



**Fox Aluminium Ltd**  
**Wentworth Way**  
**Tankersley**  
**Coal Mining Risk Assessment**

**ECL.8822.R06.001 Rev: -**

**July 2021**

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**Prepared for**  
**Fox Aluminium Ltd**  
**Wentworth Way**  
**Tankersley**  
**Barnsley**  
**S75 3DH**

**Prepared by**  
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## **Assessment Summary**

|                                 |                                                          |
|---------------------------------|----------------------------------------------------------|
| <b>Assessment Result</b>        | <b>MEDIUM TO HIGH RISK</b>                               |
| <b>Recommended Further Work</b> | <b>INTRUSIVE SITE INVESTGATION AND FOUNDATION DESIGN</b> |

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## 1.0 INTRODUCTION

- 1.0.1 Egniol Consulting Limited (Egniol) of Warren Park in Milton Keynes have been appointed by Fox Aluminium Ltd to carry out a Coal Mining Risk Assessment Report (CMRA) in relation to the proposed extensions at the existing Fox Aluminium Ltd warehouse off Wentworth Way.
- 1.0.2 Egniol have been commissioned to prepare a CMRA for the proposed extensions, to provide the Local Planning Authority and the Coal Authority (CA) with information with regards to coal mining and as assessment of its impact on land stability.
- 1.0.3 The CA have objected to the proposals due to fundamental concerns with regards to the coal mining risk at the site. The letter dated 14 May 2021 from Melanie Lindsley of the CA, in relation to planning reference 2021/0617 states that a CMRA is required to support the planning application.
- 1.0.4 The site has not been subject of a Phase I Desk Study Report or a subsequent Phase II Ground Investigation.

## 1.1 Site Location

- 1.1.1 The site is located to the north east of Wentworth Way in Tankersley. The site is centred at approximate co-ordinates 433992, 399669. The site has an approximate elevation of 160m AOD.

**Figure 1 – Site Location Plan**

Base Plan – Google Earth



## 1.2 Proposed Development

- 1.2.1 The proposed development comprises a two-storey extension joined to the eastern side of the existing building as shown in Figure 2 below, in an extract of the aba Architecture and Interiors Location and Site Block Plan referenced 2335.06/- dated April 2021.

**Figure 2 – Proposed Site Plan**

Base Plan – aba Site Block Plan



### 1.3 Scope of Coal Mining Risk Assessment

- 1.3.1 The aim of this CMRA is to:

- Provide a desk-based review of available information relating to coal mining issues relevant to the application site.
- Use the information available to identify and assess the risks to the proposed development from the coal mining legacy, including the cumulative impact of any identified issues.
- Set out appropriate mitigation measures to address the identified issues affecting the site including recommendations for intrusive investigations and possible remedial measures if required.
- Demonstrate to the Local Planning Authority and Coal Authority that the application site is or can be made safe and stable to meet requirements of the national planning policy relating to development on unstable land.

### 1.4 Sources of Information

- 1.4.1 The following sources of information have been used as part of this CMRA:

- The CA document: Risk Based Approach to Development Management – Guidance for Developers, Version 4, 2017.

- Historic Ordnance Survey mapping obtained from Groundsure (Appendix 1).
- British Geological Survey (BGS) mapping Sheet 87 'Barnsley'.
- BGS borehole records (available to view online via the GeoIndex website)
- Coal Authority Coal Mining Consultants Report (CMCR) for the site (Referenced GS-7937209 dated 9<sup>th</sup> June 2021) (Appendix 2).
- Coal Authority abandonment Plans (Appendix 3)
- Coal Authority Mine Gas Emission Report (Dated 14 June 2021) (Appendix 4).

## **1.5 Development Advice**

- 1.5.1 The CMCR has confirmed that the site is within an area of historical coal mining activity and there are potential risks to the proposed development. This report considers the risks and provides recommendations for further works as considered to be required.

## 2.0 ASSESSMENT OF SITE SPECIFIC RISKS

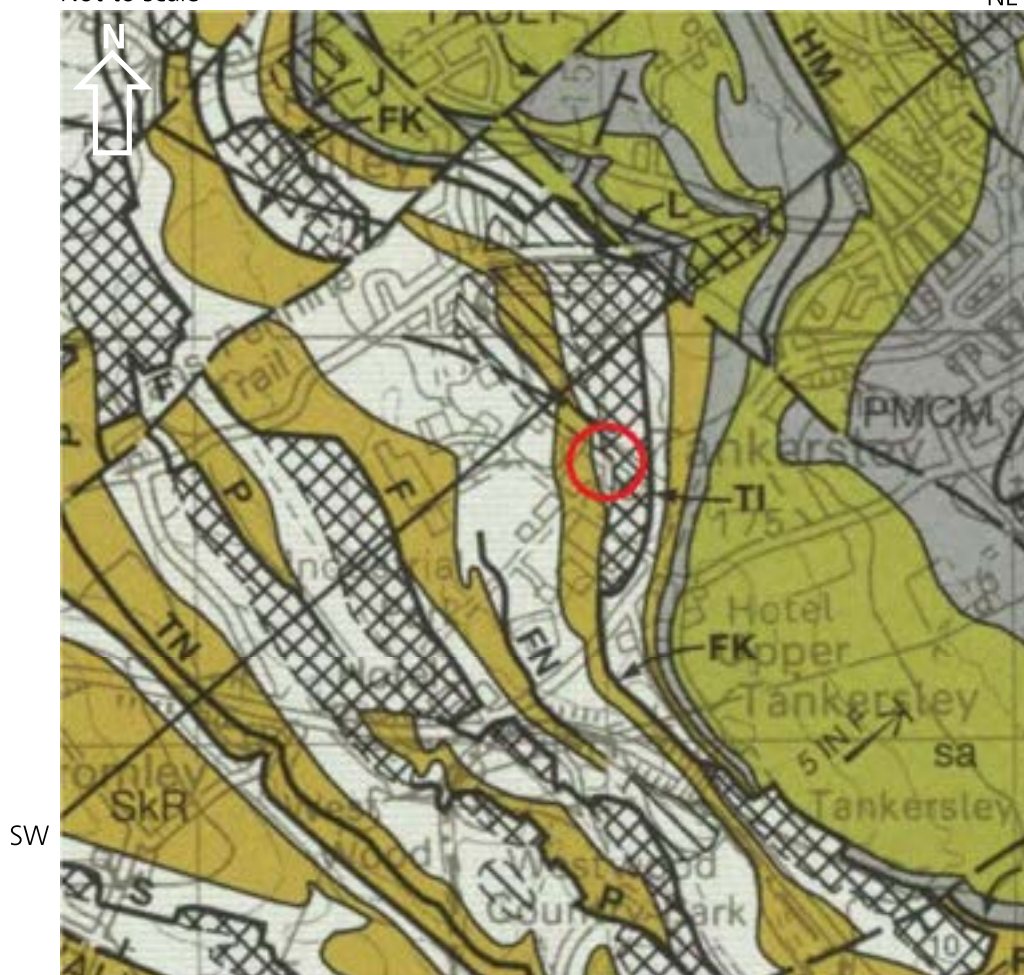
### 2.1 Geology

- 2.1.1 The 1:50,000 BGS map, Sheet 87 'Barnsley' shows the site is underlain by the solid geology of the Pennine Lower Coal Measures. The dip direction is to the north east and is shown to be 5 in 1. The Tankersley Fault is shown beneath or very close to the site, the downthrow side of the fault is to the north east. The Tankersley (Musselband) Ironstone recorded to outcrop to the north east of the site.
- 2.1.2 The site area and the area to the immediate north and east is recorded as Made Ground: Mainly colliery spoil and landfill and Infilled Ground: mainly restored open cast coal sites, pits and quarries.
- 2.1.3 Figures 3 to 6 below show extracts of Sheet 87 'Barnsley' (geology mapping, cross section and keys) with the red circle showing the approximate site location. The cross section shows the fault location and dip direction of the bedrock and is orientated south west to north east.

**Figure 3 – BGS Sheet 87 'Barnsley' Mapping Extract**

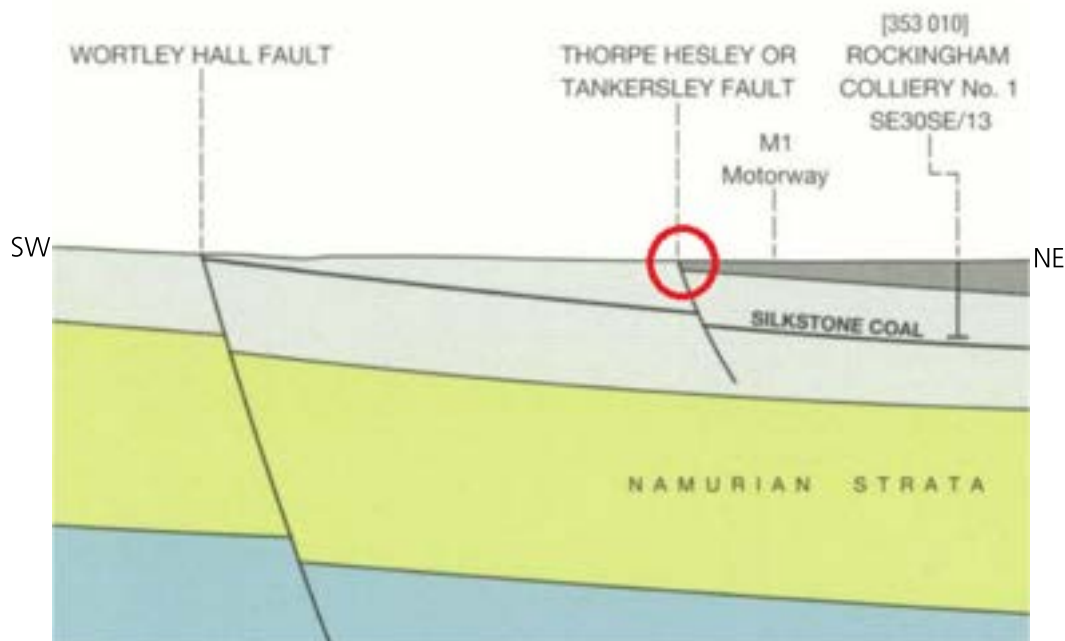
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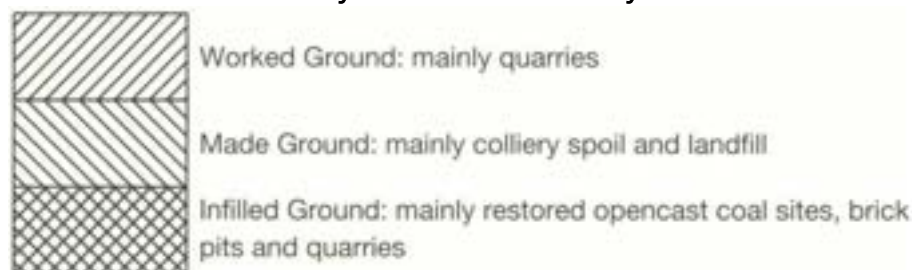


**Figure 4 – BGS Sheet 87 'Barnsley' Cross Section Extract**

Not to scale



**Figure 5 – BGS Sheet 87 'Barnsley' Artificial Ground Key**



**Figure 6 – BGS Sheet 87 'Barnsley' Bedrock Geology Key Extract**



- 2.1.4 The geological mapping shows that coal seams outcrop to the north east and south west of the site with the closest being the Flockton thick Coal seam. Outcrops of the Flockton Thin (Top Deep Soft) Coal are present to the south west and may dip beneath the site at shallow depth. The Silkstone Four Foot Coal is recorded beneath the site as shown on the cross section in Figure 4, with a number of seams present above and potentially beneath the site at shallow depths.
- 2.1.5 A review of the BGS borehole records online shows several boreholes to the north west of the site, these are however confidential and could not be accessed. A single borehole is available to view on the BGS GeoIndex website, the borehole is located

to the north west of the site within the area of worked ground at grid reference SK 339 999. The borehole records 6ft of outset (pit fill) overlying earth and clay to 10ft (3.05m) bgl. The Flockton Thin Seam is recorded at 28.3ft (8.63m) bgl and is 4.3ft (1.31m) thick, with the High Fenton Coal at 97.9ft (29.84m) bgl recorded at 5.2ft (1.58m) thick and the Low Fenton Coal at 107.3ft (32.7m) bgl recorded at 5.6ft (1.71m) thick. Further seams include the Parkgate Seam at 182.2ft (55.5m). The Silkstone Seam (including the Thornccliffe Thin Coal and Silkstone Seam) and Whinmoor Seam, all recorded at depths of greater than 250ft (76.2m) bgl.

## 2.2 Outcrops

- 2.2.1 The CMCR indicates that the Flockton Thick seam outcrop is within the site boundary, on a bearing of 345.

## 2.3 Coal Mine Geology

- 2.3.1 The CMRA does not have a record of any fissures, faults or breaklines within the site boundary.

## 2.4 Site History

- 2.4.1 Historical mapping for the site were obtained from Groundsure with the aim of identify historical land uses and locations of interest in relation to historic coal mining activities on or close to the site. The maps are included within Appendix 1 of this report, with Table 1 below summarising key features identified on the mapping.

**Table 1 – Summary of Key Features Identified on Historical Mapping**

| Mapping date | On Site                                                                                                                         | Off Site                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1855         | The site is part of a larger field, with a boundary present to the far east, which may be formed by a stream or drainage ditch. | A railway line is located to the north west, with Wharnccliffe Silkstone Colliery immediately beyond approximately 150m from the site boundary. A wooded area denoted a 'Long Spring' is located approximately 100m west of the site, a circular feature is located along the edge 100m from the site. Upper Tankersley is located approximately 200m south of the site. Potter Holes Plantation is approximately 100m east and north east to the site. A circular feature is located along the edge of this area 200m from the site boundary. Ironstone pits are mapped beyond the railway line to the south west of the site.                                                     |
| 1891-1894    | No changes noted on site.                                                                                                       | An air shaft is recorded approximately 10m to the east of the site boundary, with a second air shaft located 200m to the south. The two circular features noted previously are no longer mapped. A pumping shaft and depression are located approximately 200m north east of the site. Wharnccliffe Silkstone Colliery has expanded further, with a number of railway sidings present to the north west and additional buildings, Coke Covens etc. A shaft is shown within a building approximately 150m north west of the site, with two further shafts indicated approximately 200m to the north west. Tankersley Colliery is mapped approximately 600m to the south of the site. |

| Mapping date        | On Site                                                                                                                                                                                                                                                                                  | Off Site                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1903-1905           | No changes noted on site.                                                                                                                                                                                                                                                                | A railway siding is within 50m of the north western site boundary, with building and gasometers beyond. A subway is located 125m to the north going under a railway line. Wharnccliffe Silkstone Colliery has expanded further to include the features mentioned, and to the north west. A brick works and tramway are also shown.                                                                                                                                                                                                                          |
| 1929-1931           | A building is very close to and possibly encroaching into the site along the north western boundary, the building is associated with the adjacent Wharnccliffe Silkstone Colliery. A new boundary crosses the site in a south west to north east orientation, in the north western area. | Wharnccliffe Silkstone Colliery has expanded further and is now up to the north western edge of the site. A road to the south east has been widened.                                                                                                                                                                                                                                                                                                                                                                                                        |
| 1938-1966           | No changes noted on site.                                                                                                                                                                                                                                                                | Wharnccliffe Silkstone Colliery has expanded further. Ruins are recorded within the colliery north of the site. An area of ground approximately 100m north east appears to be excavated or worked, with railway sidings going into it. The air shaft/shaft located 10m east of the site is no longer shown on the 1965 map.                                                                                                                                                                                                                                 |
| 1970 (eastern half) | No changes noted on site.                                                                                                                                                                                                                                                                | An area to the north, located within 100m of the site is recorded as a Tip (disused). Westwood New Road is mapped 150m south east of the site.                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1977-1981           | The building along the north western boundary is no longer mapped. The site remains unchanged.                                                                                                                                                                                           | The colliery to the north west and railway line is no longer present. A large commercial building is located immediately north west of the site, a smaller one is present immediately south west and further smaller commercial type buildings beyond to the north west. Wentworth way is located to the south west. The discussed Tip to the north is still mapped and is within 50m of the site. Potter Holes Plantation is also shown as a disused tip to the north. Tankersley Colliery to the south is no longer present, disused shafts are recorded. |
| 1987-1993           | The site contains a commercial building in the north west covering approximately two thirds of the site, a tank is shown centrally along the northern edge in the location of the proposed extension.                                                                                    | Additional commercial type buildings are mapped to the south and east of the site. Two tanks are recorded to the north west of the site. The area of land immediately to the north is denoted as 'Disused Workings'.                                                                                                                                                                                                                                                                                                                                        |
| 2001-2021           | No changes noted on site.                                                                                                                                                                                                                                                                | No significant changes noted off site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## 2.5 Coal Mining

2.5.1 The CMCRR included within Appendix 2 confirms that the site is within a zone of influence from recorded past underground mining as summarised in Table 2 below;

**Table 2 – Summary of Past Underground Mining within 100m of ground level**

| Colliery     | Seam         | Depth (m) | Extraction thickness (m) |
|--------------|--------------|-----------|--------------------------|
| Wharnccliffe | Top Fenton   | 53        | 1.40                     |
| Unnamed      | Low Fenton   | 61        | 1.57                     |
| Rockingham   | Low Fenton   | 62        | 1.52                     |
| Unnamed      | Parkgate     | 79        | 1.60                     |
| Tankersley   | Parkgate     | 84        | 1.60                     |
| Tankersley   | Thornccliffe | 97        | 68                       |

2.5.2 The Rockingham Colliery is not indicated on the historic mapping obtained. The grid references indicate that it is located approximately 600m south east of the site, however, is not shown the mapping.

2.5.3 The CMCR indicates that there are probably unrecorded shallow workings beneath the site.

## 2.6 Mine Entries

2.6.1 A single mine entry is recorded within the CMCR report, the entry type is shaft and the grid reference is 434054, 399654. The grid reference refers to the air shaft recorded on the historic mapping approximately 10m east of the site.

## 2.7 Opencast Mines

2.7.1 The site is recorded to be within an area of unlicensed opencast mining sites. The area is shown on the Summary of Findings map included within Appendix 2 along with the CMCR.

## 2.8 Coal Authority Managed Tips

2.8.1 There are no CA managed tips recorded within 500m of the site.

## 2.9 Abandonment Plans

2.9.1 The CMCR indicates abandonment mine plans are available for the site, Egniol have obtained the most relevant plans within 75m of the surface as part of the searches, these are included within Appendix 3 of this report.

2.9.2 The abandonment plans obtained are for the Top Fenton Seam and Low Fenton Seams, and are the only plans available within 75m of the surface indicating the shallow seams have either not been worked or any workings are unrecorded.

2.9.3 The abandonment plan for the Top Fenton Seam shows extensive workings of this seam at an approximate depth of 72 yards (66m) at its shallowest depth noted on the plan as surface drift 43/3399/731675. The typical seam thickness is 61 inches (1.55m).

## 2.10 Mine Gas

2.10.1 There is one record for a mine gas incident/record located 180.3m west of the site. The CACR indicated that the site is within an area of previous interest. It is close to where the coal authority has previously undertaken investigation and subsequently remediation to mitigate the effects of mine or ground gas emissions following specific reported hazards.

- 2.10.2 The CACR indicates that the site requires further investigations and it is recommended that a Coal Authority Mine Gas Emission Report (CAMGER) is obtained to provide more detail of the hazard.
- 2.10.3 Egniol have obtained the CAMGER (Appendix 4). The report has confirmed that Wharnccliffe Silkstone No 4 Shaft is located 180.3m west of the site and comprises a large vent fitted to the void. The vent was installed upon closure of the colliery to allow the safe discharge of mine gas to the atmosphere.
- 2.10.4 The results of the quarterly monitoring indicate less than 1% methane, with most readings below 1%. Fluctuating levels of carbon dioxide have been recorded up to 10%, with two peaks corresponding with lower atmospheric pressure events, although this isn't consistent with other low atmospheric pressure events recorded. The highest peak reading of 10% for carbon dioxide during February 2017 corresponds with the lowest reading for oxygen which of less than 10%. The records provided for oxygen concentrations are depleted for the duration of the monitoring from 2015 to 2021.

### 3.0 IDENTIFICATION AND ASSESSMENT COAL MINING THAT MAY AFFECT THE PROPOSED DEVELOPMENT

3.0.1 Table 3 below summarises the potential risks associated with coal mining based on the searches completed as detailed within this report.

**Table 3 – Coal Mining within Influence and Risk**

| Coal Mining Feature                                          | Risk Present |    | Risk Assessment                                                                                                                                             |             |
|--------------------------------------------------------------|--------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
|                                                              | Yes          | No | Comment                                                                                                                                                     | Rating      |
| Underground mining recorded at shallow depth (less than 30m) | ✓            |    | None recorded. Seams present so risk of unrecorded mining at depths of less than 30m.                                                                       | Medium Risk |
| Underground coal mining (probable at shallow depths)         | ✓            |    | Possibility of unrecorded mining of shallow coal seams. Records show the Top and Low Fenton Seams have been mined locally and potentially beneath the site. | Medium Risk |
| Mine entries (shafts and adits)                              |              | ✓  | None within the site boundary. Closest is 10m east of the site, but at least 50m from the proposed area of the extension.                                   | Medium risk |
| Coal mining geology (fissures)                               |              | ✓  | Non recorded                                                                                                                                                | Low risk    |
| Record of past mine gas emissions                            | ✓            |    | Mine gas emissions records off site, potential for mine gases beneath the site if a pathway exists. Gas levels recorded are low.                            | Medium Risk |
| Recorded coal mining surface hazard                          | ✓            |    | Potential for unrecorded opencast mining, or unrecorded shafts.                                                                                             | High Risk   |
| Surface mining (opencast workings)                           | ✓            |    | Recorded as an unlicensed opencast area, however no indication of workings shown on historic mapping. Potentially worked prior to mapping available.        | High Risk   |

## **4.0 PROPOSED MITIGATION STRATEGY**

### **4.1 Site Investigation**

- 4.1.1 Due to the potential of unrecorded shallow mining, and the indication of past opencast mining beneath the site, along with the nearby shaft and potential for unrecorded shafts, an intrusive site investigation will be required in the area of the proposed extension. It is recommended that 4No. rotary boreholes are carried out to target depths of 35m to confirm the absence of any mine workings, to include shallow sampling and testing for foundation design information. In addition, the consideration of mine gas emissions may be required if any shallow workings (30m or less) are encountered.
- 4.1.2 Due to difficulties in identifying coal gas hazards, it may be necessary to consider completing a gas risk assessment for the site. This may recommend basic gas protection measures within the foundation design, which are resistant to permanent gases (carbon dioxide, methane, carbon monoxide).
- 4.1.3 The occurrence of unrecorded mine entries across the site can't be ruled out or discounted, and in area of the proposed extension, a watching brief should be maintained throughout the site works to identify this risk. All site operatives should be made aware of the potential risks.

### **4.2 Coal Authority Permit**

- 4.2.1 For any intrusive activities, including site investigation boreholes and any subsequent treatment of coal mine workings/coal mine entries for ground stability purposes requires written permission from the Coal Authority prior to proceeding.

## **5.0 CONCLUSIONS**

- 5.0.1 This Coal Mining Risk Assessment report has identified that open cast and possible shallow workings of coal seams as occurred historically beneath the site, with the likelihood of unrecorded workings and mine entries also being present. The risk to the site from mining legacy features is considered to be medium to high.
- 5.0.2 The intrusive investigations recommended in Section 4.1 of this report should be undertaken to confirm any shallow coal mining features present and to provide remediation proposals if required.
- 5.0.3 It is advised that a detailed Gas Risk Assessment in the area of the proposed development is completed to identify and/or rule out any risk from mine related gas emissions.



## **Fox Aluminium Ltd**

Wentworth Way  
Tannersley

Coal Mining Risk Assessment  
ECL.8822.R06.001 Rev -

July 2021

# Appendix 1

Groundsure Historic Mapping

#### Site Details:

FOX ALUMINIUM SYSTEMS  
LTD, PARK WORKS,  
WENTWORTH WAY,  
TANKERSLEY, BARNSELY, S75  
3DH

**Client Ref:** 8822\_Fox\_Aluminum\_Tankersley  
**Report Ref:** GS-7937208  
**Grid Ref:** 433972, 399678

**Map Name:** County Series

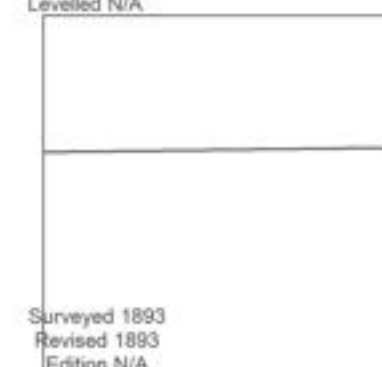
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**Scale:** 1:2,500

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



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Edition N/A  
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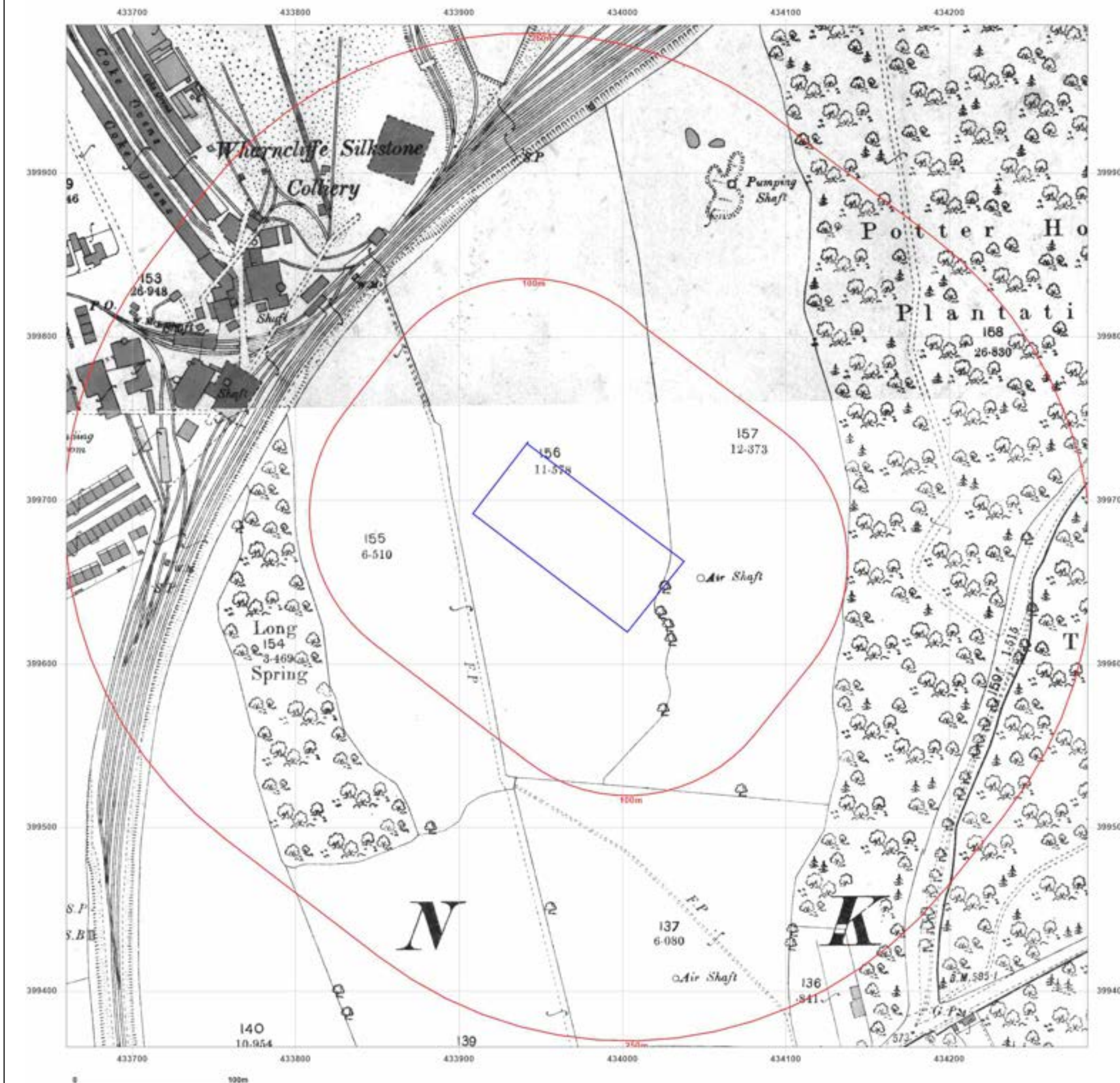


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Map legend available at:  
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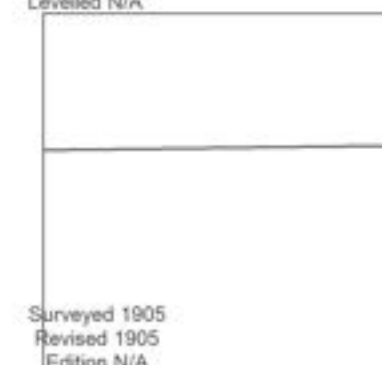
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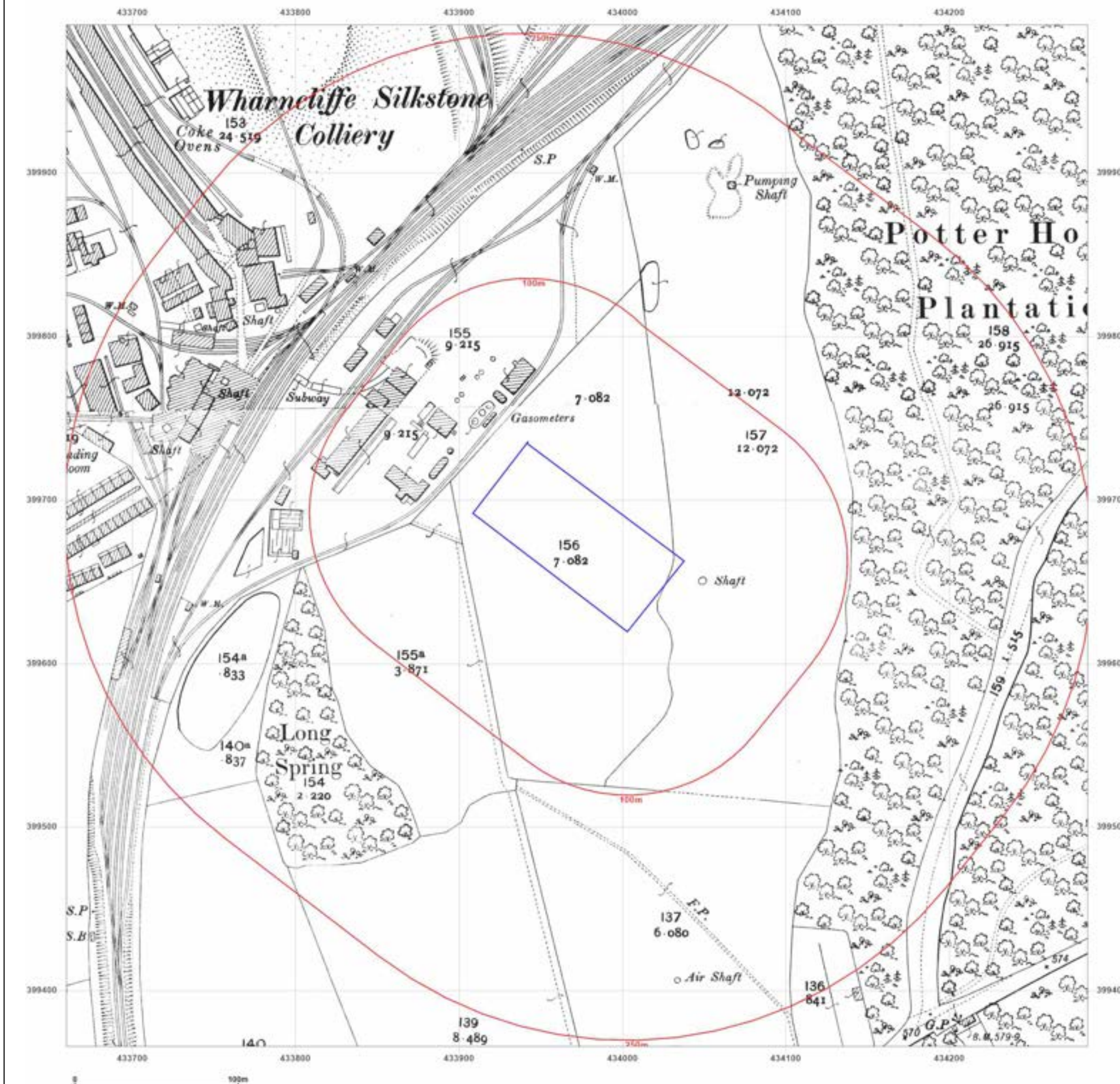


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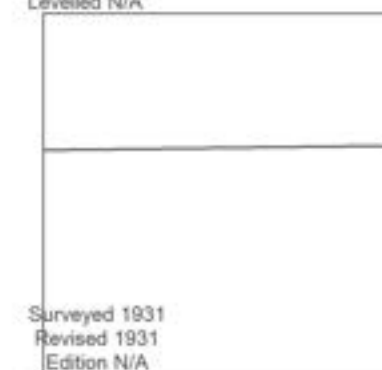
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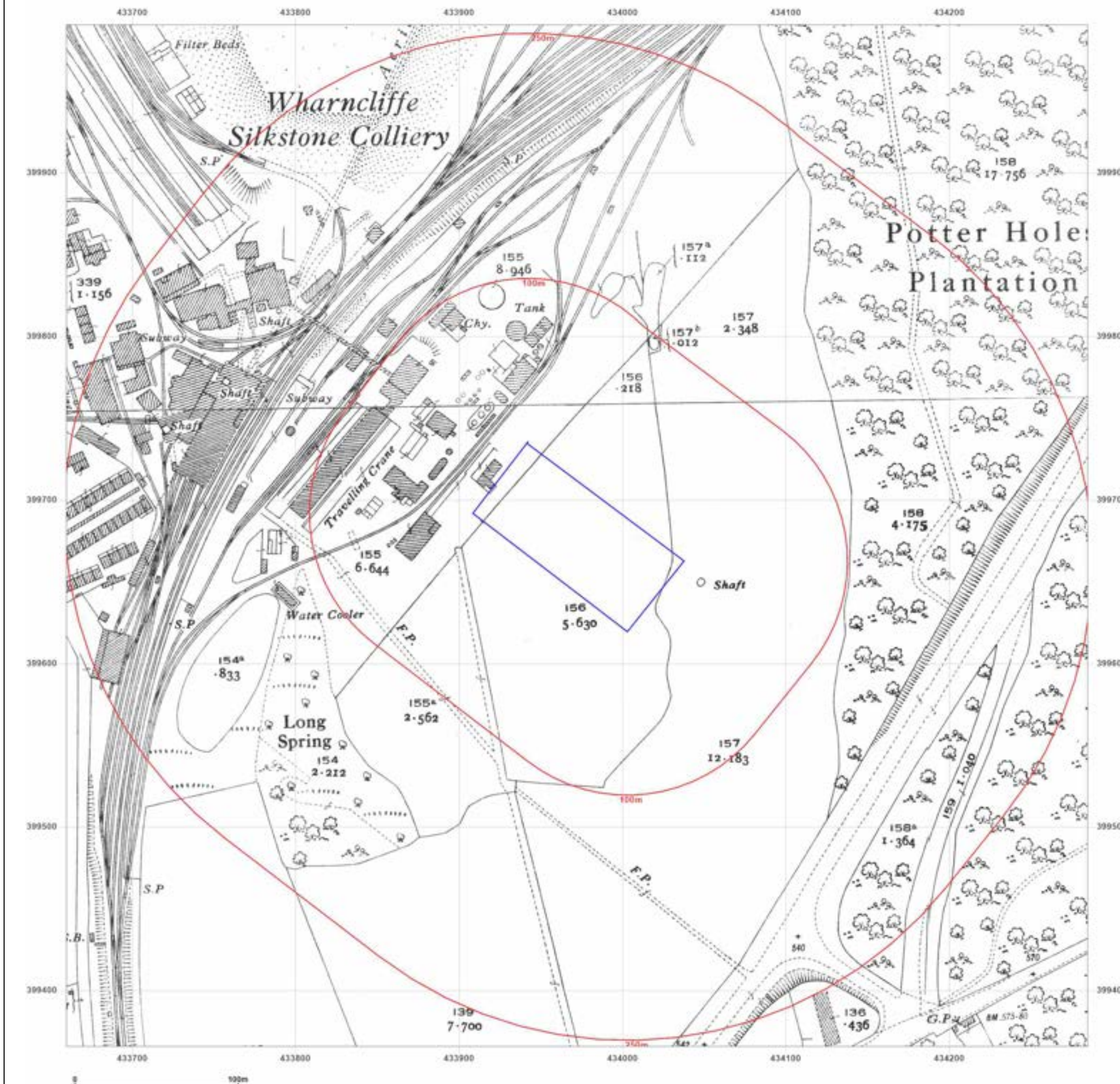


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TANKERSLEY, BARNLEY, S75  
3DH

**Client Ref:** 8822\_Fox\_Aluminum\_Tankersley  
**Report Ref:** GS-7937208  
**Grid Ref:** 433972, 399678

**Map Name:** National Grid

**Map date:** 1956

**Scale:** 1:2,500

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



Surveyed 1956  
Revised 1956  
Edition N/A  
Copyright N/A  
Levelled 1930

Surveyed 1956  
Revised 1956  
Edition N/A  
Copyright N/A  
Levelled 1930

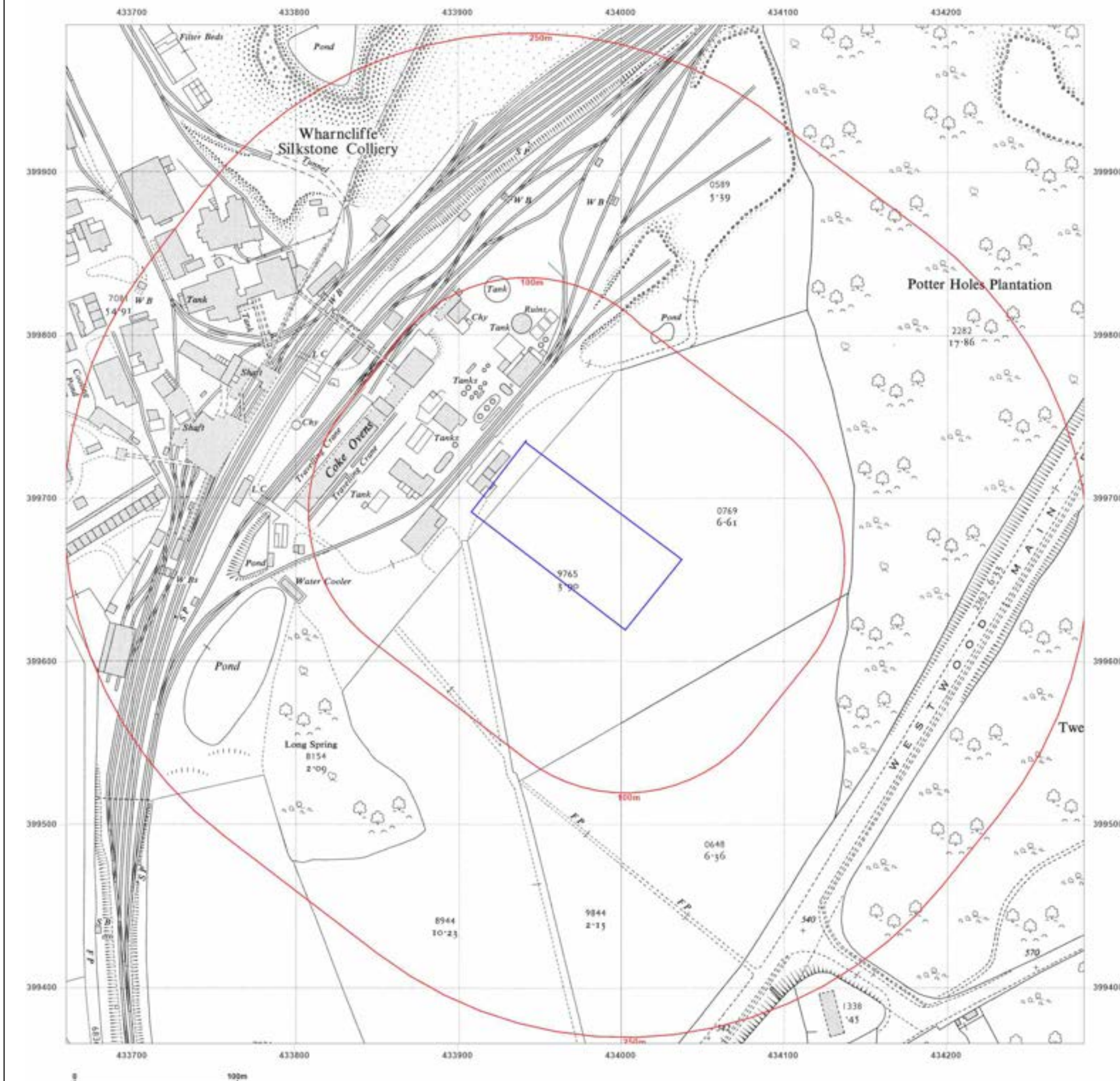


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**Client Ref:** 8822\_Fox\_Aluminum\_Tankersley  
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**Map Name:** National Grid

**Map date:** 1970

**Scale:** 1:2,500

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



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

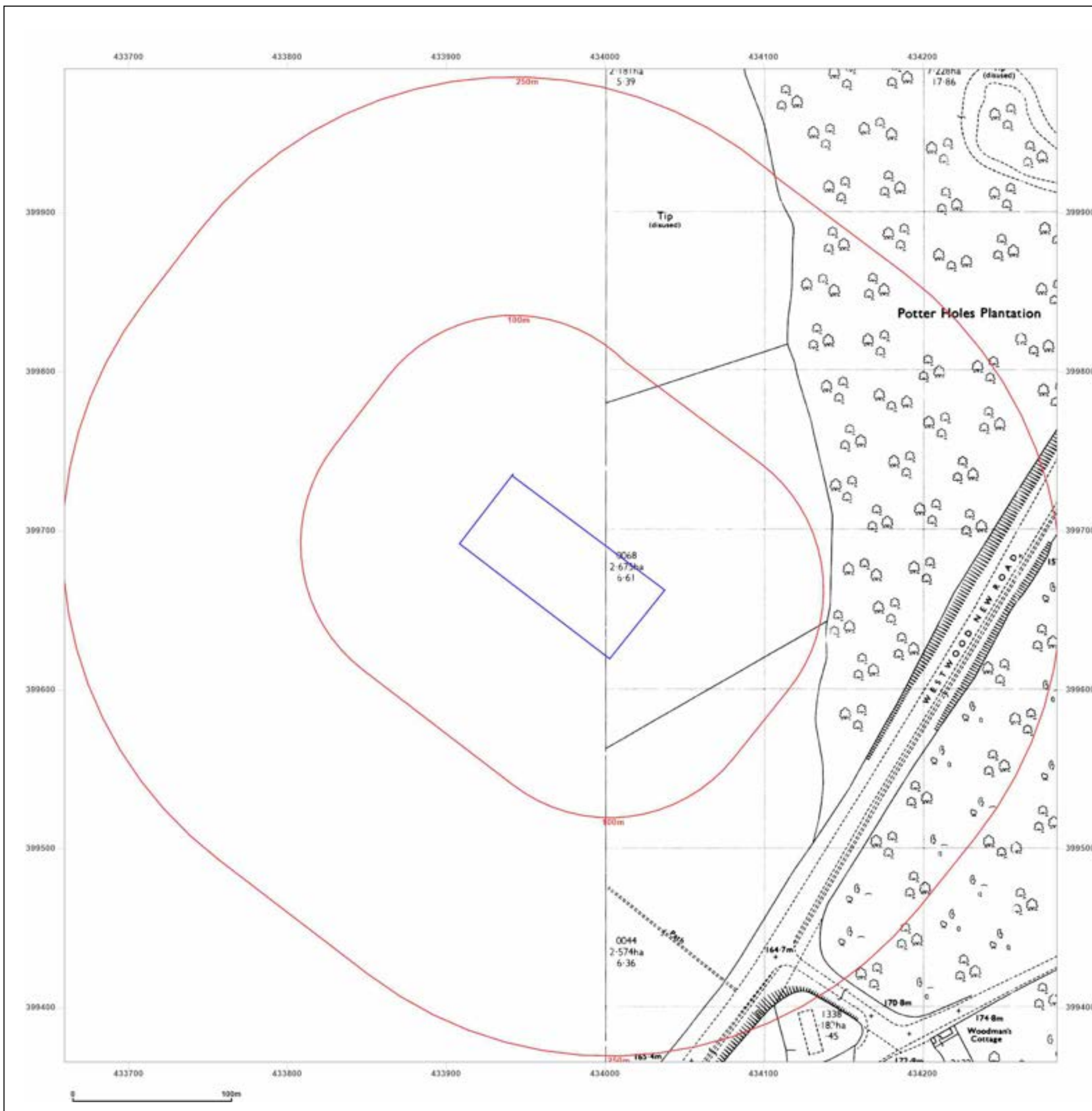


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**Map Name:** National Grid

**Map date:** 1981

**Scale:** 1:2,500

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



Surveyed N/A  
Revised N/A  
Edition N/A  
Copyright 1981  
Levelled 1983

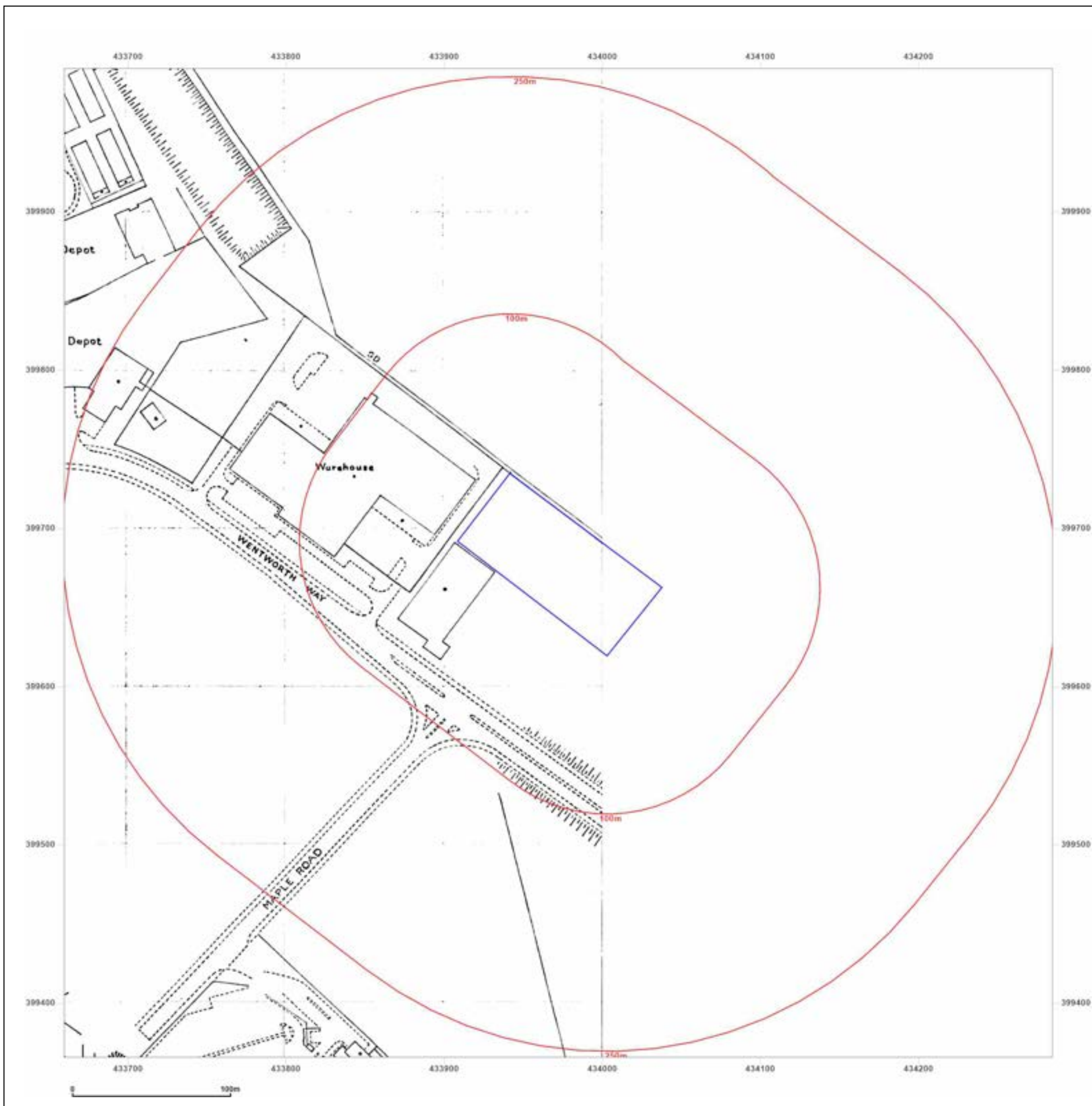


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**Client Ref:** 8822\_Fox\_Aluminum\_Tankersley  
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**Grid Ref:** 433972, 399678

**Map Name:** National Grid

**Map date:** 1989

**Scale:** 1:2,500

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



Surveyed N/A  
Revised 1989  
Edition N/A  
Copyright 1991  
Levelled N/A

Surveyed 1963  
Revised 1989  
Edition N/A  
Copyright 1989  
Levelled 1963

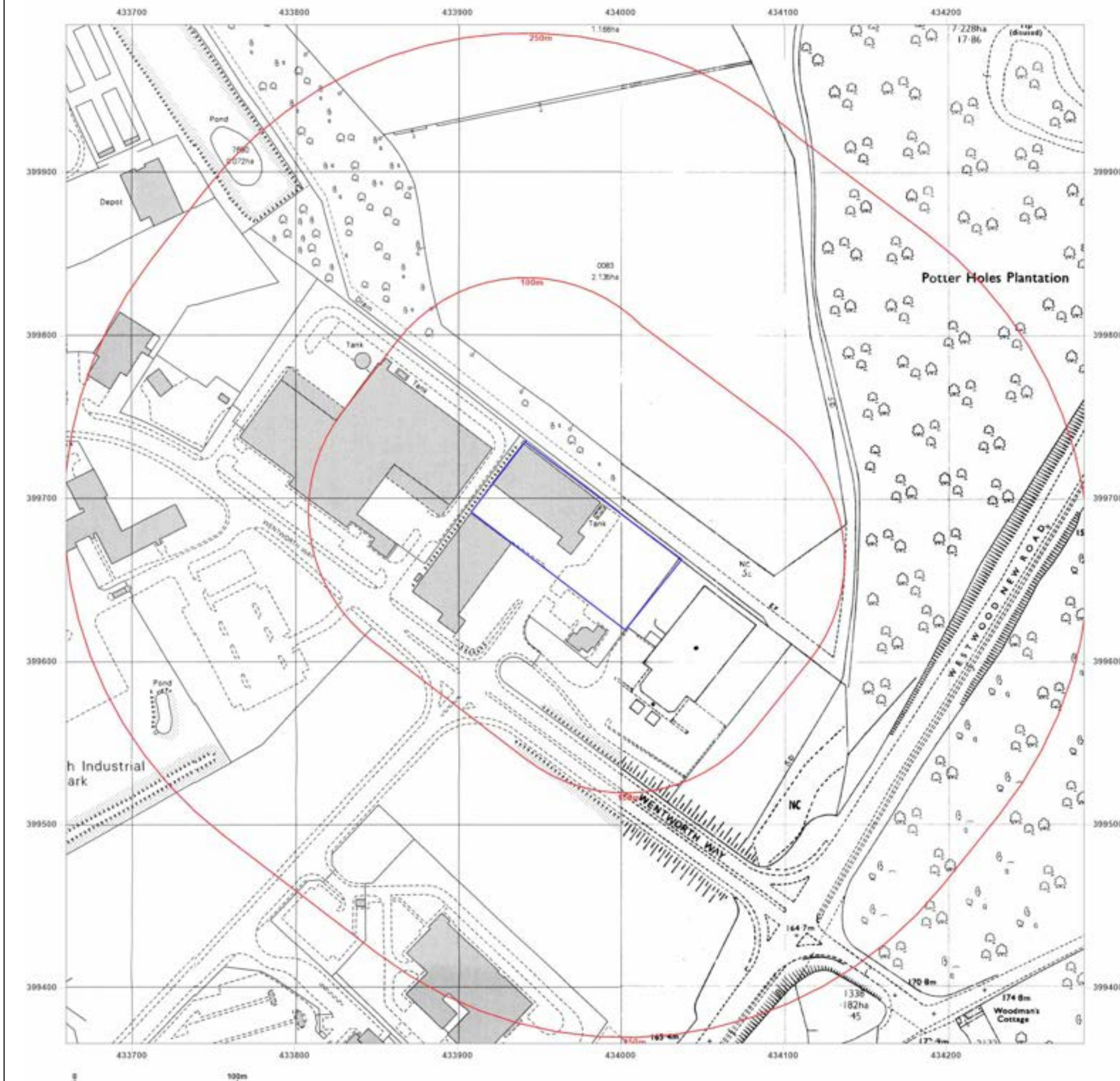


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**Map date:** 1990

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

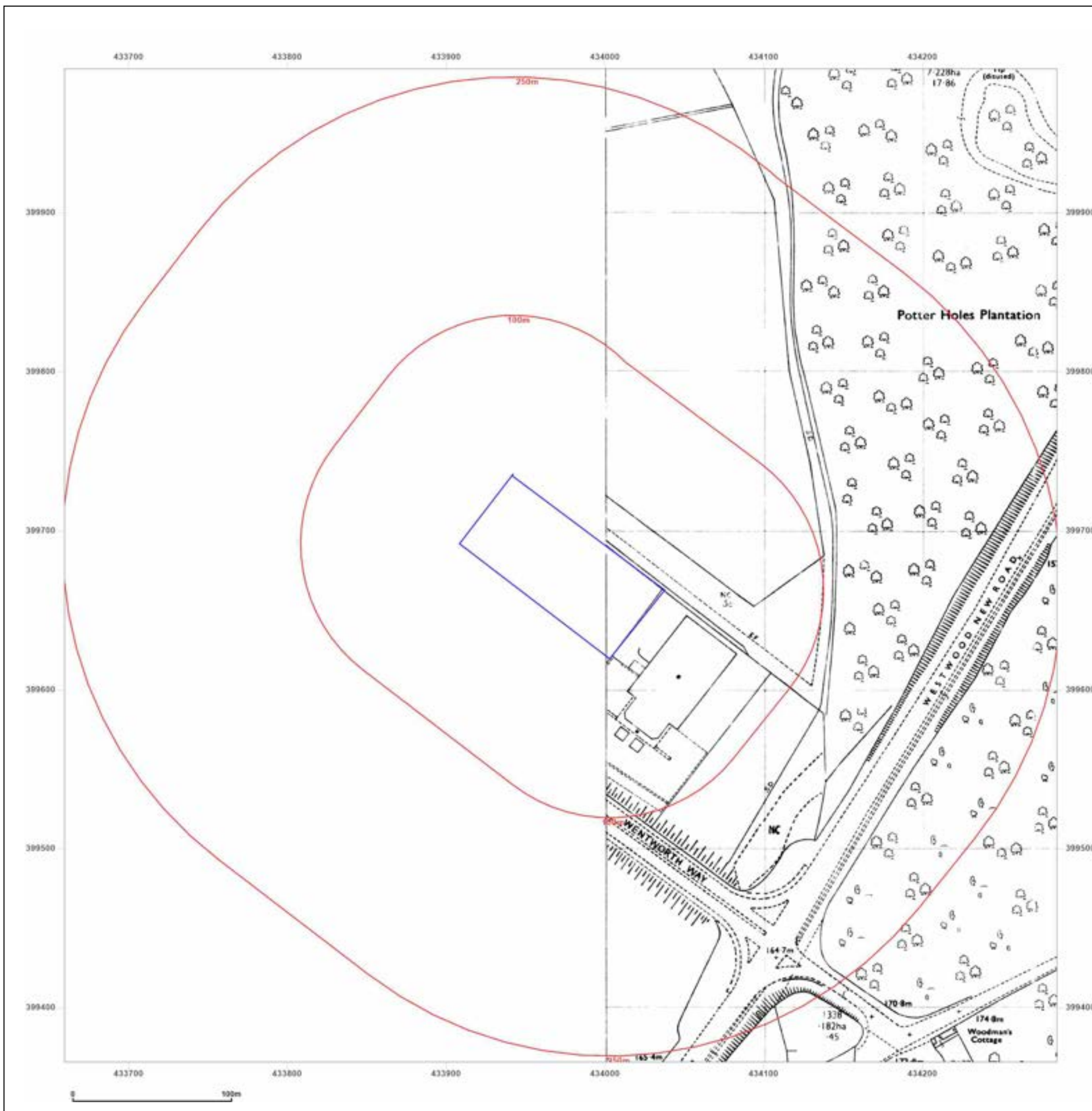


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**Map date:** 1989-1993

**Scale:** 1:2,500

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



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

Surveyed 1963  
Revised 1989  
Edition N/A  
Copyright 1989  
Levelled 1963

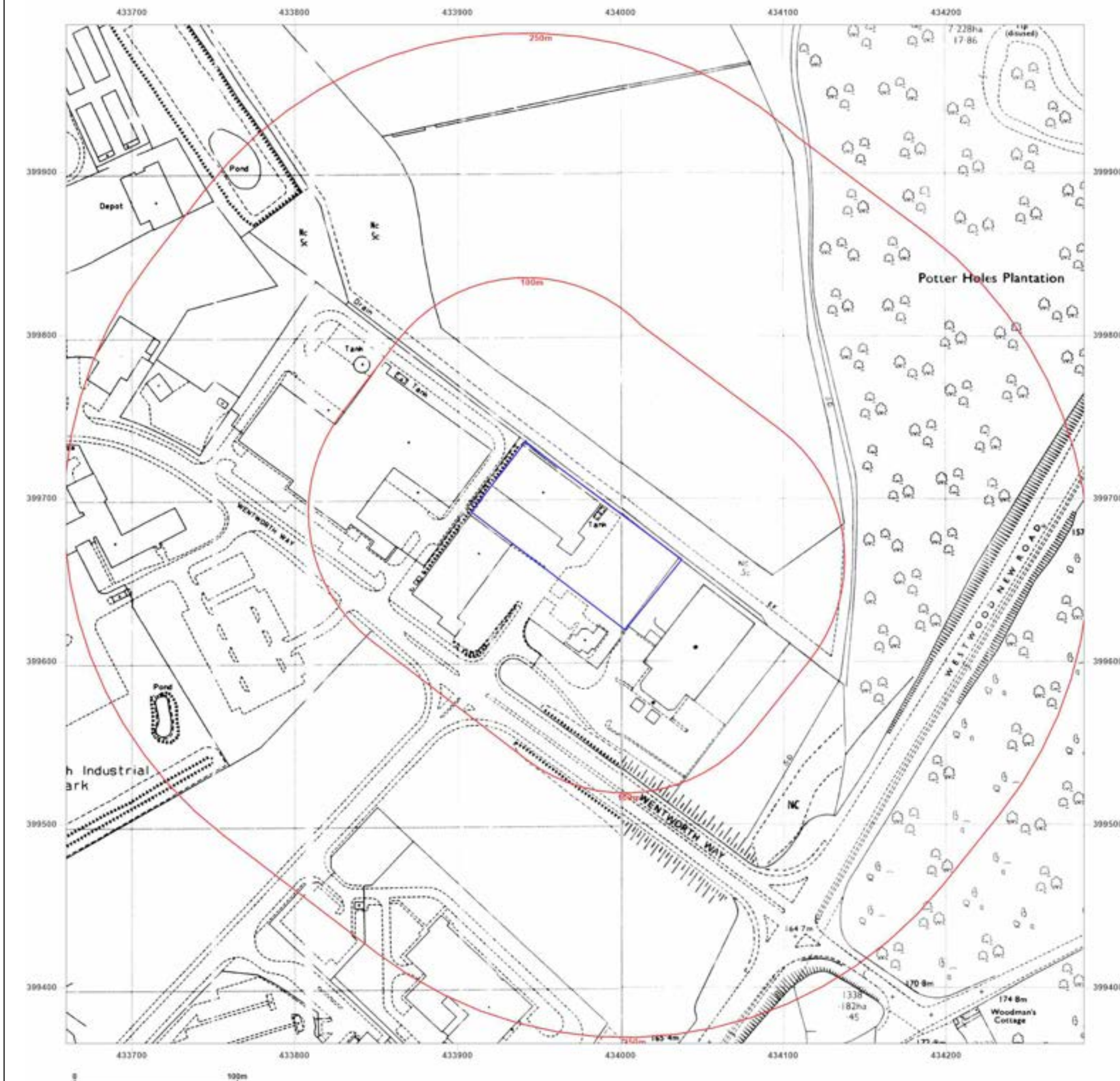


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**Client Ref:** 8822\_Fox\_Aluminum\_Tankersley  
**Report Ref:** GS-7937208  
**Grid Ref:** 433972, 399678

**Map Name:** LandLine

**Map date:** 2003

**Scale:** 1:1,250

**Printed at:** 1:1,250



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**Report Ref:** GS-7937208  
**Grid Ref:** 433972, 399678

**Map Name:** County Series

**Map date:** 1891-1894

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1891  
Revised 1891  
Edition 1891  
Copyright N/A  
Levelled N/A

Surveyed 1891  
Revised N/A  
Edition 1894  
Copyright N/A  
Levelled N/A

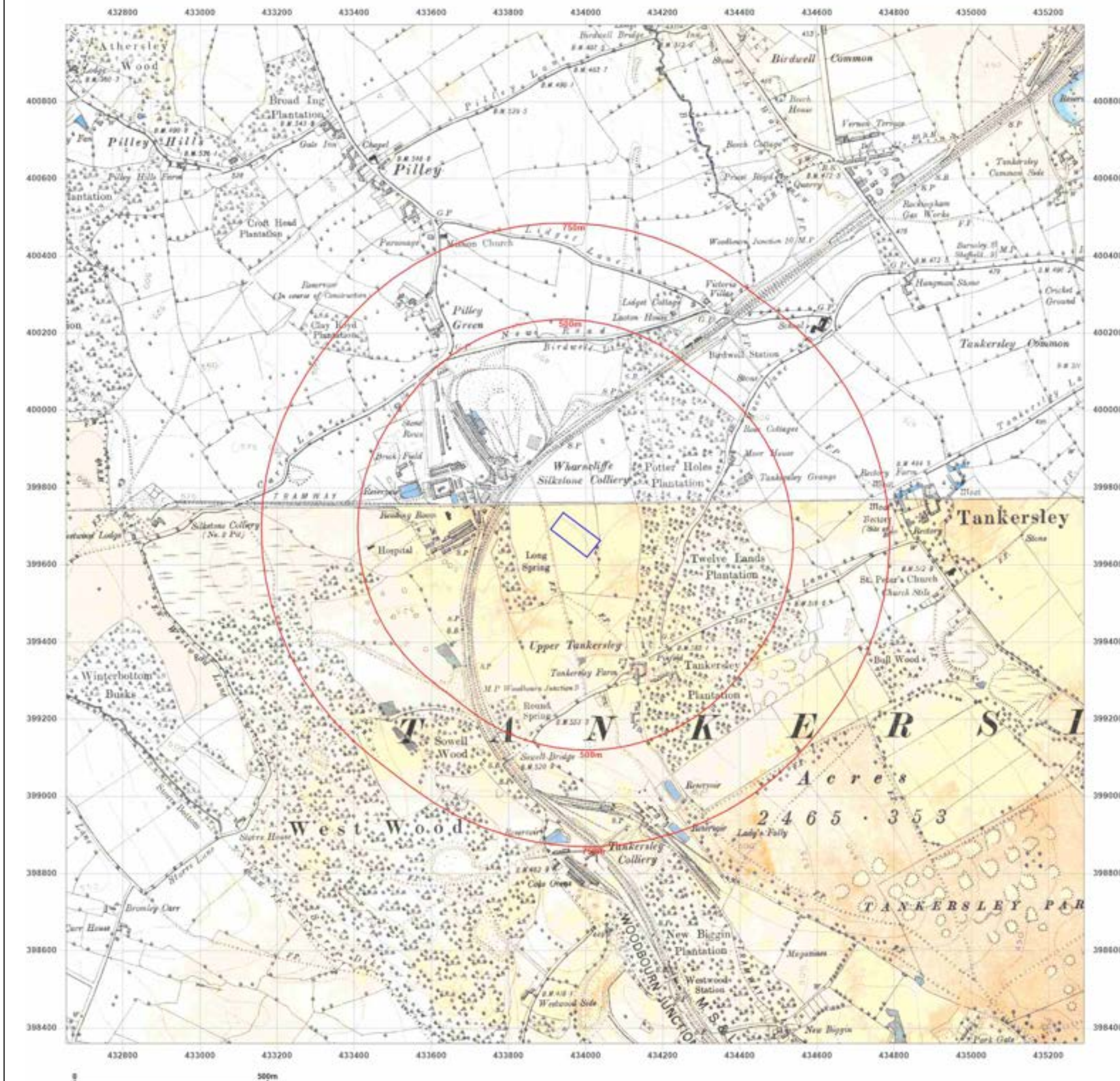


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**Report Ref:** GS-7937208  
**Grid Ref:** 433972, 399678

**Map Name:** County Series

**Map date:** 1903

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1891  
Revised 1903  
Edition 1903  
Copyright N/A  
Levelled N/A

Surveyed 1891  
Revised 1903  
Edition 1903  
Copyright N/A  
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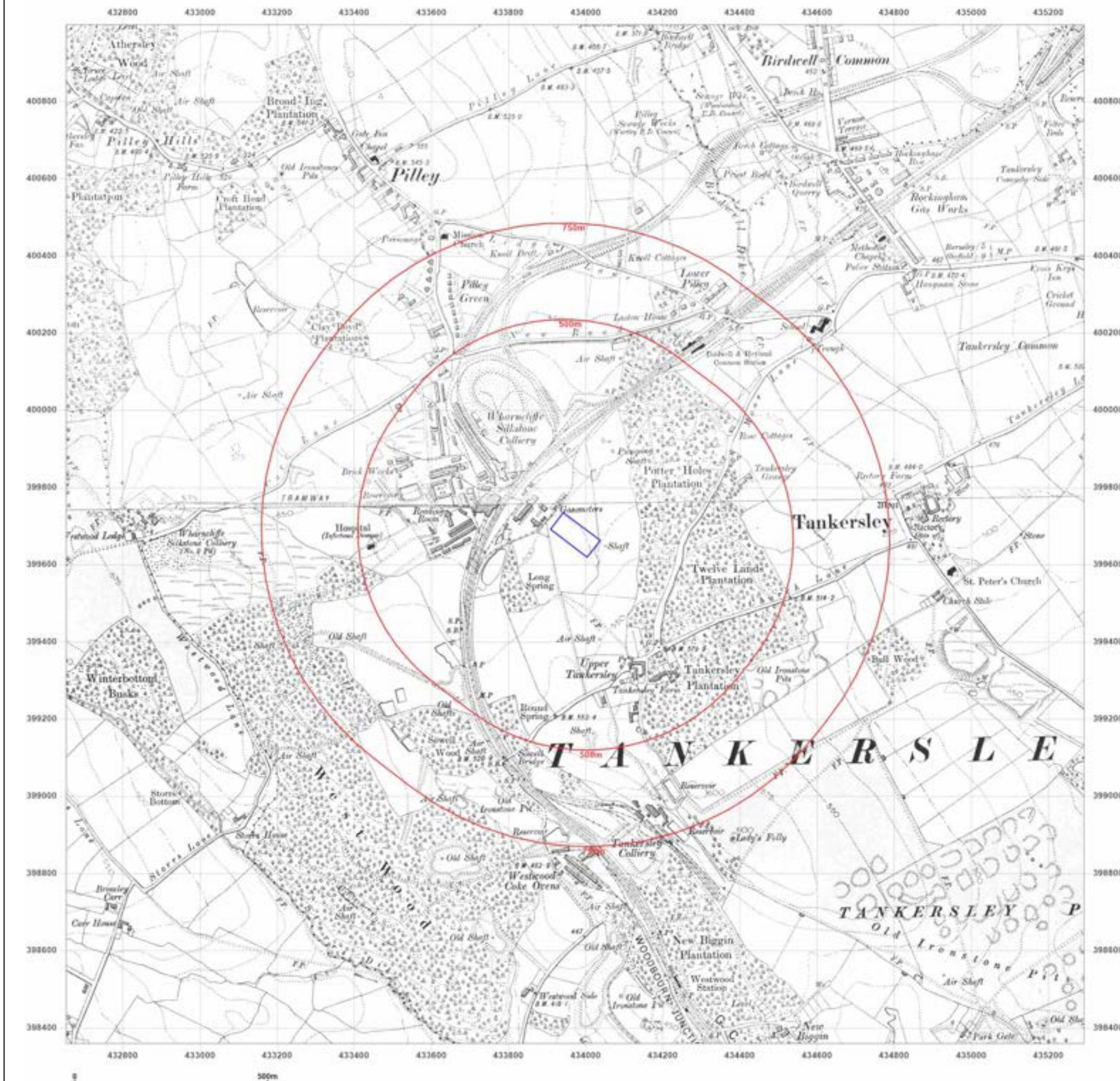


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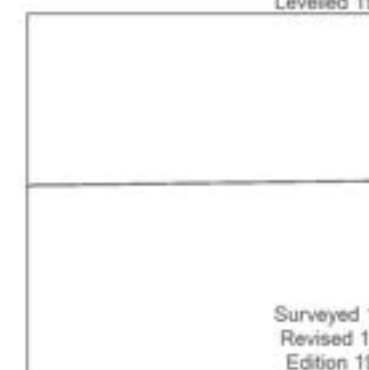
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Surveyed 1851  
Revised 1929  
Edition 1929  
Copyright N/A  
Levelled 1915



Surveyed 1851  
Revised 1929  
Edition 1929  
Copyright N/A  
Levelled 1915

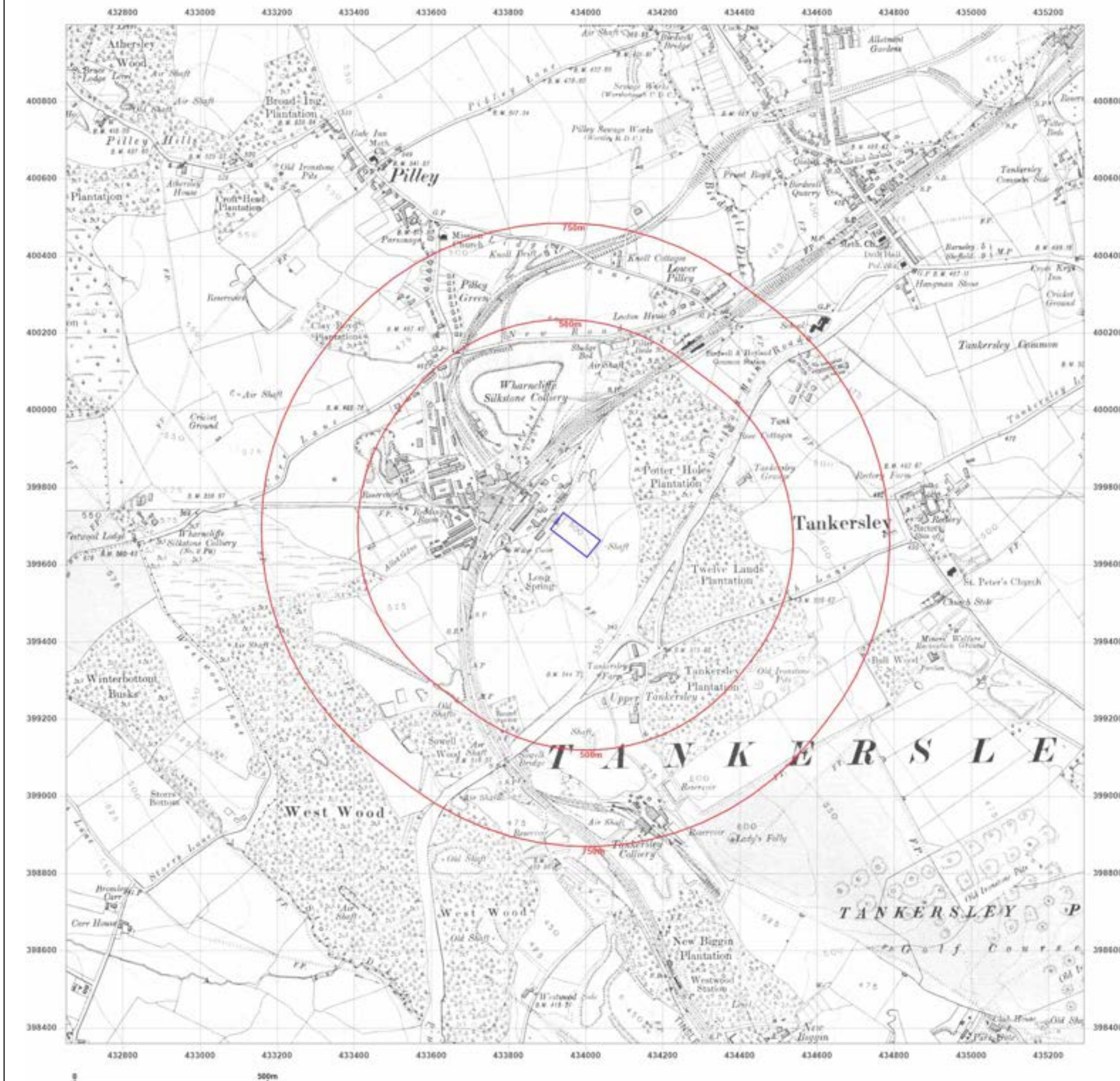


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Client Ref: 8822\_Fox\_Aluminum\_Tankersley  
Report Ref: GS-7937208  
Grid Ref: 433972, 399678

Map Name: County Series

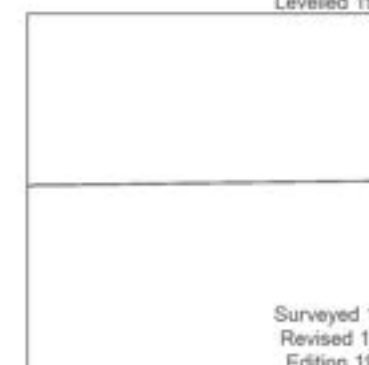
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Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1851  
Revised 1938  
Edition 1938  
Copyright N/A  
Levelled 1929



Surveyed 1851  
Revised 1938  
Edition 1938  
Copyright N/A  
Levelled 1929

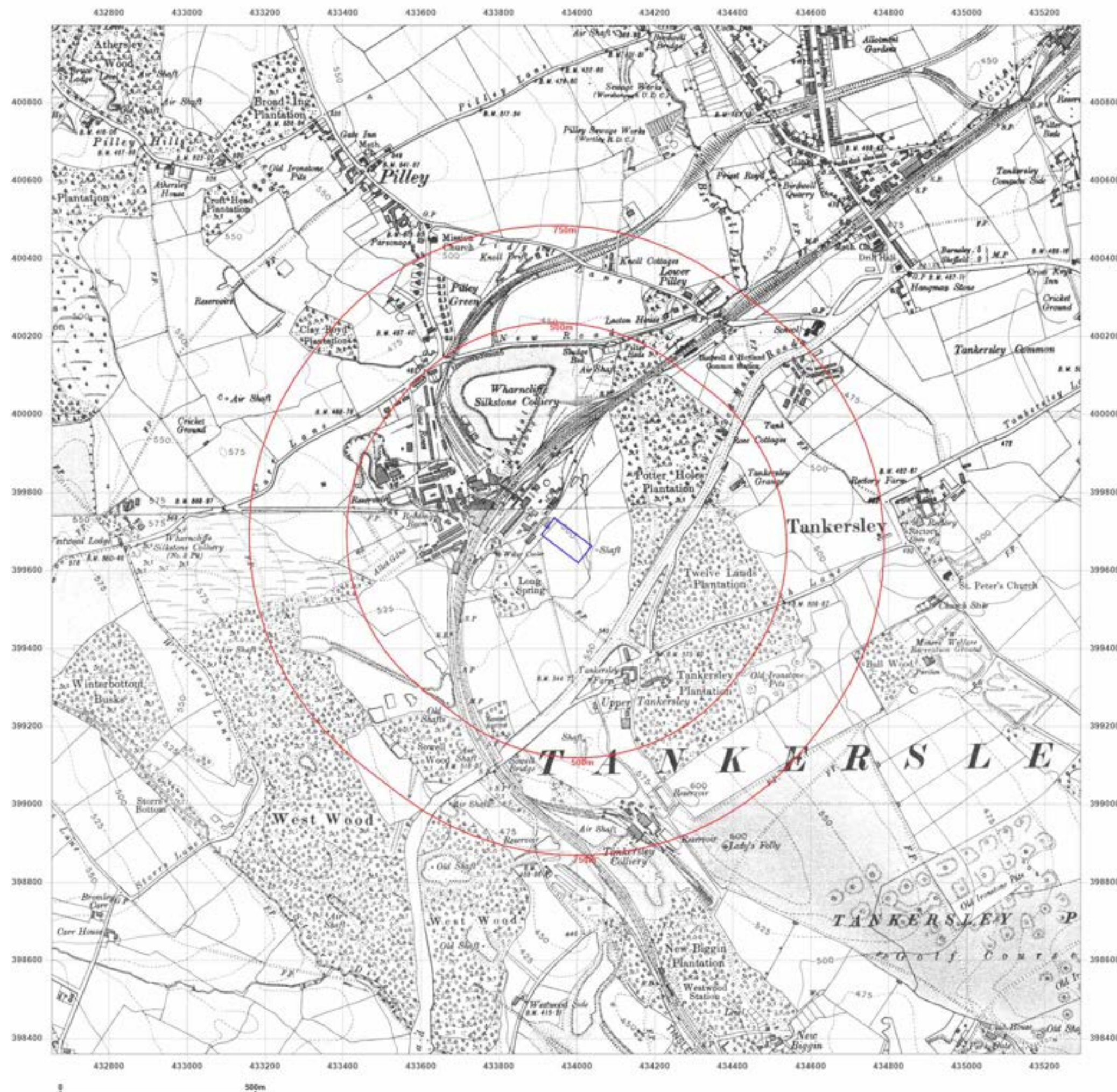


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3DH

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**Report Ref:** GS-7937208  
**Grid Ref:** 433972, 399678

**Map Name:** County Series

**Map date:** 1948

**Scale:** 1:10,560

**Printed at:** 1:10,560



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**Client Ref:** 8822\_Fox\_Aluminum\_Tankersley  
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**Map Name:** Provisional

**Map date:** 1951-1956

**Scale:** 1:10,560

**Printed at:** 1:10,560



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

Surveyed 1951  
Revised 1951  
Edition N/A  
Copyright 1951  
Levelled N/A

Surveyed 1951  
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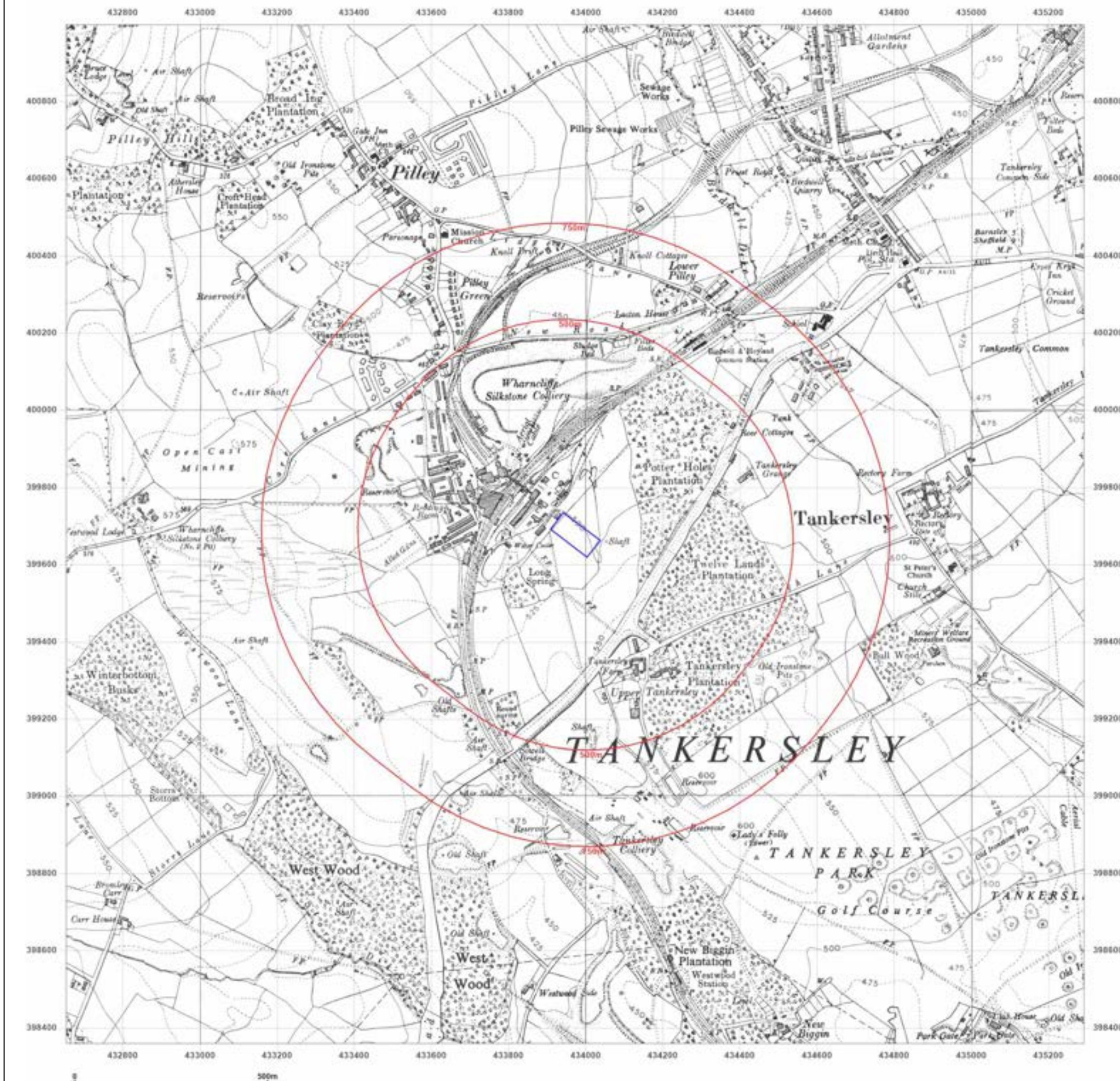


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**Map Name:** Provisional

**Map date:** 1965-1966

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Revised 1965  
Edition N/A  
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Levelled N/A

Surveyed 1966  
Revised 1966  
Edition N/A  
Copyright 1966  
Levelled N/A

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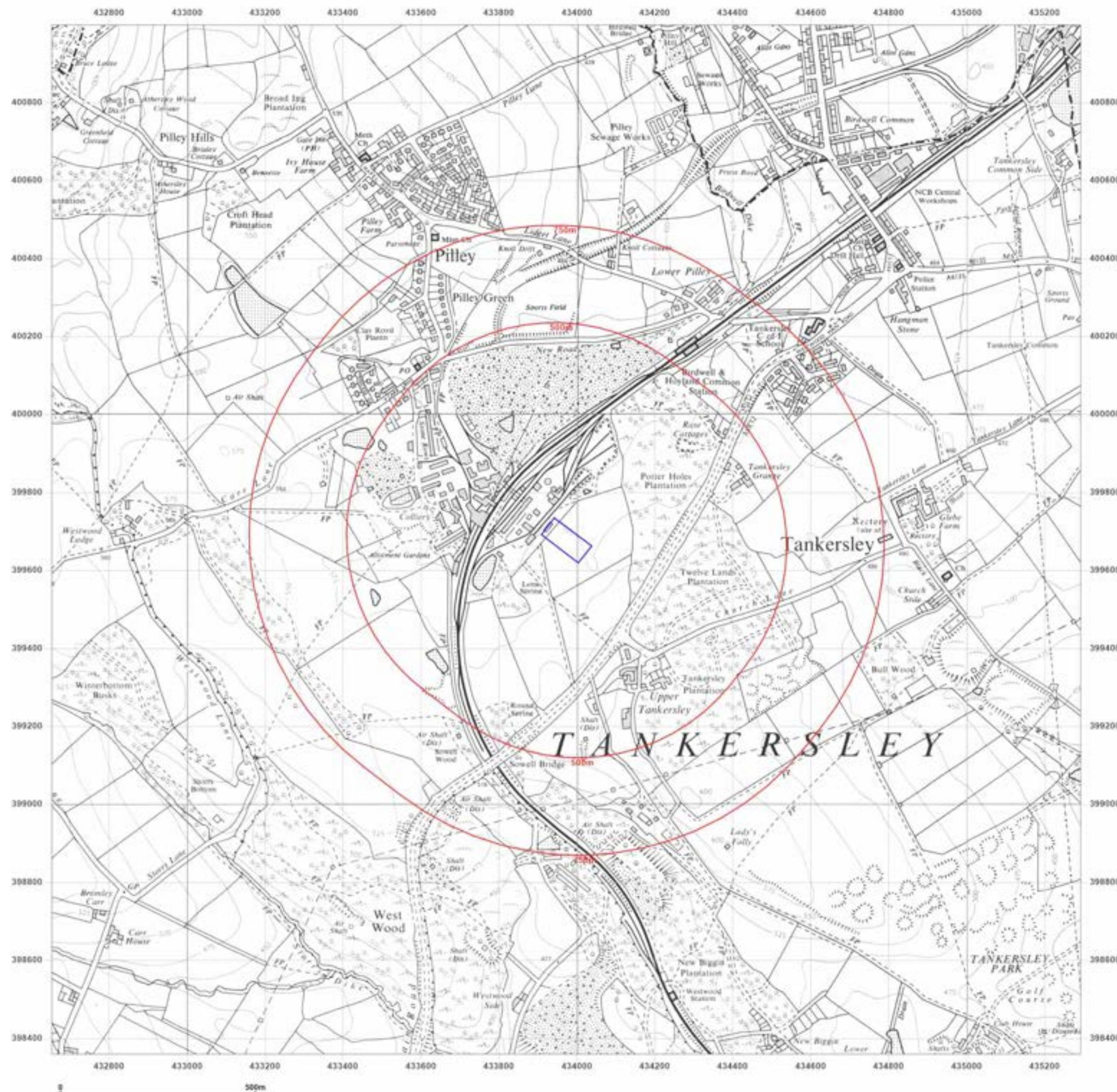


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**Map date:** 1977-1980

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Revised 1977  
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Levelled N/A

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Revised 1977  
Edition N/A  
Copyright 1978  
Levelled 1978

Surveyed 1980  
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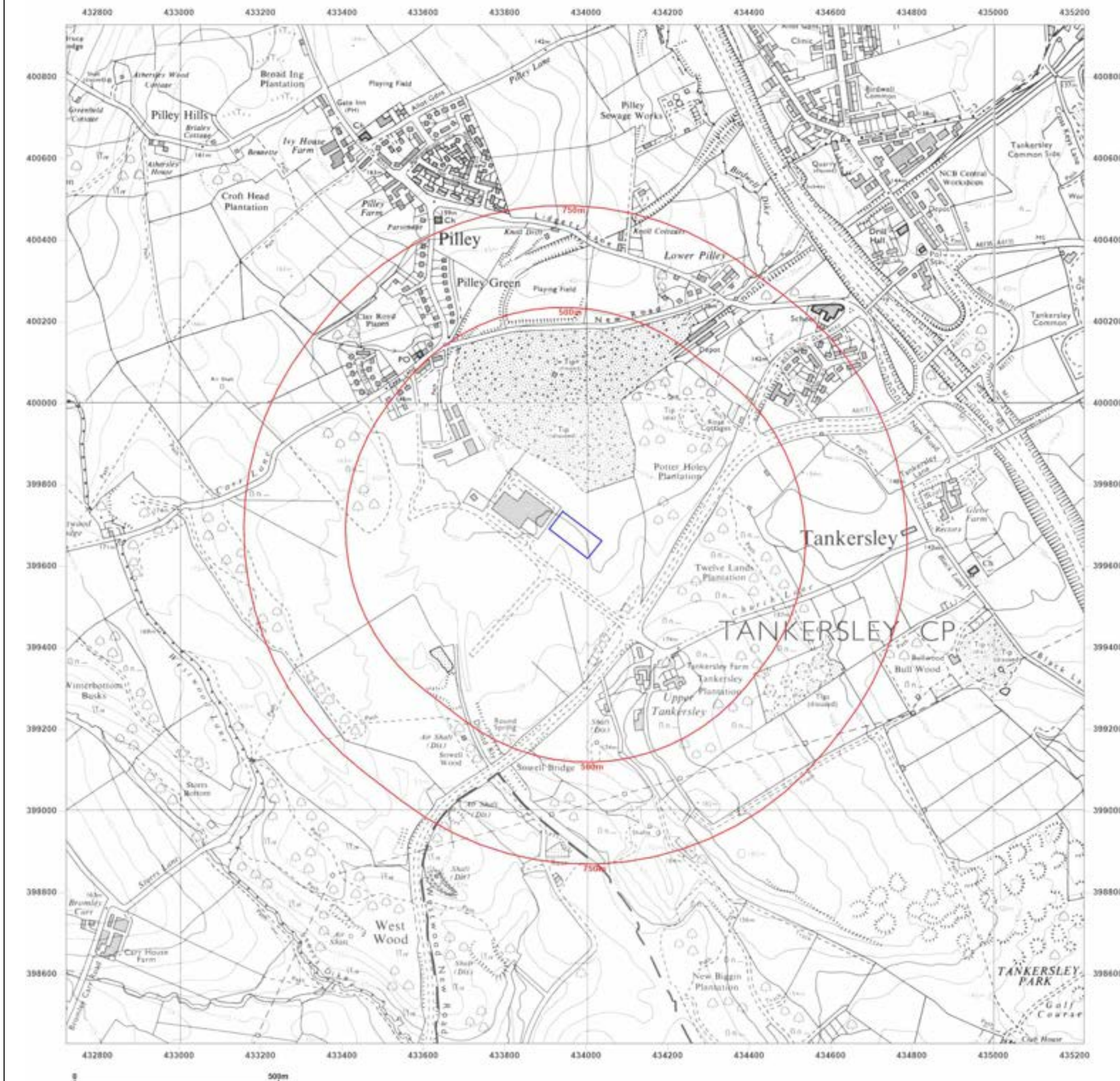


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**Printed at:** 1:10,000



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Revised 1987  
Edition N/A  
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Levelled 1978

Surveyed 1991  
Revised 1992  
Edition N/A  
Copyright N/A  
Levelled N/A

Surveyed 1989  
Revised 1991  
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Copyright 1991  
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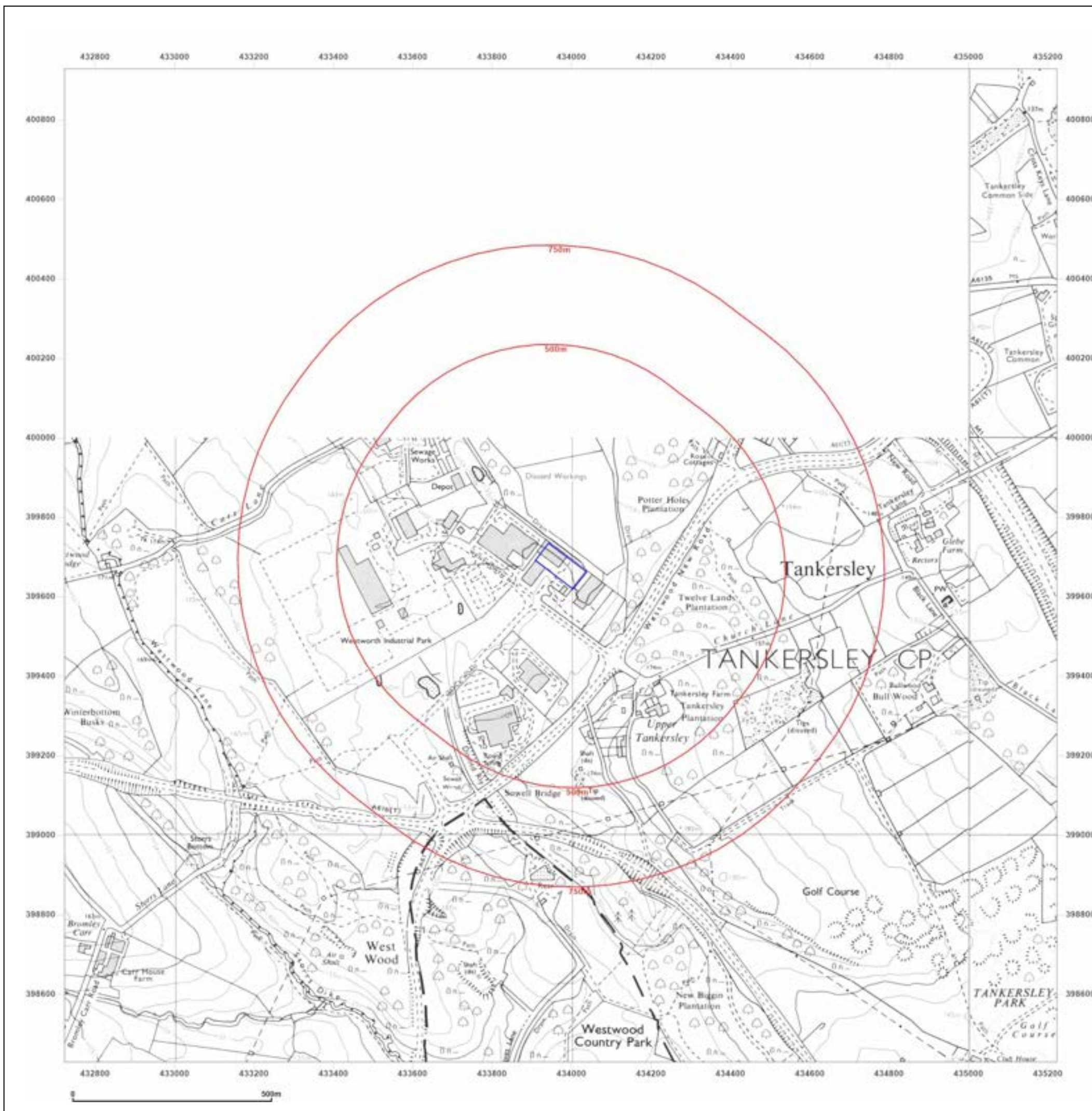


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**Report Ref:** GS-7937208  
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**Map Name:** National Grid

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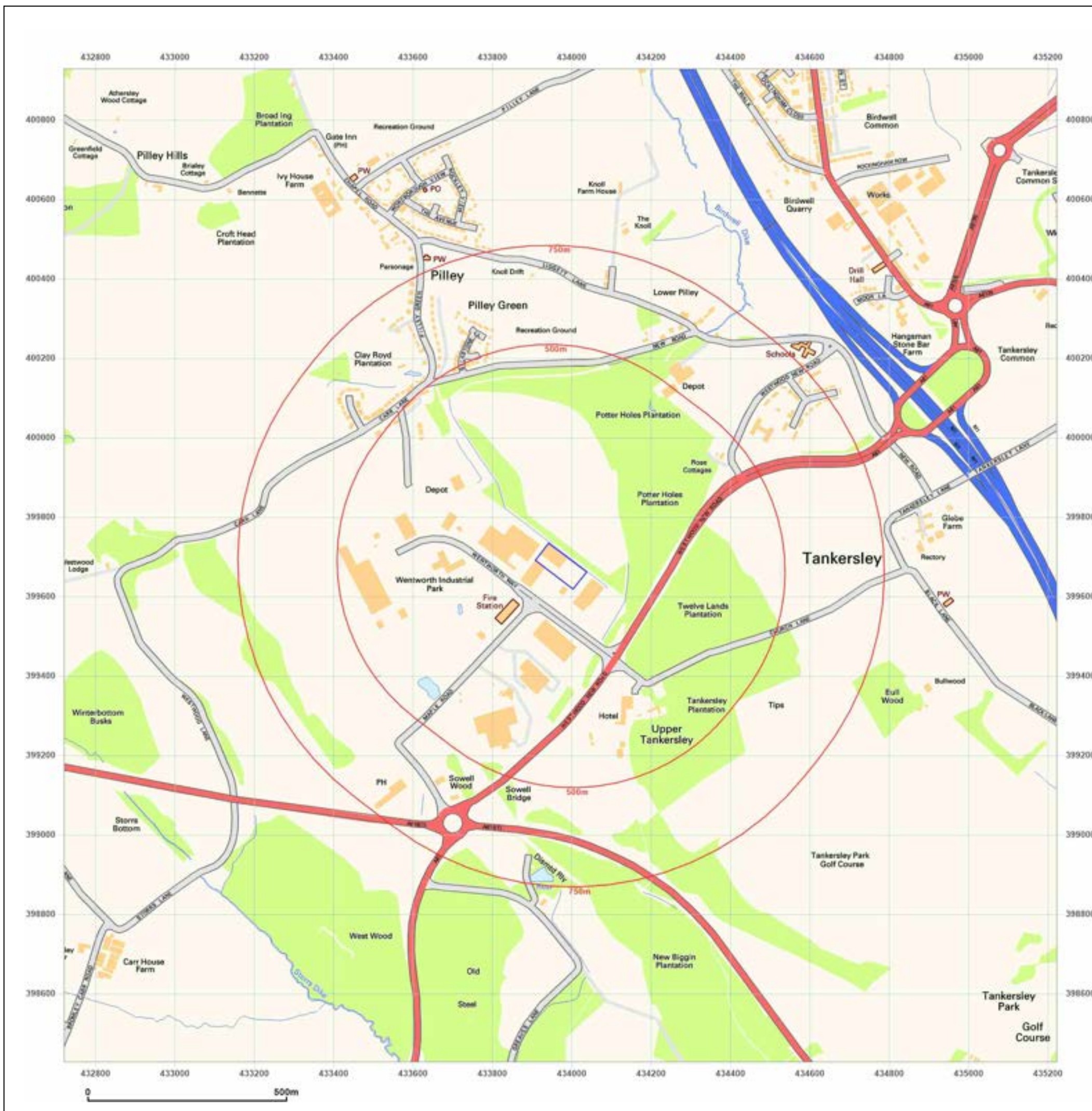


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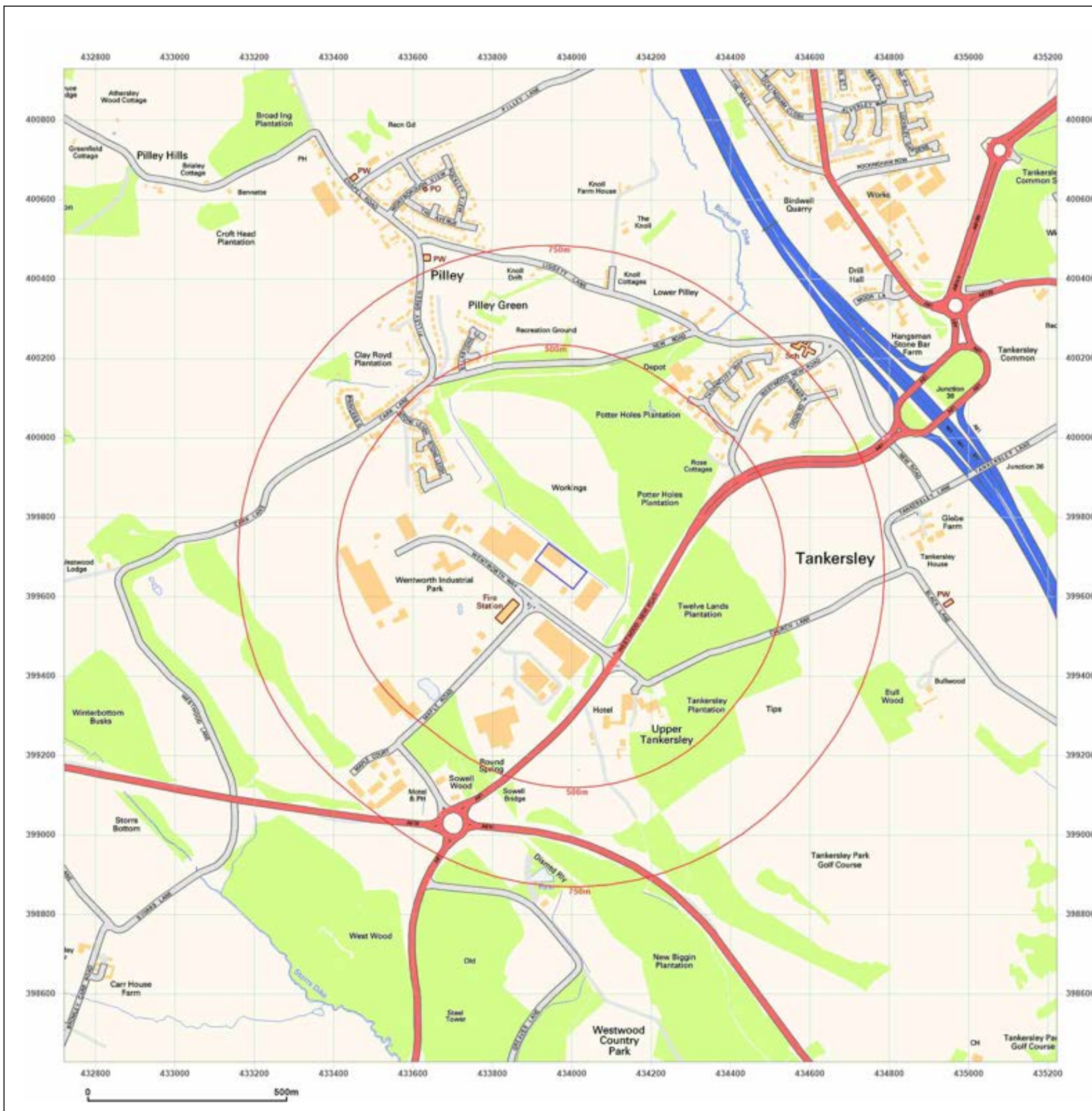


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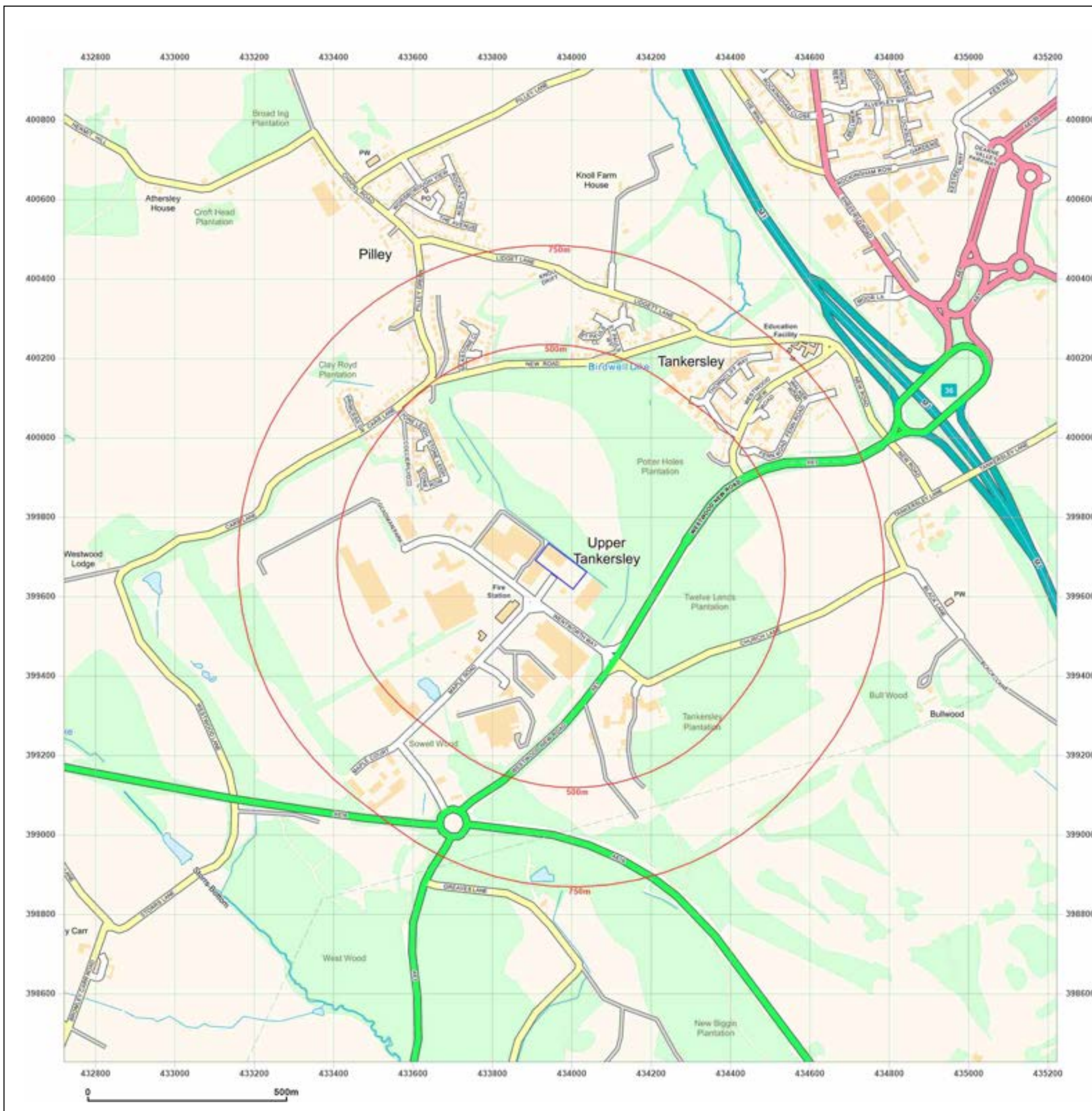


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**Fox Aluminium Ltd**

Wentworth Way  
Tankersley

Coal Mining Risk Assessment  
ECL.8822.R06.001 Rev -

July 2021

# Appendix 2

Coal Authority Coal Mining Consultants Report



The Coal  
Authority

# Consultants

## Coal Mining Report

Fox Aluminium Systems Ltd, Park  
Works, Wentworth Way, Tankersley,  
Barnsley  
South Yorkshire  
S75 3DH

|                        |             |
|------------------------|-------------|
| Date of enquiry:       | 9 June 2021 |
| Date enquiry received: | 9 June 2021 |
| Issue date:            | 9 June 2021 |

|                 |                |
|-----------------|----------------|
| Our reference:  | 51002555199001 |
| Your reference: | GS-7937209     |

# 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**

GROUNDSURE LIMITED

### **Enquiry address**

Fox Aluminium Systems Ltd, Park Works,  
Wentworth Way, Tankersley, Barnsley  
South Yorkshire  
S75 3DH

### **How to contact us**

0345 762 6848 (UK)  
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 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



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 |
|-------------|-------------|---------|--------------------------|-----------|----------------------|---------------------------------------|---------------------------------|---------------------------|-----------------|
| WHARNCLIFFE | TOP FENTON  | Coal    | 6IZ5                     | 53        | Beneath Property     | 4.8                                   | North-East                      | 140                       | 1961            |
| unnamed     | LOW FENTON  | Coal    | 65R0                     | 61        | Beneath Property     | 5.4                                   | North-East                      | 157                       | 1955            |
| ROCKINGHAM  | LOW FENTON  | Coal    | 6XRN                     | 62        | Beneath Property     | 5.2                                   | North-East                      | 152                       | 1955            |
| unnamed     | PARKGATE    | Coal    | 65RE                     | 79        | Beneath Property     | 6.6                                   | East                            | 160                       | 1896            |
| TANKERSLEY  | PARKGATE    | Coal    | 6XRC                     | 84        | Beneath Property     | 3.5                                   | East                            | 160                       | 1880            |
| TANKERSLEY  | THORNCLIFFE | Coal    | 65R1                     | 97        | Beneath Property     | 5.5                                   | North-East                      | 68                        | 1886            |
| unnamed     | THORNCLIFFE | Coal    | 6620                     | 101       | Beneath Property     | 4.8                                   | North-East                      | 76                        | 1895            |
| unnamed     | SILKSTONE   | Coal    | 65RL                     | 156       | Beneath Property     | 5.2                                   | East                            | 170                       | 1875            |
| TANKERSLEY  | SILKSTONE   | Coal    | 6IZD                     | 168       | Beneath Property     | 4.5                                   | East                            | 180                       | 1874            |
| TANKERSLEY  | WHINMOOR    | Coal    | 65RB                     | 219       | Beneath Property     | 5.3                                   | North-East                      | 74                        | 1915            |
| TANKERSIDE  | WHINMOOR    | Coal    | 6XM0                     | 222       | Beneath Property     | 4.4                                   | North-East                      | 91                        | 1918            |

## Probable unrecorded shallow workings

Yes.

## Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

## Mine entries

| Entry type | Reference  | Grid reference | Treatment description | Mineral | Conveyancing details |
|------------|------------|----------------|-----------------------|---------|----------------------|
| Shaft      | 434399-002 | 434054 399654  |                       | Coal    |                      |

### Abandoned mine plan catalogue numbers

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

|      |       |       |
|------|-------|-------|
| M668 | M671  | 9356  |
| SY90 | SY92  | NE853 |
| 8641 | OC241 | 8642  |

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 |
|----------------|---------|---------------|-------------------------|----------------------|--------------------|
| FLOCKTON THICK | Coal    | Yes           | Within                  | N/A                  | 345                |

### 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

None recorded within 50 metres of the enquiry boundary.

### 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

| Distance to gas incident/remediation (m) | Direction |
|------------------------------------------|-----------|
| 180.3                                    | West      |

See Section 4 for further information.

### 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.

### Mine gas remedial works

The site is within an area of previous interest. It is close to where the Coal Authority has investigated and subsequently remediated the effects of mine or ground gas emissions following specific reported hazards.

The site requires further investigation and may influence your risk assessment. We recommend that you order the **Coal Authority Mine Gas Emission Report**, which will include more information about the hazard.

**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](mailto: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](mailto: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.

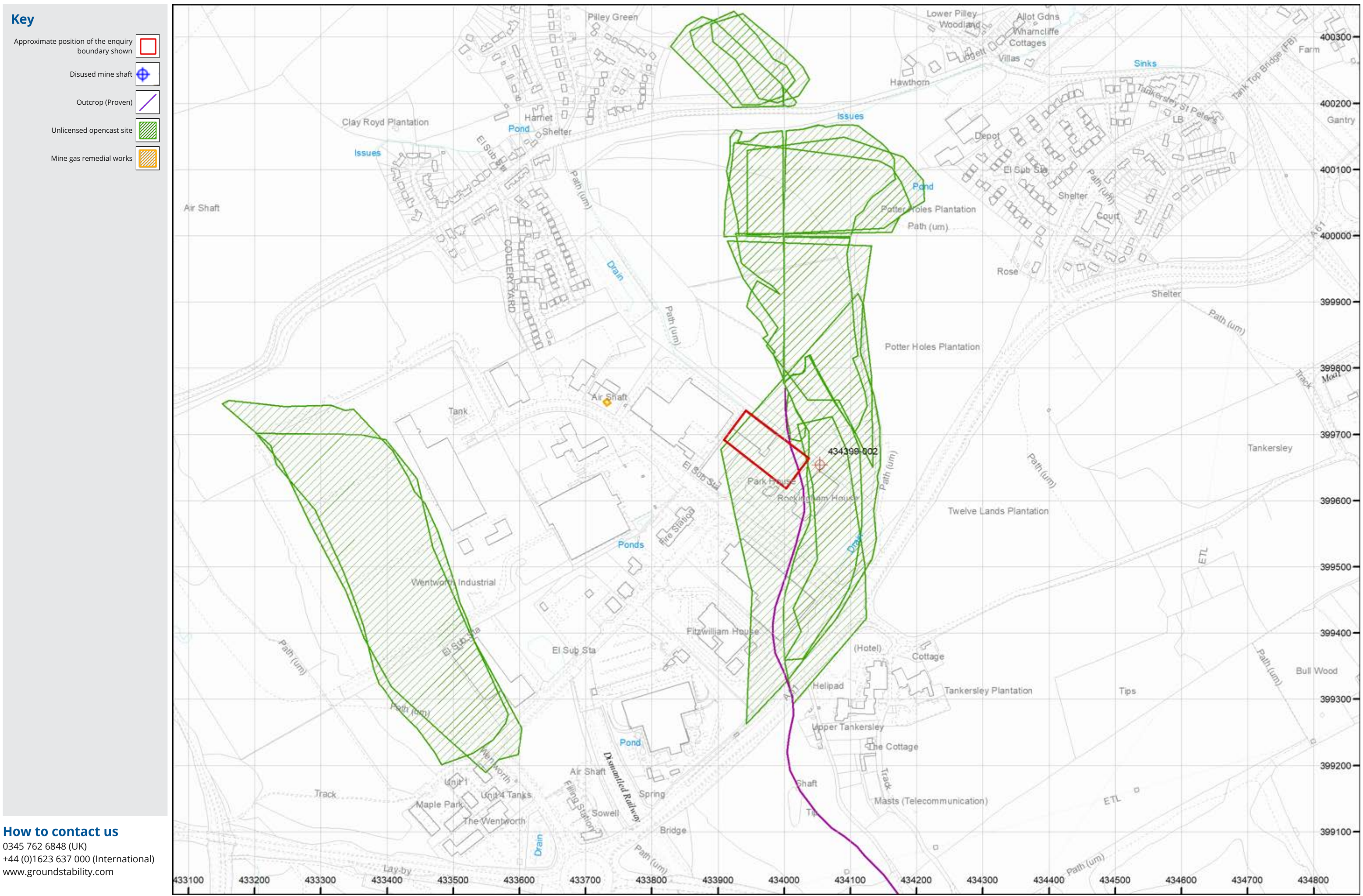
### **Withdrawal of support notices**

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.





## **Fox Aluminium Ltd**

Wentworth Way  
Tannersley

Coal Mining Risk Assessment  
ECL.8822.R06.001 Rev -

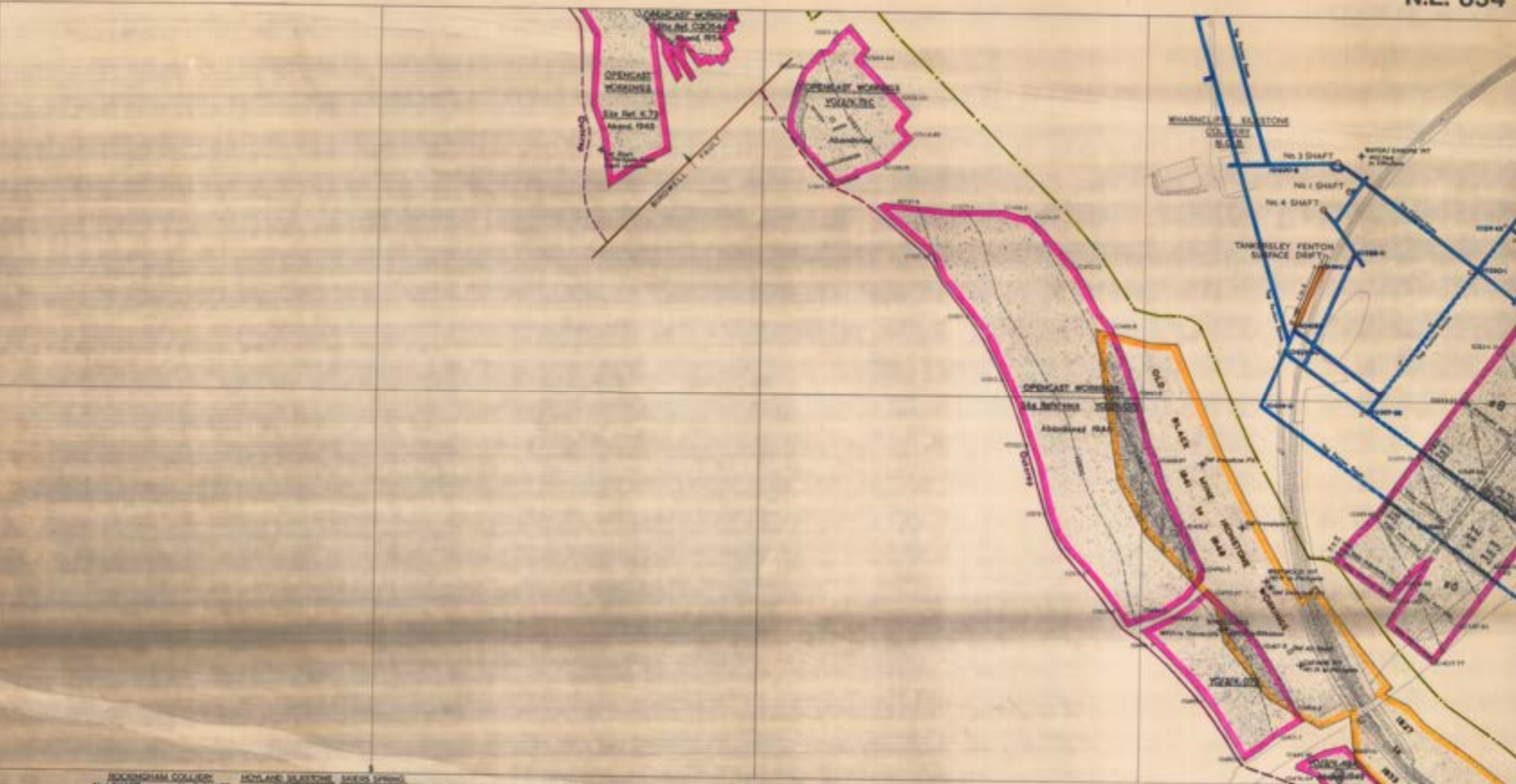
July 2021

# Appendix 3

Coal Authority Abandonment Plans







| ROCKINGHAM COLLIERY  |                |                |                |
|----------------------|----------------|----------------|----------------|
| No. 1 SHAFT          | No. 2 SHAFT    | No. 3 SHAFT    | No. 4 SHAFT    |
| 44/3500/277008       | 44/3500/000008 | 44/3500/706483 | 43/3300/731184 |
| FACE LEVEL           | 1042-10        | 1042-00        | 1042-00        |
| BLACK MINE IRONSTONE | 1042-00        | 1042-00        | 1042-00        |
| BLACK SHALE          | 1042-00        | 1042-00        | 1042-00        |
| COAL                 | 1042-00        | 1042-00        | 1042-00        |
| FIRECLAY             | 1042-00        | 1042-00        | 1042-00        |
| COAL                 | 1042-00        | 1042-00        | 1042-00        |
| SPATIN               | 1042-00        | 1042-00        | 1042-00        |
| FACE LEVEL           | 1042-00        | 1042-00        | 1042-00        |
| BLACK MINE IRONSTONE | 1042-00        | 1042-00        | 1042-00        |
| BLACK SHALE          | 1042-00        | 1042-00        | 1042-00        |
| COAL                 | 1042-00        | 1042-00        | 1042-00        |
| FIRECLAY             | 1042-00        | 1042-00        | 1042-00        |
| COAL                 | 1042-00        | 1042-00        | 1042-00        |
| SPATIN               | 1042-00        | 1042-00        | 1042-00        |
| FACE LEVEL           | 1042-00        | 1042-00        | 1042-00        |
| BLACK MINE IRONSTONE | 1042-00        | 1042-00        | 1042-00        |
| BLACK SHALE          | 1042-00        | 1042-00        | 1042-00        |
| COAL                 | 1042-00        | 1042-00        | 1042-00        |
| FIRECLAY             | 1042-00        | 1042-00        | 1042-00        |
| COAL                 | 1042-00        | 1042-00        | 1042-00        |
| SPATIN               | 1042-00        | 1042-00        | 1042-00        |

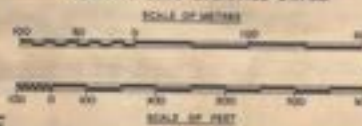
This plan is a true map of the working area of the mine as completed up to 30-11-1967, and I would refer through measurement and survey that in the face of no knowledge and held in it no accident due to the mine.

Signed *Robert Brown*  
Date *16-12-67*  
Coordinates of 852 854 856 858

**ROCKINGHAM  
COLLIERY  
INCORPORATING  
WHARNCLIFFE SILKSTONE  
COLLIERY  
AS FROM 1st AUG. 1967**

— SCALE — 1/2500 —

DATUM FOR LEVELS  
10,000 FT. BELOW ORDNANCE DATUM  
SCALE OF METERS



TYPICAL  
SECTION OF SEAM

BLACK MINE IRONSTONE 36'  
BLACK SHALE 10'  
COAL 14'  
FIRECLAY 16'  
COAL 26'  
SPATIN

I hereby certify that no further working has taken place after the date of abandonment which would affect the accuracy of this plan.

Signed *Robert Brown*  
Date *16-12-67*  
Coordinates of 852 854 856 858

**LOW FENTON  
SEAM**

DATE OF ABANDONMENT 30-11-1967  
DATE OF CONSTRUCTION 1-1-1968



4.38

- SCALE -  $\frac{1}{2500}$  -



Name: *Th. H. Schuyler*  
 Date: *Feb. 4 - 87*  
 Chapter: *17*

IRONSTONE  
CANAL  
COAL  
DRIFT  
COAL  
BED

DATE OF ABANDONMENT...  
DATE OF CONSTRUCTION...



**Fox Aluminium Ltd**

Wentworth Way  
Tannersley

Coal Mining Risk Assessment  
ECL.8822.R06.001 Rev -

July 2021

# Appendix 4

Coal Authority Mine Gas Emissions Report

# Mine Gas Emissions Report

FOX ALUMINIUM SYSTEMS LTD, PARK  
WORKS, WENTWORTH WAY, TANKERSLEY,  
BARNSELY S75 3DH

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

14 June 2021



# Location

## Plan



## Sub sites

| Coordinates                           |                 |
|---------------------------------------|-----------------|
| L81 Wharnccliffe Silkstone No 4 Shaft | 433732E 399750N |

# L81 Wharnccliffe Silkstone No 4 Shaft

## Background

A large vent is fitted to the void Warnccliffe Silkstone No 4 shaft. The vent was installed upon closure of the colliery to allow the safe discharge of mine gas to atmosphere.

The site consists of a green pallisade fenced compound with a locked gate for access. Within the compound is a vent stack with flame arresters fitted to the sides and a sample tap for gas monitoring.

In front of the vent stack on the floor is a square plate which is secured down by seven bolts. The bolts and plate can be removed to gain access to the shaft for water level monitoring to be undertaken.

## Monitoring

The site is visited on a quarterly basis by contractors on behalf of the Coal Authority. During these visits spot readings are taken and concentrations of oxygen, carbon dioxide and methane are recorded and latterly atmospheric pressure.

## Data

