

LAND OF HEOL TABOR, CWMAVON,

PORT TALBOT, SA12 9PR

Phase I:

**Assessment of Land Quality/ Preliminary Risk
Assessment (Desk Study)**

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CONTENTS

FOREWORD	1
1.0 INTRODUCTION	2
1.1 General	2
1.2 Purpose	2
1.3 Scope	2
2.0 SITE DETAIL	3
2.1 Site Description	3
2.2 Topography	3
2.3 Statutory Service Information	3
3.0 GEOLOGY, SITE HISTORY AND MINING HISTORY	4
3.1 Published Geology	4
3.2 Site History	4
4.0 GROUNDSURE DATA REVIEW	6
4.1 General	6
4.2 GeolInsight® Report– Geology and Ground Stability	6
4.3 EnvirolInsight® Report – Site Environmental Appraisal	11
4.4 Data Review Summary	16
5.0 CONCEPTUAL SITE MODEL	17
5.1 Legal Framework for Contaminated Land	17
6.0 COAL MINING RISK ASSESSMENT	20
6.1 Shallow Lying Coal Seams	20
6.2 Coal Authority Mining Report/ Interactive Viewer	20
6.3 Shallow Mine Workings	22
6.4 Mine Entries	23
7.0 CONCLUSIONS AND RECOMMENDATIONS	24
7.1 Overview	24
7.2 Evaluation and Recommendations	25
8.0 REFERENCES	26

APPENDICES

APPENDIX I – SITE PLANS	I
APPENDIX II – GROUNDSURE REPORTS.....	II
APPENDIX III – HISTORICAL ORDNANCE SURVEY MAPS	III
APPENDIX IV – CON29M COAL AUTHORITY MINING REPORT	IV

FOREWORD

The following Conditions and Notes on Site Investigation Procedures should be read in conjunction with this report.

The recommendations made and opinions expressed in the report are based upon the study of historical Ordnance Survey maps of the area, GroundSure® reports, and geological maps where available.

Where other plan sources, and published data are considered, these are specifically referred to in the text.

We regret that no responsibility can be held for conditions, which have not been revealed by the plan sources referred to. Whilst the report may suggest the likely configuration of strata below the site, this is only indicative, and no liability can be accepted for its accuracy.

1.0 INTRODUCTION

1.1 General

Upon the instructions of Wayne Goodridge (Client), Quantum (QGL) has been commissioned to undertake a Phase I Assessment of Land Quality/ Desk Study for a proposed new residential development on an unused parcel of land off Heol Tabor, Cwmavon, Port Talbot.

The proposed development is for six residential dwellings off Heol Tabor. A proposed 'Site Plan' drawing, as supplied by the Client, is presented within Appendix I for reference.

This report presents an assessment of both geotechnical and environmental ground conditions to provide information on any potential risks or hazards that may be posed to the development of the site.

General notes on the techniques employed by Quantum Geotechnic are described in the Foreword together with the limitations inherent in this type of work.

1.2 Purpose

The purpose of the desk study is to provide a preliminary assessment of the land quality and assess the site's suitability for development in terms of its geotechnical and geo-environmental setting. This report aims to achieve this by providing the following:

- An early indication of possible land quality issues that could impact on the development proposals
- A conceptual model of the site detailing potential contamination source pathways and receptors
- A geotechnical and geo-environmental appraisal of any issue highlighted and its significance
- The relevant information to allow the of design an appropriate intrusive (phase 2) ground investigation (if deemed necessary)

1.3 Scope

In order to achieve its objectives, this study compiles a range of information pertinent to the development site. This typically targets its locality and includes archival and current data from the following sources.

- Site specific database searches provided by Groundsure: GeoInsight and EnviroInsight
- Historical and recent ordnance survey maps, geological maps and environmental information,
- Published Geological Map for the area: Sheet 247 'Swansea'.
- British Geological Survey Website.
- National Resources Wales

2.0 SITE DETAIL

2.1 Site Description

The area under review lies 2 miles north-east of the town of Port Talbot within the large village of Cwmavon. The site is currently an un-used parcel of land with no visible signs of historical use. It is understood that the new development will comprise six new residential dwellings with associated access routes.

The approximate National Grid Reference of the site is SS 78211 92729 with a nearby postcode of SA12 9PD. The site location and extent of the development is indicated on the site plan presented in Appendix I

An aerial view of the site from current on-line mapping is presented below. The site has not been visited as part of this desk study assessment



Figure 1: Proposed site boundary ©GoogleEarth

2.2 Topography

The site is approximately 65m east to west and 40m north to south. To the direct north of the site study area is dense woodland and agricultural land. To the east, south and west are neighbouring residential dwellings. After carrying out a site visit the site has been levelled across the site study area with all vegetation being removed. Aerial photographs of the site are included in the Groundsure reports presented in Appendix II.

2.3 Statutory Service Information

Service plans have been made available to Quantum by the Client. During excavation works on site, safe digging practices in accord with to HS(G)47 must be employed.

3.0 GEOLOGY, SITE HISTORY AND MINING HISTORY

3.1 Published Geology

Details of the geology of the site are provided by British Geological Survey (BGS) Sheet 247 'Swansea', Solid edition at 1:50,000 scale, and BGS's online resource Geology of Britain Viewer.

There are no mapped superficial deposits within the site study area, however, the presence of superficial geology cannot be ruled out.

The geological mapping indicates the site to be underlain by strata from the South Wales Middle Coal Measures Formation. The lithology comprises grey, productive coal bearing mudstone/ siltstones with seat earths and minor sandstones. The dip angle/ direction of the strata is 35 degrees to the north. There is also one named fault (Gnoll Fault) 1.5km west of the site study area trending northwest-southeast with a downthrow of 200 yards to the west.

3.2 Site History

A review of the site history has been undertaken based on archive and recent maps provided by GroundSure and presented in Appendix III. A summary of the details contained within the Ordnance Survey maps is provided as follows.

1882 to 1884 County Series at 1:2,500 and 1:10,560 scales

The site resides a series of through roads linking up the nearby collieries Finery Slant 50m (E), Meadow Pit 260m (S), copper works Rio Tinto 150m (S-E) and miners housing terraces to the direct (E) and (W). The only infrastructure on the site study area is on the form of roadways.

1897 to 1899 County Series at 1:2,500 and 1:10,560 scales

The site under investigation has had several notable changes. The site now has an adit on-site with associated railway connection to Cwmavon Sidings to the direct (S) of the site. The coal-level (Adit) has no name of identification. The Finery Slant that is situated 50m (E) and Meadow Pit situated 260m (S) of the study area are now classed as disused. Very little to no change regarding Rio Tinto Copper Works 150m (S-E).

1919 to 1936 County Series and National Grid at 1:2,500 and 1:10,560 scales

By 1936 a commercial/ residential dwelling is situated on the centre of the site study area possibly linked to the Adit on-site. However, by 1936 there is no evidence of the adit/ coal-level. By 1936 the Rio Tinto Copper Works 150m (S-E) is also stated as disused with some of the infrastructure now obsolete and decommissioned.

1957 to 1966 Provisional and National Grid 1:2,500 and 1:10,000 scale

All signs of railway links to the south have been taken away from the site study area and no signs of the on-

site adit. The Rio Tinto Copper Works has been demolished and redeveloped as residential dwellings. The mining terrace housing around the site study area have also been demolished and redeveloped as semi-detached residential dwellings. All railway sidings associated with the Rio Tinto Copper works have been dismantled and are no longer mapped. The site study area no longer has roadways running through the site. There are two roadways within close proximity them being to the direct south and direct west.

1993 to 1995 National Grid 1:2,500 and 1:10,000 scale

By 1995 the site remains un-changed however, to the direct east a plot has been cleared for residential dwellings. Heol Camlas 100m south of the study area now trends east-west through the former Rio Tinto Copper Works lined with terrace housing. All coal mining has now stopped in the area with all shafts and coal-levels stating disused. No indication of both adit or building on the site study area.

2001 to 2003 Landline and National Grid 1:1,250 and 1:10,000 scale

There has been no change to the site study area. The only notable change is to the direct west with the construction of detached residential dwellings (Park Row).

4.0 GROUNDSURE DATA REVIEW

4.1 General

As part of the desk study, environmental and combined geological/ ground stability reports have been obtained from GroundSure® which compile the results of online database searches using a range of national resources.

The GeoInsight® report provides details on the geology of the site as well as information relating to ground workings in the area of the site, mining, extraction, natural cavities and natural ground subsidence. The EnviroInsight® report details site specific environmental issues including pollution incidents, discharge consents, flooding issues and any areas of significant contamination potential as well the risk to any existing or planned properties from the underlying ground conditions.

A summary and review of the data collected from within these reports are detailed in the following sections. Full copies of the documents provided by GroundSure® are included in Appendix II.

4.2 GeoInsight® Report– Geology and Ground Stability

4.2.1 Artificial Ground

The geology section of the combined geological/ground stability GroundSure® GeoInsight® report (Report Ref: GS-7066560) has identified Made Ground/ Artificial Deposits on-site. There are also indications of artificial ground 71m (SE) and 197m (N).

4.2.2 Superficial Ground/ Drift Geology & Landslips

There is no mapped superficial ground/ drift geology on the site study area. There are mapped superficial deposits however 120m (S) of the site relating to Alluvium, comprising clay, silt, sand and gravel.

There are no records of any landslips within 500m of the site boundary.

4.2.3 Bedrock, Solid Geology & Faults

The report identifies the site to be underlain by the South Wales Middle Coal Measures Formation comprising mudstone, siltstone, sandstone and thin coals.

There is also one named fault (Gnoll Fault) 1.5km west of the site study area trending northwest-southeast.

Figure 2 (A) and 2 (B) below illustrates the site study areas 'Solid' and 'Drift' Geology using BGS Sheet 247.

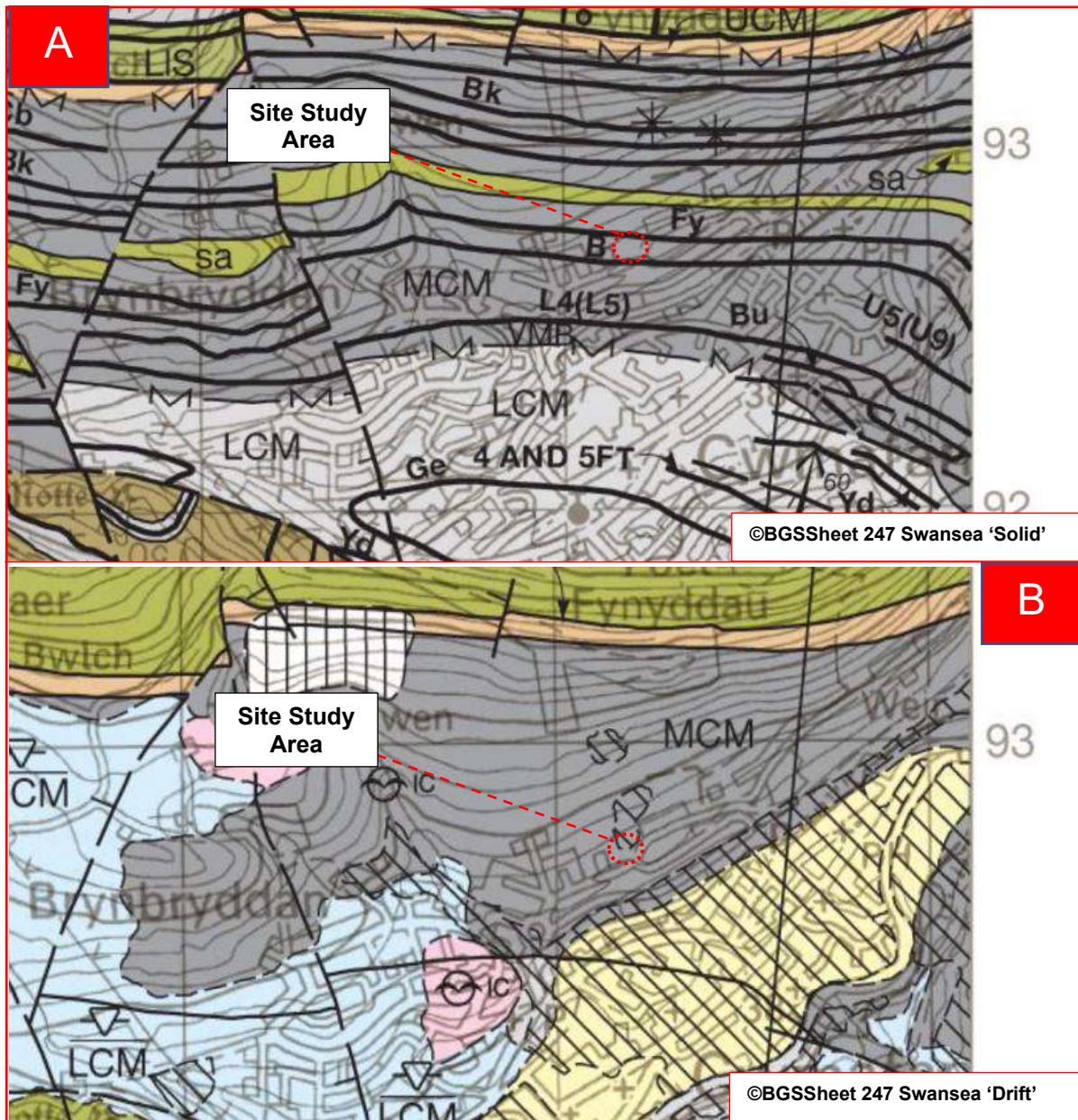


Figure 2: Illustration of the site study areas 'Solid' and 'Drift' Geology using BGS Sheet 247.

4.2.4 Radon Data

The report states that the property is in a Radon Affected Area, as between 3 and 5% of properties are above the Action Level. If planning on building an extension or a new build property basic radon protective measures will need to be installed in accordance with the Building Research Establishment guidance on radon protective measures for new dwellings (BR211 2015).

4.2.5 Ground Workings

There are nine records of ground workings on-site relating to disused pits, refuse heaps and disused tips.

4.2.6 Mining, Extraction & Natural Cavities

The report indicates a number of historical mining activities within 1000m of the study site boundary, all of which are mineral vein related. The below table illustrates the search findings.

Table 1: Natural Ground Hazard Summary:

Location	Commodity	Description
107m (E)	Brit Pit: Coal (Deep)	Type: Ceased 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.
233m (NW)	Brit Pit: Coal (Deep)	Type: Ceased 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.
247m (N)	Brit Pit: Coal (Deep)	Type: Ceased 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.
310m (SE)	Brit Pit: Coal (Deep)	Type: Ceased 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

262m (S)	Iron Ore (Bedded)	Localised small-scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
487m (N)	Iron Ore (Bedded)	Localised small-scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

The site under investigation does not lie within an area where Johnson Poole and Bloomer hold information relating to mining.

4.2.8 Natural Ground Subsidence

The GeolInsight® report identifies a range of 'Natural Ground Subsidence' datasets supplied by BGS. Each hazard has a 'hazard rating' and corresponding description which are summarised in Table 2.

Table 2: Natural Ground Hazard Summary

Hazard	Hazard Rating	Details
Shrink - Swell Clays	Very Low (On-Site)	Ground conditions predominantly low plasticity
Landslides	Very Low – Moderate (On-Site)	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.
Soluble Rocks	Negligible (On-Site)	Soluble rocks either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.
Collapsible ground	Very Low (On-Site)	Deposits with potential to collapse when loaded and saturated are unlikely to be present.
Compressible deposits	Negligible (On-Site)	Compressible strata are not thought to occur.
Running Sands	Negligible - Very Low (On-Site)	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

4.2.9 Estimated Background Soil Chemistry

The report identifies three records of the estimated background soil chemistry either on site or within 250m of the site boundary. A summary of these records is presented in Table 3.

Table 3: Estimated Geometric Mean Soil Concentrations (all figures in mg/kg)

Location	Arsenic (As)	Bio accessible Arsenic	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)	Bio accessible Lead
On site	25 - 35 mg/kg	No Data	1.8 mg/kg	60-90 mg/kg	30-45 mg/kg	100 mg/kg	60 mg/kg

4.2.10 Railways and Tunnels

There are seven records of historical railway systems on-site and around the site study area. Table 4 below summarises the findings.

Table 4: Railway and Tramway railway sidings

Location	Land Use	Year of Mapping	Mapping Scale
On-Site	Railway Sidings	1899	1:2,500
5m (SE)	Railway Sidings	1921	1:10,560
13m (SE)	Railway Sidings	1897	1:10,560
17m (SE)	Railway Sidings	1919	1:2,500

35m (SE)	Tramway Sidings	1882	1:2,500
78m (SW)	Tramway Sidings	1936	1:2,500
84m (SW)	Tramway Sidings	1936	1:10,560

4.3 Envirolnsight® Report – Site Environmental Appraisal

4.3.1 Historical Industrial Sites

The EnvironInsight® report identifies one-hundred fifty-nine records of potentially contaminative past land uses within 500m of the site boundary. There are eight on-site refereeing to refuse heaps, disused copper works, disused pits and disused pits. The remainder of records are associated with railway sidings, old coal levels, refuse heaps, disused pits, unspecified heaps, copper works, old slants, tramway sidings, disused flue, steel works, cuttings, tin plates, disused shafts, gas works, police stations, brickworks, unspecified tanks, gasometer and unspecified kilns.

There are six-teen records of historical tanks within 500m of the site study area. The closest records being 234m (E) relating to an unspecified tank dated 1882.

There are thirty-one records of historical energy features within 500m of the site study boundary with the closest records being 133m to the (E).

The report has identified no records of historical petrol stations and fuel sites within 500m of the site boundary.

The report has identified two historical garage records with the closest being 451m (SE) of the site study area, present in 1974. The one additional record is 455m (SE) from the site study area.

There are no records of any historical military sites within 500m of the site boundary.

There are is one record of historical landfill on the site study area referring to a disused tip of Heol Tabor.

There are no records of historical waste sites within 500m of the site study boundary.

4.3.2 Environmental Permits, Incidents and Registers

There are ten records relating to Licenced Waste Sites within 500m of the site study area. The ten records seem to be split over two sites. The closest being 241m north-west comprising three of the licenced waste sites relating to storage of electrical insulting oils. The seven remaining records are 280m north-west of the site study area relating to a transfer station taking non-biodegradable wastes.

There are also three waste exemptions with the closet being 367m (SE) relating to sorting and de-naturing of

controlled drugs for disposal.

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

There are no records of both Licenced Industrial Activities (PartA(1)) within 500m of the site study area

No records of Licenced Pollutant Release (Part A(2)/B) have been recorded.

There are no records of Licenced Discharges to Controlled Waters within 500m of the site study area.

No records of Pollutant Release to Surface Waters (Red List) under the environmental protection regulations 1991.

There are no records for both List 1 and List 2 Dangerous Substances in Compliance with European Directive E 2006/11/EC and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

There are no records of Substantiated Pollution Incidents (EA/NRW) within 500m of the site study area.

No Pollution Inventory Waste Transfers/ Radioactive Waste data sets recorded within 500m of the site study area.

There are no records of Control of Major Accident Hazards (COMAH). This includes upper and lower tier sites and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS).

4.3.3 Current Land Use

Two records of potentially contaminative current industrial sites have been identified within 250m of the site study area. The closest being M&S Engineering & Garage Services 141m north of the site study area who are related to vehicle repair, testing and servicing. Below in Table 5 are all the current industrial sites for ease of reference.

Table 5: Current Industrial Sites

Location	Company	Address	Activity	Category
143m (East)	Electrical Sub-Station	West Glamorgan, SA12	Electrical Features	Infrastructure and Facilities
187m (South-East)	Electrical Sub-Station	West Glamorgan, SA12	Electrical Features	Infrastructure and Facilities

There are no records of National Grid High Voltage Underground Electricity Transmission Cables or High-

Pressure Gas Transmission Pipeline within 500m of the site.

4.3.4 Hydrogeology and Hydrology

The report indicates the site not to be underlain by a “Superficial Aquifer”.

The report indicates the closest “Secondary A” aquifer at 121m (S) assigned to the superficial deposits. This meaning 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 formally classified as minor aquifers.

Bedrock on-site has been identified as ‘Secondary A’ aquifer which is described as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly as minor aquifers.

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.

Table 6 below characterises the on-site vulnerability of groundwater to a pollutant discharge.

Table 6: On-Site Vulnerability of Groundwater

Location	Summary	Soil/ Surface	Superficial Geology	Bedrock Geology
On-Site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: 40- 70% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fracture

There is one groundwater abstraction licences or portable water abstraction licences identified within 2000m of the site study boundary. This record is located 1306m (SW) of the study area with the status of historical and dated between the 20/11/2004 and 31/03/2017. There are no records of surface water abstraction

However, there are no records of surface water abstraction within 2000m of the site study area.

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. The on-site catchment for

the site study area is the Afan.

In the below table 7 are the WFD Groundwater Bodies scores for the on-site hydrology.

Table 7: WFD Groundwater Bodies Scores

Location	Name	Water Body ID	Overall Rating	Chemical Rating	Quantitative	Year
607m (SE)	Afan	GB110058026110	Good	Good	Good	2016

4.3.5 Flooding

Information on surface water flooding, flood defences, flood storage and groundwater flood are provided in this section with a radius of 250m of the site study area. Both Flood Zone 2 and 3 identified a Negligible risk.

The Risk of Flooding from Rivers and Sea (RoFRaS) is Negligible.

The report states the area within 250m of the site study area does not benefit from flood defences.

Table 8: Surface Water Flood Risk

Return Period	Maximum Modelled Depth (Within 50m)
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

Groundwater risk on-site has been identified as Low with the highest risk within 50m also being a Low risk.

4.3.6 Designated Environmentally Sensitive Sites

According to the EnviroInsight® (Report Ref: GS-7066560) there are no recorded areas classified as a Site of Specific Scientific Interest (SSSI) and Ramsar Sites.

There no records of Special Areas of Conservation (SAC) within 2000m of the site study area.

The report indicates no data was found during the search regarding records of National Reserves (NNR), within 2000m of the site study area.

The report indicates no data was found during the search regarding records of Special Protection Areas (SPA), within 2000m of the site study area.

The report indicates no data was found during the search regarding records of Local Nature Reserves (LNR), within 2000m of the site study area.

The report states a total of fifty-two areas of Ancient Woodland within 2000m of the site study area. The closest being 624m to the north-east of the study area relating to plantation on ancient woodland sites. All other records identified are beyond 624m from the site study area and are related to ancient woodland site of unknown category, ancient semi-natural woodland, restored ancient woodland and plantation on ancient woodland sites.

There are no records of Biosphere Reserves, Forest Parks, Marine Conservation Reserves, Proposed Ramsar Sites, Possible Special Areas of Conservation (pSAC), Potential Special Protection Areas (pSPA), Nitrate Sensitive Areas, Nitrate Vulnerable Zones and Green Belt Land within 2000m of the site study area.

4.3.7 Natural Hazards

A BGS GeoSure has been searched to 50m from the study area. The maximum shrink-swell hazard identified by the report on the study site is classified as very low. The Ground conditions predominantly low plasticity. Planting trees near to buildings should be at a negligible risk. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is no increase in construction cost to reduce potential shrink-swell problems.

The report indicates the maximum landslide hazard rating of moderate. The description states slope stability problems may be present or have occurred in the past. Land use should be considering the stability of the site. According, to the report the maximum soluble rocks rating has been identified as negligible. The description is soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

As regards to collapsible rocks the maximum hazard rating has be specified as very low. The description stating deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required, increased construction costs or increased financial risk due to potential problems with collapsible deposits.

Compressible soils on-site have a maximum hazard rating of very low. The description stating compressibility and uneven settlement problems are not likely to be significant on the site for most land uses. Avoid large differential loadings of ground. Draining or de-water ground near the property will not need technical advice. Extra construction costs are not likely.

Running sand has a maximum hazard rating of very low within 50m of the site study area. Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless the water table rises rapidly. For new build consider the consequences of soil and groundwater conditions during and after construction.

The site study area is in a Radon Affected Area, as between 3 and 5% of properties are above the action level. Basic radon protective measures are necessary. If planning on building an extension or a new build property basic radon protective measures will need to be installed in accordance with the Building Research Establishment guidance on radon protective measures for new dwellings (BR211 2015).

4.4 Data Review Summary

Upon review of the geotechnical and geo-environmental data collected from all sources (including geology, site history and both Groundsure reports), a number of features regarding historical/current land use within the locality have been identified that may have the potential to influence the development. A summary of these features and potential contaminants associated with each are as follows:

- Historical mapping does show development on the site, the potential for Made Ground is highly likely. This source of this material could lead to the potential presence of the following – metals, semi-metals and non-metals (various), inorganic chemicals, asbestos, pH, phenols, aromatic hydrocarbons, and polycyclic aromatic hydrocarbons (PAHs).
- Shrink Swell Clays -Very Low (On-Site)
- Running Sands – Very Low (On-Site)
- Compressible Deposits – Very Low (On-Site)
- Collapsible Deposits – Very Low (On-Site)
- Landslides – Moderate (On-Site)
- Ground Dissolution of Soluble Rocks – Negligible (On-Site)

5.0 CONCEPTUAL SITE MODEL

5.1 Legal Framework for Contaminated Land

Part 2A of the Environmental Protection Act 1990 created a regime for the identification and remediation of contaminated land. Contaminated land is defined by the potential to cause significant harm to human health and/or the environment. It establishes that responsibility for deciding when land is contaminated lies solely with local authorities.

Part 2A of the Environmental Protection Act 1990, Section 78A (2) defines “Contaminated Land” as:

“any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that -

- (a) significant harm is being caused or there is a significant possibility of such harm being caused; or*
- (b) pollution of controlled waters is being, or is likely to be, caused.”*

The definition is subject to statutory guidance issued by the Secretary of State which defines significant harm and a significant possibility of such harm with respect to the definition of contaminated land. The statutory guidance sets the definition of contaminated land within the context of Government policy including the “suitable for use” approach.

Under the planning regime, land contamination is also a material consideration. A local authority has the duty to consider potential implications of contamination when it is considering applications for planning permission. A planning authority may require investigations to be undertaken where there is potential contamination or contamination is known to exist at a site before granting planning permission. Alternatively, planning permission may be conditional requiring appropriate investigation and, if necessary, remediation.

5.2 Conceptual Site Model

The Conceptual Site Model (CSM) is a representation of the current understanding of the site and its surrounding environment with regards to geology, groundwater, surface waters, and potential contamination on-site and adjacent off-site and any migration pathways.

The potential risks to the proposed development and adjacent land have been assessed by consideration of the potential pollution linkages. For a risk to exist there must be a source of contamination, a receptor that may be harmed, and a pathway by which the receptor could be exposed to the contaminant. Only when all three factors are present (i.e. source, pathway, and receptor) can a pollution linkage, and consequently an unacceptable risk, exist. The CSM considers all three elements and the potential for pollution linkages that may exist. If no linkage is identified, then there is no or negligible risk.

The CSM has been developed for the proposed end use (Residential) and each factor has been assessed in

terms of its relative position (on-site/off-site). A visual representation of the model is provided as Figure 3.

Sources

Potential sources or contamination (on-site) were identified by the data review (see section 4.4) with consideration to the site and surrounding land's past, present and potential future uses.

Several sources have been identified on-site in the form of a coal-level/ adit, railway sidings, tip, building between 1921-36 (Demolition spoil), possible colliery spoil heaps and general Made Ground.

Considering the area's hydrology and suspected groundwater migration direction, the risk of these features is Moderate – high.

Receptors

Considering the proposed site end use (Commercial), a number of receptors have been identified at risk during and subsequent to the proposed development (on-site), and in the surrounding areas (off-site). These are summarised as follows:

On-site

- Future site users – construction workers (during development), Residential Homeowners
- Controlled waters – groundwater, ('Secondary A') aquifer (Bedrock)
- Controlled waters – Surface Water (surface water drain)
- Possible services
- Historical Coal-Level/ Adit
- Railway Sidings
- Tip
- Building between 1927-36 demolition spoil

Off-site

- Local site users – residents and visitors
- Nearby controlled waters – groundwater, River Afan
- Nearby buildings and services – primarily residential

Pathways

Completing the pollutant linkage between source and receptor are pathways – the way in which they are connected. The type of sources identified have a range of ways of contaminating the receptors, and typically fall into the following categories:

- Direct contact – including dermal contact and ingestion
- Dust or land-gas migration through air (above or below ground level) and subsequent inhalation
- Leaching of contaminants into groundwater and aqueous phase migration into areas of direct contact

- Consumption of plant material (vegetable patch etc) grown on site

Considering sources and receptors both on-site and off-site, pathways exist in three forms: on-site to on-site, on-site to off-site, and off-site to on-site. A visual representation of the complete model and each pollutant linkage is provided as Figure 3 below.

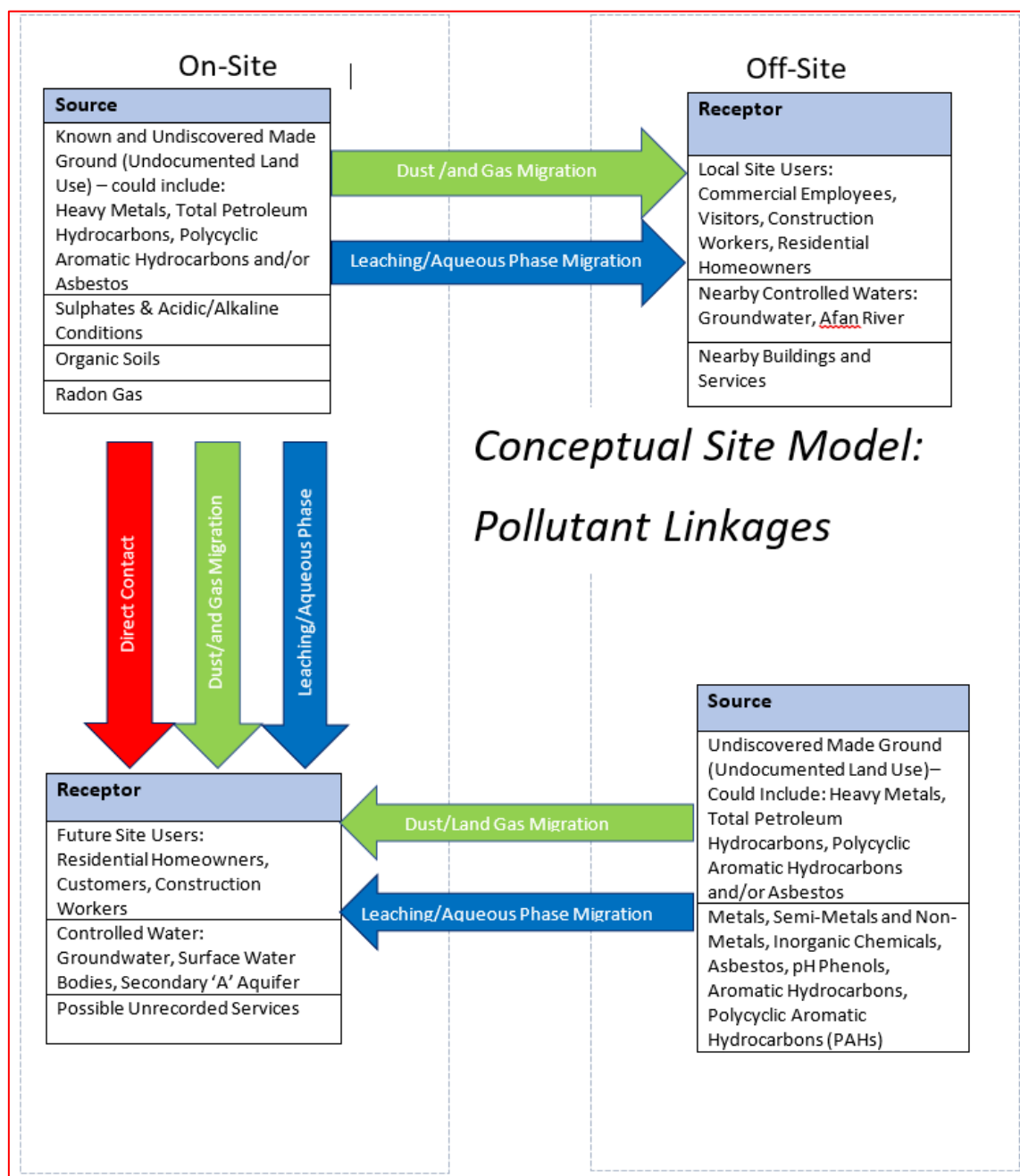


Figure 3: Conceptual Site Model: Pollutant Linkages

6.0 COAL MINING RISK ASSESSMENT

6.1 Shallow Lying Coal Seams

The available information indicates six seams to underlie the site at shallow to 210mbgl. Available information including borehole records, Coal Authority Interactive Viewer and BGS 1:50,000 geological maps indicate the 'Big Seam' outcrops across the southern area of the site study area. North (21m) of the study boundary is the 'Finery Seam' and South (22m) of the study boundary outcrops the 'Upper Six Feet Seam'. The 'Lower Four Feet Seam' outcrops 215m south of the site study area. Figure 4 below is a visual interpretation of the coal seams across the current site study area and their depth below the site.



Figure 4: Visual interpretation of the coal seams

6.2 Coal Authority Mining Report/ Interactive Viewer

The Coal Authority CON29M coal mining report (Ref:51002309812001) states the site study area is in a surface area that could be affected by underground mining in 6 seams of coal at 50m to 210m depth, and last worked in 1900. Any movement in the ground due to coal mining activity associated with these workings should have stopped by now. In addition, the property is in an area where the Coal Authority believes there is coal at or close to the surface. This coal may have been worked at some point in the past. The potential presence of

coal workings at or close to the surface should be considered, particularly prior to any site works or future development activity, as ground movement could still be a risk.

The property is not within a surface area that could be affected by present underground mining. As for the future, the study area is not in an area where the Coal Authority has received an application for and is currently considering whether to grant a licence to remove or work coal by underground methods. The study area is not in an area likely to be affected from any planned future underground mining. However, reserves of coal exist in the local area which could be worked at some point in the future. No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that land is at a risk of subsidence.

There is one recorded coal mine entry known to the Coal Authority within, or within 20 metres of the boundary of the site study area. There are no records to what steps, if any have been taken to treat the mine entry. Based on the Coal Authority's knowledge of the mining circumstances at the present time, therefore there may be unrecorded mine entries in the local area that do not appear on Coal Authority records.

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining. The site study area is not within the boundary of an opencast site from which coal has been removed by opencast methods and does not lie within 200m of an opencast site from which coal is being extracted in present day. There are also no licence requests outstanding to remove coal by opencast methods within 1000m of the site study boundary area.

The Coal Authority has no records of mine gas emissions requiring action. The site study area has not been subject to remedial works, by or on behalf of the Coal Authority, under its emergency surface hazard call out procedure. The study area is not in an area where a notice to withdraw support has been given or where notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support. The study area is not in an area where order has been made, under the provisions of the mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

Using information on the Coal Authority Interactive Viewer, the known reported dip of the 'Lower Four Feet Seam' is stated as 22.4° dip with a dip direction of 14°. Overpage in figure 4 is an illustration from the Coal Authority Interactive Viewer indicating the known dip of the 'Lower Four Feet Seam', which the Coal Authority state as the SW031I with the extent of the only recorded workings highlighted in blue.

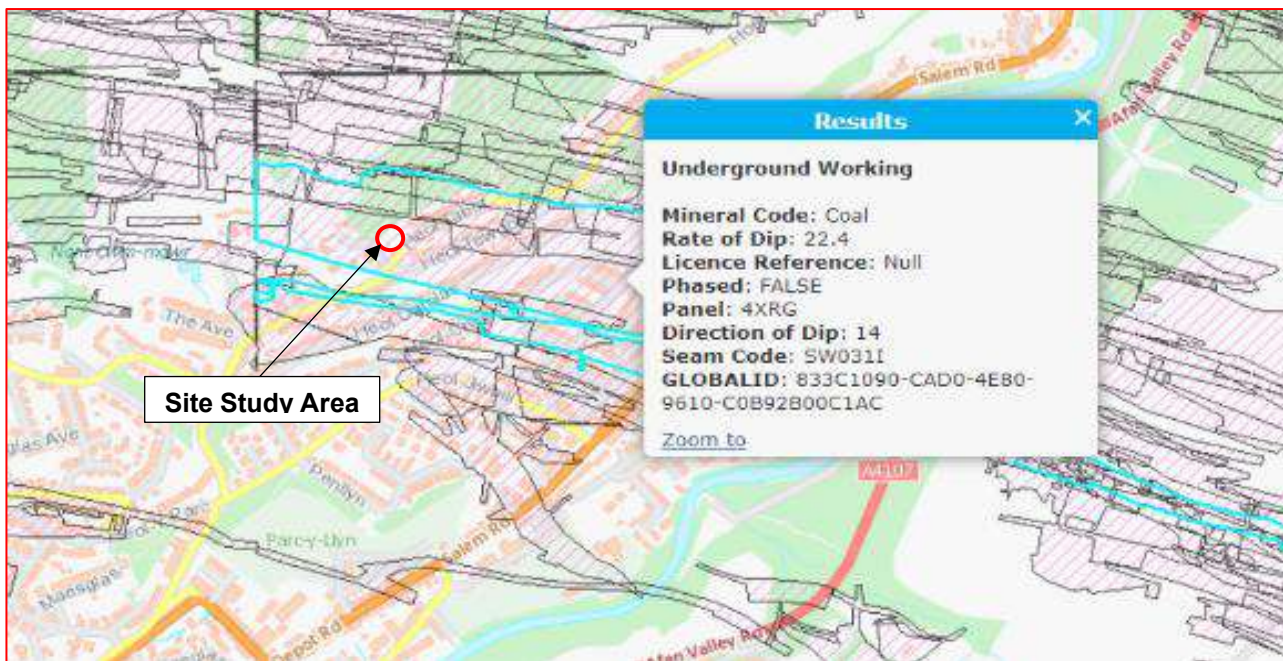


Figure 4: Coal Authority Interactive Viewer illustration of the recorded dip/ dip direction of the 'Lower Four Feet Seam'.

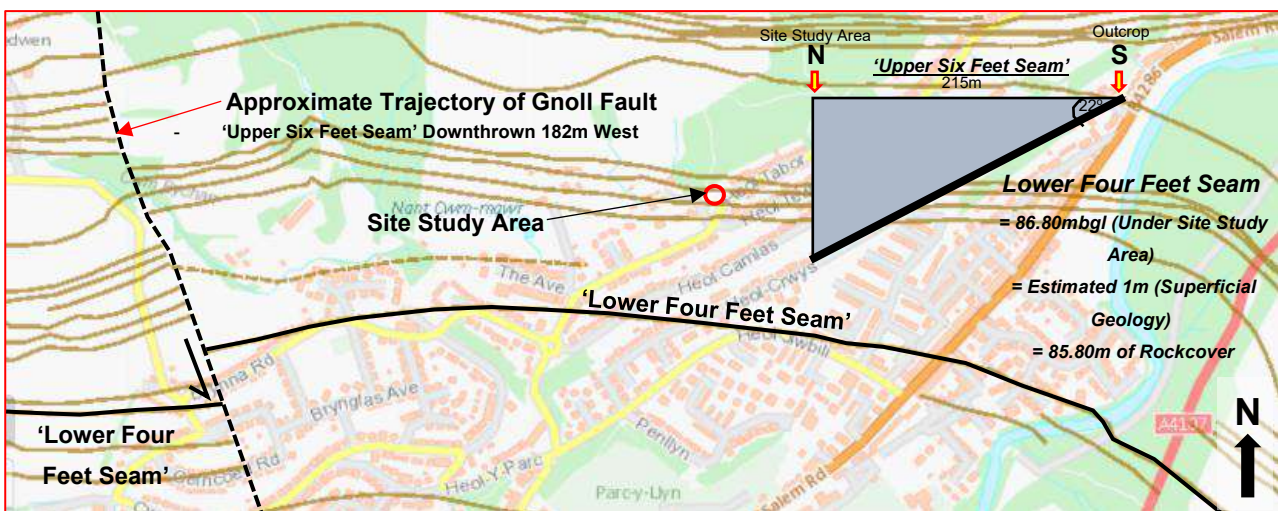


Figure 5: Coal Authority Interactive Viewer illustrating the recorded Outcrops of the 'Lower Four Feet Seam'

6.3 Shallow Mine Workings

The geological mapping indicates the Upper 6ft Coal seam potentially underlies the site at depths as shallow as 8.0mbgl. Although the Coal Authority data indicates no records of mine workings within this seam below the site, however the possibility of unrecorded workings within this seam exists and as such, the potential risk unknown.

In regards to the 'Upper 4 Feet' and the Big' there is a possibility of surface extracting / crop workings have taken place across the site, especially with the occurrence of an 'Adit' noted on the CON29M Mining Report

(Ref: 51002309812001). The risk associated with potential unrecorded shallow mine workings within the Big Seam is unknown, whilst the risk associated with the Upper 4ft Coal Seam is considered high within the northern area of the site due to the adit which is known to have been present.

The Coal Authority Interactive Viewer indicates the 'Lower Four Feet Seam' to have been worked under the site study area, however the report refers to the depth of mine workings being between 50m and 210m, whilst the geological mapping indicates these seams will underlie the site at approximate depths of 86mbgl. Therefore any mine working associated with these seams are unlikely to be at 'shallow' depths. The risk to the proposed development from these recorded workings is considered low based on the below:

The Lower Four Feet Seam is estimated to be present below the site at a depth of 86.80m with a known thickness of 1.15m (Geoindex Borehole Records). Based on the thickness of the seam the potential void migration can be calculated using a relationship which defines the maximum height to which a void can migrate above workings was developed by Price, Malkin and Knill (1969).

This is given by:- $H = h / (B - 1)$

Where H = Height to which a void can migrate (m)

h = Thickness of seam (m)

B = Measurement of the bulking effect of the rock.

The ratio B , will vary according to the rock type present. For sandstone it may be 1.5, whereas for a mudstone it would be 1.2.

Using the above method of calculation, the potential void migration of the Lower Four Feet Seam is 5.75m; and would therefore not reach the surface of the proposed site study area.

6.4 Mine Entries

The CON29M Mining Report (Ref: 51002309812001) and historic mapping indicates an adit potentially associated with the Upper Swansea 4ft Coal seam was located in the northern area of the site. There are no records available regarding any treatment of the adit and it is therefore assumed the adit remains untreated. The orientation of the adit is anticipated to be to the north.

In addition, the potential for crop workings within the Big and Upper 4ft Coal Seam exists across the site.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Overview

Following the Phase 1 Land Quality Assessment/Desk Study the following highlights have been identified:

Geotechnical:

- The geological map for the area indicates the site is to be underlain by no Superficial Deposits. The bedrock geology on the site study are is that of the South Wales Middle Coal Measures Formation.
- Shrink Swell Clays -Very Low (On-Site)
- Running Sands – Very Low (On-Site)
- Compressible Deposits – Negligible (On-Site)
- Collapsible Deposits – Very Low (On-Site)
- Landslides – Moderate (On-Site)
- Ground Dissolution of Soluble Rocks – Negligible (On-Site)
- A risk may exist to the proposed development from unrecorded shallow mine workings within the Upper 6ft Coal Seam and to a lesser extent, the Big and Upper 4ft Coal Seams which should be quantified.
- A potential high risk to the proposed development from mine entries (adit) associated with the Upper 4ft Coal Seam. A risk from crop workings in the Upper 4ft and Big Seams has been identified and which should be quantified.

Environmental:

- Any Made Ground that may be present could contain Heavy Metals, Total Petroleum Hydrocarbons, Polycyclic Aromatic Hydrocarbons and Asbestos. The presence of these deposits means a potential risk is present and should be considered. The potential for Made Ground to exist is considered high.
- Off-site sources of contamination include refuse heaps, disused tips, disused copper works, railway sidings and disused pit. Given the history of the site and surrounding area together with the position and distance to these potential sources it is considered the risk from these is sources is moderate – high.
- Ground gas emissions from organic and potential Made Ground on site sources can be a risk to future site end users.
- Depending on the permeability of the ground on site, there is a possibility of leaching of contaminated soils into the groundwater.
- The GroundSure® report states that basic radon protective measures are necessary.
- The South Wales Middle Coal Measures formation is classified as a 'Secondary A' aquifer.
- The closest watercourse is an inland river (E of Study Boundary) on the site study area.
- The Groundsure® report indicates the negligible risk of flooding on-site.

7.2 Evaluation and Recommendations

Several potential geotechnical and environmental issues have been identified within this study. The following evaluations and subsequent recommendations are made:

- In relation to any environmental/contaminated land issues, the desk study has identified a high possibility of Made Ground present on-site and therefore a potential source of land contamination, may pose a risk to future site users.
- For the purposes of development on site, it is recommended an intrusive ground investigation is undertaken, to include in-depth overview contaminant testing to ascertain any contamination on-site , and to identify suitable founding strata determine a suitable founding option to permit assessment.
- The investigation should include in-situ tests, soil sampling, and subsequent laboratory testing in order to gather the geotechnical and geo-environmental data required for design recommendations and environmental assessments to be made. There should also be the installation of groundwater/ land gas standpipes installed for monitoring purposes.
- To quantify the risk to the proposed development from potential historic mining related features below the site, rotary probe boreholes should be implemented to identify any potential unrecorded shallow mine workings or broken ground. Also, a trenching exercise is recommended to identify the locality/ condition of the historic coal-level/ adit on the site study area and to investigate possible crop workings within the Big and Upper 4ft Coal Seam.
- The laboratory test results, and in-situ test results should then be utilised in an Interpretative Report detailing the site findings, recommendations of foundation design and other geotechnical issues that may have come to light. In addition, a preliminary assessment of human health risk and environmental risk should also be undertaken. The findings of the intrusive investigation will be used to assess the requirement for any further intrusive ground investigation.

8.0 REFERENCES

British Geological Survey:

- British Geological Survey (BGS) Sheet 247 'Swansea' 1:50,000.
- BGS Lexicon of Named Rock Units (www.bgs.ac.uk/lexicon)
- BGS Geology of Britain Viewer (www.bgs.ac.uk)

Environmental and Ground Stability:

- GroundSure® GS-7066560

Coal Authority CON29M Mining Report

Environmental Protection Act 1990

Ordnance Survey Plans:

- Collection of Historical Plans from 1878 to 2014, at 1:2,500, 1:10,560 and 1:10,000 scale.

Environment Agency

- *Groundwater Vulnerability National Dataset User Guide* (2009)

APPENDIX I – SITE PLANS

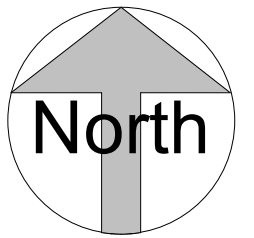


1 Location Plan
1 : 1250



2 Proposed Site Plan
1 : 500

NOTES:



DRAWING STATUS

Outline Planning

PROJECT

Land at Heol Tabor, Cwmavon

TITLE

Location Plan & Proposed Site Plan

CLIENT

Mr W Goodridge

DRAWN BY
Gareth Owen

DATE
19.08.20

SCALE (@A3)
As indicated

PROJECT NO.
GOCN WG01

DRAWING NO.
A100

REV
B

GO CONCEPT DESIGNS LTD, 9 DARWIN RD, PORT TALBOT, SA12 6BT
gareth@goconceptdesigns.co.uk

APPENDIX II – GROUNDSURE REPORTS

LAND OFF HEOL TABOR, CWMAYON, PORT TALBOT, SA12 9PR**Order Details**

Date: 18/09/2020
Your ref: Q0353
Our Ref: GS-7066560
Client: Quantum Geotechnic Ltd

Site Details

Location: 278207 192713
Area: 0.23 ha
Authority: [Castell-nedd Port Talbot - Neath Port Talbot County Borough](#)

**Summary of findings**

p. 2

Aerial image

p. 8

OS MasterMap site plan

p.12

groundsure.com/insightuserguide

Contact us with any questions at:

info@groundsure.com

08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	1.1	<u>Historical industrial land uses</u>	8	5	56	90	-
19	1.2	<u>Historical tanks</u>	0	0	1	15	-
20	1.3	<u>Historical energy features</u>	0	0	6	25	-
22	1.4	Historical petrol stations	0	0	0	0	-
22	1.5	<u>Historical garages</u>	0	0	0	2	-
22	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
23	2.1	<u>Historical industrial land uses</u>	10	5	65	116	-
31	2.2	<u>Historical tanks</u>	0	0	1	27	-
32	2.3	<u>Historical energy features</u>	0	0	7	34	-
34	2.4	Historical petrol stations	0	0	0	0	-
34	2.5	<u>Historical garages</u>	0	0	0	4	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
35	3.1	Active or recent landfill	0	0	0	0	-
35	3.2	Historical landfill (BGS records)	0	0	0	0	-
36	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
36	3.4	<u>Historical landfill (EA/NRW records)</u>	1	0	1	0	-
36	3.5	Historical waste sites	0	0	0	0	-
37	3.6	Licensed waste sites	0	0	0	0	-
37	3.7	<u>Waste exemptions</u>	0	0	0	3	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
38	4.1	<u>Recent industrial land uses</u>	0	0	2	-	-
39	4.2	Current or recent petrol stations	0	0	0	0	-
39	4.3	Electricity cables	0	0	0	0	-
39	4.4	Gas pipelines	0	0	0	0	-
39	4.5	Sites determined as Contaminated Land	0	0	0	0	-



39	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
40	4.7	Regulated explosive sites	0	0	0	0	-
40	4.8	Hazardous substance storage/usage	0	0	0	0	-
40	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
40	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
40	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
41	4.12	Radioactive Substance Authorisations	0	0	0	0	-
41	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
41	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
41	4.15	Pollutant release to public sewer	0	0	0	0	-
41	4.16	List 1 Dangerous Substances	0	0	0	0	-
42	4.17	List 2 Dangerous Substances	0	0	0	0	-
42	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
42	4.19	Pollution inventory substances	0	0	0	0	-
42	4.20	Pollution inventory waste transfers	0	0	0	0	-
42	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
43	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
45	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
46	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
47	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
47	5.5	Groundwater vulnerability- local information	None (within 0m)				
48	5.6	<u>Groundwater abstractions</u>	0	0	0	0	1
49	5.7	Surface water abstractions	0	0	0	0	0
49	5.8	<u>Potable abstractions</u>	0	0	0	0	1
50	5.9	Source Protection Zones	0	0	0	0	-
50	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
51	6.1	<u>Water Network (OS MasterMap)</u>	6	0	4	-	-



52	6.2	<u>Surface water features</u>	1	0	3	-	-
53	6.3	<u>WFD Surface water body catchments</u>	1	-	-	-	-
53	6.4	<u>WFD Surface water bodies</u>	0	0	0	-	-
53	6.5	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
55	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
55	7.2	Historical Flood Events	0	0	0	-	-
55	7.3	Flood Defences	0	0	0	-	-
55	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
56	7.5	Flood Storage Areas	0	0	0	-	-
57	7.6	Flood Zone 2	None (within 50m)				
57	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
58	8.1	<u>Surface water flooding</u>	1 in 100 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding					
60	9.1	<u>Groundwater flooding</u>	Negligible (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
61	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
62	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
62	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
62	10.4	Special Protection Areas (SPA)	0	0	0	0	0
62	10.5	National Nature Reserves (NNR)	0	0	0	0	0
63	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
63	10.7	<u>Designated Ancient Woodland</u>	0	0	0	0	52
65	10.8	Biosphere Reserves	0	0	0	0	0
65	10.9	<u>Forest Parks</u>	0	0	1	0	3
66	10.10	Marine Conservation Zones	0	0	0	0	0
66	10.11	Green Belt	0	0	0	0	0
66	10.12	Proposed Ramsar sites	0	0	0	0	0



66	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
66	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
67	10.15	Nitrate Sensitive Areas	0	0	0	0	0
67	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
68	10.17	SSSI Impact Risk Zones	0	-	-	-	-
68	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
69	11.1	World Heritage Sites	0	0	0	-	-
69	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
69	11.3	National Parks	0	0	0	-	-
69	11.4	Listed Buildings	0	0	0	-	-
70	11.5	Conservation Areas	0	0	0	-	-
70	11.6	Scheduled Ancient Monuments	0	0	0	-	-
70	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
71	12.1	<u>Agricultural Land Classification</u>	Grade 3b (within 250m)				
72	12.2	Open Access Land	0	0	0	-	-
72	12.3	Tree Felling Licences	0	0	0	-	-
72	12.4	Environmental Stewardship Schemes	0	0	0	-	-
73	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
74	13.1	Priority Habitat Inventory	0	0	0	-	-
74	13.2	Habitat Networks	0	0	0	-	-
74	13.3	Open Mosaic Habitat	0	0	0	-	-
74	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
75	14.1	<u>10k Availability</u>	Identified (within 500m)				
76	14.2	<u>Artificial and made ground (10k)</u>	1	0	2	0	-
77	14.3	<u>Superficial geology (10k)</u>	0	0	1	2	-



78	14.4	Landslip (10k)	0	0	0	0	-
79	14.5	<u>Bedrock geology (10k)</u>	1	1	2	2	-
80	14.6	<u>Bedrock faults and other linear features (10k)</u>	3	1	8	29	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
82	15.1	<u>50k Availability</u>	Identified (within 500m)				
83	15.2	<u>Artificial and made ground (50k)</u>	1	0	2	0	-
84	15.3	<u>Artificial ground permeability (50k)</u>	1	0	-	-	-
85	15.4	<u>Superficial geology (50k)</u>	0	0	1	2	-
86	15.5	Superficial permeability (50k)	None (within 50m)				
86	15.6	Landslip (50k)	0	0	0	0	-
86	15.7	Landslip permeability (50k)	None (within 50m)				
87	15.8	<u>Bedrock geology (50k)</u>	1	0	3	2	-
88	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
88	15.10	<u>Bedrock faults and other linear features (50k)</u>	1	1	6	18	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
90	16.1	<u>BGS Boreholes</u>	0	6	25	-	-
Page	Section	Natural ground subsidence					
92	17.1	<u>Shrink swell clays</u>	Very low (within 50m)				
93	17.2	<u>Running sands</u>	Very low (within 50m)				
95	17.3	<u>Compressible deposits</u>	Very low (within 50m)				
97	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
98	17.5	<u>Landslides</u>	Moderate (within 50m)				
100	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
102	18.1	Natural cavities	0	0	0	0	-
103	18.2	<u>BritPits</u>	0	0	3	1	-
104	18.3	<u>Surface ground workings</u>	9	2	55	-	-
106	18.4	<u>Underground workings</u>	0	1	7	6	53
109	18.5	Historical Mineral Planning Areas	0	0	0	0	-



109	18.6	<u>Non-coal mining</u>	0	0	0	2	0
110	18.7	Mining cavities	0	0	0	0	0
110	18.8	JPB mining areas	None (within 0m)				
110	18.9	<u>Coal mining</u>	Identified (within 0m)				
110	18.10	Brine areas	None (within 0m)				
111	18.11	Gypsum areas	None (within 0m)				
111	18.12	Tin mining	None (within 0m)				
111	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
112	19.1	<u>Radon</u>	Between 3% and 5% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
114	20.1	<u>BGS Estimated Background Soil Chemistry</u>	1	0	-	-	-
114	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
114	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
115	21.1	Underground railways (London)	0	0	0	-	-
115	21.2	Underground railways (Non-London)	0	0	0	-	-
116	21.3	Railway tunnels	0	0	0	-	-
116	21.4	<u>Historical railway and tunnel features</u>	1	4	2	-	-
116	21.5	Royal Mail tunnels	0	0	0	-	-
117	21.6	Historical railways	0	0	0	-	-
117	21.7	Railways	0	0	0	-	-
117	21.8	Crossrail 1	0	0	0	0	-
117	21.9	Crossrail 2	0	0	0	0	-
117	21.10	HS2	0	0	0	0	-



Recent aerial photograph



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Capture Date: 26/05/2017

Site Area: 0.23ha



Recent site history - 2014 aerial photograph



Capture Date: 23/07/2014

Site Area: 0.23ha



Recent site history - 2009 aerial photograph



Capture Date: 13/10/2009

Site Area: 0.23ha



Recent site history - 2000 aerial photograph

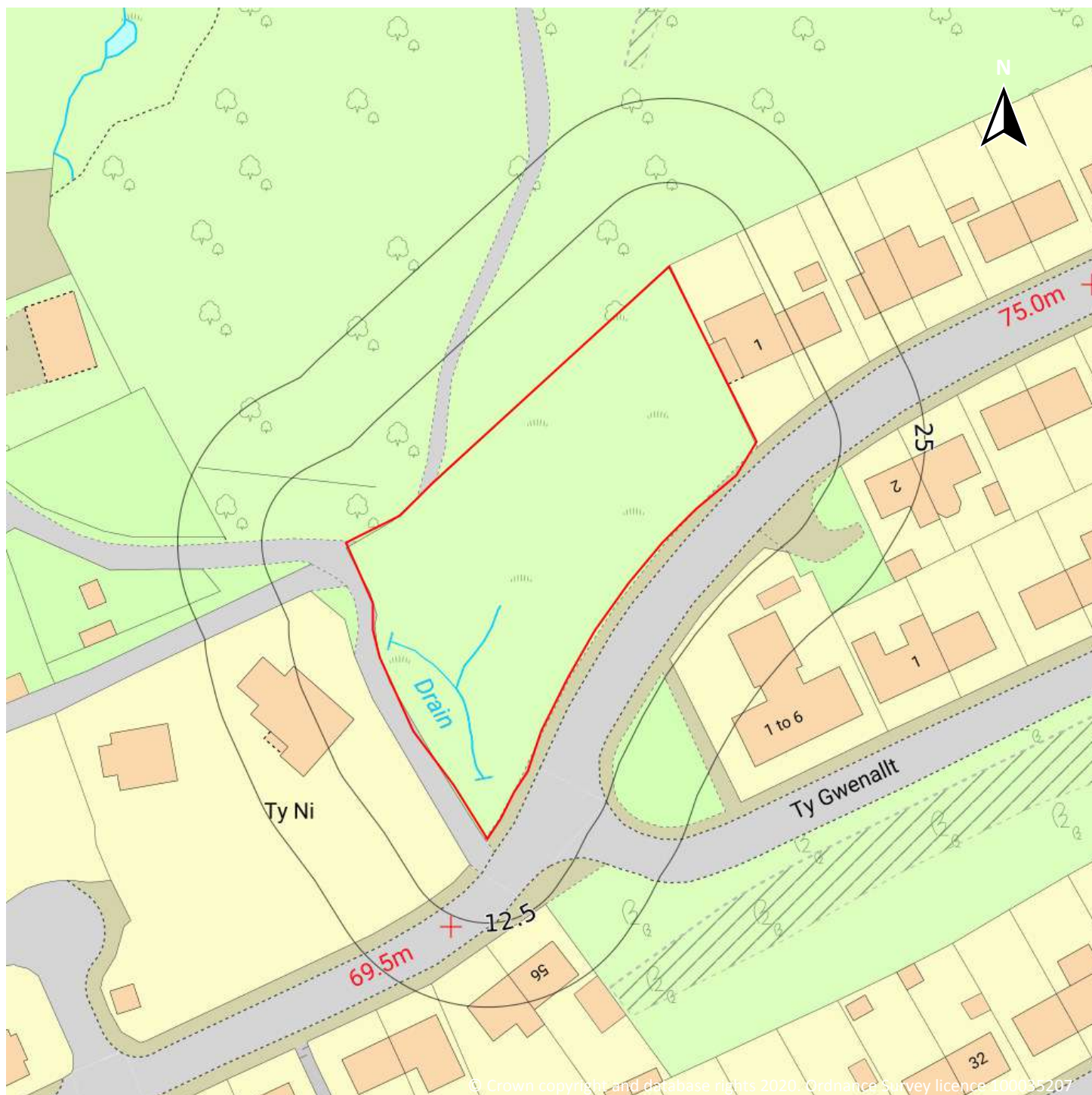


Capture Date: 18/06/2000

Site Area: 0.23ha



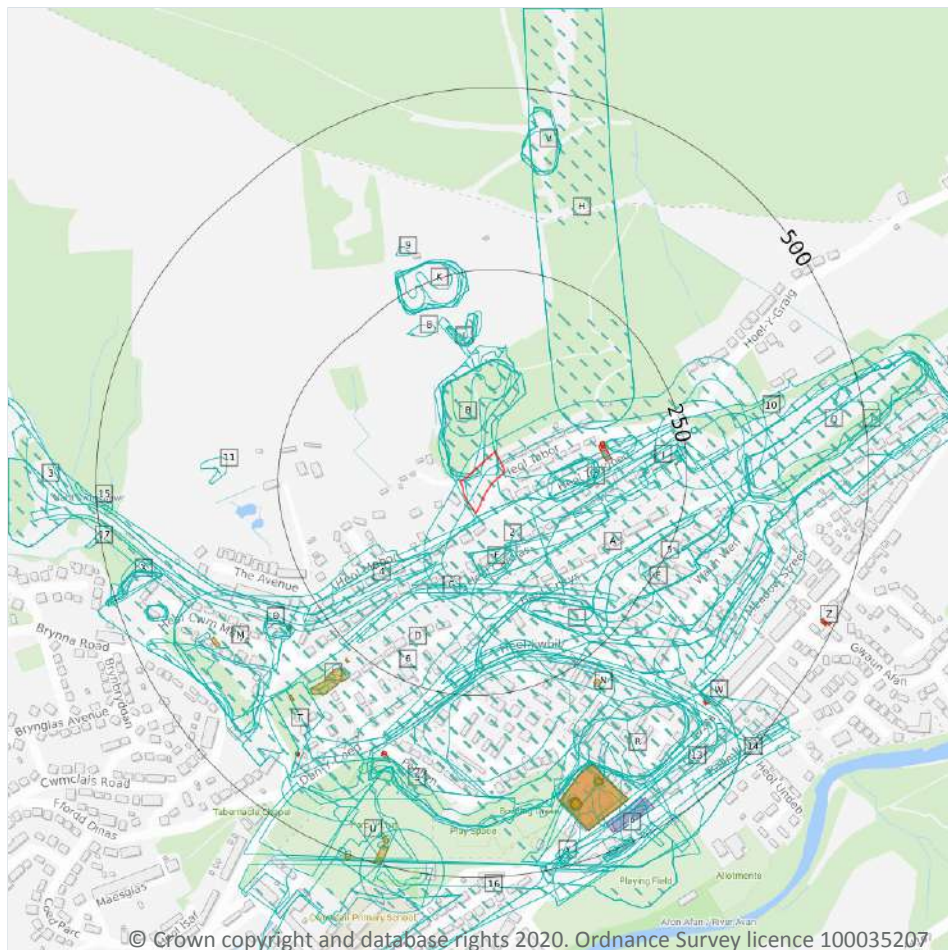
OS MasterMap site plan



Site Area: 0.23ha



1 Past land use



1.1 Historical industrial land uses

Records within 500m

159

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

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

ID	Location	Land use	Dates present	Group ID
1	On site	Unspecified Disused Pits	1921	365901



ID	Location	Land use	Dates present	Group ID
2	On site	Refuse Heap	1921	368691
A	On site	Disused Copper Works	1936	339370
B	On site	Refuse Heap	1957	342298
B	On site	Unspecified Disused Tip	1978	350781
B	On site	Unspecified Disused Tip	1995	366645
B	On site	Refuse Heap	1936	375701
C	On site	Unspecified Disused Pit	1957	362410
D	5m SE	Railway Sidings	1921	339396
D	5m SE	Railway Sidings	1921	376483
D	13m SE	Railway Sidings	1897	339351
B	36m NW	Old Coal Levels	1897	318957
C	49m E	Refuse Heap	1936	363811
C	52m S	Unspecified Disused Pit	1936	364255
E	52m S	Unspecified Heap	1957	341823
E	54m S	Unspecified Heap	1936	368865
C	59m SE	Refuse Heap	1957	370814
F	60m SE	Unspecified Disused Pit	1957	376229
C	61m E	Refuse Heap	1957	348116
E	62m SE	Unspecified Heap	1897	346265
F	63m SE	Copper Works	1897	322725
C	65m E	Coal Level	1897	338424
C	68m E	Refuse Heap	1936	357519
C	68m E	Coal Slant	1921	345084
3	84m SW	Tramway Sidings	1936	324103
4	86m SW	Unspecified Ground Workings	1936	333312
G	98m S	Unspecified Heap	1957	357581
G	101m S	Unspecified Heap	1936	378080
5	101m SE	Disused Copper Works	1936	363478



ID	Location	Land use	Dates present	Group ID
H	105m NE	Disused Flue	1995	347767
H	105m NE	Disused Flue	1978	355226
6	109m S	Steel Works	1897	320592
C	111m SE	Railway Buildings	1897	319116
I	119m N	Unspecified Pit	1921	348729
D	131m SE	Unspecified Works	1897	320921
C	140m E	Unspecified Heap	1897	327248
7	140m SE	Unspecified Disused Pit	1936	345577
A	140m SE	Refuse Heap	1921	363314
A	140m SE	Refuse Heap	1921	378010
F	143m SE	Refuse Heap	1936	379428
C	143m E	Refuse Heap	1957	340880
F	145m SE	Refuse Heap	1957	348411
C	145m E	Refuse Heap	1936	346203
I	150m N	Unspecified Old Level	1936	378534
I	151m N	Unspecified Ground Workings	1936	333300
I	153m N	Unspecified Old Level	1957	344907
A	155m SE	Unspecified Ground Workings	1978	342036
A	155m SE	Unspecified Ground Workings	1995	373500
I	160m N	Unspecified Pit	1921	344251
D	182m S	Cuttings	1957	372255
8	183m NW	Unspecified Quarry	1877	325663
J	184m E	Railway Building	1897	323631
D	185m S	Cuttings	1936	377765
J	190m E	Unspecified Disused Pit	1936	377774
D	197m S	Ground Workings and Refuse Heap	1936	332915
D	204m S	Refuse Heap	1957	368923
K	207m N	Unspecified Heap	1921	356315



ID	Location	Land use	Dates present	Group ID
K	207m N	Unspecified Disused Tip	1978	365886
K	207m N	Unspecified Disused Tip	1995	366837
D	208m S	Cuttings	1957	353625
K	208m N	Unspecified Old Level	1936	377323
J	210m E	Unspecified Disused Pit	1921	366924
D	211m S	Refuse Heap	1936	342388
K	212m N	Unspecified Old Level	1957	347353
K	214m N	Old Coal Level	1897	331318
D	221m S	Unspecified Heap	1897	327162
K	223m NW	Old Coal Levels	1897	318958
F	226m SE	Unspecified Pit	1877	335742
J	238m E	Refuse Heap	1957	338689
J	262m E	Unspecified Disused Shaft	1995	346827
J	262m E	Unspecified Disused Shaft	1978	349170
M	274m SW	Tin Plate Works	1897	321977
L	280m SW	Unspecified Tanks	1897	363356
L	282m SW	Unspecified Tanks	1921	365464
N	286m SE	Unspecified Disused Pit	1921	344053
9	295m NW	Old Coal Level	1921	353385
O	295m SW	Refuse Heap	1921	352292
O	299m SW	Unspecified Ground Workings	1936	333311
O	300m SW	Unspecified Heap	1957	354198
O	301m SW	Unspecified Heap	1936	340447
P	319m SE	Coal Level	1877	338372
Q	321m E	Unspecified Disused Pit	1897	379919
10	321m E	Cuttings	1921 - 1936	356838
11	321m W	Unspecified Quarry	1877	325661
Q	325m E	Unspecified Heap	1978	358051



ID	Location	Land use	Dates present	Group ID
Q	325m E	Unspecified Heap	1995	362706
R	327m SE	Unspecified Heap	1957	375565
Q	330m E	Unspecified Heap	1957	371056
R	331m SE	Unspecified Heap	1936	364082
Q	331m E	Ground Workings and Refuse Heap	1936	332916
P	354m SE	Railway Sidings	1877	351067
M	354m SW	Refuse Heap	1921 - 1936	346905
T	355m SW	Tin Plate Works	1897	321978
S	356m S	Unspecified Pit	1897	354392
S	357m S	Unspecified Pit	1957	362688
M	357m SW	Refuse Heap	1936	375122
12	360m S	Unspecified Ground Workings	1936	333307
P	361m SE	Unspecified Ground Workings	1877	333308
U	366m S	Railway Sidings	1921	361199
U	366m S	Unspecified Disused Pits	1921	367555
M	371m SW	Refuse Heap	1957	340616
P	374m SE	Gas Works	1897	321791
P	381m SE	Unspecified Commercial/Industrial	1936	331166
V	385m N	Ground Workings and Refuse Heap	1936	332914
V	388m N	Unspecified Heap	1936	327255
V	388m N	Unspecified Ground Workings	1897 - 1921	359927
V	389m N	Unspecified Ground Workings	1957	340356
T	391m SW	Refuse Heap	1921	362347
W	394m SE	Police Station	1978	357388
W	394m SE	Police Station	1995	360754
P	394m SE	Unspecified Tank	1897 - 1936	374412
U	398m S	Brick Works	1897	357538
P	400m SE	Unspecified Tank	1957	343614



ID	Location	Land use	Dates present	Group ID
P	403m SE	Unspecified Tank	1936	353180
P	408m S	Gasometer	1897	321162
P	408m S	Unspecified Tank	1921 - 1936	354864
P	413m S	Unspecified Tank	1957	366161
P	415m S	Unspecified Tank	1936	354136
X	428m W	Unspecified Ground Workings	1921	364819
X	429m W	Unspecified Ground Workings	1936	376703
X	430m W	Unspecified Pit	1936	342282
X	431m W	Unspecified Pit	1957	375724
X	434m W	Unspecified Pit	1897	352256
U	437m S	Refuse Heap	1921	344373
X	437m W	Unspecified Heap	1936	377105
X	437m W	Refuse Heap	1921	345519
X	438m W	Unspecified Heap	1936	359787
P	439m SE	Railway Sidings	1957	361842
U	440m S	Brick Works	1921	347207
X	440m W	Unspecified Heap	1957	358974
P	441m SE	Railway Sidings	1936	359166
13	443m SE	Railway Building	1957	323629
U	444m S	Unspecified Kilns	1897	330942
U	457m S	Unspecified Tank	1897	320123
U	458m S	Unspecified Tanks	1921	364981
P	460m SE	Unspecified Pit	1877	335738
Q	461m E	Unspecified Pit	1957	335741
U	469m S	Unspecified Tank	1897	320124
Y	476m S	Railway Building	1897	343732
14	478m SE	Railway Sidings	1936	365599
15	479m W	Unspecified Ground Workings	1921	333303



ID	Location	Land use	Dates present	Group ID
Y	480m S	Railway Building	1921	372803
16	481m S	Railway Sidings	1897 - 1914	339705
U	481m S	Unspecified Works	1897	347576
Y	482m S	Railway Building	1957	349605
Y	483m S	Railway Building	1936	379825
P	484m SE	Railway Station	1897	331985
P	488m SE	Railway Sidings	1936	355584
P	489m SE	Goods Shed	1921	379773
U	489m S	Unspecified Tank	1921	373051
U	491m S	Unspecified Commercial/Industrial	1914	331167
P	492m SE	Railway Station	1957	350256
U	494m S	Unspecified Tank	1897	320120
P	495m SE	Railway Station	1921	375962
P	495m SE	Railway Station	1936	342859
U	495m S	Unspecified Tank	1921	354027
17	496m W	Unspecified Ground Workings	1921	333304
P	496m SE	Railway Station	1936	350502
U	499m S	Unspecified Ground Workings	1897	333309

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

16

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

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



ID	Location	Land use	Dates present	Group ID
J	234m E	Unspecified Tank	1882	38398
L	267m SW	Unspecified Tank	1919	38365
N	282m SE	Unspecified Tank	1882 - 1919	41439
L	283m SW	Tanks	1899 - 1919	41879
S	347m SW	Unspecified Tank	1882	38355
T	356m SW	Unspecified Tank	1936 - 1977	44177
P	380m SE	Gas Works	1882 - 1899	40433
M	393m SW	Unspecified Tank	1919	38366
P	399m SE	Unspecified Tank	1899 - 1936	42191
P	400m SE	Gasometer	1882	39899
P	413m S	Unspecified Tank	1919 - 1936	43922
P	415m S	Unspecified Tank	1964	43912
P	416m S	Gasometer	1899	39898
U	460m S	Tanks	1899 - 1919	43961
U	473m S	Tanks	1899 - 1919	40855
U	500m S	Unspecified Tank	1899 - 1919	41170

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

31

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

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

ID	Location	Land use	Dates present	Group ID
C	133m E	Electricity Substation	1992	20367
C	133m E	Electricity Transformer	1984	21454



ID	Location	Land use	Dates present	Group ID
C	136m E	Electricity Transformer	1969	21712
C	136m E	Electricity Transformer	1974	21557
C	137m E	Electricity Transformer	-	18907
C	137m E	Electricity Substation	1994	23555
O	296m SW	Electricity Substation	1998	20579
O	296m SW	Electricity Substation	1993	22321
O	297m SW	Electricity Substation	1977 - 1981	22126
O	298m SW	Electricity Substation	1981 - 1983	21345
S	350m S	Electricity Transformer	-	18888
S	350m S	Electricity Substation	1994	19331
S	353m S	Electricity Transformer	1969 - 1992	21481
P	380m SE	Gas Works	1882 - 1899	23421
P	400m SE	Gasometer	1882	20039
W	403m SE	Electricity Transformer	-	18892
W	403m SE	Electricity Substation	1994	19332
W	406m SE	Electricity Transformer	1974	19808
T	408m SW	Gas Governor	1993	21067
T	408m SW	Gas Governor	1998	22076
W	410m SE	Electricity Transformer	1992	19807
T	410m SW	Gas Governor	1981	21126
W	411m SE	Electricity Transformer	1984 - 1992	23120
T	411m SW	Gas Governor	1983	21572
T	411m SW	Gas Governor	1981	22722
P	416m S	Gasometer	1899	20038
Z	481m SE	Electricity Substation	1994	19335
Z	484m SE	Electricity Substation	1992	21145
Z	485m SE	Electricity Substation	-	18894
Z	485m SE	Electricity Transformer	1969 - 1974	22349



ID	Location	Land use	Dates present	Group ID
Z	491m SE	Electricity Substation	1984	19333

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0
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Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, 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	2
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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 13**

ID	Location	Land use	Dates present	Group ID
P	451m SE	Garage	1974	6963
P	455m SE	Garage	1984 - 1992	7616

This data is sourced from Ordnance Survey / Groundsure.

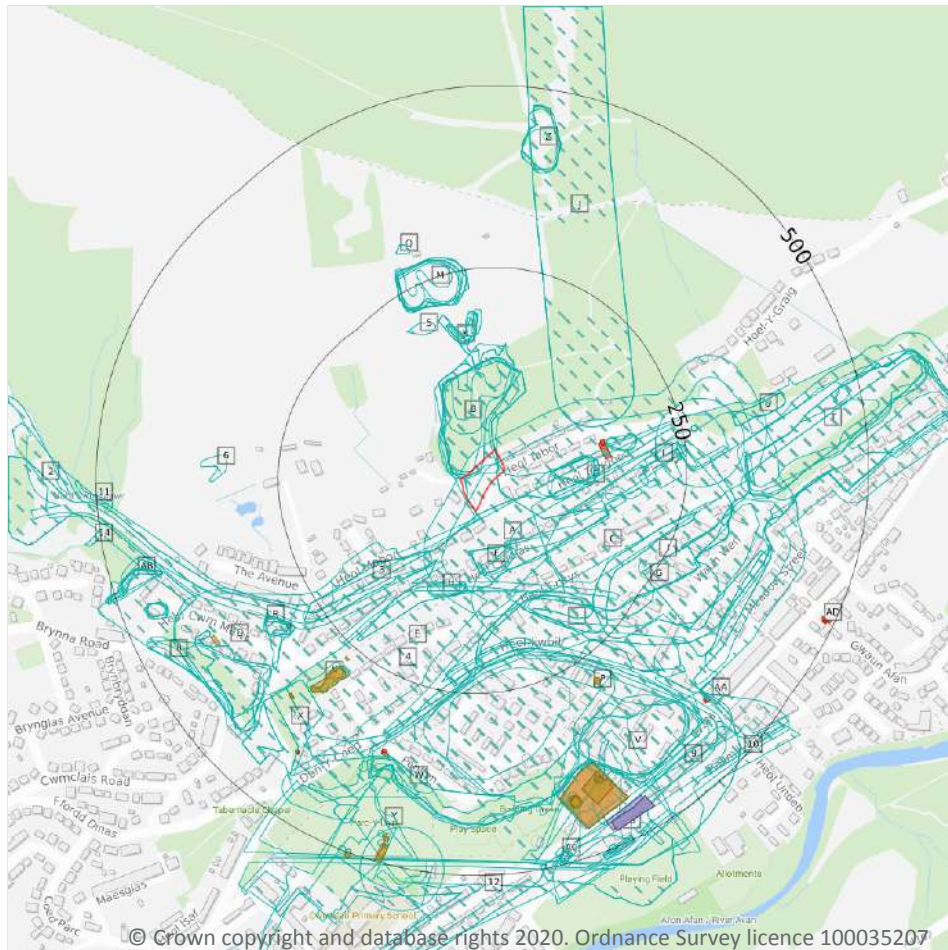
1.6 Historical military land

Records within 500m	0
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Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

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

2 Past land use - un-grouped



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

2.1 Historical industrial land uses

Records within 500m

196

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

Features are displayed on the Past land use - un-grouped map on **page 23**

ID	Location	Land Use	Date	Group ID
1	On site	Unspecified Disused Pits	1921	365901
A	On site	Refuse Heap	1921	368691
A	On site	Refuse Heap	1921	368691



ID	Location	Land Use	Date	Group ID
B	On site	Refuse Heap	1936	375701
B	On site	Refuse Heap	1936	375701
B	On site	Unspecified Disused Tip	1978	350781
B	On site	Refuse Heap	1957	342298
B	On site	Unspecified Disused Tip	1995	366645
C	On site	Disused Copper Works	1936	339370
D	On site	Unspecified Disused Pit	1957	362410
E	5m SE	Railway Sidings	1921	339396
E	5m SE	Railway Sidings	1921	376483
E	13m SE	Railway Sidings	1897	339351
B	36m NW	Old Coal Levels	1897	318957
D	49m E	Refuse Heap	1936	363811
D	52m S	Unspecified Disused Pit	1936	364255
F	52m S	Unspecified Heap	1957	341823
F	54m S	Unspecified Heap	1936	368865
D	59m SE	Refuse Heap	1957	370814
G	60m SE	Unspecified Disused Pit	1957	376229
D	61m E	Refuse Heap	1957	348116
F	62m SE	Unspecified Heap	1897	346265
G	63m SE	Copper Works	1897	322725
D	65m E	Coal Level	1897	338424
D	68m E	Refuse Heap	1936	357519
D	68m E	Coal Slant	1921	345084
D	68m E	Coal Slant	1921	345084
2	84m SW	Tramway Sidings	1936	324103
3	86m SW	Unspecified Ground Workings	1936	333312
H	98m S	Unspecified Heap	1957	357581
H	101m S	Unspecified Heap	1936	378080



ID	Location	Land Use	Date	Group ID
I	101m SE	Disused Copper Works	1936	363478
H	104m S	Unspecified Heap	1936	378080
J	105m NE	Disused Flue	1978	355226
J	105m NE	Disused Flue	1995	347767
4	109m S	Steel Works	1897	320592
D	111m SE	Railway Buildings	1897	319116
K	119m N	Unspecified Pit	1921	348729
K	119m N	Unspecified Pit	1921	348729
E	131m SE	Unspecified Works	1897	320921
D	140m E	Unspecified Heap	1897	327248
C	140m SE	Refuse Heap	1921	378010
I	140m SE	Refuse Heap	1921	363314
I	140m SE	Unspecified Disused Pit	1936	345577
G	143m SE	Refuse Heap	1936	379428
D	143m E	Refuse Heap	1957	340880
G	145m SE	Refuse Heap	1957	348411
D	145m E	Refuse Heap	1936	346203
D	147m E	Refuse Heap	1936	346203
K	150m N	Unspecified Old Level	1936	378534
K	151m N	Unspecified Ground Workings	1936	333300
K	153m N	Unspecified Old Level	1957	344907
C	155m SE	Unspecified Ground Workings	1978	342036
C	155m SE	Unspecified Ground Workings	1995	373500
K	158m N	Unspecified Old Level	1936	378534
K	160m N	Unspecified Pit	1921	344251
K	160m N	Unspecified Pit	1921	344251
E	182m S	Cuttings	1957	372255
5	183m NW	Unspecified Quarry	1877	325663



ID	Location	Land Use	Date	Group ID
L	184m E	Railway Building	1897	323631
E	185m S	Cuttings	1936	377765
L	190m E	Unspecified Disused Pit	1936	377774
E	197m S	Ground Workings and Refuse Heap	1936	332915
E	204m S	Refuse Heap	1957	368923
E	205m S	Refuse Heap	1921	363314
M	207m N	Unspecified Heap	1921	356315
M	207m N	Unspecified Heap	1921	356315
M	207m N	Unspecified Disused Tip	1978	365886
M	207m N	Unspecified Disused Tip	1995	366837
E	208m S	Cuttings	1957	353625
M	208m N	Unspecified Old Level	1936	377323
L	210m E	Unspecified Disused Pit	1921	366924
M	211m N	Unspecified Old Level	1936	377323
E	211m S	Refuse Heap	1936	342388
M	212m N	Unspecified Old Level	1957	347353
M	214m N	Old Coal Level	1897	331318
E	221m S	Unspecified Heap	1897	327162
M	223m NW	Old Coal Levels	1897	318958
G	226m SE	Unspecified Pit	1877	335742
L	238m E	Refuse Heap	1957	338689
L	262m E	Unspecified Disused Shaft	1978	349170
L	262m E	Unspecified Disused Shaft	1995	346827
O	274m SW	Tin Plate Works	1897	321977
N	280m SW	Unspecified Tanks	1897	363356
N	282m SW	Unspecified Tanks	1921	365464
N	282m SW	Unspecified Tanks	1921	365464
P	286m SE	Unspecified Disused Pit	1921	344053



ID	Location	Land Use	Date	Group ID
Q	295m NW	Old Coal Level	1921	353385
Q	295m NW	Old Coal Level	1921	353385
R	295m SW	Refuse Heap	1921	352292
R	295m SW	Refuse Heap	1921	352292
R	299m SW	Unspecified Ground Workings	1936	333311
R	300m SW	Unspecified Heap	1957	354198
R	301m SW	Unspecified Heap	1936	340447
S	319m SE	Coal Level	1877	338372
T	321m E	Unspecified Disused Pit	1897	379919
U	321m E	Cuttings	1936	356838
U	321m E	Cuttings	1921	356838
U	321m E	Cuttings	1921	356838
6	321m W	Unspecified Quarry	1877	325661
T	325m E	Unspecified Heap	1978	358051
T	325m E	Unspecified Heap	1995	362706
V	327m SE	Unspecified Heap	1957	375565
T	330m E	Unspecified Heap	1957	371056
V	331m SE	Unspecified Heap	1936	364082
T	331m E	Ground Workings and Refuse Heap	1936	332916
S	354m SE	Railway Sidings	1877	351067
O	354m SW	Refuse Heap	1921	346905
O	354m SW	Refuse Heap	1936	346905
O	354m SW	Refuse Heap	1921	346905
X	355m SW	Tin Plate Works	1897	321978
W	356m S	Unspecified Pit	1897	354392
W	357m S	Unspecified Pit	1957	362688
O	357m SW	Refuse Heap	1936	375122
7	360m S	Unspecified Ground Workings	1936	333307



ID	Location	Land Use	Date	Group ID
S	361m SE	Unspecified Ground Workings	1877	333308
Y	366m S	Unspecified Disused Pits	1921	367555
Y	366m S	Railway Sidings	1921	361199
O	371m SW	Refuse Heap	1957	340616
S	374m SE	Gas Works	1897	321791
S	381m SE	Unspecified Commercial/Industrial	1936	331166
Z	385m N	Ground Workings and Refuse Heap	1936	332914
Z	388m N	Unspecified Ground Workings	1921	359927
Z	388m N	Unspecified Ground Workings	1897	359927
Z	388m N	Unspecified Heap	1936	327255
Z	388m N	Unspecified Ground Workings	1921	359927
Z	389m N	Unspecified Ground Workings	1957	340356
X	391m SW	Refuse Heap	1921	362347
X	391m SW	Refuse Heap	1921	362347
AA	394m SE	Police Station	1978	357388
AA	394m SE	Police Station	1995	360754
S	394m SE	Unspecified Tank	1921	374412
S	394m SE	Unspecified Tank	1897	374412
S	394m SE	Unspecified Tank	1936	374412
S	394m SE	Unspecified Tank	1921	374412
Y	398m S	Brick Works	1897	357538
S	400m SE	Unspecified Tank	1957	343614
S	403m SE	Unspecified Tank	1936	353180
S	408m S	Gasometer	1897	321162
S	408m S	Unspecified Tank	1921	354864
S	408m S	Unspecified Tank	1936	354864
S	408m S	Unspecified Tank	1921	354864
S	413m S	Unspecified Tank	1957	366161



ID	Location	Land Use	Date	Group ID
S	415m S	Unspecified Tank	1936	354136
AB	428m W	Unspecified Ground Workings	1921	364819
AB	428m W	Unspecified Ground Workings	1921	364819
AB	429m W	Unspecified Ground Workings	1936	376703
AB	430m W	Unspecified Pit	1936	342282
AB	431m W	Unspecified Pit	1957	375724
AB	434m W	Unspecified Pit	1897	352256
Y	437m S	Refuse Heap	1921	344373
Y	437m S	Refuse Heap	1921	344373
AB	437m W	Unspecified Heap	1936	377105
AB	437m W	Refuse Heap	1921	345519
AB	437m W	Refuse Heap	1921	345519
AB	438m W	Unspecified Heap	1936	359787
S	439m SE	Railway Sidings	1957	361842
Y	440m S	Brick Works	1921	347207
AB	440m W	Unspecified Heap	1957	358974
8	441m SW	Refuse Heap	1936	375122
S	441m SE	Railway Sidings	1936	359166
9	443m SE	Railway Building	1957	323629
Y	444m S	Unspecified Kilns	1897	330942
Y	457m S	Unspecified Tank	1897	320123
Y	458m S	Unspecified Tanks	1921	364981
Y	458m S	Unspecified Tanks	1921	364981
S	460m SE	Unspecified Pit	1877	335738
T	461m E	Unspecified Pit	1957	335741
Y	469m S	Unspecified Tank	1897	320124
AC	476m S	Railway Building	1897	343732
10	478m SE	Railway Sidings	1936	365599



ID	Location	Land Use	Date	Group ID
11	479m W	Unspecified Ground Workings	1921	333303
AC	480m S	Railway Building	1921	372803
AC	480m S	Railway Building	1921	372803
12	481m S	Railway Sidings	1897	339705
Y	481m S	Unspecified Works	1897	347576
AC	482m S	Railway Building	1957	349605
AC	483m S	Railway Building	1936	379825
S	484m SE	Railway Station	1897	331985
13	488m S	Railway Sidings	1914	339705
S	488m SE	Railway Sidings	1936	355584
S	489m SE	Goods Shed	1921	379773
S	489m SE	Goods Shed	1921	379773
Y	489m S	Unspecified Tank	1921	373051
Y	489m S	Unspecified Tank	1921	373051
Y	491m S	Unspecified Commercial/Industrial	1914	331167
S	492m SE	Railway Station	1957	350256
Y	494m S	Unspecified Tank	1897	320120
S	495m SE	Railway Station	1921	375962
S	495m SE	Railway Station	1921	375962
S	495m SE	Railway Station	1936	342859
Y	495m S	Unspecified Tank	1921	354027
Y	495m S	Unspecified Tank	1921	354027
14	496m W	Unspecified Ground Workings	1921	333304
S	496m SE	Railway Station	1936	350502
Y	499m S	Unspecified Ground Workings	1897	333309

This data is sourced from Ordnance Survey / Groundsure.



2.2 Historical tanks

Records within 500m

28

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

Features are displayed on the Past land use - un-grouped map on **page 23**

ID	Location	Land Use	Date	Group ID
L	234m E	Unspecified Tank	1882	38398
N	267m SW	Unspecified Tank	1919	38365
P	282m SE	Unspecified Tank	1882	41439
P	282m SE	Unspecified Tank	1899	41439
P	282m SE	Unspecified Tank	1919	41439
N	283m SW	Tanks	1919	41879
N	284m SW	Tanks	1899	41879
W	347m SW	Unspecified Tank	1882	38355
X	356m SW	Unspecified Tank	1977	44177
X	356m SW	Unspecified Tank	1966	44177
X	356m SW	Unspecified Tank	1936	44177
S	380m SE	Gas Works	1899	40433
O	393m SW	Unspecified Tank	1919	38366
S	394m SE	Gas Works	1882	40433
S	399m SE	Unspecified Tank	1919	42191
S	399m SE	Unspecified Tank	1936	42191
S	400m SE	Gasometer	1882	39899
S	403m SE	Unspecified Tank	1899	42191
S	413m S	Unspecified Tank	1919	43922
S	413m S	Unspecified Tank	1936	43922
S	415m S	Unspecified Tank	1964	43912
S	416m S	Gasometer	1899	39898
Y	460m S	Tanks	1919	43961



ID	Location	Land Use	Date	Group ID
Y	463m S	Tanks	1899	43961
Y	473m S	Tanks	1919	40855
Y	475m S	Tanks	1899	40855
Y	500m S	Unspecified Tank	1899	41170
Y	500m S	Unspecified Tank	1919	41170

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

41

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

Features are displayed on the Past land use - un-grouped map on **page 23**

ID	Location	Land Use	Date	Group ID
D	133m E	Electricity Transformer	1984	21454
D	133m E	Electricity Substation	1992	20367
D	133m E	Electricity Substation	1992	20367
D	136m E	Electricity Transformer	1969	21712
D	136m E	Electricity Transformer	1974	21557
D	137m E	Electricity Substation	1994	23555
D	137m E	Electricity Transformer	-	18907
R	296m SW	Electricity Substation	1998	20579
R	296m SW	Electricity Substation	1993	22321
R	297m SW	Electricity Substation	1977	22126
R	297m SW	Electricity Substation	1981	22126
R	298m SW	Electricity Substation	1983	21345
R	298m SW	Electricity Substation	1981	21345
W	350m S	Electricity Substation	1994	19331
W	350m S	Electricity Transformer	-	18888



ID	Location	Land Use	Date	Group ID
W	353m S	Electricity Transformer	1969	21481
W	354m S	Electricity Transformer	1974	21481
W	354m S	Electricity Transformer	1992	21481
W	354m S	Electricity Transformer	1992	21481
S	380m SE	Gas Works	1899	23421
S	394m SE	Gas Works	1882	23421
S	400m SE	Gasometer	1882	20039
AA	403m SE	Electricity Substation	1994	19332
AA	403m SE	Electricity Transformer	-	18892
AA	406m SE	Electricity Transformer	1974	19808
X	408m SW	Gas Governor	1998	22076
X	408m SW	Gas Governor	1993	21067
AA	410m SE	Electricity Transformer	1992	19807
X	410m SW	Gas Governor	1981	21126
AA	411m SE	Electricity Transformer	1984	23120
AA	411m SE	Electricity Transformer	1992	23120
X	411m SW	Gas Governor	1983	21572
X	411m SW	Gas Governor	1981	22722
S	416m S	Gasometer	1899	20038
AD	481m SE	Electricity Substation	1994	19335
AD	484m SE	Electricity Substation	1992	21145
AD	484m SE	Electricity Substation	1992	21145
AD	485m SE	Electricity Substation	-	18894
AD	485m SE	Electricity Transformer	1969	22349
AD	485m SE	Electricity Transformer	1974	22349
AD	491m SE	Electricity Substation	1984	19333

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**4**

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 23**

ID	Location	Land Use	Date	Group ID
S	451m SE	Garage	1974	6963
S	455m SE	Garage	1992	7616
S	455m SE	Garage	1992	7616
S	455m SE	Garage	1984	7616

This data is sourced from Ordnance Survey / Groundsure.



3.3 Historical landfill (LA/mapping records)

Records within 500m

0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m

2

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

Features are displayed on the Waste and landfill map on **page 35**

ID	Location	Details		
1	On site	Site Address: Disused Tip off Heol Tabor Licence Holder Address: -	Waste Licence: - Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: - First Recorded - Last Recorded: -
2	202m N	Site Address: Tip - Disused Licence Holder Address: -	Waste Licence: - Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: - First Recorded - Last Recorded: -

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

3.5 Historical waste sites

Records within 500m

0

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

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

3.6 Licensed waste sites

Records within 500m

0

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

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

3.7 Waste exemptions

Records within 500m

3

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.

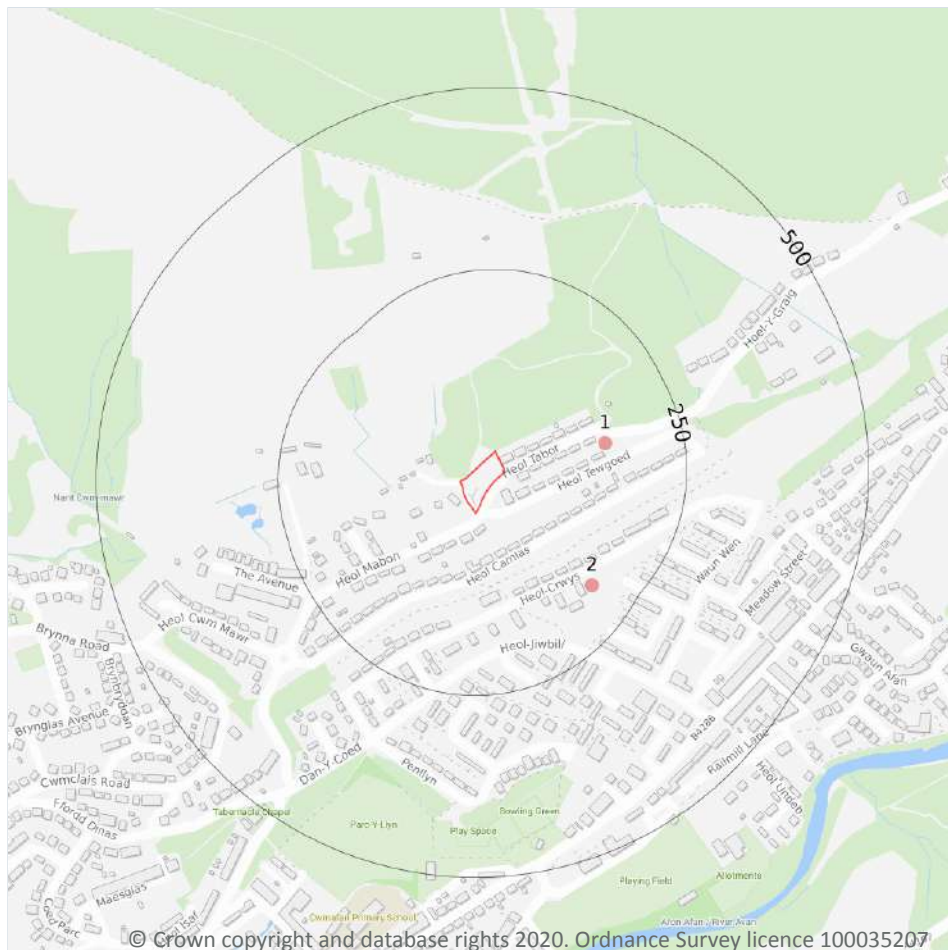
Features are displayed on the Waste and landfill map on **page 35**

ID	Location	Site	Reference	Category	Sub-Category	Description
3	367m SE	Adrian D Richards, The Pharmacy, 39 Heol Jiwbili, Cwmafan, Port Talbot, Neath Port Talbot, SA12 9nr	NRW-WME048531	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
4	367m SE	SBU Health Board Managed Practice, Health Centre, Penllyn, Cwmavon, Port Talbot, Castell-nedd Port Talbot, SA12 9PY	NRW-WME040396	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
5	482m SE	Davies Skips Hire, Unit 1, Brunel Industrial Estate, Cwmavon, Port Talbot, Castell-nedd Port Talbot, SA12 9DG	NRW-WME038948	Using waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Use of waste for a specified purpose

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

4.1 Recent industrial land uses

Records within 250m

2

Current potentially contaminative industrial sites.

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

ID	Location	Company	Address	Activity	Category
1	143m E	Electricity Sub Station	West Glamorgan, SA12	Electrical Features	Infrastructure and Facilities
2	187m SE	Electricity Sub Station	West Glamorgan, SA12	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.



4.2 Current or recent petrol stations

Records within 500m**0**

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m**0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m**0**

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m

0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m

0

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

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

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

Records within 500m

0

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m**0**

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m**0**

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

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m**0**

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

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

4.15 Pollutant release to public sewer

Records within 500m**0**

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m**0**

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

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

4.17 List 2 Dangerous Substances

Records within 500m

0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m

0

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

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

4.19 Pollution inventory substances

Records within 500m

0

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

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

4.20 Pollution inventory waste transfers

Records within 500m

0

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

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

4.21 Pollution inventory radioactive waste

Records within 500m

0

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

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

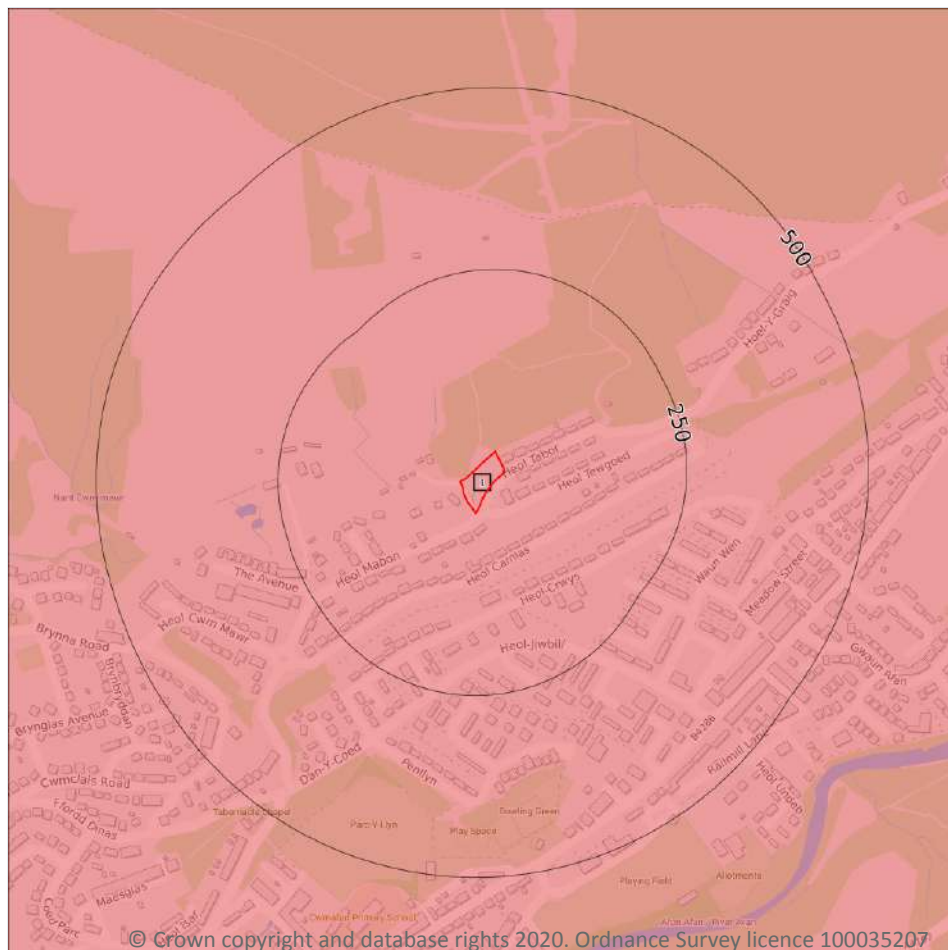


ID	Location	Designation	Description
3	422m W	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics 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

5.2 Bedrock aquifer

Records within 500m

1

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 45**

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

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

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: 40-70% Dilution value: >550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High 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
Point features
- 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

1

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 48**

ID	Location	Details	
-	1306m SW	Status: Historical Licence No: 21/58/61/0043 Details: Water Bottling Direct Source: EAW Groundwater Point: UNNAMED SPRING Data Type: Point Name: Ms Powell & Mr Spackman Easting: 277170 Northing: 191880	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: 31/03/2017 Issue No: 1 Version Start Date: 20/11/2004 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	0
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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.

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

5.8 Potable abstractions

Records within 2000m	1
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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 48**

ID	Location	Details	
-	1306m SW	Status: Historical Licence No: 21/58/61/0043 Details: Water Bottling Direct Source: EAW Groundwater Point: UNNAMED SPRING Data Type: Point Name: Ms Powell & Mr Spackman Easting: 277170 Northing: 191880	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: - Expiry Date: 31/03/2017 Issue No: 1 Version Start Date: 20/11/2004 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m

0

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

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

5.10 Source Protection Zones (confined aquifer)

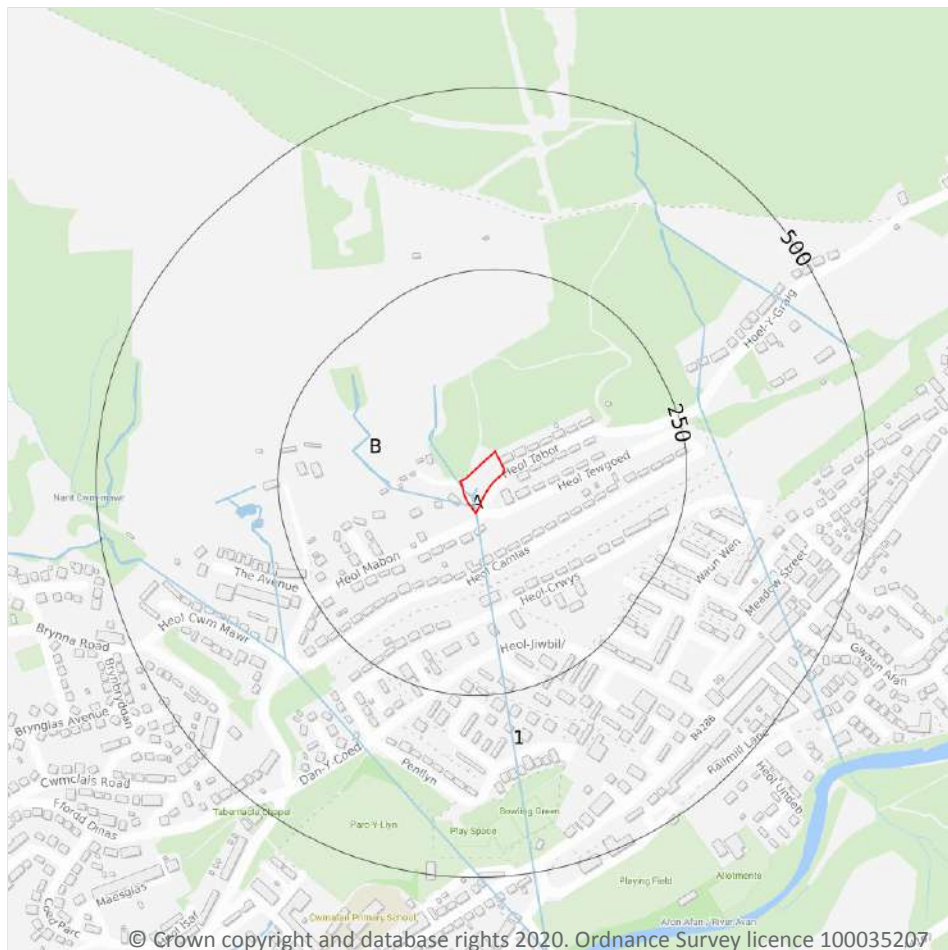
Records within 500m

0

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

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

6 Hydrology



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

6.1 Water Network (OS MasterMap)

Records within 250m

10

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 51**

ID	Location	Type of water feature	Ground level	Permanence	Name
1	On site	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	On site	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-
A	On site	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-
A	67m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	79m NW	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	81m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	95m W	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

4

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 51**

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 51**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	On site	River WB catchment	Afan - confluence with Pelenna to tidal limit	GB110058026110	Afan	Tawe to Cadoxton

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.

Features are displayed on the Hydrology map on **page 51**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	607m SE	River	Afan - confluence with Pelenna to tidal limit	GB110058026110	Good	Good	Good	2016

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.

Features are displayed on the Hydrology map on **page 51**



ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	On site	Swansea Carboniferous Coal Measures	GB41002G201000	Poor	Poor	Good	2016

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 Sea (RoFRaS)

Records within 50m**0**

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; 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).

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

7.2 Historical Flood Events

Records within 250m**0**

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

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

7.3 Flood Defences

Records within 250m**0**

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m**0**

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

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



7.5 Flood Storage Areas

Records within 250m

0

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

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



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

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

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

7.7 Flood Zone 3

Records within 50m

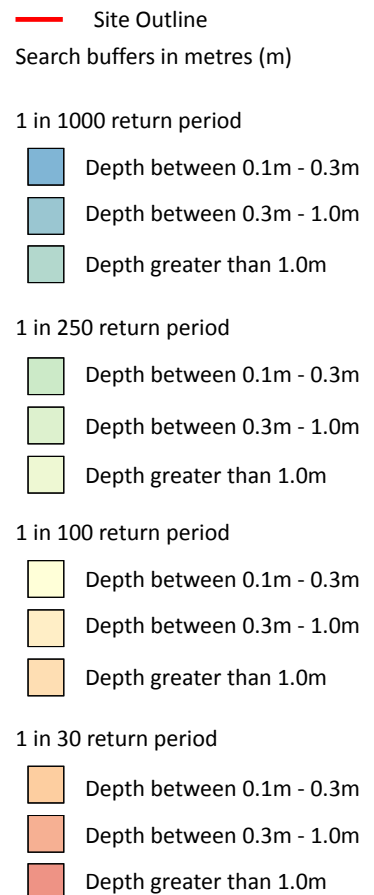
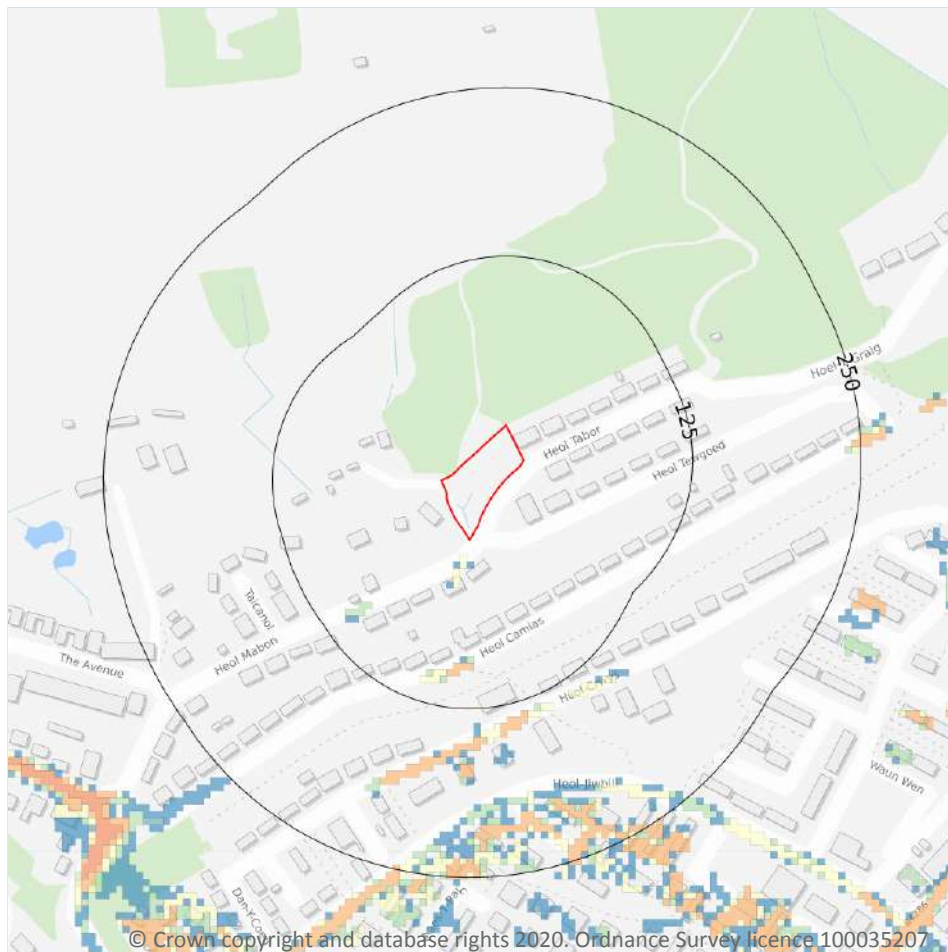
0

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

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



8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

Negligible

Highest risk within 50m

1 in 100 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 58**

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

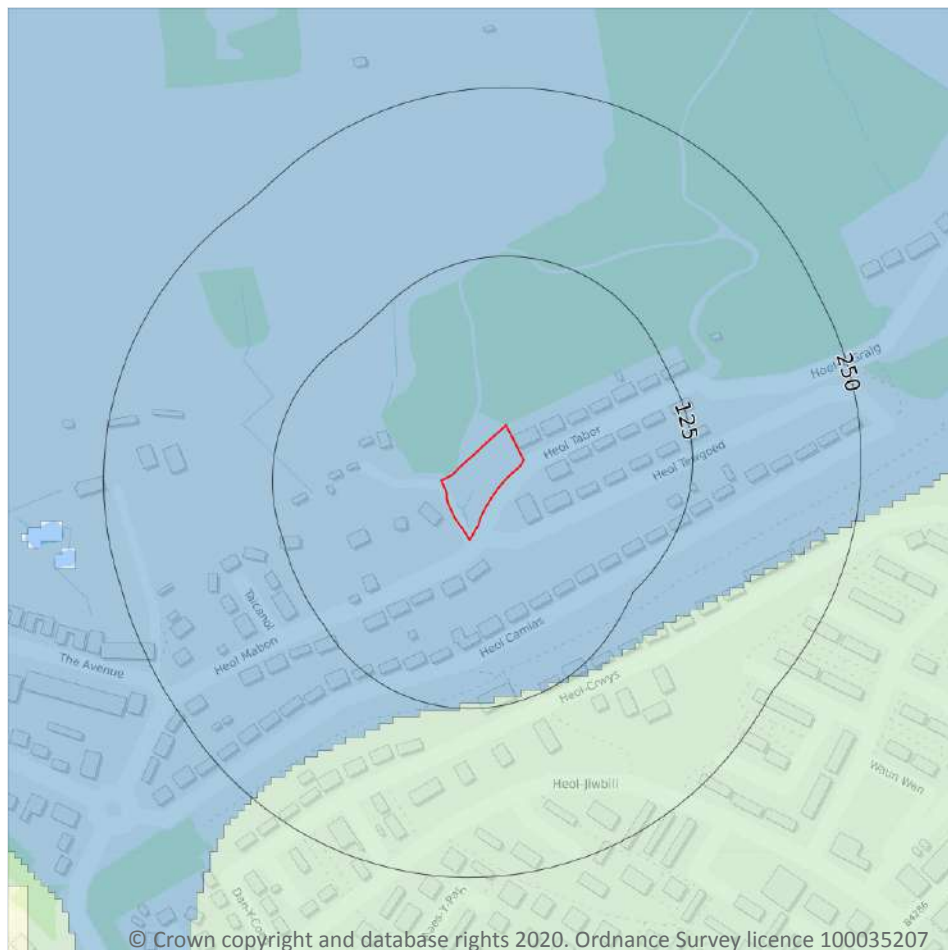
The table below shows the maximum flood depths for a range of return periods for the site.

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

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site

Negligible

Highest risk within 50m

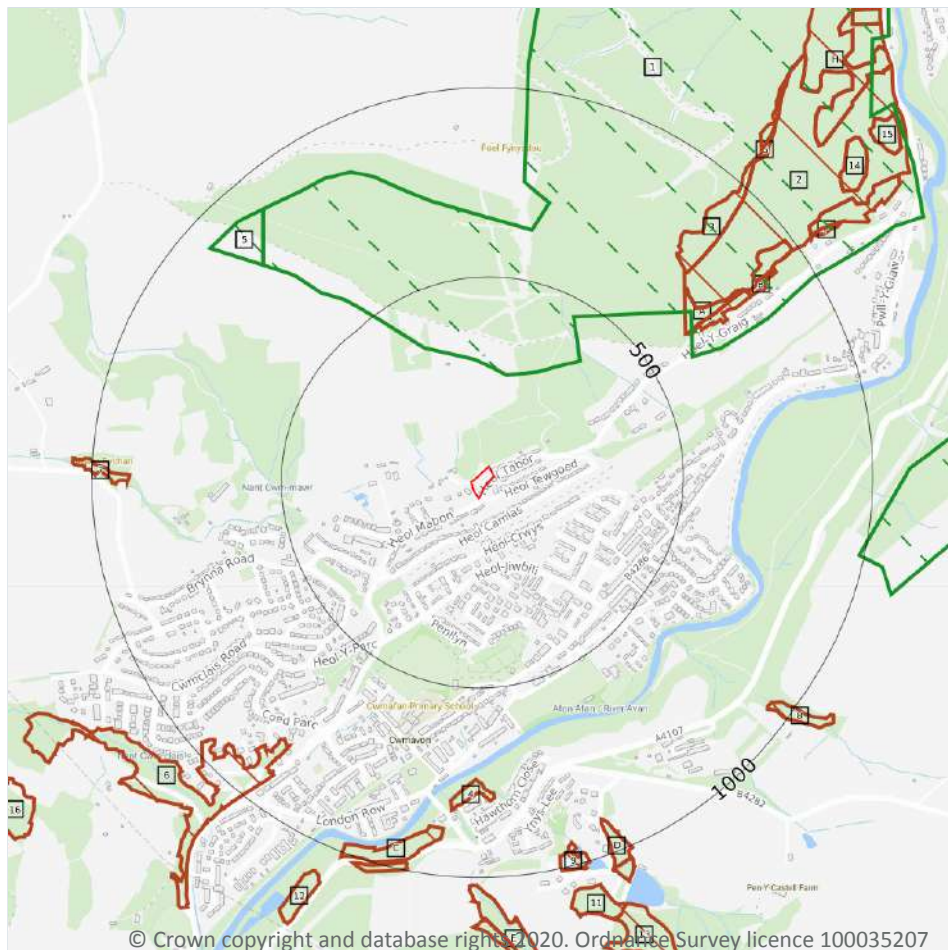
Negligible

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 60**

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Designated Ancient Woodland
- Forest Parks

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

52

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 61**

ID	Location	Name	Woodland Type
A	626m NE	Unknown	Plantation on Ancient Woodland Site
A	633m NE	Unknown	Plantation on Ancient Woodland Site
2	687m NE	Unknown	Ancient Semi Natural Woodland
3	724m NE	Unknown	Ancient Semi Natural Woodland
4	742m S	Unknown	Ancient Semi Natural Woodland
6	815m SW	Unknown	Ancient Semi Natural Woodland
B	820m NE	Unknown	Ancient Semi Natural Woodland
B	856m NE	Unknown	Plantation on Ancient Woodland Site
C	873m S	Unknown	Ancient Semi Natural Woodland
B	884m NE	Unknown	Plantation on Ancient Woodland Site
7	901m W	Unknown	Ancient Semi Natural Woodland
D	906m S	Unknown	Ancient Semi Natural Woodland
8	940m SE	Unknown	Ancient Semi Natural Woodland
9	941m S	Unknown	Ancient Semi Natural Woodland
B	948m NE	Unknown	Plantation on Ancient Woodland Site
C	978m S	Unknown	Plantation on Ancient Woodland Site



ID	Location	Name	Woodland Type
E	1020m S	Unknown	Ancient Semi Natural Woodland
D	1029m SE	Unknown	Ancient Semi Natural Woodland
F	1041m NE	Unknown	Plantation on Ancient Woodland Site
F	1046m NE	Unknown	Plantation on Ancient Woodland Site
G	1055m NE	Unknown	Plantation on Ancient Woodland Site
11	1064m S	Unknown	Ancient Semi Natural Woodland
12	1074m SW	Unknown	Ancient Semi Natural Woodland
G	1102m NE	Unknown	Plantation on Ancient Woodland Site
E	1110m S	Unknown	Plantation on Ancient Woodland Site
13	1137m S	Unknown	Plantation on Ancient Woodland Site
G	1174m NE	Unknown	Ancient Semi Natural Woodland
14	1184m NE	Unknown	Plantation on Ancient Woodland Site
H	1215m NE	Unknown	Plantation on Ancient Woodland Site
I	1287m S	Unknown	Ancient Woodland Site of Unknown Category
G	1309m NE	Unknown	Plantation on Ancient Woodland Site
15	1333m NE	Unknown	Plantation on Ancient Woodland Site
-	1370m SE	Unknown	Plantation on Ancient Woodland Site
16	1416m SW	Unknown	Ancient Semi Natural Woodland
H	1422m NE	Unknown	Ancient Semi Natural Woodland
-	1470m SW	Unknown	Ancient Semi Natural Woodland
-	1491m NE	Unknown	Ancient Semi Natural Woodland
H	1511m NE	Unknown	Ancient Semi Natural Woodland
H	1538m NE	Unknown	Plantation on Ancient Woodland Site
-	1541m SW	Unknown	Ancient Semi Natural Woodland
-	1577m SW	Unknown	Ancient Semi Natural Woodland
-	1586m NE	Unknown	Ancient Semi Natural Woodland
-	1699m SW	Unknown	Ancient Semi Natural Woodland
-	1713m NE	Unknown	Plantation on Ancient Woodland Site

ID	Location	Name	Woodland Type
-	1762m W	Unknown	Ancient Semi Natural Woodland
-	1835m N	Unknown	Plantation on Ancient Woodland Site
-	1920m NW	Unknown	Ancient Semi Natural Woodland
-	1929m SE	Unknown	Ancient Semi Natural Woodland
-	1929m SE	Unknown	Ancient Semi Natural Woodland
-	1977m N	Unknown	Ancient Semi Natural Woodland
-	1977m SE	Unknown	Ancient Semi Natural Woodland
-	1988m N	Unknown	Plantation on Ancient Woodland Site

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

4

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

Features are displayed on the Environmental designations map on **page 61**

ID	Location	Name
1	245m N	Afan Argoed
5	793m NW	Afan Argoed
10	987m E	Afan Argoed
-	1948m NE	Afan Argoed

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**0**

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

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**0**

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.

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



SSSI Impact Zones and Units

10.17 SSSI Impact Risk Zones

Records on site	0
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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.

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 English Heritage, 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 English Heritage, 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 English Heritage, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m

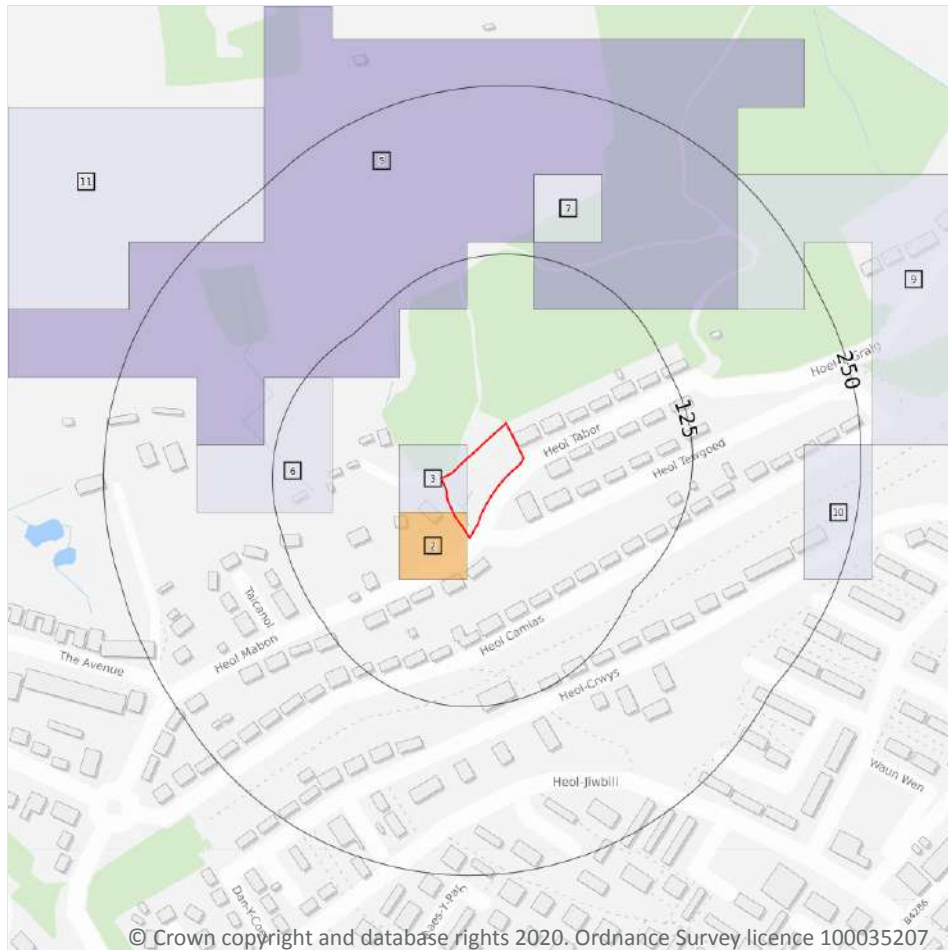
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Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process,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

This data is sourced from English Heritage, 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 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Timber felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m

8

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 71**

ID	Location	Classification	Description
2	On site	Grade 2	Good quality agricultural land
3	On site	Grade 3b	Moderate quality agricultural land
5	78m NW	Grade 4	Poor quality agricultural land

ID	Location	Classification	Description
6	81m W	Grade 3b	Moderate quality agricultural land
7	136m N	Grade 3b	Moderate quality agricultural land
9	191m NE	Grade 3b	Moderate quality agricultural land
10	208m E	Grade 3b	Moderate quality agricultural land
11	219m NW	Grade 3b	Moderate quality agricultural land

This data is sourced from Natural Resources Wales.

12.2 Open Access Land

Records within 250m

0

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

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

12.3 Tree Felling Licences

Records within 250m

0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment.

This data is sourced from Natural England.



12.5 Countryside Stewardship Schemes

Records within 250m

0

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

This data is sourced from Natural England.



13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m**0**

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m**0**

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m**0**

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

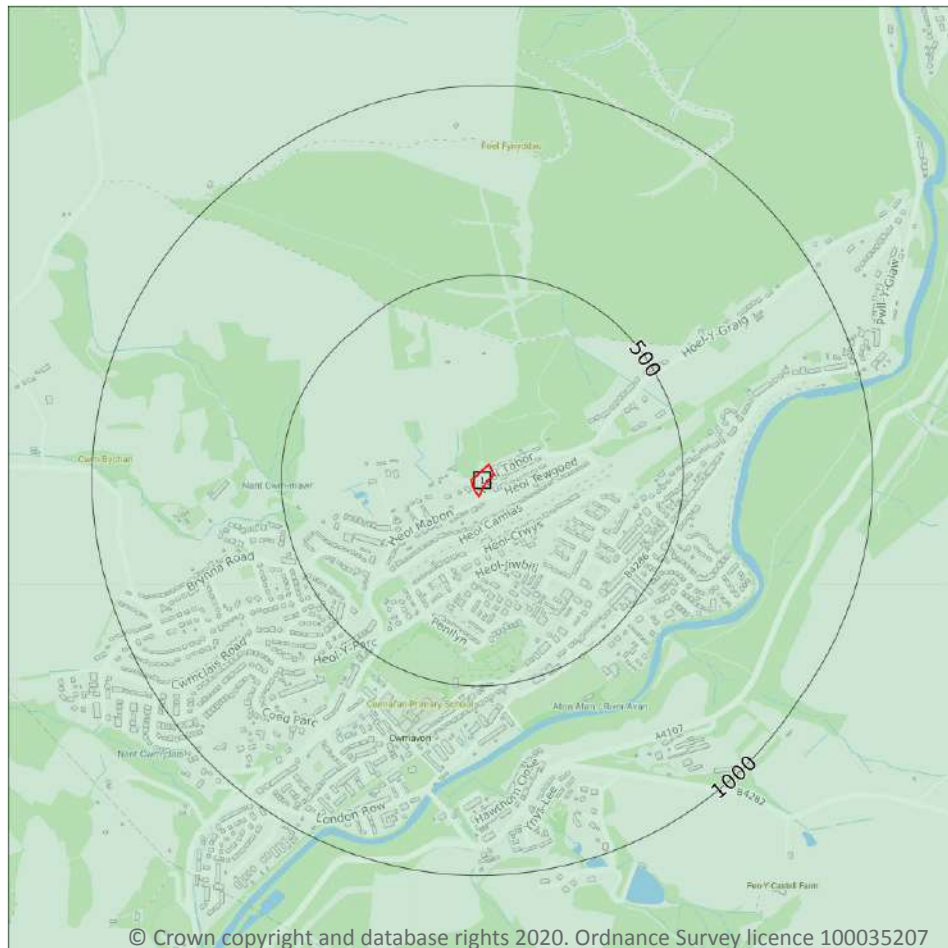
Records within 250m**0**

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

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



- Site Outline
- Search buffers in metres (m)
- Full coverage
 - Partial coverage
 - No coverage

14.1 10k Availability

Records within 500m

1

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.

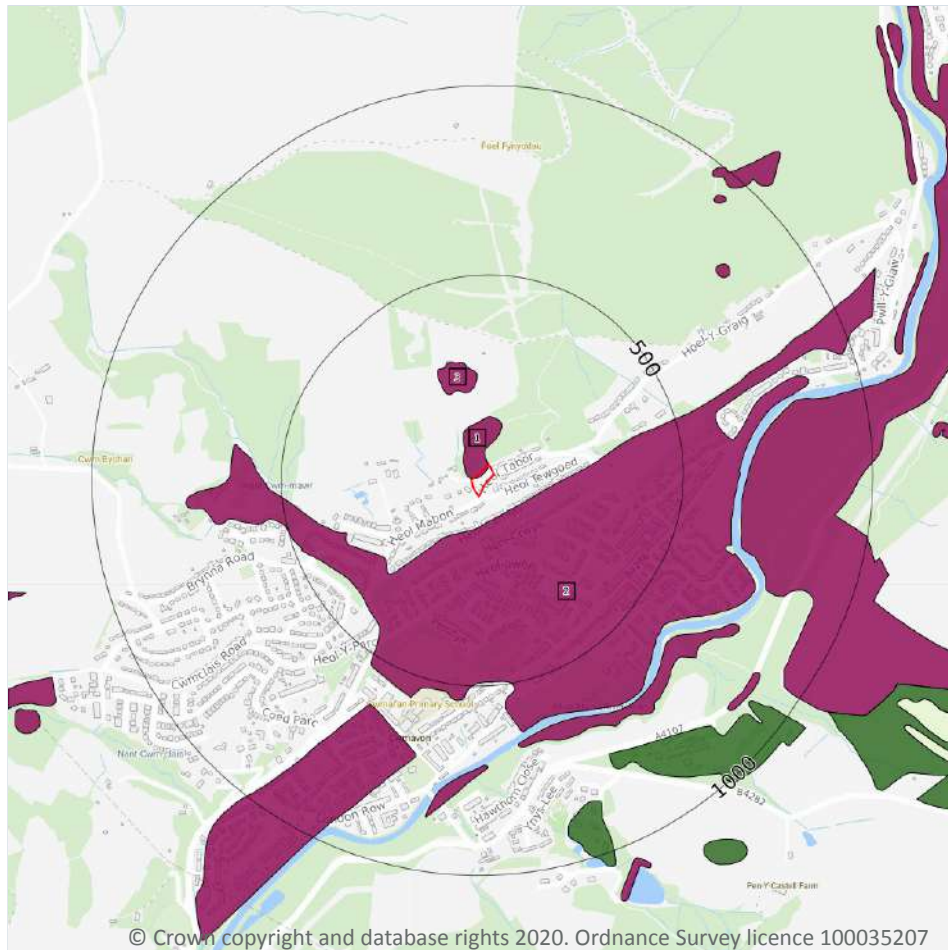
Features are displayed on the Geology 1:10,000 scale - Availability map on **page 75**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	SS79SE

This data is sourced from the British Geological Survey.



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



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

14.2 Artificial and made ground (10k)

Records within 500m

3

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

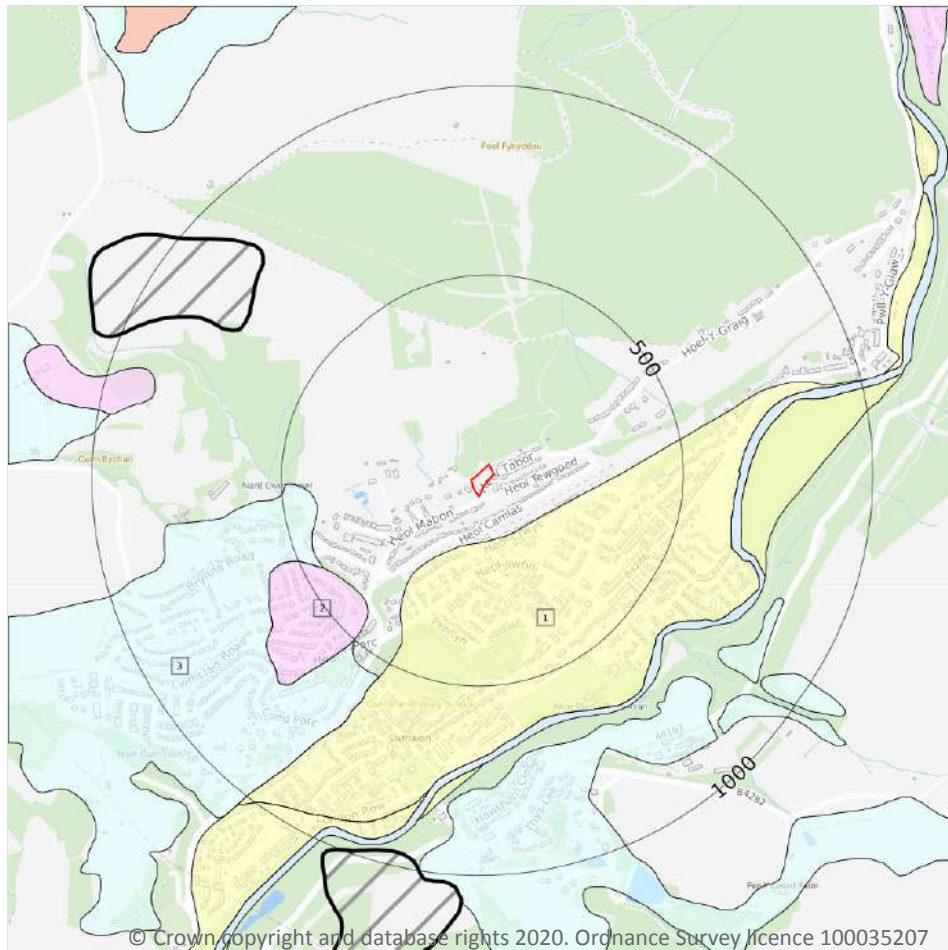
Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 76**

ID	Location	LEX Code	Description	Rock description
1	On site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	71m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	197m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m

3

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 77**

ID	Location	LEX Code	Description	Rock description
1	120m S	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
2	405m SW	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
3	411m W	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton

This data is sourced from the British Geological Survey.



14.4 Landslip (10k)

Records within 500m

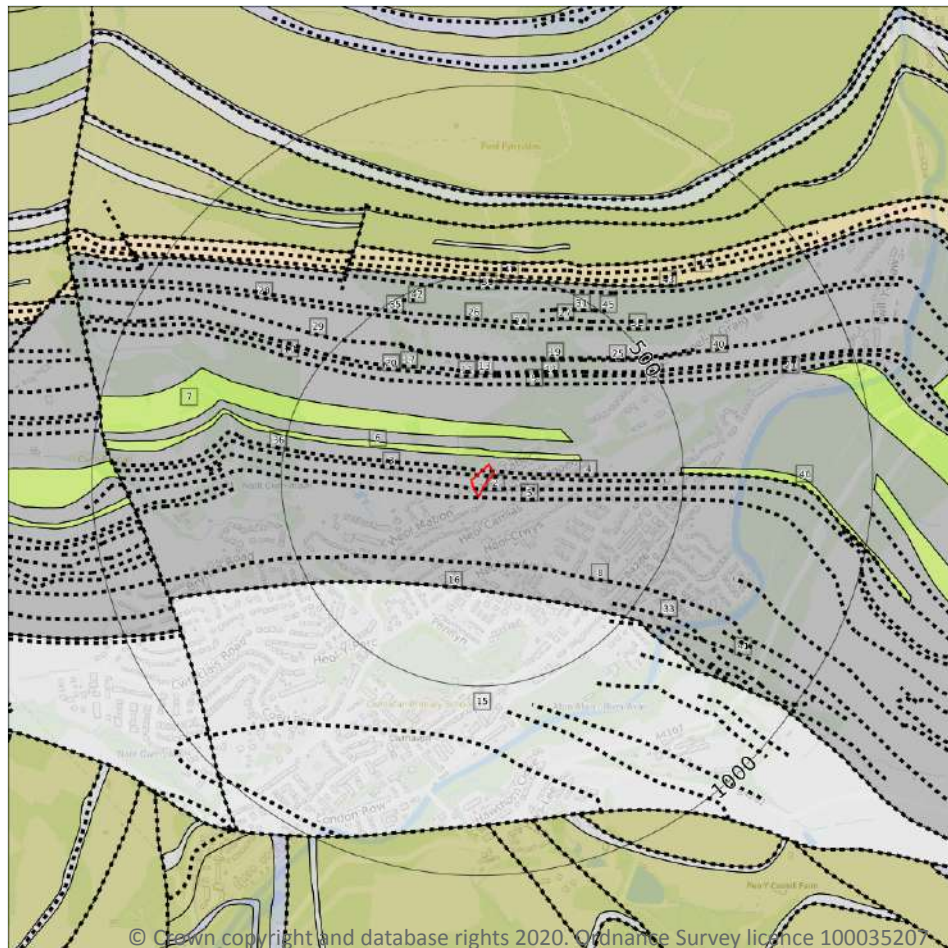
0

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

6

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 79**

ID	Location	LEX Code	Description	Rock age
1	On site	SWMCM-MDSS	South Wales Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
6	21m N	SWMCM-SDST	South Wales Middle Coal Measures Formation - Sandstone	Bolsovia Sub-age - Duckmantian Sub-age

ID	Location	LEX Code	Description	Rock age
7	73m N	SWMCM-SDST	South Wales Middle Coal Measures Formation - Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
15	244m S	SWLCM-MDSS	South Wales Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
44	484m N	SWUCM-MDSS	South Wales Upper Coal Measures Formation - Mudstone, Siltstone And Sandstone	Westphalian D Sub-age - Bolsovia Sub-age
46	493m E	SWMCM-SDST	South Wales 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	41
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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 79**

ID	Location	Category	Description
2	On site	ROCK	Coal seam, inferred ()
3	On site	ROCK	Coal seam, inferred ()
4	On site	ROCK	Coal seam, inferred (FINERY)
5	3m S	ROCK	Coal seam, inferred (BIG)
8	176m S	ROCK	Coal seam, inferred ()
9	211m N	ROCK	Coal seam, observed ()
10	213m N	ROCK	Coal seam, inferred (UPPER COCKSHOT)
11	234m N	ROCK	Coal seam, inferred ()
12	235m N	ROCK	Coal seam, observed ()
13	242m N	ROCK	Coal seam, inferred ()
14	242m N	ROCK	Coal seam, observed ()
16	244m S	FOSSIL_HORIZON	Fossil horizon, marine band ()
17	264m N	ROCK	Coal seam, observed ()

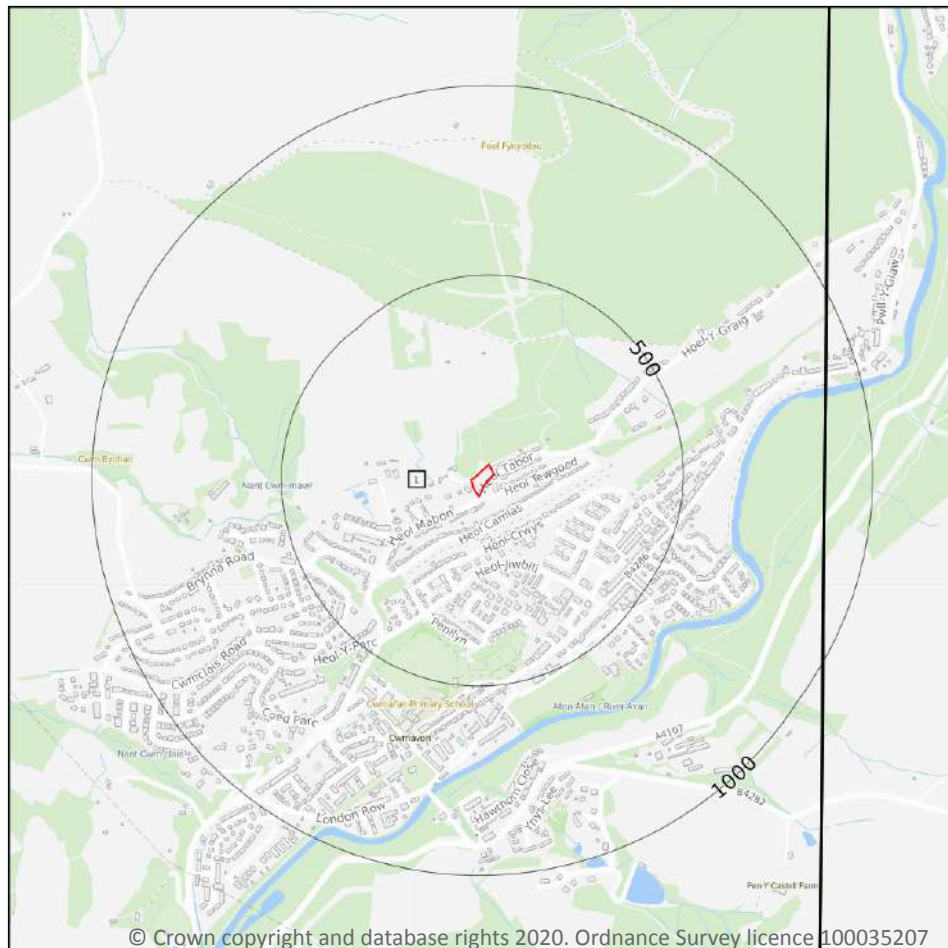


ID	Location	Category	Description
18	279m N	ROCK	Coal seam, observed ()
19	283m N	FOSSIL_HORIZON	Fossil horizon, marine band ()
20	306m NW	ROCK	Coal seam, observed ()
21	315m NE	ROCK	Coal seam, inferred (UPPER COCKSHOT (CAE DAVID))
22	348m NE	ROCK	Coal seam, inferred ()
23	351m NE	ROCK	Coal seam, inferred (GOLDEN RIDER (UPPER YARD))
24	364m N	ROCK	Coal seam, observed ()
25	372m NE	ROCK	Coal seam, inferred ()
26	379m N	ROCK	Coal seam, inferred (CWMBYR)
27	386m N	ROCK	Coal seam, observed ()
28	401m N	ROCK	Coal seam, inferred ()
29	422m NW	ROCK	Coal seam, inferred ()
30	429m N	ROCK	Coal seam, inferred ()
31	442m N	ROCK	Coal seam, observed ()
32	445m NE	ROCK	Coal seam, inferred ()
33	447m SE	ROCK	Coal seam, inferred ()
34	452m NW	ROCK	Coal seam, inferred ()
35	453m NW	ROCK	Coal seam, observed ()
36	454m W	ROCK	Coal seam, observed ()
37	461m NW	ROCK	Coal seam, inferred ()
38	462m NE	ROCK	Coal seam, inferred ()
39	467m N	ROCK	Coal seam, observed ()
40	472m NE	ROCK	Coal seam, observed ()
41	473m SE	FAULT	Normal fault, inferred
42	475m NW	ROCK	Coal seam, observed ()
43	484m N	FOSSIL_HORIZON	Fossil horizon, marine band (UPPER CWMGORSE MB)
45	491m NE	ROCK	Coal seam, inferred ()
47	499m N	ROCK	Coal seam, inferred ()

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

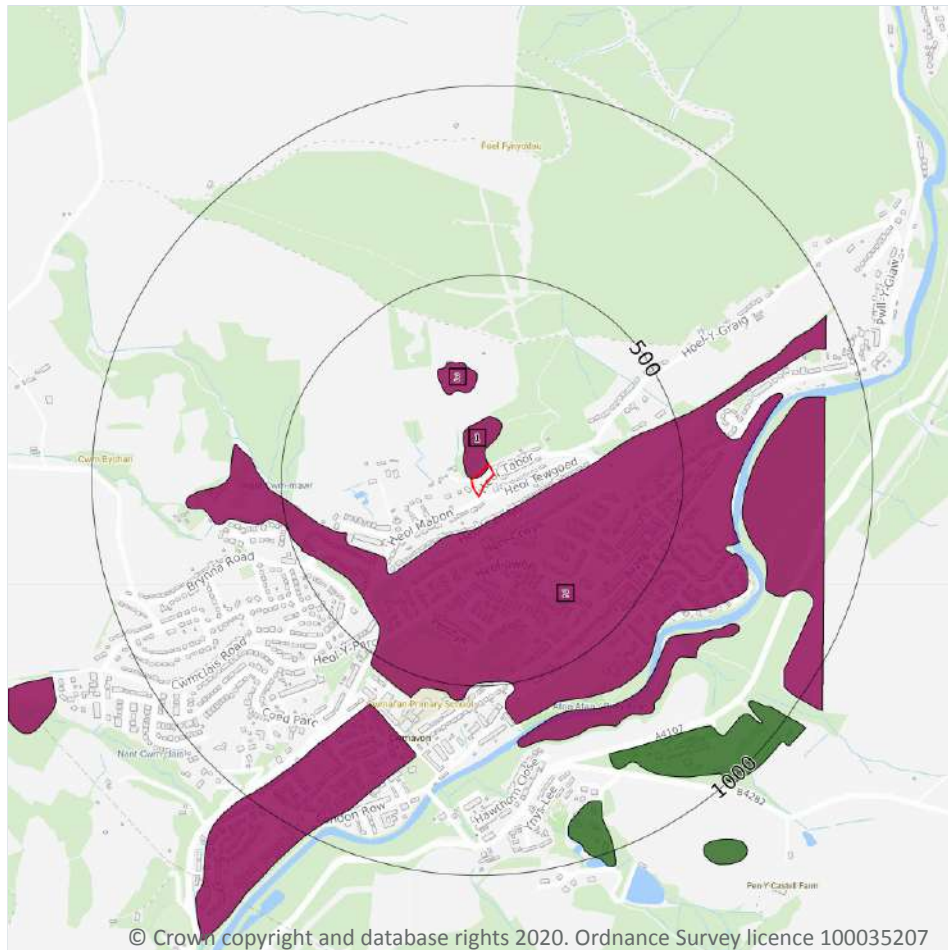
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme. Where 50k data is not available, this area has been filled in with 625k scale data.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 82**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW247_swansea_v4

This data is sourced from the British Geological Survey.

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



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

15.2 Artificial and made ground (50k)

Records within 500m

3

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.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 83**

ID	Location	LEX Code	Description	Rock description
1	On site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	71m SE	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
3	197m N	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m**1**

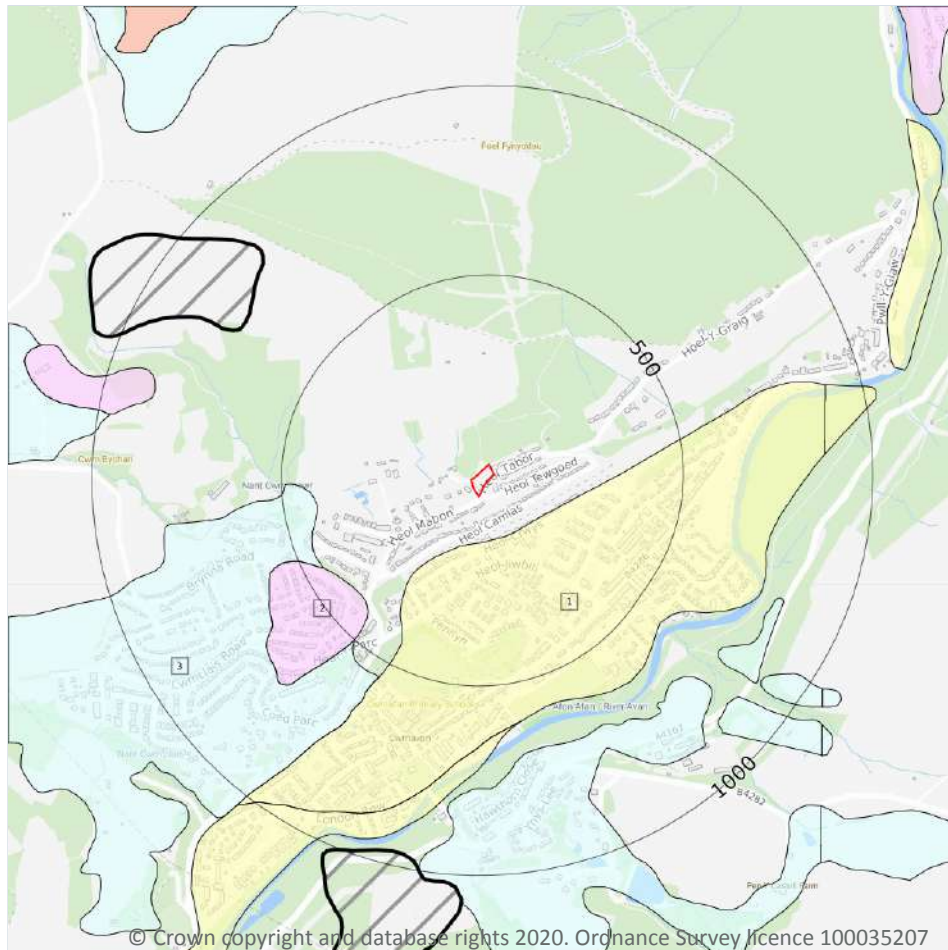
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



— Site Outline

Search buffers in metres (m)

▨ Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

3

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 85**

ID	Location	LEX Code	Description	Rock description
1	120m S	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
2	405m SW	GFICD-XSV	GLACIOFLUVIAL ICE CONTACT DEPOSITS, DEVENSIAN	SAND AND GRAVEL
3	411m W	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

This data is sourced from the British Geological Survey.



15.5 Superficial 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 superficial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m

0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

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

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

15.8 Bedrock geology (50k)

Records within 500m

6

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 87**

ID	Location	LEX Code	Description	Rock age
1	On site	SWMCM-MDSS	SOUTH WALES MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
4	72m N	SWMCM-SDST	SOUTH WALES MIDDLE COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN

ID	Location	LEX Code	Description	Rock age
5	107m N	SWMCM-MDSS	SOUTH WALES MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
12	244m S	SWLCM-MDSS	SOUTH WALES LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
29	482m SE	SWMCM-MDSS	SOUTH WALES MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
31	484m N	SWUCM-MDSS	SOUTH WALES UPPER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1
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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	Fracture	Moderate	Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	26
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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 87**

ID	Location	Category	Description
2	On site	ROCK	Coal seam, inferred
3	3m S	ROCK	Coal seam, inferred
6	176m S	ROCK	Coal seam, inferred
7	184m N	ROCK	Coal seam, observed
8	189m N	ROCK	Coal seam, inferred

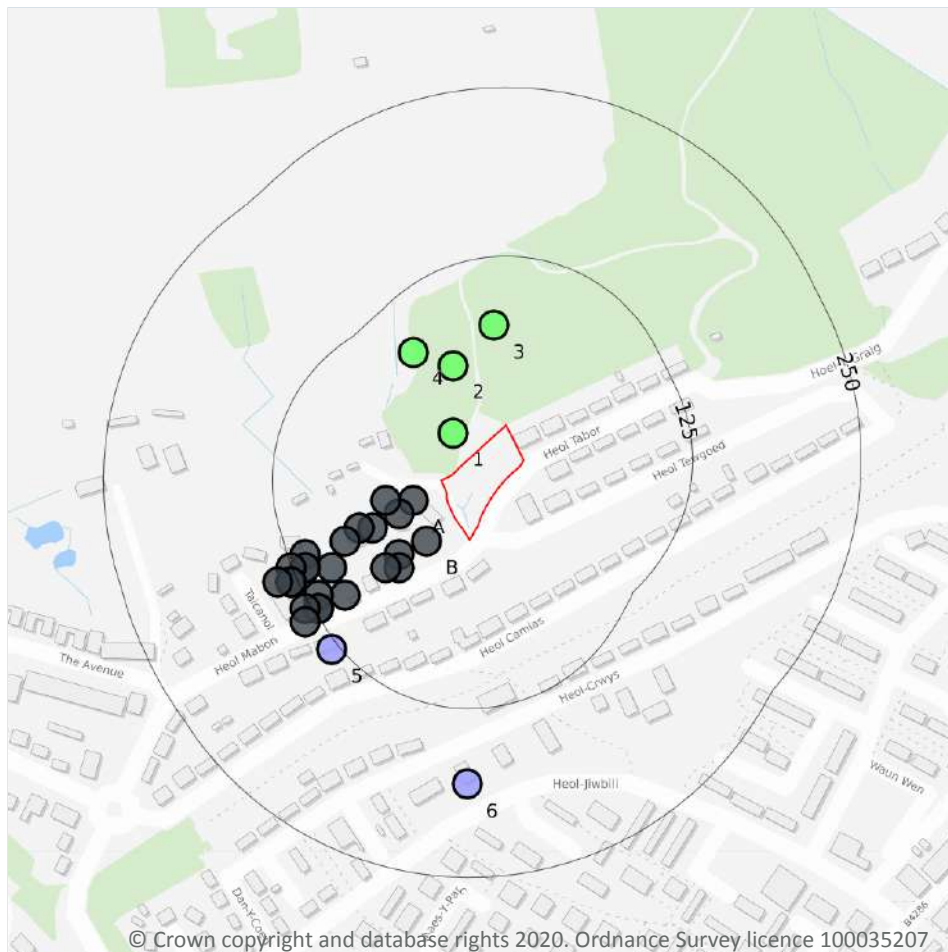


ID	Location	Category	Description
9	232m N	ROCK	Coal seam, inferred
10	232m N	ROCK	Coal seam, observed
11	244m S	FOSSIL_HORIZON	Marine band
13	254m N	ROCK	Coal seam, observed
14	279m N	ROCK	Coal seam, observed
15	289m NE	ROCK	Coal seam, inferred
16	344m NE	ROCK	Coal seam, inferred
17	372m NE	ROCK	Coal seam, inferred
18	389m N	ROCK	Coal seam, inferred
19	396m N	ROCK	Coal seam, observed
20	414m SE	FAULT	Fault, inferred, displacement unknown
21	422m NW	ROCK	Coal seam, inferred
22	429m SE	ROCK	Coal seam, inferred
23	444m N	ROCK	Coal seam, observed
24	454m NW	ROCK	Coal seam, inferred
25	454m W	ROCK	Coal seam, observed
26	462m NW	ROCK	Coal seam, observed
27	470m NE	ROCK	Coal seam, inferred
28	472m NE	ROCK	Coal seam, observed
30	482m SE	FOSSIL_HORIZON	Marine band
32	484m N	FOSSIL_HORIZON	Marine band

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

31

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 90**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	22m NW	278190 192760	TEWGOED TIPS CWMAVON 3	14.0	N	371974
A	25m W	278160 192710	HEOL MABON CWMAVON 3A	-	Y	N/A
B	27m SW	278170 192680	HEOL MABON CWMAVON 2A	-	Y	N/A

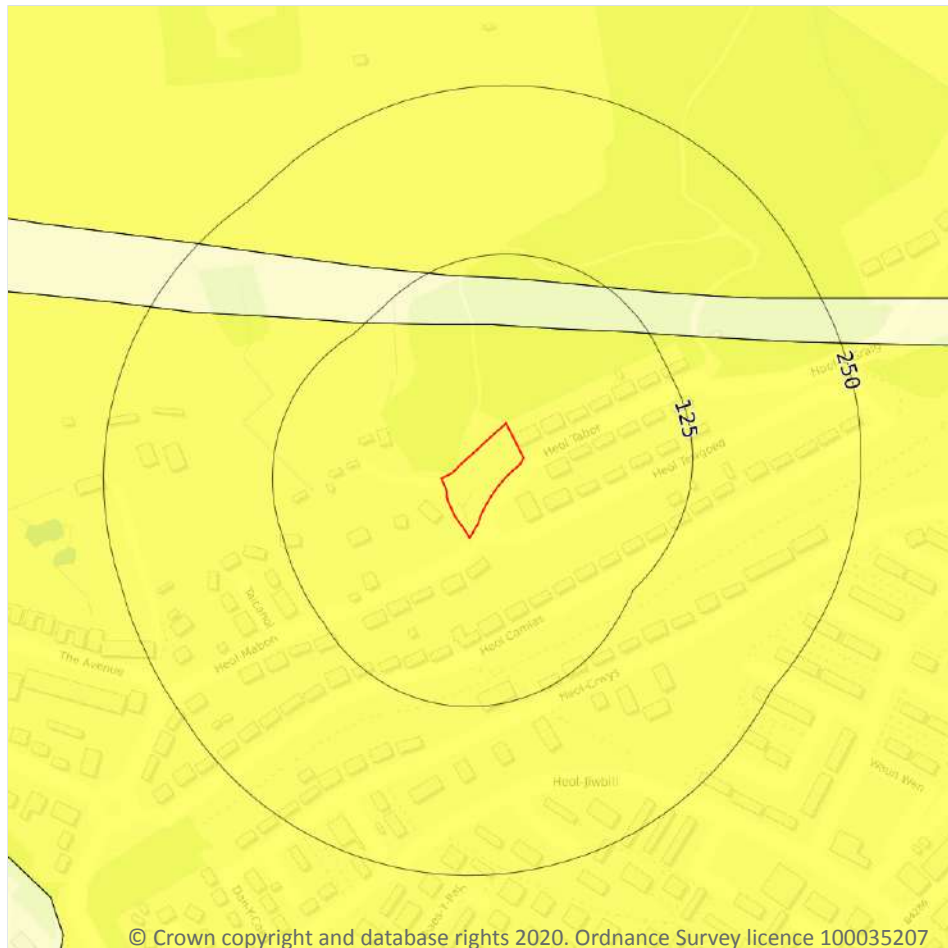


ID	Location	Grid reference	Name	Length	Confidential	Web link
A	37m W	278150 192700	HEOL MABON CWMAVON 1B	-	Y	N/A
A	44m W	278140 192710	HEOL MABON CWMAVON 3B	-	Y	N/A
B	49m SW	278150 192670	HEOL MABON CWMAVON 11B	-	Y	N/A
B	55m SW	278150 192660	HEOL MABON CWMAVON 1A	-	Y	N/A
2	59m NW	278190 192810	TEWGOED TIPS CWMAVON 2	13.0	N	371973
A	59m W	278130 192690	HEOL MABON CWMAVON 4A	-	Y	N/A
B	63m SW	278140 192660	HEOL MABON CWMAVON 10B	-	Y	N/A
A	68m W	278120 192690	HEOL MABON CWMAVON 2B	-	Y	N/A
3	75m N	278220 192840	TEWGOED TIPS CWMAVON 1	12.0	N	371972
A	81m W	278110 192680	HEOL MABON CWMAVON 5A	-	Y	N/A
4	86m NW	278160 192820	TEWGOED TIPS CWMAVON 4	11.0	N	371975
A	98m SW	278100 192660	HEOL MABON CWMAVON 5B	-	Y	N/A
A	99m SW	278110 192640	HEOL MABON CWMAVON 9A	-	Y	N/A
A	113m W	278080 192670	HEOL MABON CWMAVON 4B	-	Y	N/A
A	116m SW	278090 192640	HEOL MABON CWMAVON 8BC	-	Y	N/A
A	116m SW	278080 192660	HEOL MABON CWMAVON 6A	-	Y	N/A
A	116m SW	278080 192660	HEOL MABON CWMAVON 6B	-	Y	N/A
A	121m SW	278090 192630	HEOL MABON CWMAVON 8CC	-	Y	N/A
A	121m SW	278090 192630	HEOL MABON CWMAVON 8A	-	Y	N/A
A	126m SW	278070 192660	HEOL MABON CWMAVON 8B	-	Y	N/A
A	130m SW	278070 192650	HEOL MABON CWMAVON 7AC	-	Y	N/A
A	130m SW	278070 192650	HEOL MABON CWMAVON 7B	-	Y	N/A
A	130m SW	278070 192650	HEOL MABON CWMAVON 7A	-	Y	N/A
A	130m SW	278080 192630	HEOL MABON CWMAVON 8AC	-	Y	N/A
5	130m SW	278100 192600	NEW BALANCE PIT, CWMAVON	-2.0	N	371548
A	135m SW	278080 192620	HEOL MABON CWMAVON 8DC	-	Y	N/A
A	139m SW	278060 192650	HEOL MABON CWMAVON 9B	-	Y	N/A
6	181m S	278200 192500	YNYSAFON LEVEL	-2.0	N	371549

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).

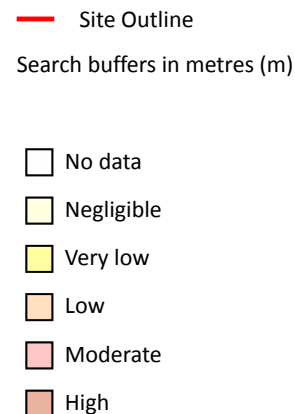
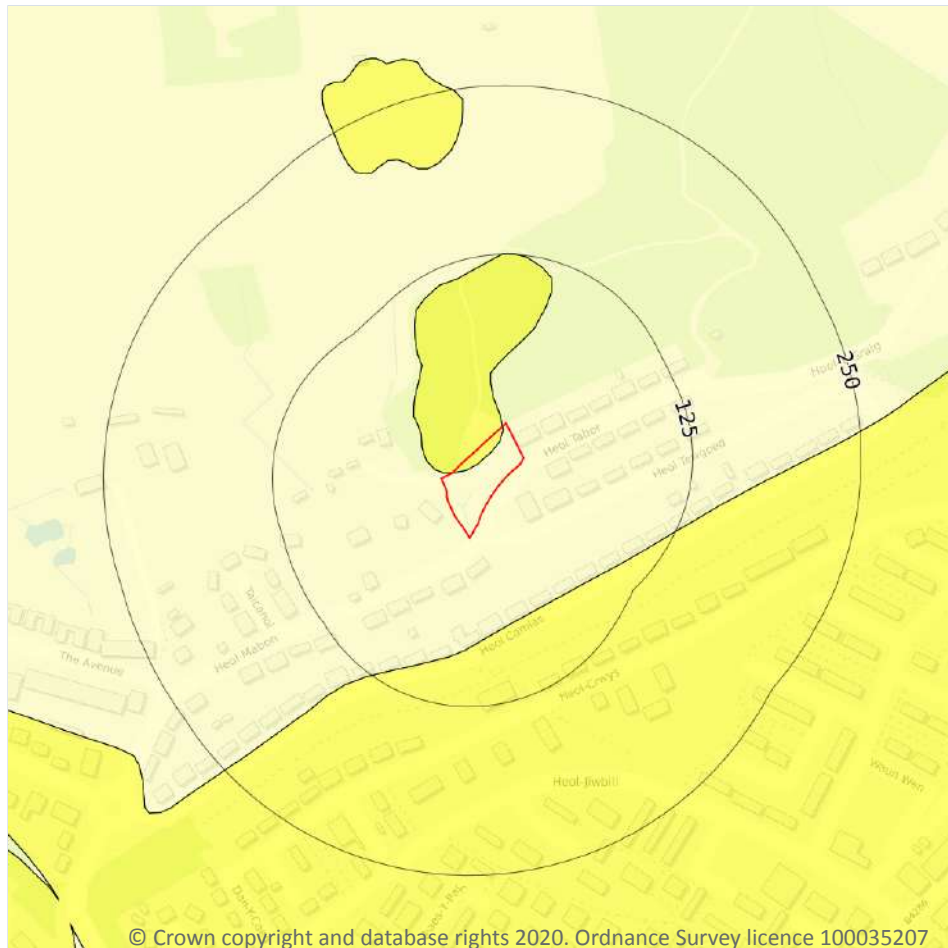
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 92**

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



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17.2 Running sands

Records within 50m

2

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 93**

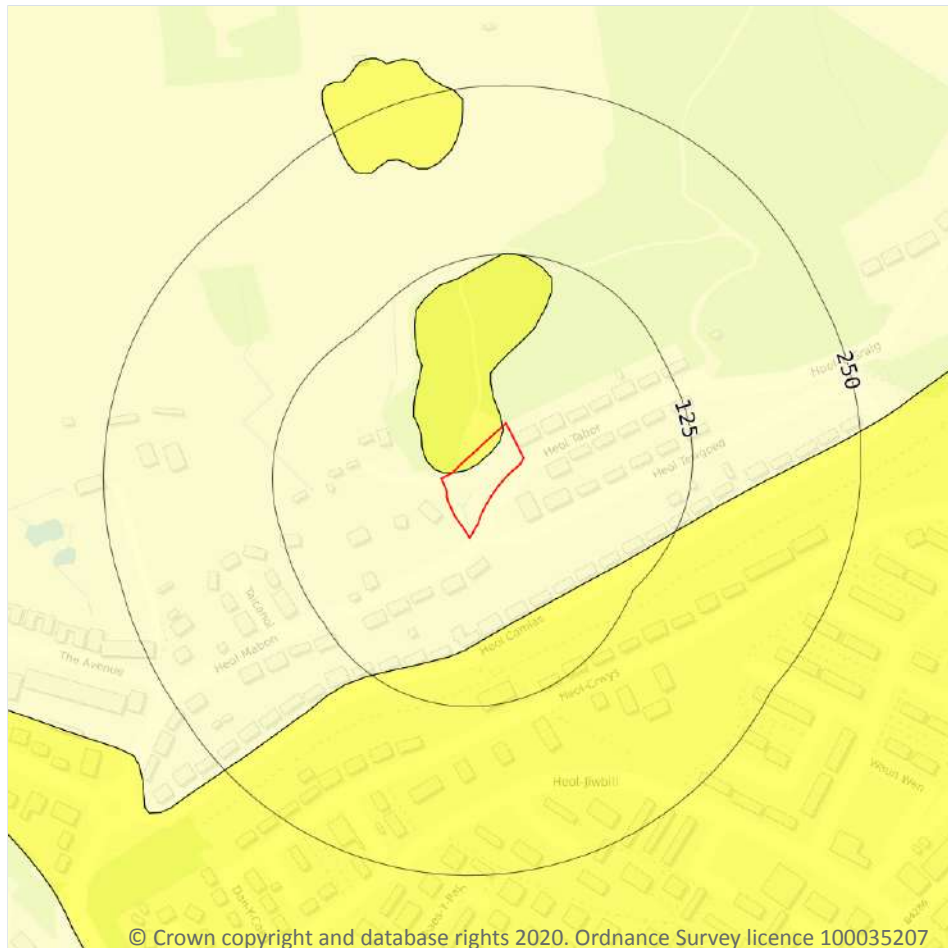
Location	Hazard rating	Details
On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

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

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17.3 Compressible deposits

Records within 50m

2

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 95**

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
On site	Very low	Compressibility and uneven settlement problems are not likely to be significant on the site for most land uses.



This data is sourced from the British Geological Survey.



The map displays a site outline in red, surrounded by concentric search buffers at 125m and 250m. The area is color-coded based on the search buffer legend:

- No data:** White
- Negligible:** Light yellow
- Very low:** Yellow
- Low:** Light orange
- Moderate:** Pink
- High:** Red

The map shows a residential area with streets such as The Avenue, Heol Mabon, Heol Gwynn, Heol Fawell, and Heol Fawell. The site outline is located in the center of the map, within the 125m buffer. The 250m buffer extends further out, covering a larger area of the residential neighborhood.

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Records within 50m	1
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Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 97**

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


 Contact us with any questions at:
info@groundsure.com
 08444 159 000

Date: 18 September 2020
 

 No data
 Negligible
 Very low
 Low
 Moderate
 High

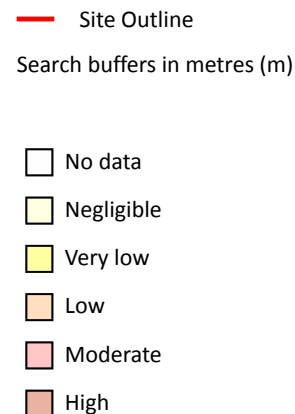
Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

Location	Hazard rating	Details
On site	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
On site	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



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.

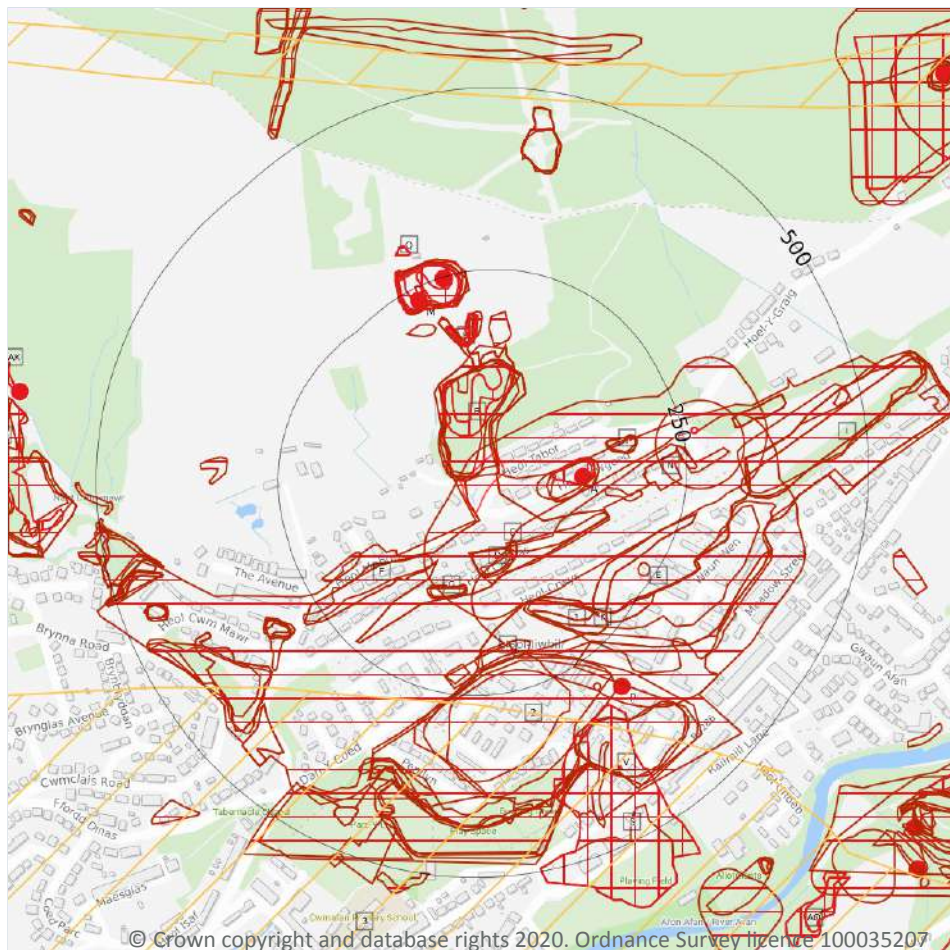
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 100**

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

This data is sourced from the British Geological Survey.



18 Mining, ground workings and natural cavities



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

18.1 Natural cavities

Records within 500m

0

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

This data is sourced from Peter Brett Associates (PBA).

18.2 BritPits

Records within 500m

4

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 102**

ID	Location	Details	Description
A	107m E	Name: Copper Row Address: Cwmafan, NEATH, West Glamorgan Commodity: Coal, Deep Status: 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)	Type: Ceased 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
M	233m NW	Name: Tewgoed-bach Address: Cwmafan, NEATH, West Glamorgan Commodity: Coal, Deep Status: 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)	Type: Ceased 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
M	247m N	Name: Tewgoed-bach Address: Cwmafan, NEATH, West Glamorgan Commodity: Coal, Deep Status: 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)	Type: Ceased 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
P	310m SE	Name: Meadow Pit Address: Cwmafan, NEATH, West Glamorgan Commodity: Coal, Deep Status: 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)	Type: Ceased Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.



18.3 Surface ground workings

Records within 250m

66

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 102**

ID	Location	Land Use	Year of mapping	Mapping scale
1	On site	Unspecified Disused Pits	1921	1:10560
A	On site	Unspecified Disused Pit	1957	1:10560
B	On site	Refuse Heap	1936	1:10560
B	On site	Unspecified Disused Tip	1978	1:10000
B	On site	Refuse Heap	1957	1:10560
B	On site	Unspecified Disused Tip	1995	1:10000
B	On site	Refuse Heap	1936	1:10560
C	On site	Refuse Heap	1921	1:10560
C	On site	Refuse Heap	1921	1:10560
B	36m NW	Old Coal Levels	1897	1:10560
A	49m E	Refuse Heap	1936	1:10560
A	52m S	Unspecified Disused Pit	1936	1:10560
D	52m S	Unspecified Heap	1957	1:10560
D	54m S	Unspecified Heap	1936	1:10560
A	59m SE	Refuse Heap	1957	1:10560
E	60m SE	Unspecified Disused Pit	1957	1:10560
A	61m E	Refuse Heap	1957	1:10560
D	62m SE	Unspecified Heap	1897	1:10560
A	65m E	Coal Level	1897	1:10560
A	68m E	Refuse Heap	1936	1:10560
F	86m SW	Unspecified Ground Workings	1936	1:10560
G	98m S	Unspecified Heap	1957	1:10560
G	101m S	Unspecified Heap	1936	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
G	104m S	Unspecified Heap	1936	1:10560
H	119m N	Unspecified Pit	1921	1:10560
H	119m N	Unspecified Pit	1921	1:10560
A	140m E	Unspecified Heap	1897	1:10560
2	140m SE	Refuse Heap	1921	1:10560
I	140m SE	Refuse Heap	1921	1:10560
I	140m SE	Unspecified Disused Pit	1936	1:10560
E	143m SE	Refuse Heap	1936	1:10560
J	143m E	Refuse Heap	1957	1:10560
H	144m N	Pond	1957	1:10560
E	145m SE	Refuse Heap	1957	1:10560
J	145m E	Refuse Heap	1936	1:10560
J	147m E	Refuse Heap	1936	1:10560
H	150m N	Unspecified Old Level	1936	1:10560
H	151m N	Unspecified Ground Workings	1936	1:10560
H	153m N	Unspecified Old Level	1957	1:10560
K	155m SE	Unspecified Ground Workings	1978	1:10000
K	155m SE	Unspecified Ground Workings	1995	1:10000
H	158m N	Unspecified Old Level	1936	1:10560
H	160m N	Unspecified Pit	1921	1:10560
H	160m N	Unspecified Pit	1921	1:10560
F	164m SW	Pond	1897	1:10560
L	182m S	Cuttings	1957	1:10560
M	183m NW	Unspecified Quarry	1877	1:10560
L	185m S	Cuttings	1936	1:10560
N	190m E	Unspecified Disused Pit	1936	1:10560
O	204m S	Refuse Heap	1957	1:10560
O	205m S	Refuse Heap	1921	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
M	207m N	Unspecified Heap	1921	1:10560
M	207m N	Unspecified Heap	1921	1:10560
M	207m N	Unspecified Disused Tip	1978	1:10000
M	207m N	Unspecified Disused Tip	1995	1:10000
L	208m S	Cuttings	1957	1:10560
M	208m N	Unspecified Old Level	1936	1:10560
N	210m E	Unspecified Disused Pit	1921	1:10560
M	211m N	Unspecified Old Level	1936	1:10560
O	211m S	Refuse Heap	1936	1:10560
M	212m N	Unspecified Old Level	1957	1:10560
M	214m N	Old Coal Level	1897	1:10560
O	221m S	Unspecified Heap	1897	1:10560
M	223m NW	Old Coal Levels	1897	1:10560
E	226m SE	Unspecified Pit	1877	1:10560
N	238m E	Refuse Heap	1957	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m

67

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 102**

ID	Location	Land Use	Year of mapping	Mapping scale
B	36m NW	Old Coal Levels	1897	1:10560
A	65m E	Coal Level	1897	1:10560
H	150m N	Unspecified Old Level	1936	1:10560
H	153m N	Unspecified Old Level	1957	1:10560
M	208m N	Unspecified Old Level	1936	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
M	212m N	Unspecified Old Level	1957	1:10560
M	214m N	Old Coal Level	1897	1:10560
M	223m NW	Old Coal Levels	1897	1:10560
N	262m E	Unspecified Disused Shaft	1978	1:10000
N	262m E	Unspecified Disused Shaft	1995	1:10000
Q	295m NW	Old Coal Level	1921	1:10560
Q	295m NW	Old Coal Level	1921	1:10560
S	319m SE	Coal Level	1877	1:10560
V	400m SE	Air Shaft	1877	1:10560
AG	547m W	Unspecified Disused Level	1897	1:10560
16	626m NE	Colliery	1897	1:10560
AK	627m W	Unspecified Disused Level	1921	1:10560
-	631m W	Unspecified Disused Level	1936	1:10560
-	642m W	Unspecified Disused Level	1921	1:10560
-	642m W	Unspecified Disused Level	1921	1:10560
-	651m W	Unspecified Disused Level	1957	1:10560
AO	689m SE	Old Coal Level	1897	1:10560
-	690m W	Old Air Shaft	1936	1:10560
-	693m W	Old Air Shaft	1957	1:10560
AO	697m SE	Old Coal Level	1914	1:10560
AO	697m SE	Old Coal Level	1921	1:10560
-	701m W	Air Shaft	1921	1:10560
-	701m W	Air Shaft	1921	1:10560
-	701m E	Colliery	1936	1:10560
-	708m W	Air Shaft	1897	1:10560
20	726m SE	Old Coal Level	1897	1:10560
-	774m W	Trial Level	1877	1:10560
-	787m NE	Unspecified Disused Level	1978	1:10000



ID	Location	Land Use	Year of mapping	Mapping scale
-	787m NE	Unspecified Disused Level	1995	1:10000
-	818m E	Coal Level	1897	1:10560
-	846m NE	Unspecified Disused Level	1978	1:10000
-	846m NE	Unspecified Disused Level	1995	1:10000
-	861m SE	Old Coal Level	1897	1:10560
-	866m SE	Unspecified Level	1914	1:10560
-	866m SE	Unspecified Old Level	1947	1:10560
-	870m SE	Unspecified Level	1921	1:10560
AR	876m SE	Colliery	1914	1:10560
AR	876m SE	Colliery	1921	1:10560
-	891m NE	Unspecified Old Levels	1936	1:10560
-	895m NE	Unspecified Old Levels	1957	1:10560
-	902m SW	Air Shaft	1877	1:10560
-	905m NE	Unspecified Old Levels	1957	1:10560
-	906m NE	Unspecified Old Levels	1936	1:10560
-	906m SE	Old Coal Level	1921	1:10560
-	911m SE	Coal Level	1921	1:10560
-	911m SE	Unspecified Old Level	1936	1:10560
-	911m SE	Coal Level	1921	1:10560
-	914m SE	Unspecified Old Level	1957	1:10560
-	925m NE	Unspecified Disused Level	1978	1:10000
-	925m NE	Unspecified Disused Level	1995	1:10000
-	935m E	Old Coal Level	1914	1:10560
-	970m NE	Unspecified Level	1921	1:10560
-	970m NE	Unspecified Level	1921	1:10560
-	972m NE	Unspecified Old Levels	1957	1:10560
-	972m E	Old Coal Levels	1897	1:10560
-	977m E	Old Coal Level	1914	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
-	977m E	Old Coal Level	1921	1:10560
-	978m E	Unspecified Disused Shaft	1978	1:10000
-	978m E	Unspecified Disused Shaft	1995	1:10000
-	979m NE	Unspecified Level	1921	1:10560
-	987m E	Unspecified Disused Shaft	1978	1:10000
-	987m E	Unspecified Disused Shaft	1995	1:10000

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

2

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, ground workings and natural cavities map on **page 102**

ID	Location	Name	Commodity	Class	Likelihood
3	262m S	Not available	Iron Ore (Bedded)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
10	487m N	Not available	Iron Ore (Bedded)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

This data is sourced from the British Geological Survey.



18.7 Mining cavities

Records within 1000m**0**

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

This data is sourced from Peter Brett Associates (PBA).

18.8 JPB mining areas

Records on site**0**

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site**1**

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

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site**0**

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

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



18.11 Gypsum areas

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

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

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

Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.

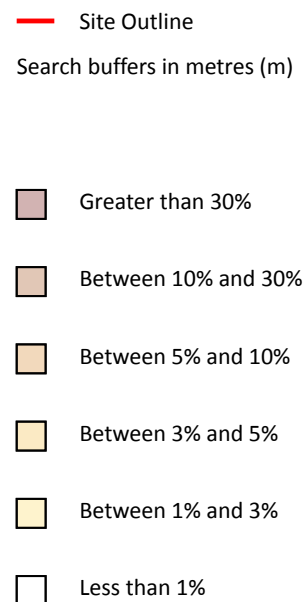
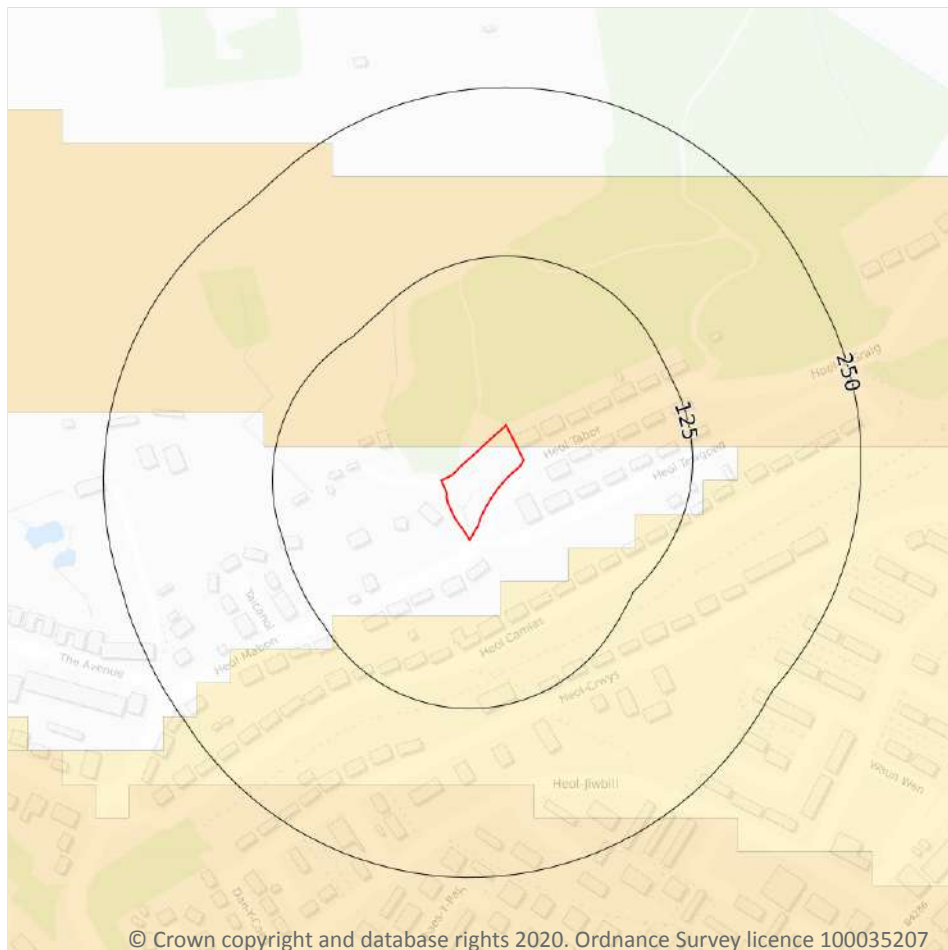
18.13 Clay mining

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

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

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

19 Radon



19.1 Radon

Records on site

2

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

Features are displayed on the Radon map on **page 112**

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 3% and 5%	Basic
On site	Less than 1%	None**



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



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

1

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	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

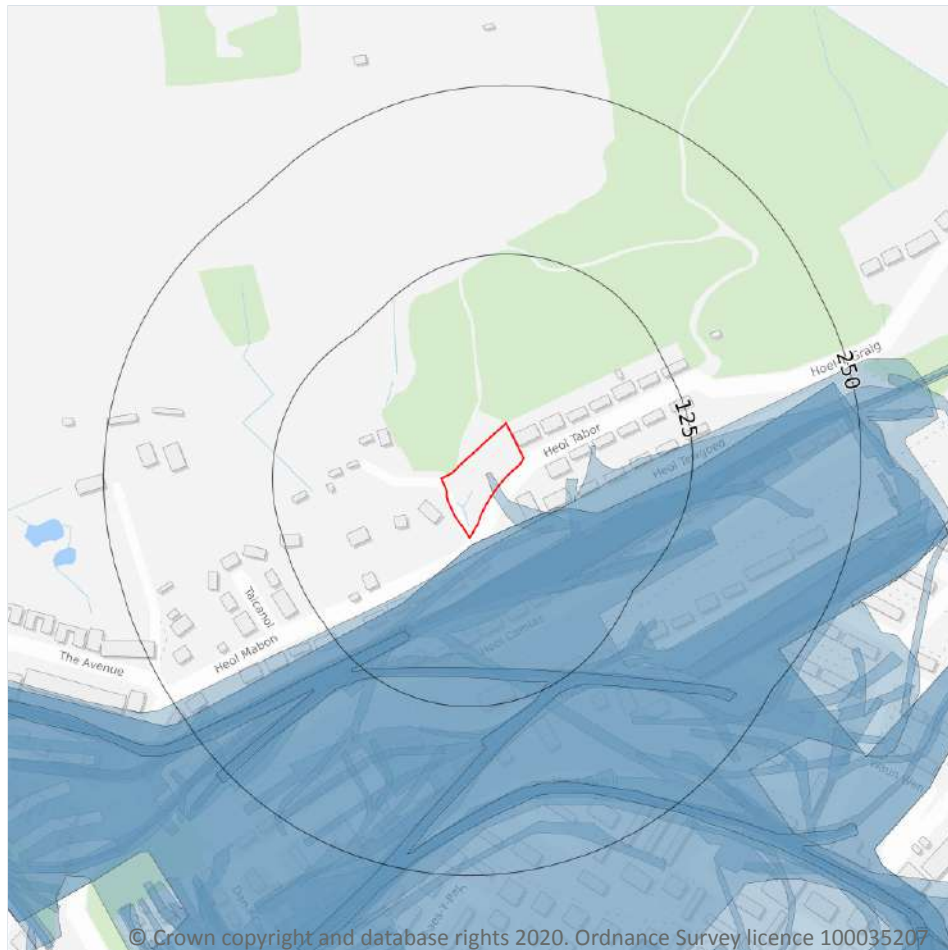
0

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

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects



- Site Outline
- Search buffers in metres (m)
- C1 Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 1 Worksites
- C2 Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

21.1 Underground railways (London)

Records within 250m

0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m

0

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



This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m

7

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.

Features are displayed on the Railway infrastructure and projects map on **page 115**

Location	Land Use	Year of mapping	Mapping scale
On site	Railway Sidings	1899	2500
5m SE	Railway Sidings	1921	10560
13m SE	Railway Sidings	1897	10560
17m SE	Railway Sidings	1919	2500
35m SE	Tramway Sidings	1882	2500
78m SW	Tramway Sidings	1936	2500
84m SW	Tramway Sidings	1936	10560

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m

0

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

This data is sourced from Groundsure/the Postal Museum.



21.6 Historical railways

Records within 250m**0**

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m**0**

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m**0**

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m**0**

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m**0**

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

This data is sourced from HS2 Ltd.



Data providers

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

Terms and conditions

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



APPENDIX III – HISTORICAL ORDNANCE SURVEY MAPS

Site Details:

LAND OFF HEOL TABOR,
CWMAVON, PORT TALBOT,
SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: County Series

Map date: 1882

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1882
Revised 1882
Edition N/A
Copyright N/A
Levelled N/A

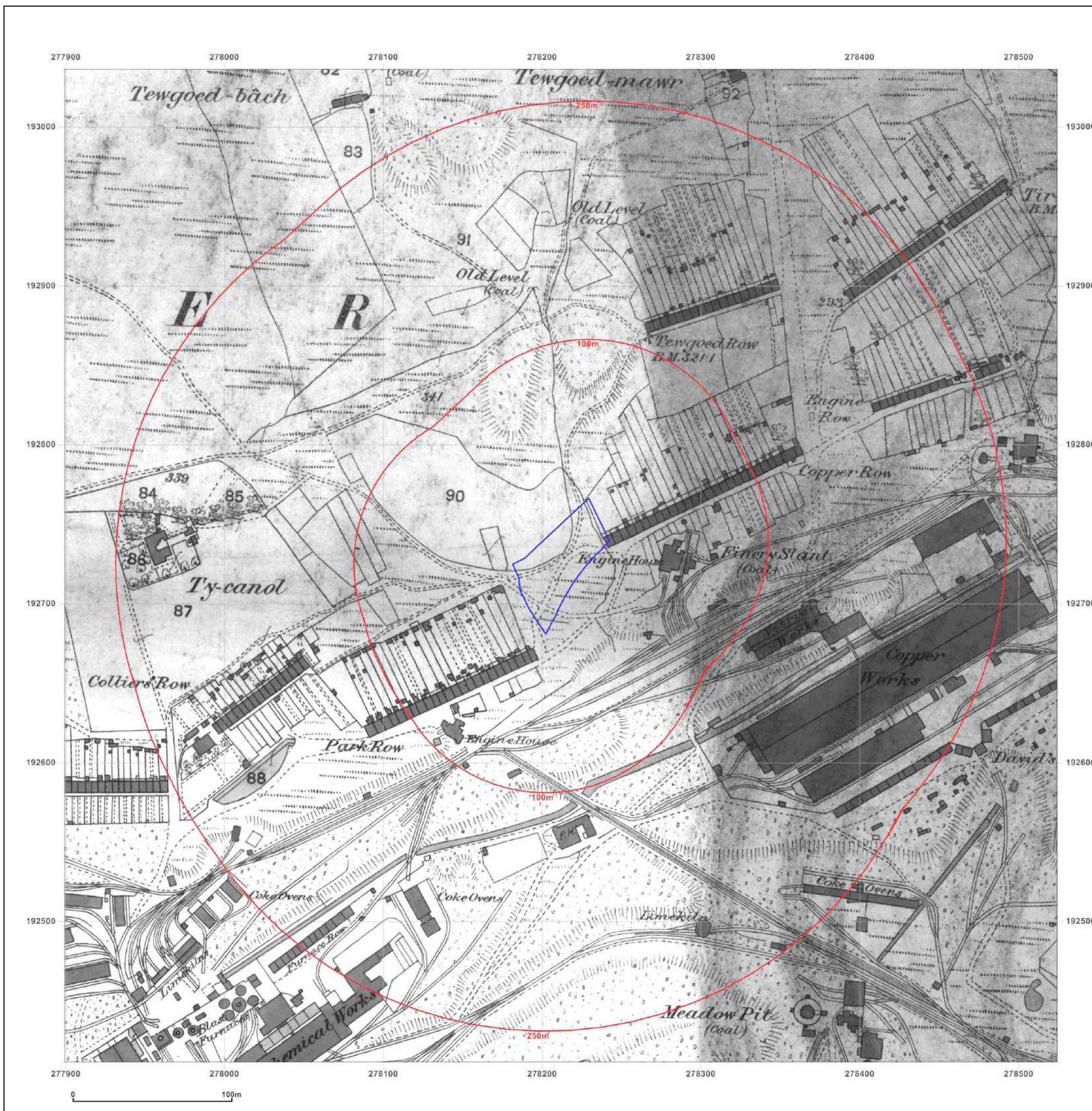


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Production date: 18 September 2020

Map legend available at:
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Site Details:

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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: County Series

Map date: 1899

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

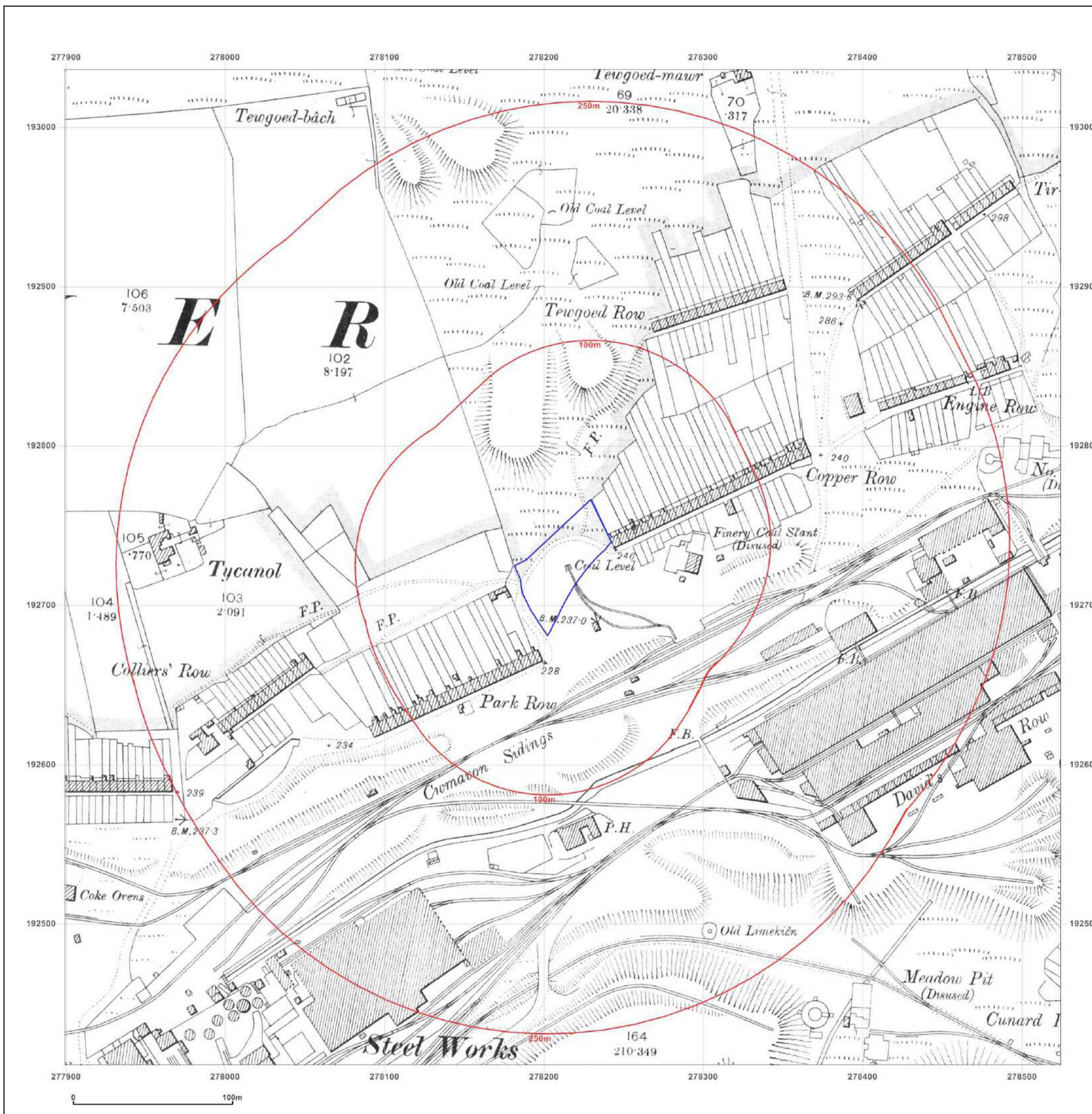


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Site Details:

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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: County Series

Map date: 1919

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1919
Revised 1919
Edition N/A
Copyright N/A
Levelled N/A

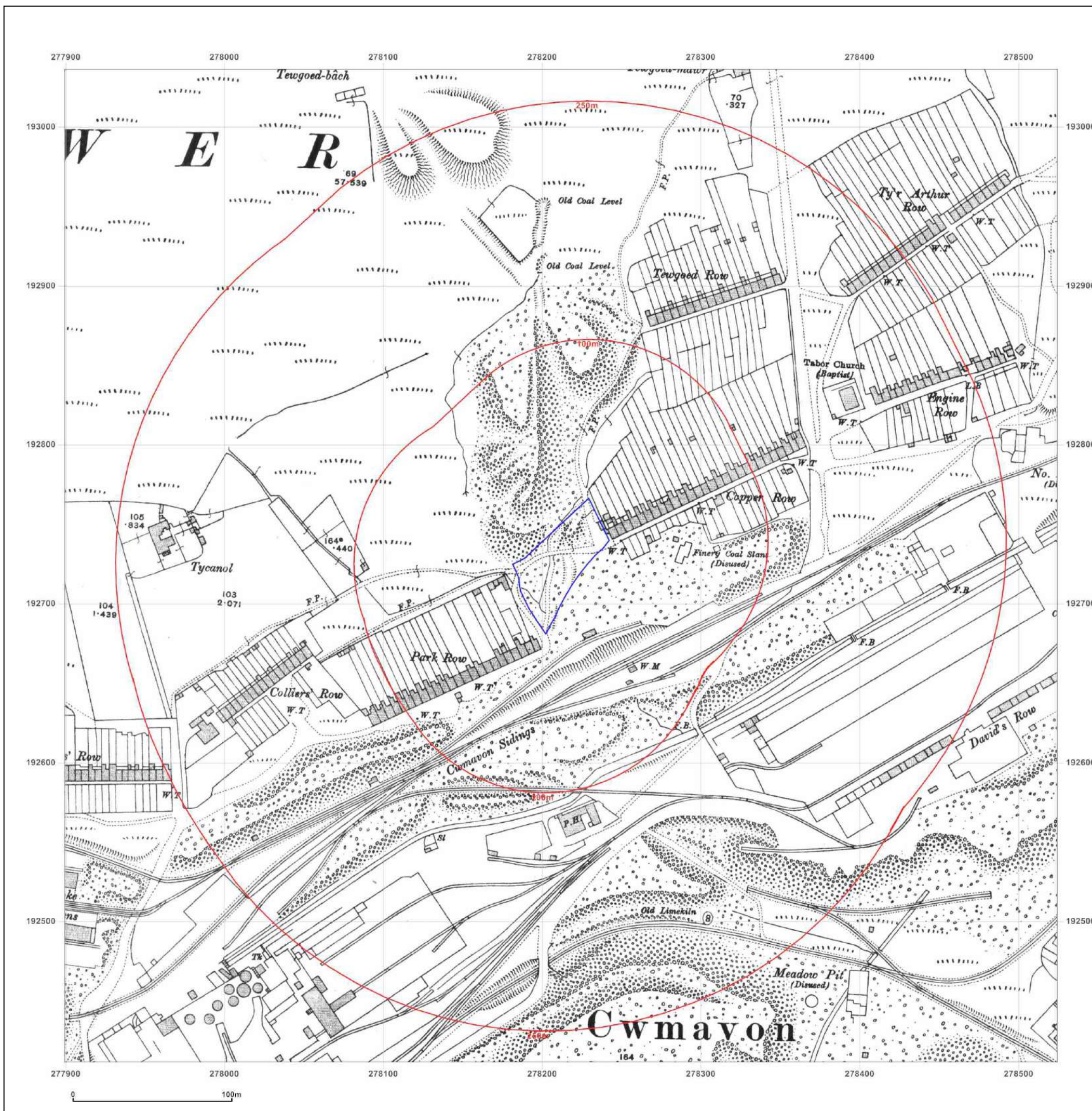


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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: County Series

Map date: 1936

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1936
Revised 1936
Edition N/A
Copyright N/A
Levelled N/A

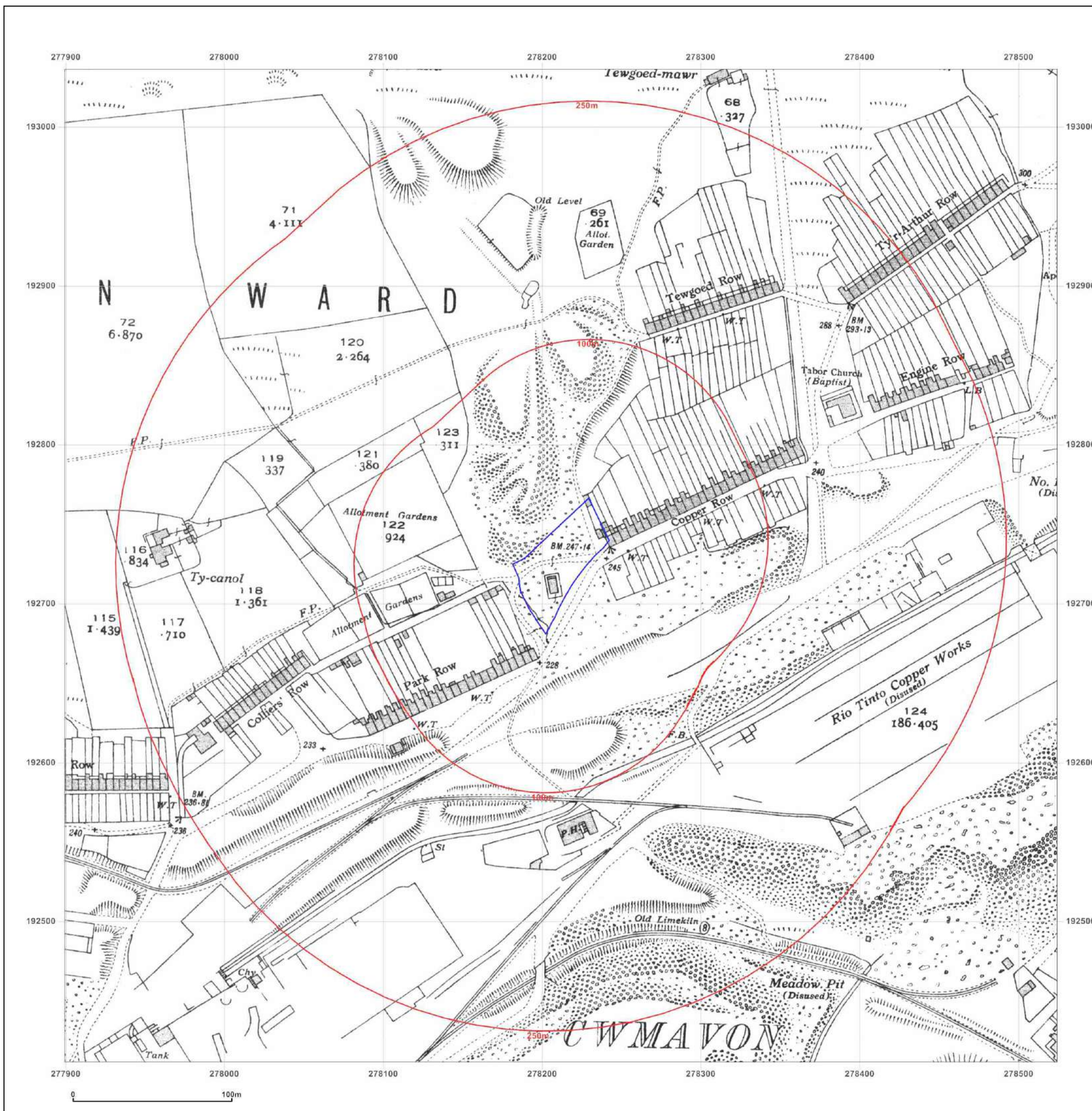


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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: National Grid

Map date: 1962-1966

Scale: 1:2,500

Printed at: 1:2,500



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Levelled 1964

Surveyed 1966
Revised 1966
Edition N/A
Copyright 1967
Levelled 1964

Surveyed N/A
Revised N/A
Edition N/A
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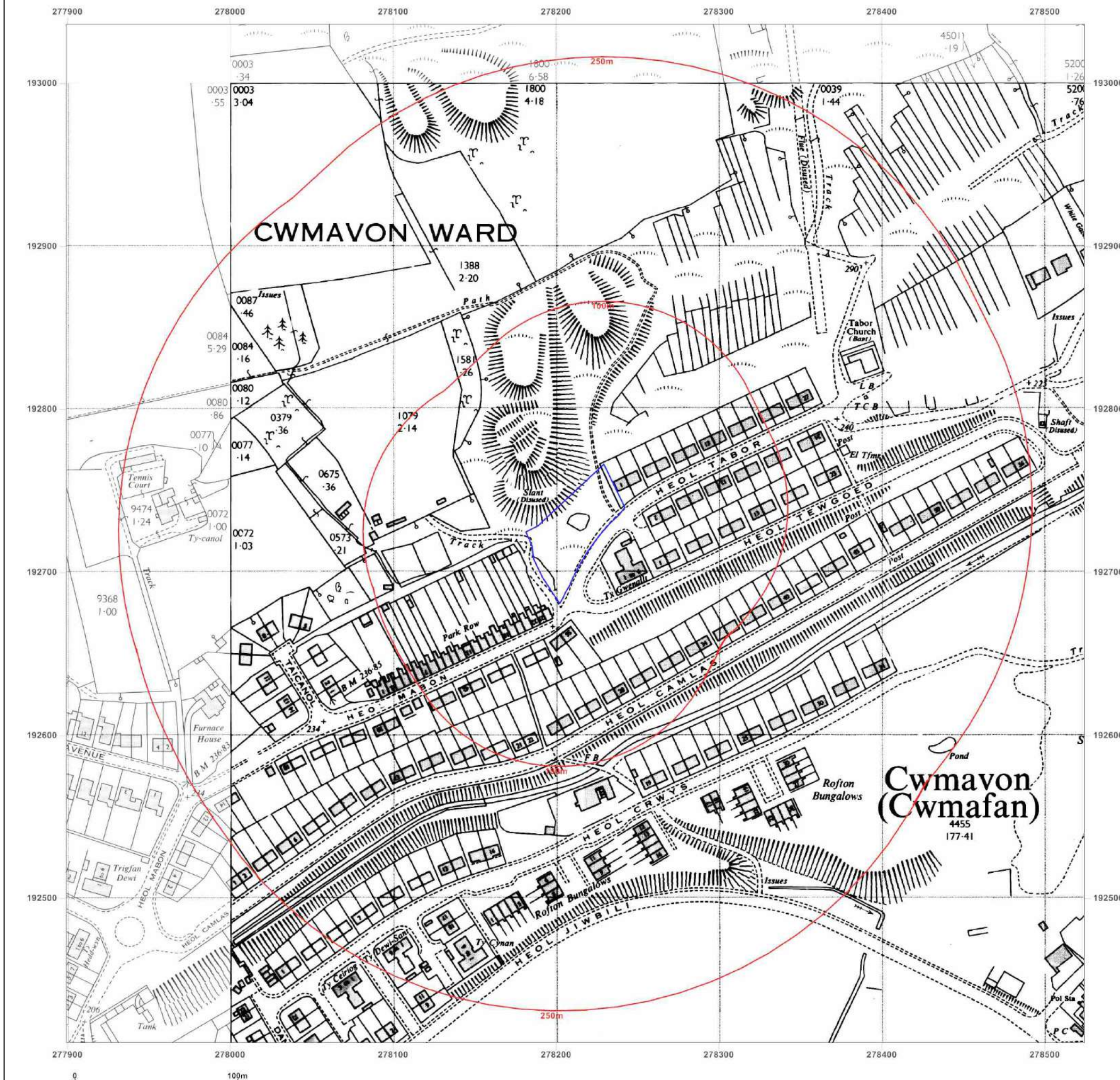


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Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: National Grid

Map date: 1964-1969

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1969
Revised 1969
Edition N/A
Copyright 1970
Levelled 1963

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

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

Surveyed 1964
Revised 1964
Edition N/A
Copyright 1965
Levelled 1964

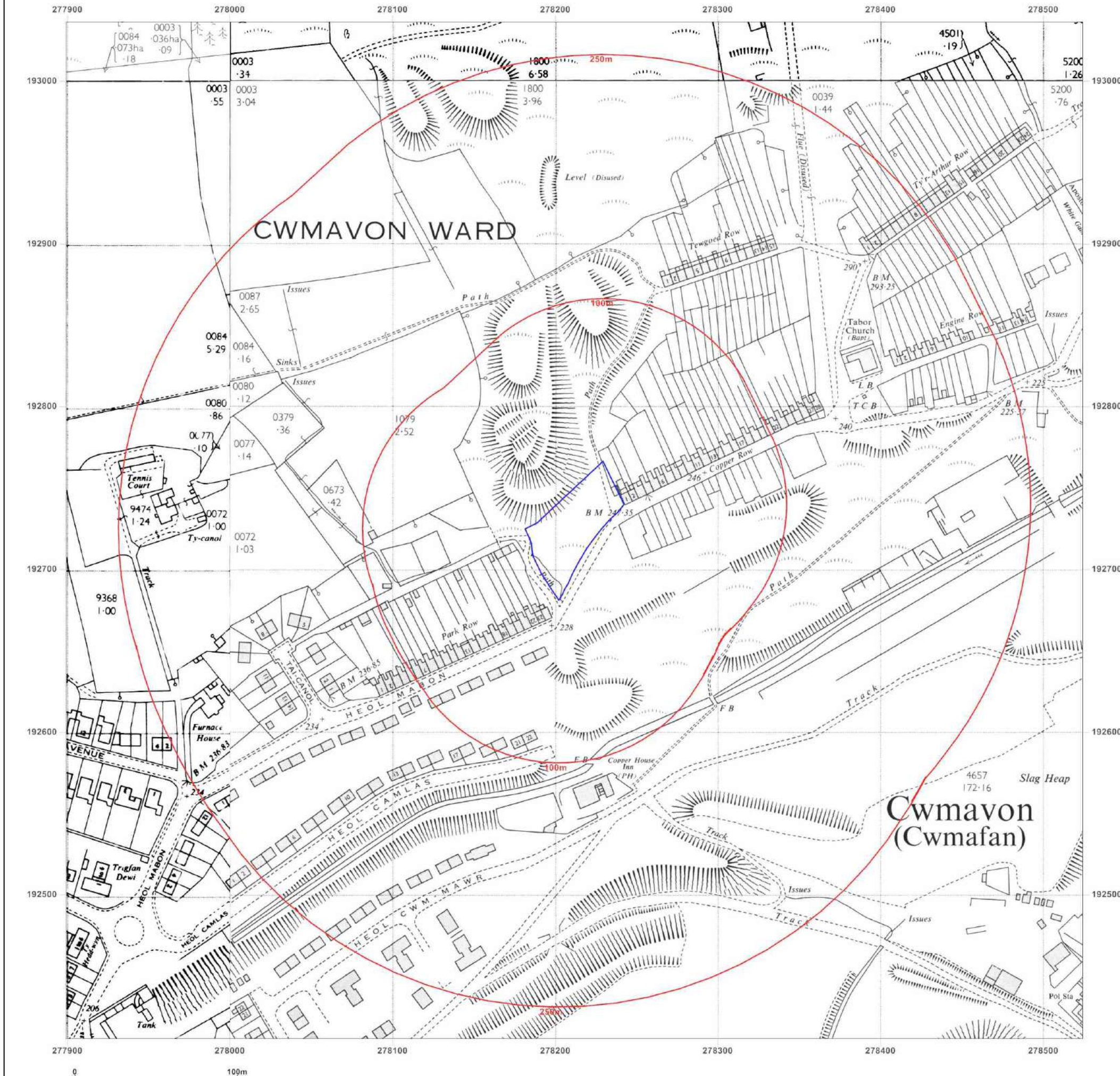


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Site Details:

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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: National Grid

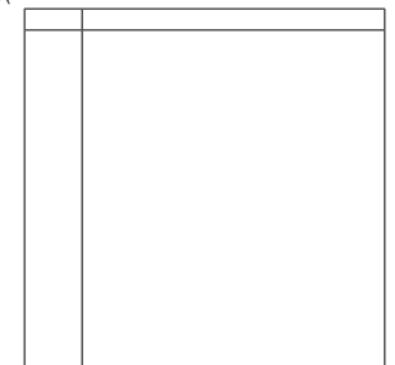
Map date: 1969-1970

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1970
Revised 1970
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1969
Revised 1969
Edition N/A
Copyright 1969
Levelled 1964

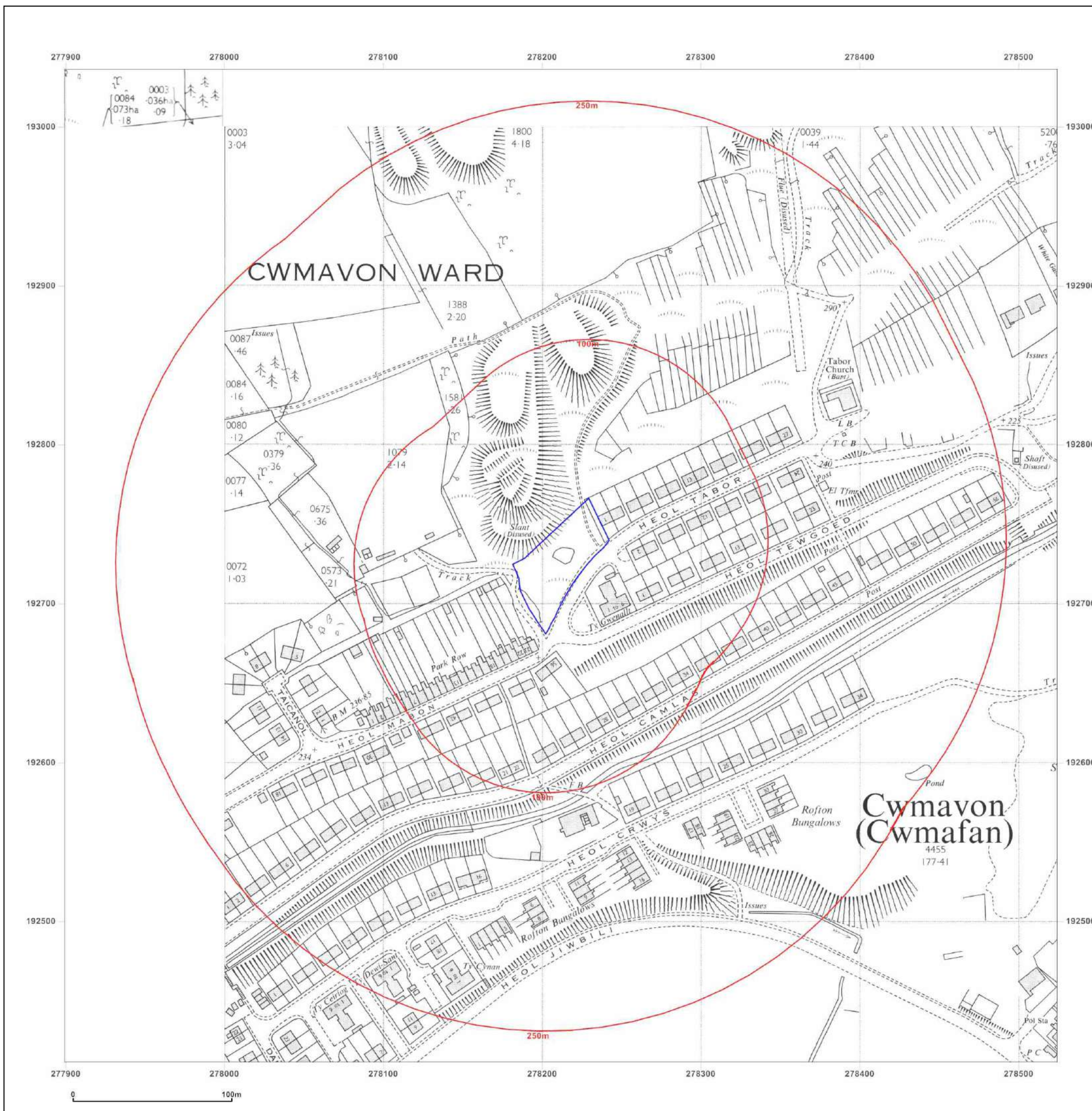


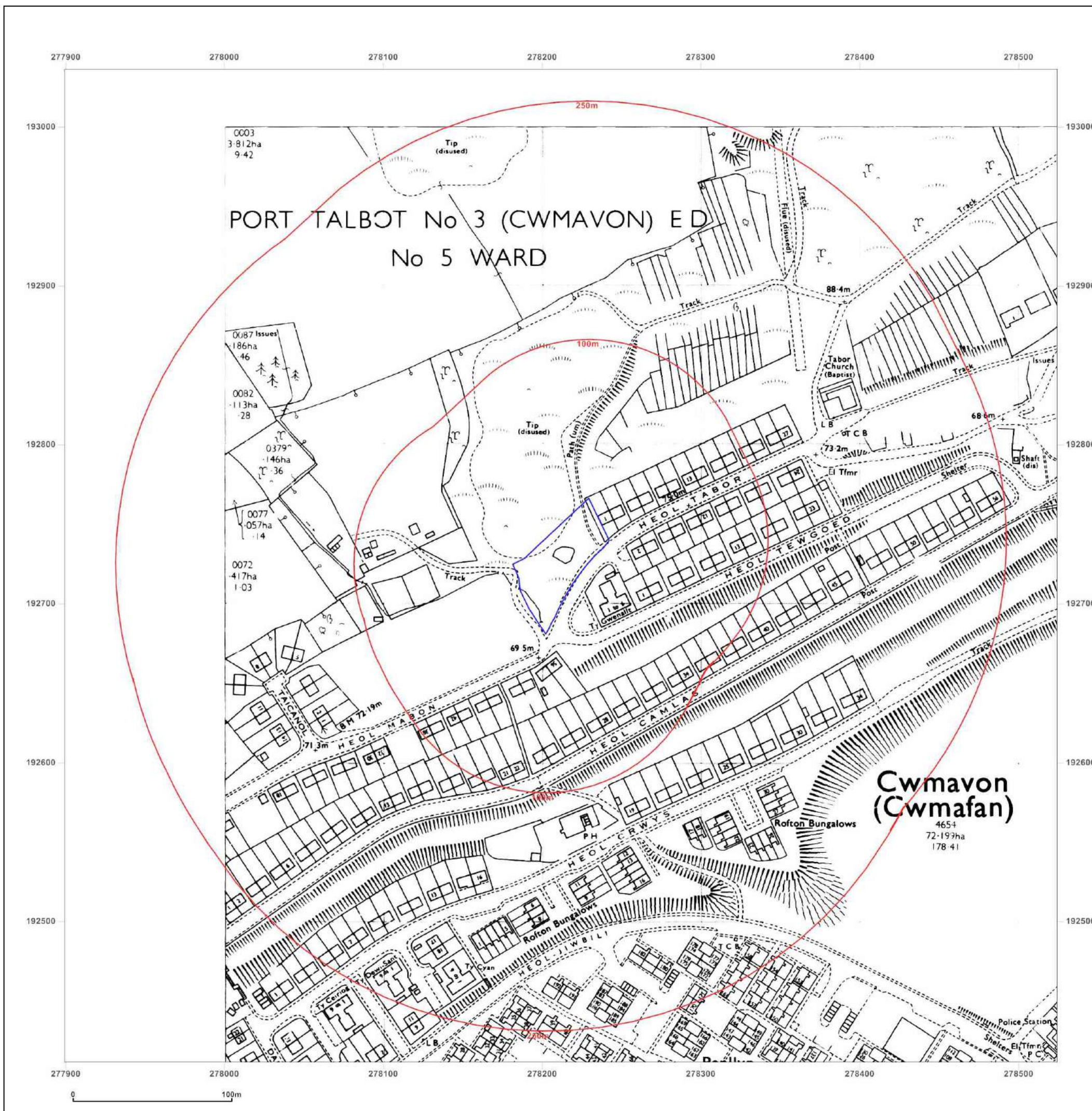
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Production date: 18 September 2020

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Site Details:

LAND OFF HEOL TABOR,
CWMAVON, PORT TALBOT,
SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name:	National Grid
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Map date: 1975

Scale: 1:2,500

Printed at: 1:2,500



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



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Production date: 18 September 2020

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Site Details:

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CWMAVON, PORT TALBOT,
SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: National Grid

Map date: 1973-1977

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1977
Revised 1977
Edition N/A
Copyright 1978
Levelled 1964

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

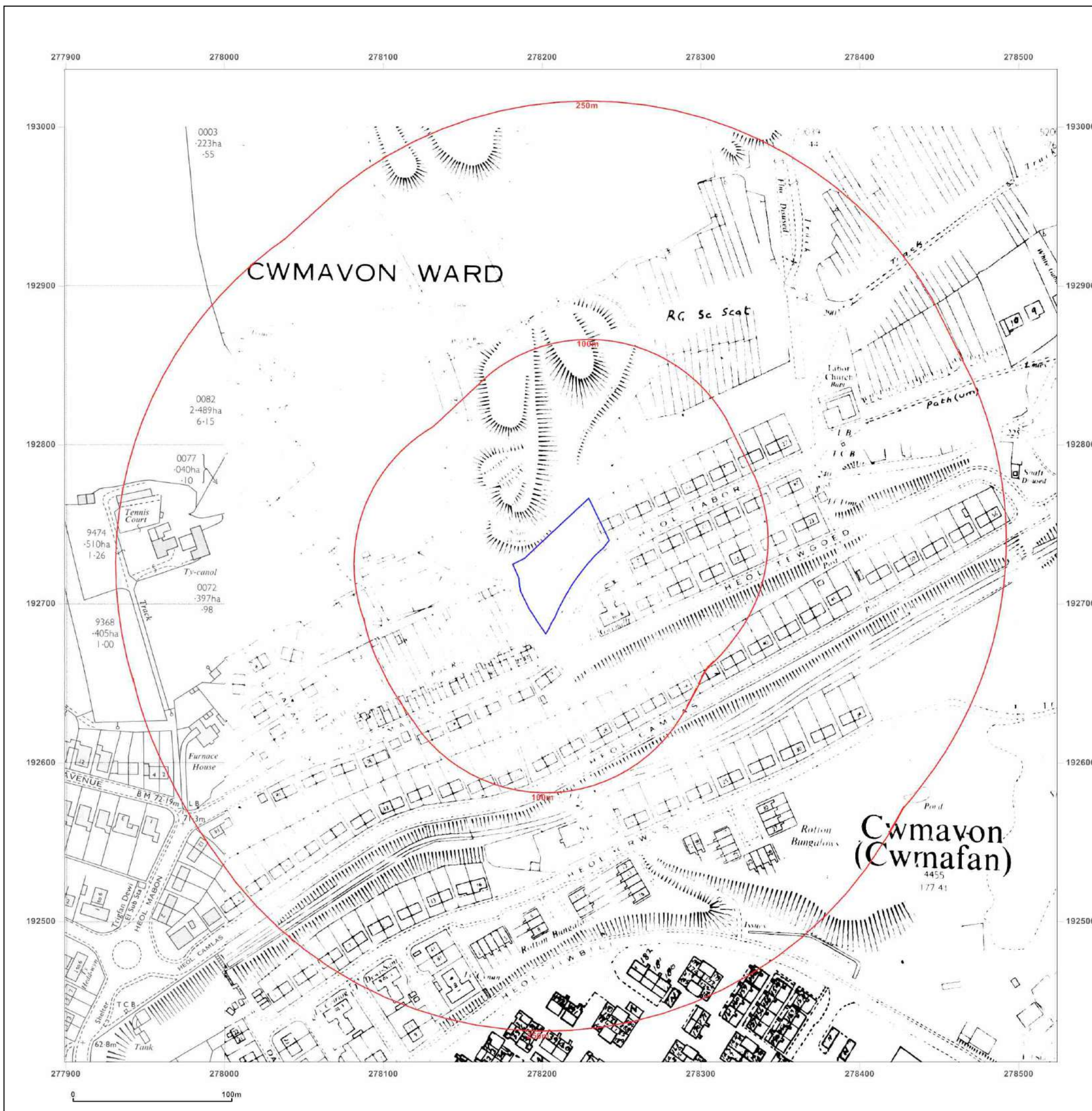


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Production date: 18 September 2020

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Site Details:

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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: National Grid

Map date: 1981-1986

Scale: 1:2,500

Printed at: 1:2,500



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Revised 1986
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Revised N/A
Edition N/A
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CWMAVON, PORT TALBOT,
SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: National Grid

Map date: 1989-1993

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1993
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Edition N/A
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Surveyed 1993
Revised 1993
Edition N/A
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Surveyed N/A
Revised 1989
Edition N/A
Copyright 1983
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1992
Levelled 1964

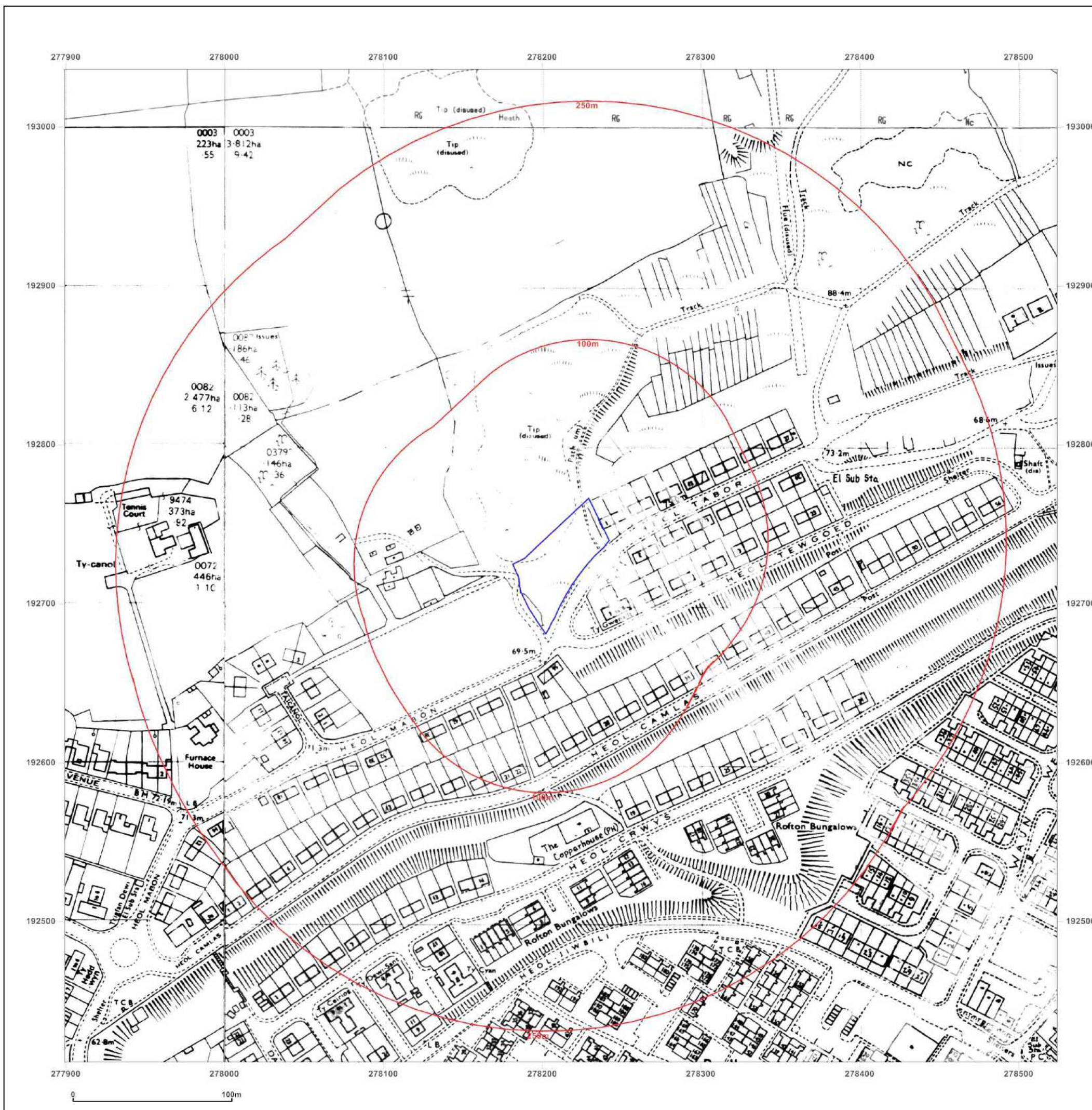


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Site Details:

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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: National Grid

Map date: 1992-1993

Scale: 1:2,500

Printed at: 1:2,500



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Revised N/A
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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: National Grid

Map date: 1993

Scale: 1:2,500

Printed at: 1:2,500



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

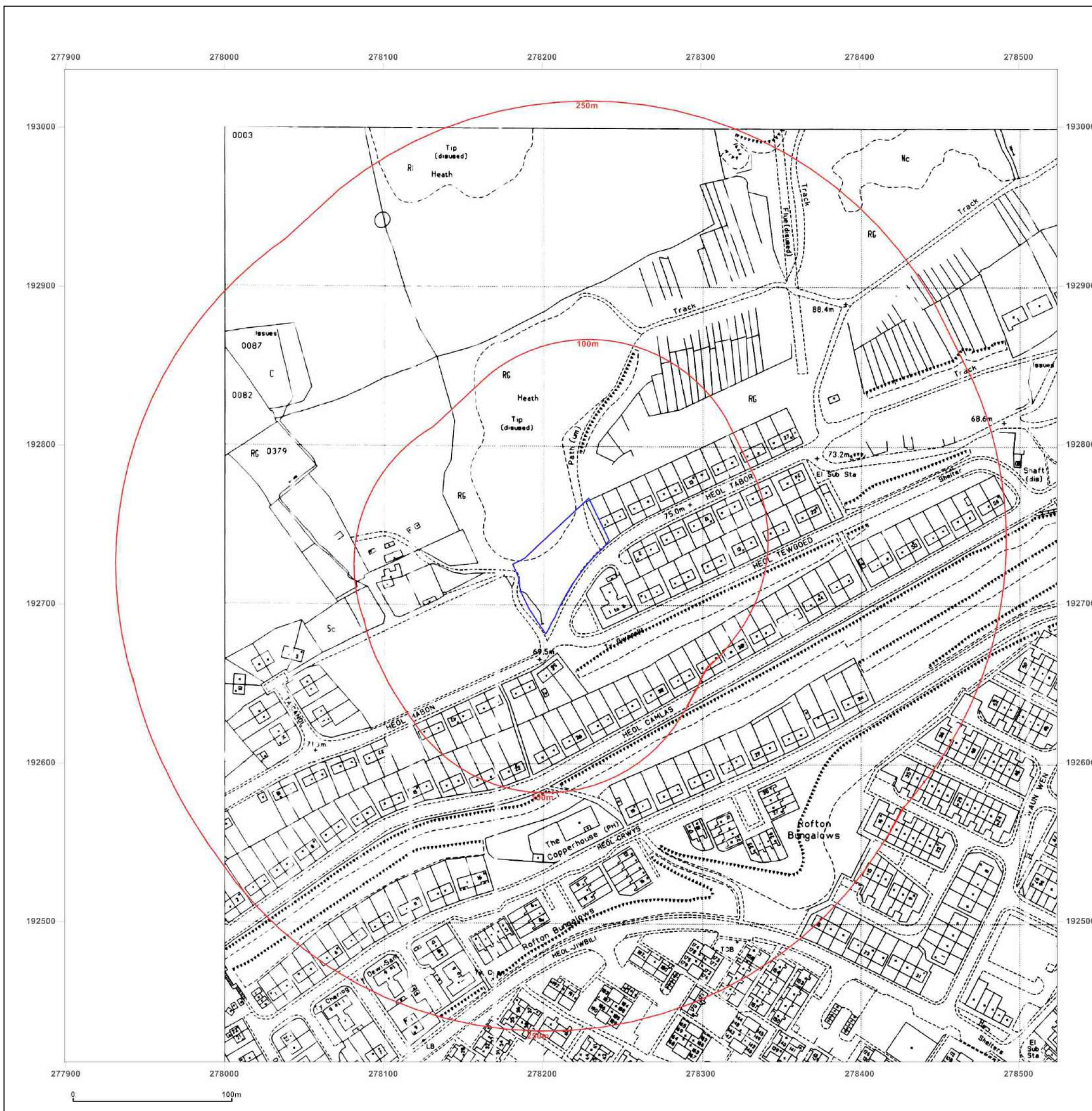


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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: National Grid

Map date: 1994

Scale: 1:2,500

Printed at: 1:2,500



Surveyed N/A
Revised N/A
Edition N/A
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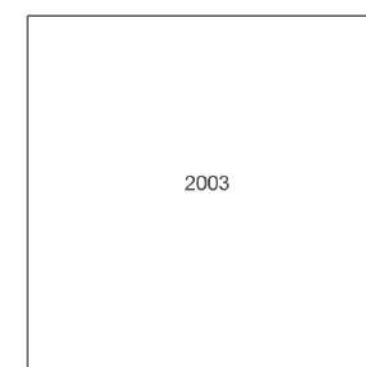
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Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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Site Details:

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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: County Series

Map date: 1884

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1877
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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: County Series

Map date: 1897

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1877
Revised 1897
Edition N/A
Copyright N/A
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Revised 1897
Edition N/A
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Surveyed 1876
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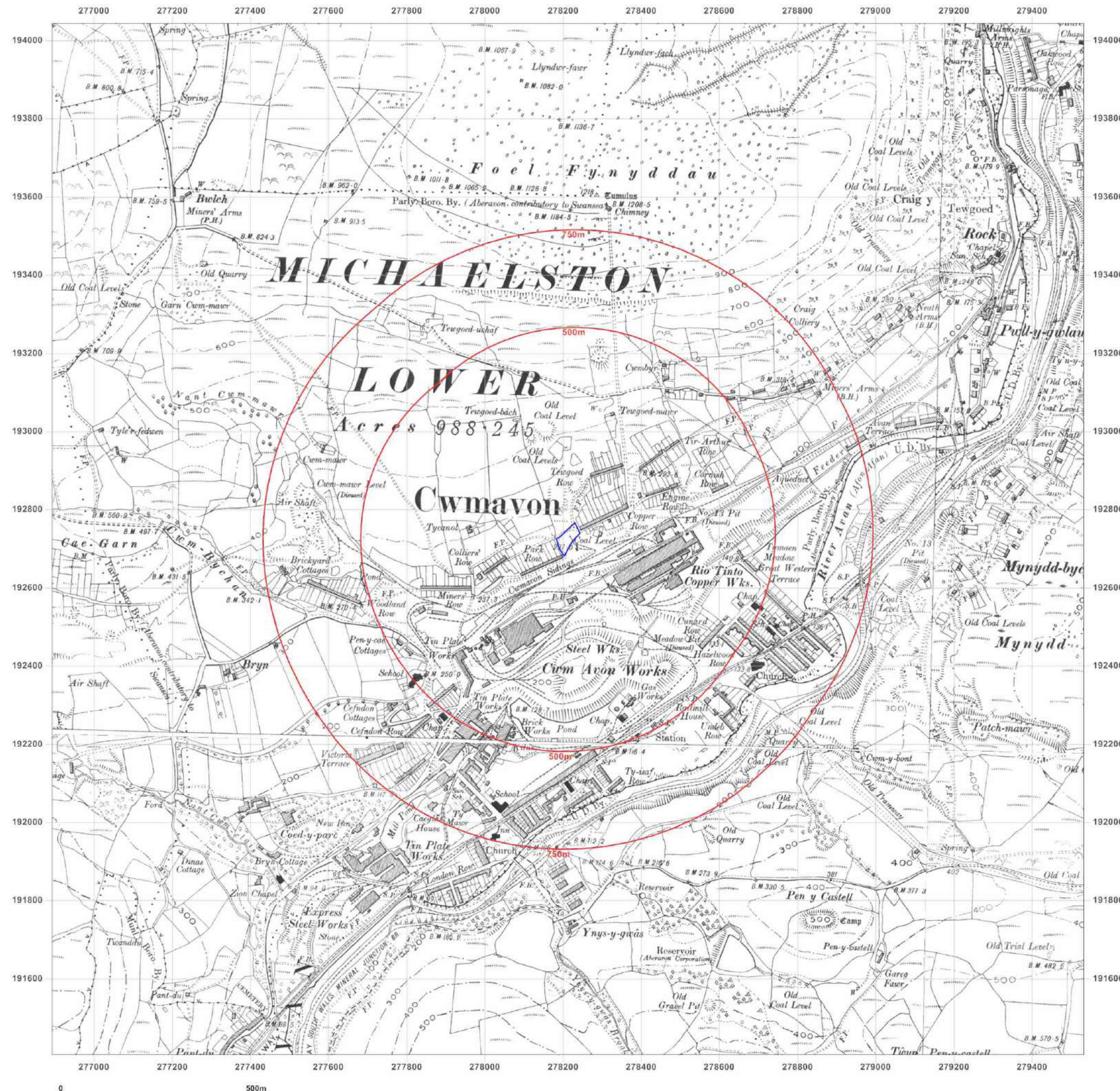


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Map Name: County Series

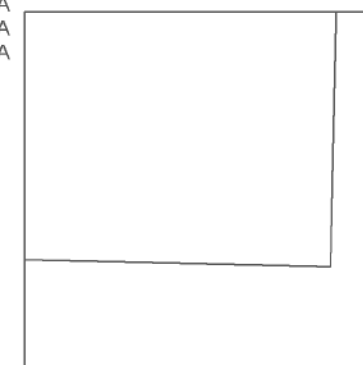
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Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1875
Revised 1921
Edition N/A
Copyright N/A
Levelled N/A

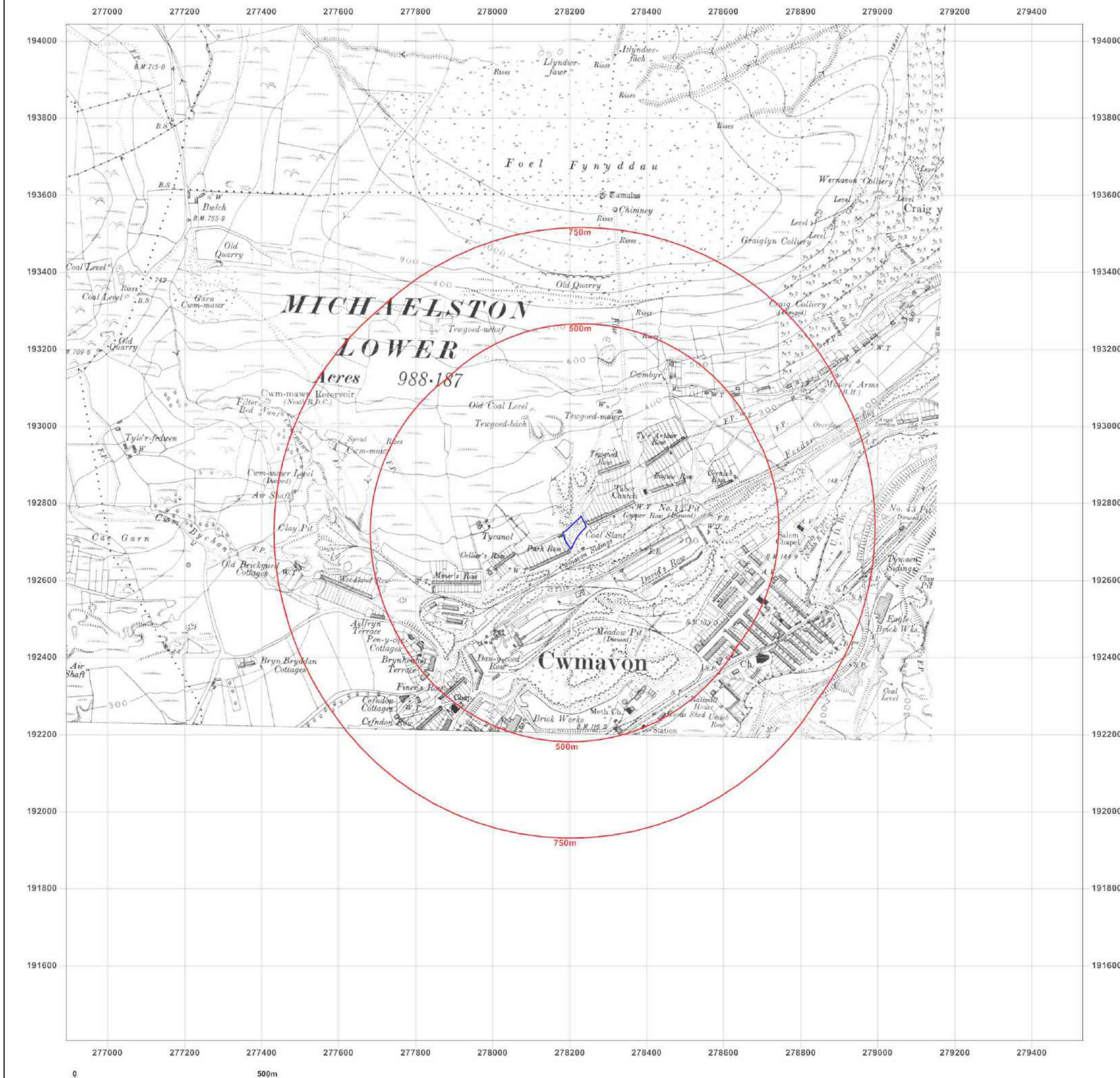


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Site Details:

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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: County Series

Map date: 1921

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Printed at: 1:10,560



Surveyed 1875
Revised 1921
Edition N/A
Copyright N/A
Levelled N/A

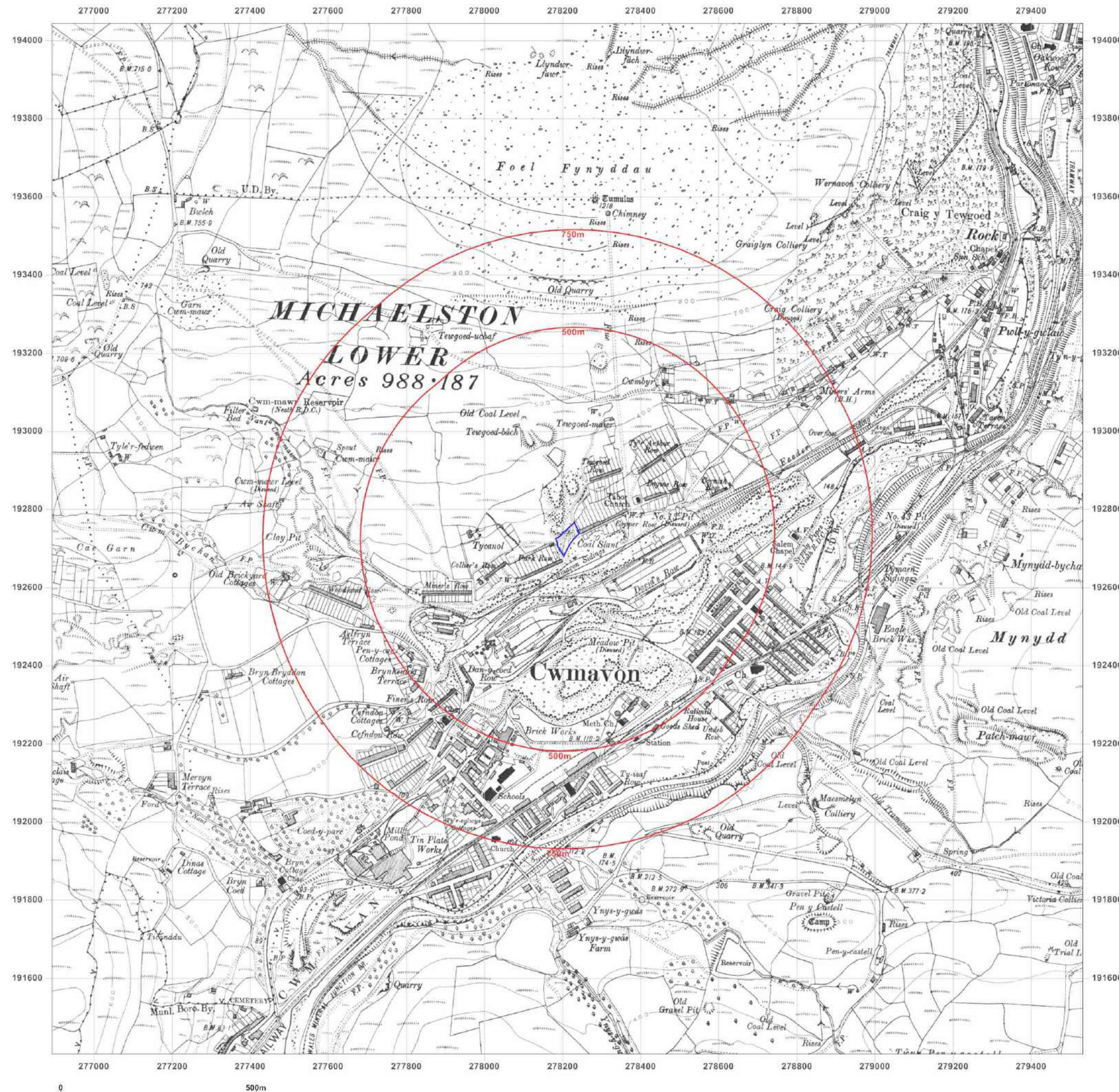


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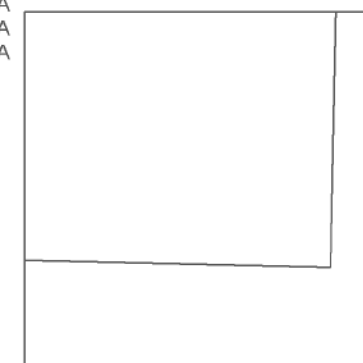
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Surveyed 1875
Revised 1936
Edition N/A
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Levelled N/A

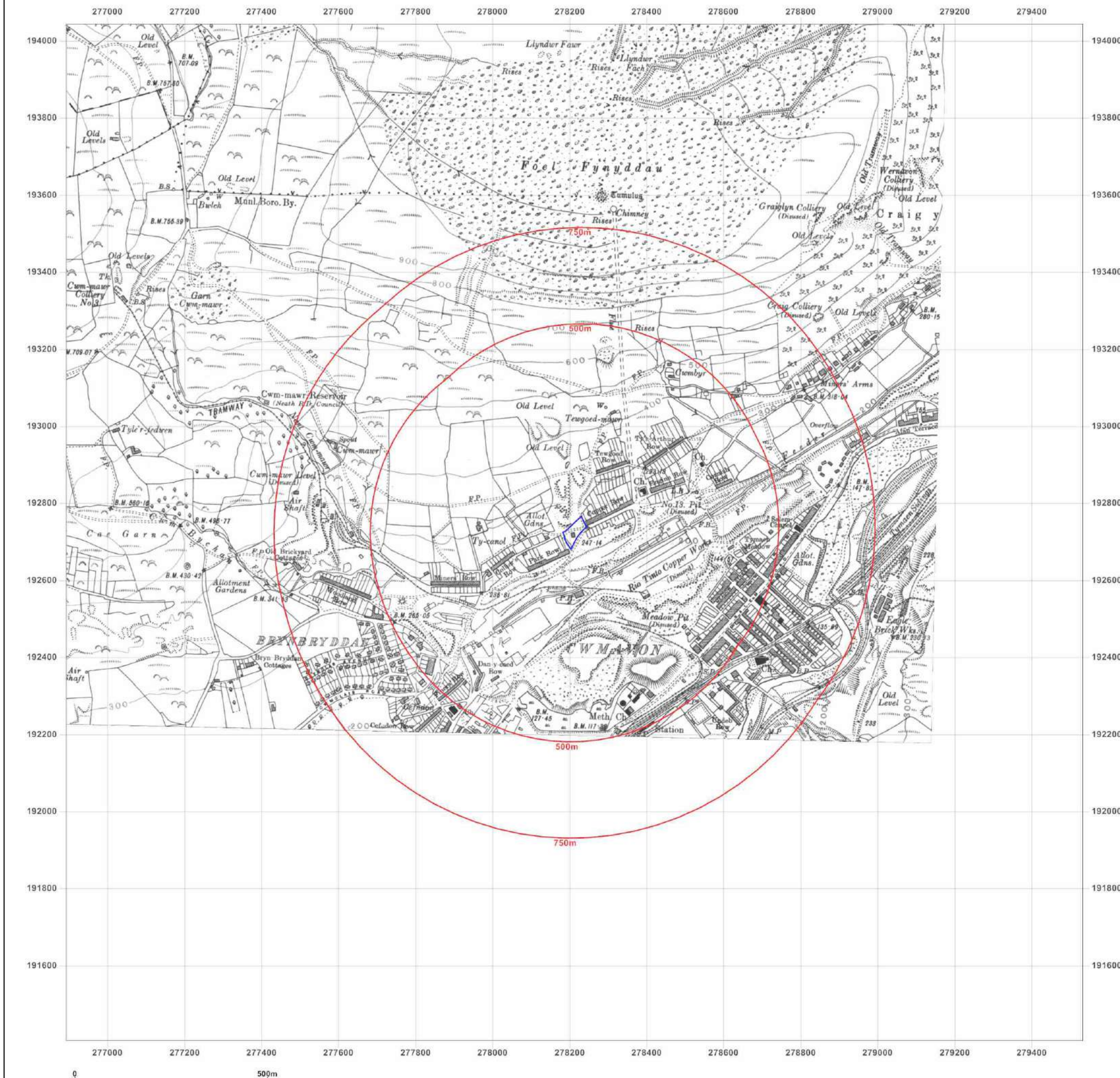


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Site Details:

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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: County Series

Map date: 1947

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1875
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Levelled N/A

Surveyed 1875
Revised 1947
Edition N/A
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Surveyed 1875
Revised 1947
Edition N/A
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Revised 1947
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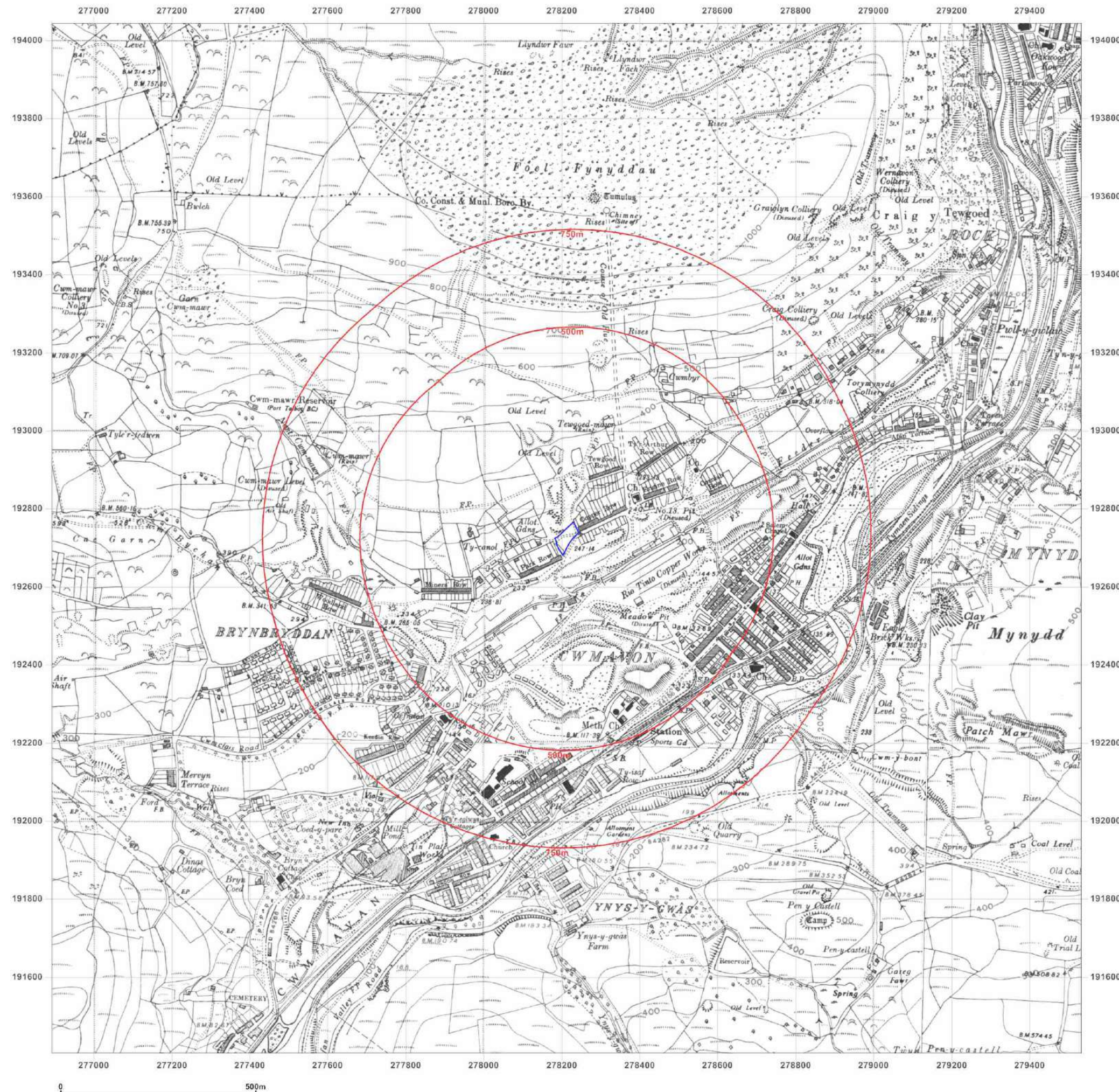


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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: Provisional

Map date: 1957

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1957
Revised 1957
Edition N/A
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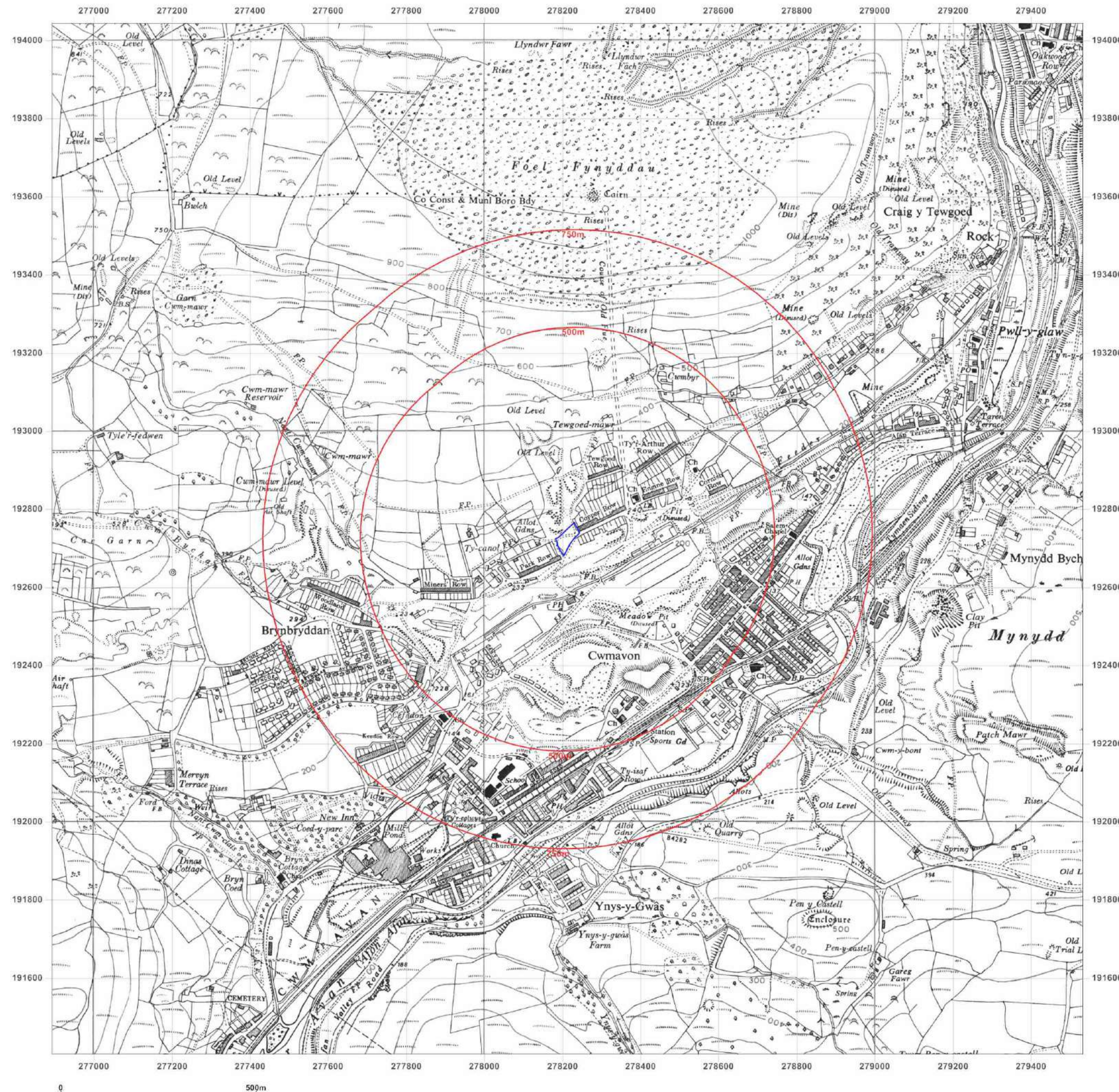


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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: Provisional

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Printed at: 1:10,560



Surveyed 1957
Revised 1957
Edition N/A
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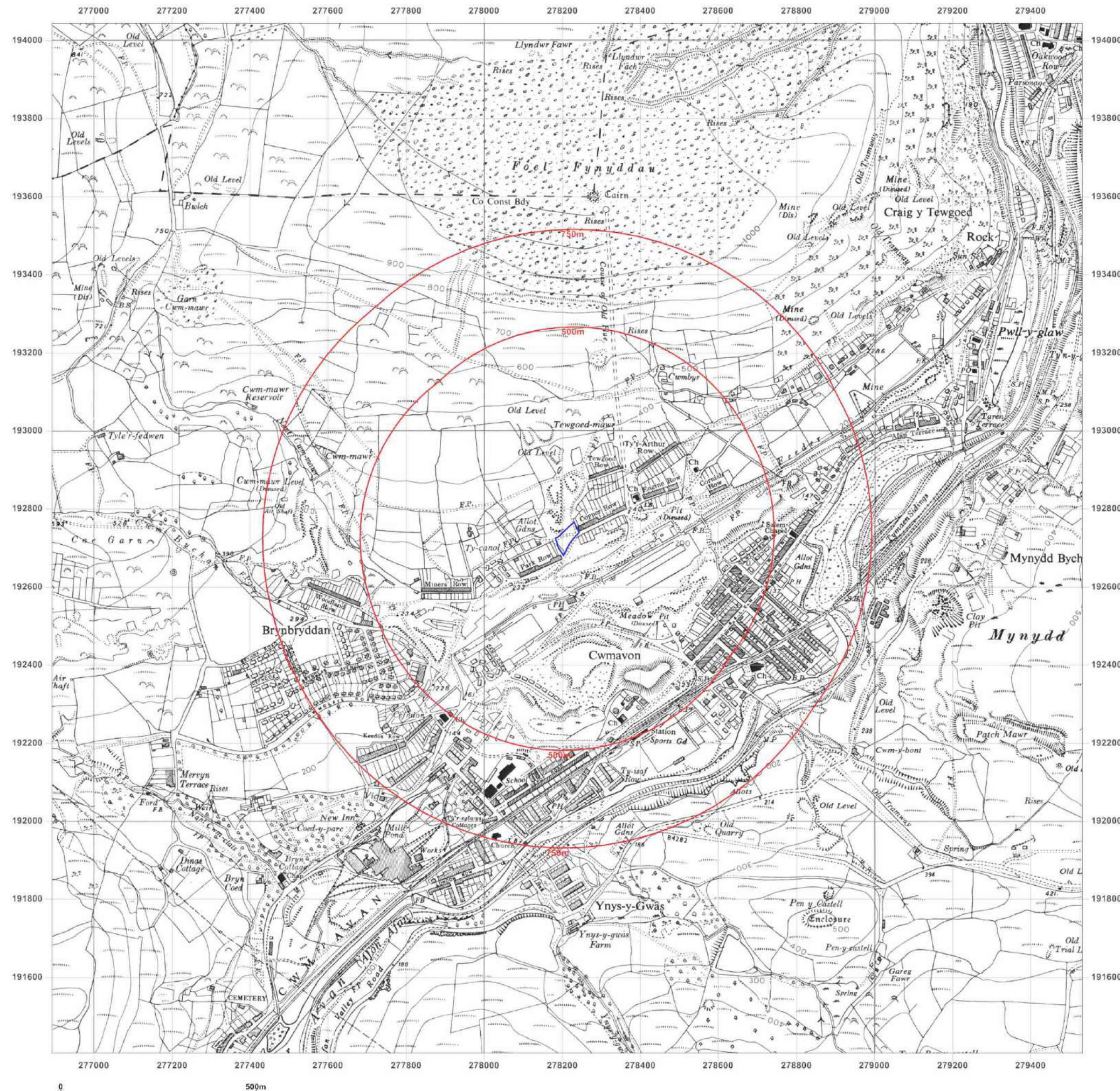


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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: National Grid

Map date: 1980

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1977
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Edition N/A
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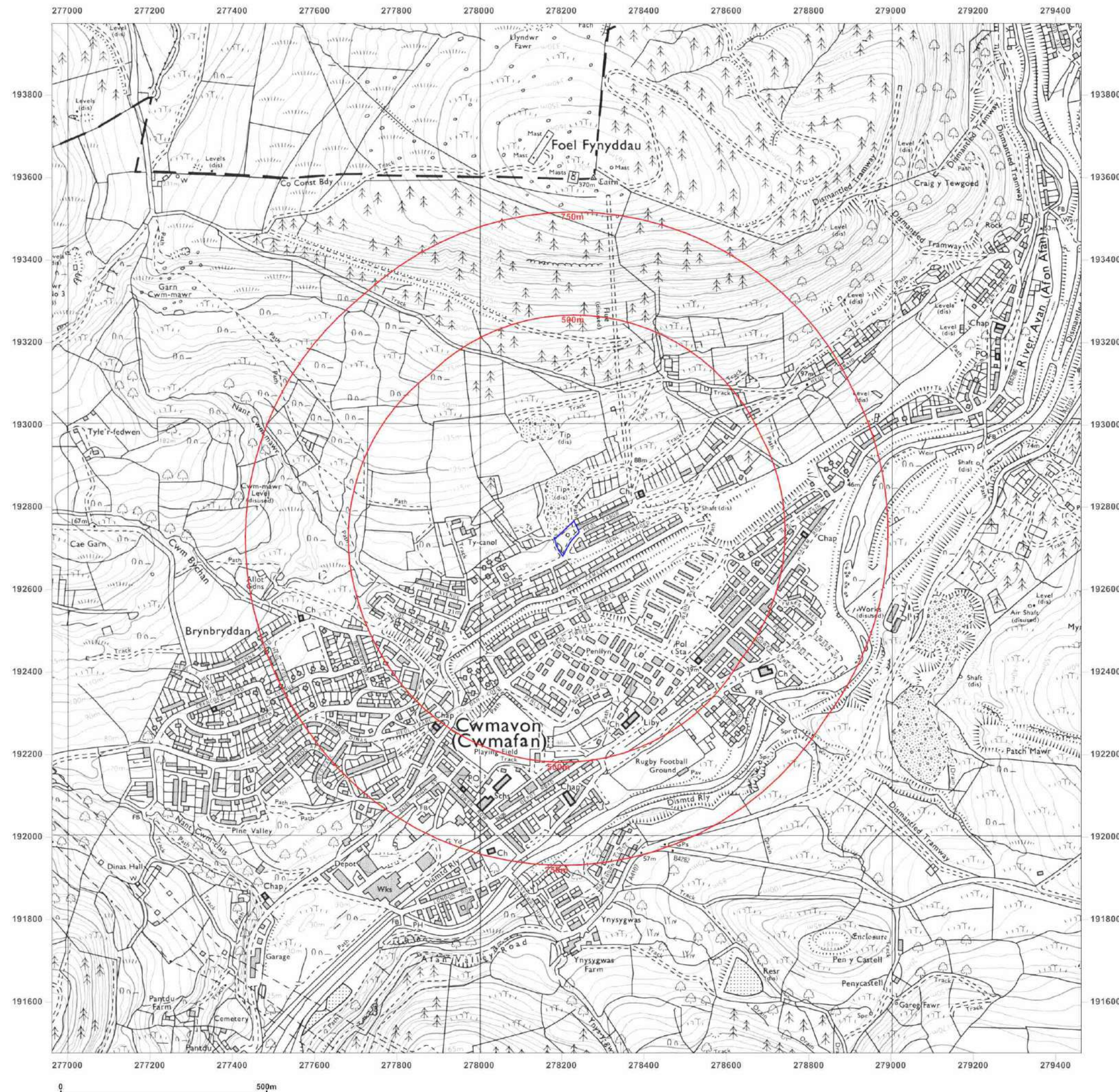


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Site Details:

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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: National Grid

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Printed at: 1:10,000



Surveyed 1977
Revised 1995
Edition N/A
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Levelled N/A

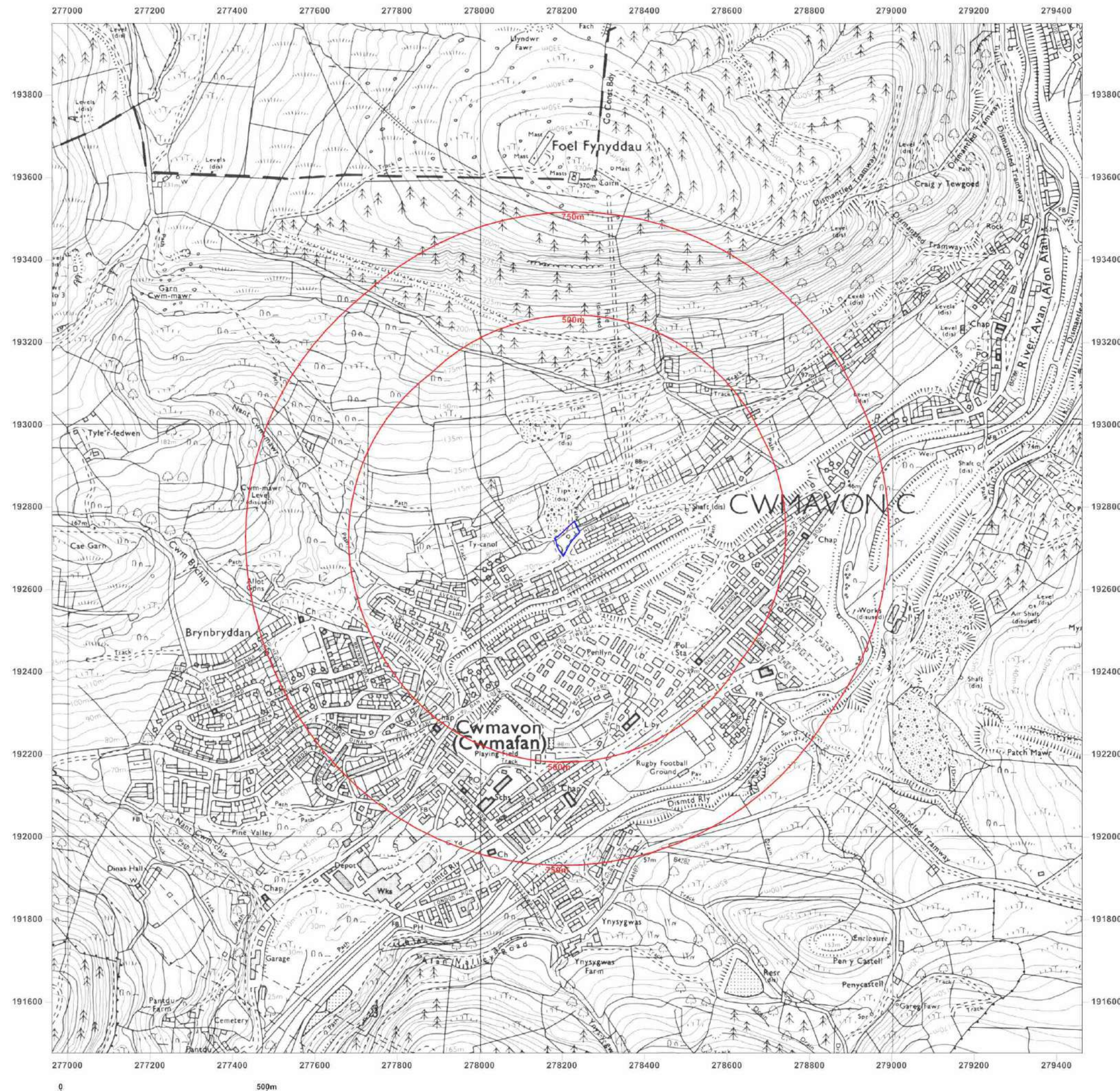


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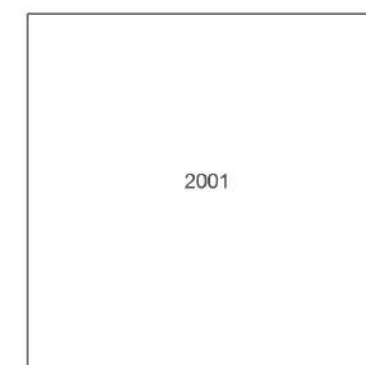
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Grid Ref: 278212, 192724

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Map date: 2001

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Printed at: 1:10,000

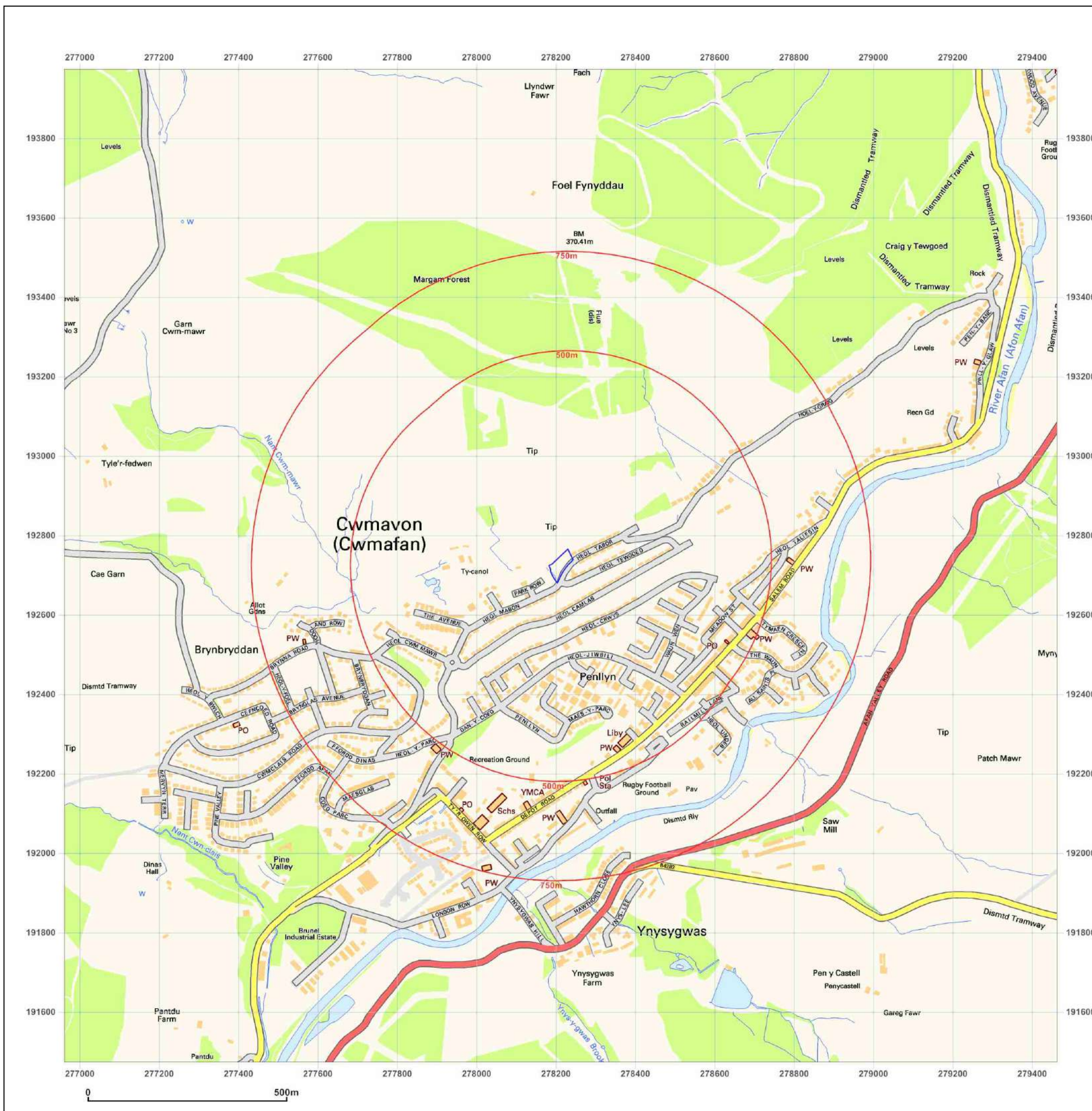


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Site Details:

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SA12 9PR

Client Ref: Q0353
Report Ref: GS-7066559
Grid Ref: 278212, 192724

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



2010

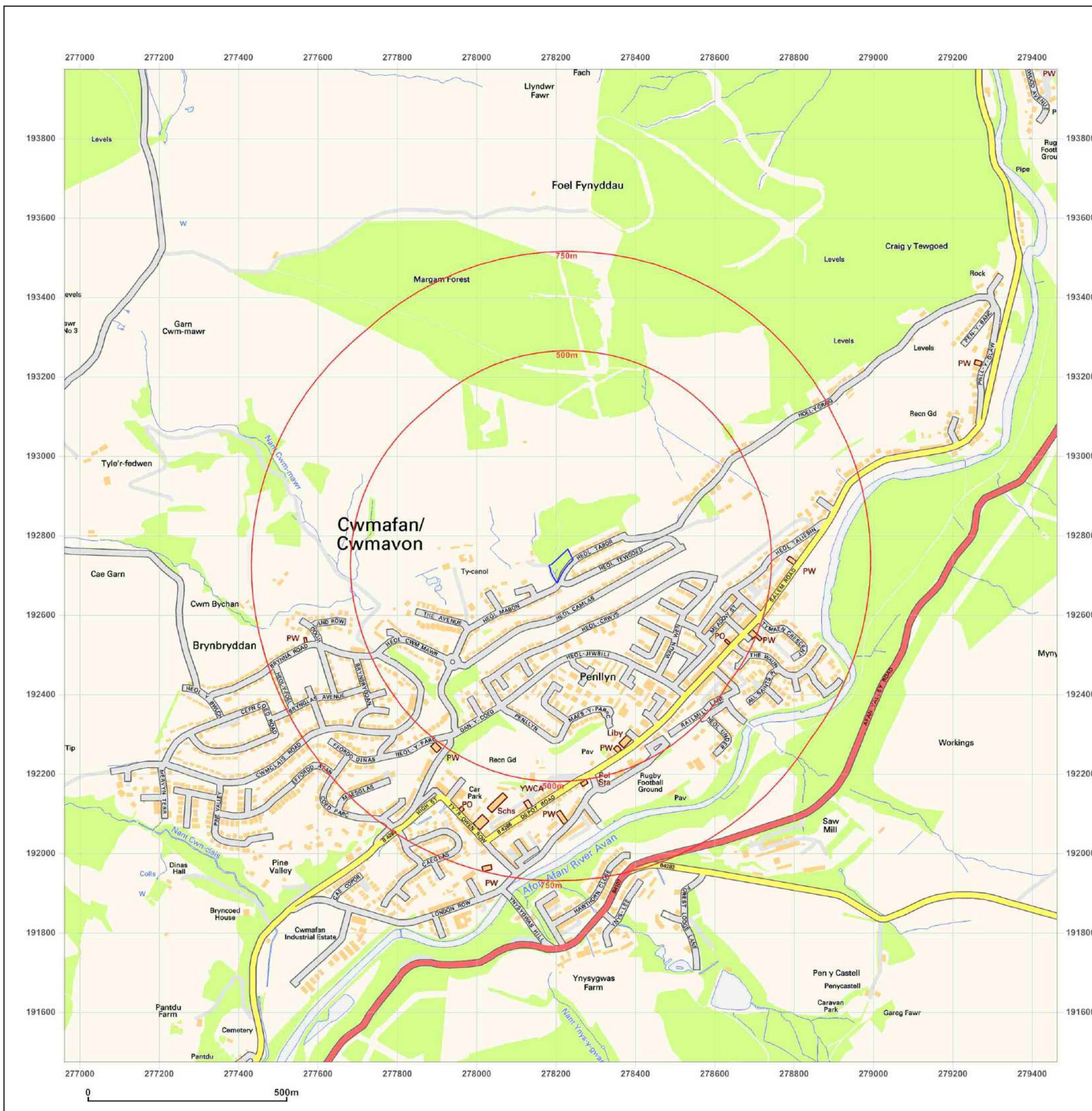


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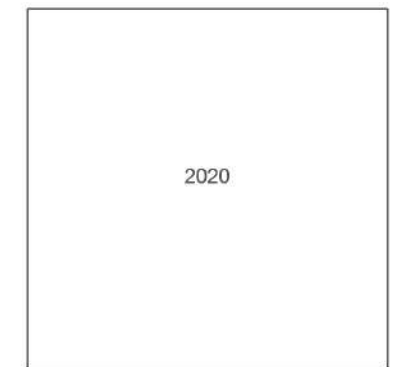
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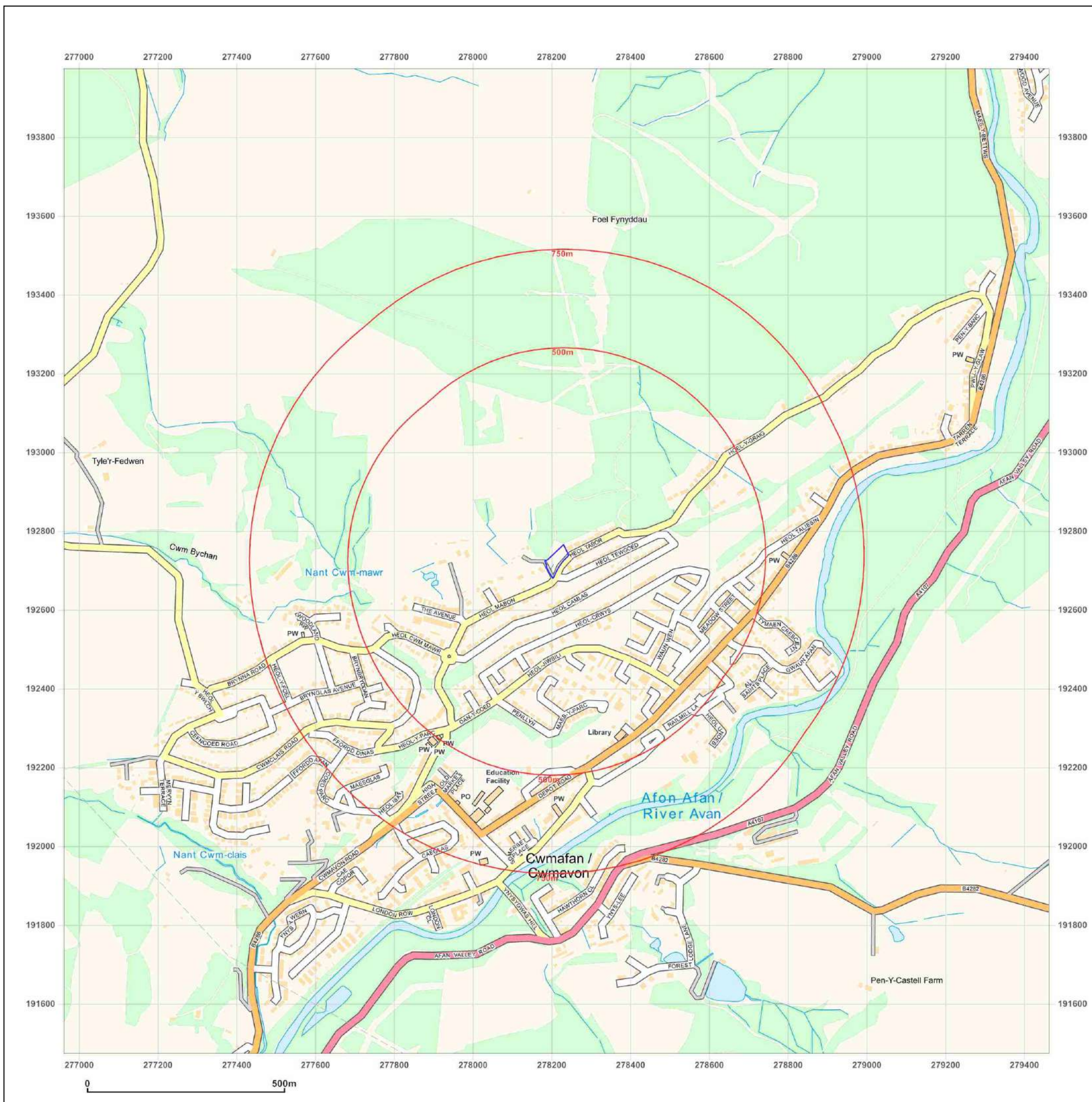


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APPENDIX IV – CON29M COAL AUTHORITY MINING REPORT



The Coal
Authority

CON29M

coal mining report

HEOL TABOR, PARCEL OF LAND OFF HEOL TABOR, CWMAVON, NEATH PORT
TALBOT, SA12 9PR



Known or potential coal mining risks

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



Further action

These additional reports can give further detail on the risks identified:

- Mine entry interpretive report
- Mine entry plan and data sheets

For more information please see our **Further action reports** on page 10



Professional opinion

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

Your reference: **Q0353**
Our reference: **51002309812001**
Date: **18 September 2020**

Client name:
Lee Simlett

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



The Law
Society

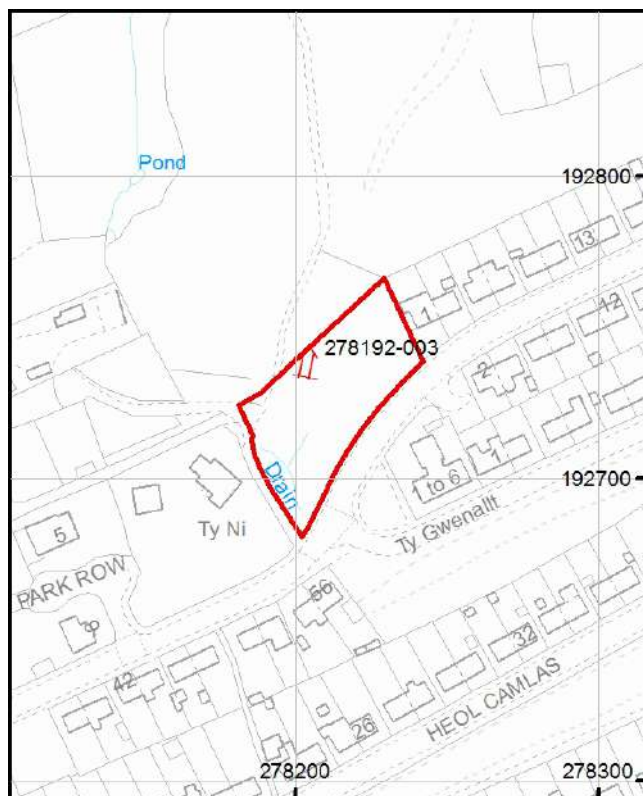
Enquiry boundary

Key

Approximate position of enquiry boundary shown



Disused adit



We can confirm that the location is
on the coalfield



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



Accessibility

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

Professional opinion



Mine entries

The enquiry boundary shows the approximate location of the disused mine entry/entries referred to in this report. Property owners have the benefit of statutory protection (under the Coal Mining Subsidence Act 1991). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage caused by disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by visiting www.coal.gov.uk. Please note this Act is not valid where coal was worked or extracted by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

If you wish to discuss the relevance of any of the information contained in this report, you should seek the advice of a qualified mining engineer or surveyor. If you or your advisor wishes to examine the source plans from which the information has been taken, these are available to view, at our Coal Authority head office in Mansfield. To book an appointment please call **01623 637 225**. Should you or your advisor wish to carry out a physical investigation that may enter, disturb or interfere with any disused mine entry, prior permission must be sought from the owner. For coal mine entries, the owner will normally be the Coal Authority.

The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency, 24 hour call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries). To report an emergency you can call **01623 646 333**.



Future development

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

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

Detailed findings

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

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1 Past underground coal mining

The property is in a surface area that could be affected by underground mining in 6 seams of coal at 50m to 210m depth, and last worked in 1900.

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

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

2 Present underground coal mining

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

3 Future underground coal mining

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

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

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

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

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

4 Mine entries

Within, or within 20 metres of, the boundary of the property there is 1 mine entry, the approximate position of which is shown on the enquiry boundary plot. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

There is no record of what steps, if any, have been taken to treat the mine entry.

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

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

For an additional fee, the Coal Authority can provide a Mine Entry Interpretive Report. The report will provide a separate assessment for the mine entry/entries referred to in this report. It gives an opinion on the likelihood of mining subsidence damage caused from ground movement as a consequence of the mine entry/entries. It also gives details of the remedies available for subsidence damage where the mine entry was sunk in connection with coal mining.

Please note that it may not be possible to produce a report if the main building to the property cannot be identified from Coal Authority plans (ie for development sites and new build).

For further advice on how to order this additional information please visit www.groundstability.com.

5 Coal mining geology

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

6 Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7 Present opencast coal mining

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

8 Future opencast coal mining

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

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

9 Coal mining subsidence

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

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

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

10 Mine gas

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

11 Hazards related to coal mining

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

12 Withdrawal of support

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

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

13 Working facilities order

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

14 Payments to owners of former copyhold land

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

Statutory cover



Coal mining subsidence

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

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

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

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



Coal mining hazards

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

Glossary



Key terms

adit - horizontal or sloped entrance to a mine

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

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

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

coal seams - bed of coal of varying thickness

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

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

mine entries - collective name for shafts and adits

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

shaft - vertical entry into a mine

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

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

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

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

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



Further action reports

Mine entry interpretive report - assesses the risk of ground movement from mine entries in, or within 20 metres of, the property boundary. To order this report, use the same boundary as the CON29M report, then draw the building on the additional map screen.

For more information and to order this report please visit:

<https://www2.groundstability.com/interpretive-report>

Mine entry plan and data sheets - give additional information on mine entries recorded on a piece of land. To order this report use the same boundary as the CON29M report and a member of our team will contact you to confirm the mine entries to include in this bespoke report.

For more information and to order this report please visit:

<https://www2.groundstability.com/plan-and-data-sheets>