



Phase I Coal Mining Risk Assessment

Liverpool (Tarbuck) PIX Tarbuck Green Liverpool L36 6AD

Whitbread PLC

CRM.1483.051.GE.R.001.A



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Coal Mining Risk Assessment

Project:	Liverpool (Tarbuck) PIX Tarbuck Green Liverpool L36 6AD
For:	Whitbread PLC
Ref:	CRM.1483.051.GE.R.001.A
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1.0 INTRODUCTION

1.1 Background

- 1.1.1 Enzygo Geoenvironmental Limited has been commissioned to prepare a Coal Mining Risk Assessment in support of a planning application at Liverpool (Tarbuck) PIX Tarbuck Green Liverpool L36 6AD.

1.2 Proposed Development

- 1.2.1 The existing site comprises a Premier Inn Hotel and Brewers Fayre restaurant with associated car parking and soft landscaping. The proposed development comprises an extension to the existing hotel together with an annex located within soft landscaping to the north east of the existing hotel.
- 1.2.2 The proposed development is shown on Drawing SK101 prepared by Alison Pike Partnership Limited. A copy is included within the Drawing Section of this report.

1.3 Objectives

- 1.3.1 The objectives of the study are to:
- Obtain desk study information, a copy of which is included within Appendix 1;
 - Obtain a coal mining report, a copy of which is included in Appendix 2;
 - Assess the implications of any potential geotechnical issues in relation to the site and any historical mining; and
 - Provide a report relating to the Geotechnical and mining risks.

2.0 SITE SETTING

Table 2.0 Site Description

Item	Description
Site Address	Liverpool (Tarbuck) PIX Tarbuck Green Liverpool L36 6AD
National Grid Reference	345970 389514

2.1 Current Site Description

- 2.1.1 The site of the proposed annex is occupied by soft landscaping comprising a grassed area surrounded by mature trees. An area of low growing shrubs is present within the western area of the proposed annex separating it from an existing tarmac car park.
- 2.1.2 The proposed extension is located to the north of the existing hotel and is occupied by paving slabs and an area of soft landscaping vegetated with bushes.

2.2 Surrounding Area

- 2.2.1 Land uses surrounding the site are summarised as follows:

Table 2.2.1 Land Use Surrounding the Area

Direction	Land Use
North	Distribution sheds and car parking.
South	Cronton Road with food retail and depot beyond.
West	Car park and hotel.
East	Distribution sheds and car parking.

- 2.2.2 There is no evidence of ground workings on or adjacent to the site.

3.0 SITE HISTORY

3.1 Historical Maps

3.1.1 A review of historical Ordnance Survey maps and information pertinent to the site and within a 250m radius is summarised below:

Table 3.1.1 Historical Maps

Potentially Contaminative Historical Land Use		
Map Edition	Site	Surrounding Area
1892	Field.	Fields 0m N, S, E & W. Pond 50m NW. Logwood Mill Brook 120m NE. Residential properties 20m SW, 100m S, 80m E & 170m SE. Colliery 550m SW, 600m NE, Coal Pits 800m NW. Old Colliery 600m N. Shaft 800m NE.
1907	No significant change.	No significant change.
1927	No significant change.	No significant change.
1937	No significant change.	No significant change.
1956	No significant change.	No significant change.
1976	Open land.	Works and commercial development 100m N, E & W. Cronton Road 0m S with Council Depot beyond.
1982	No significant change.	Depot 20m N. Works 10m E. Depot 100m W. Garage 220m SW.
1989	No significant change.	No significant change.
1992	No significant change.	No significant change.
2001	Public House and hotel in W. Remainder of site car parking and open land.	Car parking 0m W.
2003	No significant change.	No significant change.
2010	No significant change.	No significant change.
2024	No significant change.	Food retail store 100m SW.

3.1.2 Historic collieries and shafts are identified within 1km of the site, with all of them being located at least 600m from the site. No collieries, shafts or open cast mine workings are identified on or within 50m of the site.

3.1.3 No significant risks are identified.

4.0 ENVIRONMENTAL SETTING

4.1 Ground Conditions

4.1.1 The British Geological Survey (BGS) indicates that the site is underlain by the following geological sequence:

Table 4.1.1 Geological Sequence

Geological Unit	Type	Descriptions	Aquifer Classification
Drift	Glacial Till	Diamicton	Secondary Undifferentiated
Solid	Pennine Middle Coal Measures.	Mudstone siltstone and sandstone.	Secondary A
	Kinnerton Sandstone	Sandstone.	Unproductive

4.1.2 The Pennine Middle Coal Measures are shown to be present within the western areas of the larger site. The Eastern area, where the proposed annex and extension are located is underlain by Kinnerton Sandstone.

4.1.3 A normal fault is present on site, trending north to south which separates the Pennine Middle Coal Measures from the Kinnerton Sandstone. Other faults surround the site. The presence of this fault means that the development site of the site (eastern area) is not underlain by Pennine Middle Coal measures and therefore not at risk from coal workings.

4.1.4 BGS records show no published records of Made Ground on or within 500m of the site.

4.1.5 There are no records of landslips on or near to the site.

4.1.6 There are no viewable BGS boreholes logs on or within the vicinity of the site. Borehole records are available from the BGS, which are included in Appendix 3 and are summarised on the table below:

Table 4.1.7 Borehole Records

Reference	Location	Details
SJ 4604 8992	430m NE	3m of clay (Glacial Till) over rock. Mine at 54m.
SJ48 NE/30	120m SW	3m Drift (Glacial Til) over rock. Coal (150mm thick) at 6.7m depth. Coal seam (100mm thick) at 8.5m depth. Coal seams (2m thick) at 9.75m depth.
SJ48 NE	170m S.	3m Boulder Clay (Glacial Till) over rock. Coal and shale (150mm) thick at 118m depth. Coal (3.1m thick) at 232m depth.
514	243m SW	3m Drift (Glacial Til) over rock. Coal (450mm thick) at 85.3m depth. Coal 0.91m thick) at 102m depth.

4.1.7 Thicker seams of coal are shown as fragments and dirty coal. No voids other than within the borehole located 430m north east were noted.

4.1.8 Due to the coal seams dipping at significant angles and the presence of faults on and adjacent to the site it is not feasible to extrapolate between the borehole records to predict seams below the site.

4.2 Natural Hazards Finding

4.2.1 BGS information presented within the Groundsure report identified the following ground conditions:

Table 5.5.1 Natural Hazards

Hazard	Risk Designation (Groundsure)
Shrink Swell	Very Low
Landslides	Very Low
Soluble Rocks	Negligible
Compressible Ground	Negligible
Collapsible Rocks	Very low
Running Sands	Very Low

4.2.2 No significant ground hazards are identified.

4.3 Coal Mining

4.3.1 The site is identified as being in a coal mining area and as such a more detailed assessment has been undertaken. This is presented in Section 5.

4.4 Non-Coal Mining and Cavities

4.4.1 The Groundsure GeoInsight report indicates no significant risk from none coal mining activities.

4.5 Natural Cavities

4.5.1 No natural cavities are identified below or near to the site.

4.6 Ground Workings

4.6.1 Tarbock Colliery is identified 208m north west, which is a disused coal mine. This is not shown on historical maps as a colliery however is shown as an open excavation in 1850 and field by 1891. This colliery is referenced as open from 1803. Given the faulting of the site and the surrounding area. Any workings from this colliery will not be a risk to the site.

4.6.2 Similar open excavations presumed exploration pits are shown on the 1850 historical plan to the north west, west and south west with the closest being 50m north west shown as an excavation in 1850 and pond in 1891 to 1967. As the excavation was infilled as a pond by 1891 and as fields by 1967 this is not considered a significant risk to the site.

4.6.3 Nearest referenced colliery shown on historical maps is 590m north.

4.6.4 The only surface workings within 250m of the site comprise ponds and a cutting, which are not considered to be a significant risk.

4.6.5 The closest old shaft is located 637m north.

4.7 Planning Records



4.7.1 The Local Authority Planning Portal was inspected and included no relevant documents were available pertaining to the scheme.

5.0 COAL MINING RISK ASSESSMENT

5.1 General

5.1.1 The Groundsure Geo Insight report indicates the site is located within an area of potential coal mining and a detailed coal mining risk assessment has been undertaken.

5.2 Coal Authority Viewer

5.2.1 The Coal Authority Interactive Viewer shows the western area of the larger site to be within a development high risk area. The eastern area of the site, within the area of the proposed annex is shown to be outside of the high risk area.

5.3 Coal Authority Report

5.3.1 A Coal Authority Report has been obtained for the development site which is to the eastern section of the wider site. A copy of this report is included in Appendix 2. Results are summarised below:

5.3.2 The Coal Mining report identifies no past mining recorded on the development site.

5.3.3 No spine roadways recorded at shallow depth.

5.3.4 No mine entries within 100m for the site.

5.3.5 No open cast mines within 500m of the site.

5.3.6 The Coal Authority confirms that it has not received damage notice or claim for the property or within 50m.

5.3.7 There are no records of preventative works having been undertaken.

5.3.8 No recorded mine gas.

5.3.9 No coal mining licenses within 200m of the site.

5.4 Conclusion

5.4.1 Based on the geological maps and findings of the Coal Authority Report no significant risk from coal mining has been identified at the site.

6.0 PRELIMINARY GEOTECHNICAL RISK ASSESSMENT

6.1 General

6.1.1 A preliminary geotechnical risk register has been produced for the proposed scheme in order to identify potential hazards, the probability of the hazard occurring, impact and risk rating. This geotechnical register reflects the current situation on site and should be used to confirm where the current risks are. It is a very simple qualitative risk assessment and should not be viewed as definitive. This risk assessment reflects the current level of understanding of the geotechnical aspects of the scheme and will be subject to revision. It is a generalised risk register that covers all of the main risks.

Table 6.1.1 Risk assessment Criteria and rating

Risk rating (R) = Probability (P) x Impact (I).

Risk Assessment Criteria and Rating			
Probability (P)		Impact (I)	
Very likely	5	Very high	5
Probable	4	High	4
Possible	3	Medium	3
Unlikely	2	Low	2
Negligible	1	Very Low	1
Risk Rating (R) = Probability X Impact			
Low 1-8		Medium 9-15	High 16-25

Table 6.1.2 Preliminary Geotechnical risk Register

Table 5.1.1: Geotechnical Risk Register (existing conditions)						
Hazard / Risk	Cause	Consequence(s)	Pre-Control			Mitigation
			P	I	R	
Ground collapse from Coal mining or workings collapse	Potential for coal seams and workings	Local collapse - Damage to proposed property - Potential cost of remedial measures - loss of life - effects on neighbouring properties & infrastructure	1	4	4	No coal mining identified below the site.
Ground collapse from Coal mining or workings collapse	Void migration and collapsing of shallow workings	Local collapse - Damage to proposed property - Potential cost of remedial measures - loss of life - effects on neighbouring properties & infrastructure	1	4	4	No coal mining identified below the site.
	Foundation collapse		1	4	4	No coal mining identified below the site.
Unforeseen Ground Conditions	Unforeseen Ground Conditions (e.g. un identified shallow workings Variability in encountered soils	- potential local collapse via void migration - effects on neighbouring properties & infrastructure - Damage to proposed property - Potential cost of remedial measures	1	4	4	No coal mining identified below the site.

HATCH LEGEND

- RECEPTION AREA
- BREAKFAST ROOM
- OFFICE
- LINEN STORE
- PLANT ROOM
- PUBLIC HOUSE

OPTION A

EXISTING HOTEL
2 Storeys 41 Bedrooms

PROPOSED EXTENSION
2 Storey 25 Bedroom Extension

3 Bedrooms Lost To Form New
Breakfast Room Area

Total Bedrooms 63 Bedrooms

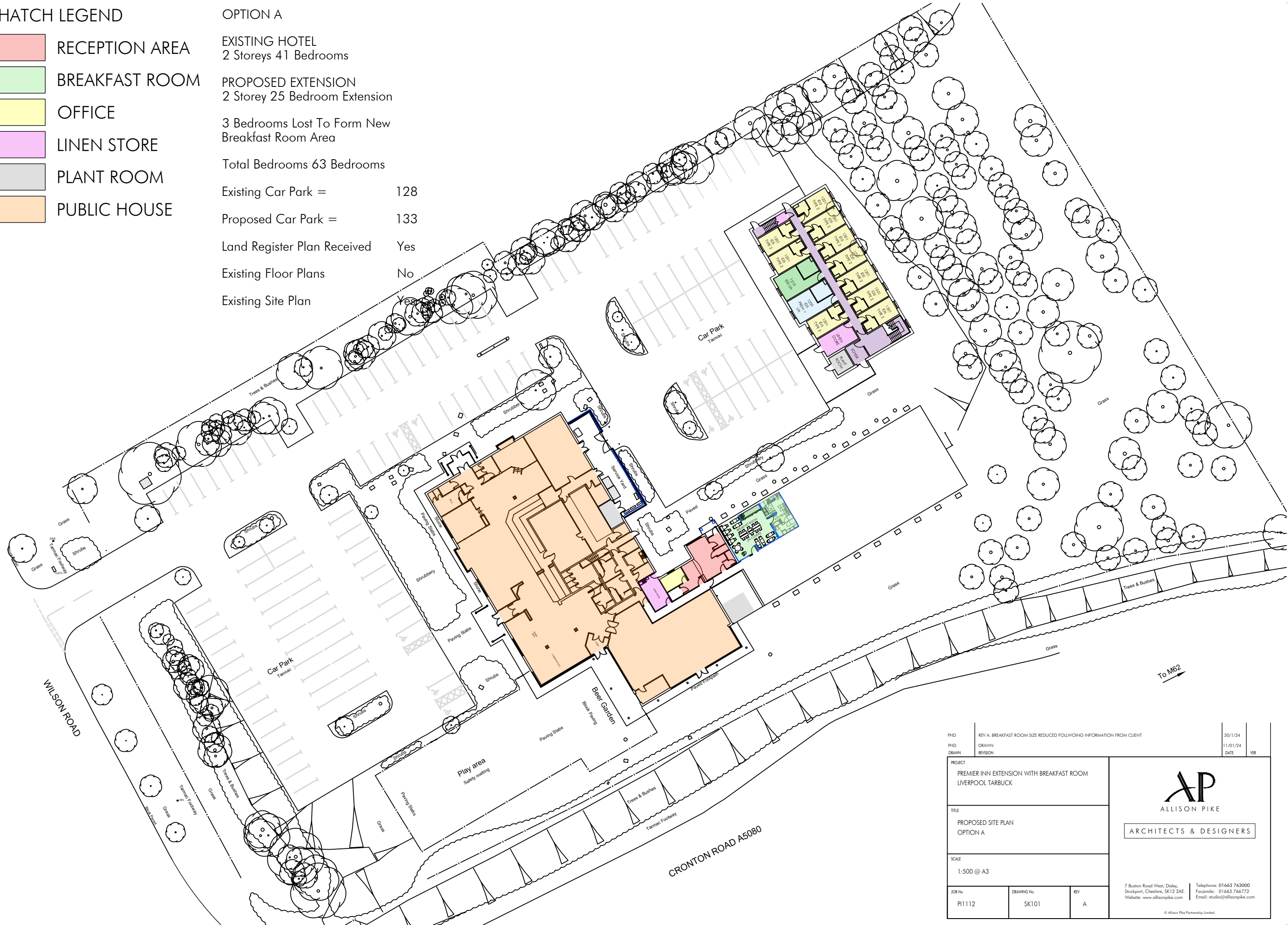
Existing Car Park = 128

Proposed Car Park = 133

Land Register Plan Received Yes

Existing Floor Plans No

Existing Site Plan



PHD DRAWN	REV A: BREAKFAST ROOM SIZE REDUCED FOLLOWING INFORMATION FROM CLIENT	30/1/24
PHD REVISION		11/01/24 DATE
PROJECT PREMIER INN EXTENSION WITH BREAKFAST ROOM LIVERPOOL TARBUCK		AP ALLISON PIKE ARCHITECTS & DESIGNERS 7 Buxton Road West, Disley, Stockport, Cheshire, SK12 2AE Telephone: 01663 763000 Facsimile: 01663 766772 Website: www.allisonpike.com Email: studio@allisonpike.com
TITLE PROPOSED SITE PLAN OPTION A		
SCALE 1:500 @ A3		
JOB No PI1112	DRAWING No SK101	

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Appendix 1 – Desk Study Assessment

unspecified

Order Details

Date: 09/04/2024
Your ref: EMS_937012_1162880
Our Ref: EMS-937012_1192550

Site Details

Location: 345970 389514
Area: 0.89 ha
Authority: [Knowsley Metropolitan Borough Council](#) ↗



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Summary of findings

[p. 2 >](#)

Aerial image

[p. 9 >](#)

OS MasterMap site plan

[p.14 >](#)

groundsure.com/insightuserguide ↗

Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	1	0	11	29	-
17 >	1.2 >	Historical tanks >	0	0	0	11	-
18 >	1.3 >	Historical energy features >	0	1	7	14	-
19	1.4	Historical petrol stations	0	0	0	0	-
19 >	1.5 >	Historical garages >	0	0	3	4	-
20	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
21 >	2.1 >	Historical industrial land uses >	1	0	11	35	-
23 >	2.2 >	Historical tanks >	0	0	0	15	-
24 >	2.3 >	Historical energy features >	0	4	21	28	-
26	2.4	Historical petrol stations	0	0	0	0	-
26 >	2.5 >	Historical garages >	0	0	6	7	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
28	3.1	Active or recent landfill	0	0	0	0	-
28	3.2	Historical landfill (BGS records)	0	0	0	0	-
29	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
29	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
29 >	3.5 >	Historical waste sites >	0	0	0	4	-
31 >	3.6 >	Licensed waste sites >	0	0	0	7	-
33 >	3.7 >	Waste exemptions >	0	0	7	10	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
35 >	4.1 >	Recent industrial land uses >	1	4	17	-	-
37 >	4.2 >	Current or recent petrol stations >	0	0	2	0	-
37	4.3	Electricity cables	0	0	0	0	-
37	4.4	Gas pipelines	0	0	0	0	-
38	4.5	Sites determined as Contaminated Land	0	0	0	0	-



38	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
38	4.7	Regulated explosive sites	0	0	0	0	-
38 >	4.8 >	Hazardous substance storage/usage >	0	0	1	0	-
39 >	4.9 >	Historical licensed industrial activities (IPC) >	0	0	5	0	-
39 >	4.10 >	Licensed industrial activities (Part A(1)) >	0	0	6	3	-
41 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	0	2	0	-
42	4.12	Radioactive Substance Authorisations	0	0	0	0	-
42 >	4.13 >	Licensed Discharges to controlled waters >	0	1	4	6	-
44	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
44	4.15	Pollutant release to public sewer	0	0	0	0	-
44 >	4.16 >	List 1 Dangerous Substances >	0	0	3	0	-
45	4.17	List 2 Dangerous Substances	0	0	0	0	-
45 >	4.18 >	Pollution Incidents (EA/NRW) >	0	0	1	2	-
45	4.19	Pollution inventory substances	0	0	0	0	-
46	4.20	Pollution inventory waste transfers	0	0	0	0	-
46	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
47 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
49 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
51 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
52	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
53	5.5	Groundwater vulnerability- local information	None (within 0m)				
54 >	5.6 >	Groundwater abstractions >	0	0	0	0	5
56 >	5.7 >	Surface water abstractions >	0	0	0	0	4
57 >	5.8 >	Potable abstractions >	0	0	0	0	5
59 >	5.9 >	Source Protection Zones >	1	0	0	0	-
59	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
60 >	6.1 >	Water Network (OS MasterMap) >	0	0	4	-	-



61 >	6.2 >	Surface water features >	0	0	2	-	-
61 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
62 >	6.4 >	WFD Surface water bodies >	0	0	1	-	-
62 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
63	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
63	7.2	Historical Flood Events	0	0	0	-	-
63	7.3	Flood Defences	0	0	0	-	-
64	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
64	7.5	Flood Storage Areas	0	0	0	-	-
65	7.6	Flood Zone 2	None (within 50m)				
65	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
66 >	8.1 >	Surface water flooding >	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding >					
68 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
69	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
70	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
70	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
70	10.4	Special Protection Areas (SPA)	0	0	0	0	0
70	10.5	National Nature Reserves (NNR)	0	0	0	0	0
71	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
71 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	2
71	10.8	Biosphere Reserves	0	0	0	0	0
71	10.9	Forest Parks	0	0	0	0	0
72	10.10	Marine Conservation Zones	0	0	0	0	0
72 >	10.11 >	Green Belt >	0	0	1	0	3
72	10.12	Proposed Ramsar sites	0	0	0	0	0



72	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
73	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
73	10.15	Nitrate Sensitive Areas	0	0	0	0	0
73 >	10.16 >	Nitrate Vulnerable Zones >	1	0	0	0	2
74 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
75	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
76	11.1	World Heritage Sites	0	0	0	-	-
76	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
76	11.3	National Parks	0	0	0	-	-
76	11.4	Listed Buildings	0	0	0	-	-
77	11.5	Conservation Areas	0	0	0	-	-
77	11.6	Scheduled Ancient Monuments	0	0	0	-	-
77	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
78 >	12.1 >	Agricultural Land Classification >	Urban (within 250m)				
79	12.2	Open Access Land	0	0	0	-	-
79 >	12.3 >	Tree Felling Licences >	0	0	6	-	-
80	12.4	Environmental Stewardship Schemes	0	0	0	-	-
80	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations >	On site	0-50m	50-250m	250-500m	500-2000m
81 >	13.1 >	Priority Habitat Inventory >	0	0	5	-	-
82	13.2	Habitat Networks	0	0	0	-	-
82	13.3	Open Mosaic Habitat	0	0	0	-	-
82	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
83 >	14.1 >	10k Availability >	Identified (within 500m)				
84	14.2	Artificial and made ground (10k)	0	0	0	0	-
85 >	14.3 >	Superficial geology (10k) >	1	0	1	0	-

86	14.4	Landslip (10k)	0	0	0	0	-
87 >	14.5 >	Bedrock geology (10k) >	2	1	4	6	-
88 >	14.6 >	Bedrock faults and other linear features (10k) >	2	2	14	7	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
90 >	15.1 >	50k Availability >	Identified (within 500m)				
91	15.2	Artificial and made ground (50k)	0	0	0	0	-
91	15.3	Artificial ground permeability (50k)	0	0	-	-	-
92 >	15.4 >	Superficial geology (50k) >	1	0	1	0	-
93 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
93	15.6	Landslip (50k)	0	0	0	0	-
93	15.7	Landslip permeability (50k)	None (within 50m)				
94 >	15.8 >	Bedrock geology (50k) >	2	1	6	8	-
95 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
96 >	15.10 >	Bedrock faults and other linear features (50k) >	3	1	15	6	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
98 >	16.1 >	BGS Boreholes >	0	0	19	-	-
Page	Section	Natural ground subsidence >					
100 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
101 >	17.2 >	Running sands >	Very low (within 50m)				
102 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
103 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
104 >	17.5 >	Landslides >	Very low (within 50m)				
105 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
107 >	18.1 >	BritPits >	0	0	2	0	-
108 >	18.2 >	Surface ground workings >	0	1	8	-	-
109 >	18.3 >	Underground workings >	0	0	0	0	60
111	18.4	Underground mining extents	0	0	0	0	-
111	18.5	Historical Mineral Planning Areas	0	0	0	0	-



111 >	18.6 >	Non-coal mining >	0	1	0	1	1
112	18.7	JPB mining areas	None (within 0m)				
112	18.8	The Coal Authority non-coal mining	0	0	0	0	-
112	18.9	Researched mining	0	0	0	0	-
113	18.10	Mining record office plans	0	0	0	0	-
113	18.11	BGS mine plans	0	0	0	0	-
113 >	18.12 >	Coal mining >	Identified (within 0m)				
113	18.13	Brine areas	None (within 0m)				
114	18.14	Gypsum areas	None (within 0m)				
114	18.15	Tin mining	None (within 0m)				
114	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
115	19.1	Natural cavities	0	0	0	0	-
115	19.2	Mining cavities	0	0	0	0	0
115	19.3	Reported recent incidents	0	0	0	0	-
115	19.4	Historical incidents	0	0	0	0	-
116	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
117 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
119 >	21.1 >	BGS Estimated Background Soil Chemistry >	6	3	-	-	-
120	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
120	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
121	22.1	Underground railways (London)	0	0	0	-	-
121	22.2	Underground railways (Non-London)	0	0	0	-	-
121	22.3	Railway tunnels	0	0	0	-	-
121	22.4	Historical railway and tunnel features	0	0	0	-	-
121	22.5	Royal Mail tunnels	0	0	0	-	-



122	22.6	Historical railways	0	0	0	-	-
122	22.7	Railways	0	0	0	-	-
122	22.8	Crossrail 1	0	0	0	0	-
122	22.9	Crossrail 2	0	0	0	0	-
122	22.10	HS2	0	0	0	0	-

Recent aerial photograph



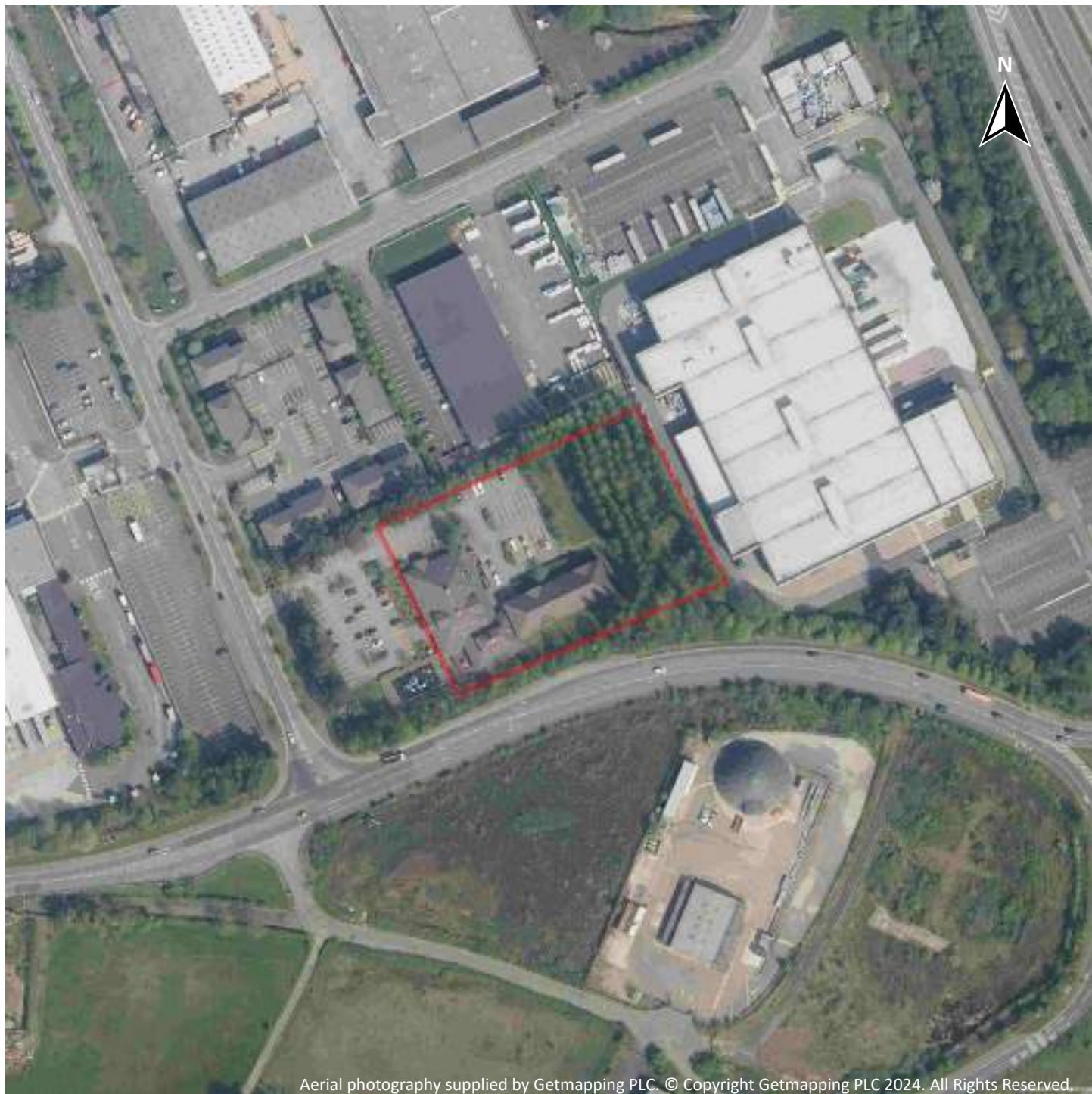
Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

Capture Date: 28/09/2022

Site Area: 0.89ha



Recent site history - 2019 aerial photograph



Capture Date: 22/04/2019

Site Area: 0.89ha



Recent site history - 2009 aerial photograph



Capture Date: 24/06/2009

Site Area: 0.89ha



Recent site history - 2005 aerial photograph



Capture Date: 02/09/2005

Site Area: 0.89ha



Recent site history - 2000 aerial photograph



Capture Date: 21/07/2000

Site Area: 0.89ha



OS MasterMap site plan



Site Area: 0.89ha



1 Past land use



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

1.1 Historical industrial land uses

Records within 500m

41

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

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
1	On site	Unspecified Works	1989	938212



ID	Location	Land use	Dates present	Group ID
A	51m SE	Unspecified Depot	1989	925297
A	51m SE	Unspecified Depot	1975	925987
B	60m NW	Unspecified Works	1975	945342
C	100m SE	Nursery	1975	913666
C	100m SE	Nursery	1989	924721
B	109m N	Unspecified Works	1989	934148
G	227m SE	Cuttings	1975	950437
G	227m SE	Cuttings	1989	975788
H	240m SE	Cuttings	1989	866992
H	240m SE	Cuttings	1975	970795
E	246m SW	Tile Works	1851	811560
E	295m SW	Unspecified Tank	1851	824616
K	299m N	Sewage Works	1950	870370
K	300m N	Sewage Works	1925 - 1947	966970
K	339m N	Unspecified Tank	1950	879671
K	341m N	Unspecified Tank	1947	853971
K	341m N	Unspecified Tank	1925	909267
K	344m N	Unspecified Tanks	1938	815135
L	346m NW	Unspecified Warehouse	1989	934162
M	357m W	Smithy	1891	843198
K	365m N	Unspecified Tank	1947 - 1950	915977
K	365m N	Unspecified Tank	1925	988346
K	366m N	Unspecified Tank	1950	948197
L	367m NW	Unspecified Warehouse	1975	987780
K	367m N	Unspecified Tank	1947	849069
K	367m N	Unspecified Tank	1925	899371
K	388m N	Unspecified Tank	1947 - 1950	857500
O	395m NW	Unspecified Commercial/Industrial	1975	950037



ID	Location	Land use	Dates present	Group ID
O	396m NW	Unspecified Commercial/Industrial	1989	918977
O	400m NW	Unspecified Commercial/Industrial	1967	942003
K	405m N	Unspecified Tanks	1950	887271
K	406m N	Unspecified Tanks	1938	973630
P	421m E	Cuttings	1989	883205
P	421m E	Cuttings	1975	910805
K	427m N	Sewage Works	1955	959491
8	440m N	Unspecified Depot	1990	818270
9	442m N	Unspecified Warehouse	1990	807173
10	444m NW	Corn Mill	1851	823124
11	455m NE	Unspecified Works	1975	976939
13	466m NE	Unspecified Works	1989	934284

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

11

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

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
6	315m NW	Tanks	1996 - 1997	130050
I	335m NW	Unspecified Tank	1992	112543
I	337m NW	Unspecified Tank	1993 - 1996	133589
K	362m N	Tanks	1937	105835
K	363m N	Settling Tanks	1927	108655
K	408m N	Unspecified Tank	1927 - 1937	138396



ID	Location	Land use	Dates present	Group ID
7	413m W	Unspecified Tank	1927	112541
K	427m N	Settling Tank	1927 - 1937	133556
Q	446m N	Settling Tanks	1927	122956
Q	447m N	Settling Tanks	1937	126633
Q	469m N	Settling Tanks	1937	147519

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	22
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Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
2	14m NW	Electricity Substation	1992 - 1997	75507
3	127m NW	Electricity Substation	1982 - 1993	75863
4	141m W	Electricity Substation	1982 - 1997	64193
D	198m N	Electricity Substation	1989 - 1992	81066
D	199m NE	Gas Governor	1992 - 1997	74213
D	220m N	Electricity Substation	1993 - 1997	85444
F	220m N	Electricity Substation	1992 - 1997	78944
F	221m N	Electricity Substation	1982	77789
J	294m NW	Electricity Substation	1992 - 1997	72408
J	306m NW	Gas Governor	1992 - 1997	77708
K	355m N	Electricity Substation	1992	70254
K	357m N	Electricity Substation	1993 - 1997	77082
M	378m W	Electricity Substation	1982	66963



ID	Location	Land use	Dates present	Group ID
M	381m W	Electricity Substation	1956	65981
N	392m NE	Electricity Substation	1992	85413
N	394m NE	Electricity Substation	1993 - 1997	83317
K	437m N	Electricity Substation	1993 - 1997	82215
K	440m N	Electricity Substation	1992 - 1994	68566
K	443m N	Electricity Substation	1987	73647
R	477m NW	Electricity Substation	1992	69240
R	477m NW	Electricity Substation	1982	77915
R	478m NW	Electricity Substation	1993 - 1997	75056

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

7

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

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
5	152m S	Garage	1989 - 1997	27669
E	207m SW	Garage	1982	20211



ID	Location	Land use	Dates present	Group ID
I	250m NW	Garage	1982	21978
I	262m NW	Garage	1982	22780
I	294m NW	Garage	1992	23768
I	297m NW	Garage	1993 - 1997	26136
12	456m W	Garage	1956 - 1982	26161

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

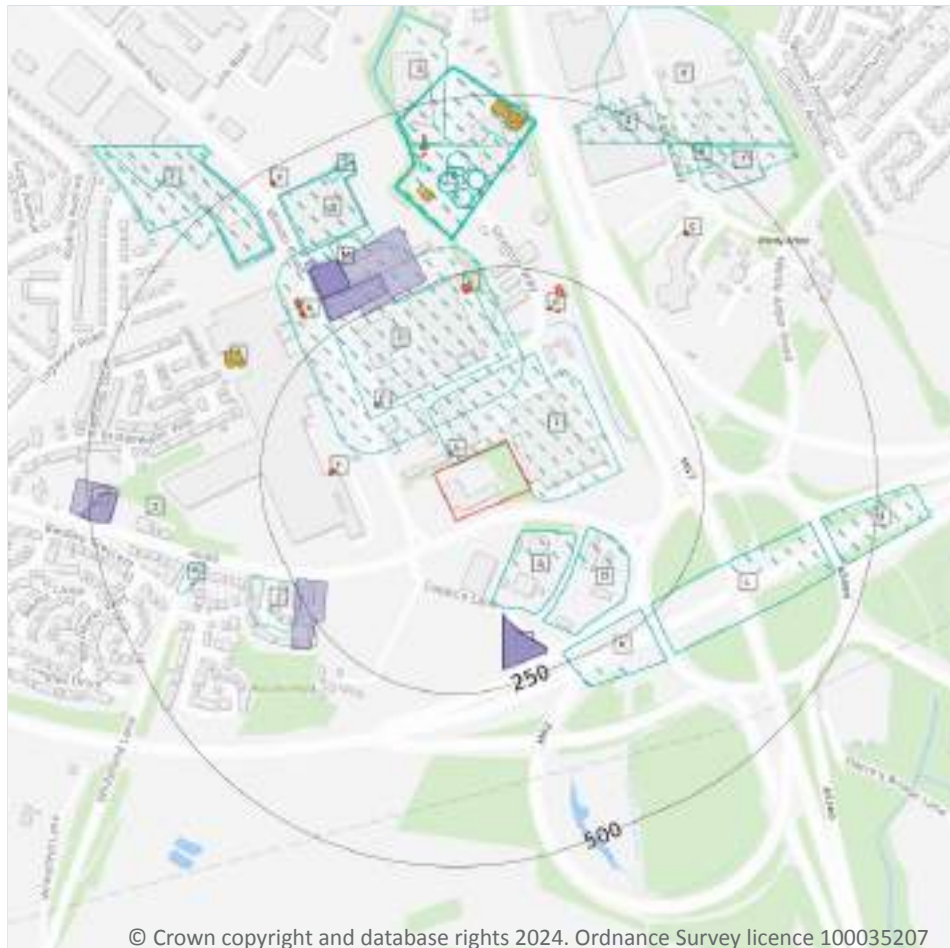
0

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

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



2 Past land use - un-grouped



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

2.1 Historical industrial land uses

Records within 500m

47

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

Features are displayed on the Past land use - un-grouped map on [page 21](#) >

ID	Location	Land Use	Date	Group ID
1	On site	Unspecified Works	1989	938212
B	51m SE	Unspecified Depot	1975	925987
B	51m SE	Unspecified Depot	1989	925297



ID	Location	Land Use	Date	Group ID
C	60m NW	Unspecified Works	1975	945342
D	100m SE	Nursery	1975	913666
D	100m SE	Nursery	1989	924721
C	109m N	Unspecified Works	1989	934148
K	227m SE	Cuttings	1975	950437
K	227m SE	Cuttings	1989	975788
L	240m SE	Cuttings	1975	970795
L	240m SE	Cuttings	1989	866992
I	246m SW	Tile Works	1851	811560
I	295m SW	Unspecified Tank	1851	824616
O	299m N	Sewage Works	1950	870370
O	300m N	Sewage Works	1947	966970
O	300m N	Sewage Works	1925	966970
O	302m N	Sewage Works	1938	966970
O	302m N	Sewage Works	1938	966970
O	339m N	Unspecified Tank	1950	879671
O	341m N	Unspecified Tank	1947	853971
O	341m N	Unspecified Tank	1925	909267
O	344m N	Unspecified Tanks	1938	815135
Q	346m NW	Unspecified Warehouse	1989	934162
R	357m W	Smithy	1891	843198
O	365m N	Unspecified Tank	1947	915977
O	365m N	Unspecified Tank	1925	988346
O	365m N	Unspecified Tank	1950	915977
O	366m N	Unspecified Tank	1950	948197
Q	367m NW	Unspecified Warehouse	1975	987780
O	367m N	Unspecified Tank	1947	849069
O	367m N	Unspecified Tank	1925	899371



ID	Location	Land Use	Date	Group ID
O	388m N	Unspecified Tank	1947	857500
O	389m N	Unspecified Tank	1950	857500
T	395m NW	Unspecified Commercial/Industrial	1975	950037
T	396m NW	Unspecified Commercial/Industrial	1989	918977
T	400m NW	Unspecified Commercial/Industrial	1967	942003
O	405m N	Unspecified Tanks	1950	887271
O	406m N	Unspecified Tanks	1938	973630
U	421m E	Cuttings	1975	910805
U	421m E	Cuttings	1989	883205
O	427m N	Sewage Works	1955	959491
3	440m N	Unspecified Depot	1990	818270
4	442m N	Unspecified Warehouse	1990	807173
5	444m NW	Corn Mill	1851	823124
6	455m NE	Unspecified Works	1975	976939
7	466m NE	Unspecified Works	1989	934284
8	471m NE	Unspecified Works	1975	976939

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

15

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

Features are displayed on the Past land use - un-grouped map on [page 21 >](#)

ID	Location	Land Use	Date	Group ID
P	315m NW	Tanks	1996	130050
P	315m NW	Tanks	1997	130050
M	335m NW	Unspecified Tank	1992	112543
M	337m NW	Unspecified Tank	1996	133589



ID	Location	Land Use	Date	Group ID
M	337m NW	Unspecified Tank	1993	133589
O	362m N	Tanks	1937	105835
O	363m N	Settling Tanks	1927	108655
O	408m N	Unspecified Tank	1927	138396
O	408m N	Unspecified Tank	1937	138396
2	413m W	Unspecified Tank	1927	112541
O	427m N	Settling Tank	1927	133556
O	427m N	Settling Tank	1937	133556
V	446m N	Settling Tanks	1927	122956
V	447m N	Settling Tanks	1937	126633
V	469m N	Settling Tanks	1937	147519

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

53

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

Features are displayed on the Past land use - un-grouped map on [page 21](#) >

ID	Location	Land Use	Date	Group ID
A	14m NW	Electricity Substation	1992	75507
A	15m NW	Electricity Substation	1996	75507
A	15m NW	Electricity Substation	1997	75507
A	15m NW	Electricity Substation	1993	75507
E	127m NW	Electricity Substation	1992	75863
E	127m NW	Electricity Substation	1982	75863
E	127m NW	Electricity Substation	1982	75863
E	127m NW	Electricity Substation	1993	75863
F	141m W	Electricity Substation	1992	64193



ID	Location	Land Use	Date	Group ID
F	142m W	Electricity Substation	1996	64193
F	142m W	Electricity Substation	1997	64193
F	142m W	Electricity Substation	1993	64193
F	142m W	Electricity Substation	1982	64193
H	198m N	Electricity Substation	1989	81066
H	198m N	Electricity Substation	1992	81066
H	199m NE	Gas Governor	1992	74213
H	199m NE	Gas Governor	1997	74213
H	199m NE	Gas Governor	1993	74213
H	220m N	Electricity Substation	1997	85444
H	220m N	Electricity Substation	1993	85444
J	220m N	Electricity Substation	1992	78944
J	221m N	Electricity Substation	1982	77789
J	223m N	Electricity Substation	1996	78944
J	223m N	Electricity Substation	1997	78944
J	223m N	Electricity Substation	1993	78944
N	294m NW	Electricity Substation	1996	72408
N	294m NW	Electricity Substation	1997	72408
N	294m NW	Electricity Substation	1992	72408
N	295m NW	Electricity Substation	1993	72408
N	306m NW	Gas Governor	1992	77708
N	308m NW	Gas Governor	1996	77708
N	308m NW	Gas Governor	1997	77708
N	308m NW	Gas Governor	1993	77708
O	355m N	Electricity Substation	1992	70254
O	357m N	Electricity Substation	1996	77082
O	357m N	Electricity Substation	1997	77082
O	357m N	Electricity Substation	1993	77082



ID	Location	Land Use	Date	Group ID
R	378m W	Electricity Substation	1982	66963
R	381m W	Electricity Substation	1956	65981
S	392m NE	Electricity Substation	1992	85413
S	394m NE	Electricity Substation	1997	83317
S	394m NE	Electricity Substation	1993	83317
O	437m N	Electricity Substation	1996	82215
O	437m N	Electricity Substation	1997	82215
O	437m N	Electricity Substation	1993	82215
O	440m N	Electricity Substation	1992	68566
O	442m N	Electricity Substation	1994	68566
O	443m N	Electricity Substation	1987	73647
X	477m NW	Electricity Substation	1992	69240
X	477m NW	Electricity Substation	1982	77915
X	478m NW	Electricity Substation	1996	75056
X	478m NW	Electricity Substation	1997	75056
X	478m NW	Electricity Substation	1993	75056

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

13

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



Features are displayed on the Past land use - un-grouped map on [page 21](#) >

ID	Location	Land Use	Date	Group ID
G	152m S	Garage	1993	27669
G	152m S	Garage	1997	27669
G	152m S	Garage	1989	27669
G	152m S	Garage	1992	27669
I	207m SW	Garage	1982	20211
M	250m NW	Garage	1982	21978
M	262m NW	Garage	1982	22780
M	294m NW	Garage	1992	23768
M	297m NW	Garage	1993	26136
M	297m NW	Garage	1996	26136
M	297m NW	Garage	1997	26136
W	456m W	Garage	1982	26161
W	459m W	Garage	1956	26161

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Historical waste sites
- Licensed waste sites
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m**0**

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m**0**

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

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

3.5 Historical waste sites

Records within 500m**4**

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

Features are displayed on the Waste and landfill map on [page 28 >](#)

ID	Location	Address	Further Details	Date
C	268m NW	Site Address: Former Hayden Drysys, Internati, Wilson Road, Thorburn International, LIVERPOOL, Merseyside, L36 6AD	Type of Site: Waste Recycling Centre Planning application reference: 10/00153/FUL Description: Scheme comprises formation of a household waste recycling centre comprising of 1 office building, covered collection area & 1 storage building, together with construction of car parking & new vehicular access landscaping, boundary treatments & associated works. Construction - pitched roof; roller shutter, steel doors; portal frame; black top surfacing, concrete paving, fencing, grp liners, lighting columns, planting, Tarmac surfacing site works. An application (ref: 10/00153/FUL) for detailed planning p ermission was granted by Knowsley B.C. The start date and contract period are for guideline only. Barhale Construction Plc has been awarded the main contract and work has commenced on site. Data source: Historic Planning Application Data Type: Point	28/11/2011



ID	Location	Address	Further Details	Date
4	328m N	Site Address: Orchid Environmental MWDA Trea, Stretton Way, & W H Smith News, Liverpool, Merseyside, L36 6JF	Type of Site: Waste Transfer Station Planning application reference: 12/00669/COU Description: Scheme comprises change of use of from distribution depot (use class B8) to waste reception building, together with external alterations, construction of double weighbridge and gatehouse, temporary modular building, relocation of car parking and associated works. Data source: Historic Planning Application Data Type: Point	04/03/2013
E	397m N	Site Address: Fleet Removals Of Liverpool, Stretton Way, LIVERPOOL, Merseyside, L36 6JF	Type of Site: Waste Treatment & Transfer Facilities Planning application reference: 06/00990/FUL Description: Scheme comprises change of use and extension to form waste treatment and transfer facility with associated visitor centre, together with construction of car parking, installation of weighbridge and associated works. Construction - black top surfacing se works. An application (ref: 06/00990/FUL) for detailed planning permission was granted by Knowsley B.C. Planning decision obtained Data source: Historic Planning Application Data Type: Point	-
5	484m N	Site Address: Orchid Environmental MWDA Trea, Stretton Way, Huyton, Knowsley, LIVERPOOL, Merseyside, L36 6JF	Type of Site: Waste Recycling Facility Planning application reference: 09/00409/FUL Description: Scheme comprises change of use of and external alterations to building to form extended waste recycling facility resulting in increase of waste processed from 50,000 tonnes/year to 120,000 tonnes/year, change of use of factory unit to form associated offices/maintenance workshop, construction of car parking and associated works - amended description. Construction - automatic, roller shutter doors; external refurbishment; black top surfacing, fencing, hardcore, turfing/grass site works. An application (ref: 09/00409/FUL) for detailed planning permission was granted by Knowsley B.C. Project value, start date and contract period are for guideline only. This scheme is now complete. Data source: Historic Planning Application Data Type: Point	-

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



3.6 Licensed waste sites

Records within 500m

7

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

Features are displayed on the Waste and landfill map on [page 28 >](#)

ID	Location	Details		
3	274m N	Site Name: Stretton Way Bulking Station Site Address: Stretton Way Depot, Stretton Way, Huyton, Knowsley, Merseyside, L36 6JF Correspondence Address: -	Type of Site: 75kte HCI Waste Transfer Station Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 652042 EPR reference: EA/EPR/EP3491LE Operator: Knowsley Metropolitan Borough Council Waste Management licence No: 101122 Annual Tonnage: 0	Issue Date: 03/11/2009 Effective Date: 03/11/2009 Modified: - Surrendered Date: 03/11/2009 Expiry Date: - Cancelled Date: - Status: Surrendered
C	298m NW	Site Name: Huyton H W R C Site Address: Huyton Ind Est, Wilson Road, Huyton, Knowsley, Merseyside, L36 6AD Correspondence Address: -	Type of Site: 75kte Non-hazardous & hazardous HWA Site Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: VEO167 EPR reference: EA/EPR/DB3833DK/A001 Operator: Veolia E S Merseyside & Halton Ltd Waste Management licence No: 103677 Annual Tonnage: 74999	Issue Date: 12/12/2011 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
C	298m NW	Site Name: Huyton H W R C Site Address: Huyton Ind Est, Wilson Road, Huyton, Knowsley, Merseyside, L36 6AD Correspondence Address: -	Type of Site: 75kte Non-hazardous & hazardous HWA Site Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 654423 EPR reference: EA/EPR/DB3833DK Operator: Veolia Es Merseyside & Halton Limited Waste Management licence No: 103677 Annual Tonnage: 74999	Issue Date: 12/12/2011 Effective Date: 12/12/2011 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued



ID	Location	Details		
G	439m N	Site Name: Stretton Way Site Address: Stretton Way, Huyton Ind Est, Huyton, Merseyside, L36 6JF Correspondence Address: -	Type of Site: 75kte HCI Waste TS + treatment Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FCC004 EPR reference: EA/EPR/JB3633RP/A001 Operator: F C C Recycling (U K) Limited Waste Management licence No: 104504 Annual Tonnage: 74999	Issue Date: 23/07/2012 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
G	439m N	Site Name: Arpley 2 Site Address: Stretton Way, Huyton Ind Est, Huyton, Merseyside, L36 6JF Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FCC004 EPR reference: EA/EPR/JB3633RP/V002 Operator: F C C Recycling (U K) Limited Waste Management licence No: 104504 Annual Tonnage: 120000	Issue Date: 23/07/2012 Effective Date: - Modified: 18/12/2012 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified
G	439m N	Site Name: Arpley 2 Site Address: Arpley 2, Stretton Way, Huyton Ind Est, Huyton, Merseyside, L36 6JF Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FCC004 EPR reference: EA/EPR/JB3633RP/V003 Operator: F C C Recycling (U K) Limited Waste Management licence No: 104504 Annual Tonnage: 120000	Issue Date: 23/07/2012 Effective Date: - Modified: 08/06/2016 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC



ID	Location	Details		
G	439m N	Site Name: Arpley 2 - EPR/LP3139RK Site Address: Arpley 2, Stretton Way, Huyton Industrial Estate, Huyton, Knowsley, L36 6JF Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 633728 EPR reference: EA/EPR/JB3633RP Operator: Fcc Recycling (UK) Limited Waste Management licence No: 104504 Annual Tonnage: 120000	Issue Date: 15/11/2016 Effective Date: 15/11/2016 Modified: 15/11/2016 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued

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

3.7 Waste exemptions

Records within 500m	17
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Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on [page 28 >](#)

ID	Location	Site	Reference	Category	Sub-Category	Description
1	143m NW	Huyton HWRC, Huyton Industrial Estate, Wilson Road, Huyton, L36 6AD	WEX175384	Storing waste exemption	Not on a farm	Storage of waste in a secure place
A	203m NE	-	WEX366784	Disposing of waste exemption	Not on a farm	Burning waste in the open
A	203m NE	STRETTON WAY, LIVERPOOL, L36 6JF	WEX093799	Disposing of waste exemption	Not on a farm	Burning waste in the open
A	203m NE	-	WEX237679	Disposing of waste exemption	Not on a farm	Burning waste in the open
2	226m N	STRETTON WAY, LIVERPOOL, L36 6JF	WEX089643	Storing waste exemption	Not on a farm	Storage of waste in a secure place
B	247m SW	Tarbock Motorway Maintenance Compound, Coppice Lane, Prescott, Merseyside, L35 1QY	WEX168997	Storing waste exemption	Not on a farm	Storage of waste in secure containers

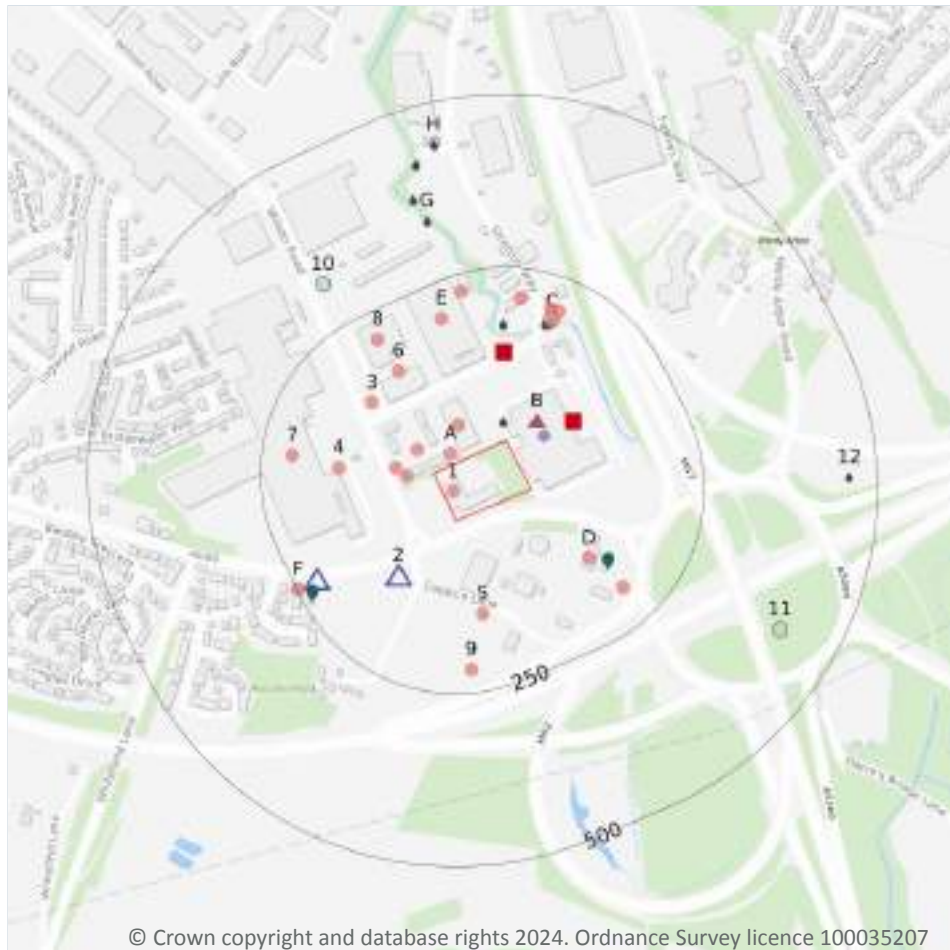


ID	Location	Site	Reference	Category	Sub-Category	Description
B	247m SW	Tarbock Motorway Maintenance Compound, Coppice Lane, Prescot, Merseyside, L35 1QY	WEX168997	Storing waste exemption	Not on a farm	Storage of waste in a secure place
D	287m SW	Tarbock Motorway Maintenance Compound, Coppice Lane, Prescot, Merseyside, L35 1QY	WEX303248	Storing waste exemption	Not on a Farm	Storage of waste in a secure place
D	287m SW	Tarbock Motorway Maintenance Compound, Coppice Lane, Prescot, Merseyside, L35 1QY	WEX303248	Storing waste exemption	Not on a Farm	Storage of waste in secure containers
E	414m N	-	WEX261078	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
E	414m N	STRETTON WAY, LIVERPOOL, L36 6JF	WEX121161	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
E	414m N	Knowsley Depot, Stretton Way, Huyton, Knowsley, Merseyside, L36 6JF	WEX076561	Storing waste exemption	Not on a farm	Storage of waste in a secure place
E	415m N	Locker Freight Ltd, Stretton Way, Huyton, Liverpool, L366JF	WEX137591	Storing waste exemption	Not on a farm	Storage of waste in a secure place
E	416m N	Riverside House Stretton Way LIVERPOOL L36 6JF	EPR/GF0235A U/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of waste in a secure place
E	416m N	Knowsley Metropolitan Borough Council Stretton Way LIVERPOOL L36 6JF	EPR/EF0001M P/A001	Treating waste exemption	Non-Agricultural Waste Only	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
F	432m N	Batleys Cash & Carry Venture Park Industrial Estate Windy Arbor Road Liverpool L35 1RZ	EPR/EE5249C W/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of waste in a secure place
F	432m N	Batleys Cash & Carry Venture Park Industrial Estate Windy Arbor Road Liverpool L35 1RZ	EPR/EE5249C W/A001	Treating waste exemption	Non-Agricultural Waste Only	Preparatory treatments (baling, sorting, shredding etc)

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



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- △ Current or recent petrol stations
- ▲ Hazardous substance storage/usage
- Historical licensed industrial activities
- ⬮ Part A(1) industrial activities
- Licensed pollutant release (Part A(2)/B)
- Licensed Discharges to controlled waters
- List 1 Dangerous Substances
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

22

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 35](#) >

ID	Location	Company	Address	Activity	Category
1	On site	D J Auto Repair Centre Ltd	Flat 2 The Chapel Brook, Wilson Road, Huyton, Merseyside, L36 6AD	Vehicle Repair, Testing and Servicing	Repair and Servicing
A	17m NW	Electricity Sub Station	Merseyside, L36	Electrical Features	Infrastructure and Facilities



ID	Location	Company	Address	Activity	Category
A	39m W	Eurogold	Eurogold Groundworks and Civils 15-18 Paramount Business Park, Wilson Road, Huyton, Merseyside, L36 6AW	Civil Engineers	Engineering Services
A	42m NW	Business Park	Merseyside, L36	Business Parks and Industrial Estates	Industrial Features
A	49m NW	Works	Merseyside, L36	Unspecified Works Or Factories	Industrial Features
A	56m W	Electricity Sub Station	Merseyside, L36	Electrical Features	Infrastructure and Facilities
D	130m SE	Shell Service Station	Cronton Road, -, Liverpool, Merseyside, L36 6AD	Petrol and Fuel Stations	Road and Rail
3	136m NW	Electricity Sub Station	Merseyside, L36	Electrical Features	Infrastructure and Facilities
4	137m W	Electricity Sub Station	Merseyside, L36	Electrical Features	Infrastructure and Facilities
5	140m S	Electricity Sub Station	Merseyside, L35	Electrical Features	Infrastructure and Facilities
6	156m NW	Blu-sky UK Ltd	The Woodlands Centre, Wilson Road, Huyton, Merseyside, L36 6AD	Seals, Tapes, Taps and Valves	Industrial Products
C	184m NE	Sewage Pumping Station	Merseyside, L36	Waste Storage, Processing and Disposal	Infrastructure and Facilities
D	195m SE	Electricity Sub Station	Merseyside, L35	Electrical Features	Infrastructure and Facilities
E	199m N	Works	Merseyside, L36	Unspecified Works Or Factories	Industrial Features
C	202m N	Electricity Sub Station	Merseyside, L36	Electrical Features	Infrastructure and Facilities
C	202m NE	Gas Governor Station	Merseyside, L36	Gas Features	Infrastructure and Facilities
7	206m W	Halewood International	Halewood International, Wilson Road, Huyton, Merseyside, L36 6AD	Alcoholic Drinks	Foodstuffs
C	207m N	Fleet Factors Ltd	-, Stretton Way, Huyton, Merseyside, L36 6JF	Vehicle Parts and Accessories	Motoring
8	210m NW	Works	Merseyside, L36	Unspecified Works Or Factories	Industrial Features



ID	Location	Company	Address	Activity	Category
9	216m S	Mast	Merseyside, L35	Telecommunications Features	Infrastructure and Facilities
E	225m N	Electricity Sub Station	Merseyside, L36	Electrical Features	Infrastructure and Facilities
F	249m SW	Tesco Petrol Station	Tesco Stores Ltd Esso Garage, Cronton Road, Huyton, Merseyside, L35 1QY	Petrol and Fuel Stations	Road and Rail

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m

2

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on [page 35 >](#)

ID	Location	Company	Address	LPG	Status
2	115m SW	SHELL	Cronton Road, M57 / M62, Huyton, Liverpool, Merseyside, L36 6AD	No	Open
F	218m SW	ESSO	Cronton Road, Tarbock, Prescot, Merseyside, L35 1QY	No	Open

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m

0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m

0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.



4.5 Sites determined as Contaminated Land

Records within 500m

0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m

0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m

0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

1

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

Features are displayed on the Current industrial land use map on [page 35 >](#)

ID	Location	Details	
B	52m NE	Application reference number: 06/00312/HAZ Application status: Pending Application date: 06/04/2006 Address: Goodrich Actuation Systems, Stretton Way, Huyton, Knowsley, L36 6JE	Details: Application For Hazardous Substances Consent For The Storage And Use Of Category 1 (very Toxic) And Category 2 (toxic) Substances Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.



4.9 Historical licensed industrial activities (IPC)

Records within 500m

5

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

Features are displayed on the Current industrial land use map on [page 35](#) >

ID	Location	Details	
B	52m NE	Operator: Goodrich Actuation Systems Ltd Address: Stretton Way, Liverpool, Merseyside, L36 6JE Process: Inorganic Chemical Processes Permit Number: BX9285	Original Permit Number: IPCMINVAR Date Approved: - Effective Date: - Status: Valid
B	52m NE	Operator: Goodrich Actuation Systems Ltd Address: Stretton Way, Liverpool, Merseyside, L36 6JE Process: Inorganic Chemical Processes Permit Number: AO2426	Original Permit Number: IPCAPP Date Approved: 5-12-1994 Effective Date: 12-12-1994 Status: Superseded By Variation
B	52m NE	Operator: Goodrich Actuation Systems Ltd Address: Stretton Way, Liverpool, Merseyside, L36 6JE Process: Inorganic Chemical Processes Permit Number: AZ8005	Original Permit Number: IPCMINVAR Date Approved: 24-9-1997 Effective Date: 1-10-1997 Status: Superseded By Variation
B	52m NE	Operator: Goodrich Actuation Systems Ltd Address: Stretton Way, Liverpool, Merseyside, L36 6JE Process: Inorganic Chemical Processes Permit Number: BE1364	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
B	52m NE	Operator: Goodrich Actuation Systems Ltd Address: Stretton Way, Liverpool, Merseyside, L36 6JE Process: Inorganic Chemical Processes Permit Number: BY0437	Original Permit Number: IPCMINVAR Date Approved: 16-6-2004 Effective Date: 17-6-2004 Status: Revoked - Now Ippc

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m

9

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

Features are displayed on the Current industrial land use map on [page 35](#) >



ID	Location	Details	
B	52m NE	Operator: GOODRICH ACTUATION SYSTEMS LIMITED Installation Name: Huyton Surface Treatment EPR/BX4232IA Process: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M Permit Number: BX4232IA Original Permit Number: BX4232IA	EPR Reference: EPR/BX4232IA Issue Date: 02/09/2015 Effective Date: 02/09/2015 Last date noted as effective: 23/11/2023 Status: Surrendered
B	52m NE	Operator: GOODRICH ACTUATION SYSTEMS LIMITED Installation Name: Huyton Surface Treatment EPR/BX4232IA Process: THE MANUFACTURE OF DYESTUFFS, PRINTING INK AND COATING MATERIALS: MANUFACTURING POWDER > 200 T /12 MONTHS Permit Number: BX4232IA Original Permit Number: BX4232IA	EPR Reference: EPR/BX4232IA Issue Date: 02/09/2015 Effective Date: 02/09/2015 Last date noted as effective: 23/11/2023 Status: Surrendered
B	52m NE	Operator: Goodrich Actuation Systems Ltd Installation Name: Huyton Surface Treatment EPR/BX4232IA Process: THE MANUFACTURE OF DYESTUFFS, PRINTING INK AND COATING MATERIALS: MANUFACTURING POWDER > 200 T /12 MONTHS Permit Number: XP3937CW Original Permit Number: BX4232IA	EPR Reference: - Issue Date: 20/09/2012 Effective Date: 20/09/2012 Last date noted as effective: 21/03/2023 Status: Superseded
B	52m NE	Operator: Goodrich Actuation Systems Ltd Installation Name: Huyton Surface Treatment EPR/BX4232IA Process: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M Permit Number: SP3034WK Original Permit Number: BX4232IA	EPR Reference: - Issue Date: - Effective Date: 02/09/2015 Last date noted as effective: 21/03/2023 Status: Surrender Effective
B	52m NE	Operator: Goodrich Actuation Systems Ltd Installation Name: Huyton Surface Treatment EPR/BX4232IA Process: THE MANUFACTURE OF DYESTUFFS, PRINTING INK AND COATING MATERIALS: MANUFACTURING POWDER > 200 T /12 MONTHS Permit Number: SP3034WK Original Permit Number: BX4232IA	EPR Reference: - Issue Date: - Effective Date: 02/09/2015 Last date noted as effective: 21/03/2023 Status: Surrender Effective
B	52m NE	Operator: Goodrich Actuation Systems Ltd Installation Name: Huyton Surface Treatment EPR/BX4232IA Process: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M Permit Number: XP3937CW Original Permit Number: BX4232IA	EPR Reference: - Issue Date: 20/09/2012 Effective Date: 20/09/2012 Last date noted as effective: 21/03/2023 Status: Superseded



ID	Location	Details	
H	439m N	Operator: FCC RECYCLING (UK) LIMITED Installation Name: Arpley 2 - EPR/LP3139RK Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: JB3633RP Original Permit Number: LP3139RK	EPR Reference: EPR/JB3633RP Issue Date: 15/11/2016 Effective Date: 15/11/2016 Last date noted as effective: 23/11/2023 Status: Effective
H	439m N	Operator: FCC Recycling (UK) Limited Installation Name: Arpley 2 - EPR/LP3139RK Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: CP3638DW Original Permit Number: LP3139RK	EPR Reference: - Issue Date: 15/11/2016 Effective Date: 15/11/2016 Last date noted as effective: 21/03/2023 Status: Effective
H	439m N	Operator: FCC Recycling (UK) Limited Installation Name: Arpley2 EPR/JB3633RP Process: DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: LP3139RK Original Permit Number: LP3139RK	EPR Reference: - Issue Date: 08/06/2016 Effective Date: 08/06/2016 Last date noted as effective: 21/03/2023 Status: Superseded

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

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

Records within 500m

2

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

Features are displayed on the Current industrial land use map on [page 35 >](#)

ID	Location	Address	Details	
D	152m SE	EuroGarages – Coppice Lane, Coppice Lane, Huyton, L35 1QT	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
F	233m SW	Tesco, Woodlands Service Station, Cronton Road, Huyton, L35 1QY	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified

This data is sourced from Local Authority records.



4.12 Radioactive Substance Authorisations

Records within 500m	0
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Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

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

4.13 Licensed Discharges to controlled waters

Records within 500m	11
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Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on [page 35 >](#)

ID	Location	Address	Details	
B	27m N	WHISTON INDUSTRIAL ESTATE, ELLIS ASHTON STREET, TARBOCK, MERSEYSIDE	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: 016990366 Permit Version: 1 Receiving Water: DITTON BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: - Effective Date: 22/05/1982 Revocation Date: -
C	167m N	STRETTON WAY WW NTWK PS, S/O ELECTRIC SUB STATION, STRETTON WAY, LIVERPOOL, MERSEYSIDE, L36 6JF	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: 016982144 Permit Version: 1 Receiving Water: LOGWOOD MILL BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1900 Revocation Date: -
C	175m N	STRETTON WAY WW NTWK PS, S/O ELECTRIC SUB STATION, STRETTON WAY, LIVERPOOL, MERSEYSIDE, L36 6JF	Effluent Type: MISCELLANEOUS DISCHARGES - EMERGENCY DISCHARGES Permit Number: 016990465 Permit Version: 1 Receiving Water: LOGWOOD MILL BROOK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 04/01/1984 Revocation Date: 30/06/1991
C	175m N	STRETTON WAY WW NTWK PS, S/O ELECTRIC SUB STATION, STRETTON WAY, LIVERPOOL, MERSEYSIDE, L36 6JF	Effluent Type: MISCELLANEOUS DISCHARGES - EMERGENCY DISCHARGES Permit Number: 016990465 Permit Version: 2 Receiving Water: LOGWOOD MILL BROOK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/07/1991 Revocation Date: 09/06/2016

ID	Location	Address	Details	
C	177m NE	STRETTON WAY WW NTWK PS, S/O ELECTRIC SUB STATION, STRETTON WAY, LIVERPOOL, MERSEYSIDE, L36 6JF	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: 016990465 Permit Version: 3 Receiving Water: LOGWOOD MILL BROOK	Status: VARIED UNDER EPR 2010 Issue date: 10/06/2016 Effective Date: 10/06/2016 Revocation Date: -
G	337m N	WHISTON PARK (ECCLESTON PK) CSO, STRETTON WAY, HUYTON, KNOWSLEY, MERSEYSIDE, L36 6JF	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016983003 Permit Version: 1 Receiving Water: LONGWOOD MILL BROOK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 08/08/1995 Effective Date: 08/08/1995 Revocation Date: 30/11/2013
G	337m N	WHISTON PARK (ECCLESTON PK) CSO, STRETTON WAY, HUYTON, KNOWSLEY, MERSEYSIDE, L36 6JF	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016983003 Permit Version: 2 Receiving Water: LONGWOOD MILL BROOK	Status: VARIED UNDER EPR 2010 Issue date: 29/11/2013 Effective Date: 01/12/2013 Revocation Date: 22/03/2020
G	372m N	WHISTON PARK (ECCLESTON PK) CSO, STRETTON WAY, HUYTON, KNOWSLEY, MERSEYSIDE, L36 6JF	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016983003 Permit Version: 3 Receiving Water: LONGWOOD MILL BROOK	Status: VARIED UNDER EPR 2010 Issue date: 23/03/2020 Effective Date: 23/03/2020 Revocation Date: -
H	418m N	WHISTON ECCLESTON COUNCIL CAR PARK, STRETTON WAY, KNOWSLEY, L36 6JF	Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: EPRWP3724GT Permit Version: 1 Receiving Water: LOGWOOD MILL BROOK	Status: SURRENDERED UNDER EPR 2010 Issue date: 20/09/2012 Effective Date: 25/10/2012 Revocation Date: 13/03/2014
H	439m N	BITONI FOODS LTD, WILSON ROAD, HUYTON, MERSEYSIDE	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: 016990405 Permit Version: 1 Receiving Water: LOGWOOD MILL BROOK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 13/01/1983 Revocation Date: 24/10/1988



ID	Location	Address	Details	
12	459m E	LAING O'ROURKE INFRASTRUCTURE LTD, M62 JNT6 IMPROVMENT OFFICE, WINDY ARBOUR ROAD, TARBOCK, MERSEYSIDE, L35 1RB	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 016993930 Permit Version: 1 Receiving Water: LOGWOOD MILL BROOK	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 03/05/2007 Effective Date: 03/05/2007 Revocation Date: -

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0
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Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

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

4.15 Pollutant release to public sewer

Records within 500m	0
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Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	3
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Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

Features are displayed on the Current industrial land use map on [page 35 >](#)

ID	Location	Name	Status	Receiving Water	Authorised Substances
B	97m NE	Lucas Aerospace Engine Control Ststems	Active	Stw Partcons	Cadmium, Trichloroethylene
C	127m N	Lucas Aerospace Ltd	Active	-	-
C	127m N	Trs Aeronautical Systems	Active	Stw Partcons	Cadmium

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



4.17 List 2 Dangerous Substances

Records within 500m

0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m

3

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

Features are displayed on the Current industrial land use map on [page 35 >](#)

ID	Location	Details	
C	188m NE	Incident Date: 22/04/2002 Incident Identification: 74310 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
10	317m NW	Incident Date: 09/05/2001 Incident Identification: 4977 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
11	412m SE	Incident Date: 18/10/2002 Incident Identification: 115489 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m

0

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

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



4.20 Pollution inventory waste transfers

Records within 500m	0
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The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

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

4.21 Pollution inventory radioactive waste

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

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

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

5 Hydrogeology - Superficial aquifer



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

5.1 Superficial aquifer

Records within 500m

3

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on [page 47 >](#)

ID	Location	Designation	Description
1	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
2	163m NE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

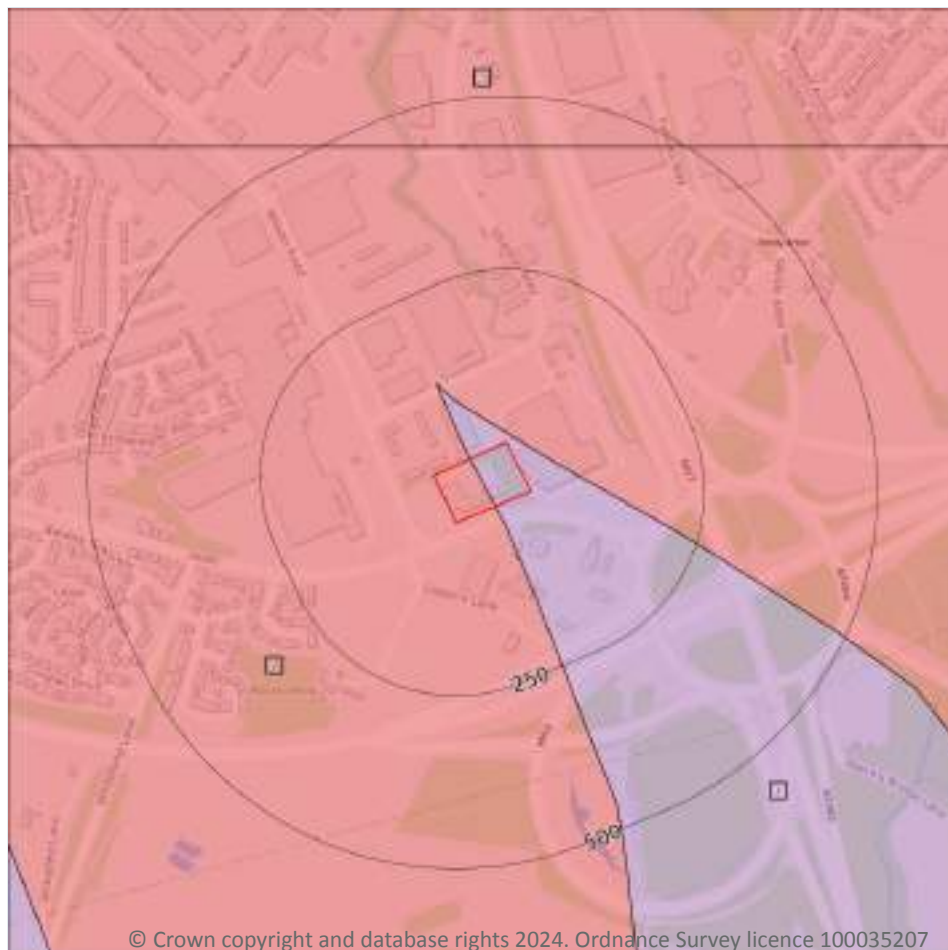


ID	Location	Designation	Description
3	427m N	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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



Bedrock aquifer



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

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5.2 Bedrock aquifer

Records within 500m

3

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 49](#) >

ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

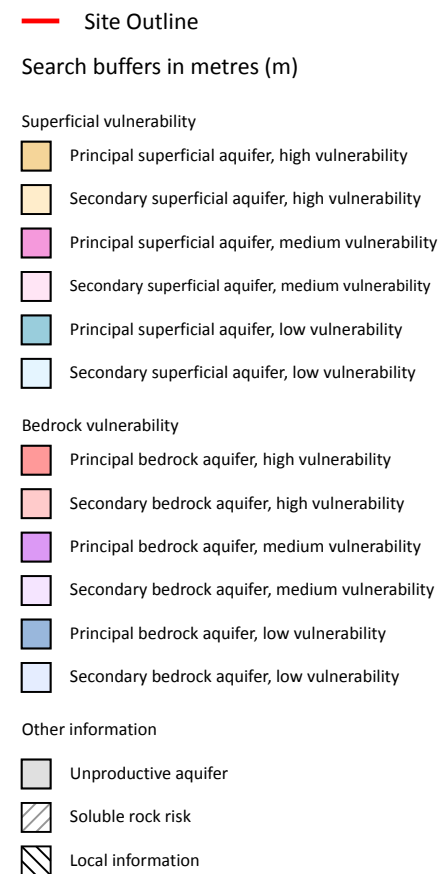


ID	Location	Designation	Description
3	427m N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

5

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

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

Features are displayed on the Groundwater vulnerability map on [page 51](#) >



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Principal bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Principal Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: <3m Patchiness value: >90% Recharge potential: Medium	Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures
4	12m NE	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: <3m Patchiness value: >90% Recharge potential: Medium	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
5	23m SE	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: <3m Patchiness value: >90% Recharge potential: Medium	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site

0

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

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



5.5 Groundwater vulnerability- local information

Records on site

0

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

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



Abstractions and Source Protection Zones



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

5.6 Groundwater abstractions

Records within 2000m

5

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

Features are displayed on the Abstractions and Source Protection Zones map on [page 54](#) >

ID	Location	Details	
-	1732m SE	Status: Active Licence No: 2569028011 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: B/HOLES (2) AT WATER LA PUMPING STATION, WHISTON, MERSEYSIDE Data Type: Point Name: United Utilities Water Ltd Easting: 346700 Northing: 387900	Annual Volume (m ³): 1750000 Max Daily Volume (m ³): 11400 Original Application No: 1608 Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -
-	1732m SE	Status: Historical Licence No: 2569028011 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: "B/HOLES (2) AT WATER LA PUMPING STATION, WHISTON, MERSEYSIDE" Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 346700 Northing: 387900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -
-	1832m SW	Status: Active Licence No: 2569028012 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: BOREHOLES X 3 AT NETHERLEY PUMPING STATION LIVERPOOL Data Type: Point Name: United Utilities Water Ltd Easting: 344600 Northing: 388200	Annual Volume (m ³): 4127000 Max Daily Volume (m ³): 11400 Original Application No: 1609 Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -
-	1832m SW	Status: Historical Licence No: 2569028012 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: "BOREHOLES (3) AT NETHERLEY PUMPING STATION, LIVERPOOL" Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 344600 Northing: 388200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -



ID	Location	Details	
-	1832m SW	Status: Historical Licence No: 2569028012 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: BOREHOLES (3) AT NETHERLEY PUMPING STATION, LIVERPOOL Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 344600 Northing: 388200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	4
-----------------------------	----------

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

Features are displayed on the Abstractions and Source Protection Zones map on [page 54 >](#)

ID	Location	Details	
A	663m SE	Status: Historical Licence No: 2569028018 Details: Spray Irrigation - Direct Direct Source: "Surface, Non-Tidal - North West Region" Point: "OCHRE & DOG CLOG BRKS, TARBOCK HALL FARM, TARBOCK, PRESCOT" Data Type: Line Name: T H CRITCHLEY & SON Easting: 346600 Northing: 389100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 13/05/1976 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -
A	663m SE	Status: Historical Licence No: 2569028018 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: OCHRE & DOG CLOG BRKS, TARBOCK HALL FARM, TARBOCK, PRESCOT Data Type: Line Name: T H CRITCHLEY & SON Easting: 346600 Northing: 389100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 13/05/1976 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -



ID	Location	Details	
A	663m SE	Status: Historical Licence No: 2569028018 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: OCHRE AND DOG CLOG BROOKS TARBOCK HALL FARM PRESCOT Data Type: Line Name: T H CRITCHLEY & SON Easting: 346600 Northing: 389100	Annual Volume (m ³): 2098 Max Daily Volume (m ³): 636 Original Application No: - Original Start Date: 13/05/1976 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -
-	966m S	Status: Historical Licence No: 2569028018 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: OCHRE AND DOG CLOG BROOKS TARBOCK HALL FARM PRESCOT Data Type: Line Name: BELPOOL DEVELOPMENTS LTD Easting: 346400 Northing: 388600	Annual Volume (m ³): 2098 Max Daily Volume (m ³): 636 Original Application No: NPS/WR/006330 Original Start Date: 13/05/1976 Expiry Date: - Issue No: 102 Version Start Date: 31/01/2011 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m

5

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

Features are displayed on the Abstractions and Source Protection Zones map on [page 54 >](#)

ID	Location	Details	
-	1732m SE	Status: Active Licence No: 2569028011 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: B/HOLES (2) AT WATER LA PUMPING STATION, WHISTON, MERSEYSIDE Data Type: Point Name: United Utilities Water Ltd Easting: 346700 Northing: 387900	Annual Volume (m ³): 1750000 Max Daily Volume (m ³): 11400 Original Application No: 1608 Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -



ID	Location	Details	
-	1732m SE	Status: Historical Licence No: 2569028011 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: "B/HOLES (2) AT WATER LA PUMPING STATION, WHISTON, MERSEYSIDE" Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 346700 Northing: 387900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -
-	1832m SW	Status: Active Licence No: 2569028012 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: BOREHOLES X 3 AT NETHERLEY PUMPING STATION LIVERPOOL Data Type: Point Name: United Utilities Water Ltd Easting: 344600 Northing: 388200	Annual Volume (m ³): 4127000 Max Daily Volume (m ³): 11400 Original Application No: 1609 Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -
-	1832m SW	Status: Historical Licence No: 2569028012 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: "BOREHOLES (3) AT NETHERLEY PUMPING STATION, LIVERPOOL" Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 344600 Northing: 388200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -
-	1832m SW	Status: Historical Licence No: 2569028012 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: BOREHOLES (3) AT NETHERLEY PUMPING STATION, LIVERPOOL Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 344600 Northing: 388200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -

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



5.9 Source Protection Zones

Records within 500m**1**

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination. Features are displayed on the Abstractions and Source Protection Zones map on [page 54 >](#)

ID	Location	Type	Description
1	On site	3	Total catchment

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m**0**

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

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



6 Hydrology



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

6.1 Water Network (OS MasterMap)

Records within 250m

4

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

Features are displayed on the Hydrology map on [page 60](#) >

ID	Location	Type of water feature	Ground level	Permanence	Name
B	152m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Logwood Mill Brook



ID	Location	Type of water feature	Ground level	Permanence	Name
1	153m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Logwood Mill Brook
3	168m E	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	Chapel Brook
4	182m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

2

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

Features are displayed on the Hydrology map on [page 60 >](#)

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

1

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

Features are displayed on the Hydrology map on [page 60 >](#)

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	On site	River	Prescot Brook (Logwood Mill Brook)	GB112069060710	Ditton	Mersey Lower

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



6.4 WFD Surface water bodies

Records identified

1

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

Features are displayed on the Hydrology map on [page 60 >](#)

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
2	154m N	River	Prescot Brook (Logwood Mill Brook)	GB112069060710 ↗	Poor	Fail	Poor	2019

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

6.5 WFD Groundwater bodies

Records on site

1

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

Features are displayed on the Hydrology map on [page 60 >](#)

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	On site	Sankey and Glaze Carboniferous aquifers	GB41202G100100 ↗	Poor	Poor	Good	2019

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



7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m

0

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

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

7.2 Historical Flood Events

Records within 250m

0

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

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

7.3 Flood Defences

Records within 250m

0

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

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



7.4 Areas Benefiting from Flood Defences

Records within 250m

0

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

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

7.5 Flood Storage Areas

Records within 250m

0

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

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



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0
--------------------	---

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

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

7.7 Flood Zone 3

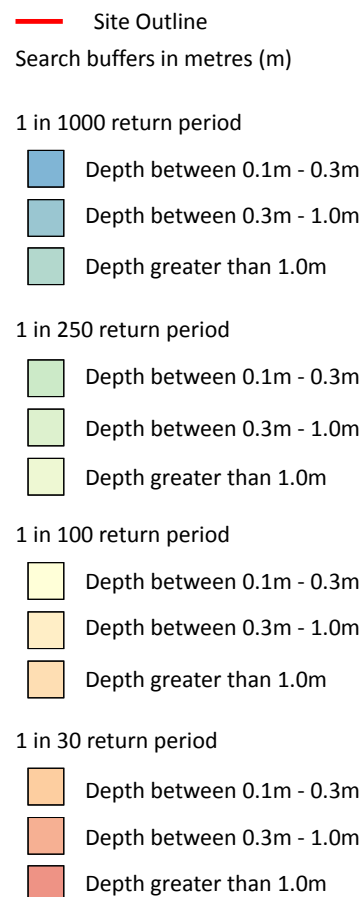
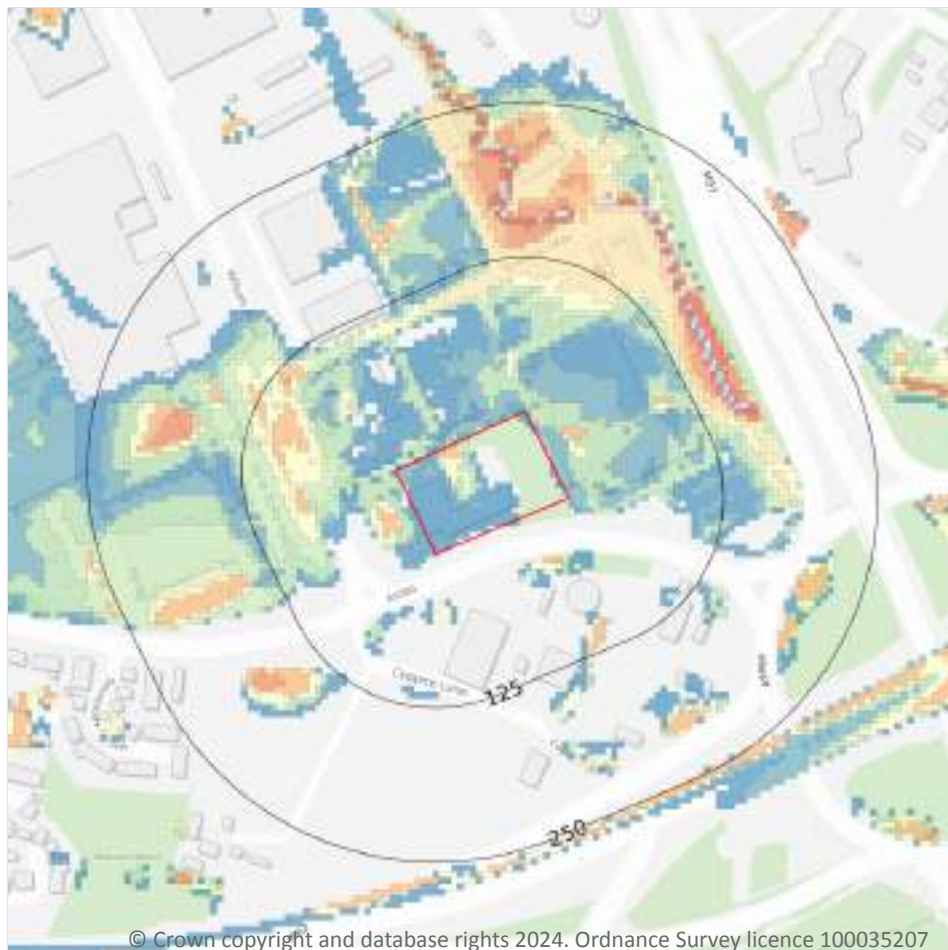
Records within 50m	0
--------------------	---

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

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



8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

1 in 30 year, 0.1m - 0.3m

Highest risk within 50m

1 in 30 year, 0.1m - 0.3m

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

Features are displayed on the Surface water flooding map on [page 66 >](#)

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

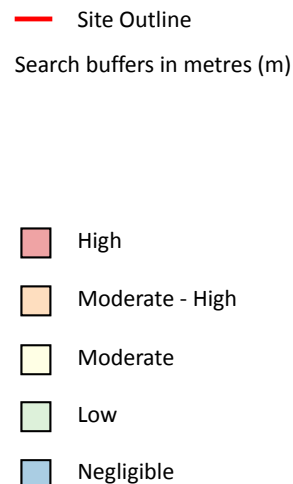
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.1m and 0.3m
1 in 30 year	Between 0.1m and 0.3m

This data is sourced from Ambiental Risk Analytics.



9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Low

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

Features are displayed on the Groundwater flooding map on [page 68](#) >

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Designated Ancient Woodland
- Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m**0**

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m**0**

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m**0**

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m**0**

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m**0**

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

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

10.7 Designated Ancient Woodland

Records within 2000m**2**

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

Features are displayed on the Environmental designations map on [page 69 >](#)

ID	Location	Name	Woodland Type
3	750m E	The Old Wood	Ancient & Semi-Natural Woodland
4	791m E	The Old Wood	Ancient & Semi-Natural Woodland

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

10.8 Biosphere Reserves

Records within 2000m**0**

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

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

10.9 Forest Parks

Records within 2000m**0**

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

This data is sourced from the Forestry Commission.



10.10 Marine Conservation Zones

Records within 2000m**0**

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

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

10.11 Green Belt

Records within 2000m**4**

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

Features are displayed on the Environmental designations map on [page 69](#) >

ID	Location	Name	Local Authority name
1	159m E	Merseyside and Greater Manchester	Knowsley
2	683m NE	Merseyside and Greater Manchester	Knowsley
5	1288m W	Merseyside and Greater Manchester	Liverpool
-	1753m E	Merseyside and Greater Manchester	St. Helens

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

10.12 Proposed Ramsar sites

Records within 2000m**0**

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m**0**

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

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



10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m

3

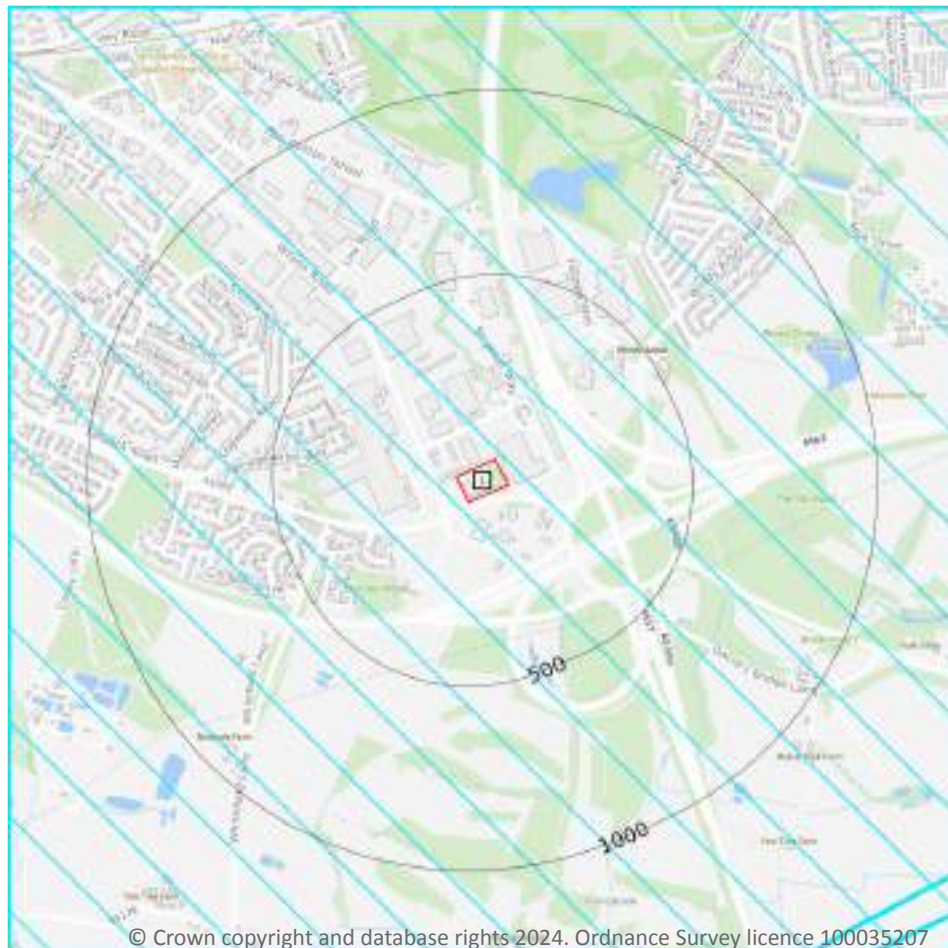
Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	Dittton Brook (Halewood to Mersey Estuary) NVZ	Surface Water	640	Existing
1434m NW	ALT NVZ	Surface Water	642	Existing
1808m W	Dittton Brook (Halewood to Mersey Estuary) NVZ	Surface Water	640	Existing

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



SSSI Impact Zones and Units



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

10.17 SSSI Impact Risk Zones

Records on site

1

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

Features are displayed on the SSSI Impact Zones and Units map on [page 74 >](#)

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Airports, helipads and other aviation proposals. Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 4000m². Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill. Discharges - Any discharge of water or liquid waste of more than 20m³/day to ground (ie to seep away) or to surface water, such as a beck or stream.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0
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Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

11.3 National Parks

Records within 250m

0

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

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

11.4 Listed Buildings

Records within 250m

0

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



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

11.5 Conservation Areas

Records within 250m

0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m

0

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

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

11.7 Registered Parks and Gardens

Records within 250m

0

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

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



12 Agricultural designations



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

12.1 Agricultural Land Classification

Records within 250m

2

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

Features are displayed on the Agricultural designations map on [page 78](#) >

ID	Location	Classification	Description
1	On site	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.

7	230m N	Urban	-
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This data is sourced from Natural England.

12.2 Open Access Land

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

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

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

12.3 Tree Felling Licences

Records within 250m	6
----------------------------	----------

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

Features are displayed on the Agricultural designations map on [page 78 >](#)

ID	Location	Description	Reference	Application date
2	164m NE	Selective Fell/Thin (Unconditional)	018/366/15-16	-
3	190m E	Selective Fell/Thin (Unconditional)	010/122/09-10	17/12/2009
4	198m NE	Selective Fell/Thin (Unconditional)	018/366/15-16	-
5	201m E	Selective Fell/Thin (Unconditional)	018/366/15-16	-
6	220m E	Selective Fell/Thin (Unconditional)	018/366/15-16	-
8	245m NE	Selective Fell/Thin (Unconditional)	018/366/15-16	-

This data is sourced from the Forestry Commission.



12.4 Environmental Stewardship Schemes

Records within 250m

0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

0

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

This data is sourced from Natural England.

13 Habitat designations



- Site Outline
- Search buffers in metres (m)
- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders
- Habitat Networks
- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m

5

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

Features are displayed on the Habitat designations map on [page 81](#) >

ID	Location	Main Habitat	Other habitats
1	91m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	97m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	163m NE	No main habitat but additional habitats present	Additional: DWOOD (INV 50%)
4	202m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)



ID	Location	Main Habitat	Other habitats
5	218m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

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

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

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

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

This data is sourced from Natural England.

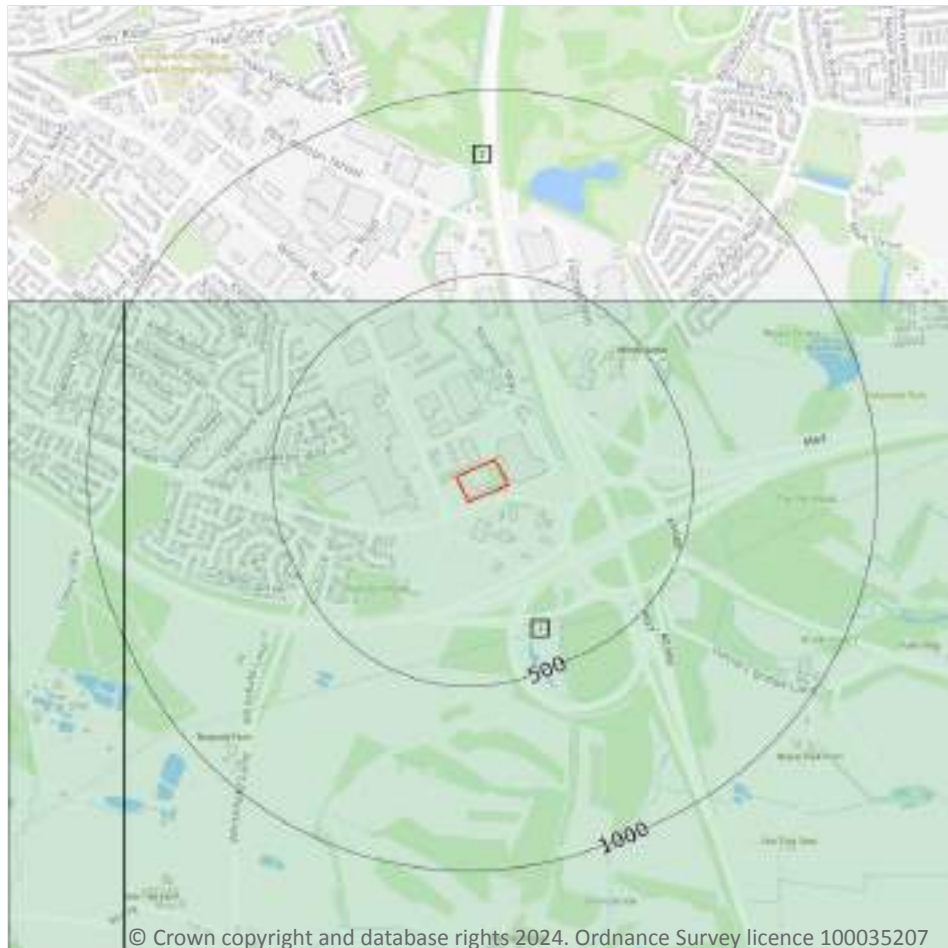
13.4 Limestone Pavement Orders

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

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

2

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

Features are displayed on the Geology 1:10,000 scale - Availability map on [page 83](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	SJ48NE
2	427m N	No coverage	No coverage	No coverage	No coverage	NoCov

This data is sourced from the British Geological Survey.



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

14.2 Artificial and made ground (10k)

Records within 500m

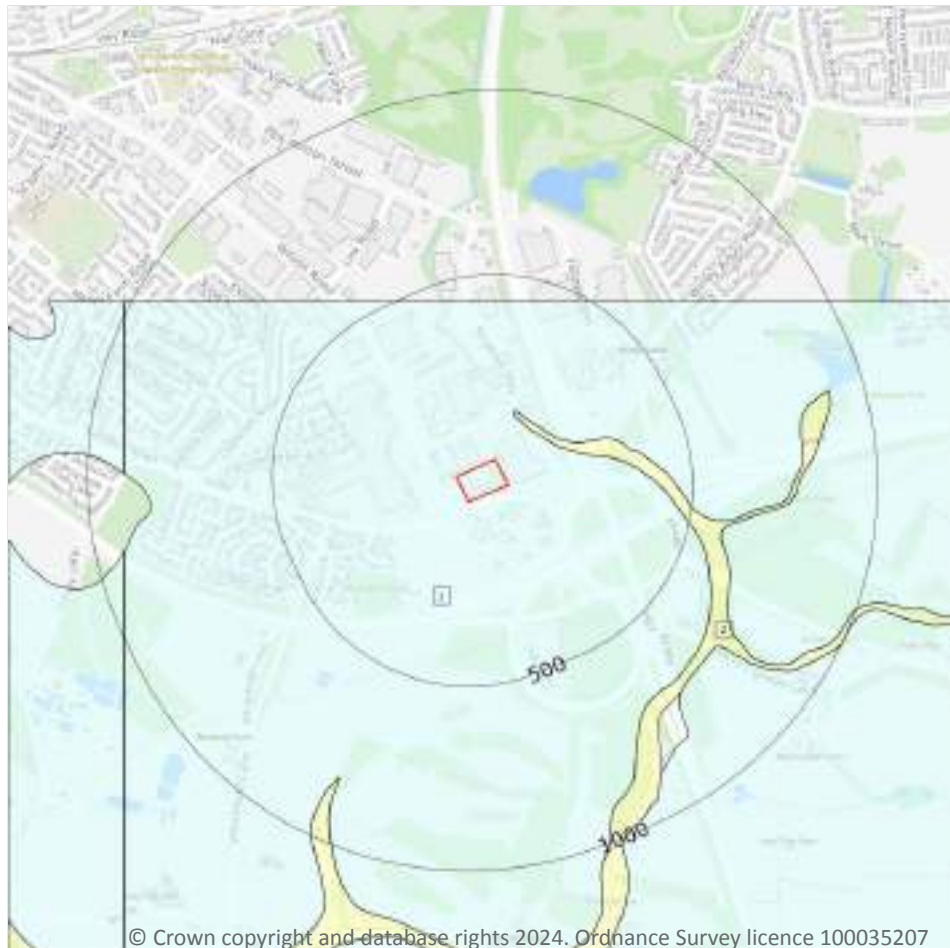
0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



— Site Outline

Search buffers in metres (m)

▣ Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m

2

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 85 >](#)

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
2	122m NE	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel

This data is sourced from the British Geological Survey.



14.4 Landslip (10k)

Records within 500m

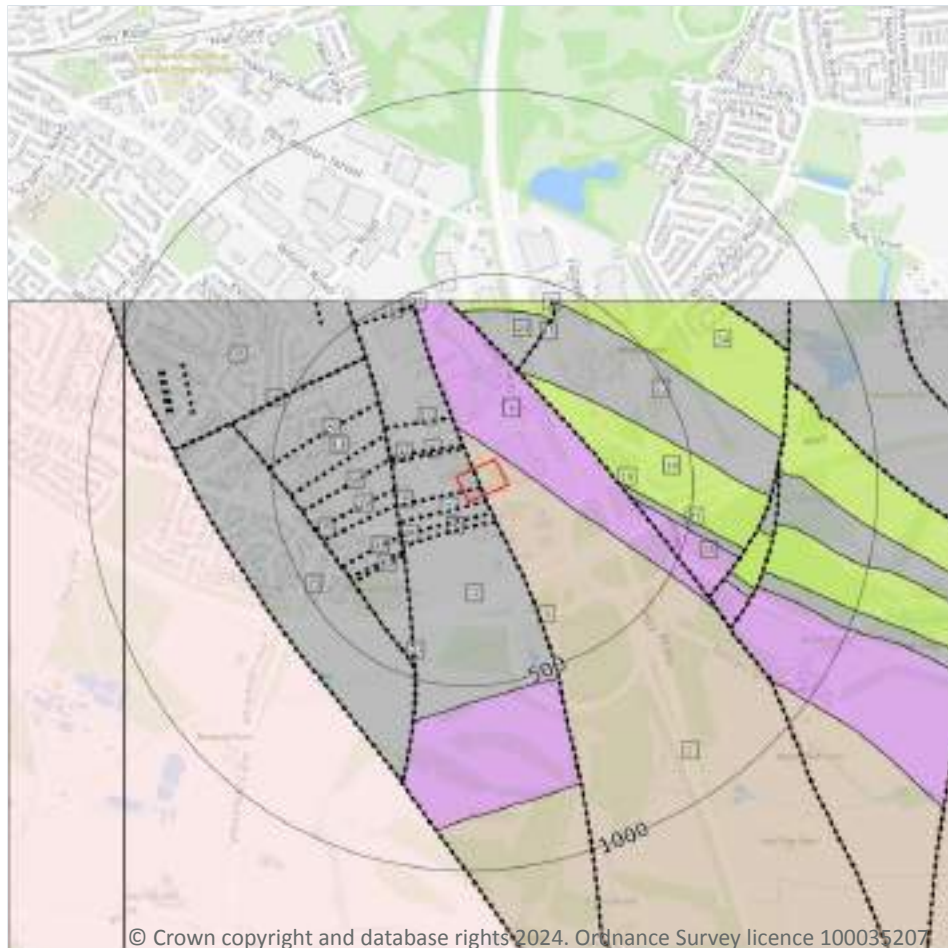
0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

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

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

14.5 Bedrock geology (10k)

Records within 500m

13

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 87](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsvian Sub-age - Duckmantian Sub-age
2	On site	KNSF-SDST	Kinnerton Sandstone Formation - Sandstone	Early Triassic Epoch
6	16m NE	ETM-MDSC	Etruria Formation - Mudstone, Sandstone And Conglomerate	Westphalian Age



ID	Location	LEX Code	Description	Rock age
13	169m W	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
18	209m NE	PMCM-SDST	Pennine Middle Coal Measures Formation - Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
23	245m N	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
24	248m N	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
27	294m E	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
28	333m E	ETM-MDSC	Etruria Formation - Mudstone, Sandstone And Conglomerate	Westphalian Age
29	381m SW	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
31	403m N	PMCM-SDST	Pennine Middle Coal Measures Formation - Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
32	406m NW	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
34	455m NE	PMCM-SDST	Pennine Middle Coal Measures Formation - Sandstone	Bolsovia Sub-age - Duckmantian Sub-age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

25

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 87](#) >

ID	Location	Category	Description
3	On site	FAULT	Normal fault, inferred; crossmarks on downthrow side
4	On site	ROCK	Coal seam, inferred (None)
5	10m SW	ROCK	Coal seam, inferred (None)
7	45m S	ROCK	Coal seam, inferred (None)



ID	Location	Category	Description
8	61m NW	ROCK	Coal seam, inferred (None)
9	67m S	ROCK	Coal seam, inferred (None)
10	71m NW	ROCK	Coal seam, inferred (None)
11	152m NW	ROCK	Coal seam, inferred (None)
12	161m W	ROCK	Coal seam, inferred (None)
14	169m W	FAULT	Normal fault, inferred; crossmarks on downthrow side
15	170m W	ROCK	Coal seam, inferred (None)
16	186m W	ROCK	Coal seam, inferred (None)
17	208m SW	ROCK	Coal seam, inferred (None)
19	209m NE	FAULT	Normal fault, inferred; crossmarks on downthrow side
20	222m NW	ROCK	Coal seam, inferred (None)
21	223m SW	ROCK	Coal seam, inferred (None)
22	228m SW	ROCK	Coal seam, inferred (None)
25	248m N	FAULT	Normal fault, observed; crossmark on downthrow side
26	290m NW	ROCK	Coal seam, inferred (None)
30	381m SW	FAULT	Normal fault, inferred; crossmarks on downthrow side
A	406m NW	FAULT	Normal fault, inferred; crossmarks on downthrow side
A	406m NW	FAULT	Normal fault, inferred; crossmarks on downthrow side
33	433m SW	FAULT	Normal fault, observed; crossmark on downthrow side
35	468m N	ROCK	Coal seam, observed (None)
36	469m N	ROCK	Coal seam, inferred (None)

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



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

15.1 50k Availability

Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 90](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	EW097_runcorn_v4

This data is sourced from the British Geological Survey.



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

15.2 Artificial and made ground (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

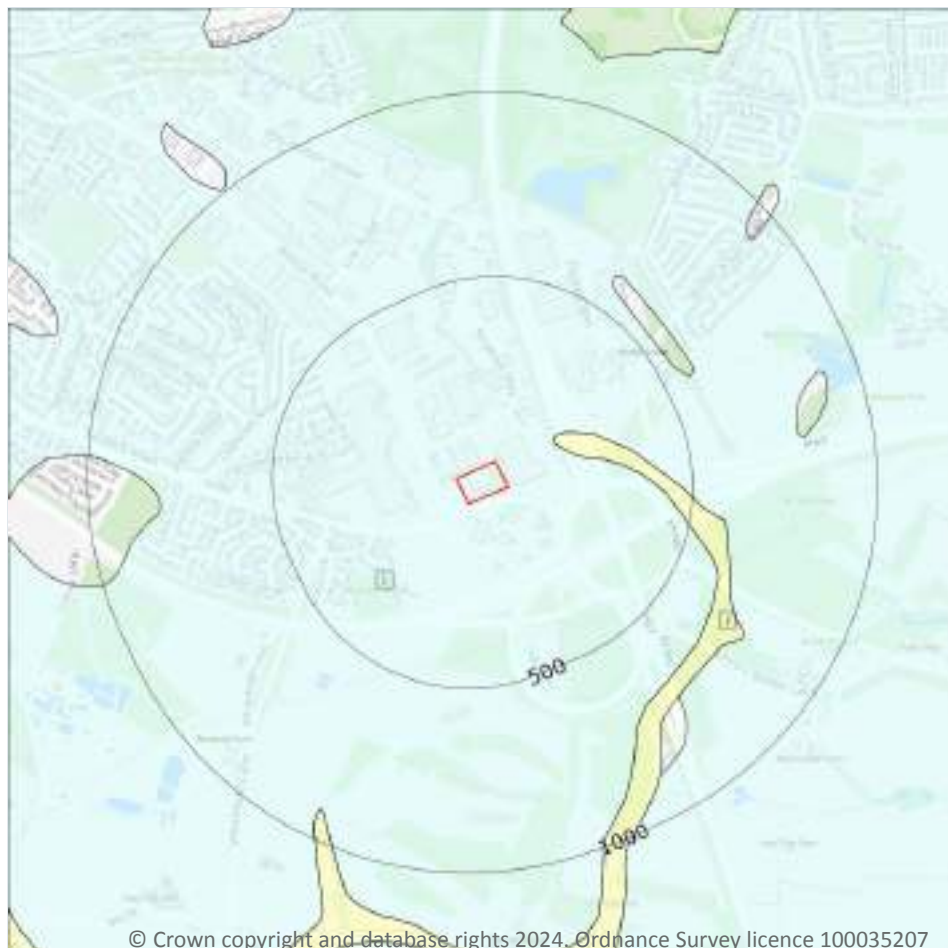
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



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— Site Outline
Search buffers in metres (m)
 Landslip (50k)
Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

2

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 92](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON
2	163m NE	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

This data is sourced from the British Geological Survey.



15.5 Superficial permeability (50k)

Records within 50m

1

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

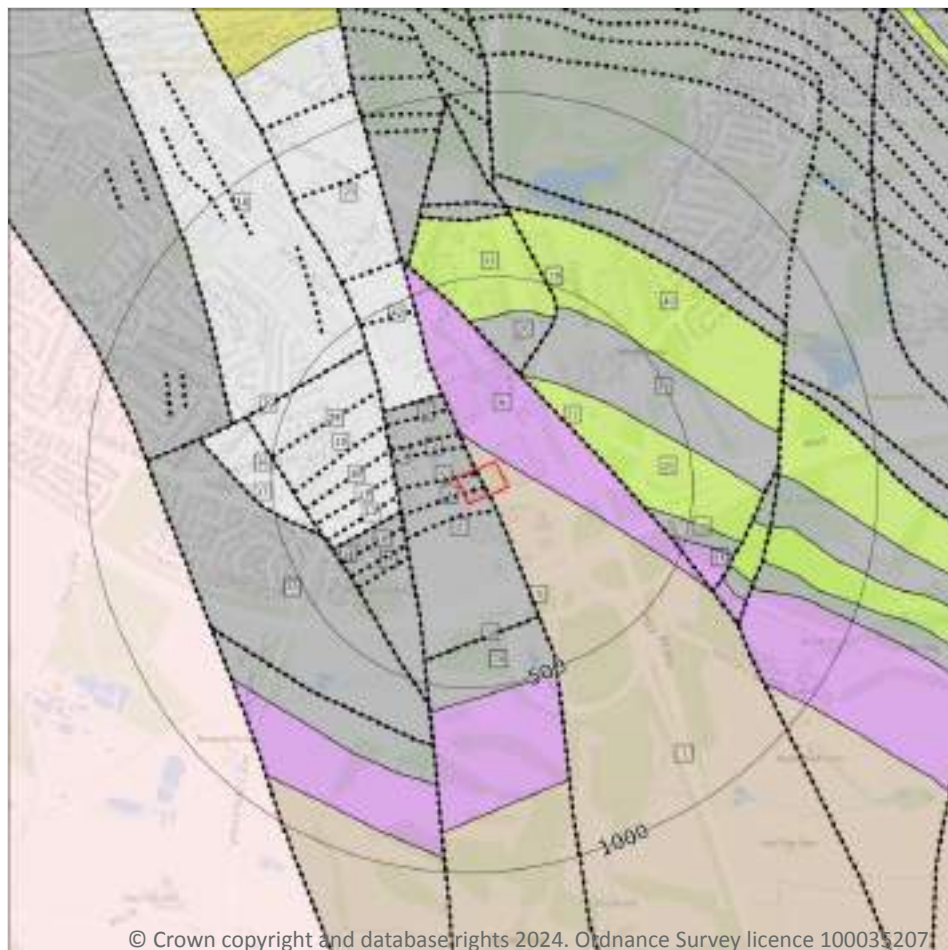
Records within 50m

0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

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

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

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15.8 Bedrock geology (50k)

Records within 500m

17

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 94](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	KNSF-SDST	KINNERTON SANDSTONE FORMATION - SANDSTONE	-
2	On site	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
6	12m NE	ETM-MDSC	ETRURIA FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE	WESTPHALIAN



ID	Location	LEX Code	Description	Rock age
10	163m W	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
14	174m W	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
20	210m NE	PMCM-SDST	PENNINE MIDDLE COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
23	225m NW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
26	244m N	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
27	244m N	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
30	354m S	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
32	366m E	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
33	375m SW	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
35	386m N	PMCM-SDST	PENNINE MIDDLE COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
36	393m W	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
38	431m NW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
40	450m NE	PMCM-SDST	PENNINE MIDDLE COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
41	456m E	ETM-MDSC	ETRURIA FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m

3

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



Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	High	High
On site	Fracture	Moderate	Low
12m NE	Fracture	Moderate	Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

25

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 94](#) >

ID	Location	Category	Description
3	On site	FAULT	Fault, inferred
4	On site	ROCK	Coal seam, inferred
5	On site	ROCK	Coal seam, inferred
7	29m S	ROCK	Coal seam, inferred
8	71m NW	ROCK	Coal seam, inferred
9	106m NW	ROCK	Coal seam, inferred
11	163m W	FAULT	Fault, inferred
12	164m W	ROCK	Coal seam, inferred
13	167m W	ROCK	Coal seam, inferred
15	174m W	FOSSIL_HORIZON	Marine band
16	180m NW	ROCK	Coal seam, inferred
17	185m SW	ROCK	Coal seam, inferred
18	195m W	ROCK	Coal seam, inferred
19	200m SW	ROCK	Coal seam, inferred
21	211m NE	FAULT	Fault, inferred
22	216m SW	ROCK	Coal seam, inferred
24	225m NW	FOSSIL_HORIZON	Marine band

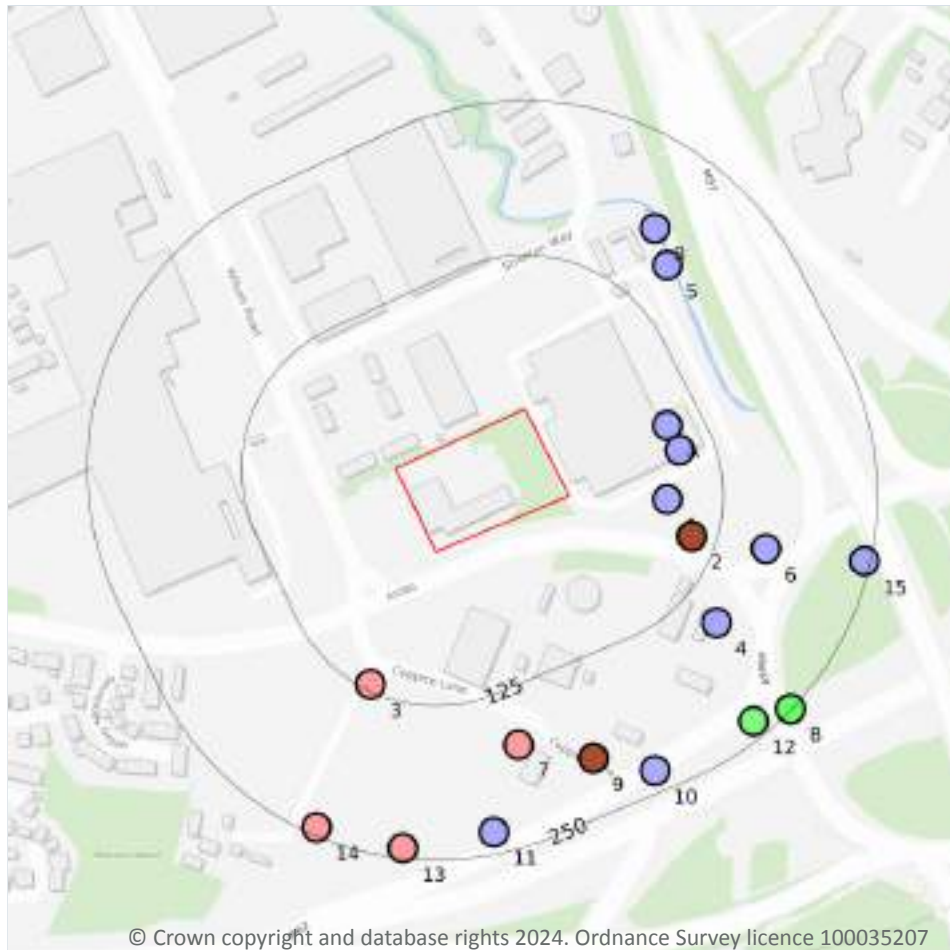


ID	Location	Category	Description
25	239m NW	ROCK	Coal seam, inferred
28	244m N	FAULT	Fault, observed
29	317m NW	ROCK	Coal seam, inferred
31	354m S	FOSSIL_HORIZON	Marine band
34	375m SW	FAULT	Fault, inferred, displacement unknown
37	393m W	FOSSIL_HORIZON	Marine band
39	431m NW	FAULT	Fault, inferred
42	462m N	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.



16 Boreholes



- Site Outline
- Search buffers in metres (m)
- Confidential
 - 0 - 10m
 - 10 - 30m
 - 30m+
 - Unknown

16.1 BGS Boreholes

Records within 250m

19

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

Features are displayed on the Boreholes map on [page 98](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	79m E	346120 389500	LUCAS AEROSPACE HUYTON 3	5.0	N	15937787 ↗
A	97m E	346120 389560	LUCAS AEROSPACE HUYTON 2	5.1	N	15937785 ↗

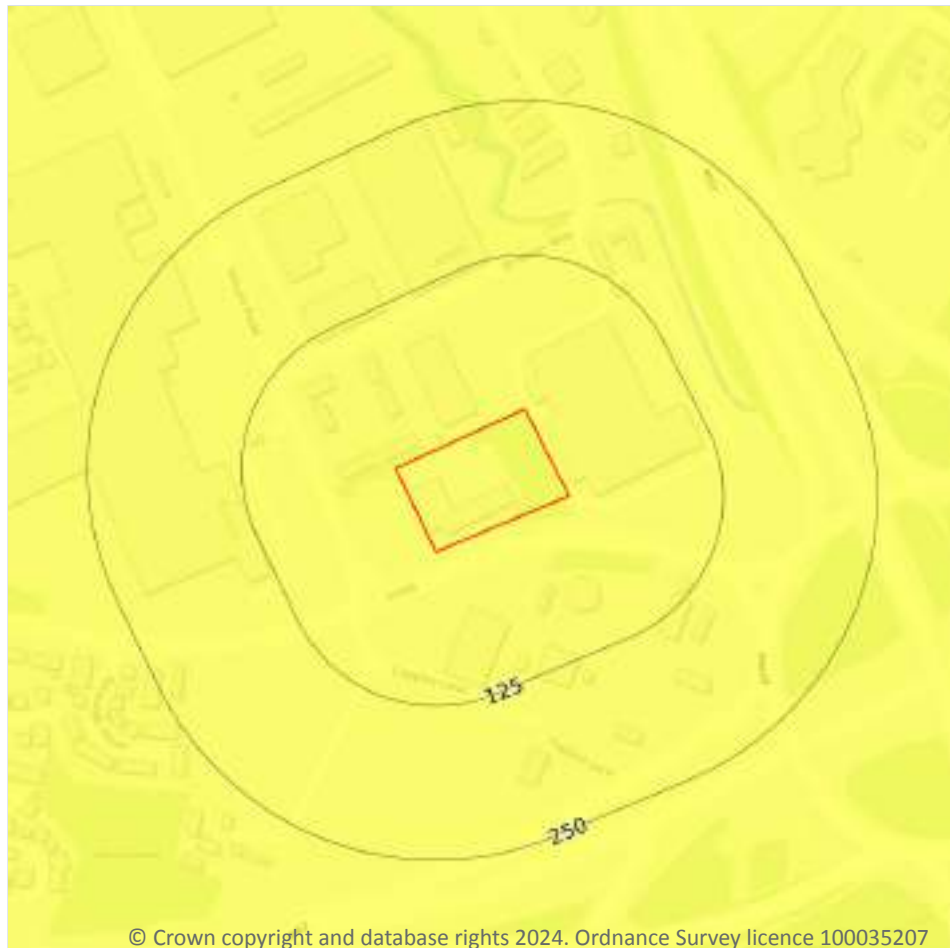


ID	Location	Grid reference	Name	Length	Confidential	Web link
A	97m E	346130 389540	LUCAS AEROSPACE HUYTON 1	3.0	N	15937784 ↗
2	105m E	346140 389470	Not Entered	-1.0	N	164217 ↗
3	120m SW	345880 389350	ROSCOE 1	99.97	N	163805 ↗
4	157m SE	346160 389400	LANCS/YORKS M/WAY TARBOCK-CROFT B16	2.44	N	163917 ↗
5	164m NE	346120 389690	HUYTON 12	2.8	N	15937793 ↗
6	165m E	346200 389460	LANCS/YORKS M/WAY TARBOCK-CROFT B19	2.44	N	163918 ↗
7	170m S	346000 389301	A3/8/1 WHITEFIELD LANE END	410.0	N	163786 ↗
8	181m NE	346110 389720	HUYTON 13	3.05	N	15937789 ↗
9	204m S	346060 389290	Not Entered	-1.0	N	164205 ↗
10	232m SE	346110 389280	LANCS/YORKS M/WAY TARBOCK-CROFT B12	6.1	N	163901 ↗
11	232m S	345980 389230	LANCS/YORKS M/WAY TARBOCK-CROFT B10C	6.17	N	163898 ↗
12	236m SE	346190 389320	M62 IMPROVEMENT JUNCTION 6 TO 7	18.68	N	164091 ↗
13	242m S	345906 389217	ROSCOE 3	161.54	N	163807 ↗
14	243m SW	345836 389234	ROSCOE 2	154.83	N	163806 ↗
15	245m E	346280 389450	M57 TO A562 LINK ROAD TP 1	4.5	N	163985 ↗
B	249m SE	346220 389330	M62 IMPROVEMENT JUNCTION 6 TO 7	13.35	N	164090 ↗
B	249m SE	346220 389330	LANCS/YORKS M/WAY TARBOCK-CROFT 5732/2	14.63	N	163905 ↗

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



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

17.1 Shrink swell clays

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 100](#) >

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



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

17.2 Running sands

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Running sands map on [page 101](#) >

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



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

17.3 Compressible deposits

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 102 >](#)

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



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

17.4 Collapsible deposits

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 103 >](#)

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



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

17.5 Landslides

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Landslides map on [page 104](#) >

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



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

17.6 Ground dissolution of soluble rocks

Records within 50m

1

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

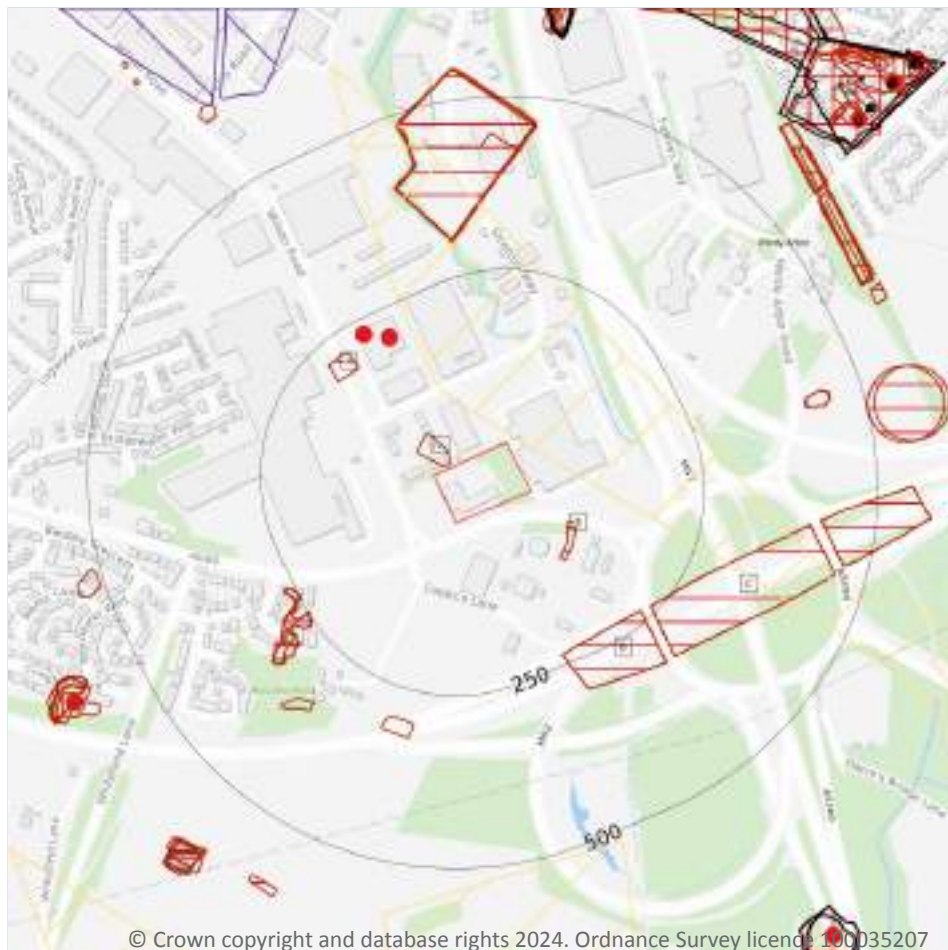
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on [page 105 >](#)

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

This data is sourced from the British Geological Survey.



18 Mining and ground workings



- Site Outline
- Search buffers in metres (m)
- BritPits
- Surface ground workings
- Underground workings
- Underground mining extents
- Historical mineral planning areas
- TCA non-coal mining
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m

2

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

Features are displayed on the Mining and ground workings map on [page 107](#) >

ID	Location	Details	Description
A	208m NW	Name: Tarbock Colliery Address: Huyton, HUYTON-WITH-ROBY, Merseyside Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
A	227m NW	Name: Tarbock Colliery Address: Huyton, HUYTON-WITH-ROBY, Merseyside Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m

9

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

Features are displayed on the Mining and ground workings map on [page 107 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
1	6m NW	Pond	1851	1:10560
3	69m SE	Pond	1950	1:10560
4	189m NW	Pond	1851	1:10560
B	227m SE	Cuttings	1975	1:10000
B	227m SE	Cuttings	1989	1:10000
C	240m SE	Cuttings	1975	1:10000
C	240m SE	Cuttings	1989	1:10000
D	248m SW	Pond	1925	1:10560
D	248m SW	Pond	1925	1:10560

This data is sourced from Ordnance Survey/Groundsure.



18.3 Underground workings

Records within 1000m

60

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

Features are displayed on the Mining and ground workings map on [page 107 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
L	590m N	Old Colliery	1947	1:10560
L	590m N	Old Colliery	1925	1:10560
L	590m N	Old Colliery	1906	1:10560
L	590m N	Old Colliery	1891	1:10560
L	592m N	Unspecified Disused Mine	1966	1:10560
L	593m N	Old Colliery	1947	1:10560
N	618m NE	Old Colliery	1891	1:10560
N	628m NE	Old Colliery	1906	1:10560
-	637m N	Unspecified Disused Shaft	1966	1:10560
-	643m N	Unspecified Old Shaft	1947	1:10560
-	643m N	Unspecified Old Shaft	1925	1:10560
O	644m NE	Disused Colliery	1947	1:10560
O	644m NE	Disused Colliery	1925	1:10560
-	644m N	Unspecified Old Shaft	1947	1:10560
P	672m NE	Colliery	1891	1:10560
N	684m NE	Unspecified Disused Shafts	1966	1:10560
N	707m NE	Unspecified Old Shafts	1947	1:10560
N	707m NE	Unspecified Old Shafts	1925	1:10560
N	710m NE	Unspecified Disused Shafts	1966	1:10560
N	710m NE	Unspecified Old Shaft	1947	1:10560
P	716m NE	Disused Colliery	1906	1:10560
-	722m NE	Unspecified Disused Mine	1966	1:10560
N	733m NE	Unspecified Old Shaft	1947	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
R	737m SE	Disused Delf	1949	1:10560
R	737m SE	Disused Delf	1967	1:10560
R	737m SE	Disused Delf	1975	1:10000
R	737m SE	Disused Delf	1989	1:10000
R	741m SE	Delf	1891	1:10560
R	741m SE	Disused Delf	1938	1:10560
R	741m SE	Disused Delf	1925	1:10560
R	741m SE	Disused Delf	1905	1:10560
N	753m NE	Unspecified Old Shafts	1947	1:10560
N	753m NE	Unspecified Old Shafts	1925	1:10560
N	755m NE	Unspecified Old Shaft	1947	1:10560
N	757m NE	Unspecified Disused Shafts	1966	1:10560
-	770m NE	Unspecified Old Shaft	1947	1:10560
-	787m NE	Unspecified Shafts	1891	1:10560
-	791m NE	Unspecified Old Shafts	1947	1:10560
-	791m NE	Unspecified Old Shafts	1925	1:10560
-	792m NE	Unspecified Disused Shaft	1966	1:10560
-	793m NE	Unspecified Old Shaft	1947	1:10560
N	796m NE	Unspecified Old Shafts	1947	1:10560
N	796m NE	Unspecified Old Shafts	1925	1:10560
N	800m NE	Unspecified Old Shaft	1947	1:10560
N	800m NE	Unspecified Disused Shafts	1966	1:10560
-	802m E	Colliery	1925	1:10560
-	805m NE	Unspecified Disused Shaft	1966	1:10560
-	806m NE	Unspecified Old Shafts	1947	1:10560
-	806m NE	Unspecified Old Shafts	1925	1:10560
-	807m NE	Unspecified Old Shaft	1947	1:10560
-	925m NW	Unspecified Old Shaft	1925	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
-	925m NW	Unspecified Old Shaft	1906	1:10560
-	928m N	Disused Colliery	1906	1:10560
-	948m NW	Colliery	1891	1:10560
-	972m NW	Unspecified Old Shafts	1947	1:10560
-	974m NW	Unspecified Old Shaft	1925	1:10560
-	974m NW	Unspecified Old Shaft	1906	1:10560
-	987m NW	Unspecified Old Shafts	1947	1:10560
-	989m NW	Unspecified Old Shafts	1947	1:10560
-	994m N	Unspecified Old Shaft	1891	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m

0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

3

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



Features are displayed on the Mining and ground workings map on [page 107 >](#)

ID	Location	Name	Commodity	Class	Likelihood
2	12m NE	Not available	Vein Mineral	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
7	443m N	Not available	Vein Mineral	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
9	510m S	Not available	Vein Mineral	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site

0

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

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m

0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m

0

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is



approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m

0

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m

0

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 Coal mining

Records on site

1

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

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

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site

0

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

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

18.14 Gypsum areas

Records on site	0
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Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

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

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

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

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

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



19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m

0

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

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m

0

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

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m

0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m

0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.



This data is sourced from Groundsure.

19.5 National karst database

Records within 500m

0

This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

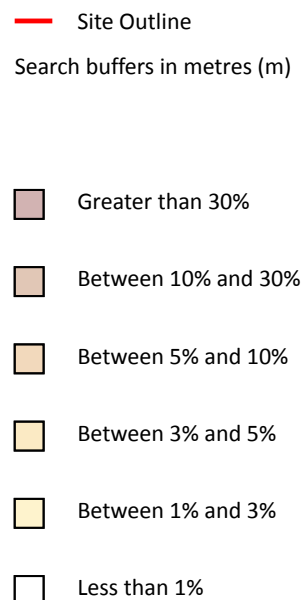
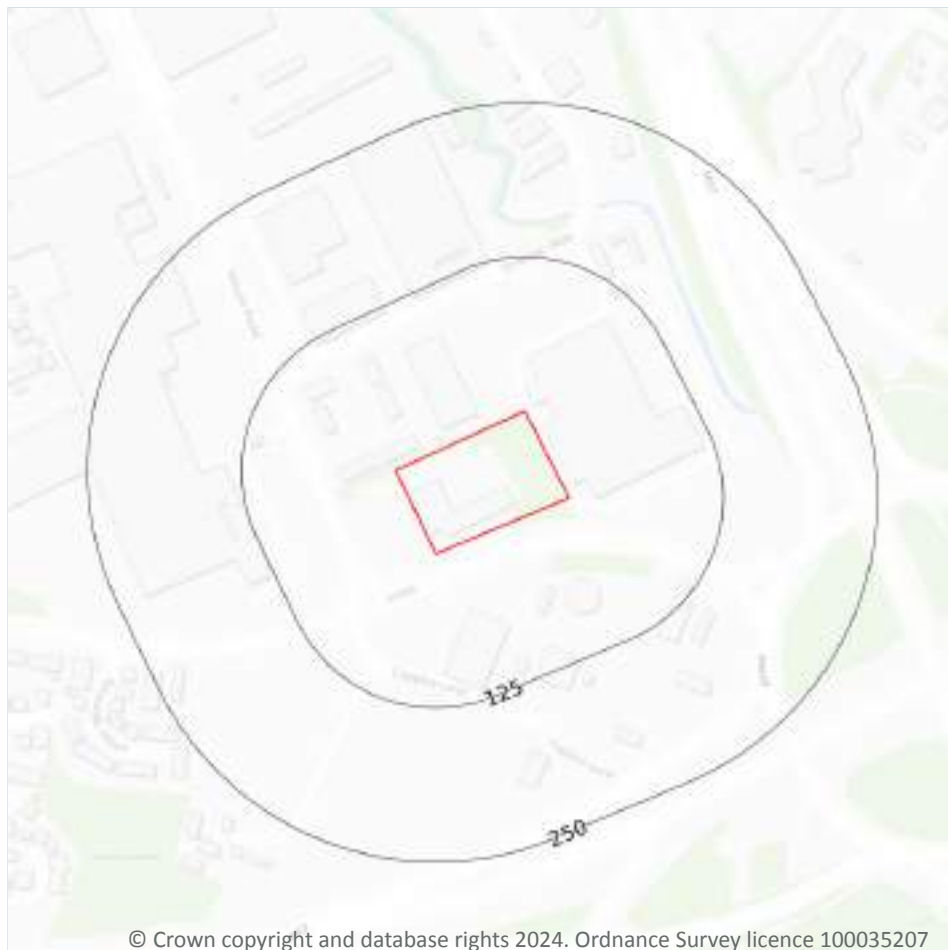
Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

This data is sourced from the British Geological Survey.



20 Radon



20.1 Radon

Records on site

1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on [page 117](#) >

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



This data is sourced from the British Geological Survey and UK Health Security Agency.



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

9

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
12m NE	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
18m N	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
23m SE	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.



21.2 BGS Estimated Urban Soil Chemistry

Records within 50m**0**

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m**0**

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



22 Railway infrastructure and projects

22.1 Underground railways (London)

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

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

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

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

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

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

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

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

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

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

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

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



This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m

0

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

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m

0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 1

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

22.9 Crossrail 2

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

22.10 HS2

Records within 500m

0

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

This data is sourced from HS2 Ltd.



Data providers

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

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Site Details:

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Report Ref: EMS-937012_1192549
Grid Ref: 345970, 389515

Map Name: County Series

Map date: 1892

Scale: 1:2,500

Printed at: 1:2,500



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Edition N/A
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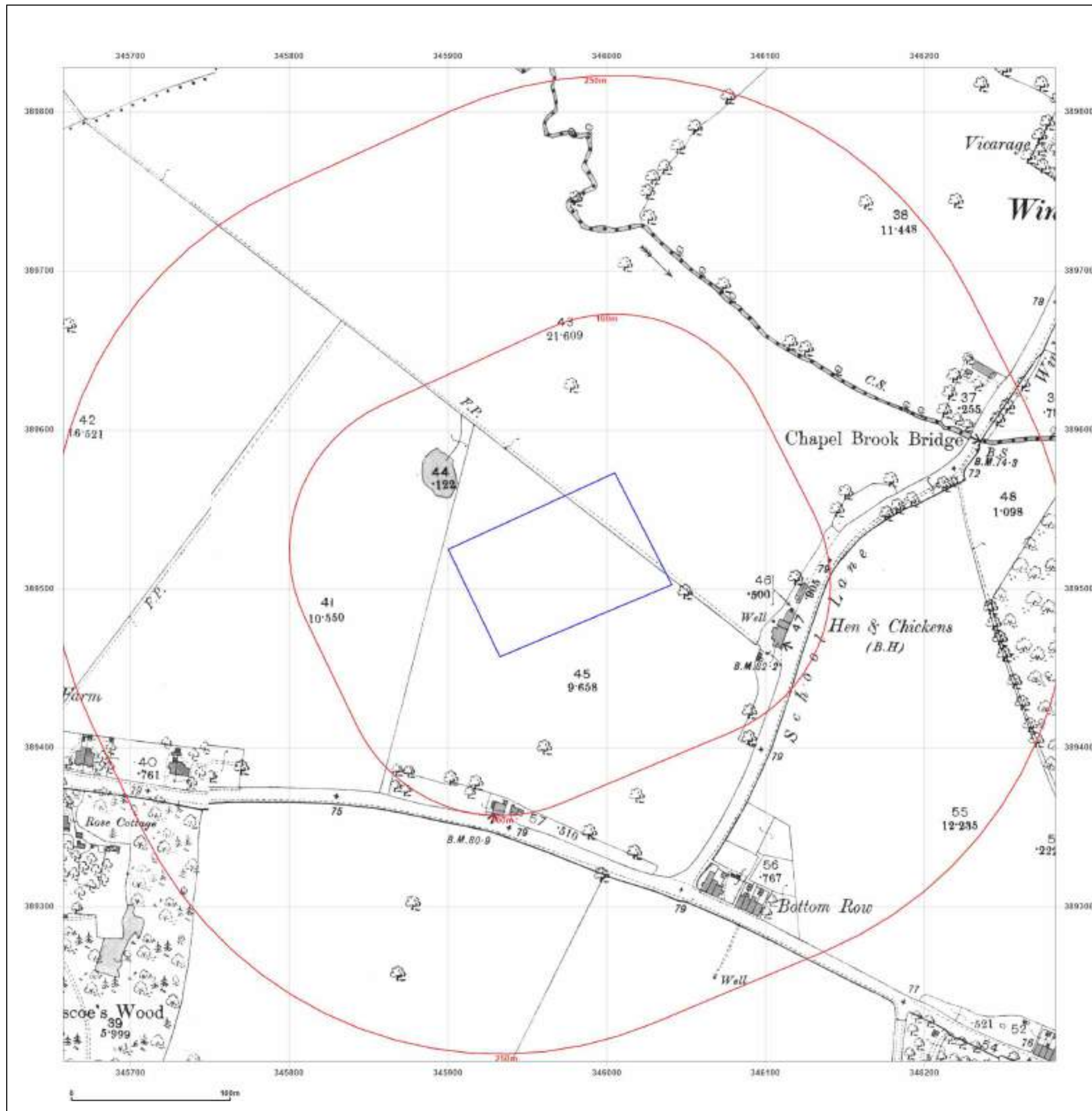


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Site Details:

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Report Ref: EMS-937012_1192549
Grid Ref: 345970, 389515

Map Name: County Series

Map date: 1907

Scale: 1:2,500

Printed at: 1:2,500



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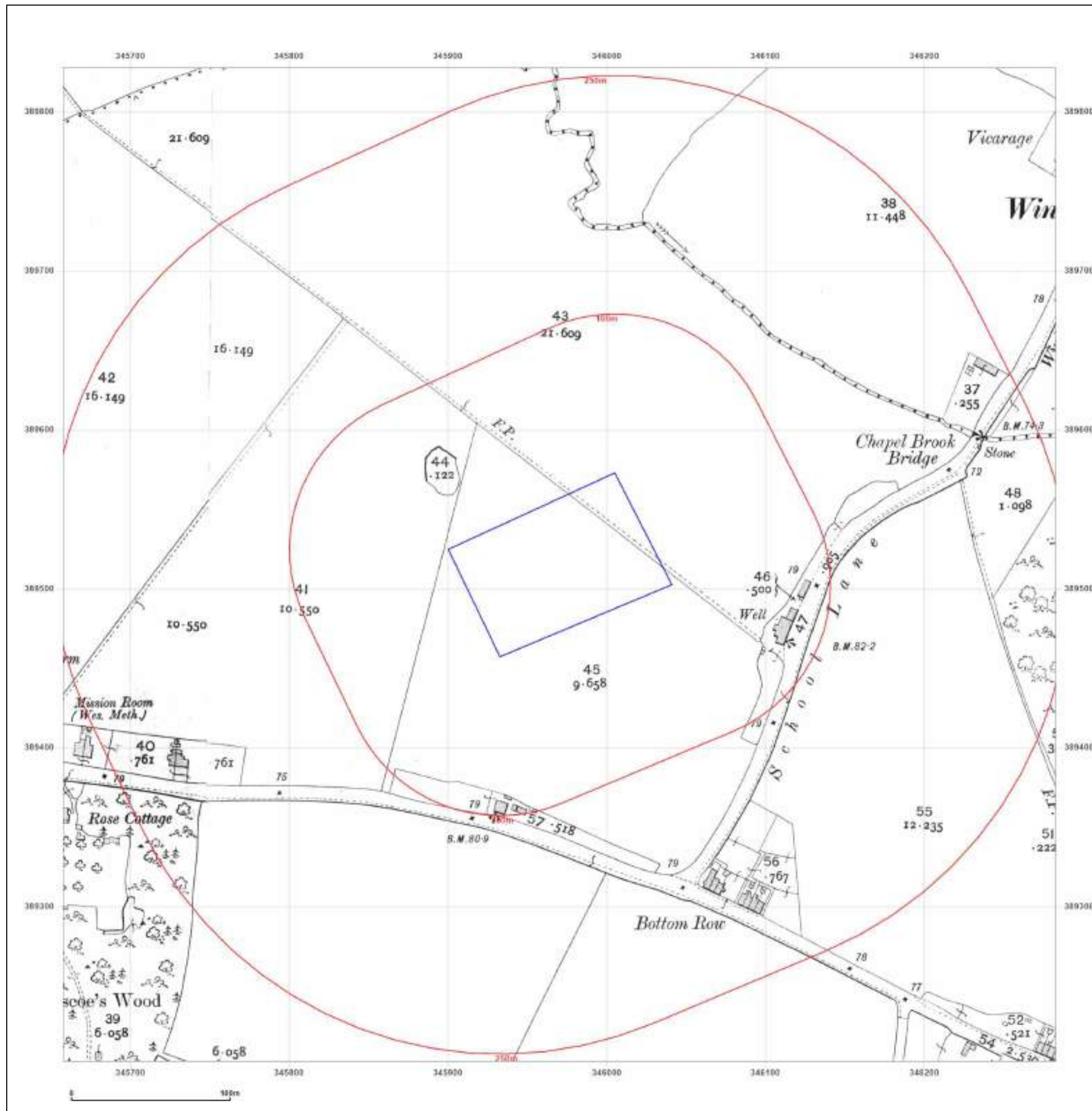


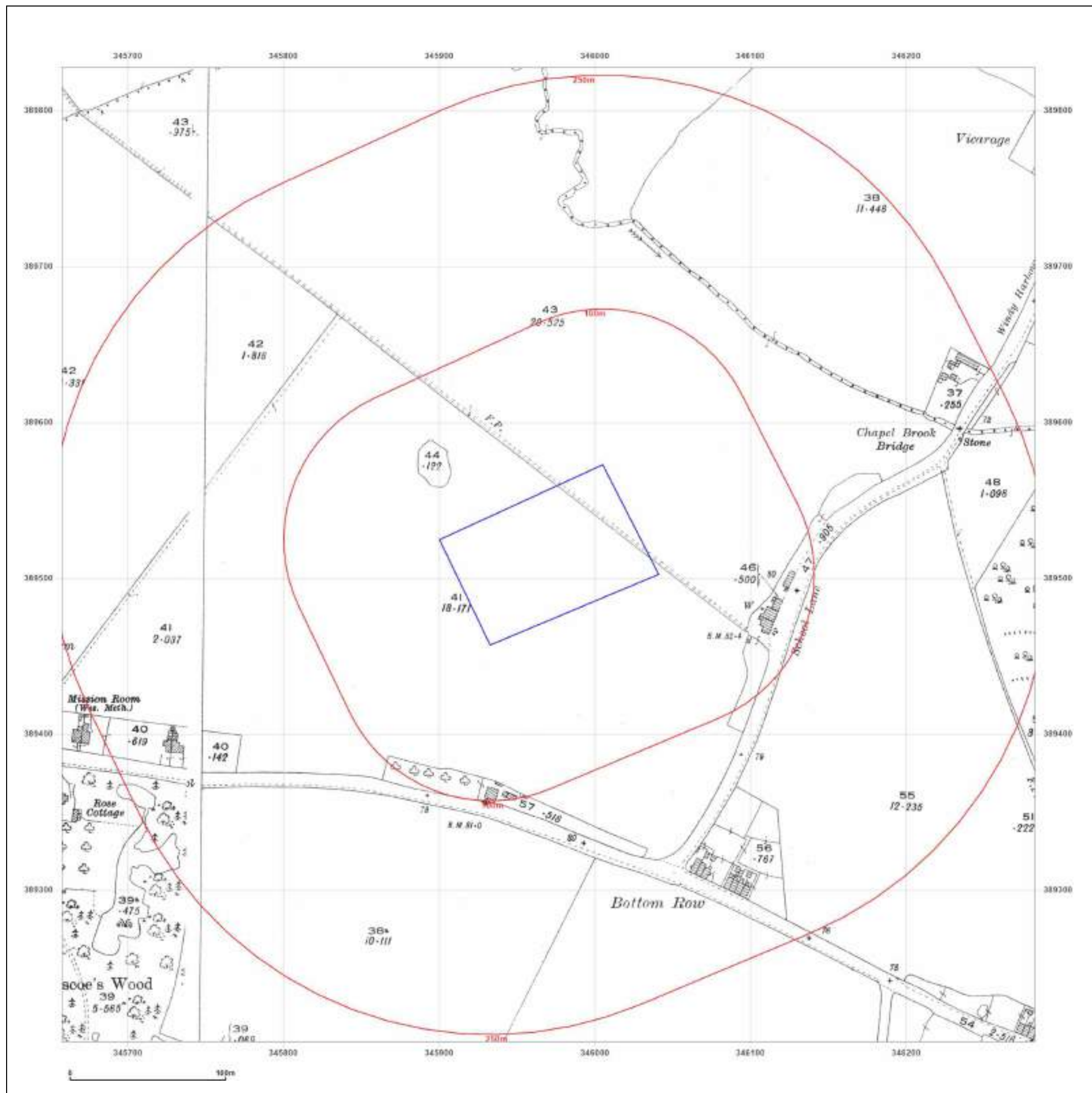
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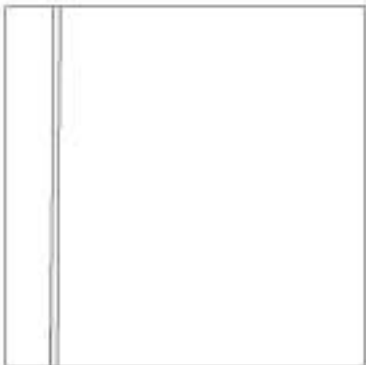
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Scale: 1:2,500

Printed at: 1:2,500



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Edition N/A
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Edition N/A
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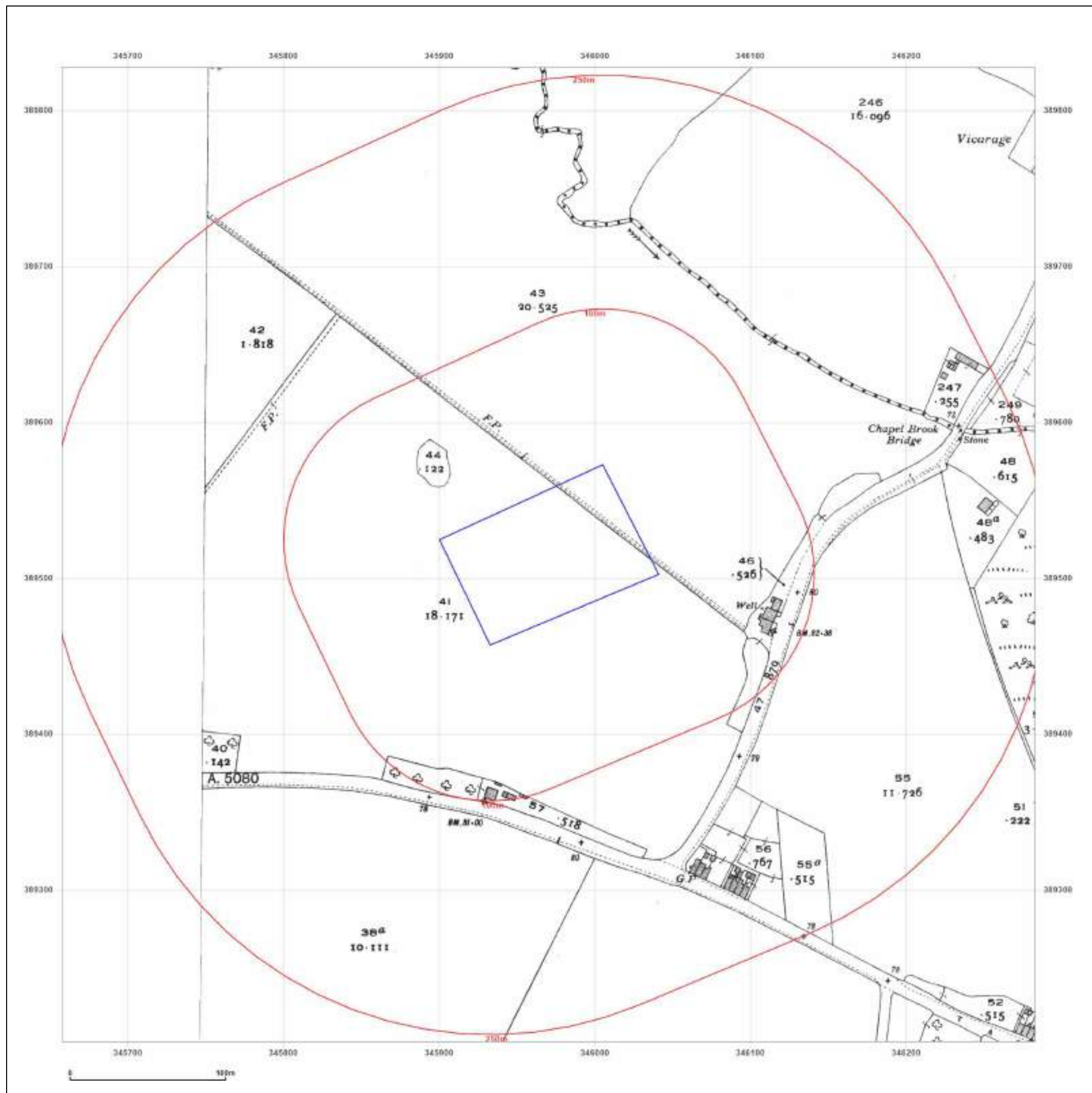


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Map Name: County Series

Map date: 1937

Scale: 1:2,500

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Edition N/A
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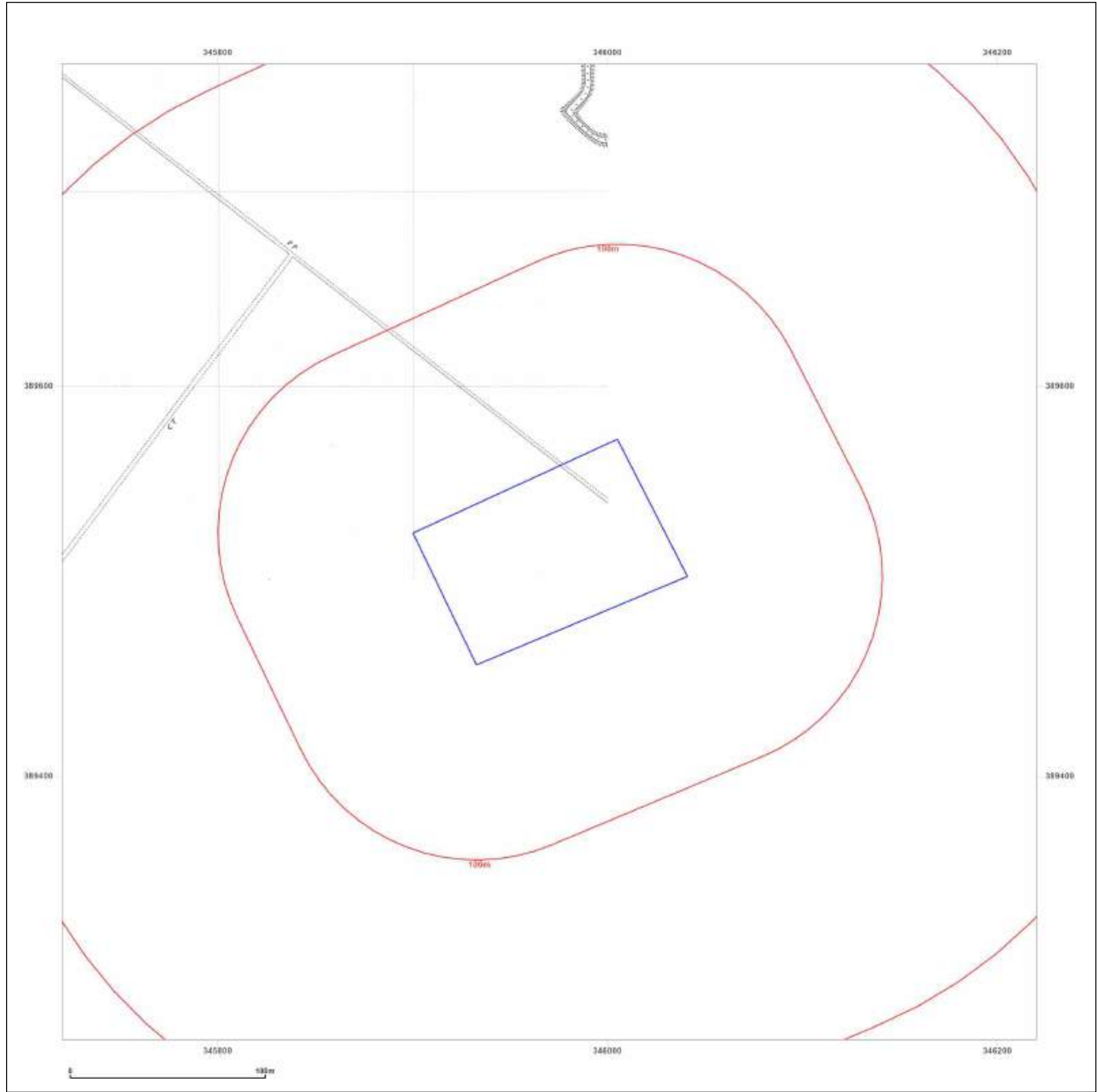


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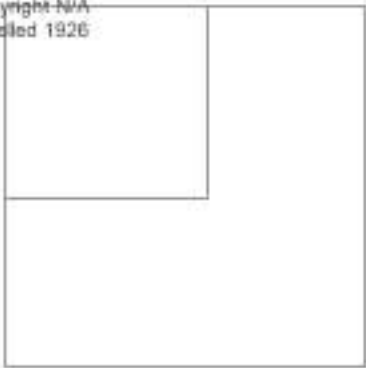
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Scale: 1:1,250

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Revised 1956
Edition N/A
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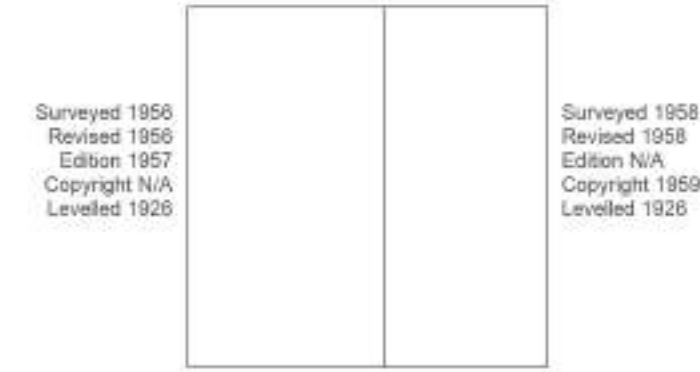
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Map date: 1956-1958

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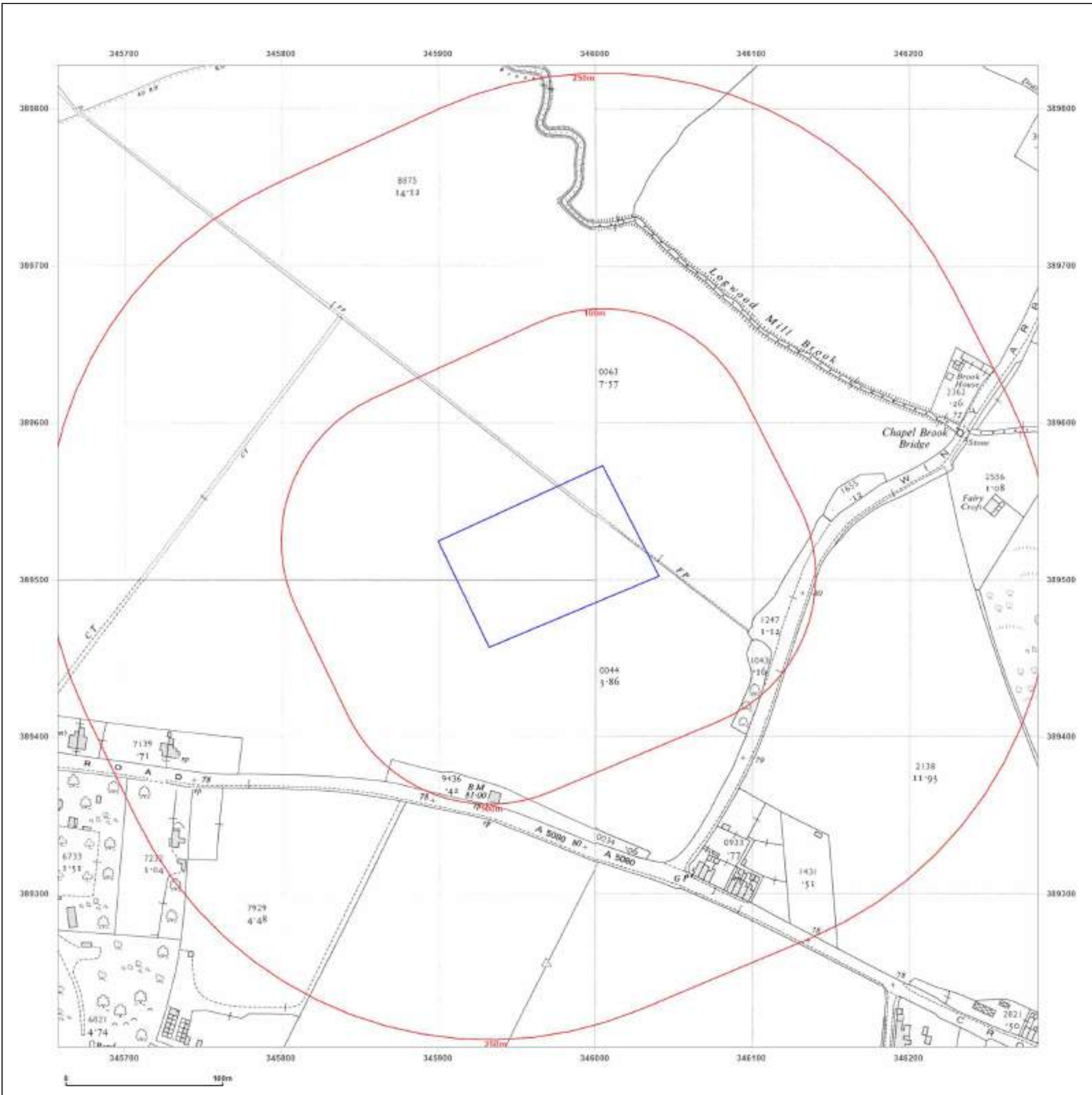


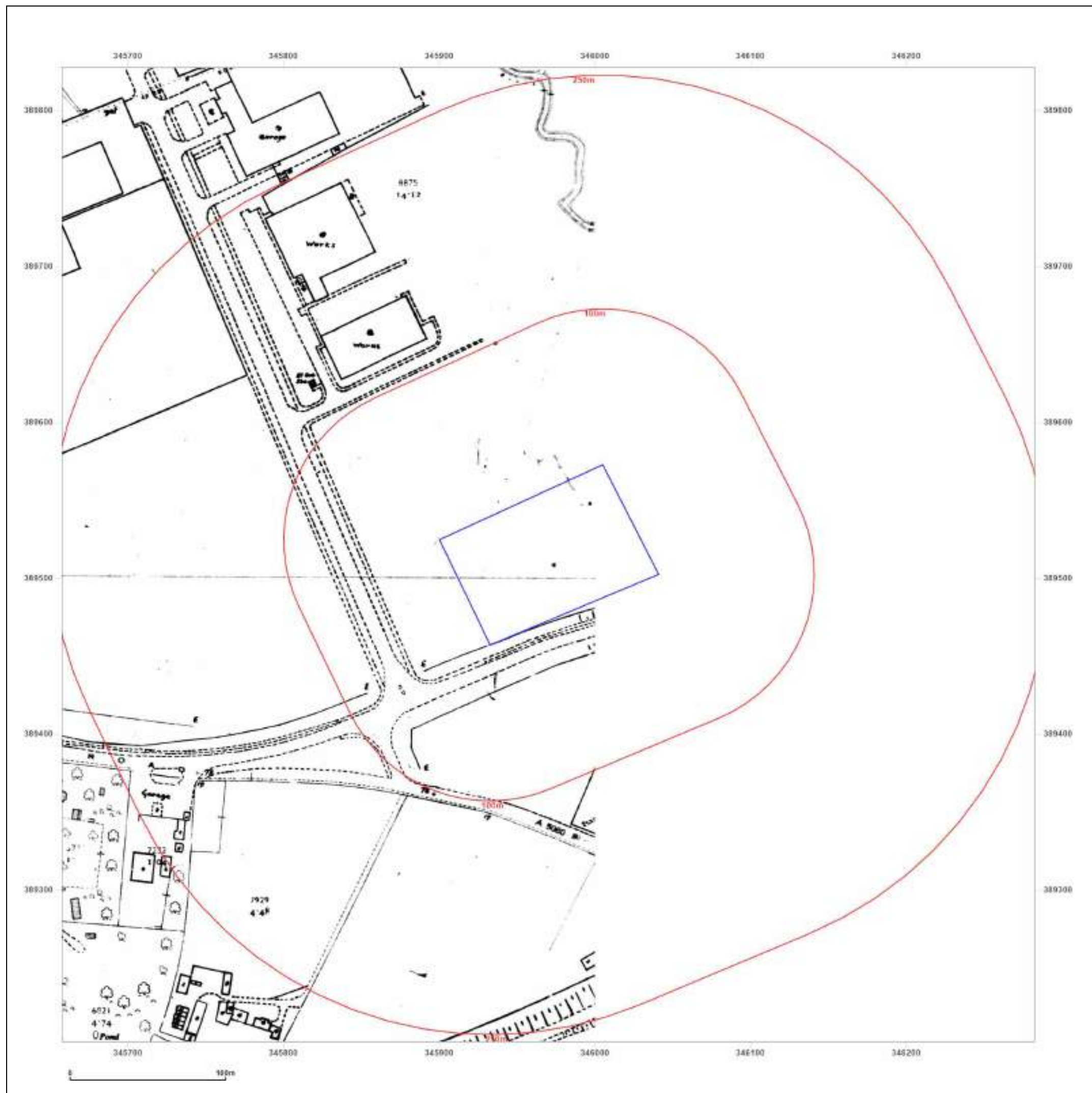
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Map Name: National Grid

Map date: 1976

Scale: 1:2,500

Printed at: 1:2,500



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Revised N/A
Edition N/A
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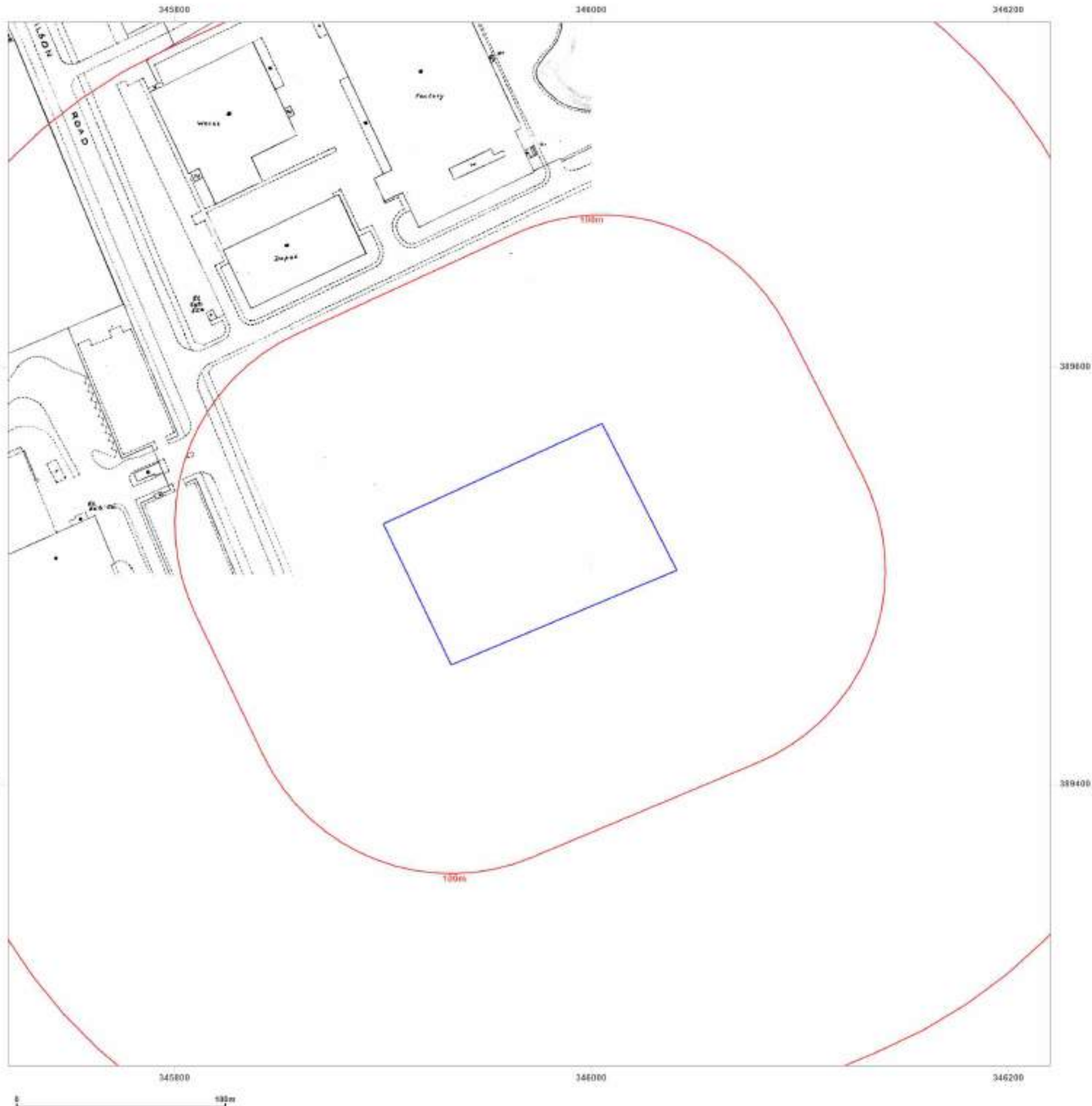


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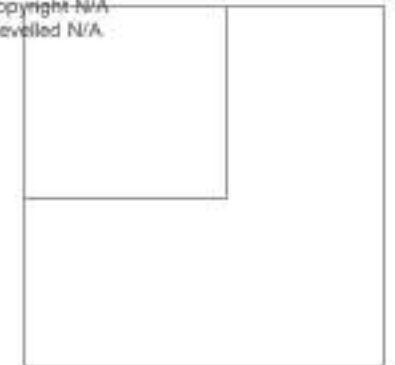
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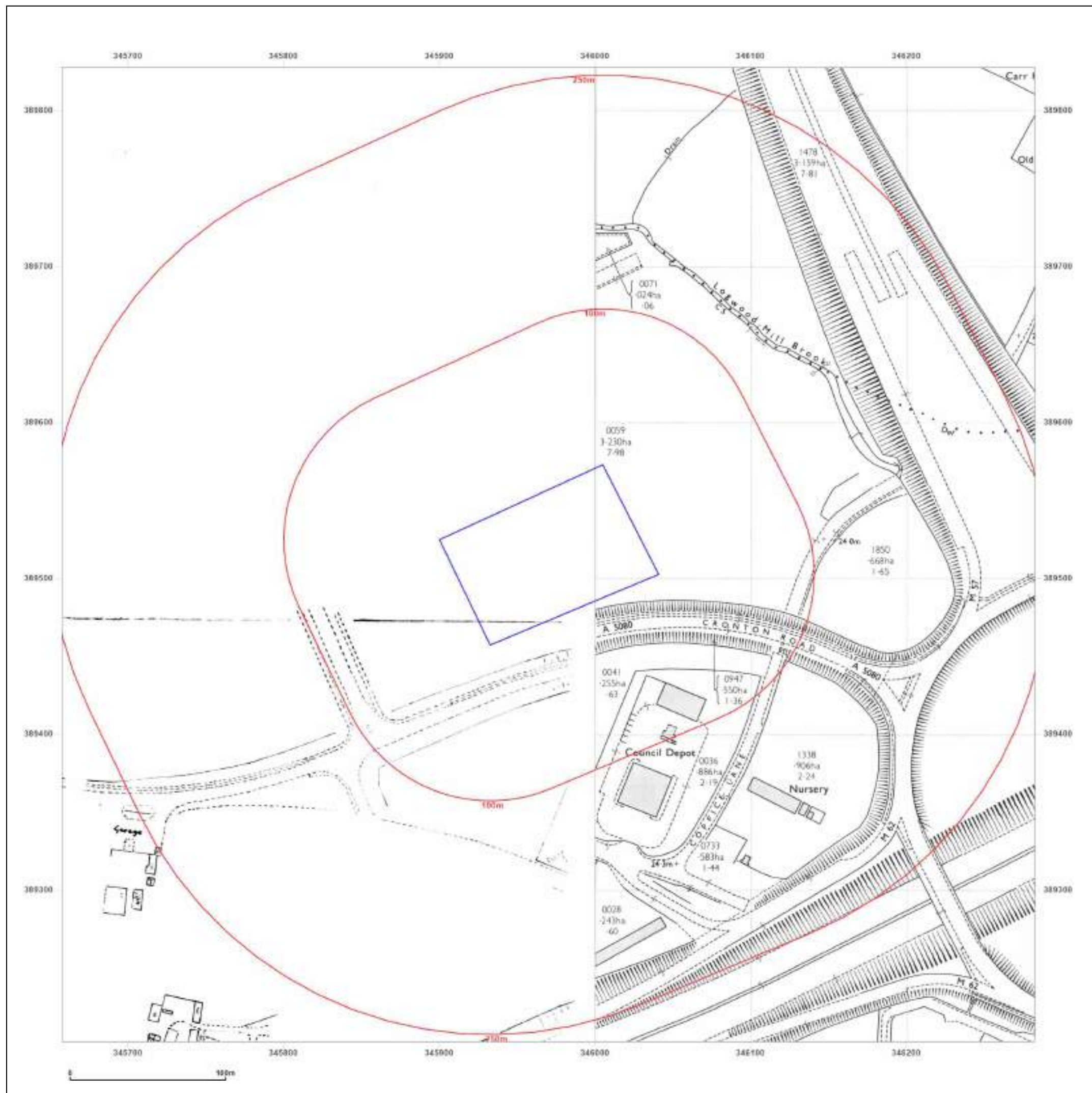


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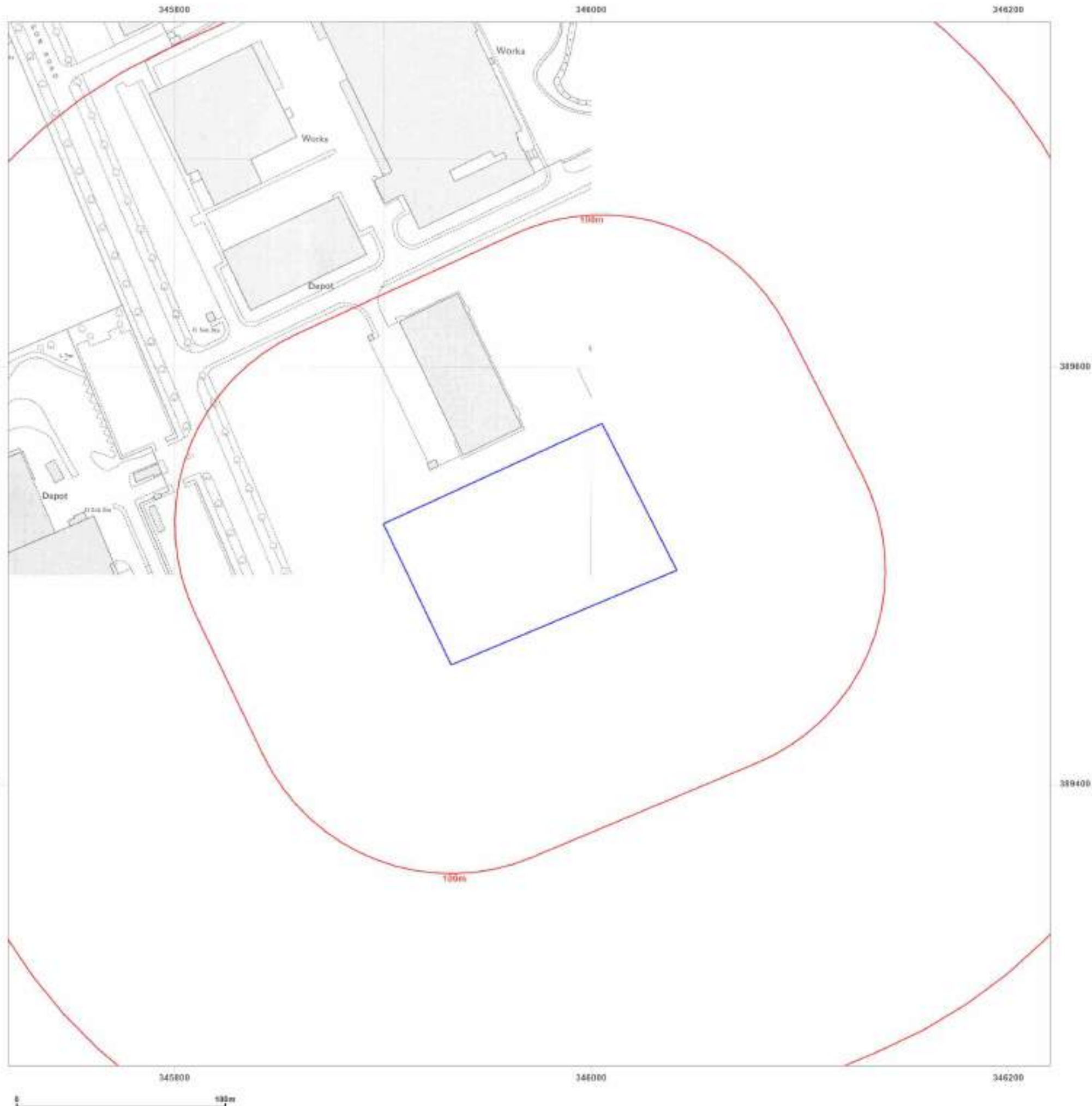
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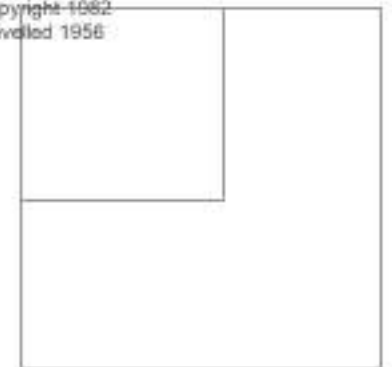
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Scale: 1:1,250

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Grid Ref: 345970, 389515

Map Name: National Grid

Map date: 1982-1984

Scale: 1:2,500

Printed at: 1:2,500



Surveyed N/A Revised N/A Edition N/A Copyright 1982 Levelled 1956	Surveyed 1963 Revised 1984 Edition N/A Copyright 1984 Levelled 1963
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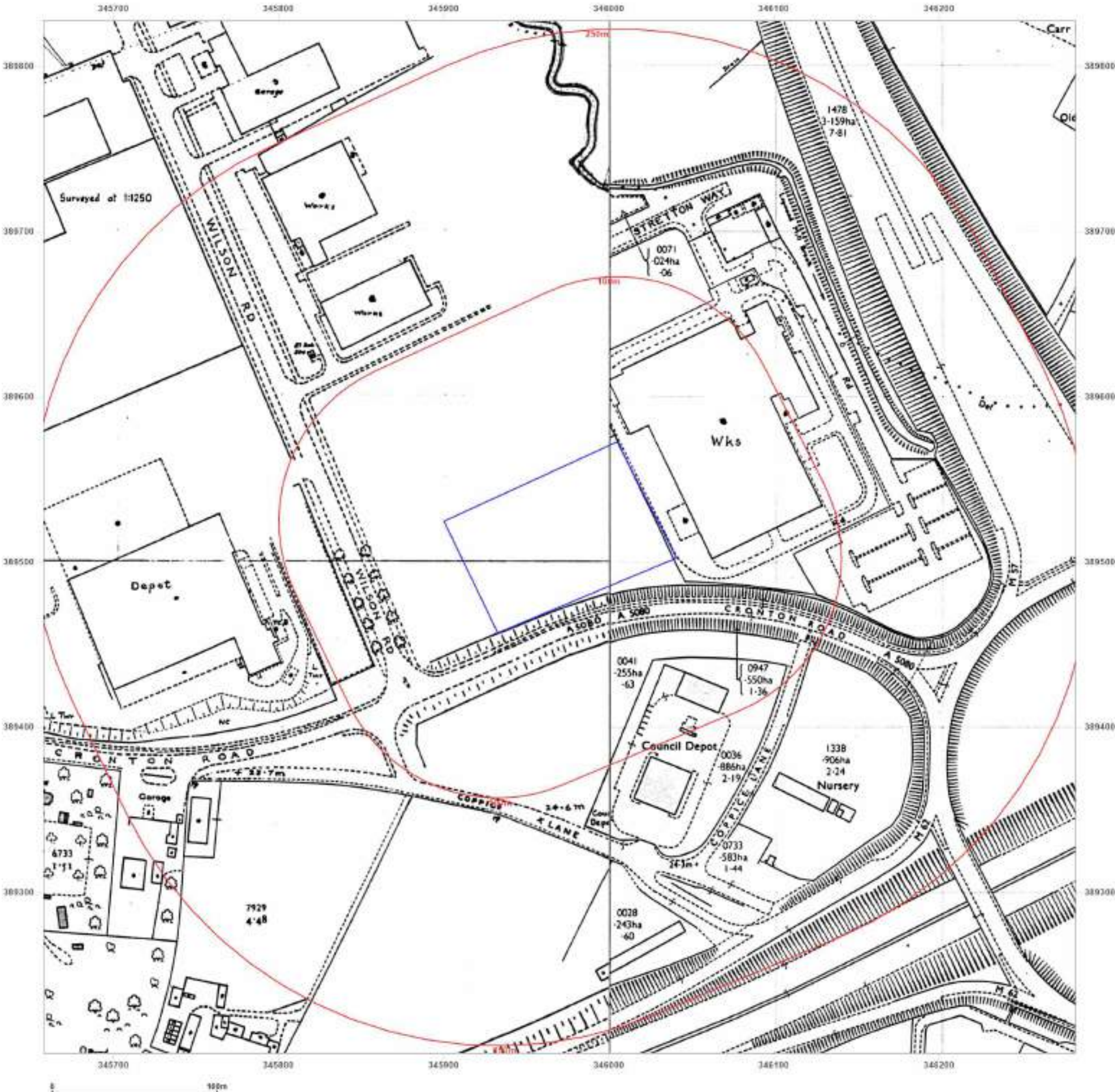


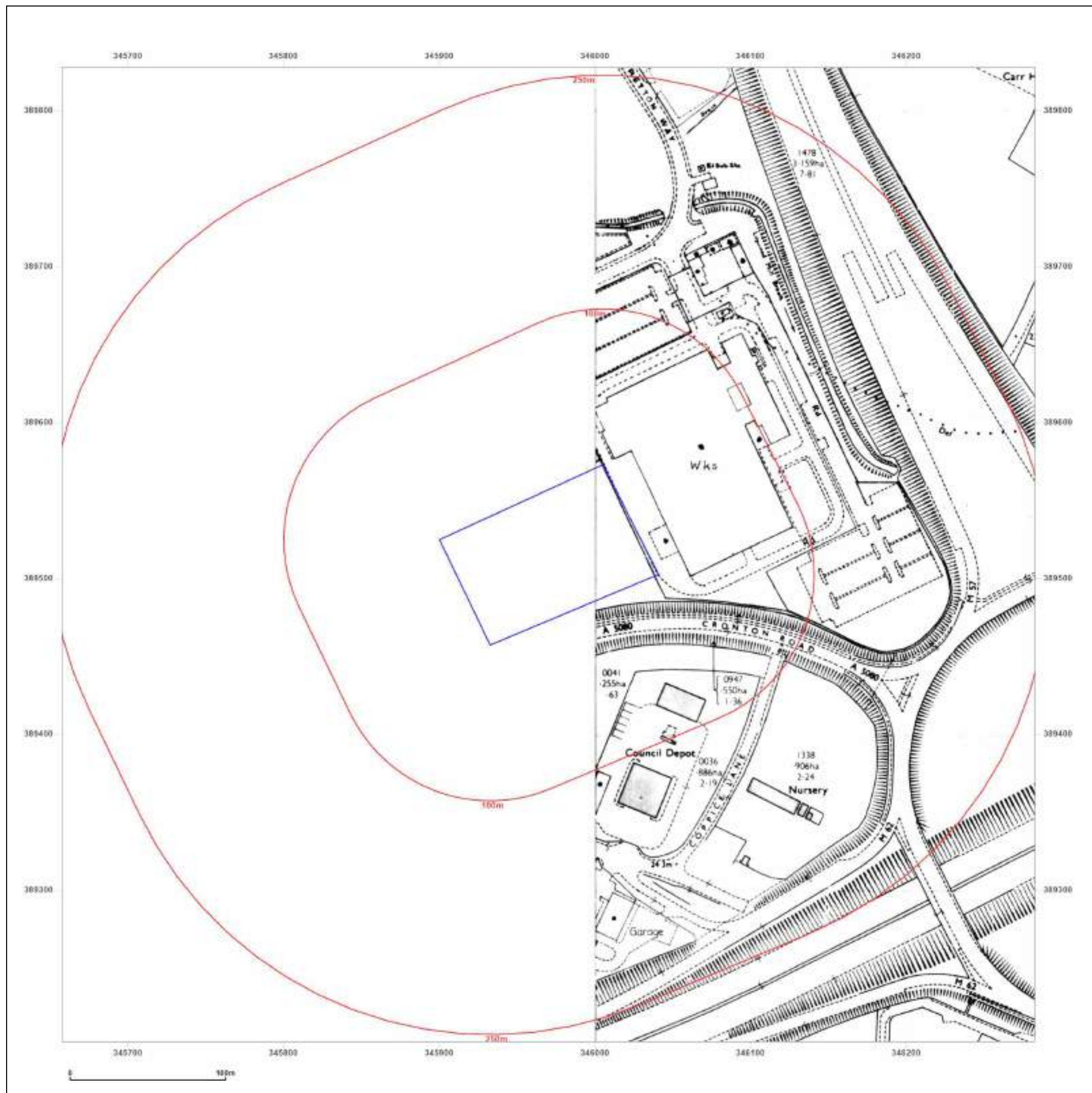
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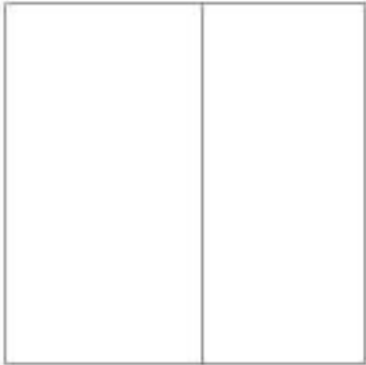




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Grid Ref: 345970, 389515

Map Name: National Grid
Map date: 1989
Scale: 1:2,500
Printed at: 1:2,500



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Site Details:

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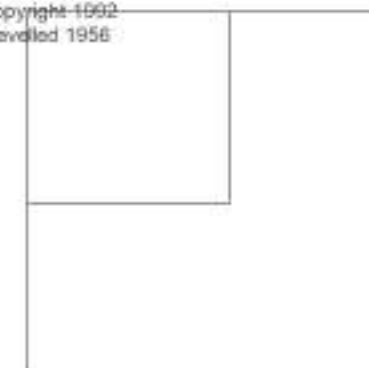
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Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1956
Revised 1992
Edition N/A
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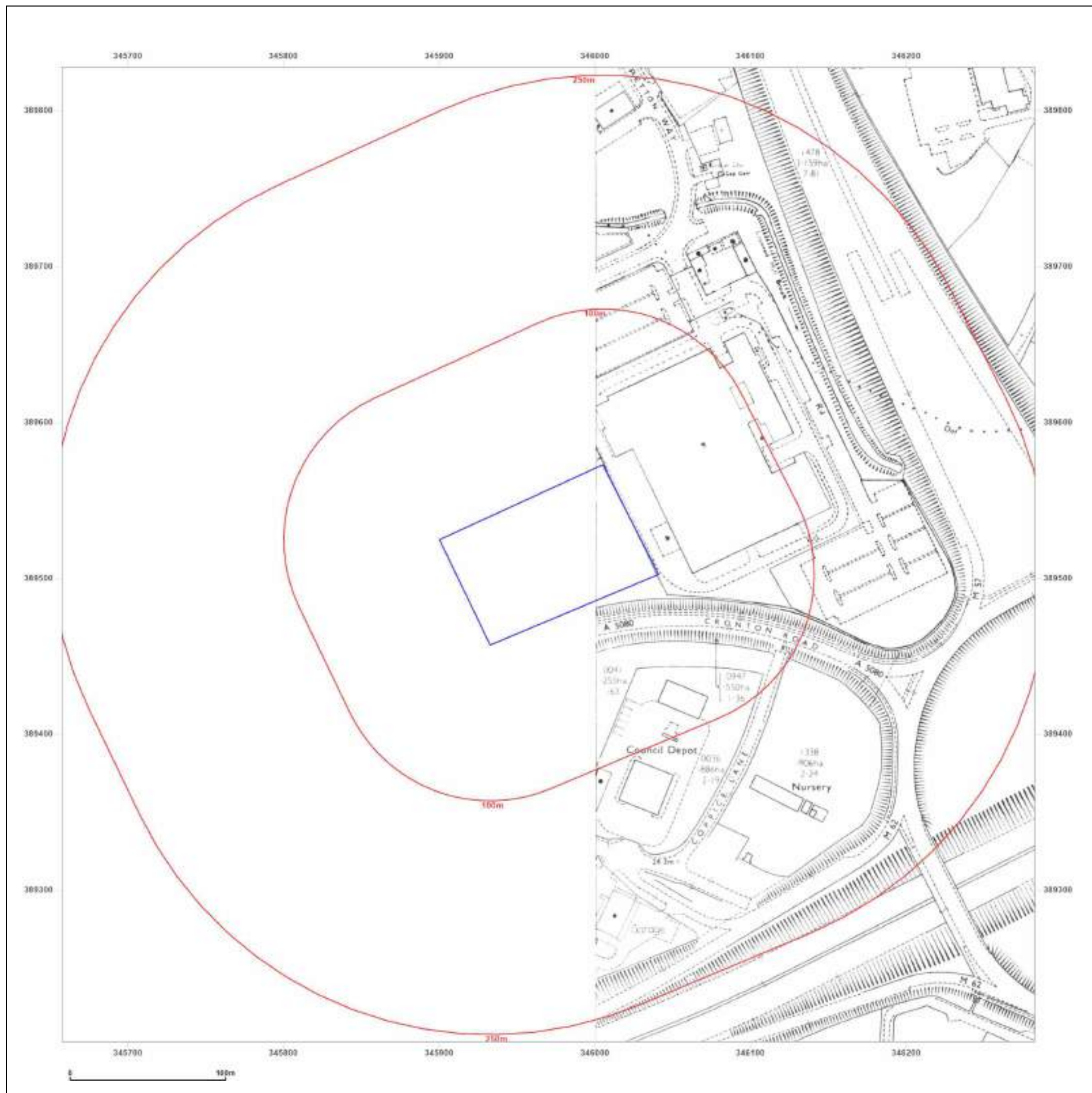


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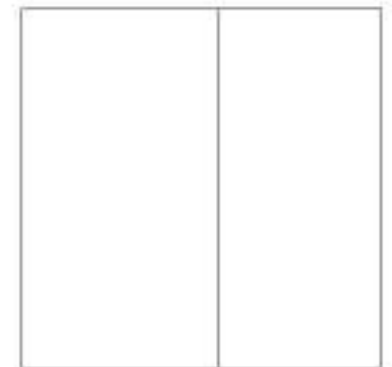
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Map Name: National Grid

Map date: 1992

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1963
Revised 1992
Edition N/A
Copyright 1992
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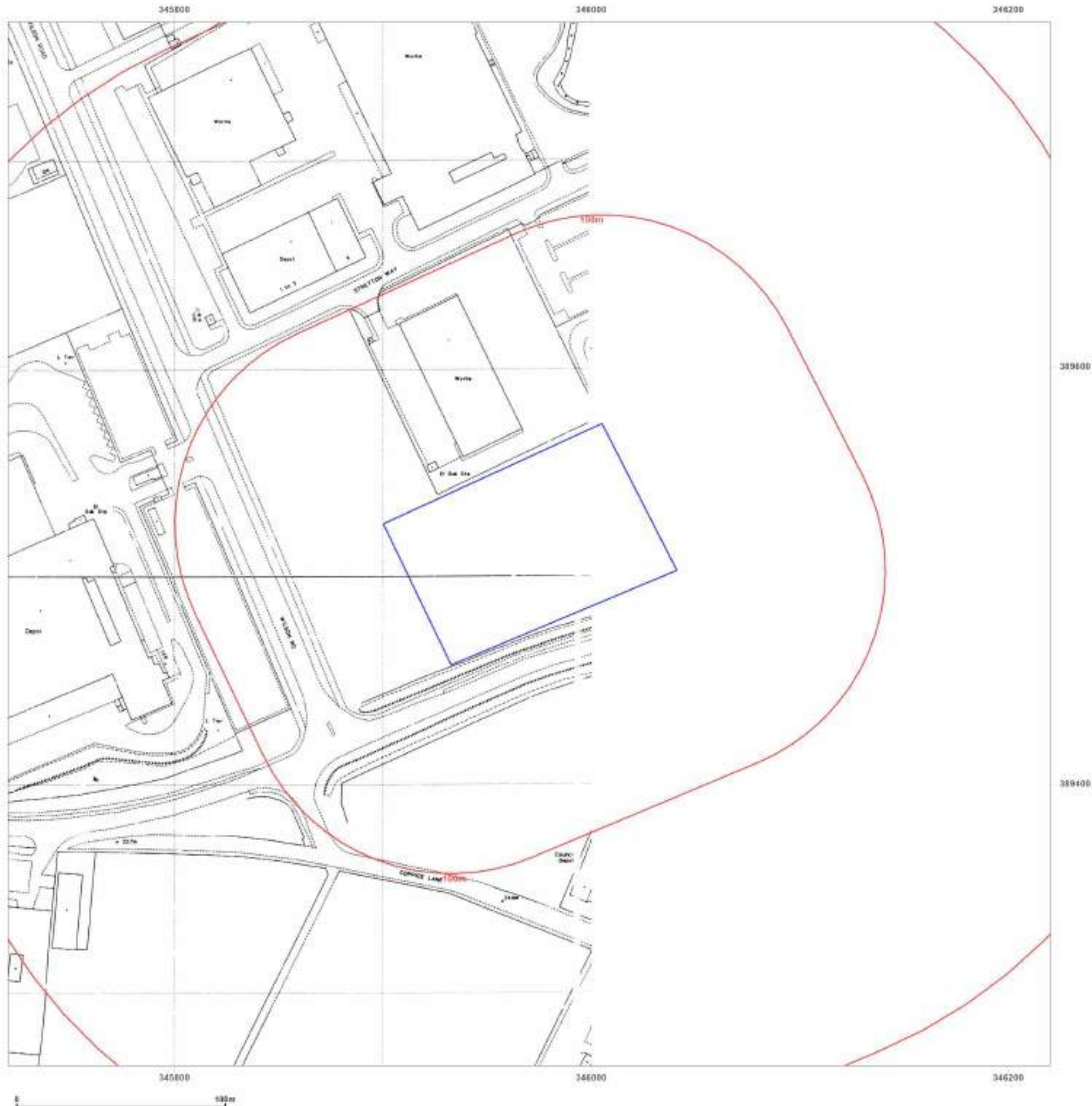


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Site Details:

unspecified

Client Ref: EMS_937012_1162880
Report Ref: EMS-937012_1192549
Grid Ref: 345970, 389515

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



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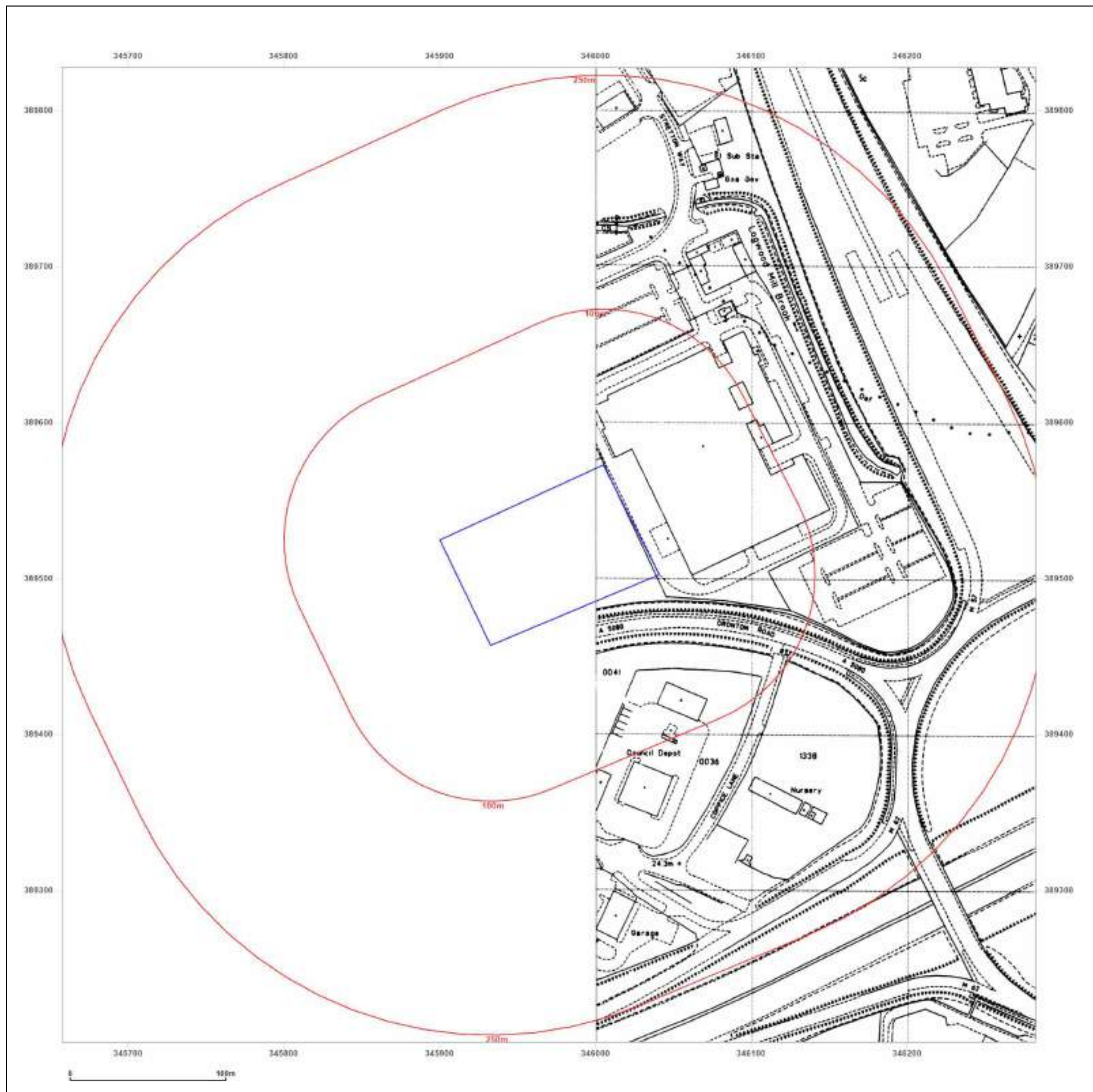


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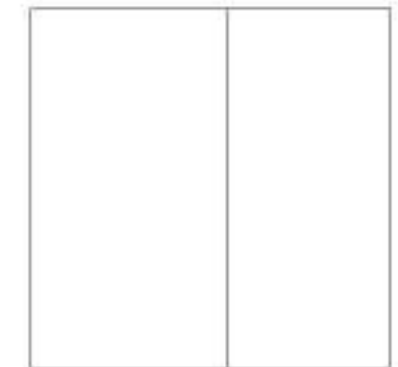
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Scale: 1:2,500

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unspecified

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Report Ref: EMS-937012_1192549
Grid Ref: 345970, 389515

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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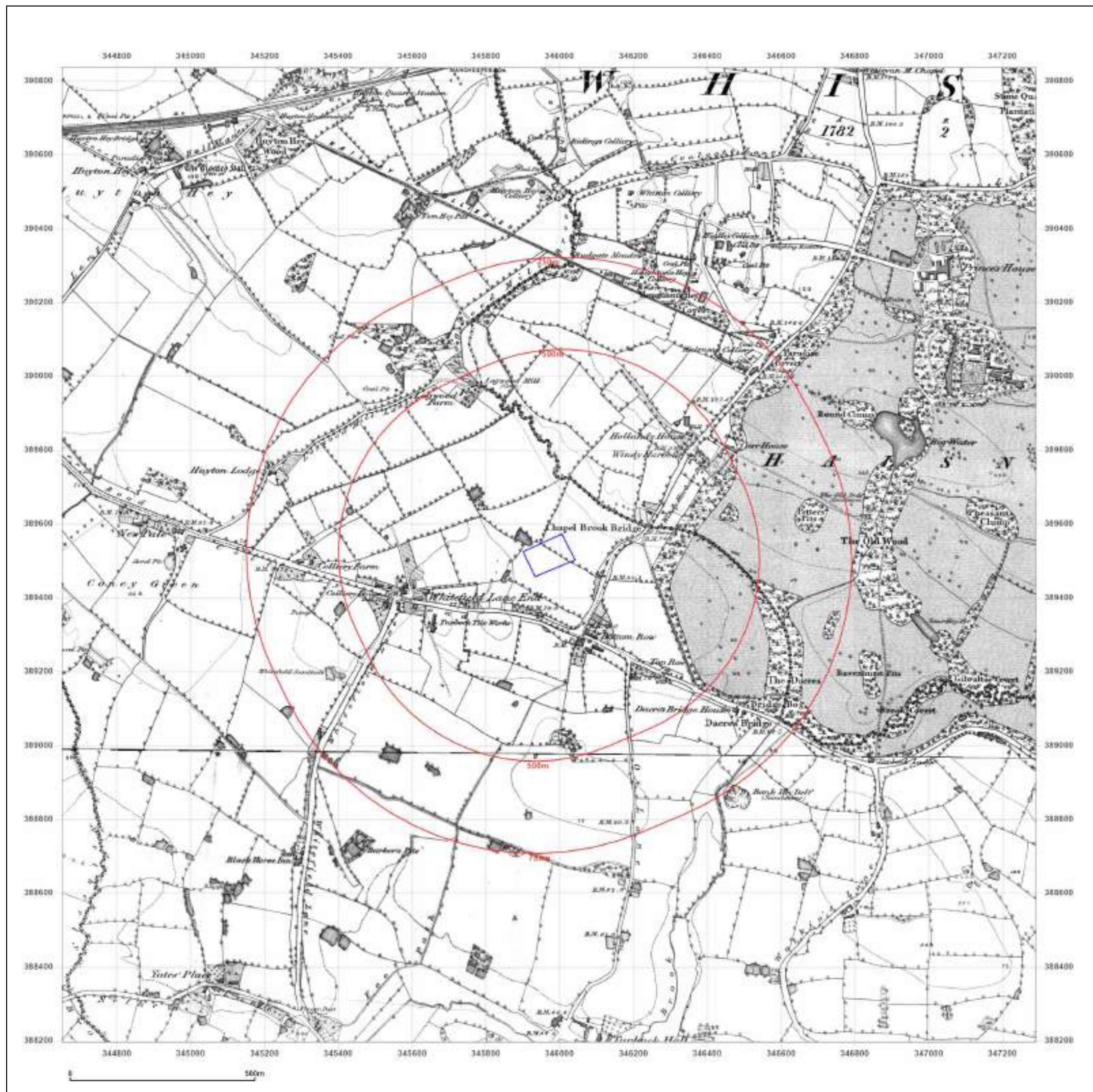


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Report Ref: EMS-937012_1192549
Grid Ref: 345970, 389515

Map Name: County Series

Map date: 1849-1850

Scale: 1:10,560

Printed at: 1:10,560



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Edition 1850
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Surveyed 1848
Revised N/A
Edition 1849
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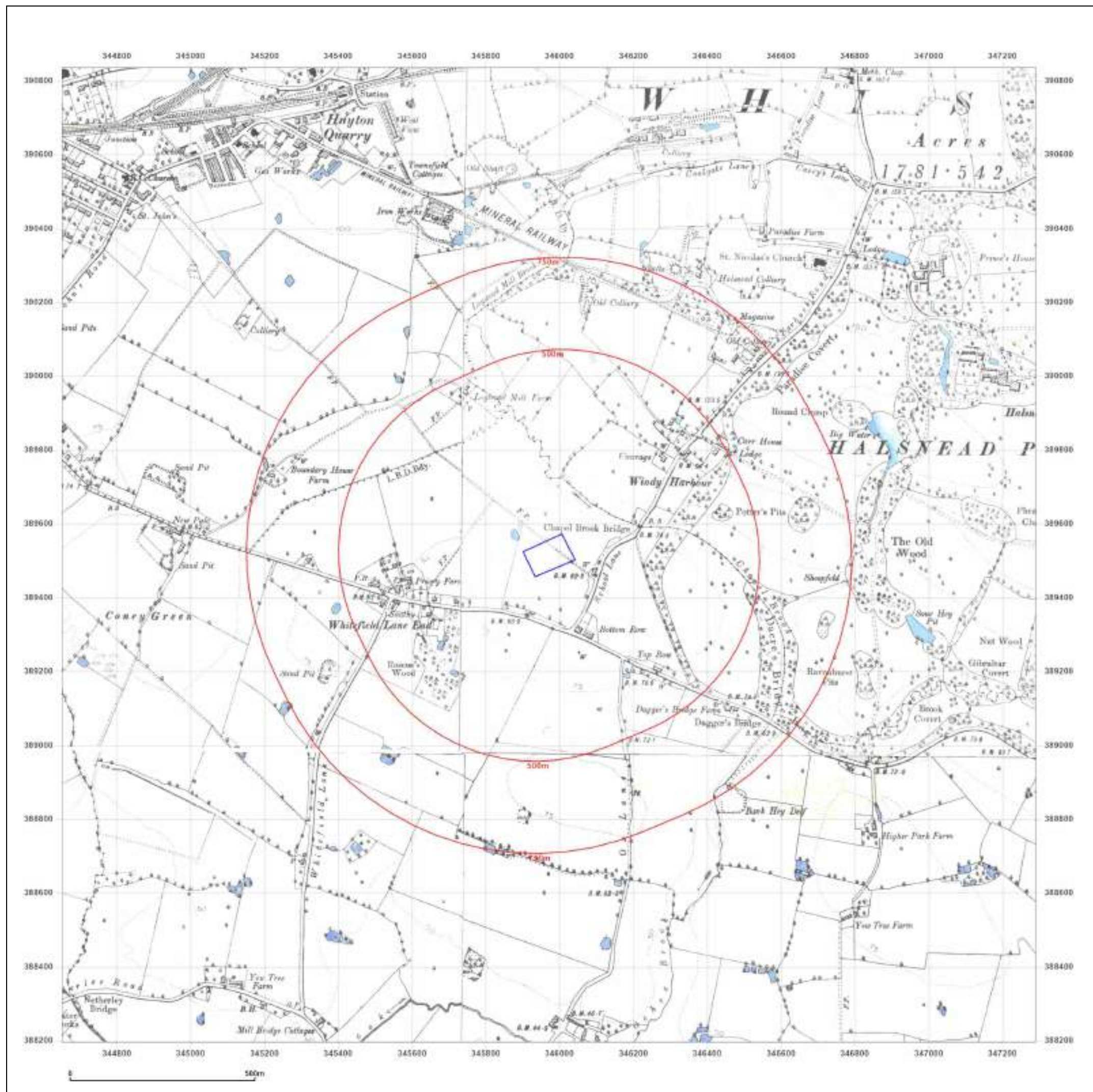


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Production date: 09 April 2024

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www.groundsure.com/sites/default/files/groundsure_legend.pdf



Site Details:

unspecified

Client Ref: EMS_937012_1162880
Report Ref: EMS-937012_1192549
Grid Ref: 345970, 389515

Map Name: County Series

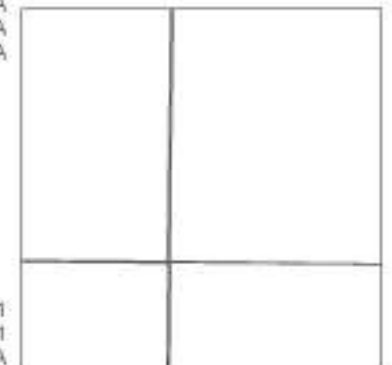
Map date: 1891

Scale: 1:10,560

Printed at: 1:10,560



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



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

Surveyed 1891
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Edition N/A
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Revised 1891
Edition N/A
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www.groundsure.com

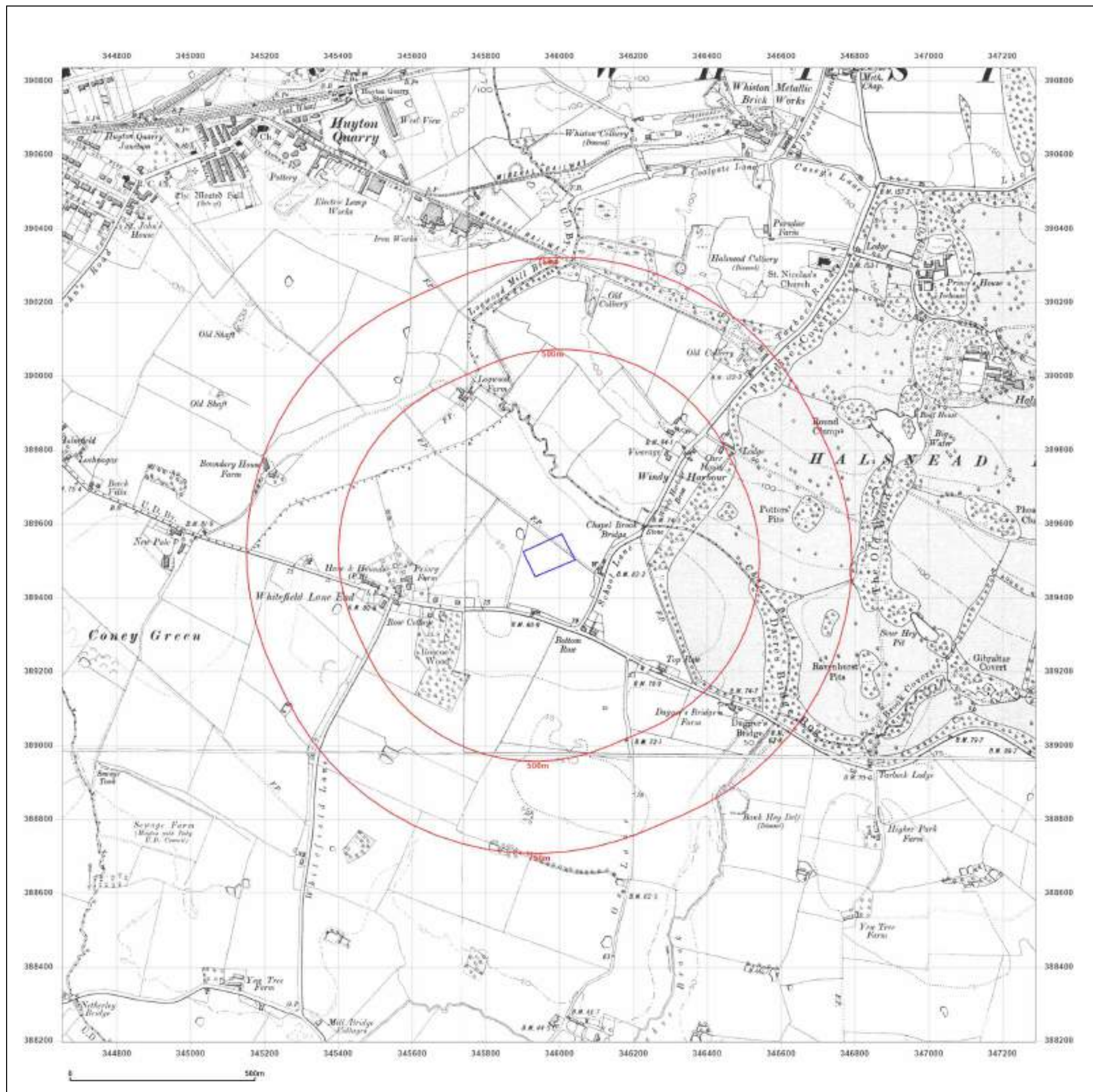


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Production date: 09 April 2024

Map legend available at:
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Site Details:

unspecified

Client Ref: EMS_937012_1162880
Report Ref: EMS-937012_1192549
Grid Ref: 345970, 389515

Map Name: County Series

Map date: 1904-1906

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1906
Edition N/A
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Surveyed 1891
Revised 1908
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1904
Edition N/A
Copyright N/A
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Surveyed 1891
Revised 1905
Edition N/A
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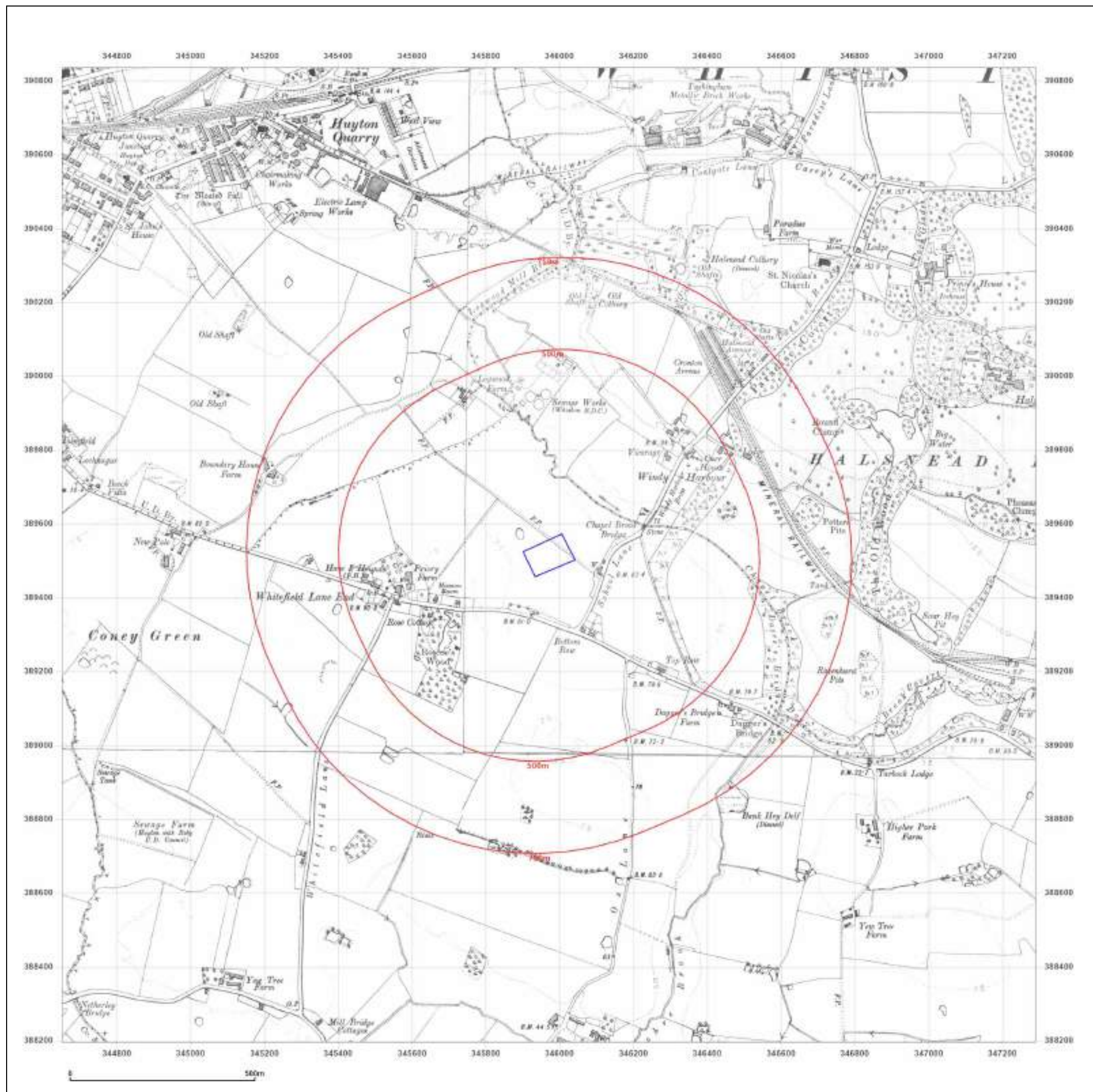


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Site Details:

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Grid Ref: 345970, 389515

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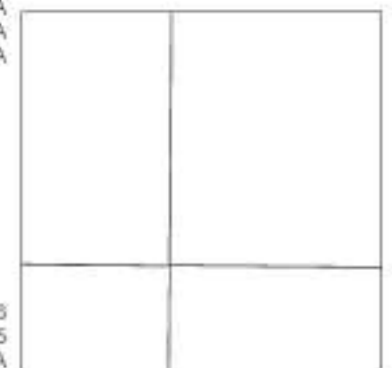
Map date: 1925

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848
Revised 1925
Edition N/A
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Revised 1925
Edition N/A
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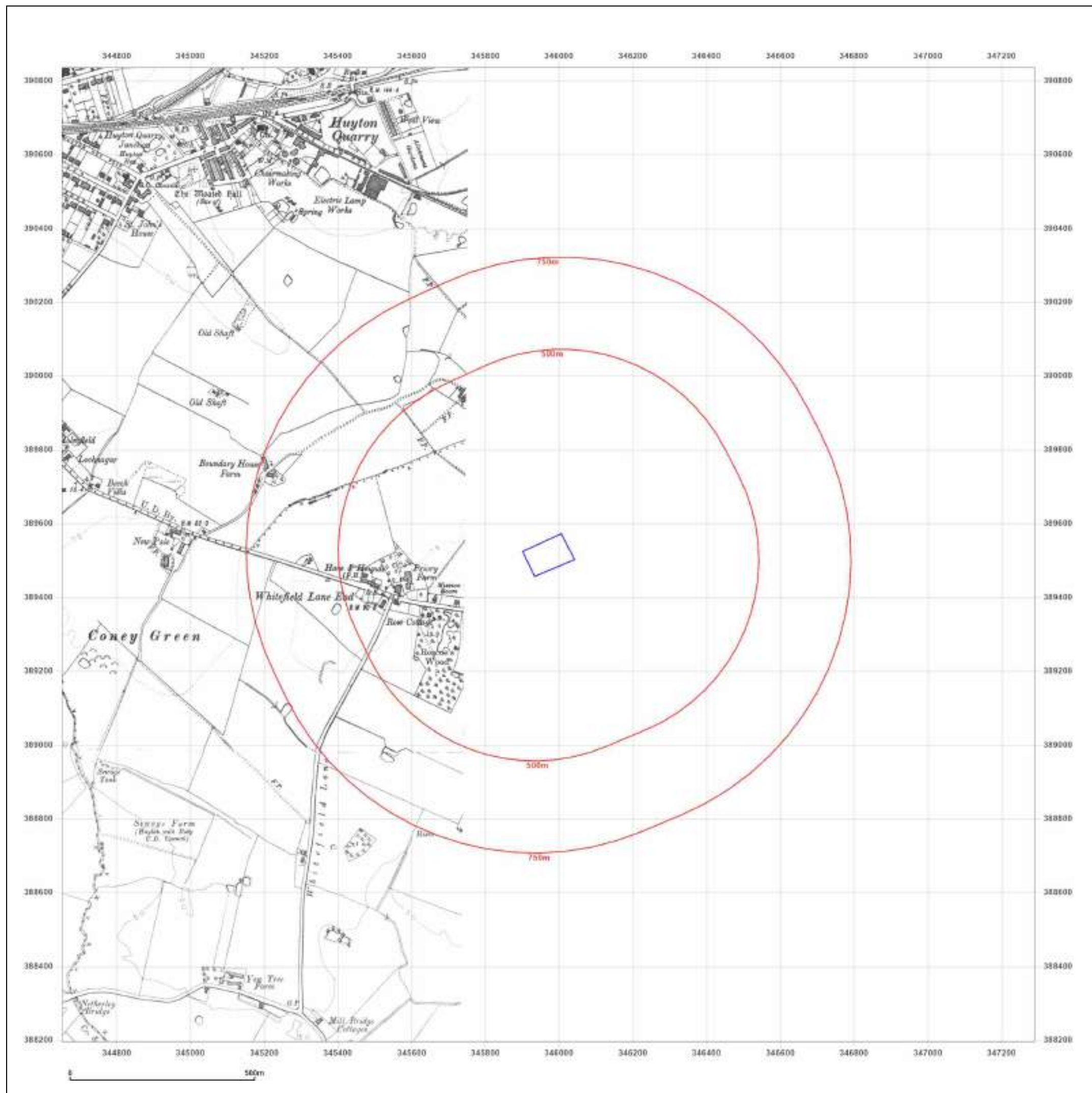


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Site Details:

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Report Ref: EMS-937012_1192549
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Map Name: County Series

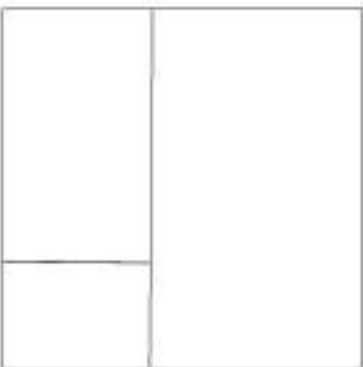
Map date: 1925

Scale: 1:10,560

Printed at: 1:10,560



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Revised 1925
Edition N/A
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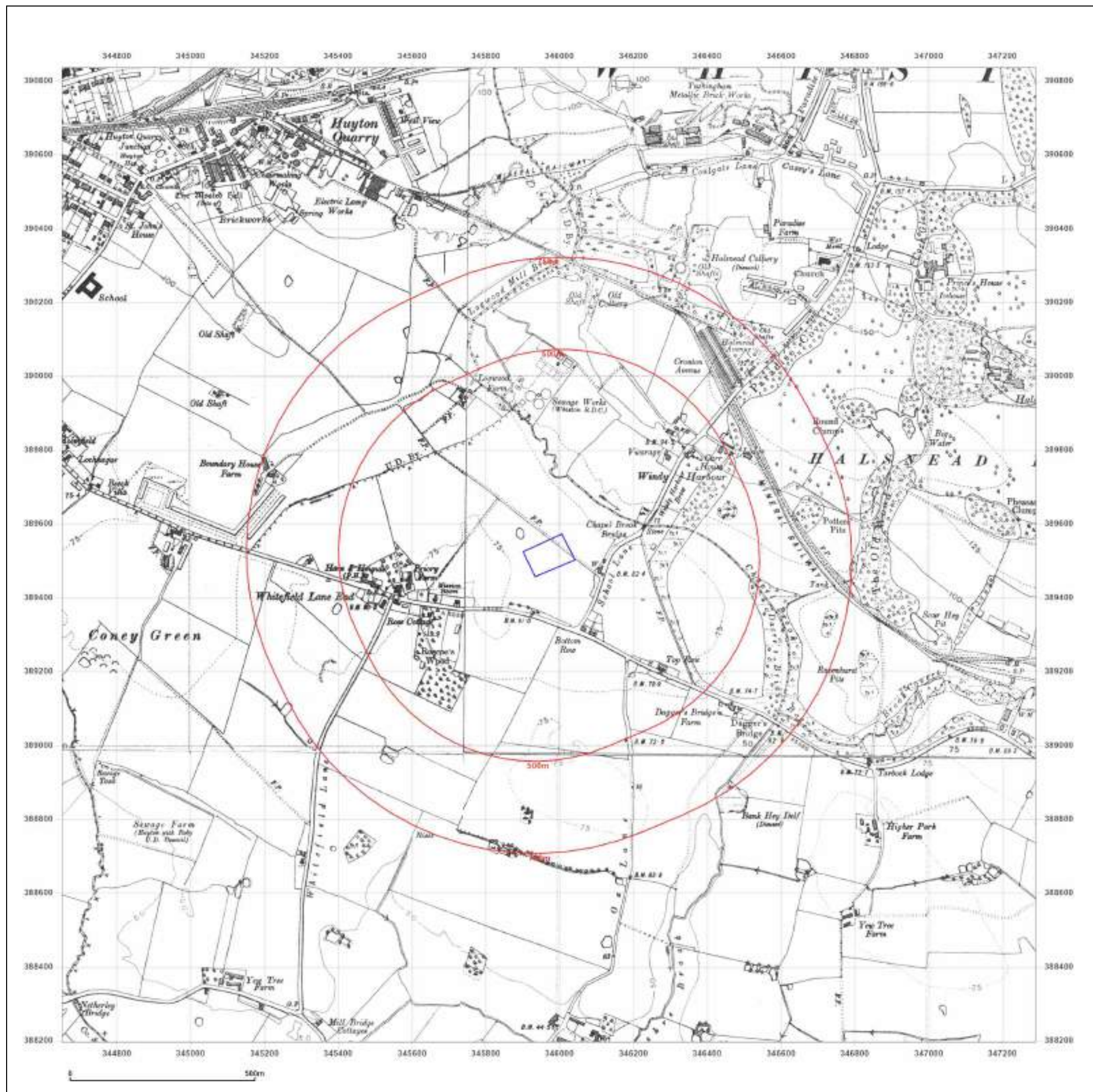


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Report Ref: EMS-937012_1192549
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Map Name: County Series

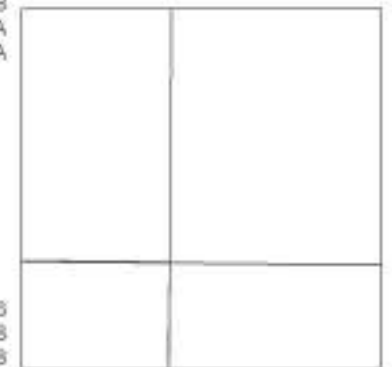
Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848
Revised 1938
Edition 1938
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Revised 1938
Edition 1938
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Surveyed 1848
Revised 1938
Edition N/A
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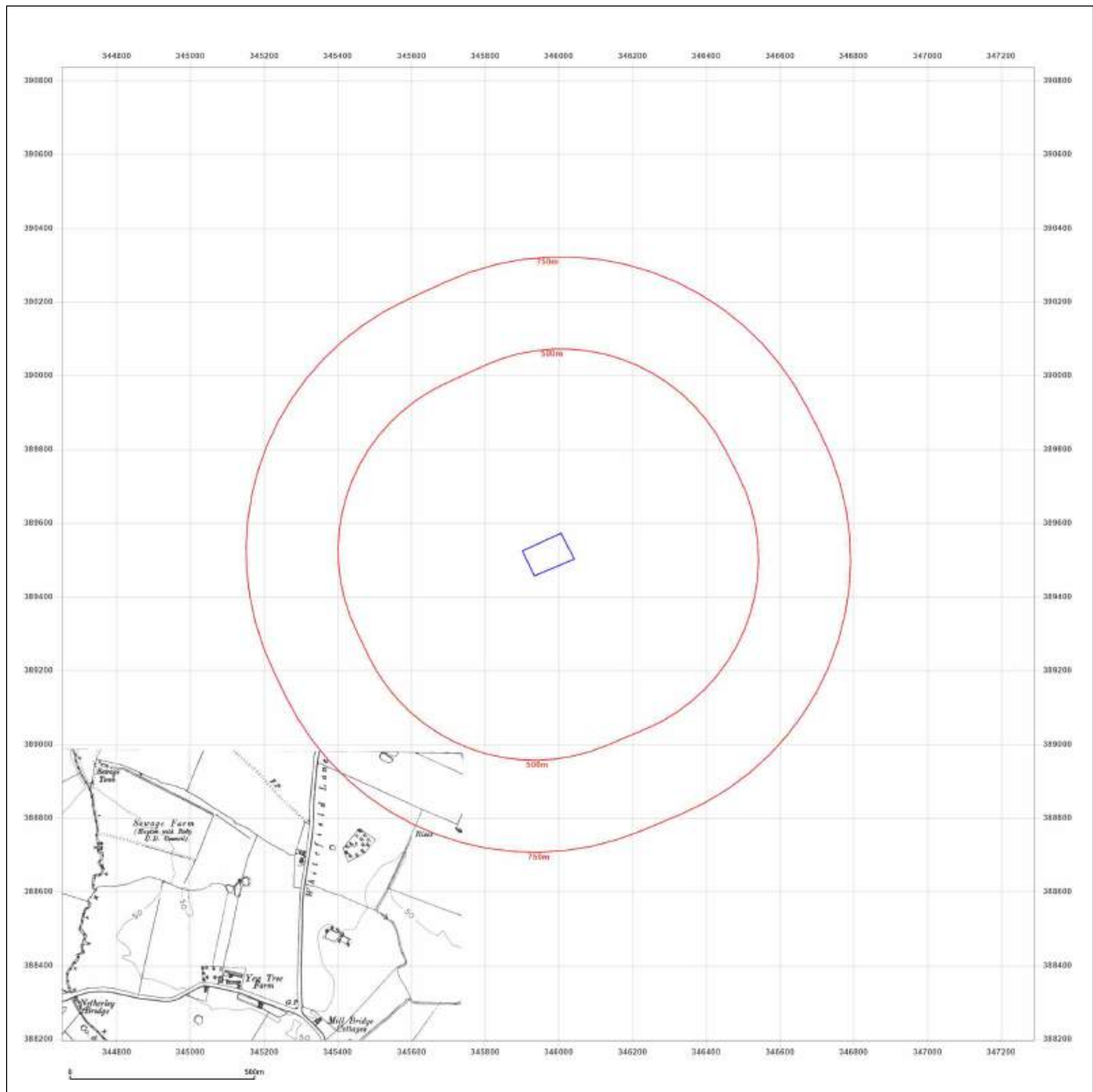


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Map legend available at:
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Site Details:

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Client Ref: EMS_937012_1162880
Report Ref: EMS-937012_1192549
Grid Ref: 345970, 389515

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848
Revised 1938
Edition N/A
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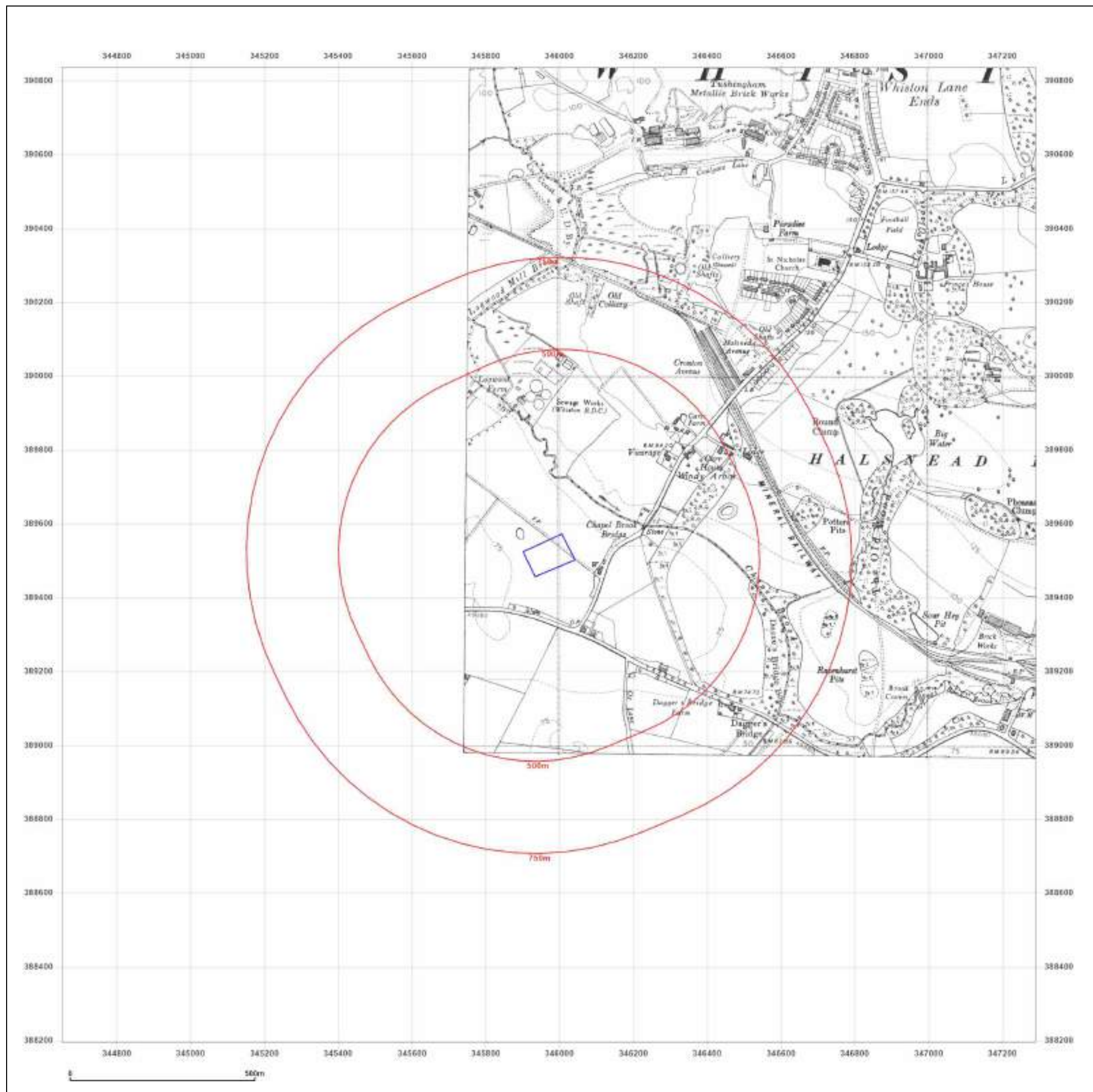


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Production date: 09 April 2024

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



Site Details:
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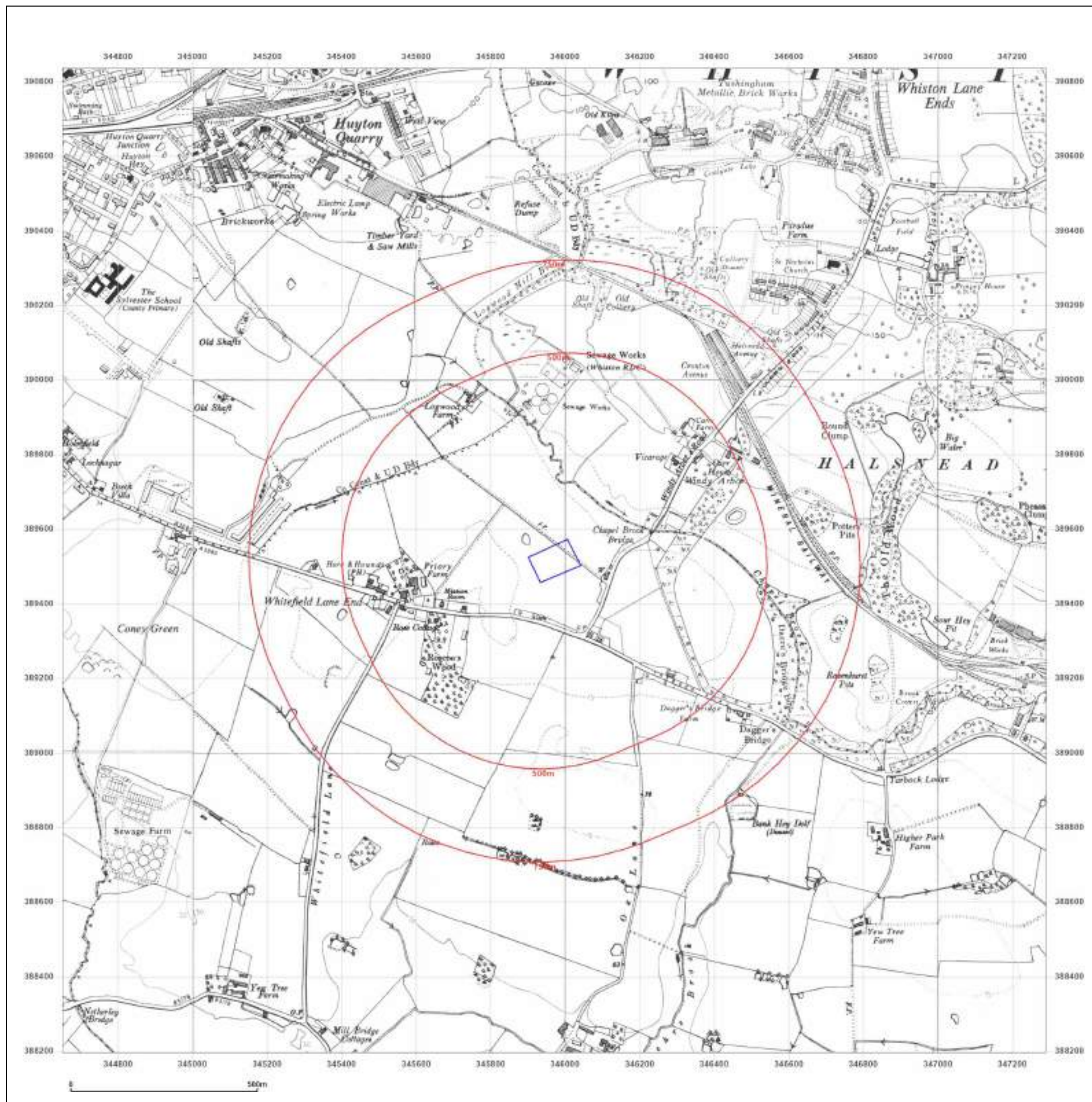
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Report Ref: EMS-937012_1192549
Grid Ref: 345970, 389515

Map Name: County Series
Map date: 1947
Scale: 1:10,560
Printed at: 1:10,560

Surveyed 1846
Revised 1947
Edition N/A
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Site Details:

unspecified

Client Ref: EMS_937012_1162880
Report Ref: EMS-937012_1192549
Grid Ref: 345970, 389515

Map Name: Provisional

Map date: 1955-1956

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1954
Revised 1955
Edition N/A
Copyright 1956
Levelled N/A

Surveyed 1947
Revised 1955
Edition 1956
Copyright N/A
Levelled N/A

Surveyed 1954
Revised 1955
Edition N/A
Copyright 1956
Levelled N/A

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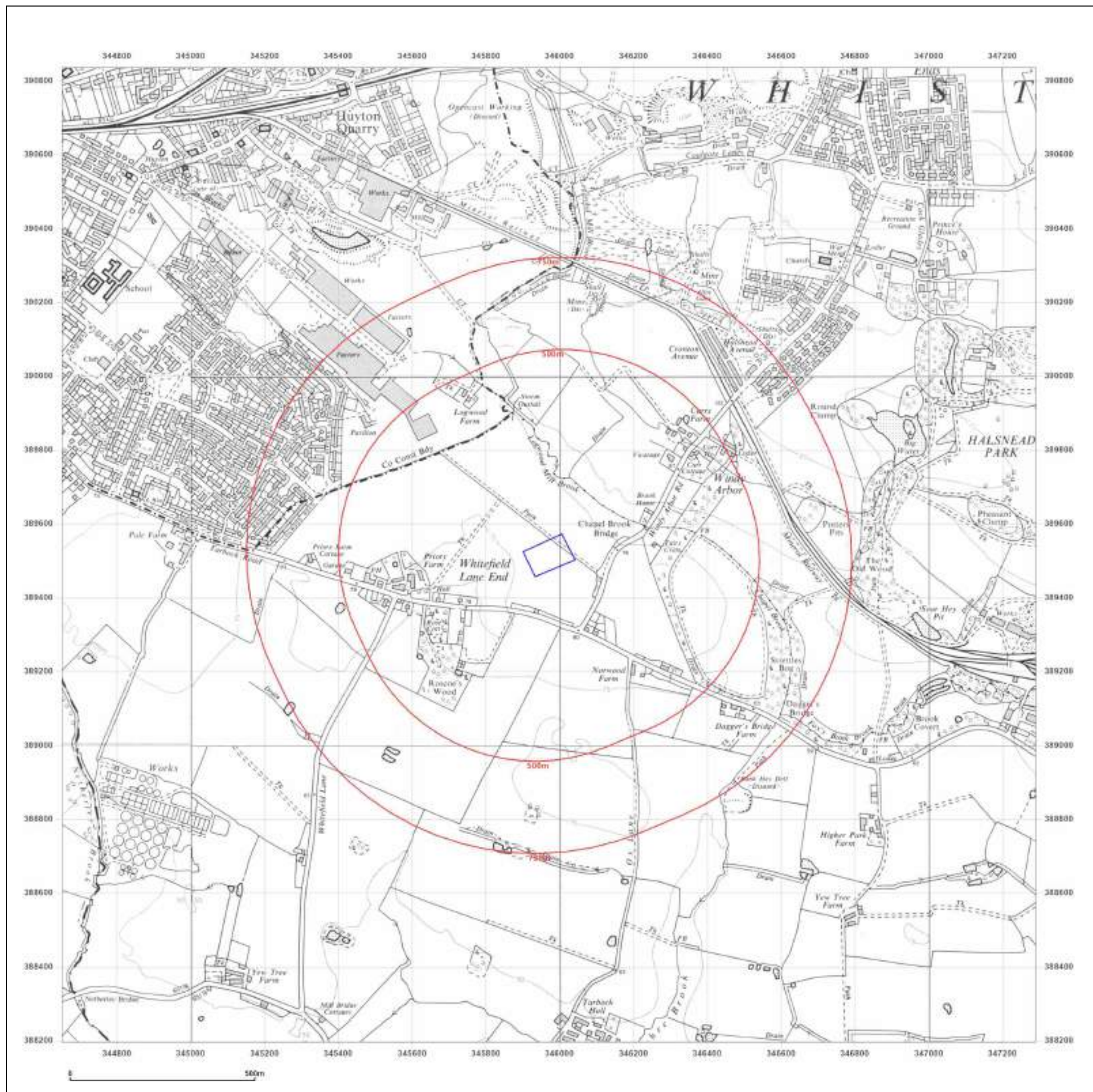


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Site Details:
unspecified

Client Ref: EMS_937012_1162880
Report Ref: EMS-937012_1192549
Grid Ref: 345970, 389515

Map Name: Provisional
Map date: 1965-1967
Scale: 1:10,560
Printed at: 1:10,560



Surveyed 1965 Revised 1965 Edition N/A Copyright N/A Levelled N/A	Surveyed 1966 Revised 1966 Edition N/A Copyright N/A Levelled N/A
Surveyed 1967 Revised 1967 Edition N/A Copyright N/A Levelled N/A	Surveyed 1967 Revised 1967 Edition N/A Copyright N/A Levelled N/A

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Site Details:

unspecified

Client Ref: EMS_937012_1162880
Report Ref: EMS-937012_1192549
Grid Ref: 345970, 389515

Map Name: National Grid

Map date: 1974-1978

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1975
Revised 1977
Edition N/A
Copyright 1978
Levelled 1955

Surveyed 1975
Revised 1978
Edition N/A
Copyright 1978
Levelled 1984

Surveyed 1973
Revised 1974
Edition N/A
Copyright 1974
Levelled 1955

Surveyed 1975
Revised 1977
Edition N/A
Copyright 1977
Levelled 1984



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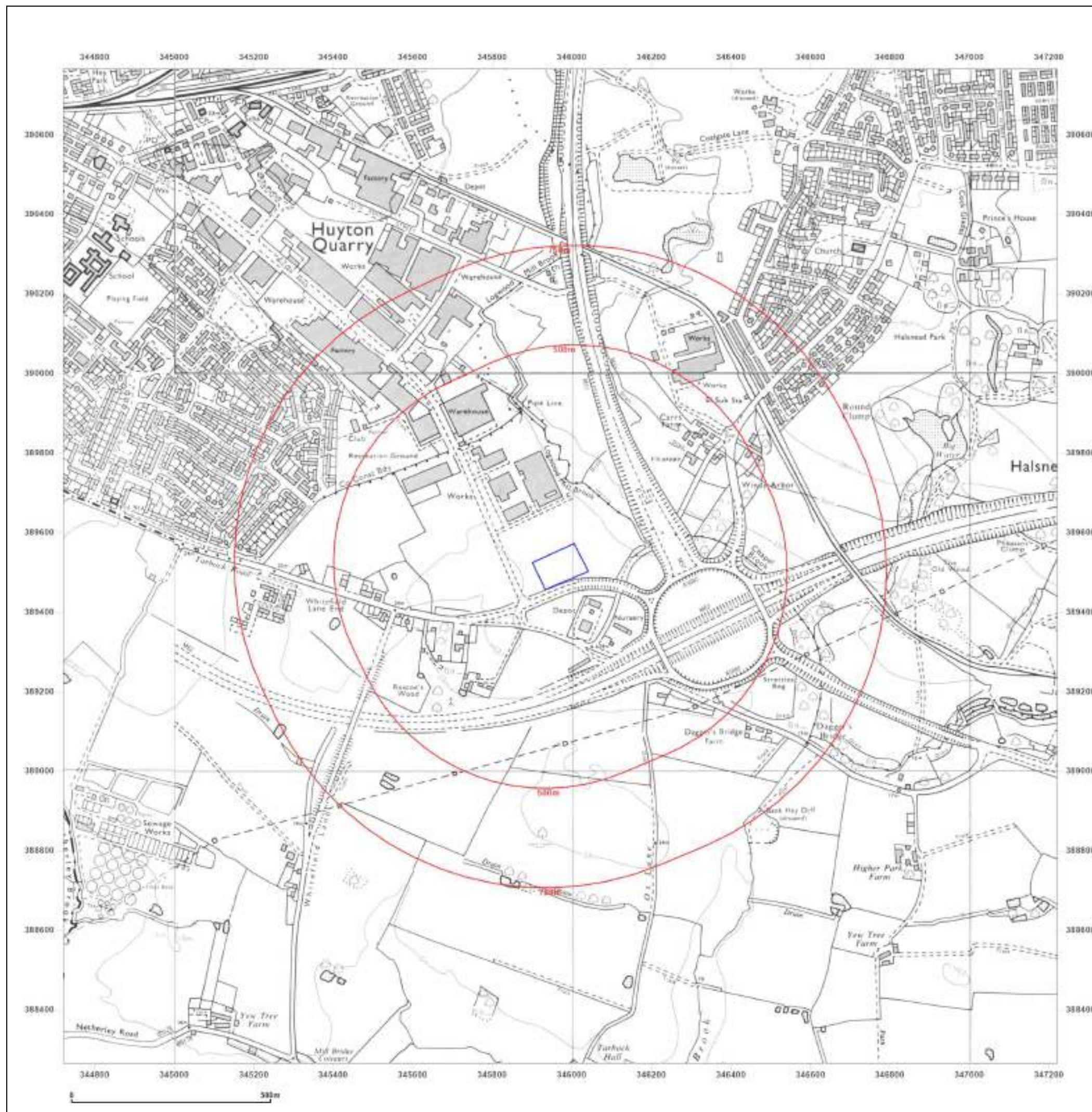


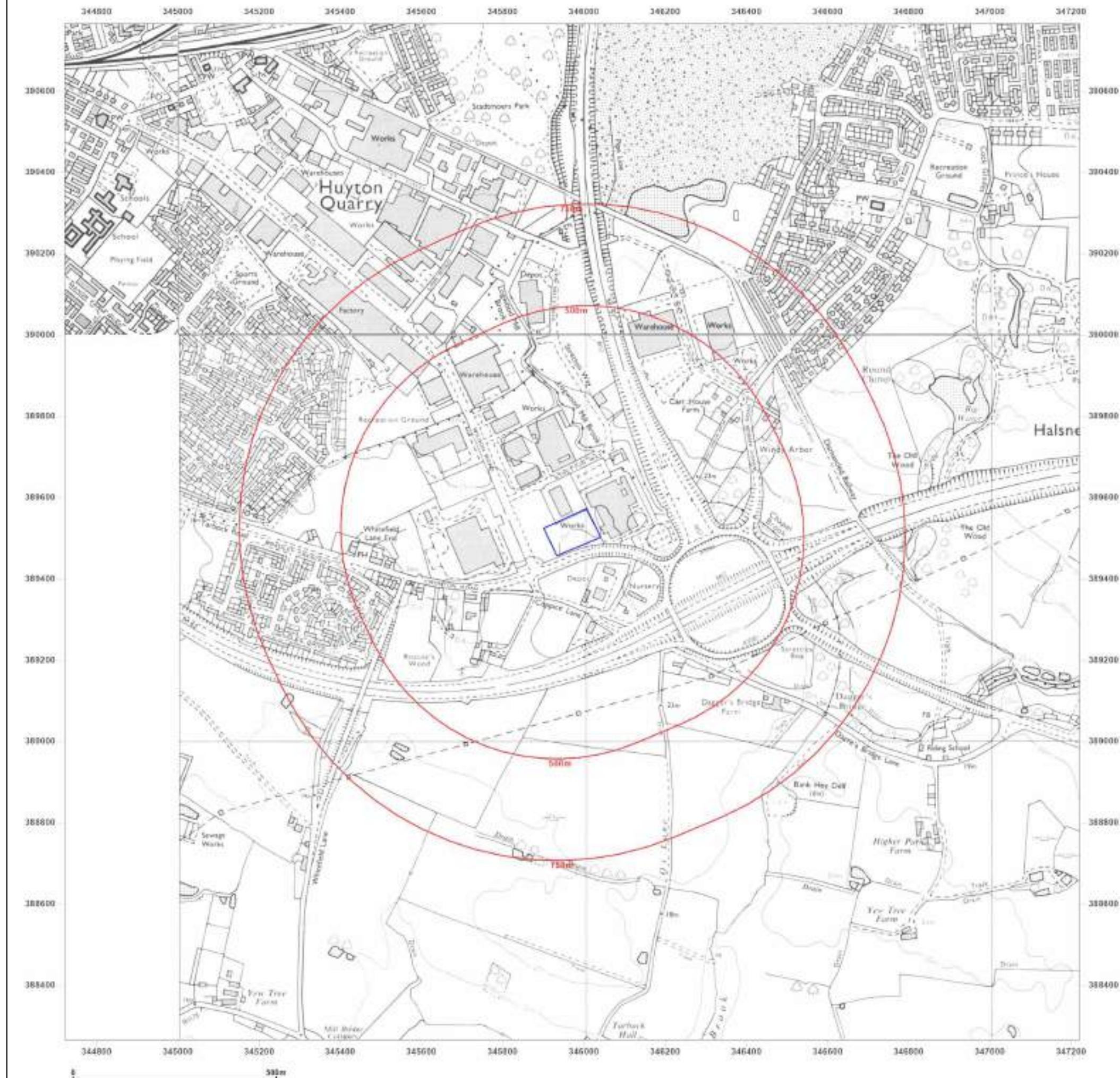
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Production date: 09 April 2024

Map legend available at:
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Site Details:

unspecified

Client Ref: EMS_937012_1162880
Report Ref: EMS-937012_1192549
Grid Ref: 345970, 389515

Map Name:	National Grid
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Map date: 1989-1990

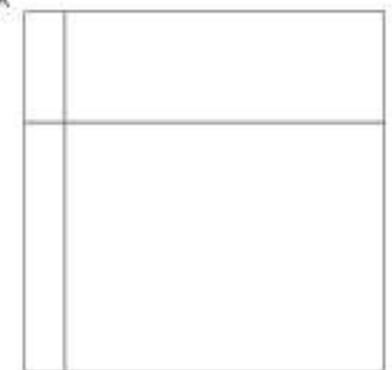
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Printed at: 1:10,000



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Revised 1989
Edition N/A
Copyright N/A
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Surveyed 1989
Revised 1990
Edition N/A
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Surveyed 1988
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Edition N/A
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Map legend available at:
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Site Details:

unspecified

Client Ref: EMS_937012_1162880
Report Ref: EMS-937012_1192549
Grid Ref: 345970, 389515

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000



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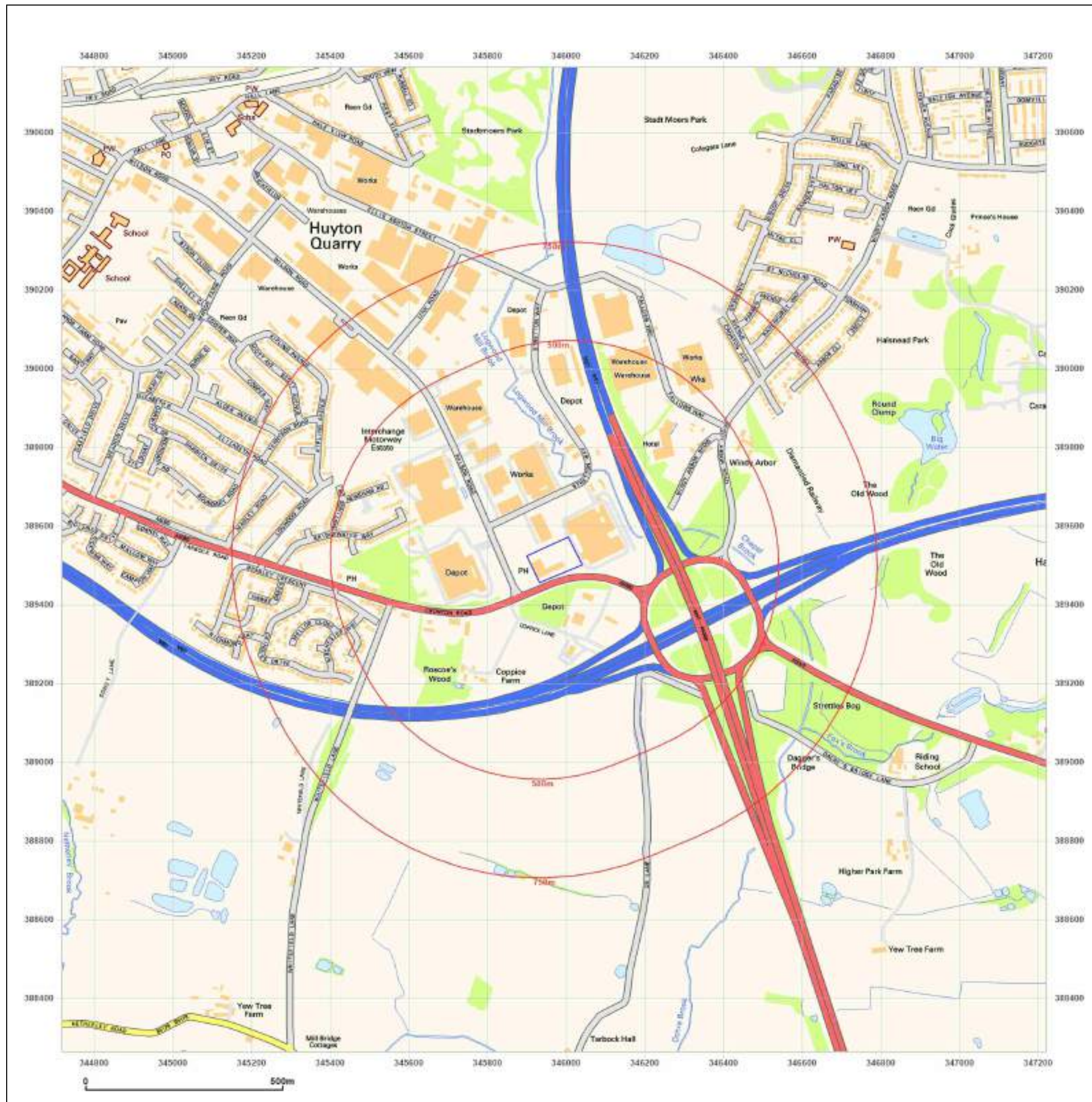


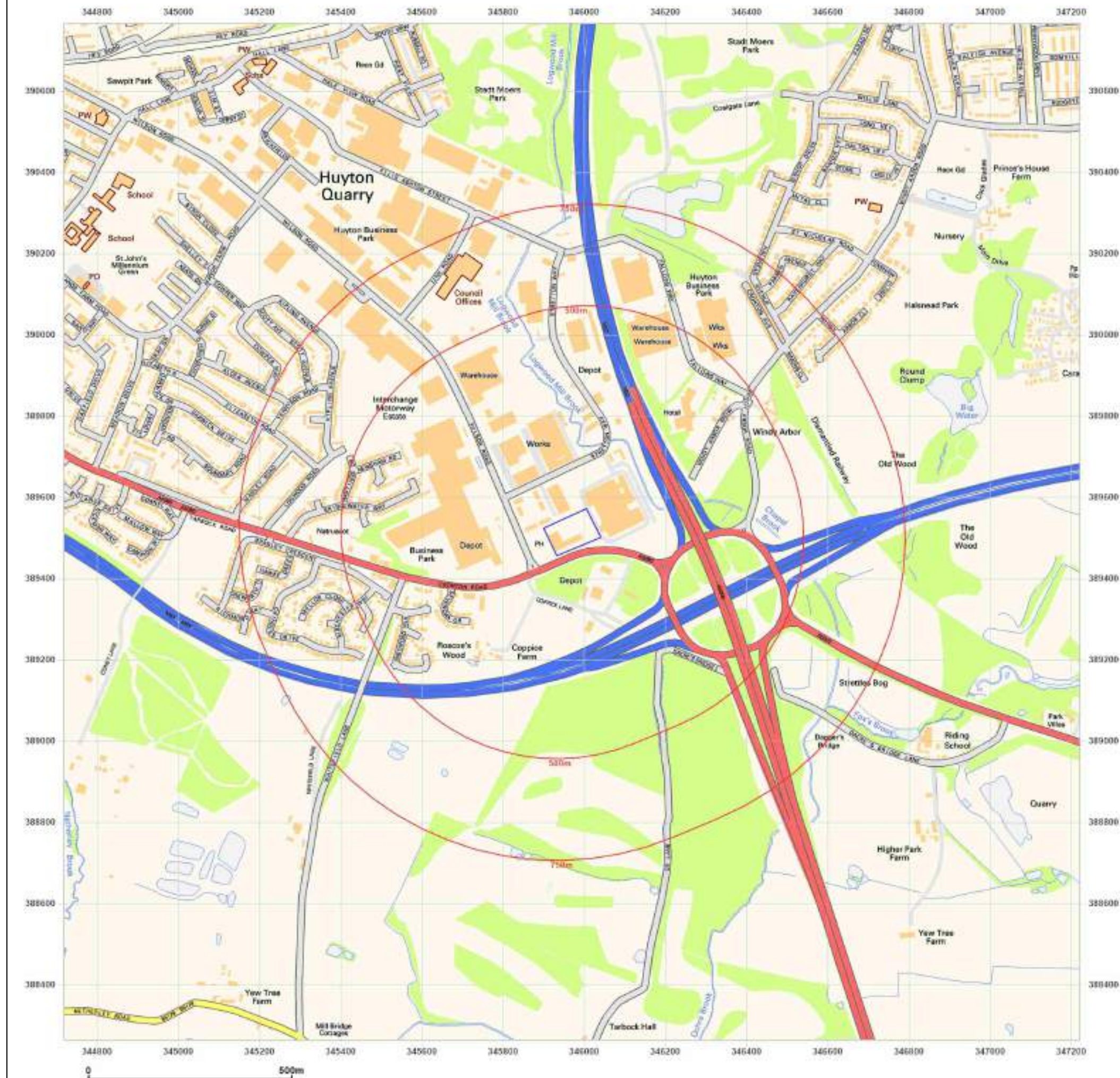
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Production date: 09 April 2024

Map legend available at:
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Site Details:

unspecified

Client Ref: EMS_937012_1162880
Report Ref: EMS-937012_1192549
Grid Ref: 345970, 389515

Map Name:	National Grid
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Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



2010



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Site Details:

unspecified

Client Ref: EMS_937012_1162880
Report Ref: EMS-937012_1192549
Grid Ref: 345970, 389515

Map Name: National Grid

Map date: 2024

Scale: 1:10,000

Printed at: 1:10,000



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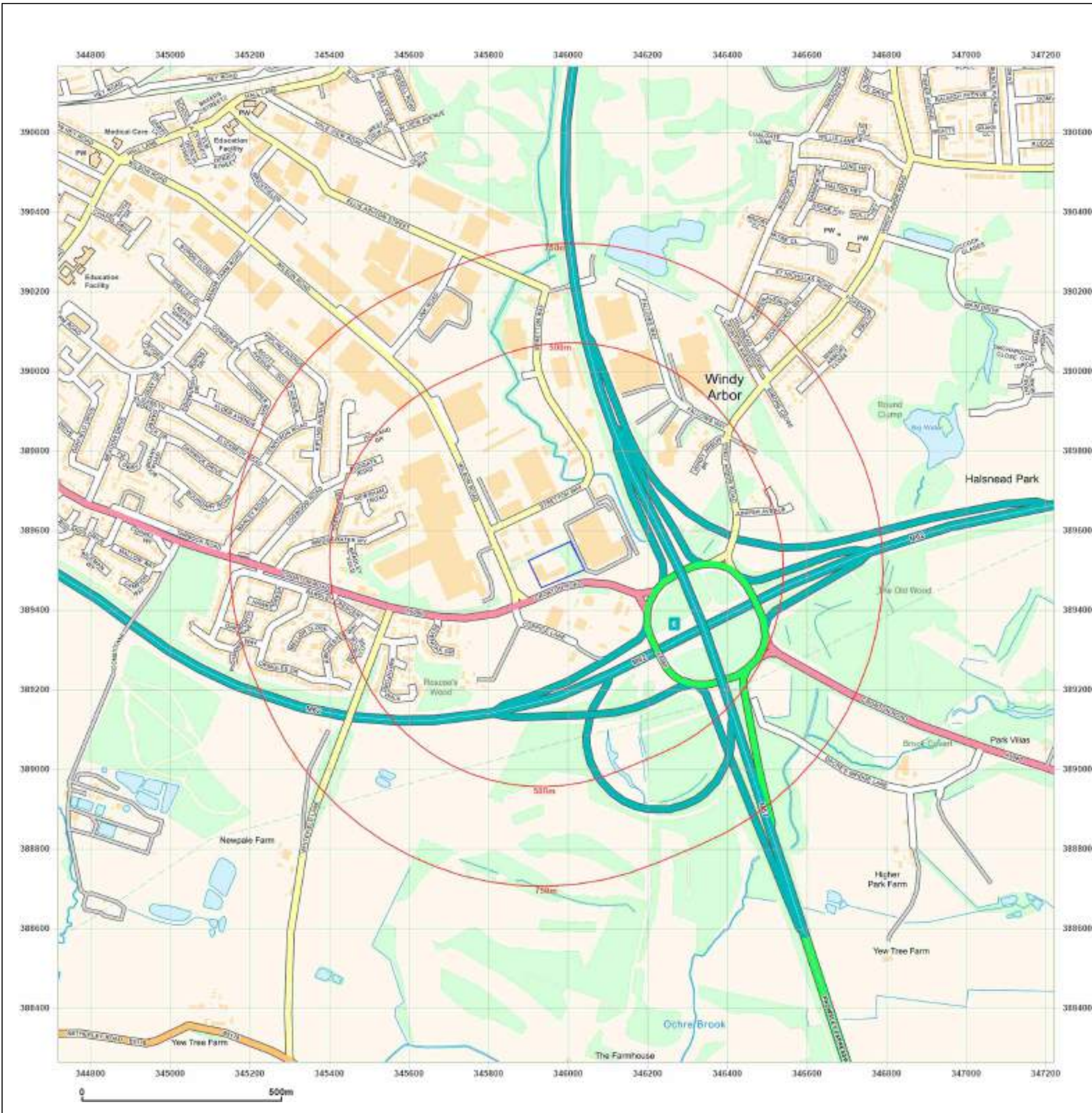


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Production date: 09 April 2024

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Appendix 2 – Mining Reports



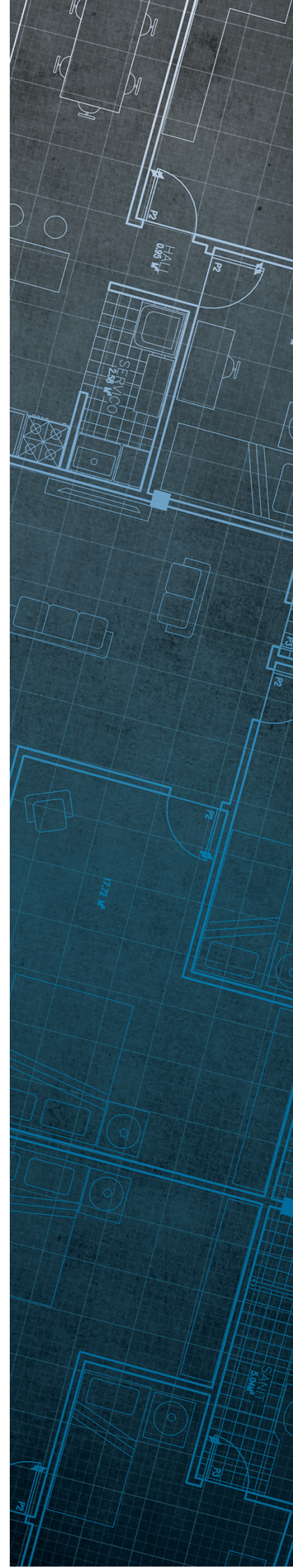
The Coal
Authority

Consultants Coal Mining Report

Premier Inn
The Chapel Brook
Wilson Road
Huyton
Knowsley
L36 6AD

Date of enquiry: 9 April 2024
Date enquiry received: 9 April 2024
Issue date: 9 April 2024

Our reference: 51003416691001
Your reference: SR - PIX Liverpool



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

ENZYGO LTD

Enquiry address

Premier Inn
The Chapel Brook
Wilson Road
Huyton
Knowsley
L36 6AD

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

No past mining recorded.

Probable unrecorded shallow workings

None.

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:

570	16820	
-----	-------	--

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

Outcrops

No outcrops recorded.

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

None recorded 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

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

Based on the responses in this report, no further information has been highlighted.

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.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. 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. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

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. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

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

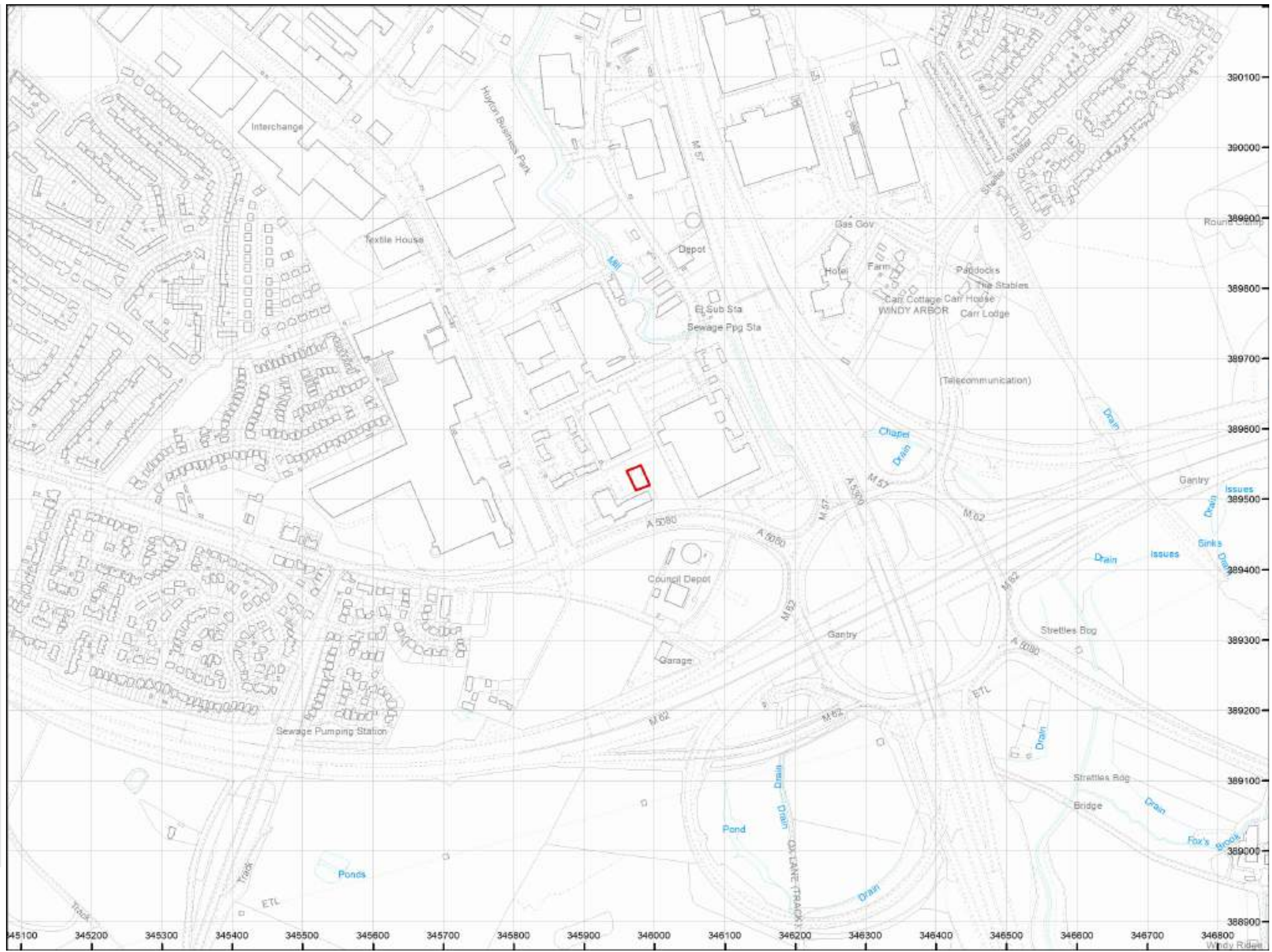
Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

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

Key

Approximate position of the enquiry boundary shown 

How to contact us
0345 762 6848 (UK)
+44 (0)1623 637 000 (International)
www.groundstability.com





Appendix 3 – BGS Borehole Logs for the area

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55 L 654 8992

5548

GEOLOGICAL SURVEY AND MUSEUM. BOREHOLES AND SHAFTS.

Drawn by
H. C. C. C.
C. C. C.
C. C. C.

County Lancs.
6 m. N.W. 1073E

BORE-H SHAFT Tanlock Colliery

450 yds WNW of Chapel Brook Bridge, ^{East} side of Malpas Pass. ^{East} side of Malpas Pass.

Surface level about 80 ft. 121.

One-inch Map 97

Communicated Copied from Issue Plan No. 570.

Date of sinking Bore measured off graphic section on plan

Specimens

Description	THICKNESS		DEPTH	
	Feet.	Inches.	Feet.	Inches.
Soil & clay.	9	-	9	-
Blank - no details	35	-	44	-
Coal	6	-	60	-
Warrant				
Coal				
Thinly bedded sand	34	-	34	-
Various strata	26	-	110	-
Rock	52	-	162	-
Mottled sandstone & clay	29	-	171	-
Chert	3	-	174	-
TENLANDS MINE.	11	-	190	-

4



SI 48 NE

(11122) W146370010 10000 438 A.R.W.L. 10000

RECORD OF SHAFT OR BORE FOR MINERALS

Name and Number of Shaft or Bore given by Geological Survey:
N.C.B. St. Helen's A3/8/1 (Gron-ton)-Windy Harbour) 107 SE/20

Name and Number given by owner (if different from above):

Town or Village: _____ Date of sinking: 1950

Exact site: _____

County: Lance

6" Quarter Sheet: 107 SE

1" N.S. Geol. Map: _____

1" O.S. Geol. Map: _____

Whether Confidential: _____

A sketch-map or tracing from a large-scale map is desirable.

Purpose for which made: Coal exploratory

Level at which bore commenced relative to O.D.: 78.37ft. If not down bore, state if horizontal or up.

Made by: Craellius for Messrs. N.C.B.

Information from: D.H. Land. 0-316ft. core examined 14/11/50. Date received: _____

Specimens: _____ Dip of strata: _____

Geological Classification	Description	Thickness	Depth
DRIFT	Soil) no core	1 3	1 3
	Brown boulder clay)	7 9	9 -
	Sand (no core)	13 -	22 -
ARDWICK GROUP	Medium to fine grained rather felspathic purple sandstone	7 -	29 -
	Soft red mudstone	1 -	30 -
	Fairly fine grained purple sandstone, some mica & felspar.	2 -	32 -
	Reddish-purple sandy micaceous shale	1 10	33 10
	Dark purple and red, grey green in places, fairly fine grained micaceous and felspathic sst. occasional partings of green & red mudstone		
	False bedding in places.	19 -	52 10
	Fine grained micaceous shaly greenish-purple sandstone.	2 2	55 -
	Sandstone as at 52' 10", occasional very micaceous	36 -	91 -
	Fine grained variegated greenish purple sandstone with mudstone pellets	3 -	94 -
	Variegated purplish sandstone as at 52' 10" with occasional red mudstone pellets	16 -	110 -
	Conglomerate; matrix: medium to fine grained dark purplish-green sandstone; with nodules and pellets of red mudstone up to 1" across.	1 8	121 8
	Fine grained fissile red shale, with a few fragmentary thin shelled lamellibranchs.	2 4	124 -
	Green and purple finely mottled shale.	- 3	124 3
	Fine grained reddish-purple shaly mudstone, a few inches sandy at 120ft. Dip 1 in 3.5	17 3	131 6
	Purplish red and pale green banded shaly mudstone.	- 9	132 3
	Mottled sandy mudstone, predominantly red and finely mottled with red, purple, pale grey and yellow. A few branching tubular markings near top (possibly rootlets or wormtubes)	6 9	139 -
	Fine grained purplish red and pale green irregularly mottled argillaceous sandstone.	22 4	161 4

Geological Survey and Museum, South Kensington, London, S.W.7.

G.S.M. Office File No. _____ Site marked on 6" Map by _____ Site marked on 1" Map by _____



Name and Number of Shaft or Bore given by the Survey:		County Lancs			
N.C.B. St. Helens A3/8/1 (Cronton - Windy Harbour)		Quarter Sheet 107 SE/20			
GEOLOGICAL CLASSIFICATION	DESCRIPTION	THICKNESS		DEPTH	
	Brt. forward			161	4
ARDWICK GROUP CONT:	Purplish red, veined & mottled with pale red and yellow, sandy mudstone.	14	8	176	-
	Fairly well bedded, fine and coarse grained purplish-red mottled sandstone, with pale green mudstone bands & pellets at intervals	7	4	183	4
	Red and green mottled sandy mudstone	-	8	184	-
	Reddish purple mottled coarse and fine grained sst., some bands with small mudstone pellets	6	9	190	9
	Sandy mudstone, blotchy & patchy & mottled with pale green, purplish red, yellow & grey. A thin band of mudstone pellets at 193ft.	6	3	197	-
	Red sandy mudstone with numerous mudstone pellets	5	-	202	-
	Sandy, somewhat micaceous, purplish red mudstone	7	0	209	-
	Grey green fine grained micaceous sandstone.	1	3	210	3
	Dark red sandy mudstone.	-	4	210	7
	Grey green fine grained micaceous sandstone	-	8	211	3
	Red sandy mudstone passing down into red mottled sandstone.	5	9	217	-
	Dark red mudstone with very numerous small rounded pellets of darker red mudstone and ironstone.	1	0	218	-
	Red mudstone with pale green mottling	2	6	220	6
	Fairly fine grained purplish-red argillaceous sst., often with very small mudstone pellets; irregularly mottled in places.	2	4	222	10
	Fine grained well bedded, purple sandstone.	2	6	225	4
	Sandy mudstone, mottled reddish purple and green.	1	5	226	9
	Fine to medium grained red sandstone, with beds containing very numerous mudstone pellets.	16	1	242	10
	Red sandy mudstone, with blocky fracture; specially numerous at some horizons; mottled towards the base.	20	8	262	6
	Fine grained reddish purple argillaceous sst., mottled at the top.	7	3	269	9
	Mottled red with green very sandy mudstone	2	-	271	9
	Very sandy purple mudstone. Small cast of calamites.	10	3	282	-
	Fine grained mottled reddish sandstone.	2	4	284	4
	Very sandy purplish red mudstone, mottled with blue and yellow.	4	-	288	4
	Fine grained argillaceous sandstone, reddish purple mottled, passing down into sandy mudstone.				
	Minor slip at 303ft.	15	8	304	-
	Heavily slickensided mottled pale green & red mudstone.	7	-	311	-
	Very sandy, somewhat micaceous mudstone, mottled purplish red and green.	4	9	315	9



(11352) WAINSWORTH 10,000 000 1:100,000 E.W. 1001. 110		County... Lancs	
Name and Number of Shaft or Bore given to Geological Survey:		Quarter Sheet 107-2/20	
N.C.B. St. Helena. A3/C/1 (Croston-Wandy Harbour)			
GEOLOGICAL CLASSIFICATION	DESCRIPTION	Thickness	Depth
Ardwick Group (cont)	As 345' 12"		1 5 1
	Ditto, with more sandy bands.	3 6	319 3
	Reddish purple and pale green mottled fine-grained allockensided mudstone	8 -	327 3
	Somewhat sandy purplish-red mottled mudstone with occasional sandy bands	9 3	336 6
	Rather shaly red mudstone, mottled with green towards the base. One or two obscure shells near the base	4 9	342 3
	Red shaly mudstone, somewhat allockensided	2 2	343 5
	Purple, red & pale green mottled fine-grained sandstone, with an irregular top.	1 4	344 9
	Very pale red hard fine-grained sandstone with minute limonite nodules, and strings of pyrites.	2 -	346 9
	Pale red fine-grained set, becoming purple towards the base (more broken)	3 4	350 5
	Pale green fine grained sandstone with purple patches	- 9	351 2
	Purple mottled fine grained sandstone.	2 8	353 10
	Bluish purple, mottled with various colours, rather sandy allockensided mudstone.	2 5	356 3
	Rather sandy yellow and purple mottled mudstone with minute hematite nodules	1 6	357 9
	Ditto, with extraordinary colour variations. Mainly purple and grey green variegated rather sandy mudstone, more sandy in places. A few carbonaceous fragments at base.	3 -	360 9
	Purple fine grained micaceous rather shaly sandstone, with a few rootlets at top.	10 -	370 9
Purple & green alternations of fine grained micaceous sandstone and sandy mudstone	1 5	372 2	
(This I take as the base of the Ardwick Group. The main colour change from mainly purple to grey is here. The colour change at 376' 2" is abrupt, but there is no lithological break or unconformity. The major lithological change from blocky mudstone (Ardwick) to grey shale (WMS) is at 370' 9", and the Ardwick - WMS boundary here taken is purely a colour boundary)	4 -	376 2	
Blue-greenish grey shale with fragmentary plants; occasional thin micaceous sandy bands very occasional purple patches (staining) about	4 10	381 -	
Gray shale. A lamellibranch shell at 384' 1". A thin band of white calcareous varicose rugulosity at 384' 5". A few scattered shells towards the base.	7 1	388 1	
Coaly shale, allockensided.	- 1	388 1 1/2	
COAL and shaly COAL	- 2 1/2	388 8	
Gray shaly fireclay	- 1	388 8	
Gray sandy fireclay at top, passing down into gray sandy fireclay mudstone	4 8	393 4	

Name and Number of Shaft or Bore given by Geological Survey		County		Quarter Sheet	
E.C.B. St. Helena. A3/B/1 (Greenico-Windy Harbour)		Lamer 1075E/20		11	
GEOLOGICAL CLASSIFICATION	DESCRIPTION	THICKNESS		DEPTH	
				113	4
MCM Sst & sh sh	Grey fine grained micaceous sandstone with carbonaceous streaks.	-	9	394	1
	Very sandy micaceous shale with fragmentary plants towards the top; and with fine grained sandstone bands.	9	11	404	-
MS A sh MS	Grey shale with a little ironstone	11	9	415	9
	Grey rather sandy mudstone	2	-	417	9
Sdy MS & Sst	Greenish grey mudstone, sandy towards base	3	7	421	4
	Dark grey sandy mudstone with plants at top.	2	6	423	10
	Fine grained pyritous sandstone, with white mudstone nodules	-	3	424	1
	Grey sandy mudstone with plants, occasionally very sandy.	2	11	427	-
	Sandy grey mudstone and very shaly micaceous sandstone in alternating layers 6 to 24 ins. thick; occasional plant fragments and ironstone nodules.	20	2	447	2
	Fine grained white sandstone with dark mudstone pellets at top.	-	10	448	-
	Grey sandy mudstone with beds of fine grained shaly sandstone, usually about 6 to 9 ins. thick, and showing contemporaneous slumping and brecciation.	16	10	464	10
	Medium grained felspathic sandstone with fragmentary plant remains and coaly streaks and occasional mudstone pellets.	10	8	475	6
Sst MS Carbonaceous mudstone beds	Dark grey shaly mudstone	-	2	475	8
	Fine to medium grained rather felspathic pale sandstone with fragmentary carbonaceous remains in the upper part; and carbonaceous micaceous films below 480ft.	26	1	501	9
	Very sandy grey mudstone getting more shaly down	4	10	506	7
	Fine grained rather felspathic pale set; with in the top 3", pellets of mudstone, ironstone and plant fragments; 3" of coaly shale at 513'3"	8	9	515	4
	Conglomerate (contemporaneous) of ironstone and mudstone pellets in fine grained rather felspathic sandstone.	±	11	516	5
	Grey sandy mudstone	-	4	516	9
	Fine grained rather felspathic sandstone, with small mudstone and ironstone pellets towards the top.	2	8	519	5
	Sandy mudstone.	-	1	519	6
	Sandstone with ironstone pellets and carbonaceous plant fragments	1	2	520	8
	Fine to medium grained felspathic sandstone with scattered pellets of mudstone and ironstone and at top a few thin coaly streaks.	5	7	526	3
	Sandstone as at 526', with large irregular fragments of mudstone and many mudstone and ironstone pellets	2	11	529	2

Name and Number of Shaft or Hole given by Geological Survey		County		Quarter Sheet	
H.C.B. St. Helens 43/2/1 (Ornton Windy Hill)		112		10752/10	
Geological Classification	Description	Thickness		Depth	
				529	1
MCM	Fine to medium grained felsepathic est, with occasional thin carbonaceous streaks.	45	6	574	8
SSS	Sandstone as above, with four coal seams 1/2" to 1" thick and coal streaks, with contemporaneous erosion and brecciation.	3	2	577	10
SSS	Sandstone as at 574'.	13	3	590	1
Coal streaks	COAL 0"-2", contemporaneously eroded (prob. only a fragment and not a continuous seam)	-	0"-1"	590	3
	Sandstone as at 574', with coal streaks.	1	8	591	11
	Coaly shale with eroded top.	-	1	592	-
SSS	Fine grained felsepathic sandstone with occasional slumping-with-brecciation; and occasional small mudstone pellets in the middle.	14	7	606	7
Coal streaks	Conglomerate (contemp.), of fine grained felsepathic sandstone; with numerous wisps and pellets up to 6" across of dark mudstone; a lift, parting of sandy mudstone at 611' 8"	10	8	617	3
Coal streaks	Fine grained felsepathic sandstone with carbonaceous films; a few mudstone pellets near the top.	10	7	627	10
	Sandstone with four irregular coal streaks, irregularly eroded.	-	10	628	8
	Sandstone with ironstone at base, with irregular base on	-	3	628	11
	Sandy mudstone	-	6	629	7
	Fine grained felsepathic sandstone, with irregular masses and nodules of ironstone, contemporaneous slumping and brecciation. Possibly a small fault here throwing a foot or two.	2	7	632	2
	Sandstone with a few nodules of ironstone and mudstone and coal streaks showing contemporaneous erosion; (fine. of coal at 634' 0"	2	8	634	10
MS, Sdy & carb	Grey sandy mudstone rather micaceous	4	4	639	2
	Carbonaceous shale	1	10	641	-
	Plant mudstone, with plant remains and rootlets	1	6	642	6
	Carbonaceous shale	-	6	643	-
C, Sdy &	Shaly coal	-	5	643	5
Greenish	Grey fireclay	-	1	643	6
MS	Greenish grey mudstone	2	1	645	7
Peak	Greenish grey shaly micaceous mudstone Dip 1 in 3	8	5	654	-
	Grey mudstone, occasional plants and rootlets at some horizons; occasionally rather sandy or shaly	34	2	658	2
	Black shale with shells, poorly preserved	2	3	668	5
C	Rather shaly coal 5"	-	5	668	10
Coal streaks	Fireclay-mudstone with rootlets	-	7	669	5
	Grey, very sandy mudstone with rootlets	3	1	692	6
MS, Sdy & MS	Grey sandy mudstone, micaceous with a fine grained sandstone bed at base.	5	6	698	-
	Pale grey fireclay-mudstone, with minute siderite nodules at bottom	1	4	699	4



Name and Number of Shaft or Hole given by Geological Survey:		County		Quarter Sheet	
S.J. 48 NE 11		Lancashire		1075E/20	
P.O. No. St. Helens 570/1 (St. Helens Windy Harbour)					
Geological Classification	Description	Thickness		Depth	
				619	4
MCM Fault with out about 100 ft longitudinal to 200 ft MS. on C. 100 ft Fault at 100 ft from base of 100 ft MS 100 ft 100 ft 100 ft	Dark mudstone, very slickensided and broken	3	8	703	-
	Grey mudstone, and fine grained sandstone, badly broken, faulted and slickensided, with frag. plant remains. The lowest 10 ft, very badly smashed.	26	3	729	3
	Very fine grained grey sandstone	2	6	731	9
	Grey sandy mudstone, rather broken, with a few plant fragments.	2	9	734	6
	Grey sandy mudstone passing into...	34	-	748	6
	Grey shale, with occasional ironstone bands about 1/4" of dark shale with fish scales at 754' 6"	13	10	762	4
	Channel with fish scales	-	3	762	7
	COAL	3	-	765	7
	Dark carbonaceous fireclay	1	7	767	2
	COAL	-	11	768	1
SECTIONS 240 ft 777 - 10 TOL 4 100 - 6 210 - 5 See sketch MS Shy MS = 55 ft 35 ft	Carbonaceous shale with rootlets	1	8	769	9
	COAL, rather shaly	-	8	770	5
	COAL	1	-	771	5
	Grey fireclay	-	2	771	7
	COAL	-	3	772	3
	Inferior coal	-	12	772	42
	COAL	1	-	773	42
	Coaly grey fireclay	-	11 1/2	774	4
	no core, presumably fireclay	3	9	778	1
	Carbonaceous fireclay	-	5	778	6
35 ft with crinoidal fossils below 851'	COAL	-	2	778	8
	Carbonaceous fireclay	-	6	779	2
	COAL	-	8	779	10
	Grey fireclay, mudstone	2	3	782	1
	Grey mudstone with rootlets in places; and slickensides, and occasional plants near bottom	9	11	792	-
	Very shaly sandstone and sandy mudstone, with minor slumping.	3	-	801	-
	Fine grained, light coloured calcareous sst., with occasional thin shale partings and carbonaceous micaceous films. At 813 to 815 ft. sandstone is rather broken, with narrow calcite veins and slight hematite staining. Below 820 ft, occasional beds hematitised.	52	6	853	6
	Sandstone, with shale partings. Broken at bottom	-	6	854	-
	Sandstone, with numerous shale pellets	1	-	855	-
	Very shaly sandstone, faulted and broken with narrow calcite veins.	4	4	859	4
	Fine grained sandstone, with numerous pellets of all sizes to 3/4" across of dark mudstone and ironstone; in places more pellets than sandstone matrix. Some contemporaneous slumping at 867'.	6	9	868	1
	Fine grained sandstone with very thin shale partings.	2	8	870	9



Name and Number of Shaft or Bore given to Geological Survey		County		Quarter Sheet	
H.C.E. St. Helens A3/8/1 (Gronow and the bony)		Lancs 10752/10		114	
Geological Classification	Description	Thickness		Depth	
				870	7
MEN.	Sandstone with pellets, as at 868 ft.	10	3	881	-
	Fine to medium grained pink sandstone, slightly hematitised and slightly felspathic with fragmentary plants.	1	6	882	6
	Pink sandstone as above with mudstone pellets	-	8	883	2
	Pink sandstone as above with numerous shale partings.	1	6	884	8
	Pink sandstone as above with numerous minute shale pellets	3	1	887	9
	Carbonaceous mudstone	-	6	888	3
	Gannelly shale with occasional fish scales	-	3	888	6
	Gannelly coal. C 6	-	6	889	-
	Gray mudstone with rootlets becoming infrequent down. Plant fragments in lower half.	13	-	902	-
	Gray sandy mudstone with fragmentary plants at top.	1	10	903	10
MS. v. I. plants	Gray mudstone, much broken.	2	4	906	2
	Gray mudstone with occasional sandy bands; and ironstone and fragmentary plant remains				
	Dip 1 in 3 at 915 ft.	43	10	950	-
	Rather cannelly shale with a few fish scales	-	6	950	6
	Shaly COAL with pyrites (Ced. C 23)	-	2	950	8
	Inferior COAL	1	9	952	5
	Dark carbonaceous fireclay (d 5)	-	5	952	10
	COAL (C 5)	-	5	953	3
	Dirt parting (d 1)	-	1	953	4
	COAL (C 14)	1	2	954	6
S. v. I. plants	Gray fireclay	1	10	956	4
	Gray mudstone with rootlets, slickensided at top.	2	2	958	6
	Gray rather sandy mudstone, more sandy in places; with slickensides and very occasional plant fragments.	16	6	975	0
	Brownish mudstone, badly slickensided, with rootlets	1	6	976	6
	Pale gray mudstone, rather sandy in places with minute siderite nodules at top.	9	6	984	-
	Very shaly micaceous sandstone with fragmentary plant remains.	9	8	993	8
	Gray mudstone	4	8	998	4
	Dark rather carbonaceous mudstone with very occasional plant fragments, base faulted 1001' 8" to 1002' 4"	4	-	1002	4
	Very fine grained sandstone, with sandy mudstone partings.	3	1	1005	5
	Very sandy gray mudstone with occasional more sandy bands, few fragmentary plants and occasional ironstone.	27	5	1032	10
H. v. I. plants	Dark mudstone with occasional ironstone.	2	8	1035	6
	Very dark shale with occasional fish scales passing down into dark mudstone.	7	1	1042	7
	Dark shaly mudstone with a few very small fragmentary shells at 1043', and one foot with many carbonicools at 1046 ft, and a very few shells below.	6	5	1050	-

Fossils from 1046 ft.

Identified by Mr. Calver 14 Nov 51.

- 36 282-91 *Carbonicola* cf. *martini* Treman & Blair
C. sp. pseudocobusta Treman w. *antistagalis* slight
 (anterior end only)
C. sp. nov. cf. declivis Treman & Blair
C. sp.
Gerrinitia armata (Beau.)
 Prob new horizon suggested, is c. 100 ft above Rely. P. 6 ft.



Name and Number of Shaft or Bore given to Geological Survey:		County <i>Lancs</i> <i>10715/20</i>		Quarter Sheet	
M.C.B. St. Helens, A1/B/1 (Barton Windy Harbour)		8		116	
Geological Classification		DESCRIPTION		THICKNESS	
				DEPTH	
				1052	
<i>MCM</i> <i>MS 4</i> <i>Sdy MS</i> <i>plate</i>	<i>MS w I.</i> <i>plate</i> <i>Sh. 10</i> <i>Sh. 10</i>	Black shale with fish debris		2	9
		Very sandy mudstone with occasional plants and fish scales.		-	3
		Grey mudstone, occasionally rather shaly or rather sandy (sandy especially from 1059' to 1061').		1059	
		Occasional fragmentary plants scattered throughout.		8	-
		Grey shaly mudstone with occasional plant fragments and occasional ironstone nodules.		12	9
		Fissile black shale with fish fragments.		-	11
		Canneloid shale with a few fish fragments.		-	2
		Rather inferior COAL		-	5
		Rather sandy carbonaceous fireclay		-	6
		COAL		12	10
<i>Sealeth</i>	<i>SSR</i>	Grey fireclay		1	6
		Grey fireclay mudstone with fragmentary plants and rootlets		2	9
		Grey argillaceous fine grained micaceous sandstone with a few rootlets at top; and minor slumping		3	-
		Grey fine grained sandstone, somewhat micaceous with occasional micaceous partings, and small scale false bedding. One or two very narrow pyrites veins.		42	1
		Grey sandy shale.		1	11
		Grey very shaly mudstone, getting more shaly downwards.		3	-
		Dark shale (no fossils)		-	6
		COAL		4	1
		Carbonaceous shale.		-	5
		Cannelly COAL		-	3
<i>Sealeth</i>	<i>SSR</i> <i>MS</i>	Carbonaceous shale		-	1
		Grey fireclay, getting rather shaly downwards.		3	-
		Fine grained flaggy sandstone, with occasional rootlets.		-	9
		Grey shaly mudstone with occasional plant fragments and rootlets, and ironstone. Occasionally somewhat sandy.		4	2
		Grey fine grained micaceous sandstone.		1	6
		Shaly mudstone as at 1143' 3"		3	10
		Grey shale getting darker downwards, the bottom few inches quite dark with one or two fish scales.		1	5
		COAL		-	4
		Grey fireclay mudstone, rather sandy, and more sandy in the middle.		8	8
		Very fine grained grey sandstone, with carbonaceous micaceous partings in the lower part.		9	5
<i>Sealeth</i>	<i>SSR</i> <i>MS</i> <i>Shale</i> <i>SSR</i>	Very shaly grey mudstone, occasionally sandy, and with occasional ironstone.		6	4
		Rather carbonaceous shale		-	3
		Carbonaceous fireclay		-	9
		Fine grained argillaceous sandstone with rootlets passing down into grey sandy mudstone with rootlets and plants.		3	7
				1150	
				1150	
				1159	
				1168	
				1174	
				1175	



P11528 W15076/1575 51.000 0.0 1.0 0.0 1.0 0.0 0.0 0.0		SU 48 NE 11		117 County <i>Lancs</i> 10755/20	
Name and Number of Shaft or Bore given to Geological Survey:		K.C.B. St. Helens. A3/8/1 (Crawton, Sandy Harbour)		Quarter Sheet	
Geological Classification	Description	Thickness		Depth	
				179	5
MCM	Fine grained argillaceous sandstone with micaceous carbonaceous partings and very sandy mudstone. Minor slumping at top.	10	7	1190	-
	Fine grained sandstone, with carbonaceous micaceous films. At about 1192' to 1194' thin calcite veins with oil seepage. Sandstone slightly broken at bottom.	7	1	1197	1
	Gray mudstone, sandy in places.	5	7	1202	6
	Fine grained sandstone, with carbonaceous micaceous films; minor slumping in the middle, 6-inch shale partings at 1206' 37	4	4	1207	-
MS in few shells	Gray mudstone	1	7	1208	7
	Gray rather shaly mudstone, occasionally more shaly or rather sandy. A single carbonicola at 1220ft. A few minute shells at 1230ft.	26	5	1235	-
	Dark gray to black shale, with a small amount of fish debris, scattered throughout.	10	-	1245	-
	Gray shale.	2	9	1247	9
Sh. m. 77 a sh. 100 sh.	Dark shale with scattered fish debris. (Dip hereabouts 35°. Some slickensiding. This dip is rather higher than usual.)	8	5	1256	2
	Gray mudstone.	2	6	1258	8
	Dark shale.	-	1	1258	9
	Gray fireclay, slickensided. Gaily streaks at bottom.	4	-	1262	9
LITTLE BELF LOWER CORN MEASURE	Very sandy fireclay-mudstone getting more sandy down and passing into...	1	3	o. 1264	-
	Fine grained argillaceous sandstone with rootlets at top.	4	-	1268	-
	Very sandy micaceous shale with thin sandstone bands and a few rootlets.	2	8	1270	8
	Ironstone	-	4	1271	2
MS in sh. Calc. 4/1	Dark shale and mudstone, rather slickensided, a few rather obscure Carbonicola at base.	2	10	1274	-
	Fairly fine grained micaceous carbonicola especially near top. Bands of mudstone towards the base.	5	4	1279	4
	Dark shale, rather micaceous, with scattered Carbonicola, rarely well preserved. Occasional fish debris.	7	8	o. 1287	-
	Dark shale, ditto, without Carbonicola.	4	2	1291	2
Sh. m. 77 shells all L145	Dark shale with many Carbonicola and Ostracods. Latter especially towards base.	2	-	1293	2
	Dark shale and shaly mudstone, rather slickensided about 1295ft. A few poorly preserved shells at 1299 and 1300 and below.	9	8	1302	8
	Carbonaceous fireclay	-	4	1303	-
	Dark fireclay with occasional ocaly streaks.	1	-	1304	-
Faintly Calc. 4/1	Dark fireclay-mudstone.	1	6	1305	6
	Carbonaceous shale.	-	3	1305	9
	Gray green fireclay.	1	-	1306	9
	Gray green fireclay-mudstone with plants & rootlets.	4	9	1311	6

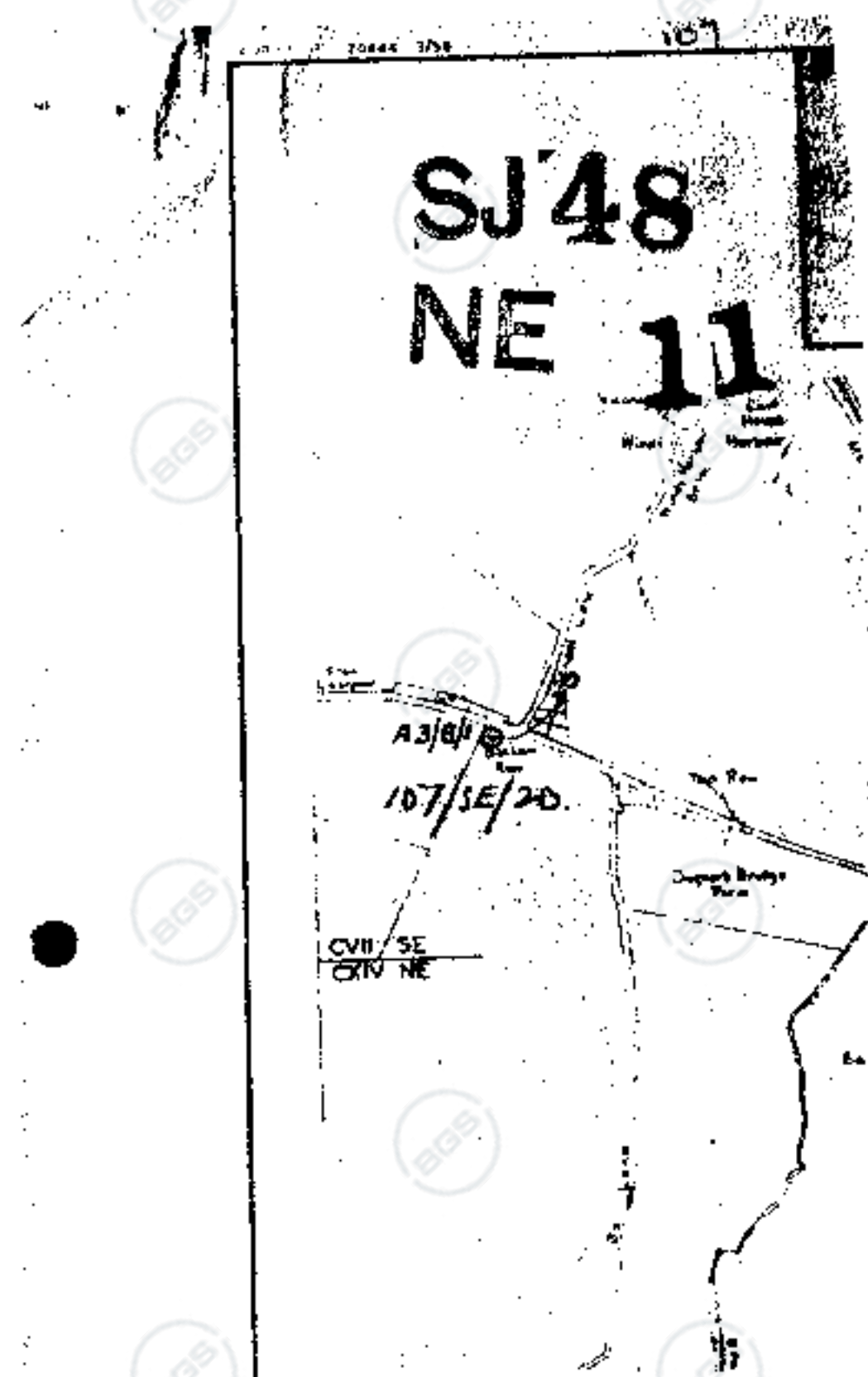


114
County Lancs 10750/20
Quarter Sheet

114
SJ 48 NE 10

Name and Number of Shaft or Bore given by Geological Survey:
N.C.B. St. Helens to B.C. Croston Windy Nook

GEOLOGICAL CLASSIFICATION	DESCRIPTION	THICKNESS		DEPTH	
				1911	6
LCM SY, 17	Very argillaceous flaggy fine-grained sat.	2	6	1314	-
	Fine grained pale sandstone, rather flaggy and micaceous in upper part. Minor stringing in topmost foot.	13	6	1327	6
Feathers	Grey to black carbonaceous shale.	-	4	1327	10
	Dark fireclay.	-	4	1328	2
SP 115	Very sandy fireclay and mudstone, more sandy in places.	3	8	1328	10
	Very fine grained pale sandstone, rather micaceous in lower part. A few very narrow calcareous veins at bottom.	5	2	1337	-
Doubtful	Grey mudstone.	1	3	1338	5
	Fine grained argillaceous sandstone.	-	7	1339	-
Doubtful	Coal seam (possibly single plant fragment) with <i>Spirorbis</i> .	-	-	at 1339	-
	Greenish grey fireclay-mudstone, passing into Greenish grey mudstone with plant fragments and scattered rootlets.	1	-	1340	-
SP		2	-	1342	-
	Fine grained pale sandstone, rather micaceous.	4	6	1346	6
	Bottom of hole at 1346 ft. 6 ins.				



S548/4

Sample from 1046 ft.

Identified by R.A. Chubb (S.A. 112)

- DL 102-91 Carbonate of medium thickness
 C. of pseudo-trilobite traces & with galee alga
 (interior and edge)
 C. of no of decalve traces clear
 C. of
 G. armata (Chubb)

Red wax was suggested, i.e. 100 ft above Red Line of

Form P-70
(Series 670)

5548 NE/30

SECTION OF ROSCOE BOREHOLE No1 (Cranton Colliery)

CONFIDENTIAL

PURPOSE

EXACT SITE N.G.Co-ordinates:-

E. 345,882. m.

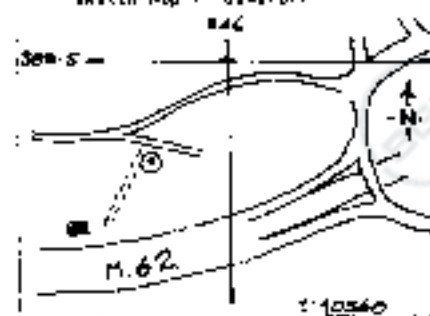
N. 389,350. m.

- - MAY 1988

LEVEL AT WHICH ^{drill} ~~hole~~ COMMENCED RELATIVE TO D.R. 76'73 feet

DATE OF SINKING OR BORING Commenced 21st July 1977
Completed 26th August 1977
SINKER OR BORER National Coal Board, Western Area

DECLASSIFIED



GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		FEET	IN.	FEET	IN.
Drift		9	0	9	0
	Sandstone, grey, massive to 9'6 then finely laminated becoming very finely laminated complex speckled with carbonized plant material on dark laminae from 13'6. DIP 16°. High Angle Slip 15'8 to 15'5 with broken core below. Eroasive base	7	8	16	8
COAL, fragments			9	17	3
	Sestearth, silty, light grey, occ. carbonised roots. Broken core Bedding DIPS 35°	4	4	21	9
	Sandstone, fine grain, light grey		4	22	1
	COAL, dirty, listric bedding planes DIP 45°		8	22	9
	COAL, pyritic		04	22	91
	Dirt, carbonised, laminated		54	23	3
	COAL, dirty		9	24	0
	Mudstone, laminate, with plant stems	1	0	25	0
	Sestearth, muddy, rootlets	1	0	26	8
	Sestearth, mudstone, roots		4	27	0
	Sestearth, coaly, bedded		6	27	6
	Sandstone, conglomerate		4	27	10
	Sandstone, washout type with coal lenses and streaks		3	28	1
	Sandstone, medium grained, erosive base		34	28	47
COAL			41	28	9
	Sandstone, laminated with siltstone DIP 45° probably current bedding		7	29	4
	Sandstone, conglomerate		5	29	9
	Mudstone, grey, weak. Laminated with specks of plant debris becoming more abundant plant fragments in depth DIP 20°	2	1	31	10

Section of BOCCOS-40 : HORIZONAL

W-11000 040	D/N
	3/3
5048 NE	30

c b4

Section ofROCK..No 1 BOREHOLE

b4

Form P 11 T
2014 053

Section of ... BOSSCOE No 1 FORDS LANE

Section map	SW
	573
SJ 48 NE 30	

GEOLOGICAL CLASSIFICATION	NATURAL STRATA	DIP		DIP	
		°	'	°	'
	Siltstone, mudstone, soft and friable		5	124	7
	Siltstone, mudstone compact		10	125	0
	Siltstone, fine grain, roots. High angle				
	Slip @ 126'7". Ironstone nodules				
	at 127'4"	2	4	128	2
	Siltstone, dark gray, strong. Occ. plant				
	debris, ferruginous layers. Bedding				
	fine grained with quartz laminae				
	from 129'4". DIP 22° Patch of				
	Ostracods at 130'5"	3	6	131	8
	Siltstone, mudstone, soft, swollen.				
	Friable with abundant listric				
	surfaces	1	8	133	1
	Siltstone, carbonaceous, soft laminated		9	133	10
	Siltstone, mudstone. Friable and weak		9	134	7
	Siltstone, mudstone, compact but friable.				
	Abundant listric surfaces. High				
	Angle Slip at 135'4"	1	5	136	0
	Siltstone, silty fine gr. in. Abundant				
	roots	1	8	137	8
	Sandstone, siltstone, white, carbonised				
	roots. High Angle Slip 139'6"	1	0	139	8
	Sandstone, laminated, fine grained.				
	Muddy laminae, complex from 140'6"				
	-141'0". Small fault with listing				
	at 141'10". Piling downwards to				
	gray siltstone	4	0	142	8
	Siltstone, gray laminated. Very High				
	angle joint from 144'4" to 148'2"				
	with fragmentary core along this				
	length	5	6	148	2
	Mudstone, fragmentary	1	0	149	2
	Mudstone, silty, gray to dark gray.				
	Laminated, silty shaly, plant				
	debris. DIP 18°	1	2	150	4
	COAL,ankerite joint faces	1	1	151	5
	Siltstone, silty light gray. Abundant roots				
	fairly strong	2	7	154	0
	Siltstone, sandy, roots light gray.				
	Ironstone nodules at 155' High				
	angle Slips at 156' and with broken				
	core from 157'3" to 158'	4	0	158	0
	Sandstone, light gray, medium grain, whippy				
	laminae. Strong	1	2	159	2
	Siltstone, fine grained, light gray, laminated				
	Isolated plant debris. DIP 20°				
	Ironstone band 1/2" at 162'3". High				
	Angle Slip 165'000. well preserved				
	leaves	9	3	169	5
	Sandstone, fine grained, light gray. Very				
	finely laminated, complex	4	2	172	7
	Sandstone, loosely cemented. Medium grain				
	light gray. High Angle joint min-				
	eralised. Occ. carbonised laminae				
	Coaly 2" to 178'6" Coarse micaceous				
	from 178'6"	6	4	178	11

Form P 31 T
SERIES 880

Section of ROSCOE No 1 BOREHOLE

6-INCH MAP	1/4"
	513
SS 48 NE	30

*Delete as appropriate

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		ft	in	ft	in
				170	11
	Sandstone, very fine grained, finely laminated, complex to 180'7" then regular fine striped, 3" ferruginous to 181'9". Sharp base. DIP 26° possibly faulted, small	4	0	182	11
	Fault, sandstone gouge	1	3	184	2
	Sandstone, very fine grain, laminated as above	2	11	187	1
	Sandstone, strong, complex laminae		9	187	10
	Sandstone, very fine grain. High angle Slip 191' to 192', and 193' to 194'	8	0	195	10
	Siltstone, soft weak and friable	1	0	196	10
	Siltstone, mudstone, laminated. Lentic bedding planes		7	197	5
	Siltstone, silty, abundant roots		9	198	2
	Siltstone, poorly laminated, Brown/Gray. Plant debris and roots occ. carbonised. High angle Slip 200'5"	2	10	201	0
	Siltstone, light gray, wispy laminae	2	0	203	0
	Sandstone, fine grain, laminated, small fault with broken core cross 204'2" to 205'. Abrupt base	5	8	208	8
	Mudstone, dark gray. Fragmentary core. 2" ironstone to 209'4". Lentic bedding planes	2	4	211	0
	Mudstone, light gray, High Angle Slip planes at top, slightly ferruginous in top 6". DIP 35°. Small Fault at 212'8". Broken by Slip Planes 213' to 215' with lentic planes	5	10	216	10
	Fault, High angle lentic planes and fragmentary core		11	217	9
	Mudstone, gray, laminate, smooth. No fossils 1" band of weak conglomerate with ironstone pebbles	2	10	220	7
	COAL, bright, pyrite faces. Fragmentary		8		
	COAL, sandy, some pyrite faces. Core		11		
	COAL, bright, Core		17		
	Mudstone, laminate, DIP 26°		21		
	COAL, Core		4		
	Siltstone, soft		4		
	Siltstone, hard		2		
	COAL, core, lenticular pyrite		11		
	COAL, core		16		
	COAL, pieces		7		
	Siltstone		11		
	COAL, becoming dirty in basal 1"		4		
	Dirt		1		
	COAL, pieces		5 1/2	228	6
	Mudstone/Siltstone, slightly silty in top 3", abundant roots, lentic surfaced		10	229	4
	Siltstone, silty, abundant roots, lentic surfaces. High angle Slip probable fault 230'5" to 231'0". Bedding plane slip 231'3"	1	11	231	3
		5			

? LONDON
DELPH

Form P 711
April 1985

Section of **ROSCOE No. 1 BOREHOLE**

6-inch MAP	1/4"
	5/3
33 48 NE 30	

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		in ft	in m	in ft	in m
				231	7
	Sandstone/Sandstone, silty, and roots carbonised. Vertical joint	1	9	233	0
	Siltstone, coarse, laminar. Vertical joint continues down to 235". DIP at 236' is 32° abundant High Angle Planes with broken core from 238' 3" to 239'	6	0	239	0
	Sandstone, grey, faint carbon films, poorly cemented and powdery, cor. roots to 242'	5	6	244	8
	Fault, broken core		4	244	10
	Sandstone, thin fractures infilled with calcite		6	245	4
	Faulted, broken core		6	245	10
	Sandstone, fine grained, grey, strong. Joint from 246' to 246' 11", High Angle Slips 247' to 247' 8", and Slip with highly listric surface at 248' 10"	4	11	250	9
	Siltstone, grey, badly fractured with listric surfaces	2	1	252	10
	Fault, gouge		7	253	5
	Mudstone, silty, brownish grey, laminar. Abundant plant debris. Ferruginous 253' 10" to 254' 4", becoming overirich, high angle joints, listric bedding plane slip at 255' 6", DIP 19°. Small burrows infilled white 255' 8" to 255' 11"	1	5	256	10
	Siltstone, coarse, laminar, abundant plant debris. Listric plane at base		10	257	8
	Sandstone, medium coarse, abundant plant debris. Strong, Whispy laminations. Erosional base		5	258	1
	Mudstone, grey, abundant carbonised plant debris		3	259	4
	Sandstone, as above		3	258	7
	Siltstone, abundant plant debris. Coalified calcareous planes. Fractured by slips from 259' 3" with High Angle Joints from 260'	1	10	260	5
	Sandstone, turbulent, listric parting at base		10	261	3
	Siltstone, fine grain, dark grey with comminuted plant debris		10	262	1
	Sandstone, strong, slaty bedded with conglomerate of silt clumps to 262' 8" then laminated slightly conglomeratic	1	2	263	3
	Sandstone, grey, waxy. Joint from top to 264' 7"	1	4	264	7
	Sandstone, grey, faint laminae. Mineralised fine cracks		10	265	5
	6				

Form P 71 F
Sheet 440

Section of ROSCOR No 1 BOREHOLE

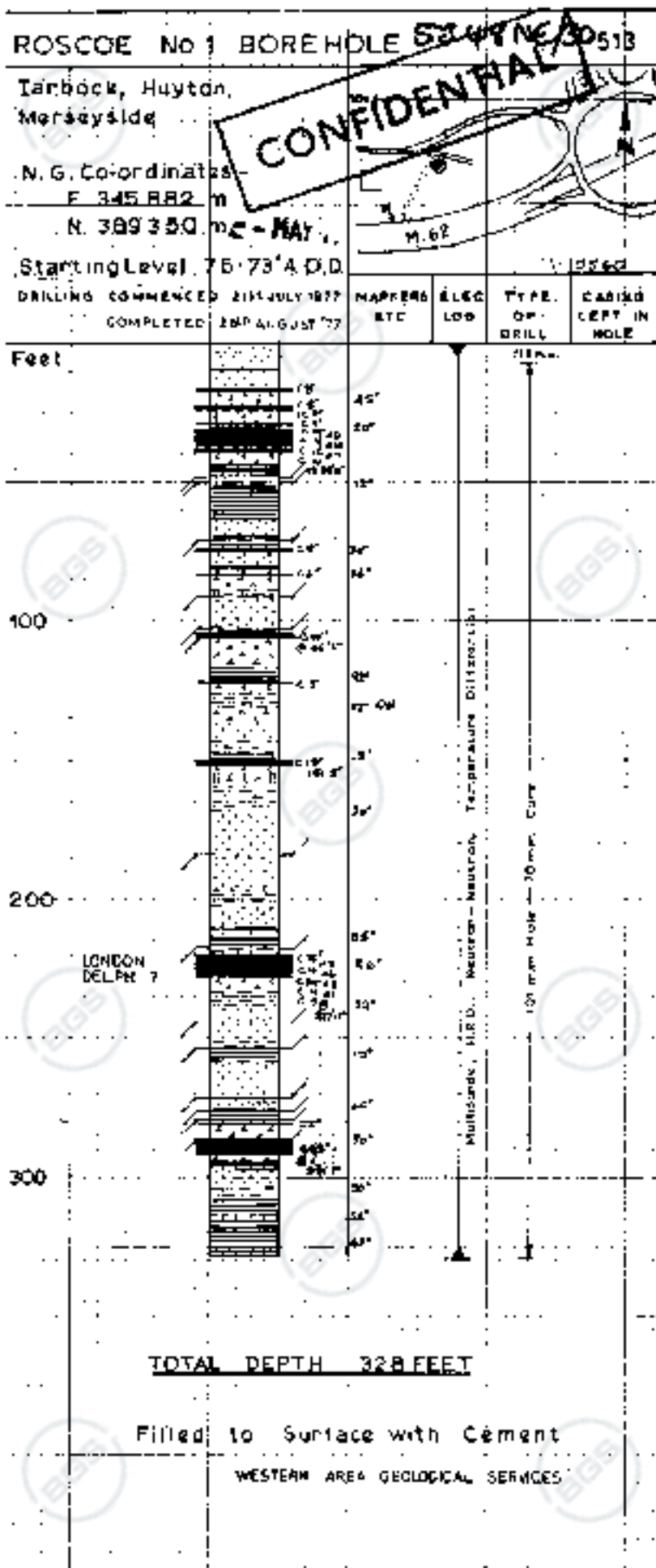
SECTION MAP	SW
	513
53 48 NE 30	

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		feet	ft	feet	ft
	Sandstone, very fine bedded with carbonaceous laminae. High Angle Slip 265'5" to 266'10". Faulted here	1	9	265	5
	Sandstone, fine cracks infilled with calcite. Small contemporaneous faults		10	266	0
	Sandstone, grey, fine bedded, laminar from 269'10". Numerous fractures and small cavities infilled	3	0	271	0
	Faulted ground. Breccia with large pieces of sandstone in a muddy matrix for 30" then a dark grey weak muddy core with small fragments. Drilling mud loss in this length	5	0	276	0
	Mudstone, silty, grey. Very steeply inclined 60° Carbonaceous plant debris. Iron impregnated heavy 276'8" to 277'14". High Angle Slip listric at 277'10". Dec. fish plate	2	9	278	9
	Fault, ground up material, carbonaceous mudstone		6	279	3
	Siltstone, fine grain. Carbonaceous with coal laminae. DIP 60°		9	280	0
	High Angle Slip 280' to 280'5"				
	Mudstone, carbonaceous with coal streaks		10	280	10
	COAL, dirty		2	281	0
	Sandstone, muddy, weak	1	0	282	0
	Sandstone, mudstone, compact, listric, roots. High Angle Slip through-out; 1" gouge at 283'7" and 2" gouge at 284'	2	4	284	4
	Sandstone, mudstone, strong. Dark grey roots	2	0	286	4
	COAL, DIP 50°. High Angle Slip 286'5" to 286'17". Isolated small pyritic lenses		10		
	COAL, dirty, pyrite faces		7		
	COAL, bright	2	0		
	COAL, inferior, dull		8		
	COAL, dirty, DIP 55°	1	2	291	7
	Sandstone, weak and friable		10	292	5
	Sandstone, coaly with High Angle Slip. 1" pyrite at base		10	293	3
	Sandstone, light grey, muddy, very weak		4	294	7
	Mudstone, light grey. Strong with near vertical listric fractures, coarsening downwards	1	4	295	11
	Sandstone, fine grain. Light grey. Dec. nkane. Very fine laminations	3	3	299	2
	Sandstone, fine grain. Badly broken coarse listric high angle surfaces a few ironstone nodules	1	1	300	1
	Sandstone, coarse, as above. Slurry bedded 5" to 30'10". Listric parting 302'1"	2	9	303	0

6-INCH MAP	1/4
	513
8849 NE	30

[illegible]

c b4





Form P.10
(Series 810)

SECTION OF ROSCOE No2 BOREHOLE (Duranton, Co. Wick)

PURPOSE

EXACT SITE N.C.Co-ordinates:-

E 345 836

N 369 234

LEVEL AT WHICH ^{FROM}BORE COMMENCED RELATIVE TO A.D. 77.41 Feet

DATE OF SINKING OF BORING Commenced 12 September 1977

SINKER OF BORER National Coal Board, Western Area

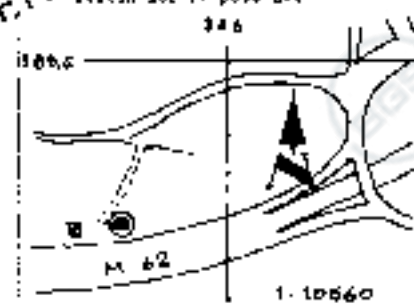
CONFIDENTIAL

DECLASSIFIED
- MAY 1981

5-inch Map B/W
Sheet and Q11.1 514

SJ 48 NB 31
(Met. Grid, Sheet and Dist.)

Sketch linking from A map to
sheet and 17 page box



GEOLOGICAL
CLASSIFICATION

NATURE OF STRATA

THICKNESS DEPTH
FEET IN. FEET IN.

Drift
Coren badly fragmented to 22'6"
Siltstone, coarse, laminated. Grey to
dark grey. Abundant comminuted
plant debris. DIP 24°
Mudstone, grey, laminated with occ. listric
inclined planes. Abundant plant
fragments occ. coalified
Sandstone/Mudstone interlaminated. Plant
debris abundant occ. Cordaites
Mudstone, quartz laminae, comminuted
plant debris
Mudstone/Sandstone, slurry bedded.
Ironstone nodules at 15'9".
Abundant coalified plants
Mudstone, grey, laminated, occ. plant
debris with bands of abundant
plant debris. Ironstone band
1" @ 20'; ironstone nodules
with pyrite @ 22'3"
Mud loes (520 gallons) at 21'6"
Quartz laminae from 22'6"
DIP 28°. Soft and friable from
23'9"
Sandstone, fine grain, light brown
abundant plant debris
Sandstone, white, turbulent bedding
Mudstone, grey, abundant plant debris
Broken core
Sandstone, laminated to 27'1", then
whispy laminae, strong
Mudstone, grey, laminated, abundant
plant debris. Very fine quartz
laminae increasing in basal 2"
Fragmented core, consisting of mudstone,
grey, fine quartz laminae
Sandstone, coarse
Mudstone, grey, laminated. Occ. plant
debris. Bands with quartz
laminae. Layers of abundant
plant debris. Light brown

9	4	9	4
	11	10	3
2	9	13	0
	8	13	8
1	11	15	7
1	1	16	8
7	6	24	2
	11	25	1
	6	25	7
1	3	26	10
1	2	28	0
1	1+	29	10
2	2	32	0
	6	32	6

Form P 71
Serial 480

Section of ...ROSCOE No. 2 ROSEVALE

1-INCH BAR	1/4"
SJ 48 NE	514
	31

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		Feet	Meters	Feet	Meters
				87	2
	Mudstone, silty, gray. Plant debris				
	Conglomeratic with small green				
	pebbles to 89'0" then large pebbles	2	4	89	7
	to 89'3"				
	Sandstone, gray strong. 2" mudflake congl-				
	omeratic to 90'9". Abundant black				
	hair like flakes to 98'6".	15	5	105	0
	Laminated below				
	Mud loss (340 gallons) between 86'5				
	and 104'4"				
	Sandstone, striped with black micaceous		8	105	8
	laminae				
	Sandstone, fine grain. Massive. High angle				
	slip with fragmentary core from	1	7	107	3
	104' to 105'10"		2	107	5
	COAL DIP 25°	1	11	109	4
	Sandstone, strong whispy				
	Sandstone, coarse grain. Occ. coalified	4	11	114	3
	plants. Laminated from 112'6"				
	Sandstone, medium grain. Very whispy laminae				
	Occ. carbonized patches. Laminated	10	9	125	0
	from 118'6" to 119'3"				
	Mudstone, gray, laminated. Abundant plant				
	debris DIP 28°. High angle listric	3	0	128	0
	slip 126'11" to 127'5". Extensive				
	base				
	Sandstone, gray, whispy. Mud flakes 131'9	7	0	135	0
	to 132'				
	Sandstone, gray, strong, laminated.	3	3	138	3
	Micaceous				
	Sandstone, gray, strong, massive. Occ.				
	small carbon patches. High angle				
	slip 139'10" - 140'5". More	4	5	142	8
	laminated below 141'9	1	6	144	2
	Sandstone, striped	2	3	146	5
	Sandstone, flaser bedded				
	Siltstone, dark gray, laminated, speckled				
	with plant debris. High angle	5	6	151	11
	slip from 149'4" to 151'11"				
	Mudstone, gray, strong. Well preserved				
	plants - Alveolites. Broken	3	1	155	0
	cores between 153' and 153'3"				
	Proterozoic fault gouge		11	155	11
	Mudstone, dark gray. High angle slip to				
	157'5". Plant debris. Brownish	2	4	158	3
	infilled migration burrows				
	Mudstone, silty, broken core to 159'4"				
	and between 159'10" and 160'4"	2	1	160	4
	Abundant small slips throughout				
	Mudstone, dark gray, strong. Occ. plant				
	debris. DIP 33°. Quartz laminae	2	3	162	7
	from 161'6" increasing in plants		8	163	3
	Sandstone/Mudstone, interlaminated				
	Siltstone, fine grain, speckled with plant				
	debris. DIP 42°. High angle listric	2	2	165	8
	slip, broken core from 164'				

Form P 71
Series 480

Section of JOSEPH No 2 BOREHOLE

1-1000 W/P	W/P
	5/4
51 48 DE	31

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS				DEPTH	
		ft	in	ft	in	ft	in
	patches and small brown mud lenses. High angle, slip, mineralised from 36'7" to 37'0"	3	4	35	10		
	Sandstone, strong white, wispy laminae		4	36	2		
	Mudstone, smooth, grey, laminated, occ. plant debris. DIP 30" @ 39'	1	10	39	0		
	Mudstone, weak and friable	1	0	39	0		
	Sandstone/Mudstone, very finely interlaminated. Abundant plant debris	1	0	40	0		
	Mudstone, grey, laminated, smooth, abundant plant debris. Widespread	2	5	42	5		
	Sandstone, fine grain, laminated. Plants		6	42	11		
	Mudstone, grey, laminated, abundant plant debris. High angle slip to 44'3"						
	Small faults at 46'6" to 47', and with breccia at 50'	7	1	50	0		
	Mudstone, dark grey, laminated. Occ. plant debris. Sandy bands, quartz laminae from 51'	2	0	52	0		
	Mudstone, dark grey, weak and friable						
	Quartz laminae. Abundant plants		9	52	9		
	Sandstone, silty bedded to 53'4", then containing coal streaks, lenses and ironstone nodules		9	53	6		
	Mudstone, dark grey, DIP 28"		7	54	3		
	Sandstone, strong, wispy coal laminae	1	3	55	4		
	Mudstone		11	56	3		
	Sandstone, abundant oolitic stone		10	57	1		
	Sandstone, coarse grain, pale yellow with slight petroleum smell, occ. oolitic plants. Coal laminae from 58'2"	1	3	58	4		
	Sandstone, coarse grain, white. Slightly micaceous. Massive to 64'9" then laminated to 66'2". High angle slip 68'5" to 69'2". Mud loss (260 gallons) at 71'	13	0	71	4		
	Sandstone, fine grain, grey, strong	1	2	72	6		
	Sandstone, coarse grain, white. Occ. coal wisps	3	0	75	6		
	Mudstone, grey, silty, laminated. Isolated patches of plant debris. DIP 30"		5	79	11		
	Mudstone, grey, weak and flakey		6	76	5		
	Sandstone, grey, coarse. Massive to 78'5" then laminated. Coal films and lenses from 79'1". Mud loss (260 gallons) at 79'10"	4	3	80	8		
	Sandstone, fine grain, grey, wispy laminae	1	8	82	4		
	Mudstone, grey, weak and friable. Structurally						
	unstable. Occ. plant debris. Ironstone nodules at 83'5". Electric surfacing. Strong from 84'10"						
	DIP 30". Quartz wisps from 86'8"	4	7	86	11		
	Sandstone, wispy		1	87	3		

Form P 21.1
Series 662

Section of ...BOS002 No 2 DOHEROL3

DATE	5/4/85
BY	514
NO	31

GEOLOGICAL CLASSIFICATION	NAME OF STRATA	THICKNESS		DEPTH	
		Top 11'	Bottom 11'	Top 11'	Bottom 11'
Probable London Delf & Crombeke Seams Coal	Siltstone, fine grain, dark gray, speckled with carbonized plant debris, ool. larger stems		10	165	5
	Mudstone silty, gray, strong and corded	1	1	166	3
	Strong, DIP 15°			167	4
	Siltstone, dark gray, strong, ool. specks of plant debris, ool. debris below 169'4". High angle listric slip 170'5"-171'3"	4	10	172	2
	Mudstone, fragments to 173'				
	Mudstone silty dark gray badly broken by listric surfaces				
	Quartz laminae from 176', abundant listric slips, badly fragmented to 182'4" then pulverized	8	11	181	1
	Mudstone, gray, abundant listric slips	1	4	182	5
	Mudstone silty, gray/green, abundant plants ool. roots, structuralism, isolated ironstone nodules	1	4	183	9
	Mudstone silty, gray/green, structuralism High angle slip 184'6" - 185'3"				
	No plants	2	6	186	3
	Mudstone, gray, poorly laminated DIP 34°				
	Small fault 187'10" High angle slip 190'4" - 192'2". Ool. faint imprints of Calamites stems.				
	Ironstone nodule at 193'7". Sandstone darker and laminated with speckled plant debris from 194', ool. calamites, ironstone nodules at 196'. Broken by slips 196'18" - 197'3"				
	High angle listric slip 201' - 201'6"				
	Calamites abundant from 201'8"				
	Quartz laminae, DIP 15°. Small fault 204'4", no calamites below but speckled plant debris	18	9	205	0
	Sandstone, fine grain, laminated. Inter-banded with gray mudstone, Sandstone ool. whippy, finely micaceous. Ool. layers of plant debris. High angle slip 209'3" - 210'1".				
	Coal 1" at 210'2", slurry bedded below. Faulted base	5	10	210	10
	Fault breccia		9	211	6
	Mudstone, dark gray, abundant listric surfaces. Fault gouge at 212'	1	6	213	0
	Mudstone, dark gray, Sphaeroiditic to 213'11" - 213'17" to 214'2". Isolated faint plant impressions				
	Listric plunge passes at 215'10"				
	No mud loss from 217'. DIP 22° at 217'. Broken down 218'4" - 218'10". Calamites stems from 219'3". Small fault from 220'	7	4	220	4

Form P 717
Series 880

Section of ... ROSLICE No. 2 BORRISOLE

1:1000 MAP	514
80 48 NB	31

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	Thickness in appropriate units			
		Feet	Meters	Feet	Meters
	Mudstone, dark gray, occ. specks of plant debris, isolated stems. Small fault at 221', fragmentary to base.	3	0	221	4
	Sandstone, abundant tectonic lenticles surfaces.	1	3	224	5
	Sandstone, coarse, weak.	1	9	226	2
	Siltstone, dark gray, fine grain, laminated. Fragmentary from 227'.	2	0	228	2
	Mudstone, gray, abundant high angle listric slip planes. Ironstone nodules at 229'9 and 230'6. Sandy beds 3" to 231'4 and 2" to 232'7, plant debris below.	4	10	233	0
	Siltstone, fine grain, plant debris. Sclerites, etc. quartz laminae increasing from 235'.				
	Mineralised slip, fragmentary from 237' to 237'9. DIP 15° at 238'.	6	0	239	0
	Sand/Silt, complex interlaminated, micaceous, carbon laminae.	2	0	241	0
	Sandstone, complex laminations, white striped dark. Fine grain, micaceous. Slurry bedded from 244'. High angle slip 245'-246'.	5	7	246	7
	Mudstone, silty, dark gray, plants and stems. DIP 25° at 248'. Slip at 249'. Layer of ironstone nodules at 250'. Slip at 251'. Abundant plants to 252'. Badly broken core from 252'2. DIP 30°.	6	1	252	8
	Siltstone, fine grain, dark gray, speckled with mica. Shell fragments. Limestone at 254', plant debris ferruginous.	2	10	255	6
	Mudstone, dark gray, laminated. Abundant plant debris. Boulders at 256'6. Fault with thin gouge at 257'. Broken core with abundant listric slips to 259'3.	2	6	258	0
	Mudstone, conglolid, dark gray, laminated. Fish debris.	1	3	259	3
	Sandstone, strong, roots abundant. Listric surfaces.		9	260	
	Sandstone, slightly silty, abundant roots, slip planes.	1	1	261	1
	Sandstone, noddy.		5	261	1
	Sandstone, silty, strong, roots. Becoming laminated with occ. quartz laminae from 261'10.		11	262	5
	Siltstone, gray, laminated, strong. Plant debris abundant in top 6" then occ. specks.	1	4	263	9
	Sandstone, slurry bedded.		2	263	11
	Siltstone, quartz laminae.		4	264	3
	Mudstone, laminated, abundant plant debris, occ. carbonised, DIP 22°.	1	1	265	4

Section of BOISDIE No. 2 BOREHOLE

8-1826 MAP	1/4
	514
SJ 48 NE	31

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	Thickness as appropriate		Depth	
		ft	m	ft	m
				265	4
	Sandstone, white, Buchanani with bands of dark siltstone. Abundant plant debris. High angle slips from 265' to 267' with badly broken zone	2	0	267	4
	faulted ground up material	1	1	268	5
	Mudstone, gray strong		2	268	7
	Sandstone, very fine grain, finely laminated whippy to 269'6 then complex broken with high angle slips from 270'11. Contorted laminae contemporaneous faulting to 272'4	3	9	272	4
	Fault, fragmented core, silty fragments and gouge	2	8	275	0
	Sand/Silt, striped, carbon laminae DIP 45°	3	0	276	0
	Mudstone, dark gray, ironstone patches broken by listric slips	1	2	277	2
	Fault, gouge		8	277	10
	Mudstone, dark gray fragments		10	278	8
	Mudstone, dark gray, laminated		1	278	9
	CDAL, some pyrite, DIP 27°	1	6	280	3
	Sandstone, weak		6	280	9
	Mudstone Sandstone, strong, laminated roots	1	4	282	1
	Siltstone Sandstone, laminated, roots and plants		10	282	11
	Siltstone, fine grain. Plant debris abundant. Quartz laminae from 285'10		4		
	Calamites and stems. Strong	2	6	287	3
	Sandstone, light gray, fine grain, complex laminated with carbon laminae	1	7	288	10
	Sandstone, strong, white, whippy laminae	1	9	290	7
	Mudstone, light gray, strong. Quartz bands. Occ. plants	1	1	291	8
	Sandstone, slurry bedded		4	292	0
	Sandstone/Mudstone, interlaminated	1	0	293	0
	Mudstone, interlaminated with fine laminae of quartz. Occ. plant debris DIP 25°. Quartz content increases from 296'. Highly inclined joint from 296' to 297'3	4	3	297	3
	Sand/Silt interlaminated, striped. Fine grain, micaceous	3	3	300	6
	Sand/Silt complex interlaminated. Fine grain, micaceous	3	1	303	7
	Siltstone, dark gray, laminated, DIP 24° abundant quartz laminae in bands	2	7	306	2
	Sand/Silt, complex interlaminated	3	6	309	8
	Siltstone, gray, laminated, fine grain Occ. quartz laminae	1	1	310	9
	Mudstone, gray strong, DIP 27°. No fossils	5	10	316	7
	Ground up material, Probable Fault gouge		8	317	3

Possible
St. Helen's Yard
Surrey

Form P. 11 T
March 1960

Section of ROSCOE No 2 BORNEO

1-100000	514
SJ 48 NE	31

LITHOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		No. of lit.	Thickness	Depth	Column
	Mudstone, grey, laminated, massive DIP 20°			317	3
	occ. plant debris		11	318	2
	Sandstone, grey, laminated, roots & listric surfaces, listric slip planes from 320°S	2	9	320	11
	Faulting, fragmentary core		5	321	4
	Sandstone, strong silty bedded to 322°S				
	Small fault passes through then turbulent laminated, striped	2	3	323	7
	Mudstone, silty, dark grey, laminated DIP 15° High angle slip 324°E-325°S, then broken by slips to 326°S	6	2	325	9
	Mudstone, thinly laminated	1	7	326	4
	Sandstone, very weak		5	327	9
	Mudstone, laminate DIP 30°		5	328	2
	COAL, considerable pyrite	3	1	329	3
Ince Six Feet Sand (Spore analysis report YRL 9122)	Dirt, soft in top 3" (4" missing S.P.B.)		10	336	1
	COAL, core	2	10	338	11
	Dirt, black, soft		1	339	0
	COAL, core DIP 29°		4	339	4
	Sandstone, mudstone, compact with listric surfaces, abundant roots	1	5	340	9
	Sandstone, very weak and swollen	1	10	342	7
	Sandstone/mudstone, weak	1	3	343	10
	Mudstone, grey, laminated, weakly compacted, occ. plants mainly comminuted, isolated stons, ironstone nodules at 345°S	3	2	347	0
	Mudstone, silty, High angle slips, bands of sandstone slurry bedded from 348°S	2	7	349	7
	Sandstone, white, fine grain, slurry bedded to 349°S then finely laminated abundant plant debris	1	8	351	3
	Mudstone silty, grey, fractured core strong and coarsening from 352°S	1	11	353	2
	Siltstone, fine grain, grey, strong, occ. plant debris, DIP 27° Quartz laminae 356°S-356°S, Calamites and Kaupopteris, Slip 362°S-362°S	10	1	363	3
	Mudstone, silty, grey, abundant plant debris, DIP 22°	3	9	365	0
	Siltstone, grey laminate, abundant plant debris	1	5	366	5
	Silt/Sand, laminate		7	367	0
	Sandstone, complex laminated	1	4	368	4
	Siltstone with sand laminae, Striped, High angle slip 368°S-369°S	3	0	369	4
	Sand/Silt laminated, finely disseminated plant debris, Silt content increasing	1	5	370	9
	Siltstone, grey laminate, plant debris Strong, fining down	1	10	372	7
	Mudstone, silty, grey, occ. quartz nodules				

Form P 11 T
Sept 14 1992

Section of ... ROSEBOM No 2. BOREHOLE

DEPTH (m)	514
50 48 48	31

GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		Top of str.	Base of str.	Top of str.	Base of str.
	isolated plants DIP 20°	1	10	372	7
	Siltstone, gray laminated, strong, plants	5	4	376	5
	Mudstone, gray, plant debris, Occ. Ironstone nodules, DIP 15° at 383'			381	9
	Quartz laminae from 383'	3	3	385	0
	Mudstone, dark gray, laminated, Occ. plant debris, isolated nodules DIP 11°	1	0	388	8
	Siltstone, fine grain, gray, strong		4	389	0
	Sand/Silt, interlaminated, some distortion	1	6	390	6
	Siltstone, gray, strong, Occ. isolated plant debris, DIP 14°	1	3	391	9
	Silt/Sand, interlaminated		1	392	0
	Mudstone, gray, laminated, strong, Quartz laminae from 391'	1	8	393	8
	Sandstone, fine grain, gray, complex laminations, Conglomerate with few large pebbles 395'5 to base	1	1	395	11
	Mudstone, gray, isolated plant debris, increasing below 397', High angle slip from 397'6	2	3	398	2
	Mudstone, with fine turbulent quartz laminae and whisps, Easy partings, Plant debris, DIP 07°	1	3	399	5
	Cavity, Mud loss to 403'		7	400	0
	Clay gouge material		7	400	7
	Mudstone, gray, abundant plant debris DIP 25°	1	4	401	11
	Cavity		6	402	5
	Clay gouge and pieces of mudstone core with plant debris, Mud loss to 403', 400 gallons of water made at 2 p.m., at 403'3"	2	7	405	0
	Fragmentary core and clay gouge, coaly 2" to 407'1"	5	9	410	9
	Fragmentary core,				
	Siltstone, dark gray, plant debris DIP 28°	1	0	411	9
	Ground up material		9	412	6
	Siltstone, fragmentary	1	4	413	10
	Ground up material	2	2	417	0
	Siltstone, abundant plant debris, Occ. coalified	1	1	418	1
	Ground up material		7	418	8
	COAL, very dirty, Stigmara on partings pyrite films		10	419	5
	Mudstone, silty, gray, Plant debris	1	1	420	7
	Ground up coaly debris		8	420	11
	COAL, fragments		9	421	7
	Ground up debris	1	3	422	10
	COAL, dirty, coaly		8	423	6
	COAL, fragments		4	423	10
	Sandstone, soft, silty, bedded		6	424	4
	COAL, dirty, pyrite films, core, DIP 21°	1	1	425	5
	Sandstone, very weak, swollen, High angle slip 427'8-428'8	4	7	430	0

Probable Higher
& Lower Florida
Seams Old workings

Section of ROSCOE No 2 BOREHOLE

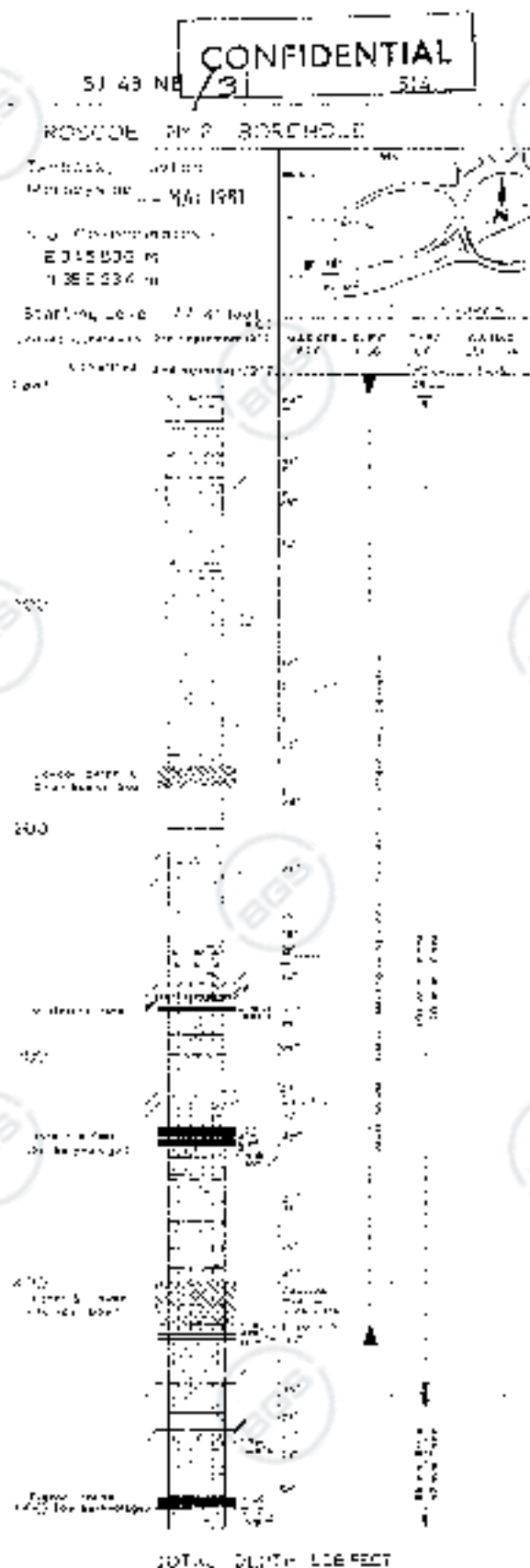
1 - IRON SHIP	6/4
	514
SJ 48 NB	31

Public as appropriate

GEOLOGICAL CORRELATION	NATURE OF STRATA	THICKNESS			
		Feet	Meters	Feet	Meters
	Seatearth, broken core	1	1	430	0
	Ground up material		11	431	1
	Sandstone, ferruginous, mineralised jointe	1	9	432	9
	Seatearth, mudstones listric surfaces, Roots, becoming bedded below 435'6				
	DIP 20, Faulted base	1	10	437	7
	Seatearth, mudstone, roots, listric surfaces, ironstone pellets Coarsening below 440'	4	0	441	7
	Sandstone, fine grain, light gray, strong		4	441	11
	Sandstone, slurry bedded		4	442	3
	Sandstone, wispy laminae		10	443	1
	Sandstone, laminated, plant debris abun- dant, strong and speckled		11	444	0
	Fault				
	Mudstone, gray, abundant plant debris		6	444	6
	Ground up muddy material		6	445	0
	Seatearth, weak		9	445	9
	Mudstone, ironstone nodules, plant debris DIP 15		10	446	7
	Mudstone, fragments with high angle slip	1	0	447	7
	Sandstone, fine grain, gray, strong, mainly wispy & often slurry bedded	3	7	451	2
	Siltstone, gray, ool, plant debris		11	452	1
	Sandstone, complex laminated	1	11	454	0
	Siltstone, ool, plant debris		11	454	11
	Sand/Silt, slurry bedded		10	455	9
	Sandstone, fragments	1	1	456	10
	High angle slip				
	Mudstone, dark gray, plant debris		7	457	5
	High angle slip				
	Sand/Silt, slurry bedded		7	458	0
	Siltstone, gray, strong, plant debris ironstone nodules and pellets fining below 459'	1	10	459	10
	Mudstone, gray, strong, ool, plant debris DIP 25		6	460	4
	Siltstone, fine grain, gray, plant debris with alveolites, strengthening with abundant quartz whips from 461'1". Ool. ironstone nodules from 462'. Fining down and passing to	2	8	463	0
	Mudstone, gray, abundant plant debris		10	463	10
	Mudstone, gray, weak, abundant plant debris ool, carbonised	1	2	465	0
	FAULT core affected by abundant High angle listric planes	1	3	466	3
	Mudstone, dark gray, laminated DIP 27 abundant plant debris, coalified Sigillaria. Becoming seatearth texture below 467'6"	2	4	468	7

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

Area Geological Service
Silver - Pine Forest



1. Log with depth to 11.41 feet and from 11.41 feet to 11.41 feet.

2. Log with depth to 11.41 feet and from 11.41 feet to 11.41 feet.



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