant authorities and other interested parties. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, JPG (Leeds) Ltd reserves the right to review such information and, if warranted, to modify the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Phase II Geo-Environmental Investigations

The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, geotechnical characteristics and ground and groundwater conditions to allow a reasonable assessment of the environmental risks together with engineering and development implications. The objectives of the investigation have been Ltd to establishing the risks associated with potential human targets, building materials, the environment (including adjacent land), and to surface and groundwater.

The amount of exploratory work and chemical testing undertaken has necessarily been restricted by the short timescale available, and the locations of exploratory holes have been restricted to the areas unoccupied by the building(s) on the site and by buried services. A more comprehensive investigation may be required if the site is to be redeveloped as, in addition to risk assessment, a number of important engineering and environmental issues may need to be resolved.

For these reasons if costs have been included in relation to site remediation these must be considered as tentative only and must, in any event, be confirmed by a qualified quantity surveyor.

The exploratory holes undertaken, which investigate only a small volume of the ground in relation to the size of the site can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site of each of the exploratory holes. There may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.

The comments made on groundwater conditions are based on observations made at the time that site work was carried out. It should be noted that groundwater levels will vary owing to seasonal, tidal and weather related effects.

The number of sampling points and the methods of sampling and testing do not preclude the existence of localised "hotspots" of contamination where concentrations may be significantly higher than those actually encountered.

The risk assessment and opinions provided, inter alia, take into consideration currently available guidance values relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.

The scope of the investigation was selected on the basis of the specific development proposed by the Client and may be inappropriate to another form of development or scheme.

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